


CLIENT	ALDI STORES LIMITED
PROJECT TITLE	ALDI MAFON ROAD, TREHARRIS
PLAN TITLE	GEOTECHNICAL CONSTRAINTS PLAN

DATE	NOVEMBER 2023
SCALE	NTS
PLAN NUMBER	GRO-20287-P06

Rev.	Details	Date

Status	Preliminary	
	Draft	
	Issued	●
	For Comment	
	Approved	

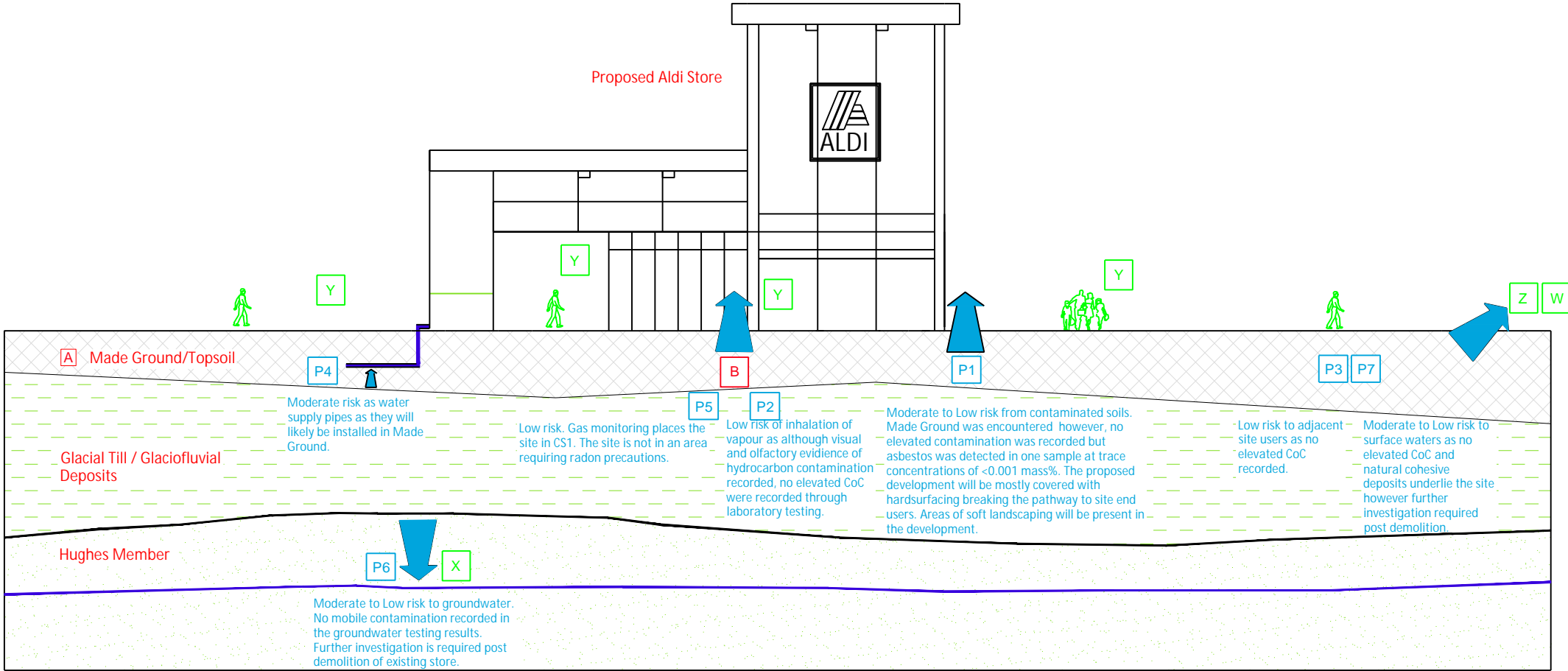
Notes	<ul style="list-style-type: none"> ▭ FOOTPRINT OF PROPOSED ALDI STORE ▭ FURTHER INVESTIGATION FOLLOWING DEMOLITION OF COOP ▭ FOUNDATIONS DEEPEMED >2.0M BEGL
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SOURCES
A. Contaminated soils / Made Ground.
B. Ground gas.

POLLUTION LINKAGES
P1. Ingestion of soil and dust.
P2. Inhalation of vapour.
P3. Inhalation of soil dust by adjacent site users.
P4. Attacking of potable water supply pipe.
P5. Migration and accumulation of ground gas in internal places.
P6. Impaction of groundwater from soil contamination.
P7. Migration of soil and groundwater contamination impacting surface waters.

RECEPTORS
W. Watercourse culverted beneath the site.
X. Groundwater within the underlying Secondary A Aquifer.
Y. Site end users.
Z. Adjacent site users.





APPENDIX 2 - Site Photographs



Photograph 1 – Site access to the north of the site



Photograph 2 – Car park area



Photograph 3 – Front of existing Coop store



Photograph 4 - Eastern area of site



APPENDIX 3 - CIRIA Risk Assessment Methodology

Contaminated Land Risk Assessment

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ⇨ Hazard Assessment ⇨ Risk Estimation ⇨ Risk Evaluation

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process.

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552:

- High likelihood: There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- Likely: There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- Low likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term;
- Unlikely: There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

- Severe: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;

- **Medium:** Chronic damage to human health ('significant harm' as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures, services or the environment;
Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.
- **Minor:** harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.
Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Likelihood	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

- **Very high:** There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required;
- **High:** Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term;
- **Moderate:** It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term;
- **Low:** It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild;
- **Very Low:** There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.



APPENDIX 4 - Exploratory Hole Logs

Borehole Log

Borehole No.

CP01

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type CP
Location: TREHARRIS	Level:		Scale 1:50
Client: ALDI STORES LTD	Dates: 08/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool. 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.60m bgl. 4. Borehole terminated at 3.40m bgl due to SPT refusal on sandstone bedrock. 5. Monitoring standpipe installed to 3.40m bgl (2.40m plain, 1.00m slotted).



Borehole Log

Borehole No.

CP02

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type CP
Location: TREHARRIS	Level:		Scale 1:50
Client: ALDI STORES LTD	Dates: 08/11/2023 -		Logged By AJ

Well

Remarks

1. Location cleared of services using handheld Cable Avoidance Tool. 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.70m bgl. 4. Borehole terminated at 3.20m bgl due to SPT refusal on sandstone bedrock. 5. Monitoring standpipe installed to 3.20m bgl (2.20m plain, 1.00m slotted).



Borehole Log

Borehole No.

CP03

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type CP
Location: TREHARRIS	Level:		Scale 1:50
Client: ALDI STORES LTD	Dates: 09/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool. 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 5.00m bgl. 4. Borehole terminated at 5.30m bgl due to SPT refusal on sandstone bedrock. 5. Monitoring standpipe installed to 5.30m bgl (4.00m plain, 1.30m slotted).



Borehole Log

Borehole No.

CP04

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type CP
Location: TREHARRIS	Level:		Scale 1:50
Client: ALDI STORES LTD	Dates: 09/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool. 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 3.70m bgl. 4. Borehole terminated at 4.30m bgl due to SPT refusal on sandstone bedrock. 5. Monitoring standpipe installed to 4.30m bgl (3.00m plain, 1.30m slotted).





Trial Pit Log

Trialpit No PL01
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): Depth 0.50	
Client: ALDI STORES LTD		

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.05		
				0.40		
				0.50		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater enc 3. Plate Load Test undertaken at 0.50m bgl. 4. Trial pit backfilled with arisings.

Stability: Stable





Trial Pit Log

Trialpit No
PL02
Sheet 1 of 1
Date
07/11/2023
Scale
1:25
Logged
AJ

Project Name: ALDI MAFON ROAD Project No. GRO-20287 Co-ords: -
Level: Dimensions (m): 1
Location: TREHARRIS Depth 0.30

Client: ALDI STORES LTD

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.05		
				0.30		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater enc 3. Plate Load Test undertaken at 0.30m bgl. 4. Trial pit backfilled with arisings.

Stability: Stable





Trial Pit Log

Trialpit No PL03
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): 1	
Client: ALDI STORES LTD	Depth 0.30	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.04		
				0.30		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater enc 3. Plate Load Test undertaken at 0.30m bgl. 4. Trial pit backfilled with arisings.

Stability: Stable





Trial Pit Log

Trialpit No PL04
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): 1	
Client: ALDI STORES LTD	Depth 0.30	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.05		
				0.30		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater enc 3. Plate Load Test undertaken at 0.30m bgl. 4. Trial pit backfilled with arisings.

Stability: Stable





Trial Pit Log

Trialpit No PL05
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): 1	
Client: ALDI STORES LTD	Depth 0.30	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.05		
				0.30		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater enc 3. Plate Load Test undertaken at 0.30m bgl. 4. Trial pit backfilled with arisings.

Stability: Stable





Trial Pit Log

Trialpit No PL06
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): Depth 0.40	
Client: ALDI STORES LTD	<div style="border: 1px solid black; width: 100px; height: 30px; display: flex; align-items: center; justify-content: center;"> 1 </div>	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.04		
				0.40		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater enc 3. Plate Load Test undertaken at 0.40m bgl. 4. Trial pit backfilled with arisings.

Stability: Stable





Trial Pit Log

Trialpit No SuDS1
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): Depth 2.10 0.7 2.2	
Client: ALDI STORES LTD		

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.04		
				0.20		
				1.10		
				2.10		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater encountered. excavated to 2.10m bgl. 4. Soil percolation test undertaken between 1.20m bgl and 2.10m bgl. 5. Trial pit bac arisings.

Stability: Unstable





Trial Pit Log

Trialpit No SuDS2
Sheet 1 of 1
Date 07/11/2023
Scale 1:25
Logged AJ

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: - Level:
Location: TREHARRIS	Dimensions (m): Depth 2.10 0.7 2.1	
Client: ALDI STORES LTD		

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend
	Depth	Type	Results			
				0.05		
				0.20		
				0.90		
				2.10		

Remarks: 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. No groundwater encountered. excavated to 2.10m bgl. 4. Soil percolation test undertaken between 1.30m bgl and 2.10m bgl. 5. Trial pit bac arisings.

Stability: Unstable



Borehole Log

Borehole No.

WS01

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS	Level:		Scale 1:25
Client: ALDI STORES LTD	Dates: 08/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 1.70m bgl. 4. Borehole terminated at 1.70m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.





Borehole Log

Borehole No.

WS02

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS	Level:		Scale 1:25
Client: ALDI STORES LTD	Dates: 08/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.00m bgl. 4. Borehole terminated at 3.00m bgl due to SPT refusal in the natural clay. 5. Monitoring standpipe installed to 3.00m bgl (1.00m plain, 2.00m slotted).



Borehole Log

Borehole No.

WS03

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS	Level:		Scale 1:25
Client: ALDI STORES LTD	Dates: 08/11/2023 -		Logged By AJ

Well

Remarks

1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.00m bgl. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Monitoring standpipe installed to 1.50m bgl (1.00m plain, 0.50m slotted).





Borehole Log

Borehole No.

WS04

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 08/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 1.70m bgl. 4. Borehole terminated at 1.70m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.



Borehole Log

Borehole No.

WS05

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS	Level:		Scale 1:25
Client: ALDI STORES LTD	Dates: 08/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.



Borehole Log

Borehole No.

WS06

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 08/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.



Borehole Log

Borehole No.

WS07

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 09/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.00m bgl. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.





Borehole Log

Borehole No.

WS08

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 09/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.00m bgl. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.



Borehole Log

Borehole No.

WS09

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 09/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.00m bgl. 4. Borehole terminated at 2.00m bgl due to SPT refusal in Made Ground. 5. Borehole backfilled with arisings.





Borehole Log

Borehole No.

WS10

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 09/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. Groundwater encountered at 2.00m bgl. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Monitoring standpipe installed to 2.00m bgl (1.00m plain, 1.00m slotted).



Borehole Log

Borehole No.

WS11

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS	Level:		Scale 1:25
Client: ALDI STORES LTD	Dates: 09/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 0.50m bgl. 3. No groundwater encountered. 4. Borehole terminated at 0.50m bgl due to concrete obstruction. 5. Borehole backfilled with arisings.



Borehole Log

Borehole No.

WS12

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 09/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.





Borehole Log

Borehole No.

WS13

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS	Level:		Scale 1:25
Client: ALDI STORES LTD	Dates: 09/11/2023 -		Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.



Borehole Log

Borehole No.

WS14

Sheet 1 of 1

Project Name: ALDI MAFON ROAD	Project No. GRO-20287	Co-ords: -	Hole Type WS
Location: TREHARRIS		Level:	Scale 1:25
Client: ALDI STORES LTD		Dates: 09/11/2023 -	Logged By AJ

Well

Remarks
 1. Location cleared of services using handheld Cable Avoidance Tool (CAT). 2. Hand excavated inspection pit to 1.20m bgl. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to SPT refusal in the natural clay. 5. Borehole backfilled with arisings.





APPENDIX 5 - Geo-Environmental Testing Results

Groundtech Consulting Limited
PO Box 499
Manchester
United Kingdom
M28 8EE



Attention : Andrew Janson
Date : 3rd January, 2024
Your reference : GRO-20287
Our reference : Test Report 23/19217 Batch 1
Location : Aldi Treharris
Date samples received : 16th November, 2023
Status : Final Report
Issue : 202401031332

Forty four samples were received for analysis on 16th November, 2023 of which sixteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co_{2e}) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 73.341 kg of CO₂

Scope 1&2&3 emissions - 173.324 kg of CO₂

Authorised By:

Liza Klebe

Project Co-ordinator

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
 Reference: GRO-20287
 Location: Aldi Treharris
 Contact: Andrew Janson
 EMT Job No: 23/19217

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	7-9	16-18	28-30	31-33	38-40	53-55	65-67	71-73	77-79	Please see attached notes for all abbreviations and acronyms		
Sample ID	CP01	CP02	CP03	CP04	WS01	WS02	WS03	WS04	WS05	WS06			
Depth	0.35	0.60	0.40	0.60	0.35	0.30	0.30	0.40	0.30	0.60			
COC No / mlsc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	08/11/2023	08/11/2023	09/11/2023	09/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Recelpt	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	LOD/LOR	Units	Method No.
Arsenic [‡]	2.7	1.2	5.6	5.6	5.1	3.3	2.4	1.6	1.0	1.7	<0.5	mg/kg	TM30/PM15
Cadmium [‡]	<0.1	0.1	<0.1	<0.1	0.3	<0.1	60.9 ^{AA}	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Chromium [‡]	15.2	8.3	10.7	13.4	13.8	7.2	10.6	10.6	10.9	11.6	<0.5	mg/kg	TM30/PM15
Copper [‡]	5	5	41	37	6	3	24	3	2	2	<1	mg/kg	TM30/PM15
Lead [‡]	9	15	17	19	16	11	56	<5	15	<5	<5	mg/kg	TM30/PM15
Mercury [‡]	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel [‡]	6.7	3.7	28.5	29.5	3.8	6.0	3.1	4.0	2.9	3.2	<0.7	mg/kg	TM30/PM15
Selenium [‡]	<1	<1	1	2	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Water Soluble Boron [‡]	0.2	0.2	0.7	0.6	0.1	<0.1	<0.1	0.2	0.1	0.1	<0.1	mg/kg	TM74/PM32
Zinc [‡]	26	14	76	79	43	14	1253	15	22	13	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene [‡]	<0.04	0.30	0.38	0.34	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene [‡]	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene [‡]	<0.04	0.07	0.11	0.09	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene [‡]	<0.03	0.31	0.52	0.53	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene [‡]	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene [‡]	<0.03	0.13	0.08	0.08	0.05	<0.03	<0.03	0.07	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene [‡]	<0.03	0.12	0.09	0.08	0.04	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene [‡]	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.07	<0.06	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene [‡]	<0.02	0.07	0.19	<0.02	0.06	<0.02	0.04	0.07	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene [‡]	<0.07	<0.07	0.11	0.11	0.08	<0.07	<0.07	0.08	<0.07	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene [‡]	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene [‡]	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene [‡]	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene [‡]	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	1.1	1.5	1.3	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	<0.05	0.08	0.08	0.06	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	0.03	0.03	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	101	102	102	104	102	105	104	100	102	106	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether [‡]	-	-	-	-	-	<2	<2	-	-	-	<2	ug/kg	TM15/PM10
Benzene [‡]	-	-	-	-	-	<3	<3	-	-	-	<3	ug/kg	TM15/PM10
Toluene [‡]	-	-	-	-	-	<3	<3	-	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene [‡]	-	-	-	-	-	<3	<3	-	-	-	<3	ug/kg	TM15/PM10
m/p-Xylene [‡]	-	-	-	-	-	<5	<5	-	-	-	<5	ug/kg	TM15/PM10
o-Xylene [‡]	-	-	-	-	-	<3	<3	-	-	-	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	-	-	86	79	-	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	-	-	88	81	-	-	-	<0	%	TM15/PM10
EPH (C8-C40) (EH_1D_Total) [‡]	1746	658	92	<30	2257	115	44	543	<30	<30	<30	mg/kg	TM5/PM8

Element Materials Technology

Client Name: Groundtech Consulting Limited
 Reference: GRO-20287
 Location: Aldi Treharris
 Contact: Andrew Janson
 EMT Job No: 23/19217

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	7-9	16-18	28-30	31-33	38-40	53-55	65-67	71-73	77-79			
Sample ID	CP01	CP02	CP03	CP04	WS01	WS02	WS03	WS04	WS05	WS06			
Depth	0.35	0.60	0.40	0.60	0.35	0.30	0.30	0.40	0.30	0.60			
COC No / mlsc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	08/11/2023	08/11/2023	09/11/2023	09/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023	16/11/2023			
											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) [†]	-	-	<0.1 ^{SV}	<0.1 ^{SV}	-	<0.1	<0.1	-	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) [†]	-	-	<0.1 ^{SV}	<0.1 ^{SV}	-	<0.1	<0.1	-	-	-	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	-	-	<0.1 ^{SV}	<0.1 ^{SV}	-	<0.1	<0.1	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) [†]	-	-	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	mg/kg	TM5/IPM8/IPM16
>C12-C16 (EH_CU_1D_AL) [†]	-	-	<4	<4	-	<4	<4	-	-	-	<4	mg/kg	TM5/IPM8/IPM16
>C16-C21 (EH_CU_1D_AL) [†]	-	-	<7	<7	-	<7	<7	-	-	-	<7	mg/kg	TM5/IPM8/IPM16
>C21-C35 (EH_CU_1D_AL) [†]	-	-	<7	<7	-	<7	18	-	-	-	<7	mg/kg	TM5/IPM8/IPM16
Total aliphatics C5-35 (EH_CU+HS_1D_AL)	-	-	<19	<19	-	<19	<19	-	-	-	<19	mg/kg	TM5/IPM8/IPM16
Aromatics													
>C5-EC7 (HS_1D_AR) [†]	-	-	<0.1 ^{SV}	<0.1 ^{SV}	-	<0.1	<0.1	-	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) [†]	-	-	<0.1 ^{SV}	<0.1 ^{SV}	-	<0.1	<0.1	-	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) [†]	-	-	<0.1 ^{SV}	<0.1 ^{SV}	-	<0.1	<0.1	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) [†]	-	-	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	mg/kg	TM5/IPM8/IPM16
>EC12-EC16 (EH_CU_1D_AR) [†]	-	-	<4	<4	-	<4	<4	-	-	-	<4	mg/kg	TM5/IPM8/IPM16
>EC16-EC21 (EH_CU_1D_AR) [†]	-	-	<7	<7	-	<7	<7	-	-	-	<7	mg/kg	TM5/IPM8/IPM16
>EC21-EC35 (EH_CU_1D_AR) [†]	-	-	26	<7	-	48	41	-	-	-	<7	mg/kg	TM5/IPM8/IPM16
Total aromatics C5-35 (EH_CU+HS_1D_AR) [†]	-	-	26	<19	-	48	41	-	-	-	<19	mg/kg	TM5/IPM8/IPM16
Total aliphatics and aromatics (C5-35) (EH_CU+HS_1D_Total)	-	-	<38	<38	-	48	41	-	-	-	<38	mg/kg	TM5/IPM8/IPM16
MTBE [†]	-	-	<5 ^{SV}	<5 ^{SV}	-	-	-	-	-	-	<5	ug/kg	TM36/PM12
Benzene [†]	-	-	72 ^{SV}	76 ^{SV}	-	-	-	-	-	-	<5	ug/kg	TM36/PM12
Toluene [†]	-	-	38 ^{SV}	33 ^{SV}	-	-	-	-	-	-	<5	ug/kg	TM36/PM12
Ethylbenzene [†]	-	-	<5 ^{SV}	<5 ^{SV}	-	-	-	-	-	-	<5	ug/kg	TM36/PM12
m/p-Xylene [†]	-	-	15 ^{SV}	10 ^{SV}	-	-	-	-	-	-	<5	ug/kg	TM36/PM12
o-Xylene [†]	-	-	<5 ^{SV}	<5 ^{SV}	-	-	-	-	-	-	<5	ug/kg	TM36/PM12
Phenol [†]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21B
Natural Moisture Content	5.0	1.6	14.0	4.4	2.6	3.3	<0.1	2.3	3.6	<0.1	<0.1	%	PM4/PM0
Hexavalent Chromium [†]	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) [†]	0.0108	0.0117	0.0409	0.0537	0.0334	0.0080	0.0354	0.0370	0.0259	0.0321	<0.0015	g/l	TM38/PM20
Total Cyanide [†]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon [†]	0.85	0.77	-	-	-	0.43	-	-	-	-	<0.02	%	TM21/PM24
Organic Matter	1.5	1.3	9.6	16.7	1.7	0.7	1.1	<0.2	<0.2	<0.2	<0.2	%	TM21/PM24
ANC at pH4	2.64	2.11	-	-	-	1.61	-	-	-	-	<0.03	mol/kg	TM77/PM0
ANC at pH7	0.04	<0.03	-	-	-	0.03	-	-	-	-	<0.03	mol/kg	TM77/PM0
Loss on Ignition [†]	1.7	1.5	-	-	-	<1.0	-	-	-	-	<1.0	%	TM22/PM0
pH [†]	9.27	9.46	8.70	9.33	7.89	9.41	9.30	9.27	NDP	9.50	<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	0.0968	Moisture Content Ratio (%) =	7.4		
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	93.1		
Particle Size <4mm =	>95%				
EMT Job No	23/19217		Landfill Waste Acceptance Criteria Limits		
Sample No	3		Inert Waste Landfill	Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample No	CP01				
Depth/Other	0.35				
Sample Date	08/11/2023				
Batch No	1				
Solid Waste Analysis					
Total Organic Carbon (%)	0.85		3	5	6
Loss on Ignition (%)	1.7		-	-	10
Sum of BTEX (mg/kg)	-		6	-	-
Sum of 7 PCBs (mg/kg)	-		1	-	-
Mineral Oil (mg/kg)	-		500	-	-
PAH Sum of 17(mg/kg)	-		100	-	-
pH (pH Units)	-		-	>6	-
ANC to pH 7 (mol/kg)	0.04		-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.64		-	to be evaluated	to be evaluated
Eluate Analysis	10:1 concⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
	C₁₀ mg/l	A₁₀ mg/kg	mg/kg		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.012	0.12	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	<0.002	<0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	0.7	7	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	1.1	11	1000	20000	50000
Total Dissolved Solids	<35	<350	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Mass of sample taken (kg)	0.0944	Moisture Content Ratio (%) =	5.0		
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	95.3		
Particle Size <4mm =	>95%				
EMT Job No	23/19217		Landfill Waste Acceptance Criteria Limits		
Sample No	9		Inert Waste Landfill	Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample No	CP02				
Depth/Other	0.60				
Sample Date	08/11/2023				
Batch No	1				
Solid Waste Analysis					
Total Organic Carbon (%)	0.77		3	5	6
Loss on Ignition (%)	1.5		-	-	10
Sum of BTEX (mg/kg)	-		6	-	-
Sum of 7 PCBs (mg/kg)	-		1	-	-
Mineral Oil (mg/kg)	-		500	-	-
PAH Sum of 17(mg/kg)	-		100	-	-
pH (pH Units)	-		-	>6	-
ANC to pH 7 (mol/kg)	<0.03		-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.11		-	to be evaluated	to be evaluated
Eluate Analysis	10:1 concⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
	C₁₀ mg/l	A₁₀ mg/kg	mg/kg		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.143	1.43	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.002	0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	1.8	18	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	2.9	29	1000	20000	50000
Total Dissolved Solids	<35	<350	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Mass of sample taken (kg)	0.0934	Moisture Content Ratio (%) =	3.8		
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	96.4		
Particle Size <4mm =	>95%				
EMT Job No	23/19217		Landfill Waste Acceptance Criteria Limits		
Sample No	40				
Client Sample No	WS02		Inert Waste Landfill	Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill	Hazardous Waste Landfill
Depth/Other	0.30				
Sample Date	08/11/2023				
Batch No	1				
Solid Waste Analysis					
Total Organic Carbon (%)	0.43				
Loss on Ignition (%)	<1.0		-	-	10
Sum of BTEX (mg/kg)	-		6	-	-
Sum of 7 PCBs (mg/kg)	-		1	-	-
Mineral Oil (mg/kg)	-		500	-	-
PAH Sum of 17(mg/kg)	-		100	-	-
pH (pH Units)	-		-	>6	-
ANC to pH 7 (mol/kg)	0.03		-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	1.61		-	to be evaluated	to be evaluated
Eluate Analysis	10:1 concⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
	C₁₀	A₁₀			
	mg/l	mg/kg	mg/kg		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.508	5.08	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.003	0.03	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	2.0	20	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	5.5	55	1000	20000	50000
Total Dissolved Solids	50	500	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Mass of sample taken (kg)	0.1005	Moisture Content Ratio (%) =	11.2		
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	89.9		
Particle Size <4mm =	>95%				
EMT Job No	23/19217		Landfill Waste Acceptance Criteria Limits		
Sample No	91		Inert Waste Landfill	Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample No	WS10				
Depth/Other	0.50				
Sample Date	09/11/2023				
Batch No	1				
Solid Waste Analysis					
Total Organic Carbon (%)	6.12		3	5	6
Loss on Ignition (%)	8.8		-	-	10
Sum of BTEX (mg/kg)	-		6	-	-
Sum of 7 PCBs (mg/kg)	-		1	-	-
Mineral Oil (mg/kg)	-		500	-	-
PAH Sum of 17(mg/kg)	-		100	-	-
pH (pH Units)	-		-	>6	-
ANC to pH 7 (mol/kg)	NDP		-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.06		-	to be evaluated	to be evaluated
Eluate Analysis	10:1 concⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
	C₁₀ mg/l	A₁₀ mg/kg	mg/kg		
Arsenic	0.0035	0.035	0.5	2	25
Barium	0.064	0.64	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.004	0.04	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.002	0.02	0.06	0.7	5
Selenium	0.003	0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	<0.3	<3	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	5.2	52	1000	20000	50000
Total Dissolved Solids	54	540	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Client Name: Groundtech Consulting Limited
Reference: GRO-20287
Location: Aldi Treharris
Contact: Andrew Janson

Note:
 Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
23/19217	1	CP01	0.35	2	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones and tar
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	CP02	0.60	8	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones and tar
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	CP03	0.40	18	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	CP04	0.60	30	Mathew Day	08/12/2023	General Description (Bulk Analysis)	BLACK STONES/DUST
					Mathew Day	08/12/2023	Asbestos Fibres	NAD
					Mathew Day	08/12/2023	Asbestos ACM	NAD
					Mathew Day	08/12/2023	Asbestos Type	NAD
23/19217	1	WS01	0.35	33	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones and tar
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS02	0.30	39	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS03	0.30	55	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones and tar
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS04	0.40	67	Mathew Day	08/12/2023	General Description (Bulk Analysis)	concrete stones and sand
					Mathew Day	08/12/2023	Asbestos Fibres	NAD
					Mathew Day	08/12/2023	Asbestos ACM	NAD
					Mathew Day	08/12/2023	Asbestos Type	NAD

Client Name: Groundtech Consulting Limited
Reference: GRO-20287
Location: Aldi Treharris
Contact: Andrew Janson

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
23/19217	1	WS05	0.30	73	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS06	0.60	79	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS07	0.30	85	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones and tar
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS10	0.50	90	Mathew Day	08/12/2023	General Description (Bulk Analysis)	Stones and black powder/dust
					Mathew Day	08/12/2023	Asbestos Fibres	NAD
					Mathew Day	08/12/2023	Asbestos ACM	NAD
					Mathew Day	08/12/2023	Asbestos Type	NAD
23/19217	1	WS11	0.30	100	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS12	0.40	103	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones and tar
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD
23/19217	1	WS13	0.40	109	Mathew Day	08/12/2023	General Description (Bulk Analysis)	STONES BLACK DUST
					Mathew Day	08/12/2023	Asbestos Fibres	Free Fibres
					Mathew Day	08/12/2023	Asbestos ACM	NAD
					Mathew Day	08/12/2023	Asbestos Type	Chrysotile
					Remigiusz Blichowski	19/12/2023	Total ACM Gravimetric Quantification (% Asb)	<0.001 (mass %)
					Remigiusz Blichowski	19/12/2023	Total Detailed Gravimetric Quantification (% Asb)	<0.001 (mass %)
					Remigiusz Blichowski	19/12/2023	Total Gravimetric Quantification (ACM + Detailed) (% Asb)	<0.001 (mass %)
					Remigiusz Blichowski	20/12/2023	Asbestos PCOM Quantification (Fibres)	<0.001 (mass %)
Remigiusz Blichowski	20/12/2023	Asbestos Gravimetric & PCOM Total	<0.001 (mass %)					
23/19217	1	WS14	0.40	115	Emily Anderton	08/12/2023	General Description (Bulk Analysis)	Brown soil with stones
					Emily Anderton	08/12/2023	Asbestos Fibres	NAD
					Emily Anderton	08/12/2023	Asbestos ACM	NAD
					Emily Anderton	08/12/2023	Asbestos Type	NAD

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/19217

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).

Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/19217

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

EMT Job No: 23/19217

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.	Yes		AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma –Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) –Al anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes		AR	Yes

EMT Job No: 23/19217

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) –Al anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) –Al anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes
TM131	Quantification of Asbestos Fibres and ACM based on HSG 248 Second edition:2021, HSG 264 Second edition:2012, HSE Contract Research Report No.83/1996, MDHS 87:1998, WM3 1st Edition v1.1:2018	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	Yes
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma –Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes		AR	Yes

EMT Job No: 23/19217

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	
TM15_A	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



APPENDIX 6 – Groundwater and Surface Water Testing Results

Groundtech Consulting Limited
PO Box 499
Manchester
United Kingdom
M28 8EE



Attention : Rebecca Rowlinson
Date : 26th January, 2024
Your reference : GRO-20287
Our reference : Test Report 24/993 Batch 1
Location : Treharris
Date samples received : 20th January, 2024
Status : Final Report
Issue : 202401261611

Six samples were received for analysis on 20th January, 2024 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 14.77 kg of CO2

Scope 1&2&3 emissions - 34.904 kg of CO2

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 24/993

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).

Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x3 Dilution
AB	x5 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 24/993

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details				
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.				
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.				
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma –Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) –Al anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.				
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.				

EMT Job No: 24/993

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.				
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.				



APPENDIX 7 - Geotechnical Testing Results



LABORATORY REPORT



Contract Number: PSL23/10038

Report Date: 19 December 2023
Client's Reference: GRO-20287
Client Name: Groundtech Consulting
First Floor
Lloyd House
Orford Court
Greenfold Way
WN7 3XJ

For the attention of: Andrew Janson

Contract Title: Aldi Treharris
Date Received: 28/11/2023
Date Commenced: 28/11/2023
Date Completed: 19/12/2023

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

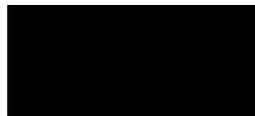
Checked and Approved Signatories:

A Watkins
(Director)



L Knight
(Assistant Laboratory Manager)

R Berriman
(Quality Manager)




S Eyre
(Senior Technician)

S Royle
(Laboratory Manager)



T Watkins
(Senior Technician)

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Hexthorpe,
Doncaster,
DN4 0AR
Tel: 01302 768098
Email: 

Page 1 of

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

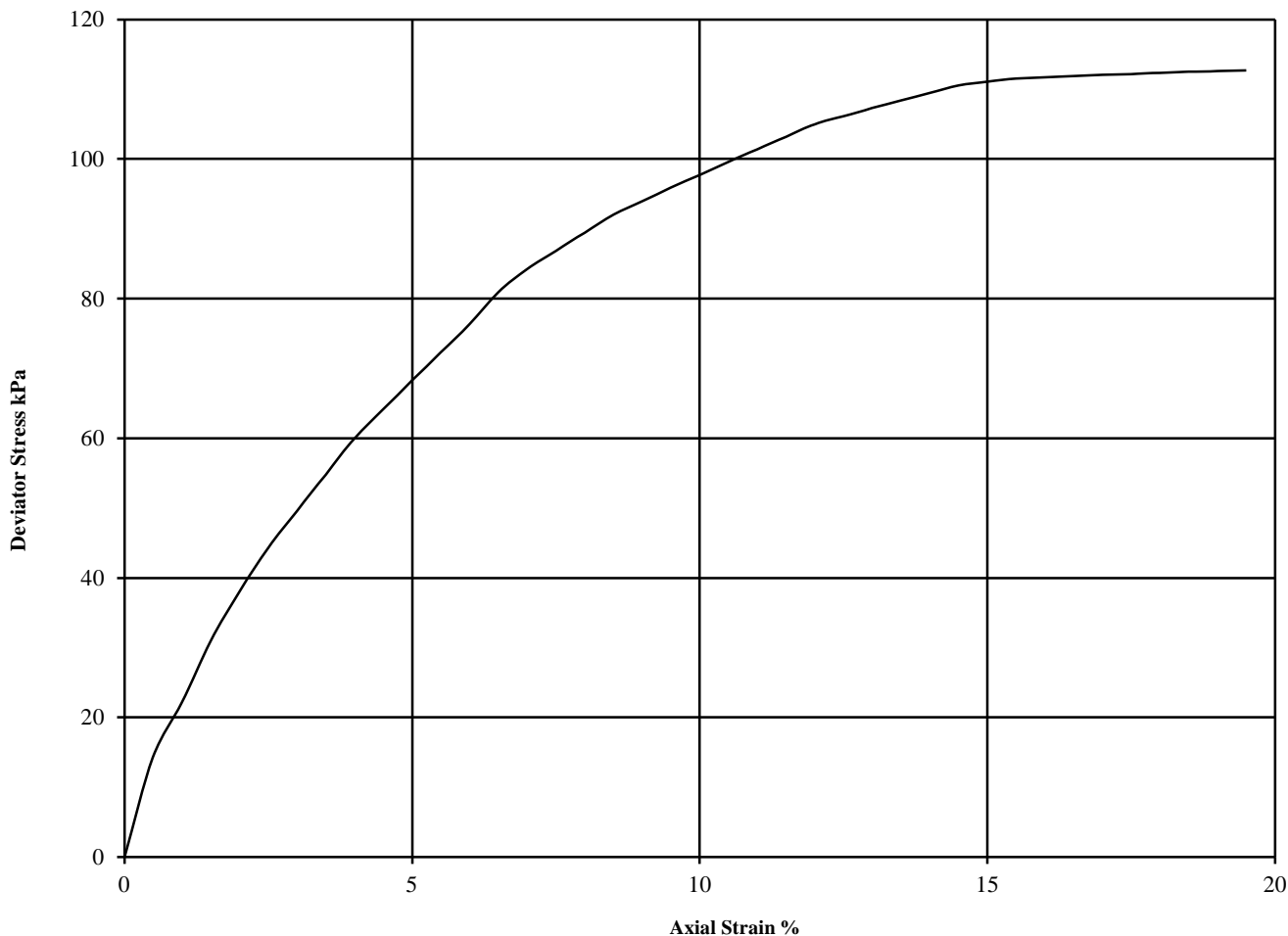
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number: CP02 Top Depth (m): 1.20

Sample Number: Base Depth (m): 1.65

Sample Type UT



Diameter (mm):		102		Height (mm):		204		Test:		UU Single Stage		Remarks:	
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34				
1	23	2.08	1.70	24	113	56	19.5	Plastic	See summary of soil descriptions				



Aldi Treharris

Contract No:

PSL23/10038

Client Ref:

ORD-20287-3856

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

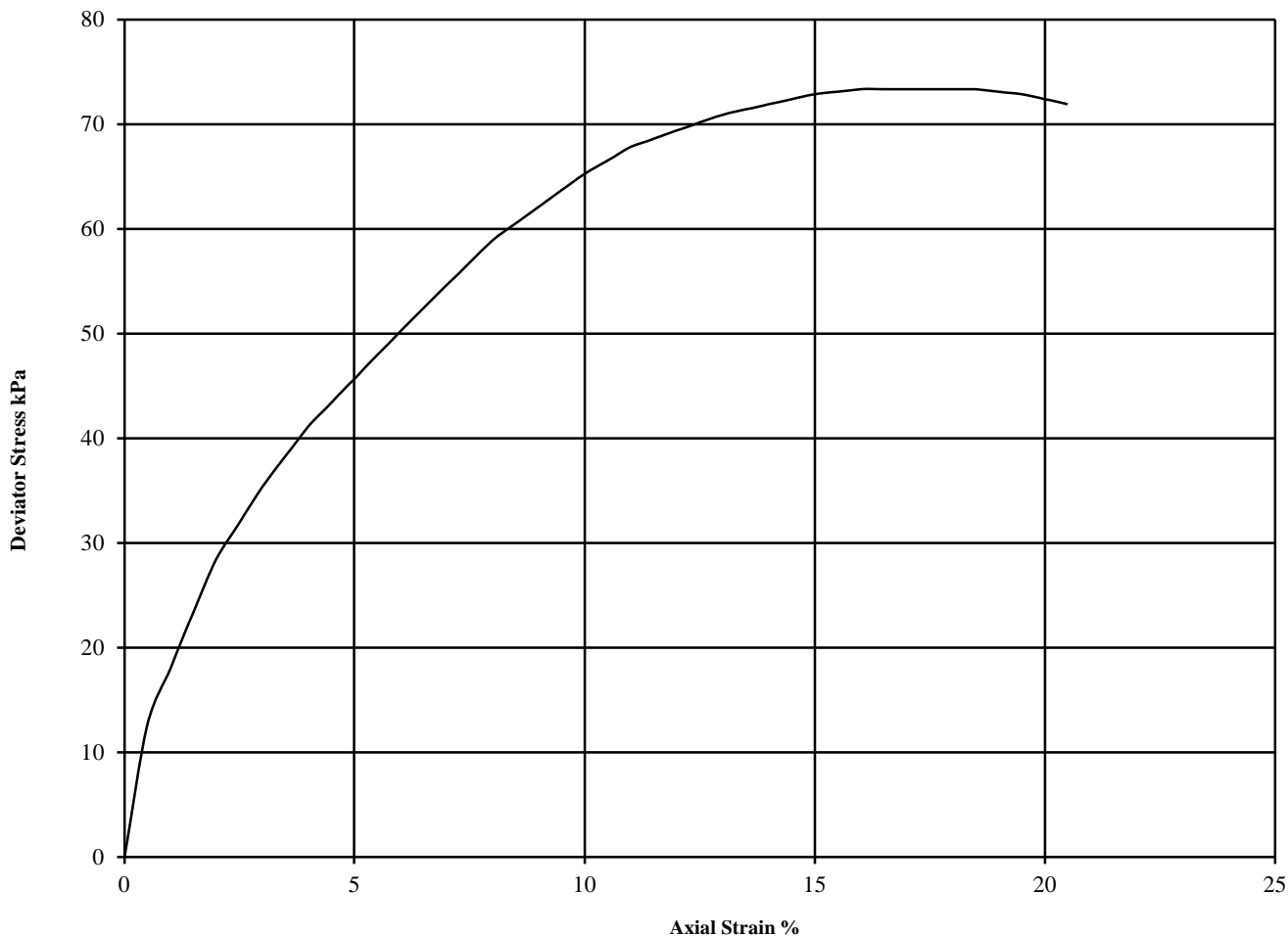
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number: CP03 Top Depth (m): 1.20

Sample Number: Base Depth (m): 1.65

Sample Type UT



Diameter (mm):		102		Height (mm):		204		Test:		UU Single Stage		Remarks:	
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34				
1	22	2.10	1.72	24	73	37	16.5	Plastic	See summary of soil descriptions				



Aldi Treharris

Contract No:

PSL23/10038

Client Ref:

ORD-20287-3856

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

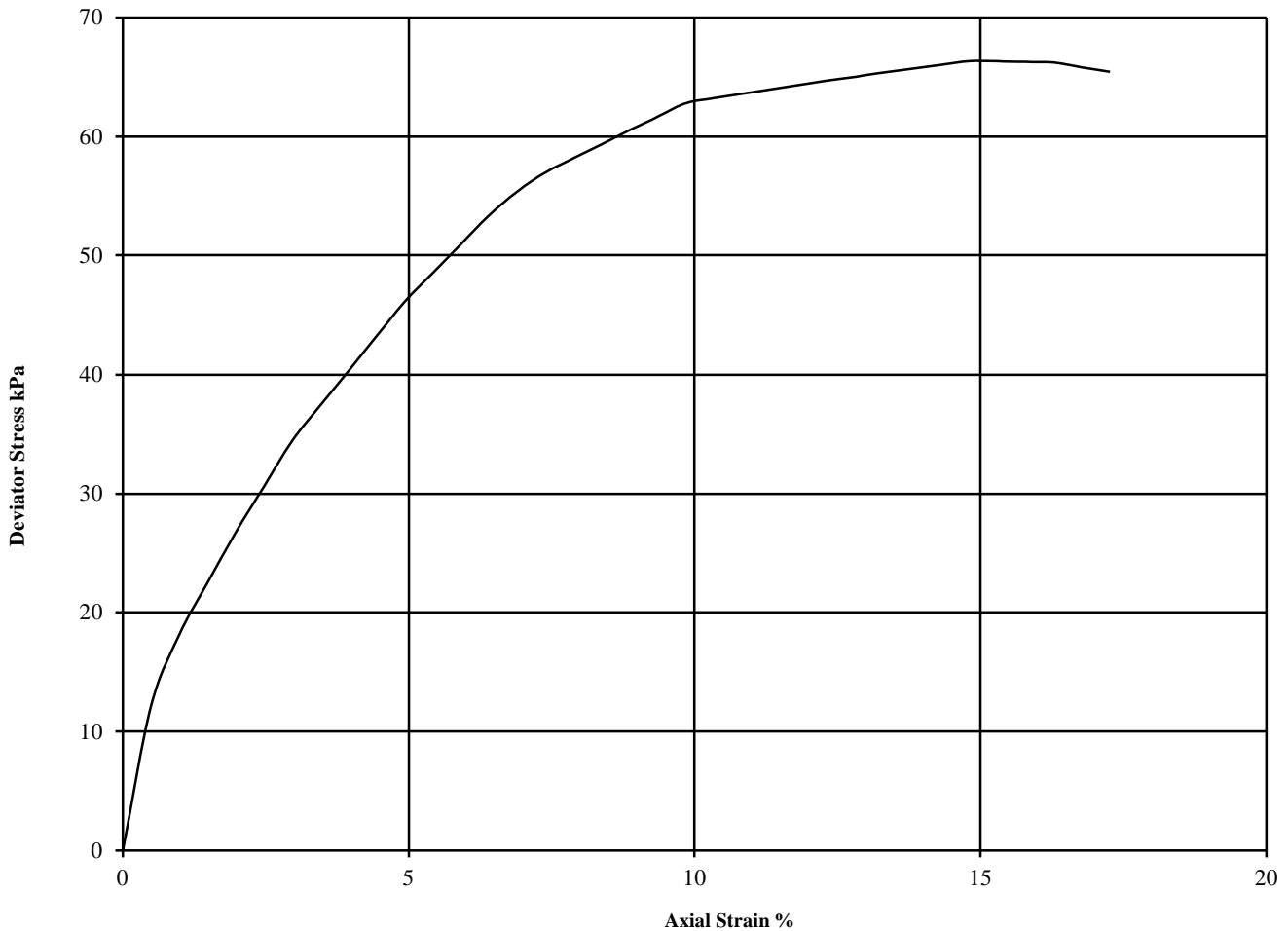
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number: WS08 Top Depth (m): 1.50

Sample Number: Base Depth (m): 2.00

Sample Type UT



Diameter (mm):		74		Height (mm):		150		Test:		UU Single Stage		Remarks:	
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.46				
1	21	2.12	1.76	30	66	33	14.8	Plastic	See summary of soil descriptions				



Aldi Treharris

Contract No:
PSL23/10038
Client Ref:
ORD-20287-3856

ONE DIMENSIONAL CONSOLIDATION TEST

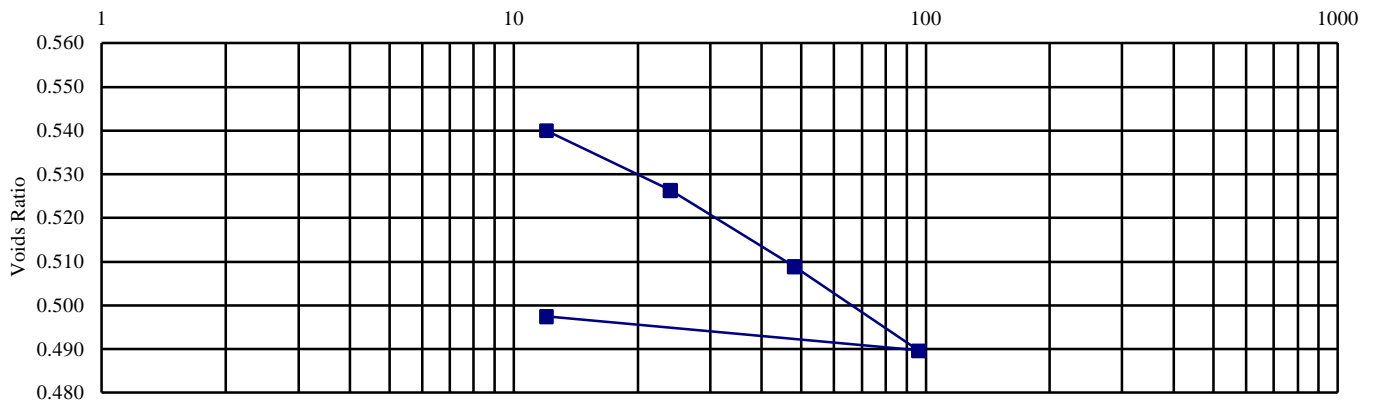
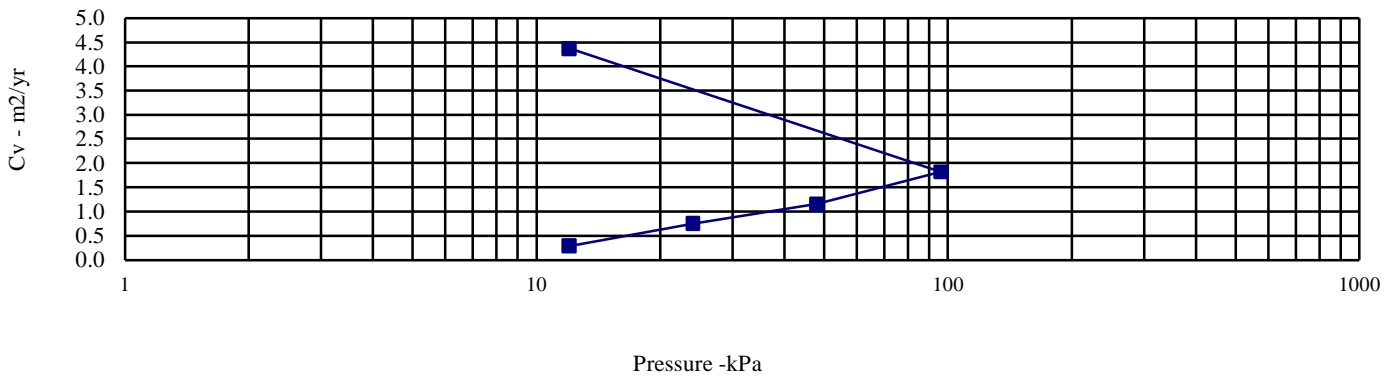
BS 1377: Part 5: 1990: Clause 3

Hole Number: CP04 Top Depth (m): 1.20

Sample Number: Base Depth (m) : 1.65

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	
Moisture Content (%):	22	kPa		m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.05	0	12	2.084	0.288	Method used to	
Dry Density (Mg/m3):	1.68	12	24	0.738	0.754	determine CV:	T90
Voids Ratio:	0.579	24	48	0.478	1.157	Nominal temperature	
Degree of saturation:	101.8	48	96	0.265	1.819	during test ' C:	20
Height (mm):	20.032	96	12	0.062	4.370	Remarks:	
Diameter (mm)	75.025	See summary of soil descriptions					
Particle Density (Mg/m3):	2.65						
Assumed							



Aldi Treharris

Contract No:
PSL23/10038
Client Ref:
ORD-20287-3856

ONE DIMENSIONAL CONSOLIDATION TEST

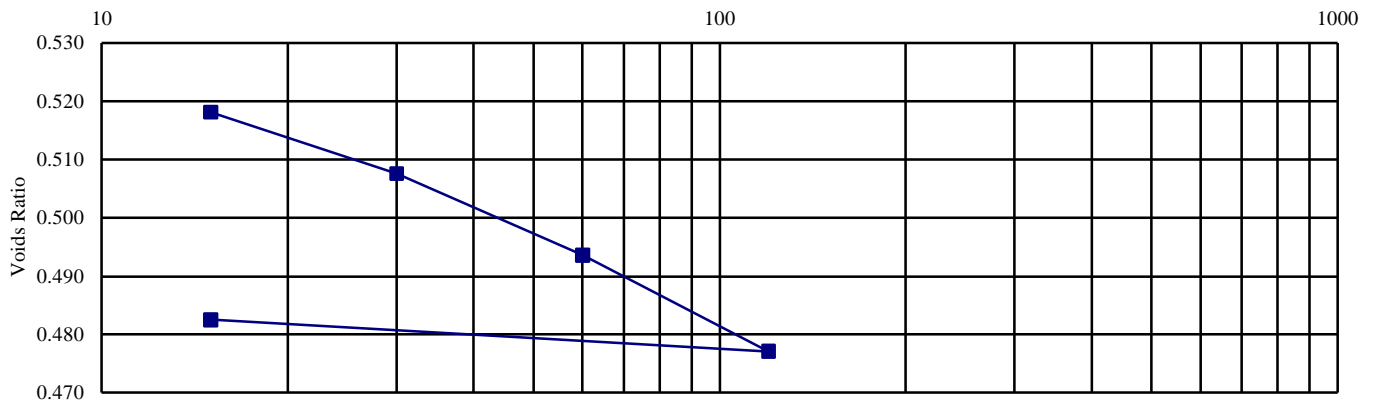
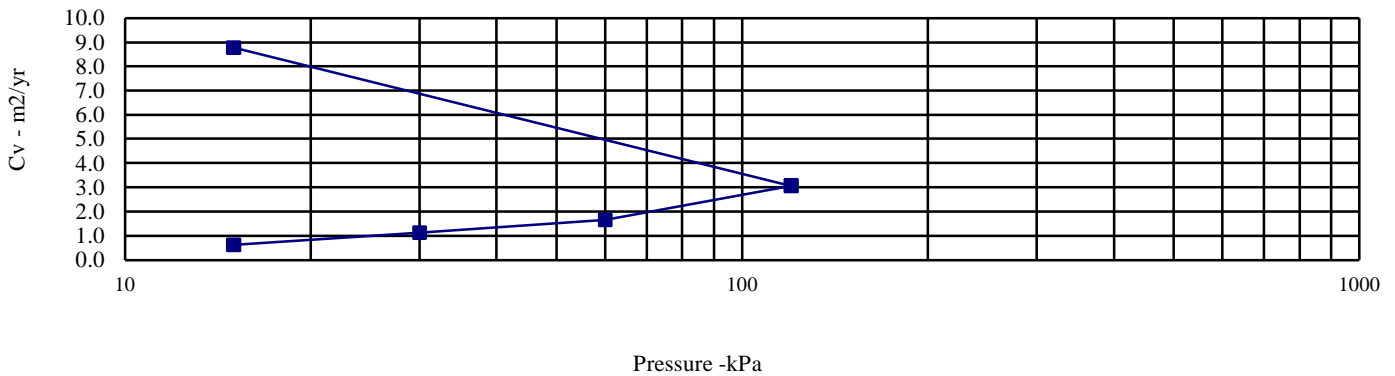
BS 1377: Part 5: 1990: Clause 3

Hole Number: WS08 Top Depth (m): 1.50

Sample Number: Base Depth (m) : 2.00

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	
Moisture Content (%):	21	kPa		m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.08	0	15	0.939	0.621	Method used to	
Dry Density (Mg/m3):	1.72	15	30	0.463	1.125	determine CV:	T90
Voids Ratio:	0.540	30	60	0.309	1.653	Nominal temperature	
Degree of saturation:	102.3	60	120	0.184	3.068	during test 'C':	20
Height (mm):	20.026	120	15	0.035	8.783	Remarks:	
Diameter (mm)	50.008	See summary of soil descriptions					
Particle Density (Mg/m3):	2.65						
Assumed							



Aldi Treharris

Contract No:
PSL23/10038
Client Ref:
ORD-20287-3856



LABORATORY REPORT



Contract Number: PSL24/0386

Report Date: 19 January 2024
Client's Reference: GRO-20287-3948
Client Name: Groundtech Consulting
First Floor
Lloyd House
Orford Court
Greenfold Way
WN7 3XJ

For the attention of: Rebecca Rowlinson

Contract Title: Aldi Treharris
Date Received: 16/1/2024
Date Commenced: 16/1/2024
Date Completed: 19/1/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Managing Director)

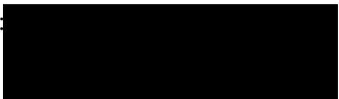
R Berriman
(Associate Director)

S Royle
(Laboratory Manager)


L Knight
(Assistant Laboratory Manager)

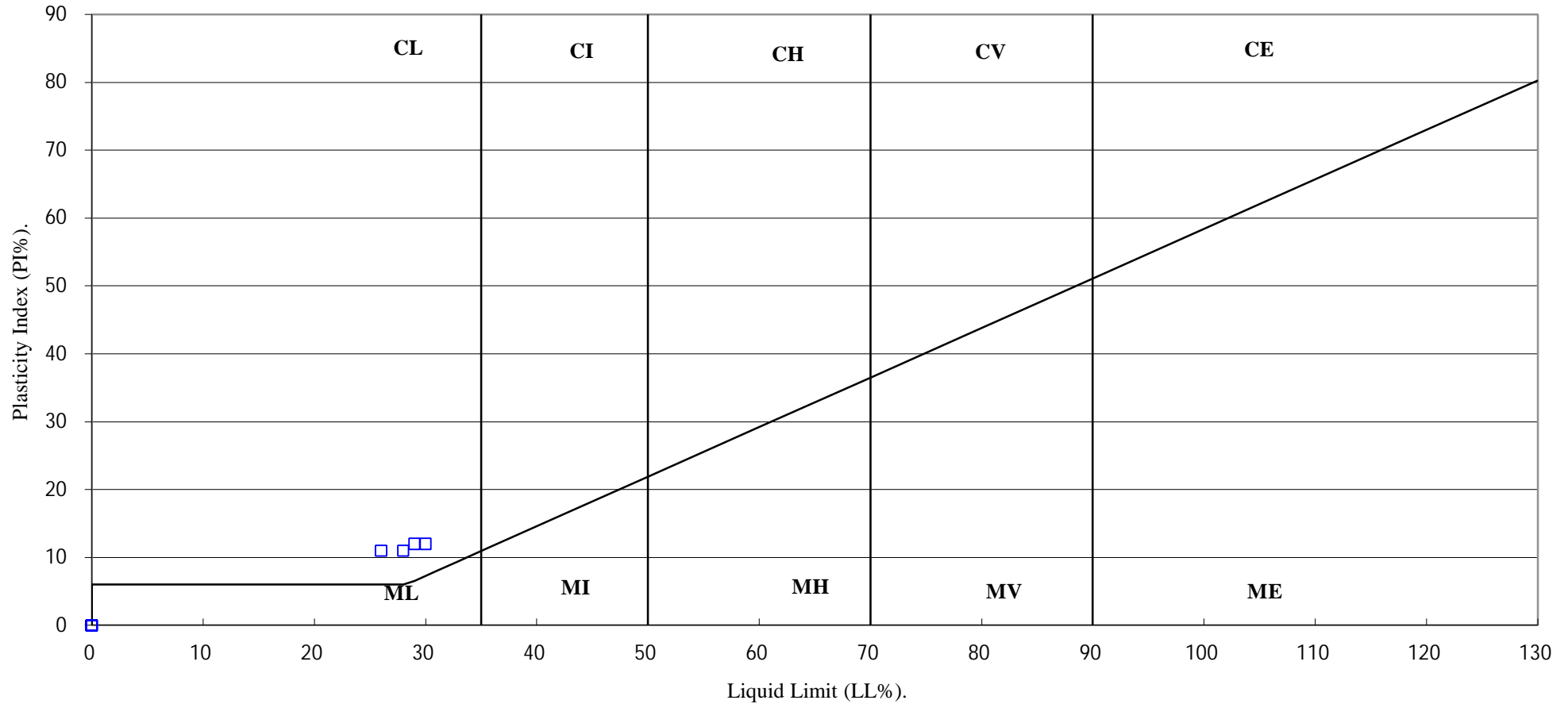
S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

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Doncaster,
DN4 0AR
Tel: 01302 768098
Email: 

Page 1 of

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



Aldi Treharris

Contract No:

PSL24/0386

Client Ref:

GRO-20287-3948



4161



Professional Soils Laboratory
5/7 Hexthorpe Road
Hexthorpe
Doncaster
DN4 0AR

Analytical Test Report: L24/00463/PSL - 24-40898

Your Project Reference:	PSL24/0386 Aldi Treharris		
Your Order Number:	PSL24/0386	Samples Received / Instructed:	19/01/2024 / 19/01/2024
Report Issue Number:	1	Sample Tested:	19/01 to 25/01/2024
Samples Analysed:	6 soil samples	Report issued:	25/01/2024



James Gane
Analytical Services Manager
CTS Group

Notes:

General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Date of Issue: 30.10.2023

Issued by: J. Gane

Issue No: 4

Rev No: 5



4161

7 - 11 Harding Street
Leicester
LE1 4DH

L24/00463/PSL - 24-40898

Project Reference - PSL24/0386 Aldi Treharris

Analytical Test Results - Chemical Analysis

Lab Reference	336653	336654	336655	336656	336657	336658		
Client Sample ID	-	-	-	-	-	-		
Client Sample Location	WS05	WS12	CP03	WS01	WS06	CP02		
Client Sample Type	D	D	D	D	D	D		
Client Sample Number	-	-	-	-	-	-		
Depth - Top (m)	1.50	2.00	1.70	1.50	1.60	1.70		
Depth - Bottom (m)	1.50	2.00	1.70	1.50	1.60	1.70		
Date of Sampling	-	-	-	-	-	-		
Time of Sampling	-	-	-	-	-	-		
Sample Matrix	Clay	Clay	Clay	Clay	Clay	Clay		
Determinant	Units	Accreditation						
Water soluble sulphate (as SO ₄)	(mg/l)	u	< 10	< 10	< 10	24	11	< 10
Acid Soluble Sulphate	(%)	u	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total Sulphur	(%)	UKAS	0.02	< 0.01	0.02	0.01	0.02	0.02
pH Value	pH Units	MCERTS	7.4	7.0	4.6	7.1	6.9	4.8
Water Soluble Chloride	(mg/l)	u	14	26	9.4	37	3.7	12
Water Soluble Nitrate (As NO ₃)	(mg/l)	u	1.8	2.3	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Magnesium	(mg/l)	u	4.8	1.6	< 1.5	5.3	5.9	< 1.5
Water Soluble Ammonium Ion	(mg/l)	u	1.3	4.4	1.3	4.5	1.3	1.3



4161



7 - 11 Harding Street
Leicester
LE1 4DH

L24/00463/PSL - 24-40898

Project Reference - PSL24/0386 Aldi Treharris

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
336653	-	WS05	D	-	Brown slightly gravelly silty clay	-	-	78
336654	-	WS12	D	-	Brown slightly gravelly silty clay	-	-	88
336655	-	CP03	D	-	Brown slightly gravelly silty clay	-	-	62
336656	-	WS01	D	-	Brown slightly gravelly silty clay	-	-	62
336657	-	WS06	D	-	Brown slightly gravelly silty clay	-	-	90
336658	-	CP02	D	-	Brown slightly gravelly silty clay	-	-	65



4161



7 - 11 Harding Street
Leicester
LE1 4DH

L24/00463/PSL - 24-40898

Project Reference - PSL24/0386 Aldi Treharris

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
336653	-	WS05	D	-	
336654	-	WS12	D	-	
336655	-	CP03	D	-	
336656	-	WS01	D	-	
336657	-	WS06	D	-	
336658	-	CP02	D	-	



4161



7 - 11 Harding Street
Leicester
LE1 4DH

L24/00463/PSL - 24-40898

Project Reference - PSL24/0386 Aldi Treharris

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
ASSO4S	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Determination of total sulphate in soils by acid extraction followed by ICP analysis
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis
1377TS-ELT	BS1377 Total Sulphur Content by HTC	Oven dried	BS1377 : Part 1 : 2016	Total Sulphur Content testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.10 (using Eltra CS-800 Analyser)
1377MGICP	BS1377 WS Magnesium (ICP)	Oven dried	Passing 2mm test sieve	Water Soluble Magnesium testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 10.



4161



7 - 11 Harding Street
Leicester
LE1 4DH

L24/00463/PSL - 24-40898

Project Reference - PSL24/0386 Aldi Treharris

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided

C - Received in inappropriate container

H - Contains headspace

T - Temperature on receipt exceeds storage temperature

R - Sample(s) received with less than 96 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
336653	-	WS05	D	-		A
336654	-	WS12	D	-		A
336655	-	CP03	D	-		A
336656	-	WS01	D	-		A
336657	-	WS06	D	-		A
336658	-	CP02	D	-		A



APPENDIX 8 - Ground Gas Monitoring Results

PERMANENT GROUND GAS MONITORING FORM



SITE NAME:	ALDI,MAFON,ROAD, TREHARRIS				ENGINEER:	William Sandiford Mitchell				
CLIENT:	ALDI STORES LIMITED				DATE:	15/11/2023				
JOB NO:	GRO-20287									
Pressure Trend:	Steady	Weather:	CLEAR			Equipment:	GFM 436			
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)	LEL	H ₂ S (ppm)	CO (ppm)				
Start	20.7	0.0	0.0	0.0	0.0	0.0				
Finish	20.7	0.0	0.0	0.0	0.0	0.0				

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q _{hg} CO ₂ (l/hr)	Q _{hg} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
CP01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP03	0.0	0.0	0.00	0.0	0.0	0.0	0.8	0.6	19.4	19.2	0.0	0.0	0.0	0.0	0.0008	0.0000	1001	-	N	N/A	N/A	1.60
CP04	0.0	0.0	0.00	0.0	0.0	0.0	1.2	0.9	17.7	18.0	0.0	0.0	0.0	0.0	0.0012	0.0000	1001	-	N	N/A	N/A	2.05
WS02	0.0	0.0	0.00	0.0	0.0	0.0	0.1	0.0	20.3	20.8	0.0	0.0	0.0	0.0	0.0001	0.0000	999	-	N	N/A	N/A	0.99
WS03	0.0	0.0	0.00	0.0	0.0	0.0	0.1	0.1	20.8	20.4	0.0	0.0	0.0	10.0	0.0001	0.0000	999	-	N	N/A	N/A	NGW
WS04	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0000	0.0000	999	-	N	N/A	N/A	1.26	
WS05	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0000	0.0000	999	-	N	N/A	N/A	1.22	

Notes: CP01 - CP02 FLOODED

PERMANENT GROUND GAS MONITORING FORM



SITE NAME:	ALDI,MAFON,ROAD, TREHARRIS	ENGINEER:	William Sandiford Mitchell
CLIENT:	ALDI STORES LIMITED	DATE:	28/11/2023
JOB NO:	GRO-20287		
Pressure Trend:	Falling	Weather:	CLEAR
		Equipment:	GFM 436
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)
Start	20.8	0.0	0.0
Finish	20.8	0.0	0.0

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q _{hg} CO ₂ (l/hr)	Q _{hg} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
CP01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP03	0.0	0.0	0.00	0.0	0.0	0.0	0.8	0.7	19.5	19.0	0.0	0.0	0.0	0.0	0.0008	0.0000	995	-	N	N/A	N/A	1.54
CP04	0.0	0.0	0.00	0.0	0.0	0.0	0.9	1.0	16.9	16.6	0.0	0.0	0.0	0.0	0.0009	0.0000	995	-	N	N/A	N/A	1.98
WS02	0.0	0.0	0.00	0.0	0.0	0.0	0.8	0.6	18.9	18.6	0.0	0.0	0.0	0.0	0.0008	0.0000	995	-	N	N/A	N/A	0.96
WS03	0.0	0.0	0.00	0.0	0.0	0.0	1.4	1.2	18.2	18.0	0.0	0.0	0.0	0.0	0.0014	0.0000	995	-	N	N/A	N/A	NGW
WS04	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	20.2	20.4	0.0	0.0	0.0	0.0	0.0000	0.0000	995	-	N	N/A	N/A	1.22
WS05	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	20.1	20.2	0.0	0.0	0.0	0.0	0.0000	0.0000	995	-	N	N/A	N/A	1.18

Notes: CP01 AND CP02 FLOODED

PERMANENT GROUND GAS MONITORING FORM



SITE NAME:	ALDI,MAFON,ROAD, TREHARRIS	ENGINEER:	William Sandiford Mitchell
CLIENT:	ALDI STORES LIMITED	DATE:	07/12/2023
JOB NO:	GRO-20287		
Pressure Trend:	Steady	Weather:	OVERCAST
		Equipment:	GFM 436
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)
Start	20.7	0.0	0.0
Finish	20.7	0.0	0.0

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q _{hg} CO ₂ (l/hr)	Q _{hg} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
CP01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP03	0.0	0.0	0.00	0.0	0.0	0.0	1.9	1.6	20.4	20.4	0.0	0.0	0.0	0.0	0.0019	0.0000	986	-	N	N/A	N/A	1.33
CP04	0.0	0.0	0.00	0.0	0.0	0.0	1.3	1.1	20.4	20.5	0.0	0.0	0.0	0.0	0.0013	0.0000	986	-	N	N/A	N/A	1.98
WS02	0.0	0.0	0.00	0.0	0.0	0.0	0.4	0.3	19.6	20.0	0.0	0.0	0.0	0.0	0.0004	0.0000	986	-	N	N/A	N/A	0.97
WS03	0.0	0.0	0.00	0.0	0.0	0.0	0.2	0.2	20.3	20.4	0.0	0.0	0.0	0.0	0.0002	0.0000	986	-	N	N/A	N/A	NGW
WS04	0.0	0.0	0.00	0.0	0.0	0.0	0.2	0.2	20.5	20.5	0.0	0.0	0.0	0.0	0.0002	0.0000	986	-	N	N/A	N/A	1.23
WS05	0.0	0.0	0.00	0.0	0.0	0.0	0.2	0.2	19.6	20.0	0.0	0.0	0.0	0.0	0.0002	0.0000	986	-	N	N/A	N/A	1.27

Notes: Gw Flooding - recharge within the hour - CP01 CP02

PERMANENT GROUND GAS MONITORING FORM



SITE NAME:	ALDI,MAFON,ROAD, TREHARRIS				ENGINEER:	Ethan Hitchcow				
CLIENT:	ALDI STORES LIMITED				DATE:	04/01/2024				
JOB NO:	GRO-20287									
Pressure Trend:	Rising	Weather:	Overcast		Equipment:	GFM 436				
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)	LEL	H ₂ S (ppm)	CO (ppm)				
Start	20.6	0.0	0.0	0.0	0.0	0.0				
Finish	20.6	0.0	0.0	0.0	0.0	0.0				

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q _{hg} CO ₂ (l/hr)	Q _{hg} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
CP01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CP03	0.0	0.0	0.00	0.0	0.0	0.0	0.2	0.1	19.9	19.6	0.0	0.0	0.0	0.0	0.0002	0.0000	979	N	N	N/A	N/A	1.56
CP04	0.0	0.0	0.00	0.0	0.0	0.0	0.8	0.6	15.8	13.6	0.0	0.0	0.0	0.0	0.0008	0.0000	979	N	N	N/A	N/A	1.78
WS02	0.0	0.0	0.00	0.0	0.0	0.0	0.8	0.1	19.6	19.4	0.0	0.0	0.0	0.0	0.0008	0.0000	979	N	N	N/A	N/A	1.03
WS03	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	20.2	19.9	0.0	0.0	0.0	0.0	0.0000	0.0000	979	N	N	N/A	N/A	NGW
WS04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WS05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: CP01 and CP02 were both flooded. WS04 was blocked by a lorry. WS05 couldn't be located.