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CASTLEMEAD GROUP LTD

RESIDENTIAL DEVELOPMENT AT JACQUES YARD, JACQUES WAY, REGENT STREET, WREXHAM, LL11 2BY
PHASE 4 - SITE REMEDIATION VERIFICATION REPORT

REPORT No. E1659.PH4.VER.R2
JANUARY 2023



Client: CASTLEMEAD GROUP LTD

Project Title: RESIDENTIAL DEVELOPMENT AT JACQUES YARD, JACQUES WAY, REGENT STREET,
WREXHAM, LL11 2BY

Document Title: PHASE 4 - SITE REMEDIATION VERIFICATION REPORT

Project No. E1659
Report No. E1659.PH4.VER.R2
Date. JANUARY 2023

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Signed:			

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1. INTRODUCTION.

1.1 Background and Terms of Reference

1.1.1 Castlemead Group Ltd has instructed e-geo Solutions Ltd to prepare a Site Remediation Validation Report for site remediation works carried out at a new residential development on land known as Jacques Yard on Jacques Way in Wrexham.

1.1.2 The site was previously an area of unused land with a known historic use as a scrapyard. The proposed development comprises 24 residential units with associated car parking and access roads.

1.1.3 To address site contamination remediation activities were carried out to address planning conditions and to ensure the site was 'fit for use'. The site remediation activities undertaken were detailed in a report titled:

Remediation Strategy, Jacques Way. For Castlemead Group REC Reference: 108157P3R3 dated June 2020

1.1.4 The Remediation Strategy Implementation Plan Report was based on the findings of previous studies at the site which included:

- *Geo-Environmental Assessment, REC Reference: 102904p1r1, dated October 2018.*
- *Phase II Geo-Environmental & Geotechnical Site Investigation, REC 108157p2r0, dated November 2019.*
- *Stockpile Soil Sampling 108157p4r1, dated January 2020 by REC*

1.1.5 The objective of this Verification Report is to demonstrate and confirm that the site remediation works undertaken in external areas has been implemented in accordance with the remediation proposals, and that the specific remediation objectives have been met.

1.1.6 This report presents details and evidence of the works carried out and details of placed materials used in the remediation works.

1.1.7 The report has been prepared by e-geo Solutions Ltd for the sole use of the Client, for the purposes described and no extended duty of care applies to other parties. The comments given, and opinions expressed are based on the information collated from site observations and the analysis of samples, however there may be outstanding information and data which becomes available at a later date which has an impact on the overall conclusions.

1.1.8 The copyright of this report and its contents prepared by e-geo Solutions Ltd is solely owned by e-geo Solutions Ltd. Neither this report nor contents prepared by e-geo Solutions Ltd may be reproduced, published or adapted without the express written approval of e-geo Solutions Ltd.

1.2 Site Location

1.2.1 The development site is located to the south of Jacques Way in Wrexham. There are active railway tracks to the east, west and south of the site, and a Premier Inn directly to the north. The site location is shown on Figure 1 and development boundary on Figure 2 and is centred at Grid Reference 332859, 350642.



Figure 1 – Site Location



Figure 2 – Development and Area

2. SITE CHARACTERISTICS

2.1 Site Description and Topography

- 2.1.1 Prior to development the site was an area of undeveloped land with a known historic use as a scrapyards. There were occasional areas of dense vegetation containing Japanese Knotweed, particularly towards the western and southern site boundaries. Two spoil heaps were present in the northwest area of the site, in front of an entrance to site with slight changes in elevation in the western and southern areas where the site slopes slightly towards the railway track.

2.2 Ground and Groundwater Conditions

- 2.2.1 The results of the Phase 2 Ground Contamination Investigation undertaken by REC and presented in the report Phase II Geo-Environmental & Geotechnical Site Investigation, REC 108157p2r0, dated November 2019, indicated that site is covered with a layer of made ground overlying glaciofluvial deposits.
- 2.2.2 The made ground comprised very gravelly sand to slightly clayey gravelly sand, with varying degrees of cobble content. Gravel consisted of angular to sub rounded fine to coarse brick and concrete with cobbles of brick, concrete and mudstone. The made ground was also found to contain slate, plastic, glass and metal. The thickness of made ground where proved was typically between 5.00m bgl (CP102) and 5.80m bgl (CP103). Shallow made ground was identified in TP105 to a maximum depth of 2.80mbgl.
- 2.2.3 Natural ground strata of Glaciofluvial deposits were encountered under the made ground in every exploratory hole. These were encountered to a maximum depth explored depth of 19.95m bgl (CP103) and typically consisted of gravelly silty clays, dense sand and gravels and clayey gravelly sands.

2.3 Site Contamination

- 2.3.1 The results of sampling and analysis presented in the report 'Phase II Geo-Environmental & Geotechnical Site Investigation, REC 108157p2r0 by REC Ltd' indicated that the screening values were exceeded for lead in six samples and PAHs in five samples, and asbestos in four samples. All samples were retrieved from shallow made ground and indicate potential widespread contamination.
- 2.3.2 All five samples of asbestos were submitted for quantification with all results reported as <0.001 % (The limit of detection) chrysotile fibres.
- 2.3.3 Lead concentrations ranged from 280 – 650 mg/kg and are therefore notably elevated above the screening value of 200 mg/kg.
- 2.3.4 Benzo(b)fluoranthene concentrations ranged from 3.3 to 4.9 mg/kg and are therefore consistent across the site and exceed the screening value of 3.3 mg/kg.

2.4 Proposed Development

- 2.4.1 The proposed development comprises 24 residential units with associated car parking and access roads and external areas. The proposed layout is shown as Figure 2.

3. REMEDIATION STRATEGY.

3.1 Site Conceptual Model and Risks

- 3.1.1 The results of the Phase II ground investigation and laboratory analyses identified potential risk from PAHs and lead contamination and detection of asbestos fibres within the made ground with respect to future residential receptors.

3.2 Site Remediation Objectives

- 3.2.1 Remediation measures were required at the site to remove and control the risks presented to site end-users from the identified contamination sources. The remediation was formulated with the aim of achieving the following objectives.
- Preventing contact between residents and the contaminated ground on a long-term basis, by breaking the pollution linkages.

3.3 Site Remediation Approach

- 3.3.1 Details of the approach to remediation for external areas are detailed in a report *Remediation Strategy Jacques Way Castlemead Group Limited 108157p3r3 June 2020 by REC Ltd*
- 3.3.2 Following a remediation options appraisal the recommended remediation approach involved provision of a clean cover system in external areas where the elevated lead and PAH contamination was found.
- 3.3.3 Specifically the details were:

Footprint of New Residential Property – Areas beneath the footprint of the proposed buildings or access roads will break the exposure pathway for contaminants. However, the location and concentration of residual contamination will need to be recorded.

Gardens and Soft Standing – In areas of soft standing / residential gardens, a cover system will be utilised to ensure adequate thickness of a suitable growing medium is present.

The following depths of materials will be incorporated into the soft standing / residential gardens areas above a permeable barrier:

- 450mm clean imported sub-soil, free of deleterious materials; and,
- 150mm clean imported topsoil, free of deleterious materials

4. REMEDIATION WORKS.

4.1 Remediation Works Undertaken

4.1.1 Site remediation works were undertaken at the development site as follows:

- Provision of a clean cover layer in all soft standing / residential gardens at each property.

5. VERIFICATION.

5.1 Depth of Placed Clean Cover System Materials

- 5.1.1 Topsoil and subsoil materials have been imported to the site for use as a clean cover material and placed in the external areas of properties. Observation pipes comprising 100mm diameter drainage pipe were placed in each external area during soil placement to allow final depth measurement of placed soils.
- 5.1.2 A high visibility geotextile has been placed on the original ground surface and below the clean cover system in external areas and was observed at the base of the observation pipe in each external area.
- 5.1.3 The depths of soil materials as measured in the observation pipes is presented below:

PLOT NR	Soil Depth (Subsoil + Topsoil) mm	Turf and Topsoil mm	TOTAL DEPTH mm
1	600	70	670
2	600	70	670
3	620	70	690
4	610	70	680
5	610	70	680
6	600	70	670
7	600	70	670

PLOT NR	Soil Depth (Subsoil + Topsoil) mm	Turf and Topsoil mm	TOTAL DEPTH mm
8	570	70	640
9	580	70	650
10	550	70	620
11	550	70	620
12	650	70	720
13	610	70	680
14	570	70	640
15	700	70	770
16	600	70	670
17	550	70	620
24/25	750	incl	750

- 5.1.4 Photographic evidence of soil material placement and the achieved depths is presented below:



Plate 1 – Plot 1



Plate 2 – Plot 1



Plate 3 – Plot 2



Plate 4 – Plot 2



Plate 5 – Plot 3



Plate 6 – Plot 3



Plate 7 – Plot 4



Plate 8 – Plot 4



Plate 9 – Plot 5



Plate 10 – Plot 5



Plate 11 – Plot 6



Plate 12 – Plot 6



Plate 13 – Plot 7



Plate 14 – Plot 7



Plate 15 – Plot 8



Plate 16 – Plot 9



Plate 17 – Plate 10



Plate 18 – Plot 11



Plate 19 – Plot 12



Plate 20 – Plot 13



Plate 21 – Plot 14



Plate 22 – Plot 15



Plate 23 – Plot 16



Plate 24 – Plot 17



Plate 25 – Plot 24/25

5.2 Placed Clean Cover System Materials Type and Quantities

- 5.2.1 Only subsoil and topsoil material has been imported to the site for use as a clean cover system. Confirmation of the acceptability of the imported material is provided by a 'Verification Letter Confirming the Suitability of Soils for Reuse' by enSAFE dated 12th January 2022 and presented in Appendix 1.1. Receipts for the delivery of imported material to site and the Waste Exemption Certificate WEX294472 are also presented in Appendix 1.2

5.3 Ground Excavation and Disposal

- 5.3.1 Ground levels have been raised across the site in external areas. No ground excavation has been undertaken and no soils have been disposed of off-site.

5.4 Chemical Analysis of Clean Cover System Soils

- 5.4.1 Samples of the placed topsoil and subsoil were collected from depths of 0 -100mm and 200 – 300mm in the rear external areas at Plot 8, Plot 9, Plot 10. These samples are taken as representative of soils placed in all external areas and meet the frequency specified in the *Remediation Strategy Jacques Way Castlemead Group Limited 108157p3r3 June 2020 by REC Ltd* of 1 sample per 50m³ topsoil and 1 sample per 250m³ subsoil. The results of the chemical analysis are presented in Appendix 2.
- 5.4.2 The analytical results have been assessed against the screening values presented in the *Remediation Strategy Jacques Way Castlemead Group Limited 108157p3r3 June 2020 by REC Ltd* report. The analytical reports on the soil samples when compared to the screening values indicate the following:
- The concentrations of total metals lead, arsenic, barium, beryllium, cadmium, mercury, selenium, vanadium and chromium are below the respective guidelines concentrations for the intended end use
 - The concentrations of phytotoxic metals copper, nickel and zinc are not elevated and below the guideline concentrations
 - Water soluble chloride, fluoride and sulphate are below the guideline concentrations
 - BTEX concentrations are below detection limits
 - The PAH concentrations and speciated fractions are significantly below the guideline concentrations or below detection limits
 - TPH concentrations and the speciated fractions are significantly below the guideline concentrations or below detection limits
 - No asbestos was detected within the soil samples

5.5 Potable Water Supply Pipe Material Type

- 5.5.1 All potable water supply pipes are of PE Pipe which was confirmed as acceptable by Severn Trent following review of the Phase 2 Ground Contamination Investigation undertaken by REC and presented in the report Phase II Geo-Environmental & Geotechnical Site Investigation, REC 108157p2r0, dated November 2019 and confirmed by the signed off final version of HD Cymru Design and Build Scheme drawing (Appendix 3). Confirmation of the PE Pipe installed was provided by Alan Cooper at Avoe Ltd and confirmed in an email copy (Appendix 3) and photograph of installed pipe (Appendix 3)

5.6 Previously Unidentified Contamination

- 5.6.1 No previously unidentified contamination was found during any of the site development works.

6. CONCLUSIONS.

6.1 Conclusion

- 6.1.1 Site remediation works have been carried out at a new residential development on land known as Jacques Yard on Jacques Way in Wrexham
- 6.1.2 A clean cover system of imported uncontaminated subsoil and topsoil has been placed to a depth of 600mm in external areas. Site measurements of the clean cover system depth has confirmed at least 600mm of placed soils. Validation testing and chemical analysis of representative samples of topsoil and subsoil samples from imported soils has confirmed that the placed soils are uncontaminated with respect to the chemical parameters for which analysis was undertaken.
- 6.1.3 The findings of the soil depths measurements and chemical analysis of representative soil samples indicate that the remediation objectives have been met.

Appendix 1.1 - Verification Letter Confirming the Suitability of Soils for Reuse - enSAFE



Mr Eric Bray

Castlemead Group Limited
Abenbury House
17 Wilkinson Business Park
Clywedog Road South
Wrexham
LL13 9AE

12 January 2022

Dear Mr Eric Bray

VERIFICATION LETTER CONFIRMING THE SUITABILITY OF THE SOILS FOR RE-USE

1.1 Background Information

Ensafe Consultants Ltd were commissioned by Castlemead Group Limited to prepare a verification letter for suitability of soils for use at the development site, Jacques Way, Wrexham, LL11 2BY, from the proposed donor site at Chester Road, Kelsall, Cheshire, CW6 0RS. The report provides verification of site material, compares site conditions and soil chemical parameters to the specification for verification as agreed with Wrexham Borough Council in the remediation strategy outlined in REC Ltd, *Remediation Strategy Report*, 108157P3R3, June 2020.

This report has been devised to generally comply with the relevant principles and requirements of a range of guidance including:

- Part IIA of the Environment Protection Act, 1990;
- Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, April 2012);
- National Planning Policy Framework (HCA, February 2019);
- BS5930:2015: "Code of practice for site investigations";
- BS10175: 2011 +A2:2017 "Investigation of Potentially Contaminated Sites - Code of Practice";
- The Building Regulations 2010. Part C (HM Government 2013)
- Environment Agency (2011) Report GPLC1 "Guiding Principles for Land Contamination";
- Environment Agency (2017) "The Environment Agency's Approach to Groundwater Protection" November 2017 Version 1.1;
- Environment Agency Guidance (October 2020) Land Contamination Risk Management Land Contamination (LCRM);

Ensafe's report limitations are presented in Appendix A.

The proposed development of the Jacques Way site is understood to comprise the construction of residential dwellings with associated gardens. A proposed development plan (HDS Architectural Services – Site Plan as Proposed – JWA/PD/00 revision I) is shown in Appendix B.



1.2 Background Information

This letter should be read in conjunction with the following reports prepared for the site previously:

- Geo-Environmental Assessment, REC Reference: 102904p1r1, dated October 2018;
- Phase II Geo-Environmental & Geotechnical Site Investigation, REC 108157p2r0, dated November 2019;
- Stockpile Soil Sampling 108157p4r1, dated January 2020; and,
- Remediation Strategy Report 108157P3R3, dated June 2020.

2. Site Works

In compliance with the agreed remediation strategy, the proposed material for import for use in the clean cover system was tested for suitability for use against the agreed chemical criteria, as outlined in the REC Ltd, *Remediation Strategy Report* 108157P3R3, June 2020. The suitability criteria for imported materials is presented in Appendix C.

Ensafe was present on site on the 23rd November 2021 to take samples of the stockpiled material at the Chester Road donor site. A total of 3 samples were taken in accordance with Table 3.1 within the remediation strategy. The soil samples were sent to i2 Analytical in Watford, Hertfordshire for testing. This laboratory is UKAS accredited in accordance with ISO17025 and is also MCERTS accredited for soil analysis in accordance with the Environment Agency's scheme. The laboratory analysis results are presented in Appendix D.

Photos of the stockpile sampled for testing is presented in Appendix E.

3. Verification of Stockpiled Material

Analysis of the 3 samples tested by i2 Analytical were compared to the suitability targets for imported materials. None of the samples tested exceeded the suitability criteria for imported materials and as such, the stockpiled material at the Chester Road, Kelsall, Cheshire, CW6 0RS donor site is considered suitable for re-use as subsoil in at the Jacques Way, Wrexham, LL11 2BY development site.

This proposed material will be imported to site for use in the clean cover system under a U1 exemption to be obtained by Ensafe Ltd.

Yours Sincerely
For and on behalf of Ensafe Consultants

Jonathan Lewis
Senior Geo-environmental Consultant
jlewis@ensafe.co.uk

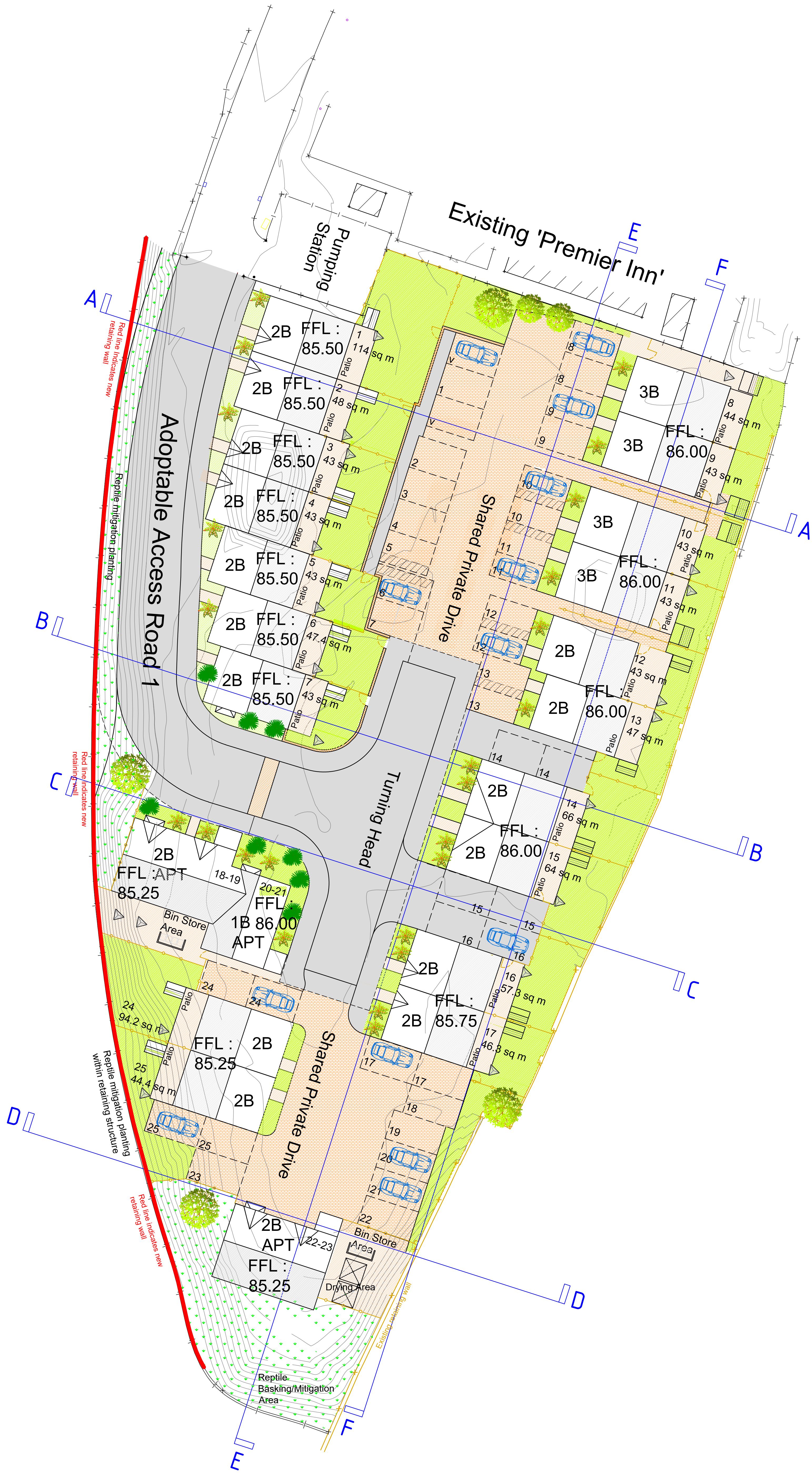
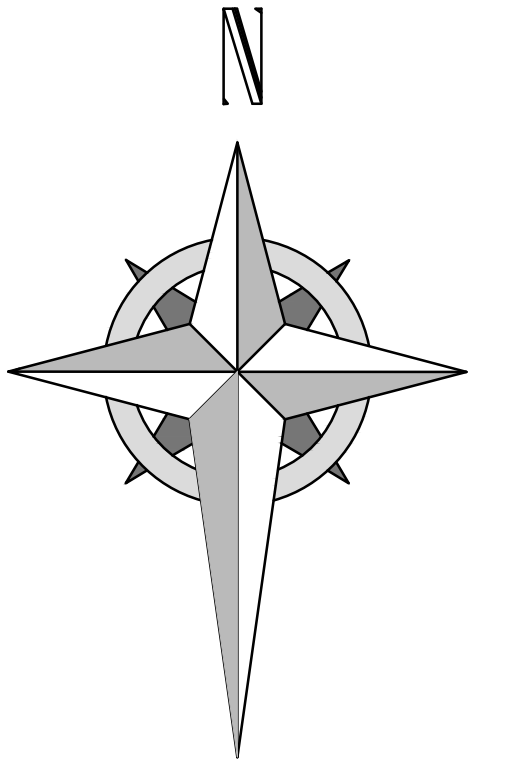
APPENDIX A - LIMITATIONS

LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between Ensaf Consultants and the Client as indicated in Section 1.0.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not be made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
6. In addition to the above Ensaf Consultants note that when investigating, or developing, potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and also with time. The absence of certain ground, ground gas, and contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Due to the presence of existing buildings and structures access could not be obtained to all areas. Additional contamination may be identified following the removal of the buildings or hard standing.
7. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
8. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
9. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
10. This report presents an interpretation of the geotechnical information established by excavation, observation and testing. Whilst every effort is made in interpretative reporting to assess the soil conditions over the Site it should be noted that natural strata vary from point to point and that manmade deposits are subject to an even greater diversity. Groundwater conditions are dependent on seasonal and other factors. Consequently, there may be conditions present not revealed by this investigation.
11. Ensaf Consultants cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by Ensaf Consultants is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by Ensaf Consultants in this connection without their explicit written agreement there to by Ensaf Consultants.
12. Rather, this investigation has been undertaken to provide a preliminary characterisation of the existing sub-surface geotechnical characteristics and make up and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

This investigation has been undertaken to reasonably characterise existing sub-surface conditions and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX B – PROPOSED DEVELOPMENT PLAN



BLOCK PLAN
SCALE - 1:200



Ferndale Villa, 25 Manley Road,
Wrexham, LL13 8HD
Tel: (01978) 353445
www.hdsarchitectural.co.uk

Project; Residential Development to Land adjoining 'Premier Inn', Jacques Way, Wrexham.	
Title; Site Plan As Proposed	Scale (A1); 1:200
Dwg No; JWA/PD/00	Date; February 2018
Revision; Rev A: Amend risk as requested by client - 28-03-17 Rev B: Add cotchmentment etc - 04-04-18 Rev C: Amend layout to apartments - 01-10-18 Rev D: Amend layout to apartments - 05-10-18 Rev E: Add bin store and drying line - 06-10-18 Rev F: Remove security fence - 18-10-18 Rev G: Amend layout to suit latest scheme - 09-02-19 Rev H: Add further info as requested by Wrexham - 13-02-19 Rev I: Amend layout to suit latest scheme - 09-04-19	

APPENDIX C – SUITIBILITY CRITERIA FOR IMPORTED MATERIALS

SUITABILITY TARGETS FOR IMPORTED MATERIALS

Determinand	Units	Screening Value for Use Of imported materials			Screening Value Source
Inorganics					
Arsenic	mg/kg	37			(i)
Cadmium	mg/kg	11			(i)
Chromium (VI)	mg/kg	6.0			(i)
Lead	mg/kg	200			(ii)
Inorganic Mercury	mg/kg	40			(i)
Nickel	mg/kg	180			(i)
Selenium	mg/kg	250			(i)
Copper	mg/kg	2400			(i)
Zinc	mg/kg	3700			(i)
Cyanide	mg/kg	97			(iv)
Asbestos	%	Non Detected			N/A
Organics – PAHs and Phenol					
		1% SOM	2.5% SOM	6% SOM	
Phenol	mg/kg	280	550	1100	(iii)
Naphthalene	mg/kg	2.3	5.6	13	(iii)
Acenaphthylene	mg/kg	170	420	920	(iii)
Acenaphthene	mg/kg	210	510	1100	(iii)
Fluorene	mg/kg	170	400	860	(iii)
Phenanthrene	mg/kg	95	220	440	(iii)
Anthracene	mg/kg	2400	5400	11000	(iii)
Fluoranthene	mg/kg	280	560	890	(iii)
Pyrene	mg/kg	620	1200	2000	(iii)
Benzo(a)Anthracene	mg/kg	7.2	11	13	(iii)
Chrysene	mg/kg	15	22	27	(iii)
Benzo(b)Fluoranthene	mg/kg	2.6	3.3	3.7	(iii)
Benzo(k)Fluoranthene	mg/kg	77	93	100	(iii)
Benzo(a)Pyrene	mg/kg	2.2	2.7	3.0	(iii)
Indeno(123-cd)Pyrene	mg/kg	27	36	41	(iii)
Dibenzo(a,h)Anthracene	mg/kg	0.24	0.28	0.30	(iii)
Benzo(ghi)Perylene	mg/kg	320	340	350	(iii)
Organics – TPHs					
TPH C ₅ -C ₆	mg/kg	42	78	160	(iii)
TPH C ₆ -C ₈	mg/kg	100	230	530	(iii)
TPH C ₈ -C ₁₀	mg/kg	27	65	150	(iii)
TPH C ₁₀ -C ₁₂	mg/kg	74	180	380	(iii)
TPH C ₁₂ -C ₁₆	mg/kg	140	330	660	(iii)
TPH C ₁₆ -C ₂₁	mg/kg	260	540	930	(iii)
TPH C ₂₁ -C ₃₅	mg/kg	1100	1500	1700	(iii)
TPH C ₃₅ -C ₄₀	mg/kg	1100	1500	1700	(iii)
Screening Value Source					
(i)	LQM/CIEH Suitable For Use Level (S4UL) (2015)				
(ii)	Defra Category 4 Screening Level (2014)				
(iii)	S4UL –1%, 2.5% and 6% SOM				
(iv)	CLEA v1.06 Derived Value				

APPENDIX D – LABORATORY CHEMICAL TEST RESULTS



Brad Hall
Ensafe Consultants
Unit 9 Orbital 24
Oldham Street
Denton
Manchester
M34 3SU

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: bhall@ensafe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 21-25592

Project / Site name:	Jaques Way	Samples received on:	26/11/2021
Your job number:	G72242	Samples instructed on/ Analysis started on:	26/11/2021
Your order number:	PO436	Analysis completed by:	08/12/2021
Report Issue Number:	1	Report issued on:	09/12/2021
Samples Analysed:	3 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-25592
Project / Site name: Jaques Way
Your Order No: PO436

Lab Sample Number				2097238	2097239	2097240
Sample Reference				ES1	ES3	ES4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				23/11/2021	23/11/2021	23/11/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	13	10
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.6	7.9	6.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	81	39	94
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.041	0.020	0.047
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	40.6	19.7	47.1
Organic Matter (automated)	%	0.1	MCERTS	0.9	0.6	0.9
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.0049	0.0032	0.0051

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80
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Analytical Report Number: 21-25592
Project / Site name: Jaques Way
Your Order No: PO436

Lab Sample Number	2097238	2097239	2097240
Sample Reference	ES1	ES3	ES4
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	23/11/2021	23/11/2021	23/11/2021
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.2	< 1.0	< 1.0
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.5	6.6	6.7
Barium (aqua regia extractable)	mg/kg	1	MCERTS	31	81	38
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.43	1.7	0.44
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.3	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	24	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	18	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.3	7.2	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	29	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	25	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	36	44	44

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC44) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC44) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-25592

Project / Site name: Jaques Way

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2097238	ES1	None Supplied	None Supplied	Brown sandy clay with vegetation and gravel
2097239	ES3	None Supplied	None Supplied	Brown sandy clay with vegetation and gravel
2097240	ES4	None Supplied	None Supplied	Brown sandy clay with vegetation and gravel

Analytical Report Number : 21-25592

Project / Site name: Jaques Way

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 21-25592

Project / Site name: Jaques Way

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX E – SITE PHOTOGRAPHS

1. PHOTOGRAPHIC RECORD

Stockpile



1. PHOTOGRAPHIC RECORD



1. PHOTOGRAPHIC RECORD



1. PHOTOGRAPHIC RECORD



Appendix 1.2 - Imported Soil Material Delivery Tickets

North West Groundworks & Landscaping Ltd
 Suite 120, Imperial Court
 Exchange Street East
 Liverpool
 L2 3AB



**North West Groundworks
and Landscaping Ltd**

Purchase Order

Supplier :	Delivery Address	Date :
Think Aggregates & Recycling Rhuallt St. Asaph Denbighshire Contact : Email : creditcontrol@apk.uk.com	Jacques Way Mold Road Wrexham LL11 2BY	13/09/21
		Order Number :
		PO00653
		Contract Name:
		Jacques Way

Delivery Date : 16 September 2021

Contact: Nick Jones Bart Wilkins

Telephone: 07739 551848 07396 946057

Description	Quantity	Units	Price	Total
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Import Soil from CW06 ORS to LL11 2BY per load TO BE CALLED OFF BY SITE	50.00	Load	100.00	5,000.00
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Nett :	5,000.00
Vat :	1,000.00
Order Total Value :	6,000.00

Standard Payment Terms are 35 Days End Of Month - unless otherwise agreed.
 Please send all invoices to: accounts@castlemeadgroup.co.uk by the end of the month to avoid payment delays.
 This purchase order is sent in line with Castlemead's standard terms and conditions



AGGREGATES &
RECYCLING

GTR Aggregates & Recycling Ltd
Waste Transfer Station
Deebank Industrial Estate
Boot End
Bagillt
CH6 6HJ

SALES INVOICE

PO 00653

Account	SITE	Account No. N012
North West Groundworks and Landscaping Ltd UNIT 1, SUITE 120 IMPERIAL COURT EXCHANGE STREET EAST LIVERPOOL	NORTH WEST GROUNDWORKS AND LANDSCAPING LTD JACQUES WAY MOLD ROAD WREXHAM LL11 2BY	Invoice No: 12595 Invoice Date - 04/10/2021

Date	Ticket	Description	Unit	Qty	Price	Value
01/10/2021	93593	Haulage	Load	1.00	£100.00	£100.00
01/10/2021	93594	Haulage	Load	1.00	£100.00	£100.00
01/10/2021	93595	Haulage	Load	1.00	£100.00	£100.00
01/10/2021	93596	Haulage	Load	1.00	£100.00	£100.00
01/10/2021	93597	Haulage	Load	1.00	£100.00	£100.00

GTR Aggregates & Recycling Ltd
Lloyds Bank
Sort Code 30-65-22
Account 82150768

Payment Terms: Strictly 30 Days Net
Vat Reg: 310 5852 87

Sub-Total	£500.00
VAT at 20.00%	£100.00
Total	£600.00

AGGREGATES &
RECYCLING

Ticket No: 93597

Date: 01/10/2021

Customer Order No: 000124/po00653

Account Address:

C002
Castlemead Homes
ABENBURY HOUSE
17 WILKINSON BUSINESS PARK
CLWYEDOG ROAD SOUTH, LL13 9AE

Address:

NORTH WEST GROUNDWORKS AND LANDSCAPING LTD
JACQUES WAY
MOLD ROAD
WREXHAM
LL11 2BY

Vehicle: PN70AFZ

Cash Sale: No

Time On Site

Time Off Site

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England and Wales) regulations 2011

Terms and conditions

- Placing vehicles on block paving, slabbed driveways, soft and unlevel ground is done so at the customers risk.
- GTR take no responsibility for damage to the customers premises if the ground or site is unsuitable for a HGV. GTR will not accept damage caused to a manhole that are not capable for carrying the weight of a HGV.
- No electrical items including fridges/freezers, tyres, asbestos, gas bottles.
- Please see our website for the full list of terms and conditions.

Product:	EWC	Unit:	Qty:	Outlet:
HAUL		LOAD	1.00	HAUL

From Customer: NO ONE ON SITE

From Driver: Adrian Rowley

To Customer: NO ONE ON SITE

To Driver: Adrian Rowley

AGGREGATES &
RECYCLING

Ticket No: 93595

Date: 01/10/2021

Customer Order No: 000124/po00653

Account Address:

C002
Castlemead Homes
ABENBURY HOUSE
17 WILKINSON BUSINESS PARK
CLWYEDOG ROAD SOUTH, LL13 9AE

Address:

NORTH WEST GROUNDWORKS AND LANDSCAPING LTD
JACQUES WAY
MOLD ROAD
WREXHAM
LL11 2BY

Vehicle: PN70AFZ

Cash Sale: No

Time On Site

Time Off Site

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England and Wales) regulations 2011

Terms and conditions

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- GTR take no responsibility for damage to the customers premises if the ground or site is unsuitable for a HGV. GTR will not accept damage caused to a manhole that are not capable for carrying the weight of a HGV.
- No electrical items including fridges/freezers, tyres, asbestos, gas bottles.
- Please see our website for the full list of terms and conditions.

Product:	EWC	Unit:	Qty:	Outlet:
HAUL		LOAD	1.00	HAUL

From Customer: NO ONE ON SITE

From Driver: Adrian Rowley

To Customer: NO ONE ON SITE

To Driver: Adrian Rowley

AGGREGATES &
RECYCLING

Ticket No: 93593

Date: 01/10/2021

Customer Order No: 000124/po00653

Account Address:

C002
Castlemead Homes
ABENBURY HOUSE
17 WILKINSON BUSINESS PARK
CLWYEDOG ROAD SOUTH, LL13 9AE

Address:

NORTH WEST GROUNDWORKS AND LANDSCAPING LTD
JACQUES WAY
MOLD ROAD
WREXHAM
LL11 2BY

Vehicle: PN70AFZ

Cash Sale: No

Time On Site

Time Off Site

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England and Wales) regulations 2011

Terms and conditions

- Placing vehicles on block paving, slabbed driveways, soft and unlevel ground is done so at the customers risk.
- GTR take no responsibility for damage to the customers premises if the ground or site is unsuitable for a HGV. GTR will not accept damage caused to a manhole that are not capable for carrying the weight of a HGV.
- No electrical items including fridges/freezers, tyres, asbestos, gas bottles.
- Please see our website for the full list of terms and conditions.

Product:	EWC	Unit:	Qty:	Outlet:
HAUL		LOAD	1.00	HAUL

From Customer: NO ONE ON SITE

From Driver: Adrian Rowley

To Customer: NO ONE ON SITE

To Driver: Adrian Rowley

AGGREGATES &
RECYCLING

Ticket No: 93596

Date: 01/10/2021

Customer Order No: 000124/po00653

Account Address:

C002
Castlemead Homes
ABENBURY HOUSE
17 WILKINSON BUSINESS PARK
CLWYEDOG ROAD SOUTH, LL13 9AE

Address:

NORTH WEST GROUNDWORKS AND LANDSCAPING LTD
JACQUES WAY
MOLD ROAD
WREXHAM
LL11 2BY

Vehicle: PN70AFZ

Cash Sale: No

Time On Site

Time Off Site

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England and Wales) regulations 2011

Terms and conditions

- Placing vehicles on block paving, slabbed driveways, soft and unlevel ground is done so at the customers risk.
- GTR take no responsibility for damage to the customers premises if the ground or site is unsuitable for a HGV. GTR will not accept damage caused to a manhole that are not capable for carrying the weight of a HGV.
- No electrical items including fridges/freezers, tyres, asbestos, gas bottles.
- Please see our website for the full list of terms and conditions.

Product:	EWC	Unit:	Qty:	Outlet:
HAUL		LOAD	1.00	HAUL

From Customer: NO ONE ON SITE

From Driver: Adrian Rowley

To Customer: NO ONE ON SITE

To Driver: Adrian Rowley

AGGREGATES &
RECYCLING

Ticket No: 93594

Date: 01/10/2021

Customer Order No: 000124/po00653

Account Address:

C002
Castlemead Homes
ABENBURY HOUSE
17 WILKINSON BUSINESS PARK
CLWYEDOG ROAD SOUTH, LL13 9AE

Address:

NORTH WEST GROUNDWORKS AND LANDSCAPING LTD
JACQUES WAY
MOLD ROAD
WREXHAM
LL11 2BY

Vehicle: PN70AFZ

Cash Sale: No

Time On Site

Time Off Site

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England and Wales) regulations 2011

Terms and conditions

- Placing vehicles on block paving, slabbed driveways, soft and unlevel ground is done so at the customers risk.
- GTR take no responsibility for damage to the customers premises if the ground or site is unsuitable for a HGV. GTR will not accept damage caused to a manhole that are not capable for carrying the weight of a HGV.
- No electrical items including fridges/freezers, tyres, asbestos, gas bottles.
- Please see our website for the full list of terms and conditions.

Product:	EWC	Unit:	Qty:	Outlet:
HAUL		LOAD	1.00	HAUL

From Customer: NO ONE ON SITE

From Driver: Adrian Rowley

To Customer: NO ONE ON SITE

To Driver: Adrian Rowley

Waste exemption registration WEX294472

We confirm that the details you have entered, as shown below, are now on the exemptions register. Your registration should show on the public register within 5 days.

This document is not a permit. Exemptions may have ceased or been revoked.

To check whether these exemptions are still valid, check the company's registration WEX294472 on the public register of waste exemptions:

<https://environment.data.gov.uk/public-register/view/search-waste-exemptions>

Business responsibilities

The business or organisation responsible for carrying out the exempt waste operations agrees to:

- comply with all limits on waste types and quantities
- comply with all conditions governing how waste must be stored, handled and treated
- carry out the operations without endangering human health or harming the environment

For the operations to remain exempt they must be carried out without:

- causing risk to water, air, soil, plants or animals
- causing a nuisance through noise and odours
- negatively affecting the countryside or places of special interest

In sensitive locations, extra controls may be needed over and above those set out in the exemptions to make sure this happens.

Registration details

Registration details

Reference Number	WEX294472
Date registered	12 January 2022

Exemptions

U1: Use of waste in construction	Expires on 11 January 2025
----------------------------------	----------------------------

Your contact details

Your name	Jonathan Lewis
Your telephone number	07570670995
Your email address	jlewis@ensafe.co.uk

Waste operator details

Business or organisation type	Limited company
Waste operator responsible for these waste operations	CASTLEMEAD GROUP LIMITED
Address of the Waste operator	CASTLEMEAD GROUP LTD UNIT 17, WILKINSON BUSINESS PARK

CLYWEDOG ROAD SOUTH
WREXHAM INDUSTRIAL ESTATE
WREXHAM
LL13 9AE

Waste operations contact

Name	Joseph O' Donnell
Position	Director
Telephone number	01978669000
Email	jodonnell@castlemeadgroup.co.uk
Address	CASTLEMEAD GROUP LTD UNIT 17, WILKINSON BUSINESS PARK CLYWEDOG ROAD SOUTH WREXHAM INDUSTRIAL ESTATE WREXHAM LL13 9AE

Waste operation details

Grid reference	SJ 32853 50623
Site details	Located to the south of Jacques Way in Wrexham, was an area of flat undeveloped land and is now currently being developed for housing. Active railway tracks are to the east, west and south of the site, and a Premier Inn is directly to the north.

Appendix 2 - Chemical Analysis Results – Topsoil and Sub-soil

Castlemead Group Ltd
Abenbury House
17 Wilkinson Business Park
Clywedog Rd South
Wrexham
LL13 9AE

Date: 11 November 2022
Test Report Ref: TR 918524

Page 1 of 3

Contract: Jacques Way

LABORATORY TEST REPORT

TEST REQUIREMENTS:

To determine the chemical analysis of a sample as per client request.

SAMPLE DETAILS:

Certificate of sampling received:	Yes
Laboratory Ref. No:	S106521
Client Ref. No:	06-00415
Date and Time of Sampling:	02/11/2022 (10:05)
Date of Receipt at Lab:	02/11/2022
Date of Start of Test:	04/11/2022
Sampling Location:	Rear Garden of Plot 8 @ 0 to 100mm
Name of Source:	Jacques Way, Wrexham
Method of Sampling:	In-house SO/SP
Sampled By:	Celtest
Tested By:	Subcontract Laboratory
Material Description:	Topsoil
Target Specification:	N/A

Results:

See Attached

This test report shall not be reproduced, except in full, without the written approval of Celtest Company Limited.

These results relate only to the items tested.

Comments:

The work was carried out by our competent, sub contracted laboratory.

Report checked and approved by:



Neil Hughes

Assistant Aggregate Team Manager

Test Report Ref: TR 918524 Page 2 of 3

Metals	Unit	Result
Arsenic	mg/kg	6.9
Barium	mg/kg	90.9
Beryllium	mg/kg	< 0.5
Cadmium	mg/kg	0.3
Chromium	mg/kg	13.3
Copper	mg/kg	30.2
Lead	mg/kg	36.7
Mercury	mg/kg	< 0.1
Nickel	mg/kg	14.8
Selenium	mg/kg	< 1.0
Vanadium	mg/kg	12.5
Zinc	mg/kg	65.3
Anions		
Water Soluble Chloride	mg/kg	< 40
Water Soluble Fluoride	mg/kg	< 40
Water Soluble Sulphate	mg/kg	179
Polyaromatic hydrocarbons		
Naphthalene	mg/kg	< 0.1
Acenaphthylene	mg/kg	< 0.1
Acenaphthene	mg/kg	< 0.1
Fluorene	mg/kg	< 0.1
Phenanthrene	mg/kg	< 0.1
Anthracene	mg/kg	< 0.1
Fluoranthene	mg/kg	< 0.1
Pyrene	mg/kg	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1
Chrysene	mg/kg	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1
Dibenzo(a,h)anthracene	mg/kg	< 0.1
Benzo[g,h,i]perylene	mg/kg	< 0.1
Total PAH(16)	mg/kg	< 0.4
BTEX		
Benzene	mg/kg	< 0.01
Toluene	mg/kg	< 0.01
Ethylbenzene	mg/kg	< 0.01
Xylenes	mg/kg	< 0.01
MTBE	mg/kg	< 0.01

Test Report Ref: TR 918524 Page 3 of 3

TPH CWG	Unit	Result
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	1.3
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	1.4

Asbestos

No Asbestos Detected

Castlemead Group Ltd
Abenbury House
17 Wilkinson Business Park
Clywedog Rd South
Wrexham
LL13 9AE

Date: 11 November 2022
Test Report Ref: TR 918523

Page 1 of 3

Contract: Jacques Way

LABORATORY TEST REPORT

TEST REQUIREMENTS:

To determine the chemical analysis of a sample as per client request.

SAMPLE DETAILS:

Certificate of sampling received:	Yes
Laboratory Ref. No:	S106521
Client Ref. No:	06-00416
Date and Time of Sampling:	02/11/2022 (10:15)
Date of Receipt at Lab:	02/11/2022
Date of Start of Test:	04/11/2022
Sampling Location:	Rear Garden of Plot 8 @ 200 to 300mm
Name of Source:	Jacques Way, Wrexham
Method of Sampling:	In-house SO/SP
Sampled By:	Celtest
Tested By:	Subcontract Laboratory
Material Description:	Sub soil :- Firm Red Brown Silty Sandy Clay & Occasional Gravel
Target Specification:	N/A

Results:

See Attached

This test report shall not be reproduced, except in full, without the written approval of Celtest Company Limited.

These results relate only to the items tested.

Comments:

The work was carried out by our competent, sub contracted laboratory.

Report checked and approved by:



Neil Hughes

Assistant Aggregate Team Manager

Test Report Ref: TR 918523 Page 2 of 3

Metals	Unit	Result
Arsenic	mg/kg	7.5
Barium	mg/kg	65.8
Beryllium	mg/kg	0.7
Cadmium	mg/kg	0.2
Chromium	mg/kg	22.4
Copper	mg/kg	29.3
Lead	mg/kg	30.6
Mercury	mg/kg	< 0.1
Nickel	mg/kg	19.4
Selenium	mg/kg	< 1.0
Vanadium	mg/kg	22.2
Zinc	mg/kg	77.4
Anions		
Water Soluble Chloride	mg/kg	< 40
Water Soluble Fluoride	mg/kg	< 40
Water Soluble Sulphate	mg/kg	184
Polyaromatic hydrocarbons		
Naphthalene	mg/kg	< 0.1
Acenaphthylene	mg/kg	< 0.1
Acenaphthene	mg/kg	< 0.1
Fluorene	mg/kg	< 0.1
Phenanthrene	mg/kg	< 0.1
Anthracene	mg/kg	< 0.1
Fluoranthene	mg/kg	< 0.1
Pyrene	mg/kg	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1
Chrysene	mg/kg	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1
Dibenzo(a,h)anthracene	mg/kg	< 0.1
Benzo[g,h,i]perylene	mg/kg	< 0.1
Total PAH(16)	mg/kg	< 0.4
BTEX		
Benzene	mg/kg	< 0.01
Toluene	mg/kg	< 0.01
Ethylbenzene	mg/kg	< 0.01
Xylenes	mg/kg	< 0.01
MTBE	mg/kg	< 0.01

Test Report Ref: TR 918523 Page 3 of 3

TPH CWG	Unit	Result
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	< 1.0

Asbestos

No Asbestos Detected

Castlemead Group Ltd
Abenbury House
17 Wilkinson Business Park
Clywedog Rd South
Wrexham
LL13 9AE

Date: 11 November 2022
Test Report Ref: TR 918522

Page 1 of 3

Contract: Jacques Way

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the chemical analysis of a sample as per client request.

SAMPLE DETAILS:

Certificate of sampling received:	Yes
Laboratory Ref. No:	S106521
Client Ref. No:	06-00417
Date and Time of Sampling:	02/11/2022 (10:30)
Date of Receipt at Lab:	02/11/2022
Date of Start of Test:	04/11/2022
Sampling Location:	Rear Garden of Plot 9 @ 0 to 100mm
Name of Source:	Jacques Way, Wrexham
Method of Sampling:	In-house SO/SP
Sampled By:	Celtest
Tested By:	Subcontract Laboratory
Material Description:	Topsoil
Target Specification:	N/A

Results:

See Attached

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These results relate only to the items tested.

Comments:

The work was carried out by our competent, sub contracted laboratory.

Report checked and approved by:



Neil Hughes
Assistant Aggregate Team Manager

Test Report Ref: TR 918522 Page 2 of 3

Metals	Unit	Result
Arsenic	mg/kg	7.0
Barium	mg/kg	86.4
Beryllium	mg/kg	0.5
Cadmium	mg/kg	0.3
Chromium	mg/kg	15.4
Copper	mg/kg	30.3
Lead	mg/kg	42.2
Mercury	mg/kg	< 0.1
Nickel	mg/kg	15.5
Selenium	mg/kg	< 1.0
Vanadium	mg/kg	13.7
Zinc	mg/kg	75.6
Anions		
Water Soluble Chloride	mg/kg	< 40
Water Soluble Fluoride	mg/kg	< 40
Water Soluble Sulphate	mg/kg	64
Polyaromatic hydrocarbons		
Naphthalene	mg/kg	< 0.1
Acenaphthylene	mg/kg	< 0.1
Acenaphthene	mg/kg	< 0.1
Fluorene	mg/kg	< 0.1
Phenanthrene	mg/kg	< 0.1
Anthracene	mg/kg	< 0.1
Fluoranthene	mg/kg	< 0.1
Pyrene	mg/kg	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1
Chrysene	mg/kg	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1
Dibenzo(a,h)anthracene	mg/kg	< 0.1
Benzo[g,h,i]perylene	mg/kg	< 0.1
Total PAH(16)	mg/kg	< 0.4
BTEX		
Benzene	mg/kg	< 0.01
Toluene	mg/kg	< 0.01
Ethylbenzene	mg/kg	< 0.01
Xylenes	mg/kg	< 0.01
MTBE	mg/kg	< 0.01

Test Report Ref: TR 918522 Page 3 of 3

TPH CWG	Unit	Result
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	1.1
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1.6
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	2.5
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	3.6

Asbestos

No Asbestos Detected

Castlemead Group Ltd
Abenbury House
17 Wilkinson Business Park
Clywedog Rd South
Wrexham
LL13 9AE

Date: 11 November 2022
Test Report Ref: TR 918521

Page 1 of 3

Contract: Jacques Way

LABORATORY TEST REPORT

TEST REQUIREMENTS:

To determine the chemical analysis of a sample as per client request.

SAMPLE DETAILS:

Certificate of sampling received:	Yes
Laboratory Ref. No:	S106521
Client Ref. No:	06-00418
Date and Time of Sampling:	02/11/2022 (10:40)
Date of Receipt at Lab:	02/11/2022
Date of Start of Test:	04/11/2022
Sampling Location:	Rear Garden of Plot 9 @ 200 to 300mm
Name of Source:	Jacques Way, Wrexham
Method of Sampling:	In-house SO/SP
Sampled By:	Celtest
Tested By:	Subcontract Laboratory
Material Description:	Sub Soil :- Firm Red Brown Silty Sandy Clay & Occasional Gravel
Target Specification:	N/A

Results:

See Attached

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These results relate only to the items tested.

Comments:

The work was carried out by our competent, sub contracted laboratory.

Report checked and approved by:



Neil Hughes

Assistant Aggregate Team Manager

Test Report Ref: TR 918521 Page 2 of 3

Metals	Unit	Result
Arsenic	mg/kg	6.3
Barium	mg/kg	56.7
Beryllium	mg/kg	0.6
Cadmium	mg/kg	0.2
Chromium	mg/kg	18.4
Copper	mg/kg	24.4
Lead	mg/kg	25.9
Mercury	mg/kg	< 0.1
Nickel	mg/kg	14.8
Selenium	mg/kg	< 1.0
Vanadium	mg/kg	18.8
Zinc	mg/kg	63.8
Anions		
Water Soluble Chloride	mg/kg	72
Water Soluble Fluoride	mg/kg	< 40
Water Soluble Sulphate	mg/kg	151
Polyaromatic hydrocarbons		
Naphthalene	mg/kg	< 0.1
Acenaphthylene	mg/kg	< 0.1
Acenaphthene	mg/kg	< 0.1
Fluorene	mg/kg	< 0.1
Phenanthrene	mg/kg	< 0.1
Anthracene	mg/kg	< 0.1
Fluoranthene	mg/kg	< 0.1
Pyrene	mg/kg	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1
Chrysene	mg/kg	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1
Dibenzo(a,h)anthracene	mg/kg	< 0.1
Benzo[g,h,i]perylene	mg/kg	< 0.1
Total PAH(16)	mg/kg	0.4
BTEX		
Benzene	mg/kg	< 0.01
Toluene	mg/kg	< 0.01
Ethylbenzene	mg/kg	< 0.01
Xylenes	mg/kg	< 0.01
MTBE	mg/kg	< 0.01

Test Report Ref: TR 918521 Page 3 of 3

TPH CWG	Unit	Result
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	< 1.0

Asbestos

No Asbestos Detected

Castlemead Group Ltd
Abenbury House
17 Wilkinson Business Park
Clywedog Rd South
Wrexham
LL13 9AE

Date: 11 November 2022
Test Report Ref: TR 918520

Page 1 of 3

Contract: Jacques Way

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the chemical analysis of a sample as per client request.

SAMPLE DETAILS:

Certificate of sampling received:	Yes
Laboratory Ref. No:	S106521
Client Ref. No:	06-00419
Date and Time of Sampling:	02/11/2022 (10:50)
Date of Receipt at Lab:	02/11/2022
Date of Start of Test:	04/11/2022
Sampling Location:	Rear Garden of Plot 10 @ 0 to 100mm
Name of Source:	Jacques Way, Wrexham
Method of Sampling:	In-house SO/SP
Sampled By:	Celtest
Tested By:	Subcontract Laboratory
Material Description:	Topsoil
Target Specification:	N/A

Results:

See Attached

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These results relate only to the items tested.

Comments:

The work was carried out by our competent, sub contracted laboratory.

Report checked and approved by:



Neil Hughes
Assistant Aggregate Team Manager

Test Report Ref: TR 918520 Page 2 of 3

Metals	Unit	Result
Arsenic	mg/kg	6.5
Barium	mg/kg	78.4
Beryllium	mg/kg	< 0.5
Cadmium	mg/kg	0.3
Chromium	mg/kg	13.3
Copper	mg/kg	27.5
Lead	mg/kg	34.5
Mercury	mg/kg	< 0.1
Nickel	mg/kg	14.1
Selenium	mg/kg	< 1.0
Vanadium	mg/kg	13.1
Zinc	mg/kg	62.2
Anions		
Water Soluble Chloride	mg/kg	< 40
Water Soluble Fluoride	mg/kg	< 40
Water Soluble Sulphate	mg/kg	73
Polyaromatic hydrocarbons		
Naphthalene	mg/kg	< 0.1
Acenaphthylene	mg/kg	< 0.1
Acenaphthene	mg/kg	< 0.1
Fluorene	mg/kg	< 0.1
Phenanthrene	mg/kg	< 0.1
Anthracene	mg/kg	< 0.1
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1
Chrysene	mg/kg	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1
Dibenzo(a,h)anthracene	mg/kg	< 0.1
Benzo[g,h,i]perylene	mg/kg	< 0.1
Total PAH(16)	mg/kg	< 0.4
BTEX		
Benzene	mg/kg	< 0.01
Toluene	mg/kg	< 0.01
Ethylbenzene	mg/kg	< 0.01
Xylenes	mg/kg	< 0.01
MTBE	mg/kg	< 0.01

Test Report Ref: TR 918520 Page 3 of 3

TPH CWG	Unit	Result
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1.2
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1.1
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	2.4
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	2.9

Asbestos

No Asbestos Detected

Castlemead Group Ltd
Abenbury House
17 Wilkinson Business Park
Clywedog Rd South
Wrexham
LL13 9AE

Date: 11 November 2022
Test Report Ref: TR 918519

Page 1 of 3

Contract: Jacques Way

LABORATORY TEST REPORT

TEST REQUIREMENTS:

To determine the chemical analysis of a sample as per client request.

SAMPLE DETAILS:

Certificate of sampling received:	Yes
Laboratory Ref. No:	S106521
Client Ref. No:	06-00420
Date and Time of Sampling:	02/11/2022 (11:00)
Date of Receipt at Lab:	02/11/2022
Date of Start of Test:	04/01/2022
Sampling Location:	Rear Garden of Plot 10 @ 200 to 300mm
Name of Source:	Jacques Way, Wrexham
Method of Sampling:	In-house SO/SP
Sampled By:	Celtest
Tested By:	Subcontract Laboratory
Material Description:	Sub Soil : Firm Red Brown Silty Sandy Clay & Occasional Gravel
Target Specification:	N/A

Results:

See Attached

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These results relate only to the items tested.

Comments:

The work was carried out by our competent, sub contracted laboratory.

Report checked and approved by:



Neil Hughes

Assistant Aggregate Team Manager

Test Report Ref: TR 918519 Page 2 of 3

Metals	Unit	Result
Arsenic	mg/kg	6.6
Barium	mg/kg	68.0
Beryllium	mg/kg	0.7
Cadmium	mg/kg	0.2
Chromium	mg/kg	22.5
Copper	mg/kg	27.0
Lead	mg/kg	31.0
Mercury	mg/kg	< 0.1
Nickel	mg/kg	20.3
Selenium	mg/kg	< 1.0
Vanadium	mg/kg	22.7
Zinc	mg/kg	74.9
Anions		
Water Soluble Chloride	mg/kg	82
Water Soluble Fluoride	mg/kg	< 40
Water Soluble Sulphate	mg/kg	148
Polyaromatic hydrocarbons		
Naphthalene	mg/kg	< 0.1
Acenaphthylene	mg/kg	< 0.1
Acenaphthene	mg/kg	< 0.1
Fluorene	mg/kg	< 0.1
Phenanthrene	mg/kg	< 0.1
Anthracene	mg/kg	< 0.1
Fluoranthene	mg/kg	< 0.1
Pyrene	mg/kg	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1
Chrysene	mg/kg	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1
Dibenzo(a,h)anthracene	mg/kg	< 0.1
Benzo[g,h,i]perylene	mg/kg	< 0.1
Total PAH(16)	mg/kg	< 0.4
BTEX		
Benzene	mg/kg	< 0.01
Toluene	mg/kg	< 0.01
Ethylbenzene	mg/kg	< 0.01
Xylenes	mg/kg	< 0.01
MTBE	mg/kg	< 0.01

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TPH CWG	Unit	Result
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	< 1.0

Asbestos

No Asbestos Detected

Appendix 3 - HD Cymru Design and Build Scheme drawing for Water Supply Pipe

TABLE 2: HYDRANT SCHEDULE			
FIRE SERVICE REFERENCE: Jaques Way, Regent Street, Wrexham			
REF	ADOPT (Y/N)	MRKER (Y/N)	COMMENTS
TW01	Y	Y	THROUGH BORE
TW02	N		THROUGH BORE
TW03	N		THROUGH BORE
TW04	Y	Y	THROUGH BORE
WO01	Y	Y	THROUGH BORE

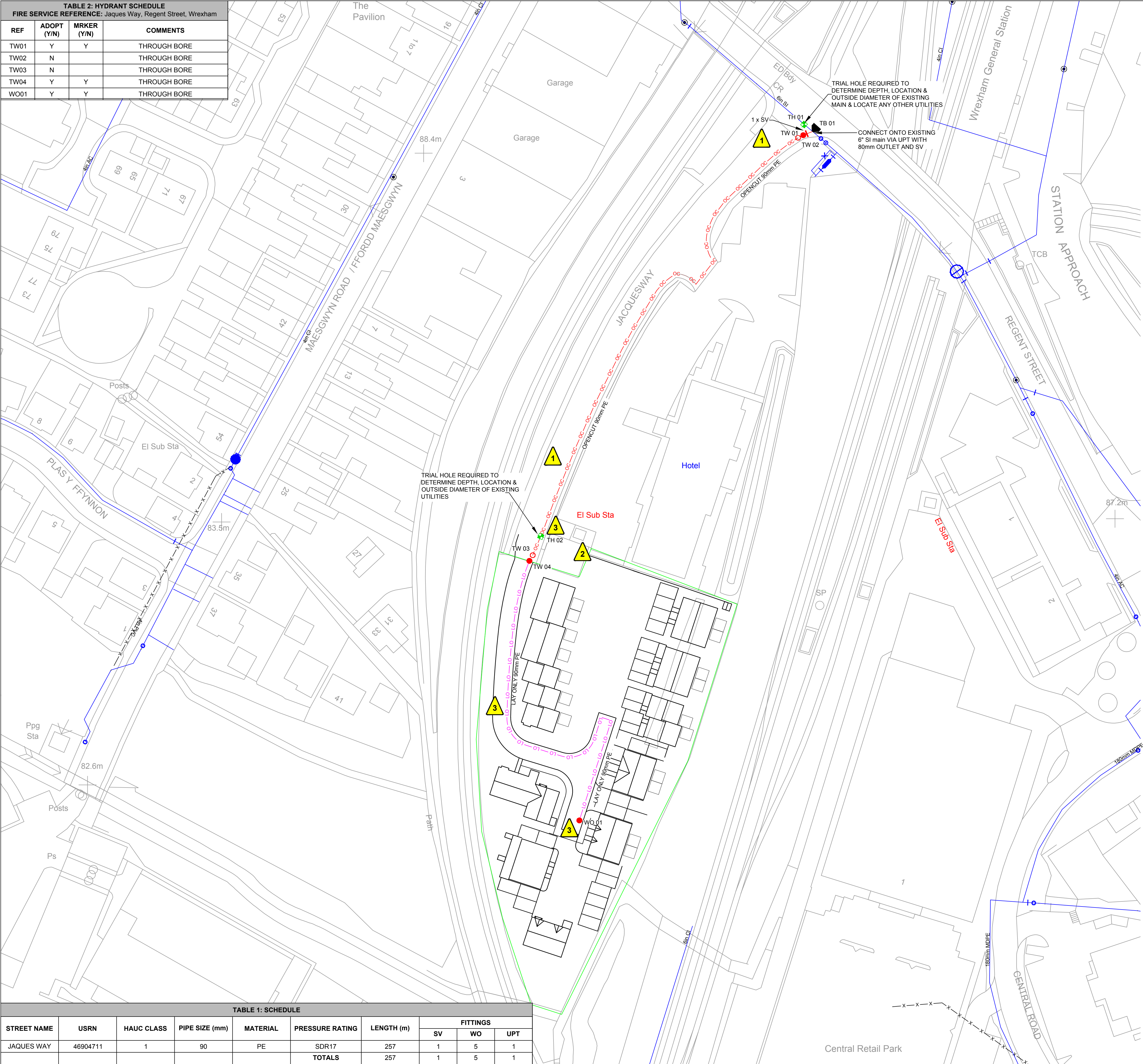


TABLE 1: SCHEDULE									
STREET NAME	USRN	HAUC CLASS	PIPE SIZE (mm)	MATERIAL	PRESSURE RATING	LENGTH (m)	FITTINGS		
							SV	WO	UPT
JAQUES WAY	46904711	1	90	PE	SDR17	257	1	5	1
TOTALS						257	1	5	1

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DISCLAIMER
Do not scale of this drawing. This plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any works (including but not limited to excavations) in the vicinity of HAREN DYFRDAY SEVERN DOE assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems.

KEY

MAINS		FITTINGS		SERVICES	
LEGEND	DESCRIPTION	LEGEND	DESCRIPTION	LEGEND	DESCRIPTION
DD	Directional Drilling		Highlighted main		Existing service
OG	Open cut		Air Valve		Existing meter/d service
FD	Flow Drilling		Meter		Pipe Sample
SL	Slip line		Hydrant		Trial Hole
LO	Lay Only		Washout		Borehole
SC	Self Construct		K.S.V.		Thrust Block
Temp Bypass	Valve		Unable To Locate		
Existing Mains	P.R.V.		Site Border		
X	Abandoned		N.R.V.		Proposed fittings
A	Abandon		Pumping Station		Existing fittings
					Abandon fittings
					Linestop

CONSULT ALL UTILITY PLANS BEFORE ANY EXCAVATION		
CUSTOMER CARE		
Amey HOTLINE: 0800 521 660 STW CALL CENTRE: 0800 783 4444		
• ANY KEY ACCOUNT CUSTOMERS ARE IDENTIFIED ON THE DRAWING WITH BLUE BUILDINGS - FOR SENSITIVE CUSTOMERS LIAISE WITH AMEY CUSTOMER CARE DEPARTMENT BEFORE STARTING		

CONSTRUCTION NOTES		
• ROUTE OF MAINS IS INDICATIVE • TRAFFIC MANAGEMENT REQUIREMENT TO BE DETERMINED BY SLP • LOCKING HYDRANT CAPS ARE BEING ADDED TO THE NETWORK. RED SIGNIFIES OPERATIONAL DISCOLORATION RISK. CALL 0800 - 783 - 4444 FOR AUTHORISATION TO USE • CRITICAL LOGGERS ARE LOCATED IN FIRE HYDRANTS, WASHOUTS, METER CHAMBERS AND BOUNDARY BOXES. IF A LOGGER IS ENCOUNTERED CONTACT : GARY WATTS ON : 07789 903 479 (WEST) • THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STW STANDARD DETAILS AND DESIGN MANUALS: STD5020 - FIRE HYDRANT / WASHOUT STD5021 - FIRE HYDRANT / WASHOUT OFF-LINE STD5040 - SLUICE VALVE & CHAMBER - DN80 - DN300 • OPEN CUT OFF SITE AND CONNECTION WORKS • ON SITE CONSTRUCTION METHOD TO BE LAY ONLY • ALL FITTINGS TO BE LAID IN THE FOOTPATH • REGENT STREET IS A BUS ROUTE • THRUST BLOCK TO BE CALCULATED UPON RECEIPT OF GROUND CONDITIONS		

HAZARD WARNING TABLE	
1	PRESSURIZED SEWER
2	PUMPING STATION
3	11KV U/G HIGH VOLTAGE ELECTRIC - SUB STATION

A	29.07.20	CONSTRUCTION ISSUE	LM
REV	DATE	REVISION COMMENTS	INI

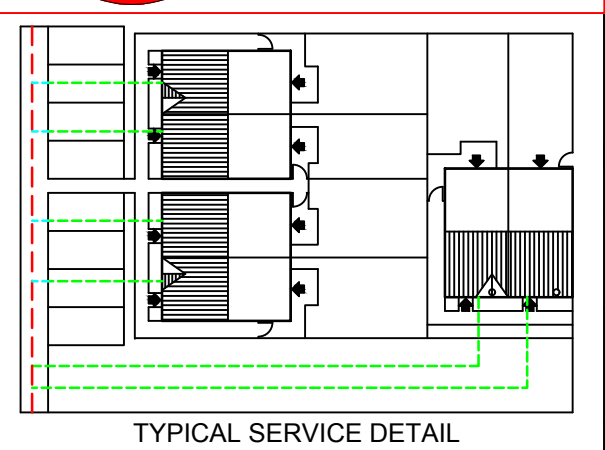
FOR CONSTRUCTION	
	Fire Service Headquarters Lime Grove Avenue Carmarthen SA31 1SP

	Amey One Supply Chain West Lambridge Lane Shifnal, TF11 8SD Web: www.amey.co.uk
--	---

	SEVERN TRENT WATER Ltd One Supply Chain South St. Martins Road Finham Coventry CV3 6SD
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Project Name: SEVERN TRENT WATER AMP6 DESIGN & BUILD REQUISITION			
Project Title: JAQUES WAY, WREXHAM			
SAP Reference: 8399744	Project Reference: H6W/00066/04/02/14-CY-0401		
O.S. Ref at CoP: 332891, 350802	P/Code: LL11 2BY	DMA Number: 17/915	
Drawn: Rik (N&R REC)	M.O.P. (BAR) 3.3	Area: WEST	Scale: 1:500
Designed	Checked	Approved	Size: A1
Name: M. J. R. P.	A. SEERA PP		
Signature: M. J. R. P.	Signature: A. SEERA PP		
Date: 2020/09/01	Date: 2020/09/01		

8 L/S FIRE FIGHTING FLOW AVAILABLE AT POINT OF CONNECTION



Alan Cooper <alan.cooper2@avove.co.uk>

To Eric Bray **Copy** Joe O'Donnell



AC



1 attachment ▸ [View](#) [Download](#) [Save to Drive](#)

Eric

Drawings usually state Barrier pie if required. It could be labelled Either Barrier or puriton.

If drawing is for pe this is usually wrapped in a blue sleeve with Brown lines

Alan Cooper

Project Manager - Utilities

e: alan.cooper2@avove.co.uk



From: Eric Bray <EBray@castlemeadgroup.co.uk>

Sent: 18 January 2023 10:32

To: Alan Cooper <alan.cooper2@avove.co.uk>

Cc: Joe O'Donnell <jodonnell@castlemeadgroup.co.uk>

Subject: Ref 839974 Jacques Way, Wrexham.



PE Pipe at Jacques Yard on Jacques Way in Wrexham