

Appendix B

Proposed Development Plan

Materials Key

CLADDING

- = Vertical timber weatherboarding, larch, western cedar or Thermowood (TBC).
- = Closed Boarded horizontal timber fencing, to match vertical timber boarding specification

ROOFING

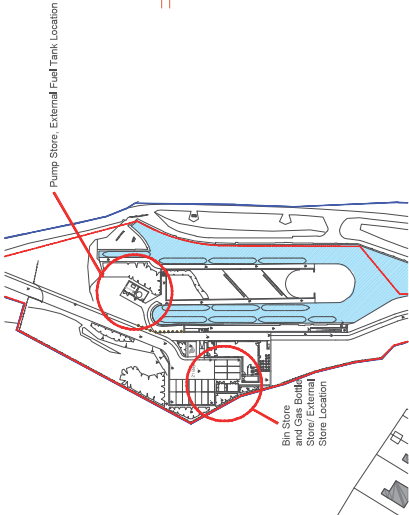
- = Standing Seam metallic roof finish to be dark metallic

Notes: Facade and soffit to be aluminium system, appearance to match standing seam roofing.

SYMBOLS KEY

- = Dark metallic louvers inset into upper gable of elevation
- = Timber external door, lockable
- = Concrete floor bund required to contain accidental spill from potential contaminants
- = Mechanical Pump location (mobile pump unit)
- = External Fuel tank location
- = Pump Store Room double door, dark metallic, louver panels, lockable.

Pump & Fuel Store Floor Plan
Scale 1:100 @ A1



Structures Locations Plan



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Sheet
GA 1938 38 GA Storage Structures and Pump Housing

Project
Trevor Hire Boat Base

Client Name / Auth
RB

Revision No.
2019 3 3 5

Sheet Size
A1

Revision Date
2019/04/2021

Revision / Issue
V14

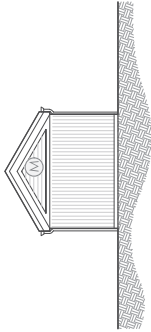
0m 1m 2m 4m 6m 8m

Scale Bar 1:100 @ A1

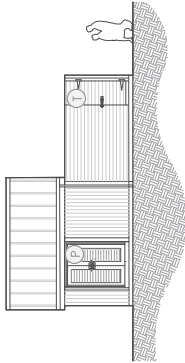
Closed boarded timber vertical cladding, open air without roofing cover



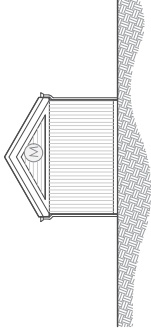
Pump Store Proposed Elevation A-A
Scale 1:100 @ A1



Pump Store Proposed Elevation B-B
Scale 1:100 @ A1

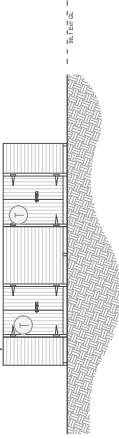


Pump Store Proposed Elevation C-C
Scale 1:100 @ A1

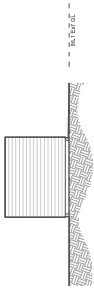


Pump Store Proposed Elevation D-D
Scale 1:100 @ A1

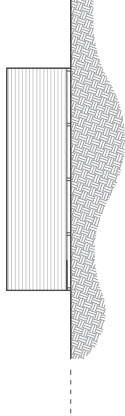
Closed boarded timber vertical cladding, open air without roofing cover



Bin & Gas Bottle Store Proposed Elevation A-A
Scale 1:100 @ A1



Bin & Gas Bottle Store Proposed Elevation B-B
Scale 1:100 @ A1



Bin & Gas Bottle Store Proposed Elevation C-C
Scale 1:100 @ A1



Bin & Gas Bottle Store Proposed Elevation D-D
Scale 1:100 @ A1

Bin & Gas Bottle Store Proposed Floor Plan
Scale 1:100 @ A1

Please note:

Drawings are not intended for construction purposes and are to be checked and approved by a structural engineer prior to any works or fabrications on site.

Rainwater pipe volume and location requirements are designed in principle and are to be approved by supplier prior to any works or fabrications on site.

All rainwater goods to be dark metallic color specification, guttering to match other metallic color specification.

Internal floor and external ground finish levels are approximate, may be subject to change of later technical design stages.

Appendix C

CRT Site Investigation Report



**Canal &
River Trust**

Making life better by water

Anglo Welsh Ltd Base Relocation, Trevor Basin Contamination Report

Prepared by Tom Wilding, Graduate Environmental Scientist, July 2021



Introduction

The project aims to locate the existing Anglo Welsh Ltd boat hire base to a new building on the western arm at Trevor Basin of the Llangollen Canal. These works will require the excavation of soil, predominately within the central arm, to accommodate the new mooring points, levelled paved surface, and associated landscaped area. In supplement to the planning application for this project, soil samples were taken and analysed in the general works area to investigate the ground for signs of contamination and inform disposal options. This report provides a brief overview of these investigations.

Site Background

The site was known to constitute a goods yard as part of the historic Ruabon-Llangollen railway line. This was in use for goods traffic until 1964, and for passengers until 1965. The railway was built to serve the mineral bearing deposits in the area consisting of coal, iron, and limestone. The central arm has since been vacated and allowed to naturalise, forming a wooded and well vegetated area. The eastern arm now consists of a towpath and associated mooring points.

There were previously temporary buildings on the western arm belonging to Jones the Boats day-trip operation, which have since been removed from site. A privately owned property is also present to the south west of the site.

The Trust has no recent records of any land-based pollutions or spills of hazardous substances at this site.

Ground Investigation

Five samples were collected on the 4th August 2020 from an approximate depth of 0.5m. Four samples were taken from the central arm, with a fifth sample taken from the northern end of the western arm.

Following the receipt of the results for these samples, it was noted sample point 3 displayed elevated levels of lead. A further five samples were taken on 13th November 2020, at the same approximate depth in close proximity to sample point 3, in order to determine the extent of this contamination.

Locations are mapped on the attached sampling plan in Appendix 1.

Laboratory Analysis

The soil samples were submitted to Socotec UK Ltd for analysis. This included tests for the following chemical parameters:

- metals

- asbestos identification and quantification
- total petroleum hydrocarbon (TPH)

Full reports are attached in Appendix 2.

Results

All of the samples collected were found to be non-hazardous with no asbestos detected. All of the chemical values were below the threshold for residential without plant uptake scenario selected from “The LAQ/CIEH S4ULs for Human Health Risk Assessment, 2015”.

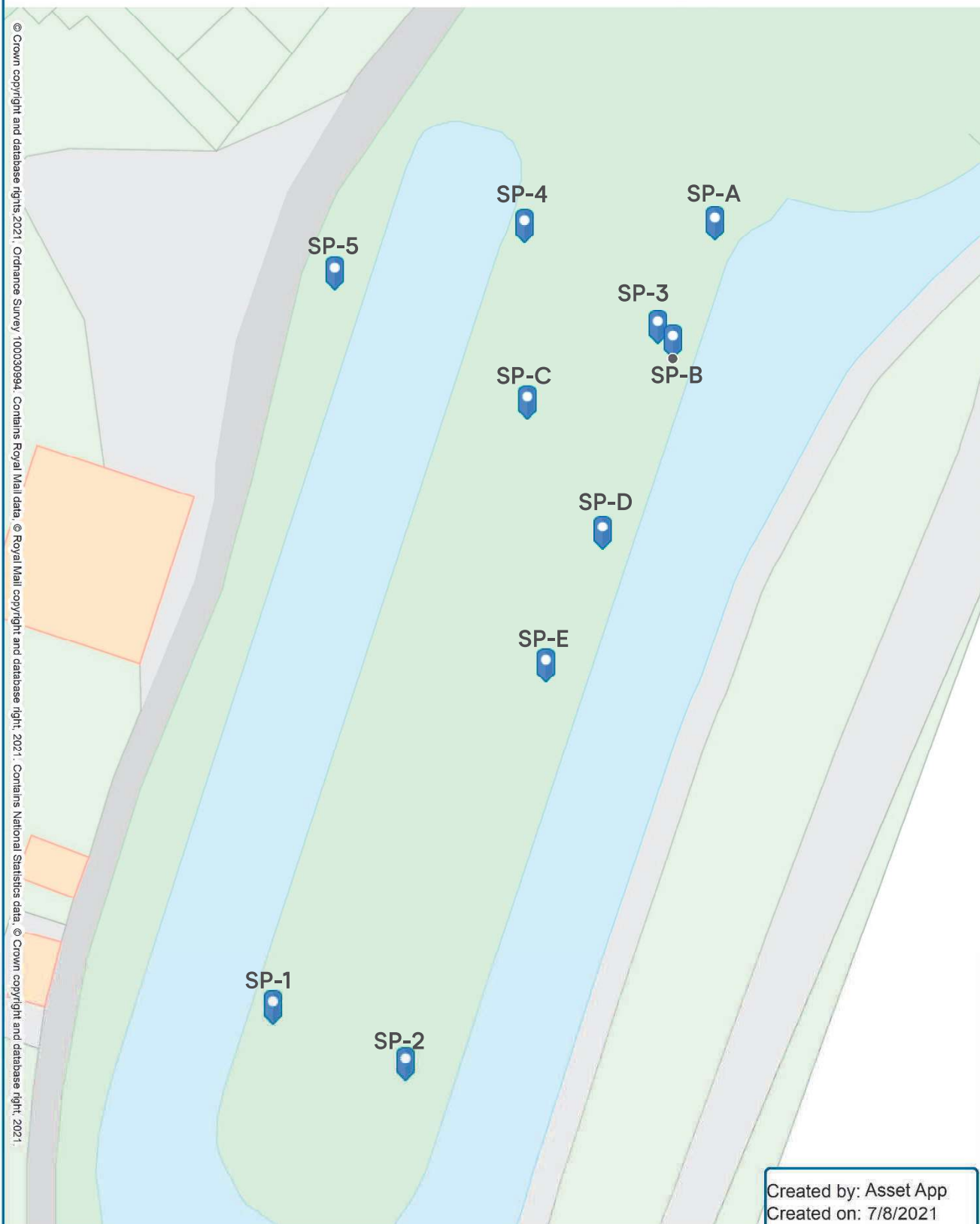
The concentration of lead at sample 3 was found to be at elevated concentrations higher than the threshold selected from “C4SL applicable to child receptor, Residential without plant uptake land use with acceptable Low Levels of Toxicological Concern of 2.1 ug kg⁻¹ bw day⁻¹”. The additional samples taken in November 2020, approximately 5m away from this original point, did not find elevated concentrations of lead.

Conclusion

The results of the sampling indicate the material on site is non-hazardous and is, for the most part, uncontaminated. The works will require the excavation of material within the central island with the intention for this to be redistributed on site. The majority of this material would appear to be chemically suitable for this, though it should be noted that Sample 3 indicated elevated levels of lead at 1160mg/kg (based on dry weight results at 35°C with a moisture content of 17.4%). However, the additional samples taken in November 2020, in close proximity to this original sample point, did not display elevated levels of lead. This suggests this contamination is therefore localised and not indicative of the site as a whole.

Whilst the level of lead at sample point 3 does exceed the C4SL based on a residential with plant uptake land use, it should be noted the site will not consist of residential accommodation, nor have land used for the growing of edible plants. The site will be used to accommodate non-residential moorings, with the narrowboats situated at this location anticipated to be hired out and travelling the network on a regular basis. The pedestrian routes between these moorings will also be paved with a hard standing surface. It is anticipated that the tracking back of soil is therefore negligible. In light of this, the C4SL for a land use of a public open space (park) is therefore deemed to be more suitable in this scenario, which sample 3 is below the threshold value for. The levels of lead are thus not deemed to be a cause for concern with regards to the reuse of material on site.

Appendix 1: Sampling Plan



Created by: Asset App
Created on: 7/8/2021
Scale: 1:564
Print size: A4

Appendix 2:

Soil Sampling Results

Where individual results are flagged see report notes for status. Results corrected to dry weight at 55°C where appropriate.

Analysis Results

Project ID		20111393			
Sample ID	Sample ID	001	002	003	005
Customer ID	Customer ID	Trevor A	Trevor B	Trevor C	Trevor E
Sample Type	Sample Type	SOLID	SOLID	SOLID	SOLID
Sampling Date	Sampling Date	13/11/2020	13/11/2020	13/11/2020	13/11/2020
Analysis	Method Code	MDL	Units	Accred	
Lead as Pb	ICPMS	0.7	mg/kg ^A	UM	
Total Moisture at 105°C	TM03	0.1	%	U	242.8#
Total Moisture at 35°C	CLANOPREP	0.1	%	N	28.9
Total Moisture at 35°C	CLANOPREP	0.1	%	N	24.4
Colour of Material	CLANOPREP		-	N	24.4
Major Constituents	CLANOPREP		-	N	Brown
Minor Constituents	CLANOPREP		-	N	SILT
Miscellaneous Constituents	CLANOPREP		-	N	SILT
Description of Solid Material	CLANOPREP		-	N	Gravel
Ettings	Grid Reference		-	N	Rootlets
Notings	Grid Reference		-	N	SILT

Appendix D

Study Limitations

IMPORTANT: This section should be read before reliance is placed on any of the information, opinions, advice, recommendations, or conclusions contained in this report.

1. This report has been prepared by Arcadis UK Ltd (Arcadis), with all reasonable skill, care, and diligence within the terms of the Appointment and with the resources and manpower agreed with Cornwall Council. (the 'Client'). Arcadis does not accept responsibility for any matters outside the agreed scope.
2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.
3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Arcadis are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.
4. All work carried out in preparing this report has used, and is based on, Arcadis' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which Arcadis is aware, have been considered. Following delivery of the report, Arcadis have no obligation to advise the Client or any other party of such changes or their repercussions.
5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.
6. Whilst this report and the opinions made are correct to the best of Arcadis' belief, Arcadis cannot guarantee the accuracy or completeness of any information provided by third parties.
7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.
8. This report refers, within the limitations stated, to the condition of the Site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the Site since the time of the investigation.
9. The content of this report represents the professional opinion of experienced environmental consultants. Arcadis does not provide specialist legal or other professional advice. The advice of other professionals may be required.
10. Where intrusive investigation techniques have been employed, they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases, the investigation is further limited by site operations, underground obstructions, and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.
11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures, or other below ground obstructions, not indicated on the drawing, may be present on Site.
12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issue.

Appendix E

GeoIndex Borehole Logs

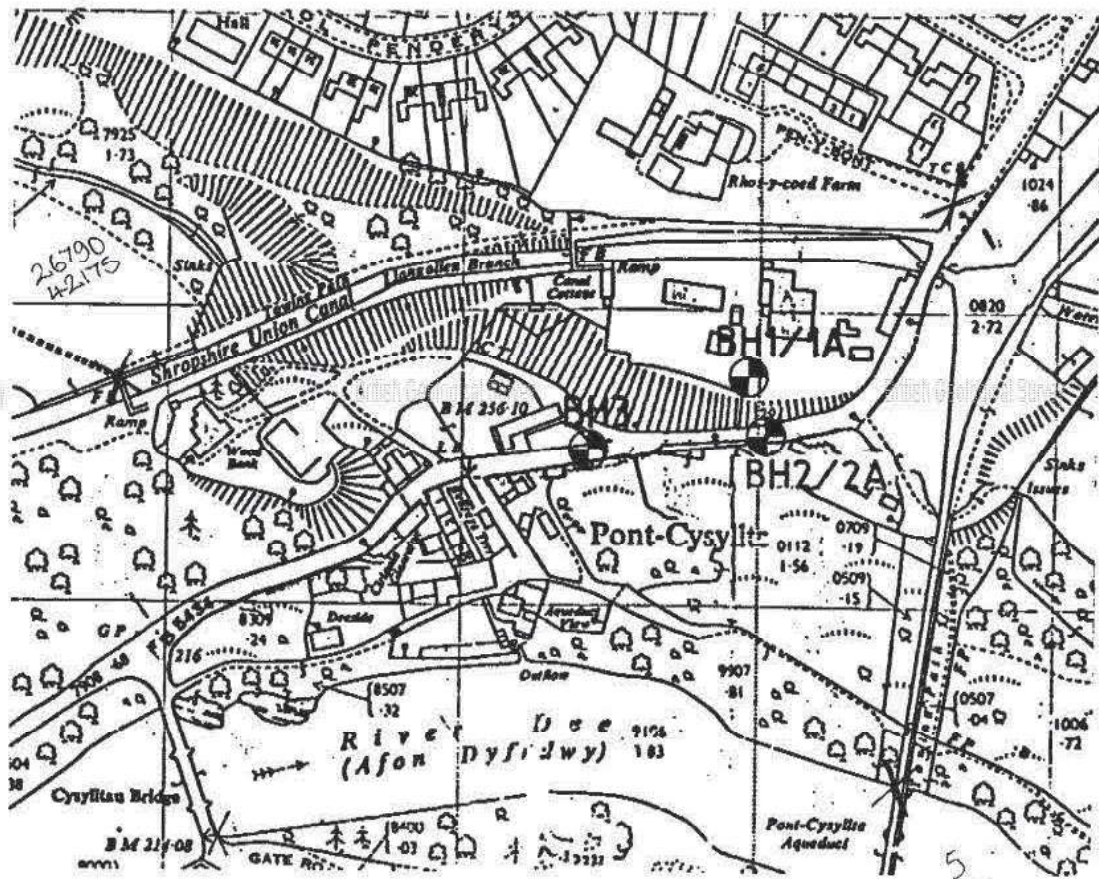
SJ24SE 498

Sampling		Properties			Strata 27001, 42177						
Drill Run	Fr	Cr	FI	RQD	Description	Depth	Level	Legend			
G.L.					MADE GROUND: Earth, bricks, concrete**	G.L.					
1.00	100%	63% (0%)	NI	0%	MADE GROUND: Firm grey and brown clay with some gravel, ash, slate and iron fragments.	1.00					
2.20	100%	50% (0%)		0%	MADE GROUND: Brick, mortar and welded ash fragments and sandstone cobbles.	2.00					
3.00	100%	77% (0%)		0%	MADE GROUND: Fine medium and coarse gravel with some cobbles in a matrix of clay with some sand.	2.50					
4.30	100%	100% (21%)		0%	Soft to firm grey mottled brown CLAY with a little sand and some angular to sub-rounded fine, medium and coarse gravel.	3.00					
4.45	100%	100% (23%)		0%	Black moderately weathered COAL, very weak.	4.30					
5.40	100%	100% (94%)	3	58%	Thinly interbedded light grey fine grained thinly laminated slightly weathered SANDSTONE, moderately strong to strong and brown very clayey highly weathered SILTSTONE, Weak to very weak.	4.77					
6.00	100%	100% (62%)		41%	Between 6.35m and 7.10m:-sandstone.	5.20					
6.40	100%	100% (94%)	8	61%	Light grey, grey-brown very silty highly weathered MUDDSTONE, weak. Much iron staining.	7.10					
7.40	100%	65% (0%)	NI	0%	Between 8.00m and 8.80m:-completely weathered. Recovered as soft clay.	8.00					
8.00	100%	80% (39%)		0%	Black carbonaceous highly weathered MUDDSTONE, moderately weak.	8.80					
8.60	100%	79% (0%)		0%	Between 8.80m and 9.00m:-completely weathered.						
9.60					Between 9.50m:-highly to completely weathered, weak.						
Location Co-ordinates: Ground Level: Chainage:											
Drilling					Groundwater						
Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water
Rotary Open Hole	G.L.	1.00	S	Mist				22.08.89	3.00	3.00	Dry
Rotary	1.00	6.70	5x40	Mist				23.08.89	3.00	3.00	Dry
Rotary	6.70	18.00	P	Mist				23.08.89	5.40	3.00	Dry
								24.08.89	5.40	3.00	-
Remarks Triefus triple tube core barrel used to 6.70m, unable to drill deeper due to strength of formation.											
Borehole Record					Project		Contract D9084				
					Trefor Landslip						
Exploration Associates					Clwyd County Council		Borehole 1 (1 of 2)				

SJ24SE 498

27001, 42177

Sampling		Properties			Strata							
Drill Run	Fr	Cr	FI	RQD	Description	Depth	Level	Legend				
10.70	100%	91% (52%)	NI	0%	(See previous sheet).							
11.70	100%	94% (47%)		0%								
12.70	100%	82% (61%)		0%								
13.70	100%	97% (23%)		0%	Between 13.40m and 14.70m:-completely weathered.							
14.70	100%	90% (31%)		0%								
15.00	100%	81% (0%)		0%	Between 15.00m and 15.20m:-completely weathered.							
15.40	100%	100% (0%)		0%	Between 15.20m and 16.50m:-occasional thin beds moderately weathered, moderately weak.							
17.00	100%	80% (11%)		0%	Between 16.50m and 16.65m:-completely weathered.							
18.00	100%	99% (0%)		0%	Below 17.50m:-completely weathered.							
					End of Borehole.	18.00						
Location Co-ordinates: Ground Level: Chainage:												
Drilling					Groundwater							
Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water	
Core Liner	N/A							24.08.89 25.08.89 25.08.89	15.00 15.00 18.00	5.40 5.40 5.60	- Dry -	
Remarks Borehole terminated at 18.00m and rig relocated. Borehole grouted.												
Borehole Record					Project			Contract				
					Trefor Landslip Clwyd County Council			D9084				
Exploration Associates								Borehole				
								1 (2 of 2)				



SITE PLAN	Project Trefor Landslip Clwyd County Council	Contract D9084
exploration associates		Figure Drawing 2

Sampling		Properties			Strata		27007, 42157			
Drill Run	Fr	Cr	FI	RQD	Description	Depth	Level	Legend		
G.L.					TARMAC**	G.L.	90.07			
						0.30	89.77			
0.60					MADE GROUND: Hardcore**	0.45	89.62			
					Firm brown CLAY**	0.60	89.47			
	80%	95% (0%)	NI	0%	Soft to firm brown mottled grey CLAY with a little sand.					
1.70						1.31	88.76			
	80%	90% (50%)	10	17%	Grey completely weathered MUDSTONE, recovered as firm clay with some angular lithorelicts.	1.36	88.71			
2.30					Black thickly laminated slightly weathered COAL, very weak.	1.75	88.32			
	80%	100% (67%)		100%	Dark grey carbonaceous highly weathered MUDSTONE, very weak.	1.86	88.21			
2.75										
3.10	80%	100% (100%)	5	100%	Light grey thinly laminated quartzose moderately weathered SILTSTONE/fine grained SANDSTONE, very weak.					
	80%	100% (80%)		80%	Below 2.30m: becoming slightly weathered and strong. Possible ironstone content.					
4.10			NI	0%	Between 2.75m: with occasional thin partings of mudstone.					
4.40	80%	100% (0%)		22%	Between 3.90m and 4.10m: fragments of siltstone held in a clay matrix, possible gouge.	4.40	85.67			
4.90	80%	100% (38%)			Dark grey to black carbonaceous thinly laminated highly to completely weathered MUDSTONE, very weak. Much brown or orange iron staining.					
	80%	100% (0%)	NI	0%						
5.70					Below 5.00m: moderately weathered.					
	80%	100% (0%)		0%						
6.70	80%	98% (0%)		0%	Around 7.00m: occasional small (<1cm) ironstone modules.					
6.90										
	80%	76% (21%)		0%	At 8.40m: moderately weak.					
7.90										
	80%	100% (36%)		0%	Below 9.00m: slightly weathered and weak. With occasional small (<3cm) ironstone modules.					
9.10										
	80%	100% (75%)		0%						

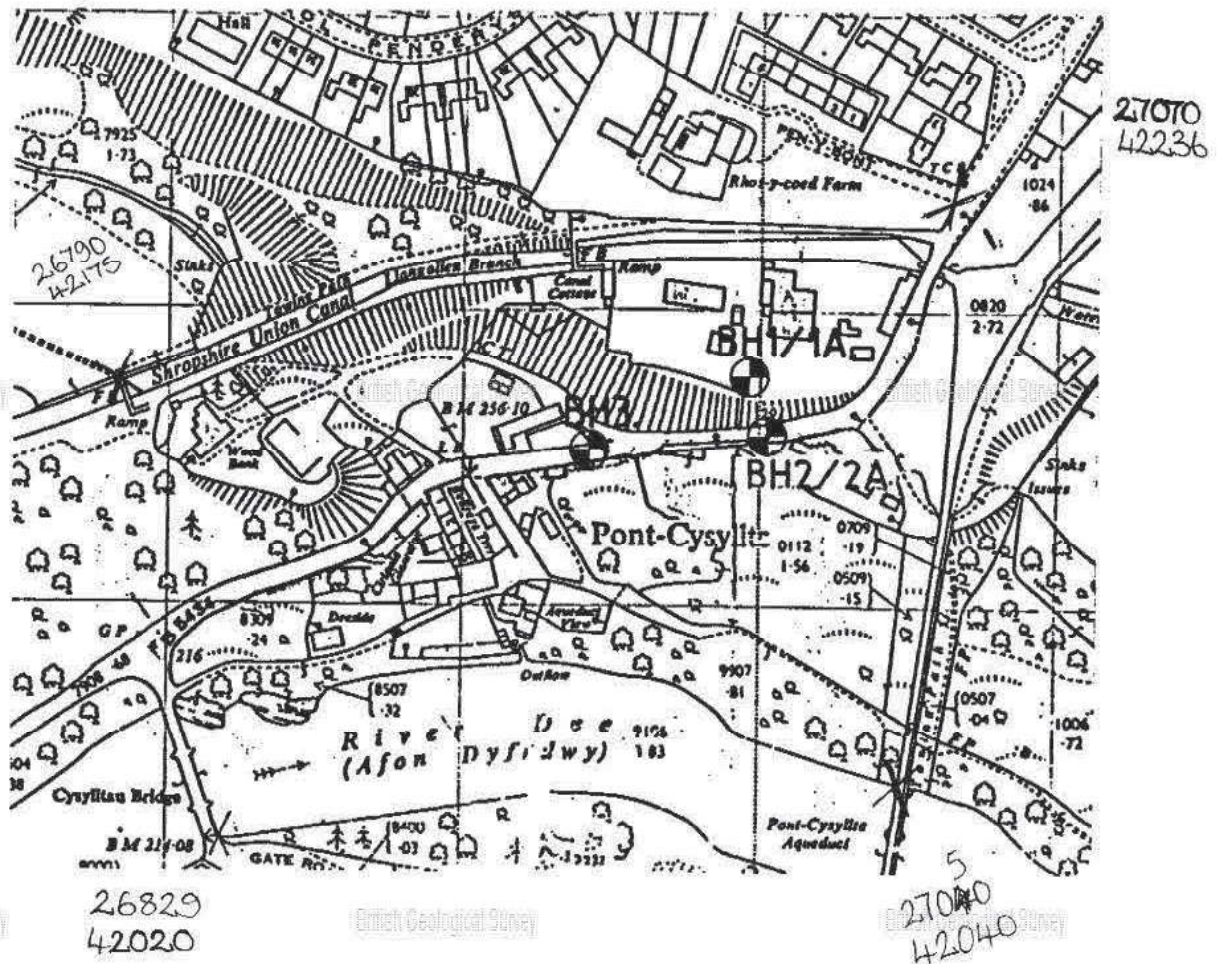
Location		Co-ordinates:		Ground Level: 90.07m AOD		Chainage:					
Drilling				Groundwater							
Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water
Rotary	0.60	4.90	S	Mist				06.09.89	10.90	4.90	9.30
Rotary	4.90	14.65	P	Mist				07.09.89	10.90	4.90	9.60
Rotary	14.65	23.10	H	Mist				07.09.89	14.60	10.00	13.60
								08.09.89	14.65	10.00	12.90

according to Johnathan
Foram according to driller

Remarks		Inspection pit excavated to 0.60m. 7.9.89 unable to advance P barrel beyond 10.00m, reduced to H, 8.09.89.	
Borehole Record		Project	
		Trefor Landslip	
		Clwyd County Council	
Exploration Associates		Contract	
		D9084	
		Borehole	
		2A (1 of 3)	

Sampling		Properties			Strata 27007, 42157						
Drill Run	Fr	Cr	FI	RQD	Description	Depth	Level	Legend			
					(See previous sheet).						
10.90					Between 10.62m and 10.90m:-highly to completely weathered, recovered as firm to stiff clay with some lithorelicts.						
	80%	100% (5%)	NI	0%	Between 11.60m and 12.05m:-completely weathered.						
12.20					Below 12.05m:-moderately weathered, moderately weak.						
	80%	100% (32%)	6	19%	Between 12.55m and 12.85m:-highly to completely weathered, weak.						
13.15					Below 13.50m:-slightly to moderately weathered, slightly micaceous and weak. Closely spaced discontinuities with orange-brown iron staining.						
	80%	100% (12%)	NI	0%							
14.65	80%	100% (0%)		0%							
14.70	80%	100% (0%)		0%							
15.30											
	80%	100% (0%)		0%							
16.50											
	80%	100% (0%)		0%	At 17.00m: with disseminated pyrite						
17.50					Between 17.82m and 18.50m:-completely weathered, very weak.						
	80%	96% (0%)		0%							
18.50											
	80%	87% (0%)		0%							
20.00					Black highly weathered coal, weak.	19.94	70.13				
Location		Co-ordinates:			Ground Level: 90.07m AOD		Chainage:				
Drilling					Groundwater						
Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water
Core Liner	4.90	14.65	P					08.09.89 09.09.89 09.09.89	14.65 14.65 23.10	11.00 11.00 14.70	11.00 13.10 -
Remarks					Piezometer installed at 18.30m, sand filter 17.50m to 18.50m.						
Borehole Record					Project			Contract 09084			
					Trefor Landslip						
Exploration Associates					Clwyd County Council			Borehole 2A (2 of 3)			

Sampling		Properties				Strata 27007, 42157						
Drill Run	Fr	Cr	FI	RQD	Description	Depth	Level	Legend				
					Light grey medium and coarse grained cross bedded slightly weathered SANDSTONE, strong to moderately strong.	20.00	70.07					
21.50	80%	100% (100%)	2	100%	Light grey medium and coarse grained cross bedded slightly weathered SANDSTONE, strong to moderately strong.							
21.60	80%	100% (100%)		100%	Below 20.50m: -fresh.							
	80%	100% (100%)	0	100%								
23.10						23.10	66.97					
					End of Borehole.							
Location Co-ordinates: Ground Level: 90.07m AOD Chainage:												
Drilling					Groundwater							
Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water	
Remarks												
Borehole Record					Project Trefor Landslip Clwyd County Council			Contract 09084				
Exploration Associates								Borehole 2A (3 of 3)				



SITE PLAN

exploration associates

Project

Trefor Landslip
Clwyd County Council

Contract D9084

Figure

Drawing 2

Appendix F

Groundsure Report

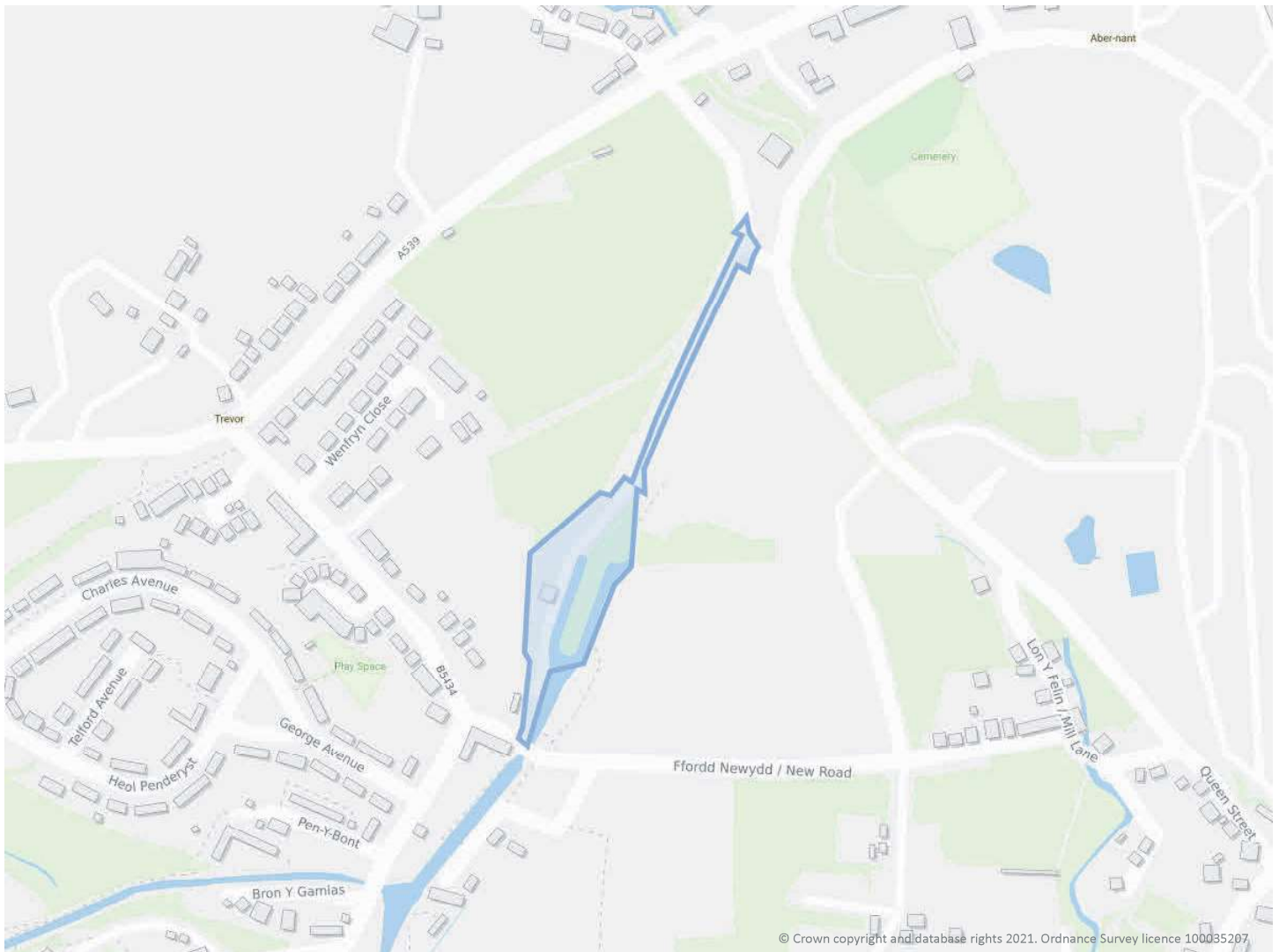
The Old Wharf, Trevor, Wrexham, LL20 7TP

Order Details

Date: 01/09/2021
Your ref: 14053779-10050394-Project_Phoenix
Our Ref: GS-8162688
Client: Arcadis Consulting (UK) Ltd

Site Details

Location: 327218 342456
Area: 1.0 ha
Authority: [Wrexham - Wrexham County Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	15	40	56	225	-
27	1.2	<u>Historical tanks</u>	0	7	3	70	-
30	1.3	<u>Historical energy features</u>	0	0	1	6	-
30	1.4	Historical petrol stations	0	0	0	0	-
31	1.5	<u>Historical garages</u>	0	0	0	3	-
31	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
32	2.1	<u>Historical industrial land uses</u>	19	46	73	305	-
48	2.2	<u>Historical tanks</u>	0	12	6	114	-
53	2.3	<u>Historical energy features</u>	0	0	1	13	-
54	2.4	Historical petrol stations	0	0	0	0	-
54	2.5	<u>Historical garages</u>	0	0	0	5	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
56	3.1	Active or recent landfill	0	0	0	0	-
56	3.2	Historical landfill (BGS records)	0	0	0	0	-
57	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
57	3.4	<u>Historical landfill (EA/NRW records)</u>	0	1	0	1	-
57	3.5	<u>Historical waste sites</u>	0	0	0	1	-
58	3.6	Licensed waste sites	0	0	0	0	-
58	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
59	4.1	<u>Recent industrial land uses</u>	0	1	5	-	-
60	4.2	<u>Current or recent petrol stations</u>	0	0	0	1	-
60	4.3	Electricity cables	0	0	0	0	-
60	4.4	Gas pipelines	0	0	0	0	-
61	4.5	Sites determined as Contaminated Land	0	0	0	0	-

