Environment Agency

SITE AT THORNTON-CLEVELEYS

Surface Water Monitoring Factual Report (Rounds 1 - 4)

CONFIDENTIAL

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FINAL - CONFIDENTIAL

PROJECT NO. 70100310

DATE: JULY 2025

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QUALITY CONTROL

Issue/revision	First issue	Second issue	Final Issue
Remarks	Draft for comment (R1-R3	Inclusion of R4 and addressing EA comments	Final
Date	February 2025	March 2025	July 2025
Prepared by	[redacted]		
Signature			
Checked by			
Signature			
Authorised by			
Signature			
Project number	70100310	70100310	70100310
Report number	70100310/12249	70100310/12249	70100310/12249

CONTENTS

TABLES

FIGURES

APPENDICES

APPENDIX A

FIGURES

APPENDIX B

PHOTOLOG

APPENDIX C

LAB CERTIFICATES

1 INTRODUCTION

1.1 TERMS OF REFERENCE

WSP UK Ltd (WSP) was instructed by the Environment Agency (EA, 'the Client') to undertake four monthly rounds of surface water sampling between September 2024 and January 2025, as part of a preliminary investigation into potential legacy releases to controlled waters from the AGC Chemicals Europe (AGCCE) facility in Thornton-Cleveleys.

The sampling remit was primarily targeted to investigate and quantify specific contaminant linkages identified through desk-based assessment, directly linked to the subject site, which have the potential to impact offsite controlled waters receptors (specifically surface waters proximal to the facility). Such linkages include potential historic releases of contamination (including a wide variety of industrial chemicals) to the subsurface attributed to legacy operations (e.g. leaks and spills, poor integrity tanks and drainage infrastructure, non-permitted discharges and/or aerial deposition), that have the potential to subsequently impact off-site controlled waters receptors. The focus of this assessment being impacts to receiving surface waters proximal to the facility including Hillylaid Pools located to the south of the facility, Royles Brook to the north and the Wyre Estuary to the east.

Works were undertaken under the HSE, 2015. Construction (Design & Management) Regulations (CDM) [3] where WSP were Principal Contractor and Designer.

This report sets out a factual account of the four sampling rounds undertaken. A sample location plan is included as Figure 1 in Appendix A.

1.2 PROJECT CONTEXT

The investigation presented herein forms part of a wider Part 2A inspection focused on the AGCCE facility and the surrounding land. The EA is leading the inspection on behalf of Wyre Council (the Local Authority). As part of an earlier phase of works, a number of plausible contaminant linkages were identified attributed to legacy operations that warrant further investigation or quantification in accordance with EA, 2020. Land Contamination Risk Management (LCRM) [4] and to be compliant with investigation requirements under Part 2A of the Environmental Protection Act, 1990 [5].

It is noted that the AGCCE facility holds active environmental permits to discharge treated effluent to surface water. Impacts related to current emissions are to be addressed via the Environmental Permitting Regulations and are not the focus of Part 2A.

Whilst this study targets contaminant linkages associated with risks to controlled waters from potential soil contamination, the wider Part 2A study focuses on other linkages of concern, including the risk to human health.

1.3 REMIT

The remit for the surface water sampling exercise was to conduct four monthly sampling rounds to observe concentrations of a range of potential contaminants in surface water that may be attributed to legacy emissions from the AGCCE facility. Representative samples were to be obtained at accessible points from the network of surface water drainage courses proximal to the facility, including the Wyre Estuary.

1.4 BACKGROUND

1.4.1 HYDROGEOLOGICAL SETTING

The regional geology indicates the site is located on superficial deposits of post glacial Tidal Flat Deposits (TFD) (previously classed as Estuarine Alluvium) overlying glacial Till. The TFD are described as unconsolidated sediment, mainly mud or sand whilst the Till is described as unsorted and unstratified drift, generally over consolidated and consists of a heterogenous mixture of clay, sand, gravel and boulders.

The underlying solid geology is the Kirkham Mudstone (part of the Mercia Mudstone Group) underlain by the Sherwood Sandstone Group.

In terms of aquifer classification, the Tidal Flat Deposits are classified as Unproductive strata, whilst the Till is classified as a Secondary Undifferentiated aquifer. The bedrock is classified as a Secondary B aquifer.

The EA Catchment Data Explorer indicates the site is located within the West Lancashire Quaternary Sand and Gravel Aquifer Operational Catchment and water body (ID: GB41202G912700). The water body holds drinking water protection status.

There are no known active or historical groundwater abstractions (licenced or unlicenced) within a 2km radius of the AGCCE facility.

1.4.2 HYDROLOGICAL SETTING

There are a number of surface water features in the vicinity of the AGCCE facility notably the Wyre Estuary located approximately 800m northeast, with two tributaries present 70m southeast (Hillylaid Pools) and 200m north (Royles Brook). Royles Brook generally flows in an easterly / southerly direction before joining Hillylaid Pools.

Publicly accessible reaches of the three watercourses are understood to be, or have the potential to be, used recreationally by the public. It is noted that whilst sections of the watercourses are inaccessible to the public, e.g. the downstream course of Royles Brook flows through the Hillhouse complex, unauthorised access into these areas by the public cannot be discounted.

The Wyre Estuary is part of the Morecambe Bay estuarine complex, one of the largest areas of intertidal mud flats in Britain. It is a highly protected ecological receptor, including designation as a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).

No surface watercourses exist within the facility; however, an extensive system of drains including both relict and active systems is anticipated to remain in-situ.

Historically, it is understood that ICI transported effluent to two lagoons and a settling pond, located approximately 2km north-northwest of the site, before being released into the Wyre Estuary. These lagoons are no longer present; however, the location of one of the lagoons, named ‘Lagoon Number 2’ (as indicated by the Hillhouse Complex landlord NPL Group) is shown in Inset 1-1. In addition, a number of effluent pits were historically located between approximately 350m and 550m northeast, which coincides with an area of historical lagoons as detailed on historical mapping which are understood to have received spent brine associated with legacy chemical manufacturing.

A triangular sea water reservoir remains approximately 1.5km north of the facility. This reservoir was historically abstracted from for industrial purposes, namely the cooling of and conveyance of solids

as slurry. Abstraction activities ceased in 2016. A literature source [14] indicates surface water sampling of a discharge near this feature (and other water features in the vicinity) has been conducted and high levels of PFAS (including EAA-NH4 (the replacement polymerisation aid for PFOA) and PFOA) have been identified, noting 'PFOA was very prominent… with concentrations ranging from 891 ± 37 ng/L to 20.62 ± 0.56 µg/L' and 'Concentrations of EEA… ranged from 120.8 ± 0.3 ng/L to 205.5 ± 1.0 ng/L'. The paper indicates the sea lagoon was not accessible for sampling but recommends it be the subject of further investigation.

The EA has provided details of a licenced abstraction (reference 2672421005) to Thornton Facilities Management Limited at NGR SD 341 445 associated with the abovementioned reservoir. This surface water abstraction licence is the only known registered abstraction within 2km of the facility.

Reference to the online Catchment Data Explorer webpage [13] indicates the site to be located within the Hillylaid Pool - Main Dyke Water Body (ID: GB112072066160).The water body is identified as having a Moderate Ecological classification and a Fail Chemical classification due to the presence of priority hazardous substances mercury and polybrominated diphenyl ethers (PBDE).

1.4.3 PERMITTED DISCHARGES

The facility is permitted to discharge treated effluent into the Wyre Estuary via the Main Outfall at emission point W1. The Main Outfall is situated on the west bank of the estuary and is exposed at low tides. A number of historical outfalls previously discharged effluent into the Wyre Estuary from the wider ICI Hillhouse complex. The facility has indicated that the effluent discharge from the Main Outfall is now the only remaining industrial discharge to the Wyre estuary.

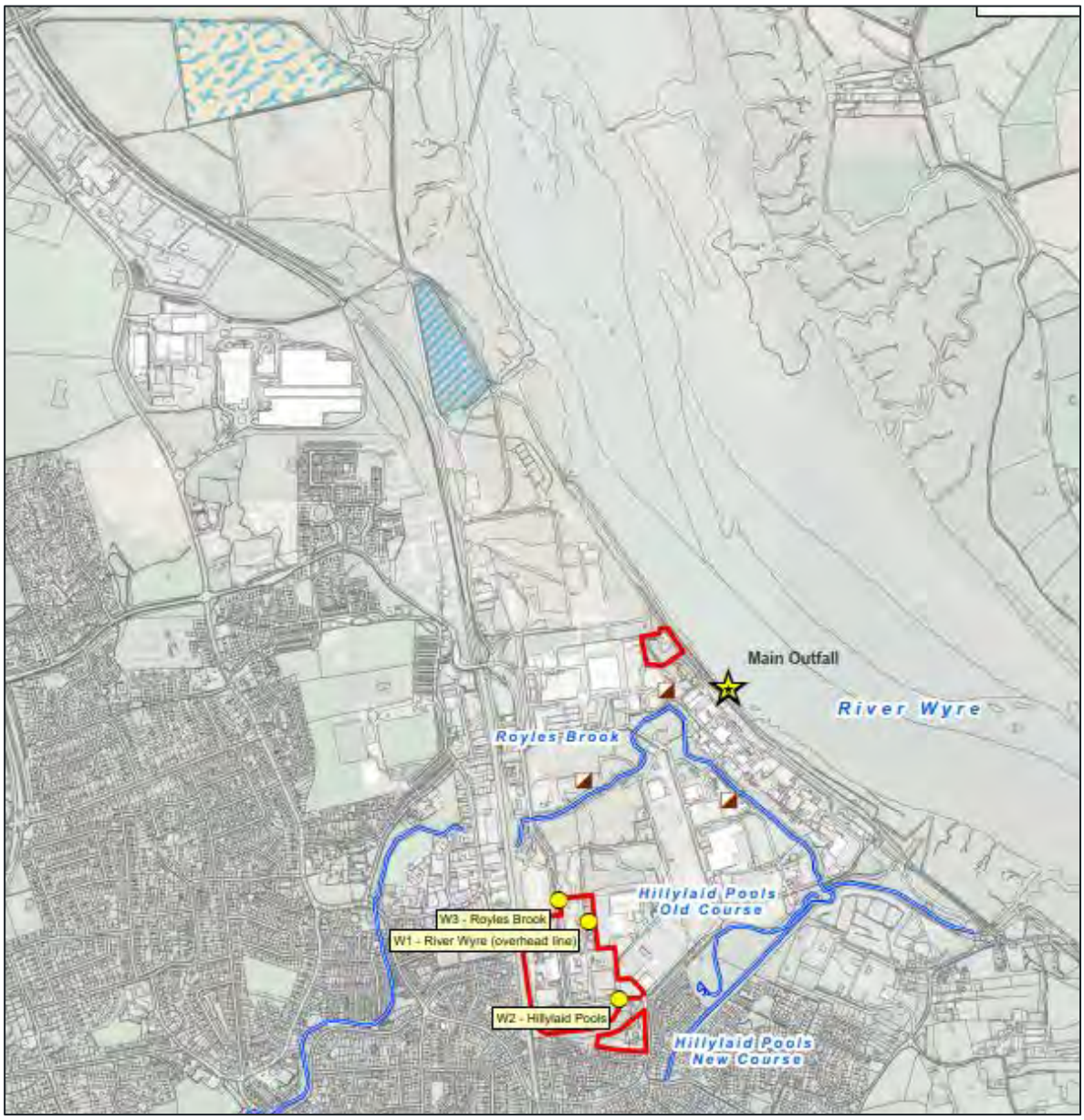
In addition, a minor amount of surface water is discharged from the plant and laboratory within the permitted facility drains into Hillylaid Pools (Old Course) at location W2.

Under conditions of very high rainfall, overflow from the West Effluent Pit (associated with the treatment plant) and emergency sewerage effluent occurs to Royles Brook (W3). Anecdotal information indicates that this is not controlled but happens when the drainage system leading to West Effluent Pit is filled to capacity (exceeding 100% on level indicator on Thornton effluent plant - which is understood to be rare).

Emission points are shown on Inset 1-1.

It is reiterated that water quality impacts associated with current emissions are to be addressed via the Environmental Permitting Regulations and are not the focus of Part 2A.

Inset 1-1 - Pertinent Hydrological Features



1.5 SCOPE OF WORK

The scope of works for the preliminary surface water sampling exercise comprised:

- Preparation of a Construction Phase Plan (CPP) [1] to include risk assessments and method statements for the proposed works, in accordance with the CDM Regulations, 2015 [3].
- Site reconnaissance for inspection of existing surface water features to identify suitable and safely accessible surface water sampling locations.
- Four monthly surface water sampling visits comprising 13 sampling locations (identified through site reconnaissance) along the course of Hillylaid Pools, Royles Brook and the Wyre Estuary to establish water quality trends and observe temporal variation.

- Collection of quality assurance / quality control (QA/QC) samples in the form of equipment rinsates, duplicates and trip blanks.
- Analysis of all samples for PFOS & PFOA (ALS laboratory method TM337), chlorinated solvents (VOCs), ammonia, fluoride and pH. (QA/QC samples analysed for PFOS & PFOA only).
- Factual reporting.

1.6 LEGISLATIVE CONTEXT AND GUIDANCE

The sampling works were undertaken in general accordance with the following standards and guidance documents:

- EA, 2020. Land Contamination Risk Management (LCRM) [4].
- Part 2A of the Environmental Protection Act, 1990 [5].
- EA, 2012. Contaminated Land Statutory Guidance [6].
- HSE, 2015. Construction (Design and Management) Regulations [3].
- BS EN ISO 5667-1:2006/ BS 6068-6.1:2006, Water Quality. Sampling, Guidance on the Design of Sampling Programmes and Sampling Techniques [8].
- BS EN ISO 5667-6:2016+A11:2020 Water Quality. Sampling – Guidance on sampling of rivers and streams [9].
- BS EN ISO 5667-3:2018; Water Quality. Sampling. Preservation and Handling of Water Samples [10].
- BS EN ISO 5667-14:2016. Water Quality. Sampling. Guidance on Quality Assurance and Quality Control of Environmental Water Sampling and Handling [11].
- BS ISO 5667-24:2016. Water Quality. Sampling. Guidance on the Auditing of Water Quality Sampling [12].

2 SAMPLING RATIONALE

2.1 SURFACE WATER SAMPLING LOCATIONS RATIONALE

The surface water sampling was primarily targeted to give an initial indication of the distribution of PFOA within surface water which may be attributed to legacy emissions from the facility. There are a number of surface water features in the vicinity of the installation notably the Wyre Estuary located approximately 800m northeast, with two tributaries present 70m southeast (Hillylaid Pools) and 200m north (Royles Brook). Royles Brook generally flows in an easterly / southerly direction before joining Hillylaid Pools and discharging into the Wyre Estuary (transitional water body). The Wyre Estuary is a highly protected ecological system, designated as a SSSI and SAC. The locations of the surface water features are indicated in Inset 1-1 and Figure 1 in Appendix A.

In addition, publicly accessible reaches of the three watercourses (Wyre Estuary, Hillylaid Pools and Royles Brook) are understood to be, or have the potential to be, used recreationally by the public. It is noted that whilst sections of the watercourses are inaccessible to the public, e.g. the downstream course of Royles Brook flows through the Hillhouse complex, unauthorised access into these areas by the public cannot be discounted.

To help inform the significance of risk to identified controlled waters, human health and ecological systems, a routine programme of surface water monitoring was recommended. It is noted that the Part 2A investigation focus is on legacy contamination impacts to surface water that may be continuing to enter potentially via groundwater or surface water runoff. Any improvements to the quality of the current consented discharges to surface water would be sought via the environmental permit rather than under Part 2A.

In summary, 13 surface water sample locations were selected as detailed in Table 2-1 and shown on Figure 1 in Appendix A. It is noted that the sample nomenclature reflects the watercourse that the sample is collected from (i.e. RB is Royles Brook, HP is Hillylaid Pools and RW is Wyre Estuary), and for Royles Brook and Hillylaid Pools the numbering is from upstream to downstream (i.e. HP01 is upstream and HP05 is downstream. Known facility permitted outfalls are located proximal to sample locations RB03 (W3 - Royles Brook outfall) and HP03 (W2 - Hillylaid Pools outfall). Given its tidal nature, samples were obtained from the Wyre sampling points (RW01 and RW02) approximately 1 hour either side high tide to provide representation during both rising and falling tides. Timings of sample collection from the Wyre Estuary are presented in Table 2-2. Low tide samples were not possible due to health and safety restrictions associated with accessibility of the water course for sampling at low water.

Table 2-1 – Surface Water Sampling Points

Reference	Location	Easting	Northing	Rationale
RB01	Royles Brook	334388	442055	Upstream of the AGCCE facility outfall (W3) and Red Marsh industrial estate
RB02	Royles Brook	334614	442712	Upstream of the AGCCE facility outfall (W3) and Red Marsh industrial estate

Reference	Location	Easting	Northing	Rationale
RB03	Royles Brook	334714	442948	Upstream of the AGCCE facility outfall (W3) and downstream of Red Marsh industrial estate
RB04	Royles Brook	334778	443108	Downstream of AGCCE facility and outfall (W3) and within Hillhouse complex
RB05	Royles Brook	335022	443184	Downstream of AGCCE facility and outfall (W3) and within Hillhouse complex
RB06^	Royles Brook	333780	442854	Penstock – final location of Royles Brook prior to leaving Hillhouse complex
HP01	Hillylaid Pools	333834	443194	Upstream of AGCCE facility
HP02	Hillylaid Pools New Course	334232	443392	Adjacent to AGCCE facility
HP03	Hillylaid Pools Old Course	334520	443526	Pond – downstream of AGCCE facility outfall (W2)
HP04	Hillylaid Pools Old Course	334600	443688	Wetland - downstream of AGCCE facility outfall (W2)
HP05	Hillylaid Pools	335022	443242	Confluence of Hillylaid Pools
RW01A	Wyre Estuary	335358	443438	Downstream (northwest) of Hillylaid Pool / Wyre Estuary confluence (before high tide)
RW01B	Wyre Estuary	335358	443438	Downstream (northwest) of Hillylaid Pool / Wyre Estuary confluence (after high tide)
RW02A	Wyre Estuary	335819	441436	Upstream (southeast) of Hillylaid Pool / Wyre Estuary confluence* (before high tide)
RW02B	Wyre Estuary	335819	441436	Upstream (southeast) of Hillylaid Pool / Wyre Estuary confluence* (after high tide)

* The location of the upstream Wyre Estuary surface water sampling location RW02 was re-positioned based on health and safety / access constraints. RW02 was taken from the Blackpool and Fylde Yacht Club slipway, located approximately 1.8m southeast from the Hillylaid Pools / Wyre Estuary confluence.

^ During the first round of sampling anecdotal information was provided regarding a reported release of firefighting foam (unknown volume) into Royles Brook from Victrex Plc (another manufacturing facility within the wider Hillhouse complex) approximately one year prior. It was indicated that the penstock was used at this time to prevent further migration. Further information regarding this incident is being sought by the EA.

Table 2-2 - Wyre Estuary sample collection times around high tide

Sample location	Time of sample collection			
	R1	R2	R3	R4
High tide time	12:45	10:19	13:25	15:12
RW01A	11:30	09:20	12:35	14:10
RW01B	13:49	11:15	14:00	15:25
RW02A	12:00	08:50	12:00	13:45
RW02B	14:27	11:50	14:30	15:50

3 FIELDWORK

3.1 COMPLETED SCOPE

Following an initial desk-based assessment of proposed sampling locations, an initial site reconnaissance visit was undertaken on 26 July 2024 to assess accessibility. A further reconnaissance visit was later undertaken on 16 September 2024 to refine the sampling positions.

Four surface water sampling rounds have been undertaken, conducted by two WSP engineers, as follows:

- 19 – 20 September (Round 1),
- 30 – 31 October 2024 (Round 2),
- 4 – 5 December (Round 3), and
- 20 – 21 January (Round 4).

Monitoring points are shown on Figures in Appendix A.

Photo records and notes regarding visual observations were collected for each location.

3.2 METHODOLOGY

The methodology for sampling was undertaken in general accordance with the following British Standards:

- BS EN ISO 5667-1:2006/ BS 6068-6.1:2006, Water Quality. Sampling, Guidance on the Design of Sampling Programmes and Sampling Techniques [8].
- BS EN ISO 5667-6:2016+A11:2020 Water Quality. Sampling – Guidance on sampling of rivers and streams [9].
- BS EN ISO 5667-3:2018; Water Quality. Sampling. Preservation and Handling of Water Samples [10].
- BS EN ISO 5667-14:2016. Water Quality. Sampling. Guidance on Quality Assurance and Quality Control of Environmental Water Sampling and Handling [11].
- BS ISO 5667-24:2016. Water Quality. Sampling. Guidance on the Auditing of Water Quality Sampling [12].

In addition, given the sensitivities of PFAS analysis special measures were taken to reduce the potential for PFAS to be introduced during the sampling process, in accordance with our standard operating procedures (SOP).

Suitable sample bottles for the required suite of analysis were provided by the Environmental Laboratory (ALS). At each sample point, the water samples were collected from the centre of the river channel targeting the fastest flowing part of the water body, using a telescoop sampling device. Sample bottles were labelled in accordance with their unique reference identifier (ID).

As per the scope, in-situ field parameters were not obtained.

Photos were taken at each location during rounds 1, 2 and 4 and are included within Appendix B.

Following sampling, the samples were stored in a cool bag provided by ALS and sent to the laboratory under chain of custody procedures in accordance with BS ISO 5667-3 [10] to obtain detailed chemical analysis.

3.3 QUALITY ASSURANCE AND QUALITY CONTROL

Due to the low screening level concentrations and prevalence of PFAS in consumer products, false positives are a major concern due to the potential for cross-contamination between sampling locations and contamination of samples.

As detailed, recommended guidance on PFAS sampling was followed during the investigation and sampling to limit the potential for introduction of contaminants or cross contamination of water samples during collection. Generally, this guidance required the undertaking of the following precautions during the investigation:

- The sampling equipment was regularly cleaned with a liquinox solution made with laboratory supplied PFAS-free deionised water. The telescoop was cleaned between every sample collected and where possible, the sample was collected directly into the laboratory supplied sample containers.
- Equipment was triple rinsed with laboratory supplied PFAS-free deionised water.
- Disposable gloves were changed for every sample collected.
- Samples were stored in sealed containers appropriate for laboratory analysis for the required suite.

A minimum of three quality assurance / quality control (QA/QC) samples were collected per round including an equipment rinsate (ER), a duplicate (DUP), a trip blank (TB) and/or a field blank (FB) as described below. The collected samples are summarised in Table 4-1, within which the equipment rinsate and duplicate samples are listed alongside their associated/parent sample for comparison.

Equipment rinsate: This technique is used to identify any errors relating to contamination of sampling devices and the sampling process caused by incomplete cleaning of the sampling equipment. The telescoop sampler was cleaned between samples using a diluted liquinox solution (diluted with PFAS free laboratory supplied deionised water). Following cleaning the telescoop was triple rinsed with PFAS laboratory supplied deionised water. A sample of this rinse was collected to form the equipment rinsate.

Duplicate: Analysis of a replicate sample collected in the field to indicate analytical and total sampling variance. A duplicate sample is collected at a selected surface water sample point in the field for analysis.

Trip blank: Used to indicate analytical and transport variance. A sample is prepared and supplied by the laboratory comprising PFAS free deionised water, carried around during the sampling visit and returned with the samples for analysis.

Field blank: A field blank sample is a laboratory blank sample that is taken into the field, treated as a sample and analysed as a check on sampling procedure (analytical and subsampling/transport variance). The sample is comprised of laboratory supplied PFAS free deionised water made up in the field by replicating the sampling method using the telescoop to fill the required laboratory supplied sample bottles, consistent with the method of collection of site samples.

3.4 VISUAL / OLFACTORY OBSERVATIONS

A photolog showing the sample locations during rounds 1,2 and 4 is included as Appendix B. Notes on field observations during sample collection are summarised in Table 3-1.

At HP03 and HP04 the watercourse was observed to be stagnant or with very slow flow. At HP03 a film of algae was observed on the surface, as depicted in the photolog, and a sulphurous odour was noted. At HP04 a hydrocarbon odour and sheen was noted.

Table 3-1 - Field Observations

Sample Location	Field observations			
	R1	R2	R3	R4
RB01	No discernible flow, clear, no odour, no sheen.	Higher flow, clear, no odour, no sheen.	Very slow flow, very pale yellow, no odour, no sheen.	Fast flow, clear, no odour, no sheen.
RB02	No discernible flow, clear, no odour, no sheen.	Steady flow, clear, no odour, no sheen.	Steady flow, clear, no odour, no sheen.	Fast flow, clear, no odour, no sheen.
RB03	Discernible flow, clear, no odour, no sheen. Two outlets beneath bridge.	Clear, no odour, no sheen.	Slow flow, pale yellow, no odour, no sheen.	Discernible flow, clear, no odour, no sheen. More plastic waste observed in riverbed (e.g. plastic bulk sheeting).
RB04	Heavily vegetated, discernible flow, clear, no odour, no sheen.	Discernible flow, pale yellow, no odour, no sheen.	Slow flow, very pale yellow, no odour, no sheen.	Less discernible flow, clear, no odour, no sheen.
RB05	Slight flow, clear, very slight sulphurous odour, no sheen.	Discernible flow, clear, no odour, no sheen.	Slow flow, very pale yellow, no odour, no sheen.	Slight flow, clear, no odour, no sheen.
RB06	Slight flow, lots of leaf litter in the area, clear, no odour, no sheen.	Fast flow, clear, no odour, no sheen.	Very slow flow, very pale yellow, no odour, no sheen.	Very slow flow, very pale yellow, no odour, no sheen.
HP01	Steady flow, clear, no odour, no sheen.	Fast flowing, clear, no odour, no sheen.	Steady flow, pale yellow, no odour, no sheen.	Moderate flow, clear, no odour, no sheen.
HP02	Steady flow, clear, no odour, no sheen.	Steady flow, clear, no odour, no sheen.	Steady flow, pale yellow, no odour, no sheen.	Fast flow, pale yellow, no odour, no sheen.
HP03	Full algae cover, stagnant, sulphurous odour, lots of sediment, no sheen.	Full algae cover, stagnant, sulphurous odour, black discolouration, no sheen.	Full algae cover, stagnant, strong sulphurous odour, no sheen.	Full algae cover, stagnant, clear with organic matter / algae within, strong sulphurous odour, no sheen.

Sample Location	Field observations			
	R1	R2	R3	R4
HP04	Very slow flow, HC odour, HC sheen, black suspended solids.	Slow flow apparent within reeds, HC odour, HC sheen.	Very slow flow, HC odour, HC sheen, black suspended solids, gelatinous viscosity.	Stagnant water, black suspended sediment, HC odour, HC sheen.
HP05	Slow flow, clear, no odour, no sheen	Slow flow, clear, no odour, no sheen	Slow flow, clear, no odour, no sheen.	Slow flow, clear, no odour, no sheen.
RW01A	Steady flow, silty, pale brown, no odour, no sheen.	Fast flow, slight brown colour, silty, no sheen, no odour.	Steady flow, light brown, no odour, no sheen.	Fast flow, slightly silty, light brown, no odour, no sheen.
RW01B	Sample taken from flooded path to sampling point. Light brown, silty, no odour, no sheen.	Fast flow, slight brown colour, silty, no sheen, no odour.	Steady flow, light brown (clearer than before high tide), no odour, no sheen.	Fast flow, slightly silty, light brown, no odour, no sheen.
RW02A	Foam on surface of water, steady flow, light brown, no odour, no sheen.	Fast flow, slight brown colour, silty, no sheen, no odour.	Fast flow, brown, silty, no odour, no sheen.	Fast flow, slightly silty, light brown, no odour, no sheen.
RW02B	Steady flow, light brown, no odour, no sheen.	Fast flow, slight brown colour, silty, no sheen, no odour.	Fast flow, brown, silty, no odour, no sheen.	Fast flow, slightly silty, light brown, no odour, no sheen.

3.5 LABORATORY CHEMICAL ANALYSIS

A summary of the sampling and laboratory analysis undertaken during the investigation is presented in Table 3-2. All samples were collected in fully labelled laboratory-supplied containers, relevant to the required suite of analysis; and transported in cooled containers under full chain of custody to a UKAS accredited laboratory (ALS Life Sciences Ltd).

Certain analysis methods for waters are validated to ISO 17025. The environmental laboratory reports are presented in Appendix C.

Table 3-2 – Summary of Environmental Laboratory Analysis Schedule

Chemical Analysis		Number of Samples Analysed (R1-R4)	
	Accredited Method ?	Surface water	Surface water *QA/QC*
pH	Yes - TM256 / TM133	*60*	-
PFOS & PFOA	Yes - TM337 / TM434	*60*	*13*
VOCs	Yes – TM208	*60*	-

Chemical Analysis		Number of Samples Analysed (R1-R4)	
	Accredited Method ?	Surface water	Surface water *QA/QC*
Ammoniacal Nitrogen as N	Yes – TM099	*60*	-
Fluoride	Yes – TM104	*60*	-
pH	Yes – TM256	*60*	-

It is noted where samples have been diluted by the laboratory for analysis, a variation in the reported limits of detection is observed.

3.6 HEALTH AND SAFETY

WSP acted as Principal Contractor and Designer for the works, which formed part of a wider preliminary investigation. A Construction Phase Plan (CPP) was prepared prior to commencement of the ground investigation and issued to the Principal Designer (Mott McDonald) acting on behalf of the Client (the EA), for approval.

The CPP set out the arrangements made for securing health and safety during the construction period. The CPP detailed site rules, risk assessments and method statements and specific measures put in place to mitigate the identified health and safety risks.

The CPP is to be submitted to the EA for inclusion in the Health and Safety File kept by the Client. This factual sampling report is part of the Health and Safety File.

4 RESULTS

4.1 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) RESULTS

4.1.1 LABORATORY QUALITY ASSURANCE

The test schedules from the laboratory were checked for consistency with the sampling plan and proposed analytical schedule on the day of receipt, and any errors were rectified with the laboratory within the holding time, where applicable. During each round a minimum of three QA/QC samples were collected including a combination of duplicates (DUP), equipment rinsates (ER), trip blanks (TB) and field blanks (FB). The results are summarised in Table 4-1 within which the equipment rinsate and duplicate samples are listed alongside their associated/parent sample for comparison. Laboratory certificates are provided in Appendix C. A QA/QC pass is indicated where the sample results meet the following criteria:

- Concentrations in equipment rinsates, trip blanks and field blanks are below the laboratory limit of detection (LOD)
- Concentrations in the duplicate sample are within +/-30% of concentrations within the parent sample, i.e. within the expected range for environmental media.

The QA/QC pass confirms reproducibility of sampling procedure and analytical methods.

Table 4-1 – QA/QC results

Round	Reference	Sample Type	PFOA concentration µg/l	Linear PFOS µg/l	Branched PFOS µg/l	Total PFOS µg/l	Pass / Fail
1	ER-R1	Equipment Rinsate	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
	HP03	Sample	16.3	0.055	<0.0325	0.055	
	DUP-R1	Duplicate	1.52	0.00459	0.00356	0.00815	Pass +/- 30%
	RB04	Sample	1.08	0.00446	0.00268	0.00714	
	TB-R1	Trip Blank	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
2	FB-R2	Field Blank	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
	DUP-R2	Duplicate	1.46	0.00979	0.00546	0.0152	Pass +/- 30%
	HP04	Sample	1.62	0.0117	<0.00325	0.0117	
	ER-R2	Rinsate	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
	RW01	Sample	0.00837	<0.00065	<0.00065	<0.00065	
Round 3	FB-R3	Field Blank	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)

Round	Reference	Sample Type	PFOA concentration µg/l	Linear PFOS µg/l	Branched PFOS µg/l	Total PFOS µg/l	Pass / Fail
	DUP-R3	Duplicate	0.069	0.000998	0.00179	0.00279	Pass +/- 30%
	RW02A	Sample	0.0775	0.000948	0.00171	0.00265	
	ER-R3	Rinsate	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
	RB03	Sample	0.733	0.0021	0.00453	0.00663	
	TB – R3	Trip Blank	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
Round 4	DUP-R4	Duplicate	0.403	0.00152	0.00276	0.00427	Pass +/- 30%
	RB01	Sample	0.4	0.0012	0.00256	0.00376	
	ER-R4	Rinsate	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)
	HP02	Sample	1.1	0.00131	0.00174	0.00305	
	TB – R4	Trip Blank	<0.00065	<0.00065	<0.00065	<0.00065	Pass (<LOD)

4.2 SUMMARY OF WATER QUALITY RESULTS

Laboratory certificates are provided in Appendix C. Figures showing concentration distribution for select determinands are provided within Appendix A. It is noted that some of the samples were subject to dilution increasing the LOD above the respective method detection limit (MDL) for the test, as presented in the laboratory certificates.

4.2.1 PFOS & PFOA

PFOA Distribution

Inset 4-1 presents the concentrations of PFOA from each sample collected during Rounds 1 to 4. This includes concentrations reported at their LOD. The distribution of maximum PFOA concentrations per round are presented as Figures 1a-1d (R1-R4) in Appendix A. A summary of maximum concentrations across all four rounds is provided as Figure 1e, Appendix A.

PFOA was detected above the LOD in all water courses sampled and all samples collected both up and down gradient of the known site emission points (W2 and W3) ranging between 0.00663 µg/l (RW01) and 19.2 µg/l (HP03).

The highest concentration was consistently detected in the samples obtained from HP03 (Hillylaid Pools Old Course) ranging between 9.18 µg/l and 19.2 µg/l. This is at least an order of magnitude higher than at other sample locations. Concentrations are observed to decrease with distance downstream of this point i.e. HP04 and HP05.

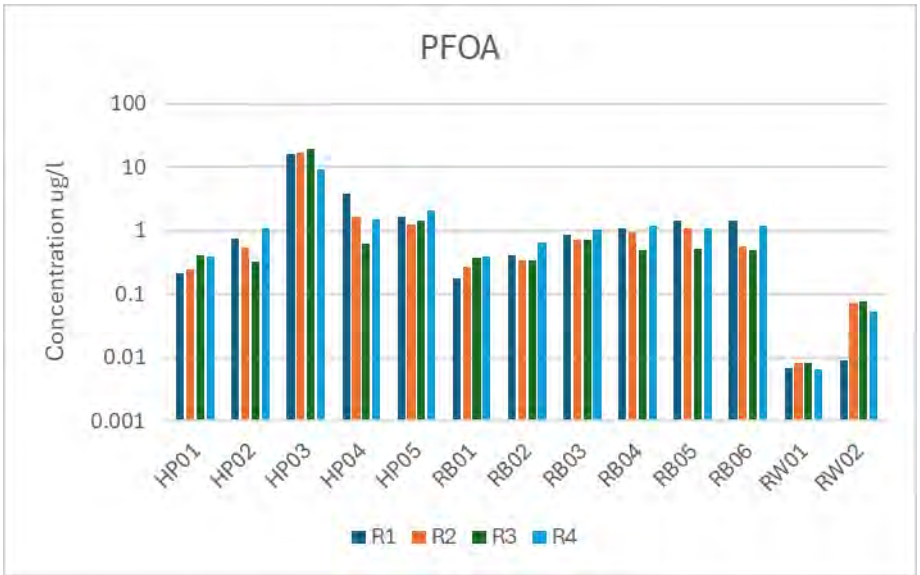
It is acknowledged, in accordance with observations documented in Table 3-1, that the body of water sampled at HP03 was observed to be a relatively stagnant pond/pool in comparison to other

monitoring points which were typically free flowing streams/watercourses. However, sample point HP03 is also located proximal to a known permitted discharge point from facility (point W2, refer to Inset 1-1).

Lowest concentrations were observed within samples from the Wyre Estuary where dilution capacity of the water body is greatest.

As demonstrated in Inset 4-1, results were generally consistent between rounds at all of the sample points.

Inset 4-1 – Max PFOA concentrations in surface water R1-R4 (µg/l)



Note logarithmic scale y-axis
Concentrations reported <LOD are displayed as equal to their LOD
Concentrations reported at RW01 and RW02 are the maximum from the samples collected during the round (before and after high tide).

PFOS Distribution

Inset 4-2 presents total PFOS concentrations within each sample collected during Rounds 1 to 4. This includes concentrations reported at their LOD. The distribution of maximum total PFOS concentrations per round are presented as Figures 2a-2d (R1-R4) in Appendix A.

PFOS was detected above the LOD in all water courses sampled and at all sample locations on at least one occasion out of the four sampling rounds both up and down gradient of the known site emission points (W2 and W3). Detected concentrations ranged between 0.00244 µg/l (HP01) and 0.0658 µg/l (HP03). Concentrations were above the LOD within samples from all locations during R3.

The highest concentration was consistently detected in the samples obtained from HP03 (Hillylaid Pools Old Course) ranging between 0.0168 µg/l and 0.0658 µg/l. Concentrations are observed to decrease with distance downstream of this point i.e. HP04 and HP05.

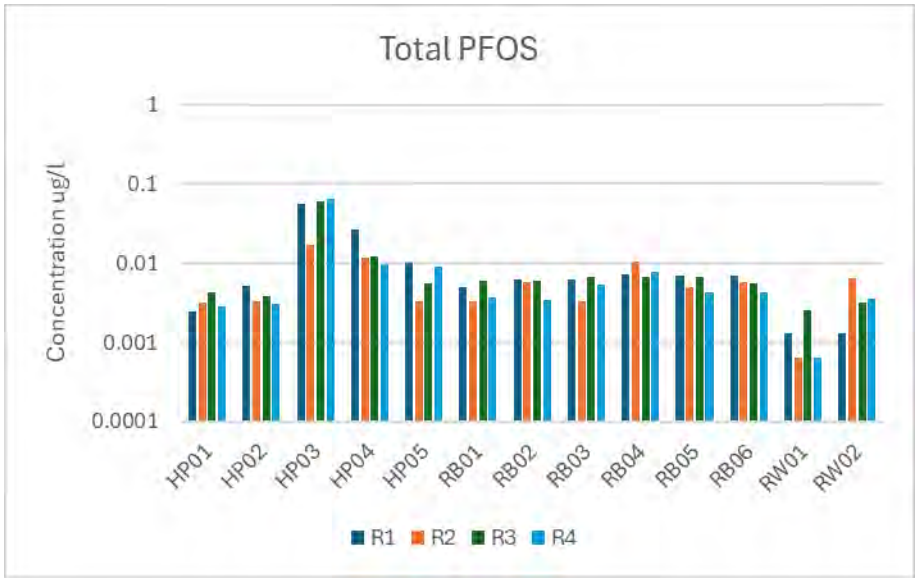
It is acknowledged, in accordance with observations documented in Table 3-1, that the body of water sampled at HP03 was observed to be a relatively stagnant pond/pool in comparison to other monitoring points which were typically free flowing streams/watercourses. However, sample point

HP03 is also located proximal to a known permitted discharge point from facility (point W2, refer to Inset 1-1).

Lowest concentrations were observed within samples from the Wyre Estuary (RW01 and RW02) and the most upstream sample from Hillylaid Pools (HP01). Concentrations within the Wyre Estuary were below the LOD during R1 and R2 but subject to dilution resulting in increased LODs (2x dilution during R1 and up to 10x dilution during R2).

As demonstrated in Inset 4-1, results were generally consistent between rounds at all of the sample points. The apparent variation observed at RW01 and RW02 is attributed to sample dilution.

Inset 4-2 – Total PFOS concentrations in surface water R1-R4 (µg/l)



Note logarithmic scale y-axis
Concentrations reported <LOD are displayed as equal to their LOD
Concentrations reported at RW01 and RW02 are the maximum from the samples collected during the round (before and after high tide).

4.2.2 VOCS

All samples collected were analysed for a range of VOCs. No notable visual observations of hydrocarbon or solvent impacts have been reported at any of the sample points, except for a hydrocarbon odour and sheen noted at HP04.

Despite this, concentrations of some VOCs, including a range of petroleum and chlorinated hydrocarbons, were above the LOD as summarised in Table 4-2 and displayed graphically in Inset 4-3. Only those results that were >LOD have been presented. Concentrations up to two orders of magnitude above the LOD have been observed (maximum 346µg/l trichloroethene, RB05, R1).

Detections have predominantly been observed in samples collected from downstream sampling points from Royles Brook (RB04, RB05 and RB06).

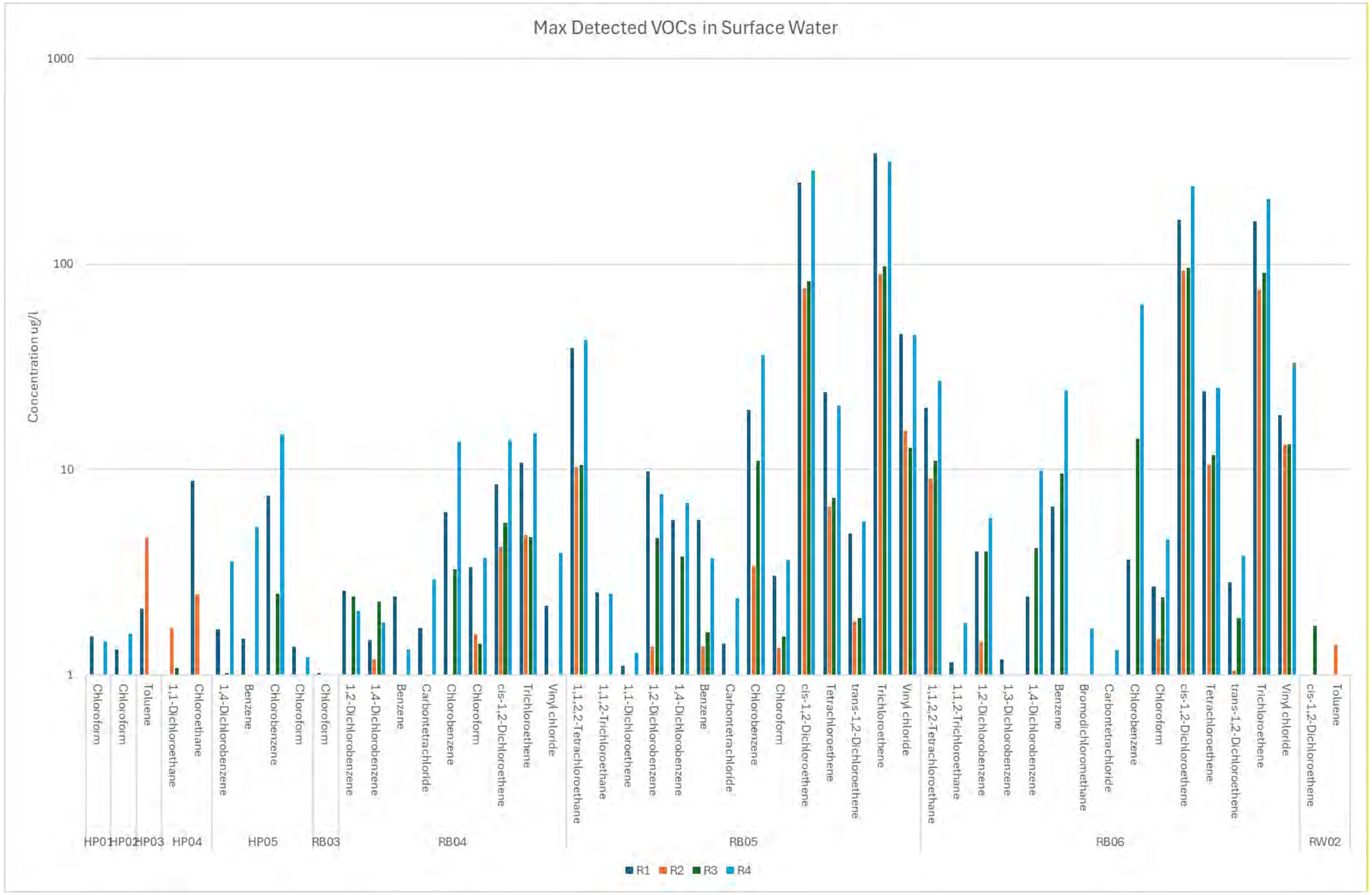
Plans showing the distribution of Trichloroethene (TCE) are presented as Figures 3a-3d (R1-R4), cis-1,2-Dichloroethene (cis-1,2-DCE) as Figures 4a-4d (R1-R4) and Vinyl Chloride (VC) as Figures 5a-5d (R1-R4), within Appendix A. It is noted that TCE, cis-1,2-DCE and VC are breakdown products of Tetrachloroethene (PCE) via the reductive dechlorination pathway.

Table 4-2 - Summary of VOC detections (>LOD) R1-R4

Analyte	LOD (µg/l)	R1 - Sept 24			R2 - Oct 24			R3 – Dec 24			R4 – Jan 25		
		No. >LOD	Min (µg/l)	Max (µg/l)	No. >LOD	Min (µg/l)	Max (µg/l)	No. >LOD	Min (µg/l)	Max (µg/l)	No. >LOD	Min (µg/l)	Max (µg/l)
1,1,2,2-Tetrachloroethane	1	2	20	39.1	2	9.04	10.3	2	10.5	11	2	27	42.7
1,1,2-Trichloroethane	1	2	1.15	2.52	-	-	-	-	-	-	2	1.79	2.48
1,1-Dichloroethane	1	-	-	-	1	1.69	1.69	1	1.08	1.08	-	-	-
1,1-Dichloroethene	1	1	1.11	1.11	-	-	-	-	-	-	1	1.28	1.28
1,2-Dichlorobenzene	1	3	2.58	9.77	2	1.38	1.46	3	2.42	4.66	3	2.06	7.59
1,3-Dichlorobenzene	1	1	1.19	1.19	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	1	4	1.48	5.7	1	1.19	1.19	4	1.02	4.16	4	1.8	9.87
Benzene	1	4	1.5	6.61	1	1.38	1.38	2	1.61	9.57	4	1.33	24.1
Bromodichloromethane	1	-	-	-	-	-	-	-	-	-	1	1.68	1.68
Carbontetrachloride	1	2	1.42	1.69	-	-	-	-	-	-	3	1.32	2.93
Chlorobenzene	1	4	3.65	19.5	1	3.39	3.39	4	2.49	14.2	4	13.7	63.8
Chloroethane	1	1	8.83	8.83	1	2.46	2.46				-	-	-
Chloroform	1	7	1.02	3.35	3	1.35	1.58	3	1.42	2.4	6	1.22	4.57
cis-1,2-Dichloroethene (DCE)	1	3	8.46	248	3	4.22	92.7	4	1.74	95.9	3	13.9	285
Tetrachloroethene (PCE)	1	2	23.9	24	2	6.63	10.6	2	7.28	11.8	2	20.4	25

Analyte	LOD (µg/l)	R1 - Sept 24			R2 - Oct 24			R3 – Dec 24			R4 – Jan 25		
		No. >LOD	Min (µg/l)	Max (µg/l)	No. >LOD	Min (µg/l)	Max (µg/l)	No. >LOD	Min (µg/l)	Max (µg/l)	No. >LOD	Min (µg/l)	Max (µg/l)
Toluene	1	1	2.1	2.1	2	1.41	4.7	-	-	-	-	-	-
trans-1,2-Dichloroethene (DCE)	1	2	2.82	4.89	2	1.05	1.82	2	1.89	1.9	2	3.79	5.58
Trichloroethene (TCE)	1	3	10.8	346	3	4.81	89.1	3	4.68	97.1	3	15.1	314
Vinyl chloride (VC)	1	3	2.18	45.6	2	13.2	15.4	2	12.8	13.3	3	3.94	45.1

Inset 4-3 – Max VOC concentrations (>LOD) in Surface Water R1-R4 (µg/l)

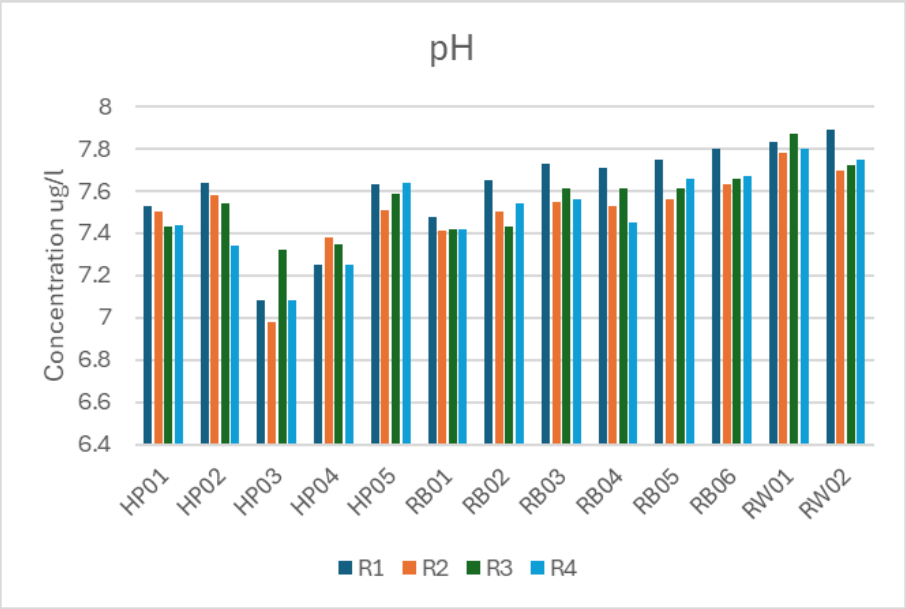


Note logarithmic scale y-axis. Graph only displays concentrations reported >LOD.
Concentrations reported at RW01 and RW02 are the maximum from the samples collected during the round (before and after high tide).

4.2.3 PH

Inset 4-4 presents pH recorded in each sample collected. pH ranged from 6.98 (HP03 round 1) to 7.89 (RW02B post high tide round 1). During each round the lowest pH was recorded in HP03, and the highest within the Wyre Estuary surface waters.

Inset 4-4 – pH in Surface Water R1-R4



Concentrations reported at RW01 and RW02 are the maximum from the samples collected during the round (before and after high tide).

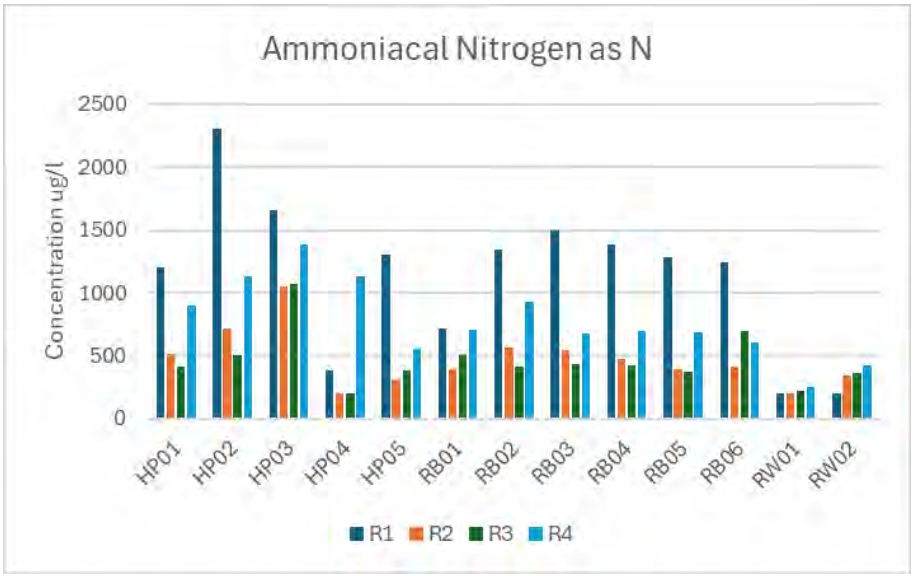
4.2.4 AMMONIACAL NITROGEN AS N

Inset 4-5 displays ammoniacal nitrogen concentrations within samples taken during R1 to R4.

Concentrations range from between <200 µg/l to 2,300 µg/l. Lowest concentrations are generally found within the Wyre Estuary samples and HP04.

Concentrations were generally higher in sample from Royles Brook and Hillylaid Pools during R1 than subsequent R2 to R4.

Inset 4-5 – Ammoniacal nitrogen concentrations in SW R1-R4 (µg/l)



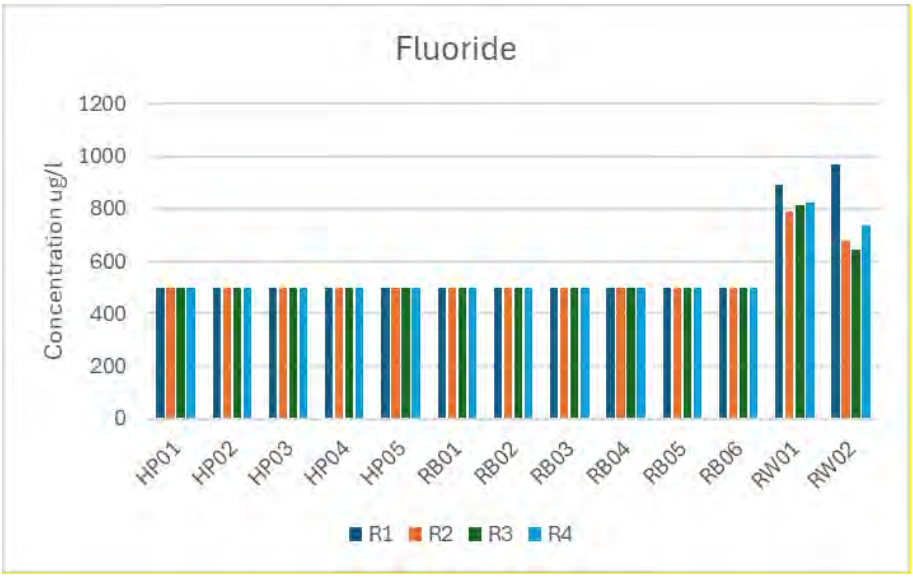
Concentrations reported <LOD are displayed as equal to their LOD
Concentrations reported at RW01 and RW02 are the maximum from the samples collected during the round (before and after high tide).

4.2.5 FLUORIDE

Inset 4-6 displays Fluoride concentrations within samples taken during R1 to R4.

Concentrations range from between <500 µg/l to 970 µg/l (RW02). All samples collected from Royles Brook and Hillylaid Pools returned concentrations that were <LOD during both rounds. Detections (>LOD) were only observed in samples collected from the Wyre Estuary, consistent with the transitional nature of the water body.

Inset 4-6 – Fluoride concentrations in SW R1-R4 (µg/l)



Concentrations reported <LOD are displayed as equal to their LOD
Concentrations reported at RW01 and RW02 are the maximum from the samples collected during the round (before and after high tide).

5 CONCLUSIONS

Four monthly surface water sampling rounds have been undertaken by WSP field engineers between September (Round 1) and January 2025 (Round 4) as part of a preliminary investigation into potential legacy releases from the AGCCE facility, located within the wider ICI complex. The works were undertaken to assess concentrations of a range of industrial chemicals in surface water around the facility, including PFOA, at thirteen selected sampling points from three receiving water courses (Royles Brook, Hillylaid Pools and the Wyre Estuary). All three water courses are known to have received discharges comprising treated effluent and/or surface drainage from the facility. The distribution of sampling points includes locations both upstream and downstream of the facility.

The works undertaken form part of a wider Part 2A inspection of the land surrounding the AGCCE facility. The sampling remit was primarily targeted to investigate and quantify specific contaminant linkages identified through desk-based assessment, directly linked to the subject site, which have the potential to impact offsite controlled waters receptors (specifically surface waters proximal to the facility).

The EA is leading the inspection on behalf of Wyre Council (the Local Authority).

Royles Brook flows south-easterly to the north of the facility, whilst Hillylaid Pools flows north-easterly to the south of the facility. The water courses converge to the east of the facility before discharging to the Wyre Estuary. The Wyre Estuary is a highly protected ecological system, designated as a SSSI and SAC. Given its tidal nature, samples were obtained from the Wyre sampling points (RW01 and RW02) approximately 1 hour either side high tide to provide representation during both rising and falling tides. Low tide samples were not possible due to health and safety restrictions associated with accessibility of the water course for sampling at low water.

Publicly accessible reaches of the three watercourses (Wyre Estuary, Hillylaid Pools and Royles Brook) are understood to be, or have the potential to be, used recreationally by the public. It is noted that whilst sections of the watercourses are inaccessible to the public, e.g. the downstream course of Royles Brook flows through the Hillhouse complex, unauthorised access into these areas by the public cannot be discounted.

The analytical data obtained indicates that PFOA compounds were detected within samples collected from all thirteen locations, representative of the three receiving water courses both upstream and downstream of the facility. The greatest concentrations of PFOA were detected at HP03 (Hillylaid Pools Old Course), to a maximum concentration of 19.2 µg/l. Concentrations at this location are typically at least an order of magnitude higher than detected at other locations sampled and are observed to decrease with distance downstream (HP04 and HP05). It is acknowledged that the body of water sampled at HP03 was observed to be a relatively stagnant pond/pool in comparison to other monitoring points which were typically free flowing streams/watercourses. However, sample point HP03 is also located proximal to a known permitted discharge point from facility (point W2).

In addition to PFOA, other substances including PFOS, ammoniacal nitrogen as N, benzene, toluene and a range of chlorinated VOCs were detected in the surface water samples obtained. VOCs were primarily detected in the downstream samples from Royles Brook (RB04, RB05 and RB06) with maximum concentrations observed for TCE (346 µg/l), cis-1,2-DCE (285 µg/l) and VC

(45.6µg/l) at RB05. Ammoniacal nitrogen as N ranged in concentration between <200 µg/l and 2,300 µg/l with maximum concentrations observed in the sample from HP03.

pH was observed between 6.98 and 7.89. Fluoride was only observed at detectable concentrations (>LOD) in the samples from the Wyre Estuary.

6 REFERENCES

1. WSP, 29 August 2024. Thornton Construction Phase Plan (ref: 70100310-CPP)
2. EA Air Quality Modelling & Assessment Unit (AQMAU), 2023. AGC Chemicals PFOA Dispersion. Air dispersion and deposition modelling study. AQMAU-C2478-RP02.
3. HSE, 2015. Construction (Design and Management) Regulations.
4. EA, 2020. Land Contamination Risk Management (LCRM).
5. Part 2A of the Environmental Protection Act, 1990
6. Defra, 2012. Contaminated Land Statutory Guidance.
7. Water Resources Act 1991
8. BS EN ISO 5667-1: 2019 Water quality - Sampling. Part 1: Guidance on the design of sampling programmes and sampling techniques,
9. BS EN ISO 5667-6:2016+A11:2020 Water Quality. Sampling – Guidance on sampling of rivers and streams,
10. BS EN ISO 5667-3:2018 Water quality. Sampling. Preservation and handling of water samples,
11. BS EN ISO 5667-14:2016. Water Quality. Sampling. Guidance on Quality Assurance and Quality Control of Environmental Water Sampling and Handling.
12. BS ISO 5667-24:2016. Water Quality. Sampling. Guidance on the Auditing of Water Quality Sampling.
13. England | Catchment Data Explorer
14. Dalmijn, J. et. al., November 2024. Perfluoro(2-ethoxy-2-fluoroethoxy)-acetic acid (EEA) and other target and suspect PFAS in the vicinity of a fluoropolymer production plant | Earth, Space, and Environmental Chemistry | ChemRxiv | Cambridge Open Engage

7 GLOSSARY & ABBREVIATIONS

The following terms and abbreviations have been used throughout the enclosed statement. All may be considered as common terms used on an everyday basis by Contaminated Land professionals, their definitions are presented to assist the reader and avoid ambiguity.

Above Ordnance Datum (AOD).

Air dispersion Modelling is the use of mathematical formulations to simulate atmospheric processes and predict the dispersion of pollutants.

Analytical Quality Control (AQC) refers to the procedures adopted by the performing laboratory to ensure that analytical measurements are of adequate accuracy for their intended purpose.

Assessment criteria. Criteria used to evaluate Contaminant concentrations, derived using a generic or site-specific set of factors for the characteristics and behaviour of Contaminants.

Attenuation. The combination of physical, chemical, or biological processes that, under favourable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.

Below ground level (BGL).

Benzene, toluene, ethylbenzene and xylene (BTEX). A group of volatile aromatic compounds that are typically found in petroleum products such as gasoline and diesel fuel.

Conceptual site model (CSM). A representation of the characteristics of the site in diagrammatic or written form that shows the possible Pollutant linkages between Contaminants, Pathways and Receptors.

Contaminant. A substance that is in, on or under the land and that has the potential to cause harm or to cause pollution to the water environment.

Contaminant linkage. The relationship between a contaminant, pathway and receptor, which is identified by developing the conceptual site model (‘CSM’). See also source-pathway-receptor linkage.

Contaminant of concern (CoC). Contaminants that pose an unacceptable risk to human health and the environment, as identified in the risk assessments.

Contaminated Land. Contaminated Land: defined in section 78A(2) of the Environmental Protection Act [5] as: ‘any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that - ‘(a) significant harm is being caused or there is a significant possibility of such harm being caused, or; ‘(b) pollution of controlled waters is being, or is likely to be, caused.’ OR with respect to radioactive contamination defined in section 78A(2)(as modified) as ‘any land which appears to the local authority in whose area it is situated to be in such a condition, by reasons of substances in, on or under the ground, that: (a) harm is being caused, or (b) there is a significant possibility of such harm being caused.’

Construction Phase Plan (CPP) is a document that sets out the health and safety management arrangements for a project. It is a key document that details the health and safety risks associated with the construction phase of the project and the control measures that will be implemented to

minimise risks or where possible, eliminate them. The Construction Phase Plan is an explicit requirement under CDM 2015.

The Construction (Design and Management) Regulations, 2015 (CDM 2015). A set of rules that aim to improve health and safety in the construction industry by managing risks from start to finish.

Controlled waters. defined in section 78A(9) by reference to Part 3 (section 104) of the Water Resources Act 1991 [7]; this embraces territorial and coastal waters, inland fresh waters, and ground waters. Section 78A(9) was amended by section 86 of the Water Act 2003 so that for Part 2A purposes 'ground waters' does not include waters contained in underground strata but above the saturation zone.

Environmental Quality Standard (EQS), presented as an annual average (AA) concentration or maximum allowable concentration (MAC) for priority substances and certain other pollutants.

Harm. This means adverse impacts on the health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to property. (Defined in section 78A(4) of the Environmental Protection Act 1990)

Hazard. A property or situation that in particular circumstances could lead to harm or pollution.

Maximum allowable concentration (MAC), also known as the maximum for any single measurement, is a critical parameter in environmental risk assessments. It ensures protection against short-term exposure, particularly during pollution peaks.

Natural drift, or Superficial deposits (formerly known as 'drift' by British Geological Survey) are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 2.6 million years from the present. They rest on older deposits or rocks referred to as bedrock.

LoD or Limit of Detection. The lower limit achievable detection as reported by the smallest amount (concentration) that can be detected with reasonable certainty using a specific analytical procedure.

Part 2A: Part 2A of the Environmental Protection Act 1990 [5].

Pathway. A route or means by which a receptor could be, or is exposed to, or affected by a Contaminant.

Per- and polyfluoroalkyl substances (PFAS). A group of synthetic organofluorine chemical compounds that have multiple fluorine atoms attached to an alkyl chain.

15. Perfluorooctanesulfonic acid (PFOS)
16. Perfluorooctanoic acid (PFOA)

Plausible Contaminant Linkage. A contaminant linkage that may plausibly be significant but requires further quantification or investigation to confirm or refute in the context of Part 2A.

Polycyclic aromatic hydrocarbons (PAH). A class of organic compounds that are composed of multiple aromatic rings.

Pollution of controlled waters: defined in section 78A(9) as: 'the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter.'

Quality Assurance / Quality Control (QA/QC)

Receptor. In general terms, something that could be adversely affected by contamination (e.g., people, an ecological system, property or a water body).

Risk. A combination of the probability, or frequency of occurrence of a defined hazard and the magnitude of the consequences of the occurrence.

Risk Assessment. The formal process of identifying, assessing and evaluating the health and environmental risks that may be associated with a hazard.

Significant Possibility of Significant Harm (SPOSH) (a formal term within Part 2A Legislation). The following health effects should always be considered to constitute significant harm to human health: death; life threatening diseases (e.g., cancers); other diseases likely to have serious impacts on health; serious injury; birth defects; and impairment of reproductive functions. Other health effects may be considered by the local authority to constitute significant harm. For example, a wide range of conditions may or may not constitute significant harm (alone or in combination) including physical injury; gastrointestinal disturbances; respiratory tract effects; cardio-vascular effects; central nervous system effects; skin ailments; effects on organs such as the liver or kidneys; or a wide range of other health impacts. In deciding whether or not a particular form of harm is significant harm, the local authority should consider the seriousness of the harm in question: including the impact on the health, and quality of life, of any person suffering the harm; and the scale of the harm.

Site Investigation (SI). The collection and analysis of soil, surface water, groundwater, soil gas and other media as a means of further understanding the condition of the site and to inform the risk assessment. This investigation may be undertaken in a single stage, or a number of successive stages.

Site of Special Scientific Interest (SSSI).

Site Specific Assessment Criteria (SSAC). Assessment criteria that is specific to the site and its conditions, developed through detailed quantitative risk assessment (DQRA).

Source-Pathway-Receptor linkage. The relationship between a Contaminant, Pathway and Receptor, which is identified by developing the CSM. See also Pollutant linkage.

Source Protection Zones (SPZs) are defined around large and public potable groundwater abstraction sites. The purpose of SPZs is to provide additional protection to safeguard drinking water quality through constraining the proximity of an activity that may impact upon a drinking water abstraction.

Special Site defined by section 78A(3) Part IIA as: ‘any Contaminated Land –

‘(a) which has been designated as such a site by virtue of section 78C(7) or 78D(6)...; and

‘(b) whose designation as such has not been terminated by the appropriate Agency under section 78Q(4)...’.

The effect of the designation of any Contaminated Land as a Special Site is that the Environment Agency, rather than the local authority, becomes the enforcing authority for the land.

Unacceptable risk: means a risk of such a nature that it would give grounds for land to be considered Contaminated Land under Part 2A.

Uncertainty. A lack of knowledge about specific factors in a risk or exposure assessment, including parameter uncertainty, model uncertainty and scenario uncertainty. Parameter uncertainty refers to

the uncertainty in the model parameter values, which can be due to uncertainties in the data available. Model uncertainty is uncertainty due to imperfections and idealizations made in the physical model formulation. Scenario uncertainty is uncertainty in the actual conceptual model being assumed for example in the actual exposure duration and frequency of a receptor on a site.

Volatile organic compounds (VOC). Volatile organic compounds, or VOCs are organic chemical compounds whose composition makes it possible for them to evaporate under normal indoor atmospheric conditions of temperature and pressure. A VOC is any organic compound having an initial boiling point less than or equal to 250° C measured at a standard atmospheric pressure of 101.3 kPa.

Water Quality Standard (WQS).

Appendix A

FIGURES

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 1_70100310 SW Factual Sampling locations.mxd

Legend

- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

DRAWING STATUS: FINAL

wsp
8 First Street
Manchester
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Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE:

FIGURE 1
SURFACE WATER SAMPLING LOCATIONS

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/001	

Drawn By: UKKXM801

Main Outfall

River Wyre

Royles Brook

RB05 - 1.45 ug/l

RB04 - 1.08 ug/l

RW01 - 0.00676 ug/l

RB03 - 0.862 ug/l

W3 - Royles Brook

W1 - River Wyre (overhead line)

RB06 - 1.42 ug/l

HP05 - 1.63 ug/l

RB02 - 0.401 ug/l

Hillylaid Pools (Old Course)

HP04 - 3.88 ug/l

Hillylaid Pools (New Course)

HP03 - 16.3 ug/l

W2 - Hillylaid Pools

RB01 - 0.177 ug/l

HP02 - 0.747 ug/l

HP01 - 0.216 ug/l

RW02 - 0.00887 ug/l

0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Hole Type

- Surface Water Sample

Max PFOA in SW Round 1

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- >0.1 - 1.0
- >0.01 - 0.1
- >0.001 - 0.01
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND.

COLOUR SCALES AND BANDINGS ARE ARBITRARY FOR ILLUSTRATIVE PURPOSES ONLY. THEY INDICATE ORDER OF MAGNITUDE INCREMENTS ABOVE MDL. THEY ARE NOT BASED ON ANY PRESCRIBED SCREENING CRITERIA.

DRAWING STATUS: FINAL

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 1A
PFOA CONCENTRATIONS IN SURFACE WATER
ROUND 1 - SEPT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/001A	REV:

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 1a_70100310 SW Factual PFOA R1.mxd

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 1b_70100310 SW Factual PFOA R2.mxd

Main Outfall

River Wyre

Royles Brook

RB05 - 1.08ug/l

RB04 - 0.968ug/l

RB03 - 0.732ug/l

RW01 - 0.00837ug/l

W3 - Royles Brook

W1 - River Wyre (overhead line)

RB02 - 0.348ug/l

RB06 - 0.559ug/l

HP05 - 1.23ug/l

HP04 - 1.62ug/l

Hillylaid Pools (Old Course)

Hillylaid Pools (New Course)

HP03 - 16.9ug/l

W2 - Hillylaid Pools

RB01 - 0.272ug/l

HP02 - 0.541ug/l

HP01 - 0.25ug/l

RW02 - 0.0738ug/l

0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Max PFOA in SW Round 2

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- >0.10 - 1.0
- >0.01 - 0.1
- >0.001 - 0.01
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 1B
PFOA CONCENTRATIONS IN SURFACE WATER
ROUND 2 - OCT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/001B	REV:

Drawn By: UKKXM801

Legend

Max PFOA in SW Round 3

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- >0.1 - 1.0
- >0.01 - 0.1
- >0.001 - 0.01
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND
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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 1C
PFOA CONCENTRATIONS IN SURFACE WATER
ROUND 3 - DEC 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/001C	REV:

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 1c_70100310 SW Factual PFOA R3.mxd

Drawn By: UKKXM801

Main Outfall

River Wyre

Royles Brook

RB05 - 1.1ug/l

RB04 - 1.2ug/l

RB03 - 1.02ug/l

RW01 - 0.00663ug/l

W3 - Royles Brook

W1 - River Wyre (overhead line)

RB02 - 0.655ug/l

RB06 - 1.18ug/l

HP05 - 2.09ug/l

HP04 - 1.49ug/l

Hillylaid Pools (Old Course)

Hillylaid Pools (New Course)

HP03 - 9.18ug/l

W2 - Hillylaid Pools

RB01 - 0.4ug/l

HP02 - 1.1ug/l

HP01 - 0.385ug/l

RW02 - 0.052ug/l

0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Max PFOA Perfluorooctanoic acid in SW Round 4

ug/l

- >1.0 - 10.0
- >0.1 - 1.0
- >0.001 - 0.1
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND
COLOUR SCALES AND BANDINGS ARE ARBITRARY FOR ILLUSTRATIVE PURPOSES ONLY. THEY INDICATE ORDER OF MAGNITUDE INCREMENTS ABOVE MDL. THEY ARE NOT BASED ON ANY PRESCRIBED SCREENING CRITERIA.

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 1D
PFOA CONCENTRATIONS IN SURFACE WATER
ROUND 4 - JAN 2025

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 18/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/001D	REV:

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 1d_70100310 SW Factual PFOA R4.mxd

Drawn By: UKKXM801

Legend

Max PFOA Perfluorooctanoic acid in SW (R1-R4)

ug/l

- >0.001 - 0.1
- >0.1 - 1.0
- >1.0 - 10.0
- >10.0 - 100.0

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND
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LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 1E
MAX PFOA CONCENTRATIONS IN SURFACE WATER
ROUNDS 1-4

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	10/03/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/001E	

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 1e_70100310 SW Factual Max PFOA R1-4.mxd

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 2a_70100310 SW Factual PFOS R1.mxd

Main Outfall

River Wyre

Royles Brook

RB05 - 0.0069ug/l

RB04 - 0.00714ug/l

RW01 - <LOD

RB03 - 0.00629ug/l

W3 - Royles Brook

W1 - River Wyre (overhead line)

RB02 - 0.00617ug/l

RB06 - 0.00698ug/l

HP05 - 0.01ug/l

Hillylaid Pools (Old Course)

HP04 - 0.0268ug/l

Hillylaid Pools (New Course)

HP03 - 0.055ug/l

W2 - Hillylaid Pools

RB01 - 0.00499ug/l

HP02 - 0.00513ug/l

HP01 - 0.00244ug/l

RW02 - <LOD

0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Max Total PFOS in Water Round 1

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- >0.1 - 1.0
- >0.01 - 0.1
- >0.001 - 0.01
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 2A
PFOS CONCENTRATIONS IN SURFACE WATER
ROUND 1 - SEPT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/002A	REV:

Drawn By: UKKXM801

Main Outfall

River Wyre

Royles Brook

RB05 - 0.00491ug/l

RB04 - 0.0103ug/l

RB03 - <LOD

RW01 - <LOD

W3 - Royles Brook

W1 - River Wyre (overhead line)

RB02 - 0.00581ug/l

RB06 - 0.00574ug/l

HP05 - <LOD

Hillylaid Pools (Old Course)

HP04 - 0.0117ug/l

Hillylaid Pools (New Course)

HP03 - 0.0168ug/l

W2 - Hillylaid Pools

RB01 - <LOD

HP02 - <LOD

HP01 - 0.00317ug/l

RW02 - <LOD

0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Max Total PFOS in SW Round 2

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- >0.1 - 1.0
- >0.01 - 0.1
- >0.001 - 0.01
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 2B
PFOS CONCENTRATIONS IN SURFACE WATER
ROUND 2 - OCT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/002B	REV:

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 2b_70100310 SW Factual PFOS R2.mxd

Drawn By: UKKXM801

Legend

Max Total PFOS in SW Round 3

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- >0.1 - 1.0
- >0.01 - 0.1
- >0.001 - 0.01
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 2C
PFOS CONCENTRATIONS IN SURFACE WATER
ROUND 3 - DEC 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 18/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/002C	REV:

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 2c_70100310 SW Factual PFOS R3.mxd

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 2d_70100310 SW Factual PFOS R4.mxd

Main Outfall

River Wyre

RB05 - 0.00421ug/l

Royles Brook

RB04 - 0.00768ug/l

<LOD

RB03 - 0.00531ug/l

W3 - Royles Brook

RB06 - 0.00436ug/l

W1 - River Wyre (overhead line)

HP05 - 0.0091ug/l

RB02 - 0.00348ug/l

HP04 - 0.00958ug/l

Hillylaid Pools (Old Course)

Hillylaid Pools (New Course)

HP03 - 0.0658ug/l

W2 - Hillylaid Pools

RB01 - 0.00376ug/l

HP02 - 0.00305ug/l

HP01 - 0.00285ug/l

<LOD

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0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Max PFOS in SW Round 4

ug/l

- >0.01 - 0.1
- >0.001 - 0.01
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 2D
PFOS CONCENTRATIONS IN SURFACE WATER
ROUND 4 - JAN 2025

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 18/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/002D	REV:

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 3a_70100310 SW Factual TCE R1.mxd

Legend

Max Trichloroethene (TCE) in SW Round 1

ug/l

- >100.0 - 1000.0
- >10.0 - 100.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 3A
TCE CONCENTRATIONS IN SURFACE WATER
ROUND 1 - SEPT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/003A	

Legend

Max Trichloroethene (TCE) in SW Round 2

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 3B
TCE CONCENTRATIONS IN SURFACE WATER
ROUND 2 - OCT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/003B	REV:

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 3b_70100310 SW Factual TCE R2.mxd

Drawn By: UKKXM801

Main Outfall

River Wyre

RB05 - 97.1ug/l

RB04 - 4.68ug/l

Royles Brook

RB03 - <LOD

RW01 - <LOD

W3 - Royles Brook

W1 - River Wyre (overhead line)

RB06 - 90.8ug/l

HP05 - <LOD

RB02 - <LOD

Hillylaid Pools (Old Course)

HP04 - <LOD

Hillylaid Pools (New Course)

HP03 - <LOD

W2 - Hillylaid Pools

RB01 - <LOD

HP02 - <LOD

HP01 - <LOD

RW02 - <LOD

0 0.125 0.25 0.5 0.75 1 Kilometres

Legend

Max Trichloroethene (TCE) in SW Round 3 ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 3C
TCE CONCENTRATIONS IN SURFACE WATER
ROUND 3 - DEC 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/003C	REV:

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 3c_70100310 SW Factual TCE R3.mxd

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 3d_70100310 SW Factual TCE R4.mxd

Legend

Max Trichloroethene (TCE) in SW Round 4 ug/l

- >100.0 - 1000.0
- >10.0 - 100.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 3D
TCE CONCENTRATIONS IN SURFACE WATER
ROUND 4 - JAN 2025

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	19/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/003D	

Legend

Max Cis 1,2-Dichloroethene in SW Round 1 ug/l

- >100.0 - 1000.0
- >10.0 - 100.0
- >1.0 - 10.00
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

COLOUR SCALES AND BANDINGS ARE ARBITRARY FOR ILLUSTRATIVE PURPOSES ONLY. THEY INDICATE ORDER OF MAGNITUDE INCREMENTS ABOVE MDL. THEY ARE NOT BASED ON ANY PRESCRIBED SCREENING CRITERIA.

DRAWING STATUS: FINAL

wsp
8 First Street
Manchester
Tel: +44 (0)161 200 500
Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 4A
CIS 1,2-DCE CONCENTRATIONS IN SURFACE WATER
ROUND 1 - SEPT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/004A	

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 4a_70100310 SW Factual CIS DCE R1.mxd

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 4b_70100310 SW Factual CIS DCE R2.mxd

Legend

Max Cis 1,2-Dichloroethene in SW Round 2

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

COLOUR SCALES AND BANDINGS ARE ARBITRARY FOR ILLUSTRATIVE PURPOSES ONLY. THEY INDICATE ORDER OF MAGNITUDE INCREMENTS ABOVE MDL. THEY ARE NOT BASED ON ANY PRESCRIBED SCREENING CRITERIA.

DRAWING STATUS: FINAL

wsp
8 First Street
Manchester
Tel: +44 (0)161 200 500
Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 4B
CIS 1,2-DCE CONCENTRATIONS IN SURFACE WATER
ROUND 2 - OCT 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/004B	

Legend

Max Cis 1,2-Dichloroethene in SW Round 3

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

COLOUR SCALES AND BANDINGS ARE ARBITRARY FOR ILLUSTRATIVE PURPOSES ONLY. THEY INDICATE ORDER OF MAGNITUDE INCREMENTS ABOVE MDL. THEY ARE NOT BASED ON ANY PRESCRIBED SCREENING CRITERIA.

DRAWING STATUS: FINAL

wsp
8 First Street
Manchester
Tel: +44 (0)161 200 500
Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 4C
CIS 1,2-DCE CONCENTRATIONS IN SURFACE WATER
ROUND 3 - DEC 2024

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE: WSP - A3 Landscape	DESIGN-DRAWN: KG	DATE: 04/02/2025
PROJECT No: 70100310	DRAWING No: 70100310/SWF/004C	REV:

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 4c_70100310 SW Factual CIS DCE R3.mxd

Legend

Max Cis 1,2-Dichloroethene in SW Round 4 ug/l

- >100.0 - 1000.0
- >10.0 - 100.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

COLOUR SCALES AND BANDINGS ARE ARBITRARY FOR ILLUSTRATIVE PURPOSES ONLY. THEY INDICATE ORDER OF MAGNITUDE INCREMENTS ABOVE MDL. THEY ARE NOT BASED ON ANY PRESCRIBED SCREENING CRITERIA.

DRAWING STATUS: FINAL

wsp
8 First Street
Manchester
Tel: +44 (0)161 200 500
Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 4D
CIS 1,2-DCE CONCENTRATIONS IN SURFACE WATER
ROUND 4 - JAN 2025

SCALE @ A	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	19/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/004D	

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig 4d_70100310 SW Factual CIS DCE R4.mxd

Drawn By: UKKXM801

Legend

Max Vinyl chloride (Chloroethene) in Water Round 1

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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wsp
8 First Street
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Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 5A
VINYL CHLORIDE CONCENTRATIONS IN SURFACE WATER
ROUND 1 - SEPT 2024

SCALE @ A...	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/005A	

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig5a_70100310 SW Factual VC R1.mxd

Legend

Max Vinyl chloride (Chloroethene) in SW Round 2

ug/l

- >10.0- 100.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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DRAWING STATUS: FINAL

8 First Street
Manchester
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Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 5B
VINYL CHLORIDE CONCENTRATIONS IN SURFACE WATER
ROUND 2 - OCT 2024

SCALE @ A...	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/005B	

Drawn By: UKKXM801

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig5b_70100310 SW Factual VC R2.mxd

Drawn By: UKKXM801

Legend

Max Vinyl chloride (Chloroethene) in SW Round 3

ug/l

- >10.0 - 100.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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DRAWING STATUS: FINAL

wsp
8 First Street
Manchester
Tel: +44 (0)161 200 500
Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 5C
VINYL CHLORIDE CONCENTRATIONS IN SURFACE WATER
ROUND 3 - DEC 2024

SCALE @ A...	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	04/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/005C	

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig5c_70100310 SW Factual VC R3.mxd

Drawn By: UKKXM801

Legend

Max Vinyl chloride (Chloroethene) in SW Round 4

ug/l

- >10.0 - 100.0
- >1.0 - 10.0
- < LOD

Hole Type

- Surface Water Sample
- Facility Main Outfall to River Wyre
- Controlled Waters Emission Points
- Indicative Hillylaid Pools Outfall
- Indicative Royles Brook Outfall
- Surface Water Network
- Facility Permit Boundary

NOTES:
CONCENTRATIONS PRESENTED FOR SAMPLE POINTS RW01 AND RW02 REPRESENT MAXIMUM CONCENTRATIONS FROM THE PRE AND POST HIGH TIDE SAMPLES COLLECTED DURING THE MONITORING ROUND

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DRAWING STATUS: FINAL

wsp
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Website: www.wsp.com

CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310

LAND AT THORNTON-CLEVELEYS

TITLE: FIGURE 5D
VINYL CHLORIDE CONCENTRATIONS IN SURFACE WATER
ROUND 4 - JAN 2025

SCALE @ A...	CHECKED:	APPROVED:
1:0	JK	HDL
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
WSP - A3 Landscape	KG	18/02/2025
PROJECT No:	**DRAWING No:**	**REV:**
70100310	70100310/SWF/005D	

File: G:\#Projects\Land at Thornton Cleveleys\GIS\01-Map Documents (MXD)\SW Factual\Fig5d_70100310 SW Factual VC R4.mxd

Appendix B

PHOTOLOG

SITE AT THORNTON-CLEVELEYS – APPENDIX B

Surface Water Monitoring Photolog

ROYLES BROOK (RB)

RB01

Photo 1: RB01 Round 1 - Royles Brook, Upstream of the Thornton facility outfall (W3) and Red Marsh industrial estate.

Photo 2: RB01 Round 2 - Royles Brook, Upstream of the Thornton facility outfall (W3) and Red Marsh industrial estate

Photo 3: RB01 Round 4 - Royles Brook, Upstream of the Thornton facility outfall (W3) and Red Marsh industrial estate

RB02

Photo 4: RB02 Round 1 - Royles Brook, Upstream of the Thornton facility outfall (W3) and Red Marsh industrial estate

Photo 5: RB02 Round 2 - Royles Brook, Upstream of the Thornton facility outfall (W3) and Red Marsh industrial estate

Photo 6: RB02 Round 4 - Royles Brook, Upstream of the Thornton facility outfall (W3) and Red Marsh industrial estate

RB03

Photo 7: RB03 Round 1 - Royles Brook, Upstream of the Thornton facility outfall (W3) and downstream of Red Marsh industrial estate

Photo 8: RB03 Round 2 - Royles Brook, Upstream of the Thornton facility outfall (W3) and downstream of Red Marsh industrial estate

Photo 9: RB03 Round 4 - Royles Brook, Upstream of the Thornton facility outfall (W3) and downstream of Red Marsh industrial estate

RB04

Photo 10: RB04 Round 1 - Royles Brook, Downstream of Thornton facility and outfall (W3) and within Hillhouse complex

Photo 11: RB04 Round 2 - Royles Brook, Downstream of Thornton facility and outfall (W3) and within Hillhouse complex

Photo 12: RB04 Round 4 - Royles Brook, Downstream of Thornton facility and outfall (W3) and within Hillhouse complex

RB05

Photo 13: RB05 Round 1 - Royles Brook, Downstream of Thornton facility and outfall (W3) and within Hillhouse complex

Photo 14: RB05 Round 2 - Royles Brook, Downstream of Thornton facility and outfall (W3) and within Hillhouse complex

Photo 15: RB05 Round 4 - Royles Brook, Downstream of Thornton facility and outfall (W3) and within Hillhouse complex

RB06

Photo 16: RB06 Round 1 – Royles Brook, Penstock, final location of Royles Brook prior to leaving Hillhouse complex

Photo 17: RB06 Round 2 – Royles Brook, Penstock, final location of Royles Brook prior to leaving Hillhouse complex

Photo 18: RB06 Round 4 – Royles Brook, Penstock, final location of Royles Brook prior to leaving Hillhouse complex

HILLYLAID POOLS (HP)

HP01

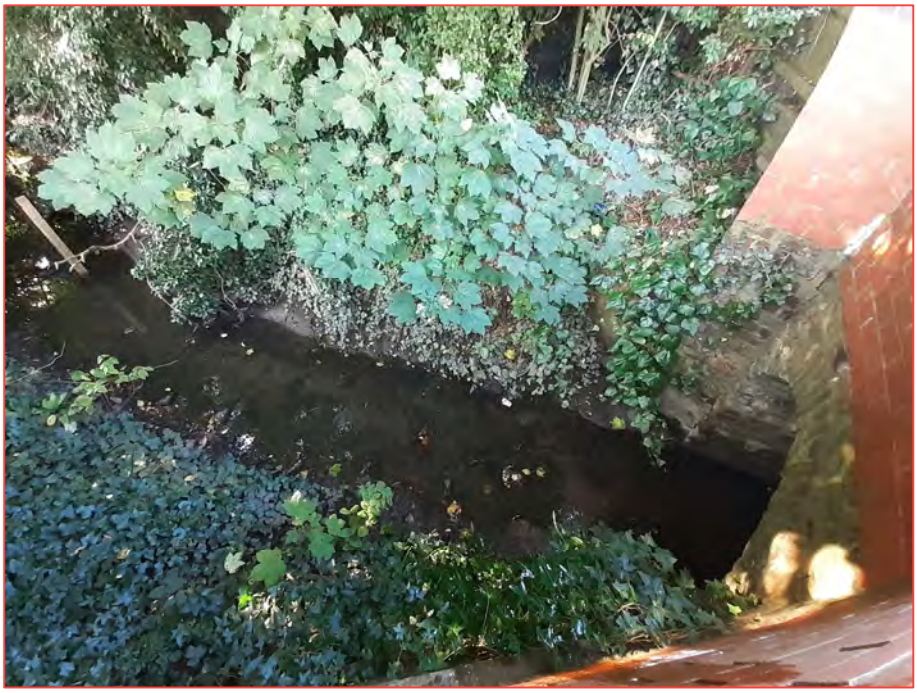

Photo 19: HP01 Round 1 - Hillylaid Pools, Upstream of Thornton facility.

Photo 20: HP01 Round 2 - Hillylaid Pools, Upstream of Thornton facility (field blank taken)

Photo 21: HP01 Round 4 - Hillylaid Pools, Upstream of Thornton facility (field blank taken)

HP02

Photo 22: HP02 Round 1 - Hillylaid Pools New Course, Adjacent to Thornton facility

Photo 23: HP02 Round 2 - Hillylaid Pools New Course, Adjacent to Thornton facility

Photo 24: HP02 Round 4 - Hillylaid Pools New Course, Adjacent to Thornton facility

HP03

Photo 25: HP03 Round 1 - Hillylaid Pools Old Course, Wetland - downstream of Thornton facility outfall (W2)

Photo 26: HP03 Round 2 – Hillylaid Pools Old Course, Pond, downstream of Thornton facility outfall (W2)

Photo 27: HP03 Round 4 – Hillylaid Pools Old Course, Pond, downstream of Thornton facility outfall (W2)

HP04

Photo 28: HP04 Round 1 - Hillylaid Pools Old Course, Wetland - downstream of Thornton facility outfall (W2)

Photo 29: HP04 Round 2 - Hillylaid Pools Old Course, Wetland - downstream of Thornton facility outfall (W2)

Photo 30: HP04 Round 4 - Hillylaid Pools Old Course, Wetland - downstream of Thornton facility outfall (W2)

HP05

Photo 31: HP05 Round 1 - Hillylaid Pools, Confluence of Hillylaid Pools

Photo 32: HP05 Round 2 - Hillylaid Pools, Confluence of Hillylaid Pools

Photo 33: HP05 Round 4 - Hillylaid Pools, Confluence of Hillylaid Pools

RIVER WYRE (RW)

RW01

Photo 34: RW01A Round 1 - River Wyre, Downstream of Hillylaid Pool / River Wyre confluence (high tide)

Photo 35: RW01B Round 2 - River Wyre, Downstream of Hillylaid Pool / River Wyre confluence (after high tide)

Photo 36: RW01B Round 4 - River Wyre, Downstream of Hillylaid Pool / River Wyre confluence (after high tide)

RW02

Photo 37: RW02B Round 1 - River Wyre, Upstream of Hillylaid Pool / River Wyre confluence (after high tide)

Photo 38: RW02A Round 2 - River Wyre, Upstream of Hillylaid Pool / River Wyre confluence (after high tide)

Photo 39: RW02A Round 4 - River Wyre, Upstream of Hillylaid Pool / River Wyre confluence (after high tide)

Appendix C

LAB CERTIFICATES

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2025
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240920-46
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	753168
Order Number:	70100310-313

This report has been revised and directly supersedes 742095 in its entirety.

We received 8 samples on Friday September 20, 2024 and 8 of these samples were scheduled for analysis which was completed on Friday September 27, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

Lauren Ellis
General Manager Western Europe Environmental

1291

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30392224	HP01	EW	0.00 - 0.00	19/09/2024
30392207	RB01	EW	0.00 - 0.00	19/09/2024
30392216	RB02	EW	0.00 - 0.00	19/09/2024
30392237	RW01	EWBefore HT-R1	0.00 - 0.00	19/09/2024
30392261	RW01	EWAfter HT-R1	0.00 - 0.00	19/09/2024
30392270	RW02	EWAfter HT-R1	0.00 - 0.00	19/09/2024
30392250	RW02	EWBefore HT-R1	0.00 - 0.00	19/09/2024
30392279	TB-R1	EW	0.00 - 0.00	19/09/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			30392224	HP01	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30392207	RB01	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30392216	RB02	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30392237	RW01	EWBefore HT-R1	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30392261	RW01	EWAfter HT-R1	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7			X			X			X				X				X	
Fluoride	All	NDPs: 0 Tests: 7	X				X			X				X				X		
PFAS Liquids	All	NDPs: 0 Tests: 8		X				X			X				X				X	
pH Value	All	NDPs: 0 Tests: 7	X				X			X				X				X		
VOC MS (W)	All	NDPs: 0 Tests: 7				X				X				X			X			

30392279	TB-R1	EW	0.00 - 0.00	1lplastic (ALE221)	SW					X		
30392250	RW02	EWBefore HT-R1	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW	X						
				Digitube fo PFAS analysis.	SW					X		
				500ml Plastic (ALE208)	SW			X			X	
30392270	RW02	EWAfter HT-R1	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW	X						
				Digitube fo PFAS analysis.	SW					X		
				500ml Plastic (ALE208)	SW			X			X	
30392261	RW01	EWAfter HT-R1	0.00 - 0.00	Vial (ALE297)	SW							X

Validated

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP01	RB01	RB02	RW01	RW01	RW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			Sample Time	.	.	.	.	.	.
			Date Received	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024
			SDG Ref	240920-46	240920-46	240920-46	240920-46	240920-46	240920-46
			Lab Sample No.(s)	30392224	30392207	30392216	30392237	30392261	30392270
			AGS Reference	EW	EW	EW	EWBefore HT-R1	EWAfter HT-R1	EWAfter HT-R1
Ammoniacal Nitrogen as N	<200 µg/l	TM099		1200 #	714 #	1340 #	<200 #	<200 #	<200 #
Fluoride	<500 µg/l	TM104		<500	<500	<500	880	891	970
pH	<1 pH Units	TM256		7.53 #	7.48 #	7.65 #	7.83 #	7.83 #	7.89 #
PFOA (335-67-1)	<0.00065 µg/l	TM337		0.216 #	0.177 #	0.401 #	0.00676 #	0.00518 #	0.00614 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM337		0.00093 #	0.00227 #	0.00308 #	<0.0013 #	<0.0013 #	<0.0013 #
Branched PFOS	<0.00065 µg/l	TM337		0.00151 #	0.00272 #	0.00309 #	<0.0013 #	<0.0013 #	<0.0013 #
Total PFOS	<0.00065 µg/l	TM337		0.00244 #	0.00499 #	0.00617 #	<0.0013 #	<0.0013 #	<0.0013 #

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RW02	TB-R1				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	19/09/2024	19/09/2024				
			Sample Time	.	.				
			Date Received	20/09/2024	20/09/2024				
			SDG Ref	240920-46	240920-46				
			Lab Sample No.(s)	30392250	30392279				
			AGS Reference	EWBefore HT-R1	EW				
Ammoniacal Nitrogen as N	<200 µg/l	TM099		<200 #					
Fluoride	<500 µg/l	TM104		879					
pH	<1 pH Units	TM256		7.85 #					
PFOA (335-67-1)	<0.00065 µg/l	TM337		0.00887 #	<0.00065 #				
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM337		<0.0013 #	<0.00065 #				
Branched PFOS	<0.00065 µg/l	TM337		<0.0013 #	<0.00065 #				
Total PFOS	<0.00065 µg/l	TM337		<0.0013 #	<0.00065 #				

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP01	RB01	RB02	RW01	RW01	RW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			Sample Time	.	.	.	.	.	.
			Date Received	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024
			SDG Ref	240920-46	240920-46	240920-46	240920-46	240920-46	240920-46
			Lab Sample No.(s)	30392224	30392207	30392216	30392237	30392261	30392270
			AGS Reference	EW	EW	EW	EWBefore HT-R1	EWAfter HT-R1	EWAfter HT-R1
Dibromofluoromethane**	%	TM208		118	118	114	115	113	118
Toluene-d8**	%	TM208		100	99.7	100	101	101	101
4-Bromofluorobenzene**	%	TM208		95.4	94.7	95.9	95.9	95.5	98.5
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		1.54 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP01	RB01	RB02	RW01	RW01	RW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			Sample Time	.	.	.	.	.	.
			Date Received	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024
			SDG Ref	240920-46	240920-46	240920-46	240920-46	240920-46	240920-46
			Lab Sample No.(s)	30392224	30392207	30392216	30392237	30392261	30392270
			AGS Reference	EW	EW	EW	EWBefore HT-R1	EWAfter HT-R1	EWAfter HT-R1
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

		Customer Sample Ref.	RW02
		Depth (m)	0.00 - 0.00
		Sample Type	Surface Water (SW)
		Date Sampled	19/09/2024
		Sample Time	.
		Date Received	20/09/2024
		SDG Ref	240920-46
		Lab Sample No.(s)	30392250
		AGS Reference	EWBefore HT-R1
Component	**LOD/Units**	**Method**	
Dibromofluoromethane**	%	TM208	117
Toluene-d8**	%	TM208	101
4-Bromofluorobenzene**	%	TM208	93.7
Dichlorodifluoromethane	<1 µg/l	TM208	<1
Chloromethane	<1 µg/l	TM208	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #
Bromomethane	<1 µg/l	TM208	<1 #
Chloroethane	<1 µg/l	TM208	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #
Carbon disulphide	<1 µg/l	TM208	<1 #
Dichloromethane	<3 µg/l	TM208	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1
Bromochloromethane	<1 µg/l	TM208	<1 #
Chloroform	<1 µg/l	TM208	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #
Benzene	<1 µg/l	TM208	<1 #
Trichloroethene	<1 µg/l	TM208	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
Toluene	<1 µg/l	TM208	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #
1,3-Dichloropropane	<1 µg/l	TM208	<1 #

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

	Customer Sample Ref.	RW02
	Depth (m)	0.00 - 0.00
	Sample Type	Surface Water (SW)
	Date Sampled	19/09/2024
	Sample Time	.
	Date Received	20/09/2024
	SDG Ref	240920-46
	Lab Sample No.(s)	30392250
	AGS Reference	EWBefore HT-R1

Component	LOD/Units	Method	RW02
Tetrachloroethene	<1 µg/l	TM208	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #
o-Xylene	<1 µg/l	TM208	<1 #
Styrene	<1 µg/l	TM208	<1 #
Bromoform	<1 µg/l	TM208	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #
Naphthalene	<1 µg/l	TM208	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

Data Amendment

Sample No. : 30392207 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RB01	Sample ID Change	SW-RB01	RB01

Sample No. : 30392216 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RB02	Sample ID Change	SW-RB02	RB02

Sample No. : 30392224 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
HP01	Sample ID Change	SW-HP01	HP01

Sample No. : 30392261 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RW01	Sample ID Change	SW-W01A	RW01
RW01	Sample ID Change	SW-W01B	RW01

Sample No. : 30392270 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RW02	Sample ID Change	SW-W02A	RW02
RW02	Sample ID Change	SW-W02B	RW02

Sample No. : 30392279 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
TB-R1	Sample ID Change	SW-RB01A	TB-R1

Table of Results - Appendix

Method No	Description
TM104	Determination of Fluoride using the Kone Analyser
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM337	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 240920-46 **Report Number:** 753168 **Superseded Report:** 742095
Client Ref.: 70100310 Thornton **Location:** Thornton

Test Completion Dates

Lab Sample No(s)	30392224	30392207	30392216	30392237	30392261	30392250	30392270	30392279
Customer Sample Ref.	HP01	RB01	RB02	RW01	RW01	RW02	RW02	TB-R1
AGS Ref.	EW	EW	EW	WBefore HT-R	EWAfter HT-R1	WBefore HT-R	EWAfter HT-R1	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	24-Sep-2024	24-Sep-2024	25-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	
Fluoride	24-Sep-2024	23-Sep-2024	23-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	
PFAS Liquids	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024
pH Value	27-Sep-2024	27-Sep-2024	27-Sep-2024	26-Sep-2024	26-Sep-2024	27-Sep-2024	27-Sep-2024	
VOC MS (W)	23-Sep-2024	23-Sep-2024	23-Sep-2024	23-Sep-2024	23-Sep-2024	23-Sep-2024	23-Sep-2024	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2025
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240921-45
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	753169
Order Number:	70100310-313

This report has been revised and directly supersedes 742220 in its entirety.

We received 11 samples on Saturday September 21, 2024 and 10 of these samples were scheduled for analysis which was completed on Monday September 30, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Lauren Ellis
General Manager Western Europe Environmental

1291

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30400433	DUP-R1	EW	0.00 - 0.00	20/09/2024
30400505	ER-R1	EW	0.00 - 0.00	20/09/2024
30400509	HP02	EW	0.00 - 0.00	20/09/2024
30400494	HP03	EW	0.00 - 0.00	20/09/2024
30400483	HP04	EW	0.00 - 0.00	20/09/2024
30400471	HP05	EW	0.00 - 0.00	20/09/2024
30400518	NO ID			
30400420	RB03	EW	0.00 - 0.00	20/09/2024
30400439	RB04	EW	0.00 - 0.00	20/09/2024
30400451	RB05	EW	0.00 - 0.00	20/09/2024
30400459	RB06	EW	0.00 - 0.00	20/09/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8	30400433	DUP-R1	EW	0.00 - 0.00	Digitube fo PFAS analysis.	SW
			30400505	ER-R1	EW	0.00 - 0.00	Digitube fo PFAS analysis.	SW
			30400509	HP02	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30400494	HP03	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30400483	HP04	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30400471	HP05	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30400420	RB03	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
PFAS Liquids	All	NDPs: 0 Tests: 10	X	X		X		
pH Value	All	NDPs: 0 Tests: 8			X		X	
VOC MS (W)	All	NDPs: 0 Tests: 8				X		

30400459	RB06	EW	0.00 - 0.00	Vial (ALE297)	SW						X
				H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW				X		
				500ml Plastic (ALE208)	SW			X		X	
30400451	RB05	EW	0.00 - 0.00	Vial (ALE297)	SW						X
				H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW				X		
				500ml Plastic (ALE208)	SW			X		X	
30400439	RB04	EW	0.00 - 0.00	Vial (ALE297)	SW						X
				H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW				X		
				500ml Plastic (ALE208)	SW			X		X	
30400420	RB03	EW	0.00 - 0.00	Vial (ALE297)	SW						X
				H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW				X		

Validated

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	DUP-R1	ER-R1	HP02	HP03	HP04	HP05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024
			Sample Time	.	.	.	.	.	.
			Date Received	21/09/2024	21/09/2024	21/09/2024	21/09/2024	21/09/2024	21/09/2024
			SDG Ref	240921-45	240921-45	240921-45	240921-45	240921-45	240921-45
			Lab Sample No.(s)	30400433	30400505	30400509	30400494	30400483	30400471
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099				2300 #	1660 #	382 #	1300 #
Fluoride	<500 µg/l	TM104				<500	<500	<500	<500
pH	<1 pH Units	TM256				7.64 #	7.08 #	7.25 #	7.63 #
PFOA (335-67-1)	<0.00065 µg/l	TM337		1.52 #	<0.00065 #	0.747 #	16.3 #	3.88 #	1.63 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM337		0.00459 #	<0.00065 #	0.00296 #	0.055 #	0.0199 #	0.00644 #
Branched PFOS	<0.00065 µg/l	TM337		0.00356 #	<0.00065 #	0.00217 #	<0.0325 #	0.00693 #	0.00356 #
Total PFOS	<0.00065 µg/l	TM337		0.00815 #	<0.00065 #	0.00513 #	0.055 #	0.0268 #	0.01 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB03	RB04	RB05	RB06		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
			Date Sampled	20/09/2024	20/09/2024	20/09/2024	20/09/2024		
			Sample Time	.	.	.	.		
			Date Received	21/09/2024	21/09/2024	21/09/2024	21/09/2024		
			SDG Ref	240921-45	240921-45	240921-45	240921-45		
			Lab Sample No.(s)	30400420	30400439	30400451	30400459		
			AGS Reference	EW	EW	EW	EW		
Ammoniacal Nitrogen as N	<200 µg/l	TM099		1500 #	1380 #	1280 #	1240 #		
Fluoride	<500 µg/l	TM104		<500	<500	<500	<500		
pH	<1 pH Units	TM256		7.73 #	7.71 #	7.75 #	7.8 #		
PFOA (335-67-1)	<0.00065 µg/l	TM337		0.862 #	1.08 #	1.45 #	1.42 #		
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM337		0.00344 #	0.00446 #	0.00396 #	0.00392 #		
Branched PFOS	<0.00065 µg/l	TM337		0.00285 #	0.00268 #	0.00293 #	0.00305 #		
Total PFOS	<0.00065 µg/l	TM337		0.00629 #	0.00714 #	0.0069 #	0.00698 #		

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP02	HP03	HP04	HP05	RB03	RB04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024
			Sample Time	.	.	.	.	.	.
			Date Received	21/09/2024	21/09/2024	21/09/2024	21/09/2024	21/09/2024	21/09/2024
			SDG Ref	240921-45	240921-45	240921-45	240921-45	240921-45	240921-45
			Lab Sample No.(s)	30400509	30400494	30400483	30400471	30400420	30400439
			AGS Reference	EW	EW	EW	EW	EW	EW
Dibromofluoromethane**	%	TM208		107	111	108	108	108	109
Toluene-d8**	%	TM208		99.7	100	97.6	100	101	101
4-Bromofluorobenzene**	%	TM208		100	99.5	93.6	99.4	101	100
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	2.18 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	8.83 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	8.46 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		1.33 #	<1 #	<1 #	1.38 #	1.02 #	3.35 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	1.69 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.5 #	<1 #	2.42 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	10.8 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	2.1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP02	HP03	HP04	HP05	RB03	RB04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024	20/09/2024
			Sample Time	.	.	.	.	.	.
			Date Received	21/09/2024	21/09/2024	21/09/2024	21/09/2024	21/09/2024	21/09/2024
			SDG Ref	240921-45	240921-45	240921-45	240921-45	240921-45	240921-45
			Lab Sample No.(s)	30400509	30400494	30400483	30400471	30400420	30400439
			AGS Reference	EW	EW	EW	EW	EW	EW
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	7.45 #	<1 #	6.18 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.67 #	<1 #	1.48 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	2.58 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB05	RB06				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	20/09/2024	20/09/2024				
			Sample Time	.	.				
			Date Received	21/09/2024	21/09/2024				
			SDG Ref	240921-45	240921-45				
			Lab Sample No.(s)	30400451	30400459				
			AGS Reference	EW	EW				
Dibromofluoromethane**	%	TM208		108	108				
Toluene-d8**	%	TM208		99.3	99.8				
4-Bromofluorobenzene**	%	TM208		99.4	98.4				
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1				
Chloromethane	<1 µg/l	TM208		<1 #	<1 #				
Vinyl chloride	<1 µg/l	TM208		45.6 #	18.5 #				
Bromomethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroethane	<1 µg/l	TM208		<1 #	<1 #				
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethene	<1 µg/l	TM208		1.11 #	<1 #				
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #				
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #				
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #				
trans-1,2-Dichloroethene	<1 µg/l	TM208		4.89 #	2.82 #				
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,2-Dichloroethene	<1 µg/l	TM208		248 #	164 #				
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1				
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroform	<1 µg/l	TM208		3.05 #	2.69 #				
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Carbontetrachloride	<1 µg/l	TM208		1.42 #	<1 #				
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
Benzene	<1 µg/l	TM208		5.66 #	6.61 #				
Trichloroethene	<1 µg/l	TM208		346 #	162 #				
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #				
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Toluene	<1 µg/l	TM208		<1 #	<1 #				
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2-Trichloroethane	<1 µg/l	TM208		2.52 #	1.15 #				
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB05	RB06				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	20/09/2024	20/09/2024				
			Sample Time	.	.				
			Date Received	21/09/2024	21/09/2024				
			SDG Ref	240921-45	240921-45				
			Lab Sample No.(s)	30400451	30400459				
			AGS Reference	EW	EW				
Tetrachloroethene	<1 µg/l	TM208		23.9 #	24 #				
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #				
Chlorobenzene	<1 µg/l	TM208		19.5 #	3.65 #				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #				
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #				
o-Xylene	<1 µg/l	TM208		<1 #	<1 #				
Styrene	<1 µg/l	TM208		<1 #	<1 #				
Bromoform	<1 µg/l	TM208		<1 #	<1 #				
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		39.1 #	20 #				
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #				
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #				
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #				
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #				
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #				
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	1.19 #				
1,4-Dichlorobenzene	<1 µg/l	TM208		5.7 #	2.42 #				
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichlorobenzene	<1 µg/l	TM208		9.77 #	3.98 #				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1				
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #				
Naphthalene	<1 µg/l	TM208		<1 #	<1 #				
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1				

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

Data Amendment

Sample No. : 30400420 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RB03	Sample ID Change	SW-RB03	RB03

Sample No. : 30400433 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
DUP-R1	Sample ID Change	SW-RB04A	DUP-R1

Sample No. : 30400439 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RB04	Sample ID Change	SW-RB04	RB04

Sample No. : 30400451 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RB05	Sample ID Change	SW-RB05	RB05

Sample No. : 30400459 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RB06	Sample ID Change	SW-RB06	RB06

Sample No. : 30400471 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
HP05	Sample ID Change	SW-HP05	HP05

Sample No. : 30400483 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
HP04	Sample ID Change	SW-HP04	HP04

Sample No. : 30400494 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
HP03	Sample ID Change	SW-HP03	HP03

Sample No. : 30400505 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
ER-R1	Sample ID Change	SW-HP03A	ER-R1

Sample No. : 30400509 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
HP02	Sample ID Change	SW-HP02	HP02

Table of Results - Appendix

Method No	Description
TM104	Determination of Fluoride using the Kone Analyser
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM337	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 240921-45 **Report Number:** 753169 **Superseded Report:** 742220
Client Ref.: 70100310 Thornton **Location:** Thornton

Test Completion Dates

Lab Sample No(s)	30400433	30400505	30400509	30400494	30400483	30400471	30400420	30400439	30400451	30400459
Customer Sample Ref.	DUP-R1	ER-R1	HP02	HP03	HP04	HP05	RB03	RB04	RB05	RB06
AGS Ref.	EW	EW	EW	EW	EW	EW	EW	EW	EW	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen			26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024
Fluoride			27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024
PFAS Liquids	26-Sep-2024	24-Sep-2024	24-Sep-2024	30-Sep-2024	24-Sep-2024	24-Sep-2024	26-Sep-2024	24-Sep-2024	26-Sep-2024	24-Sep-2024
pH Value			30-Sep-2024	30-Sep-2024	30-Sep-2024	30-Sep-2024	30-Sep-2024	30-Sep-2024	30-Sep-2024	30-Sep-2024
VOC MS (W)			25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2025
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	241102-43
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	753170
Order Number:	70100310-313

This report has been revised and directly supersedes 748030 in its entirety.

We received 18 samples on Saturday November 02, 2024 and 18 of these samples were scheduled for analysis which was completed on Monday November 25, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

Lauren Ellis
General Manager Western Europe Environmental

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30609384	DUP-R2	EW	0.00 - 0.00	30/10/2024
30609372	ER-R2	EW	0.00 - 0.00	31/10/2024
30609387	FB-R2	EW	0.00 - 0.00	31/10/2024
30609459	HP01	EW	0.00 - 0.00	30/10/2024
30609390	HP02	EW	0.00 - 0.00	31/10/2024
30609450	HP03	EW	0.00 - 0.00	30/10/2024
30609417	HP04	EW	0.00 - 0.00	30/10/2024
30609425	HP05	EW	0.00 - 0.00	30/10/2024
30609467	RB01	EW	0.00 - 0.00	30/10/2024
30609345	RB02	EW	0.00 - 0.00	30/10/2024
30609442	RB03	EW	0.00 - 0.00	30/10/2024
30609337	RB04	EW	0.00 - 0.00	30/10/2024
30609408	RB05	EW	0.00 - 0.00	30/10/2024
30609433	RB06	EW	0.00 - 0.00	30/10/2024
30609376	RW01	EWAfter HT-R2	0.00 - 0.00	31/10/2024
30609363	RW01	EWBefore HT-R2	0.00 - 0.00	31/10/2024
30609354	RW02	EWBefore HT-R2	0.00 - 0.00	31/10/2024
30609398	RW02	EWAfter HT-R2	0.00 - 0.00	31/10/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	30609384	DUP-R2	EW	0.00 - 0.00	Digitube fo PFAS analysis.	SW
			30609372	ER-R2	EW	0.00 - 0.00	Digitube fo PFAS analysis.	PW
			30609387	FB-R2	EW	0.00 - 0.00	Digitube fo PFAS analysis.	SW
			30609459	HP01	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30609390	HP02	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30609450	HP03	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30609417	HP04	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
							H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
Fluoride	All	NDPs: 0 Tests: 15						
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 18						
pH Value	All	NDPs: 0 Tests: 15						
VOC MS (W)	All	NDPs: 0 Tests: 15						

30609408	RB05	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW			X			X	
30609337	RB04	EW	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW		X					
				Digitube fo PFAS analysis.	SW				X			
				500ml Plastic (ALE208)	SW			X			X	
30609442	RB03	EW	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW		X					
				Digitube fo PFAS analysis.	SW				X			
				500ml Plastic (ALE208)	SW			X			X	
30609345	RB02	EW	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW		X					
				Digitube fo PFAS analysis.	SW				X			
				500ml Plastic (ALE208)	SW			X			X	
30609467	RB01	EW	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW		X					
				Digitube fo PFAS analysis.	SW				X			
				500ml Plastic (ALE208)	SW			X			X	
30609425	HP05	EW	0.00 - 0.00	Vial (ALE297)	SW							X
				H2SO4 (ALE244)	SW		X					
				Digitube fo PFAS analysis.	SW				X			
				500ml Plastic (ALE208)	SW			X			X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	30609408	30609433	30609376	30609363	30609354
			Customer Sample Reference	RB05	RB06	RW01	RW01	RW02
			AGS Reference	EW	EW	EWAfter HT-R2	EWBefore HT-R2	EWBefore HT-R2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Container	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)
			Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15			X				X				X				X					X	
Fluoride	All	NDPs: 0 Tests: 15					X				X				X				X				
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 18	X					X				X				X				X			
pH Value	All	NDPs: 0 Tests: 15				X				X				X				X					
VOC MS (W)	All	NDPs: 0 Tests: 15			X				X				X				X						X

						30609398
					RW02	
					EWAfter HT-R2	
				0.00 - 0.00		
Vial (ALE297)	H2SO4 (ALE244)	Digitube fo PFAS analysis. 500ml Plastic (ALE208)				
SW	SW	SW				
	X					
		X				
		X				
X						

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	DUP-R2	ER-R2	FB-R2	HP01	HP02	HP03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Process Water (PR)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	30/10/2024	31/10/2024	31/10/2024	30/10/2024	31/10/2024	30/10/2024
			Sample Time	.	.	.	.	.	.
			Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
			SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
			Lab Sample No.(s)	30609384	30609372	30609387	30609459	30609390	30609450
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099					519 #	718 #	1050 #
Fluoride	<500 µg/l	TM104					<500	<500	<500
pH	<1 pH Units	TM256					7.5 #	7.58 #	6.98 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		1.46 #		<0.00065 #	0.25 #	0.541 #	16.9 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.00979 #		<0.00065 #	0.000763 #	<0.00325 #	0.0168 #
Branched PFOS	<0.00065 µg/l	TM434		0.00546 #		<0.00065 #	0.00241 #	<0.00325 #	<0.0163 #
Total PFOS	<0.00065 µg/l	TM434		0.0152 #		<0.00065 #	0.00317 #	<0.00325 #	0.0168 #
PFOA (335-67-1)	<0.00065 µg/l	TM434			<0.00065				
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434			<0.00065				
Branched PFOS	<0.00065 µg/l	TM434			<0.00065				
Total PFOS	<0.00065 µg/l	TM434			<0.00065				

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP04	HP05	RB01	RB02	RB03	RB04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	30/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024
			Sample Time	.	.	.	.	.	.
			Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
			SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
			Lab Sample No.(s)	30609417	30609425	30609467	30609345	30609442	30609337
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099		202 #	317 #	395 #	564 #	548 #	473 #
Fluoride	<500 µg/l	TM104		<500	<500	<500	<500	<500	<500
pH	<1 pH Units	TM256		7.38 #	7.51 #	7.41 #	7.5 #	7.55 #	7.53 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		1.62 #	1.23 #	0.272 #	0.348 #	0.732 #	0.968 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.0117 #	<0.00325 #	<0.00325 #	0.00189 #	<0.00325 #	0.0066 #
Branched PFOS	<0.00065 µg/l	TM434		<0.00325 #	<0.00325 #	<0.00325 #	0.00392 #	<0.00325 #	0.0037 #
Total PFOS	<0.00065 µg/l	TM434		0.0117 #	<0.00325 #	<0.00325 #	0.00581 #	<0.00325 #	0.0103 #

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB05	RB06	RW01	RW01	RW02	RW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	30/10/2024	30/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
			Sample Time	.	.	.	.	.	.
			Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
			SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
			Lab Sample No.(s)	30609408	30609433	30609376	30609363	30609354	30609398
			AGS Reference	EW	EW	EWAfter HT-R2	EWBefore HT-R2	EWBefore HT-R2	EWAfter HT-R2
Ammoniacal Nitrogen as N	<200 µg/l	TM099		395 #	415 #	<200 #	<200 #	340 #	218 #
Fluoride	<500 µg/l	TM104		<500	<500	789	767	<500	678
pH	<1 pH Units	TM256		7.56 #	7.63 #	7.73 #	7.78 #	7.59 #	7.7 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		1.08 #	0.559 #	0.00441 #	0.00837 #	0.0738 #	0.0188 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.00239 #	0.00242 #	<0.00065 #	<0.00065 #	<0.0065 #	<0.00065 #
Branched PFOS	<0.00065 µg/l	TM434		0.00253 #	0.00332 #	<0.00065 #	<0.00065 #	<0.0065 #	<0.00065 #
Total PFOS	<0.00065 µg/l	TM434		0.00491 #	0.00574 #	<0.00065 #	<0.00065 #	<0.0065 #	<0.00065 #

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.	HP01	HP02	HP03	HP04	HP05	RB01
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
Date Sampled	30/10/2024	31/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024
Sample Time	.	.	.	.	.	.
Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
Lab Sample No.(s)	30609459	30609390	30609450	30609417	30609425	30609467
AGS Reference	EW	EW	EW	EW	EW	EW

Component	LOD/Units	Method	HP01	HP02	HP03	HP04	HP05	RB01
Dibromofluoromethane**	%	TM208	105	103	104	101	106	102
Toluene-d8**	%	TM208	99.1	98.5	98.9	96	98.4	99.1
4-Bromofluorobenzene**	%	TM208	90.8	94.2	93.1	86.5	93.4	92.1
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	2.46 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	1.69 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208	<1 #	<1 #	4.7 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.	HP01	HP02	HP03	HP04	HP05	RB01
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
Date Sampled	30/10/2024	31/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024
Sample Time	.	.	.	.	.	.
Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
Lab Sample No.(s)	30609459	30609390	30609450	30609417	30609425	30609467
AGS Reference	EW	EW	EW	EW	EW	EW

Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB02	RB03	RB04	RB05	RB06	RW01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	30/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024	31/10/2024
			Sample Time	.	.	.	.	.	.
			Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
			SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
			Lab Sample No.(s)	30609345	30609442	30609337	30609408	30609433	30609376
			AGS Reference	EW	EW	EW	EW	EW	EWAfter HT-R2
Dibromofluoromethane**	%	TM208		105	105	101 3	103	101	102
Toluene-d8**	%	TM208		99.2	99.2	98.7 3	99.3	99	99
4-Bromofluorobenzene**	%	TM208		92	90.7	94.1 3	91.2	96.8	89.5
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1 3	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	15.4 #	13.2 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	1.82 #	1.05 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	4.22 3 #	75.9 #	92.7 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1 3	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 #	1.58 3 #	1.35 #	1.5 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	1.38 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	4.81 3 #	89.1 #	75.7 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB02	RB03	RB04	RB05	RB06	RW01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	30/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024	31/10/2024
			Sample Time	.	.	.	.	.	.
			Date Received	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024	02/11/2024
			SDG Ref	241102-43	241102-43	241102-43	241102-43	241102-43	241102-43
			Lab Sample No.(s)	30609345	30609442	30609337	30609408	30609433	30609376
			AGS Reference	EW	EW	EW	EW	EW	EWAfter HT-R2
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	6.63 #	10.6 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	3.39 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	10.3 #	9.04 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	1.19 3 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	1.38 #	1.46 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1 3	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 3 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1 3	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RW01	RW02	RW02			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	31/10/2024	31/10/2024	31/10/2024			
			Sample Time	.	.	.			
			Date Received	02/11/2024	02/11/2024	02/11/2024			
			SDG Ref	241102-43	241102-43	241102-43			
			Lab Sample No.(s)	30609363	30609354	30609398			
			AGS Reference	EWBefore HT-R2	EWBefore HT-R2	EWAfter HT-R2			
Dibromofluoromethane**	%	TM208		101	107	103			
Toluene-d8**	%	TM208		98.3	99.4	99.3			
4-Bromofluorobenzene**	%	TM208		89.8	90.2	90.1			
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1			
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1			
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Toluene	<1 µg/l	TM208		<1 #	<1 #	1.41 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RW01	RW02	RW02			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	31/10/2024	31/10/2024	31/10/2024			
			Sample Time	.	.	.			
			Date Received	02/11/2024	02/11/2024	02/11/2024			
			SDG Ref	241102-43	241102-43	241102-43			
			Lab Sample No.(s)	30609363	30609354	30609398			
			AGS Reference	EWBefore HT-R2	EWBefore HT-R2	EWAfter HT-R2			
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1			

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Data Amendment

Sample No. : 30609354 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RW02	Sample ID Change	RW02A	RW02

Sample No. : 30609363 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RW01	Sample ID Change	RW01A	RW01

Sample No. : 30609372 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
ER-R2	Sample ID Change	RW01A-A	ER-R2

Sample No. : 30609376 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RW01	Sample ID Change	RW01B	RW01

Sample No. : 30609384 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
DUP-R2	Sample ID Change	HP04A	DUP-R2

Sample No. : 30609387 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
FB-R2	Sample ID Change	HP01A	FB-R2

Sample No. : 30609398 **Date of Amendment :** 19/01/2025

Sample Ref.	Reason	Previous	Amended
RW02	Sample ID Change	RW02B	RW02

Table of Results - Appendix

Method No	Description
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM104	Determination of Fluoride using the Kone Analyser
TM434	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 241102-43 **Report Number:** 753170 **Superseded Report:** 748030
Client Ref.: 70100310 Thornton **Location:** Thornton

Test Completion Dates

Lab Sample No(s)	30609384	30609372	30609387	30609459	30609390	30609450	30609417	30609425	30609467	30609345
Customer Sample Ref.	DUP-R2	ER-R2	FB-R2	HP01	HP02	HP03	HP04	HP05	RB01	RB02
AGS Ref.	EW	EW	EW	EW	EW	EW	EW	EW	EW	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Process	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen				06-Nov-2024	06-Nov-2024	05-Nov-2024	06-Nov-2024	05-Nov-2024	06-Nov-2024	06-Nov-2024
Fluoride				05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024
PFAS Liquids (Full Suite)	12-Nov-2024	07-Nov-2024	07-Nov-2024	08-Nov-2024	22-Nov-2024	25-Nov-2024	25-Nov-2024	25-Nov-2024	22-Nov-2024	08-Nov-2024
pH Value				11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024
VOC MS (W)				05-Nov-2024	07-Nov-2024	07-Nov-2024	07-Nov-2024	07-Nov-2024	05-Nov-2024	05-Nov-2024

Lab Sample No(s)	30609442	30609337	30609408	30609433	30609363	30609376	30609354	30609398
Customer Sample Ref.	RB03	RB04	RB05	RB06	RW01	RW01	RW02	RW02
AGS Ref.	EW	EW	EW	EW	WBefore HT-R	EWAfter HT-R2	WBefore HT-R	EWAfter HT-R2
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	06-Nov-2024	06-Nov-2024	05-Nov-2024	06-Nov-2024	05-Nov-2024	06-Nov-2024	06-Nov-2024	06-Nov-2024
Fluoride	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024
PFAS Liquids (Full Suite)	22-Nov-2024	25-Nov-2024	25-Nov-2024	08-Nov-2024	07-Nov-2024	07-Nov-2024	22-Nov-2024	22-Nov-2024
pH Value	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024	11-Nov-2024
VOC MS (W)	05-Nov-2024	07-Nov-2024	05-Nov-2024	07-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024	05-Nov-2024

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	28 January 2025
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	241207-64
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	753983
Order Number:	70100310-313

This report has been revised and directly supersedes 750404 in its entirety.

We received 19 samples on Saturday December 07, 2024 and 19 of these samples were scheduled for analysis which was completed on Tuesday January 28, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

Lauren Ellis
General Manager Western Europe Environmental

1291

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30794271	DUP-R3	EW	0.00 - 0.00	05/12/2024
30794279	ER-R3	EW	0.00 - 0.00	04/12/2024
30794275	FB-R3	EW	0.00 - 0.00	04/12/2024
30794339	HP01	EW	0.00 - 0.00	04/12/2024
30794331	HP02	EW	0.00 - 0.00	04/12/2024
30794323	HP03	EW	0.00 - 0.00	04/12/2024
30794315	HP04	EW	0.00 - 0.00	04/12/2024
30794307	HP05	EW	0.00 - 0.00	04/12/2024
30794224	RB01	EW	0.00 - 0.00	04/12/2024
30794232	RB02	EW	0.00 - 0.00	04/12/2024
30794214	RB03	EW	0.00 - 0.00	04/12/2024
30794283	RB04	EW	0.00 - 0.00	04/12/2024
30794291	RB05	EW	0.00 - 0.00	04/12/2024
30794299	RB06	EW	0.00 - 0.00	04/12/2024
30794263	RW01	EWBefore HT-R3	0.00 - 0.00	05/12/2024
30794247	RW01	EWAfter HT-R3	0.00 - 0.00	05/12/2024
30794255	RW02	EWAfter HT-R3	0.00 - 0.00	05/12/2024
30794240	RW02	EWBefore HT-R3	0.00 - 0.00	05/12/2024
30794273	TB-R3	EW	0.00 - 0.00	04/12/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			30794271	30794279	30794275	30794339				30794331				30794323				30794315				
Customer Sample Reference			DUP-R3	ER-R3	FB-R3	HP01				HP02				HP03				HP04				
AGS Reference			EW	EW	EW	EW				EW				EW				EW				
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00				0.00 - 0.00				0.00 - 0.00				0.00 - 0.00				
Container			Digitube fo PFAS analysis.	Digitube fo PFAS analysis.	Digitube fo PFAS analysis.	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	
Sample Type			SW	PW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15						X				X					X					X	
Fluoride	All	NDPs: 0 Tests: 15				X				X				X				X					
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 19	X	X	X		X				X				X				X				
pH Value	All	NDPs: 0 Tests: 15				X				X				X				X					
VOC MS (W)	All	NDPs: 0 Tests: 15							X				X				X						X

30794291	RB05	EW	0.00 - 0.00	500ml Plastic (ALE208)	SW			x			x	
30794283	RB04	EW	0.00 - 0.00	Vial (ALE297)	SW							x
				H2SO4 (ALE244)	SW		x					
				Digitube fo PFAS analysis.	SW				x			
				500ml Plastic (ALE208)	SW			x			x	
30794214	RB03	EW	0.00 - 0.00	Vial (ALE297)	SW							x
				H2SO4 (ALE244)	SW		x					
				Digitube fo PFAS analysis.	SW				x			
				500ml Plastic (ALE208)	SW			x			x	
30794232	RB02	EW	0.00 - 0.00	Vial (ALE297)	SW							x
				H2SO4 (ALE244)	SW		x					
				Digitube fo PFAS analysis.	SW				x			
				500ml Plastic (ALE208)	SW			x			x	
30794224	RB01	EW	0.00 - 0.00	Vial (ALE297)	SW							x
				H2SO4 (ALE244)	SW		x					
				Digitube fo PFAS analysis.	SW				x			
				500ml Plastic (ALE208)	SW			x			x	
30794307	HP05	EW	0.00 - 0.00	Vial (ALE297)	SW							x
				H2SO4 (ALE244)	SW		x					
				Digitube fo PFAS analysis.	SW				x			
				500ml Plastic (ALE208)	SW			x			x	

Validated

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			30794291			30794299			30794263			30794247			30794255					
Customer Sample Reference			RB05			RB06			RW01			RW01			RW02					
AGS Reference			EW			EW			EWBefore HT-R3			EWAfter HT-R3			EWAfter HT-R3					
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00					
Container			Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)
Sample Type			SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15		X				X				X				X				X	
Fluoride	All	NDPs: 0 Tests: 15				X				X				X				X			
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 19	X				X				X				X				X		
pH Value	All	NDPs: 0 Tests: 15				X				X				X				X			
VOC MS (W)	All	NDPs: 0 Tests: 15			X				X				X				X				X

						30794273
						30794240
					TB-R3	RW02
				EW	EWBefore HT-R3	
			0.00 - 0.00	0.00 - 0.00		
1lplastic (ALE221)	Vial (ALE297)	H2SO4 (ALE244)	Digitube fo PFAS analysis. 500ml Plastic (ALE208)			
SW	SW	SW	SW			
		X				
			X			
X						
			X			
	X					

Validated

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	DUP-R3	ER-R3	FB-R3	HP01	HP02	HP03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Process Water (PR)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	05/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024
			Sample Time	.	.	.	.	.	.
			Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
			SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
			Lab Sample No.(s)	30794271	30794279	30794275	30794339	30794331	30794323
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099					411 #	506 #	1070 #
Fluoride	<500 µg/l	TM104					<500	<500	<500
pH	<1 pH Units	TM256					7.43 #	7.54 #	7.32 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.069 3♦#		<0.00065 @#	0.407 @#	0.331 @#	19.2 3@#
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.000998 3♦#		<0.00065 @#	<0.00325 @#	0.00115 @#	0.0323 @#
Branched PFOS	<0.00065 µg/l	TM434		0.00179 3♦#		<0.00065 @#	0.00425 @#	0.00265 @#	0.0274 @#
Total PFOS	<0.00065 µg/l	TM434		0.00279 3♦#		<0.00065 @#	0.00425 @#	0.0038 @#	0.0597 @#
PFOA (335-67-1)	<0.00065 µg/l	TM434			<0.00065 @				
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434			<0.00065 @				
Branched PFOS	<0.00065 µg/l	TM434			<0.00065 @				
Total PFOS	<0.00065 µg/l	TM434			<0.00065 @				

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP04	HP05	RB01	RB02	RB03	RB04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024
			Sample Time	.	.	.	.	.	.
			Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
			SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
			Lab Sample No.(s)	30794315	30794307	30794224	30794232	30794214	30794283
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099		<200 #	385 #	502 #	416 #	434 #	422 #
Fluoride	<500 µg/l	TM104		<500	<500	<500	<500	<500	<500
pH	<1 pH Units	TM256		7.35 #	7.59 #	7.42 #	7.43 #	7.61 #	7.61 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.636 @ #	1.47 @ #	0.376 @ #	0.34 @ #	0.733 @ #	0.499 @ #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.00749 @ #	0.00214 @ #	0.00229 @ #	0.00198 @ #	0.0021 @ #	0.00262 @ #
Branched PFOS	<0.00065 µg/l	TM434		0.00473 @ #	0.00346 @ #	0.00374 @ #	0.00403 @ #	0.00453 @ #	0.00401 @ #
Total PFOS	<0.00065 µg/l	TM434		0.0122 @ #	0.0056 @ #	0.00603 @ #	0.00601 @ #	0.00663 @ #	0.00663 @ #

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB05	RB06	RW01	RW01	RW02	RW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	04/12/2024	04/12/2024	05/12/2024	05/12/2024	05/12/2024	05/12/2024
			Sample Time	.	.	.	.	.	.
			Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
			SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
			Lab Sample No.(s)	30794291	30794299	30794263	30794247	30794255	30794240
			AGS Reference	EW	EW	EWBefore HT-R3	EWAfter HT-R3	EWAfter HT-R3	EWBefore HT-R3
Ammoniacal Nitrogen as N	<200 µg/l	TM099		374 #	696 #	201 #	225 #	262 #	365 #
Fluoride	<500 µg/l	TM104		<500	<500	783	814	642	<500
pH	<1 pH Units	TM256		7.61 #	7.66 #	7.87 #	7.86 #	7.72 #	7.62 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.513 @ #	0.49 @ #	0.00796 ♦ #	0.00813 ♦ #	0.0433 ♦ #	0.0775 ♦ #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.00264 @ #	0.00227 @ #	0.000825 ♦ #	0.001 ♦ #	0.00147 ♦ #	0.000948 ♦ #
Branched PFOS	<0.00065 µg/l	TM434		0.00411 @ #	0.00334 @ #	0.00104 ♦ #	0.00152 ♦ #	0.00169 ♦ #	0.00171 ♦ #
Total PFOS	<0.00065 µg/l	TM434		0.00675 @ #	0.00561 @ #	0.00187 ♦ #	0.00252 ♦ #	0.00316 ♦ #	0.00265 ♦ #

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4♦§@	Sample deviation (see appendix)

Customer Sample Ref.			TB-R3					
Depth (m)			0.00 - 0.00					
Sample Type			Surface Water (SW)					
Date Sampled			04/12/2024					
Sample Time			.					
Date Received			07/12/2024					
SDG Ref			241207-64					
Lab Sample No.(s)			30794273					
AGS Reference			EW					
Component	**LOD/Units**	**Method**						
PFOA (335-67-1)	<0.00065 µg/l	TM434	<0.00065 2 #					
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434	<0.00065 2 #					
Branched PFOS	<0.00065 µg/l	TM434	<0.00065 2 #					
Total PFOS	<0.00065 µg/l	TM434	<0.00065 2 #					

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP01	HP02	HP03	HP04	HP05	RB01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024
			Sample Time	.	.	.	.	.	.
			Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
			SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
			Lab Sample No.(s)	30794339	30794331	30794323	30794315	30794307	30794224
			AGS Reference	EW	EW	EW	EW	EW	EW
Dibromofluoromethane**	%	TM208		101	98.8	102	101	101	99.3
Toluene-d8**	%	TM208		93.5	93.5	93.2	92.7	93.4	94.2
4-Bromofluorobenzene**	%	TM208		95.4	94.9	95.2	91.3	94.1	96.1
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.08 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.	HP01	HP02	HP03	HP04	HP05	RB01
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
Date Sampled	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024
Sample Time	.	.	.	.	.	.
Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
Lab Sample No.(s)	30794339	30794331	30794323	30794315	30794307	30794224
AGS Reference	EW	EW	EW	EW	EW	EW

Component	LOD/Units	Method											
Tetrachloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Dibromochloromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,2-Dibromoethane	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Chlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	2.49	#	<1	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Ethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
m,p-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
o-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Styrene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Bromoform	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Isopropylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Bromobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Propylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
2-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
4-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
tert-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
sec-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	1.02	#	<1	#
n-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1		<1		<1		<1		<1		<1	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Hexachlorobutadiene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Naphthalene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1		<1		<1		<1		<1		<1	

CERTIFICATE OF ANALYSIS

SDG: 241207-64 Report Number: 753983 Superseded Report: 750404
Client Ref.: 70100310 Thornton Location: Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB02	RB03	RB04	RB05	RB06	RW01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024	05/12/2024
			Sample Time	.	.	.	.	.	.
			Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
			SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
			Lab Sample No.(s)	30794232	30794214	30794283	30794291	30794299	30794263
			AGS Reference	EW	EW	EW	EW	EW	EWBefore HT-R3
Dibromofluoromethane**	%	TM208		100	98.7	96.9	99.7	98.7	93.1
Toluene-d8**	%	TM208		93.2	94.1	94.2	93.4	94	94.1
4-Bromofluorobenzene**	%	TM208		96.1	95.6	95.9	94.2	96.5	93.7
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	12.8 #	13.3 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.89 #	1.9 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	5.48 #	82.4 #	95.9 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 #	1.42 #	1.54 #	2.4 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.61 #	9.57 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	4.68 #	97.1 #	90.8 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB02	RB03	RB04	RB05	RB06	RW01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	04/12/2024	04/12/2024	04/12/2024	04/12/2024	04/12/2024	05/12/2024
			Sample Time	.	.	.	.	.	.
			Date Received	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024	07/12/2024
			SDG Ref	241207-64	241207-64	241207-64	241207-64	241207-64	241207-64
			Lab Sample No.(s)	30794232	30794214	30794283	30794291	30794299	30794263
			AGS Reference	EW	EW	EW	EW	EW	EWBefore HT-R3
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	7.28 #	11.8 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	3.28 #	11 #	14.2 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	10.5 #	11 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	2.28 #	3.78 #	4.16 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	2.42 #	4.66 #	3.98 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.	RW01	RW02	RW02			
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
Date Sampled	05/12/2024	05/12/2024	05/12/2024			
Sample Time	.	.	.			
Date Received	07/12/2024	07/12/2024	07/12/2024			
SDG Ref	241207-64	241207-64	241207-64			
Lab Sample No.(s)	30794247	30794255	30794240			
AGS Reference	EWAfter HT-R3	EWAfter HT-R3	EWBefore HT-R3			

Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	94.8	96.9	98.8			
Toluene-d8**	%	TM208	93.6	93.6	93.5			
4-Bromofluorobenzene**	%	TM208	95	94.3	94.9			
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1			
Chloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Vinyl chloride	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Bromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Chloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Trichlorofluoromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Carbon disulphide	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Dichloromethane	<3 µg/l	TM208	<3 #	<3 #	<3 #			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #	<1 #	<1 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	1.74 #			
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			
Bromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Chloroform	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Carbontetrachloride	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Benzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Trichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Dibromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Bromodichloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Toluene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #			

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.			RW01	RW02	RW02			
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
Sample Type			Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
Date Sampled			05/12/2024	05/12/2024	05/12/2024			
Sample Time			.	.	.			
Date Received			07/12/2024	07/12/2024	07/12/2024			
SDG Ref			241207-64	241207-64	241207-64			
Lab Sample No.(s)			30794247	30794255	30794240			
AGS Reference			EWAfter HT-R3	EWAfter HT-R3	EWBefore HT-R3			
Component	**LOD/Units**	**Method**						
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1			

Table of Results - Appendix

Method No	Description
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM104	Determination of Fluoride using the Kone Analyser
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM434	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 241207-64 **Report Number:** 753983 **Superseded Report:** 750404
Client Ref.: 70100310 Thornton **Location:** Thornton

Test Completion Dates

Lab Sample No(s)	30794271	30794279	30794275	30794339	30794331	30794323	30794315	30794307	30794224	30794232
Customer Sample Ref.	DUP-R3	ER-R3	FB-R3	HP01	HP02	HP03	HP04	HP05	RB01	RB02
AGS Ref.	EW	EW	EW	EW	EW	EW	EW	EW	EW	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Process	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen				13-Dec-2024	13-Dec-2024	13-Dec-2024	13-Dec-2024	12-Dec-2024	12-Dec-2024	13-Dec-2024
Fluoride				12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024
PFAS Liquids (Full Suite)	22-Jan-2025	20-Jan-2025	22-Jan-2025	27-Jan-2025	20-Jan-2025	28-Jan-2025	20-Jan-2025	22-Jan-2025	22-Jan-2025	20-Jan-2025
pH Value				14-Dec-2024	12-Dec-2024	14-Dec-2024	12-Dec-2024	12-Dec-2024	14-Dec-2024	12-Dec-2024
VOC MS (W)				10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024

Lab Sample No(s)	30794214	30794283	30794291	30794299	30794247	30794263	30794240	30794255	30794273
Customer Sample Ref.	RB03	RB04	RB05	RB06	RW01	RW01	RW02	RW02	TB-R3
AGS Ref.	EW	EW	EW	EW	EWAfter HT-R3	WBefore HT-R	WBefore HT-R	EWAfter HT-R3	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	12-Dec-2024	12-Dec-2024	13-Dec-2024	13-Dec-2024	12-Dec-2024	12-Dec-2024	13-Dec-2024	13-Dec-2024	
Fluoride	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	12-Dec-2024	
PFAS Liquids (Full Suite)	22-Jan-2025	20-Jan-2025	20-Jan-2025	20-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	22-Jan-2025	23-Jan-2025
pH Value	14-Dec-2024	14-Dec-2024	14-Dec-2024	14-Dec-2024	12-Dec-2024	12-Dec-2024	14-Dec-2024	14-Dec-2024	
VOC MS (W)	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	10-Dec-2024	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised.
This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur -
e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis.
The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l.
Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only.
It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Manchester
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	12 February 2025
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	250122-41
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	756072
Order Number:	uk-70100310-313

This report has been revised and directly supersedes 755660 in its entirety.

We received 18 samples on Wednesday January 22, 2025 and 18 of these samples were scheduled for analysis which was completed on Wednesday February 12, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton
Business Unit Leader - Land

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30972029	DUP-R4	EW	0.00 - 0.00	20/01/2025
30972150	ER-R4	EW	0.00 - 0.00	20/01/2025
30972051	HP01	EW	0.00 - 0.00	20/01/2025
30972141	HP02	EW	0.00 - 0.00	20/01/2025
30972133	HP03	EW	0.00 - 0.00	20/01/2025
30972114	HP04	EW	0.00 - 0.00	20/01/2025
30972125	HP05	EW	0.00 - 0.00	20/01/2025
30972020	RB01	EW	0.00 - 0.00	20/01/2025
30972081	RB02	EW	0.00 - 0.00	20/01/2025
30972012	RB03	EW	0.00 - 0.00	20/01/2025
30972098	RB04	EW	0.00 - 0.00	20/01/2025
30972106	RB05	EW	0.00 - 0.00	20/01/2025
30972090	RB06	EW	0.00 - 0.00	20/01/2025
30972061	RW01	EWAfter HT	0.00 - 0.00	20/01/2025
30972042	RW01	EWBefore HT	0.00 - 0.00	20/01/2025
30972072	RW02	EWAfter HT	0.00 - 0.00	20/01/2025
30972033	RW02	EWBefore HT	0.00 - 0.00	20/01/2025
30972123	TB-R4	EW	0.00 - 0.00	20/01/2025

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	30972029	30972150	30972051			30972141			30972133			30972114			30972125
			Customer Sample Reference	DUP-R4	ER-R4	HP01			HP02			HP03			HP04			HP05
			AGS Reference	EW	EW	EW			EW			EW			EW			EW
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
			Container	Digitube fo PFAS analysis.	Digitube fo PFAS analysis.	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	H2SO4 (ALE244)	Vial (ALE297)	500ml Plastic (ALE208)
			Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15						X			X			X				X			
Fluoride	All	NDPs: 0 Tests: 15			X				X			X			X			X			X
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 18	X	X		X				X			X				X				
pH Value	All	NDPs: 0 Tests: 15			X				X			X			X			X			X
VOC MS (W)	All	NDPs: 0 Tests: 15						X			X			X				X			

30972106	RB05	EW	0.00 - 0.00	Digitube fo PFAS analysis.	SW						
				500ml Plastic (ALE208)	SW			X			
				Vial (ALE297)	SW				X		
30972098	RB04	EW	0.00 - 0.00	H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW					X	
				500ml Plastic (ALE208)	SW			X			
				Vial (ALE297)	SW				X		
30972012	RB03	EW	0.00 - 0.00	H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW					X	
				500ml Plastic (ALE208)	SW			X			
				Vial (ALE297)	SW				X		
30972081	RB02	EW	0.00 - 0.00	H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW					X	
				500ml Plastic (ALE208)	SW			X			
				Vial (ALE297)	SW				X		
30972020	RB01	EW	0.00 - 0.00	H2SO4 (ALE244)	SW		X				
				Digitube fo PFAS analysis.	SW					X	
				500ml Plastic (ALE208)	SW			X			
				Vial (ALE297)	SW				X		
30972125	HP05	EW	0.00 - 0.00	H2SO4 (ALE244)	SW	X					
				Digitube fo PFAS analysis.	SW					X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			30972106	RB05	EW	0.00 - 0.00	H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
							500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
			30972090	RB06	EW	0.00 - 0.00	H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
							500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
			30972061	RW01	EWAfter HT	0.00 - 0.00	H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
							500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
			30972042	RW01	EWBefore HT	0.00 - 0.00	H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
							500ml Plastic (ALE208)	SW
							Digitube fo PFAS analysis.	SW
			30972072	RW02	EWAfter HT	0.00 - 0.00	H2SO4 (ALE244)	SW
							Vial (ALE297)	SW
			30972033	RW02	EWBefore HT	0.00 - 0.00	500ml Plastic (ALE208)	SW
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X				X	
							X	
							X	
Fluoride	All	NDPs: 0 Tests: 15					X	
			X				X	
							X	
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 18		X			X	
							X	
							X	
pH Value	All	NDPs: 0 Tests: 15	X				X	
							X	
							X	
VOC MS (W)	All	NDPs: 0 Tests: 15		X		X		
							X	
							X	

30972123	TB-R4	EW	0.00 - 0.00	1Iplastic (ALE221)	SW		
30972033	RW02	EWBefore HT	0.00 - 0.00	Vial (ALE297)	SW		
				H2SO4 (ALE244)	SW	X	
				Digitube fo PFAS analysis.	SW		X
						X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	DUP-R4	ER-R4	HP01	HP02	HP03	HP04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
			Sample Time	.	.	.	.	.	.
			Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
			SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
			Lab Sample No.(s)	30972029	30972150	30972051	30972141	30972133	30972114
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099				894 #	1130 #	1380 #	1130 #
Fluoride	<500 µg/l	TM104				<500	<500	<500	<500
pH	<1 pH Units	TM256				7.44 #	7.34 #	7.08 #	7.25 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.403 #	<0.00065 #	0.385 #	1.1 #	9.18 #	1.49 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.00152 #	<0.00065 #	0.000993 #	0.00131 #	0.0311 #	0.00546 #
Branched PFOS	<0.00065 µg/l	TM434		0.00276 #	<0.00065 #	0.00185 #	0.00174 #	0.0346 #	0.00412 #
Total PFOS	<0.00065 µg/l	TM434		0.00427 #	<0.00065 #	0.00285 #	0.00305 #	0.0658 #	0.00958 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660

Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP05	RB01	RB02	RB03	RB04	RB05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
			Sample Time	.	.	.	.	.	.
			Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
			SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
			Lab Sample No.(s)	30972125	30972020	30972081	30972012	30972098	30972106
			AGS Reference	EW	EW	EW	EW	EW	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099		551 #	708 #	926 #	681 #	692 #	689 #
Fluoride	<500 µg/l	TM104		<500	<500	<500	<500	<500	<500
pH	<1 pH Units	TM256		7.64 #	7.42 #	7.54 #	7.56 #	7.45 #	7.66 #
PFOA (335-67-1)	<0.00065 µg/l	TM434		2.09 #	0.4 #	0.655 #	1.02 #	1.2 #	1.1 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.0043 #	0.0012 #	0.00107 #	0.00218 #	0.00167 #	0.0015 #
Branched PFOS	<0.00065 µg/l	TM434		0.0048 #	0.00256 #	0.00241 #	0.00313 #	0.00601 #	0.00271 #
Total PFOS	<0.00065 µg/l	TM434		0.0091 #	0.00376 #	0.00348 #	0.00531 #	0.00768 #	0.00421 #

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
***	6:2 FTAB (see appendix)
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB06	RW01	RW01	RW02	RW02	TB-R4
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
			Sample Time	.	.	.	.	.	.
			Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
			SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
			Lab Sample No.(s)	30972090	30972061	30972042	30972072	30972033	30972123
			AGS Reference	EW	EWAfter HT	EWBefore HT	EWAfter HT	EWBefore HT	EW
Ammoniacal Nitrogen as N	<200 µg/l	TM099		610 #	<200 #	255 #	341 #	428 #	
Fluoride	<500 µg/l	TM104		<500	823	807	736	573	
pH	<1 pH Units	TM256		7.67 #	7.8 #	7.8 #	7.71 #	7.75 #	
PFOA (335-67-1)	<0.00065 µg/l	TM434		1.18 #	0.00488 #	0.00663 #	0.0497 #	0.052 #	<0.00065 2 #
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		0.00182 #	<0.00065 #	<0.00065 #	0.00152 #	<0.00065 #	<0.00065 2 #
Branched PFOS	<0.00065 µg/l	TM434		0.00254 #	<0.00065 #	<0.00065 #	0.00201 #	<0.00065 #	<0.00065 2 #
Total PFOS	<0.00065 µg/l	TM434		0.00436 #	<0.00065 #	<0.00065 #	0.00353 #	<0.00065 #	<0.00065 2 #

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	HP01	HP02	HP03	HP04	HP05	RB01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
			Sample Time	.	.	.	.	.	.
			Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
			SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
			Lab Sample No.(s)	30972051	30972141	30972133	30972114	30972125	30972020
			AGS Reference	EW	EW	EW	EW	EW	EW
Dibromofluoromethane**	%	TM208		106	109	107	108	108	111
Toluene-d8**	%	TM208		97	98.5	97.4	97.2	97.9	99.6
4-Bromofluorobenzene**	%	TM208		95.3	93.9	98.3	97.3	97.2	97.8
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		1.45 #	1.59 #	<1 #	<1 #	1.22 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	5.26 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.	HP01	HP02	HP03	HP04	HP05	RB01
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
Sample Time	.	.	.	.	.	.
Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
Lab Sample No.(s)	30972051	30972141	30972133	30972114	30972125	30972020
AGS Reference	EW	EW	EW	EW	EW	EW

Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	14.9 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	3.58 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB02	RB03	RB04	RB05	RB06	RW01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
			Sample Time	.	.	.	.	.	.
			Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
			SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
			Lab Sample No.(s)	30972081	30972012	30972098	30972106	30972090	30972061
			AGS Reference	EW	EW	EW	EW	EW	EWAfter HT
Dibromofluoromethane**	%	TM208		107	110	108	106	105	105
Toluene-d8**	%	TM208		98.4	97.8	97.8	98.9	98.4	98.8
4-Bromofluorobenzene**	%	TM208		98.1	98.1	95.7	96.6	97.1	95.3
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	3.94 #	45.1 #	33 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.28 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	5.58 #	3.79 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	13.9 #	285 #	239 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 #	3.7 #	3.64 #	4.57 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	2.93 #	2.38 #	1.32 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	1.33 #	3.71 #	24.1 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	15.1 #	314 #	207 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	1.68 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	2.48 #	1.79 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RB02	RB03	RB04	RB05	RB06	RW01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
			Sample Time	.	.	.	.	.	.
			Date Received	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025	22/01/2025
			SDG Ref	250122-41	250122-41	250122-41	250122-41	250122-41	250122-41
			Lab Sample No.(s)	30972081	30972012	30972098	30972106	30972090	30972061
			AGS Reference	EW	EW	EW	EW	EW	EWAfter HT
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	20.4 #	25 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	13.7 #	36.1 #	63.8 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	42.7 #	27 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	1.8 #	6.88 #	9.87 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	2.06 #	7.59 #	5.83 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RW01	RW02	RW02			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	20/01/2025	20/01/2025	20/01/2025			
			Sample Time	.	.	.			
			Date Received	22/01/2025	22/01/2025	22/01/2025			
			SDG Ref	250122-41	250122-41	250122-41			
			Lab Sample No.(s)	30972042	30972072	30972033			
			AGS Reference	EWBefore HT	EWAfter HT	EWBefore HT			
Dibromofluoromethane**	%	TM208		108	105	105			
Toluene-d8**	%	TM208		100	99.2	98.2			
4-Bromofluorobenzene**	%	TM208		99.3	97.4	97.2			
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1			
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1			
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RW01	RW02	RW02			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	20/01/2025	20/01/2025	20/01/2025			
			Sample Time	.	.	.			
			Date Received	22/01/2025	22/01/2025	22/01/2025			
			SDG Ref	250122-41	250122-41	250122-41			
			Lab Sample No.(s)	30972042	30972072	30972033			
			AGS Reference	EWBefore HT	EWAfter HT	EWBefore HT			
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1			

Table of Results - Appendix

Method No	Description
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM104	Determination of Fluoride using the Kone Analyser
TM434	Analysis of PFAS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 250122-41 **Report Number:** 756072 **Superseded Report:** 755660
Client Ref.: 70100310 Thornton **Location:** Thornton

Test Completion Dates

Lab Sample No(s)	30972029	30972150	30972051	30972141	30972133	30972114	30972125	30972020	30972081	30972012
Customer Sample Ref.	DUP-R4	ER-R4	HP01	HP02	HP03	HP04	HP05	RB01	RB02	RB03
AGS Ref.	EW	EW	EW	EW	EW	EW	EW	EW	EW	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen			27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
Fluoride			27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025
PFAS Liquids (Full Suite)	07-Feb-2025	06-Feb-2025	05-Feb-2025	07-Feb-2025	12-Feb-2025	07-Feb-2025	07-Feb-2025	07-Feb-2025	07-Feb-2025	05-Feb-2025
pH Value			28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025
VOC MS (W)			23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025

Lab Sample No(s)	30972098	30972106	30972090	30972042	30972061	30972033	30972072	30972123
Customer Sample Ref.	RB04	RB05	RB06	RW01	RW01	RW02	RW02	TB-R4
AGS Ref.	EW	EW	EW	EWBefore HT	EWAfter HT	EWBefore HT	EWAfter HT	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	
Fluoride	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	27-Jan-2025	
PFAS Liquids (Full Suite)	07-Feb-2025	07-Feb-2025	07-Feb-2025	07-Feb-2025	07-Feb-2025	05-Feb-2025	07-Feb-2025	05-Feb-2025
pH Value	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	28-Jan-2025	
VOC MS (W)	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	23-Jan-2025	

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised.
This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur -
e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis.
The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l.
Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only.
It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two ‘pinch’ samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term ‘trace asbestos identified’ is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.
The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

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