



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

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Land at Ilk Street And Alpine Street, Clayton

Verification Report



Prepared for:



Report Ref: BEK-19661-3

November 2021



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Project Quality Assurance Information Sheet

Site	Land at Ilk Street And Alpine Street, Clayton
Report Title	Verification Report
Report Status	Final
Report No	BEK-19661-3
Date	November 2021
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Land at Ilk Street And Alpine Street, Clayton

Validation Report

PROJECT NO: 19661
REPORT REF: BEK-19661-3
DATE: November 2021

REVISION STATUS / HISTORY

Rev	Date	Issue / Comment	Prepared	Checked

GENERAL REPORT LIMITATIONS

BEK Enviro Limited (BEK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and BEK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by BEK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of BEK and the party for whom it was prepared. Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

Unless explicitly agreed otherwise, in writing, this report has been prepared under BEK's limited standard Terms and Conditions as included within our proposal to the Client.

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

TABLE OF CONTENTS

1.	INTRODUCTION
1.1	Background
1.2	Limitations
2.	REMEDIATION STRATEGY
2.1	Contamination
2.2	Ground Gas Precautions
2.3	Off-Site Disposal
2.4	Dewatering
2.5	Construction Workers
2.6	Concrete Mix Design
2.7	Utilities
3.	VERIFICATION OF WORKS
3.1	Supervision of Works
3.2	Gas Mitigation Measures
3.3	Capping System
3.4	Services
3.5	Off Site Disposal of Waste Soils
3.6	Unrecorded Contamination & Associated Issues
4.	CONCLUSIONS

APPENDICES	
Appendix A	Source Test Data – Topsoil & Subsoil
Appendix B	Imported Soil Test Data – Topsoil & Subsoil
Appendix C	Selection of Plot Completion Certificates – Gas Membrane & Garden Capping Validation
Appendix D	Selection of Plot Completion Certification – Garden Capping Only
Appendix E	Photographs
Appendix F	Drawings

1. INTRODUCTION

1.1 Background

1.1.1 BEK Enviro Limited (BEK) has been commissioned by P Casey & Co Limited to prepared a verification report for the remediation works carried out at the site located at Ilk St and Alpine St, Clayton (hereafter referred to as 'the site').

1.1.2 The site area is approximately 1.5 ha and is roughly rectangular in shape. Until its recent re-development, the site was formerly occupied by undeveloped public open space with overgrown vegetation. Access to the site was via Ilk Street and a concrete block and soil bund were present to prevent unauthorized access. The surface of the site was comprised of soft landscaping and discrete areas of asphalt and there were no buildings on site.

1.1.3 Manchester City Council has granted planning permission (subject to conditions) for the 'proposed redevelopment of vacant land to create 66 no. 2, 3 and 4 bedroom dwellings incorporating new access roads off Bank Street and Tartan Street, pavements and associated landscaping and boundary treatments.'

1.1.4 This report has been prepared to satisfy Planning Condition No 4b) which states:

'When the development commences, the development shall be carried out in accordance with the Remediation Strategy and a Completion/Verification Report shall be submitted to and approved in writing by the City Council as local planning authority. In the event that ground contamination, groundwater contamination and/or ground gas, not previously identified, are found to be present on the site at any time before the development is occupied, then development shall cease and/or the development shall not be occupied until, a report outlining what measures, if any, are required to remediate the land (the Revised Remediation Strategy) is submitted to and approved in writing by the City Council as local planning authority and the development shall be carried out in accordance with the Revised Remediation Strategy, which shall take precedence over any Remediation Strategy or earlier Revised Remediation Strategy.'

1.1.5 The proposed development layout is illustrated on MHA Architects Drawing No 10M1_MHA_XX_XX_DR_A_01-002 (Rev C1) entitled 'Proposed Site Layout', a copy of which is presented in Appendix F.

1.1.6 The remediation works have been carried out in accordance with the Remediation Method Statement (RMS) prepared by BEK (Report Ref BEK-19661-1 (Rev D), dated December 2019).

1.2 Limitations

- 1.2.1 This report has been prepared by BEK for the sole benefit of P Casey & Co Limited. The conclusions in this report are professional opinions of BEK based on the information available.
- 1.2.2 This document has been prepared for the residential development located at Ilk St and Alpine St, Clayton and should not be relied upon or used for any other project. BEK accepts no responsibility or liability for the consequences of this document being used for a purpose other than that purpose for which it was commissioned.

2. REMEDIATION STRATEGY

2.0.1 In order to remove potential risks to the development and/or human health specific remediation and mitigation measures need to be carried out.

2.1 Contamination

2.1.1 The contamination assessment carried out by Terra Consult identified elevated concentrations of 2 x heavy metals, 7 x PAHs, an elevated total petroleum hydrocarbon and localised asbestos in the northern zone of the site. Furthermore elevated ground gas levels were identified in the northern zone of the site. It is noted that no elevated concentrations of contaminants of concern were identified in the southern zone of the site.

2.1.2 Due to the potential contamination, Terra Consult recommend that clean cover in garden areas is required in the northern zone of the site. No remediation is required for the southern zone of the site. The Plots that need garden capping are highlighted green in Figure 1 below and listed in the adjacent table.



Plots Requiring Garden Capping	
Plot 26	Plot 45
Plot 27	Plot 46
Plot 28	Plot 47
Plot 29	Plot 48
Plot 30	Plot 49
Plot 31	Plot 50
Plot 32	Plot 51
Plot 33	Plot 52
Plot 34	Plot 53
Plot 35	Plot 54
Plot 36	Plot 55
Plot 37	Plot 56
Plot 38	Plot 57
Plot 39	Plot 58
Plot 40	Plot 59
Plot 41	Plot 60
Plot 42	Plot 61
Plot 43	Plot 62
Plot 44	

Figure 1: Plots Where Garden Capping is Required (highlighted Green)

2.1.3 The gardens within Plots 26 to 62 (of the current development layout plan – see Figure 1) will need to be capped with a minimum of 600 mm of clean suitable soils (minimum 450 mm topsoil overlying 150 mm subsoil).

- 2.1.4 Any soft landscaped areas in the vicinity of Plots 26 to 62 will need to be capped with a minimum of 450 mm of clean suitable soils.
- 2.1.5 Soils used in the capping system will need to be tested and assessed and ensure suitability for use. The soils will be placed on a geo-membrane to act as a marker layer and prevent mixing. All soil used in the capping system will need to be imported. Final capping thickness will also need to be validated.
- 2.1.6 The topsoil must be a minimum of 150 mm and be a suitable growing medium to assist future planting (predominantly grass and shrubs).
- 2.1.7 To confirm the suitability of the sub/topsoil it will be necessary to recover representative samples for chemical testing and assessment.
- 2.1.8 We recommend that as a minimum this will consist of a minimum of 3 samples from each source of topsoil and subsoil.
- 2.1.9 The following testing frequency recommendations are presented in the MCC guidance and should be adhered to with respect to soils imported into the site:

Intended End-Use	SOURCE/ORIGIN OF FILL MATERIAL			
	GREENFIELD	REMEDIED	BROWNFIELD	UNKNOWN
GARDENS	1:200m ³	1:100m ³	1:50m ³	1:50m ³
SOFT-LANDSCAPING	1:200m ³	1:150m ³	1:150m ³	1:150m ³
OTHER	1:200m ³	1:200m ³	1:200m ³	1:200m ³

Table 1. Summary of required imported topsoil/subsoil testing frequencies

- 2.1.10 It will also be necessary to carry out routine inspection and sampling during the importation process in order to confirm the material is consistent with the source testing and assessment. The visual inspection shall ensure that the soil is visually suitable for use and does not contain any deleterious material (ie glass, plastic, brick, concrete etc).

Supervision

- 2.1.11 BEK recommends that a watching brief is undertaken on site during the proposed works. All construction workers should be made aware of the potential to encounter possible contaminants. This should include the identification of asbestos containing materials.
- 2.1.12 Any material demonstrating visual or olfactory evidence of contamination shall be separated from other materials, sampled and tested. Whilst awaiting the test results the suspect materials shall be stored in a manner that prevents contact with other materials or the ingress or egress of water. On confirmation of the contamination test results the suspect materials will be disposed of or treated appropriately.

2.1.13 The key remedial activities will need to be supervised and validated by an engineer from BEK.

2.2 Ground Gas Precautions

2.2.1 With respect to risks from ground gas at the site, Terra Consult identified Characteristic Situation 2 (CS2) ground gas conditions have been identified in the northern zone of the site and mitigation measures need to be incorporated into these buildings. The affected plots are highlighted in blue in Figure 3 below and listed in the adjacent Table.



Figure 2: Plots That Require Gas Mitigation Measures (highlighted blue)

2.2.2 On the basis of the assessment of the potential risks from ground gas, mitigation measures which adhere to Characteristic Situation 2/Amber 1 of CIRIA C665 will be required in Plots 42 to 58.

2.2.3 The following ground gas mitigation measures should be incorporated into all new builds at the site:

(i) Reinforce concrete cast in-situ floor slab (suspended, non-suspended or raft) with at least 1200 g damp proof membrane and underfloor venting

OR

(ii) Beam and block or pre-cast concrete and 2000 gauge damp proof membrane/reinforced gas membrane and underfloor venting.

2.2.4 All joints and service penetrations should be sealed in both options.

2.2.5 The membranes should be fitted by a specialist contractor and certification that these passive protection measures have been installed correctly should be provided.

2.3 Off-Site Disposal

2.3.1 The chemical testing regime for off-site disposal may be different to the chemical testing required to assess the suitability of the soils for retention on site and the risks to human health. Therefore, additional assessment may be required to classify the soils for off-site disposal with testing criteria to assess whether the soil is hazardous, non-hazardous or inert waste. However, existing laboratory test certificates will help inform the process. Any additional testing (principally for asbestos) should also be used in the classification of the waste soils for off-site disposal.

2.3.2 The receiving landfill may require additional specialist laboratory testing to further characterise the material proposed for disposal against Waste Acceptance Criteria (WAC). We would recommend early consultation between the Contractor and the receiving landfill to determine any specific laboratory testing requirements.

2.3.3 Individuals/companies removing soils from the site are bound by a duty of care and as such this should only be undertaken by an authorised person. All waste movements should be accompanied by a waste transfer note.

2.3.4 We understand that waste soils have already been removed from the site and waste transfer notes will be collected and reviewed and where necessary, appended to the Completion Report.

2.4 Dewatering

2.4.1 Perched water was only encountered at one exploratory location during the site investigation and it is unlikely significant quantities will be encountered during the development works. However, if water entering any of the excavations is visually or olfactory affected by contamination then consideration should be made for dewatering. Any impacted water should be carefully pumped from the excavation direct into a tanker for off-site disposal.

2.4.2 Water will be pumped from the near surface of the water and (as much as is practicable) away from the sides of the excavation to avoid pumping up soils.

2.4.3 All pumping activities will be carefully monitored by BEK to watch for drawing in contaminated water from elsewhere on the site. Pumping will continue until visual/olfactory evidence of contamination has reduced/gone or as is considered reasonably practicable.

2.5 Construction Workers

- 2.5.1 It is recommended that construction personnel involved with direct contact with the soils at the site use appropriate PPE equipment (i.e. boots, gloves and overalls) together with hygiene facilities in accordance with general health and safety guidelines. The successful remediation/site works contractor should undertake a suitable Risk Assessment to confirm the appropriate level of PPE.
- 2.5.2 A copy of all reports relating to the site should be included in the site Health & Safety File and site workers should be made fully aware of the sites setting.

2.6 Concrete Mix Design

- 2.6.1 On the basis of the results, Terra Consult state that the typical design sulphate (DS) class and 'Aggressive Chemical Environment for Concrete' (ACEC) class for the site are AC-2.

2.7 Utilities

- 2.7.1 The Terra Consult report states that two samples were analysed for a suite of contaminants in line with United Utilities requirements for pipeline risk assessment.
- 2.7.2 The UKWIR risk assessment has been completed and PE Barrier Pipe Type A will be used across the whole development site.

3. VERIFICATION OF WORKS

3.1 Supervision of Works

- 3.1.1 An Engineer from BEK attended the site as requested by P Casey & Co Limited during the remediation works which were undertaken progressively. Regular liaison with P Casey & Co Limited during the works ensured a presence during key activities.

3.2 Gas Mitigation Measures

- 3.2.1 BEK validated the ground gas mitigation measures installed in plots 42 to 58.
- 3.2.2 Following completion of the block and beam floors, blocks were lifted to inspect the ventilation through the internal/sleeper walls and BEK can confirm that a minimum 150 mm void space had been achieved and that the telescopic vents were installed correctly.
- 3.2.3 The Protech GM Super gas membrane was installed in Plots 42 to 58 at the site by Reeve-Tec Membranes Limited.
- 3.2.4 BEK can confirm that the membrane was installed in accordance with the manufacturer recommendations. All joints were sealed using the heat welding method and all service entries were well sealed.
- 3.2.5 Following each inspection a gas proforma was completed for each plot detailing the findings of the inspection.
- 3.2.6 BEK can confirm that the gas mitigation measures have been installed in accordance with the approved methodology.
- 3.2.7 A series of certificates confirming the implementation of ground gas measures (which also detail the validation of the capping system) are presented within Appendix C. A CD containing all of the certificates relevant to the validation report will be made available to the local authority on request.

3.3 Capping System

Suitability

- 3.3.1 BEK validated the capping layer in residential gardens for plots 26 to 62 and can confirm a clean cover to a depth of 600 mm has been installed in these plots.
- 3.3.2 The capping layer consists of approximately 450 mm of subsoil sourced from Shire Hill Quarry, Glossop. The subsoil is overlain by approximately 150 mm of topsoil sourced by Frank O’Gara & Sons from Protos, Ince Marshes, Ellesmere Port.

Imported Subsoil

- 3.3.3 The subsoil is generally described as 'brown fine to coarse clayey gravel and cobbles of shales'. Source testing was been carried out by BEK to confirm suitability (SS-1 to SS-3) of the material prior to its importation to the site. Source Test Data is provided in Appendix A.
- 3.3.4 P Casey & Co Limited has indicated that some 483 m³ of subsoil was progressively imported to the site for use in all the garden/landscaped areas of plot 26 to 62.
- 3.3.5 To ensure consistency, BEK recovered an additional 6 validation samples (VS-SS1 to VS-SS6) of subsoil from the rear garden following formation of the capping layer. There is no formal requirement to test virgin quarried material. However, assuming a testing frequency of 1 per 200 m³ for a greenfield source sufficient samples have been recovered to satisfy the appropriate testing frequency for the site.

Imported Topsoil

- 3.3.6 The topsoil is generally described as 'dark brown fine to medium slightly clayey silty sand' and is visually suitable for use. Source test data for the topsoil was reviewed for the material prior to its importation to the site. Source Test Data is provided in Appendix A.
- 3.3.7 P Casey & Co Limited has indicated that some 161 m³ of topsoil was progressively imported to the site for use in all the garden/landscaped areas of plot 26 to 62. The topsoil has been subject to additional sampling and testing by BEK throughout the remediation works carried out within Plot 26 to 62. To ensure consistency, BEK recovered additional validation samples (VS-TS1 to VS-TS10) of topsoil from the rear gardens following formation of the capping layer. This fulfils the testing frequency of 1 per 50 m³ for material from a brownfield source.

Chemical Suitability – Imported Topsoil and Subsoil

- 3.3.8 BEK has recovered 6 samples of subsoil from the site and 10 samples of topsoil from the site to support the source test data. All imported samples recovered by BEK at the Ilk Street and Alpine Street, Clayton site were submitted to the UKAS accredited laboratories of Envirolab and chemically tested for a wide range of potential contaminants of concern. All available chemical test results have been compared to approved assessment criteria (as presented in the Remediation Strategy) and BEK can confirm that the sub/topsoil is suitable for use in a residential garden.
- 3.3.9 Copies of the chemical test results for the imported topsoil subsoil are presented in Appendix B.

Capping Thickness – Private Gardens Plots 26 to 62

- 3.3.10 Capping layer thickness was checked by BEK within the private gardens of Plot 26 to 62 to ensure the required thickness had been achieved. This was undertaken by excavating a series of trial holes/dipping a pre-placed pipe to ensure the correct construction of the capping system and confirm capping thickness.
- 3.3.11 BEK can confirm that the private garden landscaped areas are capped with a minimum of 600 mm of clean soils (generally 150 mm topsoil and 450 mm subsoil). The capping soils overly a geotextile membrane at the base.
- 3.3.12 A series of certificates confirming the validation of the capping system (which also detail the implementation of ground gas measures) are presented within Appendix D. A CD containing all of the certificates relevant to the validation report will be made available to the local authority on request.

Capping Thickness – Soft Landscaped POS Areas in vicinity of Plots 26 to 62

- 3.3.13 Capping layer thickness was checked by BEK within the POS Areas in the vicinity of Plots 26 to 62 to ensure the required thickness had been achieved. This was undertaken by excavating a series of trial holes (HP1 to HP4 – shown in Figure 3) to ensure the correct construction of the capping system and confirm capping thickness.
- 3.3.14 BEK can confirm that the soft landscaped POS Areas in vicinity of Plots 26 to 62 are capped with a minimum of 450 mm of clean soils (generally 450 mm topsoil).
- 3.3.15 A series of photographs showing the capping thickness are presented in Appendix E.



Figure 3. Locations of Hand Excavated Trial Holes used to validated capping thickness in POS Areas

3.4 Services

- 3.4.1 P Casey & Co Limited has confirmed the use of PE Barrier Pipe Type A throughout the site and this has been independently validated by United Utilities.

3.5 Off Site Disposal of Waste Soils

- 3.5.1 BEK understand that there was a requirement to dispose of material off-site. Copies of the consignment notes can be made available upon request.

3.6 Unrecorded Contamination & Associated Issues

- 3.6.1 The groundworkers did not report any visual or olfactory evidence of contamination impacted soils during any excavations.

4. CONCLUSIONS

- 4.1 BEK and P Casey & Co Limited have supervised the implementation of the remediation works at the residential development situated at the land at Ilk Street and Alpine Street, Clayton.
- 4.2 The works have been carried out by P Casey & Co Limited and their appointed contractors, in accordance with the approved recommendations.
- 4.3 Based on the information herein, the remediation works have been completed in accordance with the approved post construction remediation works as detailed in the BEK 'Remediation and Enabling Work Strategy'.

APPENDIX A

Source Test Data – Topsoil & Subsoil

FINAL ANALYTICAL TEST REPORT

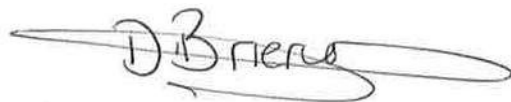
Envirolab Job Number: 21/00719
Issue Number: 1

Date: 03 February, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
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Lancashire
BB7 9YE

Project Manager: Mick Buckley
Project Name: Shire Hill Quarry - Source Test Data - Subsoil
Project Ref: Not specified
Order No: 6981/20685/J
Date Samples Received: 26/01/21
Date Instructions Received: 26/01/21
Date Analysis Completed: 03/02/21

Prepared by:



Danielle Brierley
Client Manager

Approved by:



Holly Neary-King
Client Services Supervisor

Envirolab Job Number: 21/00719

Client Project Name: Shire Hill Quarry - Source Test Data - Subsoil

Client Project Ref: Not specified

Lab Sample ID	21/00719/1	21/00719/2	21/00719/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS-1	SS-2	SS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	26-Jan-21	26-Jan-21	26-Jan-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	2A	4A	4A							
% Stones >10mm _A	28.3	26.8	25.0					% w/w	0.1	A-T-044
pH _D ^{M#}	5.36	5.27	6.01					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.02	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	<200	<200	<200					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	0.4	0.4	0.5					% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	2	1	4					mg/kg	1	A-T-024s
Chromium _D ^{M#}	13	12	14					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	7	7	8					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	13	12	15					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	45	42	47					mg/kg	5	A-T-024s

Envirolab Job Number: 21/00719

Client Project Name: Shire Hill Quarry - Source Test Data - Subsoil

Client Project Ref: Not specified

Lab Sample ID	21/00719/1	21/00719/2	21/00719/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS-1	SS-2	SS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	26-Jan-21	26-Jan-21	26-Jan-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	2A	4A	4A							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	0.03					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client:	BEK Enviro Ltd, Suite One, No 3 Mitton Road Business Park, Mitton Road, Whalley, Lancashire, BB7 9YE	Project No:	21/00719
Project:	Shire Hill Quarry - Source Test Data - Subsoil	Date Received:	26/01/2021 (am)
Clients Project No:		Cool Box Temperatures (°C):	5.4

NO DEVIATIONS IDENTIFIED

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

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/04268
Issue Number: 1

Date: 06 May, 2021

Client: Frank O'Gara & Sons Ltd,
Sorby Road,
Northbank
Irlam
Manchester
UK
M44 5BA

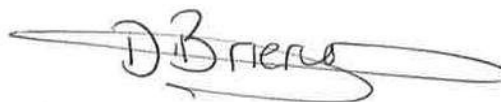
Project Manager: John O'Gara/Keith Lewis
Project Name: Protos, E'Port
Project Ref: N/A
Order No: PP57816
Date Samples Received: 21/04/21
Date Instructions Received: 22/04/21
Date Analysis Completed: 05/05/21

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Danielle Brierley
Client Manager

Envirolab Job Number: 21/04268

Client Project Name: Protos, E'Port

Client Project Ref: N/A

Lab Sample ID	21/04268/1	21/04268/2	21/04268/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Topsoil 1	Topsoil 2	Topsoil 3							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Apr-21	21-Apr-21	21-Apr-21							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	4AE	4AE							
% Stones >10mm _A	3.8	7.3	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	6.73	6.60	6.74					pH	0.01	A-T-031s
Ammonia / Ammoniacal Nitrogen as NH ₃ _D	14.6	20.1	15.7					mg/kg	0.24	A-T-033s
Chloride (water sol 2:1) _D ^{M#}	<10	<10	<10					mg/kg	10	A-T-026s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	340	340	360					mg/kg	200	A-T-028s
Cyanide (free) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sFCN
Arsenic _D ^{M#}	3	3	3					mg/kg	1	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	13	12	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	15	15	16					mg/kg	1	A-T-024s
Lead _D ^{M#}	26	20	22					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	10	10					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	35	32	35					mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	25	48	59					mg/kg	10	A-T-007s

Envirolab Job Number: 21/04268

Client Project Name: Protos, E'Port

Client Project Ref: N/A

Lab Sample ID	21/04268/1	21/04268/2	21/04268/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Topsoil 1	Topsoil 2	Topsoil 3							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Apr-21	21-Apr-21	21-Apr-21							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	4AE	4AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test ^o	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 21/04268

Client Project Name: Protos, E'Port

Client Project Ref: N/A

Lab Sample ID	21/04268/1	21/04268/2	21/04268/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Topsoil 1	Topsoil 2	Topsoil 3							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Apr-21	21-Apr-21	21-Apr-21							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	4AE	4AE							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client:	Frank O'Gara & Sons Ltd, Sorby Road, Northbank, Irlam, Manchester, UK, M44	Project No:	21/04268
Project:	5BA	Date Received:	22/04/2021 (am)
Clients Project No:	Protos, E'Port	Cool Box Temperatures (°C):	14.9
	N/A		

NO DEVIATIONS IDENTIFIED

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

APPENDIX B

Imported Soil Test Data – Topsoil & Subsoil

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/09690
Issue Number: 1

Date: 17 September, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

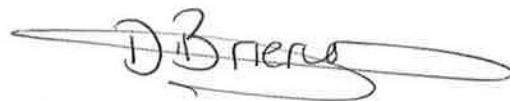
Project Manager: Mick Buckley
Project Name: Ilk Street, Clayton
Project Ref: Not specified
Order No: 7221-19661-M
Date Samples Received: 07/09/21
Date Instructions Received: 07/09/21
Date Analysis Completed: 17/09/21

Prepared by:



Richard Wong
Client Manager

Approved by:



Danielle Brierley
Client Manager

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH _D ^{M#}	7.21	6.80	6.83	6.50	6.60	6.72		pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.03	0.08	0.09	0.08	0.05		g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	1000	850	880	1100	880	730		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	5.4	5.7	4.1	4.4	4.2	4.6		% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	6	9	4	2	2	6		mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.6	1.4	1.3	1.3	1.4	1.4		mg/kg	0.5	A-T-024s
Copper _D ^{M#}	56	51	45	49	52	52		mg/kg	1	A-T-024s
Chromium _D ^{M#}	28	33	25	26	28	24		mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-040s
Lead _D ^{M#}	38	30	27	34	33	29		mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	51	59	45	47	49	46		mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-024s
Zinc _D ^{M#}	109	119	96	95	98	100		mg/kg	5	A-T-024s

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD				A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ^o	N/A	N/A	N/A	N/A	N/A	N/A				A-T-045

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	0.02		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02	<0.02	0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	0.15		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	0.18		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	0.18		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	0.09		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	<0.06	<0.06	0.20		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	0.26		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	0.10		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.08	0.07	0.06	0.06	0.06	0.13		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	0.25		mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.08	<0.08	<0.08	<0.08	<0.08	1.59		mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	5	5	4	4	4	2		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	13	15	14	14	12	5		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	29	39	34	37	32	13		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	26	37	32	34	30	10		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	36	45	44	43	40	20		mg/kg	1	A-T-055s
Total Aliphatics _A	109	140	129	131	119	50		mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	2	2	2	2	2	1		mg/kg	1	A-T-055s
Aro >C10-C12 _A	4	4	4	4	3	2		mg/kg	1	A-T-055s
Aro >C12-C16 _A	8	10	9	9	8	4		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	7	9	8	8	7	5		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	8	12	11	11	10	21		mg/kg	1	A-T-055s
Total Aromatics _A	30	38	36	35	31	34		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	140	178	164	166	150	84		mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, Suite One , No 3 Mitton Road Business Park , Mitton Road , 21/09690
Whalley , Lancashire , BB7 9YE
Project: Ilk Street, Clayton
Clients Project No: 07/09/2021 (am)
Date Received:
Cool Box Temperatures (°C): 20.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6
Client Sample No						
Client Sample ID/Depth	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6
Date Sampled	06/09/21	06/09/21	06/09/21	06/09/21	06/09/21	06/09/21
A-T-019s	14/09/2021	14/09/2021	14/09/2021	14/09/2021	14/09/2021	14/09/2021
A-T-022s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-024s	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
A-T-026s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-027s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-028s	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
A-T-031s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-032 OM	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-040s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-042sTCN	10/09/2021	10/09/2021	10/09/2021	10/09/2021	10/09/2021	10/09/2021
A-T-044	15/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
A-T-045	09/09/2021	09/09/2021	09/09/2021	09/09/2021	09/09/2021	09/09/2021
A-T-050s	11/09/2021	11/09/2021	11/09/2021	11/09/2021	11/09/2021	11/09/2021
A-T-055s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 21/07845/1

Amendments: Request for split report

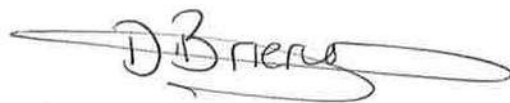
Envirolab Job Number: 21/07845
Issue Number: 2

Date: 02 August, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

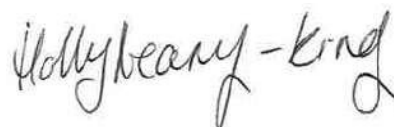
Project Manager: Mick Buckley
Project Name: Ilk Street, Clayton
Project Ref: Not specified
Order No: 7167/19661/JD
Date Samples Received: 19/07/21
Date Instructions Received: 20/07/21
Date Analysis Completed: 29/07/21

Prepared by:



Danielle Brierley
Client Manager

Approved by:



Holly Neary-King
Client Services Supervisor

Envirolab Job Number: 21/07845

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/07845/1	21/07845/2	21/07845/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-1	VS-TS-2	VS-TS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	16-Jul-21	16-Jul-21	16-Jul-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6A	6AE	6							
% Stones >10mm _A	12.8	1.8	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.70	7.33	6.87					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.02	0.06					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	480	490	560					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	2.4	4.1	5.5					% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	2	7	7					mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	0.7	0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	14	32	28					mg/kg	1	A-T-024s
Chromium _D ^{M#}	12	17	16					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	27	50	52					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	10	19	16					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	35	69	68					mg/kg	5	A-T-024s

Envirolab Job Number: 21/07845

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/07845/1	21/07845/2	21/07845/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-1	VS-TS-2	VS-TS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	16-Jul-21	16-Jul-21	16-Jul-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6A	6AE	6							
Asbestos in Soil (inc. matrix)										
Asbestos in soil ^o #	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?o	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 21/07845

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/07845/1	21/07845/2	21/07845/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-1	VS-TS-2	VS-TS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	16-Jul-21	16-Jul-21	16-Jul-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6A	6AE	6							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	0.01	0.05					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	0.10					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	0.06	0.31					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	0.06	0.26					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	0.08	0.28					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	0.12					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	0.09					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	0.08	0.32					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	0.16	0.60					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	0.04					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	0.15					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	0.09	0.39					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	0.15	0.53					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	0.69	3.24					mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/07845

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/07845/1	21/07845/2	21/07845/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-1	VS-TS-2	VS-TS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	16-Jul-21	16-Jul-21	16-Jul-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6A	6AE	6							
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	1	2					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	13	19	16					mg/kg	1	A-T-055s
Total Aliphatics _A	13	20	18					mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	<1	1	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	2	4	10					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	11	18	38					mg/kg	1	A-T-055s
Total Aromatics _A	13	23	53					mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	25	43	71					mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, Suite One, No 3 Mitton Road Business Park, Mitton Road, **Project No:** 21/07845
Whalley, Lancashire, BB7 9YE **Date Received:** 20/07/2021 (am)
Project: Ilk Street, Clayton **Cool Box Temperatures (°C):** 20.5

Clients Project No:

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-120:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/07845/1	21/07845/2	21/07845/3	21/07845/4	21/07845/5	21/07845/6
Client Sample No						
Client Sample ID/Depth	VS-TS-1	VS-TS-2	VS-TS-3	VS-SS-1	VS-SS-2	VS-SS-3
Date Sampled	16/07/21	16/07/21	16/07/21	16/07/21	16/07/21	16/07/21
A-T-019s	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
A-T-022s	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
A-T-024s	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
A-T-026s	29/07/2021	29/07/2021	29/07/2021	29/07/2021	29/07/2021	29/07/2021
A-T-027s	26/07/2021	26/07/2021	26/07/2021	26/07/2021	26/07/2021	26/07/2021
A-T-028s	28/07/2021	28/07/2021	28/07/2021	28/07/2021	28/07/2021	28/07/2021
A-T-031s	26/07/2021	26/07/2021	26/07/2021	26/07/2021	26/07/2021	26/07/2021
A-T-032 OM	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
A-T-040s	29/07/2021	29/07/2021	29/07/2021	29/07/2021	29/07/2021	29/07/2021
A-T-042sTCN	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
A-T-044	28/07/2021	28/07/2021	28/07/2021	28/07/2021	28/07/2021	28/07/2021
A-T-045	21/07/2021	21/07/2021	21/07/2021	21/07/2021	21/07/2021	21/07/2021
A-T-050s	26/07/2021	26/07/2021	26/07/2021	26/07/2021	26/07/2021	26/07/2021
A-T-055s	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/09692
Issue Number: 1

Date: 17 September, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

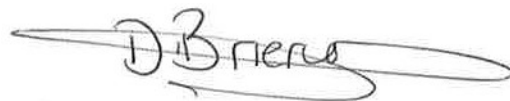
Project Manager: Mick Buckley
Project Name: Ilk Street, Clayton
Project Ref: Not specified
Order No: 7220-19661-M
Date Samples Received: 07/09/21
Date Instructions Received: 07/09/21
Date Analysis Completed: 17/09/21

Prepared by:



Richard Wong
Client Manager

Approved by:



Danielle Brierley
Client Manager

Envirolab Job Number: 21/09692

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09692/1	21/09692/2	21/09692/3	21/09692/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-4	VS-TS-5	VS-TS-6	VS-TS-7						
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6AE	6AE	6AE	6AE						
% Stones >10mm _A	8.6	1.0	3.1	0.6				% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.30	7.18	7.10				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.03	0.06	0.03				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	770	910	900	820				mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	8.3	9.0	8.6	7.3				% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	16	15	20	16				mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	0.7	0.7	0.8				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	53	56	48	52				mg/kg	1	A-T-024s
Chromium _D ^{M#}	23	23	21	24				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	111	93	83	91				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	19	19	18	21				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	91	97	93	118				mg/kg	5	A-T-024s

Envirolab Job Number: 21/09692

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09692/1	21/09692/2	21/09692/3	21/09692/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-4	VS-TS-5	VS-TS-6	VS-TS-7						
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6AE	6AE	6AE	6AE						
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD						A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ^o	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 21/09692

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09692/1	21/09692/2	21/09692/3	21/09692/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-4	VS-TS-5	VS-TS-6	VS-TS-7						
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6AE	6AE	6AE	6AE						
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	0.06	0.06	0.05				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	0.11	0.11	0.09				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.09	0.47	0.37	0.38				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.11	0.50	0.37	0.44				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.13	0.54	0.41	0.47				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.07	0.27	0.20	0.28				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	0.22	0.16	0.18				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.13	0.55	0.42	0.48				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	0.07	0.05	0.06				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.15	0.85	0.71	0.69				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	0.04	0.04	0.04				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.08	0.30	0.23	0.30				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.06	0.49	0.41	0.36				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.15	0.76	0.65	0.64				mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.97	5.23	4.19	4.46				mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/09692

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09692/1	21/09692/2	21/09692/3	21/09692/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-4	VS-TS-5	VS-TS-6	VS-TS-7						
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	6AE	6AE	6AE	6AE						
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	2	2	1				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	9	22	22	20				mg/kg	1	A-T-055s
Total Aliphatics _A	9	26	24	21				mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	1	1	1				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A	1	2	4	2				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	2	7	11	6				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	18	45	49	36				mg/kg	1	A-T-055s
Total Aromatics _A	22	56	65	46				mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	31	82	89	67				mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client:	BEK Enviro Ltd, Suite One , No 3 Mitton Road Business Park , Mitton Road , Whalley , Lancashire , BB7 9YE	Project No:	21/09692
Project:	Ilk Street, Clayton	Date Received:	07/09/2021 (am)
Clients Project No:		Cool Box Temperatures (°C):	20.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/09692/1	21/09692/2	21/09692/3	21/09692/4
Client Sample No				
Client Sample ID/Depth	VS-TS-4	VS-TS-5	VS-TS-6	VS-TS-7
Date Sampled	06/09/21	06/09/21	06/09/21	06/09/21
A-T-019s	09/09/2021	09/09/2021	09/09/2021	09/09/2021
A-T-022s	15/09/2021	15/09/2021	15/09/2021	15/09/2021
A-T-024s	17/09/2021	17/09/2021	17/09/2021	17/09/2021
A-T-026s	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-027s	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-028s	17/09/2021	17/09/2021	17/09/2021	17/09/2021
A-T-031s	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-032 OM	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-040s	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-042sTCN	10/09/2021	10/09/2021	10/09/2021	14/09/2021
A-T-044	14/09/2021	14/09/2021	14/09/2021	14/09/2021
A-T-045	09/09/2021	09/09/2021	09/09/2021	09/09/2021
A-T-050s	11/09/2021	11/09/2021	11/09/2021	11/09/2021
A-T-055s	15/09/2021	15/09/2021	15/09/2021	15/09/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/10947
Issue Number: 1

Date: 18 October, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

Project Manager: Mick Buckley
Project Name: Ilk Street, Clayton
Project Ref: N/A
Order No: 7265-19661-J
Date Samples Received: 07/10/21
Date Instructions Received: 08/10/21
Date Analysis Completed: 18/10/21

Prepared by:



Sophie France
Client Service Manager

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
% Stones >10mm _A	0.6	0.9	0.6					% w/w	0.1	A-T-044
pH _D ^{M#}	7.13	7.22	7.18					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	770	750	890					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	7.9	11.0	12.0					% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	15	14	17					mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.8	0.8	0.9					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	52	48	56					mg/kg	1	A-T-024s
Chromium _D ^{M#}	17	17	18					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	83	82	89					mg/kg	1	A-T-024s
Mercury _D	0.30	0.18	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	14	15	16					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	2	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	72	70	80					mg/kg	5	A-T-024s

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil ^o	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test ^o	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
PAH-16MS										
Acenaphthene _A ^{M#}	0.07	0.10	0.06					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.10	0.15	0.07					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.45	0.57	0.33					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.55	0.54	0.36					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.59	0.60	0.42					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.28	0.25	0.17					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.25	0.24	0.15					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.62	0.67	0.45					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.87	1.12	0.67					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.04	0.03					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.32	0.31	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.42	0.65	0.29					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.83	1.01	0.63					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	5.39	6.25	3.84					mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	1	1	1					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	18	19	18					mg/kg	1	A-T-055s
Total Aliphatics _A	20	21	20					mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	3	3	1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	3	3	3					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	8	7	7					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	39	33	36					mg/kg	1	A-T-055s
Total Aromatics _A	53	46	47					mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	73	67	67					mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, Suite One, No 3 Mitton Road Business Park, Mitton Road, 21/10947
Whalley, Lancashire, BB7 9YE
Project: Ilk Street, Clayton
Clients Project No: N/A
Date Received: 08/10/2021 (am)
Cool Box Temperatures (°C): 16.0

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3
Client Sample No			
Client Sample ID/Depth	VS-TS-8	VS-TS-9	VS-TS-10
Date Sampled	06/10/21	06/10/21	06/10/21
A-T-019s	12/10/2021	12/10/2021	12/10/2021
A-T-022s	14/10/2021	14/10/2021	14/10/2021
A-T-024s	15/10/2021	15/10/2021	15/10/2021
A-T-026s	14/10/2021	14/10/2021	14/10/2021
A-T-027s	14/10/2021	14/10/2021	14/10/2021
A-T-028s	15/10/2021	15/10/2021	15/10/2021
A-T-031s	18/10/2021	18/10/2021	18/10/2021
A-T-032 OM	17/10/2021	17/10/2021	17/10/2021
A-T-040s	14/10/2021	14/10/2021	14/10/2021
A-T-042sTCN	15/10/2021	15/10/2021	15/10/2021
A-T-044	13/10/2021	13/10/2021	13/10/2021
A-T-045	12/10/2021	12/10/2021	12/10/2021
A-T-050s	13/10/2021	13/10/2021	13/10/2021
A-T-055s	14/10/2021	14/10/2021	14/10/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

APPENDIX C

Selection of Plot Completion Certificates – Gas Membrane & Garden
Capping Validation

Our Ref: BEK/19661/211027/CGL/P46

27 October 2021

FAO Paul Hunter
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Paul,

Residential Development at Ilk Street and Alpine Street, Clayton- PLOT 46

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the remediation works required at the above site.

The approved remediation works are detailed in the BEK Report entitled 'Remediation Method Statement' (Report Ref BEK-19661-1 (Rev D)), dated December 2019.

Clean Cover System

The approved remediation requirement comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'The gardens within Plots 26 to 62 will need to be capped with a minimum of 600 mm of clean suitable soils (minimum 450 mm topsoil overlying 150 mm subsoil). Any soft landscaped areas in the vicinity of Plots 26 to 62 will need to be capped with a minimum of 450 mm of clean suitable soils. Soils used in the capping system will need to be tested and assessed and ensure suitability for use. The soils will be placed on a geo-membrane to act as a marker layer and prevent mixing. Final capping thickness will also need to be validated.'

To comply with the above recommendations, CG have imported subsoil from Shire Hill Quarry, Glossop. Source testing has been carried out by BEK to confirm suitability (SS-1 to SS-3). Subsoil source test data is presented in Annex A). To ensure consistency, BEK recovered an additional 6 validation samples (VS-SS1 to VS-SS6) of subsoil from the rear garden following formation of the capping layer. There is no formal requirement to test virgin quarried material. However, BEK will maintain a watch brief on the subsoil and take periodic samples at the discretion of our own engineers to ensure visual and chemical consistency of the material.

The topsoil has been sourced the topsoil from Frank O'Gara & Sons from Protos, Ince Marshes in Ellesmere Port. Source test data for the topsoil is presented in Annex A. To ensure consistency, BEK recovered additional validation samples (VS-TS1 to VS-TS10) of topsoil from the rear garden following formation of the capping layer. The most recent results (VS-TS8 to VS-TS10) are included within Annex B.

All imported samples recovered by BEK at the Ilk Street and Alpine Street, Clayton site were submitted to the UKAS accredited laboratories of Envirolab and chemically tested for a wide range of potential contaminants of concern. Copies of the chemical test results are presented in Annex B. All available chemical test results have been compared to approved assessment criteria (as presented in the Remediation Strategy) and BEK can confirm that the sub/topsoil is suitable for use in a residential garden.

Following placement of the validated soils by CG, an engineer from BEK carried out spot checks and can confirm that the capping layer for Plot 46 comprises in excess of 600 mm of suitably clean validated soils. The capping soils overly a geotextile membrane at the base. Photographs showing capping thickness are provided within Annex E.

Gas Mitigation Measures

In addition to the clean cover system, risks from ground gas have been identified in the north of the site. As such, gas mitigation measures in accordance with Characteristic Situation 2/Amber 1 need to be installed in Plots 42 to 58.

The gas measures recommended will comply with those recommended for 'Amber 1' sites, as described in CIRIA 665. The measures will include an independently validated membrane and passively ventilated sub-floor void. Gas protection measures will be as described in BRE Report 414 and ventilation of the sub-floor will need to facilitate a minimum of one complete volume change per 24 hours.

The sub-floor void and the installation of the membrane has been validated and BEK can confirm the gas measures incorporated into the foundation design of Plot 46 conforms to the specified requirements. The membrane installation was verified by an Engineer from BEK who has attended the Verification of Gas Protection Systems Course delivered by CL:AIRE Training Course.

CG commissioned Reeve-Tec Membranes Limited to install the gas membranes at the site, who have used the Protech GM Super gas membrane which is considered suitable for use. A copy of the data sheet for this membrane is presented in Annex C. The completed gas validation proforma for this plot is presented in Annex D and validation photographs are presented in Annex E.

BEK can confirm that the remediation works required for Plot 46 at the Residential Development at Ilk Street, Clayton have been completed in accordance with the approved methodology.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely



MICHAEL BUCKLEY
BSc (Hons) MSc MEnvSci CEnv

ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT

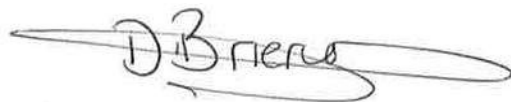
Envirolab Job Number: 21/00719
Issue Number: 1

Date: 03 February, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

Project Manager: Mick Buckley
Project Name: Shire Hill Quarry - Source Test Data - Subsoil
Project Ref: Not specified
Order No: 6981/20685/J
Date Samples Received: 26/01/21
Date Instructions Received: 26/01/21
Date Analysis Completed: 03/02/21

Prepared by:



Danielle Brierley
Client Manager

Approved by:



Holly Neary-King
Client Services Supervisor

Envirolab Job Number: 21/00719

Client Project Name: Shire Hill Quarry - Source Test Data - Subsoil

Client Project Ref: Not specified

Lab Sample ID	21/00719/1	21/00719/2	21/00719/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS-1	SS-2	SS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	26-Jan-21	26-Jan-21	26-Jan-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	2A	4A	4A							
% Stones >10mm _A	28.3	26.8	25.0					% w/w	0.1	A-T-044
pH _D ^{M#}	5.36	5.27	6.01					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.02	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	<200	<200	<200					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	0.4	0.4	0.5					% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	2	1	4					mg/kg	1	A-T-024s
Chromium _D ^{M#}	13	12	14					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	7	7	8					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	13	12	15					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	45	42	47					mg/kg	5	A-T-024s

Envirolab Job Number: 21/00719

Client Project Name: Shire Hill Quarry - Source Test Data - Subsoil

Client Project Ref: Not specified

Lab Sample ID	21/00719/1	21/00719/2	21/00719/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS-1	SS-2	SS-3							
Depth to Top										
Depth To Bottom										
Date Sampled	26-Jan-21	26-Jan-21	26-Jan-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	2A	4A	4A							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	0.03					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

REPORT NOTES

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client:	BEK Enviro Ltd, Suite One, No 3 Mitton Road Business Park, Mitton Road, Whalley, Lancashire, BB7 9YE	Project No:	21/00719
Project:	Shire Hill Quarry - Source Test Data - Subsoil	Date Received:	26/01/2021 (am)
Clients Project No:		Cool Box Temperatures (°C):	5.4

NO DEVIATIONS IDENTIFIED

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

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/04268
Issue Number: 1

Date: 06 May, 2021

Client: Frank O'Gara & Sons Ltd,
Sorby Road,
Northbank
Irlam
Manchester
UK
M44 5BA

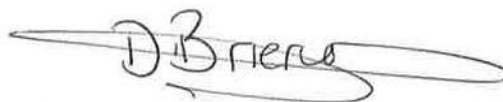
Project Manager: John O'Gara/Keith Lewis
Project Name: Protos, E'Port
Project Ref: N/A
Order No: PP57816
Date Samples Received: 21/04/21
Date Instructions Received: 22/04/21
Date Analysis Completed: 05/05/21

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Danielle Brierley
Client Manager

Envirolab Job Number: 21/04268

Client Project Name: Protos, E'Port

Client Project Ref: N/A

Lab Sample ID	21/04268/1	21/04268/2	21/04268/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Topsoil 1	Topsoil 2	Topsoil 3							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Apr-21	21-Apr-21	21-Apr-21							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	4AE	4AE							
% Stones >10mm _A	3.8	7.3	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	6.73	6.60	6.74					pH	0.01	A-T-031s
Ammonia / Ammoniacal Nitrogen as NH ₃ _D	14.6	20.1	15.7					mg/kg	0.24	A-T-033s
Chloride (water sol 2:1) _D ^{M#}	<10	<10	<10					mg/kg	10	A-T-026s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	340	340	360					mg/kg	200	A-T-028s
Cyanide (free) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sFCN
Arsenic _D ^{M#}	3	3	3					mg/kg	1	A-T-024s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	13	12	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	15	15	16					mg/kg	1	A-T-024s
Lead _D ^{M#}	26	20	22					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	10	10					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	35	32	35					mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	25	48	59					mg/kg	10	A-T-007s

Envirolab Job Number: 21/04268

Client Project Name: Protos, E'Port

Client Project Ref: N/A

Lab Sample ID	21/04268/1	21/04268/2	21/04268/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Topsoil 1	Topsoil 2	Topsoil 3							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Apr-21	21-Apr-21	21-Apr-21							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	4AE	4AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil ^o #	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?o	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 21/04268

Client Project Name: Protos, E'Port

Client Project Ref: N/A

Lab Sample ID	21/04268/1	21/04268/2	21/04268/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Topsoil 1	Topsoil 2	Topsoil 3							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Apr-21	21-Apr-21	21-Apr-21							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	4AE	4AE	4AE							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

REPORT NOTES

General

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client:	Frank O'Gara & Sons Ltd, Sorby Road, Northbank, Irlam, Manchester, UK, M44	Project No:	21/04268
Project:	5BA	Date Received:	22/04/2021 (am)
Clients Project No:	Protos, E'Port	Cool Box Temperatures (°C):	14.9
	N/A		

NO DEVIATIONS IDENTIFIED

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

ANNEX B

Validation Chemical Test Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/09690
Issue Number: 1

Date: 17 September, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

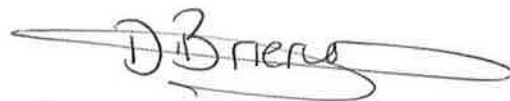
Project Manager: Mick Buckley
Project Name: Ilk Street, Clayton
Project Ref: Not specified
Order No: 7221-19661-M
Date Samples Received: 07/09/21
Date Instructions Received: 07/09/21
Date Analysis Completed: 17/09/21

Prepared by:



Richard Wong
Client Manager

Approved by:



Danielle Brierley
Client Manager

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH _D ^{M#}	7.21	6.80	6.83	6.50	6.60	6.72		pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.03	0.08	0.09	0.08	0.05		g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	1000	850	880	1100	880	730		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	5.4	5.7	4.1	4.4	4.2	4.6		% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	6	9	4	2	2	6		mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.6	1.4	1.3	1.3	1.4	1.4		mg/kg	0.5	A-T-024s
Copper _D ^{M#}	56	51	45	49	52	52		mg/kg	1	A-T-024s
Chromium _D ^{M#}	28	33	25	26	28	24		mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-040s
Lead _D ^{M#}	38	30	27	34	33	29		mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	51	59	45	47	49	46		mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-024s
Zinc _D ^{M#}	109	119	96	95	98	100		mg/kg	5	A-T-024s

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD				A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ^o	N/A	N/A	N/A	N/A	N/A	N/A				A-T-045

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	0.02		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02	<0.02	0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	0.15		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	0.18		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	0.18		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05	<0.05	0.09		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	<0.06	<0.06	0.20		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	<0.08	<0.08	0.26		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	0.10		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.08	0.07	0.06	0.06	0.06	0.13		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	0.25		mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.08	<0.08	<0.08	<0.08	<0.08	1.59		mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/09690

Client Project Name: Ilk Street, Clayton

Client Project Ref: Not specified

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6				
Depth to Top										
Depth To Bottom										
Date Sampled	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21	06-Sep-21				
Sample Type	Solid	Solid	Solid	Solid	Solid	Solid				
Sample Matrix Code	7	7	7	7	7	7				
TPH CWG										
Ali >C5-C6 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	5	5	4	4	4	2		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	13	15	14	14	12	5		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	29	39	34	37	32	13		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	26	37	32	34	30	10		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	36	45	44	43	40	20		mg/kg	1	A-T-055s
Total Aliphatics _A	109	140	129	131	119	50		mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	2	2	2	2	2	1		mg/kg	1	A-T-055s
Aro >C10-C12 _A	4	4	4	4	3	2		mg/kg	1	A-T-055s
Aro >C12-C16 _A	8	10	9	9	8	4		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	7	9	8	8	7	5		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	8	12	11	11	10	21		mg/kg	1	A-T-055s
Total Aromatics _A	30	38	36	35	31	34		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	140	178	164	166	150	84		mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.01	A-T-022s

REPORT NOTES

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

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US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, Suite One , No 3 Mitton Road Business Park , Mitton Road , 21/09690
Whalley , Lancashire , BB7 9YE
Project: Ilk Street, Clayton
Clients Project No: 07/09/2021 (am)
Date Received:
Cool Box Temperatures (°C): 20.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/09690/1	21/09690/2	21/09690/3	21/09690/4	21/09690/5	21/09690/6
Client Sample No						
Client Sample ID/Depth Date Sampled	VS-SS1	VS-SS2	VS-SS3	VS-SS4	VS-SS5	VS-SS6
A-T-019s	06/09/21	06/09/21	06/09/21	06/09/21	06/09/21	06/09/21
A-T-022s	14/09/2021	14/09/2021	14/09/2021	14/09/2021	14/09/2021	14/09/2021
A-T-024s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-026s	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
A-T-027s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-028s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-031s	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021	17/09/2021
A-T-032 OM	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-040s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021
A-T-042sTCN	10/09/2021	10/09/2021	10/09/2021	10/09/2021	10/09/2021	10/09/2021
A-T-044	15/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
A-T-045	09/09/2021	09/09/2021	09/09/2021	09/09/2021	09/09/2021	09/09/2021
A-T-050s	11/09/2021	11/09/2021	11/09/2021	11/09/2021	11/09/2021	11/09/2021
A-T-055s	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021	16/09/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/10947
Issue Number: 1

Date: 18 October, 2021

Client: BEK Enviro Ltd
Suite One
No 3 Mitton Road Business Park
Mitton Road
Whalley
Lancashire
BB7 9YE

Project Manager: Mick Buckley
Project Name: Ilk Street, Clayton
Project Ref: N/A
Order No: 7265-19661-J
Date Samples Received: 07/10/21
Date Instructions Received: 08/10/21
Date Analysis Completed: 18/10/21

Prepared by:



Sophie France
Client Service Manager

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
% Stones >10mm _A	0.6	0.9	0.6					% w/w	0.1	A-T-044
pH _D ^{M#}	7.13	7.22	7.18					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	770	750	890					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	7.9	11.0	12.0					% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	15	14	17					mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.8	0.8	0.9					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	52	48	56					mg/kg	1	A-T-024s
Chromium _D ^{M#}	17	17	18					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	83	82	89					mg/kg	1	A-T-024s
Mercury _D	0.30	0.18	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	14	15	16					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	2	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	72	70	80					mg/kg	5	A-T-024s

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil ^o	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test ^o	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
PAH-16MS										
Acenaphthene _A ^{M#}	0.07	0.10	0.06					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.10	0.15	0.07					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.45	0.57	0.33					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.55	0.54	0.36					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.59	0.60	0.42					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.28	0.25	0.17					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.25	0.24	0.15					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.62	0.67	0.45					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.87	1.12	0.67					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.04	0.03					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.32	0.31	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.42	0.65	0.29					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.83	1.01	0.63					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	5.39	6.25	3.84					mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/10947

Client Project Name: Ilk Street, Clayton

Client Project Ref: N/A

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	VS-TS-8	VS-TS-9	VS-TS-10							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Oct-21	06-Oct-21	06-Oct-21							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6AE	6AE							
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	1	1	1					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	18	19	18					mg/kg	1	A-T-055s
Total Aliphatics _A	20	21	20					mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	3	3	1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	3	3	3					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	8	7	7					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	39	33	36					mg/kg	1	A-T-055s
Total Aromatics _A	53	46	47					mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	73	67	67					mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, Suite One, No 3 Mitton Road Business Park, Mitton Road, 21/10947
Whalley, Lancashire, BB7 9YE
Project: Ilk Street, Clayton
Clients Project No: N/A
Date Received: 08/10/2021 (am)
Cool Box Temperatures (°C): 16.0

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/10947/1	21/10947/2	21/10947/3
Client Sample No			
Client Sample ID/Depth	VS-TS-8	VS-TS-9	VS-TS-10
Date Sampled	06/10/21	06/10/21	06/10/21
A-T-019s	12/10/2021	12/10/2021	12/10/2021
A-T-022s	14/10/2021	14/10/2021	14/10/2021
A-T-024s	15/10/2021	15/10/2021	15/10/2021
A-T-026s	14/10/2021	14/10/2021	14/10/2021
A-T-027s	14/10/2021	14/10/2021	14/10/2021
A-T-028s	15/10/2021	15/10/2021	15/10/2021
A-T-031s	18/10/2021	18/10/2021	18/10/2021
A-T-032 OM	17/10/2021	17/10/2021	17/10/2021
A-T-040s	14/10/2021	14/10/2021	14/10/2021
A-T-042sTCN	15/10/2021	15/10/2021	15/10/2021
A-T-044	13/10/2021	13/10/2021	13/10/2021
A-T-045	12/10/2021	12/10/2021	12/10/2021
A-T-050s	13/10/2021	13/10/2021	13/10/2021
A-T-055s	14/10/2021	14/10/2021	14/10/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

ANNEX C

Gas Membrane Data Sheet

Protech GM Super

GAS PROTECTION

• HIGH RISK CHARACTERISTIC SITES •

REGULATIONS COMPATIBILITY TABLE

	CIRIA 665 CHARACTERISTIC SITUATION 2	CIRIA 665 CHARACTERISTIC SITUATION 3-6	BS8485 CHARACTERISTIC SITUATION 2	BS8485 CHARACTERISTIC SITUATION 3-6	BRE 211 RADON	NHBC AMBER 1	NHBC AMBER 2 & RED
METHANE	✓	✓	✓	✓	N/A	✓	✓
CARBON DIOXIDE	✓	✓	✓	✓	N/A	✓	✓
RADON	N/A	N/A	N/A	N/A	✓	N/A	N/A

DESCRIPTION

Protech GM Super is a high performance proprietary reinforced gas barrier, that incorporates a 12 micron aluminium foil layer, for maximum protection against ground-borne gases. This has been specifically designed to conform with the latest guidance documents. Due to its unique composition, the membrane is extremely robust and flexible and, therefore, easy to install on site. The membrane also provides protection from damp when placed below the slab and, therefore, there is no need to install a separate DPM.

SPECIFICATION

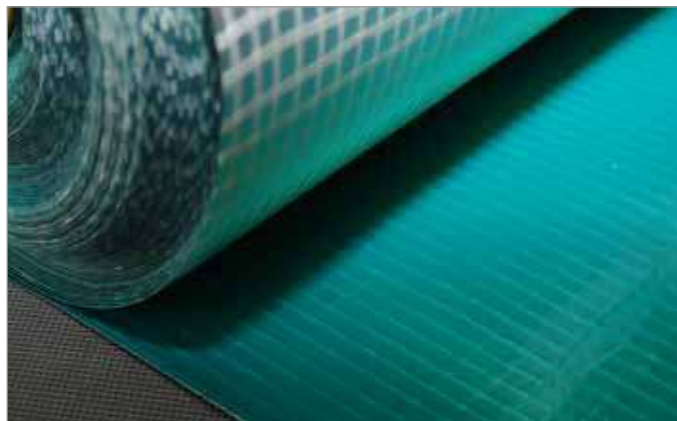
CIRIA C665, BS8485:2015 & Local Authority Ground Gas Handbook recommended that gas membranes are specified on the basis of the 'need to survive' construction, i.e. use one that is puncture and tear resistant.

Thickness should not be the main determinant of the suitability of a membrane for a particular site, although it can indirectly influence some key performance parameters.

In practise, because of the nature of construction sites, the durability, survivability and robustness of membranes are equally important than purely permeability to gas.

Protech GM Super incorporates a reinforced grid to ensure that maximum protection is achieved when installed to manufacturers' instructions.

The need for high quality workmanship during installation should not be under-estimated. The health and safety of the occupants of the building is dependent on its satisfactory performance. If installed incorrectly or damaged during the construction process, the membrane is rendered ineffective and will fail to provide adequate protection against the ingress of ground gas or vapours.



TYPICAL PROPERTIES	
Roll Length	50m
Width	2m
Weight	370g/m ²
Thickness	0.4mm
Colour	Green / Silver
Methane Permeability (ISO 15105-1)	≤ 0.1 ml/day/m ²

REQUIRED ACCESSORIES

- Protech GM Super Starter Band (1m x 50m)
- Protech GM Tape
- Protech GM Tophats
- Protech SAGM (Self Adhesive Gas Membrane)
- Protech GM Flashing Strip
- Protech GM Super Corner Units
- Protech GM Primer
- Protech GM 3mm Protection Board
- Protech GM Protection Fleece
- Protech I25

VENTING

On sites where venting is required, our Provoid Venting System should be used. We can provide design advice for both passive and active venting systems to suit individual site requirements.

Protech GM Super Starter Band

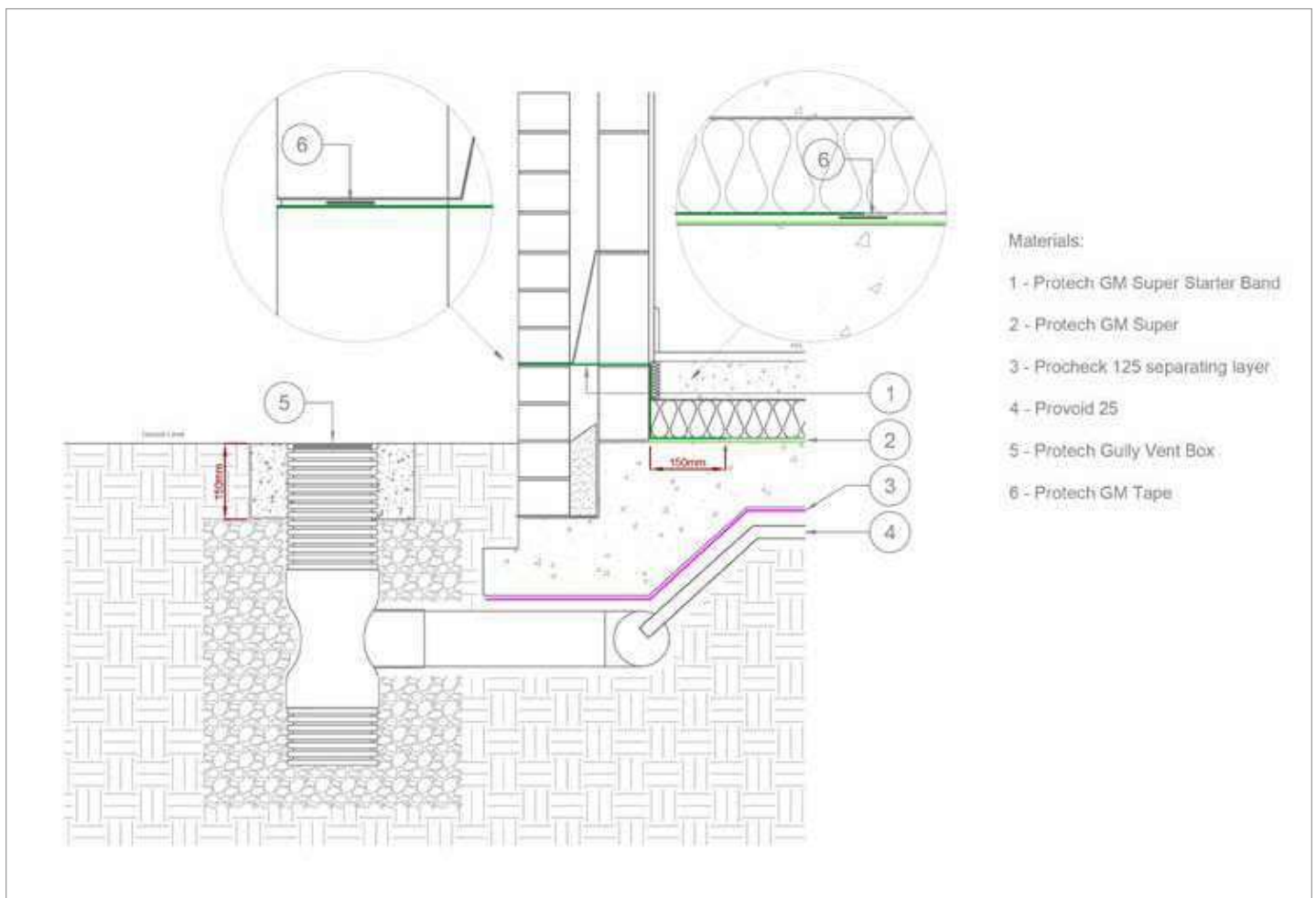
GAS PROTECTION

DESCRIPTION

The Protech GM Super Starter Band has a dual function, to provide a continuous barrier to gas which is then linked in with the horizontal gas membrane and it will also function as a DPC within the wall.

The Starter Band goes through the cavity with an architectural DPC or cavity tray which should be fixed with Protech GMTape in order to stop a creation of a slip plane.

On a solid wall internal wall construction there is no requirement for any additional DPC or protection to the Starter Band. When used in a cavity wall a separate cavity tray or architectural DPC is recommended to protection the spanning section of the Starter Band from damage from mortar snots and other debris created during construction. This cavity tray would be installed in the same course and fixed to Protech GMTape again to prevent a creation of a slip plane.



Download a full Gas Protection brochure from our website...

www.proctorgroup.com

contact@proctorgroup.com | +44 (0) 1250 872261

Revised June 2019



ANNEX D

Gas Proforma

GAS PROTECTION VALIDATION RECORD:

Ilk Street and Alpine Street, Clayton Residential Development

PLOT 46

One record sheet to be completed for each plot inspected by a suitably qualified independent consultant/engineer

Job No	19661
Site Name	Ilk Street and Alpine Street
Plot No	46
Compiled	D Emmott

Design/specification ref	BEK RMS dated December 2019 (BEK-19661-1 (Rev D))
Building use	Residential/ commercial/other
Building description	Detached/semi-detached/terrace/apartment
Gas protection type	Active/passive Foundation type Suspended floor/ raft/other

Ventilated sub floor (if present)	Inspection date/type:	October 2020	Inspected by	BEK	Photographed	Y/N
-----------------------------------	-----------------------	--------------	--------------	-----	--------------	-----

	notes/comments (see guide below)
Void former type	1. Not required – open void space
Height of void space	2. Minimum 150 mm
Gravel type	3. Not required – open space
Pipe size and spacing	4. Minimum 2 m spacing where required
External wall air bricks	5. 2 m centres – all clear and unobstructed
Internal sleeper walls	6. Joints in masonry allow free venting
External vent trenches/ducts	7. Not required

Gas barrier	Inspection date/type:	November 2020	Inspected by	BEK	Photographed	Y/N
-------------	-----------------------	---------------	--------------	-----	--------------	-----

	notes/comments (see guide below)
Membrane type	8. Protech GM Super
Extent of coverage	9. Full ground floor
Underside of membrane	10. Good conditions – All rips/tears sealed using tape
Slab/membrane condition	11. Free from debris – good condition
Laps and joints	12. All laps and joined sealed correctly using tape
Damp-proof membrane	13. OK
Service entries and seals	14. All sealed appropriately using tape
Cavity inspection	15. Membrane crosses cavity – cavity clear of obstructions

GAS PROTECTION VALIDATION RECORD:

Ilk Street and Alpine Street, Clayton Residential Development

PLOT 46

Guide Notes

1.	Void former height	Proprietary type – manufacturer and specification, in accordance with design? Installed property without damage
2.	Height of void space	Height of proprietary former of constructed ventilated space below suspended floor – note any debris on void/ obstructions to air flow, note formation surface soil type (eg crushed concrete/brick), evidence of flooding
3.	Gravel type	Gravel type if used (limestone/granite etc) and any specification (eg 6F2), typical particle dimensions (mm), apparent fines content (low/high), compaction (loose/dense), waterlogging/contamination by clay, organic matter, other debris. Take photographs of stockpile or check details on delivery notes. Check depth of stone conforms to at least 300 mm if visible
4.	Pipe size and spacing	Diameter in mm; material type (eg PVC); slotted or perforated; positioning and spacing/separation and jointing as on design drawing – if not sketch arrangement – do pipes connect with external (telescopic/swan neck) vents? Take photographs of vents on external walls for each plot.
5.	External wall airbricks	Check numbers, size and positions as design drawing - check for blockage eg mortar, soil, pavings etc
6.	Internal wall airbricks	Check ventilation holes eg honeycomb brickwork or pipe crossings – note size, spacing and location
7.	External vent trenches/ducts	Check whether located and constructed in accordance with design drawings; if open-topped gravel, note gravel type and presence of fines/contamination; if pipe or other vents – check positions and construction for functionality and absence of blockages – vents may be built over
8.	Membrane type	Note manufacturer and product specification, including batch/roll numbers if present – in accordance with specification? Check stock storage arrangements – protected from dirt and damage
9.	Extent of coverage	If membrane cover is incomplete then further inspection will be required – note areas completed/incomplete – is membrane fully visible or have internal walls been constructed over membrane/screed placed?
10.	Underside of membrane	Where necessary, for example, when using a granular blanket as a ventilation layer, check the underside of the membrane has adequate protection eg minimum 50 mm no fines concrete blinding layer or appropriate geo-textile
11.	Slab/membrane condition	Record presence of ducts/rough surfaces, in particular sharp projections, below or above membrane; record locations of all punctures or repairs, note arrangements to protect membrane surface from traffic/tools and equipment/materials and temporary weighting down of membrane eg use of boards. Take photographs of each plot inspected.