

Interpretive Ground Assessment & Infiltration Testing

At

Ysgol Thomas Ellis, Holyhead

**Client: Isle of Anglesey County Council** 

Reference: 31494-SUT-ZZ-00-RP-G-705-0001

Date: June 2021

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# **SUTCLIFFE INVESTIGATIONS**

# Interpretive Ground Assessment & Infiltration Testing

## **Document Control Sheet**

#### Report Reference: 31494-SUT-ZZ-00-RP-G-705-0001

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# 1 Introduction

#### **1.1 Terms of Reference**

Sutcliffe Investigations were instructed by Isle of Anglesey County Council (the "client") to undertake investigations at Ysgol Thomas Ellis, Holyhead, Ynys Môn (NGR: 224520, 381710). Investigations included:

- 3No. soakaway tests complaint with Soakaway Design Digest BRE365
- 6No. Trial Holes
- Contamination Sampling

This report presents our soakaway test results, exploratory trial pit logs and contamination testing analysis.

With regards to the soakaway testing, this report is not an engineering design and the figures and calculations contained in the report should only be used by the Engineer.

Additionally, this report shall not be relied upon or transferred to any other parties without the express written authorisation of Sutcliffe Investigations. If an unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

## 1.2 Site Location

The site is located at Ysgol Thomas Ellis, Holyhead, Ynys Môn. The site is approximately 1.2km south of Holyhead Town Centre. The National Grid Reference (NGR) for the centre of the site is 224520, 381710.

## 1.3 Scope of Works

In accordance with the Client's instructions, the following was included in our brief for works:

- 3No. soakaway tests (SA TP103, SA TP104 & SA TP106) carried out on site using the BRE 365 methodology. The location was identified by the appointed Civil Engineer. The fieldwork was carried out on the 8<sup>th</sup> March 2021, the weather was dry during the site works.
- 6No. Trial Pits (TP101 106) carried out on the 8<sup>th</sup> March 2021, for the purpose of further identifying the underlying ground conditions.
- 5No. Samples taken for contamination testing purposes. Samples were taken to Envirolab Laboratory for analysis.



## 2 Fieldwork

#### 2.1 General Site Description

The site is currently undeveloped following the demolition of the former on-site school. It is understood that the proposed development is for the construction of houses.

#### 2.2 Geology

The British Geological Survey Sheet No 93 (Anglesey) indicates that the site geology consists of Devensian Till for the superficial deposits and South Stack Formation for the solid geology.

#### 2.3 Ground Model

The ground conditions comprised of made ground over brown / grey, clayey, gravelly, fine-medium SAND with occasional clay pockets, large cobbles and boulders. Gravel was noted to be angular, fine-coarse natural stone.

TP101 and TP102 were terminated at a depth of 2.50m bgl, TP103 and TP106 at 1.30m bgl and TP104 at 1.20m bgl all on bounders and bedrock.

TP105 was terminated at a depth of 1.00m bgl on a possible former concrete foundation.

The trial pit logs for TP101 – TP106 are presented in Appendix A.

A plan detailing the Trial Pit and Soakaway locations is presented in Appendix B.



# 3 Infiltration Test Methodology

#### 3.1 Soakaway Design Digest – BRE365

The BRE365 Digest on soakaway design allows for the design of trench soakaways as well as traditional square and circular soakaways.

The test to measure the soil infiltration rate is carried out in pits which are excavated to the full depth of the proposed soakaway. The trial pits are filled and allowed to drain to empty or near empty, three times, on the same day or on consecutive days.

The pit is considered full when the water is level is the same as the proposed inlet invert. The time for the water level to fall from  $\frac{3}{4}$  full to  $\frac{1}{4}$  full is obtained and the soil infiltration rate is obtained from the following formula:

$$f = \frac{Vp75 - 25}{ap50xtp75 - 25}$$

Where: f = soil infiltration rate (in this case expressed in  $1/m^2/\text{minute}$ )

Vp75-25 = the effective storage volume of water in the trail pit between 75% and 25% effective depth

ap50 = the internal surface area of the trial pit up to 50% effective depth and excluding the base area;

tp75-25 = the time for the water level to fall from 75% to 25% effective depth.

The infiltration rates detailed within this report is expressed as  $1/m^2/minute$ , which is a convenient rate to use. The BRE use a unit of m/sec, which is the value in  $1/m^2/minute$  divided by 60,000.

## 3.2 Infiltration Test Results

Three infiltration tests were carried out on site at locations indicated by the Sutcliffe Engineer. Due to the inefficient infiltration characteristics of the ground at the excavation depths, the soakaway test comprised a single fill.

The full results of the infiltration tests are presented in *Appendix C*. Photographic logs of the excavations are presented in *Appendix D*.

However, the infiltration rates are summarised below:



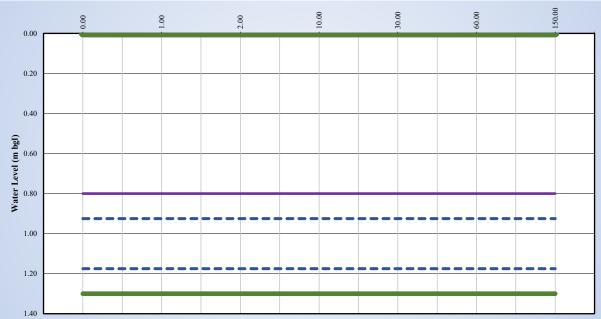


Plate 1 - BRE 365 Infiltration Test Results - SA TP103









Plate 3 - BRE 365 Infiltration Test Results - SA TP106

#### 3.3 Summary

No groundwater was encountered during the site investigation.

The SA TP103, SA TP104 & SA TP106 test results did not provide an infiltration rate due to the inefficiencies of the ground to infiltrate.

As all three soakaway tests failed, it is advised that alternative methods of sustainable drainage are explored.



# 4 Soils – Long Term Human Health Risk Assessment

### 4.1 Methodology

Based on the Preliminary Risk Assessment and Ground Model for this site, a Generic Quantitative Risk Assessment for human health has been undertaken in accordance with CLR and SR (SC050021 series) (DEFRA) guidance as well as CL:AIRE guidance on Comparing Soil Contamination Data with a Critical Concentration, May 2008 and comprises the following:

- Selection of appropriate generic screening values for human health assessment.
- Creation of relevant datasets from which to undertake the assessment.
- Assessment of contamination distribution and comparison of site data to screening values using relevant statistical tests (in accordance with CIEH guidance).
- Assessment of risks to receptors.

Determination of requirements for further investigation or remediation

#### 4.2 Selection of Soil Screening Values

Soil screening values appropriate for a residential with plant uptake end use were selected.

#### 4.3 Creation of Relevant Datasets

The sampling strategy targeted the made ground encountered on site.

#### 4.4 Assessment

The soil analytical data has been assessed following CL:AIRE/CIEH guidance and NHBC R&D Publication 66 2008 *"Guidance for the Safe Development of Housing on Land Affected by Contamination".* 

The purpose of human health risk assessment for planning is to decide whether the land is suitable for the proposed end use and does not pose a risk to human health. Therefore, the key question to answer is, *"Is there sufficient evidence that the true mean concentration is less than the critical concentration"*?

Statistics are used to assist in answering the key question raised above and to help decide whether to support a particular hypothesis. The null hypothesis is the starting point because it is believed to be true but needs to be proved.



In terms of planning, the hypotheses are as follows:

- Null Hypothesis (H0) the true mean is equal to, or greater than the critical concentration.
- Alternative Hypothesis (H1) the true mean is less than the critical concentration.

The null hypothesis needs to be rejected in order to confirm that the land does not pose a human health risk and is suitable for use under the planning regime.

## 4.5 Identification of Contaminants of Concern

The results of the soil analysis from the investigation are shown in *Appendix G*. These results were then compared against the relevant GACs for 5% soil organic matter (SOM). The average percentage SOM was 4.6% for 5 samples.

A single slightly elevated level of Lead was identified in TP104 at 0.00 - 0.60m bgl, when assessed against the 5% SOM residential with plant uptake end use values, therefore statistical analysis was only undertaken for Lead.

It should be noted that the screening values for Aliphatics EC12-16, Aliphatics EC16-35 and Aliphatics EC35-44 are based upon the theoretical lower saturation limit for the compounds in question. The lower saturation limit has been used for these contaminants as the CLEA calculated SGV/GAC is greater than the lower saturation limit and vapour inhalation is an important contributor to exposure (SR4).

Soil analytical results and screening tables are shown in Appendix E.

#### 4.6 Asbestos

An Asbestos screen was undertaken on all samples. No Asbestos was detected in any of the samples.

### 4.7 Discussion

Despite the slightly elevated level, Lead was noted to pass the mean value test, therefore, the statistical analysis indicates that the null hypothesis can be rejected for all the contaminants and the alternative hypothesis can be accepted.

The statistical analysis for Lead is presented in Appendix F.

#### 4.8 Conclusion

The site does not pose a risk to human health, and no remediation works will be required as part of the development to ensure that the site is suitable for occupation and no longer poses a risk to human health.



Appendix A – Trial Pit Logs



	Sutc	liff	e			Site Anglesey Development of	Affordable Housing	Trial I Numb TP1	ber	
Excavation		Dimensi 2.5x2.5x	nsions 2.5x0.6m Ground Level (mOD)		Client Anglesey Council			Job Number 31494_L		
	Location		ntion Dates 08/03/2021		/03/2021	Engineer Michael Wiggins			Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend	d	
0.00-0.40	ES				(0.40) (0.90) (0.90) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20) (1.20)	natural stone.	obbles. Gravel is angular, htly gravelly, fine-medium SAN tts. Gravel is angular, fine-coar gravelly, fine-medium SAND w Gravel is angular, fine-coarse			
	and the second sec	A CONTRACTOR			1					

	Sample / Tests		x0.6m		Level (mOD)	Client Anglesey Council	Job Numl 31494	)er
	-		ı	-	.5x0.6m Anglesey Council			
	-		Location Dates		8/03/2021	Engineer Michael Wiggins	Shee 1/	
0.00-0.40		Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legen	Water
	ES					Madeground (similar to topsoil), dark brown, slightly silty,         fine-medium SAND with occasional rootlets.         Brown, clayey, slightly gravelly, fine-medium SAND with occasional clay pockets. Gravel is angular, fine-coarse natural stone.         Grey, slightly clayey, very gravelly, fine-medium SAND with occasional large cobbles. Gravel is angular, fine-coarse natural stone. Occasional small-medium boulders from 1.9r         Terminated at 2.50m		
						CAT scanned Terminated on boulders/bedrock		

	Sutc	liffe	•			Site Anglesey Development of Affordable Housing	Trial P Numb TP1(
<b>xcavation</b> Nachine Ex		Dimension 2.8x1.3x0		Ground	Level (mOD)	Client Anglesey Council	Job Numb 31494_
		Location	Location		3/03/2021	Engineer Michael Wiggins	Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
00-0.10	ES				0.10	Madeground, Brownish grey, very sandy, angular, fine-coarse GRAVEL.	
					(1.20)	Brown mottled grey, clayey, very gravelly, fine-medium SAND with occasional boulders. Gravel is ang, fine-coarse, natural stone	
					1.30	Terminated at 1.30m	
'lan .					• •	Remarks Terminated on boulders/bedrock	
				•			
				- ·	· ·		
		•				Scale (approx) Logged By Figu	re No.
							re NO.

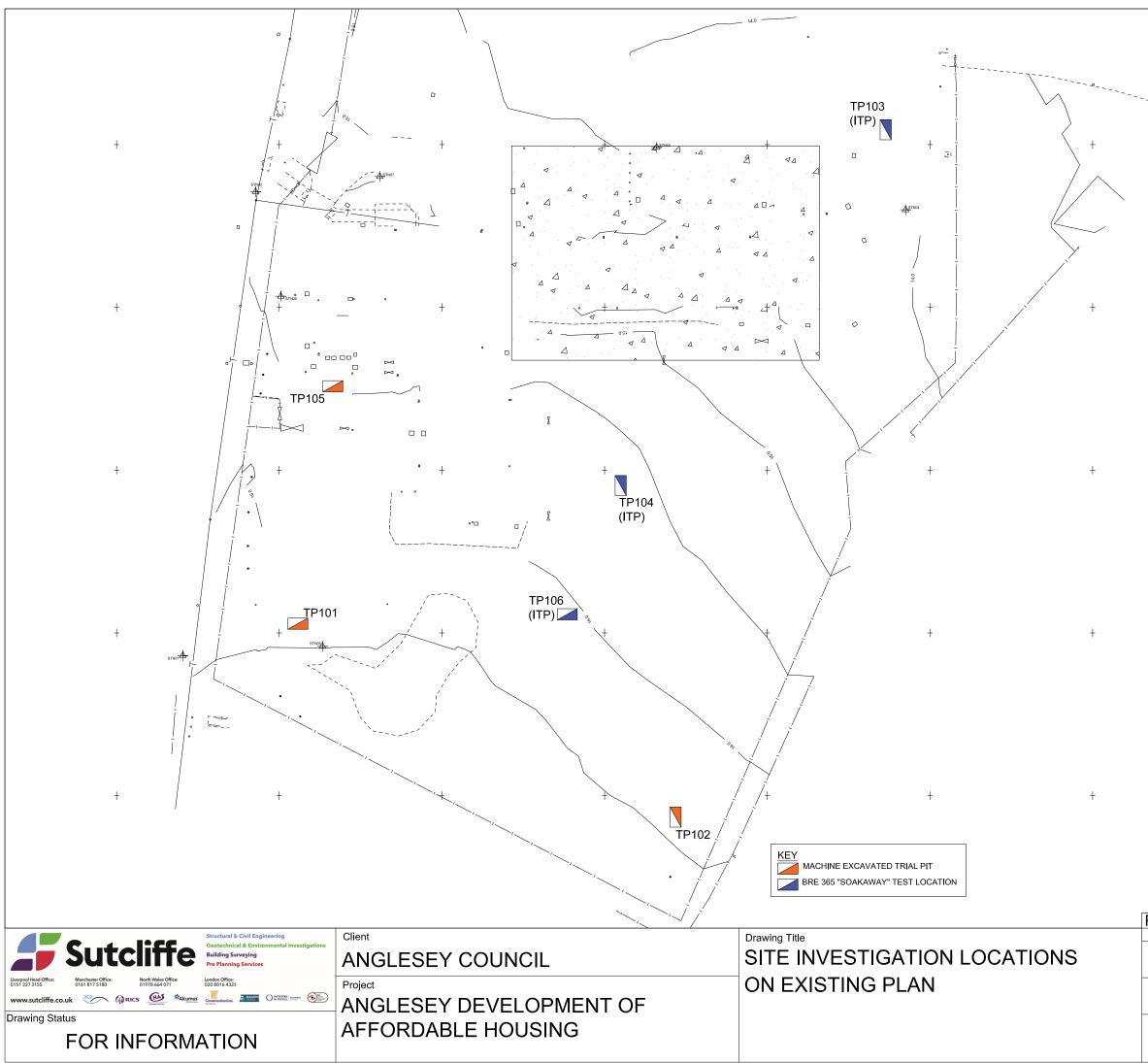
	Sutc	liffe				Site Anglesey Development of A	Affordable Housing	Trial Numb TP1	be
Excavation		Dimension 2.1x1.2x0.		Ground I	Level (mOD)	Client Anglesey Council		Job Numi 31494	
		Location		Dates 08/	B/03/2021 Engineer Michael Wiggins		Sh		e <b>t</b> '1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legen	d
.00-0.60	ES						osoil), dark brown, slightly silty, gravelly, fine-medium SAND with Gravel is angular, fine-coarse		
Plan .			· · · ·			Remarks CAT scanned Terminated on boulders/bedi	rock.		
lan .			· · · ·	· ·		CAT scanned	rock.		
lan .			· · · ·			CAT scanned	rock.		
۱an .		· ·	· · · ·			CAT scanned	rock.		

🗲 Sutc	liff	е			Site Anglesey Development of Affordable Housing	Trial F Numb TP1	er
Excavation Method Machine excavation		mensions Ground Level (mOD) 2x1x0.6m		Level (mOD)	Client Anglesey Council	Job Numb 31494	
	Locatio	n	Dates 08/03/2021		Engineer Michael Wiggins	Sheet 1/1	
Depth (m) Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description MADEGROUND, brown, very cobbly fine-medium SAND. Cobbles are angular of brick and concrete	Legend	
					Terminated at 1.00m		
					Remarks CAT scanned Terminated on possible former concrete foundations.		

	Sutcliffe				Site Anglesey Development of Affordable Housing		Pit ber 06		
Excavation Machine Exc		Dimensions         Ground Level (m           2.5x1.3x0.6m         Image: Comparison of the second secon		Level (mOD)	) Client Anglesey Council		<b>ber</b> _LC		
		Locatior	1	Dates 08/03/2021		Engineer Michael Wiggins		<b>Sheet</b> 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	t t	
0.00-0.60	ES					MADEGROUND (similar to topsoil), dark brown, slightly sil SAND. Grey, slightly clayey, very gravelly, fine-medium SAND with occasional large cobbles. Gravel is angular, fine-coarse natural stone. Terminated at 1.30m	y		
						icale (approx) Logged By Fig	ure No.		

Appendix B – Site Investigation Location Plan

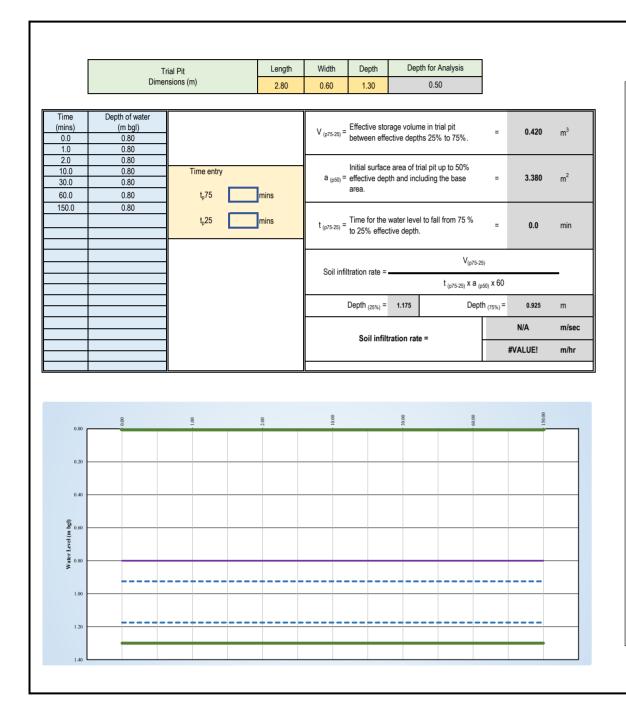


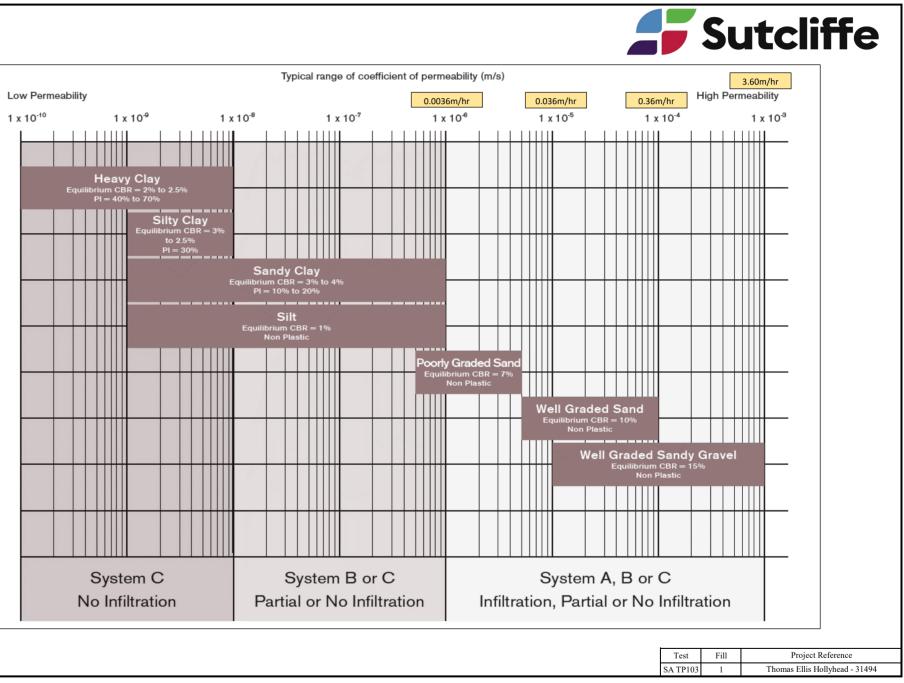


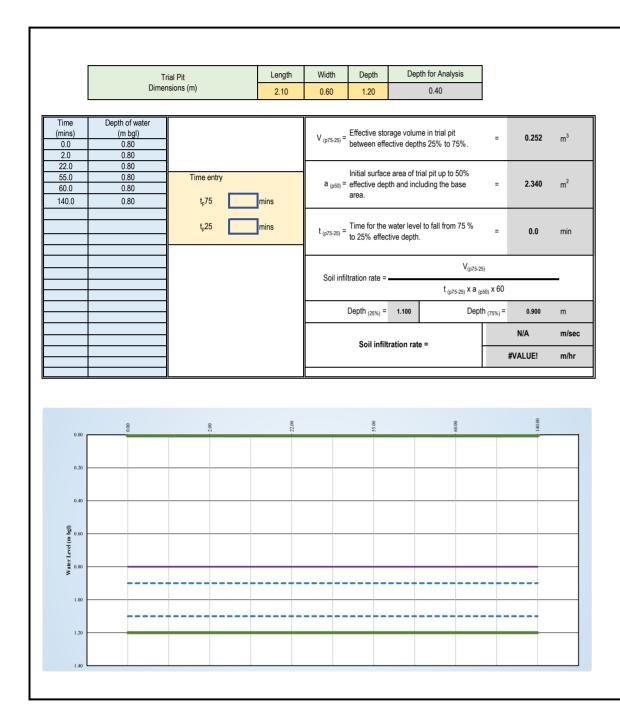
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P01 PRELIMINARY DRA Rev Description	Date	AT WB By Chkd
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NTS	31494LG	
Sheet Number	200.0004	Revision
31494-sut-zz-00-dr-g-7	20-0001	P01

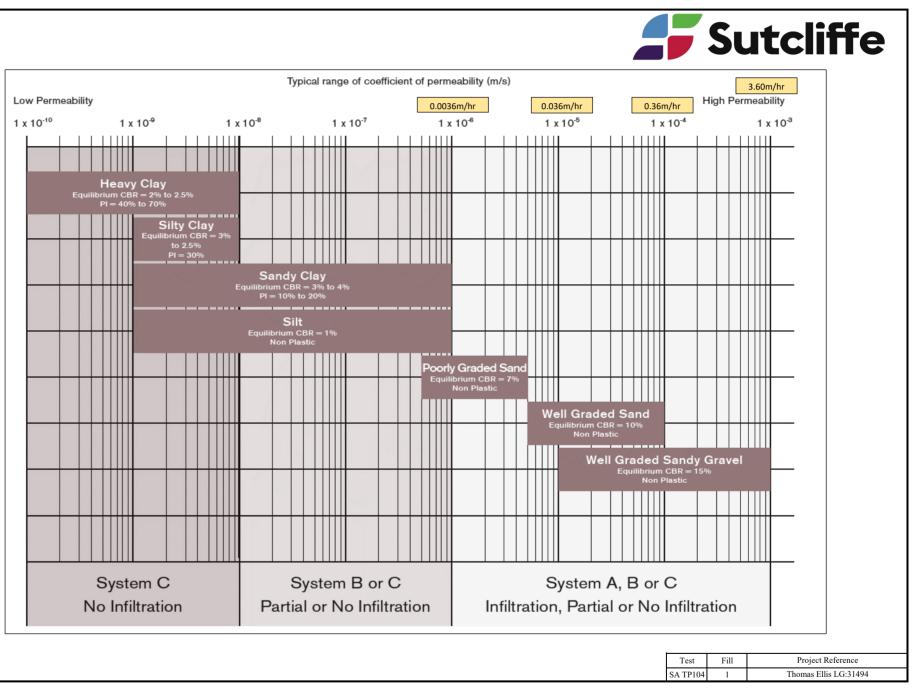
Appendix C – BRE 365 Infiltration Test Results & Calculations – SA TP103, 104 & 106

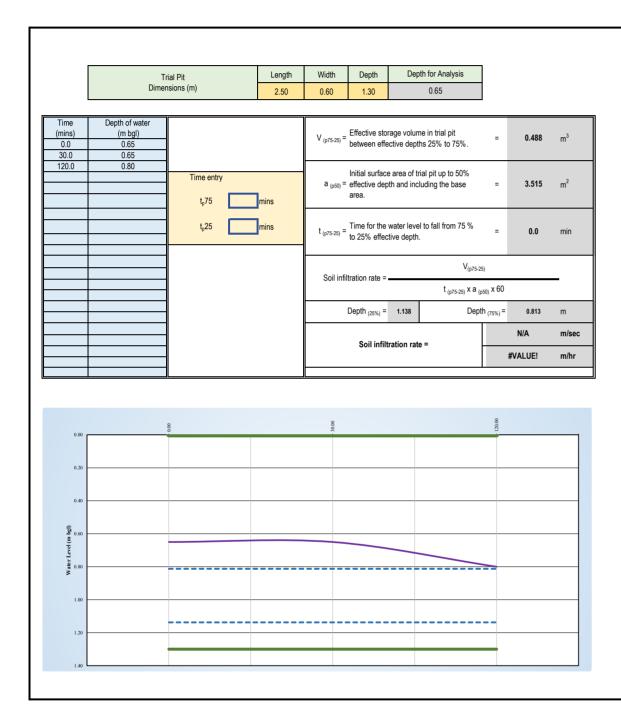


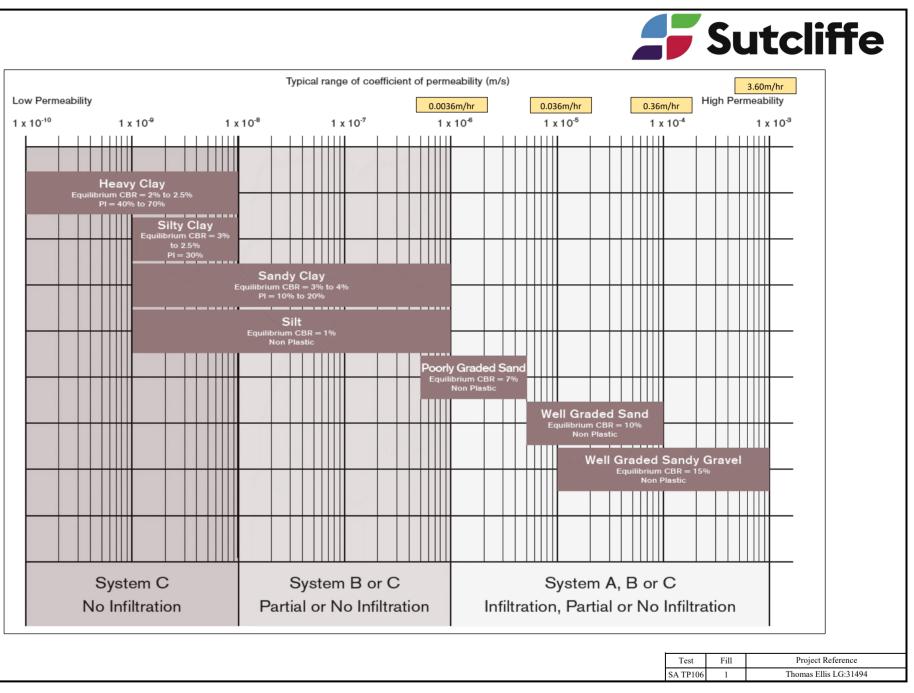












Appendix D – Photographic Log





Photographic Log – Trial Pits and Soakaways

Plate 1: TP101 terminated at a depth of 2.50m





Plate 3: TP102 terminated at a depth of 2.50m





Plate 5: SA TP103 terminated at 1.30m



Plate 6: Material from TP103



Plate 7: SA TP104 terminated at 1.20m



Plate 8: Some material from TP104



Plate 9: TP105 terminated at a depth of 1.00m



Plate 10: Material from TP105



Plate 11: SA TP106 terminated at 1.30m



Plate 12: Material from TP106

Appendix E – Analytical Certificates & Screening Spreadsheets



	-
	Job
<b>Sutcliffe</b>	Job N

Job Name:	Anglesey
Job Number:	LG: 31494

ATKINS REVISED 31/03/11, CATEGORY 4 - APRIL 2014, LQM JAN 2015

				2015				
			RESIDENT	IAL WITH PLA	NT UPTAKE		21/02657	21/02657
			-	1			21/02657/1	21/02657/2
		Category 4	Atkins		LQM		TP101	TP102
Contaminant	Units	Screening Values (6%)	Atrisk	SOM 1%	SOM 2.5%	SOM 5%	0.00 - 0.40m	0.00 - 0.40m
Arsenic (Total)	mg/kg	37			37		<1	8
Boron (Soluble)	mg/kg				290		<1.0	<1.0
Cadmium (Total)	mg/kg	26			11		0.5	0.8
Chromium III	mg/kg	- 1			910		20	28
Chromium VI	mg/kg	21			6		<1	<1
Copper (Total)	mg/kg	200			2400		15 14	54 137
Lead (Total) Mercury (Total)	mg/kg mg/kg	200			40		<0.17	<0.17
Nickel (Total)	mg/kg				180		19	23
Selenium (Total)	mg/kg				250		<1	<1
Zinc (Total)	mg/kg				3700		51	104
Cyanide (Total)	mg/kg		34				<1	<1
Phenols (Total)	mg/kg			280	550	1100	<0.2	<0.2
Organic matter	%						0.7	6.4
Sulphate (Acid Soluble)	mg/kg						<200	630
Sulphate as Water Soluble	g/l						<0.01	<0.01
Sulphide	mg/kg						<5	<5
pH	pH units						7.93	6.21
Sulphur (Elemental)	mg/kg			-			<5	<5
Asbestos							NAD	NAD
>> TPH SUITE << Total Aliphatic								
>C5 to C6 aliphatic	mg/kg			42	78	160	< 0.01	<0.01
>C6 to C8 aliphatic	mg/kg			100	230	530	<0.01	< 0.01
>C8 to C10 aliphatic	mg/kg			27	65	150	<1	<1
>C10 to C12 aliphatic	mg/kg			130	330	760	<1	<1
>C12 to C16 aliphatic	mg/kg			1100	2400	4300	<1	<1
>C16 to C21 aliphatic	mg/kg			65000	92000	110000	<1	<1
>C21 to C35 aliphatic	mg/kg			65000	92000	110000	2	2
>C35 to C44 aliphatic	mg/kg			65000	92000	110000	<1	<1
Total Aromatic								
>C5 to C7 aromatic	mg/kg			70	140	300	<0.01	<0.01
(Benzene)							0.01	0.01
>C7 to C8 aromatic	mg/kg			130	290	660	< 0.01	<0.01
(Toluene)				24	0.2	100	- 1	-1
>C8 to C10 aromatic >C10 to C12 aromatic	mg/kg			34 74	83 180	190 380	<1	<1 <1
>C10 to C12 aromatic	mg/kg mg/kg			140	330	660	<1	<1
>C16 to C21 aromatic	mg/kg			260	540	930	<1	1
>C21 to C35 aromatic	mg/kg			1100	1500	1700	<1	7
>C35 to C44 aromatic	mg/kg			1100	1500	1700	<1	<1
>> BTEX SUITE <<								
benzene	mg/kg	0.87		0.87	0.17	0.37	<0.01	<0.01
toluene	mg/kg			130	290	660	<0.01	<0.01
ethylbenzene	mg/kg			47	110	260	<0.01	<0.01
M&P Xylene	mg/kg			56	130	310	<0.01	<0.01
O-Xylene	mg/kg			60	140	330	<0.01	<0.01
>> PAH SUITE <<	,				E Â	40		
naphthalene	mg/kg			2.3	5.6	13	< 0.03	< 0.03
acenaphthylene	mg/kg			170	420	920	<0.01	<0.01 <0.01
	100 at /1			040	E40	1400		<(1)(1)
acenaphthene	mg/kg			210	510	1100	< 0.01	
fluorene	mg/kg			170	400	860	<0.01	<0.01
fluorene phenanthrene	mg/kg mg/kg			170 95	400 220	860 440	<0.01 <0.03	<0.01 0.09
fluorene phenanthrene anthracene	mg/kg mg/kg mg/kg			170 95 2400	400 220 5400	860 440 11000	<0.01 <0.03 <0.02	<0.01 0.09 <0.02
fluorene phenanthrene anthracene fluoranthene	mg/kg mg/kg mg/kg mg/kg			170 95 2400 280	400 220 5400 560	860 440 11000 890	<0.01 <0.03 <0.02 <0.08	<0.01 0.09 <0.02 0.17
fluorene phenanthrene anthracene fluoranthene pyrene	mg/kg mg/kg mg/kg mg/kg mg/kg			170 95 2400 280 620	400 220 5400 560 1200	860 440 11000 890 2000	<0.01 <0.03 <0.02 <0.08 <0.07	<0.01 0.09 <0.02 0.17 0.17
fluorene phenanthrene anthracene fluoranthene pyrene benzo(a)anthracene	mg/kg mg/kg mg/kg mg/kg			170 95 2400 280 620 7.2	400 220 5400 560	860 440 11000 890 2000 13	<0.01 <0.03 <0.02 <0.08	<0.01 0.09 <0.02 0.17
fluorene phenanthrene anthracene fluoranthene pyrene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg			170 95 2400 280 620	400 220 5400 560 1200 11	860 440 11000 890 2000	<0.01 <0.03 <0.02 <0.08 <0.07 <0.04	<0.01 0.09 <0.02 0.17 0.17 0.12
fluorene phenanthrene anthracene fluoranthene pyrene benzo(a)anthracene chrysene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg			170 95 2400 280 620 7.2 15	400 220 5400 560 1200 11 22	860 440 11000 890 2000 13 27	<0.01 <0.03 <0.02 <0.08 <0.07 <0.04 <0.06	<0.01 0.09 <0.02 0.17 0.17 0.12 0.12
fluorene phenanthrene anthracene fluoranthene pyrene benzo(a)anthracene chrysene benzo(b)fluoranthene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	5		170 95 2400 80 620 7.2 15 2.6 77 2.2	400 220 5400 1200 11 22 3.3 93 2.7	860 440 11000 890 2000 13 27 3.7 100 3	<ul> <li>&lt;0.01</li> <li>&lt;0.03</li> <li>&lt;0.02</li> <li>&lt;0.08</li> <li>&lt;0.07</li> <li>&lt;0.04</li> <li>&lt;0.06</li> <li>&lt;0.05</li> <li>&lt;0.07</li> <li>&lt;0.04</li> </ul>	<0.01 0.09 <0.02 0.17 0.17 0.12 0.12 0.14 <0.07 0.15
fluorene phenanthrene anthracene fluoranthene pyrene benzo(a)anthracene chrysene benzo(b)fluoranthene benzo(k)fluoranthene benzo(a)pyrene dibenzo(ah)anthracene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg			170 95 2400 280 620 7.2 15 2.6 77 2.2 0.24	400 220 5400 1200 11 22 3.3 93 2.7 0.28	860 440 11000 890 2000 13 27 3.7 100 3 0.3	<ul> <li>&lt;0.01</li> <li>&lt;0.03</li> <li>&lt;0.02</li> <li>&lt;0.08</li> <li>&lt;0.07</li> <li>&lt;0.04</li> <li>&lt;0.05</li> <li>&lt;0.07</li> <li>&lt;0.04</li> <li>&lt;0.04</li> </ul>	<0.01 0.09 <0.02 0.17 0.17 0.12 0.12 0.14 <0.07 0.15 <0.04
fluorene phenanthrene anthracene fluoranthene pyrene benzo(a)anthracene chrysene benzo(b)fluoranthene benzo(k)fluoranthene benzo(a)pyrene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	5 		170 95 2400 80 620 7.2 15 2.6 77 2.2	400 220 5400 1200 11 22 3.3 93 2.7	860 440 11000 890 2000 13 27 3.7 100 3	<ul> <li>&lt;0.01</li> <li>&lt;0.03</li> <li>&lt;0.02</li> <li>&lt;0.08</li> <li>&lt;0.07</li> <li>&lt;0.04</li> <li>&lt;0.06</li> <li>&lt;0.05</li> <li>&lt;0.07</li> <li>&lt;0.04</li> </ul>	<0.01 0.09 <0.02 0.17 0.17 0.12 0.12 0.14 <0.07 0.15

	<u>.</u>
	Jo
<b>Sutcli</b>	Job

Job Name:	Anglesey
Job Number:	LG: 31494

ATKINS REVISED 31/03/11, CATEGORY 4 - APRIL 2014, LQM JAN 2015

PESIDENTIAL WITH PLANT UPTAKE         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/02/57/3         21/0					2015						
Cartegory 4 Screening Values (C)         Category 4 Screening Values (C)         Low Screening Values (C)         Low Screening Values (C)         Soft Values (C)         Soft Values (C)				RESIDENT							
Contaminant         Units         Screen Values (KN)         Atrine Arsenic (Total)         SOM Type         SOM 2.5%         SOM 2.5%         SOM 2.5%         SOM 0.00-0.10m         O.00- 0.60m           Arsenic (Total)         mg/kg         2         20         <1.0         -1.0         9           Cantinum VI Cationum V				REGIDENT		-					
Contaminant         Units         Screening Nutsex (1)         Athres Athres         SOM 1%         SOM 2.5%         SOM 5%         0.00 - 0.10 0.66m         0.00 - 1           Arsenic (Total)         mg/kg         37         37         37			Category 4			LQM		TP103	TP104		
Boron (Soluble)         mg/kg         28         211         0.7         0.9           Chromium III         mg/kg         910         25         29           Chromium III         mg/kg         21         6	Contaminant	Units	Screening					0.00 - 0.10m			
Cadmium (Tota)         mg/kg         26         11         0.7         0.9           Chromium VI         mg/kg         910         25         29           Chromium VI         mg/kg         2400         14         65         29           Copper (Tota)         mg/kg         200         14         65         21           Mecury (Tota)         mg/kg         200         40         -0.17         0.32           Nickal (Tota)         mg/kg         230         41         24         205           Selenium (Tota)         mg/kg         230         40         -0.17         0.32           Cigner (Tota)         mg/kg         230         550         1100         -0.2         -1           Organic (Tota)         mg/kg         240         550         1100         -0.2         -1         130           Sulphata (Act Soukbo)         ng/kg         280         550         1100         -0.2         -0.01         -0.02         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01         -0.01	Arsenic (Total)	mg/kg	37					<1	9		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Boron (Soluble)	mg/kg				290		<1.0	<1.0		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Cadmium (Total)	mg/kg	26					0.7			
Copper (Tota)         mg/kg         200         14         66           Mercury (Tota)         mg/kg         20         40         <0.17		~ ~									
Lead (Tota)         mg/kg         200         40         <0.17         0.32           Nickel (Tota)         mg/kg         190         19         24         22           Zinc (Tota)         mg/kg         250         <1			21			-					
Mercury (Total)         mg/kg         40         -0.17         0.32           Nickel (Total)         mg/kg         250         -1         2           Zinc (Total)         mg/kg         3700         70         138           Cyanide (Total)         mg/kg         280         550         1100         -0.2         -0.2           Organic matter         %         280         550         1100         -0.2         -0.2           Sulphate (Add Soluble)         gf		~ ~	000			2400					
Nickel (Total)         mg/kg         180         19         24           Selenium (Total)         mg/kg         3700         70         138           Cynide (Total)         mg/kg         34         20         <1		~ ~	200			40					
Selenium (Total)         mg/kg         270         70         136           Quincle (Total)         mg/kg         34         20         50         1100         <0.2	<1	<1									
Zinc (Total)         mg/kg         34         3700         700         136           Cyanide (Total)         mg/kg         34         280         550         1100         <0.2								-			
Cyanida (Total)         mg/kg         34         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x		~ ~									
Phenois (Total)         mg/kg         280         550         1100         <0.2         <0.2           Organic matter         %                  0.8         10.6           Sulphate Acid Soluble)         mg/kg                          0.02         <				34							
Sulphate Acid Soluble)         mg/kg <th<< th=""> <th<< th=""> <t< td=""><td></td><td></td><td></td><td></td><td>280</td><td>550</td><td>1100</td><td>&lt;0.2</td><td>&lt;0.2</td></t<></th<<></th<<>					280	550	1100	<0.2	<0.2		
Sulphate as Water Soluble         off         mg/kg         off         off<         off         off	Organic matter	%						0.8	10.6		
Sulphide         mg/kg	Sulphate (Acid Soluble)	mg/kg						<200	750		
pH         pH units         pH units         set bests         set be		g/l						0.02	<0.01		
Subpur (Elemental)         mg/kg                   NAD         NAD         NAD           Total Aliphatic         mg/kg         42         78         160         <0.01											
→ SPTPH SUITE <         NAD         NAD           → Cold Aliphatic         mg/kg         42         78         160         <0.01		· ·									
>> TPH SUTE <         Image		mg/kg							-		
Total Aliphatic         mg/kg         42         78         160         <0.011         <0.011           >C6 to C6 aliphatic         mg/kg         100         230         530         <0.011								NAD	NAD		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $											
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		malka			42	70	160	<0.01	<0.01		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $											
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		~ ~									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		~ ~									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		~ ~									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $											
Total Aromatic         mg/kg         70         140         300         <0.01           >C5 to C7 aromatic (Benzene)         mg/kg         70         140         300         <0.01					65000						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	>C35 to C44 aliphatic	mg/kg			65000	92000	110000	<1	<1		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$											
Image: Serie of CR aromatic (Toluene)         mg/kg         130         290         660         <0.01         <0.01           >C8 to C10 aromatic mg/kg         34         83         190         <1		ma/ka			70	140	300	<0.01	<0.01		
(Toluene)mg/kg130290660<0.01<0.01>C8 to C10 aromaticmg/kg3483190<1		iiig/itg			10	140	000	40.01	-0.01		
Cloudeley       mg/kg       34       83       190       <1       <1         >C10 to C12 aromatic       mg/kg       74       180       380       <1		ma/ka			130	290	660	< 0.01	<0.01		
>C10 to C12 aromatic         mg/kg         74         180         380         <1         <1           >C12 to C16 aromatic         mg/kg         260         540         930         <1					0.1	00	100				
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		~ ~									
>C16 to C21 aromatic         mg/kg         260         540         930         <1         2           >C21 to C35 aromatic         mg/kg         1100         1500         1700         2         13           >C35 to C44 aromatic         mg/kg         1100         1500         1700         <1		~ ~							-		
>C21 to C35 aromatic         mg/kg         1100         1500         1700         2         13           >C35 to C44 aromatic         mg/kg         1100         1500         1700         <1											
$\begin{array}{c c c c c c c c c c c c c c c c c c c $											
>> BTEX SUITE         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         <											
toluene         mg/kg         130         290         660         <0.01         <0.01           ethylbenzene         mg/kg         47         110         260         <0.01								-			
toluenemg/kg130290660<0.01<0.01ethylbenzenemg/kg47110260<0.01		mg/kg	0.87		0.87	0.17	0.37	<0.01	<0.01		
M&P Xylene         mg/kg         56         130         310         <0.01         <0.01           O-Xylene         mg/kg         60         140         330         <0.01	toluene				130	290	660	<0.01	<0.01		
O-Xylene         mg/kg         60         140         330         <0.01         <0.01           > PAH SUITE         maphthalene         mg/kg         2.3         5.6         13         <0.03         <0.03           acenaphthylene         mg/kg         170         420         920         <0.01         <0.01           acenaphthylene         mg/kg         210         510         1100         <0.01         <0.01           acenaphthene         mg/kg         210         510         1100         <0.01         <0.01           acenaphthylene         mg/kg         210         510         1100         <0.01         <0.01           gluorene         mg/kg         95         220         440         <0.03         0.11           acthracene         mg/kg         2400         5400         11000         <0.02         <0.02           fluoranthene         mg/kg         280         560         890         <0.08         0.25           pyrene         mg/kg         620         1200         2000         <0.07         0.23           benzo(a)anthracene         mg/kg         7.2         11         13         <0.04         0.15           benzo(k)											
> PAH SUITE         Mg/kg         2.3         5.6         13         <0.03         <0.03           acenaphthylene         mg/kg         170         420         920         <0.01											
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		mg/kg			60	140	330	<0.01	<0.01		
acenaphtylene $mg/kg$ 170420920<0.01<0.01acenaphthene $mg/kg$ 2105101100<0.01					6.2	F ^	4.2	0.55			
acenaphthene $mg/kg$ 2105101100<0.01<0.01fluorene $mg/kg$ 170400860<0.01											
fluorene         mg/kg         170         400         860         <0.01         <0.01           phenanthrene         mg/kg         95         220         440         <0.03											
$\begin{array}{c c c c c c c c c c c c c c c c c c c $											
anthracene         mg/kg         2400         5400         11000         <0.02         <0.02           fluoranthene         mg/kg         280         560         890         <0.08											
fluoranthene         mg/kg         280         560         890         <0.08         0.25           pyrene         mg/kg         620         1200         2000         <0.07											
pyrene         mg/kg         620         1200         2000         <0.07         0.23           benzo(a)anthracene         mg/kg         7.2         11         13         <0.04											
benzo(a)anthracene         mg/kg         7.2         11         13         <0.04         0.15           chrysene         mg/kg         15         22         27         <0.06											
chrysene         mg/kg         15         22         27         <0.06         0.18           benzo(b)fluoranthene         mg/kg         2.6         3.3         3.7         <0.05											
benzo(b)fluoranthene         mg/kg         2.6         3.3         3.7         <0.05         0.21           benzo(k)fluoranthene         mg/kg         77         93         100         <0.07											
benzo(k)fluoranthene         mg/kg         77         93         100         <0.07         <0.07           benzo(a)pyrene         mg/kg         5         2.2         2.7         3         <0.04											
benzo(a)pyrene         mg/kg         5         2.2         2.7         3         <0.04         0.18           dibenzo(ah)anthracene         mg/kg         0.24         0.28         0.3         <0.04					77	93					
	benzo(a)pyrene		5						0.18		
		mg/kg									
benzo(ghi)perylene mg/kg 320 340 350 <0.05 0.11											
indeno(123cd)pyrene mg/kg 27 36 41 <0.03 0.12	indeno(123cd)pyrene	mg/kg			27	36	41	< 0.03	0.12		



# FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: Issue Number: 21/02657 1

Date: 31 March, 2021

Client:

Sutcliffe 18-20 Harrington Street Liverpool L2 9QA

Project Manager: Project Name: Project Ref: Order No: Date Samples Received: Date Instructions Received: Date Analysis Completed: (Use) S Hale; D Bowen; A Tosh; W Baldwin; J Smith Anglesey Not specified 8510 11/03/21 16/03/21 31/03/21

Prepared by:

Manshall

Melanie Marshall Laboratory Coordinator Approved by:

APRA

Danielle Brierley Client Manager





#### Client Project Name: Anglesey

Lab Sample ID	21/02657/1	21/02657/2	21/02657/3	21/02657/4	21/02657/5				
Client Sample No									
Client Sample ID	TP101	TP102	TP103	TP104	TP106				
Depth to Top	0.00	0.00	0.00	0.00	0.00				
Depth To Bottom	0.40	0.40	0.10	0.60	0.40			io	
Date Sampled	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21			Limit of Detection	f
Sample Type	Soil	Soil	Soil	Soil	Soil			ofD	Method ref
Sample Matrix Code	2ABE	2AE	4A	2AE	2AE		Units	Limit	Meth
% Moisture at <40C <sub>A</sub>	7.7	17.5	6.0	17.6	16.6		% w/w	0.1	A-T-044
% Stones >10mm <sub>A</sub>	25.5	9.2	19.0	9.3	15.5		% w/w	0.1	A-T-044
pH₀ <sup>M#</sup>	7.93	6.21	8.07	5.92	5.73		рН	0.01	A-T-031s
Sulphate (water sol 2:1) <sup>D<sup>M#</sup></sup>	<0.01	<0.01	0.02	<0.01	<0.01		g/I	0.01	A-T-026s
Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>	<200	630	<200	750	610		mg/kg	200	A-T-028s
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC <sub>A</sub>	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Sulphide₄	<5	<5	<5	<5	<5		mg/kg	5	A-T-S2-s
Sulphur (elemental) <sup>D<sup>M#</sup></sup>	<5	<5	<5	<5	<5		mg/kg	5	A-T-029s
Organic matter <sup>DM#</sup>	0.7	6.4	0.8	10.6	4.3		% w/w	0.1	A-T-032 OM
Arsenic <sub>D</sub> <sup>M#</sup>	<1	8	<1	9	6		mg/kg	1	A-T-024s
Boron (water soluble) <sub>D</sub>	<1.0	<1.0	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium <sub>D</sub> <sup>M#</sup>	0.5	0.8	0.7	0.9	0.7		mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	15	54	14	65	74		mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	20	28	25	29	24		mg/kg	1	A-T-024s
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1	<1	<1		mg/kg	1	A-T-040s
Chromium (trivalent)	20	28	25	29	24		mg/kg	1	Calc
Lead <sub>D</sub> <sup>M#</sup>	14	137	24	205	129		mg/kg	1	A-T-024s
Mercury⊳	<0.17	<0.17	<0.17	0.32	<0.17		mg/kg	0.17	A-T-024s
Nickel <sup>D<sup>M#</sup></sup>	19	23	19	24	20		mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	<1	<1	<1	2	2		mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	51	104	70	136	91		mg/kg	5	A-T-024s



#### Client Project Name: Anglesey

Lab Sample ID	21/02657/1	21/02657/2	21/02657/3	21/02657/4	21/02657/5				
Client Sample No									
Client Sample ID	TP101	TP102	TP103	TP104	TP106				
Depth to Top	0.00	0.00	0.00	0.00	0.00				
Depth To Bottom	0.40	0.40	0.10	0.60	0.40			io	
Date Sampled	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21			Detection	ų.
Sample Type	Soil	Soil	Soil	Soil	Soil			ď	od ref
Sample Matrix Code	2ABE	2AE	4A	2AE	2AE		Units	Limit	Method
Asbestos in Soil (inc. matrix)									
Asbestos in soil <sub>b</sub> #	NAD	NAD	NAD	NAD	NAD				A-T-045
Asbestos ACM - Suitable for Water Absorption Test? <sub>D</sub>	N/A	N/A	N/A	N/A	N/A				A-T-045



#### Client Project Name: Anglesey

		-		-		 -	-		
Lab Sample ID	21/02657/1	21/02657/2	21/02657/3	21/02657/4	21/02657/5				
Client Sample No									
Client Sample ID	TP101	TP102	TP103	TP104	TP106				
Depth to Top	0.00	0.00	0.00	0.00	0.00				
Depth To Bottom	0.40	0.40	0.10	0.60	0.40			ion	
Date Sampled	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21			etect	if
Sample Type	Soil	Soil	Soil	Soil	Soil			Limit of Detection	Method ref
Sample Matrix Code	2ABE	2AE	4A	2AE	2AE		Units	Limit	Meth
PAH-16MS									
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02	<0.02	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	0.12	<0.04	0.15	0.10		mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	0.15	<0.04	0.18	0.12		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	0.14	<0.05	0.21	0.14		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	0.09	<0.05	0.11	0.08		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	0.12	<0.06	0.18	0.11		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	0.17	<0.08	0.25	0.16		mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	0.09	<0.03	0.12	0.09		mg/kg	0.03	A-T-019s
Naphthalene A <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	0.09	<0.03	0.11	0.08		mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	0.17	<0.07	0.23	0.14		mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub> <sup>M#</sup>	<0.08	1.14	<0.08	1.54	1.02	 	mg/kg	0.01	A-T-019s



#### Client Project Name: Anglesey

Lab Sample ID	21/02657/1	21/02657/2	21/02657/3	21/02657/4	21/02657/5				
Client Sample No									
Client Sample ID	TP101	TP102	TP103	TP104	TP106				
Depth to Top	0.00	0.00	0.00	0.00	0.00				
Depth To Bottom	0.40	0.40	0.10	0.60	0.40			ion	
Date Sampled	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21	08-Mar-21			Limit of Detection	¥
Sample Type	Soil	Soil	Soil	Soil	Soil		<i>"</i>	t of D	Method ref
Sample Matrix Code	2ABE	2AE	4A	2AE	2AE		Units	Limi	Meth
ТРН ИКСЖО									
Ali >C5-C6 <sub>4</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8 <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10 <sub>A</sub>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C12-C16 <sup>AM#</sup>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C16-C21 <sup>AM#</sup>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C21-C35 <sup>AM#</sup>	2	2	2	4	5		mg/kg	1	A-T-055s
Ali >C35-C44 <sub>A</sub>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Total Aliphatics <sub>A</sub>	2	2	2	4	5		mg/kg	1	A-T-055s
Aro >C5-C7 <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10 <sub>A</sub>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Aro >C10-C12 <sub>A</sub>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Aro >C12-C16 <sub>A</sub>	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Aro >C16-C21 <sup>AM#</sup>	<1	1	<1	2	6		mg/kg	1	A-T-055s
Aro >C21-C35₄ <sup>M#</sup>	<1	7	2	13	29		mg/kg	1	A-T-055s
Aro >C35-C44 <sub>A</sub>	<1	<1	<1	2	3		mg/kg	1	A-T-055s
Total Aromatics <sub>A</sub>	<1	8	2	18	39		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) <sub>A</sub>	2	10	3	22	44		mg/kg	1	A-T-055s
BTEX - Benzene <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene <sup>"#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
MTBE <sub>A</sub> #	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s



#### **REPORT NOTES**

#### General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

#### Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

#### TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only

#### Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

#### Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

#### Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample. Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

#### Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

#### E = contains roots/twigs.

#### Kev:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.



# **Envirolab Deviating Samples Report**

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** 

Sutcliffe, 18-20 Harrington Street, Liverpool, L2 9QA

 Project No:
 21/02657

 Date Received:
 16/03/2021 (am)

 Cool Box Temperatures (°C):
 5.6

Project: Anglesey Clients Project No:

Lab Sample ID	21/02657/1	21/02657/2	21/02657/3	21/02657/4	21/02657/5
Client Sample No					
Client Sample ID/Depth	TP101 0.00- 0.40m	TP102 0.00- 0.40m	TP103 0.00- 0.10m	TP104 0.00- 0.60m	TP106 0.00- 0.40m
Date Sampled	08/03/21	08/03/21	08/03/21	08/03/21	08/03/21
Deviation Code					
F	~	$\checkmark$	$\checkmark$	$\checkmark$	✓

Key F

Maximum holding time exceeded between sampling date and analysis for analytes listed below

#### HOLDING TIME EXCEEDANCES

Lab Sample ID	21/02657/1	21/02657/2	21/02657/3	21/02657/4	21/02657/5
Client Sample No					
Client Sample ID/Depth	TP101 0.00- 0.40m	TP102 0.00- 0.40m	TP103 0.00- 0.10m	TP104 0.00- 0.60m	TP106 0.00- 0.40m
Date Sampled	08/03/21	08/03/21	08/03/21	08/03/21	08/03/21
Sulphide	$\checkmark$	$\checkmark$	$\checkmark$	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.