Environment Agency

SITE AT THORNTON-CLEVELEYS

Factual Report from Preliminary Phase of Offsite Soils Investigation

12232(2)
DECEMBER 2024

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REVISION 2

PROJECT NO. 70100310

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DATE: DECEMBER 2024

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Factual Report from Preliminary Phase of Offsite Soils Investigation

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1. INTRODUCTION

1.1. TERMS OF REFERENCE

WSP UK Ltd (WSP) was instructed by the Environment Agency (EA, 'the Client') to undertake an offsite Preliminary Soils Investigation in Thornton-Cleveleys. The purpose of the investigation was to determine if legacy aerial emissions of PFOA associated with historical activities undertaken at the AGC Chemicals Europe (AGCCE) Thornton-Cleveleys site (also known as the 'Thornton facility') are present in shallow soils in land surrounding the site. Works were undertaken under the HSE, 2015. Construction (Design & Management) Regulations (CDM) [5] where WSP were Principal Contractor and Designer.

This report sets out a factual account of the works undertaken between September and October 2024. A Sampling Plan is included as Figures 1A and 1B in Appendix A.

1.2. PROJECT CONTEXT

The investigation presented herein forms part of a wider Part 2A inspection focused on the Thornton 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) [6] and to be compliant with investigation requirements under Part 2A of the Environmental Protection Act, 1990 [7].

In accordance with previous findings, including reference to an independent air dispersion modelling assessment undertaken by the EA Air Quality Modelling & Assessment Unit (AQMAU) in August 2023 [2], the contaminant linkage identified as a priority for further consideration was the potential risk to human health from legacy deposition of PFOA in shallow soils, which forms the basis of this Preliminary Soils Investigation.

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

1.3. REMIT

The remit for the offsite Preliminary Soils Investigation was to investigate the presence of PFOA in shallow soils radial to the facility as an 'escaped substance' attributed to legacy aerial emissions.

The focus was to target areas of council owned land within an approximate radius of 5km to provide an initial indication of PFOA concentrations in soil and their distribution. The findings will be used to inform whether a more targeted and detailed sampling exercise is warranted.

It is recognised that the investigation into offsite impacts and their significance in the context of Part 2A may require a phased / iterative process and the preliminary works described herein represent the first phase of offsite sampling.

1.4. SCOPE OF WORK

The scope of works for the offsite Preliminary Soils Investigation comprised the following:

- Identification of appropriate council owned land parcels (provided by Wyre Council and Lancashire County Council) for initial shallow soil sampling locations.
- Site reconnaissance of identified council owned land to identify any health and safety constraints ahead of sampling, in addition to inspection of existing surface water features to identify suitable and safely accessible surface water sampling locations.
- Review of historical maps, utility plans and unexploded ordnance (UXO) data for each identified land parcel.
- Preparation of a Construction Phase Plan (CPP) to include risk assessments and method statements for the proposed works, in accordance with the CDM Regulations, 2015.
- Service identification and service clearance by a specialist third party contractor at all proposed intrusive locations and provision of surveying coordinates of all exploratory hole locations.
- Excavation of 79 hand dug pits by a specialist contractor to a depth of up to 0.6m below ground level (m bgl) positioned on either a 40m grid (i.e. for land parcels within 500m of the facility) or minimum of 3 locations per land parcel to provide reasonable coverage. Sampling of up to three samples per location to target the shallow vertical profile.
- Analysis of up to 200 samples of the recovered soil for a specified suite of contaminants comprising PFAS Broad Suite (ALS laboratory method TM440, which includes PFOA, PFOS, PFNA and PFHxS at a limit of detection / method detection limit (LOD/MDL) of 0.5µg/kg), in addition to soil organic matter (SOM) and pH.
- Collection and analysis of quality assurance / quality control (QA/QC) samples in the form of equipment rinsates, analysed for PFAS Broad Suite (ALS method TM434).
- Factual reporting.

1.5. LEGISLATIVE CONTEXT AND GUIDANCE

The investigation was undertaken in general accordance with the following standards and guidance documents:

- BS 5930:2015 +A1:2020 Code of Practice for Ground Investigation [3].
- BS 10175:2011+A2:2017, Investigation of Potentially Contaminated Sites, Code of Practice [4].
- HSE, 2015. Construction (Design and Management) Regulations[5].
- EA, 2020. Land Contamination Risk Management (LCRM) [6].
- Part 2A of the Environmental Protection Act, 1990 [7].
- Defra, 2012. Contaminated Land Statutory Guidance [8].

1.6. LIMITATIONS

The report is addressed to and may be relied upon by the EA, as “the Client” within the meaning given to that phrase within the agreement and subject to the terms and conditions contained therein.

This report has been completed with regard to generally accepted consulting practices and may not be relied upon by any other party without the explicit written agreement of WSP. No other third-party

warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.

Unless WSP has actual knowledge to the contrary, WSP has assumed the correctness and completeness of third-party information supplied and shall have no liability in respect of any inaccuracy, defect or omission in any information or materials provided, anecdotally or otherwise, by the Client or any other third party to WSP. WSP does not assume any liability for misrepresentation of information or for items not visible, accessible, present or supplied at the time of the study.

WSP's General Limitations are included in Appendix B.

2. SITE SETTING

A summary of the regional setting associated with the sampling areas (or 'land parcels') is provided in Table 2-1 below.

Table 2-1 – Site Setting

Details		Description
Site details		The 'site' for the purposes of the Preliminary Soils Investigation is defined as the various council owned land parcels within a 5km radius of the Thornton Facility, Thornton-Cleveleys, FY5 4QD.
Topography		The topography in the area is relatively flat typically between 4 – 6m above ordnance datum (m AOD).
History		Variable depending on the land parcel being sampled. A summary of the site history for each land parcel is contained within Appendix C.
Environmental Setting	Published Geology	Published geological mapping indicates the regional geology comprises superficial deposits of post glacial Tidal Flat Deposits (TFD) (previously classed as Estuarine Alluvium) overlying glacial Till, or 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. Along the coastline to the north and west, Blown Sand is present. The underlying solid geology is the Kirkham Mudstone (part of the Mercia Mudstone Group) underlain by the Sherwood Sandstone Group. The Preesall Halite Member is indicated to be present approximately 500m northeast of the Thornton Facility which is described as halite (rock salt) with thin partings of reddish brown and dark greenish grey mudstone with breccias formed by dissolution common at shallow depth.
	Aquifer classification	The TFD are classified as Unproductive, which are described as deposits with low permeability that have negligible significance for water supply or river base flow. Mapping indicates the Till is classified as a Secondary Undifferentiated aquifer due to the variable characteristics. The Blown Sand is classified as a Secondary A, described as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. The bedrock is classified as a Secondary B aquifer which is classed as lower permeability layers which may store / yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.
	Hydrology	There are a number of surface water features in the vicinity of the installation notably the River Wyre 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 subsequently discharging into the River Wyre, which is a highly protected ecological receptor, including a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).
Flooding		The risk of flooding from rivers and sea in the regional area is considered to be low with the majority of the area located within Flood Zone 3 (1 in 100 (1%) chance of flooding). A high chance of flooding is present on land directly adjacent to the River Wyre to the east and the Irish Sea to the west (greater than or equal to 1 in 30 year chance).

3. RATIONALE FOR INVESTIGATION

3.1. SOIL SAMPLING AREAS AND LOCATION RATIONALE

As mentioned, the remit of the offsite Preliminary Soils Investigation was to obtain an initial indication of PFOA concentrations in soil and their distribution attributed to legacy air emissions from the facility. The criteria used for the selection of sites for the Preliminary Soils Investigation included the following:

- Use of accessible land –Wyre Council and Lancashire County Council owned land was used to facilitate collecting initial soil samples as soon as practically possible.
- Sampling of surrounding area– Targeting areas within a 500m radius of the facility and/or orientated with the predominant wind direction where aerial deposition of PFOA was considered more likely.
- Confirmatory sampling – Sampling of areas up to 5km radius to give an early indication of wider spatial extent.

In accordance with the strategy, both Wyre Council and Lancashire County Council provided plans detailing council owned land within 5km radius of the facility, representing 32 potential land parcels (LP) available for soil sampling, subject to access agreement. The land parcels comprised a mixture of public open space, parks, and more sensitive site uses including an allotment and school playing fields. It should be noted that due to the potential for widespread aerial dispersion and deposition, establishing representative 'baseline' concentrations is not straightforward and is likely to require more detailed investigations.

Following a WSP site reconnaissance visit on 26 July 2024, a number of land parcels were discounted as potential sampling locations either on health and safety grounds (i.e. due to being too close to live main roadways), due to land access constraints (i.e. heavily vegetated steep embankments) or due to their proximity to other plots.

Based on the WSP review and site reconnaissance, 22 parcels of land were selected as suitable soil sample areas for the Preliminary Soils Investigation phase. A plan detailing these land parcels is presented as Figures 1 A and 1B and summarised in Table 3-1 below.

Table 3-1 – Offsite Preliminary Soils Investigation – Land Parcels and Sample Distribution

Land Parcel (LP)	Location with respect to the facility	Land Parcel	Land Type	Rationale	Sample Distribution (lateral and vertical)
LP01	<100m	Occupation Road Allotments	Allotments	Greater likelihood of aerial deposition based on AQMAU modelling. Sensitive land use	40m grid or minimum of 3 sample locations per land parcel. 3 samples per location from surface to 600mm below ground level (bgl)
LP02	<500m	Heys Street	Public open space - Residential	Greater likelihood of aerial deposition based on AQMAU modelling	
LP04		Red Marsh Drive	Public open space - Commercial	Greater likelihood of aerial deposition based on AQMAU modelling	

Land Parcel (LP)	Location with respect to the facility	Land Parcel	Land Type	Rationale	Sample Distribution (lateral and vertical)
LP05		Croft Court	Public open space - Commercial	Greater likelihood of aerial deposition based on AQMAU modelling	
LP06		Butts Close	Public open space - Commercial	Greater likelihood of aerial deposition based on AQMAU modelling	
LP08		Hargreaves Street	Public open space - Residential	Greater likelihood of aerial deposition based on AQMAU modelling	
LP10		Thornton Primary School	School	Greater likelihood of aerial deposition based on AQMAU modelling. Sensitive land use	
LP11		Great Arley / Red Marsh School	School	Greater likelihood of aerial deposition based on AQMAU modelling. Sensitive land use	
LP14		Stanah Road	Public open space - Residential	Lower likelihood of aerial deposition based on AQMAU modelling. To give an indication of spatial extent within the south	
LP15		Butts Road Playground	Playground	Sensitive land use close to likely areas of modelled deposition	
LP17		Thornton Cleveleys Bains Endowed School	School	To give an indication of spatial extent.	
LP18		Stanah Primary School	School	To give an additional indication of spatial extent within the south	
LP19	<2500m	River Road Car Park	Public open space -	To give an indication of spatial extent within the east.	3 sample locations per land parcel. 3 samples per location from surface to max 600mm bgl
LP20		Northfold Community School	School	To give an indication of spatial extent	
LP21		Royles Brook School	School	To give an indication of spatial extent within the west. Sensitive land use.	
LP22		Thornton House	Residential Care Home	To give an indication of spatial extent	
LP23		Bourne Way	Waste Facility	To give an indication of spatial extent	
LP26		Millfield College	School	To give an indication of spatial extent	
LP29	<5000m	Jubilee Gardens	Public open space	To give an indication of spatial extent (upwind at distance)	
LP30		King Georges Playing Fields	Public open space	To give an indication of spatial extent (upwind at distance)	
LP31		Memorial Park	Public open space	To give an indication of spatial extent (upwind at distance)	
LP32		The Mount Gardens	Public open space	To give an indication of spatial extent (upwind at distance)	

3.1.1. Desk Based Review

For each of the identified land parcels within Table 3-1, a specific Groundsure report was obtained and a review of the historical land use / site activity was undertaken. Information on the likely tillage, soil turnover / disturbance and/or earthworks over the past circa. 50-60 years which could affect

sample results and determine whether other PFAS sources may have been present in the area was recorded. The results of the land parcel desk based review is presented in Appendix C.

4. OFFSITE GROUND INVESTIGATION

4.1. FIELDWORKS

The shallow soil sampling works were undertaken between 09 September and 04 October 2024 supervised by two WSP engineers on a full-time basis. The land parcels subject to soil sampling are shown in Figures 1 A and 1B in Appendix A.

Due to the extremely low method detection limits associated with PFAS analysis (e.g. part per trillion for waters) and the many potential sources of PFAS contamination, field personnel followed specific PFAS sampling QA/QC protocols and standard operating procedures (SOP) to ensure the quality of analysis results. Specific method statements were devised and incorporated into the design of the investigation. Full copies of the SOP and Method statements for reference are presented in Appendix D.

A summary of the PFAS specific quality assurance actions taken on-site is provided within Section 4.8.

4.2. COMPLETED SCOPE OF FIELDWORK

The programme of completed fieldwork activities are summarised in Table 4-1 below.

Table 4-1 – Programme of Completed Works

Date	Programme of Completed Works
15 – 19 July 24	Desk based assessment of proposed land parcels
26 July 24	Site reconnaissance of accessibility of land parcels and sampling locations
05 Aug – 04 Sept 24	Preparation, submission and authorisation of health and safety documentation (CDM compliant).
09 Sept 24	Inductions, utility avoidance and mobilisation of hand pitting crew
09 – 13 Sept 24	Hand pitting and sampling of LP01*, LP02, LP08 and LP11
16 Sept 24	Utility avoidance
16 – 18 Sept 24	Hand pitting and sampling of LP04, LP05, LP06, LP10, LP19, LP15, LP19
23 Sept 24	Utility avoidance, hand pitting and sampling of LP21,
24 – 27 Sept 24	Hand pitting and sampling of LP14, LP17, LP18, LP22, LP29, LP30, LP31, LP32
30 Sept 24	Utility avoidance
01 Oct 24	Hand pitting and sampling of LP23, LP20 and LP26

** LP = Land Parcel. Numbering as per Table 3-1*

The following deviations / restrictions from the original planned scope of works are noted:

- The proposed sampling depth profile within each sampling location was updated to ensure the full shallow depth profile was targeted to reduce potential data gaps and uncertainty. More detail is provided in Section 4.4.

- Various sampling points were re-positioned onsite to account for site constraints including the potential presence of previously unidentified underground utilities.

4.3. SAMPLING POINTS WITHIN EACH LAND PARCEL

In accordance with the strategy, a minimum of three individual sample points were progressed within each land parcel, as detailed within Table 3-1. Most soil sampling points were positioned in areas of landscaping (e.g. within grassed open space, school playing fields, or parks) with one location representing cultivated soils used for growing (i.e. from the allotments). As detailed within Table 3-1, for land parcels located within 500m of the facility, the sample locations were positioned on a systematic (regular) grid pattern undertaken on a general 40m spacing. For land parcels beyond the 500m radius, 3 sample locations per land parcel were positioned to provide reasonable coverage. In total, 79 sample points were advanced within the 22 selected land parcels.

The national grid coordinates for each proposed sampling point were given to the specialist surveyor (Midland Survey) who marked and cleared each location (using a cable avoidance tools (CAT) and ground penetrating radar (GPR)). The sampling locations were then re-surveyed via GPS to account for any repositioning (coordinates and elevations X, Y, Z) which are presented on the logs (presented in Appendix E) . Plans showing the sampling point within each land parcel are presented as Figures 2 A-O) within Appendix A.

4.4. SAMPLE DEPTH

Following further internal and external discussions in relation to the sample depths collected at each sampling point, the proposed sampling depth profile was updated from what was specified within the strategy. The proposed sample depths were updated to ensure the shallow profile (0.6m bgl) was targeted whilst continuing to align with the exposure assumptions for different land uses. In summary, at each identified sampling point, the collection of three shallow, hand dug soil samples was undertaken, comprising:

- Near-surface soil (0.0- 0.1m) (one sample collected per sampling point) representing shallow ground sampling and considered appropriate for sampling soil where exposure is dominated by soil and dust ingestion and dermal contact (i.e. users in public open space) and;
- Deeper soils (0.1 – 0.6m) (two samples collected per sampling point) representing the full depth profile to reduce uncertainty in the data set and considered appropriate for sampling soil where there is increased use / soil turnover (e.g. allotments and school playing fields).

In total, approximately 246 soil samples were collected; although, not all samples collected were scheduled for analysis. More detail on the analysis undertaken is presented in Section 4.9.

4.5. SAMPLE IDENTIFICATION

For sample identification purposes, each sample was prefixed ‘LP’ (land parcel) with the unique land parcel number then attached to the sample ID (i.e. ‘LP01’ representing Land Parcel 01, Occupation Road Allotments). Each ID was then provided with a corresponding ‘SP’ (sample point) location corresponding to its position within the land parcel and a depth profile of where the sample was taken from (e.g. 0.3 – 0.4).

The sample identification details are summarised in Table 4-2 below. The location of the sampling points within each land parcel are shown in Figures 2 A-O in Appendix A.

Table 4-2 – Sample Locations

Land Parcel (LP)	Location with respect to the facility	Land Parcel Name	Number of Sampling Points	Sampling Point (SP)	Depth (m bgl)	Unique Sampling Code	Sample Plan Figure Number (Appendix A)
LP01	<100m	Occupation Road Allotments	3	SP01	0.0 - 0.1	LP01/SP1/0.0-0.1	Figure 2A
					0.2 - 0.3	LP01/SP1/0.2-0.3	
					0.4 - 0.5	LP01/SP1/0.4-0.5	
				SP02	0.0 – 0.1	LP01/SP2/0.0-0.1	
					0.3 – 0.4	LP01/SP2/0.3-0.4	
					0.5 – 0.6	LP01/SP2/0.5-0.6	
				SP03	0.0 – 0.1	LP01/SP3/0.0-0.1	
					0.1 – 0.2	LP01/SP3/0.1-0.2	
					0.4 – 0.5	LP01/SP3/0.4-0.5	
LP02	<500m	Heys Street	4	SP01	0.0 - 0.1	LP02/SP1/0.0-0.1	Figure 2A
					0.2 - 0.3	LP02/SP1/0.2-0.3	
					0.4 - 0.5	LP02/SP1/0.4-0.5	
				SP02	0.0 – 0.1	LP02/SP2/0.0-0.1	
					0.3 – 0.4	LP02/SP2/0.3-0.4	
					0.5 – 0.6	LP02/SP2/0.5-0.6	
				SP03	0.0 – 0.1	LP02/SP3/0.0-0.1	
					0.1 – 0.2	LP02/SP3/0.1-0.2	
					0.4 – 0.5	LP02/SP3/0.4-0.5	
				SP04	0.0 – 0.1	LP02/SP4/0.0-0.1	
					0.2 – 0.3	LP02/SP4/0.2-0.3	
					0.4 – 0.5	LP02/SP4/0.4-0.5	
LP04		Red Marsh Drive	3	SP01	0.0 – 0.1	LP04/SP1/0.0-0.1	Figure 2B
					0.3 – 0.4	LP04/SP1/0.3-0.4	
					0.5 – 0.6	LP04/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP04/SP2/0.0-0.1	
					0.1 – 0.2	LP04/SP2/0.1-0.2	
					0.4 – 0.5	LP04/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP04/SP3/0.0-0.1	
					0.2 - 0.3	LP04/SP3/0.2-0.3	
					0.4 - 0.5	LP04/SP3/0.4-0.5	
LP05		Croft Court	3	SP01	0.0 – 0.1	LP05/SP1/0.0-0.1	Figure 2B
					0.3 – 0.4	LP05/SP1/0.3-0.4	
					0.5 – 0.6	LP05/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP05/SP2/0.0-0.1	
					0.1 – 0.2	LP05/SP2/0.1-0.2	
					0.4 – 0.5	LP05/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP05/SP3/0.0-0.1	
					0.2 - 0.3	LP05/SP3/0.2-0.3	
					0.4 - 0.5	LP05/SP3/0.4-0.5	
LP06		Butts Close	3	SP01	0.0 – 0.1	LP06/SP1/0.0-0.1	Figure 2B
					0.3 – 0.4	LP06/SP1/0.3-0.4	
					0.5 – 0.6	LP06/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP06/SP2/0.0-0.1	
					0.1 – 0.2	LP06/SP2/0.1-0.2	
					0.4 – 0.5	LP06/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP06/SP3/0.0-0.1	
					0.2 - 0.3	LP06/SP3/0.2-0.3	
					0.4 - 0.5	LP06/SP3/0.4-0.5	
LP08		Hargreaves Street	6	SP01	0.0 – 0.1	LP08/SP1/0.0-0.1	Figure 2A
					0.3 – 0.4	LP08/SP1/0.3-0.4	
					0.5 – 0.6	LP08/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP08/SP2/0.0-0.1	
					0.1 – 0.2	LP08/SP2/0.1-0.2	
					0.4 – 0.5	LP08/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP08/SP3/0.0-0.1	
					0.2 - 0.3	LP08/SP3/0.2-0.3	
					0.4 - 0.5	LP08/SP3/0.4-0.5	
				SP04	0.0 – 0.1	LP08/SP4/0.0-0.1	
					0.3 – 0.4	LP08/SP4/0.3-0.4	
					0.5 – 0.6	LP08/SP4/0.5-0.6	
				SP05	0.0 – 0.1	LP08/SP5/0.0-0.1	

Land Parcel (LP)	Location with respect to the facility	Land Parcel Name	Number of Sampling Points	Sampling Point (SP)	Depth (m bgl)	Unique Sampling Code	Sample Plan Figure Number (Appendix A)
					0.1 – 0.2	LP08/SP5/0.1-0.2	
					0.4 – 0.5	LP08/SP5/0.4-0.5	
				SP06	0.0 - 0.1	LP08/SP6/0.0-0.1	
					0.2 - 0.3	LP08/SP6/0.2-0.3	
					0.4 - 0.5	LP08/SP6/0.4-0.5	
LP10		Thornton Primary School	5	SP01	0.0 – 0.1	LP10/SP1/0.0-0.1	Figure 2B
					0.3 – 0.4	LP10/SP1/0.3-0.4	
					0.5 – 0.6	LP10/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP10/SP2/0.0-0.1	
					0.1 – 0.2	LP10/SP2/0.1-0.2	
					0.4 – 0.5	LP10/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP10/SP3/0.0-0.1	
					0.2 - 0.3	LP10/SP3/0.2-0.3	
					0.4 - 0.5	LP10/SP3/0.4-0.5	
				SP04	0.0 – 0.1	LP10/SP4/0.0-0.1	
					0.3 – 0.4	LP10/SP4/0.3-0.4	
					0.5 – 0.6	LP10/SP4/0.5-0.6	
				SP05	0.0 – 0.1	LP10/SP5/0.0-0.1	
					0.1 – 0.2	LP10/SP5/0.1-0.2	
					0.4 – 0.5	LP10/SP5/0.4-0.5	
LP11		Great Arley School / Red Marsh School	10	SP01	0.0 - 0.1	LP11/SP13/0.0-0.1	Figure 2A
					0.2 - 0.3	LP11/SP1/0.2-0.3	
					0.4 - 0.5	LP11/SP1/0.4-0.5	
				SP02	0.0 – 0.1	LP11/SP2/0.0-0.1	
					0.3 – 0.4	LP11/SP2/0.3-0.4	
					0.5 – 0.6	LP11/SP2/0.5-0.6	
				SP03	0.0 – 0.1	LP11/SP3/0.0-0.1	
					0.1 – 0.2	LP11/SP3/0.1-0.2	
					0.4 – 0.5	LP11/SP3/0.4-0.5	
				SP04	0.0 - 0.1	LP11/SP4/0.0-0.1	
					0.2 - 0.3	LP11/SP4/0.2-0.3	
					0.4 - 0.5	LP11/SP4/0.4-0.5	
				SP05	0.0 – 0.1	LP11/SP5/0.0-0.1	
					0.3 – 0.4	LP11/SP5/0.3-0.4	
					0.5 – 0.6	LP11/SP5/0.5-0.6	
				SP06	0.0 – 0.1	LP11/SP6/0.0-0.1	
					0.1 – 0.2	LP11/SP6/0.1-0.2	
					0.4 – 0.5	LP11/SP6/0.4-0.5	
				SP07	0.0 - 0.1	LP11/SP7/0.0-0.1	
					0.2 - 0.3	LP11/SP7/0.2-0.3	
					0.4 - 0.5	LP11/SP7/0.4-0.5	
				SP08	0.0 – 0.1	LP11/SP8/0.0-0.1	
					0.3 – 0.4	LP11/SP8/0.3-0.4	
					0.5 – 0.6	LP11/SP8/0.5-0.6	
				SP09	0.0 – 0.1	LP11/SP9/0.0-0.1	
					0.1 – 0.2	LP11/SP9/0.1-0.2	
					0.4 – 0.5	LP11/SP9/0.4-0.5	
				SP10	0.0 - 0.1	LP11/SP10/0.0-0.1	
					0.2 - 0.3	LP11/SP10/0.2-0.3	
					0.4 - 0.5	LP11/SP10/0.4-0.5	
LP14	<2500m	Stanah Road	3	SP01	0.0 – 0.1	LP14/SP1/0.0-0.1	Figure 2D
					0.3 – 0.4	LP14/SP1/0.3-0.4	
					0.5 – 0.6	LP14/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP14/SP2/0.0-0.1	
					0.1 – 0.2	LP14/SP2/0.1-0.2	
					0.4 – 0.5	LP14/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP14/SP3/0.0-0.1	
					0.2 - 0.3	LP14/SP3/0.2-0.3	
					0.4 - 0.5	LP14/SP3/0.4-0.5	
LP15		Butts Road Playground	3	SP01	0.0 – 0.1	LP15/SP1/0.0-0.1	Figure 2C
					0.3 – 0.4	LP15/SP1/0.3-0.4	
					0.5 – 0.6	LP15/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP15/SP2/0.0-0.1	

Land Parcel (LP)	Location with respect to the facility	Land Parcel Name	Number of Sampling Points	Sampling Point (SP)	Depth (m bgl)	Unique Sampling Code	Sample Plan Figure Number (Appendix A)
					0.1 – 0.2	LP15/SP2/0.1-0.2	
					0.4 – 0.5	LP15/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP15/SP3/0.0-0.1	
					0.2 - 0.3	LP15/SP3/0.2-0.3	
					0.4 - 0.5	LP15/SP3/0.4-0.5	
LP17		Thornton Cleveleys Bains Endowed School	3	SP01	0.0 – 0.1	LP17/SP1/0.0-0.1	Figure 2E
					0.3 – 0.4	LP17/SP1/0.3-0.4	
					0.5 – 0.6	LP17/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP17/SP2/0.0-0.1	
					0.1 – 0.2	LP17/SP2/0.1-0.2	
					0.4 – 0.5	LP17/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP17/SP3/0.0-0.1	
					0.2 - 0.3	LP17/SP3/0.2-0.3	
					0.4 - 0.5	LP17/SP3/0.4-0.5	
LP18		Stanah Primary School	3	SP01	0.0 – 0.1	LP18/SP1/0.0-0.1	Figure 2D
					0.3 – 0.4	LP18/SP1/0.3-0.4	
					0.5 – 0.6	LP18/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP18/SP2/0.0-0.1	
					0.1 – 0.2	LP18/SP2/0.1-0.2	
					0.4 – 0.5	LP18/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP18/SP3/0.0-0.1	
					0.2 - 0.3	LP18/SP3/0.2-0.3	
					0.4 - 0.5	LP18/SP3/0.4-0.5	
LP19		River Road Car Park	3	SP01	0.0 – 0.1	LP19/SP1/0.0-0.1	Figure 2J
					0.3 – 0.4	LP19/SP1/0.3-0.4	
					0.5 – 0.6	LP19/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP19/SP2/0.0-0.1	
					0.1 – 0.2	LP19/SP2/0.1-0.2	
					0.4 – 0.5	LP19/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP19/SP3/0.0-0.1	
					0.2 - 0.3	LP19/SP3/0.2-0.3	
					0.4 - 0.5	LP19/SP3/0.4-0.5	
LP20		Northfold School	3	SP01	0.0 – 0.1	LP20/SP1/0.0-0.1	Figure 2F
					0.3 – 0.4	LP20/SP1/0.3-0.4	
					0.5 – 0.6	LP20/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP20/SP2/0.0-0.1	
					0.1 – 0.2	LP20/SP2/0.1-0.2	
					0.4 – 0.5	LP20/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP20/SP3/0.0-0.1	
					0.2 - 0.3	LP20/SP3/0.2-0.3	
					0.4 - 0.5	LP20/SP3/0.4-0.5	
LP21		Royles Brook School	3	SP01	0.0 – 0.1	LP21/SP1/0.0-0.1	Figure 2G
					0.3 – 0.4	LP21/SP1/0.3-0.4	
					0.5 – 0.6	LP21/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP21/SP2/0.0-0.1	
					0.1 – 0.2	LP21/SP2/0.1-0.2	
					0.4 – 0.5	LP21/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP21/SP3/0.0-0.1	
					0.2 - 0.3	LP21/SP3/0.2-0.3	
					0.4 - 0.5	LP21/SP3/0.4-0.5	
LP22		Thornton House	3	SP01	0.0 – 0.1	LP22/SP1/0.0-0.1	Figure 2H
					0.3 – 0.4	LP22/SP1/0.3-0.4	
					0.5 – 0.6	LP22/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP22/SP2/0.0-0.1	
					0.1 – 0.2	LP22/SP2/0.1-0.2	
					0.4 – 0.5	LP22/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP22/SP3/0.0-0.1	
					0.2 - 0.3	LP22/SP3/0.2-0.3	
					0.4 - 0.5	LP22/SP3/0.4-0.5	
LP23		Bourne Way	3	SP01	0.0 – 0.1	LP23/SP1/0.0-0.1	Figure 2I
					0.3 – 0.4	LP23/SP1/0.3-0.4	
					0.5 – 0.6	LP23/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP23/SP2/0.0-0.1	

Land Parcel (LP)	Location with respect to the facility	Land Parcel Name	Number of Sampling Points	Sampling Point (SP)	Depth (m bgl)	Unique Sampling Code	Sample Plan Figure Number (Appendix A)
					0.1 – 0.2	LP23/SP2/0.1-0.2	
					0.4 – 0.5	LP23/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP23/SP3/0.0-0.1	
					0.2 - 0.3	LP23/SP3/0.2-0.3	
					0.4 - 0.5	LP23/SP3/0.4-0.5	
LP26		Mirefield College	3	SP01	0.0 – 0.1	LP26/SP1/0.0-0.1	Figure 2K
					0.3 – 0.4	LP26/SP1/0.3-0.4	
					0.5 – 0.6	LP26/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP26/SP2/0.0-0.1	
					0.1 – 0.2	LP26/SP2/0.1-0.2	
					0.4 – 0.5	LP26/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP26/SP3/0.0-0.1	
					0.2 - 0.3	LP26/SP3/0.2-0.3	
					0.4 - 0.5	LP26/SP3/0.4-0.5	
LP29	<5000m	Jubilee Gardens	3	SP01	0.0 – 0.1	LP29/SP1/0.0-0.1	Figure 2L
					0.3 – 0.4	LP29/SP1/0.3-0.4	
					0.5 – 0.6	LP29/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP29/SP2/0.0-0.1	
					0.1 – 0.2	LP29/SP2/0.1-0.2	
					0.4 – 0.5	LP29/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP29/SP3/0.0-0.1	
					0.2 - 0.3	LP29/SP3/0.2-0.3	
					0.4 - 0.5	LP29/SP3/0.4-0.5	
LP30		King George Playing Field	3	SP01	0.0 – 0.1	LP30/SP1/0.0-0.1	Figure 2M
					0.3 – 0.4	LP30/SP1/0.3-0.4	
					0.5 – 0.6	LP30/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP30/SP2/0.0-0.1	
					0.1 – 0.2	LP30/SP2/0.1-0.2	
					0.4 – 0.5	LP30/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP30/SP3/0.0-0.1	
					0.2 - 0.3	LP30/SP3/0.2-0.3	
					0.4 - 0.5	LP30/SP3/0.4-0.5	
LP31		Memorial Park	3	SP01	0.0 – 0.1	LP31/SP1/0.0-0.1	Figure 2N
					0.3 – 0.4	LP31/SP1/0.3-0.4	
					0.5 – 0.6	LP31/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP31/SP2/0.0-0.1	
					0.1 – 0.2	LP31/SP2/0.1-0.2	
					0.4 – 0.5	LP31/SP2/0.4-0.5	
				SP03	0.0 - 0.1	LP31/SP3/0.0-0.1	
					0.2 - 0.3	LP31/SP3/0.2-0.3	
					0.4 - 0.5	LP31/SP3/0.4-0.5	
LP32		The Mount Gardens	3	SP01	0.0 – 0.1	LP32/SP1/0.0-0.1	Figure 2O
					0.3 – 0.4	LP32/SP1/0.3-0.4	
					0.5 – 0.6	LP32/SP1/0.5-0.6	
				SP02	0.0 – 0.1	LP32/SP2/0.0-0.1	
					0.1 – 0.2	LP32/SP2/0.1-0.2	
					0.4 – 0.5	LP32/SP2/0.4-0.5	
				SP3	0.0 - 0.1	LP32/SP3/0.0-0.1	
					0.2 - 0.3	LP32/SP3/0.2-0.3	
					0.4 - 0.5	LP32/SP3/0.4-0.5	

4.6. LOGGING AND SAMPLING

The sampling technique comprised hand dug pits (using insulated hand tools) whilst adopting a strict methodology for the avoidance of cross contamination or introduction of PFAS during hole advancement or sample collection. The hand pits were all positioned in soft landscaping with no requirement for mechanical excavation or coring of ground surface.

Contractor Geotron undertook the hand pitting works which were overseen by two WSP geo-environmental engineers on a full-time basis. The hand pit arisings were logged in accordance with

BS5930:2015 by the WSP engineers and hand dug inspection pits were photographed. Selected photographs are included on the exploratory hole logs, presented in Appendix E.

Arisings were placed on thin HDPE sheeting in accordance with laboratory advice. Discrete disturbed soil samples were extracted from arisings using a handheld stainless-steel trowel, undertaken in accordance with the methodology described in Appendix D. Samples were collected in laboratory supplied sample containers (1kg tubs) and placed on ice, which were double bagged to prevent leaks, within the laboratory supplied cool bags. Typically, the samples were sent by courier to the laboratory (ALS Life Sciences Ltd (ALS)) the same day.

Quality assurance / quality control (QA/QC) samples were collected, in the form of equipment/ rinsate samples at an approximate frequency of 1 in 10 samples collected (more detail presented in Section 4.8).

4.7. HEALTH AND SAFETY

WSP acted as Principal Contractor during the ground investigation and supervised all site activities on a full-time basis. 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.

- WSP, 29 August 2024. Thornton Construction Phase Plan (ref: 70100310-CPP).

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 of all subcontractors and WSP, 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 ground investigation report is part of the Health and Safety File.

4.8. 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 cross-contamination between sampling locations and contamination of samples.

During the Preliminary Soils Investigation, through liaison with the contractors and suppliers, detailed consideration was given to methods to avoid the unintended introduction of contaminants of concern (PFOA in particular given the sensitivities of PFAS analysis) into the subsurface attributed to the processes and materials being employed.

As stated within Section 4.1, recommended guidance on PFAS sampling was followed during the investigation and sampling to limit the potential for introduction of contaminants or cross contamination of soil and water samples during collection. Generally, this guidance required the undertaking of the following precautions during the investigation:

- The hand pitting and sampling equipment to be regularly cleaned with a liquinox solution made with laboratory supplied PFAS-free deionised water. The hand pitting tools were cleaned between every sample point within each land parcel whilst the sampling equipment was cleaned between every sample collected.
- Triple rinse of tools and equipment with laboratory supplied PFAS-free deionised water.

- The changing of disposable gloves for every sample collected.
- Samples to be stored in sealed containers appropriate for laboratory analysis for the required suite.

During the investigation, quality assurance / quality control samples were collected in general accordance with that outlined within Table 4-3.

Table 4-3 – Quality Control Sampling Plan

QC Sample	Description	Typical Quantity
Equipment/ rinsate Blank	E.g. sample taken of the rinse water from the final rinse after decontamination of the field equipment. Used to assess whether the decontamination process has been adequately undertaken.	At an approximate frequency of 1 in 10 soil samples collected

The soil quality control samples collected as part of the Preliminary Soils Investigation are summarised in Table 4-4 below. In summary 19 rinsate samples of the field equipment were randomly taken from selected sample locations (equating to ~10% of soil samples collected).

Table 4-4 – Soil Quality Control Samples

Land Parcel	Sample	Type
LP02 – Heys Street	LP02-SP02/0.3-0.4	Rinsate sample
LP04 – Red Marsh Drive	LP04/SP02/0.5-0.6	Rinsate sample
LP05 – Croft Court	LP05/SP01/0.3-0.4	Rinsate sample
LP06 – Butts Close	LP06/SP02/0.0-0.1	Rinsate sample
LP08 – Hargreves Street	LP08/SP04/0.3-0.4	Rinsate sample
LP10 – Thornton Primary School	LP10/SP01/0.0-0.1	Rinsate sample
LP11 - Great Arley School / Red Marsh School	LP11/SP07/0.2-0.3	Rinsate sample
	LP11/SP09/0.0-0.1	Rinsate sample
LP14 - Stanah Road	LP14/SP02/0.1-0.2	Rinsate sample
	LP14/SP03/0.4-0.5	Rinsate sample
LP15 - Butts Road Playground	LP15/SP03/0.0-0.1	Rinsate sample
LP18 - Stanah Primary School	LP18/SP01/0.0-0.1	Rinsate sample
	LP18/SP03/0.2-0.3	Rinsate sample
LP19 - River Road Car Park	LP19/SP01/0.5-0.6	Rinsate sample
LP20 - Northfold School	LP20/SP03/0.4-0.5	Rinsate sample
LP22 - Thornton House	LP22/SP01/0.5-0.6	Rinsate sample
LP26 - Mirefield College	LP26/SP03/0.2-0.3	Rinsate sample
LP30 - King George Playing Field	LP30/SP02/0.4-0.5	Rinsate sample
LP31 - Memorial Park	LP31/SP03/0.0-0.1	Rinsate sample

In addition to the above, data from ALS Laboratories internal Quality Processes are presented within Appendix F. This includes the results of an analytical quality control (AQC (Spiked Sample)) run

with each batch of samples. Where the AQC sample fails, the batch is cancelled, and samples are re-run. The laboratory note:

- 6:2 FTAB results are highlighted bold due to low recovery which is a known issue and data is indicated as indicative.
- Cells in orange indicate a warning flagging the QA/QC data is outside of the expected 100+/-30% range . The data is confirmed by the laboratory as passing their QA/QC.
- Where data is reported as within the range 100+/-30% range no AQC failures were noted.

The laboratory AQC compliance shows that the extraction/analysis process worked and won't have affected the levels of the contaminants in the actual samples.

4.9. LABORATORY CHEMICAL ANALYSIS

A summary of the sampling and laboratory analysis undertaken during the investigation is presented in Table 4-5 below. The 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).

Whilst, for the purpose of this investigation, PFOA was identified as the principal contaminant of concern a wider suite of PFAS analysis was implemented which offered the lowest method detection limit / limit of detection (MDL/LOD) available for PFOA (0.5µg/l).

Soil analysis for PFAS in the present study was not accredited (which applies to the services currently available from all UK labs). However, certain analysis methods for waters are validated to ISO 17025. The environmental laboratory reports are presented in Appendix F.

Table 4-5 – Summary of Environmental Laboratory Analysis Schedule

Chemical Analysis		Number of Samples Analysed	
	Accredited Method ?	Soil	Soil QA/QC (rinsate)
PFAS Broad Suite (soil)	No	199	-
PFAS Broad Suite (water)	Yes - TM434	-	19
Soil Organic Matter	Yes – TM132	199	-
pH	Yes - TM133	199	-

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

5. GROUND INVESTIGATION FINDINGS

A summary of the recorded ground conditions is presented in Table 5-1 below. The sampling location plans are provided in Figures 2 A-O in Appendix A, whilst the exploratory logs are contained in Appendix E.

Due to the shallow nature of the hand pits (depths between 0.5 – 0.6m bgl), the base of the encountered strata units was typically not proven in any location.

Table 5-1 – Summary of Recorded Strata

Strata		Depth to Base (m bgl)*	Typical Description	Notes
Made Ground	Made Ground Granular	0.15 to 0.30 (0.60)	Brown sandy fine to coarse gravel with occasional brick	Recorded in LP01 – Occupation Road Allotments. Potential reworked granular Made Ground recorded in LP14 – Stanah Road
	Cohesive Made Ground	0.15 to 0.45 (0.60)	Brown sandy slightly gravelly clay with brick and plastic fragments with occasional cobbles	Recorded in approximately a third of land parcels either as reworked Topsoil or shallow Made Ground (LP01, LP02, LP04, LP06, LP11 (locally only), LP14, LP15 and LP23.
	Landfill waste material	0.50 to 0.60 (0.60)	Brownish black ashy gravel with metal, clinker, plastic and pottery	Recorded in LP19 – River Road Car Park and LP30 – King George Playing field only.
Natural Topsoil		0.15 to 0.40	Grass over dark brown sandy clay / clayey sand with frequent rootlets	Predominantly recorded within school playing fields or parks, typically 0.3m thick (LP08, LP10, LP11, LP17, LP18, LP20, LP21, LP22, LP26, LP31, LP32).
Tidal Flat Deposits		Not proven (0.60)	Grey orangish brown silty sandy clay / sandy silt	Encountered within the majority of locations. Peat encountered within LP21-SP01.
Till		Not proven (0.60)	Firm red brown sandy silty clay / silty sand	Recorded within LP14 – Stanah Road and LP18 – Stanah Road Primary School only.
Blown Sand		Not proven (0.60)	Brown / yellow brown clayey sand with occasional gravel	Encountered within LP32 – The Mount Gardens and within LP29 – Jubilee Gardens possibly as reworked.

** Depth in brackets indicates maximum unproven depth*

5.1. MADE GROUND

5.1.1. Reworked Topsoil / Shallow Made Ground

Made Ground was encountered within approximately half of the exploratory locations predominantly comprising sandy gravelly clay (cohesive Made Ground) with granular Made Ground only encountered within two land parcels (LP01-Occupation Road Allotments and LP14 – Stanah Road).

The cohesive Made Ground generally comprised a 0.3m thick layer of topsoil with frequent / abundant rootlets which often included brick inclusions, or a cohesive gravelly sandy clay with gravel and cobbles of brick. The granular Made Ground typically comprised a slightly clayey gravel from surface associated with a central footpath running between allotment plots within LP01-Occupation

Road, or as a potentially reworked granular Made Ground comprising a silty slightly clayey sand with rare inclusions of brick (LP14 – Stanah Road).

Within LP01 – Occupation Road Allotments, beneath the granular surface Made Ground cover to 0.3m bgl, a possible reworked Made Ground was encountered as gravelly clay to 0.5mbgl. Organic Made Ground was encountered within LP01-SP03 between 0.25 and 0.6m bgl, which was progressed within a disused allotment plot and considered to represent cultivated soils.

The depth of Made Ground was unproved within approximately seven land parcels: LP01 – Occupation Road Allotments, locally within LP02 - Heys Street, LP06 – Butts Close, LP14 – Stanah Road, LP15 – Butts Road Playground, LP19 – River Road Car Park and LP23 – Bourne Road.

5.1.2. Landfill Waste Material

Made Ground potentially representing landfill deposits / capping were recorded in land parcels LP30 – King Georges Playing Field and LP19 – River Road Car Park associated with every sampling point progressed in the area. Both land parcels form part of historical household waste landfills which were in operation until the 1950s and 1970s respectively (more detail presented in Appendix C).

Within LP30 – King Georges Playing Field, the recorded Made Ground typically comprised a reworked topsoil over a granular ashy matrix with glass and plastic in addition to cohesive Made Ground recorded locally. Within LP19 – River Road Car Park, a potential landfill capping layer was encountered, either as a sandy clay (LP19-SP02) or a clayey sand (LP19-SP01) to depths up to 0.6mbgl. Within LP19-SP03, Made Ground more typical of waste material was encountered comprising metal, plastic, rag and wire within a granular ash matrix. The base of the Made Ground was not proven within any locations.

5.2. NATURAL TOPSOIL

Natural topsoil of up to 0.30m thickness was encountered above natural strata at approximately 11 land parcels (or at approximately 47 sample points) and typically comprised grass over dark brown sandy clay with frequent rootlets.

5.3. SUPERFICIAL DEPOSITS

5.3.1. Tidal Flat Deposits

Beneath the topsoil / Made Ground (where proven), soils interpreted to be Tidal Flat Deposits comprising a greyish orange, brown sandy silty clay / sandy silt with occasional gravel sized pockets of sand were recorded to depths of up to 0.6m bgl (base of strata unproven). Occasional gravel was encountered which was recorded to be fine to coarse subrounded and subangular of mostly sandstone and mudstone.

Dark brown fibrous peat was encountered locally with LP21 – Royles Brook School, within a clay matrix. No other organic soils were identified within any location.

5.3.2. Till

Within LP14 – Stanah Road (LP14-SP01) and LP18 – Stanah Road Primary School (LP18-SP01 to LP18-SP03), a firm reddish brown sandy silty clay was observed which was interpreted to be Till. The Till was recorded to depths of up to 0.6m bgl. WSP note the general similar geological composition of the Till and Tidal Flat Deposits as described above, the two units of which have been differentiated by WSP predominantly based on colour.

5.3.3. Blown Sand

Deposits comprising a yellow brown / dark brown clayey fine to coarse sand were encountered within LP29 – Jubilee Gardens, and LP32 – The Mount Gardens which were interpreted to be possibly reworked Blown Sand deposits. Occasional subangular and subrounded gravel was observed. Both of these land parcels are situated on the coastline. Whilst limited anthropogenic material was identified within the unit, given the shallow nature of the hand pit, it was not possible to confirm the if layer was natural or had possibly been reworked.

5.4. GROUNDWATER STRIKES

Limited volumes of groundwater were recorded during the soil sampling investigation as described below:

- LP10-SP01 – Damp strata encountered between ground level and 0.6m bgl. Sampling location noted to be at a lower topographical level compared to surrounding area and the ground was noted to be saturated..
- LP17-SP02 – Seepage of water at base of hand pit (0.5m bgl) encountered within silty sand layer.
- LP26-SP02 – Damp strata encountered within full vertical profile (to 6m bgl). Saturated ground and surface water ponding present within surrounding area.

5.5. CONTAMINATION OBSERVATIONS

Noteworthy visual or olfactory evidence of contamination (e.g. strong odours or presence of hydrocarbon staining/sheens/free product) was not observed. As discussed earlier, Made Ground within LP30 – King Georges Playing Field and LP19 – River Road Car Park recorded an ashy matrix with rag, metal and plastic which is consistent with a landfill type material.

Identifiable asbestos containing material (ACM) was not encountered during the investigation; however, given the heterogeneous nature of Made Ground, the presence of ACM cannot be ruled out. It is noted that some 'possible asbestos' notifications were received from the laboratory on some sample batches, which were typically associated with samples containing the presence of brick and building materials from LP29 (Jubilee Gardens) and LP23 (Bourne Way). The potential presence of asbestos was not investigated further on the basis that asbestos is not a contaminant of concern within the remit of the investigation.

6. SOIL LABORATORY ANALYSIS RESULTS

6.1. SOIL LABORATORY ANALYSIS

Soil laboratory analysis was undertaken on 199 samples of Made Ground and natural soils collected from 22 land parcels located within 5km of the facility. Sampling was undertaken from discrete depth intervals between ground level and 0.6m bgl. Soil samples were subject to a suite of PFAS testing (PFAS Broad Suite), pH and SOM, as detailed within Table 4-5. The laboratory reports are provided in Appendix F.

It is noted that the dataset collected as part of the Preliminary Soils Investigation is not intended to be sufficient for the use of statistical assessment; however, is to confirm the presence / absence of PFOA and inform the requirements for further works.

6.1.1. PFOA IN SOILS

PFOA was detected above the LOD in 187 out of 199 samples, representing ~94% of samples. All 22 sampled land parcels reported detectable PFOA concentrations in soil with the maximum concentration reported as 35.1µg/kg. A summary of detected PFOA concentrations is presented in Table 6.1 below. The mapped maximum PFOA concentrations within soils from each sample point are presented in Figures 3 A -B.

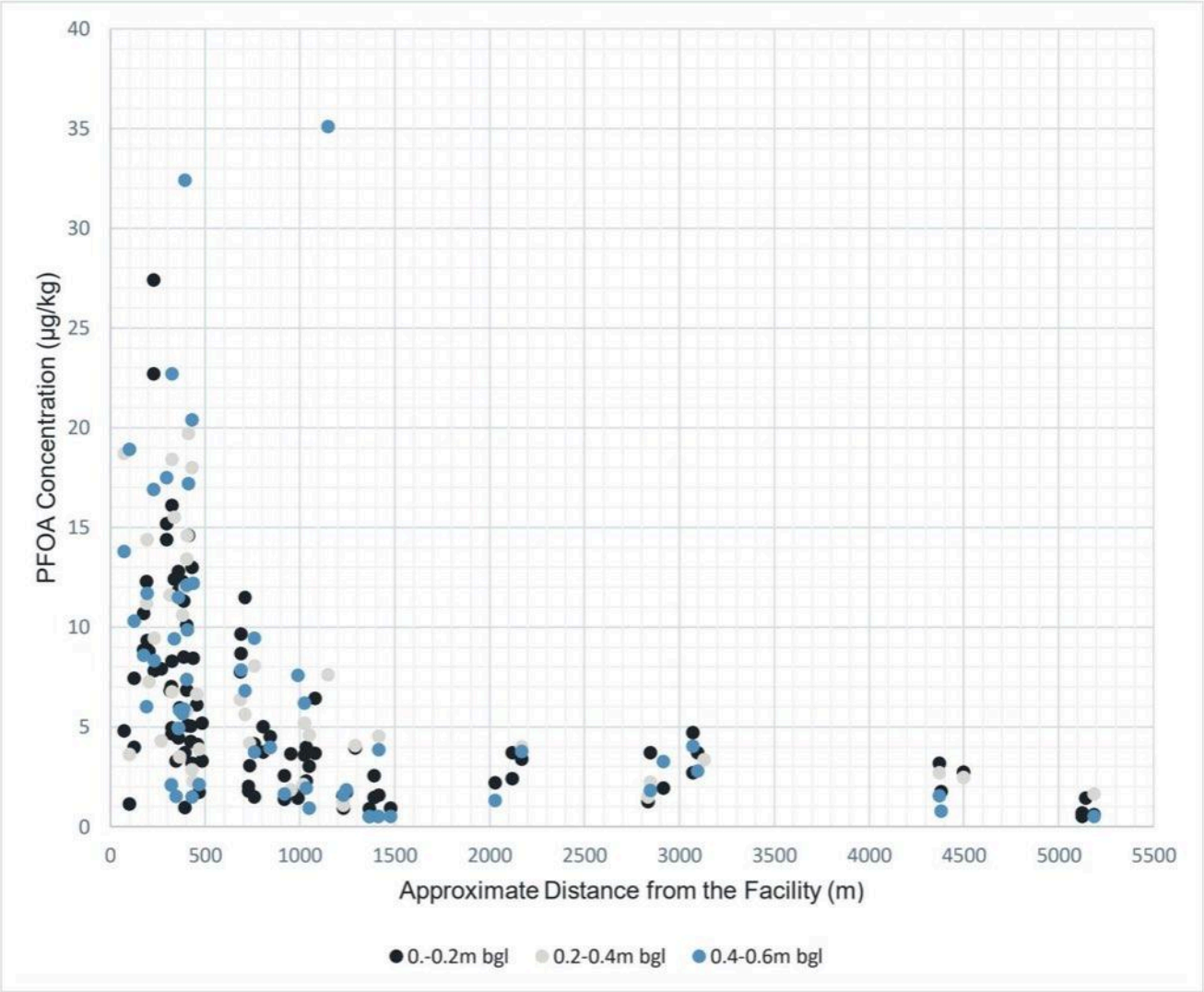
A graph detailing reported concentrations of PFOA in individual samples compared to approximate sample location distance from the facility is presented in Extract 6.1 whilst the maximum and median PFOA distribution in soils is indicated in Extract 6.2.

Table 6-1 – Summary of Detected PFOA

Location with respect to the facility	Land Parcel	Number of samples	Number of samples with concentrations above LOD (>LOD)	PFOA concentration (µg/kg)		
				Average	Maximum	Minimum
<100m	01 - Occupation Road Allotments	9	9	9.18	18.90	1.12
<500m	02 -Heys Street	11	11	9.79	32.40	0.96
	04 -Red Marsh Drive	8	8	11.64	19.70	4.26
	05 - Croft Court	7	7	4.93	12.20	1.49
	06 - Butts Close	7	7	4.13	6.64	1.73
	08 - Hargreaves Street	17	17	11.9	27.4	6.02
	10 - Thornton Primary School	13	13	10.28	20.40	4.64
	11 - Great Arley / Red Marsh School	27	27	9.30	22.70	1.51
<2500m	14 - Stanah Road	8	8	8.03	11.50	5.64

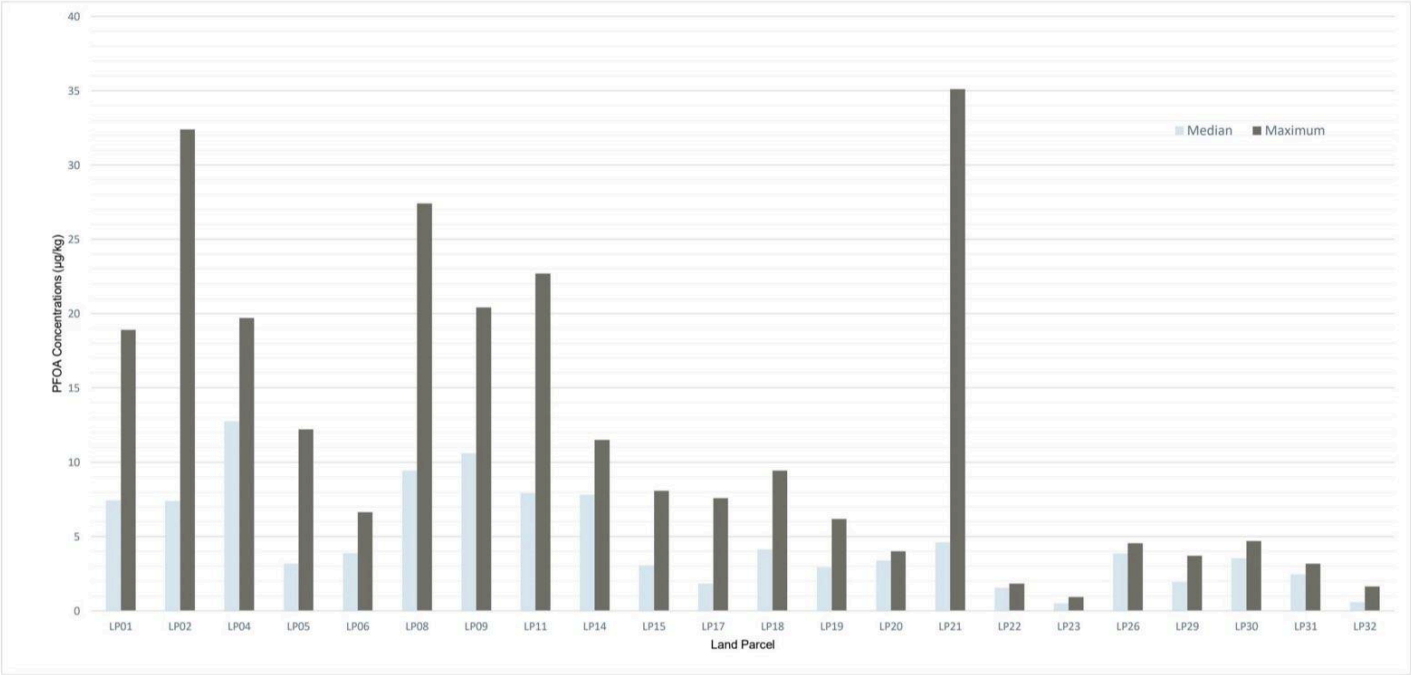
Location with respect to the facility	Land Parcel	Number of samples	Number of samples with concentrations above LOD (>LOD)	PFOA concentration (µg/kg)		
				Average	Maximum	Minimum
	15 - Butts Road Playground	7	7	3.48	8.07	1.50
	17 - Thornton Clevelys Bains Endowed School	7	7	2.87	7.58	1.38
	18 - Stannah Primary School	7	7	4.97	9.44	3.75
	19 - River Road Car Park	7	7	3.41	6.19	1.93
	20 - Northfold Community School	9	9	2.97	4.00	1.32
	21 - Royles Brook School	7	7	8.77	35.10	0.92
	22 - Thornton House	7	7	1.42	1.83	0.93
	23 - Bourne Way	8	2	0.61	0.93	<0.5
	26 - Millfield College	7	7	3.16	4.54	1.45
<5000m	29 - Jubilee Gardens	7	7	2.24	3.71	1.26
	30 - King Georges Playing Fields	6	6	3.55	4.70	2.69
	31 - Memorial Park	7	7	2.16	3.16	0.78
	32 - The Mount Gardens	7	4	0.83	1.64	<0.5

Extract 6-1 - PFOA Distribution in Soils (µg/kg) Compared to Distance from the Facility

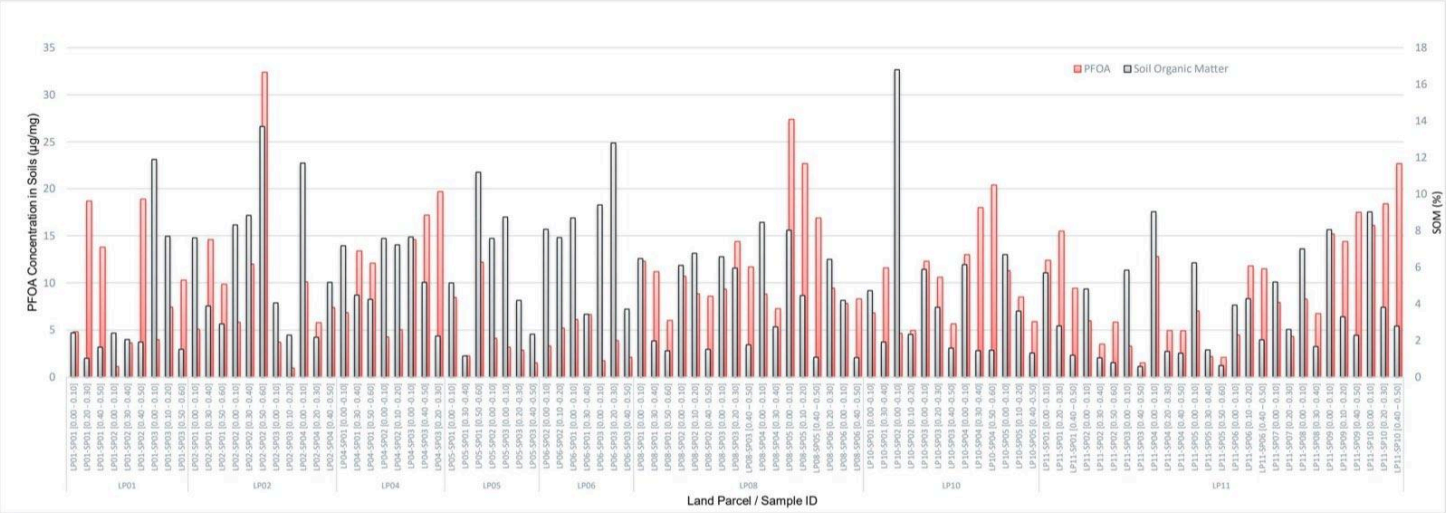


NB concentrations <LOD are taken as = LOD.

Extract 6-2 –Maximum and Median PFOA Concentrations (µg/kg)



Extract 6-3 - PFOA Distribution in Soils (µg/kg) and SOM (%) – Land <500m from the Facility



NB concentrations <LOD are taken as = LOD.

6.1.2. PFAS IN SOILS

As part of the wider PFAS Broad Suite, a collection of 52 PFAS compounds were analysed in addition to PFOA. Whilst PFOA is the contaminant of concern under investigation, Table 6-2 provides a summary of the concentrations of wider PFAS observed across the soil sample population above the laboratory LOD. Pertinent observations from the analytical results are discussed below.

The laboratory reports are provided in Appendix F whilst a table detailing the compiled PFAS soil analysis is presented within Appendix G.

Table 6-2 – Summary of Detected PFAS Compounds in Soils

Detected PFAS Compound	Limit of Detection (LOD) (µg/kg)	Reported Range in Detected Result (µg/kg)	No. of Land Parcels >LOD	No. of Samples >LOD
Perfluroalkylated carboxylic acids (PFCAs) in order of increasing chain length				
PFBA	0.5	0.597 – 0.999	8 locations: LP02, LP04, LP05, LP06, LP10, LP11, LP14, LP19	12
PFPA	0.5	0.612 – 1.3	8 locations: LP02, LP04, LP05, LP06, LP10, LP11, LP15, LP23	15
PFOA	0.5	0.594 – 35.1	22 locations: All	187
PFNA	0.5	0.738 – 0.738	1 location: LP08	1
PFDA	0.5	0.695 – 1.14	4 locations: LP01, LP05, LP08, LP11	7
PFUnA	0.5	0.773	1 location: LP08	1
Perfluroalkylated sulfonic acids (PFSAs) in order of increasing chain length				
Branched PFOS	0.6	0.71 – 1.15	1 location: LP29	4
Linear PFOS	0.6	0.655 – 3.13	14 locations: LP01, LP02, LP04, LP05, LP06, LP08, LP10, LP11, LP14, LP22, LP29, LP30, LP31, LP32	35
Fluorotelomers				
6:2 FTS	0.5	0.57 – 1.81	3 locations: LP01, LP02, LP08	4

Based on the results, the following is noted:

- Compounds within the perfluoroalkylated sulfonic acids (PFSA) and perfluroalkylated carboxylic acids (PFCAs) subgroups have been detected including PFOA, branched / linear PFOS and fluorotelomers including 6:2 FTS.
- The greatest prevalence and highest PFAS concentrations relate to PFOA. As discussed in Section 6.1.1, PFOA was detected above the LOD (0.5µg/kg) in 187 out of 199 samples, representing ~94% of samples. All 22 sampled land parcels reported detectable PFOA

concentrations in soil with the maximum concentration reported as 35.1µg/kg (LP21-SP02, 0.5 – 0.6m bgl).

- Linear PFOS was encountered within 35 samples above the LOD (0.6µg/kg) from 14 land parcels with concentrations ranging between 0.655 – 3.13µg/kg. Branched PFOS was encountered within four samples from one location (LP29) with concentrations between 0.71 – 1.15 µg/kg.
- Additional PFAS compounds (PFBA, PFPA, PFDA, PFUnA and 6:2 FTS,) were detected within approximately 24 samples across 10 land parcels with detected concentrations typically ranging between 0.5 and 1.8µg/kg. PFNA was encountered above the LOD in one sample only – from LP08, 0.738 µg/kg.

6.1.3. pH

- pH ranged from between 4.88 (LP21-SP01) to 8.81 (LP23-SP03). It is noted that LP21 Royles Brook School where 4.88 was recorded generally has lower pH concentrations recorded (between 4.88 and 6).

6.1.4. SOM

- SOM typically ranged from between 0.44% (LP20-SP01 0.5 – 0.6m bgl) to 13.7% (LP02-SP02 0.5 – 0.6m bgl). Higher SOM concentrations were encountered within LP30-SP01 (0.5 – 0.6m bgl) at 38.8% from an ashy Made Ground representing landfill deposits, in addition to LP21-SP01 (0.5 – 0.6m bgl) at 17.4% from an organic clay layer containing fibrous peat. The recorded SOM concentrations within 500m of the facility are shown on Extract 6.3.

6.2. QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

6.2.1. 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.

6.2.2. Rinsate Samples

During soil sampling, 19 rinsate samples of the field equipment were randomly taken from selected sample locations (as detailed within Table 4.4) and submitted for PFAS analysis to assess whether the decontamination process has been adequately undertaken.

Upon review of the analysis, concentrations of PFAS analytes were predominately below the limit of detection, with the exception of trace concentrations of 4:2 FTS (between 0.00116 – 0.0011µg/l) reported within LP20-SP03 and LP26-SP03 and trace concentrations of PFOA (between 0.00133 – 0.000882µg/l) reported within LP30-SP02 and LP31-SP03. Trace PFAS detections are not uncommon due to the very low method detection limits (<0.00065 µg/l for PFOS and PFOA); however, given concentrations of 4:2 FTS has not been encountered above the limit of detection (0.5µg/kg) in corresponding soil samples, this was queried with the laboratory. In addition, data quality checks were requested from the laboratory given the trace detections of PFOA.

The following was confirmed by the laboratory: -

- No issues were found with the data checks.

- The batch blank was below the <LOD
- No samples were particularly contaminated within the batch and therefore carry-over was not suspected.
- Of note is that the detections are only just above LOD and would therefore pass the laboratory repeats policy when compared to the LOD.

WSP note that the trace concentrations of PFOA relate to land parcels at a distance from the facility where the potential for soil impact is reduced. The rinsate samples collected within 500m and / or where greatest concentrations of PFOA have been observed were reported below the laboratory LOD.

The results of the rinsate samples are contained within the laboratory reports presented in Appendix F.

7. SUMMARY

An offsite Preliminary Soils Investigation was undertaken under the supervision of WSP between September and October 2024; comprising hand dug pits to obtain shallow soil samples within land parcels radial to the Thornton facility. Works were undertaken under the CDM, 2015 Regulations [5] where WSP was Principal Contractor and Designer.

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 LCRM [6] and to be compliant with investigation requirements under Part 2A of the Environmental Protection Act, 1990 [7]. Of those contaminant linkages identified, potential risk to human health from legacy deposition of PFOA in shallow soils was identified as a priority for further consideration; and forms the basis of this Preliminary Soils Investigation.

For ease of access, the investigation targeted areas of council owned land identified within 5km radius of the facility, prioritising those considered within the greatest likelihood of deposition radius of 500m or the prevalent wind direction. The objective was to provide an initial indication of PFOA concentrations in shallow soil and their distribution, associated with aerial deposition from legacy emissions that occurred between the 1950's and 2012.

The dataset collected as part of the Preliminary Soils Investigation is not intended to be sufficient for the use of statistical assessment; however, is to confirm the presence / absence of PFOA and inform the requirements for further works. Follow up reporting will provide the interpretation of the dataset. It is recognised that the investigation into offsite impacts and their significance in the context of Part 2A [7] will be a phased / iterative process and the works described within this document represent the first phase of offsite sampling.

In summary, the investigation comprised the analysis of 199 samples of shallow Made Ground and natural soils collected from 22 land parcels within a 5km radius of the facility. Sampling was undertaken from discrete depth intervals between ground level and 0.6m bgl. Given the sensitivities of PFAS analysis, special measures were taken to reduce the potential for PFAS to be introduced during the hand pitting works as well as limiting the potential for cross contamination during sampling, in accordance with our method statements and SOP. In addition, representative QA/QC samples in the form of equipment rinsates were also analysed.

PFOA was detected above the LOD in 187 out of 199 samples, representing ~94% of samples. All 22 sampled land parcels reported detectable PFOA concentrations in soil with the maximum concentration reported as 35.1µg/kg. In addition to PFOA, other PFAS compounds from the wider suite of analysis have also been detected in soils, including PFCA's, PFSA's and fluorotelomers, albeit the distribution is more sporadic and concentration magnitude is much lower.

8. 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. BS 5930:2015 +A1:2020 Code of Practice for Ground Investigation.
4. BS 10175:2011+A2:2017, Investigation of Potentially Contaminated Sites, Code of Practice.
5. HSE, 2015. Construction (Design and Management) Regulations.
6. EA, 2020. Land Contamination Risk Management (LCRM).
7. Part 2A of the Environmental Protection Act, 1990
8. Defra, 2012. Contaminated Land Statutory Guidance.
9. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton central).
10. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 27).
11. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 19).
12. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 21).
13. Groundsure Report, 15 August 2024 (ref: P104122UK001_Thornton 31).
14. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 16_16_18).
15. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 12).
16. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 27).
17. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 19).
18. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 12).
19. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 07).
20. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 17_26).
21. Groundsure Report, 12 August 2024 (ref: P104122UK001_Thornton 20).
22. Groundsure Report, 15 August 2024 (ref: P104122UK001_Thornton 32).
23. Groundsure Report, 15 August 2024 (ref: P104122UK001_Thornton 29).
24. Groundsure Report, 15 August 2024 (ref: P104122UK001_Thornton 30).

9. GLOSSARY AND 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.

Asbestos containing material (ACMs). Products that have asbestos in them. Asbestos is a mineral that has been used for its fireproofing and insulation properties. Examples include: construction and insulation materials, such as fireproofing, pipes, boilers, roofing, plaster, wallboard, and cement; friction products, such as brakes and clutches; heat-resistant fabrics, packaging, gaskets, and coatings.

Below ground level (BGL).

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 [1] 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.

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.

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 [1].

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.

25. Perfluorooctanesulfonic acid (PFOS)
26. Perfluorooctanoic acid (PFOA)
27. Perfluorosulfonic acids (PFSAs)
28. Perfluoroalkyl carboxylic acids (PFCAs)
29. Perfluoropentanoic acid (PFPA / PFPeA)
30. perfluorohexane sulfonate (PFHxS)
31. Perfluorohexanoic acid (PFHxA)
32. Perfluoroheptanoic acid (PFHpA)
33. perfluoroheptyl sulphonate (PFHpS)
34. 5:3 Fluorotelomer carboxylic acid (5:3 FTCA)
35. Fluorotelomers (FTS)
36. 6:2 fluorotelomer sulfonamidoalkyl betaine (6:2 FTAB)
37. Perfluoroalkyl acids (PFAAs)

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.

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.

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).

Soil organic matter (SOM). The organic matter component of soil, consisting of plant and animal detritus at various stages of decomposition, cells and tissues of soil microbes, and substances that soil microbes synthesize.

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

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.

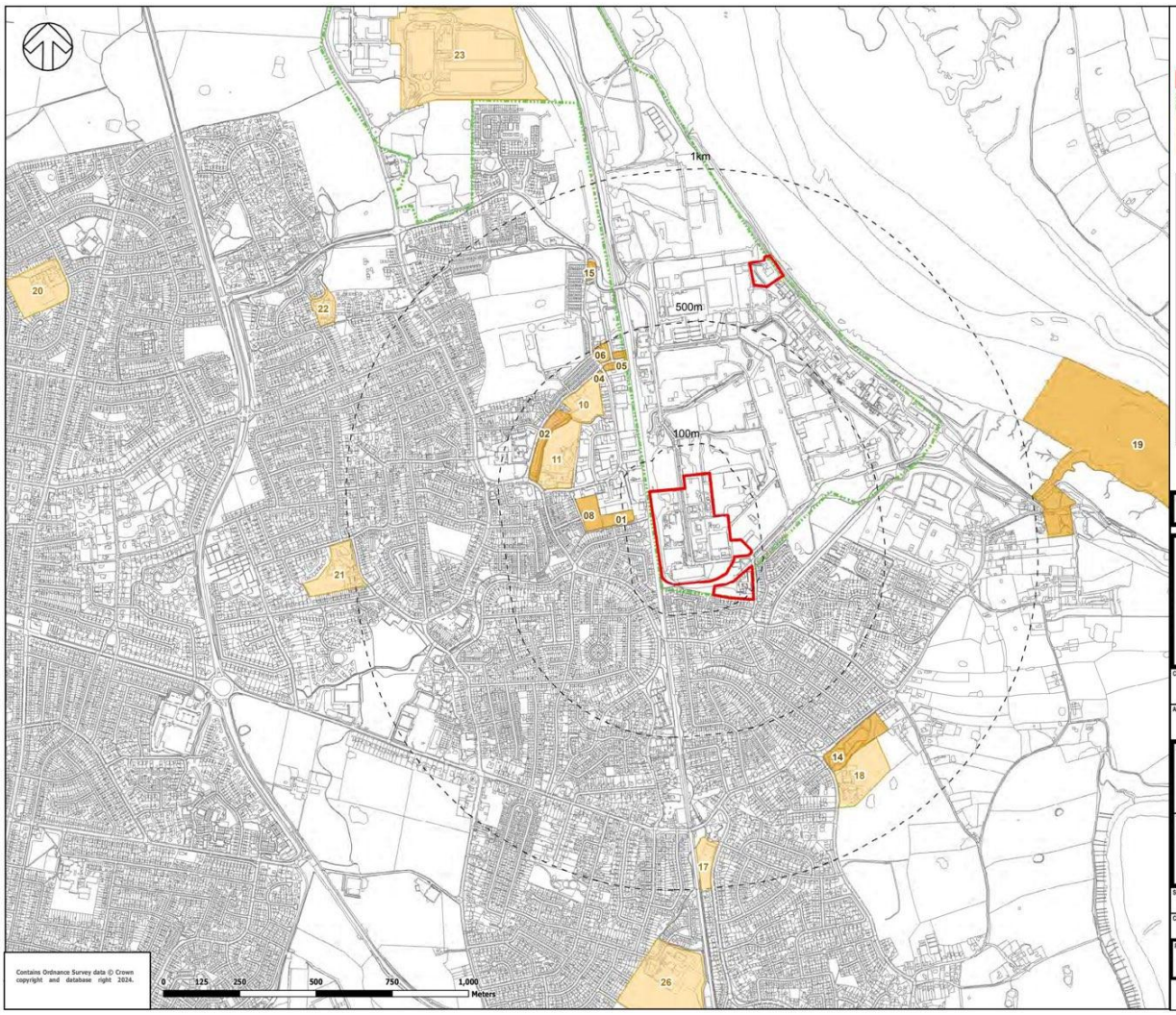
Unacceptable risk: means a risk of such a nature that it would give grounds for land to be considered Contaminated Land under Part 2A.

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.

Unexploded Ordnance (UXO). A term for any sort of military ammunition or explosive device that failed to function as intended and still pose a risk of detonation.

Appendix A

FIGURES



Drawn By: UKJXK032

File: G:\Projects\AGC\70100310 AGC Sampling v5.mxd

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0 125 250 500 750 1,000 Meters

DO NOT SCALE

Legend

- Site Boundary - AGCCE Land Ownership
- Hillhouse Complex (former ICI Works)
- Wyre Council Owned Land
- Lancashire Council Owned Land

No.	Land Parcel	Land Type
1	Occupation Road Allotments	Allotments
2	Heys Street	Public open space - Residential
4	Red Marsh Drive	Public open space - Commercial
5	Croft Court	Public open space - Commercial
6	Butts Close	Public open space - Commercial
8	Hargreaves Street	Public open space - Residential
10	Thornton Primary School	School
11	Red Marsh School	School
14	Stannah Road	Public open space - Residential
15	Butts Road Playground	Playground
17	Thornton Clevelys Bains Endowed School	School
18	Stanah Primary School	School
19	River Road Car Park	Public open space
20	Northfold Community School	School
21	Royles Brook School	School
22	Thornton House	Residential Care Home
23	Bourne Road	Waste Facility
26	Millfield College	College
29	Jubilee Gardens	Public open space - Park
30	King Georges Playing Fields	Public open space - Park
31	Memorial Park	Public open space - Park
32	The Mount Gardens	Public open space - Park

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 EA PHASE 4 PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 1A COUNCIL OWNED LAND PARCELS FOR SOIL SAMPLING

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE: WSP - A2 Landscape	DESIGN/DRAWN: USER	DATE: NOV 24
PROJECT No: 70100310	DRAWING No: 70100310/P2 -01A	REV:

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File: G:\Projects\AGC\70100310 AGC Sampling v5.mxd

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0 200 400 800 1,200 1,600 Meters

DO NOT SCALE

Legend

- Site Boundary - AGCCE Land Ownership
- Hillhouse Complex (former ICI Works)
- Wyre Council Owned Land
- Lancashire Council Owned Land

No.	Land Parcel	Land Type
1	Occupation Road Allotments	Allotments
2	Heys Street	Public open space - Residential
4	Red Marsh Drive	Public open space - Commercial
5	Croft Court	Public open space - Commercial
6	Butts Close	Public open space - Commercial
8	Hargreaves Street	Public open space - Residential
10	Thornton Primary School	School
11	Red Marsh School	School
14	Stannah Road	Public open space - Residential
15	Butts Road Playground	Playground
17	Thornton Clevelys Bains Endowed School	School
18	Stanah Primary School	School
19	River Road Car Park	Public open space
20	Northfold Community School	School
21	Royles Brook School	School
22	Thornton House	Residential Care Home
23	Bourne Road	Waste Facility
26	Millfield College	College
29	Jubilee Gardens	Public open space - Park
30	King Georges Playing Fields	Public open space - Park
31	Memorial Park	Public open space - Park
32	The Mount Gardens	Public open space - Park

DRAWING STATUS: FINAL

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CLIENT: ENVIRONMENT AGENCY

ARCHITECT: WSP UK LIMITED

PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 1B
COUNCIL OWNED LAND PARCELS
FOR SOIL SAMPLING

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
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PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -01B	

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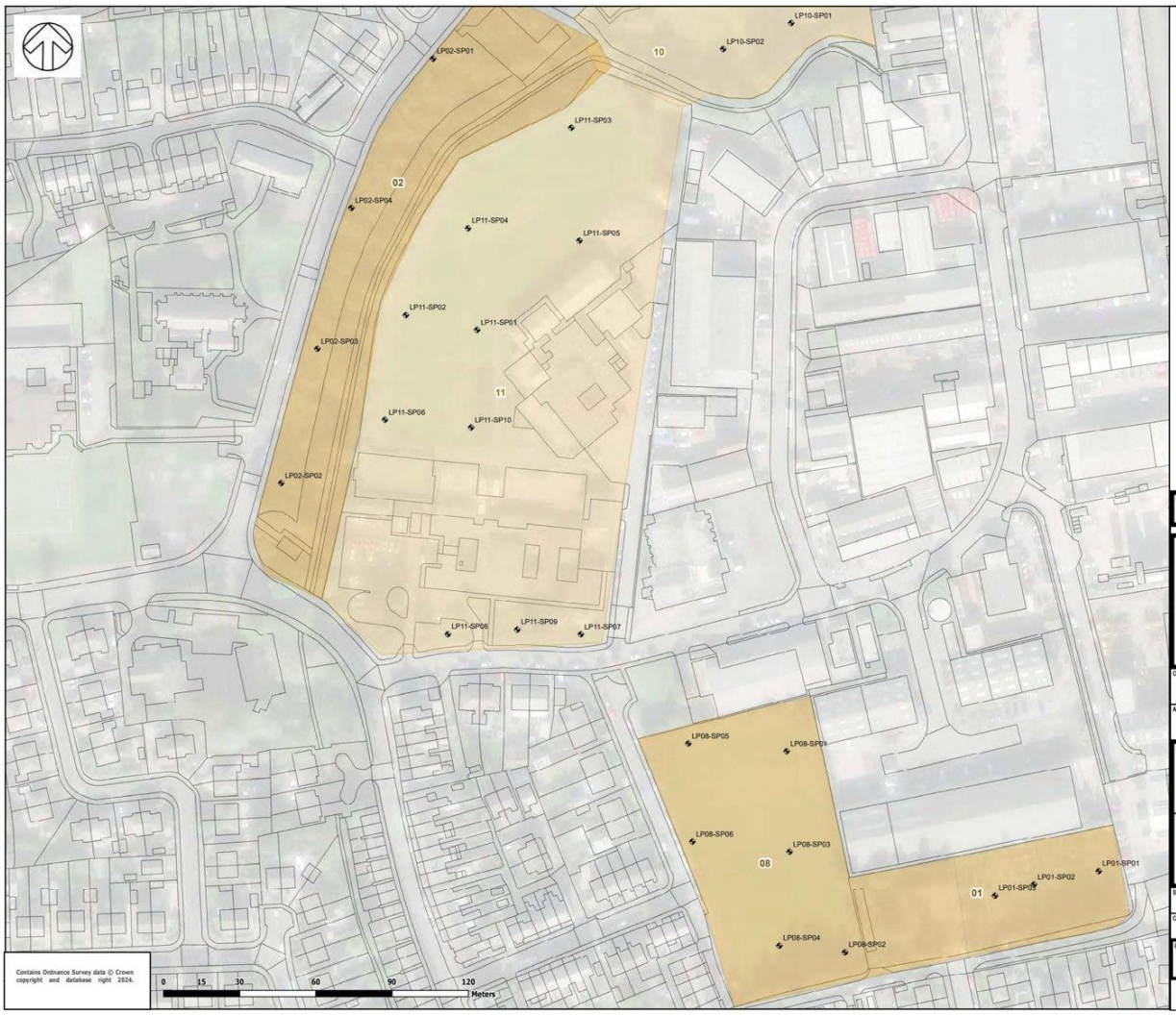

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DO NOT SCALE

Legend

- WSP Soil Sampling Point
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- Wyre Council Owned Land

DRAWING STATUS: FINAL

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310 EA PHASE 4 PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2A

SAMPLING PLAN (LAND PARCELS 01, 02, 08 AND 11)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE: WSP - A2 Landscape	DESIGN-DRAWN: USER	DATE: NOV 24
PROJECT No: 70100310	DRAWING No: 70100310/P2 -2A	REV:

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2B

SAMPLING PLAN
(LAND PARCELS 04, 05, 06 AND 10)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE: WSP - A2 Landscape	DESIGN-DRAWN: USER	DATE: NOV 24
PROJECT No: 70100310	DRAWING No: 70100310/P2 -2B	REV:

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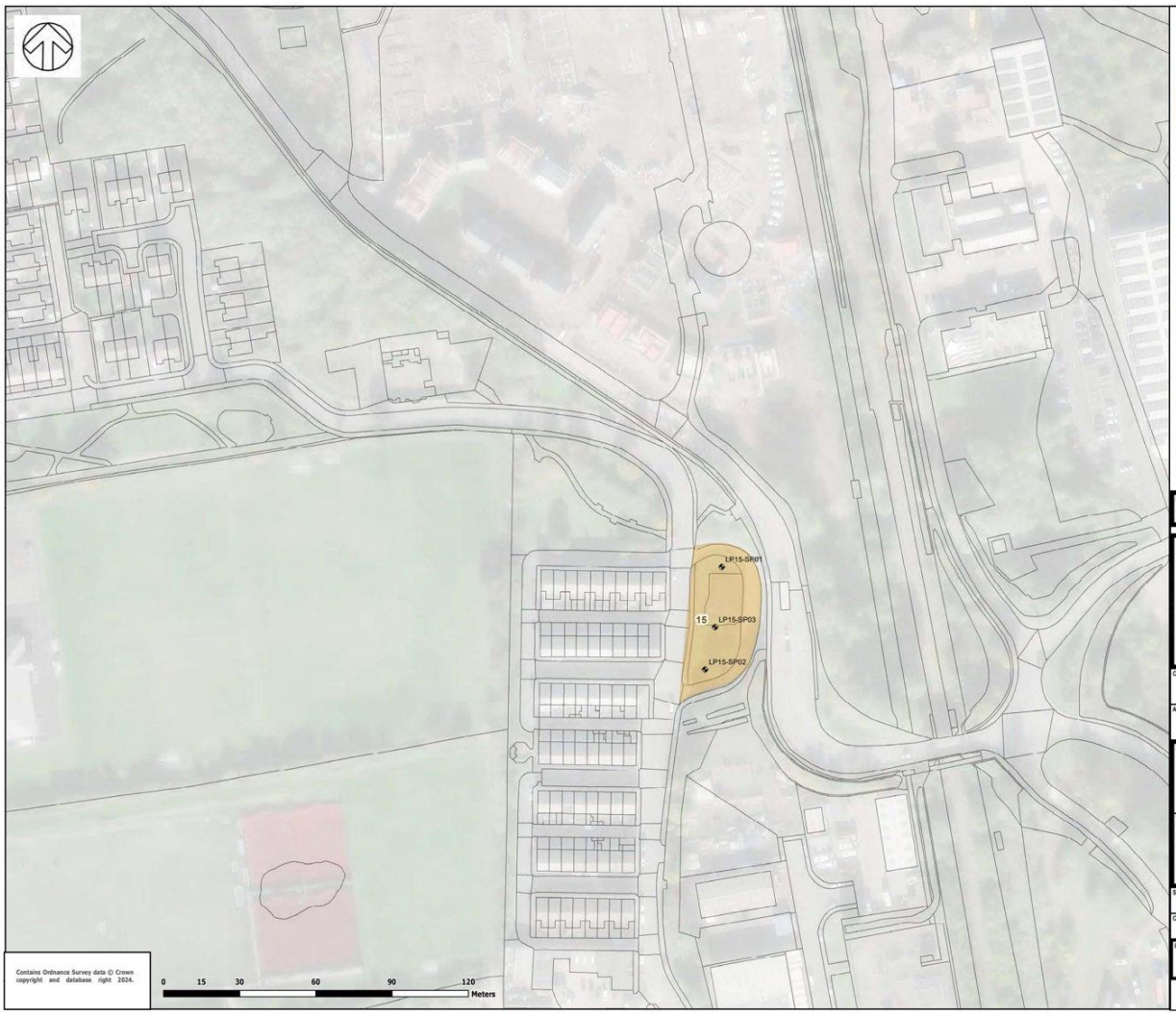

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2C

SAMPLING PLAN
(LAND PARCEL 15)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -2C	

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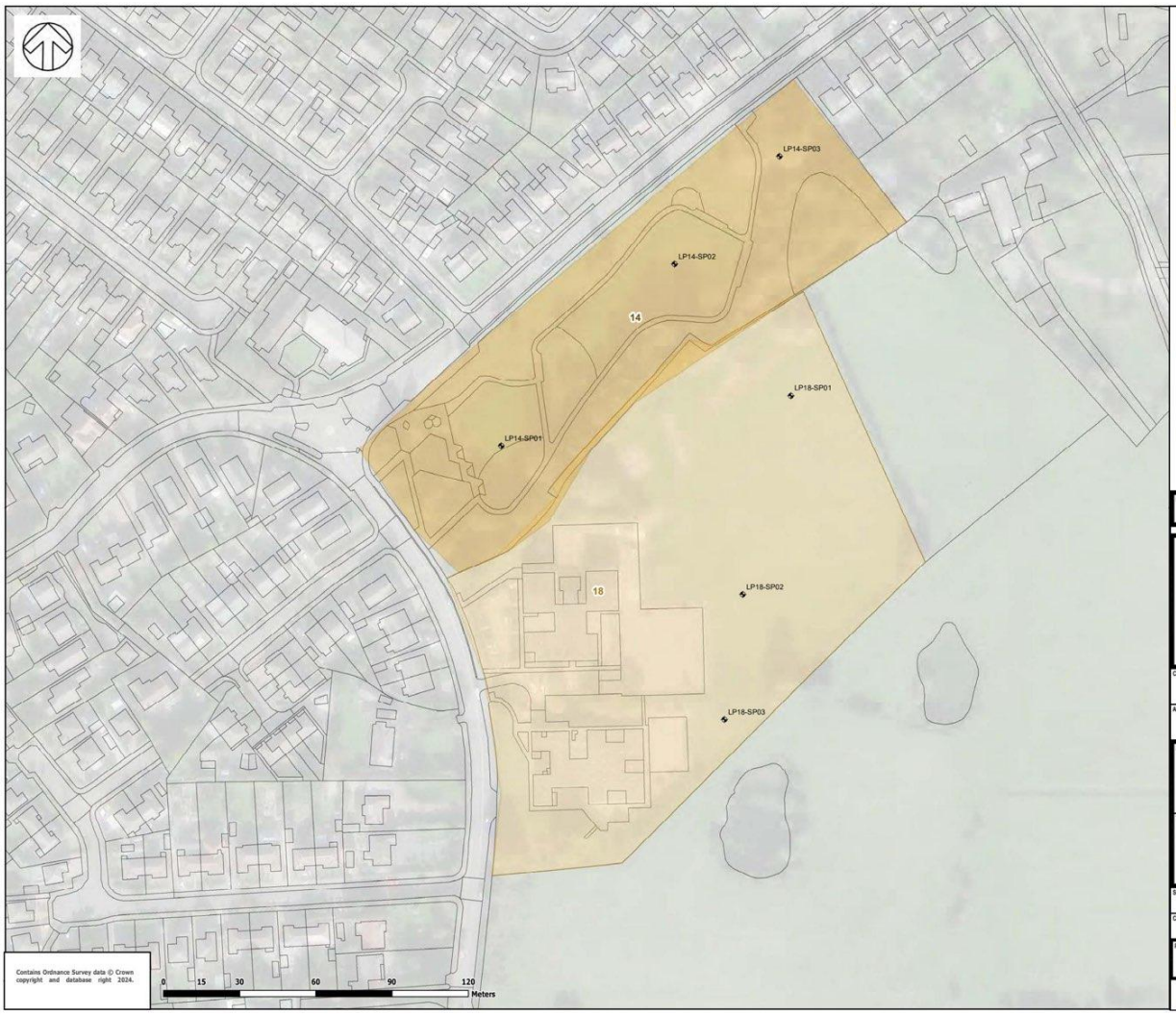

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ARCHITECT: WSP UK LIMITED

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THORNTON SITE

TITLE: FIGURE 2D

SAMPLING PLAN (LAND PARCEL 14 AND 18)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
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PROJECT: 70100310 EA PHASE 4 PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2E

SAMPLING PLAN (LAND PARCEL 17)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
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THORNTON SITE

TITLE: FIGURE 2F

SAMPLING PLAN (LAND PARCEL 20)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
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THORNTON SITE

TITLE: FIGURE 2G

SAMPLING PLAN (LAND PARCEL 21)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
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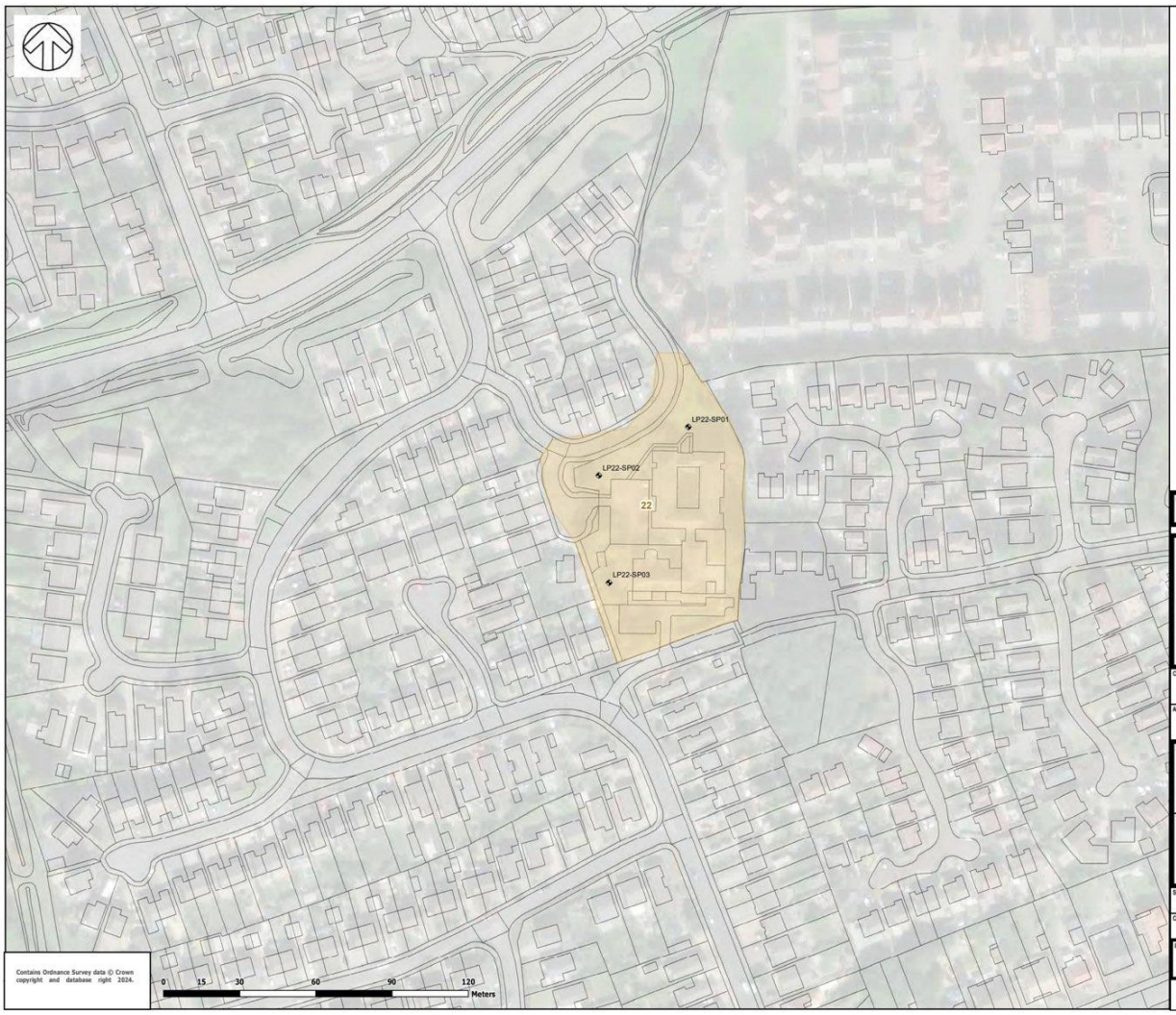

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PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2H

SAMPLING PLAN
(LAND PARCEL 22)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -2H	

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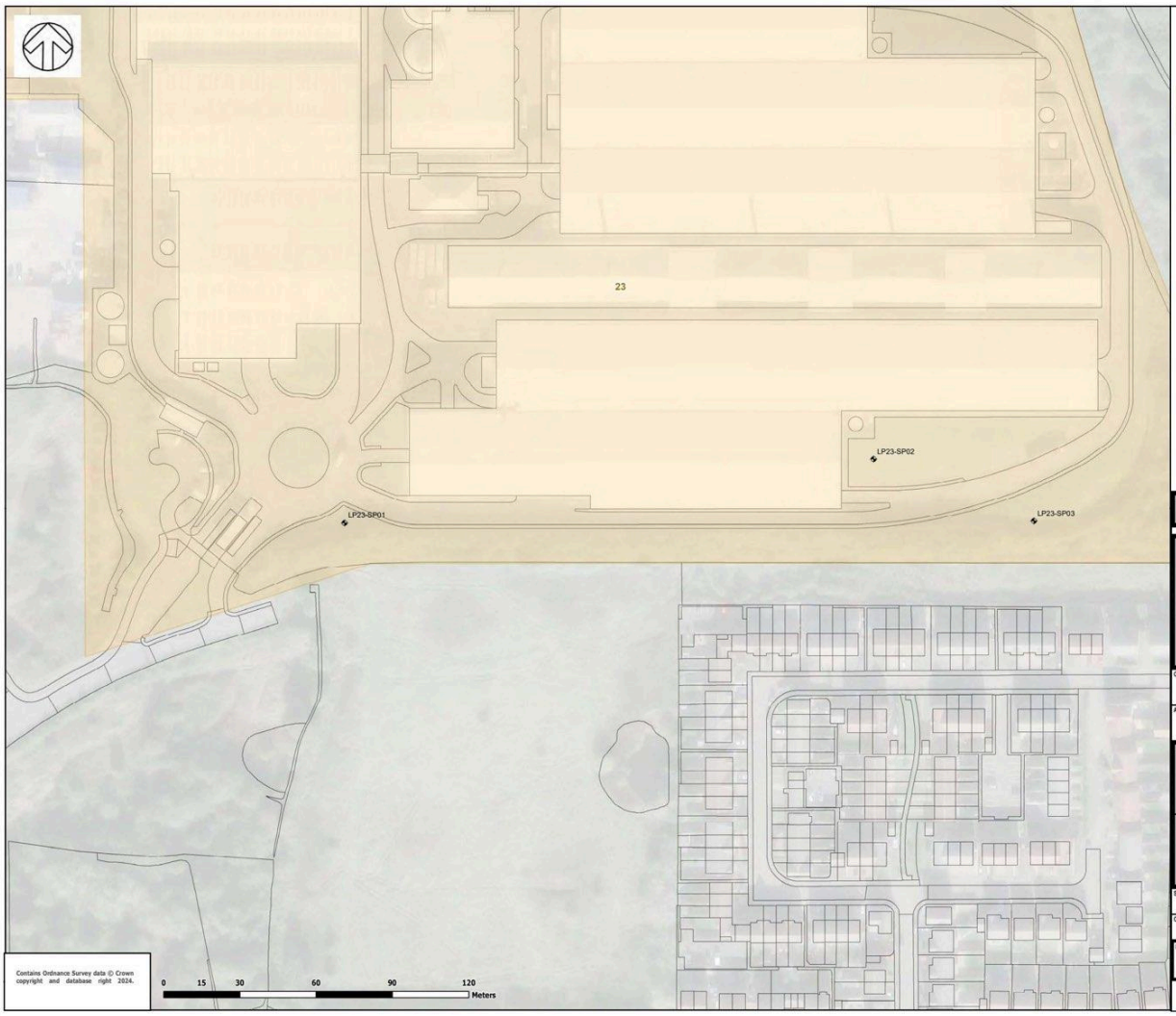

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THORNTON SITE

TITLE: FIGURE 2I

SAMPLING PLAN (LAND PARCEL 23)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -2I	

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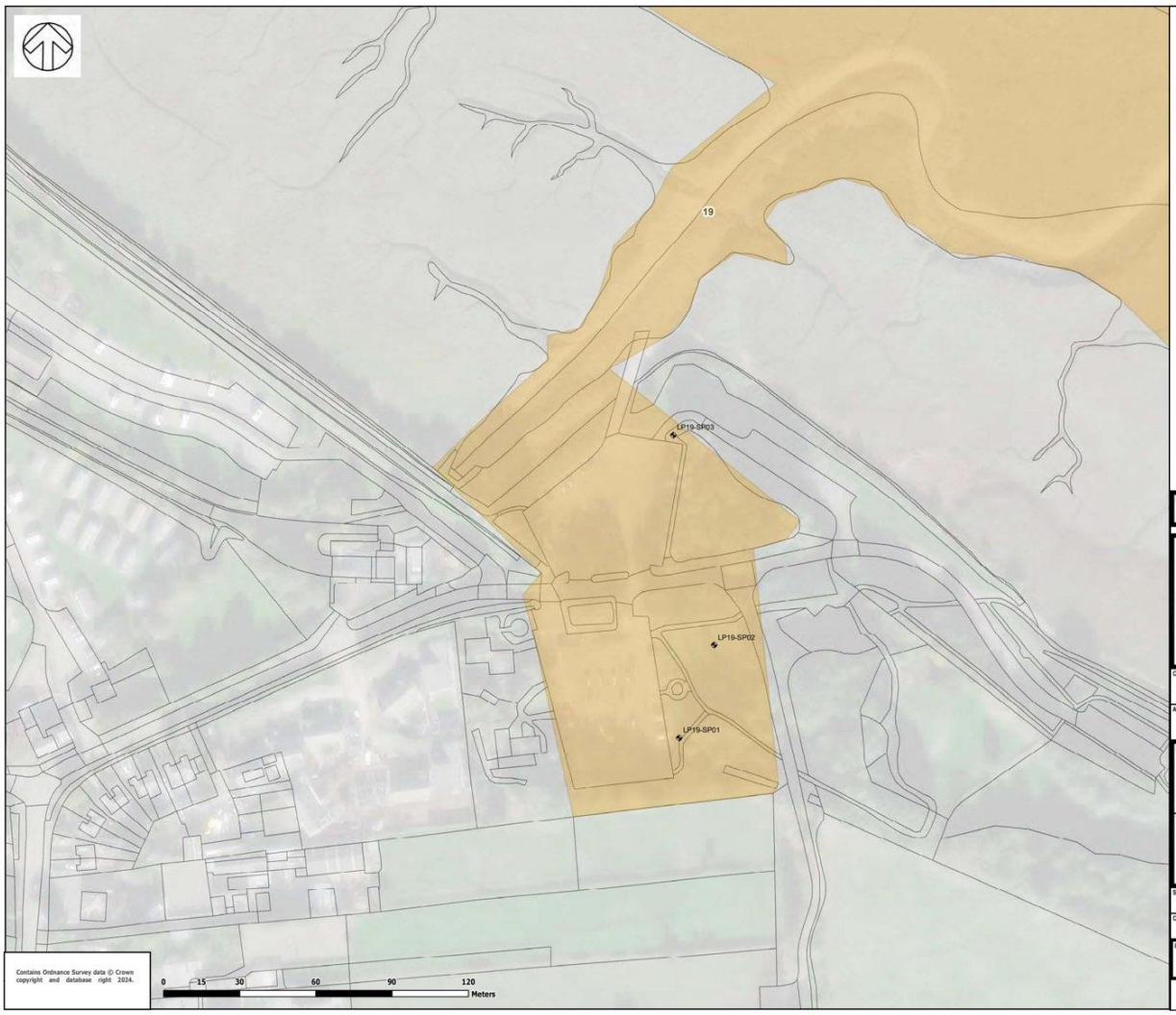

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THORNTON SITE

TITLE: FIGURE 2J

SAMPLING PLAN (LAND PARCEL 19)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE: WSP - A2 Landscape	DESIGN/DRAWN: USER	DATE: NOV 24
PROJECT No: 70100310	DRAWING No: 70100310/P2 -2J	REV:

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THORNTON SITE

TITLE: FIGURE 2K

SAMPLING PLAN (LAND PARCEL 26)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
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PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2L

SAMPLING PLAN
(LAND PARCEL 29)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -2L	

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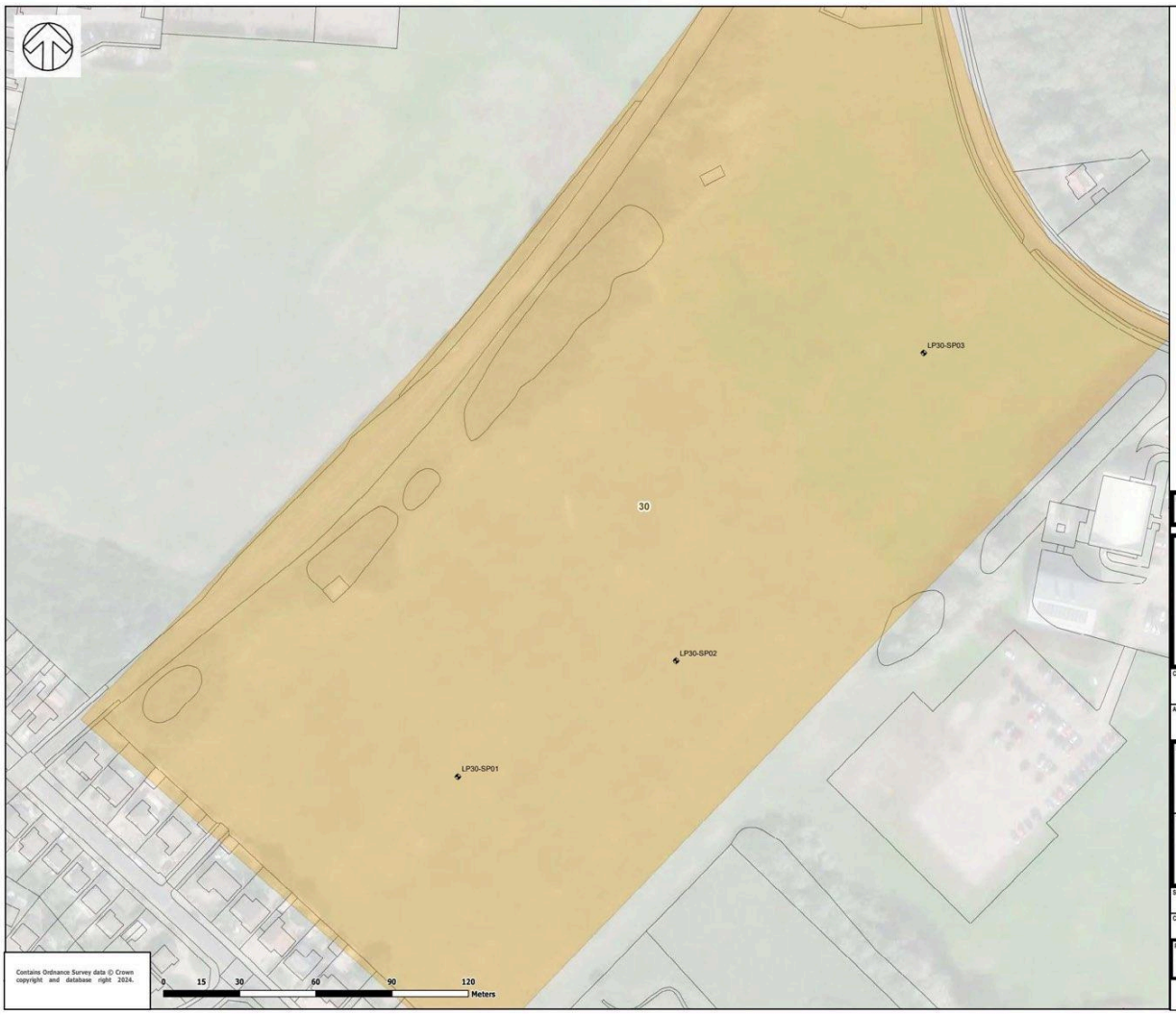

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DO NOT SCALE

Legend

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THORNTON SITE

TITLE: FIGURE 2M

SAMPLING PLAN (LAND PARCEL 30)

SCALE @ A	CHECKED:	APPROVED:
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CAD FILE:	DESIGN-DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -2M	

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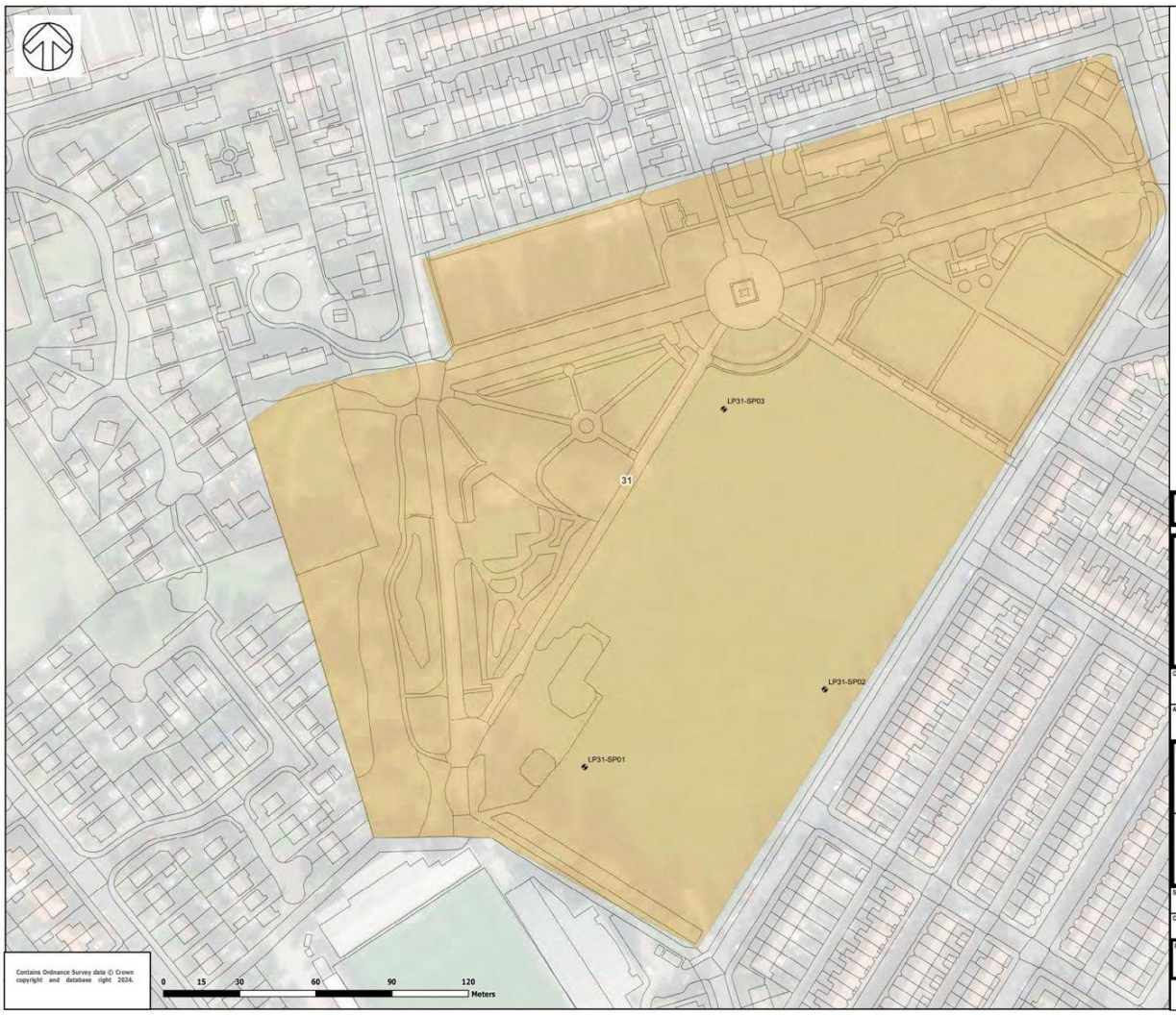

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PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 2N

SAMPLING PLAN
(LAND PARCEL 31)

SCALE @ A	CHECKED:	APPROVED:
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CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
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THORNTON SITE

TITLE: FIGURE 2O

SAMPLING PLAN (LAND PARCEL 32)

SCALE @ A	CHECKED:	APPROVED:
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CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -2O	

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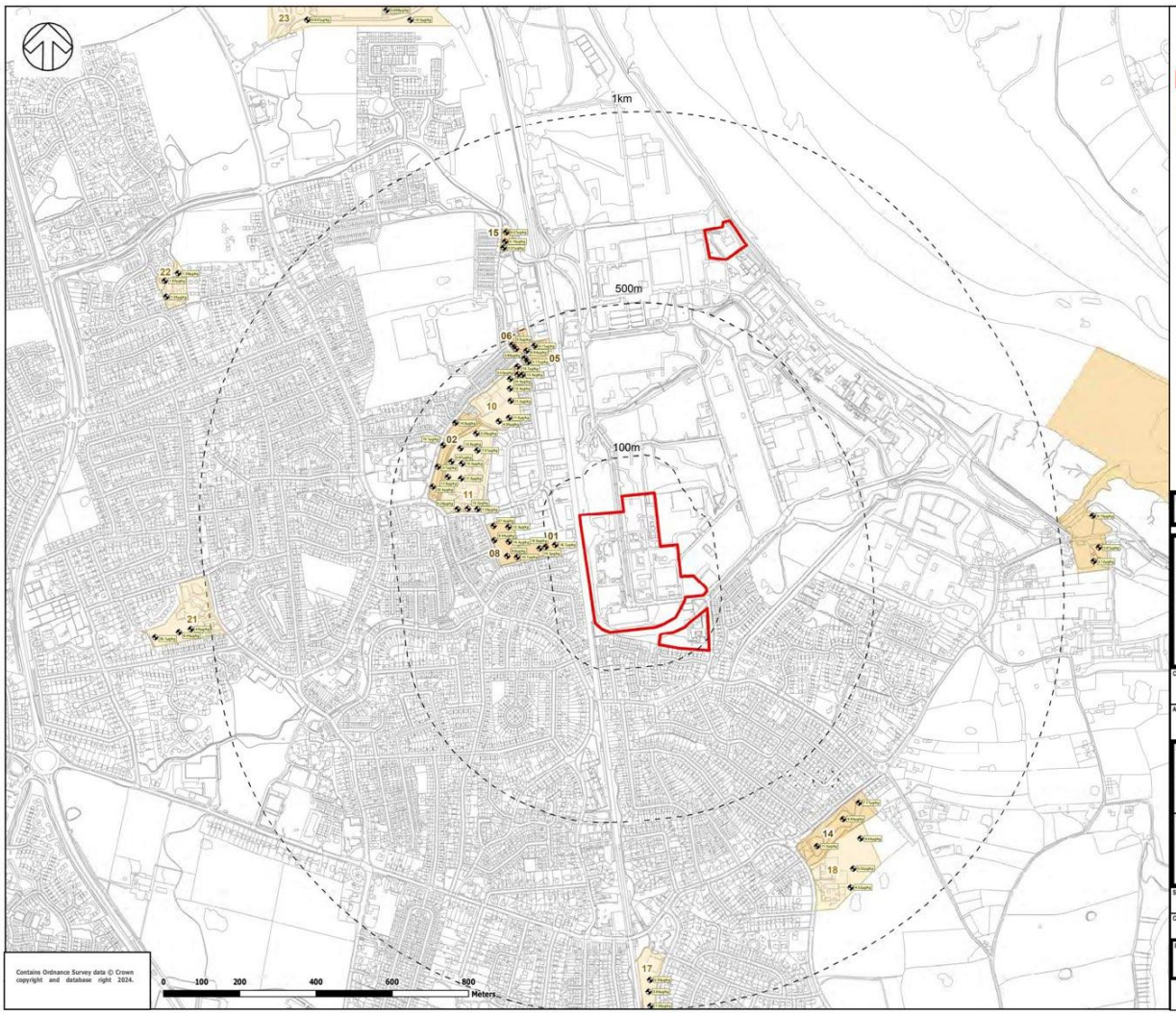

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- Wyre Council Owned Land
- Lancashire Council Owned Land
- WSP Soil Sampling Point

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THORNTON SITE

TITLE: FIGURE 3
MAXIMUM REPORTED PFOA
CONCENTRATIONS IN SOILS (UG/KG)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE: WSP - A2 Landscape	DESIGN/DRAWN: USER	DATE: NOV 24
PROJECT No: 70100310	DRAWING No: 70100310/P2 -04	REV:

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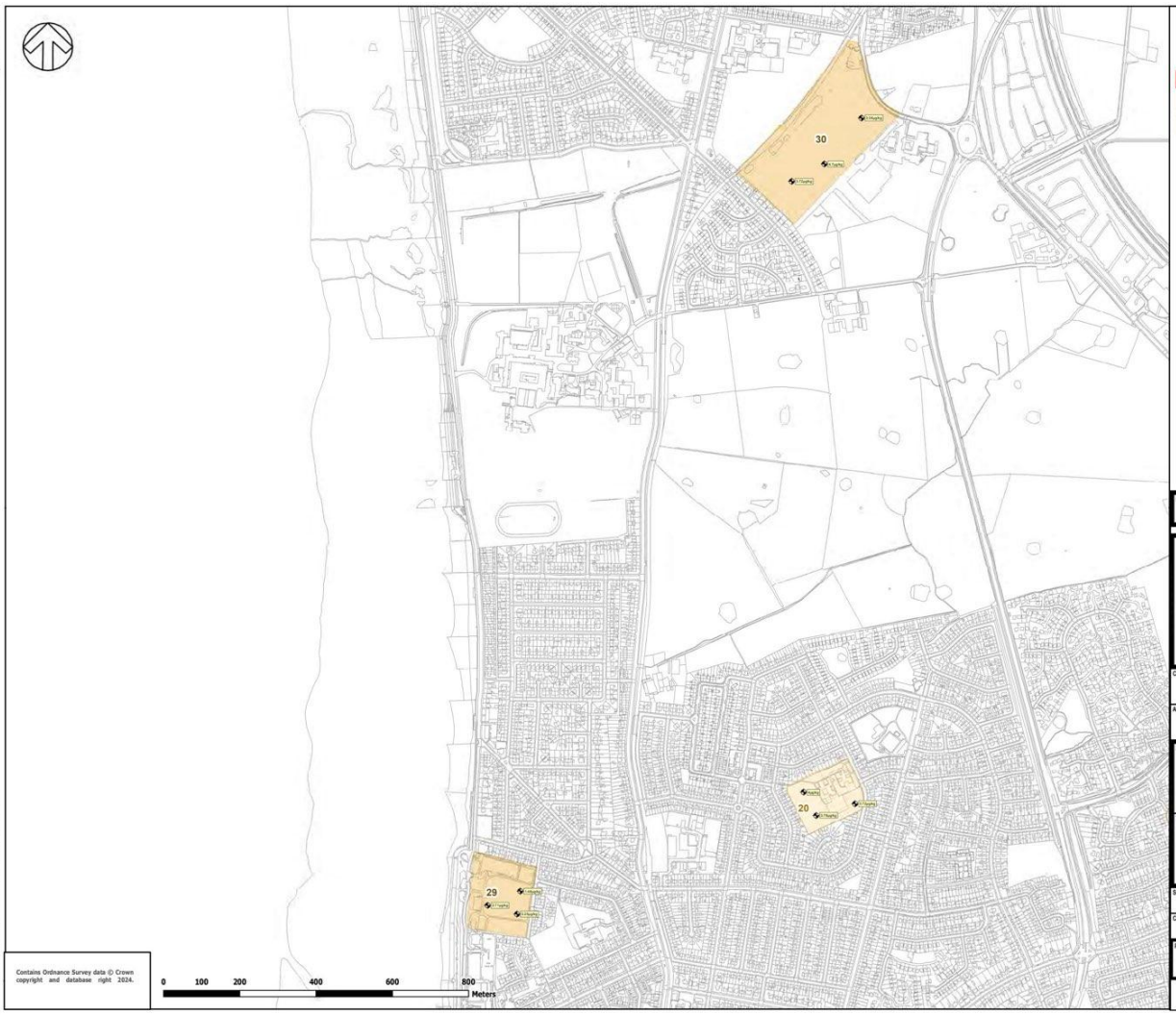

Drawn By: UKJXK032

File: G:\Projects\AGC\70100310 AGC Sampling v5.mxd

DO NOT SCALE

Legend

- Site Boundary - AGCCE Land Ownership
- Wyre Council Owned Land
- Lancashire Council Owned Land
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0 100 200 400 600 800 Meters

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 3 A
MAXIMUM REPORTED PFOA
CONCENTRATIONS IN SOILS (UG/KG)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
PROJECT No:	DRAWING No:	REV:
70100310	70100310/P2 -04A	

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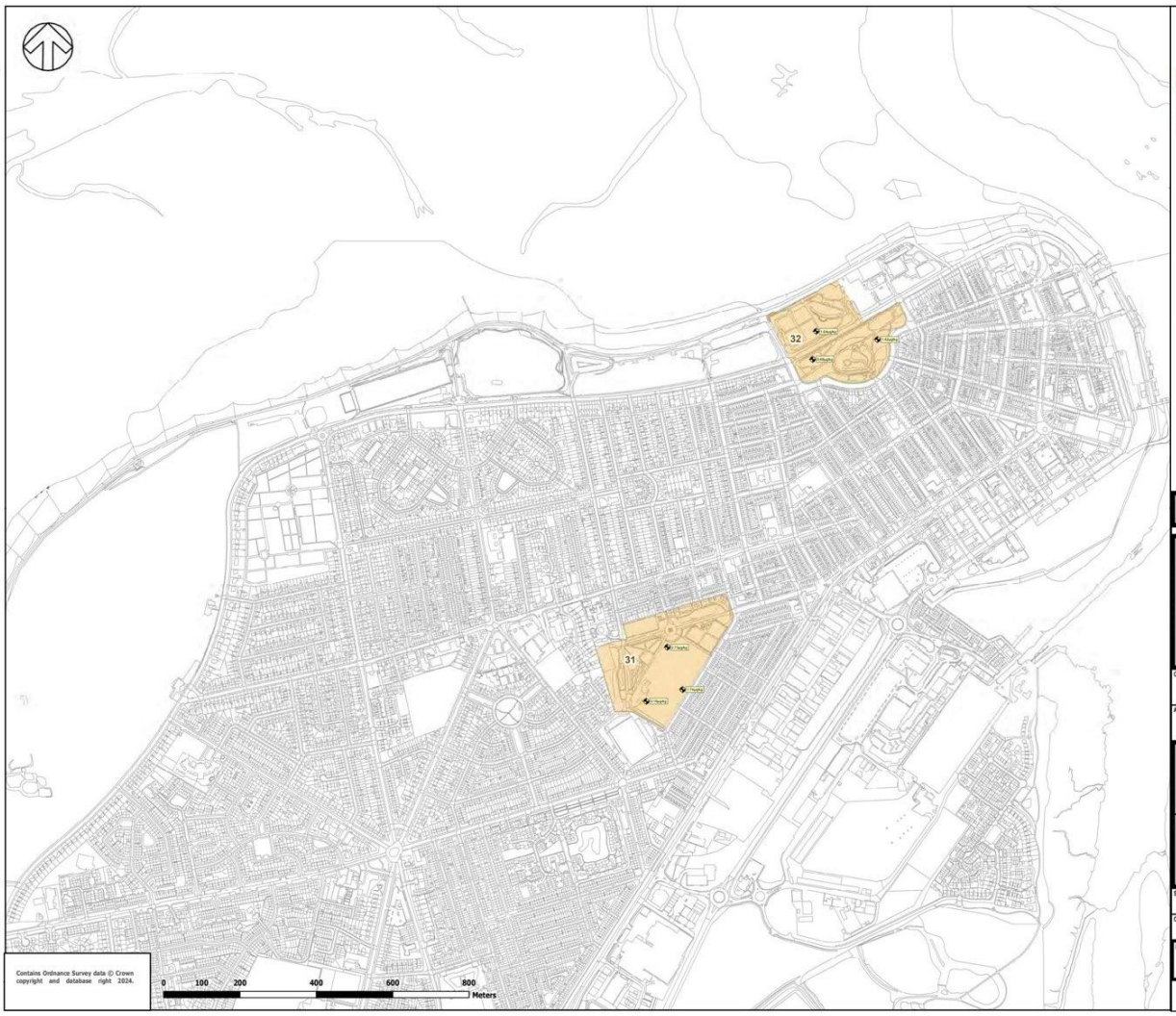

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ARCHITECT: WSP UK LIMITED

PROJECT: 70100310 EA PHASE 4
PRELIMINARY INVESTIGATION

THORNTON SITE

TITLE: FIGURE 3 B
MAXIMUM REPORTED PFOA
CONCENTRATIONS IN SOILS (UG/KG)

SCALE @ A	CHECKED:	APPROVED:
1:0	CHK	APP
CAD FILE:	DESIGN/DRAWN:	DATE:
WSP - A2 Landscape	USER	NOV 24
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Appendix B

NOTES AND LIMITATIONS

Confidential

REPORT LIMITATIONS - GROUND AND WATER

GENERAL

1. WSP UK Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.

2. Unless explicitly agreed otherwise, in writing, this report has been prepared under WSP UK Limited standard Terms and Conditions as included within our proposal to the Client.

3. Project specific appointment documents may be agreed at our discretion and a charge may be levied for both the time to review and finalise appointments documents and also for associated changes to the appointment terms. WSP UK Limited reserves the right to amend the fee should any changes to the appointment terms create an increase risk to WSP UK Limited.

4. The report needs to be considered in the light of the WSP UK Limited proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEO ENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: *This section covers reports with the following titles or combination of titles: phase 1; desk top study; geo environmental assessment; development appraisal; preliminary environmental risk assessment; constraints report; due diligence report; geotechnical development review; environmental statement; environmental chapter; project scope summary report (PSSR), program environmental impact report (PEIR), geotechnical development risk register; and, baseline environmental assessment.*

5. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. WSP UK Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.

6. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP UK Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

7. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.

8. WSP UK Limited does not warrant work / data undertaken / provided by others.

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

INTRUSIVE INVESTIGATION REPORTS

Coverage: *The following report titles (or combination) may cover this category of work: geo environmental site investigation; geotechnical assessment; GIR (Ground Investigation reports); preliminary environmental and geotechnical risk assessment; and, geotechnical risk register.*

9. The investigation has been undertaken to provide information concerning either:

    i. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or

    ii. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.

10. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.

11. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.

12. For geotechnical investigations the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.

13. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.

14. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

15. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, WSP UK Limited has used reasonable skill and care to extrapolate conditions between these points based upon assumptions to develop our interpretation and conclusions. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation. Conditions can change between investigation points and these interpretations should be considered indicative.

16. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated

with the WSP UK Limited risk assessment process have been outlined within the body or associated appendix of the report.

17. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.

18. Where soil contamination concentrations recorded as part of this investigation are used for commentary on potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed.

19. The results of the asbestos testing are factually reported and interpretation given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and / or trace loose asbestos fibres within the soil matrix at the site.

20. If costs have been included in relation to additional site works, and / or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

21. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.

22. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIAL STRATEGY REPORTS

23. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected on the basis of the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

24. The outputs of the Detailed Quantitative Risk Assessments are based upon WSP UK Limited manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.

25. Prior to adoption on site they will need discussing and agreeing with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of WSP UK Limited. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

GEOTECHNICAL DESIGN REPORT (GDR)

26. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS)

27. These reports are factual in nature and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of an earthworks or remedial works.

28. The data is presented and will be compared with assessment criteria.

Appendix C

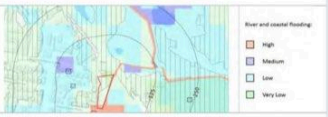
LAND PARCEL DESK REVIEW

Confidential

70100310 Thorton Preliminary Offsite Investigation
Land Parcel Desk Review

Land Parcel	Council	Land Parcel	Land Type	Land use	Potential PFAS Source in the vicinity	Pertinent screenshots
1	Wyre Council	Occupation Road Allotments	Allotments	1951: The site is undeveloped. 1960: There is a structure in the west of the site, and a works is to the northeast of the site. 1981: The structure in the west of the site is no longer present. 2024: The site is occupied by allotments.+F4:G9G10F4:G8F4:G11F4:G10F4:G9	FLOOD RISK: - Risk of river / coastal flooding is very low. - The site sits within Flood Zone 3. - The highest SW flood risk present on the site is 1 in 30 year, 0.1-0.3m risk. - The site falls within a negligible GW flood risk area. LAND USE: - Directly northwest of the site an unspecified works was present 1967-1973. - A historical garage is located ~60m N of the site (1970). - There are multiple unspecified tanks to the east of the site, as well as a historical licensed pollutant release (combustion & incineration). WASTE: - A historical licenced waste site (vehicular metal recycling) is located ~40m NE of the site. - A historical waste site (scrap yard) is located ~65m N of the site (1994).	
2		Heys Street	Public open space - Residential	1951: The site is undeveloped. A small brook runs though the site (S-N) 1967: Two small structures have been constructed in the north (electricity sub station) and the south (pumping station). The site remains the same until 2024.	FLOOD RISK: - The site falls within a high risk river and coastal flood ing area due to the brook that runs through the site. - The site sits within Flood Zone 3. - The highest SW flood risk present on the site is 1 in 30 year, 0.1-0.3m risk. - The site falls within a negligible GW flood risk area. LAND USE: - An electricity substation is located on the northern border of the site and a pumping station is present in the south of the site. WASTE: - ~120m east of the site are multiple waste exemptions for disposal, treating and using waste (including recovery of scrap metal). - There are four records of licensed discharges to controlled waters in the site, two of which are sewage discharges (most recent in 2017). GROUND WORKINGS: - The northern area of the site is suspected of surface ground workings due to a large pond that was present in 1891.	
4		Red Marsh Drive	Public open space - Commercial	1951: The site is undeveloped and remains that way until 2024.	FLOOD RISK: - Risk of river / coastal flooding is very low. - The site sits within Flood Zone 3. - There is no SW flood risk on the site. - The site falls within a negligible GW flood risk area. LAND USE: - Multiple recent industrial land uses ~20m east of the site, including vehicle repair / testing facilities and unspecified works. WASTE: - A waste exemption is located ~60m east of the site (burning waste in the open). - A historical licensed waste site is located ~ 90m NE of the site (household, commercial and insdustrial waste - operational in 1994).	
5		Croft Court	Public open space - Commercial	1951: The north area of the site appears to be on a built up area of land, but otherwise undeveloped. A works is present to the north of the site. 1973: The works is no longer present to the north of the site, however two gasholders remain. 1981: The gasholders to the north are no longer present. 1988: Buildings have been constructed in the north and the south of the site. The site remains the same until 2024.	FLOOD RISK: - Risk of river / coastal flooding is very low. - The majority of the site sits within Flood Zone 2. - There is no risk of SW flooding on site. - The site falls within a negligible GW flood risk area. LAND USE: - A historical gasworks was present directly north of the site betweem1910-1973. This included the presence of multiple tanks. - A railway is present along the eastern border of the site. - The site falls within Red Marsh Industrial Estate, therefore there are a number of industrial land uses surrounding the site, including vehicular services, engineering services and industrial features. - The site falls within a COMAH site for Victrex. 81m NE of the site is a licensed pollutant release related to halogen processes, and chemical & acid processes. - The site is underlain by Made Ground. WASTE: - A historical licensed waste site is located 4m NE of the site (household, commercial and insdustrial waste - operational in 1994). - A waste exemption is located ~50m south of the site (burning waste in the open). GROUND WORKINGS: There is record of surface workings (cuttings) to the east of the site associated with the railway.	
6		Butts Close	Public open space - Commercial	1951: The site appears to be on a built up area of land. 1976: An electricity substation in the northwest of the site. 1981: A road runs through the site (N-S). 1988: Two buildings have been onstructed on the site. The road is no longer present on the site. 2024: The south and west areas of the site are grassland, with two buildings in the centre and north of the site.	FLOOD RISK: - Risk of river / coastal flooding is low. - The site sits within Flood Zone 2 in the north and Flood Zone 3 in the south. - There is a low risk (1 in 250 return period) of SW flooding on the site. - The site falls within a negligible GW flood risk area. LAND USE: - The historical gas works directly north of the site appears to extend into the northern area of the site in 1910. - There are multiple records of current land uses on site, including vehicular services, electricity sub stations and concrete / garage door wholesalers. - The site is underlain by Made Ground. WASTE: - A historical licensed waste site is located ~5m east of the site (household, commercial and insdustrial waste - operational in 1994).	
8		Hargreaves Street	Public open space - Residential	1951: The site is undeveloped with Hargreaves St bordering the site to the west. The site remains in this state until 2024.	FLOOD RISK: - Risk of river / coastal flooding is low. - The site sits within Flood Zone 3. - There is a low risk (1 in 250 return period) of SW flooding on the site. - The site falls within a negligible GW flood risk area. LAND USE: - Red March Industrial Estate is located directly north of the site, therefore there are a variety of current land uses in the vicinity of the site. This includes: Vehicular services, industrial coatings and finishings (**including powder coating services**), biofuel providers, and further unspecified works.	

9	Lancashire County Council	Sacred Heart School	School	1951: The site is undeveloped with an area of trees in the east and the B5439 bordering the site to the south 2010: The area of trees in the east has been replaced with an area of hardstandingand a water pumping station in the south. 2024: A football pitch is present in the centre of the site.	FLOOD RISK: - Risk of river / coastal flooding is very low / low. - The site sits within Flood Zone 3. - There is a low risk (1 in 1000 return period) of SW flooding on the site. - The site falls within a negligible GW flood risk area. LAND USE: - An unspecified historical tank is recorded ~30m north of the site. - There is a pumping station in the southeastern area of the site. - An electricity sub station is present ~10m east of the site. - There are four records of licensed discharges to controlled waters to the east (~20m) the site, two of which are sewage discharges (most recent in 2017).	
10		Thornton Primary School	School	1951: A school is present on the site 1976: The school building has been extended The layout remains the same until 2024	FLOOD RISK: - Risk of river / coastal flooding is very low / low. - The site sits within Flood Zone 3. - There is a low risk (1 in 250 return period) of SW flooding on the site. - The site falls within a negligible GW flood risk area. LAND USE: - A licensed pollutant release record is present for waste oil burner processes located 14m NE of the site. - Multiple current land uses are identified adjacent to the eastern and southern perimeter of the site, including vehicular repair servicing (including a **car body painting service**) and unspecified works. WASTE: - A waste exemption (disposal by incineration) is located ~30m south of the site. - Three further waste exemptions are located 30m east of the site for sorting, recovery, and use of waste. - A pollution incident occurred ~70m SE of the site in 2001, and was identified as specific waste materials (household waste).	
11		Great Ardley School / Red Marsh School	School	1951: The site is undeveloped. 1973: A school has been developed in the south of the site. 1981: A further two school buildings have been constructed on site 2024: The school buildings remain, with associated car park, tennis courts and playgrounds	FLOOD RISK: - The site has a high risk of river / coastal flooding due to the brook flowing through the north of the site. - The site sits within Flood Zone 3. - The site has a high SW flood risk. - The site falls within a negligible GW flood risk area. LAND USE: - An electricity substation is present on the site from 1967-1997. - A pumping station is present in the southern area of the site. - 19m S of the site are two land use records for vehicular servicing, and industrial art signs. - Multiple land uses are identified along the eastern border of the site, including chemical manufacturers, stained glass suppliers, and vehicle services. WASTE: - A waste exemption (disposal by incineration) is located 18m east of the site. - Three further waste exemptions are located 30m east of the site for sorting, recovery, and use of waste.	
14	Wyre Council	Stannah Road	Public open space - Residential	1951: The plot is undeveloped. 1973: The site has been labelled as Kenyon Gardens and remains the same layout until 2024.	FLOOD RISK: The site is within a low river and coastal flood risk area, and sits within Flood Zone 3. The highest SW flood risk present on the site is 1 in 30 year, 0.1-0.3m risk. The site falls within a negligible / low GW flood risk area. LAND USE: A sewage pumping station is located 54m north of the site. An obsolete petrol station is located 348m south of the site. A historical landfill is located 160m SW of the site that accepted inert waste and was last recorded in 1973.	
15		Butts Road Playground	Playground	1951: A car park is present across the south of the site, along with a bus terminus and a small shelter in the north. A raised footpath passes through the site (east-west). 1994: The car park is no longer present in the south of the site instead, shrubland is now in this area. 2024: The bus terminal is no longer present and has been replaced with a childrens playground in the north of the site.	LAND USE: - 35m N of the site is an electrical production and industrial products site, and a vehicle repair, testing and servicing centre. - The site is underlain by Made Ground. - Records indicate surface workings in the northeastern area of the site related to unspecified pits in 1967 and 1973. WASTE: - 5m NE of the site is a waste exemption for the storage of sludge. - ~90m west of site there is a hisoric landfill record (1950 - household waste). POLLUTANTS: - A pollution incident (unspecified pollutants) occurred 26m SE of the site in 2003.	
17	Lancashire County Council	Thornton Cleveleys Bains Endowed School	School	1951: site mostly undeveloped. Single building seemingly present on site in north. Residential developments surrounding site directly to the north, east and west. Railway running north-south along western boundary of site present. 1967-1968: Further development of residential areas. 1973: Second building built in north end of site. Area directly north, east and west now fully developed with residential. 1981-1985: No major changes. 2001: Number of buildings reduced down to one. No further developments. 2024: North site boundary is intersected by part of an Education Facility situated directly north of site. No further changes.	FLOOD RISK: - Most of site Very Low, rest is Low. - Entire site benefits from Flood Defences. - Site is directly adjacent to river which is assigned a High flood risk. - Highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. - Negligible GW flooding. WASTE: - 1965-1973: Historical landfill (101m NE) (waste type: Inert) - 2002: Pollution incident (490m W) - agricultural materials and wastes, slurry and dilute slurry Sewage Pumping Station (37m SE)	
18		Stanah Primary School	School	1973: A school is constructed in the centre of the site. 1981: A second school building has been constructed on the site.	LAND USE: - 1973: A historical landfill is located 160m SW of the site that accepted inert waste. - A gas feature is located on site on the western site boundary.	
19	Wyre Council	River Road Car Park	Public open space -	1951: The site comprises salt marshes in the north, and vacant land in the south. A children's playground is located adjacent to the western boundary. 1967: A **refuse tip** is present across the south half of the site. A track, a car park and a flood gate is present in the north of the site 1981: The car park has extended into the southern area of the site. 2024: On site are two car parks, areas of trees, and River Road.	FLOOD RISK: - The majority of the site is classed as very low risk from river and coastal flooding, excluding the salt marsh area in the north, which is classed as high risk. - A sea wall is present in the northwest of the site. - The site is witin a negligible SW flood risk area. - The majority of the site is within a negligiblw GW flood risk area, with an area of low GW flood risk in the south. LANDFILL / WASTE: - A **historical landfill** (EA/NRW records) is located across the majority of the site and extends to the east - waste is classified as Household. The landfill was last recorded in 1970. - Waste exemptions: 168m S - Disposal, use and treating of agricultural waste (burning, spreading, composting etc.) LAND USE: - 52m NW: List 1 dangerous substance record - carbon tetrachloride, chloroform. - 1983-1981: 52m NW - Licensed Sewage discharges (treated effluent) into Hillylaid pool. POLLUTION INCIDENTS: - 236m S - 2001 Sewage materials (process effluent). Water impact classed as minor, land and air impact classed as no impact.	

20		Northfold Community School	School	1951: The sie is part of an open expanse of fields, with a pond in the west area. 1973: Two buildings labelled as a School have been constructed in the northeast area of the site. The pond is no longer present. 2024: The site comprises three school buildings and associated school yard.	FLOOD RISK: - The site lies within a low risk river and coastal flooding area. - Silts within Flood Zone 2 (1 in 1000 chance of flooding each year). - The highest SW flood risk present on the site is 1 in 30 year, 0.1-0.3m risk in a small area in the south of the site. - The site falls within a negligible GW flood risk area. LAND USE: - An electricity substation is located 34m NE of the site.	
21		Royles Brook School	School	1951: The site s mostly undevevoped with a small building in the south, and a pond in the north. Thsidential developments are present to the east and the south of the site. 1967: The site is labelled as Playing Fields 1981: A smaller second building is constructed directly north of the existing building and is labelled as Scout HQ. 1991: A tank is present just south of the scout hut. 1992: A primary school building has been constructed in the centre of the site with associated roads and car parks. 2024: The school is labelled as Education Facility. The surrounding area is residential.	FLOOD RISK: - The site lies within a low risk river and coastal flooding area. - Silts within Flood Zone 3 (1 in 100 chance of flooding each year). - There are three recorded historical flood events on the site in 2017, the cause of one being local drainage / surface water, the other two unknown. WASTE: - There are two records of waste exemptions within 500m of the site, both of which relate to the sorting and de-naturing of controlled drugs for disposal, located 136m SE and 253m SE. LAND USE: - A petrol station is located 324m east of the site. - A tank is present in the southeastern area of the site, and is identified as generic. - An electricity substation is identified 20m north of site, and 53m to the south. POLLUTANTS: - Licenced pollutant release: 335m east of site is unloading of petrol into storage at service stations, and 415m southwest is petrol vapour recovery (no longer active). - There are five records of licensed discharges to controlled waters within 500m of the site, three of which concern sewage dischares - final / treated effluent to Oyles Brook in 1993 (347m SE).	
22		Thornton House	Residential Care Home	1951: Site is undeveloped. Nursery present east and south of the site. 1967: Site remains undeveloped however a drain has been labelled on site running along the eastern boundary. 1979: Three buildings have been constructed on site in addition to an electricity substation in the west area of the site, a road along the northern boundary and a parking area in the northwest. North, south and west of the site has been developed into residential land.	FLOOD RISK: - North area of the site is considered very low and the central and southern area of the site is considered low risk in terms of river and coastal flooding. - The site benefits from flood defences. The site sits within Flood Zone 3. - Highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. GW flood risk negligible across the whole site. LANDFILL: - Historical (BGS) landfill identified 289m SE of site - waste type not identified.	
23	Lancashire County Council	Bourne Road	Waste Facility	1951: On site (and directly northwest of site), chemical works first labelled (some structures present along inside of northern site boundary). 1967: On site buildings along northern boundary reduced, one structure appears to remain. Armonia Soda Works no longer labelled in mapping. 1973: On site buildings expanded in NW and on East side of site. 1981: On site buildings stretch across entire site, tanks are labelled in east of site as well as directly south of site. Buildings now extend beyond the site in a SE direction for ~100m. 1992: No major changes on site. Developments in residential areas directly southwest and west of site. ~250m from boundary. 2001: No major changes on site. 2010: Buildings on site appear to be complete gone (besides a single structure inside northern boundary) with only roads remaining. Some building directly north off site are still present . All buildings directly southeast of site stripped. 2024: Two large structures now extend from east of site towards west. Road redeveloped to include a roundabout in the west half of the site.	FLOOD RISK: - Most of site Very Low or Low, area of site in south west corner characterised as High risk of river/coastal flooding. - Entire site benefits from flood defences. Most of site in Flood Zone 3. - Highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. - GW flood risk negligible for all of site but for SW corner which is Low. LAND USE: - Various tanks/unspecified tanks noted between 1969 and 1994. Additional tanks noted offsite north, NE, NW and SE in same timeframe. - Onsite generic tanks (3No.). 'Associated Process' of Thornton Waste Treatment Plant (Permit ZP3239DH), 'Disposal of >50 T/D Non-hazardous waste involving biological treatment' (also Thornton Waste Facility). Additional licenses 58m NE for similar activities. - List 1 Dangerous substances: 138m NE Carbon Tetrachloride, Chloroform. WASTE: - Licensed waste sites: 58m NE (Physio-Chemical Treatment Facility), 136m NW (Household, Commercial, Industrial Waste), 205m W (Landfill taking Non-Biodegradable Wastes), 222m NW (Physical Treatment Facility). - Pollution incidents: 148m NW, Contaminated Water - **'Firefighting Runoff'** - 58m NE Pollution inventory waste transfers: 0.04 tonnes 'Other wastes (including mixtures of materials) from mechanical treatment of waste containing dangerous substances', - Leaching class High for both bedrock and superficial aquifer.	F
26		Millfield College	School	1951: site mostly undeveloped. Residential developments surrounding site directly to the north, east and west. Railway running north-south along eastern boundary of site present. 1967-1968: Further development of residential areas. 1973: School first labelled on site in north half. Road (Belvedere Road) now cuts across the site in the northwest corner of the site. Area directly north, east and west now fully developed with residential. 1981-1985: No major changes. 2001: School building now expanded. 2010: Extension added to Belvedere Road further into site area west of school building. 2024: School relabelled as Education facility.	(See plot 17)	
27		White Carr Lane	Public open space	1951: White Carr Lane runst north to south talong the east border of the site. Either side of the road appears as vacant land 1969: Directly to the west of the site a residental development is constructed and office buildings are constructed to the south. 1974: White Carr Lane now cuts through the north area of the site in a northwesterly direction. 2024: The site maintains the same layout from 1974. The office buildings located south of the site are no longer present in 2024.	FLOOD RISK: - The majority of the site falls within a very low risk river and coastal flooding area, with the exception of a small section in the south of the site that is classed as high risk. - The site sits within Flood Zone 3. - Highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. - GW flood risk negligible across the whole site.	
28		North Park	Public open space	1951: The site is part of an open expanse of fields. 1981: The site has been labelled as a recreation ground, witha smalll structure isand a bowling green present in the centre of the site. 2024: A playground and sports court has been added to the site.	FLOOD RISK: - The site is within a low risk coastal / river flooding area. - The site sits within Flood Zone 2 and has a high SW flood risk on site. GW flood risk is negligible in the area. LAND USE:. - There are records of surface ground workings in the southeastern area of the site relating to a pond that was present until 1930.	

29	Wyre Council	Jubilee Gardens	Public open space	1951: The site is labelled as Jubilee Gardens, and comprises pavements, tennis grounds, a paddling pool., small pavillion buildings and lavaories. Residentia areas are located to the north and south, Jubilee Drive borders the site to the east, and North Promenade is located to the west with groynes and the sea beyond. 2010: The paddling pool is no longer present on the map, along with most of the previous buildings on the site no longer present 2024: The site comprises a car park in the north, a bowling green in the northeast, playing fields, a playgroundin the west, and a skatepark in the southwest.	FLOOD RISK: - The greatest flood risk level from river and coastal flooding located on the site is high in the northern area. - There is one record of histrical flooding on site due to overtopping of defences in 1977. - The northern area of the site falls within Flood Zone 3. - Highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. - GW flood risk negligible across the northeastern area of the site, and is classed as low for the rest of the site. LANDFILL: - The closest landfill record for the site is located 459m NE of the site. LAND USE: - Water pumping station on site. Sewage pumping station located 151m south of the site	
30		King Georges Playing Fields	Public open space	1951: The north western boundary runs adjacent to the Blackpool and Fleetwood Tramroad. A small brook runs through the south of the site, flowing northwest, and an unspecified heap is also present in the centre of the site. 1973: The site is labelled as King George's Memorial Field (playing field) and a small pavillion building is situated in the north area of the site along with a small area of parking. 1973-2024: No major changes. 2024: The pavillion building in the north of the site has been removed and a substation is present in the north area of the site.	FLOOD RISK: The greatest flood risk level from river and coastal flooding located on the site is high in the northern area. There is a record of historical coastal flooding 6m west of the site due to overtopping of defences. The majority of the site sits within Flood Zone 2 (0.1% chance of flooding each year). The highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. GW flood risk negligible across the whole site. LANDFILL: A **historical landfill** is underlying the majority of the site. The landfill was last recorded in 1950, and the waste type was classified as household. A second historical landfill is located 60m NE of the site (household waste also) and was also last recorded in 1950. POLLUTANTS: A pollution incident occured on site in 2021 and was classed as 'Atmospheric Pollutants and Effects' with a significant air impact. A similar pollution indicent occured 56m east of the site in 2010 (atmospheric pollutants). 87m west of the siteis an active discharge licence of sewage discharges into Culv Cops Brook via SWS.	
31		Memorial Park	Public open space	1951: The site consists of a park with small shelters / buildings and a pond in the west. This layout remains the same until 2024.	FLOOD RISK: - The river and coastal flood risk across the majority of the site is low. - The area benefits from flood defences, sits within Flood Zone 3. - Risk from GW flooding is negligible. - The highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. LAND USE: - A historical garage is identified 45m NE of the site present from 1960-1998. - A metal recycling site was located 267m SE of the site in 1993. - Fleetwood **Fire Station** is located 147m south of the site. WASTE: - Two waste exemptions are recorded on site: spreading of waste on non-agricultural land to confer benefit and deposit of waste from dredging of inland waters. - Located 226m E of the site is a waste exemption for recovery of textiles. - A historical waste site (waste transfer station for scrap metal) is located 261m SE.	
32		The Mount Gardens	Public open space	1951: The site consists of bowling greens, a bandstand, small shelters and a Marine Hall / Terraces in the north. The Esplanade road runs through the centre of the site (east-west), and to the south of the road is 'The Mount' a raised area of park land with paths and small pavillion buildings. 2024: The site layout remains similar to 1951, however some small buildings / shelters have been removed and a skate park has been added in the west of the site.	FLOOD RISK: - The river and coastal flood risk across the majority of the site is low. - There is a record of historical coastal flooding 1m north of the site due to overtopping of defences. - The majority of the site sits within Flood Zone 2 (0.1% chance of flooding each year). - The highest SW flood risk on site is 1 in 30 year, 0.3 - 1.0m. - GW flood risk low across the whole site. LAND USE: - An electricity substation is located in the south of the site. - A **historical fire station** is located 297m SE, and was last recorded in 1973.	

Appendix D

PFAS STANDARD OPERATING PROCEDURE

METHOD STATEMENT – Excavation of Hand Pits

Project Name:	Thornton Preliminary Offsite Sampling	**Project Number:**	70100310
This document is to be read in conjunction with	• T480 – Site Risk Assessment for the works. • Construction Phase Plan. • Site Documents Pack (including contractor Risk Assessments and Method Statements (if applicable), COSHH assessments, proposed exploratory hole plan and exploratory hole and sampling schedule). • Permit(s) to Dig		
Purpose	This Method Statement has been written for the excavation of hand dug pits as part of ground investigations. It does not cover temporary propping or shoring of pits. It does not cover utility avoidance surveys – see Procedure for the avoidance of underground utilities and below ground structures: here.		
Equipment:	• Hand digging tools (Insulated shovel, scissor shovels, etc.). • Tablet (or other method for taking logs and notes including stationery)/ weather writer* clipboard or somewhere to store drawings and paperwork. • Pens* / pencils. • Tape measure. • Camera (separate to phone or tablet if necessary). • Laboratory supplied sample containers* and chain of custody sheets (if obtaining samples). • Sampling trowel (stainless steel*). • PID (if head space testing and/or personal monitoring require one). • Spill kit (may be provided by Contractor). • Blue roll. • Heavy plastic sheeting* or boards for soil arisings (if required and if not provided by Contractor). • Detergent / PFAS free decontamination solution* (if required, COSHH assessment to be in Site Documents Pack). • PFAS free deionised water for rinsing equipment. • PFAS free buckets and wastewater storage container for decontamination. • Photo board* (if required). • Pedestrian barriers and hazard tape (if required and if not provided by Contractor) • Permits to Dig for the hand dug pit locations. • CAT and Genny Minimum CAT4+ or equivalent (if not provided by Contractor). • Hand held GPS.		

Site specific requirements	OTHER SITE-SPECIFIC REQUIREMENTS:
	• Known constraints: Specific to each land parcel and to be assessed as part of a dynamic risk assessment e.g. soft / uneven ground, structures, trench / manhole covers, overhead wires / gantries, rabbit burrow, etc.
	• Pedestrian barrier requirements around each work location to segregate hand pit works and public/other works: Mobile/folding pedestrian barriers to be placed around hand pitting equipment and hand pit within land parcels that are open to the public. Not required for private/secure land parcels.
	• Personal / ambient monitoring requirements: No personal or ambient monitoring requirements
	• Target depth for hand pits: 600mm (unless specifically indicated otherwise based on known tillage or ground disturbance). See exploratory hole and sampling schedule.
	• Soil sampling requirements: See exploratory hole and sampling schedule for specific location requirements. Generic requirements:
	  ○ Surface or near-surface soil (primarily 0.0- 0.05m)
	  ○ Sub-surface soil (0.10 – 0.15m)		

	○ Deeper soil (0.4 - 0.6m) ○ Change in strata to also trigger sample collection • In-situ testing requirements: No in-situ testing required • Chemical laboratory details: ○ Samples to be couriered under chain of custody procedures to ALS Lif Sciences Ltd, Hawarden Business Park, Hawarden. CH5 3US. Tel: 01244528700 Email: Hawarden.sales@alsglobal.com ○ Samples to be packaged and transported in cooled box/bag provided by the laboratory ○ All soil samples collected to be scheduled for PFAS Broad Suite (TM440) in accordance with the exploratory hole and sampling schedule. Note some samples may be selected for interim storage at the laboratory and later scheduling. • Disposal of arisings: During the works, all arisings retrieved are to be stored on sheeting or boards in the order retrieved. Once target depth has been achieved and required samples collected, the arisings are to be replaced within the hole consistent with the order they were obtained. Any deficit (due to sampling) to be made up from a local surface scrape, where feasible. The replaced material should be compacted during backfill and left slightly mounded to allow for settlement. • Decontamination of equipment: Tools to be decontaminated using PFAS free detergent prior to commencement and prior to sample collection. After decontamination a final rinse should be undertaken using laboratory supplied PFAS free deionised water. • QA/QC: equipment/rinsate samples to be collected in accordance with the exploratory hole and sampling schedule.
PFAS specific requirements	*PFAS SPECIFIC CONSIDERATIONS: *Items within the method statement marked with an asterix (*) indicates where consideration should be given to the potential for the influence of positive and negative sample bias[1] relating to PFAS. Note, research indicates that the most likely pathway for sample bias is through direct contact between sampling equipment and the sample. Examples are provided below.* • Equipment: ○ Weather writers, waterproof paper and other equipment comprised of waterproof materials should only be used in inclement weather. Such items should be kept separate from sampling equipment and gloves changed between use of equipment and interaction with the samples. ○ Use of waterproof pens including permanent markers and dry wipe markers should be avoided. ○ Sample containers should be supplied by the laboratory and specifically for PFAS analysis (Only use high-density polyethylene (HDPE) or polypropylene containers with unlined plastic caps). ○ Tools used for digging and sampling should be PFAS free. ○ Any plastic sheeting or boards to be used for storing spoil should be PFAS free. ○ Decontamination detergents or solutions should be PFAS free and supplied by the laboratory e.g. liquinox. Laboratory supplied PFAS free deionised water should be used for the final rinse during decontamination of sampling equipment. • PPE: Consideration in the use and selection of PPE should also be given to the potential for the introduction of PFAS into the sampling process e.g.

[1] Positive bias is the overestimation of analyte concentration and can result from contamination of samples by field equipment, materials, and sampling procedures used during sample collection, storage, and transport. Negative bias is the underestimation of analyte concentration and can result from improper field sampling procedures, using materials to which the contaminant sorbs, or sample storage conditions that could result in analyte degradation prior to analysis. (NGWA, 2023)

	○ Waterproof fabrics can contain PFAS and should only be worn in inclement weather. If worn, all precautions should be taken to avoid contact between the sample and the waterproof fabric. E.g. Sample container should not be stored or transported in coat pockets. Recommended material for field clothing and PPE may include waterproof clothing that contains polyurethane, polyvinyl chloride, wax-coated fabric, rubber, or neoprene. The use of waterproof clothing during sample collection should be documented in the site diary with the refined sampling protocols to be adopted. ○ Disposable gloves to be changed frequently. Hands should be washed with PFAS-free soap and new, clean disposable gloves should be donned prior to the collection of each sample. ○ Application of sunscreen or insect repellents to be undertaken outside of the working area and hands thoroughly washed with PFAS free soap prior to re-entry. Use should be documented in the site diary with the refined sampling protocols to be adopted. • Food and cosmetic products: General consideration to be given to the potential for introduction of PFAS into the sampling process e.g. ○ Food products and packaging can contain PFAS. Food should be consumed outside of the working area and packaging disposed of appropriately. Hands to be washed thoroughly with PFAS free soap after consumption or handling of food or food packaging. ○ Fabric detergents and cosmetics can contain PFAS. Contact between skin or clothing and the sample should be avoided. ○ Disposable gloves to be changed frequently. • Disposable nitrile gloves must be worn at all times and a new pair of nitrile gloves are to be worn prior to the following activities at each sample location: ○ Contact with laboratory-suppled sample containers or PFAS-free water containers. ○ Decontamination of sampling equipment. ○ Insertion of silicon tubing into the peristaltic pump. ○ Sample collection. ○ Handling of QA/QC samples including field blanks and equipment blanks. ○ After the handling of any non-dedicated sampling equipment or contact with non-decontaminated surfaces.
Detailed Methodology of works to be carried out: <u>Prior to Mobilising to hand pit locations</u>.	• All personnel should wear PPE* as stated in the site-specific instructions/Risk Assessment. • COSHH assessments for all materials used on site should be available. • All staff are to be briefed as to their responsibilities and aware of the safety measures in place during the works. • Hand tools should be insulated. WSP engineers should inspect hand tools for damage and suitability prior to using the tools. Any damaged hand tools are to be disposed of safely and new tools must be purchased.
Equipment decontamination procedure	**Equipment decontamination:** • Rinse equipment thoroughly with an Alconox®, Citranox® or Liquinox® solution made with laboratory-supplied PFAS-free deionized water. • Triple rinse with laboratory-supplied PFAS-free water. • If elevated concentrations of other organic contaminants are present, wipe the equipment with solvent followed by rinses with detergent and laboratory-supplied PFAS-free water as above; solvent type is to be selected based on local protocols and

METHOD STATEMENT – Excavation of Hand Pits

	standards, and could include isopropyl alcohol, methylated spirits (denatured alcohol), methyl hydrate (methanol) or acetone. Review SDS prior to use of solvent and avoid use of solvent that is a contaminant of concern at the site. • Allow equipment to air dry. • When suitable, store equipment in a clean Ziploc® bag until required. • Decontamination fluids are not to be reused during the sampling program and should be collected in a waste container for proper disposal as per local regulations.
Detailed Methodology of works to be carried out: <u>Establishing work area at hand pit locations</u>	1. Hand pits will be progressed at the locations shown on the exploratory hole location plan and within the utility clearance area that is covered by a permit to dig. 2. Check buried utilities and clearance boxes are clearly marked. If the utility spray paint markings are no longer visible, contact the project manager. 3. Check the work area is safe before setting up. Known constraints/obstructions including ecological ones will be highlighted in the site-specific instructions. 4. Pre-condition photos should be taken before the work area is set up. 5. Pit locations to be recorded using handheld GPS. 6. The work area should be large enough to ensure that there is room for the required equipment, operatives, and spoil and that the investigation team are able to move around freely to minimise the risk of slips, trip and falls. Ensure that good housekeeping takes place including ensuring that trip hazards such as cool boxes, dip tapes and sample containers are stored in a safe place. 7. Set-up pedestrian barriers to segregate work area as required in the site-specific instruction. 8. Set-up personal monitoring if/as required in the site-specific instruction. 9. WSP supervisor/engineer to ensure spill kit, fire extinguisher and first aid kit/ eye wash are available close to the location.
Detailed Methodology of works to be carried out: <u>Hand Pit Excavation</u>	• In-ground excavations are hazardous and can be fatal if not undertaken correctly. **Under no circumstances should any WSP employees or sub-contractor enter an excavation, regardless of depth.** • Before excavation commences, the supervising WSP engineer will scan the surface of the hand pit with a CAT 4 and signal generator to confirm the absence of services. (Check utility clearance equipment has a valid calibration). • WSP Engineer to issue Permit to Dig. • Knee pads or a kneel pad must be used by the WSP engineer to avoid contact with sharps on the ground when kneeling down. Avoid kneeling if possible. • Plastic sheeting* or bulk bags* will be placed at ground level ready for arisings. Locate soil arisings away from pit edge and samples to be taken from the arisings pile. Segregate arisings based on soil type. • Keep surface dressing material or turf etc. stored separately to avoid mixing with other arisings so that this can be replaced when backfilling and compaction has been completed • Safe digging techniques are to be utilised during excavation works, this includes the use of only insulated spades, shovels and grafts, **the use of picks, bars or pinch bars is prohibited.** Excessive force should not be used to undertake the excavation and the digging tools should not be thrown into the pit. • Pits will be excavated by the WSP engineer to the required depth as stated in the site-specific requirements. Contact the PM if this is not possible. Hand pits should be terminated, and the PM contacted if any of the following occur to consider whether it is safe to continue: • Visibility is impaired by rapid ingress of water; water should be monitored to ensure this stabilises.

METHOD STATEMENT – Excavation of Hand Pits

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Signs of utilities in the excavation such as clean fill material (pea gravel or sand), marker tape, marker tiles or cables/pipework.
Visual observation of quantities of suspected asbestos containing materials (ACM) such as lagging or cement bonded asbestos.
Soil arisings should be logged in accordance with BS5930:2015+A1:2020. Where waste materials are encountered these should be logged as close to the guidance documents with detail provided on the type of materials, any dates and percentage composition.
Descriptions of visual and olfactory contamination should accord with the scale provided in the table below.
Soil sampling and in-situ testing to be undertaken as the excavation progresses based on details provided in the site-specific requirement. Soils for chemical sampling to be kept in cool box with real ice, double bagged with LDPE bags (avoid use of chemical freezer packs).

Visual and Olfactory Contamination Descriptions
<table>
<tr><th>Visual Evidence of Contamination</th><th>Olfactory Evidence of Contamination</th></tr>
<tr><td>1 – No obvious contamination</td><td>A – No perceived odour</td></tr>
<tr><td>2 – Slight evidence of contamination</td><td>B – Slight odour</td></tr>
<tr><td>3 – Definite evidence of contamination</td><td>C – Definite odour</td></tr>
<tr><td>4 – Gross contamination (free product)</td><td>D – Strong odour</td></tr>
</table>
If you are unsure about anything, contact the PM and/or Site Manager. If you have any concerns regarding the safety of the work, YOU ARE AUTHORISED TO STOP THE WORK and you have a duty to intervene – you can have confidence that you will always be supported by WSP if you intervene on safety grounds.
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<tr>
<td>Detailed Methodology of works to be carried out: <u>Sample Handling</u></td>
<td>

Samples should be collected in laboratory supplied sample containers, packaged and immediately placed on ice within the laboratory supplied coolboxes/bags.
Samples to be shipped as soon as possible (within 24hrs) to the laboratory using the laboratory arranged courier under chain of custody procedures.
Samples should remain cool during storage and shipment (≤ 6 °C). Therefore, if samples are stored for an extended period of time, ice may need to be replaced.
Samples should be scheduled for the required analysis within the required timeframe to ensure the relevant holding times are not exceeded.
Coolers must be packed in such a way as to ensure that no leaks occur during shipment and storage. Ice must be double bagged to prevent leaks. Ice bags should be placed in such a way as to ensure good contact between the ice bags and the sample containers, preferably in the upper part of the cooler since warm air tends to stay higher. Organize the containers in the cooler appropriately and add bubble wrap as needed.
Samples from different land parcels should be segregated so that each coolbox/bag only contains samples from a single land parcel.

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<tr>
<td>Detailed Methodology of works to be carried out: <u>Hand Pit Backfilling</u></td>
<td>
DO NOT LEAVE OPEN EXCAVATIONS UNATTENDED

Excavation to be backfilled using the soil arisings.
Arisings to be replaced in reverse order and compacted in layers using hand tools.
Obtain a photograph of the reinstated hand pit and work area.
WSP Engineer to complete and close the Permit to Dig.

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</table>

METHOD STATEMENT – Excavation of Hand Pits

	In areas accessible to the public, all hand pits to be fenced with pedestrian barriers to prevent unauthorised access to work area. No open hand pit to be left open and unfenced or unattended. NB the hand pits are unlikely to exceed 0.3m diameter and 0.6m depth and therefore only represent a potential trip hazard rather than an unstable excavation or fall from height.						
Required Personnel Protective Equipment:	Safety Boots	Hard Hats	Safety Gloves	Hearing Protection	Eye Protection	Respiratory Protection	Other: 1. Hi-visibility waistcoat/ jacket/ coat* 2. Knee pads 3. PFAS free disposable Gloves*
Applicable:	Yes Conform to 20345:2011 and protective mid-sole	Yes Conforms to EN397	Yes Cut resistant level 3 EN388	No	Yes Splash and impact resistant with sides EN166	No	4. Weather dependent PPE e.g. waterproofs* or sunscreen* (use to be documented in site diary with the refined sampling protocols to be adopted)
Prepared by: (signature)					**Print name: Katie Gamlin** **Date: 06/08/24**		
Authorised by: (signature)					**Print name: Heather Di Lauro** **Date: 12/08/24**		

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed to coordinate a per- and polyfluoroalkyl substances (PFAS) sampling program with the analytical laboratory during the planning stages of the project. In addition, an overview of sample handling procedures is provided with reference to specific other SOPs as needed. The results of the laboratory analyses are dependent on the ability to collect a representative sample and maintain the sample integrity until it can be analyzed. Proper sample collection, storage and documentation all work to maintain sample integrity within a sampling program.

The SOPs available with specific reference to PFAS sampling programs are as follows:

- SOP-1: General Field Methods for PFAS Sampling
- SOP-2: Quality Assurance / Quality Control (QA/QC) Protocols for PFAS Sampling
- SOP-3: PFAS Monitoring Well Development – Purging and Sampling
- SOP-4: PFAS Soil Sampling
- SOP-5: PFAS Surface Water Sampling
- SOP-6: PFAS Drinking Water Sampling
- SOP-7: Sediment Sampling
- SOP-8: Tissue Sampling
- SOP-9: PFAS Construction Materials Sampling

Consult with a PFAS Subject Matter Expert (SME) if required at any time during the planning or execution phase of your proposal and project or contact INT-PFAS@golder.com

Local sampling guidance protocols, if available, should always be consulted. Local protocols can supersede or complement these SOPs, as applicable.

2.0 FIELD PREPARATION - OVERVIEW

Once the sampling program, PFAS analytes of interest and objectives have been finalized, determine the number of samples and types of analyses to be conducted. Several analytical packages for PFAS are offered by the different laboratories and these change frequently as new analytes are added. Review analytical lists from the selected laboratory (accredited for PFAS analyses) based on project objectives and confirm the following:

- Method detection limits (MDL) meet applicable regulatory standards/guidelines. Whenever possible the MDL should be at least an order of magnitude lower than the standards/guidelines;
- Method reportable limits meet applicable regulatory standards/guidelines;
- Recommended and minimum sample volumes required for each sample type (i.e., soil, sediment, water);
- Analytical turnaround time with reference to the project schedule; and
- Laboratory has capacity to meet hold times and reporting schedules.

Laboratories may offer in-house or modified methods and operating procedures for analysis of PFAS in certain environmental matrices. Review the lab methodology when using a new laboratory, especially if needed to change laboratory during monitoring programs.

The most robust and accurate method for PFAS quantification involves isotope dilution (the PFAS target analyte is quantitated relative to its isotopically labeled equivalent). Confirm with the laboratory that isotope dilution is used and check what isotopically labeled standards are analysed.

Some other specific considerations for a PFAS sampling program:

- Confirm the number of field staff needed to undertake the sampling;
- Request sampling containers and any other relevant sampling media (such as swabs) from the analytical laboratory based on the specific analyses to be performed (PFAS and other parameters as needed).
- Confirm sampling method will yield sufficient volume to completely fill sample container to minimize surface-to-volume ratio and decrease the likelihood of PFAS loss via sorption to the sampling container;
- Include an appropriate number of QA/QC samples (refer to SOP-2) in order to identify potential PFAS cross-contamination during sampling. Order extra QA/QC supplies to cover potentially extra days in the field;
- Determine if arrangements must be made for courier services in order to meet sample hold times;
- Specify to the laboratory if chlorinated drinking water samples are to be collected for PFAS as these sample containers require Trizma® preservative in some jurisdictions;
- Obtain Safety Data Sheets (SDS) pertaining to sample preservatives and keep them in the field file;
- Request clean, separate coolers for PFAS samples and one Chain of Custody (CoC) form per cooler;
- Request PFAS-free water for trip blanks (at least one trip blank per shipment) and rinse water to clean sampling equipment.
- Wash your hands and use a new pair of nitrile gloves prior to reviewing the content of the cooler to confirm the number, type and status of the sample containers, CoC forms, custody seals and other supplies.

3.0 LABORATORY SAMPLE SUBMISSION - OVERVIEW

1) All samples should be individually bagged using Ziploc®-type storage bags, placed on ice immediately after sampling and kept at ≤ 6 ºC, unless otherwise stated in SOPs for specific sampling medium (SOP-3 to SOP-9). No chemical (blue) ice packs used within the coolers unless tested to be PFAS free. Unless collected from the same source, samples for PFAS analysis should be stored in separate coolers from the other samples collected as part of the program to minimize the likelihood of cross-contamination during storage, transport and/or handling.

2) Prior to shipping the samples, confirm that the sample ID on the container matches the sample ID on the field notes and CoC. Fill out the CoC accordingly and submit one CoC per cooler. Place the CoC inside a sealed plastic bag such as Ziploc® bag at the top of the cooler before shipment. If you are not shipping directly to the laboratory, include additional signed custody seals in the bag with the CoC forms.

3) Samples should remain cool during storage and shipment (≤ 6 ºC). Therefore, if samples are stored for an extended period of time, ice may need to be replaced. If samples are stored within a refrigerator, confirm the absence of potential PFAS sources in the refrigerator that can come in contact with the samples such as blue ice/gel packs, aluminum foil, wax paper, etc.

4) Coolers must be packed in such a way as to ensure that no leaks occur during shipment and storage (note that a courier may stop shipment if a cooler is noted to leak). Ice must be double bagged to prevent leaks. Consideration should be given to assess if local jurisdictions require the use of ice made of Type I - ultrapure water (i.e.,18.2 MΩ). Ice bags should be placed in such a way as to ensure good contact between the ice bags and the sample containers, preferably in the upper part of the cooler since warm air tends to stay higher. Organize the containers in the cooler appropriately and add bubble wrap as needed.

5) Complete a Deficiency Avoidance Checklist (if required) prior to sealing the cooler for shipment. Place custody seals across all openings of the cooler and wrap several layers of clear packing tape over the seals and around the entire cooler in case the lid may inadvertently open during transport.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be used during implementation of per- and polyfluoroalkyl substances (PFAS) sampling programs.

Due to the extremely low method detection limits associated with PFAS analysis (i.e., part per trillion) and the many potential sources of PFAS contamination, Field Personnel must employ the greatest caution by strictly following the protocols described herein or protocols from local jurisdictions, as applicable. Frequent replacement of nitrile gloves and decontamination of non-dedicated sampling equipment in accordance with the appropriate procedures will mitigate the potential for PFAS cross-contamination.

This SOP includes the following:

- Considerations regarding food packaging and food consumption during PFAS sampling programs;
- Field gear and clothing restrictions;
- Personal hygiene requirements;
- Sample area access restrictions; and
- Field equipment decontamination.

Some of the provisions of the PFAS sampling program requirements described herein may conflict with standard health and safety procedures (e.g., use of insect repellant or sunscreen). Therefore, prior to implementation of a field program subject to these protocols, an Addendum to the site-specific Health and Safety Plan (HASP) should be prepared and discussed with Project Managers to address any potential conflicts between the requirements described herein and standard health and safety procedures. The PFAS Sampling Checklist included in Attachment 1 should be reviewed, filled in and signed prior to the initiation of the field activities and re-checked daily to ensure compliance.

Note that the health and safety of personnel should not be compromised during PFAS sampling programs. Deviations from PFAS sampling protocols for health and safety reasons should be noted and appropriate blank samples should be collected to support the analytical results.

2.0 CONTAMINATION CATEGORIES

Based on Michigan Department of Environmental Quality General PFAS Sampling Guidance (2018), PFAS contamination sources can be divided into two categories:

Category 1: Items and materials that will come in direct contact with the sample. These should not be used when sampling unless they are known to be PFAS-free based on certification from the supplier or by collecting an equipment blank sample prior to use.

Category 2: Items and materials that will not come in direct contact with the sample. These should be avoided, if possible, unless they are known to be PFAS-free based on certification from the supplier or by collecting an equipment blank sample prior to use.

Note that the collection of regular blanks (field and trip) is critical for all PFAS programs even if PFAS-free supplies are ordered as there is no guarantee that materials have not been in contact with PFAS sources.

3.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee that the PFAS sampling program is performed in accordance with the program-specific protocols described in this SOP. The Field Team Leader should ensure that on-site personnel, including subcontractors and third parties that may have direct access to the sampling area, understand the sampling requirements and potential for cross-contamination on-site. Field Personnel should be notified of these requirements a minimum of five days prior to the start of field work to have the time to appropriately comply with many of the food and clothing requirements prior to arriving at the site.

4.0 GENERAL FIELD METHODS AND ACTIVITIES

4.1 Food Consumption

Components of some food packages have been treated with PFAS to resist wetting and staining. Potential sources of PFAS contamination as related to food packaging include paper bags and paper packaging for pre-wrapped foods and snacks (e.g. chocolate bars, energy bars, granola bars, potato chips, etc.), fast food wrappings, pizza boxes, aluminum foil, wax paper, and/or coated textiles.

During field breaks, Field Personnel should not consume food or beverage near collected samples and/or within the immediate vicinity of the sampling locations. Prior to the consumption of food or beverages, Field Personnel need to remove their nitrile gloves and coveralls and move to a location that is outside the sampling area (at least 10 m away, downwind). When finished, Field Personnel need to wash their hands (in remote areas bring along additional PFAS-free laboratory rinse water) and put on a new pair of nitrile gloves prior to returning to the sampling area.

Note that nitrile gloves must be powder-free.

4.2 Field Gear and Clothing Restrictions

Because treatments to provide water resistant, waterproof or stain-resistant clothing include the use of PFAS, Field Personnel should avoid wearing any water-resistant, waterproof, stain-resistant treated clothing or coated Tyvek® clothing in the sampling area during the field program. Permissible field clothing for PFAS sampling programs includes clothing made from natural fibers, preferably cotton and rain gear made of polyethylene, vinyl or PVC. Clothing made of synthetic fibers can be used provided that they are certified or tested to be PFAS-free, meet the following conditions or are covered by cotton coveralls and do not come in contact with the sample/sample equipment:

- They are not water resistant/proof, stain resistant, or impregnated with UV protective chemicals or insect repellant; and
- They are completely covered by clothing made of natural fibers.

In areas where reflective vests or coveralls with reflective strips are needed for safety reasons, these items can be worn but they should be noted on the field notes or sample collection forms. Precautions should be taken to make sure that they do not come in contact with the samples and sample-contact materials.

Field clothing should be laundered with a minimal amount of detergent and no fabric softener or scented products should be used. It is preferred field clothing is washed a second time on a rinse-only cycle, using only water, prior to drying. Anti-static dryer sheets shall not be used when drying field clothing. It is preferred that field clothing is made from cotton and has been laundered many times, as new clothing may contain PFAS related treatments. Clothing containing Gore-Tex™ shall not be worn in the sampling area, as Gore-Tex™ clothing contains a PFAS membrane.

Most safety footwear is constructed of leather and synthetic materials that have been treated to provide some degree of waterproofing and/or increased durability. Therefore, footwear materials represent a potential source of PFAS. Field Personnel's contact with safety footwear including donning footwear or tying laces shall not occur within the sampling area. If footwear must be adjusted, Field Personnel must re-locate outside the sampling area to make the necessary adjustments. Nitrile gloves need to be worn when contacting footwear and replaced prior to re-entering the sampling area.

Any samples and/or disposable sample-contact materials that come in contact with footwear or non-compliant clothing (as described above) must be discarded. Reusable sampling equipment (e.g., trowels and pumps) must be cleaned before use if they have contacted non-compliant footwear or garments.

Waterproof field books should not be used in the sampling area, and field notes should be recorded using a non-gel pen or pencil.

Disposable nitrile gloves must be worn at all times and a new pair of nitrile gloves are to be worn prior to the following activities at each sample location:

- Contact with laboratory-suppled sample containers or PFAS-free water containers;
- Decontamination of sampling equipment;
- Insertion of anything into the well (e.g. HDPE tubing, HydraSleeve, bailer, etc.);
- Insertion of silicon tubing into the peristaltic pump;
- Sample collection;
- Handling of QA/QC samples including field blanks and equipment blanks; and
- After the handling of any non-dedicated sampling equipment or contact with non-decontaminated surfaces.

4.3 Personal Hygiene

Many personal hygiene products (e.g., shampoo, conditioner, body gel, cosmetic cream, hand creams, insect repellents, sunscreens, etc.) may contain PFAS and should not come into contact with the samples, sampling equipment and/or be used within the sampling area. If these products are required during the field program, use of products that are 100% natural or identified as PFAS free is recommended. The application of the products should be outside of the sampling area and product types should be noted in the field notes. Field Personnel should wash their hands thoroughly (repeatedly rinse with water only) before returning to the sampling area and replace nitrile gloves prior to initiating field activities. Appropriate blank samples should be collected as part of all programs to confirm analytical results and understanding of potential cross-contamination.

4.4 Sample Area Access

Visitors, including subcontractors or site personnel, who are not following these general PFAS sampling program protocols should remain outside of the sampling area (at least 10 m away from the sampling area) until PFAS sample collection activities are completed, the PFAS sample containers have been enclosed in a Ziploc® storage bag, and samples have been placed in the sample coolers.

4.5 Field Equipment Decontamination

Use the procedures in this section to decontaminate all non-dedicated sampling equipment (e.g., submersible pumps, tubing shears, etc.):

- Rinse equipment thoroughly with an Alconox®, Citranox® or Liquinox® solution made with laboratory-supplied PFAS-free water (5% v/v);
- Triple rinse with laboratory-supplied PFAS-free water;
- If elevated concentrations of other organic contaminants are present, wipe the equipment with solvent followed by rinses with detergent and laboratory-supplied PFAS-free water as above; solvent type is to be selected based on local protocols and standards, and could include isopropyl alcohol, methylated spirits (denatured alcohol), methyl hydrate (methanol) or acetone. Review SDS prior to use of solvent and avoid use of solvent that is a contaminant of concern at the site.
- Allow equipment to air dry; and
- When suitable, store equipment in a clean Ziploc® bag until required.

Decontamination fluids are not to be reused during the sampling program and should be collected in a waste container for proper disposal as per local regulations.

Use of commercially available deionized water or municipal water is acceptable for decontamination of large field equipment. However, pre-testing the water for PFAS and other potential contaminants of concern is recommended before the field program is initiated, unless the water is known to not have PFAS concentrations that would negatively affect the field program. Pre-testing should take place at least three weeks prior to the initiation of field work (or longer based on laboratory turn around times) to ensure the receipt of results in time. If the water source or supplier is expected to change during the field program, re-testing will be required and the time taken for re-testing must be taken into account.

Date: _____ Project number: _____

Weather *(temp/precipitation)*: _____ Site Name: _____

Field Clothing and PPE
No coated Tyvek® suits are used in the sampling area unless tested to be PFAS-free.
Field crew has not used fabric softener on the clothing worn during sampling day.
Field crew has not used cosmetics, moisturizers, hand cream or other related products on sampling day.
Field crew has not applied unauthorized sunscreen or insect repellant. Refer to the Michigan Sampling Guidance or available local protocols for approved sunscreen, insect repellant and other products.
Field Equipment
No Teflon® or Gore-Tex™ containing materials in the sampling area to avoid cross-contamination. Pumps and other equipment with screw fittings may have Teflon® tape in the threads – inspect, remove and clean (or request supplier to this prior to delivery) if these can come in direct contact with the sample.
All sample materials should be made from stainless steel, HDPE, acetate, silicon, or polypropylene. LDPE should not come in contact with samples (potential sorption) unless authorized by local protocols.
Cables or strings used for bailers, pressure transducers or other monitoring devices to be installed in water should be made of undyed nylon, undyed cotton, steel, HDPE, polyethylene, vinyl, PVC or tested to be PFAS-free.
No waterproof field books in the sampling area.
No PFAS-coated plastic clipboards, binders, or spiral hard cover notebooks in the sampling area.
No adhesives (Duct tape, Post-It Notes) in the sampling area.
Coolers filled with regular doubled-bagged ice only. No chemical (blue) ice packs used within the coolers unless tested to be PFAS free.
Sample Containers
All sample containers used to be those supplied by the analytical laboratory specifically for PFAS (made of HDPE or polypropylene).
Caps used to be those supplied by the analytical laboratory specifically for PFAS (unlined and made of HDPE or polypropylene).
Sample containers to be labelled with ball-point pen (no markers or sharpies).

Wet Weather	
Waterproof clothing made of polyurethane, vinyl and PVC or other materials tested to be PFAS free.	
Equipment Decontamination	
Distilled water and "PFAS-free" water onsite for decontamination of sample equipment along with polyethylene or PVC brush, dedicated cotton cloth or untreated paper towel.	
Alconox®, Liquinox®, Citranox® and methyl hydrate (depending on local regulations) to be used as decontamination media.	
Food Considerations	
	No food or drink in sampling area.

If any applicable boxes cannot be checked, the field lead should describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work.

Corrective action should include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

_____

_____

_____

Field Lead Name: _____

Signature:_____ Date/Time:_____

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the Quality Assurance / Quality Control (QA/QC) samples that should be included as part of a PFAS sampling program. This SOP includes protocols for the collection of the following QA/QC samples:

- Field Duplicates;
- Equipment Blanks;
- Field Blanks; and
- Trip Blanks.

2.0 RESPONSIBILITIES

The Field Team Lead and Field Personnel have the shared responsibility to oversee and ensure that the PFAS QA/QC sampling program is performed in accordance with the program-specific protocols described in this SOP. The Field Team Lead should review the SOP with Field Personnel so they understand and comply with this SOP.

3.0 QA/QC SAMPLES

3.1 Field Duplicates

One field duplicate should be collected for every ten field samples collected per medium (e.g., water and soil) during a PFAS sampling program. If there are < 10 samples collected (per medium) as part of a sampling program, one field duplicate should be included. A field duplicate should be collected at the same time as the parent sample using the exact same procedure employed for the samples following the media-specific SOPs.

The field duplicate should be submitted for laboratory analysis with a different identifier to the parent sample, and this identifier should be recorded in the field notes to link to the parent sample. The sample identifier should be discussed with the Project Team Lead prior to initiation of field work.

The number of QA/QC samples collected as part of a field program is dependent on many factors:

- ***shipment constraints (i.e., remoteness);***
- ***budgets;***
- ***regulatory frameworks; and/or***
- ***project objectives.***

Discuss specific project needs with Project Team Lead prior to formulating a QA/QC program.

3.2 Equipment Blanks

Depending on the size of the sampling program, equipment blanks may be collected for each day of sampling and/or per sampling event. The sampling frequency should be discussed with the Project Team Lead prior to initiation of the field program.

Equipment blanks should be collected using laboratory-supplied PFAS-free water following the exact same procedure employed for the samples following the media-specific SOPs.

Equipment blanks should be collected after decontamination of non-dedicated equipment (i.e., pumps), when using new disposable equipment or when using dedicated equipment that is not certified as PFAS-free, as appropriate.

Sample bottles should be labelled using identifiers determined in discussion with the Project Team Lead prior to the initiation of the sampling program. The sample identifier should be recorded in the field notes.

3.3 Field Blanks

Depending on the size of the sampling program, field blanks may be collected for each day of sampling and/or per sampling event. Field blanks are prepared using laboratory-supplied PFAS-free water that is poured into laboratory-supplied PFAS free containers used to collect the samples (i.e., HDPE or polypropylene) in the field. The field blanks should be handled using the same sample handling techniques discussed in media specific SOPs.

Sample bottles should be labelled using identifiers determined in discussion with the Project Team Lead prior to the initiation of the sampling program. The sample identifier should be recorded in the field notes.

3.4 Trip Blanks

Laboratory-supplied trip blanks (PFAS-free water in the same container used for the samples) should be submitted with each laboratory shipment of water samples. Trip blanks are ordered from the laboratory and accompany the bottle order to site and the sample shipment from site. The trip blank remains in the cooler (bagged in the Ziploc®) in the field for the duration of the sampling program. Ensure sufficient trip blanks are ordered and accompany each water sample shipment.

Sample bottles should be labelled using identifiers determined in discussion with the Project Team Lead prior to the initiation of the sampling program. The sample identifier should be recorded in the field notes.

Trip blanks may be placed on hold rather than analyzed. Trip blanks may be analyzed only in the event of suspect results; however, this should be discussed with the Project Team Lead. Hold times should be verified prior to placing samples on hold for extended periods of time.

4.0 SAMPLE SHIPMENT

The QA/QC samples should be maintained at a temperature ≤ 6 ºC (but must not be frozen) during shipment and storage and handled as per the requirements of the parent samples discussed in other SOPs. Tracking numbers for all shipments should be provided once the sample coolers have been shipped to ensure their timely delivery.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the installation and development of groundwater monitoring wells as well as purging and collection of groundwater samples for analysis of per- and polyfluoroalkyl substances (PFAS).

This SOP includes the following:

- Monitoring Well Installation;
- Monitoring Well Development;
- Purging and sampling procedure; and
- Water Level Measurement.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 "Planning and Sample Submission Preparation", SOP-1 "General Field Methods for PFAS Sampling" and SOP-2 "Quality Assurance / Quality Control Protocols for PFAS Sampling". With the exceptions provided in these SOPs, Field Personnel should follow the monitoring well installation, development, purging and sampling protocols according to the standard Golder SOPs or project specific Sampling and Analysis Plan (SAP) and Health, Safety and Environmental Plan (HASEP).

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the installation and development of monitoring well, purging and groundwater sampling program are performed in accordance with the protocols described in this SOP. The Field Team Leader should review the SOP with Field Personnel so they understand and comply with this SOP.

3.0 MONITORING WELL INSTALLATION

The Project Manager and Field Personnel should make all the drilling contractors, other field subcontractors and the suppliers of well equipment aware of the precautions related to PFAS investigations as mentioned in the applicable SOPs for the specific job well ahead of the beginning of the field program. The Project Manager should make sure that the equipment (well material, O-ring seals, etc.) does not include any PFAS or Teflon® components. Written details on the equipment construction materials and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable.

New nitrile gloves must be worn by the drilling contractors prior to the handling of well components and supplies at each location

3.1 MONITORING WELL DEVELOPMENT

Following installation, monitoring wells must be developed to remove fine particles from the filter pack and to remove any fluids introduced to the monitoring well during drilling. Proper monitoring well development ensures that samples collected are representative of surrounding aquifer conditions and reduces the amount of sediment produced during sample collection. Field Personnel should use appropriate well development equipment to generate sufficient energy to agitate the water column and induce flow reversals in the monitoring well screen, filter pack, and/or formation to loosen fine-grained materials and draw them into the well. Field Personnel should develop monitoring wells until visibly clear water is discharged from the well.

Field Personnel should not use Teflon® tubing or any other PFAS-containing materials for well development. Field Personnel shall not re-use materials between well locations whenever possible. After completion of monitoring well development, Field Personnel should put all disposable materials in heavy-duty (i.e., lawn waste) garbage bags for disposal.

Field Personnel should develop monitoring wells using a submersible pump or inertial pumps, and high-density polyethylene (HDPE) tubing. Other pumping methods may be preferred or required for deep and/or high-yield monitoring wells (e.g., air-lift pumping using either compressed air or nitrogen). The Project Manager should inquire the manufacturer and/or subcontractors with sufficient notice prior to performing this task, and make sure that the down-the-well equipment (pumps, tubing, etc.) is PFAS free. Written details on the equipment construction materials and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable. Field Personnel should determine and cut the appropriate length of new HDPE tubing to be used in each well to avoid contact with any materials other than the well and pump.

Development water shall be containerized and/or disposed of in accordance with local regulations or protocols.

4.0 WATER LEVEL SURVEY, WELL PURGING AND SAMPLING PROCEDURES

4.1 Water Level Measurement

Static water/product level measurement should be conducted prior to sampling using a water level probe or hydrocarbon interface probe. The measuring device should be cleaned between monitoring well locations as per SOP-1 with the addition of one extra cycle of solvent and de-ionized (DI) PFAS-free laboratory-supplied water rinse. Unless absolutely required, only depth to water measurements, and not bottom of well measurements should be made, to ensure only the metal part of the interface probe contacts the water column.

In case pressure transducers or other monitoring devices are to be installed in the monitoring wells, the composition of the material used for the string/cable and the monitoring equipment should be reviewed to confirm the absence of PFAS-containing materials. Polyethylene, nylon or steel cable are generally acceptable options.

4.2 Monitoring Well Purge

If pumping, monitoring or any other equipment is found in the monitoring well, written details on the construction materials for the equipment including strings, tape and valves should be requested and reviewed as applicable. Unless evidence is found that no PFAS-containing materials are present, the Project Manager should discuss the situation with the client to determine if the well should be purged and sampled upon removal of the equipment (additional purging may be advisable) or if sampling at this location should not be conducted.

Field Personnel should purge monitoring wells using a peristaltic pump or submersible pump and HDPE tubing. HDPE tubing should be used instead of low-density polyethylene (LDPE) tubing because of the lower tendency to sorb PFAS. Low-flow purging and sampling techniques should be used whenever possible. If no-purge samplers are to be used, e.g. HydraSleeves, the PFAS-specific models should be obtained. Field Personnel shall inquire of the manufacturer and identify down-the-well equipment whose construction does not include any Teflon® or PFAS-containing components (e.g., check balls, O-rings, compression fittings, etc.). Written details on the equipment construction materials shall be requested and reviewed as applicable. Field Personnel should decontaminate non-dedicated components and sampling equipment (including pumps, tubing shears, etc.) in accordance with SOP-1 between well purge locations. Following completion of

monitoring well purge activities at a monitoring well location, Field Personnel shall place all disposable materials in heavy-duty (i.e., lawn waste) garbage bags for disposal.

Purge water shall be containerized and disposed of in accordance with local regulations or protocols.

4.3 Sample Collection

Groundwater samples shall be collected in HDPE or polypropylene sample containers provided by the laboratory specifically for use in the collection samples for analysis of PFAS (no Teflon® liner). Groundwater sample containers should be labeled using a non-gel pen or a pencil, and a new pair of nitrile gloves should be donned before sampling. Sample container lids should remain on the sample container until immediately prior to sample collection and lids should be resealed immediately following sample collection. Field Personnel should hold the sample container lid in their gloved hand until the lid is screwed on the sample container.

Field Personnel should wash their hands and put on a new pair of nitrile gloves prior to sample collection. Once the nitrile gloves are put on, Field Personnel should not touch any potential source of PFAS contamination such as papers, pens, clothes, etc. prior to the collection of groundwater samples. If Field Personnel need to take notes or handle anything other than the sample container prior to collecting the sample, the old nitrile gloves with which contact was made shall be removed and new nitrile gloves put on.

Field Personnel should hold the sample container in such a manner that the sample container does not come in direct contact with the HDPE tubing or pump equipment. The sampling container shall be filled completely to minimize surface-to-volume ratio and therefore the likelihood of PFAS loss via sorption.

If Field Personnel observe suspended solids in the collected groundwater sample, a new sample should be collected in a new bottle, if possible. No subsampling, sample transfer or sample filtering should occur in the field. If it is not possible to collect a sample with minimal suspended solids, Field Personnel should contact the Project Manager and, if the sample is submitted for analysis, indicate the presence of suspended solids as a note on the chain-of-custody form.

Once the groundwater sample container lid has been resealed, the sample container should be placed into individual new Ziploc® storage bag. Following groundwater sample collection, groundwater sample containers enclosed within their Ziploc® storage bags shall be placed on ice in the laboratory-provided sample cooler. Field Personnel should minimize the sample exposure to sunlight during sample handling and storage.

5.0 SAMPLE SHIPMENT

Groundwater samples should be maintained at a temperature ≤ 6 ºC (but must not be frozen) during shipment and transported by overnight courier to the laboratory. The details of the sample shipment and laboratory submission are provided in SOP-0.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the collection of soil samples for analysis of per- and polyfluoroalkyl substances (PFAS).

This SOP includes the following:

- Sample container and handling considerations;
- Soil sample collection procedures;
- Sample shipping requirements, and
- Field equipment decontamination procedures.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 "*Planning and Sample Submission Preparation", SOP-1 "General Field Methods for PFAS Sampling*" and SOP-2 "*Quality Assurance / Quality Control Protocols for PFAS Sampling*".

With the exceptions provided in these SOPs, Field Personnel should follow the soil sampling protocols provided in the standard Golder SOPs and the project Specific Work Instructions (SWI), if available, and modification provided in this SOP as related to PFAS sampling.

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the PFAS soil sampling program is performed in accordance with the program-specific protocols described in this SOP. The Field Team Leader should ensure that Field Personnel understand and comply with this SOP.

3.0 SOIL SAMPLING PROCEDURES

3.1 Sample Containers and Handling

Soil sample containers should not be handled without first donning a new, clean pair of nitrile gloves (powder-free). Soil samples should only be collected in high density polyethylene (HDPE) or polypropylene (PP) containers provided by the laboratory for specific PFAS use with no Teflon liners. Glass containers should not be used due to the potential for loss of PFAS through sorption processes. Soil sample containers should be labelled after collection of the soil sample using a non-gel pen or a pencil. If a marker must be used for labelling purposes, nitrile gloves are to be removed after use of the marker and replaced with new ones.

3.2 Sample Collection

A new pair of powder-free nitrile gloves should be worn prior to the collection of each sample. Soil samples collected for analysis of PFAS should be obtained using clean, decontaminated stainless-steel spoons, trowels or augers. All non-dedicated sampling equipment must be decontaminated prior to sampling activities and before each subsequent sample location in accordance with the decontamination procedures described below. Background soil samples or samples interpreted to be less impacted should be collected first. Soil samples are to be placed directly into the laboratory-supplied HDPE or polypropylene containers. The containers should be filled completely to minimize surface-to-volume ratio and therefore the likelihood of PFAS loss via sorption. No subsampling or sample transfer should occur in the field. Once the soil sample container lid has been resealed, soil sample containers should be individually placed in a new Ziploc® bag. Following soil sample collection, the sample containers enclosed within their Ziploc® bags should be placed in the laboratory-provided sample cooler on ice. Field personnel should minimize the sample exposure to sunlight during sample handling and storage.

3.2.1 Drilling and Test Pitting

With the exceptions provided in this SOP, Field Personnel should follow the drilling and test pitting protocols according to the standard Golder SOPs or project specific Sampling and Analysis Plan (SAP).

The Project Manager and Field Personnel shall make all the contractors aware of the precautions related to PFAS investigations as contained in the applicable PFAS SOPs for the specific job well ahead of the beginning of the field program to ensure their personnel are fully familiar with these precautions and can make necessary arrangements. The Project Manager and Field Personnel should inquire the manufacturer and subcontractors with sufficient notice prior to performing this task, and make sure to use PFAS free tools and equipment (augers, split spoons, soil sample sleeves, tubing, tape, grease, lubricants, drilling fluid, etc.). Written details on the equipment construction materials and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable.

Use of tap or tanker water is acceptable for use as drilling fluid. However, pre-testing the water for PFAS and other potential contaminants of concern is recommended before the field program is initiated, unless the water is known to not have PFAS concentrations that would negatively affect the field program. Pre-testing should occur at least 3 weeks before the field work starts to receive the results and make any necessary alternative plans if needed. If the water source or supplier is expected to change during the field program, re-testing will be required and the time taken for re-testing must be taken into account.

Soil cuttings and return fluid from drilling operations should be containerized for characterization and disposal according to local regulations and protocols.

If a drill rig is being used, new nitrile gloves should be worn by the drilling contractor prior to the handling and recovery of the sampling equipment (e.g., split spoon). A new pair of clean nitrile gloves should be worn by field staff prior to the collection of each soil sample.

NOTE: Equipment blanks must be collected using PFAS free water poured over appropriate equipment as per SOP-2.

3.3 Sample Shipping

Soil sample containers should be stored in coolers maintained at ≤ 6 ºC (but must not be frozen) and transported by overnight courier to the laboratory. The details of the sample shipment and laboratory submission are provided in SOP-0.

3.4 Field Equipment Decontamination

All the non-dedicated sampling equipment (e.g., stainless steel spoons or trowels) used to collect soil samples should be decontaminated as follows:

- Clean with a brush to remove particulate matter and surface films;
- Rinse thoroughly with Alconox®, Citranox®, or Liquinox® solution made with laboratory-supplied PFAS-free water (5% v/v);
- Triple rinse with laboratory-supplied PFAS-free water;
- If elevated concentrations of other organic contaminants are present, wipe with solvent followed by a triple rinse with laboratory-supplied PFAS-free water;
- Allow equipment to air dry; and

- When suitable, store equipment in a clean Ziploc® bag until required.

Decontamination fluids are not to be reused during the sampling program and should be collected in a waste container for proper disposal as per local regulations.

Use of commercially available deionized water or municipal water is acceptable for decontamination of large field equipment such as drilling augers. However, pre-testing the water for PFAS and other potential contaminants of concern is recommended before the field program is initiated, unless the water is known to not have PFAS concentrations that would negatively affect the field program. Pre-testing should take place at least three weeks prior to the initiation of field work to ensure the receipt of results in time. Re-testing of the decontamination water should be conducted if the quality of the source water changes over the duration of the field program.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the collection of surface water samples for analysis of per- and polyfluoroalkyl substances (PFAS).

This SOP includes the following:

- Sample container and handling considerations;
- Equipment;
- Water sample collection procedures;
- Water level measurement; and
- Sample shipping requirements.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 “Planning and Sample Submission Preparation”, SOP-1 “General Field Methods for PFAS Sampling” and SOP-2 “Quality Assurance / Quality Control Protocols for PFAS Sampling”.

With the exceptions provided in these SOPs, Field Personnel should follow the surface water sampling protocols according to the standard Golder SOPs or project specific Sampling and Analysis Plan (SAP).

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the surface water sampling program is performed in accordance with the protocols described in this SOP. The Field Team Leader should review the SOP with Field Personnel so that they understand and comply with this SOP.

3.0 SURFACE WATER SAMPLING PROCEDURE

3.1 Sample Container and Handling

Surface water samples should be collected in HDPE or polypropylene sample containers provided by the laboratory specifically for the collection of samples for PFAS analysis (without a Teflon® liner). Surface water sample container lid should remain on the container until immediately prior to the sample collection and lid should put back and tightly screwed (snug, but not too tight) immediately after the sample collection. Field Personnel should hold the sample container lid in the hand until the lid is screwed on the sample container. Surface water sample container labels should be completed using a non-gel pen or a pencil after the lid has been re-secured on the sample container. If a marker must be used, nitrile gloves should be changed after use of the marker.

3.2 Equipment

Field Personnel should not use equipment made of Teflon®, other PFAS-containing materials or materials coated with waterproofing agents including tape, strings/cables, boat components and waders. Written details on the equipment construction materials and/or Safety Data Sheets (SDS) must be requested and reviewed as applicable before commencement of the field program so that alternative arrangements can be made if needed. Sampling materials should not be re-used between sample locations whenever possible. Following completion of surface water sampling at a given location, all disposable materials should be placed in heavy-duty (i.e., lawn waste) garbage bags for disposal. Field Personnel should wear nitrile gloves at all the times.

All the non-dedicated components and sampling equipment must be decontaminated between sampling locations (see SOP-1).

3.3 Sample Collection

Sample containers should not be handled without first donning a new, clean pair of nitrile gloves (powder-free). Surface water must be collected by inserting a laboratory-supplied, capped HDPE or polypropylene sampling container in the water with the opening pointing down to avoid the collection of surface films or foams. There are cases where significant PFAS concentrations were found in foam while very low concentrations were detected in the underlying surface water. As such a separate sample of the foam should be collected, if needed. The capped container should be immersed away from the bottom of the water body to avoid sediment disturbance and as close to the middle of the channel as possible. The sampling container should be positioned in such a way that the sampling personnel and equipment are downstream of the sample collection location.

Surface water samples should be placed directly into laboratory-supplied containers. If preservative is used in the sample container, a laboratory-supplied HDPE or polypropylene container for PFAS sampling should be used for sample collection and transfer. Once the water sample container lid has been resealed, the surface water sample containers should be individually bagged using Ziploc® bags and placed in the laboratory-provided sample cooler on ice. Field Personnel should minimize the sample exposure to sunlight during sample handling and storage.

Samples should be collected from the most downstream to the most upstream location, but, whenever possible, background samples or sample interpreted to be less impacted should be collected first. Sample collection must take place prior to the measurement of water level or field water quality parameters to minimize the potential for cross-contamination. Where surface water samples and sediment samples are to be collected at the same location, surface water samples should be collected first to minimize the presence of sediment in the water column.

3.4 Water Level Measurement

Measurement of water level and field water quality parameters should take place after surface water sample collection to minimize the potential for cross-contamination due to surface water/sediment contact with field equipment. The measuring devices must be cleaned between sampling locations following SOP-1. In case pressure transducers or other monitoring devices are to be installed in the surface water, the composition of the material used for the posts, string/cable and the monitoring equipment must be reviewed to confirm the absence of PFAS-containing materials.

3.5 Sample Shipping

Surface water sample containers should be stored in coolers and maintained at ≤ 6 ºC (but must not be frozen) and transported by overnight courier to the laboratory. The details of the sample shipment and laboratory submission are provided in SOP-0.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the collection of drinking water samples for analysis of per- and polyfluoroalkyl substances (PFAS).

This SOP includes the following:

- Sample container and handling considerations;
- Equipment;
- Water sample collection procedures; and
- Sample shipping requirements.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 "Planning and Sample Submission Preparation", SOP-1 "General Field Methods for PFAS Sampling" and SOP-2 "Quality Assurance / Quality Control Protocols for PFAS Sampling". For collecting drinking water samples from wells, refer to SOP-3 "PFAS Program Monitoring Well Development, Purging and Sampling".

With the exceptions provided in these SOPs, Field Personnel should follow the drinking water sampling protocols for well sampling and faucet sampling according to the standard Golder SOPs or project specific Sampling and Analysis Plan (SAP).

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the drinking water sampling program is performed in accordance with the protocols described in this SOP. The Field Team Leader should review the SOP with Field Personnel so that they understand and comply with this SOP.

3.0 DRINKING WATER SAMPLING PROCEDURE

3.1 Sample Containers and Handling

Sample containers should not be handled without first donning a new, clean pair of nitrile gloves (powder-free). Drinking water samples should be collected in HDPE or polypropylene sample containers provided by the laboratory specifically for the collection of samples for PFAS analysis (without a Teflon® liner). Glass containers should not be used due to the potential for loss of PFAS through sorption. In accordance with US-EPA Method 537, chlorinated drinking water sample bottles should contain Trizma® preservative.

Drinking water sample container lids should remain on the sample container until immediately prior to sample collection and lids shall be resealed immediately following sample collection. Field personnel should hold the sample container lid in their hand until the lid is screwed on the sample container. Drinking water sample container labels should be completed using a non-gel pen or a pencil after the lid has been re-secured on the sample container. If a marker must be used, nitrile gloves should be changed after use of the marker.

3.2 Equipment

Field Personnel should not use equipment made of Teflon®, other PFAS-containing materials or materials coated with waterproofing agents including tape, strings/cables, pumps, tubing, etc. Written details on the equipment construction materials and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable before commencement of the field program so that alternative arrangements can be made if needed. Sampling materials should not be re-used between sample locations. Following completion of drinking water sampling at a

given location, all disposable materials should be placed in heavy-duty (i.e., lawn waste) garbage bags for disposal. Field Personnel should wear nitrile gloves at all the times.

All the non-dedicated components and sampling equipment must be decontaminated between sampling locations (see SOP-1).

If drinking water samples are to be collected from faucets, Field Personnel should complete a detailed survey of equipment and materials present in the vicinity of the faucet (within ~1 m) and document any findings related to potential PFAS contamination in writing supported by photographs. Any material found or suspected to contain PFAS should be relocated away from the faucet and a new pair of nitrile gloves should be used after handling any of such materials.

3.3 Sample Collection

When sampling from a faucet, the faucet aerator should be removed. After donning a new pair of nitrile gloves, run water for at least 5 min, slow water flow to avoid splashing and fill laboratory-supplied HDPE or polypropylene containers up to the brim of the sampling container without overflow. Once the water sample container lid has been resealed, the sample containers should be individually bagged using Ziploc® bags and placed in the laboratory-provided sample cooler on ice. Field Personnel should minimize sample exposure to sunlight during sample handling and storage.

3.4 Sample Shipping

Drinking water sample containers should be stored in coolers on ice, maintained at ≤ 6 ºC (but must not be frozen) and transported by overnight courier to the laboratory. The details of the sample shipment and laboratory submission are provided in SOP-0.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the collection of sediment samples for analysis of per- and polyfluoroalkyl substances (PFAS).

This SOP includes the following:

- Sample container and handling considerations;
- Sample collection procedures;
- Sample shipping requirements; and
- Field equipment decontamination procedures.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 “Planning and Sample Submission Preparation”, SOP-1 “General Field Methods for PFAS Sampling” and SOP-2 “Quality Assurance / Quality Control Protocols for PFAS Sampling”.

With the exceptions provided in these SOPs, Field Personnel should follow the sediment sampling protocols provided in the standard Golder SOPs and the project Specific Work Instructions (SWI), if available, and modification provided in this SOP as related to PFAS sampling.

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the PFAS sediment sampling program is performed in accordance with the program-specific protocols described in this SOP. The Field Team Leader should ensure that Field Personnel understand and comply with this SOP.

3.0 SEDIMENT SAMPLING PROCEDURES

3.1 Sample Containers and Handling

Sediment sample containers should not be handled without first donning a new, clean pair of nitrile gloves. Sediment samples should only be collected in high density polyethylene (HDPE) or polypropylene (PP) containers provided by the laboratory for specific PFAS use (without Teflon liner). Glass containers should not be used due to the potential for loss of PFAS through sorption processes. Sediment sample containers should be labelled after collection of the sediment using a non-gel pen or a pencil. If a marker must be used for labelling, nitrile gloves are to be removed after use of the marker and replaced with new ones.

3.2 Equipment

Field Personnel should not use equipment made of Teflon®, other PFAS-containing materials or materials coated with waterproofing agents including sampling tools, tape, strings/cables, boat components and waders. Written details on the equipment construction materials and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable before commencement of the field program so that alternative arrangements can be made if needed. Field Personnel should not re-use materials between sample locations whenever possible. Following the completion of sediment sampling at a given location, Field Personnel should place all disposable materials in heavy-duty (i.e., lawn waste) garbage bags for disposal. Field Personnel should wear nitrile gloves at all the times.

3.3 Sample Collection

A new pair of nitrile gloves should be worn prior to the handling of the sampling equipment and the collection of each sample. Sediment samples collected for the analysis of PFAS should be obtained using clean, decontaminated grab or core samplers.

Sediment samples are to be placed directly into the laboratory-supplied HDPE or polypropylene containers. The containers should be filled completely to minimize surface-to-volume ratio and therefore the likelihood of PFAS loss via sorption. No subsampling or sample transfer should occur in the field. Once the sediment sample container lid has been resealed, sample containers should be individually bagged using Ziploc® bags. Following sample collection, the sediment sample containers enclosed within their Ziploc® bags should be placed in the laboratory-provided sample cooler on ice. Field Personnel should minimize the sample exposure to sunlight during sample handling and storage.

Samples should be collected from the most downstream to the most upstream location, but, whenever possible, background samples or samples interpreted to be less impacted should be collected first. Where surface water samples and sediment samples are to be collected at the same location, surface water samples should be collected first to minimize the presence of sediment in the water column.

If sampling requires physical entry by field staff into the water body, field staff should stand at the downstream side of the sample location to minimize disturbance of the sample location.

All the non-dedicated tools and sampling equipment must be decontaminated before use as indicated below. Equipment blanks must be collected using PFAS free water poured over appropriate equipment part and carefully collected (see SOP-2).

3.4 Sample Shipping

Sediment sample containers should be stored in coolers on ice and maintained at ≤ 6 ºC (but must not be frozen) and transported by overnight courier to the laboratory. The details of the sample shipment and laboratory submission are provided in SOP-0.

3.5 Field Equipment Decontamination

All the non-dedicated sampling equipment (e.g., grab or core sampler) used to collect sediment samples should be decontaminated as follows:

- Clean with a brush to remove particulate matter and surface films;
- Rinse thoroughly with Alconox®, Citranox®, or Liquinox® solution made with laboratory-supplied PFAS-free water (5% v/v);
- Triple rinse with laboratory-supplied PFAS-free water;
- If elevated concentration of other organic contaminants are present, wipe with solvent followed by a triple; rinse with laboratory-supplied PFAS-free water;
- Allow equipment to air dry; and
- When suitable, store equipment in a clean Ziploc® bag until required.

Decontamination fluids are not to be reused during the sampling program and should be collected in a waste container for proper disposal as per local regulations. Use of commercially available deionized water or municipal water is acceptable for decontamination of large field equipment. However, pre-testing the water for PFAS and other potential contaminants of concern is recommended before the field program is initiated, unless the water is known to not have PFAS concentrations that would negatively affect the field program. Pre-testing should take place at least three weeks prior to the initiation of field work to ensure the receipt of results in time. Re-testing of the decontamination water should be conducted if the quality of the source water changes over the duration of the field program.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the collection of tissue samples for analysis of per- and polyfluoroalkyl substances (PFAS). Samples include terrestrial vegetation, soil invertebrates and small mammals as well as aquatic vegetation, invertebrates and fish.

This SOP includes the following:

- Sample container and handling considerations;
- Sample collection procedures; and
- Sample Shipping Requirements.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 "Planning and Sample Submission Preparation", SOP-1 "General Field Methods for PFAS Sampling" and SOP-2 "Quality Assurance / Quality Control Protocols for PFAS Sampling".

With the exceptions provided in these SOPs, Field Personnel should follow the sampling protocols provided in the standard Golder SOPs and the Specific Work Instructions (SWI).

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the PFAS tissue sampling program is performed in accordance with the program-specific protocols described in this SOP. The Field Team Leader should ensure that Field Personnel understand and comply with this SOP.

3.0 TISSUE SAMPLING PROCEDURES

3.1 Sample Containers and Handling

Sample containers should not be handled without first donning a new, clean pair of powder-free nitrile gloves. Samples should only be collected in containers provided by the laboratory for specific PFAS use (without Teflon liner) or Whirl-Pak™ bags. Glass containers are not be used due to the potential for loss of PFAS through sorption processes, particularly from wet tissues. Sample container labels should be labelled after collection of the sample using a non-gel pen or a pencil. If a marker must be used for labelling purposes, nitrile gloves are to be removed after use of the marker and replaced with new ones.

3.2 Sample Collection

A new pair of powder-free nitrile gloves should be worn prior to the handling of the sampling equipment and the collection of each sample. Sample exposure to light should be minimized during sample processing and storage.

Terrestrial Vegetation Tissue - Terrestrial plant tissue samples (i.e., berries, grass, leaves, seeds, etc.) should be collected using gloved hands in laboratory-supplied HDPE or polypropylene containers specific for PFAS use (without Teflon liner). Once the sample container lid has been resealed, sample containers should be individually bagged using Ziploc® bags. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Terrestrial Soil Invertebrates Tissue - Earthworms or other soil invertebrates should be collected by gloved hands from shallow test pits dug using a clean PFAS-free shovel or trowel. Each sample should be placed on PFAS-free filter paper (moistened with laboratory supplied PFAS-free water) and stored in laboratory-supplied containers specific for PFAS use. Samples should be stored in refrigerator (~4° C) for 48 hours to allow for the

evacuation of soil from the earthworms. After 48 hours, Field Personnel should manually purge all remaining soil from the earthworms, rinse the earthworms with laboratory-supplied PFAS-free water to remove any remaining soil or sediments and transfer them to laboratory supplied containers specific for PFAS use. Once the sample container lid has been resealed, sample containers should be individually bagged using Ziploc® bags. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Aerial invertebrates Tissue - Samples should be collected using traps (e.g. light traps or baited traps) or insect collection nets free of PFAS. Tissue should be transferred to a Whirl-Pak™ bag and stored on ice. Once the sample container lid has been resealed, sample containers should be individually bagged using Ziploc® bags. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Terrestrial Small Mammal Tissue - Live traps made of PFAS-free material or coating should be used to capture small mammals. Traps are typically baited with peanut butter/rolled oat mixture and mealworms that should be confirmed to be PFAS-free. Pre-washed quilting material made of untreated, natural fibers can be placed inside the trap for warmth and comfort. Handlers of the small mammals should wear appropriate Personal Protective Equipment including powder-free nitrile gloves. Traps should be shaken to remove soil particles and/or vegetation. The traps should be released over a new Ziploc® bag allowing the animal to fall into the bag to minimize direct handler contact with the animal. Cervical dislocation should be used to humanely euthanize the target animals captured before placing each animal in a laboratory supplied container specific for PFAS use. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Amphibians Tissue - Amphibians tissue should be collected in pitfall traps (containers made of PFAS-free material or coating, buried in the ground) located adjacent to a barrier (e.g. silt fence) so that amphibians travelling along the barrier are more likely to fall into the trap. Dowling should be placed in the traps so that small mammals that fall into these traps are able to climb out. Pithing should be used to humanely euthanize the target amphibians captured before placing each animal in a laboratory supplied container specific for PFAS use. Each sample should be placed on moistened (with laboratory supplied PFAS-free water), PFAS-free filter paper in laboratory-supplied containers specific for PFAS use. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Aquatic Vegetation Tissue - Aquatic plant tissue should be collected using gloved hands, roots should be trimmed with scissors made of PFAS-free material, if necessary. The plants should be rinsed with laboratory-supplied PFAS-free water, pat dry with PFAS-free material and transferred to a Whirl-Pak™ bag which should be frozen as soon as possible. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Benthic Invertebrates Tissue - Refer to SOP-7 “PFAS Sediment Sampling” for collecting sediment samples for benthic invertebrates. Upon retrieving the sediment grab sampler, benthic invertebrates should be picked or sieved from debris, removed from shells/casings, rinsed with laboratory supplied PFAS-free water and patted dry using with PFAS-free material. Organisms shall be removed from shells/casings and remaining sediment. The samples should be transferred to a Whirl-Pak™ bag, which should be frozen as soon as possible. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

Fish Tissue - Fish can be captured by electrofishing, minnow trapping, seining or angling. Any fish collection equipment and bait should be free of PFAS-containing materials. Target captured fish should be stored individually in Whirl-Pak™ bags, which should be frozen as soon as possible. The sample should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the sample should be frozen.

3.3 Equipment

All the non-dedicated tools and sampling equipment must be decontaminated before use at each sampling location following SOP-1. Equipment blanks must be collected using PFAS free water poured over appropriate equipment part and carefully collected (see SOP-2). Use of commercially available deionized water or municipal water is acceptable for decontamination of large field equipment. However, pre-testing the water for PFAS and other potential contaminants of concern is recommended before the field program is initiated, unless the water is known to not have PFAS concentrations that would negatively affect the field program. Pre-testing should take place at least three weeks prior to the initiation of field work to ensure the receipt of results in time. Re-testing of the decontamination water should be conducted if the quality of the source water changes over the duration of the field program.

Field Personnel should not use equipment made of Teflon®, other PFAS-containing materials or materials coated with waterproofing agents including scissors, traps, baits, sampling tools, tape, strings/cables, nets, boat components, waders and detergents. Written details on the equipment construction materials and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable before commencement of the field program so that alternative arrangements can be made if needed. In case of uncertainty, materials should be tested for PFAS before the field program begins and the results included in the site-specific field protocol. Pre-testing should occur at least 3 weeks before the field work starts to receive the results and make any necessary alternative plans.

Field Personnel should not re-use materials between sample locations. Following completion of tissue sampling at a given location, Field Personnel should place all disposable materials in heavy-duty (i.e., lawn waste) garbage bags for disposal. Field personnel should wear nitrile gloves at all the times.

3.4 Sample Shipping

Tissue samples should be kept refrigerated below 6°C and delivered to the laboratory within a day from collection. If longer delivery times are expected, the samples should be frozen. The details of the sample shipment and laboratory submission are provided in SOP-0.

1.0 GENERAL APPLICABILITY

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures that should be followed for the collection of construction material samples for analysis of per- and polyfluoroalkyl substances (PFAS). Construction materials such as asphalt, concrete, metal, plastic, and wood, etc. are typically tested to assess PFAS concentrations on and beneath the surface of the material, to estimate the depth of PFAS penetration, or to determine whether the material is suitable for landfill disposal. Depending on the purpose of the sampling program, samples can be an aliquot of the material to measure PFAS concentrations in the bulk sample (collected by chipping or coring) or surface swaps that are used to measure PFAS concentrations on the surface of the material.

This SOP includes the following:

- Sample container and handling considerations;
- Sample collection procedures; and
- Sample shipping requirements.

For general field work planning and procedures for PFAS sampling, refer to SOP-0 “Planning and Sample Submission Preparation”, SOP-1 “General Field Methods for PFAS Sampling” and SOP-2 “Quality Assurance / Quality Control Protocols for PFAS Sampling”.

With the exceptions provided in these SOPs, Field Personnel should follow the sampling protocols provided in the standard Golder SOPs and the project Specific Work Instructions (SWI) for construction materials sampling.

2.0 RESPONSIBILITIES

The Field Team Leader and Field Personnel have the shared responsibility to oversee and ensure that the PFAS construction materials sampling program is performed in accordance with the program-specific protocols described in this SOP. The Field Team Leader should ensure that Field Personnel understand and comply with this SOP.

3.0 CONSTRUCTION MATERIALS SAMPLING PROCEDURES

3.1 Sample Containers and Handling

Sample containers should not be handled without first donning a new, clean pair of nitrile gloves. Samples should only be collected in containers provided by the laboratory for specific PFAS use (without Teflon liner) or Ziploc® storage bag. Sample container should be labelled after collection of the sample using a non-gel pen or a pencil. If a marker must be used, nitrile gloves should be removed after use of the marker and replaced with new ones.

3.2 Sample Collection

A new pair of nitrile gloves should be worn prior to the handling and recovery of the sampling equipment and the collection of each sample. During sample processing and storage, exposure of the sample to light should be minimized.

Bulk Samples – If a shallow or surface sample is required, chip, break or cut the material using a PFAS- free chisel, or other chipping or cutting tool, ensuring that the sample retained for analysis is from the appropriate location/interval. Measure and record the surface area and approximate thickness of the sample extracted. If a coring device is used, core to the desired depth, remove the core and split it at the desired intervals. Record the

depth and interval of the core. Break the sample into small pieces (if needed) to fit in laboratory-supplied HDPE or polypropylene containers specific for PFAS use (without Teflon liner). Ensure that only the targeted construction material is included in the final sample. Each sample container should be individually bagged using Ziploc® bags, placed in the laboratory-provided sample cooler on ice and maintained at ≤ 6 ºC (but must not be frozen). Based on the objectives of the sampling program, provide instruction to the laboratory about the sample preparation such as whether the sample should be ground (while minimizing heat generation and volatile losses) or extracted as received.

Surface Swab Samples – Use pre-moistened gauze pads (PFAS-free) supplied by the analytical laboratory for collection of surface swab samples. Measure, and if necessary, mark (using pencil), an area on the surface to be sampled, typically, an area of 100 cm^2 should be swabbed to collect optimum sample. The area can be of any shape; to increase the degree of accuracy, a clean template shall be used. If the surface is irregular (e.g., tubing), estimate the area as accurately as possible. After donning a new pair of nitrile gloves, remove the wipe from its package and thoroughly swab the entire area inside the template side to side, in an overlapping "S" or "Z" pattern; fold the wipe in half with the sample side folded inward and repeat the wiping procedure within the same selected sampling area using an up and down overlapping "S" or "Z" pattern at right angles to the first wiping; fold the wipe in half again with the sample side folded inward and repeat the wiping procedure one more time, concentrating on covering the edges and corners within the selected surface area; fold the wipe again with the sample side folded inward and store the wipe into a new Ziploc® bag. This first bag should be placed inverted inside a second Ziploc® storage bag and placed in coolers maintained at ≤ 6 ºC (but must not be frozen).

All the non-dedicated components and sampling equipment must be decontaminated between sampling locations (see SOP-1). Equipment blanks must be collected using PFAS-free water poured over appropriate equipment part and carefully collected (see SOP-2).

3.3 Equipment

All the non-dedicated tools and sampling equipment must be decontaminated before use at each sampling location following SOP-1.

Field personnel should not use equipment made of Teflon®, other PFAS-containing materials or materials coated with waterproofing agents including chisel, hammer, coring device, grease, lubricants, and moisturized gauze pads. Written details on the material composition of the equipment and/or Safety Data Sheets (SDS) should be requested and reviewed as applicable before commencement of the field program so that alternative arrangements can be made if needed. In case of uncertainty, materials should be tested for PFAS before the field program begins and the results included in the site-specific field protocol. Pre-testing should occur at least 3 weeks before the field work starts to receive the results and make any necessary alternative plans in time.

Field Personnel should not re-use materials between sample locations. Following completion of sampling at a given location, Field Personnel should place all disposable materials in heavy-duty (i.e., lawn waste) garbage bags for disposal. Field Personnel should wear nitrile gloves at all the times.

3.4 Sample Shipping

Sample containers should be stored in a cooler on ice, maintained at ≤ 6 ºC (but must not be frozen) and transported by overnight courier to the laboratory. The details of the sample shipment and laboratory submission are provided in SOP-0.

Appendix E

EXPLORATORY LOGS

Confidential

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

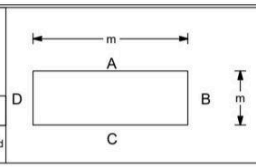
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Sparse grass over brown clayey angular to subrounded fine to coarse GRAVEL of various lithologies with occasional brick and glass and occasional rootlets. (MADE GROUND GRANULAR) *0.15 Becoming clayey and greyish*		GMG	
0.20-0.30	ES					4.74	0.30				
0.40-0.50	ES						(0.20)	Greyish brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of various lithologies (POSSIBLY REWORKED)		CMG	
						4.54	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability:

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
m	Alice Belfield	The Environment Agency	1 of 1
Width m	**Ground Level (m)** 5.038	**Co-Ordinates ()** E 334156 N 443060	**Date** Started: 10-09-24 Finished: 10-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP01-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

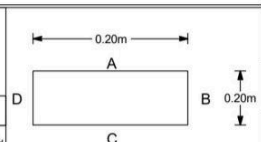
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Sparse grass over brown clayey angular to subrounded fine to coarse GRAVEL of various lithologies including fragments of rare rubber and a screw (MADE GROUND GRANULAR)		GMG	
						4.66	0.30				
0.30-0.40	ES						(0.20)	Greyish brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of various lithologies (POSSIBLY REWORKED)		CMG	
0.40-0.50	ES										
						4.46	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.955	**Co-Ordinates ()** E 334131 N 443055	**Date** Started: 10-09-24 Finished: 10-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP01-SP02

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

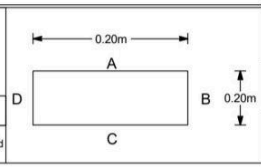
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES										
0.10-0.20	ES						(0.25)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets. Plastic rag inclusion. Gravel is subangular to subrounded fine to coarse of brick, sandstone and various lithologies. (MADE GROUND COHESIVE)		CMG	
						4.65	0.25				
							(0.35)	Firm dark brown mottled grey slightly sandy slightly silty organic CLAY with fine to coarse angular to subrounded gravel of various lithologies (FORMER CULTIVATED SOILS)		CMG	
0.50-0.60	ES					4.30	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.903	**Co-Ordinates ()** E 334116 N 443050	**Date** Started: 10-09-24 Finished: 10-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP01-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

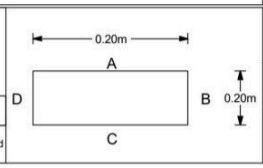
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown sandy slightly gravelly CLAY with rootlets. Gravel is subangular to subrounded fine to coarse. (MADE GROUND)		CMG	
						3.58	0.30				
0.30-0.40	ES										
						3.48	0.40	Greyish brown gravelly sandy CLAY with rare sandstone cobbles. Gravel is subangular to angular fine to coarse of brick and sandstone. (MADE GROUND)		CMG	
0.50-0.60	ES						(0.20)	Light brown sandy slightly gravelly slightly silty CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
						3.28	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 3.877	**Co-Ordinates ()** E 333894 N 443379	**Date** Started: 12-09-24 Finished: 12-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP02-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

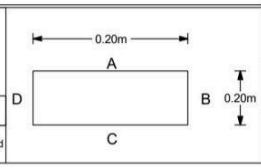
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies. (MADE GROUND COHESIVE)		CMG	
						3.79	0.20				
						3.74	0.25	Greyish brown very sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone and various lithologies. (MADE GROUND COHESIVE)		CMG	
0.30-0.40	ES					3.64	0.35	Greyish brown gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of mudstone and various lithologies. (MADE GROUND COHESIVE)		CMG	
							(0.20)	*0.35 Tarmac angular gravel*			
0.50-0.00	ES					3.44	0.55	Greyish brown gravelly sandy CLAY with occasional cobbles and rare rootlets. Gravel is angular to subrounded fine to coarse of mudstone and various lithologies. (MADE GROUND COHESIVE)		END	
								Handpit complete at 0.55m bgl			

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 3.992	**Co-Ordinates ()** E 333835 N 443212	**Date** Started: 10-09-24 Finished: 10-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP02-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

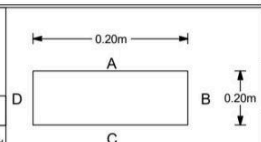
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over brown sandy slightly gravelly CLAY with occasional cobbles. Woven geotextile encountered at 0.2m bgl. Gravel is angular to subrounded fine to coarse of various lithologies. (MADE GROUND COHESIVE)			
0.10-0.20	ES						(0.40)			CMG	
						3.32	0.40				
0.40-0.50	ES							Firm reddish brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of various lithologies. (POSSIBLE MADE GROUND)		CMG	
						3.22	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 3.718	**Co-Ordinates ()** E 333849 N 443265	**Date** Started: 10-09-24 Finished: 10-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP02-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

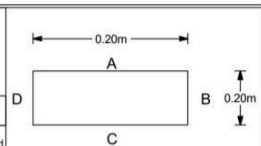
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.20-0.30	ES					3.43	0.30				
0.40-0.50	ES						(0.20)	Greyish brown sandy slightly silty CLAY with occasional angular to subrounded fine to coarse of gravel of various lithologies. (POSSIBLY REWORKED)		CMG	
						3.23	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 3.733	Co-Ordinates (): E 333862 N 443321	Date: Started: 10-09-24, Finished: 10-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP02-SP04

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

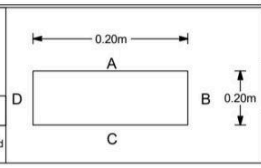
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.35)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets and rare glass. Gravel is subangular to subrounded fine and medium of brick and various lithologies. (MADE GROUND COHESIVE)		CMG	
0.30-0.40	ES					4.88	0.35				
0.50-0.60	ES				1		(0.25)	Dark greysih brown mottled grey slightly silty slightly sandy CLAY with rare rootlets and gravel. Gravel is subangular to subrounded fine to coarse of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
						4.63	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. Waterlogged ground surrounding pit

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.233	**Co-Ordinates ()** E 334070 N 443506	**Date** Started: 16-09-24 Finished: 16-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP04-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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Telephone: 0116 200 5000

TRIAL PIT LOG

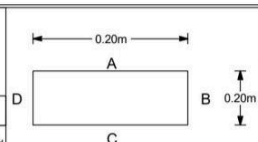
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES										
0.10-0.20	ES						(0.30)	Dark brown slightly gravelly slightly sandy CLAY with rootlets and rare plastic fragments. Gravel is angular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
						5.01	0.30				
0.40-0.50	ES						(0.20)	Dark orangish brown slightly silty slightly sandy CLAY with occasional subangular to subrounded fine and medium gravel (TIDAL FLAT DEPOSITS)		TFD	
						4.81	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.310	**Co-Ordinates ()** E 334058 N 443527	**Date** Started: 16-09-24 Finished: 16-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP04-SP02

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

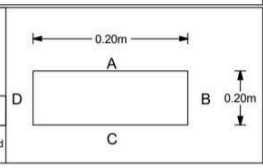
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown gravelly slightly sandy CLAY with rootlets and rare glass fragments. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)			
0.20-0.30	ES						(0.40)			CMG	
						4.93	0.40				
0.40-0.50	ES							Dark grey and reddish brown slightly silty slightly sandy CLAY with occasional subangular to subrounded fine and medium gravel (TIDAL FLAT DEPOSITS)			
						4.83	0.50			CMG	
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.327	**Co-Ordinates ()** E 334059 N 443507	**Date** Started: 16-09-24 Finished: 16-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP04-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

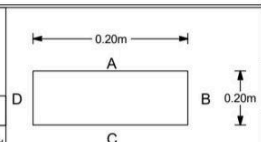
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Dark brown slightly gravelly slightly sandy CLAY with rootlets and angular brick and rare subrounded mudstone cobbles. Gravel is subrounded to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
						5.42	0.25				
0.30-0.40	ES							Dark brown gravelly slightly sandy CLAY with occasional subangular cobbles. Gravel is subangular to rounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
						5.27	0.40				
0.50-0.60	ES						(0.20)	Dark brown gravelly slightly sandy CLAY with ash and plastic fragments. Gravel is angular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
						5.07	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 5.667	Co-Ordinates (): E 334077 N 443549	Date: Started: 16-09-24, Finished: 16-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP05-SP01

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

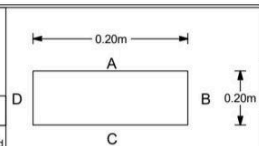
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets and rare plastic sheeting. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.10-0.20	ES					5.97	0.15				
							(0.35)	Dark brown slightly silty clayey fine to coarse SAND with occasional fine to coarse gravel of various lithologies (TIDAL FLAT DEPOSITS).		TFD	
0.40-0.50	ES					5.62	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1

Width	Ground Level (m)	Co-Ordinates ()	Date	Trial Hole No.
0.20m	6.119	E 334102 N 443581	Started: 16-09-24 Finished: 16-09-24	LP05-SP02

Orientation	Method/Plant Used	Contractor	Scale
degrees from north	Hand Tools	Geotron UK Ltd	1:20.0

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

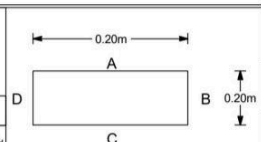
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					5.62	0.15	Dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.20-0.30	ES					5.42	(0.20) 0.35	Brown slightly gravelly slightly sandy CLAY with ootlets and fragments of brick and plastic fragments. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.40-0.50	ES					5.17	(0.25) 0.60	Brown gravelly sandy CLAY with plastic. Gravel is angular to subrounded fine to coarse of various lithologies. (MADE GROUND COHESIVE)		CMG	
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.767	**Co-Ordinates ()** E 334085 N 443539	**Date** Started: 16-09-24 Finished: 16-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP05-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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TRIAL PIT LOG

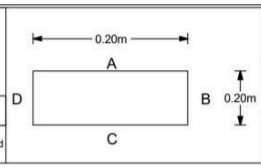
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.40)	Dark brown slightly gravelly slightly sandy CLAY with rare plastic fragments. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.30-0.40	ES					5.36	0.40				
0.50-0.60	ES						(0.20)	Firm dark brown mottled orange gravelly sandy CLAY with rare plastic fragments and rare ceramic fragments. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
						5.16	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1

Width	Ground Level (m)	Co-Ordinates ()	Date	Trial Hole No.
0.20m	5.764	E 334081 N 443569	Started: 18-09-24 Finished: 18-09-24	LP06-SP01

Orientation	Method/Plant Used	Contractor	Scale
degrees from north	Hand Tools	Geotron UK Ltd	1:20.0

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

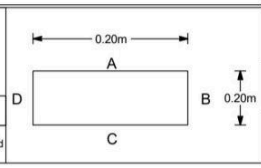
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over dark brown sandy slightly gravelly CLAY with frequent rootlets. Gravel is angular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.10-0.20	ES					6.01	0.20				
							(0.25)	Dark brown slightly gravelly slightly sandy CLAY with occasional cobbles and rare glass and plastic fragments. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.40-0.50	ES					5.76	0.45				
						5.71	0.50	Firm orangish brown slightly silty slightly sandy CLAY with occasional gravel of various lithologies. Gravel is angular to subrounded fine to coarse (TIDAL FLAT DEPOSITS).		TFD	
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 6.212	**Co-Ordinates ()** E 334043 N 443585	**Date** Started: 17-09-24 Finished: 17-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP06-SP02

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

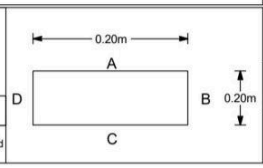
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Dark brown sandy slightly gravelly CLAY with frequent rootlets, rare plastic sheeting and rare sand pockets. Gravel is angular to subrounded fine to coarse of brick and various lithologies. (MADE GROUND COHESIVE)		CMG	
0.20-0.30	ES					5.44	0.30				
0.40-0.50	ES					5.29	0.45	Dark brown sandy slightly gravelly CLAY with rare cobbles and rare rootlets. Gravel is angular to subrounded fine to coarse of brick and various lithologies. (MADE GROUND COHESIVE)		CMG	
						5.24	0.50	Firm orangish brown slightly sandy CLAY. (POSSIBLY REWORKED)		CMG	
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.738	**Co-Ordinates ()** E 334053 N 443574	**Date** Started: 18-09-24 Finished: 18-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP06-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

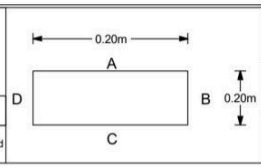
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown sandy slightly gravelly CLAY with occasional rootlets and rare ceramic framgments. Gravel is subangular fine to coarse (TOPSOIL)		TS	
						4.57	0.30				
0.30-0.40	ES						(0.30)	Dark greyish brown and grey sandy slightly silty CLAY with occasional subangular to rounded fine to coarse gravel of mudstone and sandstone (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.27	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.865	**Co-Ordinates ()** E 334034 N 443107	**Date** Started: 09-09-24 Finished: 09-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP08-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

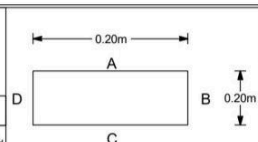
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly gravelly slightly sandy CLAY with fragments of rare angular glass. Gravel is subangular to subrounded fine to coarse of mudstone and sandstone (TOPSOIL)			
0.10-0.20	ES						(0.30)			TS	
						4.57	0.30				
							(0.20)	Firm greyish brown and grey slightly gravelly slightly sandy CLAY with occasional coarse gravel sized pockets of sand. Gravel is subangular to subrounded fine to coarse of mudstone and sandstone (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					4.37	0.50	*0.45 - 0.45 Dark grey layer with no odour*			
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.872	**Co-Ordinates ()** E 334057 N 443028	**Date** Started: 09-09-24 Finished: 09-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP08-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

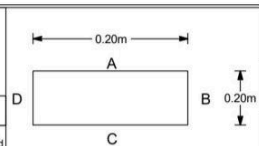
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of mudstone and sandstone (TOPSOIL)		TS	
0.20-0.30	ES					4.47	0.30				
0.40-0.50	ES						(0.20)	Firm orangish grey brown and grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of mudstone and sandstone (TIDAL FLAT DEPOSITS)		TFD	
						4.27	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.767	Co-Ordinates (): E 334035 N 443067	Date: Started: 09-09-24 Finished: 09-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP08-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

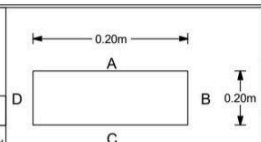
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets and rare angular brick. Gravel is subangular to subrounded fine and medium of mudstone and sandstone (TOPSOIL)		TS	
						4.56	0.30				
0.30-0.40	ES						(0.30)	Firm pale greyish orange brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine and medium of mudstone and sandstone (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.26	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.861	**Co-Ordinates ()** E 334031 N 443031	**Date** Started: 10-09-24 Finished: 10-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP08-SP04

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

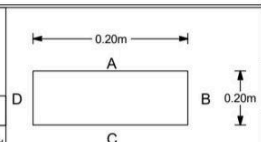
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES										
0.10-0.20	ES						(0.30)	Grass over dark brown sandy slightly gravelly slightly silty CLAY with occasional rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies (TOPSOIL)		TS	
						4.38	0.30				
0.40-0.50	ES						(0.20)	Firm orangish brown and greyish brown slightly gravelly slightly sandy CLAY. Slightly silty. Gravel is subangular to subrounded fine to coarse (TIDAL FLAT DEPOSITS)		TFD	
						4.18	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.682	**Co-Ordinates ()** E 333995 N 443110	**Date** Started: 09-09-24 Finished: 09-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP08-SP05

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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Telephone: 0116 200 5000

TRIAL PIT LOG

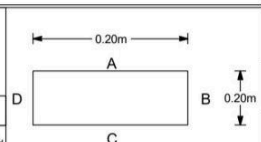
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to rounded fine and medium of mudstone and sandstone (TOPSOIL)		TS	
0.20-0.30	ES					4.56	0.30				
0.40-0.50	ES						(0.20)	Firm grey slightly silty slightly sandy CLAY with occasional subangular to subrounded fine and medium gravel of mudstone and sandstone (TIDAL FLAT DEPOSITS)		TFD	
						4.36	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.862	**Co-Ordinates ()** E 333996 N 443071	**Date** Started: 10-09-24 Finished: 09-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP08-SP06

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

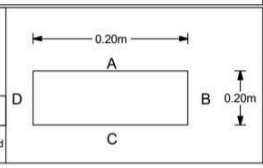
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY with occasional rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies. Strata is damp (TOPSOIL)		TS	
						3.94	0.30				
0.30-0.40	ES						(0.30)	Soft and firm dark greyish brown sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse. Strata is damp (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					3.64	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. Area saturated given lower topographical level.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.235	**Co-Ordinates ()** E 334035 N 443393	**Date** Started: 17-09-24 Finished: 17-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP10-SP01

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

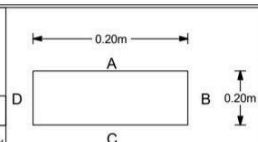
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly gravelly slightly sandy CLAY with occasional rootlets. Gravel is subangular and angular fine and medium of various lithologies with pockets of ash (MADE GROUND)			
0.10-0.20	ES						(0.30)			CMG	
						4.01	0.30				
							(0.20)	Firm dark grey orangish brown mottled grey slightly gravelly slightly sandy CLAY with occasional coarse gravel sized pockets of sand. Gravel is subangular to subrounded fine to coarse of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.81	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.314	**Co-Ordinates ()** E 334009 N 443383	**Date** Started: 17-09-24 Finished: 17-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP10-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

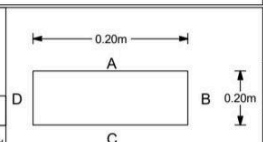
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is angular to subrounded fine and medium of various lithologies (TOPSOIL).		TS	
0.20-0.30	ES					4.68	0.30				
0.40-0.50	ES						(0.30)	Firm greyish brown slightly gravelly slightly sandy CLAY. Occasionally silty. Gravel is angular to subrounded fine and medium of various lithologies (TIDAL FLAT DEPOSITS).		TFD	
						4.38	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.980	**Co-Ordinates ()** E 334037 N 443470	**Date** Started: 17-09-24 Finished: 17-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP10-SP03

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

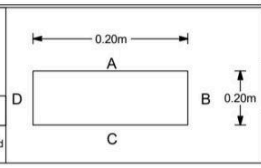
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies (TOPSOIL).		TS	
						4.73	0.30				
0.30-0.40	ES						(0.30)	Firm dark orangish brown mottled grey sandy slightly silty CLAY with occasional coarse gravel sized pockets of white sand (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.43	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency		Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 5.026	Co-Ordinates (): E 334038 N 443495	Date: Started: 17-09-24 Finished: 17-09-24	Trial Hole No. LP10-SP04
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0	

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

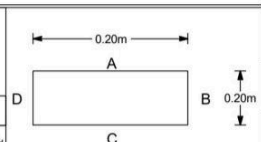
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular to rounded fine to coarse of quartz (TOPSOIL)			
0.10-0.20	ES						(0.30)			TS	
						4.67	0.30				
0.40-0.50	ES							Firm orangish grey brown mottled grey slightly silty sandy CLAY with occasional subangular to subrounded fine and medium gravel of various lithologies (TIDAL FLAT DEPOSITS)			
							(0.30)			TFD	
						4.37	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.969	**Co-Ordinates ()** E 334039 N 443437	**Date** Started: 17-09-24 Finished: 17-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP10-SP05

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

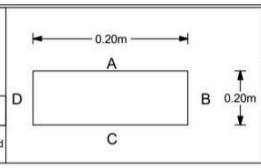
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark greyish brown sandy slightly gravelly CLAY with rootlets. Gravel is subangular to subrounded fine and medium of various lithologies (TOPSOIL)		TS	
0.20-0.30	ES					4.35	0.30				
0.40-0.50	ES						(0.20)	Firm pale grey brown mottled grey slightly sandy slightly silty CLAY (TIDAL FLAT DEPOSITS)		TFD	
						4.15	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.646	Co-Ordinates (): E 333912 N 443273	Date: Started: 11-09-24, Finished: 11-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP11-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

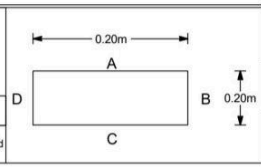
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to subrounded fine and medium (TOPSOIL)		TS	
						4.35	0.25				
0.30-0.40	ES						(0.35)	Firm grey brown mottled grey slightly silty slightly sandy CLAY with occasional gravel. Gravel is subangular to subrounded fine and medium (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.00	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.599	**Co-Ordinates ()** E 333884 N 443279	**Date** Started: 11-09-24 Finished: 11-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP11-SP02

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

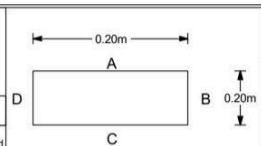
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to subrounded fine and medium of various lithologies (TOPSOIL)		TS	
0.10-0.20	ES					3.50	0.20				
							(0.30)	Firm light brown sandy slightly silty CLAY (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.20	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 3.695	**Co-Ordinates ()** E 333949 N 443352	**Date** Started: 11-09-24 Finished: 11-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP11-SP03

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

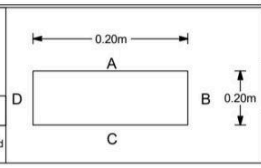
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					4.30	0.15	Grass over dark brown slightly gravelly slightly sandy slightly silty CLAY with occasional rootlets. Gravel is subangular to subrounded fine and medium. Rare brick gravel (TOPSOIL) *0.10 Organic odour* *0.15 Rare grey streak*		TS	
0.20-0.30	ES						(0.35)	Orangish brown mottled grey and grey sandy CLAY (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.95	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.451	Co-Ordinates (): E 333908 N 443313	Date Started: 11-09-24 Finished: 11-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP11-SP04

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

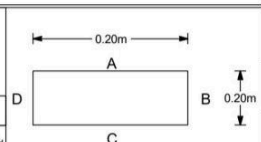
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine and medium of rare brick and sandstone (TOPSOIL)		TS	
						4.02	0.30				
0.30-0.40	ES						(0.30)	Firm orangish brown mottled grey and grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine and medium (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					3.72	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.317	Co-Ordinates (): E 333952 N 443308	Date Started: 11-09-24 Finished: 11-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP11-SP05

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
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Telephone: 0116 200 5000

TRIAL PIT LOG

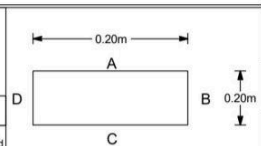
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES										
0.10-0.20	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies. Occasional rootlets (TOPSOIL)		TS	
						4.56	0.30				
0.40-0.50	ES						(0.20)	Dark brown sandy slightly gravelly CLAY. Slightly silty. Gravel is subangular to rounded fine to coarse of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
						4.36	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.864	**Co-Ordinates ()** E 333875 N 443237	**Date** Started: 11-09-24 Finished: 11-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP11-SP06

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

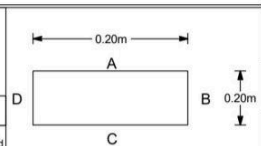
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Grass over dark brown slightly gravelly slightly sandy CLAY with occasional rootlets. Gravel is angular to subrounded fine and medium (TOPSOIL)		CMG	
0.20-0.30	ES					4.59	0.25				
0.40-0.50	ES						(0.35)	Pale orangish red mottled grey slightly sandy silty CLAY (TIDAL FLAT DEPOSITS)		TFD	
						4.24	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.838	Co-Ordinates (): E 333953 N 443153	Date: Started: 12-09-24, Finished: 12-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP11-SP07

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

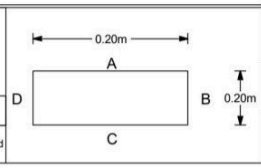
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to subrounded fine to coarse of brick and various lithologies. (MADE GROUND COHESIVE)		CMG	
						4.52	0.30				
0.30-0.40	ES						(0.30)	Firm dark orangish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine and medium of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.22	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.815	**Co-Ordinates ()** E 333900 N 443153	**Date** Started: 12-09-24 Finished: 12-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP11-SP08

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

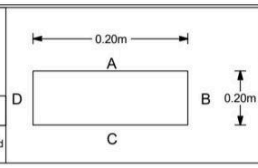
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown sandy slightly gravelly CLAY with frequent rootlets. Gravel is angular to subrounded fine to coarse including brick. (TOPSOIL)			
0.10-0.20	ES						(0.35)			TS	
						4.55	0.35				
0.40-0.50	ES						(0.25)	Firm and stiff brown mottled grey and dark grey sandy slightly gravelly CLAY. Gravel is angular fine to coarse of sandstone (TIDAL FLAT DEPOSITS)		TFD	
						4.30	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.900	**Co-Ordinates ()** E 333927 N 443155	**Date** Started: 12-09-24 Finished: 12-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP11-SP09

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

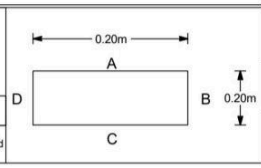
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is subangular to subrounded fine and medium of brick and various lithologies (TOPSOIL)		CMG	
0.20-0.30	ES					4.76	0.30				
0.40-0.50	ES						(0.20)	Firm orangish grey mottled grey slightly gravelly slightly sandy slightly silty CLAY. Gravel is subangular to subrounded fine and medium of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
						4.56	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.058	**Co-Ordinates ()** E 333909 N 443234	**Date** Started: 11-09-24 Finished: 11-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP11-SP10

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

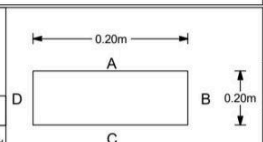
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					5.19	(0.30) 0.30	Grass over brown slightly gravelly clayey fine to coarse SAND with rare cobbles of sandstone and pockets of ash. Gravel is subangular to subrounded fine to coarse of various lithologies (MADE GROUND)		GMG	
0.30-0.40	ES										
0.50-0.60	ES					4.89	(0.30) 0.60	Firm red mottled greyish brown slightly sandy CLAY with rare inclusions of subrounded to angular gravel of various lithologies (TILL)		TILL	
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency		Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 5.493	Co-Ordinates (): E 334843 N 442270	Date: Started: 25-09-24 Finished: 25-09-24	Trial Hole No. LP14-SP01
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0	

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

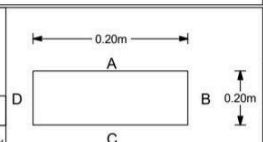
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown sandy slightly gravelly CLAY with rare plastic fragments and rare pockets of ash. Gravel is angular to subrounded fine to coarse of various lithologies (MADE GROUND COHESIVE)			
0.10-0.20	ES						(0.40)			CMG	
						4.42	0.40				
0.40-0.50	ES							Dark orangish brown mottled grey slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of chalk, various lithologies and ash. (MADE GROUND COHESIVE)			
						4.32	0.50			CMG	
										END	
								Handpit complete at 0.5m bgl			

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.819	**Co-Ordinates ()** E 334911 N 442342	**Date** Started: 24-09-24 Finished: 24-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP14-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

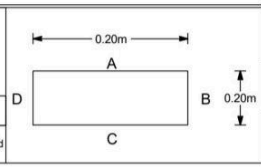
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					5.87	0.15	Grass over dark brown slightly silty slightly clayey fine to coarse SAND with rootlets (POSSIBLY REWORKED)		GMG	
0.20-0.30	ES						(0.35)	Red brown slightly silty slightly clayey fine to coarse SAND with occasional angular medium and coarse brick fragments (POSSIBLY REWORKED)		GMG	
0.40-0.50	ES					5.52	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1

Width	Ground Level (m)	Co-Ordinates ()	Date	Trial Hole No.
0.20m	6.020	E 334953 N 442384	Started: 25-09-24 Finished: 25-09-24	LP14-SP03

Orientation	Method/Plant Used	Contractor	Scale
degrees from north	Hand Tools	Geotron UK Ltd	1:20.0

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

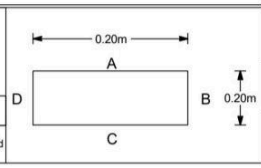
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly gravelly slightly sandy CLAY with frequent rootlets and rare ceramic fragments. Gravel is angular to subrounded fine to coarse of various lithologies and ash. Rootlets to 0.2m bgl. (MADE GROUND COHESIVE)			
0.30-0.40	ES						(0.60)			CMG	
0.50-0.60	ES					4.93	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 5.528	Co-Ordinates (): E 334027 N 443879	Date: Started: 18-09-24, Finished: 18-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP15-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
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M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

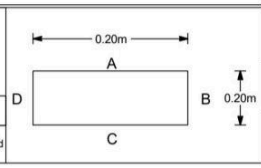
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over dark brown sandy slightly gravelly CLAY with frequent rootlets and rare metal fragments. Gravel is angular to subrounded fine to coarse of brick, various lithologies and ash. (MADE GROUND COHESIVE)		CMG	
0.10-0.20	ES					5.58	0.20	*0.10 20mm thick root*			
							(0.30)	Dark brown sandy slightly gravelly CLAY with frequent rootlets, rare glass fragments, occasional fragments of fibreboard and occasional subrounded cobbles. Gravel is angular to subrounded fine to coarse of brick, various lithologies and ash. (MADE GROUND COHESIVE)		CMG	
0.40-0.50	ES					5.28	0.50	Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 5.775	Co-Ordinates (): E 334021 N 443838	Date: Started: 18-09-24, Finished: 18-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP15-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

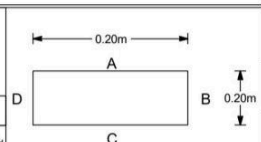
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is angular to subrounded fine to coarse of brick and various lithologies. (MADE GROUND COHESIVE)			
0.20-0.30	ES						(0.35)			CMG	
						5.43	0.35				
0.40-0.50	ES							Dark brown slightly gravelly slightly sandy CLAY with rare wire and occasional fibreboard. Gravel is angular to subrounded fine to coarse of brick and various lithologies (MADE GROUND COHESIVE)		CMG	
						5.28	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.780	**Co-Ordinates ()** E 334025 N 443855	**Date** Started: 18-09-24 Finished: 18-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP15-SP03

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

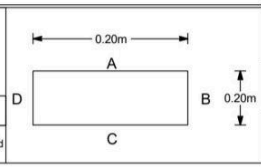
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.35)	Grass over dark greyish brown sandy slightly silty CLAY with rootlets (TOPSOIL)		TS	
0.30-0.40	ES					3.58	0.35				
							(0.25)	Dark greyish brown very sandy slightly silty CLAY (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					3.33	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 3.933	Co-Ordinates (): E 334401 N 441889	Date: Started: 24-09-24, Finished: 24-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP17-SP01

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

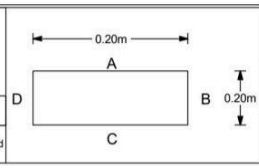
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over orangish brown and grey very sandy CLAY with occasional gravel of mudstone. Occasional rootlets (TOPSOIL)			
0.10-0.20	ES						(0.40)			TS	
						3.66	0.40				
0.40-0.50	ES						(0.20)	Brown mottled grey silty slightly clayey fine to coarse SAND (TIDAL FLAT DEPOSITS).		TFD	
								0.50 Seepage of water at the base of pit			
						3.46	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. Location very wet underfoot

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.061	**Co-Ordinates ()** E 334405 N 441921	**Date** Started: 24-09-24 Finished: 24-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP17-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

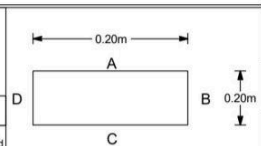
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					3.87	0.15	Grass over dark brown slightly sandy silty CLAY with rootlets and occasional gravel (TOPSOIL)		TS	
0.20-0.30	ES						(0.35)	Dark brown slightly silty fine to coarse SAND with rare subrounded cobbles of mudstone (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.52	0.50	*0.45 Becomes dark grey*			
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.022	**Co-Ordinates ()** E 334406 N 441851	**Date** Started: 24-09-24 Finished: 24-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP17-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

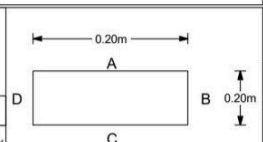
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					7.24	(0.30) 0.30	Grass over dark brown very sandy slightly gravelly slightly silty CLAY with rare cobbles of mudstone. Gravel is angular to subrounded fine to coarse (TOPSOIL)		TS	
0.30-0.40	ES					6.94	(0.30) 0.60	Firm reddish brown sandy CLAY with rare cobbles of mudstone (TILL)		TILL	
0.50-0.60	ES							Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 7.535	Co-Ordinates (): E 334957 N 442290	Date: Started: 25-09-24, Finished: 25-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP18-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

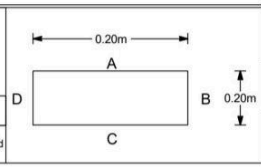
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over brown very sandy slightly silty CLAY with rootlets (TOPSOIL)			
0.10-0.20	ES						(0.35)			TS	
						8.15	0.35				
0.40-0.50	ES							Firm to stiff reddish brown sandy slightly silty CLAY with occasional angular fine to coarse gravel of sandstone (TILL)		TILL	
						8.00	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 8.497	**Co-Ordinates ()** E 334938 N 442212	**Date** Started: 25-09-24 Finished: 25-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP18-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

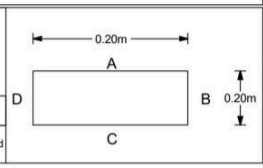
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown very sandy silty CLAY with rootlets (TOPSOIL)			
0.20-0.30	ES						(0.40)			TS	
						10.69	0.40				
0.40-0.50	ES							Firm to stiff dark reddish brown very sandy slightly silty CLAY with occasional angular to subrounded fine and medium gravel of various lithologies (TILL)		TILL	
						10.59	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 11.089	**Co-Ordinates ()** E 334931 N 442163	**Date** Started: 25-09-24 Finished: 25-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP18-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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TRIAL PIT LOG

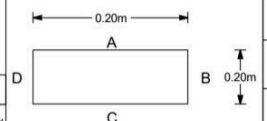
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					9.87	0.15	Dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies. (POSSIBLE LANDFILL CAP)		CMG	
0.30-0.40	ES						(0.45)	Orangish brown mottled red slightly gravelly slightly clayey fine to coarse SAND. Gravel is subrounded and rounded fine to coarse of mudstone and siltstone. (POSSIBLE LANDFILL CAP)		GMG	
0.50-0.60	ES					9.42	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1

Width	Ground Level (m)	Co-Ordinates ()	Date	Trial Hole No.
0.20m	10.024	E 335568 N 443017	Started: 18-09-24 Finished: 18-09-24	LP19-SP01

Orientation	Method/Plant Used	Contractor	Scale
degrees from north	Hand Tools	Geotron UK Ltd	1:20.0

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

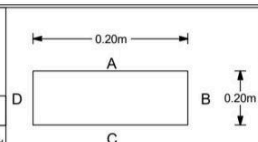
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular to rounded fine to coarse of various lithologies. Rootlets up to 10mm thick (POSSIBLE LANDFILL CAP)			
0.10-0.20	ES						(0.50)			CMG	
0.40-0.50	ES							*0.40 Rare subrounded boulder of mudstone (0.2 x 0.15 x 0.1)*			
						8.42	0.50	Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency		Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 8.918	Co-Ordinates (): E 335582 N 443053	Date: Started: 18-09-24 Finished: 18-09-24	Trial Hole No. LP19-SP02
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0	

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

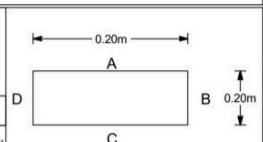
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Grass over dark brown slightly gravelly clayey fine to coarse SAND with rootlets, brick and ash. Gravel is angular to subrounded fine to coarse of brick and various lithologies (MADE GROUND GRANULAR)		GMG	
0.20-0.30	ES					7.67	0.25				
0.40-0.50	ES						(0.25)	Dark brown clayey fine to coarse gravelly SAND with frequent ash and frequent inclusions of metal hooks, plastic fragments, rag and wire (POSSIBLE LANDFILL MATERIAL)		GMG	
						7.42	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 7.920	Co-Ordinates (): E 335566 N 443136	Date: Started: 18-09-24, Finished: 18-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP19-SP03

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

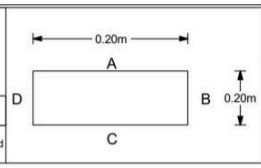
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over brown mottled orange sandy slightly silty CLAY with frequent rootlets. Rare fragment of brick (TOPSOIL)		TS	
						4.71	0.30				
0.30-0.40	ES						(0.30)	Firm pale orangish brown mottled grey sandy silty CLAY with rare pocket of silty sand (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES										
						4.41	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.005	**Co-Ordinates ()** E 332293 N 443783	**Date** Started: 01-10-24 Finished: 01-10-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP20-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

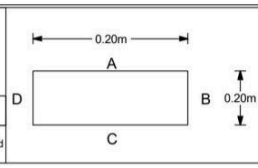
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over brown sandy CLAY with frequent rootlets and occasional pockets of coarse yellow sand (TOPSOIL)			
0.10-0.20	ES						(0.35)			TS	
						4.58	0.35				
0.40-0.50	ES							Firm pale greyish brown mottled orange sandy slightly silty CLAY (TIDAL FLAT DEPOSITS)		TFD	
						4.43	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.925	**Co-Ordinates ()** E 332191 N 443753	**Date** Started: 01-11-24 Finished: 01-10-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP20-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

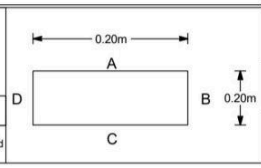
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.35)	Dark brown sandy slightly silty CLAY with frequent rootlets with rare brick fragments (TOPSOIL)		TS	
0.20-0.30	ES					4.69	0.35				
0.40-0.50	ES					4.54	0.50	Dark greyish brown slightly sandy slightly silty CLAY with rare pottery fragments (TIDAL FLAT DEPOSITS)		TFD	
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 5.037	Co-Ordinates (): E 332158 N 443813	Date Started: 01-10-24 Finished: 01-10-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP20-SP03

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

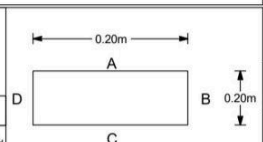
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over light brown slightly silty clayey fine and medium SAND with rootlets (TOPSOIL)		TS	
						3.60	0.30				
0.30-0.40	ES						(0.30)	Light brown friable organic CLAY with boulder sized pocket of dark brown fibrous peat (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					3.30	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 3.898	Co-Ordinates (): E 333107 N 442818	Date: Started: 24-09-24, Finished: 24-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP21-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

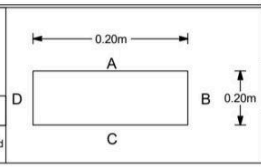
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over light brown mottled grey very sandy gravelly slightly silty CLAY with rootlets. Gravel is angular to rounded fine to coarse of various lithologies (TOPSOIL)			
0.10-0.20	ES						(0.35)			TS	
						3.95	0.35				
0.40-0.50	ES							Greyish orangish brown gravelly slightly sandy slightly silty CLAY. Gravel is angular to rounded fine to coarse of various lithologies (TIDAL FLAT DEPOSITS)		TFD	
						3.80	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.303	**Co-Ordinates ()** E 333170 N 442831	**Date** Started: 24-09-24 Finished: 24-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP21-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

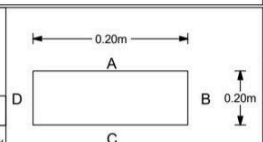
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over brown slightly sandy silty CLAY with rare gravel and frequent rootlets (TOPSOIL)			
0.20-0.30	ES						(0.35)			TS	
						3.95	0.35				
0.40-0.50	ES							Orangish brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies including sandstone (TIDAL FLAT DEPOSITS)		TFD	
						3.80	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.300	**Co-Ordinates ()** E 333201 N 442839	**Date** Started: 24-09-24 Finished: 24-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP21-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

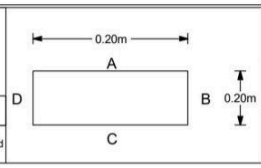
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.35)	Grass over dark brown slightly gravelly slightly sandy silty CLAY with rootlets. Gravel is angular to subrounded fine to coarse of mudstone and sandstone (TOPSOIL).		TS	
0.30-0.40	ES					4.82	0.35	Firm orangish brown slighty silty sandy CLAY with rare cobble sized pockets of sand (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.57	0.60	Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.169	**Co-Ordinates ()** E 333167 N 443771	**Date** Started: 23-09-24 Finished: 23-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP22-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

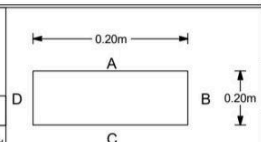
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown slightly sandy slightly silty CLAY with frequent rootlets (TOPSOIL)			
0.10-0.20	ES						(0.30)			TS	
						5.31	0.30				
0.40-0.50	ES						(0.30)	Dark brown slightly sandy silty CLAY with rare orange sand pockets and occasional gravel. Gravel is subrounded to subangular fine to coarse of mudstone and various lithologies (TIDAL FLAT DEPOSITS).		TFD	
						5.01	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.607	**Co-Ordinates ()** E 333132 N 443752	**Date** Started: 23-09-24 Finished: 23-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP22-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

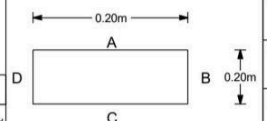
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown gravelly slightly sandy CLAY with frequent rootlets and brick fragments. Large diameter root (15mm) at 0.25 and 0.4m bgl. (MADE GROUND COHESIVE)			
0.20-0.30	ES						(0.40)			CMG	
						4.79	0.40				
0.40-0.50	ES						(0.20)	Firm orangish mottled grey brown slightly sandy slighlty CLAY (TIDAL FLAT DEPOSITS)		TFD	
						4.59	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.194	**Co-Ordinates ()** E 333136 N 443710	**Date** Started: 23-09-24 Finished: 23-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP22-SP03

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

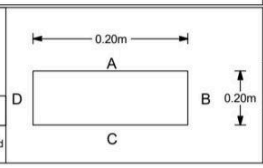
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					6.36	0.15	Grass over brown sandy slightly gravelly CLAY with rootlets. Gravel is subangular to subrounded fine to coarse. (MADE GROUND COHESIVE)		CMG	
0.30-0.40	ES						(0.45)	Brown slightly gravelly sandy CLAY with occasional concrete subangular cobbles. Gravel is angular and subangular fine and medium of brick. (MADE GROUND COHESIVE)		CMG	
0.50-0.60	ES					5.91	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 6.511	**Co-Ordinates ()** E 333506 N 444436	**Date** Started: 30-09-24 Finished: 30-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP23-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

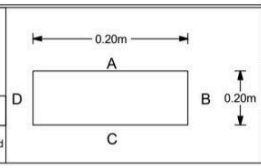
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over dark brown sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies (MADE GROUND COHESIVE)		CMG	
0.10-0.20	ES					6.73	0.20				
							(0.30)	Pale brown sandy CLAY with occasional subangular brick cobbles (MADE GROUND COHESIVE)		CMG	
0.40-0.50	ES					6.43	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 6.931	**Co-Ordinates ()** E 333714 N 444461	**Date** Started: 30-09-24 Finished: 30-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP23-SP02

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

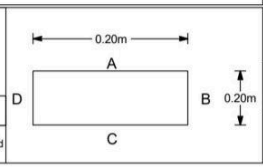
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over brown gravelly CLAY with occasional rootlets and subrounded mudstone cobbles. Gravel is subangular to subrounded fine to coarse of brick, concrete and mudstone. (MADE GROUND COHESIVE)			
0.20-0.30	ES						(0.50)			CMG	
0.40-0.50	ES					7.89	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 8.390	Co-Ordinates (): E 333777 N 444436	Date Started: 30-09-24 Finished: 30-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP23-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

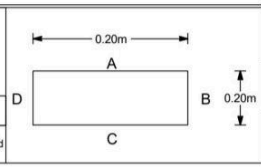
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over brown sandy clayey SILT(MADE GROUND COHESIVE)		CMG	
						4.42	0.30	*0.20 m bgl. Pea gravel encountered on southern face of pit, possibly associated with land drain*			
0.30-0.40	ES						(0.30)	Firm pale orangish brown mottled gey silty slightly clayey fine to coarse SAND (TIDAL FLAT DEPOSITS)		TFD	
0.50-0.60	ES					4.12	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.716	**Co-Ordinates ()** E 334200 N 441538	**Date** Started: 01-10-24 Finished: 01-10-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP26-SP01

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

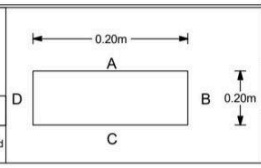
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over brown sandy SILT with occasional rootlets. Strata is damp (TOPSOIL)		TS	
0.10-0.20	ES					4.16	0.15				
							(0.35)	Firm brown mottled grey sandy SILT pockets of coarse sand. Strata is damp (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.81	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. Wet saturated ground with surface water ponding.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 4.311	**Co-Ordinates ()** E 334222 N 441434	**Date** Started: 01-10-24 Finished: 01-10-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP26-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

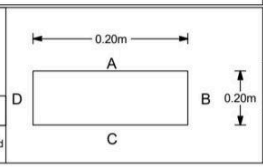
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Grass over light brown sandy slightly clayey SILT with rootlets and occasional fine to coarse gravel (TOPSOIL).		TS	
0.20-0.30	ES					3.89	0.25				
							(0.25)	Firm reddish brown sandy slightly clayey SILT (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.64	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency		Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.144	Co-Ordinates (): E 334332 N 441401	Date: Started: 01-10-24 Finished: 01-10-24	Trial Hole No. LP26-SP03
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0	

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

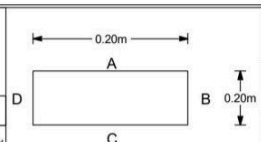
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over dark brown slightly silty SAND with rare plastic fragments, brick and ash (GRANULAR MADE GROUND)		GMG	
						5.00	0.20				
0.30-0.40	ES						(0.40)	Dark brown slightly gravelly slightly silty clayey fine to coarse SAND with occasional subangular to subrounded fine to coarse gravel of various lithologies (POSSIBLE REWORKED BLOWN SAND)		BSA	
0.50-0.60	ES					4.60	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.204	**Co-Ordinates ()** E 331416 N 443554	**Date** Started: 26-09-24 Finished: 26-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP29-SP01

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

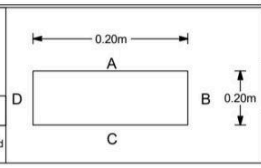
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES										
0.10-0.20	ES						(0.25)	Grass over dark brown slightly silty clayey fine to coarse SAND with rare plastic and brick fragments and black ash (MADE GROUND GRANULAR)		GMG	
						6.84	0.25				
0.40-0.50	ES						(0.25)	Dark brown slightly gravelly slightly silty clayey fine to coarse SAND with occasional subangular to subrounded fine to coarse gravel of sandstone and various lithologies (POSSIBLE REWORKED BLOWN SAND)		BSA	
						6.59	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 7.086	**Co-Ordinates ()** E 331407 N 443494	**Date** Started: 26-09-24 Finished: 26-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP29-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

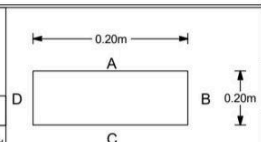
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.30)	Grass over dark brown slightly gravelly slightly silty clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine and medium of brick, various lithologies (TOPSOIL)		TS	
0.20-0.30	ES					7.46	0.30				
0.40-0.50	ES						(0.20)	Dark brown slightly gravelly slightly silty clayey fine to coarse SAND with rare subangular cobble of concrete (POSSIBLE REWORKED BLOWN SAND)		BSA	
						7.26	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 7.764	**Co-Ordinates ()** E 331330 N 443517	**Date** Started: 26-09-24 Finished: 26-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP29-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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TRIAL PIT LOG

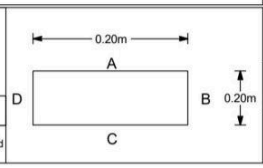
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					4.96	0.15	Grass over pale brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of various lithologies. (MADE GROUND GRANULAR)		GMG	
0.30-0.40	ES						(0.45)	Brownish black sandy clayey angular to subangular fine to coarse GRAVEL of brick fragments with black ash with clinker in addition to glass and pottery fragments. (POSSIBLE LANDFILL MATERIAL).		GMG	
0.50-0.60	ES					4.51	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.105	**Co-Ordinates ()** E 332127 N 445413	**Date** Started: 26-09-24 Finished: 26-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP30-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

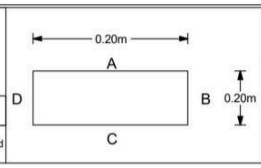
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown sandy CLAY with rootlets with metal and plastic fragments (POSSIBLE LANDFILL MATERIAL)			
0.10-0.20	ES						(0.35)			CMG	
						4.97	0.35				
0.40-0.50	ES							Firm dark greyish brown sandy CLAY (POSSIBLE LANDFILL MATERIAL)		CMG	
						4.82	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1

Width	Ground Level (m)	Co-Ordinates ()	Date	Trial Hole No.
0.20m	5.318	E 332213 N 445459	Started: 26-09-24 Finished: 26-09-24	LP30-SP02

Orientation	Method/Plant Used	Contractor	Scale
degrees from north	Hand Tools	Geotron UK Ltd	1:20.0

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
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TRIAL PIT LOG

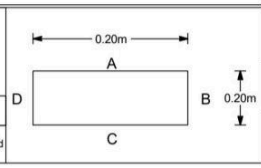
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES							Grass over dark brown gravelly sandy CLAY with rare ceramic tiles. Ashy. Gravel is subangular to subrounded fine to coarse of various lithologies (MADE GROUND COHESIVE)			
0.20-0.30	ES						(0.40)			CMG	
						4.69	0.40				
0.40-0.50	ES							Dark brownish black angular to subangular fine to coarse GRAVEL of various lithologies and ash with occasional clinker, glass and plastic fragments (POSSIBLE LANDFILL MATERIAL)		GMG	
						4.59	0.50			END	
								Handpit complete at 0.5m bgl			

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 5.090	**Co-Ordinates ()** E 332310 N 445580	**Date** Started: 26-09-24 Finished: 26-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP30-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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TRIAL PIT LOG

Project
Land at Thornton Cleveleys

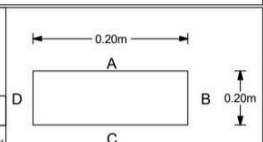
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					4.28	(0.25) 0.25	Grass over brown sandy clayey SILT with rare brick fragments (TOPSOIL)		TS	
0.30-0.40	ES					3.93	(0.35) 0.60	Brown sandy slightly clayey SILT with rare fragments of brick (POSSIBLY REWORKED)		TFD	
0.50-0.60	ES							Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.526	Co-Ordinates (): E 332830 N 447292	Date: Started: 27-09-24, Finished: 27-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP31-SP01

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

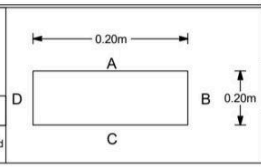
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					4.16	(0.20) 0.20	Grass over firm brown sandy slightly clayey SILT with occasional fine and medium gravel and rootlets (TOPSOIL)		TS	
0.20-0.30	ES						(0.30)	Brown sandy slightly clayey SILT (TIDAL FLAT DEPOSITS)		TFD	
0.40-0.50	ES					3.86	0.50	Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency		Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.360	Co-Ordinates (): E 332924 N 447322	Date: Started: 27-09-24 Finished: 27-09-24	Trial Hole No. LP31-SP02
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0	

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
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Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

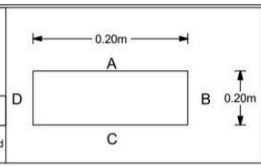
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Grass over brown sandy slightly clayey SILT with occasional rootlets with ash and brick fragments (MADE GROUND COHESIVE)		CMG	
0.20-0.30	ES					4.11	0.25				
0.40-0.50	ES						(0.25)	Brown sandy slightly clayey SILT with occasional fine and medium gravel and rare glass fragments (POSSIBLY REWORKED)		TFD	
						3.86	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 4.355	Co-Ordinates (): E 332884 N 447433	Date: Started: 27-09-24, Finished: 27-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP31-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

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8 First Street, Manchester
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Telephone: 0116 200 5000

TRIAL PIT LOG

Project
Land at Thornton Cleveleys

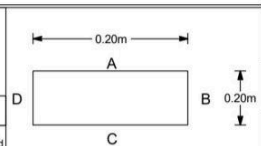
Job No
UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.25)	Grass over dark brown slightly gravelly clayey fine to coarse SAND with occasional rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies and ash. (MADE GROUND GRANULAR)		GMG	
						5.88	0.25				
0.30-0.40	ES						(0.35)	Pale yellowish brown fine to coarse SAND (POSSIBLE REWORKED BLOWN SAND)		BSA	
0.50-0.60	ES					5.53	0.60				
								Handpit complete at 0.6m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length: 0.20m	Logged By: Alice Belfield	Client: The Environment Agency	Sheet: 1 of 1
Width: 0.20m	Ground Level (m): 6.125	Co-Ordinates (): E 333275 N 448260	Date: Started: 27-09-24, Finished: 27-09-24
Orientation: degrees from north	Method/Plant Used: Hand Tools	Contractor: Geotron UK Ltd	Scale: 1:20.0

Trial Hole No.
LP32-SP01

20 WSP TP LOG LS 2 PHOTO LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

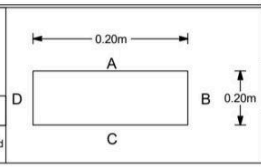
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES						(0.20)	Grass over dark brown gravelly slightly clayey fine to coarse SAND with frequent rootlets. Gravel is subangular to rounded fine to coarse of various lithologies and ash. (MADE GROUND GRANULAR)		GMG	
						9.61	0.20				
0.20-0.30	ES							Yellowish brown fine to coarse SAND with rare glass and occasional pockets of dark brown slightly clayey sand (POSSIBLE REWORKED BLOWN SAND)			
0.40-0.50	ES						(0.30)			BSA	
						9.31	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 9.809	**Co-Ordinates ()** E 333265 N 448187	**Date** Started: 27-09-24 Finished: 27-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP32-SP02

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

WSP
8 First Street, Manchester
M15 4RP
Telephone: 0116 200 5000

TRIAL PIT LOG

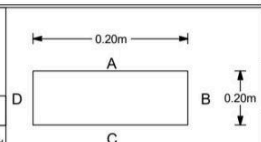
Project	Job No
Land at Thornton Cleveleys	UK-70100310-312

Depth	Type	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	STRATA Description	Legend	Geology	Install / Backfill
0.00-0.10	ES					14.46	0.15	Grass over dark brown slightly gravelly clayey fine to coarse SAND with occasional pockets of yellow brown sand and occasional rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies and ash. (MADE GROUND GRANULAR)		GMG	
0.20-0.30	ES						(0.35)	Yellow brown slightly gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of various lithologies (POSSIBLE REWORKED BLOWN SAND).		BSA	
0.40-0.50	ES					14.11	0.50				
								Handpit complete at 0.5m bgl		END	

General Remarks
Hole backfilled upon completion. No visual or olfactory evidence of contamination identified. No groundwater encountered.

Shoring/Support:
Stability: Stable

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	Logged By	Client	Sheet
0.20m	Alice Belfield	The Environment Agency	1 of 1
Width 0.20m	**Ground Level (m)** 14.614	**Co-Ordinates ()** E 333435 N 448238	**Date** Started: 27-09-24 Finished: 27-09-24
Orientation degrees from north	**Method/Plant Used** Hand Tools	**Contractor** Geotron UK Ltd	**Scale** 1:20.0

Trial Hole No.
LP32-SP03

20 WSP TP LOG LS 2 PHOTO_LAND AT THORNTON CLEVELEYS_V8.01.GPJ WSPETEMPLATE8.00.GDT 11/12/24

Appendix F

LABORATORY CHEMICAL ANALYSIS RESULTS

Confidential

ALS Laboratories (UK) Limited
Unit 7-8 Hawarden Business Park
Manor Road, Hawarden, Deeside CH5 3US
T +44 (0)1244 528700 E eugblstechdevelopment@alsglobal.com

right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

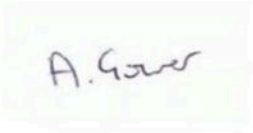
Date: 20 September 2024

Our Reference:	24-167 (SDG: 240910-62)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

13 soil samples were received on the 10th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 4: Results for PFAS in the soil samples (µg/Kg) 6

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240910-62	30342169	LP08-SP03 [0.00 - 0.10]
240910-62	30342145	LP08-SP02 [0.10 - 0.20]
240910-62	30342164	LP08-SP01 [0.30 - 0.40]
240910-62	30342149	LP08-SP02 [0.40 - 0.50]
240910-62	30342153	LP08-SP06 [0.20 - 0.30]
240910-62	30342143	LP08-SP02 [0.00 - 0.10]
240910-62	30342151	LP08-SP06 [0.00 - 0.10]
240910-62	30342155	LP08-SP06 [0.40 - 0.50]
240910-62	30342157	LP08-SP05 [0.10 - 0.20]
240910-62	30342171	LP08-SP03 [0.20 - 0.30]
240910-62	30342141	LP08-SP05 [0.00 - 0.10]
240910-62	30342162	LP08-SP01 [0.00 - 0.10]
240910-62	30342166	LP08-SP01 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be ~50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP08-SP03 [0.00 - 0.10]	LP08-SP02 [0.10 - 0.20]	LP08-SP01 [0.30 - 0.40]	LP08-SP02 [0.40 - 0.50]	LP08-SP06 [0.20 - 0.30]
Sample	30342169	30342145	30342164	30342149	30342153
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	9.33	8.84	11.2	8.58	9.44
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	0.717	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP08-SP02 [0.00 - 0.10]	LP08-SP06 [0.00 - 0.10]	LP08-SP06 [0.40 - 0.50]	LP08-SP05 [0.10 - 0.20]	LP08-SP03 [0.20 - 0.30]
Sample	30342143	30342151	30342155	30342157	30342171
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	10.7	7.81	8.31	22.7	14.4
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.5	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP08-SP05 [0.00 - 0.10]	LP08-SP01 [0.00 - 0.10]	LP08-SP01 [0.50 - 0.60]
Sample	30342141	30342162	30342166
PFBA	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5
PFOA	27.4	12.3	6.02
PFHxS	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10
PFNA	0.738	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4
PFDA	1.14	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6
Linear PFOS	0.85	<0.5	<0.6
7:3 FTCA	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9
PFUnA	0.773	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

ALS Laboratories (UK) Limited
Unit 7-8 Hawarden Business Park
Manor Road, Hawarden, Deeside CH5 3US
T +44 (0)1244 528700 E eugblstechdevelopment@alsglobal.com

right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

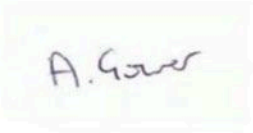
Date: 20 September 2024

Our Reference:	24-168 (SDG: 240911-31)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

16 soil samples were received on the 11th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 4: Results for PFAS in the soil samples (µg/Kg) 6

Table 5: Results for PFAS in the soil samples (µg/Kg) 7

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240911-31	30343746	LP08-SP04 [0.00 - 0.10]
240911-31	30343750	LP01-SP03 [0.00 - 0.10]
240911-31	30343755	LP01-SP03 [0.10 - 0.20]
240911-31	30343760	LP01-SP03 [0.50 - 0.60]
240911-31	30343764	LP02-SP02 [0.00 - 0.10]
240911-31	30343769	LP02-SP02 [0.30 - 0.40]
240911-31	30343772	LP02-SP02 [0.50 - 0.60]
240911-31	30343774	LP02-SP03 [0.00 - 0.10]
240911-31	30343776	LP02-SP03 [0.10 - 0.20]
240911-31	30343794	LP08-SP04 [0.30 - 0.40]
240911-31	30343800	LP01-SP01 [0.00 - 0.10]
240911-31	30343803	LP01-SP01 [0.20 - 0.30]
240911-31	30343807	LP01-SP01 [0.40 - 0.50]
240911-31	30343810	LP01-SP02 [0.00 - 0.10]
240911-31	30343813	LP01-SP02 [0.30 - 0.40]
240911-31	30343816	LP01-SP02 [0.40 - 0.50]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be ~50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP08-SP04 [0.00 - 0.10]	LP01-SP03 [0.00 - 0.10]	LP01-SP03 [0.10 - 0.20]	LP01-SP03 [0.50 - 0.60]	LP02-SP02 [0.00 - 0.10]
Sample	30343746	30343750	30343755	30343760	30343764
PFBA	<0.5	<0.5	<0.5	<0.5	0.959
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	1.16
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	0.866	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	8.80	3.97	7.42	10.3	5.81
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	0.993	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	0.819	<0.6	<0.6	<0.6	1.77
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP02-SP02 [0.30 - 0.40]	LP02-SP02 [0.50 - 0.60]	LP02-SP03 [0.00 - 0.10]	LP02-SP03 [0.10 - 0.20]	LP08-SP04 [0.30 - 0.40]
Sample	30343769	30343772	30343774	30343776	30343794
PFBA	<0.5	<0.5	0.945	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	1.30	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	0.570	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	12.0	32.4	3.70	0.956	7.27
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	0.74	<0.6	1.03	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP01-SP01 [0.00 - 0.10]	LP01-SP01 [0.20 - 0.30]	LP01-SP01 [0.40 - 0.50]	LP01-SP02 [0.00 - 0.10]	LP01-SP02 [0.30 - 0.40]
Sample	30343800	30343803	30343807	30343810	30343813
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	0.798	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	4.81	18.7	13.8	1.12	3.62
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	0.655	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP01-SP02 [0.40 - 0.50]
Sample	30343816
PFBA	<0.5
PFMOPrA	<0.5
3:3 FTCA	<0.6
PFPA	<0.5
PFMOBA	<0.5
4:2 FTS	<0.5
NFDHA	<1
PFHxA	<0.5
PFBS	<0.5
HFPO-DA	<1
PFEESA	<0.5
PFHpA	<0.5
PFPeS	<0.5
ADONA	<0.5
6:2 FTS	1.81
5:3 FTCA	<2.5
PFOA	18.9
PFHxS	<0.5
FBSA	<0.5
6:2 FTAB*	<10
PFNA	<0.5
PFecHS	<0.5
PFHpS	<0.6
8:2 FTS	<0.9
HFPO-TA	<4.4
PFDA	<0.5
MeFOSAA	<0.5
Branched PFOS	<0.6
Linear PFOS	<0.6
7:3 FTCA	<2.5
EtFOSAA	<0.9
PFUnA	<0.5
9Cl-PF3ONS	<0.5
10:2 FTS	<0.8
FHxSA	<0.5
PFNS	<0.5
PFDoA	<0.6
PFDS	<0.6
PFTrDA	<0.5
11Cl-PF3OUdS	<0.7
PFUnDS	<0.5
PFTeA	<0.5
PFOSA	<0.5
PFDoS	<0.5
PFTrDS	<0.5
MeFOSE	<5
PFHxDA	<0.5
N-MeFOSA	<0.5
8:2 diPAP	<0.9
EtFOSE	<5
N-EtFOSA	<0.5
PFODA	<0.5

Table 5: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

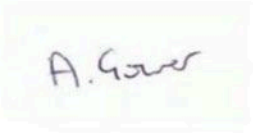
Date: 20 September 2024

Our Reference:	24-169 (SDG: 240912-41)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

20 soil samples were received on the 12th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240912-41	30350507	LP11-SP04 [0.00 - 0.10]
240912-41	30350510	LP11-SP04 [0.20 - 0.30]
240912-41	30350512	LP11-SP04 [0.40 - 0.50]
240912-41	30350514	LP11-SP01 [0.00 - 0.10]
240912-41	30350516	LP11-SP01 [0.20 - 0.30]
240912-41	30350521	LP11-SP02 [0.00 - 0.10]
240912-41	30350523	LP11-SP02 [0.30 - 0.40]
240912-41	30350525	LP11-SP02 [0.50 - 0.60]
240912-41	30350527	LP11-SP06 [0.00 - 0.10]
240912-41	30350529	LP02-SP04 [0.00 - 0.10]
240912-41	30350532	LP11-SP06 [0.10 - 0.20]
240912-41	30350536	LP11-SP10 [0.00 - 0.10]
240912-41	30350538	LP11-SP10 [0.20 - 0.30]
240912-41	30350542	LP11-SP03 [0.40 - 0.50]
240912-41	30350544	LP02-SP04 [0.20 - 0.30]
240912-41	30350546	LP02-SP04 [0.40 - 0.50]
240912-41	30350549	LP11-SP03 [0.00 - 0.10]
240912-41	30350553	LP11-SP05 [0.00 - 0.10]
240912-41	30350556	LP11-SP05 [0.30 - 0.40]
240912-41	30350558	LP11-SP05 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be ~50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP11-SP04 [0.00 - 0.10]	LP11-SP04 [0.20 - 0.30]	LP11-SP04 [0.40 - 0.50]	LP11-SP01 [0.00 - 0.10]	LP11-SP01 [0.20 - 0.30]
Sample	30350507	30350510	30350512	30350514	30350516
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	12.8	4.94	4.91	12.4	15.5
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	0.755	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	1.42	<0.6	<0.6	0.736	0.724
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP11-SP02 [0.00 - 0.10]	LP11-SP02 [0.30 - 0.40]	LP11-SP02 [0.50 - 0.60]	LP11-SP06 [0.00 - 0.10]	LP02-SP04 [0.00 - 0.10]
Sample	30350521	30350523	30350525	30350527	30350529
PFBA	<0.5	<0.5	<0.5	<0.5	0.999
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	01.1
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	5.97	3.50	5.83	4.46	10.1
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	0.829	<0.6	<0.6	<0.6	1.34
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP11-SP06 [0.10 - 0.20]	LP11-SP10 [0.00 - 0.10]	LP11-SP10 [0.20 - 0.30]	LP11-SP03 [0.40 - 0.50]	LP02-SP04 [0.20 - 0.30]
Sample	30350532	30350536	30350538	30350542	30350544
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	11.8	16.1	18.4	1.51	5.78
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	0.973	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	2.18	1.30	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP02-SP04 [0.40 - 0.50]	LP11-SP03 [0.00 - 0.10]	LP11-SP05 [0.00 - 0.10]	LP11-SP05 [0.30 - 0.40]	LP11-SP05 [0.50 - 0.60]
Sample	30350546	30350549	30350553	30350556	30350558
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	7.38	3.28	7.01	2.17	2.09
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	0.851	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 5: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Ltd
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

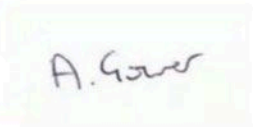
Date: 24 September 2024

Our Reference:	24-172 (SDG: 240913-101)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

Nine soil samples were received on the 13th September with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240913-101	30359996	LP02-SP01 [0.00 - 0.10]
240913-101	30360009	LP11-SP09 [0.00 - 0.10]
240913-101	30360011	LP11-SP09 [0.10 - 0.20]
240913-101	30360014	LP11-SP09 [0.40 - 0.50]
240913-101	30360096	LP02-SP01 [0.30 - 0.40]
240913-101	30360100	LP11-SP07 [0.00 - 0.10]
240913-101	30360103	LP11-SP07 [0.20 - 0.30]
240913-101	30360107	LP11-SP08 [0.00 - 0.10]
240913-101	30360109	LP11-SP08 [0.30 - 0.40]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP02-SP01 [0.00 - 0.10]	LP11-SP09 [0.00 - 0.10]	LP11-SP09 [0.10 - 0.20]	LP11-SP09 [0.40 - 0.50]	LP02-SP01 [0.30 - 0.40]
Sample	30359996	30360009	30360011	30360014	30360096
PFBA	<0.5	<0.5	<0.5	0.696	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	0.822	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	5.07	15.2	14.4	17.5	14.6
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	0.935	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	1.07	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP11-SP07 [0.00 - 0.10]	LP11-SP07 [0.20 - 0.30]	LP11-SP08 [0.00 - 0.10]	LP11-SP08 [0.30 - 0.40]
Sample	30360100	30360103	30360107	30360109
PFBA	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5
PFOA	7.92	4.31	8.28	6.74
PFHxS	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

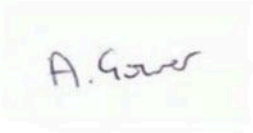
Date: 27 September 2024

Our Reference:	24-182 (SDG: 240918-51)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

14 soil samples were received on the 18th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240918-51	30376985	LP06-SP02 [0.00 - 0.10]
240918-51	30376990	LP10-SP05 [0.10 - 0.20]
240918-51	30377006	LP10-SP02 [0.10 - 0.20]
240918-51	30377019	LP06-SP02 [0.10 - 0.20]
240918-51	30377035	LP10-SP04 [0.30 - 0.40]
240918-51	30377041	LP10-SP03 [0.00 - 0.10]
240918-51	30377045	LP10-SP03 [0.40 - 0.50]
240918-51	30377002	LP10-SP02 [0.00 - 0.10]
240918-51	30376987	LP10-SP05 [0.00 - 0.10]
240918-51	30377031	LP10-SP04 [0.00 - 0.10]
240918-51	30377043	LP10-SP03 [0.20 - 0.30]
240918-51	30376994	LP10-SP05 [0.40 - 0.50]
240918-51	30376996	LP10-SP01 [0.00 - 0.10]
240918-51	30376998	LP10-SP01 [0.30 - 0.40]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP06-SP02 [0.00 - 0.10]	LP10-SP05 [0.10 - 0.20]	LP10-SP02 [0.10 - 0.20]	LP06-SP02 [0.10 - 0.20]	LP10-SP04 [0.30 - 0.40]
Sample	30376985	30376990	30377006	30377019	30377035
PFBA	0.854	<0.5	<0.5	0.788	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	1.01	<0.5	<0.5	1.15	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	3.29	8.50	4.95	5.19	18.0
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	0.760	<0.6	<0.6	0.967	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP10-SP03 [0.00 - 0.10]	LP10-SP03 [0.40 - 0.50]	LP10-SP02 [0.00 - 0.10]	LP10-SP05 [0.00 - 0.10]	LP10-SP04 [0.00 - 0.10]
Sample	30377041	30377045	30377002	30376987	30377031
PFBA	0.893	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	0.765	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	12.3	5.65	4.64	11.3	13.0
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	0.92	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP10-SP03 [0.20 - 0.30]	LP10-SP05 [0.40 - 0.50]	LP10-SP01 [0.00 - 0.10]	LP10-SP01 [0.30 - 0.40]
Sample	30377043	30376994	30376996	30376998
PFBA	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5
PFOA	10.6	5.89	6.81	11.6
PFHxS	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

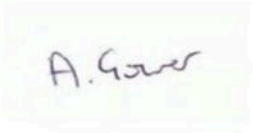
Date: 27 September 2024

Our Reference:	24-183 (SDG: 240917-45)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

15 soil samples were received on the 17th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 4: Results for PFAS in the soil samples (µg/Kg) 6

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240917-45	30372983	LP04-SP03 [0.00 - 0.10]
240917-45	30372988	LP05-SP03 [0.00 - 0.10]
240917-45	30372994	LP05-SP03 [0.20 - 0.30]
240917-45	30372999	LP05-SP03 [0.40 - 0.50]
240917-45	30373009	LP05-SP01 [0.30 - 0.40]
240917-45	30373016	LP05-SP01 [0.50 - 0.60]
240917-45	30373033	LP05-SP02 [0.00 - 0.10]
240917-45	30373067	LP04-SP03 [0.40 - 0.50]
240917-45	30373071	LP04-SP01 [0.00 - 0.10]
240917-45	30373088	LP04-SP02 [0.00 - 0.10]
240917-45	30373094	LP04-SP02 [0.10 - 0.20]
240917-45	30373084	LP04-SP01 [0.50 - 0.60]
240917-45	30373079	LP04-SP01 [0.30 - 0.40]
240917-45	30373056	LP04-SP03 [0.20 - 0.30]
240917-45	30373001	LP05-SP01 [0.00 - 0.10]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP04-SP03 [0.00 - 0.10]	LP05-SP03 [0.00 - 0.10]	LP05-SP03 [0.20 - 0.30]	LP05-SP03 [0.40 - 0.50]	LP05-SP01 [0.30 - 0.40]
Sample	30372983	30372988	30372994	30372999	30373009
PFBA	0.76	0.913	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	0.777	1.17	0.612	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	14.6	3.17	2.85	1.49	2.25
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	0.695	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP05-SP01 [0.50 - 0.60]	LP05-SP02 [0.00 - 0.10]	LP04-SP03 [0.40 - 0.50]	LP04-SP01 [0.00 - 0.10]	LP04-SP02 [0.00 - 0.10]
Sample	30373016	30373033	30373067	30373071	30373088
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	12.2	4.11	17.2	6.84	4.26
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	1.08	<0.6	1.27	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP04-SP02 [0.10 - 0.20]	LP04-SP01 [0.50 - 0.60]	LP04-SP01 [0.30 - 0.40]	LP04-SP03 [0.20 - 0.30]	LP05-SP01 [0.00 - 0.10]
Sample	30373094	30373084	30373079	30373056	30373001
PFBA	<0.5	<0.5	<0.5	<0.5	0.597
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	1.04
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	5.03	12.1	13.4	19.7	8.45
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	0.711
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
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Non-routine Analysis Report

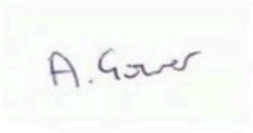
Date: 27 September 2024

Our Reference:	24-190 (SDG: 240919-79)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

20 soil samples were received on the 19th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240919-79	30385793	LP06-SP01 [0.00 - 0.10]
240919-79	30385795	LP15-SP02 [0.00 - 0.10]
240919-79	30385798	LP15-SP02 [0.10 - 0.20]
240919-79	30385804	LP15-SP03 [0.00 - 0.10]
240919-79	30385808	LP15-SP03 [0.20 - 0.30]
240919-79	30385814	LP19-SP01 [0.00 - 0.10]
240919-79	30385816	LP19-SP01 [0.30 - 0.40]
240919-79	30385820	LP19-SP02 [0.00 - 0.10]
240919-79	30385823	LP06-SP01 [0.30 - 0.40]
240919-79	30385827	LP19-SP02 [0.10 - 0.20]
240919-79	30385829	LP19-SP02 [0.40 - 0.50]
240919-79	30385831	LP19-SP03 [0.00 - 0.10]
240919-79	30385833	LP19-SP03 [0.20 - 0.30]
240919-79	30385835	LP19-SP03 [0.40 - 0.50]
240919-79	30385854	LP06-SP03 [0.00 - 0.10]
240919-79	30385856	LP06-SP03 [0.20 - 0.30]
240919-79	30385860	LP06-SP03 [0.40 - 0.50]
240919-79	30385864	LP15-SP01 [0.00 - 0.10]
240919-79	30385868	LP15-SP01 [0.30 - 0.40]
240919-79	30385871	LP15-SP01 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP06-SP01 [0.00 - 0.10]	LP15-SP02 [0.00 - 0.10]	LP15-SP02 [0.10 - 0.20]	LP15-SP03 [0.00 - 0.10]	LP15-SP03 [0.20 - 0.30]
Sample	30385793	30385795	30385798	30385804	30385808
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	0.719	0.662	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	6.11	2.01	1.77	3.06	4.19
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP19-SP01 [0.00 - 0.10]	LP19-SP01 [0.30 - 0.40]	LP19-SP02 [0.00 - 0.10]	LP06-SP01 [0.30 - 0.40]	LP19-SP02 [0.10 - 0.20]
Sample	30385814	30385816	30385820	30385823	30385827
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	2.01	2.12	2.30	6.64	3.97
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP19-SP02 [0.40 - 0.50]	LP19-SP03 [0.00 - 0.10]	LP19-SP03 [0.20 - 0.30]	LP19-SP03 [0.40 - 0.50]	LP06-SP03 [0.00 - 0.10]
Sample	30385829	30385831	30385833	30385835	30385854
PFBA	<0.5	0.715	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	1.93	3.58	5.19	6.19	1.73
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP06-SP03 [0.20 - 0.30]	LP06-SP03 [0.40 - 0.50]	LP15-SP01 [0.00 - 0.10]	LP15-SP01 [0.30 - 0.40]	LP15-SP01 [0.50 - 0.60]
Sample	30385856	30385860	30385864	30385868	30385871
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	0.677	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	3.88	2.10	1.50	8.07	3.74
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 5: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

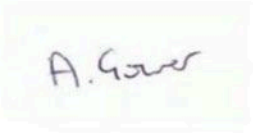
Date: 15 October 2024

Our Reference:	24-198 (SDG: 240925-25)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

24 soil samples were received on the 25th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240925-25	30414840	LP14-SP02 [0.00 - 0.10]
240925-25	30414843	LP14-SP02 [0.10 - 0.20]
240925-25	30414845	LP14-SP02 [0.40 - 0.50]
240925-25	30414852	LP21-SP01 [0.30 - 0.40]
240925-25	30414857	LP21-SP02 [0.00 - 0.10]
240925-25	30414860	LP21-SP02 [0.10 - 0.20]
240925-25	30414865	LP21-SP03 [0.00 - 0.10]
240925-25	30414868	LP22-SP02 [0.10 - 0.20]
240925-25	30414871	LP21-SP03 [0.20 - 0.30]
240925-25	30414874	LP21-SP03 [0.40 - 0.50]
240925-25	30414883	LP17-SP01 [0.00 - 0.10]
240925-25	30414887	LP17-SP01 [0.30 - 0.40]
240925-25	30414893	LP17-SP02 [0.00 - 0.10]
240925-25	30414896	LP17-SP02 [0.10 - 0.20]
240925-25	30414900	LP17-SP02 [0.40 - 0.50]
240925-25	30414913	LP22-SP01 [0.00 - 0.10]
240925-25	30414916	LP22-SP01 [0.30 - 0.40]
240925-25	30414920	LP22-SP01 [0.50 - 0.60]
240925-25	30414922	LP22-SP03 [0.00 - 0.10]
240925-25	30414924	LP22-SP03 [0.20 - 0.30]
240925-25	30414855	LP21-SP01 [0.50 - 0.60]
240925-25	30414876	LP17-SP03 [0.00 - 0.10]
240925-25	30414880	LP17-SP03 [0.40 - 0.50]
240925-25	30414898	LP22-SP02 [0.40 - 0.50]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP14-SP02 [0.00 - 0.10]	LP14-SP02 [0.10 - 0.20]	LP14-SP02 [0.40 - 0.50]	LP21-SP01 [0.30 - 0.40]	LP21-SP02 [0.00 - 0.10]
Sample	30414840	30414843	30414845	30414852	30414857
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	8.67	9.64	7.86	7.62	3.68
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP21-SP02 [0.10 - 0.20]	LP21-SP03 [0.00 - 0.10]	LP22-SP02 [0.10 - 0.20]	LP21-SP03 [0.20 - 0.30]	LP21-SP03 [0.40 - 0.50]
Sample	30414860	30414865	30414868	30414871	30414874
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	6.44	3.04	1.72	4.60	0.92
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP17-SP01 [0.00 - 0.10]	LP17-SP01 [0.30 - 0.40]	LP17-SP02 [0.00 - 0.10]	LP17-SP02 [0.10 - 0.20]	LP17-SP02 [0.40 - 0.50]
Sample	30414883	30414887	30414893	30414896	30414900
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	3.64	1.83	1.38	2.56	1.65
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP22-SP01 [0.00 - 0.10]	LP22-SP01 [0.30 - 0.40]	LP22-SP01 [0.50 - 0.60]	LP22-SP03 [0.00 - 0.10]	LP22-SP03 [0.20 - 0.30]
Sample	30414913	30414916	30414920	30414922	30414924
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	0.931	1.06	1.58	1.55	1.26
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	0.765	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 5: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP21-SP01 [0.50 - 0.60]	LP17-SP03 [0.00 - 0.10]	LP17-SP03 [0.40 - 0.50]	LP22-SP02 [0.40 - 0.50]
Sample	30414855	30414876	30414880	30414898
PFBA	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5
PFOA	35.1	1.42	7.58	1.83
PFHxS	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5

Table 6: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

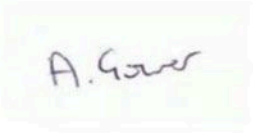
Date: 16 October 2024

Our Reference:	24-206 (SDG: 240926-86)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

12 soil samples were received on the 18th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240926-86	30427519	LP18-SP01 [0.00 - 0.10]
240926-86	30427521	LP14-SP01 [0.00 - 0.10]
240926-86	30427523	LP14-SP01 [0.30 - 0.40]
240926-86	30427525	LP14-SP01 [0.50 - 0.60]
240926-86	30427528	LP14-SP03 [0.00 - 0.10]
240926-86	30427530	LP14-SP03 [0.20 - 0.30]
240926-86	30427549	LP18-SP01 [0.50 - 0.60]
240926-86	30427551	LP18-SP02 [0.00 - 0.10]
240926-86	30427553	LP18-SP02 [0.10 - 0.20]
240926-86	30427557	LP18-SP03 [0.00 - 0.10]
240926-86	30427560	LP18-SP03 [0.20 - 0.30]
240926-86	30427562	LP18-SP03 [0.40 - 0.50]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP18-SP01 [0.00 - 0.10]	LP14-SP01 [0.00 - 0.10]	LP14-SP01 [0.30 - 0.40]	LP14-SP01 [0.50 - 0.60]	LP14-SP03 [0.00 - 0.10]
Sample	30427519	30427521	30427523	30427525	30427528
PFBA	<0.5	<0.5	<0.5	<0.5	0.794
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	4.14	11.5	5.64	6.80	7.77
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	1.07
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP14-SP03 [0.20 - 0.30]	LP18-SP01 [0.50 - 0.60]	LP18-SP02 [0.00 - 0.10]	LP18-SP02 [0.10 - 0.20]	LP18-SP03 [0.00 - 0.10]
Sample	30427530	30427549	30427551	30427553	30427557
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	6.36	9.44	5.01	3.75	4.52
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP18-SP03 [0.20 - 0.30]	LP18-SP03 [0.40 - 0.50]
Sample	30427560	30427562
PFBA	<0.5	<0.5
PFMOPrA	<0.5	<0.5
3:3 FTCA	<0.6	<0.6
PFPA	<0.5	<0.5
PFMOBA	<0.5	<0.5
4:2 FTS	<0.5	<0.5
NFDHA	<1	<1
PFHxA	<0.5	<0.5
PFBS	<0.5	<0.5
HFPO-DA	<1	<1
PFEESA	<0.5	<0.5
PFHpA	<0.5	<0.5
PFPeS	<0.5	<0.5
ADONA	<0.5	<0.5
6:2 FTS	<0.5	<0.5
5:3 FTCA	<2.5	<2.5
PFOA	3.94	3.97
PFHxS	<0.5	<0.5
FBSA	<0.5	<0.5
6:2 FTAB*	<10	<10
PFNA	<0.5	<0.5
PFecHS	<0.5	<0.5
PFHpS	<0.6	<0.6
8:2 FTS	<0.9	<0.9
HFPO-TA	<4.4	<4.4
PFDA	<0.5	<0.5
MeFOSAA	<0.5	<0.5
Branched PFOS	<0.6	<0.6
Linear PFOS	<0.6	<0.6
7:3 FTCA	<2.5	<2.5
EtFOSAA	<0.9	<0.9
PFUnA	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5
10:2 FTS	<0.8	<0.8
FHxSA	<0.5	<0.5
PFNS	<0.5	<0.5
PFDoA	<0.6	<0.6
PFDS	<0.6	<0.6
PFTrDA	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7
PFUnDS	<0.5	<0.5
PFTeA	<0.5	<0.5
PFOSA	<0.5	<0.5
PFDoS	<0.5	<0.5
PFTrDS	<0.5	<0.5
MeFOSE	<5	<5
PFHxDA	<0.5	<0.5
N-MeFOSA	<0.5	<0.5
8:2 diPAP	<0.9	<0.9
EtFOSE	<5	<5
N-EtFOSA	<0.5	<0.5
PFODA	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

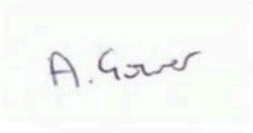
Date: 16 October 2024

Our Reference:	24-210 (SDG: 240927-114)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

13 soil samples were received on the 27th September 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240927-114	30434296	LP29-SP01 [0.00 - 0.10]
240927-114	30434304	LP30-SP03 [0.20 - 0.30]
240927-114	30434308	LP30-SP02 [0.00 - 0.10]
240927-114	30434310	LP30-SP02 [0.10 - 0.20]
240927-114	30434312	LP30-SP02 [0.40 - 0.50]
240927-114	30434317	LP30-SP01 [0.00 - 0.10]
240927-114	30434324	LP30-SP01 [0.50 - 0.60]
240927-114	30434332	LP29-SP01 [0.30 - 0.40]
240927-114	30434337	LP29-SP02 [0.00 - 0.10]
240927-114	30434341	LP29-SP02 [0.40 - 0.50]
240927-114	30434343	LP29-SP03 [0.00 - 0.10]
240927-114	30434345	LP29-SP03 [0.20 - 0.30]
240927-114	30434347	LP29-SP03 [0.40 - 0.50]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP29-SP01 [0.00 - 0.10]	LP30-SP03 [0.20 - 0.30]	LP30-SP02 [0.00 - 0.10]	LP30-SP02 [0.10 - 0.20]	LP30-SP02 [0.40 - 0.50]
Sample	30434296	30434304	30434308	30434310	30434312
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	1.26	3.34	2.69	4.70	4.04
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	3.01	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP30-SP01 [0.00 - 0.10]	LP30-SP01 [0.50 - 0.60]	LP29-SP01 [0.30 - 0.40]	LP29-SP02 [0.00 - 0.10]	LP29-SP02 [0.40 - 0.50]
Sample	30434317	30434324	30434332	30434337	30434341
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	3.72	2.78	1.48	1.94	3.25
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	0.710
Linear PFOS	1.12	<0.6	<0.6	2.15	1.78
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP29-SP03 [0.00 - 0.10]	LP29-SP03 [0.20 - 0.30]	LP29-SP03 [0.40 - 0.50]
Sample	30434343	30434345	30434347
PFBA	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5
PFOA	3.71	2.22	1.81
PFHxS	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10
PFNA	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5
Branched PFOS	1.05	1.15	0.943
Linear PFOS	3.13	2.98	2.77
7:3 FTCA	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

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To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

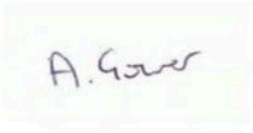
Date: 16 October 2024

Our Reference:	24-211 (SDG: 241001-9)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

14 soil samples were received on the 1st October 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
241001-9	30444026	LP31-SP03 [0.00 - 0.10]
241001-9	30444028	LP32-SP01 [0.00 - 0.10]
241001-9	30444030	LP32-SP01 [0.30 - 0.40]
241001-9	30444033	LP32-SP01 [0.50 - 0.60]
241001-9	30444036	LP32-SP03 [0.00 - 0.10]
241001-9	30444042	LP32-SP03 [0.40 - 0.50]
241001-9	30444046	LP32-SP02 [0.00 - 0.10]
241001-9	30444048	LP32-SP02 [0.10 - 0.20]
241001-9	30444055	LP31-SP03 [0.20 - 0.30]
241001-9	30444059	LP31-SP02 [0.00 - 0.10]
241001-9	30444063	LP31-SP02 [0.40 - 0.50]
241001-9	30444065	LP31-SP01 [0.00 - 0.10]
241001-9	30444067	LP31-SP01 [0.30 - 0.40]
241001-9	30444069	LP31-SP01 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP31-SP03 [0.00 - 0.10]	LP32-SP01 [0.00 - 0.10]	LP32-SP01 [0.30 - 0.40]	LP32-SP01 [0.50 - 0.60]	LP32-SP03 [0.00 - 0.10]
Sample	30444026	30444028	30444030	30444033	30444036
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	2.73	0.594	1.64	<0.5	1.42
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	1.43	1.78	<0.6	<0.6	2.30
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP32-SP03 [0.40 - 0.50]	LP32-SP02 [0.00 - 0.10]	LP32-SP02 [0.10 - 0.20]	LP31-SP03 [0.20 - 0.30]	LP31-SP02 [0.00 - 0.10]
Sample	30444042	30444046	30444048	30444055	30444059
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	<0.5	0.696	<0.5	2.45	1.74
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	0.749	<0.6	<0.6	0.943
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP31-SP02 [0.40 - 0.50]	LP31-SP01 [0.00 - 0.10]	LP31-SP01 [0.30 - 0.40]	LP31-SP01 [0.50 - 0.60]
Sample	30444063	30444065	30444067	30444069
PFBA	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5
PFOA	0.780	3.16	2.70	1.56
PFHxS	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	0.777	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

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To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

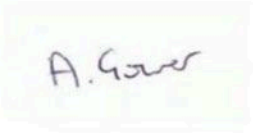
Date: 29 October 2024

Our Reference:	24-213 (SDG: 240910-62)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

A further two soil samples previously received on the 10th September 2024 were requested to be analysed for PFAS.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 1: Sample References 3

Table 2: Results for PFAS in the soil samples (µg/Kg) 4

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240910-62	30342159	LP08-SP05 [0.40 - 0.50]
240910-62	30342173	LP08-SP03 [0.40 - 0.50]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP08-SP05 [0.40 - 0.50]	LP08-SP03 [0.40 - 0.50]
Sample	30342159	30342173
PFBA	<0.5	<0.5
PFMOPrA	<0.5	<0.5
3:3 FTCA	<0.6	<0.6
PFPA	<0.5	<0.5
PFMOBA	<0.5	<0.5
4:2 FTS	<0.5	<0.5
NFDHA	<1	<1
PFHxA	<0.5	<0.5
PFBS	<0.5	<0.5
HFPO-DA	<1	<1
PFEESA	<0.5	<0.5
PFHpA	<0.5	<0.5
PFPeS	<0.5	<0.5
ADONA	<0.5	<0.5
6:2 FTS	<0.5	<0.5
5:3 FTCA	<2.5	<2.5
PFOA	16.9	11.7
PFHxS	<0.5	<0.5
FBSA	<0.5	<0.5
6:2 FTAB*	<10	<10
PFNA	<0.5	<0.5
PFecHS	<0.5	<0.5
PFHpS	<0.6	<0.6
8:2 FTS	<0.9	<0.9
HFPO-TA	<4.4	<4.4
PFDA	<0.5	<0.5
MeFOSAA	<0.5	<0.5
Branched PFOS	<0.6	<0.6
Linear PFOS	<0.6	<0.6
7:3 FTCA	<2.5	<2.5
EtFOSAA	<0.9	<0.9
PFUnA	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5
10:2 FTS	<0.8	<0.8
FHxSA	<0.5	<0.5
PFNS	<0.5	<0.5
PFDoA	<0.6	<0.6
PFDS	<0.6	<0.6
PFTrDA	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7
PFUnDS	<0.5	<0.5
PFTeA	<0.5	<0.5
PFOSA	<0.5	<0.5
PFDoS	<0.5	<0.5
PFTrDS	<0.5	<0.5
MeFOSE	<5	<5
PFHxDA	<0.5	<0.5
N-MeFOSA	<0.5	<0.5
8:2 diPAP	<0.9	<0.9
EtFOSE	<5	<5
N-EtFOSA	<0.5	<0.5
PFODA	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

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To:
WSP UK Limited
8 First Street
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Lancashire
M15 4RP

Non-routine Analysis Report

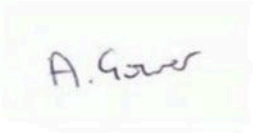
Date: 29 October 2024

Our Reference:	24-214 (SDG: 240912-41)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

A further three soil samples previously received on the 12th September 2024 were requested to be analysed for PFAS.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 1: Sample References 3

Table 2: Results for PFAS in the soil samples (µg/Kg) 4

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240912-41	30350518	LP11-SP01 [0.40 - 0.50]
240912-41	30350534	LP11-SP06 [0.40 - 0.50]
240912-41	30350540	LP11-SP10 [0.40 - 0.50]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP11-SP01 [0.40 - 0.50]	LP11-SP06 [0.40 - 0.50]	LP11-SP10 [0.40 - 0.50]
Sample	30350518	30350534	30350540
PFBA	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5
PFOA	9.43	11.5	22.7
PFHxS	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10
PFNA	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

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To:
WSP UK Limited
8 First Street
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Non-routine Analysis Report

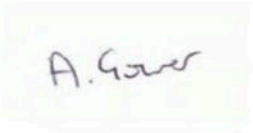
Date: 29 October 2024

Our Reference:	24-215 (SDG: 240913-101)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

A further soil sample previously received on the 13th September 2024 was requested to be analysed for PFAS.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 1: Sample References 3

Table 2: Results for PFAS in the soil samples (µg/Kg) 4

1. Summary

The received sample was requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240913-101	30360098	LP02-SP01 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil sample was extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP02-SP01 [0.50 - 0.60]
Sample	30436855
PFBA	<0.5
PFMOPrA	<0.5
3:3 FTCA	<0.6
PFPA	<0.5
PFMOBA	<0.5
4:2 FTS	<0.5
NFDHA	<1
PFHxA	<0.5
PFBS	<0.5
HFPO-DA	<1
PFEESA	<0.5
PFHpA	<0.5
PFPeS	<0.5
ADONA	<0.5
6:2 FTS	<0.5
5:3 FTCA	<2.5
PFOA	9.86
PFHxS	<0.5
FBSA	<0.5
6:2 FTAB*	<10
PFNA	<0.5
PFecHS	<0.5
PFHpS	<0.6
8:2 FTS	<0.9
HFPO-TA	<4.4
PFDA	<0.5
MeFOSAA	<0.5
Branched PFOS	<0.6
Linear PFOS	<0.6
7:3 FTCA	<2.5
EtFOSAA	<0.9
PFUnA	<0.5
9Cl-PF3ONS	<0.5
10:2 FTS	<0.8
FHxSA	<0.5
PFNS	<0.5
PFDoA	<0.6
PFDS	<0.6
PFTrDA	<0.5
11Cl-PF3OUdS	<0.7
PFUnDS	<0.5
PFTeA	<0.5
PFOSA	<0.5
PFDoS	<0.5
PFTrDS	<0.5
MeFOSE	<5
PFHxDA	<0.5
N-MeFOSA	<0.5
8:2 diPAP	<0.9
EtFOSE	<5
N-EtFOSA	<0.5
PFODA	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

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Non-routine Analysis Report

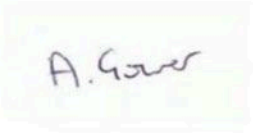
Date: 29 October 2024

Our Reference:	24-216 (SDG: 240918-51)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

A further soil sample previously received on the 18th September 2024 was requested to be analysed for PFAS.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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Table 1: Sample References 3

Table 2: Results for PFAS in the soil samples (µg/Kg) 4

1. Summary

The received sample was requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
240918-51	30377038	LP10-SP04 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil sample was extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP10-SP04 [0.50 - 0.60]
Sample	30377038
PFBA	<0.5
PFMOPrA	<0.5
3:3 FTCA	<0.6
PFPA	<0.5
PFMOBA	<0.5
4:2 FTS	<0.5
NFDHA	<1
PFHxA	<0.5
PFBS	<0.5
HFPO-DA	<1
PFEESA	<0.5
PFHpA	<0.5
PFPeS	<0.5
ADONA	<0.5
6:2 FTS	<0.5
5:3 FTCA	<2.5
PFOA	20.4
PFHxS	<0.5
FBSA	<0.5
6:2 FTAB*	<10
PFNA	<0.5
PFecHS	<0.5
PFHpS	<0.6
8:2 FTS	<0.9
HFPO-TA	<4.4
PFDA	<0.5
MeFOSAA	<0.5
Branched PFOS	<0.6
Linear PFOS	<0.6
7:3 FTCA	<2.5
EtFOSAA	<0.9
PFUnA	<0.5
9Cl-PF3ONS	<0.5
10:2 FTS	<0.8
FHxSA	<0.5
PFNS	<0.5
PFDoA	<0.6
PFDS	<0.6
PFTrDA	<0.5
11Cl-PF3OUdS	<0.7
PFUnDS	<0.5
PFTeA	<0.5
PFOSA	<0.5
PFDoS	<0.5
PFTrDS	<0.5
MeFOSE	<5
PFHxDA	<0.5
N-MeFOSA	<0.5
8:2 diPAP	<0.9
EtFOSE	<5
N-EtFOSA	<0.5
PFODA	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

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Non-routine Analysis Report

Date: 30 October 2024

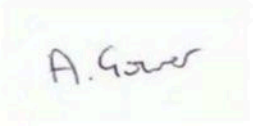
Our Reference:	24-220 (SDG: 241001-50)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

Eight soil samples were received on the 1st October with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

This is a preliminary report which does not include a complete set of results.

Signed



Adam Gower

Technical Specialist

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Table 3: Results for PFAS in the soil samples (µg/Kg) 5

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
241001-50	30448682	LP23-SP01 [0.00 - 0.10]
241001-50	30448689	LP23-SP03 [0.00 - 0.10]
241001-50	30448691	LP23-SP03 [0.20 - 0.30]
241001-50	30448693	LP23-SP03 [0.40 - 0.50]
241001-50	30448695	LP23-SP02 [0.00 - 0.10]
241001-50	30448697	LP23-SP02 [0.10 - 0.20]
241001-50	30448699	LP23-SP02 [0.40 - 0.50]
241001-50	30448687	LP23-SP01 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP23-SP01 [0.00 - 0.10]	LP23-SP03 [0.00 - 0.10]	LP23-SP03 [0.20 - 0.30]	LP23-SP03 [0.40 - 0.50]	LP23-SP02 [0.00 - 0.10]
Sample	30448682	30448689	30448691	30448693	30448695
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	0.867
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	0.937	<0.5	<0.5	<0.5	0.899
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP23-SP02 [0.10 - 0.20]	LP23-SP02 [0.40 - 0.50]	LP23-SP01 [0.50 - 0.60]
Sample	30448697	30448699	30448687
PFBA	<0.5	<0.5	TBD
PFMOPrA	<0.5	<0.5	TBD
3:3 FTCA	<0.6	<0.6	TBD
PFPA	<0.5	<0.5	TBD
PFMOBA	<0.5	<0.5	TBD
4:2 FTS	<0.5	<0.5	TBD
NFDHA	<1	<1	TBD
PFHxA	<0.5	<0.5	TBD
PFBS	<0.5	<0.5	TBD
HFPO-DA	<1	<1	TBD
PFEESA	<0.5	<0.5	TBD
PFHpA	<0.5	<0.5	TBD
PFPeS	<0.5	<0.5	TBD
ADONA	<0.5	<0.5	TBD
6:2 FTS	<0.5	<0.5	TBD
5:3 FTCA	<2.5	<2.5	TBD
PFOA	<0.5	<0.5	TBD
PFHxS	<0.5	<0.5	TBD
FBSA	<0.5	<0.5	TBD
6:2 FTAB*	<10	<10	TBD
PFNA	<0.5	<0.5	TBD
PFecHS	<0.5	<0.5	TBD
PFHpS	<0.6	<0.6	TBD
8:2 FTS	<0.9	<0.9	TBD
HFPO-TA	<4.4	<4.4	TBD
PFDA	<0.5	<0.5	TBD
MeFOSAA	<0.5	<0.5	TBD
Branched PFOS	<0.6	<0.6	TBD
Linear PFOS	<0.6	<0.6	TBD
7:3 FTCA	<2.5	<2.5	TBD
EtFOSAA	<0.9	<0.9	TBD
PFUnA	<0.5	<0.5	TBD
9Cl-PF3ONS	<0.5	<0.5	TBD
10:2 FTS	<0.8	<0.8	TBD
FHxSA	<0.5	<0.5	TBD
PFNS	<0.5	<0.5	TBD
PFDoA	<0.6	<0.6	TBD
PFDS	<0.6	<0.6	TBD
PFTrDA	<0.5	<0.5	TBD
11Cl-PF3OUdS	<0.7	<0.7	TBD
PFUnDS	<0.5	<0.5	TBD
PFTeA	<0.5	<0.5	TBD
PFOSA	<0.5	<0.5	TBD
PFDoS	<0.5	<0.5	TBD
PFTrDS	<0.5	<0.5	TBD
MeFOSE	<5	<5	TBD
PFHxDA	<0.5	<0.5	TBD
N-MeFOSA	<0.5	<0.5	TBD
8:2 diPAP	<0.9	<0.9	TBD
EtFOSE	<5	<5	TBD
N-EtFOSA	<0.5	<0.5	TBD
PFODA	<0.5	<0.5	TBD

Table 3: Results for PFAS in the soil samples (µg/Kg)

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To:
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Non-routine Analysis Report

Date: 14 November 2024

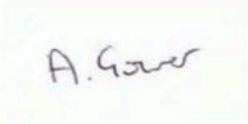
Our Reference:	24-220a (SDG: 241001-50)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

Eight soil samples were received on the 1st October with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

This report has been re-issued and supersedes all previous versions.

Signed



Adam Gower

Technical Specialist

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Table 1: Sample References 3

Table 2: Results for PFAS in the soil samples (µg/Kg) 4

Table 3: Results for PFAS in the soil samples (µg/Kg) 5

1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
241001-50	30448682	LP23-SP01 [0.00 - 0.10]
241001-50	30448689	LP23-SP03 [0.00 - 0.10]
241001-50	30448691	LP23-SP03 [0.20 - 0.30]
241001-50	30448693	LP23-SP03 [0.40 - 0.50]
241001-50	30448695	LP23-SP02 [0.00 - 0.10]
241001-50	30448697	LP23-SP02 [0.10 - 0.20]
241001-50	30448699	LP23-SP02 [0.40 - 0.50]
241001-50	30448687	LP23-SP01 [0.50 - 0.60]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP23-SP01 [0.00 - 0.10]	LP23-SP03 [0.00 - 0.10]	LP23-SP03 [0.20 - 0.30]	LP23-SP03 [0.40 - 0.50]	LP23-SP02 [0.00 - 0.10]
Sample	30448682	30448689	30448691	30448693	30448695
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	0.867
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	0.937	<0.5	<0.5	<0.5	0.899
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP23-SP02 [0.10 - 0.20]	LP23-SP02 [0.40 - 0.50]	LP23-SP01 [0.50 - 0.60]
Sample	30448697	30448699	30448687
PFBA	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5
PFOA	<0.5	<0.5	<0.5
PFHxS	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10
PFNA	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

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right solutions.
right partner.

To:
WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Non-routine Analysis Report

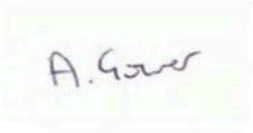
Date: 29 October 2024

Our Reference:	24-221 (SDG: 241002-69)
Quote Reference:	n/a
Your Reference:	70100310 Thornton
Location:	Thornton

14 soil samples were received on the 2nd October 2024 with a request for PFAS analysis.

We are pleased to enclose our non-routine analysis report.

Signed



Adam Gower
Technical Specialist

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1. Summary

The received samples were requested to be analysed for PFAS and are detailed in the table below:

SDG	Sample Event	Customer ID
241002-69	30453401	LP26-SP03 [0.00 - 0.10]
241002-69	30453403	LP20-SP03 [0.00 - 0.10]
241002-69	30453406	LP20-SP03 [0.20 - 0.30]
241002-69	30453409	LP20-SP03 [0.40 - 0.50]
241002-69	30453411	LP20-SP02 [0.00 - 0.10]
241002-69	30453413	LP20-SP02 [0.10 - 0.20]
241002-69	30453417	LP20-SP01 [0.00 - 0.10]
241002-69	30453423	LP20-SP01 [0.50 - 0.60]
241002-69	30453429	LP26-SP03 [0.20 - 0.30]
241002-69	30453435	LP26-SP03 [0.40 - 0.50]
241002-69	30453437	LP26-SP02 [0.00 - 0.10]
241002-69	30453439	LP26-SP02 [0.10 - 0.20]
241002-69	30453445	LP26-SP01 [0.00 - 0.10]
241002-69	30453448	LP26-SP01 [0.30 - 0.40]

Table 1: Sample References

All analyses within this report are outside our accreditation status and were conducted on the "As received" sample. Results have been moisture corrected and are reported on a dry weight basis.

2. Sample Analysis

The soil samples were extracted and analysed by LC/MS/MS with electrospray ionization (ESI).

Quantification was performed against a multi-point calibration curve generated using standards of known concentration, using the internal standard method.

N.B. *Recovery of 6:2 FTAB in QC samples has been observed to be <50% of target value. Result has been supplied as indicative only.

3. Results

Customer ID	LP26-SP03 [0.00 - 0.10]	LP20-SP03 [0.00 - 0.10]	LP20-SP03 [0.20 - 0.30]	LP20-SP03 [0.40 - 0.50]	LP20-SP02 [0.00 - 0.10]
Sample	30453401	30453403	30453406	30453409	30453411
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	1.57	3.38	4.00	3.78	2.41
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP20-SP02 [0.10 - 0.20]	LP20-SP01 [0.00 - 0.10]	LP20-SP01 [0.50 - 0.60]	LP26-SP03 [0.20 - 0.30]	LP26-SP03 [0.40 - 0.50]
Sample	30453413	30453417	30453423	30453429	30453435
PFBA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
PFOA	3.72	2.20	1.32	4.54	3.85
PFHxS	<0.5	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3: Results for PFAS in the soil samples (µg/Kg)

Customer ID	LP26-SP02 [0.00 - 0.10]	LP26-SP02 [0.10 - 0.20]	LP26-SP01 [0.00 - 0.10]	LP26-SP01 [0.30 - 0.40]
Sample	30453437	30453439	30453445	30453448
PFBA	<0.5	<0.5	<0.5	<0.5
PFMOPrA	<0.5	<0.5	<0.5	<0.5
3:3 FTCA	<0.6	<0.6	<0.6	<0.6
PFPA	<0.5	<0.5	<0.5	<0.5
PFMOBA	<0.5	<0.5	<0.5	<0.5
4:2 FTS	<0.5	<0.5	<0.5	<0.5
NFDHA	<1	<1	<1	<1
PFHxA	<0.5	<0.5	<0.5	<0.5
PFBS	<0.5	<0.5	<0.5	<0.5
HFPO-DA	<1	<1	<1	<1
PFEESA	<0.5	<0.5	<0.5	<0.5
PFHpA	<0.5	<0.5	<0.5	<0.5
PFPeS	<0.5	<0.5	<0.5	<0.5
ADONA	<0.5	<0.5	<0.5	<0.5
6:2 FTS	<0.5	<0.5	<0.5	<0.5
5:3 FTCA	<2.5	<2.5	<2.5	<2.5
PFOA	1.45	2.54	3.94	4.05
PFHxS	<0.5	<0.5	<0.5	<0.5
FBSA	<0.5	<0.5	<0.5	<0.5
6:2 FTAB*	<10	<10	<10	<10
PFNA	<0.5	<0.5	<0.5	<0.5
PFecHS	<0.5	<0.5	<0.5	<0.5
PFHpS	<0.6	<0.6	<0.6	<0.6
8:2 FTS	<0.9	<0.9	<0.9	<0.9
HFPO-TA	<4.4	<4.4	<4.4	<4.4
PFDA	<0.5	<0.5	<0.5	<0.5
MeFOSAA	<0.5	<0.5	<0.5	<0.5
Branched PFOS	<0.6	<0.6	<0.6	<0.6
Linear PFOS	<0.6	<0.6	<0.6	<0.6
7:3 FTCA	<2.5	<2.5	<2.5	<2.5
EtFOSAA	<0.9	<0.9	<0.9	<0.9
PFUnA	<0.5	<0.5	<0.5	<0.5
9Cl-PF3ONS	<0.5	<0.5	<0.5	<0.5
10:2 FTS	<0.8	<0.8	<0.8	<0.8
FHxSA	<0.5	<0.5	<0.5	<0.5
PFNS	<0.5	<0.5	<0.5	<0.5
PFDoA	<0.6	<0.6	<0.6	<0.6
PFDS	<0.6	<0.6	<0.6	<0.6
PFTrDA	<0.5	<0.5	<0.5	<0.5
11Cl-PF3OUdS	<0.7	<0.7	<0.7	<0.7
PFUnDS	<0.5	<0.5	<0.5	<0.5
PFTeA	<0.5	<0.5	<0.5	<0.5
PFOSA	<0.5	<0.5	<0.5	<0.5
PFDoS	<0.5	<0.5	<0.5	<0.5
PFTrDS	<0.5	<0.5	<0.5	<0.5
MeFOSE	<5	<5	<5	<5
PFHxDA	<0.5	<0.5	<0.5	<0.5
N-MeFOSA	<0.5	<0.5	<0.5	<0.5
8:2 diPAP	<0.9	<0.9	<0.9	<0.9
EtFOSE	<5	<5	<5	<5
N-EtFOSA	<0.5	<0.5	<0.5	<0.5
PFODA	<0.5	<0.5	<0.5	<0.5

Table 4: Results for PFAS in the soil samples (µg/Kg)

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WSP UK Limited
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Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240910-62
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	744863
Order Number:	70100310-313

This report has been revised and directly supersedes 744015 in its entirety.

We received 15 samples on Tuesday September 10, 2024 and 15 of these samples were scheduled for analysis which was completed on Friday October 18, 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

CERTIFICATE OF ANALYSIS

SDG: 240910-62 Report Number: 744863 Superseded Report: 744015
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30342162	LP08-SP01	ES	0.00 - 0.10	09/09/2024
30342164	LP08-SP01	ES	0.30 - 0.40	09/09/2024
30342166	LP08-SP01	ES	0.50 - 0.60	09/09/2024
30342143	LP08-SP02	ES	0.00 - 0.10	09/09/2024
30342145	LP08-SP02	ES	0.10 - 0.20	09/09/2024
30342149	LP08-SP02	ES	0.40 - 0.50	09/09/2024
30342169	LP08-SP03	ES	0.00 - 0.10	09/09/2024
30342171	LP08-SP03	ES	0.20 - 0.30	09/09/2024
30342173	LP08-SP03	ES	0.40 - 0.50	09/09/2024
30342141	LP08-SP05	ES	0.00 - 0.10	09/09/2024
30342157	LP08-SP05	ES	0.10 - 0.20	09/09/2024
30342159	LP08-SP05	ES	0.40 - 0.50	09/09/2024
30342151	LP08-SP06	ES	0.00 - 0.10	09/09/2024
30342153	LP08-SP06	ES	0.20 - 0.30	09/09/2024
30342155	LP08-SP06	ES	0.40 - 0.50	09/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240910-62 **Report Number:** 744863 **Superseded Report:** 744015
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)			30342162	30342164	30342166	30342143	30342145	30342149	30342169	30342171	30342173	30342141	30342157	30342159	30342151	30342153	30342155
Customer Sample Reference			LP08-SP01	LP08-SP01	LP08-SP01	LP08-SP02	LP08-SP02	LP08-SP02	LP08-SP03	LP08-SP03	LP08-SP03	LP08-SP05	LP08-SP05	LP08-SP05	LP08-SP06	LP08-SP06	LP08-SP06
AGS Reference			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth (m)			0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Container			1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
pH	All	NDPs: 0 Tests: 15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

CERTIFICATE OF ANALYSIS

SDG: 240910-62 Report Number: 744863 Superseded Report: 744015
Client Ref.: 70100310 Thornton Location: Thornton

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30342162	LP08-SP01	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30342164	LP08-SP01	0.30 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
30342166	LP08-SP01	0.50 - 0.60	Dark Brown	Sandy Clay	Stones	Vegetation
30342143	LP08-SP02	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30342145	LP08-SP02	0.10 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
30342149	LP08-SP02	0.40 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
30342169	LP08-SP03	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30342171	LP08-SP03	0.20 - 0.30	Dark Brown	Silt Loam	Stones	Vegetation
30342173	LP08-SP03	0.40 - 0.50	Light Brown	Silty Clay Loam	Vegetation	Stones
30342141	LP08-SP05	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30342157	LP08-SP05	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	None
30342159	LP08-SP05	0.40 - 0.50	Dark Brown	Clay	Vegetation	None
30342151	LP08-SP06	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30342153	LP08-SP06	0.20 - 0.30	Dark Brown	Sandy Loam	Vegetation	None
30342155	LP08-SP06	0.40 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 240910-62 **Report Number:** 744863 **Superseded Report:** 744015

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

Results Legend								
# ISO17025 accredited.	Customer Sample Ref.	LP08-SP01	LP08-SP01	LP08-SP01	LP08-SP02	LP08-SP02	LP08-SP02
M mCERTS accredited.							
aq Aqueous / settled sample.	Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
diss.filt Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
tot.unfilt Total / unfiltered sample.	Date Sampled	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024
* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	-	-	-	-	-	-
** % 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	Date Received	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
(F) Trigger breach confirmed	SDG Ref	240910-62	240910-62	240910-62	240910-62	240910-62	240910-62
1-4+$@ Sample deviation (see appendix)	Lab Sample No.(s)	30342162	30342164	30342166	30342143	30342145	30342149
	AGS Reference	ES	ES	ES	ES	ES	ES

Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	29	16	17	28	18	15
Soil Organic Matter (SOM)	<0.35 %	TM132	6.47 #	1.97 #	1.43 #	6.1 #	6.76 #	1.51 #
pH	1 pH Units	TM133	5.53 M	6.31 M	6.79 M	5.72 M	6.44 M	6.57 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240910-62 **Report Number:** 744863 **Superseded Report:** 744015

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP08-SP03	LP08-SP03	LP08-SP03	LP08-SP05	LP08-SP05	LP08-SP05
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024	09/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
			SDG Ref	240910-62	240910-62	240910-62	240910-62	240910-62	240910-62
			Lab Sample No.(s)	30342169	30342171	30342173	30342141	30342157	30342159
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		23	16	16	31	21	17
Soil Organic Matter (SOM)	<0.35 %	TM132		6.57 #	5.95 #	1.76 @ #	8.02 #	4.45 #	1.08 @ #
pH	1 pH Units	TM133		5.42 M	5.78 M	6.48 @ M	6.69 M	7.69 M	7.86 @ M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240910-62 **Report Number:** 744863 **Superseded Report:** 744015

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP08-SP06	LP08-SP06	LP08-SP06			
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	09/09/2024	09/09/2024	09/09/2024			
			Sample Time	-	-	-			
			Date Received	10/09/2024	10/09/2024	10/09/2024			
			SDG Ref	240910-62	240910-62	240910-62			
			Lab Sample No.(s)	30342151	30342153	30342155			
			AGS Reference	ES	ES	ES			
Moisture Content Ratio (% of as received sample)	%	PM024		24	18	15			
Soil Organic Matter (SOM)	<0.35 %	TM132		6.43 #	4.19 #	1.06 #			
pH	1 pH Units	TM133		5.65 M	5.68 M	6.37 M			

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 240910-62 Report Number: 744863 Superseded Report: 744015
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30342162	30342164	30342166	30342143	30342145	30342149	30342169	30342171	30342173	30342141
Customer Sample Ref.	LP08-SP01	LP08-SP01	LP08-SP01	LP08-SP02	LP08-SP02	LP08-SP02	LP08-SP03	LP08-SP03	LP08-SP03	LP08-SP05
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	18-Oct-2024	16-Sep-2024
Sample description	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Oct-2024	11-Sep-2024
Total Organic Carbon	17-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024	17-Sep-2024	17-Oct-2024	16-Sep-2024

Lab Sample No(s)	30342157	30342159	30342151	30342153	30342155
Customer Sample Ref.	LP08-SP05	LP08-SP05	LP08-SP06	LP08-SP06	LP08-SP06
AGS Ref.	ES	ES	ES	ES	ES
Depth	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	16-Sep-2024	18-Oct-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024
Sample description	11-Sep-2024	11-Oct-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024
Total Organic Carbon	16-Sep-2024	16-Oct-2024	16-Sep-2024	16-Sep-2024	16-Sep-2024

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.

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.

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.

Unit 7-8 Hawarden Business Park
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email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 September 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240911-31
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	741163
Order Number:	70100310-313

We received 19 samples on Wednesday September 11, 2024 and 18 of these samples were scheduled for analysis which was completed on Thursday September 19, 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

CERTIFICATE OF ANALYSIS

SDG: 240911-31 Report Number: 741163 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30343800	LP01-SP01	ES	0.00 - 0.10	10/09/2024
30343803	LP01-SP01	ES	0.20 - 0.30	10/09/2024
30343807	LP01-SP01	ES	0.40 - 0.50	10/09/2024
30343810	LP01-SP02	ES	0.00 - 0.10	10/09/2024
30343813	LP01-SP02	ES	0.30 - 0.40	10/09/2024
30343816	LP01-SP02	ES	0.40 - 0.50	10/09/2024
30343750	LP01-SP03	ES	0.00 - 0.10	10/09/2024
30343755	LP01-SP03	ES	0.10 - 0.20	10/09/2024
30343760	LP01-SP03	ES	0.50 - 0.60	10/09/2024
30343764	LP02-SP02	ES	0.00 - 0.10	10/09/2024
30343769	LP02-SP02	ES	0.30 - 0.40	10/09/2024
30343788	LP02-SP02	EW	0.30 - 0.40	10/09/2024
30343772	LP02-SP02	ES	0.50 - 0.60	10/09/2024
30343774	LP02-SP03	ES	0.00 - 0.10	10/09/2024
30343776	LP02-SP03	ES	0.10 - 0.20	10/09/2024
30343746	LP08-SP04	ES	0.00 - 0.10	10/09/2024
30343794	LP08-SP04	ES	0.30 - 0.40	10/09/2024
30343781	LP08-SP04	EW	0.30 - 0.40	10/09/2024
30343797	LP08-SP04	ES	0.50 - 0.60	10/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240911-31 **Report Number:** 741163 **Superseded Report:**
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)	30343800	30343803	30343807	30343810	30343813	30343816	30343750	30343755	30343760	30343764	30343769	30343788	30343772	30343774	30343776	30343746	30343794	30343781
			Customer Sample Reference	LP01-SP01	LP01-SP01	LP01-SP01	LP01-SP02	LP01-SP02	LP01-SP02	LP01-SP03	LP01-SP03	LP01-SP03	LP02-SP02	LP02-SP02	LP02-SP02	LP02-SP02	LP02-SP03	LP02-SP03	LP08-SP04	LP08-SP04	LP08-SP04
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES	ES	ES	EW
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.40 - 0.50	0.00 - 0.10	0.10 - 0.20	0.50 - 0.60	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	PW	PW	S	S	S	S	S	PW
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2														X						
pH	All	NDPs: 0 Tests: 16		X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	
pH Value	All	NDPs: 0 Tests: 2													X							X
Sample description	All	NDPs: 0 Tests: 16		X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	
Total Organic Carbon	All	NDPs: 0 Tests: 16		X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	

30343781	LP08-SP04	EW	0.30 - 0.40	Digitube fo PFAS analysis.	PW	
						X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30343800	LP01-SP01	0.00 - 0.10	Dark Brown	Stone/Soil	Stones	Vegetation
30343803	LP01-SP01	0.20 - 0.30	Dark Brown	Stone/Soil	Stones	Vegetation
30343807	LP01-SP01	0.40 - 0.50	Dark Brown	Sandy Clay	Stones	Vegetation
30343810	LP01-SP02	0.00 - 0.10	Dark Brown	Stone/Soil	Stones	Vegetation
30343813	LP01-SP02	0.30 - 0.40	Dark Brown	Silt Loam	Stones	Vegetation
30343816	LP01-SP02	0.40 - 0.50	Dark Brown	Sandy Clay	Stones	Vegetation
30343750	LP01-SP03	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30343755	LP01-SP03	0.10 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
30343760	LP01-SP03	0.50 - 0.60	Dark Brown	Clay	Vegetation	None
30343764	LP02-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30343769	LP02-SP02	0.30 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
30343772	LP02-SP02	0.50 - 0.60	Dark Brown	Loamy Sand	Stones	Vegetation
30343774	LP02-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30343776	LP02-SP03	0.10 - 0.20	Dark Brown	Sand	Stones	Vegetation
30343746	LP08-SP04	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30343794	LP08-SP04	0.30 - 0.40	Dark Brown	Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240911-31 **Report Number:** 741163 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP01-SP01	LP01-SP01	LP01-SP01	LP01-SP02	LP01-SP02	LP01-SP02
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			SDG Ref	240911-31	240911-31	240911-31	240911-31	240911-31	240911-31
			Lab Sample No.(s)	30343800	30343803	30343807	30343810	30343813	30343816
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		14	8.8	18	12	13	21
Soil Organic Matter (SOM)	<0.35 %	TM132		2.41 #	1.02 #	1.63 #	2.4 #	2.05 #	1.91 #
pH	1 pH Units	TM133		8.43 #	8.71 #	8.36 M	8.5 #	8.17 M	8.24 M

CERTIFICATE OF ANALYSIS

SDG: 240911-31 **Report Number:** 741163 **Superseded Report:**
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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP01-SP03	LP01-SP03	LP01-SP03	LP02-SP02	LP02-SP02	LP02-SP02
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.50 - 0.60	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			SDG Ref	240911-31	240911-31	240911-31	240911-31	240911-31	240911-31
			Lab Sample No.(s)	30343750	30343755	30343760	30343764	30343769	30343788
			AGS Reference	ES	ES	ES	ES	ES	EW
pH	<1 pH Units	TM256							8.08
PFBA (375-22-4)	<0.002 µg/l	TM434							<0.002
PFMOPrA (377-73-1)	<0.001 µg/l	TM434							<0.001
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434							<0.002
PFPA (2706-90-3)	<0.001 µg/l	TM434							<0.001
PFMOBA (863090-89-5)	<0.001 µg/l	TM434							<0.001
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434							<0.001
NFDHA (151772-58-6)	<0.003 µg/l	TM434							<0.003
PFBS (375-73-5)	<0.001 µg/l	TM434							<0.001
PFHxA (307-24-4)	<0.001 µg/l	TM434							<0.001
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434							<0.002
PFEESA (113507-82-7)	<0.001 µg/l	TM434							<0.001
PFHpA (375-85-9)	<0.001 µg/l	TM434							<0.001
PFPeS (2706-91-4)	<0.001 µg/l	TM434							<0.001
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434							<0.005
ADONA (919005-14-4)	<0.001 µg/l	TM434							<0.001
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434							<0.001
FBSA (30334-69-1)	<0.001 µg/l	TM434							<0.001
PFOA (335-67-1)	<0.00065 µg/l	TM434							<0.00065
PFHxS (355-46-4)	<0.001 µg/l	TM434							<0.001
PFNA (375-95-1)	<0.001 µg/l	TM434							<0.001
PFecHS (133201-07-7)	<0.001 µg/l	TM434							<0.001
PFHpS (375-92-8)	<0.001 µg/l	TM434							<0.001
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434							<0.002
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434							<0.005
PFDA (335-76-2)	<0.002 µg/l	TM434							<0.002
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434							<0.002
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434							<0.005
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434							<0.00065
Branched PFOS	<0.00065 µg/l	TM434							<0.00065
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434							<0.002
PFUnA (2058-94-8)	<0.002 µg/l	TM434							<0.002
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434							<0.001

CERTIFICATE OF ANALYSIS

SDG: 240911-31 **Report Number:** 741163 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP01-SP03	LP01-SP03	LP01-SP03	LP02-SP02	LP02-SP02	LP02-SP02
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.50 - 0.60	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			SDG Ref	240911-31	240911-31	240911-31	240911-31	240911-31	240911-31
			Lab Sample No.(s)	30343750	30343755	30343760	30343764	30343769	30343788
			AGS Reference	ES	ES	ES	ES	ES	EW
PFNS (68259-12-1)	<0.001 µg/l	TM434							<0.001
FHxSA (41997-13-1)	<0.001 µg/l	TM434							<0.001
PFDoA (307-55-1)	<0.002 µg/l	TM434							<0.002
PFDS (335-77-3)	<0.002 µg/l	TM434							<0.002
PFTrDA (72629-94-8)	<0.003 µg/l	TM434							<0.003
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434							<0.002
PFUnDS (749786-16-1)	<0.002 µg/l	TM434							<0.002
PFTeA (376-06-7)	<0.001 µg/l	TM434							<0.001
PFOSA (754-91-6)	<0.002 µg/l	TM434							<0.002
PFDoS (79780-39-5)	<0.002 µg/l	TM434							<0.002
PFTrDS (174675-49-1)	<0.001 µg/l	TM434							<0.001
PFHxDA (67905-19-5)	<0.001 µg/l	TM434							<0.001
MeFOSE (24448-09-7)	<0.01 µg/l	TM434							<0.01
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434							<0.001
EtFOSE (1691-99-2)	<0.01 µg/l	TM434							<0.01
PFODA (16517-11-6)	<0.001 µg/l	TM434							<0.001
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434							<0.001
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434							<0.01
Total PFOS	<0.00065 µg/l	TM434							<0.00065
Moisture Content Ratio (% of as received sample)	%	PM024		32	23	20	22	8	
Soil Organic Matter (SOM)	<0.35 %	TM132		11.9 #	7.69 #	1.51 #	8.31 #	8.83 #	
pH	1 pH Units	TM133		7.3 M	7.62 M	7.58 M	7.6 M	8.61 M	

CERTIFICATE OF ANALYSIS

SDG: 240911-31 **Report Number:** 741163 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP02-SP02	LP02-SP03	LP02-SP03	LP08-SP04	LP08-SP04	LP08-SP04
			Depth (m)	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			SDG Ref	240911-31	240911-31	240911-31	240911-31	240911-31	240911-31
			Lab Sample No.(s)	30343772	30343774	30343776	30343746	30343794	30343781
			AGS Reference	ES	ES	ES	ES	ES	EW
pH	<1 pH Units	TM256							8.15
PFBA (375-22-4)	<0.002 µg/l	TM434							<0.002
PFMOPrA (377-73-1)	<0.001 µg/l	TM434							<0.001
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434							<0.002
PFPA (2706-90-3)	<0.001 µg/l	TM434							<0.001
PFMOBA (863090-89-5)	<0.001 µg/l	TM434							<0.001
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434							<0.001
NFDHA (151772-58-6)	<0.003 µg/l	TM434							<0.003
PFBS (375-73-5)	<0.001 µg/l	TM434							<0.001
PFHxA (307-24-4)	<0.001 µg/l	TM434							<0.001
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434							<0.002
PFEESA (113507-82-7)	<0.001 µg/l	TM434							<0.001
PFHpA (375-85-9)	<0.001 µg/l	TM434							<0.001
PFPeS (2706-91-4)	<0.001 µg/l	TM434							<0.001
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434							<0.005
ADONA (919005-14-4)	<0.001 µg/l	TM434							<0.001
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434							<0.001
FBSA (30334-69-1)	<0.001 µg/l	TM434							<0.001
PFOA (335-67-1)	<0.00065 µg/l	TM434							<0.00065
PFHxS (355-46-4)	<0.001 µg/l	TM434							<0.001
PFNA (375-95-1)	<0.001 µg/l	TM434							<0.001
PFecHS (133201-07-7)	<0.001 µg/l	TM434							<0.001
PFHpS (375-92-8)	<0.001 µg/l	TM434							<0.001
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434							<0.002
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434							<0.005
PFDA (335-76-2)	<0.002 µg/l	TM434							<0.002
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434							<0.002
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434							<0.005
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434							<0.00065
Branched PFOS	<0.00065 µg/l	TM434							<0.00065
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434							<0.002
PFUnA (2058-94-8)	<0.002 µg/l	TM434							<0.002
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434							<0.001

CERTIFICATE OF ANALYSIS

SDG: 240911-31 **Report Number:** 741163 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP02-SP02	LP02-SP03	LP02-SP03	LP08-SP04	LP08-SP04	LP08-SP04
			Depth (m)	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024	10/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			SDG Ref	240911-31	240911-31	240911-31	240911-31	240911-31	240911-31
			Lab Sample No.(s)	30343772	30343774	30343776	30343746	30343794	30343781
			AGS Reference	ES	ES	ES	ES	ES	EW
PFNS (68259-12-1)	<0.001 µg/l	TM434							<0.001
FHxSA (41997-13-1)	<0.001 µg/l	TM434							<0.001
PFDoA (307-55-1)	<0.002 µg/l	TM434							<0.002
PFDS (335-77-3)	<0.002 µg/l	TM434							<0.002
PFTrDA (72629-94-8)	<0.003 µg/l	TM434							<0.003
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434							<0.002
PFUnDS (749786-16-1)	<0.002 µg/l	TM434							<0.002
PFTeA (376-06-7)	<0.001 µg/l	TM434							<0.001
PFOSA (754-91-6)	<0.002 µg/l	TM434							<0.002
PFDoS (79780-39-5)	<0.002 µg/l	TM434							<0.002
PFTrDS (174675-49-1)	<0.001 µg/l	TM434							<0.001
PFHxDA (67905-19-5)	<0.001 µg/l	TM434							<0.001
MeFOSE (24448-09-7)	<0.01 µg/l	TM434							<0.01
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434							<0.001
EtFOSE (1691-99-2)	<0.01 µg/l	TM434							<0.01
PFODA (16517-11-6)	<0.001 µg/l	TM434							<0.001
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434							<0.001
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434							<0.01
Total PFOS	<0.00065 µg/l	TM434							<0.00065
Moisture Content Ratio (% of as received sample)	%	PM024		11	10	11	30	17	
Soil Organic Matter (SOM)	<0.35 %	TM132		13.7 #	4.05 #	2.29 #	8.45 #	2.74 #	
pH	1 pH Units	TM133		8.5 M	8.04 M	8.3 M	6.47 M	7.76 M	

Table of Results - Appendix

Method No	Description
TM434	Analysis of PFAS
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
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: 240911-31 Report Number: 741163 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30343800	30343803	30343807	30343810	30343813	30343816	30343750	30343755	30343760	30343764
Customer Sample Ref.	LP01-SP01	LP01-SP01	LP01-SP01	LP01-SP02	LP01-SP02	LP01-SP02	LP01-SP03	LP01-SP03	LP01-SP03	LP02-SP02
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.40 - 0.50	0.00 - 0.10	0.10 - 0.20	0.50 - 0.60	0.00 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024
Sample description	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024	11-Sep-2024
Total Organic Carbon	17-Sep-2024	18-Sep-2024	17-Sep-2024	17-Sep-2024	17-Sep-2024	17-Sep-2024	18-Sep-2024	16-Sep-2024	17-Sep-2024	17-Sep-2024

Lab Sample No(s)	30343769	30343772	30343788	30343774	30343776	30343746	30343781	30343794
Customer Sample Ref.	LP02-SP02	LP02-SP02	LP02-SP02	LP02-SP03	LP02-SP03	LP08-SP04	LP08-SP04	LP08-SP04
AGS Ref.	ES	ES	EW	ES	ES	ES	EW	ES
Depth	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)
PFAS Liquids (Full Suite)			17-Sep-2024				19-Sep-2024	
pH	18-Sep-2024	18-Sep-2024		18-Sep-2024	18-Sep-2024	18-Sep-2024		18-Sep-2024
pH Value			18-Sep-2024				18-Sep-2024	
Sample description	11-Sep-2024	11-Sep-2024		11-Sep-2024	11-Sep-2024	11-Sep-2024		11-Sep-2024
Total Organic Carbon	17-Sep-2024	17-Sep-2024		17-Sep-2024	17-Sep-2024	17-Sep-2024		18-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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240912-41
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	744864
Order Number:	70100310-313

This report has been revised and directly supersedes 744016 in its entirety.

We received 25 samples on Thursday September 12, 2024 and 23 of these samples were scheduled for analysis which was completed on Friday October 18, 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

CERTIFICATE OF ANALYSIS

SDG: 240912-41 Report Number: 744864 Superseded Report: 744016
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30350504	LP02-SP03	ES	0.40 - 0.50	10/09/2024
30350529	LP02-SP04	ES	0.00 - 0.10	10/09/2024
30350544	LP02-SP04	ES	0.20 - 0.30	10/09/2024
30350546	LP02-SP04	ES	0.40 - 0.50	10/09/2024
30350514	LP11-SP01	ES	0.00 - 0.10	11/09/2024
30350516	LP11-SP01	ES	0.20 - 0.30	11/09/2024
30350518	LP11-SP01	ES	0.40 - 0.50	11/09/2024
30350521	LP11-SP02	ES	0.00 - 0.10	11/09/2024
30350523	LP11-SP02	ES	0.30 - 0.40	11/09/2024
30350525	LP11-SP02	ES	0.50 - 0.60	11/09/2024
30350549	LP11-SP03	ES	0.00 - 0.10	11/09/2024
30350551	LP11-SP03	ES	0.10 - 0.20	11/09/2024
30350542	LP11-SP03	ES	0.40 - 0.50	11/09/2024
30350507	LP11-SP04	ES	0.00 - 0.10	11/09/2024
30350510	LP11-SP04	ES	0.20 - 0.30	11/09/2024
30350512	LP11-SP04	ES	0.40 - 0.50	11/09/2024
30350553	LP11-SP05	ES	0.00 - 0.10	11/09/2024
30350556	LP11-SP05	ES	0.30 - 0.40	11/09/2024
30350558	LP11-SP05	ES	0.50 - 0.60	11/09/2024
30350527	LP11-SP06	ES	0.00 - 0.10	11/09/2024
30350532	LP11-SP06	ES	0.10 - 0.20	11/09/2024
30350534	LP11-SP06	ES	0.40 - 0.50	11/09/2024
30350536	LP11-SP10	ES	0.00 - 0.10	11/09/2024
30350538	LP11-SP10	ES	0.20 - 0.30	11/09/2024
30350540	LP11-SP10	ES	0.40 - 0.50	11/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240912-41 **Report Number:** 744864 **Superseded Report:** 744016
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
			30350529	LP02-SP04	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350544	LP02-SP04	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S
			30350546	LP02-SP04	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30350514	LP11-SP01	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350516	LP11-SP01	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S
			30350518	LP11-SP01	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30350521	LP11-SP02	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350523	LP11-SP02	ES	0.30 - 0.40	1kg TUB with Handle (ALE260)	S
			30350525	LP11-SP02	ES	0.50 - 0.60	1kg TUB with Handle (ALE260)	S
			30350549	LP11-SP03	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350542	LP11-SP03	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30350507	LP11-SP04	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350510	LP11-SP04	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S
			30350512	LP11-SP04	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30350553	LP11-SP05	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350556	LP11-SP05	ES	0.30 - 0.40	1kg TUB with Handle (ALE260)	S
			30350558	LP11-SP05	ES	0.50 - 0.60	1kg TUB with Handle (ALE260)	S
			30350527	LP11-SP06	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30350532	LP11-SP06	ES	0.10 - 0.20	1kg TUB with Handle (ALE260)	S
pH	All	NDPs: 0 Tests: 23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

30350540	LP11-SP10	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S			
30350538	LP11-SP10	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S			
30350536	LP11-SP10	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S			
30350534	LP11-SP06	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S			

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30350529	LP02-SP04	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30350544	LP02-SP04	0.20 - 0.30	Dark Brown	Sandy Loam	Crushed Brick	Plastic
30350546	LP02-SP04	0.40 - 0.50	Dark Brown	Sandy Loam	Crushed Brick	Vegetation
30350514	LP11-SP01	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30350516	LP11-SP01	0.20 - 0.30	Dark Brown	Silt Loam	Stones	Vegetation
30350518	LP11-SP01	0.40 - 0.50	Dark Brown	Clay Loam	Vegetation	None
30350521	LP11-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30350523	LP11-SP02	0.30 - 0.40	Dark Brown	Silt Loam	Stones	Vegetation
30350525	LP11-SP02	0.50 - 0.60	Dark Brown	Silty Clay Loam	Vegetation	None
30350542	LP11-SP03	0.40 - 0.50	Light Brown	Silt Loam	Vegetation	None
30350549	LP11-SP03	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30350507	LP11-SP04	0.00 - 0.10	Light Brown	Silty Clay Loam	Vegetation	None
30350510	LP11-SP04	0.20 - 0.30	Dark Brown	Silty Clay	Stones	Vegetation
30350512	LP11-SP04	0.40 - 0.50	Grey	Silty Clay	Stones	Vegetation
30350553	LP11-SP05	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30350556	LP11-SP05	0.30 - 0.40	Dark Brown	Silty Clay Loam	Vegetation	None
30350558	LP11-SP05	0.50 - 0.60	Light Brown	Silty Clay Loam	Vegetation	None
30350527	LP11-SP06	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30350532	LP11-SP06	0.10 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
30350534	LP11-SP06	0.40 - 0.50	Light Brown	Silty Clay Loam	Vegetation	None
30350536	LP11-SP10	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30350538	LP11-SP10	0.20 - 0.30	Dark Brown	Silt Loam	Stones	Vegetation
30350540	LP11-SP10	0.40 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240912-41 **Report Number:** 744864 **Superseded Report:** 744016
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP02-SP04	LP02-SP04	LP02-SP04	LP11-SP01	LP11-SP01	LP11-SP01
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/09/2024	10/09/2024	10/09/2024	11/09/2024	11/09/2024	11/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			SDG Ref	240912-41	240912-41	240912-41	240912-41	240912-41	240912-41
			Lab Sample No.(s)	30350529	30350544	30350546	30350514	30350516	30350518
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		28	12	7.1	30	21	17
Soil Organic Matter (SOM)	<0.35 %	TM132		11.7 #	2.17 #	5.17 #	5.69 #	2.79 #	1.19 @ #
pH	1 pH Units	TM133		7.4 M	8.37 M	8.32 M	5.68 M	6.11 M	7.03 @ M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240912-41 **Report Number:** 744864 **Superseded Report:** 744016
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP11-SP02	LP11-SP02	LP11-SP02	LP11-SP03	LP11-SP03	LP11-SP04
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			SDG Ref	240912-41	240912-41	240912-41	240912-41	240912-41	240912-41
			Lab Sample No.(s)	30350521	30350523	30350525	30350549	30350542	30350507
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		30	17	19	33	20	29
Soil Organic Matter (SOM)	<0.35 %	TM132		4.81 #	1.05 #	0.783 #	5.84 #	0.574 #	9.03 #
pH	1 pH Units	TM133		5.59 M	6.95 M	7.19 M	7.34 M	8.67 M	6.04 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240912-41 **Report Number:** 744864 **Superseded Report:** 744016
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend									
#	ISO17025 accredited.	Customer Sample Ref.	LP11-SP04	LP11-SP04	LP11-SP05	LP11-SP05	LP11-SP05	LP11-SP06
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
tot.unfilt	Total / unfiltered sample.	Date Sampled	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	-	-	-	-	-	-
**	% 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	Date Received	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
(F)	Trigger breach confirmed	SDG Ref	240912-41	240912-41	240912-41	240912-41	240912-41	240912-41
1-4+$@	Sample deviation (see appendix)	Lab Sample No.(s)	30350510	30350512	30350553	30350556	30350558	30350527
		AGS Reference	ES	ES	ES	ES	ES	ES

Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	20	22	33	17	18	27
Soil Organic Matter (SOM)	<0.35 %	TM132	1.4 #	1.3 #	6.24 #	1.48 #	0.624 #	3.93 #
pH	1 pH Units	TM133	6.62 M	7.05 M	7.62 M	7.48 M	7.66 M	6.21 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240912-41 **Report Number:** 744864 **Superseded Report:** 744016

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP11-SP06	LP11-SP06	LP11-SP10	LP11-SP10	LP11-SP10
			Depth (m)	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2024	11/09/2024	11/09/2024	11/09/2024	11/09/2024
			Sample Time	-	-	-	-	-
			Date Received	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			SDG Ref	240912-41	240912-41	240912-41	240912-41	240912-41
			Lab Sample No.(s)	30350532	30350534	30350536	30350538	30350540
			AGS Reference	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		28	18	36	22	19
Soil Organic Matter (SOM)	<0.35 %	TM132		4.28 #	2.03 @ #	9.02 #	3.81 #	2.78 @ #
pH	1 pH Units	TM133		6.24 M	6.1 @ M	6.26 M	6.5 M	6.54 @ M

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 240912-41 Report Number: 744864 Superseded Report: 744016
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30350529	30350544	30350546	30350514	30350516	30350518	30350521	30350523	30350525	30350542
Customer Sample Ref.	LP02-SP04	LP02-SP04	LP02-SP04	LP11-SP01	LP11-SP01	LP11-SP01	LP11-SP02	LP11-SP02	LP11-SP02	LP11-SP03
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	18-Oct-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	19-Sep-2024
Sample description	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	11-Oct-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024
Total Organic Carbon	19-Sep-2024	20-Sep-2024	18-Sep-2024	19-Sep-2024	19-Sep-2024	16-Oct-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	18-Sep-2024

Lab Sample No(s)	30350549	30350507	30350510	30350512	30350553	30350556	30350558	30350527	30350532	30350534
Customer Sample Ref.	LP11-SP03	LP11-SP04	LP11-SP04	LP11-SP04	LP11-SP05	LP11-SP05	LP11-SP05	LP11-SP06	LP11-SP06	LP11-SP06
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	20-Sep-2024	19-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	19-Sep-2024	19-Sep-2024	20-Sep-2024	20-Sep-2024	18-Oct-2024
Sample description	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	11-Oct-2024
Total Organic Carbon	18-Sep-2024	20-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	16-Oct-2024

Lab Sample No(s)	30350536	30350538	30350540
Customer Sample Ref.	LP11-SP10	LP11-SP10	LP11-SP10
AGS Ref.	ES	ES	ES
Depth	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	20-Sep-2024	19-Sep-2024	18-Oct-2024
Sample description	13-Sep-2024	13-Sep-2024	11-Oct-2024
Total Organic Carbon	19-Sep-2024	19-Sep-2024	16-Oct-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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240913-101
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	744865
Order Number:	70100310-313

This report has been revised and directly supersedes 744018 in its entirety.

We received 14 samples on Friday September 13, 2024 and 12 of these samples were scheduled for analysis which was completed on Friday October 18, 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

CERTIFICATE OF ANALYSIS

SDG: 240913-101 Report Number: 744865 Superseded Report: 744018
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30359996	LP02-SP01	ES	0.00 - 0.10	12/09/2024
30360096	LP02-SP01	ES	0.30 - 0.40	12/09/2024
30360098	LP02-SP01	ES	0.50 - 0.60	12/09/2024
30360100	LP11-SP07	ES	0.00 - 0.10	12/09/2024
30360103	LP11-SP07	ES	0.20 - 0.30	12/09/2024
30360089	LP11-SP07	EW	0.20 - 0.30	12/09/2024
30360105	LP11-SP07	ES	0.40 - 0.50	12/09/2024
30360107	LP11-SP08	ES	0.00 - 0.10	12/09/2024
30360109	LP11-SP08	ES	0.30 - 0.40	12/09/2024
30360111	LP11-SP08	ES	0.50 - 0.60	12/09/2024
30360016	LP11-SP09	EW	0.00 - 0.10	12/09/2024
30360009	LP11-SP09	ES	0.00 - 0.10	12/09/2024
30360011	LP11-SP09	ES	0.10 - 0.20	12/09/2024
30360014	LP11-SP09	ES	0.40 - 0.50	12/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240913-101 **Report Number:** 744865 **Superseded Report:** 744018
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)	30359996	30360096	30360098	30360100	30360103	30360089	30360107	30360109	30360016	30360009	30360011	30360014
			Customer Sample Reference	LP02-SP01	LP02-SP01	LP02-SP01	LP11-SP07	LP11-SP07	LP11-SP07	LP11-SP08	LP11-SP08	LP11-SP09	LP11-SP09	LP11-SP09	LP11-SP09
			AGS Reference	ES	ES	ES	ES	ES	EW	ES	ES	EW	ES	ES	ES
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	PW	PW	S	S	PW	PW	S	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2								X				X			
pH	All	NDPs: 0 Tests: 10		X	X	X	X	X			X	X			X	X	X
pH Value	All	NDPs: 0 Tests: 2							X				X				
Sample description	All	NDPs: 0 Tests: 10		X	X	X	X	X			X	X			X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 10		X	X	X	X	X			X	X			X	X	X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30359996	LP02-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30360096	LP02-SP01	0.30 - 0.40	Dark Brown	Sandy Loam	Crushed Brick	Stones
30360098	LP02-SP01	0.50 - 0.60	Light Brown	Sandy Clay Loam	Stones	None
30360100	LP11-SP07	0.00 - 0.10	Dark Brown	Silt Loam	Vegetation	None
30360103	LP11-SP07	0.20 - 0.30	Dark Brown	Silt Loam	Vegetation	None
30360107	LP11-SP08	0.00 - 0.10	Dark Brown	Silt Loam	Vegetation	None
30360109	LP11-SP08	0.30 - 0.40	Dark Brown	Silt Loam	Vegetation	Stones
30360009	LP11-SP09	0.00 - 0.10	Dark Brown	Silty Clay Loam	Vegetation	None
30360011	LP11-SP09	0.10 - 0.20	Light Brown	Silty Clay Loam	Vegetation	Stones
30360014	LP11-SP09	0.40 - 0.50	Light Brown	Sandy Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240913-101 **Report Number:** 744865 **Superseded Report:** 744018
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP02-SP01	LP02-SP01	LP02-SP01	LP11-SP07	LP11-SP07	LP11-SP07
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024
			SDG Ref	240913-101	240913-101	240913-101	240913-101	240913-101	240913-101
			Lab Sample No.(s)	30359996	30360096	30360098	30360100	30360103	30360089
			AGS Reference	ES	ES	ES	ES	ES	EW
pH	<1 pH Units	TM256							8.1
PFBA (375-22-4)	<0.002 µg/l	TM434							<0.002
PFMOPrA (377-73-1)	<0.001 µg/l	TM434							<0.001
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434							<0.002
PFPA (2706-90-3)	<0.001 µg/l	TM434							<0.001
PFMOBA (863090-89-5)	<0.001 µg/l	TM434							<0.001
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434							<0.001
NFDHA (151772-58-6)	<0.003 µg/l	TM434							<0.003
PFBS (375-73-5)	<0.001 µg/l	TM434							<0.001
PFHxA (307-24-4)	<0.001 µg/l	TM434							<0.001
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434							<0.002
PFEESA (113507-82-7)	<0.001 µg/l	TM434							<0.001
PFHpA (375-85-9)	<0.001 µg/l	TM434							<0.001
PFPeS (2706-91-4)	<0.001 µg/l	TM434							<0.001
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434							<0.005
ADONA (919005-14-4)	<0.001 µg/l	TM434							<0.001
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434							<0.001
FBSA (30334-69-1)	<0.001 µg/l	TM434							<0.001
PFOA (335-67-1)	<0.00065 µg/l	TM434							<0.00065
PFHxS (355-46-4)	<0.001 µg/l	TM434							<0.001
PFNA (375-95-1)	<0.001 µg/l	TM434							<0.001
PFecHS (133201-07-7)	<0.001 µg/l	TM434							<0.001
PFHpS (375-92-8)	<0.001 µg/l	TM434							<0.001
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434							<0.002
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434							<0.005
PFDA (335-76-2)	<0.002 µg/l	TM434							<0.002
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434							<0.002
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434							<0.005
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434							<0.00065
Branched PFOS	<0.00065 µg/l	TM434							<0.00065
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434							<0.002
PFUnA (2058-94-8)	<0.002 µg/l	TM434							<0.002
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434							<0.001

Validated

CERTIFICATE OF ANALYSIS

SDG: 240913-101 **Report Number:** 744865 **Superseded Report:** 744018
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP02-SP01	LP02-SP01	LP02-SP01	LP11-SP07	LP11-SP07	LP11-SP07
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024
			SDG Ref	240913-101	240913-101	240913-101	240913-101	240913-101	240913-101
			Lab Sample No.(s)	30359996	30360096	30360098	30360100	30360103	30360089
			AGS Reference	ES	ES	ES	ES	ES	EW
PFNS (68259-12-1)	<0.001 µg/l	TM434							<0.001
FHxSA (41997-13-1)	<0.001 µg/l	TM434							<0.001
PFDoA (307-55-1)	<0.002 µg/l	TM434							<0.002
PFDS (335-77-3)	<0.002 µg/l	TM434							<0.002
PFTrDA (72629-94-8)	<0.003 µg/l	TM434							<0.003
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434							<0.002
PFUnDS (749786-16-1)	<0.002 µg/l	TM434							<0.002
PFTeA (376-06-7)	<0.001 µg/l	TM434							<0.001
PFOSA (754-91-6)	<0.002 µg/l	TM434							<0.002
PFDoS (79780-39-5)	<0.002 µg/l	TM434							<0.002
PFTrDS (174675-49-1)	<0.001 µg/l	TM434							<0.001
PFHxDA (67905-19-5)	<0.001 µg/l	TM434							<0.001
MeFOSE (24448-09-7)	<0.01 µg/l	TM434							<0.01
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434							<0.001
EtFOSE (1691-99-2)	<0.01 µg/l	TM434							<0.01
PFODA (16517-11-6)	<0.001 µg/l	TM434							<0.001
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434							<0.001
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434							<0.01
Total PFOS	<0.00065 µg/l	TM434							<0.00065
Moisture Content Ratio (% of as received sample)	%	PM024		24	11	9.4	33	23	
Soil Organic Matter (SOM)	<0.35 %	TM132		7.6 #	3.88 #	2.9 @ #	5.19 #	2.6 #	
pH	1 pH Units	TM133		6.37 M	8.48 M	8.28 @ M	6.79 M	6.97 M	

CERTIFICATE OF ANALYSIS

SDG: 240913-101 **Report Number:** 744865 **Superseded Report:** 744018
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP11-SP08	LP11-SP08	LP11-SP09	LP11-SP09	LP11-SP09	LP11-SP09
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024
			SDG Ref	240913-101	240913-101	240913-101	240913-101	240913-101	240913-101
			Lab Sample No.(s)	30360107	30360109	30360016	30360009	30360011	30360014
			AGS Reference	ES	ES	EW	ES	ES	ES
pH	<1 pH Units	TM256				8.22			
PFBA (375-22-4)	<0.002 µg/l	TM434				<0.002			
PFMOPrA (377-73-1)	<0.001 µg/l	TM434				<0.001			
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434				<0.002			
PFPA (2706-90-3)	<0.001 µg/l	TM434				<0.001			
PFMOBA (863090-89-5)	<0.001 µg/l	TM434				<0.001			
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434				<0.001			
NFDHA (151772-58-6)	<0.003 µg/l	TM434				<0.003			
PFBS (375-73-5)	<0.001 µg/l	TM434				<0.001			
PFHxA (307-24-4)	<0.001 µg/l	TM434				<0.001			
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434				<0.002			
PFEESA (113507-82-7)	<0.001 µg/l	TM434				<0.001			
PFHpA (375-85-9)	<0.001 µg/l	TM434				<0.001			
PFPeS (2706-91-4)	<0.001 µg/l	TM434				<0.001			
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434				<0.005			
ADONA (919005-14-4)	<0.001 µg/l	TM434				<0.001			
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434				<0.001			
FBSA (30334-69-1)	<0.001 µg/l	TM434				<0.001			
PFOA (335-67-1)	<0.00065 µg/l	TM434				<0.00065			
PFHxS (355-46-4)	<0.001 µg/l	TM434				<0.001			
PFNA (375-95-1)	<0.001 µg/l	TM434				<0.001			
PFecHS (133201-07-7)	<0.001 µg/l	TM434				<0.001			
PFHpS (375-92-8)	<0.001 µg/l	TM434				<0.001			
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434				<0.002			
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434				<0.005			
PFDA (335-76-2)	<0.002 µg/l	TM434				<0.002			
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434				<0.002			
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434				<0.005			
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434				<0.00065			
Branched PFOS	<0.00065 µg/l	TM434				<0.00065			
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434				<0.002			
PFUnA (2058-94-8)	<0.002 µg/l	TM434				<0.002			
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434				<0.001			

Validated

CERTIFICATE OF ANALYSIS

SDG: 240913-101 **Report Number:** 744865 **Superseded Report:** 744018
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP11-SP08	LP11-SP08	LP11-SP09	LP11-SP09	LP11-SP09	LP11-SP09
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024	12/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024
			SDG Ref	240913-101	240913-101	240913-101	240913-101	240913-101	240913-101
			Lab Sample No.(s)	30360107	30360109	30360016	30360009	30360011	30360014
			AGS Reference	ES	ES	EW	ES	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434				<0.001			
FHxSA (41997-13-1)	<0.001 µg/l	TM434				<0.001			
PFDoA (307-55-1)	<0.002 µg/l	TM434				<0.002			
PFDS (335-77-3)	<0.002 µg/l	TM434				<0.002			
PFTrDA (72629-94-8)	<0.003 µg/l	TM434				<0.003			
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434				<0.002			
PFUnDS (749786-16-1)	<0.002 µg/l	TM434				<0.002			
PFTeA (376-06-7)	<0.001 µg/l	TM434				<0.001			
PFOSA (754-91-6)	<0.002 µg/l	TM434				<0.002			
PFDoS (79780-39-5)	<0.002 µg/l	TM434				<0.002			
PFTrDS (174675-49-1)	<0.001 µg/l	TM434				<0.001			
PFHxDA (67905-19-5)	<0.001 µg/l	TM434				<0.001			
MeFOSE (24448-09-7)	<0.01 µg/l	TM434				<0.01			
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434				<0.001			
EtFOSE (1691-99-2)	<0.01 µg/l	TM434				<0.01			
PFODA (16517-11-6)	<0.001 µg/l	TM434				<0.001			
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434				<0.001			
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434				<0.01			
Total PFOS	<0.00065 µg/l	TM434				<0.00065			
Moisture Content Ratio (% of as received sample)	%	PM024		36	18		9.1	15	15
Soil Organic Matter (SOM)	<0.35 %	TM132		7 #	1.66 #		8.05 #	3.29 #	2.28 #
pH	1 pH Units	TM133		6.12 M	7.55 M		5.71 M	6.28 M	7.06 M

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
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: 240913-101 Report Number: 744865 Superseded Report: 744018
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30359996	30360096	30360098	30360089	30360100	30360103	30360107	30360109	30360009	30360011
Customer Sample Ref.	LP02-SP01	LP02-SP01	LP02-SP01	LP11-SP07	LP11-SP07	LP11-SP07	LP11-SP08	LP11-SP08	LP11-SP09	LP11-SP09
AGS Ref.	ES	ES	ES	EW	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.20 - 0.30	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)				17-Sep-2024						
pH	24-Sep-2024	24-Sep-2024	18-Oct-2024		24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024
pH Value				19-Sep-2024						
Sample description	14-Sep-2024	13-Sep-2024	11-Oct-2024		13-Sep-2024	13-Sep-2024	13-Sep-2024	13-Sep-2024	14-Sep-2024	14-Sep-2024
Total Organic Carbon	23-Sep-2024	20-Sep-2024	16-Oct-2024		23-Sep-2024	20-Sep-2024	23-Sep-2024	23-Sep-2024	20-Sep-2024	23-Sep-2024

Lab Sample No(s)	30360014	30360016
Customer Sample Ref.	LP11-SP09	LP11-SP09
AGS Ref.	ES	EW
Depth	0.40 - 0.50	0.00 - 0.10
Type	Soil/Solid (S)	Process
PFAS Liquids (Full Suite)		17-Sep-2024
pH	24-Sep-2024	
pH Value		19-Sep-2024
Sample description	14-Sep-2024	
Total Organic Carbon	23-Sep-2024	

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.

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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 September 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240917-45
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	742013
Order Number:	70100310-313

We received 20 samples on Tuesday September 17, 2024 and 17 of these samples were scheduled for analysis which was completed on Thursday September 26, 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

CERTIFICATE OF ANALYSIS

SDG: 240917-45 **Report Number:** 742013 **Superseded Report:**
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30373071	LP04-SP01	ES	0.00 - 0.10	16/09/2024
30373079	LP04-SP01	ES	0.30 - 0.40	16/09/2024
30373084	LP04-SP01	ES	0.50 - 0.60	16/09/2024
30373048	LP04-SP01	EW	0.50 - 0.60	16/09/2024
30373088	LP04-SP02	ES	0.00 - 0.10	16/09/2024
30373094	LP04-SP02	ES	0.10 - 0.20	16/09/2024
30373098	LP04-SP02	ES	0.40 - 0.50	16/09/2024
30372983	LP04-SP03	ES	0.00 - 0.10	16/09/2024
30373056	LP04-SP03	ES	0.20 - 0.30	16/09/2024
30373067	LP04-SP03	ES	0.40 - 0.50	16/09/2024
30373001	LP05-SP01	ES	0.00 - 0.10	16/09/2024
30373009	LP05-SP01	ES	0.30 - 0.40	16/09/2024
30373060	LP05-SP01	EW	0.30 - 0.40	16/09/2024
30373016	LP05-SP01	ES	0.50 - 0.60	16/09/2024
30373033	LP05-SP02	ES	0.00 - 0.10	16/09/2024
30373038	LP05-SP02	ES	0.10 - 0.20	16/09/2024
30373043	LP05-SP02	ES	0.40 - 0.50	16/09/2024
30372988	LP05-SP03	ES	0.00 - 0.10	16/09/2024
30372994	LP05-SP03	ES	0.20 - 0.30	16/09/2024
30372999	LP05-SP03	ES	0.40 - 0.50	16/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240917-45 **Report Number:** 742013 **Superseded Report:**
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)			30373071	30373079	30373084	30373048	30373088	30373094	30372983	30373056	30373067	30373001	30373009	30373060	30373016	30373033	30372988	30372994	30372999
Customer Sample Reference			LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP02	LP04-SP02	LP04-SP03	LP04-SP03	LP04-SP03	LP05-SP01	LP05-SP01	LP05-SP01	LP05-SP01	LP05-SP02	LP05-SP03	LP05-SP03	LP05-SP03
AGS Reference			ES	ES	ES	EW	ES	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES	ES	ES
Depth (m)			0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Container			1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	PW	PW	S	S	S	S	S	S	S	PW	PW	S	S	S	S	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2					X									X						
pH	All	NDPs: 0 Tests: 15	X	X	X			X	X	X	X	X	X	X			X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 2				X									X							
Sample description	All	NDPs: 0 Tests: 15	X	X	X			X	X	X	X	X	X	X			X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 15	X	X	X			X	X	X	X	X	X	X			X	X	X	X	X	X

CERTIFICATE OF ANALYSIS

SDG: 240917-45 Report Number: 742013 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30373071	LP04-SP01	0.00 - 0.10	Light Brown	Silty Clay Loam	Stones	Vegetation
30373079	LP04-SP01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Vegetation	Stones
30373084	LP04-SP01	0.50 - 0.60	Dark Brown	Sandy Clay Loam	Vegetation	Stones
30373088	LP04-SP02	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30373094	LP04-SP02	0.10 - 0.20	Dark Brown	Sandy Clay Loam	Vegetation	Stones
30372983	LP04-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	Stones
30373056	LP04-SP03	0.20 - 0.30	Dark Brown	Sandy Clay Loam	Vegetation	Stones
30373067	LP04-SP03	0.40 - 0.50	Light Brown	Clay Loam	Stones	Vegetation
30373001	LP05-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30373009	LP05-SP01	0.30 - 0.40	Light Brown	Sandy Clay Loam	Stones	Vegetation
30373016	LP05-SP01	0.50 - 0.60	Dark Brown	Sandy Loam	Stones	Vegetation
30373033	LP05-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30372988	LP05-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30372994	LP05-SP03	0.20 - 0.30	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30372999	LP05-SP03	0.40 - 0.50	Light Brown	Sandy Clay Loam	Stones	Tile/Insulation Board

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240917-45 **Report Number:** 742013 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP02	LP04-SP02
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			SDG Ref	240917-45	240917-45	240917-45	240917-45	240917-45	240917-45
			Lab Sample No.(s)	30373071	30373079	30373084	30373048	30373088	30373094
			AGS Reference	ES	ES	ES	EW	ES	ES
pH	<1 pH Units	TM256					8.19		
PFBA (375-22-4)	<0.002 µg/l	TM434					<0.002		
PFMOPrA (377-73-1)	<0.001 µg/l	TM434					<0.001		
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434					<0.002		
PFPA (2706-90-3)	<0.001 µg/l	TM434					<0.001		
PFMOBA (863090-89-5)	<0.001 µg/l	TM434					<0.001		
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434					<0.001		
NFDHA (151772-58-6)	<0.003 µg/l	TM434					<0.003		
PFBS (375-73-5)	<0.001 µg/l	TM434					<0.001		
PFHxA (307-24-4)	<0.001 µg/l	TM434					<0.001		
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434					<0.002		
PFEESA (113507-82-7)	<0.001 µg/l	TM434					<0.001		
PFHpA (375-85-9)	<0.001 µg/l	TM434					<0.001		
PFPeS (2706-91-4)	<0.001 µg/l	TM434					<0.001		
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434					<0.005		
ADONA (919005-14-4)	<0.001 µg/l	TM434					<0.001		
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434					<0.001		
FBSA (30334-69-1)	<0.001 µg/l	TM434					<0.001		
PFOA (335-67-1)	<0.00065 µg/l	TM434					<0.00065		
PFHxS (355-46-4)	<0.001 µg/l	TM434					<0.001		
PFNA (375-95-1)	<0.001 µg/l	TM434					<0.001		
PFecHS (133201-07-7)	<0.001 µg/l	TM434					<0.001		
PFHpS (375-92-8)	<0.001 µg/l	TM434					<0.001		
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434					<0.002		
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434					<0.005		
PFDA (335-76-2)	<0.002 µg/l	TM434					<0.002		
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434					<0.002		
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434					<0.005		
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434					<0.00065		
Branched PFOS	<0.00065 µg/l	TM434					<0.00065		
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434					<0.002		
PFUnA (2058-94-8)	<0.002 µg/l	TM434					<0.002		
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434					<0.001		

Validated

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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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP02	LP04-SP02
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			SDG Ref	240917-45	240917-45	240917-45	240917-45	240917-45	240917-45
			Lab Sample No.(s)	30373071	30373079	30373084	30373048	30373088	30373094
			AGS Reference	ES	ES	ES	EW	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434					<0.001		
FHxSA (41997-13-1)	<0.001 µg/l	TM434					<0.001		
PFDoA (307-55-1)	<0.002 µg/l	TM434					<0.002		
PFDS (335-77-3)	<0.002 µg/l	TM434					<0.002		
PFTrDA (72629-94-8)	<0.003 µg/l	TM434					<0.003		
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434					<0.002		
PFUnDS (749786-16-1)	<0.002 µg/l	TM434					<0.002		
PFTeA (376-06-7)	<0.001 µg/l	TM434					<0.001		
PFOSA (754-91-6)	<0.002 µg/l	TM434					<0.002		
PFDoS (79780-39-5)	<0.002 µg/l	TM434					<0.002		
PFTrDS (174675-49-1)	<0.001 µg/l	TM434					<0.001		
PFHxDA (67905-19-5)	<0.001 µg/l	TM434					<0.001		
MeFOSE (24448-09-7)	<0.01 µg/l	TM434					<0.01		
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434					<0.001		
EtFOSE (1691-99-2)	<0.01 µg/l	TM434					<0.01		
PFODA (16517-11-6)	<0.001 µg/l	TM434					<0.001		
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434					<0.001		
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434					<0.01		
Total PFOS	<0.00065 µg/l	TM434					<0.00065		
Moisture Content Ratio (% of as received sample)	%	PM024		32	23	24		28	23
Soil Organic Matter (SOM)	<0.35 %	TM132		7.17 #	4.47 #	4.24 #		7.57 #	7.22 #
pH	1 pH Units	TM133		6.09 M	6.39 M	7.18 M		6.82 M	7.75 M

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- * 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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP04-SP03	LP04-SP03	LP04-SP03	LP05-SP01	LP05-SP01	LP05-SP01
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			SDG Ref	240917-45	240917-45	240917-45	240917-45	240917-45	240917-45
			Lab Sample No.(s)	30372983	30373056	30373067	30373001	30373009	30373060
			AGS Reference	ES	ES	ES	ES	ES	EW
pH	<1 pH Units	TM256							7.95
PFBA (375-22-4)	<0.002 µg/l	TM434							<0.002
PFMOPrA (377-73-1)	<0.001 µg/l	TM434							<0.001
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434							<0.002
PFPA (2706-90-3)	<0.001 µg/l	TM434							<0.001
PFMOBA (863090-89-5)	<0.001 µg/l	TM434							<0.001
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434							<0.001
NFDHA (151772-58-6)	<0.003 µg/l	TM434							<0.003
PFBS (375-73-5)	<0.001 µg/l	TM434							<0.001
PFHxA (307-24-4)	<0.001 µg/l	TM434							<0.001
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434							<0.002
PFEESA (113507-82-7)	<0.001 µg/l	TM434							<0.001
PFHpA (375-85-9)	<0.001 µg/l	TM434							<0.001
PFPeS (2706-91-4)	<0.001 µg/l	TM434							<0.001
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434							<0.005
ADONA (919005-14-4)	<0.001 µg/l	TM434							<0.001
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434							<0.001
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MeFOSAA (2355-31-9)	<0.002 µg/l	TM434							<0.002
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Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434							<0.00065
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- ** % 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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP04-SP03	LP04-SP03	LP04-SP03	LP05-SP01	LP05-SP01	LP05-SP01
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			SDG Ref	240917-45	240917-45	240917-45	240917-45	240917-45	240917-45
			Lab Sample No.(s)	30372983	30373056	30373067	30373001	30373009	30373060
			AGS Reference	ES	ES	ES	ES	ES	EW
PFNS (68259-12-1)	<0.001 µg/l	TM434							<0.001
FHxSA (41997-13-1)	<0.001 µg/l	TM434							<0.001
PFDoA (307-55-1)	<0.002 µg/l	TM434							<0.002
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PFHxDA (67905-19-5)	<0.001 µg/l	TM434							<0.001
MeFOSE (24448-09-7)	<0.01 µg/l	TM434							<0.01
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434							<0.001
EtFOSE (1691-99-2)	<0.01 µg/l	TM434							<0.01
PFODA (16517-11-6)	<0.001 µg/l	TM434							<0.001
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434							<0.001
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434							<0.01
Total PFOS	<0.00065 µg/l	TM434							<0.00065
Moisture Content Ratio (% of as received sample)	%	PM024		26	21	18	17	13	
Soil Organic Matter (SOM)	<0.35 %	TM132		7.65 #	5.17 #	2.24 #	5.14 #	1.15 #	
pH	1 pH Units	TM133		5.94 M	6.72 M	7.8 M	7.72 M	8.41 M	

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- aq Aqueous / settled sample.
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- * 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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP05-SP01	LP05-SP02	LP05-SP03	LP05-SP03	LP05-SP03	
			Depth (m)	0.50 - 0.60	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
			Date Sampled	16/09/2024	16/09/2024	16/09/2024	16/09/2024	16/09/2024	
			Sample Time	-	-	-	-	-	
			Date Received	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	
			SDG Ref	240917-45	240917-45	240917-45	240917-45	240917-45	
			Lab Sample No.(s)	30373016	30373033	30372988	30372994	30372999	
			AGS Reference	ES	ES	ES	ES	ES	
Moisture Content Ratio (% of as received sample)	%	PM024		8.9	27	24	15	8.3	
Soil Organic Matter (SOM)	<0.35 %	TM132		11.2 #	7.57 #	8.74 #	4.19 #	2.34 #	
pH	1 pH Units	TM133		8.22 M	6.92 M	7.33 M	8.04 M	8.52 M	

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM434	Analysis of PFAS
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 240917-45 Report Number: 742013 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30373048	30373071	30373079	30373084	30373088	30373094	30372983	30373056	30373067	30373001
Customer Sample Ref.	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP01	LP04-SP02	LP04-SP02	LP04-SP03	LP04-SP03	LP04-SP03	LP05-SP01
AGS Ref.	EW	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.50 - 0.60	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10
Type	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)	23-Sep-2024									
pH		26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024
pH Value	25-Sep-2024									
Sample description		19-Sep-2024	18-Sep-2024	18-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024	18-Sep-2024	19-Sep-2024	19-Sep-2024
Total Organic Carbon		25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024

Lab Sample No(s)	30373009	30373016	30373060	30373033	30372988	30372994	30372999
Customer Sample Ref.	LP05-SP01	LP05-SP01	LP05-SP01	LP05-SP02	LP05-SP03	LP05-SP03	LP05-SP03
AGS Ref.	ES	ES	EW	ES	ES	ES	ES
Depth	0.30 - 0.40	0.50 - 0.60	0.30 - 0.40	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)			23-Sep-2024				
pH	26-Sep-2024	26-Sep-2024		26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024
pH Value			25-Sep-2024				
Sample description	19-Sep-2024	19-Sep-2024		19-Sep-2024	19-Sep-2024	19-Sep-2024	19-Sep-2024
Total Organic Carbon	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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240918-51
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	744866
Order Number:	70100310-313

This report has been revised and directly supersedes 744019 in its entirety.

We received 20 samples on Wednesday September 18, 2024 and 17 of these samples were scheduled for analysis which was completed on Friday October 18, 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

CERTIFICATE OF ANALYSIS

SDG: 240918-51 Report Number: 744866 Superseded Report: 744019
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30376985	LP06-SP02	ES	0.00 - 0.10	17/09/2024
30377010	LP06-SP02	EW	0.10 - 0.20	17/09/2024
30377019	LP06-SP02	ES	0.10 - 0.20	17/09/2024
30377028	LP06-SP02	ES	0.40 - 0.50	17/09/2024
30377021	LP10-SP01	EW	0.00 - 0.10	17/09/2024
30376996	LP10-SP01	ES	0.00 - 0.10	17/09/2024
30376998	LP10-SP01	ES	0.30 - 0.40	17/09/2024
30377000	LP10-SP01	ES	0.50 - 0.60	17/09/2024
30377002	LP10-SP02	ES	0.00 - 0.10	17/09/2024
30377006	LP10-SP02	ES	0.10 - 0.20	17/09/2024
30377008	LP10-SP02	ES	0.40 - 0.50	17/09/2024
30377041	LP10-SP03	ES	0.00 - 0.10	17/09/2024
30377043	LP10-SP03	ES	0.20 - 0.30	17/09/2024
30377045	LP10-SP03	ES	0.40 - 0.50	17/09/2024
30377031	LP10-SP04	ES	0.00 - 0.10	17/09/2024
30377035	LP10-SP04	ES	0.30 - 0.40	17/09/2024
30377038	LP10-SP04	ES	0.50 - 0.60	17/09/2024
30376987	LP10-SP05	ES	0.00 - 0.10	17/09/2024
30376990	LP10-SP05	ES	0.10 - 0.20	17/09/2024
30376994	LP10-SP05	ES	0.40 - 0.50	17/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240918-51 **Report Number:** 744866 **Superseded Report:** 744019
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)	30376985	30377010	30377019	30377021	30376996	30376998	30377002	30377006	30377041	30377043	30377045	30377031	30377035	30377038	30376987	30376990	30376994
			Customer Sample Reference	LP06-SP02	LP06-SP02	LP06-SP02	LP10-SP01	LP10-SP01	LP10-SP01	LP10-SP02	LP10-SP02	LP10-SP03	LP10-SP03	LP10-SP03	LP10-SP04	LP10-SP04	LP10-SP04	LP10-SP05	LP10-SP05	LP10-SP05
			AGS Reference	ES	EW	ES	EW	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.00 - 0.10	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
			Container	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
			Sample Type	S	PW	PW	S	PW	PW	S	S	S	S	S	S	S	S	S	S	S	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2				X			X													
pH	All	NDPs: 0 Tests: 15		X			X			X	X	X	X	X	X	X	X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 2			X			X														
Sample description	All	NDPs: 0 Tests: 15		X			X			X	X	X	X	X	X	X	X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 15		X			X			X	X	X	X	X	X	X	X	X	X	X	X	X

CERTIFICATE OF ANALYSIS

SDG: 240918-51 Report Number: 744866 Superseded Report: 744019
Client Ref.: 70100310 Thornton Location: Thornton

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30376985	LP06-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30377019	LP06-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
30376996	LP10-SP01	0.00 - 0.10	Dark Brown	Silt Loam	Vegetation	None
30376998	LP10-SP01	0.30 - 0.40	Dark Brown	Silt Loam	Vegetation	None
30377002	LP10-SP02	0.00 - 0.10	Dark Brown	Silt Loam	Metal	Vegetation
30377006	LP10-SP02	0.10 - 0.20	Light Brown	Silty Clay Loam	Vegetation	None
30377041	LP10-SP03	0.00 - 0.10	Dark Brown	Silty Clay Loam	Vegetation	None
30377043	LP10-SP03	0.20 - 0.30	Dark Brown	Silt Loam	Vegetation	None
30377045	LP10-SP03	0.40 - 0.50	Light Brown	Clay Loam	Vegetation	None
30377031	LP10-SP04	0.00 - 0.10	Dark Brown	Silt Loam	Vegetation	None
30377035	LP10-SP04	0.30 - 0.40	Light Brown	Silty Clay Loam	Vegetation	None
30377038	LP10-SP04	0.50 - 0.60	Light Brown	Clay	Vegetation	None
30376987	LP10-SP05	0.00 - 0.10	Dark Brown	Silt Loam	Vegetation	None
30376990	LP10-SP05	0.10 - 0.20	Dark Brown	Silty Clay Loam	Vegetation	None
30376994	LP10-SP05	0.40 - 0.50	Light Brown	Silty Clay	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240918-51 **Report Number:** 744866 **Superseded Report:** 744019
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP06-SP02	LP06-SP02	LP06-SP02	LP10-SP01	LP10-SP01	LP10-SP01
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.00 - 0.10	0.00 - 0.10	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			SDG Ref	240918-51	240918-51	240918-51	240918-51	240918-51	240918-51
			Lab Sample No.(s)	30376985	30377010	30377019	30377021	30376996	30376998
			AGS Reference	ES	EW	ES	EW	ES	ES
pH	<1 pH Units	TM256		8.08		8.17		
PFBA (375-22-4)	<0.002 µg/l	TM434		<0.002		<0.002		
PFMOPrA (377-73-1)	<0.001 µg/l	TM434		<0.001		<0.001		
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434		<0.002		<0.002		
PFPA (2706-90-3)	<0.001 µg/l	TM434		<0.001		<0.001		
PFMOBA (863090-89-5)	<0.001 µg/l	TM434		<0.001		<0.001		
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434		<0.001		<0.001		
NFDHA (151772-58-6)	<0.003 µg/l	TM434		<0.003		<0.003		
PFBS (375-73-5)	<0.001 µg/l	TM434		<0.001		<0.001		
PFHxA (307-24-4)	<0.001 µg/l	TM434		<0.001		<0.001		
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434		<0.002		<0.002		
PFEESA (113507-82-7)	<0.001 µg/l	TM434		<0.001		<0.001		
PFHpA (375-85-9)	<0.001 µg/l	TM434		<0.001		<0.001		
PFPeS (2706-91-4)	<0.001 µg/l	TM434		<0.001		<0.001		
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434		<0.005		<0.005		
ADONA (919005-14-4)	<0.001 µg/l	TM434		<0.001		<0.001		
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434		<0.001		<0.001		
FBSA (30334-69-1)	<0.001 µg/l	TM434		<0.001		<0.001		
PFOA (335-67-1)	<0.00065 µg/l	TM434		<0.00065		<0.00065		
PFHxS (355-46-4)	<0.001 µg/l	TM434		<0.001		<0.001		
PFNA (375-95-1)	<0.001 µg/l	TM434		<0.001		<0.001		
PFecHS (133201-07-7)	<0.001 µg/l	TM434		<0.001		<0.001		
PFHpS (375-92-8)	<0.001 µg/l	TM434		<0.001		<0.001		
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434		<0.002		<0.002		
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434		<0.005		<0.005		
PFDA (335-76-2)	<0.002 µg/l	TM434		<0.002		<0.002		
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434		<0.002		<0.002		
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434		<0.005		<0.005		
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		<0.00065		<0.00065		
Branched PFOS	<0.00065 µg/l	TM434		<0.00065		<0.00065		
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434		<0.002		<0.002		
PFUnA (2058-94-8)	<0.002 µg/l	TM434		<0.002		<0.002		
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434		<0.001		<0.001		

CERTIFICATE OF ANALYSIS

SDG: 240918-51 **Report Number:** 744866 **Superseded Report:** 744019
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP06-SP02	LP06-SP02	LP06-SP02	LP10-SP01	LP10-SP01	LP10-SP01
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.00 - 0.10	0.00 - 0.10	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			SDG Ref	240918-51	240918-51	240918-51	240918-51	240918-51	240918-51
			Lab Sample No.(s)	30376985	30377010	30377019	30377021	30376996	30376998
			AGS Reference	ES	EW	ES	EW	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434			<0.001		<0.001		
FHxSA (41997-13-1)	<0.001 µg/l	TM434			<0.001		<0.001		
PFDoA (307-55-1)	<0.002 µg/l	TM434			<0.002		<0.002		
PFDS (335-77-3)	<0.002 µg/l	TM434			<0.002		<0.002		
PFTrDA (72629-94-8)	<0.003 µg/l	TM434			<0.003		<0.003		
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434			<0.002		<0.002		
PFUnDS (749786-16-1)	<0.002 µg/l	TM434			<0.002		<0.002		
PFTeA (376-06-7)	<0.001 µg/l	TM434			<0.001		<0.001		
PFOSA (754-91-6)	<0.002 µg/l	TM434			<0.002		<0.002		
PFDoS (79780-39-5)	<0.002 µg/l	TM434			<0.002		<0.002		
PFTrDS (174675-49-1)	<0.001 µg/l	TM434			<0.001		<0.001		
PFHxDA (67905-19-5)	<0.001 µg/l	TM434			<0.001		<0.001		
MeFOSE (24448-09-7)	<0.01 µg/l	TM434			<0.01		<0.01		
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434			<0.001		<0.001		
EtFOSE (1691-99-2)	<0.01 µg/l	TM434			<0.01		<0.01		
PFODA (16517-11-6)	<0.001 µg/l	TM434			<0.001		<0.001		
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434			<0.001		<0.001		
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434			<0.01		<0.01		
Total PFOS	<0.00065 µg/l	TM434			<0.00065		<0.00065		
Moisture Content Ratio (% of as received sample)	%	PM024		25		20		29	16
Soil Organic Matter (SOM)	<0.35 %	TM132		8.07 #		7.62 #		4.72 #	1.91 #
pH	1 pH Units	TM133		6.62 M		7.3 M		5.86 M	6.67 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240918-51 **Report Number:** 744866 **Superseded Report:** 744019

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP10-SP02	LP10-SP02	LP10-SP03	LP10-SP03	LP10-SP03	LP10-SP04
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			SDG Ref	240918-51	240918-51	240918-51	240918-51	240918-51	240918-51
			Lab Sample No.(s)	30377002	30377006	30377041	30377043	30377045	30377031
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		42	20	31	22	19	32
Soil Organic Matter (SOM)	<0.35 %	TM132		16.8 #	2.33 #	5.88 #	3.81 #	1.58 #	6.14 #
pH	1 pH Units	TM133		7.01 M	6.38 M	5.85 M	6.07 M	6.66 M	6.22 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240918-51 **Report Number:** 744866 **Superseded Report:** 744019

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP10-SP04	LP10-SP04	LP10-SP05	LP10-SP05	LP10-SP05	
			Depth (m)	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
			Date Sampled	17/09/2024	17/09/2024	17/09/2024	17/09/2024	17/09/2024	
			Sample Time	-	-	-	-	-	
			Date Received	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	
			SDG Ref	240918-51	240918-51	240918-51	240918-51	240918-51	
			Lab Sample No.(s)	30377035	30377038	30376987	30376990	30376994	
			AGS Reference	ES	ES	ES	ES	ES	
Moisture Content Ratio (% of as received sample)	%	PM024		18	17	31	24	18	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.44 #	1.46 @ #	6.69 #	3.6 #	1.31 #	
pH	1 pH Units	TM133		6.86 M	7.18 @ M	5.83 M	6.11 M	6.98 M	

Table of Results - Appendix

Method No	Description
TM434	Analysis of PFAS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 240918-51 Report Number: 744866 Superseded Report: 744019
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30376985	30377010	30377019	30376996	30376998	30377021	30377002	30377006	30377041	30377043
Customer Sample Ref.	LP06-SP02	LP06-SP02	LP06-SP02	LP10-SP01	LP10-SP01	LP10-SP01	LP10-SP02	LP10-SP02	LP10-SP03	LP10-SP03
AGS Ref.	ES	EW	ES	ES	ES	EW	ES	ES	ES	ES
Depth	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30
Type	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)		20-Sep-2024				20-Sep-2024				
pH	25-Sep-2024		25-Sep-2024	25-Sep-2024	25-Sep-2024		25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024
pH Value		24-Sep-2024				24-Sep-2024				
Sample description	19-Sep-2024		19-Sep-2024	18-Sep-2024	18-Sep-2024		18-Sep-2024	18-Sep-2024	18-Sep-2024	18-Sep-2024
Total Organic Carbon	24-Sep-2024		24-Sep-2024	24-Sep-2024	24-Sep-2024		24-Sep-2024	24-Sep-2024	24-Sep-2024	24-Sep-2024

Lab Sample No(s)	30377045	30377031	30377035	30377038	30376987	30376990	30376994
Customer Sample Ref.	LP10-SP03	LP10-SP04	LP10-SP04	LP10-SP04	LP10-SP05	LP10-SP05	LP10-SP05
AGS Ref.	ES	ES	ES	ES	ES	ES	ES
Depth	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	25-Sep-2024	25-Sep-2024	25-Sep-2024	18-Oct-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024
Sample description	18-Sep-2024	18-Sep-2024	18-Sep-2024	11-Oct-2024	18-Sep-2024	19-Sep-2024	18-Sep-2024
Total Organic Carbon	24-Sep-2024	24-Sep-2024	24-Sep-2024	16-Oct-2024	24-Sep-2024	24-Sep-2024	24-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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 September 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240919-79
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	742182
Order Number:	70100310-313

We received 26 samples on Thursday September 19, 2024 and 22 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

CERTIFICATE OF ANALYSIS

SDG: 240919-79 Report Number: 742182 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30385793	LP06-SP01	ES	0.00 - 0.10	18/09/2024
30385823	LP06-SP01	ES	0.30 - 0.40	18/09/2024
30385851	LP06-SP01	ES	0.50 - 0.60	18/09/2024
30385854	LP06-SP03	ES	0.00 - 0.10	18/09/2024
30385856	LP06-SP03	ES	0.20 - 0.30	18/09/2024
30385860	LP06-SP03	ES	0.40 - 0.50	18/09/2024
30385864	LP15-SP01	ES	0.00 - 0.10	18/09/2024
30385868	LP15-SP01	ES	0.30 - 0.40	18/09/2024
30385871	LP15-SP01	ES	0.50 - 0.60	18/09/2024
30385795	LP15-SP02	ES	0.00 - 0.10	18/09/2024
30385798	LP15-SP02	ES	0.10 - 0.20	18/09/2024
30385801	LP15-SP02	ES	0.40 - 0.50	18/09/2024
30385804	LP15-SP03	ES	0.00 - 0.10	18/09/2024
30385837	LP15-SP03	EW	0.00 - 0.10	18/09/2024
30385808	LP15-SP03	ES	0.20 - 0.30	18/09/2024
30385812	LP15-SP03	ES	0.40 - 0.50	18/09/2024
30385814	LP19-SP01	ES	0.00 - 0.10	18/09/2024
30385816	LP19-SP01	ES	0.30 - 0.40	18/09/2024
30385818	LP19-SP01	ES	0.50 - 0.60	18/09/2024
30385847	LP19-SP01	EW	0.50 - 0.60	18/09/2024
30385820	LP19-SP02	ES	0.00 - 0.10	18/09/2024
30385827	LP19-SP02	ES	0.10 - 0.20	18/09/2024
30385829	LP19-SP02	ES	0.40 - 0.50	18/09/2024
30385831	LP19-SP03	ES	0.00 - 0.10	18/09/2024
30385833	LP19-SP03	ES	0.20 - 0.30	18/09/2024
30385835	LP19-SP03	ES	0.40 - 0.50	18/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240919-79 **Report Number:** 742182 **Superseded Report:**
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)	30385793	30385823	30385854	30385856	30385860	30385864	30385868	30385871	30385795	30385798	30385804	30385837	30385808	30385814	30385816	30385847	30385820
			Customer Sample Reference	LP06-SP01	LP06-SP01	LP06-SP03	LP06-SP03	LP06-SP03	LP15-SP01	LP15-SP01	LP15-SP01	LP15-SP02	LP15-SP02	LP15-SP03	LP15-SP03	LP15-SP03	LP19-SP01	LP19-SP01	LP19-SP01	LP19-SP01	LP19-SP02
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES	EW	ES
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	500ml Plastic (ALE208)	0.50 - 0.60	0.00 - 0.10
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	PW	PW	S	S	S	PW	PW	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2														X					X	
pH	All	NDPs: 0 Tests: 20		X	X	X	X	X	X	X	X	X	X	X			X	X	X			X
pH Value	All	NDPs: 0 Tests: 2													X					X		
Sample description	All	NDPs: 0 Tests: 19		X	X	X	X	X	X	X	X	X	X	X			X	X	X			X
Total Organic Carbon	All	NDPs: 0 Tests: 20		X	X	X	X	X	X	X	X	X	X	X			X	X	X			X

30385835	LP19-SP03	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S				X		X
30385833	LP19-SP03	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S				X	X	X
30385831	LP19-SP03	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S				X	X	X
30385829	LP19-SP02	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S				X	X	X
30385827	LP19-SP02	ES	0.10 - 0.20	1kg TUB with Handle (ALE260)	S				X	X	X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30385793	LP06-SP01	0.00 - 0.10	Dark Brown	Silty Clay Loam	Vegetation	None
30385823	LP06-SP01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30385854	LP06-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	Stones
30385856	LP06-SP03	0.20 - 0.30	Dark Brown	Silty Clay Loam	Stones	Vegetation
30385860	LP06-SP03	0.40 - 0.50	Dark Brown	Sandy Clay Loam	Vegetation	Stones
30385864	LP15-SP01	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	None
30385868	LP15-SP01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30385871	LP15-SP01	0.50 - 0.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
30385795	LP15-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	Plastic
30385798	LP15-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
30385804	LP15-SP03	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	Metal
30385808	LP15-SP03	0.20 - 0.30	Dark Brown	Sandy Silt Loam	Vegetation	Stones
30385814	LP19-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30385816	LP19-SP01	0.30 - 0.40	Light Brown	Loamy Sand	Stones	Vegetation
30385820	LP19-SP02	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	None
30385827	LP19-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
30385829	LP19-SP02	0.40 - 0.50	Light Brown	Sandy Clay Loam	Vegetation	None
30385831	LP19-SP03	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	None
30385833	LP19-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Metal	Plastic
30385835	LP19-SP03	0.40 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 240919-79 **Report Number:** 742182 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP06-SP01	LP06-SP01	LP06-SP03	LP06-SP03	LP06-SP03	LP15-SP01
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			SDG Ref	240919-79	240919-79	240919-79	240919-79	240919-79	240919-79
			Lab Sample No.(s)	30385793	30385823	30385854	30385856	30385860	30385864
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		25	16	26	17	14	27
Soil Organic Matter (SOM)	<0.35 %	TM132		8.69 #	3.43 #	9.4 #	12.8 #	3.71 #	7.84 #
pH	1 pH Units	TM133		6.86 M	8.22 M	6.32 M	8 M	8.19 M	6.34 M

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- 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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP15-SP01	LP15-SP01	LP15-SP02	LP15-SP02	LP15-SP03	LP15-SP03
			Depth (m)	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			SDG Ref	240919-79	240919-79	240919-79	240919-79	240919-79	240919-79
			Lab Sample No.(s)	30385868	30385871	30385795	30385798	30385804	30385837
			AGS Reference	ES	ES	ES	ES	ES	EW
pH	<1 pH Units	TM256							8.07
PFBA (375-22-4)	<0.002 µg/l	TM434							<0.002
PFMOPrA (377-73-1)	<0.001 µg/l	TM434							<0.001
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434							<0.002
PFPA (2706-90-3)	<0.001 µg/l	TM434							<0.001
PFMOBA (863090-89-5)	<0.001 µg/l	TM434							<0.001
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434							<0.001
NFDHA (151772-58-6)	<0.003 µg/l	TM434							<0.003
PFBS (375-73-5)	<0.001 µg/l	TM434							<0.001
PFHxA (307-24-4)	<0.001 µg/l	TM434							<0.001
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434							<0.002
PFEESA (113507-82-7)	<0.001 µg/l	TM434							<0.001
PFHpA (375-85-9)	<0.001 µg/l	TM434							<0.001
PFPeS (2706-91-4)	<0.001 µg/l	TM434							<0.001
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434							<0.005
ADONA (919005-14-4)	<0.001 µg/l	TM434							<0.001
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434							<0.001
FBSA (30334-69-1)	<0.001 µg/l	TM434							<0.001
PFOA (335-67-1)	<0.00065 µg/l	TM434							<0.00065
PFHxS (355-46-4)	<0.001 µg/l	TM434							<0.001
PFNA (375-95-1)	<0.001 µg/l	TM434							<0.001
PFecHS (133201-07-7)	<0.001 µg/l	TM434							<0.001
PFHpS (375-92-8)	<0.001 µg/l	TM434							<0.001
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434							<0.002
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434							<0.005
PFDA (335-76-2)	<0.002 µg/l	TM434							<0.002
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434							<0.002
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434							<0.005
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434							<0.00065
Branched PFOS	<0.00065 µg/l	TM434							<0.00065
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434							<0.002
PFUnA (2058-94-8)	<0.002 µg/l	TM434							<0.002
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434							<0.001

CERTIFICATE OF ANALYSIS

SDG: 240919-79 **Report Number:** 742182 **Superseded Report:**
Client Ref.: 70100310 Thornton **Location:** Thornton

Results Legend
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- 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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP15-SP01	LP15-SP01	LP15-SP02	LP15-SP02	LP15-SP03	LP15-SP03
			Depth (m)	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			SDG Ref	240919-79	240919-79	240919-79	240919-79	240919-79	240919-79
			Lab Sample No.(s)	30385868	30385871	30385795	30385798	30385804	30385837
			AGS Reference	ES	ES	ES	ES	ES	EW
PFNS (68259-12-1)	<0.001 µg/l	TM434							<0.001
FHxSA (41997-13-1)	<0.001 µg/l	TM434							<0.001
PFDoA (307-55-1)	<0.002 µg/l	TM434							<0.002
PFDS (335-77-3)	<0.002 µg/l	TM434							<0.002
PFTrDA (72629-94-8)	<0.003 µg/l	TM434							<0.003
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434							<0.002
PFUnDS (749786-16-1)	<0.002 µg/l	TM434							<0.002
PFTeA (376-06-7)	<0.001 µg/l	TM434							<0.001
PFOSA (754-91-6)	<0.002 µg/l	TM434							<0.002
PFDoS (79780-39-5)	<0.002 µg/l	TM434							<0.002
PFTrDS (174675-49-1)	<0.001 µg/l	TM434							<0.001
PFHxDA (67905-19-5)	<0.001 µg/l	TM434							<0.001
MeFOSE (24448-09-7)	<0.01 µg/l	TM434							<0.01
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434							<0.001
EtFOSE (1691-99-2)	<0.01 µg/l	TM434							<0.01
PFODA (16517-11-6)	<0.001 µg/l	TM434							<0.001
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434							<0.001
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434							<0.01
Total PFOS	<0.00065 µg/l	TM434							<0.00065
Moisture Content Ratio (% of as received sample)	%	PM024		21	22	21	18	28	
Soil Organic Matter (SOM)	<0.35 %	TM132		6.53 #	5.1 #	13.9 #	11.3 #	8.36 #	
pH	1 pH Units	TM133		7.17 M	7.53 M	5.87 M	6.6 M	6.36 M	

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Results Legend
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- ** % 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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP15-SP03	LP19-SP01	LP19-SP01	LP19-SP01	LP19-SP02	LP19-SP02
			Depth (m)	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			SDG Ref	240919-79	240919-79	240919-79	240919-79	240919-79	240919-79
			Lab Sample No.(s)	30385808	30385814	30385816	30385847	30385820	30385827
			AGS Reference	ES	ES	ES	EW	ES	ES
pH	<1 pH Units	TM256					8.06		
PFBA (375-22-4)	<0.002 µg/l	TM434					<0.002		
PFMOPrA (377-73-1)	<0.001 µg/l	TM434					<0.001		
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434					<0.002		
PFPA (2706-90-3)	<0.001 µg/l	TM434					<0.001		
PFMOBA (863090-89-5)	<0.001 µg/l	TM434					<0.001		
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434					<0.001		
NFDHA (151772-58-6)	<0.003 µg/l	TM434					<0.003		
PFBS (375-73-5)	<0.001 µg/l	TM434					<0.001		
PFHxA (307-24-4)	<0.001 µg/l	TM434					<0.001		
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434					<0.002		
PFEESA (113507-82-7)	<0.001 µg/l	TM434					<0.001		
PFHpA (375-85-9)	<0.001 µg/l	TM434					<0.001		
PFPeS (2706-91-4)	<0.001 µg/l	TM434					<0.001		
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434					<0.005		
ADONA (919005-14-4)	<0.001 µg/l	TM434					<0.001		
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434					<0.001		
FBSA (30334-69-1)	<0.001 µg/l	TM434					<0.001		
PFOA (335-67-1)	<0.00065 µg/l	TM434					<0.00065		
PFHxS (355-46-4)	<0.001 µg/l	TM434					<0.001		
PFNA (375-95-1)	<0.001 µg/l	TM434					<0.001		
PFecHS (133201-07-7)	<0.001 µg/l	TM434					<0.001		
PFHpS (375-92-8)	<0.001 µg/l	TM434					<0.001		
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434					<0.002		
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434					<0.005		
PFDA (335-76-2)	<0.002 µg/l	TM434					<0.002		
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434					<0.002		
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434					<0.005		
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434					<0.00065		
Branched PFOS	<0.00065 µg/l	TM434					<0.00065		
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434					<0.002		
PFUnA (2058-94-8)	<0.002 µg/l	TM434					<0.002		
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434					<0.001		

Validated

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Results Legend
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- 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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP15-SP03	LP19-SP01	LP19-SP01	LP19-SP01	LP19-SP02	LP19-SP02
			Depth (m)	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024	18/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
			SDG Ref	240919-79	240919-79	240919-79	240919-79	240919-79	240919-79
			Lab Sample No.(s)	30385808	30385814	30385816	30385847	30385820	30385827
			AGS Reference	ES	ES	ES	EW	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434					<0.001		
FHxSA (41997-13-1)	<0.001 µg/l	TM434					<0.001		
PFDoA (307-55-1)	<0.002 µg/l	TM434					<0.002		
PFDS (335-77-3)	<0.002 µg/l	TM434					<0.002		
PFTrDA (72629-94-8)	<0.003 µg/l	TM434					<0.003		
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434					<0.002		
PFUnDS (749786-16-1)	<0.002 µg/l	TM434					<0.002		
PFTeA (376-06-7)	<0.001 µg/l	TM434					<0.001		
PFOSA (754-91-6)	<0.002 µg/l	TM434					<0.002		
PFDoS (79780-39-5)	<0.002 µg/l	TM434					<0.002		
PFTrDS (174675-49-1)	<0.001 µg/l	TM434					<0.001		
PFHxDA (67905-19-5)	<0.001 µg/l	TM434					<0.001		
MeFOSE (24448-09-7)	<0.01 µg/l	TM434					<0.01		
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434					<0.001		
EtFOSE (1691-99-2)	<0.01 µg/l	TM434					<0.01		
PFODA (16517-11-6)	<0.001 µg/l	TM434					<0.001		
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434					<0.001		
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434					<0.01		
Total PFOS	<0.00065 µg/l	TM434					<0.00065		
Moisture Content Ratio (% of as received sample)	%	PM024		22	30	12		21	17
Soil Organic Matter (SOM)	<0.35 %	TM132		7.95 #	6.38 #	0.731 #		5.78 #	3.74 #
pH	1 pH Units	TM133		7.1 M	6.57 M	7.48 M		6.48 M	6.65 M

Validated

CERTIFICATE OF ANALYSIS

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- 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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP19-SP02	LP19-SP03	LP19-SP03	LP19-SP03		
			Depth (m)	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/09/2024	18/09/2024	18/09/2024	18/09/2024		
			Sample Time	-	-	-	-		
			Date Received	19/09/2024	19/09/2024	19/09/2024	19/09/2024		
			SDG Ref	240919-79	240919-79	240919-79	240919-79		
			Lab Sample No.(s)	30385829	30385831	30385833	30385835		
			AGS Reference	ES	ES	ES	ES		
Moisture Content Ratio (% of as received sample)	%	PM024		15	21	16	9.8		
Soil Organic Matter (SOM)	<0.35 %	TM132		2.1 #	9.64 #	5.76 #	4 #		
pH	1 pH Units	TM133		6.89 M	6.85 M	7.63 M	8.32 M		

Table of Results - Appendix

Method No	Description
TM434	Analysis of PFAS
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
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: 240919-79 Report Number: 742182 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30385793	30385823	30385854	30385856	30385860	30385864	30385868	30385871	30385795	30385798
Customer Sample Ref.	LP06-SP01	LP06-SP01	LP06-SP03	LP06-SP03	LP06-SP03	LP15-SP01	LP15-SP01	LP15-SP01	LP15-SP02	LP15-SP02
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024
Sample description	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024
Total Organic Carbon	26-Sep-2024	26-Sep-2024	26-Sep-2024	27-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024	26-Sep-2024

Lab Sample No(s)	30385804	30385808	30385837	30385814	30385816	30385847	30385820	30385827	30385829	30385831
Customer Sample Ref.	LP15-SP03	LP15-SP03	LP15-SP03	LP19-SP01	LP19-SP01	LP19-SP01	LP19-SP02	LP19-SP02	LP19-SP02	LP19-SP03
AGS Ref.	ES	ES	EW	ES	ES	EW	ES	ES	ES	ES
Depth	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)			23-Sep-2024			23-Sep-2024				
pH	27-Sep-2024	27-Sep-2024		27-Sep-2024	27-Sep-2024		27-Sep-2024	27-Sep-2024	27-Sep-2024	27-Sep-2024
pH Value			30-Sep-2024			30-Sep-2024				
Sample description	20-Sep-2024	20-Sep-2024		20-Sep-2024	20-Sep-2024		20-Sep-2024	20-Sep-2024	20-Sep-2024	20-Sep-2024
Total Organic Carbon	26-Sep-2024	26-Sep-2024		26-Sep-2024	26-Sep-2024		26-Sep-2024	26-Sep-2024	27-Sep-2024	26-Sep-2024

Lab Sample No(s)	30385833	30385835
Customer Sample Ref.	LP19-SP03	LP19-SP03
AGS Ref.	ES	ES
Depth	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)
pH	27-Sep-2024	27-Sep-2024
Sample description	20-Sep-2024	20-Sep-2024
Total Organic Carbon	26-Sep-2024	26-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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240925-25
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	743309
Order Number:	70100310

This report has been revised and directly supersedes 742516 in its entirety.

We received 32 samples on Wednesday September 25, 2024 and 28 of these samples were scheduled for analysis which was completed on Wednesday October 09, 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

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30414840	LP14-SP02	ES	0.00 - 0.10	24/09/2024
30414843	LP14-SP02	ES	0.10 - 0.20	24/09/2024
30414908	LP14-SP02	EW	0.10 - 0.20	24/09/2024
30414845	LP14-SP02	ES	0.40 - 0.50	24/09/2024
30414883	LP17-SP01	ES	0.00 - 0.10	24/09/2024
30414887	LP17-SP01	ES	0.30 - 0.40	24/09/2024
30414891	LP17-SP01	ES	0.50 - 0.60	24/09/2024
30414893	LP17-SP02	ES	0.00 - 0.10	24/09/2024
30414896	LP17-SP02	ES	0.10 - 0.20	24/09/2024
30414900	LP17-SP02	ES	0.40 - 0.50	24/09/2024
30414876	LP17-SP03	ES	0.00 - 0.10	24/09/2024
30414878	LP17-SP03	ES	0.20 - 0.30	24/09/2024
30414880	LP17-SP03	ES	0.40 - 0.50	24/09/2024
30414848	LP21-SP01	ES	0.00 - 0.10	24/09/2024
30414852	LP21-SP01	ES	0.30 - 0.40	24/09/2024
30414855	LP21-SP01	ES	0.50 - 0.60	24/09/2024
30414857	LP21-SP02	ES	0.00 - 0.10	24/09/2024
30414860	LP21-SP02	ES	0.10 - 0.20	24/09/2024
30414862	LP21-SP02	ES	0.40 - 0.50	24/09/2024
30414865	LP21-SP03	ES	0.00 - 0.10	24/09/2024
30414871	LP21-SP03	ES	0.20 - 0.30	24/09/2024
30414874	LP21-SP03	ES	0.40 - 0.50	24/09/2024
30414913	LP22-SP01	ES	0.00 - 0.10	24/09/2024
30414916	LP22-SP01	ES	0.30 - 0.40	24/09/2024
30414920	LP22-SP01	ES	0.50 - 0.60	24/09/2024
30414902	LP22-SP01	EW	0.50 - 0.60	24/09/2024
30414836	LP22-SP02	ES	0.00 - 0.10	24/09/2024
30414868	LP22-SP02	ES	0.10 - 0.20	24/09/2024
30414898	LP22-SP02	ES	0.40 - 0.50	24/09/2024
30414922	LP22-SP03	ES	0.00 - 0.10	24/09/2024
30414924	LP22-SP03	ES	0.20 - 0.30	24/09/2024
30414926	LP22-SP03	ES	0.40 - 0.50	24/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516
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)	30414840	30414843	30414908	30414845	30414883	30414887	30414893	30414896	30414900	30414876	30414880	30414848	30414852	30414855	30414857	30414860	30414865	30414871
			Customer Sample Reference	LP14-SP02	LP14-SP02	LP14-SP02	LP14-SP02	LP17-SP01	LP17-SP01	LP17-SP02	LP17-SP02	LP17-SP02	LP17-SP03	LP17-SP03	LP21-SP01	LP21-SP01	LP21-SP01	LP21-SP02	LP21-SP02	LP21-SP03	LP21-SP03
			AGS Reference	ES	ES	EW	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208) Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	PW	PW	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2					X															
pH	All	NDPs: 0 Tests: 24		X	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 2				X																
Sample description	All	NDPs: 0 Tests: 26		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 24		X	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X

30414924	LP22-SP03	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S			X																
30414922	LP22-SP03	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S			X																
30414898	LP22-SP02	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S			X																
30414868	LP22-SP02	ES	0.10 - 0.20	1kg TUB with Handle (ALE260)	S			X																
30414836	LP22-SP02	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S																			
30414902	LP22-SP01	EW	0.50 - 0.60	Digitube fo PFAS analysis.	PW			X																
				500ml Plastic (ALE208)	PW					X														
30414920	LP22-SP01	ES	0.50 - 0.60	1kg TUB with Handle (ALE260)	S																			
30414916	LP22-SP01	ES	0.30 - 0.40	1kg TUB with Handle (ALE260)	S																			
30414913	LP22-SP01	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S																			
30414874	LP21-SP03	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S																			

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30414840	LP14-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30414843	LP14-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	None
30414845	LP14-SP02	0.40 - 0.50	Dark Brown	Clay Loam	Vegetation	None
30414883	LP17-SP01	0.00 - 0.10	Dark Brown	Silty Clay Loam	Vegetation	None
30414887	LP17-SP01	0.30 - 0.40	Light Brown	Sandy Clay Loam	Vegetation	Stones
30414893	LP17-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30414896	LP17-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	None
30414900	LP17-SP02	0.40 - 0.50	Light Brown	Silty Clay Loam	Stones	Vegetation
30414876	LP17-SP03	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	Vegetation
30414880	LP17-SP03	0.40 - 0.50	Dark Brown	Clay Loam	Vegetation	None
30414848	LP21-SP01	0.00 - 0.10	Light Brown	Silty Clay Loam	Vegetation	None
30414852	LP21-SP01	0.30 - 0.40	Dark Brown	Loamy Sand	Vegetation	None
30414855	LP21-SP01	0.50 - 0.60	Dark Brown	Silty Clay Loam	Vegetation	Stones
30414857	LP21-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30414860	LP21-SP02	0.10 - 0.20	Dark Brown	Silty Clay Loam	Vegetation	None
30414865	LP21-SP03	0.00 - 0.10	Dark Brown	Silty Clay Loam	Vegetation	None
30414871	LP21-SP03	0.20 - 0.30	Dark Brown	Clay Loam	Vegetation	None
30414874	LP21-SP03	0.40 - 0.50	Light Brown	Silty Clay	Vegetation	None
30414913	LP22-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30414916	LP22-SP01	0.30 - 0.40	Dark Brown	Clay Loam	Vegetation	None
30414920	LP22-SP01	0.50 - 0.60	Dark Brown	Clay Loam	Vegetation	None
30414836	LP22-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30414868	LP22-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	None
30414898	LP22-SP02	0.40 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
30414922	LP22-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30414924	LP22-SP03	0.20 - 0.30	Dark Brown	Clay Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP14-SP02	LP14-SP02	LP14-SP02	LP14-SP02	LP17-SP01	LP17-SP01
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024
			SDG Ref	240925-25	240925-25	240925-25	240925-25	240925-25	240925-25
			Lab Sample No.(s)	30414840	30414843	30414908	30414845	30414883	30414887
			AGS Reference	ES	ES	EW	ES	ES	ES
pH	<1 pH Units	TM256				8.05			
PFBA (375-22-4)	<0.002 µg/l	TM434				<0.002			
PFMOPrA (377-73-1)	<0.001 µg/l	TM434				<0.001			
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434				<0.002			
PFPA (2706-90-3)	<0.001 µg/l	TM434				<0.001			
PFMOBA (863090-89-5)	<0.001 µg/l	TM434				<0.001			
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434				<0.001			
NFDHA (151772-58-6)	<0.003 µg/l	TM434				<0.003			
PFBS (375-73-5)	<0.001 µg/l	TM434				<0.001			
PFHxA (307-24-4)	<0.001 µg/l	TM434				<0.001			
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434				<0.002			
PFEESA (113507-82-7)	<0.001 µg/l	TM434				<0.001			
PFHpA (375-85-9)	<0.001 µg/l	TM434				<0.001			
PFPeS (2706-91-4)	<0.001 µg/l	TM434				<0.001			
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434				<0.005			
ADONA (919005-14-4)	<0.001 µg/l	TM434				<0.001			
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434				<0.001			
FBSA (30334-69-1)	<0.001 µg/l	TM434				<0.001			
PFOA (335-67-1)	<0.00065 µg/l	TM434				<0.00065			
PFHxS (355-46-4)	<0.001 µg/l	TM434				<0.001			
PFNA (375-95-1)	<0.001 µg/l	TM434				<0.001			
PFecHS (133201-07-7)	<0.001 µg/l	TM434				<0.001			
PFHpS (375-92-8)	<0.001 µg/l	TM434				<0.001			
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434				<0.002			
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434				<0.005			
PFDA (335-76-2)	<0.002 µg/l	TM434				<0.002			
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434				<0.002			
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434				<0.005			
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434				<0.00065			
Branched PFOS	<0.00065 µg/l	TM434				<0.00065			
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434				<0.002			
PFUnA (2058-94-8)	<0.002 µg/l	TM434				<0.002			
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434				<0.001			

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP14-SP02	LP14-SP02	LP14-SP02	LP14-SP02	LP17-SP01	LP17-SP01
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024
			SDG Ref	240925-25	240925-25	240925-25	240925-25	240925-25	240925-25
			Lab Sample No.(s)	30414840	30414843	30414908	30414845	30414883	30414887
			AGS Reference	ES	ES	EW	ES	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434				<0.001			
FHxSA (41997-13-1)	<0.001 µg/l	TM434				<0.001			
PFDoA (307-55-1)	<0.002 µg/l	TM434				<0.002			
PFDS (335-77-3)	<0.002 µg/l	TM434				<0.002			
PFTrDA (72629-94-8)	<0.003 µg/l	TM434				<0.003			
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434				<0.002			
PFUnDS (749786-16-1)	<0.002 µg/l	TM434				<0.002			
PFTeA (376-06-7)	<0.001 µg/l	TM434				<0.001			
PFOSA (754-91-6)	<0.002 µg/l	TM434				<0.002			
PFDoS (79780-39-5)	<0.002 µg/l	TM434				<0.002			
PFTrDS (174675-49-1)	<0.001 µg/l	TM434				<0.001			
PFHxDA (67905-19-5)	<0.001 µg/l	TM434				<0.001			
MeFOSE (24448-09-7)	<0.01 µg/l	TM434				<0.01			
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434				<0.001			
EtFOSE (1691-99-2)	<0.01 µg/l	TM434				<0.01			
PFODA (16517-11-6)	<0.001 µg/l	TM434				<0.001			
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434				<0.001			
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434				<0.01			
Total PFOS	<0.00065 µg/l	TM434				<0.00065			
Moisture Content Ratio (% of as received sample)	%	PM024		30	24		21	30	20
Soil Organic Matter (SOM)	<0.35 %	TM132		8.84 #	4.69 #		3.57 #	4.76 #	2.71 #
pH	1 pH Units	TM133		5.5 M	6.44 M		8.01 M	5.45 M	6.37 M

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP17-SP02	LP17-SP02	LP17-SP02	LP17-SP03	LP17-SP03	LP21-SP01
			Depth (m)	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024
			SDG Ref	240925-25	240925-25	240925-25	240925-25	240925-25	240925-25
			Lab Sample No.(s)	30414893	30414896	30414900	30414876	30414880	30414848
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		27	19	19	30	24	16
Soil Organic Matter (SOM)	<0.35 %	TM132		4.72 #	3.07 #	1.68 #	6.34 #	5.05 #	
pH	1 pH Units	TM133		5.56 M	5.9 M	6.01 M	5.5 M	7.28 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP21-SP01	LP21-SP01	LP21-SP02	LP21-SP02	LP21-SP03	LP21-SP03
			Depth (m)	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024
			SDG Ref	240925-25	240925-25	240925-25	240925-25	240925-25	240925-25
			Lab Sample No.(s)	30414852	30414855	30414857	30414860	30414865	30414871
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		15	49	28	21	31	22
Soil Organic Matter (SOM)	<0.35 %	TM132		3.36 #	17.4 #	7.62 #	3.33 #	6.38 #	2.76 #
pH	1 pH Units	TM133		4.88 M	4.88 M	5.43 M	5.71 M	5.77 M	6.04 M

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP21-SP03	LP22-SP01	LP22-SP01	LP22-SP01	LP22-SP01	LP22-SP02
			Depth (m)	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.50 - 0.60	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024
			SDG Ref	240925-25	240925-25	240925-25	240925-25	240925-25	240925-25
			Lab Sample No.(s)	30414874	30414913	30414916	30414920	30414902	30414836
			AGS Reference	ES	ES	ES	ES	EW	ES
pH	<1 pH Units	TM256						8.11	
PFBA (375-22-4)	<0.002 µg/l	TM434						<0.002	
PFMOPrA (377-73-1)	<0.001 µg/l	TM434						<0.001	
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434						<0.002	
PFPA (2706-90-3)	<0.001 µg/l	TM434						<0.001	
PFMOBA (863090-89-5)	<0.001 µg/l	TM434						<0.001	
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434						<0.001	
NFDHA (151772-58-6)	<0.003 µg/l	TM434						<0.003	
PFBS (375-73-5)	<0.001 µg/l	TM434						<0.001	
PFHxA (307-24-4)	<0.001 µg/l	TM434						<0.001	
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434						<0.002	
PFEESA (113507-82-7)	<0.001 µg/l	TM434						<0.001	
PFHpA (375-85-9)	<0.001 µg/l	TM434						<0.001	
PFPeS (2706-91-4)	<0.001 µg/l	TM434						<0.001	
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434						<0.005	
ADONA (919005-14-4)	<0.001 µg/l	TM434						<0.001	
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434						<0.001	
FBSA (30334-69-1)	<0.001 µg/l	TM434						<0.001	
PFOA (335-67-1)	<0.00065 µg/l	TM434						<0.00065	
PFHxS (355-46-4)	<0.001 µg/l	TM434						<0.001	
PFNA (375-95-1)	<0.001 µg/l	TM434						<0.001	
PFecHS (133201-07-7)	<0.001 µg/l	TM434						<0.001	
PFHpS (375-92-8)	<0.001 µg/l	TM434						<0.001	
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434						<0.002	
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434						<0.005	
PFDA (335-76-2)	<0.002 µg/l	TM434						<0.002	
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434						<0.002	
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434						<0.005	
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434						<0.00065	
Branched PFOS	<0.00065 µg/l	TM434						<0.00065	
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434						<0.002	
PFUnA (2058-94-8)	<0.002 µg/l	TM434						<0.002	
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434						<0.001	

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP21-SP03	LP22-SP01	LP22-SP01	LP22-SP01	LP22-SP01	LP22-SP02
			Depth (m)	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.50 - 0.60	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024	24/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024	25/09/2024
			SDG Ref	240925-25	240925-25	240925-25	240925-25	240925-25	240925-25
			Lab Sample No.(s)	30414874	30414913	30414916	30414920	30414902	30414836
			AGS Reference	ES	ES	ES	ES	EW	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434						<0.001	
FHxSA (41997-13-1)	<0.001 µg/l	TM434						<0.001	
PFDoA (307-55-1)	<0.002 µg/l	TM434						<0.002	
PFDS (335-77-3)	<0.002 µg/l	TM434						<0.002	
PFTrDA (72629-94-8)	<0.003 µg/l	TM434						<0.003	
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434						<0.002	
PFUnDS (749786-16-1)	<0.002 µg/l	TM434						<0.002	
PFTeA (376-06-7)	<0.001 µg/l	TM434						<0.001	
PFOSA (754-91-6)	<0.002 µg/l	TM434						<0.002	
PFDoS (79780-39-5)	<0.002 µg/l	TM434						<0.002	
PFTrDS (174675-49-1)	<0.001 µg/l	TM434						<0.001	
PFHxDA (67905-19-5)	<0.001 µg/l	TM434						<0.001	
MeFOSE (24448-09-7)	<0.01 µg/l	TM434						<0.01	
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434						<0.001	
EtFOSE (1691-99-2)	<0.01 µg/l	TM434						<0.01	
PFODA (16517-11-6)	<0.001 µg/l	TM434						<0.001	
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434						<0.001	
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434						<0.01	
Total PFOS	<0.00065 µg/l	TM434						<0.00065	
Moisture Content Ratio (% of as received sample)	%	PM024		16	26	20	19		24
Soil Organic Matter (SOM)	<0.35 %	TM132		0.962 #	4.69 #	1.63 #	0.688 #		
pH	1 pH Units	TM133		6.7 M	6.12 M	7.56 M	7.74 M		

Validated

CERTIFICATE OF ANALYSIS

SDG: 240925-25 **Report Number:** 743309 **Superseded Report:** 742516

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP22-SP02	LP22-SP02	LP22-SP03	LP22-SP03		
			Depth (m)	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/09/2024	24/09/2024	24/09/2024	24/09/2024		
			Sample Time	-	-	-	-		
			Date Received	25/09/2024	25/09/2024	25/09/2024	25/09/2024		
			SDG Ref	240925-25	240925-25	240925-25	240925-25		
			Lab Sample No.(s)	30414868	30414898	30414922	30414924		
			AGS Reference	ES	ES	ES	ES		
Moisture Content Ratio (% of as received sample)	%	PM024		18	14	26	20		
Soil Organic Matter (SOM)	<0.35 %	TM132		2.07 #	1.68 #	5.88 #	3 #		
pH	1 pH Units	TM133		7.06 M	8.31 M	6.59 M	7.75 M		

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM434	Analysis of PFAS

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

Test Completion Dates

Lab Sample No(s)	30414840	30414843	30414845	30414908	30414883	30414887	30414893	30414896	30414900	30414876
Customer Sample Ref.	LP14-SP02	LP14-SP02	LP14-SP02	LP14-SP02	LP17-SP01	LP17-SP01	LP17-SP02	LP17-SP02	LP17-SP02	LP17-SP03
AGS Ref.	ES	ES	ES	EW	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.10 - 0.20	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)				09-Oct-2024						
pH	04-Oct-2024	04-Oct-2024	04-Oct-2024		04-Oct-2024	04-Oct-2024	04-Oct-2024	04-Oct-2024	04-Oct-2024	02-Oct-2024
pH Value				03-Oct-2024						
Sample description	25-Sep-2024	25-Sep-2024	25-Sep-2024		25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	26-Sep-2024
Total Organic Carbon	04-Oct-2024	04-Oct-2024	04-Oct-2024		04-Oct-2024	03-Oct-2024	04-Oct-2024	04-Oct-2024	03-Oct-2024	02-Oct-2024

Lab Sample No(s)	30414880	30414848	30414852	30414855	30414857	30414860	30414865	30414871	30414874	30414902
Customer Sample Ref.	LP17-SP03	LP21-SP01	LP21-SP01	LP21-SP01	LP21-SP02	LP21-SP02	LP21-SP03	LP21-SP03	LP21-SP03	LP22-SP01
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	EW
Depth	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.50 - 0.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process
PFAS Liquids (Full Suite)										09-Oct-2024
pH	02-Oct-2024		04-Oct-2024	02-Oct-2024	04-Oct-2024	04-Oct-2024	04-Oct-2024	04-Oct-2024	04-Oct-2024	
pH Value										03-Oct-2024
Sample description	26-Sep-2024	25-Sep-2024	25-Sep-2024	26-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	
Total Organic Carbon	02-Oct-2024		04-Oct-2024	02-Oct-2024	04-Oct-2024	03-Oct-2024	03-Oct-2024	04-Oct-2024	03-Oct-2024	

Lab Sample No(s)	30414913	30414916	30414920	30414836	30414868	30414898	30414922	30414924
Customer Sample Ref.	LP22-SP01	LP22-SP01	LP22-SP01	LP22-SP02	LP22-SP02	LP22-SP02	LP22-SP03	LP22-SP03
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	04-Oct-2024	04-Oct-2024	04-Oct-2024		04-Oct-2024	02-Oct-2024	04-Oct-2024	04-Oct-2024
Sample description	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	25-Sep-2024	26-Sep-2024	25-Sep-2024	25-Sep-2024
Total Organic Carbon	04-Oct-2024	04-Oct-2024	04-Oct-2024		04-Oct-2024	02-Oct-2024	04-Oct-2024	04-Oct-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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240926-86
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	743509
Order Number:	70100310-313

We received 18 samples on Thursday September 26, 2024 and 15 of these samples were scheduled for analysis which was completed on Monday October 14, 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

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
Client Ref.: 70100310 Thornton **Location:** Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30427521	LP14-SP01	ES	0.00 - 0.10	26/09/2024
30427523	LP14-SP01	ES	0.30 - 0.40	26/09/2024
30427525	LP14-SP01	ES	0.50 - 0.60	26/09/2024
30427528	LP14-SP03	ES	0.00 - 0.10	26/09/2024
30427530	LP14-SP03	ES	0.20 - 0.30	26/09/2024
30427532	LP14-SP03	ES	0.40 - 0.50	26/09/2024
30427543	LP14-SP03	EW	0.40 - 0.50	26/09/2024
30427534	LP18-SP01	EW	0.00 - 0.10	26/09/2024
30427519	LP18-SP01	ES	0.00 - 0.10	26/09/2024
30427547	LP18-SP01	ES	0.30 - 0.40	26/09/2024
30427549	LP18-SP01	ES	0.50 - 0.60	26/09/2024
30427551	LP18-SP02	ES	0.00 - 0.10	26/09/2024
30427553	LP18-SP02	ES	0.10 - 0.20	26/09/2024
30427555	LP18-SP02	ES	0.40 - 0.50	26/09/2024
30427557	LP18-SP03	ES	0.00 - 0.10	26/09/2024
30427560	LP18-SP03	ES	0.20 - 0.30	26/09/2024
30427539	LP18-SP03	EW	0.20 - 0.30	26/09/2024
30427562	LP18-SP03	ES	0.40 - 0.50	26/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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)	30427521	30427523	30427525	30427528	30427530	30427543	30427534	30427519	30427549	30427551	30427553	30427557	30427560	30427539	30427562
			Customer Sample Reference	LP14-SP01	LP14-SP01	LP14-SP01	LP14-SP03	LP14-SP03	LP14-SP03	LP18-SP01	LP18-SP01	LP18-SP01	LP18-SP02	LP18-SP02	LP18-SP03	LP18-SP03	LP18-SP03	LP18-SP03
			AGS Reference	ES	ES	ES	ES	ES	EW	EW	ES	ES	ES	ES	ES	ES	EW	ES
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	500ml Plastic (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	PW	PW	S	S	S	S	S	S	PW	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 3							X	X							X	
pH	All	NDPs: 0 Tests: 12		X	X	X	X	X			X	X	X	X	X	X		X
pH Value	All	NDPs: 0 Tests: 3							X	X							X	
Sample description	All	NDPs: 0 Tests: 12		X	X	X	X	X			X	X	X	X	X	X		X
Total Organic Carbon	All	NDPs: 0 Tests: 12		X	X	X	X	X			X	X	X	X	X	X		X

CERTIFICATE OF ANALYSIS

SDG: 240926-86 Report Number: 743509 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30427521	LP14-SP01	0.00 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
30427523	LP14-SP01	0.30 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
30427525	LP14-SP01	0.50 - 0.60	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30427528	LP14-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30427530	LP14-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30427519	LP18-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30427549	LP18-SP01	0.50 - 0.60	Dark Brown	Sandy Loam	Stones	Vegetation
30427551	LP18-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30427553	LP18-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
30427557	LP18-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30427560	LP18-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30427562	LP18-SP03	0.40 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP14-SP01	LP14-SP01	LP14-SP01	LP14-SP03	LP14-SP03	LP14-SP03
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			SDG Ref	240926-86	240926-86	240926-86	240926-86	240926-86	240926-86
			Lab Sample No.(s)	30427521	30427523	30427525	30427528	30427530	30427543
			AGS Reference	ES	ES	ES	ES	ES	EW
pH	<1 pH Units	TM256							8.23
PFBA (375-22-4)	<0.002 µg/l	TM434							<0.02 ♦
PFMOPrA (377-73-1)	<0.001 µg/l	TM434							<0.01 ♦
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434							<0.02 ♦
PFPA (2706-90-3)	<0.001 µg/l	TM434							<0.01 ♦
PFMOBA (863090-89-5)	<0.001 µg/l	TM434							<0.01 ♦
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434							<0.01 ♦
NFDHA (151772-58-6)	<0.003 µg/l	TM434							<0.03 ♦
PFBS (375-73-5)	<0.001 µg/l	TM434							<0.01 ♦
PFHxA (307-24-4)	<0.001 µg/l	TM434							<0.01 ♦
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434							<0.02 ♦
PFEESA (113507-82-7)	<0.001 µg/l	TM434							<0.01 ♦
PFHpA (375-85-9)	<0.001 µg/l	TM434							<0.01 ♦
PFPeS (2706-91-4)	<0.001 µg/l	TM434							<0.01 ♦
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434							<0.05 ♦
ADONA (919005-14-4)	<0.001 µg/l	TM434							<0.01 ♦
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434							<0.01 ♦
FBSA (30334-69-1)	<0.001 µg/l	TM434							<0.01 ♦
PFOA (335-67-1)	<0.00065 µg/l	TM434							<0.0065 ♦
PFHxS (355-46-4)	<0.001 µg/l	TM434							<0.01 ♦
PFNA (375-95-1)	<0.001 µg/l	TM434							<0.01 ♦
PFecHS (133201-07-7)	<0.001 µg/l	TM434							<0.01 ♦
PFHpS (375-92-8)	<0.001 µg/l	TM434							<0.01 ♦
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434							<0.02 ♦
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434							<0.05 ♦
PFDA (335-76-2)	<0.002 µg/l	TM434							<0.02 ♦
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434							<0.02 ♦
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434							<0.05 ♦
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434							<0.0065 ♦
Branched PFOS	<0.00065 µg/l	TM434							<0.0065 ♦
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434							<0.02 ♦
PFUnA (2058-94-8)	<0.002 µg/l	TM434							<0.02 ♦
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434							<0.01 ♦

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP14-SP01	LP14-SP01	LP14-SP01	LP14-SP03	LP14-SP03	LP14-SP03
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process Water (PR)
			Date Sampled	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			SDG Ref	240926-86	240926-86	240926-86	240926-86	240926-86	240926-86
			Lab Sample No.(s)	30427521	30427523	30427525	30427528	30427530	30427543
			AGS Reference	ES	ES	ES	ES	ES	EW
PFNS (68259-12-1)	<0.001 µg/l	TM434							<0.01 ♦
FHxSA (41997-13-1)	<0.001 µg/l	TM434							<0.01 ♦
PFDoA (307-55-1)	<0.002 µg/l	TM434							<0.02 ♦
PFDS (335-77-3)	<0.002 µg/l	TM434							<0.02 ♦
PFTrDA (72629-94-8)	<0.003 µg/l	TM434							<0.03 ♦
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434							<0.02 ♦
PFUnDS (749786-16-1)	<0.002 µg/l	TM434							<0.02 ♦
PFTeA (376-06-7)	<0.001 µg/l	TM434							<0.01 ♦
PFOSA (754-91-6)	<0.002 µg/l	TM434							<0.02 ♦
PFDoS (79780-39-5)	<0.002 µg/l	TM434							<0.02 ♦
PFTrDS (174675-49-1)	<0.001 µg/l	TM434							<0.01 ♦
PFHxDA (67905-19-5)	<0.001 µg/l	TM434							<0.01 ♦
MeFOSE (24448-09-7)	<0.01 µg/l	TM434							<0.1 ♦
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434							<0.01 ♦
EtFOSE (1691-99-2)	<0.01 µg/l	TM434							<0.1 ♦
PFODA (16517-11-6)	<0.001 µg/l	TM434							<0.01 ♦
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434							<0.01 ♦
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434							<0.1 ♦
Total PFOS	<0.00065 µg/l	TM434							<0.0065 ♦
Moisture Content Ratio (% of as received sample)	%	PM024		37	16	13	22	11	
Soil Organic Matter (SOM)	<0.35 %	TM132		8.69 #	1.83 #	0.833 #	6.88 #	1.19 #	
pH	1 pH Units	TM133		5.98 M	8.03 M	7.83 M	6.54 M	6.14 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP18-SP01	LP18-SP01	LP18-SP01	LP18-SP02	LP18-SP02	LP18-SP03
			Depth (m)	0.00 - 0.10	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10
			Sample Type	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			SDG Ref	240926-86	240926-86	240926-86	240926-86	240926-86	240926-86
			Lab Sample No.(s)	30427534	30427519	30427549	30427551	30427553	30427557
			AGS Reference	EW	ES	ES	ES	ES	ES
pH	<1 pH Units	TM256		8.2					
PFBA (375-22-4)	<0.002 µg/l	TM434		<0.02 ♦					
PFMOPrA (377-73-1)	<0.001 µg/l	TM434		<0.01 ♦					
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434		<0.02 ♦					
PFPA (2706-90-3)	<0.001 µg/l	TM434		<0.01 ♦					
PFMOBA (863090-89-5)	<0.001 µg/l	TM434		<0.01 ♦					
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434		<0.01 ♦					
NFDHA (151772-58-6)	<0.003 µg/l	TM434		<0.03 ♦					
PFBS (375-73-5)	<0.001 µg/l	TM434		<0.01 ♦					
PFHxA (307-24-4)	<0.001 µg/l	TM434		<0.01 ♦					
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434		<0.02 ♦					
PFEESA (113507-82-7)	<0.001 µg/l	TM434		<0.01 ♦					
PFHpA (375-85-9)	<0.001 µg/l	TM434		<0.01 ♦					
PFPeS (2706-91-4)	<0.001 µg/l	TM434		<0.01 ♦					
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434		<0.05 ♦					
ADONA (919005-14-4)	<0.001 µg/l	TM434		<0.01 ♦					
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434		<0.01 ♦					
FBSA (30334-69-1)	<0.001 µg/l	TM434		<0.01 ♦					
PFOA (335-67-1)	<0.00065 µg/l	TM434		<0.0065 ♦					
PFHxS (355-46-4)	<0.001 µg/l	TM434		<0.01 ♦					
PFNA (375-95-1)	<0.001 µg/l	TM434		<0.01 ♦					
PFecHS (133201-07-7)	<0.001 µg/l	TM434		<0.01 ♦					
PFHpS (375-92-8)	<0.001 µg/l	TM434		<0.01 ♦					
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434		<0.02 ♦					
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434		<0.05 ♦					
PFDA (335-76-2)	<0.002 µg/l	TM434		<0.02 ♦					
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434		<0.02 ♦					
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434		<0.05 ♦					
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		<0.0065 ♦					
Branched PFOS	<0.00065 µg/l	TM434		<0.0065 ♦					
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434		<0.02 ♦					
PFUnA (2058-94-8)	<0.002 µg/l	TM434		<0.02 ♦					
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434		<0.01 ♦					

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP18-SP01	LP18-SP01	LP18-SP01	LP18-SP02	LP18-SP02	LP18-SP03
			Depth (m)	0.00 - 0.10	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10
			Sample Type	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			SDG Ref	240926-86	240926-86	240926-86	240926-86	240926-86	240926-86
			Lab Sample No.(s)	30427534	30427519	30427549	30427551	30427553	30427557
			AGS Reference	EW	ES	ES	ES	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434		<0.01 ♦					
FHxSA (41997-13-1)	<0.001 µg/l	TM434		<0.01 ♦					
PFDoA (307-55-1)	<0.002 µg/l	TM434		<0.02 ♦					
PFDS (335-77-3)	<0.002 µg/l	TM434		<0.02 ♦					
PFTrDA (72629-94-8)	<0.003 µg/l	TM434		<0.03 ♦					
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434		<0.02 ♦					
PFUnDS (749786-16-1)	<0.002 µg/l	TM434		<0.02 ♦					
PFTeA (376-06-7)	<0.001 µg/l	TM434		<0.01 ♦					
PFOSA (754-91-6)	<0.002 µg/l	TM434		<0.02 ♦					
PFDoS (79780-39-5)	<0.002 µg/l	TM434		<0.02 ♦					
PFTrDS (174675-49-1)	<0.001 µg/l	TM434		<0.01 ♦					
PFHxDA (67905-19-5)	<0.001 µg/l	TM434		<0.01 ♦					
MeFOSE (24448-09-7)	<0.01 µg/l	TM434		<0.1 ♦					
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434		<0.01 ♦					
EtFOSE (1691-99-2)	<0.01 µg/l	TM434		<0.1 ♦					
PFODA (16517-11-6)	<0.001 µg/l	TM434		<0.01 ♦					
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434		<0.01 ♦					
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434		<0.1 ♦					
Total PFOS	<0.00065 µg/l	TM434		<0.0065 ♦					
Moisture Content Ratio (% of as received sample)	%	PM024			24	13	26	17	32
Soil Organic Matter (SOM)	<0.35 %	TM132			4.02 #	1.04 #	5.26 #	2.64 #	6.17 #
pH	1 pH Units	TM133			5.6 M	6.9 M	6.25 M	6.28 M	6.64 M

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP18-SP03	LP18-SP03	LP18-SP03			
			Depth (m)	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50			
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)			
			Date Sampled	26/09/2024	26/09/2024	26/09/2024			
			Sample Time	-	-	-			
			Date Received	26/09/2024	26/09/2024	26/09/2024			
			SDG Ref	240926-86	240926-86	240926-86			
			Lab Sample No.(s)	30427560	30427539	30427562			
			AGS Reference	ES	EW	ES			
pH	<1 pH Units	TM256			8.18				
PFBA (375-22-4)	<0.002 µg/l	TM434			<0.02 ♦				
PFMOPrA (377-73-1)	<0.001 µg/l	TM434			<0.01 ♦				
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434			<0.02 ♦				
PFPA (2706-90-3)	<0.001 µg/l	TM434			<0.01 ♦				
PFMOBA (863090-89-5)	<0.001 µg/l	TM434			<0.01 ♦				
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434			<0.01 ♦				
NFDHA (151772-58-6)	<0.003 µg/l	TM434			<0.03 ♦				
PFBS (375-73-5)	<0.001 µg/l	TM434			<0.01 ♦				
PFHxA (307-24-4)	<0.001 µg/l	TM434			<0.01 ♦				
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434			<0.02 ♦				
PFEESA (113507-82-7)	<0.001 µg/l	TM434			<0.01 ♦				
PFHpA (375-85-9)	<0.001 µg/l	TM434			<0.01 ♦				
PFPeS (2706-91-4)	<0.001 µg/l	TM434			<0.01 ♦				
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434			<0.05 ♦				
ADONA (919005-14-4)	<0.001 µg/l	TM434			<0.01 ♦				
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434			<0.01 ♦				
FBSA (30334-69-1)	<0.001 µg/l	TM434			<0.01 ♦				
PFOA (335-67-1)	<0.00065 µg/l	TM434			<0.0065 ♦				
PFHxS (355-46-4)	<0.001 µg/l	TM434			<0.01 ♦				
PFNA (375-95-1)	<0.001 µg/l	TM434			<0.01 ♦				
PFecHS (133201-07-7)	<0.001 µg/l	TM434			<0.01 ♦				
PFHpS (375-92-8)	<0.001 µg/l	TM434			<0.01 ♦				
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434			<0.02 ♦				
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434			<0.05 ♦				
PFDA (335-76-2)	<0.002 µg/l	TM434			<0.02 ♦				
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434			<0.02 ♦				
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434			<0.05 ♦				
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434			<0.0065 ♦				
Branched PFOS	<0.00065 µg/l	TM434			<0.0065 ♦				
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434			<0.02 ♦				
PFUnA (2058-94-8)	<0.002 µg/l	TM434			<0.02 ♦				
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434			<0.01 ♦				

CERTIFICATE OF ANALYSIS

SDG: 240926-86 **Report Number:** 743509 **Superseded Report:**
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP18-SP03	LP18-SP03	LP18-SP03			
			Depth (m)	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50			
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)			
			Date Sampled	26/09/2024	26/09/2024	26/09/2024			
			Sample Time	-	-	-			
			Date Received	26/09/2024	26/09/2024	26/09/2024			
			SDG Ref	240926-86	240926-86	240926-86			
			Lab Sample No.(s)	30427560	30427539	30427562			
			AGS Reference	ES	EW	ES			
PFNS (68259-12-1)	<0.001 µg/l	TM434			<0.01 ♦				
FHxSA (41997-13-1)	<0.001 µg/l	TM434			<0.01 ♦				
PFDoA (307-55-1)	<0.002 µg/l	TM434			<0.02 ♦				
PFDS (335-77-3)	<0.002 µg/l	TM434			<0.02 ♦				
PFTrDA (72629-94-8)	<0.003 µg/l	TM434			<0.03 ♦				
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434			<0.02 ♦				
PFUnDS (749786-16-1)	<0.002 µg/l	TM434			<0.02 ♦				
PFTeA (376-06-7)	<0.001 µg/l	TM434			<0.01 ♦				
PFOSA (754-91-6)	<0.002 µg/l	TM434			<0.02 ♦				
PFDoS (79780-39-5)	<0.002 µg/l	TM434			<0.02 ♦				
PFTrDS (174675-49-1)	<0.001 µg/l	TM434			<0.01 ♦				
PFHxDA (67905-19-5)	<0.001 µg/l	TM434			<0.01 ♦				
MeFOSE (24448-09-7)	<0.01 µg/l	TM434			<0.1 ♦				
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434			<0.01 ♦				
EtFOSE (1691-99-2)	<0.01 µg/l	TM434			<0.1 ♦				
PFODA (16517-11-6)	<0.001 µg/l	TM434			<0.01 ♦				
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434			<0.01 ♦				
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434			<0.1 ♦				
Total PFOS	<0.00065 µg/l	TM434			<0.0065 ♦				
Moisture Content Ratio (% of as received sample)	%	PM024		18		19			
Soil Organic Matter (SOM)	<0.35 %	TM132		2.22 #		2.16 #			
pH	1 pH Units	TM133		7.63 M		8.11 M			

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
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: 240926-86 Report Number: 743509 Superseded Report:
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30427521	30427523	30427525	30427528	30427530	30427543	30427519	30427534	30427549	30427551
Customer Sample Ref.	LP14-SP01	LP14-SP01	LP14-SP01	LP14-SP03	LP14-SP03	LP14-SP03	LP18-SP01	LP18-SP01	LP18-SP01	LP18-SP02
AGS Ref.	ES	ES	ES	ES	ES	EW	ES	EW	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)						14-Oct-2024		14-Oct-2024		
pH	07-Oct-2024	07-Oct-2024	07-Oct-2024	07-Oct-2024	07-Oct-2024		07-Oct-2024		07-Oct-2024	07-Oct-2024
pH Value						03-Oct-2024		04-Oct-2024		
Sample description	27-Sep-2024	27-Sep-2024	27-Sep-2024	04-Oct-2024	27-Sep-2024		27-Sep-2024		27-Sep-2024	27-Sep-2024
Total Organic Carbon	07-Oct-2024	07-Oct-2024	07-Oct-2024	07-Oct-2024	07-Oct-2024		07-Oct-2024		07-Oct-2024	07-Oct-2024

Lab Sample No(s)	30427553	30427539	30427557	30427560	30427562
Customer Sample Ref.	LP18-SP02	LP18-SP03	LP18-SP03	LP18-SP03	LP18-SP03
AGS Ref.	ES	EW	ES	ES	ES
Depth	0.10 - 0.20	0.20 - 0.30	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)		14-Oct-2024			
pH	07-Oct-2024		07-Oct-2024	07-Oct-2024	07-Oct-2024
pH Value		03-Oct-2024			
Sample description	27-Sep-2024		27-Sep-2024	27-Sep-2024	27-Sep-2024
Total Organic Carbon	07-Oct-2024		07-Oct-2024	07-Oct-2024	07-Oct-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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	11 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	240927-114
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	743436
Order Number:	70100310-313

This report has been revised and directly supersedes 742964 in its entirety.

We received 19 samples on Friday September 27, 2024 and 14 of these samples were scheduled for analysis which was completed on Wednesday October 09, 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

CERTIFICATE OF ANALYSIS

SDG: 240927-114 Report Number: 743436 Superseded Report: 742964
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30434296	LP29-SP01	ES	0.00 - 0.10	26/09/2024
30434332	LP29-SP01	ES	0.30 - 0.40	26/09/2024
30434334	LP29-SP01	ES	0.50 - 0.60	26/09/2024
30434337	LP29-SP02	ES	0.00 - 0.10	26/09/2024
30434339	LP29-SP02	ES	0.10 - 0.20	26/09/2024
30434341	LP29-SP02	ES	0.40 - 0.50	26/09/2024
30434343	LP29-SP03	ES	0.00 - 0.10	26/09/2024
30434345	LP29-SP03	ES	0.20 - 0.30	26/09/2024
30434347	LP29-SP03	ES	0.40 - 0.50	26/09/2024
30434317	LP30-SP01	ES	0.00 - 0.10	26/09/2024
30434321	LP30-SP01	ES	0.30 - 0.40	26/09/2024
30434324	LP30-SP01	ES	0.50 - 0.60	26/09/2024
30434308	LP30-SP02	ES	0.00 - 0.10	26/09/2024
30434310	LP30-SP02	ES	0.10 - 0.20	26/09/2024
30434312	LP30-SP02	ES	0.40 - 0.50	26/09/2024
30434327	LP30-SP02	EW	0.40 - 0.50	26/09/2024
30434302	LP30-SP03	ES	0.00 - 0.10	26/09/2024
30434304	LP30-SP03	ES	0.20 - 0.30	26/09/2024
30434306	LP30-SP03	ES	0.40 - 0.50	26/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 240927-114 **Report Number:** 743436 **Superseded Report:** 742964
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
			30434296	LP29-SP01	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30434332	LP29-SP01	ES	0.30 - 0.40	1kg TUB with Handle (ALE260)	S
			30434337	LP29-SP02	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30434341	LP29-SP02	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30434343	LP29-SP03	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30434345	LP29-SP03	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S
			30434347	LP29-SP03	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30434317	LP30-SP01	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30434324	LP30-SP01	ES	0.50 - 0.60	1kg TUB with Handle (ALE260)	S
			30434308	LP30-SP02	ES	0.00 - 0.10	1kg TUB with Handle (ALE260)	S
			30434310	LP30-SP02	ES	0.10 - 0.20	1kg TUB with Handle (ALE260)	S
			30434312	LP30-SP02	ES	0.40 - 0.50	1kg TUB with Handle (ALE260)	S
			30434327	LP30-SP02	EW	0.40 - 0.50	Digitube fo PFAS analysis.	PW
			30434304	LP30-SP03	ES	0.20 - 0.30	1kg TUB with Handle (ALE260)	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 1					X	
pH	All	NDPs: 0 Tests: 13	X	X	X	X	X	X	X	X	X	X	X	X		X
pH Value	All	NDPs: 0 Tests: 1					X	
Sample description	All	NDPs: 0 Tests: 11		X	X	X	X		X	X	X	X	X	X		X
Total Organic Carbon	All	NDPs: 0 Tests: 13	X	X	X	X	X	X	X	X	X	X	X	X		X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30434296	LP29-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30434332	LP29-SP01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30434337	LP29-SP02	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30434341	LP29-SP02	0.40 - 0.50	Dark Brown	Loamy Sand	Vegetation	Stones
30434343	LP29-SP03	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30434345	LP29-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Brick	Vegetation
30434347	LP29-SP03	0.40 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
30434317	LP30-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30434324	LP30-SP01	0.50 - 0.60	Dark Brown	Loamy Sand	Stones	Vegetation
30434308	LP30-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30434310	LP30-SP02	0.10 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
30434312	LP30-SP02	0.40 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
30434304	LP30-SP03	0.20 - 0.30	Dark Brown	Silty Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 240927-114 **Report Number:** 743436 **Superseded Report:** 742964

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP29-SP01	LP29-SP01	LP29-SP02	LP29-SP02	LP29-SP03	LP29-SP03
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			SDG Ref	240927-114	240927-114	240927-114	240927-114	240927-114	240927-114
			Lab Sample No.(s)	30434296	30434332	30434337	30434341	30434343	30434345
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		21	17	20	13	22	16
Soil Organic Matter (SOM)	<0.35 %	TM132		5.6 #	3.62 #	5.38 #	3.33 #	6 #	3.5 #
pH	1 pH Units	TM133		7.23 M	7.92 M	6.33 M	7.34 M	7.32 M	7.67 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240927-114 **Report Number:** 743436 **Superseded Report:** 742964

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP29-SP03	LP30-SP01	LP30-SP01	LP30-SP02	LP30-SP02	LP30-SP02
			Depth (m)	0.40 - 0.50	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			SDG Ref	240927-114	240927-114	240927-114	240927-114	240927-114	240927-114
			Lab Sample No.(s)	30434347	30434317	30434324	30434308	30434310	30434312
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		14	23	25	23	19	18
Soil Organic Matter (SOM)	<0.35 %	TM132		3.76 #	7.91 #	38.8 #	5.67 #	6.84 #	4.34 #
pH	1 pH Units	TM133		8.19 M	5.39 M	7.69 M	6.09 M	6.4 M	6.46 M

CERTIFICATE OF ANALYSIS

SDG: 240927-114 **Report Number:** 743436 **Superseded Report:** 742964
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP30-SP02	LP30-SP03				
			Depth (m)	0.40 - 0.50	0.20 - 0.30				
			Sample Type	Process Water (PR)	Soil/Solid (S)				
			Date Sampled	26/09/2024	26/09/2024				
			Sample Time	-	-				
			Date Received	27/09/2024	27/09/2024				
			SDG Ref	240927-114	240927-114				
			Lab Sample No.(s)	30434327	30434304				
			AGS Reference	EW	ES				
pH	<1 pH Units	TM256		7.96					
PFBA (375-22-4)	<0.002 µg/l	TM434		<0.002					
PFMOPrA (377-73-1)	<0.001 µg/l	TM434		<0.001					
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434		<0.002					
PFPA (2706-90-3)	<0.001 µg/l	TM434		<0.001					
PFMOBA (863090-89-5)	<0.001 µg/l	TM434		<0.001					
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434		<0.001					
NFDHA (151772-58-6)	<0.003 µg/l	TM434		<0.003					
PFBS (375-73-5)	<0.001 µg/l	TM434		<0.001					
PFHxA (307-24-4)	<0.001 µg/l	TM434		<0.001					
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434		<0.002					
PFEESA (113507-82-7)	<0.001 µg/l	TM434		<0.001					
PFHpA (375-85-9)	<0.001 µg/l	TM434		<0.001					
PFPeS (2706-91-4)	<0.001 µg/l	TM434		<0.001					
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434		<0.005					
ADONA (919005-14-4)	<0.001 µg/l	TM434		<0.001					
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434		<0.001					
FBSA (30334-69-1)	<0.001 µg/l	TM434		<0.001					
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.00133					
PFHxS (355-46-4)	<0.001 µg/l	TM434		<0.001					
PFNA (375-95-1)	<0.001 µg/l	TM434		<0.001					
PFecHS (133201-07-7)	<0.001 µg/l	TM434		<0.001					
PFHpS (375-92-8)	<0.001 µg/l	TM434		<0.001					
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434		<0.002					
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434		<0.005					
PFDA (335-76-2)	<0.002 µg/l	TM434		<0.002					
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434		<0.002					
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434		<0.005					
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		<0.00065					
Branched PFOS	<0.00065 µg/l	TM434		<0.00065					
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434		<0.002					
PFUnA (2058-94-8)	<0.002 µg/l	TM434		<0.002					
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434		<0.001					

CERTIFICATE OF ANALYSIS

SDG: 240927-114 **Report Number:** 743436 **Superseded Report:** 742964
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP30-SP02	LP30-SP03
			Depth (m)	0.40 - 0.50	0.20 - 0.30
			Sample Type	Process Water (PR)	Soil/Solid (S)
			Date Sampled	26/09/2024	26/09/2024
			Sample Time	-	-
			Date Received	27/09/2024	27/09/2024
			SDG Ref	240927-114	240927-114
			Lab Sample No.(s)	30434327	30434304
			AGS Reference	EW	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434		<0.001	
FHxSA (41997-13-1)	<0.001 µg/l	TM434		<0.001	
PFDoA (307-55-1)	<0.002 µg/l	TM434		<0.002	
PFDS (335-77-3)	<0.002 µg/l	TM434		<0.002	
PFTrDA (72629-94-8)	<0.003 µg/l	TM434		<0.003	
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434		<0.002	
PFUnDS (749786-16-1)	<0.002 µg/l	TM434		<0.002	
PFTeA (376-06-7)	<0.001 µg/l	TM434		<0.001	
PFOSA (754-91-6)	<0.002 µg/l	TM434		<0.002	
PFDoS (79780-39-5)	<0.002 µg/l	TM434		<0.002	
PFTrDS (174675-49-1)	<0.001 µg/l	TM434		<0.001	
PFHxDA (67905-19-5)	<0.001 µg/l	TM434		<0.001	
MeFOSE (24448-09-7)	<0.01 µg/l	TM434		<0.01	
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434		<0.001	
EtFOSE (1691-99-2)	<0.01 µg/l	TM434		<0.01	
PFODA (16517-11-6)	<0.001 µg/l	TM434		<0.001	
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434		<0.001	
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434		<0.01	
Total PFOS	<0.00065 µg/l	TM434		<0.00065	
Moisture Content Ratio (% of as received sample)	%	PM024			18
Soil Organic Matter (SOM)	<0.35 %	TM132			6.14 #
pH	1 pH Units	TM133			6.34 M

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM434	Analysis of PFAS
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).

Test Completion Dates

Lab Sample No(s)	30434296	30434332	30434337	30434341	30434343	30434345	30434347	30434317	30434324	30434308
Customer Sample Ref.	LP29-SP01	LP29-SP01	LP29-SP02	LP29-SP02	LP29-SP03	LP29-SP03	LP29-SP03	LP30-SP01	LP30-SP01	LP30-SP02
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024
Sample description	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024
Total Organic Carbon	07-Oct-2024	07-Oct-2024	08-Oct-2024	08-Oct-2024	07-Oct-2024	07-Oct-2024	08-Oct-2024	07-Oct-2024	07-Oct-2024	07-Oct-2024

Lab Sample No(s)	30434310	30434312	30434327	30434304
Customer Sample Ref.	LP30-SP02	LP30-SP02	LP30-SP02	LP30-SP03
AGS Ref.	ES	ES	EW	ES
Depth	0.10 - 0.20	0.40 - 0.50	0.40 - 0.50	0.20 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)
PFAS Liquids (Full Suite)			09-Oct-2024	
pH	08-Oct-2024	08-Oct-2024		08-Oct-2024
pH Value			08-Oct-2024	
Sample description	01-Oct-2024	01-Oct-2024		01-Oct-2024
Total Organic Carbon	08-Oct-2024	07-Oct-2024		07-Oct-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.

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.

Unit 7-8 Hawarden Business Park
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Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
Main
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 November 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	241001-50
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	746735
Order Number:	70100310-313

This report has been revised and directly supersedes 743100 in its entirety.

We received 9 samples on Tuesday October 01, 2024 and 8 of these samples were scheduled for analysis which was completed on Wednesday October 09, 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

CERTIFICATE OF ANALYSIS

SDG: 241001-50 Report Number: 746735 Superseded Report: 743100
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30448682	LP23-SP01	ES	0.00 - 0.10	30/09/2024
30448684	LP23-SP01	ES	0.30 - 0.40	30/09/2024
30448687	LP23-SP01	ES	0.50 - 0.60	30/09/2024
30448695	LP23-SP02	ES	0.00 - 0.10	30/09/2024
30448697	LP23-SP02	ES	0.10 - 0.20	30/09/2024
30448699	LP23-SP02	ES	0.40 - 0.50	30/09/2024
30448689	LP23-SP03	ES	0.00 - 0.10	30/09/2024
30448691	LP23-SP03	ES	0.20 - 0.30	30/09/2024
30448693	LP23-SP03	ES	0.40 - 0.50	30/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-50 **Report Number:** 746735 **Superseded Report:** 743100
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)			30448682	30448687	30448695	30448697	30448699	30448689	30448691	30448693
Customer Sample Reference			LP23-SP01	LP23-SP01	LP23-SP02	LP23-SP02	LP23-SP02	LP23-SP03	LP23-SP03	LP23-SP03
AGS Reference			ES	ES	ES	ES	ES	ES	ES	ES
Depth (m)			0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Container			1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S
pH	All	NDPs: 0 Tests: 8	X	X	X	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 8	X	X	X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 8	X	X	X	X	X	X	X	X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30448682	LP23-SP01	0.00 - 0.10	Dark Brown	Sandy Silt Loam	Stones	Vegetation
30448687	LP23-SP01	0.50 - 0.60	Light Brown	Silty Clay Loam	Stones	Brick
30448695	LP23-SP02	0.00 - 0.10	Dark Brown	Sandy Silt Loam	Stones	Vegetation
30448697	LP23-SP02	0.10 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Vegetation
30448699	LP23-SP02	0.40 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
30448689	LP23-SP03	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	Stones
30448691	LP23-SP03	0.20 - 0.30	Dark Brown	Sandy Clay Loam	Stones	Vegetation
30448693	LP23-SP03	0.40 - 0.50	Light Brown	Silty Clay Loam	Stones	Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-50 **Report Number:** 746735 **Superseded Report:** 743100

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP23-SP01	LP23-SP01	LP23-SP02	LP23-SP02	LP23-SP02	LP23-SP03
			Depth (m)	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024
			SDG Ref	241001-50	241001-50	241001-50	241001-50	241001-50	241001-50
			Lab Sample No.(s)	30448682	30448687	30448695	30448697	30448699	30448689
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		22	13	35	17	9.3	31
Soil Organic Matter (SOM)	<0.35 %	TM132		4.34 #	1.32 #	12.3 #	2.34 #	1.04 #	7.76 #
pH	1 pH Units	TM133		7.89 M	8.69 M	7.13 M	8.28 M	8.81 M	7.96 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-50 **Report Number:** 746735 **Superseded Report:** 743100

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP23-SP03	LP23-SP03				
			Depth (m)	0.20 - 0.30	0.40 - 0.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	30/09/2024	30/09/2024				
			Sample Time	-	-				
			Date Received	01/10/2024	01/10/2024				
			SDG Ref	241001-50	241001-50				
			Lab Sample No.(s)	30448691	30448693				
			AGS Reference	ES	ES				
Moisture Content Ratio (% of as received sample)	%	PM024		15	12				
Soil Organic Matter (SOM)	<0.35 %	TM132		2.78 #	1.47 #				
pH	1 pH Units	TM133		8.17 M	8.59 M				

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 241001-50 Report Number: 746735 Superseded Report: 743100
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30448682	30448687	30448695	30448697	30448699	30448689	30448691	30448693
Customer Sample Ref.	LP23-SP01	LP23-SP01	LP23-SP02	LP23-SP02	LP23-SP02	LP23-SP03	LP23-SP03	LP23-SP03
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.40 - 0.50	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	09-Oct-2024	08-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	08-Oct-2024
Sample description	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024
Total Organic Carbon	08-Oct-2024	08-Oct-2024	09-Oct-2024	08-Oct-2024	08-Oct-2024	09-Oct-2024	09-Oct-2024	08-Oct-2024

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.

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.

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.

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Website: www.alsenvironmental.co.uk

WSP UK Limited
8 First Street
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Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	11 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	241001-9
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	743437
Order Number:	70100310-313

This report has been revised and directly supersedes 742905 in its entirety.

We received 19 samples on Saturday September 28, 2024 and 15 of these samples were scheduled for analysis which was completed on Wednesday October 09, 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

CERTIFICATE OF ANALYSIS

SDG: 241001-9 Report Number: 743437 Superseded Report: 742905
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30444065	LP31-SP01	ES	0.00 - 0.10	27/09/2024
30444067	LP31-SP01	ES	0.30 - 0.40	27/09/2024
30444069	LP31-SP01	ES	0.50 - 0.60	27/09/2024
30444059	LP31-SP02	ES	0.00 - 0.10	27/09/2024
30444061	LP31-SP02	ES	0.10 - 0.20	27/09/2024
30444063	LP31-SP02	ES	0.40 - 0.50	27/09/2024
30444026	LP31-SP03	ES	0.00 - 0.10	27/09/2024
30444052	LP31-SP03	EW	0.00 - 0.10	27/09/2024
30444055	LP31-SP03	ES	0.20 - 0.30	27/09/2024
30444057	LP31-SP03	ES	0.40 - 0.50	27/09/2024
30444028	LP32-SP01	ES	0.00 - 0.10	27/09/2024
30444030	LP32-SP01	ES	0.30 - 0.40	27/09/2024
30444033	LP32-SP01	ES	0.50 - 0.60	27/09/2024
30444046	LP32-SP02	ES	0.00 - 0.10	27/09/2024
30444048	LP32-SP02	ES	0.10 - 0.20	27/09/2024
30444050	LP32-SP02	ES	0.40 - 0.50	27/09/2024
30444036	LP32-SP03	ES	0.00 - 0.10	27/09/2024
30444038	LP32-SP03	ES	0.20 - 0.30	27/09/2024
30444042	LP32-SP03	ES	0.40 - 0.50	27/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905
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)	30444065	30444067	30444069	30444059	30444063	30444026	30444052	30444055	30444028	30444030	30444033	30444046	30444048	30444036	30444042
			Customer Sample Reference	LP31-SP01	LP31-SP01	LP31-SP01	LP31-SP02	LP31-SP02	LP31-SP03	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01	LP32-SP01	LP32-SP02	LP32-SP02	LP32-SP03	LP32-SP03
			AGS Reference	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES	ES	ES	ES	ES	ES
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.40 - 0.50
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	S	PW	S	S	S	S	S	S	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 1								X								
pH	All	NDPs: 0 Tests: 14		X	X	X	X	X	X		X	X	X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 1								X								
Sample description	All	NDPs: 0 Tests: 13		X	X	X	X	X	X		X	X	X	X		X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 14		X	X	X	X	X	X		X	X	X	X	X	X	X	X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30444065	LP31-SP01	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	None
30444067	LP31-SP01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Vegetation	None
30444069	LP31-SP01	0.50 - 0.60	Dark Brown	Sandy Clay Loam	Vegetation	None
30444059	LP31-SP02	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30444063	LP31-SP02	0.40 - 0.50	Dark Brown	Sandy Loam	Vegetation	None
30444026	LP31-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30444055	LP31-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30444028	LP32-SP01	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30444030	LP32-SP01	0.30 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
30444033	LP32-SP01	0.50 - 0.60	Light Brown	Sand	Vegetation	None
30444046	LP32-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	Stones
30444048	LP32-SP02	0.10 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
30444036	LP32-SP03	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30444042	LP32-SP03	0.40 - 0.50	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP31-SP01	LP31-SP01	LP31-SP01	LP31-SP02	LP31-SP02	LP31-SP03
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024
			SDG Ref	241001-9	241001-9	241001-9	241001-9	241001-9	241001-9
			Lab Sample No.(s)	30444065	30444067	30444069	30444059	30444063	30444026
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		25	18	18	17	18	26
Soil Organic Matter (SOM)	<0.35 %	TM132		6.07 #	4.53 #	1.71 #	6.95 #	1.17 #	13.7 #
pH	1 pH Units	TM133		6.3 M	6.77 M	7.89 M	5.51 M	6.72 M	5.93 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01	LP32-SP01	LP32-SP02
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10
			Sample Type	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024
			SDG Ref	241001-9	241001-9	241001-9	241001-9	241001-9	241001-9
			Lab Sample No.(s)	30444052	30444055	30444028	30444030	30444033	30444046
			AGS Reference	EW	ES	ES	ES	ES	ES
pH	<1 pH Units	TM256		8.11					
PFBA (375-22-4)	<0.002 µg/l	TM434		<0.002					
PFMOPrA (377-73-1)	<0.001 µg/l	TM434		<0.001					
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434		<0.002					
PFPA (2706-90-3)	<0.001 µg/l	TM434		<0.001					
PFMOBA (863090-89-5)	<0.001 µg/l	TM434		<0.001					
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434		<0.001					
NFDHA (151772-58-6)	<0.003 µg/l	TM434		<0.003					
PFBS (375-73-5)	<0.001 µg/l	TM434		<0.001					
PFHxA (307-24-4)	<0.001 µg/l	TM434		<0.001					
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434		<0.002					
PFEESA (113507-82-7)	<0.001 µg/l	TM434		<0.001					
PFHpA (375-85-9)	<0.001 µg/l	TM434		<0.001					
PFPeS (2706-91-4)	<0.001 µg/l	TM434		<0.001					
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434		<0.005					
ADONA (919005-14-4)	<0.001 µg/l	TM434		<0.001					
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434		<0.001					
FBSA (30334-69-1)	<0.001 µg/l	TM434		<0.001					
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.000882					
PFHxS (355-46-4)	<0.001 µg/l	TM434		<0.001					
PFNA (375-95-1)	<0.001 µg/l	TM434		<0.001					
PFecHS (133201-07-7)	<0.001 µg/l	TM434		<0.001					
PFHpS (375-92-8)	<0.001 µg/l	TM434		<0.001					
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434		<0.002					
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434		<0.005					
PFDA (335-76-2)	<0.002 µg/l	TM434		<0.002					
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434		<0.002					
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434		<0.005					
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		<0.00065					
Branched PFOS	<0.00065 µg/l	TM434		<0.00065					
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434		<0.002					
PFUnA (2058-94-8)	<0.002 µg/l	TM434		<0.002					
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434		<0.001					

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01	LP32-SP01	LP32-SP02
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10
			Sample Type	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024
			SDG Ref	241001-9	241001-9	241001-9	241001-9	241001-9	241001-9
			Lab Sample No.(s)	30444052	30444055	30444028	30444030	30444033	30444046
			AGS Reference	EW	ES	ES	ES	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434		<0.001					
FHxSA (41997-13-1)	<0.001 µg/l	TM434		<0.001					
PFDoA (307-55-1)	<0.002 µg/l	TM434		<0.002					
PFDS (335-77-3)	<0.002 µg/l	TM434		<0.002					
PFTrDA (72629-94-8)	<0.003 µg/l	TM434		<0.003					
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434		<0.002					
PFUnDS (749786-16-1)	<0.002 µg/l	TM434		<0.002					
PFTeA (376-06-7)	<0.001 µg/l	TM434		<0.001					
PFOSA (754-91-6)	<0.002 µg/l	TM434		<0.002					
PFDoS (79780-39-5)	<0.002 µg/l	TM434		<0.002					
PFTrDS (174675-49-1)	<0.001 µg/l	TM434		<0.001					
PFHxDA (67905-19-5)	<0.001 µg/l	TM434		<0.001					
MeFOSE (24448-09-7)	<0.01 µg/l	TM434		<0.01					
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434		<0.001					
EtFOSE (1691-99-2)	<0.01 µg/l	TM434		<0.01					
PFODA (16517-11-6)	<0.001 µg/l	TM434		<0.001					
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434		<0.001					
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434		<0.01					
Total PFOS	<0.00065 µg/l	TM434		<0.00065					
Moisture Content Ratio (% of as received sample)	%	PM024			17	17	14	4.4	17
Soil Organic Matter (SOM)	<0.35 %	TM132			4.12 #	6.38 #	4.91 #	0.552 #	7.88 #
pH	1 pH Units	TM133			6.72 M	6.08 M	7.69 M	8.57 M	6.14 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP32-SP02	LP32-SP03	LP32-SP03			
			Depth (m)	0.10 - 0.20	0.00 - 0.10	0.40 - 0.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	27/09/2024	27/09/2024	27/09/2024			
			Sample Time	-	-	-			
			Date Received	28/09/2024	28/09/2024	28/09/2024			
			SDG Ref	241001-9	241001-9	241001-9			
			Lab Sample No.(s)	30444048	30444036	30444042			
			AGS Reference	ES	ES	ES			
Moisture Content Ratio (% of as received sample)	%	PM024		5.9	19	4.7			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.55 #	7.15 #	0.507 #			
pH	1 pH Units	TM133		8.01 M	6.47 M	8.51 M			

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM434	Analysis of PFAS
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 241001-9 Report Number: 743437 Superseded Report: 742905
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30444065	30444067	30444069	30444059	30444063	30444026	30444052	30444055	30444028	30444030
Customer Sample Ref.	LP31-SP01	LP31-SP01	LP31-SP01	LP31-SP02	LP31-SP02	LP31-SP03	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01
AGS Ref.	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)							09-Oct-2024			
pH	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024		08-Oct-2024	08-Oct-2024	08-Oct-2024
pH Value							07-Oct-2024			
Sample description	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024		01-Oct-2024	01-Oct-2024	01-Oct-2024
Total Organic Carbon	07-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024		08-Oct-2024	07-Oct-2024	08-Oct-2024

Lab Sample No(s)	30444033	30444046	30444048	30444036	30444042
Customer Sample Ref.	LP32-SP01	LP32-SP02	LP32-SP02	LP32-SP03	LP32-SP03
AGS Ref.	ES	ES	ES	ES	ES
Depth	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024
Sample description	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024
Total Organic Carbon	07-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	07-Oct-2024

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.

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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	11 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	241001-9
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	743437
Order Number:	70100310-313

This report has been revised and directly supersedes 742905 in its entirety.

We received 19 samples on Saturday September 28, 2024 and 15 of these samples were scheduled for analysis which was completed on Wednesday October 09, 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

CERTIFICATE OF ANALYSIS

SDG: 241001-9 Report Number: 743437 Superseded Report: 742905
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30444065	LP31-SP01	ES	0.00 - 0.10	27/09/2024
30444067	LP31-SP01	ES	0.30 - 0.40	27/09/2024
30444069	LP31-SP01	ES	0.50 - 0.60	27/09/2024
30444059	LP31-SP02	ES	0.00 - 0.10	27/09/2024
30444061	LP31-SP02	ES	0.10 - 0.20	27/09/2024
30444063	LP31-SP02	ES	0.40 - 0.50	27/09/2024
30444026	LP31-SP03	ES	0.00 - 0.10	27/09/2024
30444052	LP31-SP03	EW	0.00 - 0.10	27/09/2024
30444055	LP31-SP03	ES	0.20 - 0.30	27/09/2024
30444057	LP31-SP03	ES	0.40 - 0.50	27/09/2024
30444028	LP32-SP01	ES	0.00 - 0.10	27/09/2024
30444030	LP32-SP01	ES	0.30 - 0.40	27/09/2024
30444033	LP32-SP01	ES	0.50 - 0.60	27/09/2024
30444046	LP32-SP02	ES	0.00 - 0.10	27/09/2024
30444048	LP32-SP02	ES	0.10 - 0.20	27/09/2024
30444050	LP32-SP02	ES	0.40 - 0.50	27/09/2024
30444036	LP32-SP03	ES	0.00 - 0.10	27/09/2024
30444038	LP32-SP03	ES	0.20 - 0.30	27/09/2024
30444042	LP32-SP03	ES	0.40 - 0.50	27/09/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905
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)	30444065	30444067	30444069	30444059	30444063	30444026	30444052	30444055	30444028	30444030	30444033	30444046	30444048	30444036	30444042
			Customer Sample Reference	LP31-SP01	LP31-SP01	LP31-SP01	LP31-SP02	LP31-SP02	LP31-SP03	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01	LP32-SP01	LP32-SP02	LP32-SP02	LP32-SP03	LP32-SP03
			AGS Reference	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES	ES	ES	ES	ES	ES
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.40 - 0.50
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	S	PW	S	S	S	S	S	S	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 1								X								
pH	All	NDPs: 0 Tests: 14		X	X	X	X	X	X		X	X	X	X	X	X	X	X
pH Value	All	NDPs: 0 Tests: 1								X								
Sample description	All	NDPs: 0 Tests: 13		X	X	X	X	X	X		X	X	X	X		X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 14		X	X	X	X	X	X		X	X	X	X	X	X	X	X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30444065	LP31-SP01	0.00 - 0.10	Dark Brown	Sandy Clay Loam	Vegetation	None
30444067	LP31-SP01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	Vegetation	None
30444069	LP31-SP01	0.50 - 0.60	Dark Brown	Sandy Clay Loam	Vegetation	None
30444059	LP31-SP02	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30444063	LP31-SP02	0.40 - 0.50	Dark Brown	Sandy Loam	Vegetation	None
30444026	LP31-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30444055	LP31-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30444028	LP32-SP01	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30444030	LP32-SP01	0.30 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
30444033	LP32-SP01	0.50 - 0.60	Light Brown	Sand	Vegetation	None
30444046	LP32-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	Stones
30444048	LP32-SP02	0.10 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
30444036	LP32-SP03	0.00 - 0.10	Dark Brown	Loamy Sand	Vegetation	None
30444042	LP32-SP03	0.40 - 0.50	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP31-SP01	LP31-SP01	LP31-SP01	LP31-SP02	LP31-SP02	LP31-SP03
			Depth (m)	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024
			SDG Ref	241001-9	241001-9	241001-9	241001-9	241001-9	241001-9
			Lab Sample No.(s)	30444065	30444067	30444069	30444059	30444063	30444026
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		25	18	18	17	18	26
Soil Organic Matter (SOM)	<0.35 %	TM132		6.07 #	4.53 #	1.71 #	6.95 #	1.17 #	13.7 #
pH	1 pH Units	TM133		6.3 M	6.77 M	7.89 M	5.51 M	6.72 M	5.93 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905

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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01	LP32-SP01	LP32-SP02
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10
			Sample Type	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024
			SDG Ref	241001-9	241001-9	241001-9	241001-9	241001-9	241001-9
			Lab Sample No.(s)	30444052	30444055	30444028	30444030	30444033	30444046
			AGS Reference	EW	ES	ES	ES	ES	ES
pH	<1 pH Units	TM256		8.11					
PFBA (375-22-4)	<0.002 µg/l	TM434		<0.002					
PFMOPrA (377-73-1)	<0.001 µg/l	TM434		<0.001					
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434		<0.002					
PFPA (2706-90-3)	<0.001 µg/l	TM434		<0.001					
PFMOBA (863090-89-5)	<0.001 µg/l	TM434		<0.001					
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434		<0.001					
NFDHA (151772-58-6)	<0.003 µg/l	TM434		<0.003					
PFBS (375-73-5)	<0.001 µg/l	TM434		<0.001					
PFHxA (307-24-4)	<0.001 µg/l	TM434		<0.001					
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434		<0.002					
PFEESA (113507-82-7)	<0.001 µg/l	TM434		<0.001					
PFHpA (375-85-9)	<0.001 µg/l	TM434		<0.001					
PFPeS (2706-91-4)	<0.001 µg/l	TM434		<0.001					
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434		<0.005					
ADONA (919005-14-4)	<0.001 µg/l	TM434		<0.001					
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434		<0.001					
FBSA (30334-69-1)	<0.001 µg/l	TM434		<0.001					
PFOA (335-67-1)	<0.00065 µg/l	TM434		0.000882					
PFHxS (355-46-4)	<0.001 µg/l	TM434		<0.001					
PFNA (375-95-1)	<0.001 µg/l	TM434		<0.001					
PFecHS (133201-07-7)	<0.001 µg/l	TM434		<0.001					
PFHpS (375-92-8)	<0.001 µg/l	TM434		<0.001					
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434		<0.002					
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434		<0.005					
PFDA (335-76-2)	<0.002 µg/l	TM434		<0.002					
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434		<0.002					
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434		<0.005					
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		<0.00065					
Branched PFOS	<0.00065 µg/l	TM434		<0.00065					
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434		<0.002					
PFUnA (2058-94-8)	<0.002 µg/l	TM434		<0.002					
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434		<0.001					

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01	LP32-SP01	LP32-SP02
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10
			Sample Type	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024	27/09/2024
			Sample Time	-	-	-	-	-	-
			Date Received	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024	28/09/2024
			SDG Ref	241001-9	241001-9	241001-9	241001-9	241001-9	241001-9
			Lab Sample No.(s)	30444052	30444055	30444028	30444030	30444033	30444046
			AGS Reference	EW	ES	ES	ES	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434		<0.001					
FHxSA (41997-13-1)	<0.001 µg/l	TM434		<0.001					
PFDoA (307-55-1)	<0.002 µg/l	TM434		<0.002					
PFDS (335-77-3)	<0.002 µg/l	TM434		<0.002					
PFTrDA (72629-94-8)	<0.003 µg/l	TM434		<0.003					
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434		<0.002					
PFUnDS (749786-16-1)	<0.002 µg/l	TM434		<0.002					
PFTeA (376-06-7)	<0.001 µg/l	TM434		<0.001					
PFOSA (754-91-6)	<0.002 µg/l	TM434		<0.002					
PFDoS (79780-39-5)	<0.002 µg/l	TM434		<0.002					
PFTrDS (174675-49-1)	<0.001 µg/l	TM434		<0.001					
PFHxDA (67905-19-5)	<0.001 µg/l	TM434		<0.001					
MeFOSE (24448-09-7)	<0.01 µg/l	TM434		<0.01					
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434		<0.001					
EtFOSE (1691-99-2)	<0.01 µg/l	TM434		<0.01					
PFODA (16517-11-6)	<0.001 µg/l	TM434		<0.001					
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434		<0.001					
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434		<0.01					
Total PFOS	<0.00065 µg/l	TM434		<0.00065					
Moisture Content Ratio (% of as received sample)	%	PM024			17	17	14	4.4	17
Soil Organic Matter (SOM)	<0.35 %	TM132			4.12 #	6.38 #	4.91 #	0.552 #	7.88 #
pH	1 pH Units	TM133			6.72 M	6.08 M	7.69 M	8.57 M	6.14 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 241001-9 **Report Number:** 743437 **Superseded Report:** 742905

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP32-SP02	LP32-SP03	LP32-SP03			
			Depth (m)	0.10 - 0.20	0.00 - 0.10	0.40 - 0.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	27/09/2024	27/09/2024	27/09/2024			
			Sample Time	-	-	-			
			Date Received	28/09/2024	28/09/2024	28/09/2024			
			SDG Ref	241001-9	241001-9	241001-9			
			Lab Sample No.(s)	30444048	30444036	30444042			
			AGS Reference	ES	ES	ES			
Moisture Content Ratio (% of as received sample)	%	PM024		5.9	19	4.7			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.55 #	7.15 #	0.507 #			
pH	1 pH Units	TM133		8.01 M	6.47 M	8.51 M			

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM434	Analysis of PFAS
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG: 241001-9 Report Number: 743437 Superseded Report: 742905
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30444065	30444067	30444069	30444059	30444063	30444026	30444052	30444055	30444028	30444030
Customer Sample Ref.	LP31-SP01	LP31-SP01	LP31-SP01	LP31-SP02	LP31-SP02	LP31-SP03	LP31-SP03	LP31-SP03	LP32-SP01	LP32-SP01
AGS Ref.	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES
Depth	0.00 - 0.10	0.30 - 0.40	0.50 - 0.60	0.00 - 0.10	0.40 - 0.50	0.00 - 0.10	0.00 - 0.10	0.20 - 0.30	0.00 - 0.10	0.30 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)							09-Oct-2024			
pH	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024		08-Oct-2024	08-Oct-2024	08-Oct-2024
pH Value							07-Oct-2024			
Sample description	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024		01-Oct-2024	01-Oct-2024	01-Oct-2024
Total Organic Carbon	07-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024		08-Oct-2024	07-Oct-2024	08-Oct-2024

Lab Sample No(s)	30444033	30444046	30444048	30444036	30444042
Customer Sample Ref.	LP32-SP01	LP32-SP02	LP32-SP02	LP32-SP03	LP32-SP03
AGS Ref.	ES	ES	ES	ES	ES
Depth	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
pH	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024
Sample description	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024	01-Oct-2024
Total Organic Carbon	07-Oct-2024	08-Oct-2024	08-Oct-2024	08-Oct-2024	07-Oct-2024

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.

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.

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.

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
Lancashire
M15 4RP

Attention: Jess Kinchington

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 October 2024
Customer:	WSP UK Limited
Sample Delivery Group (SDG):	241002-69
Your Reference:	70100310 Thornton
Location:	Thornton
Report No:	744867
Order Number:	70100310-313

This report has been revised and directly supersedes 743500 in its entirety.

We received 20 samples on Wednesday October 02, 2024 and 16 of these samples were scheduled for analysis which was completed on Monday October 14, 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

CERTIFICATE OF ANALYSIS

SDG: 241002-69 Report Number: 744867 Superseded Report: 743500
Client Ref.: 70100310 Thornton Location: Thornton

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30453417	LP20-SP01	ES	0.00 - 0.10	01/10/2024
30453419	LP20-SP01	ES	0.30 - 0.40	01/10/2024
30453423	LP20-SP01	ES	0.50 - 0.60	01/10/2024
30453411	LP20-SP02	ES	0.00 - 0.10	01/10/2024
30453413	LP20-SP02	ES	0.10 - 0.20	01/10/2024
30453415	LP20-SP02	ES	0.40 - 0.50	01/10/2024
30453403	LP20-SP03	ES	0.00 - 0.10	01/10/2024
30453406	LP20-SP03	ES	0.20 - 0.30	01/10/2024
30453409	LP20-SP03	ES	0.40 - 0.50	01/10/2024
30453431	LP20-SP03	EW	0.40 - 0.50	01/10/2024
30453445	LP26-SP01	ES	0.00 - 0.10	01/10/2024
30453448	LP26-SP01	ES	0.30 - 0.40	01/10/2024
30453452	LP26-SP01	ES	0.50 - 0.60	01/10/2024
30453437	LP26-SP02	ES	0.00 - 0.10	01/10/2024
30453439	LP26-SP02	ES	0.10 - 0.20	01/10/2024
30453441	LP26-SP02	ES	0.40 - 0.50	01/10/2024
30453401	LP26-SP03	ES	0.00 - 0.10	01/10/2024
30453425	LP26-SP03	EW	0.20 - 0.30	01/10/2024
30453429	LP26-SP03	ES	0.20 - 0.30	01/10/2024
30453435	LP26-SP03	ES	0.40 - 0.50	01/10/2024

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 241002-69 **Report Number:** 744867 **Superseded Report:** 743500
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)	30453417	30453423	30453411	30453413	30453403	30453406	30453409	30453431	30453445	30453448	30453437	30453439	30453401	30453425	30453429	30453435
			Customer Sample Reference	LP20-SP01	LP20-SP01	LP20-SP02	LP20-SP02	LP20-SP03	LP20-SP03	LP20-SP03	LP20-SP03	LP26-SP01	LP26-SP01	LP26-SP02	LP26-SP02	LP26-SP03	LP26-SP03	LP26-SP03	LP26-SP03
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	EW	ES	ES	ES	ES	ES	EW	ES	ES
			Depth (m)	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50
			Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	500ml Plastic (ALE208)	Digitube fo PFAS analysis.	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	S	S	PW	PW	S	S	S	S	S	PW	PW	S	S
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 2										X							X		
pH	All	NDPs: 0 Tests: 14		X	X	X	X	X	X	X			X	X	X	X	X			X	X
pH Value	All	NDPs: 0 Tests: 2									X							X			
Sample description	All	NDPs: 0 Tests: 14		X	X	X	X	X	X	X			X	X	X	X	X			X	X
Total Organic Carbon	All	NDPs: 0 Tests: 14		X	X	X	X	X	X	X			X	X	X	X	X			X	X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30453417	LP20-SP01	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30453423	LP20-SP01	0.50 - 0.60	Light Brown	Sandy Loam	Stones	Vegetation
30453411	LP20-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30453413	LP20-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	None
30453403	LP20-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
30453406	LP20-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30453409	LP20-SP03	0.40 - 0.50	Dark Brown	Sandy Loam	Vegetation	None
30453445	LP26-SP01	0.00 - 0.10	Dark Brown	Sandy Silt Loam	Vegetation	None
30453448	LP26-SP01	0.30 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
30453437	LP26-SP02	0.00 - 0.10	Dark Brown	Sandy Loam	Vegetation	Stones
30453439	LP26-SP02	0.10 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
30453401	LP26-SP03	0.00 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
30453429	LP26-SP03	0.20 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
30453435	LP26-SP03	0.40 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241002-69 **Report Number:** 744867 **Superseded Report:** 743500

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
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP20-SP01	LP20-SP01	LP20-SP02	LP20-SP02	LP20-SP03	LP20-SP03
			Depth (m)	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024
			Sample Time	-	-	-	-	-	-
			Date Received	02/10/2024	02/10/2024	02/10/2024	02/10/2024	02/10/2024	02/10/2024
			SDG Ref	241002-69	241002-69	241002-69	241002-69	241002-69	241002-69
			Lab Sample No.(s)	30453417	30453423	30453411	30453413	30453403	30453406
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		33	16	31	22	25	20
Soil Organic Matter (SOM)	<0.35 %	TM132		5.19 #	0.44 #	5.21 #	7.14 #	3.91 #	2.86 #
pH	1 pH Units	TM133		6.27 M	7.23 M	5.96 M	6.27 M	5.89 M	6.43 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 241002-69 **Report Number:** 744867 **Superseded Report:** 743500
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP20-SP03	LP20-SP03	LP26-SP01	LP26-SP01	LP26-SP02	LP26-SP02
			Depth (m)	0.40 - 0.50	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024
			Sample Time	-	-	-	-	-	-
			Date Received	02/10/2024	02/10/2024	02/10/2024	02/10/2024	02/10/2024	02/10/2024
			SDG Ref	241002-69	241002-69	241002-69	241002-69	241002-69	241002-69
			Lab Sample No.(s)	30453409	30453431	30453445	30453448	30453437	30453439
			AGS Reference	ES	EW	ES	ES	ES	ES
pH	<1 pH Units	TM256		8.2					
PFBA (375-22-4)	<0.002 µg/l	TM434		<0.002					
PFMOPrA (377-73-1)	<0.001 µg/l	TM434		<0.001					
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434		<0.002					
PFPA (2706-90-3)	<0.001 µg/l	TM434		<0.001					
PFMOBA (863090-89-5)	<0.001 µg/l	TM434		<0.001					
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434		0.00116					
NFDHA (151772-58-6)	<0.003 µg/l	TM434		<0.003					
PFBS (375-73-5)	<0.001 µg/l	TM434		<0.001					
PFHxA (307-24-4)	<0.001 µg/l	TM434		<0.001					
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434		<0.002					
PFEESA (113507-82-7)	<0.001 µg/l	TM434		<0.001					
PFHpA (375-85-9)	<0.001 µg/l	TM434		<0.001					
PFPeS (2706-91-4)	<0.001 µg/l	TM434		<0.001					
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434		<0.005					
ADONA (919005-14-4)	<0.001 µg/l	TM434		<0.001					
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434		<0.001					
FBSA (30334-69-1)	<0.001 µg/l	TM434		<0.001					
PFOA (335-67-1)	<0.00065 µg/l	TM434		<0.00065					
PFHxS (355-46-4)	<0.001 µg/l	TM434		<0.001					
PFNA (375-95-1)	<0.001 µg/l	TM434		<0.001					
PFecHS (133201-07-7)	<0.001 µg/l	TM434		<0.001					
PFHpS (375-92-8)	<0.001 µg/l	TM434		<0.001					
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434		<0.002					
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434		<0.005					
PFDA (335-76-2)	<0.002 µg/l	TM434		<0.002					
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434		<0.002					
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434		<0.005					
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434		<0.00065					
Branched PFOS	<0.00065 µg/l	TM434		<0.00065					
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434		<0.002					
PFUnA (2058-94-8)	<0.002 µg/l	TM434		<0.002					
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434		<0.001					

CERTIFICATE OF ANALYSIS

SDG: 241002-69 **Report Number:** 744867 **Superseded Report:** 743500
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP20-SP03	LP20-SP03	LP26-SP01	LP26-SP01	LP26-SP02	LP26-SP02
			Depth (m)	0.40 - 0.50	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40	0.00 - 0.10	0.10 - 0.20
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024
			Sample Time	-	-	-	-	-	-
			Date Received	02/10/2024	02/10/2024	02/10/2024	02/10/2024	02/10/2024	02/10/2024
			SDG Ref	241002-69	241002-69	241002-69	241002-69	241002-69	241002-69
			Lab Sample No.(s)	30453409	30453431	30453445	30453448	30453437	30453439
			AGS Reference	ES	EW	ES	ES	ES	ES
PFNS (68259-12-1)	<0.001 µg/l	TM434			<0.001				
FHxSA (41997-13-1)	<0.001 µg/l	TM434			<0.001				
PFDoA (307-55-1)	<0.002 µg/l	TM434			<0.002				
PFDS (335-77-3)	<0.002 µg/l	TM434			<0.002				
PFTrDA (72629-94-8)	<0.003 µg/l	TM434			<0.003				
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434			<0.002				
PFUnDS (749786-16-1)	<0.002 µg/l	TM434			<0.002				
PFTeA (376-06-7)	<0.001 µg/l	TM434			<0.001				
PFOSA (754-91-6)	<0.002 µg/l	TM434			<0.002				
PFDoS (79780-39-5)	<0.002 µg/l	TM434			<0.002				
PFTrDS (174675-49-1)	<0.001 µg/l	TM434			<0.001				
PFHxDA (67905-19-5)	<0.001 µg/l	TM434			<0.001				
MeFOSE (24448-09-7)	<0.01 µg/l	TM434			<0.01				
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434			<0.001				
EtFOSE (1691-99-2)	<0.01 µg/l	TM434			<0.01				
PFODA (16517-11-6)	<0.001 µg/l	TM434			<0.001				
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434			<0.001				
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434			<0.01				
Total PFOS	<0.00065 µg/l	TM434			<0.00065				
Moisture Content Ratio (% of as received sample)	%	PM024		18		33	18	29	23
Soil Organic Matter (SOM)	<0.35 %	TM132		2.05 #		5.24 #	1.45 #	4 #	2.22 #
pH	1 pH Units	TM133		6.79 M		6.51 M	8.18 M	5.53 M	5.67 M

CERTIFICATE OF ANALYSIS

SDG: 241002-69 **Report Number:** 744867 **Superseded Report:** 743500
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
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LP26-SP03	LP26-SP03	LP26-SP03	LP26-SP03		
			Depth (m)	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50		
			Sample Type	Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/10/2024	01/10/2024	01/10/2024	01/10/2024		
			Sample Time	-	-	-	-		
			Date Received	02/10/2024	02/10/2024	02/10/2024	02/10/2024		
			SDG Ref	241002-69	241002-69	241002-69	241002-69		
			Lab Sample No.(s)	30453401	30453425	30453429	30453435		
			AGS Reference	ES	EW	ES	ES		
pH	<1 pH Units	TM256			8.24				
PFBA (375-22-4)	<0.002 µg/l	TM434			<0.002				
PFMOPrA (377-73-1)	<0.001 µg/l	TM434			<0.001				
3:3 FTCA (356-02-5)	<0.002 µg/l	TM434			<0.002				
PFPA (2706-90-3)	<0.001 µg/l	TM434			<0.001				
PFMOBA (863090-89-5)	<0.001 µg/l	TM434			<0.001				
4:2 FTS (757124-72-4)	<0.001 µg/l	TM434			0.00111				
NFDHA (151772-58-6)	<0.003 µg/l	TM434			<0.003				
PFBS (375-73-5)	<0.001 µg/l	TM434			<0.001				
PFHxA (307-24-4)	<0.001 µg/l	TM434			<0.001				
HFPO-DA (13252-13-6)	<0.002 µg/l	TM434			<0.002				
PFEESA (113507-82-7)	<0.001 µg/l	TM434			<0.001				
PFHpA (375-85-9)	<0.001 µg/l	TM434			<0.001				
PFPeS (2706-91-4)	<0.001 µg/l	TM434			<0.001				
5:3 FTCA (914637-49-3)	<0.005 µg/l	TM434			<0.005				
ADONA (919005-14-4)	<0.001 µg/l	TM434			<0.001				
6:2 FTS (27619-97-2)	<0.001 µg/l	TM434			<0.001				
FBSA (30334-69-1)	<0.001 µg/l	TM434			<0.001				
PFOA (335-67-1)	<0.00065 µg/l	TM434			<0.00065				
PFHxS (355-46-4)	<0.001 µg/l	TM434			<0.001				
PFNA (375-95-1)	<0.001 µg/l	TM434			<0.001				
PFecHS (133201-07-7)	<0.001 µg/l	TM434			<0.001				
PFHpS (375-92-8)	<0.001 µg/l	TM434			<0.001				
8:2 FTS (39108-34-4)	<0.002 µg/l	TM434			<0.002				
HFPO-TA (13252-14-7)	<0.005 µg/l	TM434			<0.005				
PFDA (335-76-2)	<0.002 µg/l	TM434			<0.002				
MeFOSAA (2355-31-9)	<0.002 µg/l	TM434			<0.002				
7:3 FTCA (812-70-4)	<0.005 µg/l	TM434			<0.005				
Linear PFOS (1763-23-1)	<0.00065 µg/l	TM434			<0.00065				
Branched PFOS	<0.00065 µg/l	TM434			<0.00065				
EtFOSAA (2991-50-6)	<0.002 µg/l	TM434			<0.002				
PFUnA (2058-94-8)	<0.002 µg/l	TM434			<0.002				
9Cl-PF3ONS (756426-58-1)	<0.001 µg/l	TM434			<0.001				

CERTIFICATE OF ANALYSIS

SDG: 241002-69 **Report Number:** 744867 **Superseded Report:** 743500
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
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.					
			LP26-SP03	LP26-SP03	LP26-SP03	LP26-SP03		
			Depth (m): 0.00 - 0.10	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50		
			Sample Type: Soil/Solid (S)	Process Water (PR)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled: 01/10/2024	01/10/2024	01/10/2024	01/10/2024		
			Sample Time: -	-	-	-		
			Date Received: 02/10/2024	02/10/2024	02/10/2024	02/10/2024		
			SDG Ref: 241002-69	241002-69	241002-69	241002-69		
			Lab Sample No.(s): 30453401	30453425	30453429	30453435		
			AGS Reference: ES	EW	ES	ES		
PFNS (68259-12-1)	<0.001 µg/l	TM434		<0.001				
FHxSA (41997-13-1)	<0.001 µg/l	TM434		<0.001				
PFDoA (307-55-1)	<0.002 µg/l	TM434		<0.002				
PFDS (335-77-3)	<0.002 µg/l	TM434		<0.002				
PFTrDA (72629-94-8)	<0.003 µg/l	TM434		<0.003				
11Cl-PF3OUdS (763051-92-9)	<0.002 µg/l	TM434		<0.002				
PFUnDS (749786-16-1)	<0.002 µg/l	TM434		<0.002				
PFTeA (376-06-7)	<0.001 µg/l	TM434		<0.001				
PFOSA (754-91-6)	<0.002 µg/l	TM434		<0.002				
PFDoS (79780-39-5)	<0.002 µg/l	TM434		<0.002				
PFTrDS (174675-49-1)	<0.001 µg/l	TM434		<0.001				
PFHxDA (67905-19-5)	<0.001 µg/l	TM434		<0.001				
MeFOSE (24448-09-7)	<0.01 µg/l	TM434		<0.01				
N-MeFOSA (31506-32-8)	<0.001 µg/l	TM434		<0.001				
EtFOSE (1691-99-2)	<0.01 µg/l	TM434		<0.01				
PFODA (16517-11-6)	<0.001 µg/l	TM434		<0.001				
N-EtFOSA (4151-50-2)	<0.001 µg/l	TM434		<0.001				
6:2 FTAB (34455-29-3)	<0.01 µg/l	TM434		<0.01				
Total PFOS	<0.00065 µg/l	TM434		<0.00065				
Moisture Content Ratio (% of as received sample)	%	PM024	30		20	19		
Soil Organic Matter (SOM)	<0.35 %	TM132	4.26 #		1.57 #	0.972 #		
pH	1 pH Units	TM133	6.21 M		6.9 M	8.43 M		

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM434	Analysis of PFAS
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 241002-69 Report Number: 744867 Superseded Report: 743500
Client Ref.: 70100310 Thornton Location: Thornton

Test Completion Dates

Lab Sample No(s)	30453417	30453423	30453411	30453413	30453403	30453406	30453409	30453431	30453445	30453448
Customer Sample Ref.	LP20-SP01	LP20-SP01	LP20-SP02	LP20-SP02	LP20-SP03	LP20-SP03	LP20-SP03	LP20-SP03	LP26-SP01	LP26-SP01
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	EW	ES	ES
Depth	0.00 - 0.10	0.50 - 0.60	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.40 - 0.50	0.40 - 0.50	0.00 - 0.10	0.30 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)								11-Oct-2024		
pH	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024		09-Oct-2024	09-Oct-2024
pH Value								11-Oct-2024		
Sample description	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024	02-Oct-2024		02-Oct-2024	02-Oct-2024
Total Organic Carbon	10-Oct-2024	11-Oct-2024	10-Oct-2024	10-Oct-2024	10-Oct-2024	10-Oct-2024	10-Oct-2024		10-Oct-2024	10-Oct-2024

Lab Sample No(s)	30453437	30453439	30453401	30453425	30453429	30453435
Customer Sample Ref.	LP26-SP02	LP26-SP02	LP26-SP03	LP26-SP03	LP26-SP03	LP26-SP03
AGS Ref.	ES	ES	ES	EW	ES	ES
Depth	0.00 - 0.10	0.10 - 0.20	0.00 - 0.10	0.20 - 0.30	0.20 - 0.30	0.40 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Process	Soil/Solid (S)	Soil/Solid (S)
PFAS Liquids (Full Suite)				11-Oct-2024		
pH	09-Oct-2024	09-Oct-2024	09-Oct-2024		11-Oct-2024	09-Oct-2024
pH Value				11-Oct-2024		
Sample description	02-Oct-2024	02-Oct-2024	02-Oct-2024		02-Oct-2024	02-Oct-2024
Total Organic Carbon	10-Oct-2024	10-Oct-2024	10-Oct-2024		14-Oct-2024	10-Oct-2024

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.

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.

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.

ALS Laboratory
Thornton PFAS QA/QC data

	PFAS_FULL_S-55	PFAS_FULL_S-57	PFAS_FULL_S-58	PFAS_FULL_S-59	PFAS_FULL_S-60	PFAS_FULL_S-62	PFAS_FULL_S-63	PFAS_FULL_S-64	PFAS_FULL_S-65	PFAS_FULL_S-67	PFAS_FULL_S-69	PFAS_FULL_S-71	PFAS_FULL_S-72	PFAS_FULL_S-73	PFAS_FULL_S-74	PFAS_FULL_S-75	PFAS_FULL_S-76	PFAS_FULL_S-77
PFBA (Raw)	96.82%	101.26%	105.01%	101.26%	105.47%	119.17%	93.93%	93.67%	93.50%	90.25%	86.16%	91.60%	85.26%	103.35%	106.87%	97.64%	95.74%	108.88%
PFMOBA (Raw)	100.04%	104.86%	98.84%	99.50%	116.56%	121.45%	91.04%	93.01%	95.34%	91.48%	94.35%	94.28%	87.17%	103.39%	108.44%	104.19%	101.93%	108.74%
PFBS (Raw)	99.86%	103.80%	104.81%	105.71%	108.02%	114.11%	91.65%	96.38%	91.80%	92.71%	88.09%	96.17%	88.82%	101.12%	107.86%	102.50%	96.98%	110.65%
PFPeS (Raw)	111.04%	101.76%	117.13%	110.76%	105.37%	122.92%	91.76%	99.52%	96.93%	92.52%	89.01%	83.89%	86.73%	107.93%	109.28%	93.36%	101.89%	104.88%
PFOA (Raw)	105.37%	104.22%	111.60%	106.23%	118.70%	120.04%	87.19%	91.04%	94.38%	95.93%	88.85%	92.37%	84.53%	109.85%	109.82%	104.94%	96.11%	107.64%
PFNA (Raw)	99.08%	109.00%	119.69%	112.23%	108.48%	109.90%	89.32%	93.07%	90.59%	94.10%	84.86%	88.90%	89.49%	98.77%	98.58%	90.91%	91.67%	109.54%
PFPA (Raw)	100.65%	105.52%	105.58%	102.81%	114.32%	118.72%	91.05%	95.18%	95.31%	89.79%	92.45%	93.75%	86.95%	104.02%	107.04%	106.49%	97.30%	111.88%
PFHxA (Raw)	104.00%	103.82%	106.29%	101.98%	111.72%	116.11%	90.93%	96.84%	97.30%	90.98%	90.23%	97.21%	85.94%	97.40%	105.94%	100.34%	97.74%	108.62%
PFHpA (Raw)	96.12%	102.04%	100.15%	95.62%	101.29%	111.79%	91.41%	98.91%	96.11%	89.50%	86.22%	91.07%	83.58%	106.05%	105.96%	103.58%	99.65%	108.56%
9:3 FTCA (Raw)	101.48%	91.15%	89.12%	78.25%	103.80%	114.67%	81.93%	97.71%	86.20%	81.62%	88.34%	77.55%	89.77%	103.40%	110.28%	103.43%	97.42%	109.78%
8:2 FTAB (Raw)	**49.36%**	**34.14%**	**33.80%**	**33.91%**	**36.69%**	**49.60%**	**34.59%**	**36.85%**	**37.78%**	**37.46%**	**29.83%**	**46.50%**	**32.09%**	**38.61%**	**44.43%**	**48.39%**	**36.21%**	**42.84%**
8:2 FTS (Raw)	103.30%	101.21%	106.78%	91.35%	123.17%	**135.75%**	120.57%	99.39%	102.69%	100.36%	89.49%	99.77%	91.71%	96.94%	113.80%	104.56%	104.65%	107.34%
Branched PFOS (Raw)	108.41%	104.28%	102.10%	104.40%	108.10%	122.10%	100.76%	103.36%	93.24%	85.46%	92.69%	96.77%	91.98%	113.03%	106.67%	93.92%	101.78%	116.39%
PFUnA (Raw)	78.01%	106.54%	95.21%	90.37%	119.20%	115.67%	103.97%	107.82%	111.02%	102.69%	96.63%	96.11%	90.36%	117.33%	96.39%	78.76%	98.68%	120.52%
PFNS (Raw)	116.65%	101.02%	107.43%	102.96%	111.41%	130.32%	97.65%	102.60%	98.85%	84.93%	89.96%	87.96%	88.50%	114.41%	105.62%	94.14%	94.51%	107.92%
11Cl-PF3OUdS (Raw)	118.20%	108.59%	124.44%	115.68%	109.65%	123.66%	93.90%	96.58%	93.89%	88.27%	89.25%	91.01%	83.53%	102.64%	107.27%	92.65%	102.07%	113.14%
PFDoS (Raw)	118.30%	108.28%	126.97%	117.57%	119.75%	129.86%	95.66%	91.09%	97.58%	87.86%	87.35%	88.04%	83.67%	103.05%	105.37%	95.10%	104.95%	113.16%
N-MeFOSA (Raw)	103.17%	101.62%	102.97%	106.37%	101.69%	108.70%	90.56%	82.94%	88.05%	88.28%	85.27%	84.85%	87.98%	97.00%	99.42%	98.90%	101.41%	104.24%
PFODA (Raw)	115.73%	110.41%	96.57%	95.61%	136.20%	138.51%	90.64%	76.57%	89.41%	89.75%	71.96%	91.78%	70.87%	104.76%	101.66%	103.98%	109.00%	121.47%
PFHOPrA (Raw)	111.98%	103.57%	86.01%	67.39%	120.08%	122.41%	89.52%	97.63%	97.61%	86.56%	94.28%	95.41%	92.24%	112.45%	111.39%	109.64%	100.69%	112.04%
4:2 FTS (Raw)	105.58%	106.31%	108.96%	109.30%	118.77%	121.74%	96.52%	101.16%	107.24%	97.64%	90.39%	100.68%	91.63%	114.17%	111.70%	105.34%	109.05%	119.69%
HFPO-DA (Raw)	97.81%	115.97%	108.09%	106.31%	104.04%	109.68%	88.06%	88.58%	98.31%	97.22%	92.54%	95.92%	91.37%	92.15%	99.95%	85.81%	93.21%	114.26%
ADONA (Raw)	96.63%	99.45%	93.33%	94.19%	102.93%	113.96%	88.06%	91.94%	96.78%	89.16%	85.33%	92.75%	79.61%	107.38%	107.56%	97.49%	96.27%	101.89%
PFHxS (Raw)	105.16%	100.77%	110.52%	110.24%	103.87%	116.09%	90.42%	93.54%	92.85%	95.46%	91.64%	92.09%	87.95%	107.60%	101.97%	97.91%	100.56%	108.39%
PFecHS (Raw)	95.15%	97.77%	100.29%	100.34%	96.72%	119.58%	82.97%	86.54%	92.05%	90.16%	82.17%	86.36%	82.92%	101.64%	99.37%	94.08%	97.44%	100.28%
PFDA (Raw)	100.83%	94.42%	110.79%	107.13%	95.25%	120.18%	87.42%	77.75%	92.57%	79.28%	83.48%	88.14%	89.20%	93.70%	112.72%	106.74%	108.76%	116.57%
7:3 FTCA (Raw)	107.56%	83.97%	89.23%	72.48%	98.01%	114.66%	84.11%	92.29%	77.95%	84.18%	80.49%	77.74%	77.38%	99.08%	110.72%	106.93%	90.08%	101.77%
10:2 FTS (Raw)	**140.07%**	94.73%	108.59%	91.41%	107.43%	121.38%	83.46%	89.69%	88.78%	88.44%	86.94%	83.39%	74.62%	102.22%	90.64%	104.47%	100.52%	111.74%
PFDS (Raw)	120.94%	101.21%	104.66%	105.27%	105.07%	124.84%	101.14%	101.90%	99.32%	88.90%	95.00%	91.66%	92.34%	107.31%	103.86%	98.69%	100.04%	111.51%
PFTeA (Raw)	93.51%	100.75%	115.01%	117.74%	107.38%	112.79%	89.75%	92.57%	81.54%	89.05%	88.78%	95.49%	101.19%	111.73%	120.28%	94.26%	96.72%	98.36%
MeFOSE (Raw)	95.79%	100.96%	104.37%	98.29%	105.59%	116.41%	90.61%	92.53%	109.60%	89.78%	89.32%	84.98%	87.22%	102.08%	104.67%	106.05%	102.78%	115.18%
EtFOSE (Raw)	103.33%	107.33%	111.75%	108.38%	109.72%	119.12%	95.65%	87.00%	94.34%	84.51%	87.79%	97.58%	82.19%	103.07%	98.98%	101.68%	98.24%	113.32%
HFPO-TA (Raw)	97.05%	108.82%	99.90%	65.00%	99.60%	112.86%	93.31%	103.09%	107.05%	90.12%	83.07%	91.66%	89.56%	102.26%	98.90%	79.13%	92.96%	118.96%
L-PFOS (Raw)	109.12%	104.65%	100.44%	100.21%	107.51%	122.43%	100.76%	105.78%	93.24%	85.46%	96.32%	96.77%	92.89%	113.20%	107.08%	95.12%	101.73%	116.34%
9Cl-PF3ONS (Raw)	113.73%	100.22%	115.41%	110.56%	109.42%	124.57%	96.51%	94.45%	96.83%	84.62%	87.77%	88.55%	87.75%	107.15%	106.04%	95.80%	100.70%	110.28%
PFDoA (Raw)	94.57%	97.94%	100.74%	106.52%	110.79%	121.59%	75.21%	80.23%	108.77%	94.15%	95.24%	89.97%	85.24%	91.02%	107.92%	106.68%	92.69%	112.22%
PFUnDS (Raw)	122.30%	103.75%	112.15%	110.25%	113.33%	126.41%	88.61%	88.05%	93.29%	80.63%	92.76%	85.41%	85.17%	101.85%	107.36%	92.04%	100.75%	112.04%
PFTrDS (Raw)	118.71%	105.82%	123.13%	113.62%	115.65%	131.13%	103.35%	91.05%	106.10%	94.57%	91.93%	98.32%	84.28%	107.38%	105.31%	93.93%	105.14%	116.94%
8:2 diPAP (Raw)	110.71%	115.49%	94.03%	115.43%	135.00%	109.01%	90.43%	108.13%	111.40%	90.84%	84.56%	111.66%	83.41%	141.91%	132.87%	122.81%	100.12%	**151.01%**
3:3 FTCA (Raw)	105.33%	96.37%	91.88%	84.06%	111.76%	112.12%	82.59%	102.55%	78.46%	81.04%	94.78%	80.22%	84.26%	113.28%	106.00%	99.84%	97.50%	103.58%
NFDHA (Raw)	81.83%	103.78%	125.44%	111.33%	109.91%	118.84%	99.73%	103.10%	113.84%	71.12%	95.76%	96.38%	104.20%	110.96%	94.82%	111.75%	97.12%	108.62%
PFESA (Raw)	96.06%	101.25%	109.97%	106.56%	106.14%	109.84%	86.29%	90.29%	87.66%	87.44%	82.69%	88.79%	84.67%	96.72%	102.28%	101.59%	91.30%	108.01%
6:2 FTS (Raw)	115.05%	107.52%	114.87%	103.79%	120.91%	113.20%	97.72%	105.13%	95.17%	96.03%	87.92%	92.04%	93.71%	108.98%	113.44%	112.12%	101.61%	111.22%
FBSA (Raw)	110.19%	87.72%	83.20%	72.54%	101.69%	107.37%	80.08%	93.14%	80.76%	83.72%	86.41%	79.07%	82.69%	104.58%	101.81%	93.12%	84.01%	94.62%
PFHpS (Raw)	91.49%	105.85%	101.21%	107.24%	114.79%	122.48%	98.40%	95.69%	103.52%	94.23%	91.81%	104.95%	89.51%	103.74%	95.27%	92.86%	99.04%	111.51%
MeFOSAA (Raw)	101.97%	101.13%	102.64%	94.60%	116.84%	112.79%	91.56%	112.93%	77.34%	93.00%	83.23%	94.55%	85.87%	104.60%	101.73%	98.00%	103.05%	104.04%
EtFOSAA (Raw)	105.54%	106.23%	100.98%	95.83%	107.05%	118.52%	88.76%	92.04%	81.02%	85.56%	85.66%	85.36%	76.63%	90.01%	99.54%	87.52%	102.05%	104.54%
PFHxSA (Raw)	129.71%	93.68%	80.55%	70.26%	108.01%	120.25%	81.25%	101.32%	90.64%	89.82%	79.83%	86.38%	81.77%	102.53%	115.28%	110.98%	90.95%	104.79%
PFTrDA (Raw)	84.05%	93.31%	114.58%	107.96%	97.43%	108.42%	86.03%	95.70%	80.01%	85.73%	87.91%	91.73%	102.30%	111.53%	108.44%	88.33%	95.04%	96.78%
PFOSA (Raw)	95.69%	104.61%	112.78%	104.75%	108.48%	121.31%	86.15%	89.83%	94.30%	92.29%	86.81%	96.69%	82.43%	101.97%	101.74%	101.81%	99.56%	108.44%
PFHxDA (Raw)	104.87%	95.74%	105.59%	102.14%	106.34%	117.58%	83.92%	81.35%	85.46%	83.81%	75.79%	85.24%	80.21%	94.66%	95.53%	92.51%	96.08%	106.34%
N-EtFOSA (Raw)	93.66%	102.95%	95.02%	98.19%	108.44%	111.29%	88.21%	97.72%	85.83%	84.95%	83.80%	87.67%	86.53%	92.68%	109.63%	96.20%	98.03%	106.94%

	PFAS_FULL_S-55	PFAS_FULL_S-57	PFAS_FULL_S-58	PFAS_FULL_S-59	PFAS_FULL_S-60	PFAS_FULL_S-62	PFAS_FULL_S-63	PFAS_FULL_S-64	PFAS_FULL_S-65	PFAS_FULL_S-67	PFAS_FULL_S-69	PFAS_FULL_S-71	PFAS_FULL_S-72	PFAS_FULL_S-73	PFAS_FULL_S-74	PFAS_FULL_S-75	PFAS_FULL_S-76	PFAS_FULL_S-77
	240910-62	**240911-31**	**240912-41**	**240912-41** **240913-101**	**240918-51** **240913-101**	**240917-45** **240918-51**	**240919-79**	**240918-51** **240917-45** **240919-79**	**240917-45** **240919-79**	**240925-25**	**240925-25**	**240925-25**	**240926-86**	**240926-86** **241001-9**	**240927-114** **241001-9**	**240926-86** **240927-114** **241001-9** **241001-50**	**241002-69** **241001-50**	**241002-69** **240912-41** **240910-62** **240918-51** **240913-101**

Appendix G

FORMATTED LABS

Confidential

Thornton Soils - PFAS Broad Suite

Results for PFAS in the soil samples (µg/kg)

SDL:	
LOD:	<LOD
0.00	Detect

Land Parcel	Occupation Road Allotments									Hays Street										Red Marsh Drive										Croft Court										Butts Close										Hargreaves Street									
Location ID	OR01	OR01	OR01	OR02	OR02	OR02	OR03	OR03	OR03	HY01	HY01	HY01	HY02	HY02	HY02	HY03	HY03	HY03	HY04	RM01	RM01	RM01	RM02	RM02	RM02	RM03	RM03	RM03	RM04	RM04	RM04	CF01	CF01	CF01	CF02	CF02	CF02	CF03	CF03	CF03	CF04	CF04	CF04	BC01	BC01	BC01	BC02	BC02	BC02	BC03	BC03	BC03	BC04	BC04	BC04
	(0.05-0.15 m bgl)	(0.35-0.45 m bgl)	(0.60-0.70 m bgl)

Theories tests - PISA level tests

Based on the PISA 6 level sample (Log10g)

SSL

-1.00 +1.00

0.00 Default

| | Thornton Primary School | | | | | | | | | | Ibis Marsh School | | | | | | | | | | | | | | | | | | | | | | Barratt Road | | | | | | | | | | Rudy Road Playgroup | | | | | | | | | | Thornton Chumleigh Hall Endowed School | | | | | | | | | | Sherrell Primary School | | | | | | | | | | Blue Road Car Park | | | | | | | | | |
|---|---|---

Thornton Soils - PFAS Broad Suite
Results for PFAS in the soil samples (µg/kg)

#.##	>LOD
0.00	Detect

Land Parcel	Northfield School						Keyles Brook School						Thornton House						Reserve Way						Minefield College						Jubilee Gardens (control)						King Georges Playing Fields (control)						Memorial Park (control)						The Mount Gardens (control)					
Location ID	LP30-SP01-10-00	LP30-SP01-30-35	LP30-SP01-40-45	LP30-SP03-00-05	LP30-SP03-10-15	LP30-SP03-40-45	LP31-SP01-00-05	LP31-SP01-10-15	LP31-SP01-30-35	LP31-SP01-40-45	LP31-SP02-00-05	LP31-SP02-10-15	LP31-SP02-30-35	LP31-SP02-40-45	LP31-SP03-00-05	LP31-SP03-10-15	LP31-SP03-30-35	LP31-SP03-40-45	LP32-SP01-00-05	LP32-SP01-10-15	LP32-SP01-30-35	LP32-SP01-40-45	LP32-SP02-00-05	LP32-SP02-10-15	LP32-SP02-30-35	LP32-SP02-40-45	LP32-SP03-00-05	LP32-SP03-10-15	LP32-SP03-30-35	LP32-SP03-40-45	LP35-SP01-00-05	LP35-SP01-10-15	LP35-SP01-30-35	LP35-SP01-40-45	LP35-SP02-00-05	LP35-SP02-10-15	LP35-SP02-30-35	LP35-SP02-40-45	LP35-SP03-00-05	LP35-SP03-10-15	LP35-SP03-30-35	LP35-SP03-40-45	LP36-SP01-00-05	LP36-SP01-10-15	LP36-SP01-30-35	LP36-SP01-40-45	LP36-SP02-00-05	LP36-SP02-10-15	LP36-SP02-30-35	LP36-SP02-40-45	LP36-SP03-00-05	LP36-SP03-10-15	LP36-SP03-30-35	LP36-SP03-40-45
Sample ID	SP01-00-05	SP01-10-15	SP01-30-35	SP01-40-45	SP03-00-05	SP03-10-15	SP01-00-05	SP01-10-15	SP01-30-35	SP01-40-45	SP02-00-05	SP02-10-15	SP02-30-35	SP02-40-45	SP03-00-05	SP03-10-15	SP03-30-35	SP03-40-45	SP01-00-05	SP01-10-15	SP01-30-35	SP01-40-45	SP02-00-05	SP02-10-15	SP02-30-35	SP02-40-45	SP03-00-05	SP03-10-15	SP03-30-35	SP03-40-45	SP01-00-05	SP01-10-15	SP01-30-35	SP01-40-45	SP02-00-05	SP02-10-15	SP02-30-35	SP02-40-45	SP03-00-05	SP03-10-15	SP03-30-35	SP03-40-45	SP01-00-05	SP01-10-15	SP01-30-35	SP01-40-45	SP02-00-05	SP02-10-15	SP02-30-35	SP02-40-45	SP03-00-05	SP03-10-15	SP03-30-35	SP03-40-45
Sample Depth	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45	0.00-0.05	0.10-0.15	0.30-0.35	0.40-0.45
Sample Date	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	18/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021
PFBS																																																			
PFHPA																																																				
PFPeS																																																			
PFHxA																									0.867																											
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PFHpA																																																			
PFOA																																																			
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PFDoA																																																			
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PFTeDA																																																			
HFPO-DA																																																			
4:2FTSA																																																			
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8:2FTSA																																																			
PFOSA	2.18	4.80	1.78	3.42	0.73	2.20	1.52	35.20	2.68	6.42	3.04	4.00	0.91	0.00	1.08	2.18	0.72	1.83	1.22	1.26	0.217				0.889				2.57	2.14	2.65	1.83	2.52	1.34	4.20	1.36	2.40	2.48	3.23	0.72	2.23	3.22	3.72	2.26	3.68	2.26	4.04	1.24	3.28	2.76	3.50	1.74	0.748	2.72	1.40	0.564	1.64			0.898		1.42	
PFDS																																																			
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PFBS																																																			
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