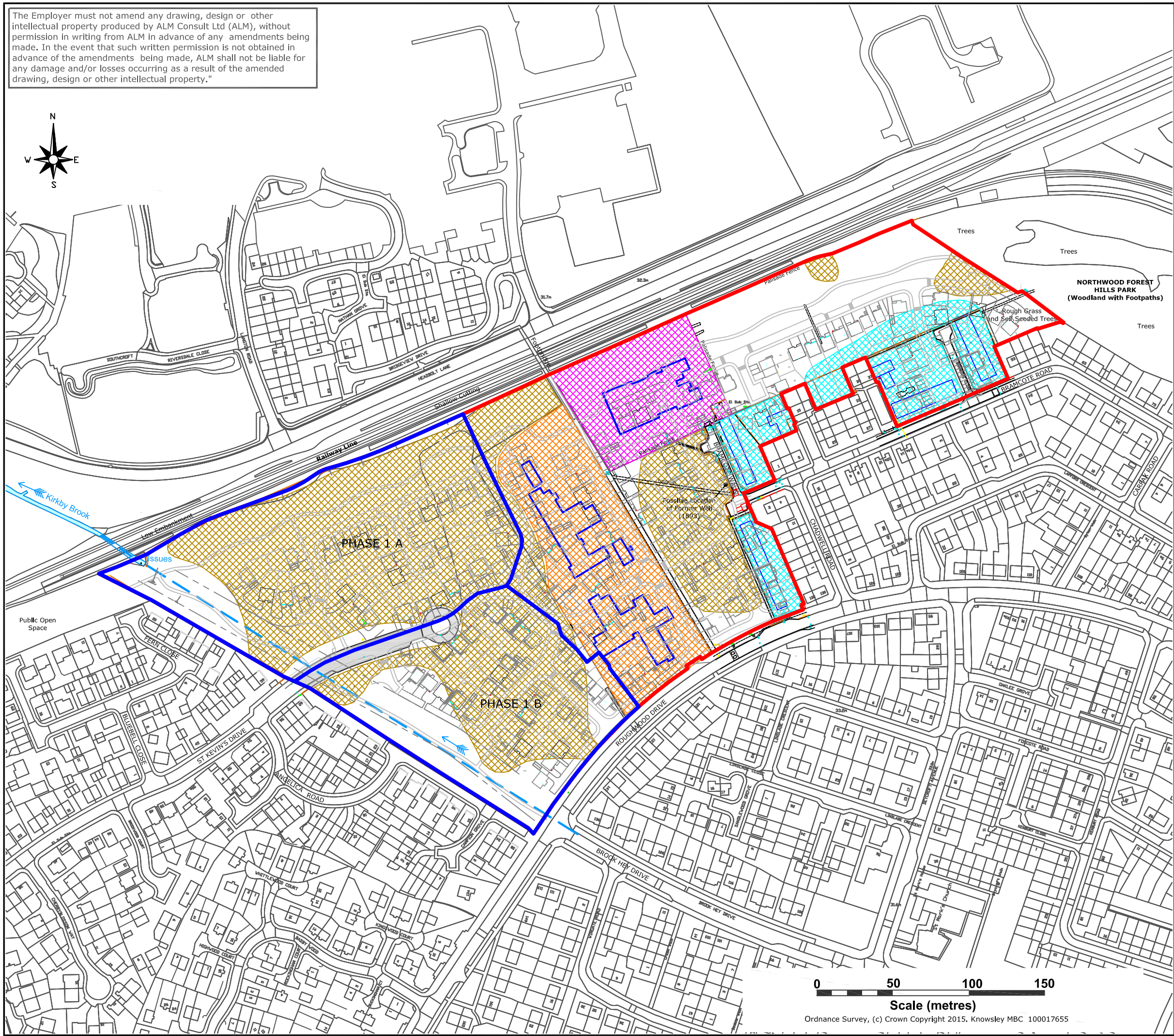


APPENDIX A

Drawings

The Employer must not amend any drawing, design or other intellectual property produced by ALM Consult Ltd (ALM), without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



- KEY**
- Approx. Site Boundary
 - Approx. Phase 1A Boundary (@October 2018)
 - Contaminated Soils (former Bramcote/Northfield School)
 - Approximate Area Underlain by Natural Topsoil
 - Approximate Area Underlain by Demolition Fill
 - Approximate Area Underlain by Granular Made Ground
 - Approximate Outline of Historic Buildings
 - Unshaded Areas Underlain by Reworked Topsoil Over Natural Strata, Culvert Backfill or Cohesive Made Ground

ALM
CONSULT

ALM Consult Limited
Paddock Business Centre, 2 Paddock Road,
West Pimbo, Skelmersdale, Lancashire. WN8 9PL
T: 01695 213160 E: info@almconsult.co.uk

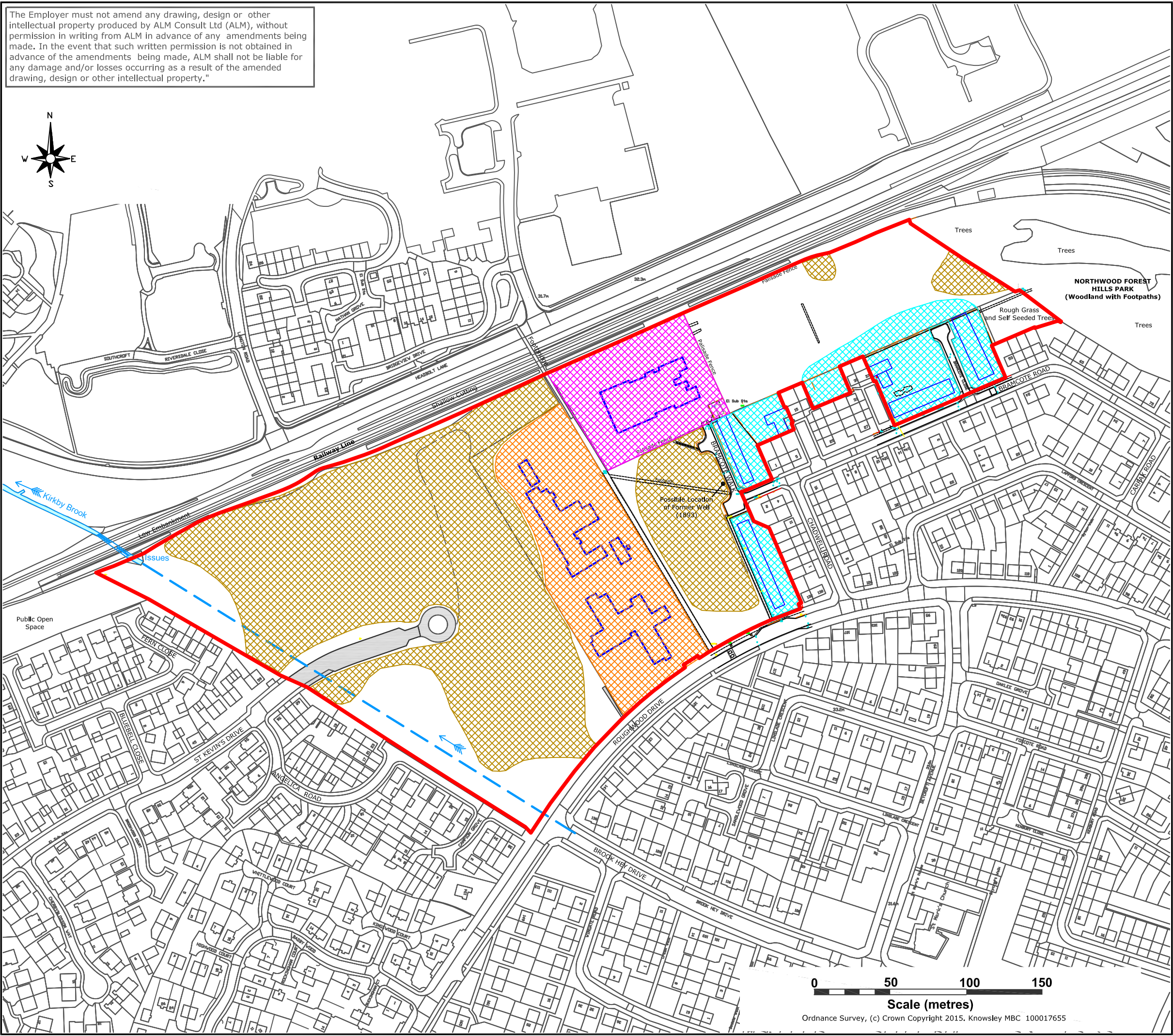


ST KEVIN'S DRIVE, KIRKBY

REMEDATION ZONE PLAN
PHASE 1B DEVELOPMENT AREA

STATUS		FINAL	
DRAWN BY KL	SIGNATURE	DATE 10/05/19	
APPROVED AA	SIGNATURE	DATE 10/05/19	
SCALE 1:2500@A3		DRG No. 30158-15_REV1	

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- KEY**
- Approx. Site Boundary
 - Contaminated Soils (former Bramcote/Northfield School)
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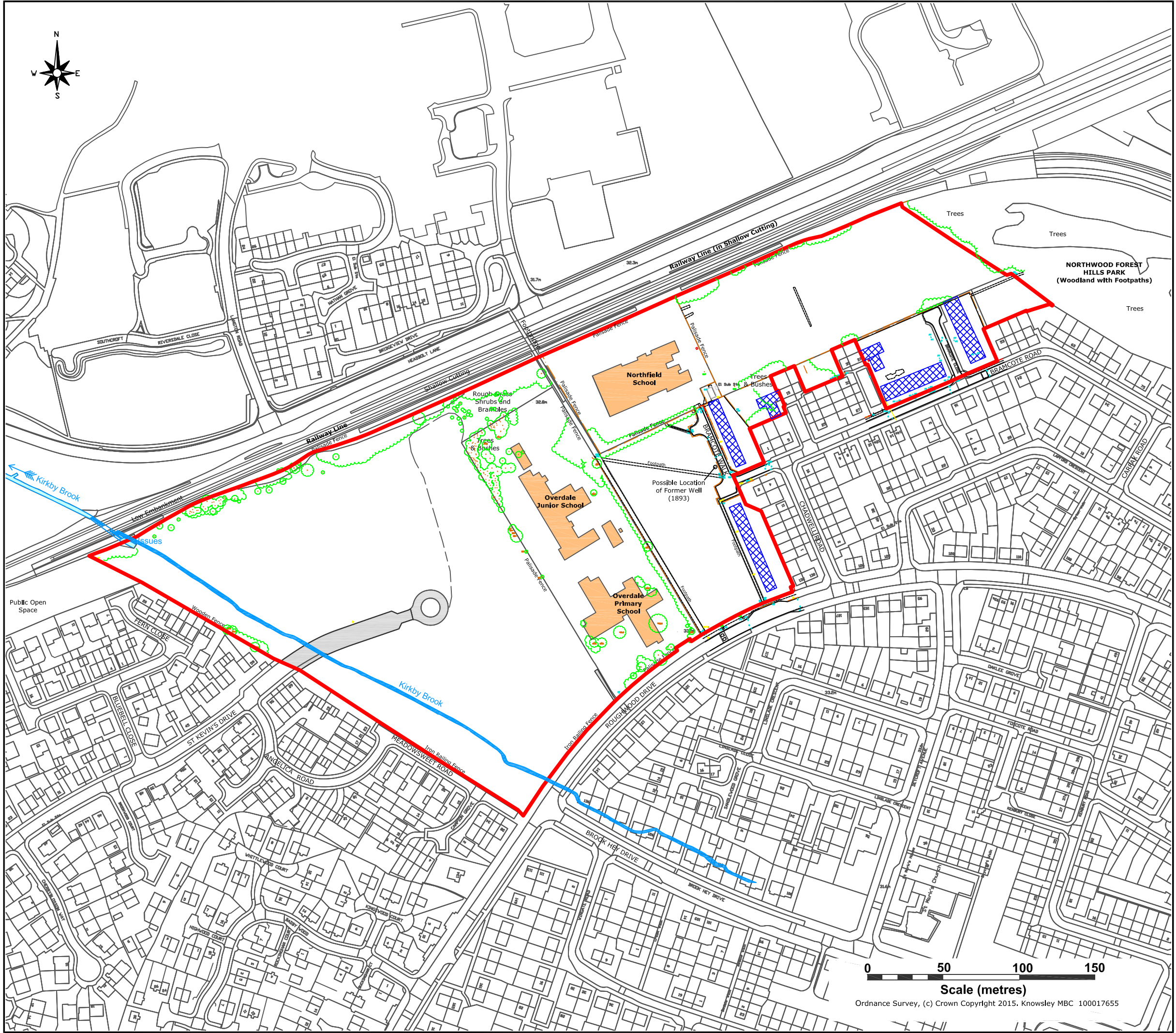


ST KEVIN'S DRIVE, KIRKBY

REMEDIATION ZONE PLAN

FINAL

DRAWN BY KL	SIGNATURE	DATE 09/11/17
APPROVED AA	SIGNATURE	DATE 09/11/17
SCALE 1:2500@A3	DRG No. 30158-10	



- KEY
- Approx. Site Boundary

Former Course of Kirkby Brook
Shown on 1850-1955 OS Maps

Former School Buildings
Shown on 1962-2006 OS Maps

Former Residential Buildings
Shown on 1961 OS Maps

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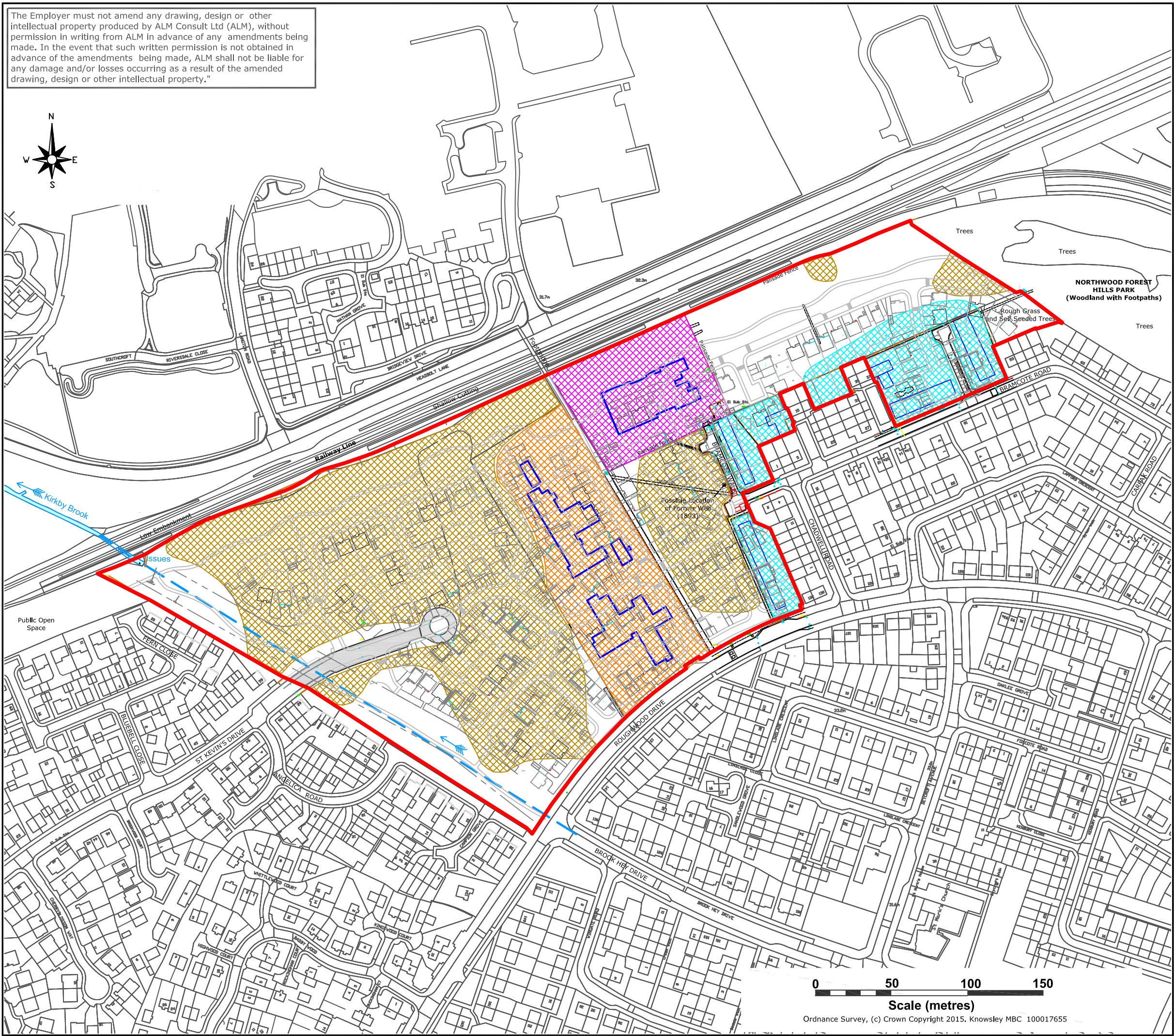
ST KEVIN'S DRIVE, KIRKBY

HISTORICAL SITE FEATURES PLAN

FINAL

DRAWN BY	SIGNATURE	DATE
KL		16/10/17
APPROVED	SIGNATURE	DATE
AA		16/10/17
SCALE	DRG No.	
1:2500@A3	30158-4	

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KEY

- Approx. Site Boundary
- Contaminated Soils (former Bramcote/Northfield School)
- Approximate Area Underlain by Natural Topsoil
- Approximate Area Underlain by Demolition Fill
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CLIENT



JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

DRAWING TITLE

REMEDIATION ZONE PLAN
WITH DEVELOPMENT OVERLAY

STATUS

FINAL

DRAWN BY

KL

SIGNATURE

DATE

30/11/17

APPROVED

AA

SIGNATURE

DATE

30/11/17

SCALE

1:2500@A3

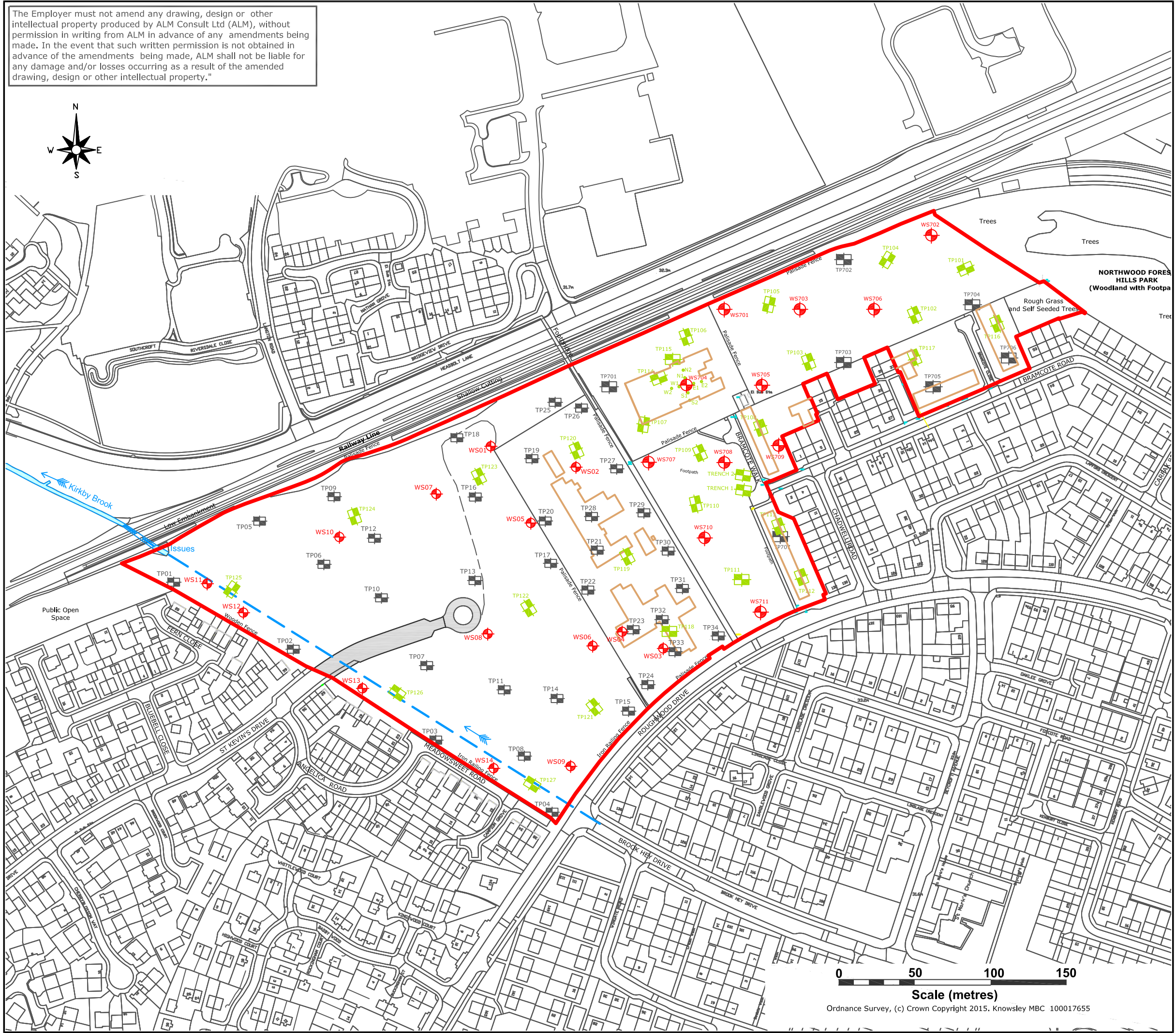
DRG No.

30158-11

0 50 100 150
Scale (metres)

Ordnance Survey, (c) Crown Copyright 2015, Knowsley MBC 100017655

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- KEY**
- Approx. Site Boundary
 - Trial Pit (ALM Consult Ltd)
 - Dynamic Percussive Windowless Sampler Borehole (CCG / ESG)
 - Trial Pit (CCG / ESG)
 - Footprint of Former Buildings
 - Kirkby Brook Surface Water Culvert (indicative location)



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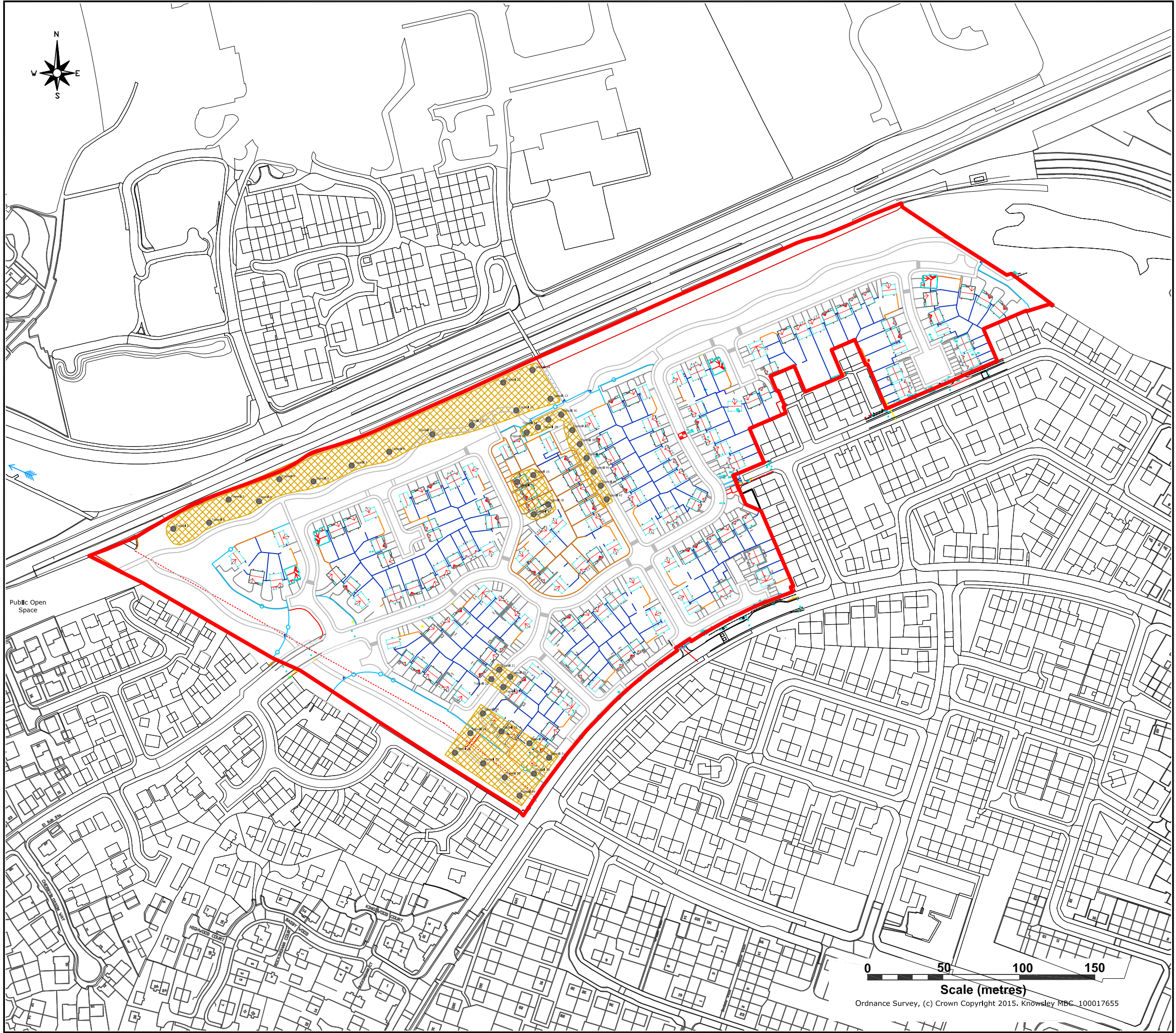
ST KEVIN'S DRIVE, KIRKBY

EXPLORATORY HOLE
LOCATION PLAN

FINAL

DRAWN BY KL	SIGNATURE	DATE 18/10/17
APPROVED AA	SIGNATURE	DATE 18/10/17
SCALE 1:2500@A3	DRG No. 30158-6	

0 50 100 150
Scale (metres)
Ordnance Survey, (c) Crown Copyright 2015. Knowsley MBC 100017655



KEY

Approx. Site Boundary

Topsoil

Topsoil 1

Sample Location

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CLIENT



JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

DRAWING TITLE

SAMPLE LOCATION PLAN

STATUS		FINAL			
DRAWN BY		SIGNATURE		DATE	
KL				18/03/19	
APPROVED		SIGNATURE		DATE	
AA				18/03/19	
SCALE			DRG No.		
1:2500@A3			30158-14_REV1		

APPENDIX B

Selected Photos



PLATE 1: Overview of larger topsoil stockpile in the southwest of Phase 1.



PLATE 2: View of smaller topsoil stockpile near Plots 153-154.



PLATE 3: Overview of validation area following removal of asbestos impacted soils.

APPENDIX C

Correspondence



Knowsley Council

Mark Wilkinson
Jupiter House
Mercury Rise
Altham Business Park
Altham
BB5 5BY

Our Ref: 17/00201/FUL

Date: 8 June 2018

Dear Sir/Madam

TOWN AND COUNTRY PLANNING ACT 1990

APPLICATION NO: 17/00201/FUL

PROPOSAL: ERECTION OF 173 DWELLINGS TOGETHER WITH VEHICULAR ACCESS FROM ST KEVIN'S DRIVE, ASSOCIATED WORKS, PUBLIC OPEN SPACE AND STOPPING UP OF 2 NO. ROADS AND 1 NO. FOOTPATH

LOCATION: Land Between Railway Line And Fern Close, Roughwood Drive And Bramcote Road, Kirkby, ,

Thank you for your application to discharge conditions in relation to the above, following an assessment of the information submitted the following details are required:-

Condition 7 - Contaminated Land

We have a query in relation to the proposed testing regime for the reuse of soils as well as requesting the laboratory certificates of analysis for the analysis that was carried out. We are unable to recommend the discharge of Condition 7A until this information has been submitted, reviewed and approved.

Further investigation was undertaken by ALM in 2017 including delineating where asbestos was previously identified. Further asbestos was identified in the area of the former Bramcote/Northfield Primary School. All material in this area is to be excavated and stockpiled. The fate of the material will be determined by the quantification of the asbestos, with it either being removed off site or encapsulated on site beneath 1m of clean cover in an area not likely to be disturbed. We are in general in agreement with this approach, which should be formalised within a Material Management Plan.

Copies of the actual laboratory analysis certificates should be forwarded for the records, to support the useful submitted summary information.

The proposals to undertake further sampling of the topsoil (both reworked and natural) once excavated is welcomed however the proposed sampling ratio of 1 per 500m³ is higher than normally expected in the Borough. Given the specifics of the site and the data already collected 1 per 250m³ would be considered more appropriate.

Details of the testing regime (including analytical suite) for materials to be reused should be submitted for review.





Knowsley Council

Before the above conditions can be discharged we require the above information/clarification for further assessment.

Details can be submitted via email to dcsubmissions@knowsley.gov.uk or by post to the address shown below.

If you require any further information please do not hesitate to contact me on 0151 443 3501

Yours faithfully

Rebekah McNally

APPENDIX D

Chemical Analysis

Client Name: ALM Consult Limited
 Reference: 30158
 Location: St Kevins Drive, Kirkby
 Contact: Keith Lyon
 JE Job No.: 19/3808

Report : Solid

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

J E Sample No.	1	2	3	5	7	9	10	11	12	13	Please see attached notes for all abbreviations and acronyms		
Sample ID	Topsoil 19	Topsoil 20	Topsoil 21	Topsoil 23	Topsoil 25	Topsoil 27	Topsoil 28	Topsoil 29	Topsoil 30	Topsoil 31			
Depth													
COC No / misc													
Containers	J	J	J	J	J	J	J	J	J	J			
Sample Date	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	LOD/LOR	Units	Method No.
Arsenic #	8.7	6.2	7.4	6.4	5.8	NDP	4.1	6.4	6.8	4.8	<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.2	0.3	0.2	0.2	NDP	0.1	0.6	0.2	0.2	<0.1	mg/kg	TM30/PM15
Chromium #	142.2	28.8	171.8	135.1	136.9	NDP	133.9	139.8	33.5	138.3	<0.5	mg/kg	TM30/PM15
Copper #	40	25	27	36	30	NDP	17	30	26	23	<1	mg/kg	TM30/PM15
Lead #	54	37	40	45	41	NDP	21	41	35	32	<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1	NDP	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	21.1	12.8	16.2	15.2	14.3	NDP	18.9	15.1	12.0	12.2	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	NDP	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.5	0.5	0.6	0.4	0.5	NDP	0.4	0.6	0.5	0.4	<0.1	mg/kg	TM74/PM32
Zinc #	66	41	47	50	57	NDP	28	49	37	44	<5	mg/kg	TM30/PM15
Arsenic	-	-	-	-	-	6.3	-	-	-	-	<0.5	mg/kg	TM30/PM62
Cadmium	-	-	-	-	-	0.3	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	-	16.0	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-	32	-	-	-	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	-	-	46	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	-	<0.1	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-	12.4	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-	<1	-	-	-	-	<1	mg/kg	TM30/PM62
Water Soluble Boron	-	-	-	-	-	0.6	-	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-	55	-	-	-	-	<5	mg/kg	TM30/PM62
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.61	0.32	0.33	0.41	0.47	0.55	0.31	0.35	0.39	0.28	<0.03	mg/kg	TM4/PM8
Anthracene #	0.13	0.06	0.06	0.08	0.17	0.13	0.06	0.08	0.10	0.06	<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.28	0.49	0.61	0.76	1.58	1.15	0.35	0.68	0.69	0.54	<0.03	mg/kg	TM4/PM8
Pyrene #	1.13	0.47	0.61	0.70	1.43	1.08	0.34	0.64	0.63	0.52	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.63	0.33	0.40	0.41	0.95	0.68	0.19	0.41	0.36	0.38	<0.06	mg/kg	TM4/PM8
Chrysene #	0.71	0.29	0.35	0.43	0.91	0.70	0.20	0.42	0.40	0.34	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.20	0.46	0.54	0.66	1.64	1.21	0.28	0.70	0.61	0.57	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.61	0.24	0.29	0.36	0.90	0.68	0.14	0.37	0.32	0.28	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.38	0.15	0.19	0.23	0.50	0.37	0.09	0.21	0.21	0.19	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.11	0.05	0.06	0.06	0.14	0.13	<0.04	0.08	0.06	0.06	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.40	0.18	0.22	0.24	0.51	0.41	0.11	0.23	0.22	0.20	<0.04	mg/kg	TM4/PM8
PAH 16 Total	7.3	3.0	3.7	4.3	9.2	7.1	2.1	4.2	4.0	3.4	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.86	0.33	0.39	0.48	1.18	0.87	0.20	0.50	0.44	0.41	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.34	0.13	0.15	0.18	0.46	0.34	0.08	0.20	0.17	0.16	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	102	99	104	101	104	103	102	104	99	102	<0	%	TM4/PM8

Exova Jones Environmental

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
JE Job No.: 19/3808

Report : Solid

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

J E Sample No.	1	2	3	5	7	9	10	11	12	13	Please see attached notes for all abbreviations and acronyms		
Sample ID	Topsoil 19	Topsoil 20	Topsoil 21	Topsoil 23	Topsoil 25	Topsoil 27	Topsoil 28	Topsoil 29	Topsoil 30	Topsoil 31			
Depth													
COC No / misc													
Containers	J	J	J	J	J	J	J	J	J	J			
Sample Date	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019	06/03/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	-	<4	-	<4	-	-	<4	-	-	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	-	<7	-	<7	-	-	<7	-	-	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	-	69	-	<7	-	-	<7	-	-	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	-	69	-	<19	-	-	<19	-	-	<19	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 #	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	-	<4	-	<4	-	-	<4	-	-	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	-	10	-	28	-	-	11	-	-	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	-	87	-	87	-	-	62	-	-	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	-	97	-	115	-	-	73	-	-	<19	mg/kg	TM5/PM8/PM16
Total aliphatics and aromatics(C5-35)	-	-	166	-	115	-	-	73	-	-	<38	mg/kg	TM5/PM8/PM16
MTBE #	-	-	<5	-	<5	-	-	<5	-	-	<5	ug/kg	TM31/PM12
Benzene #	-	-	<5	-	<5	-	-	<5	-	-	<5	ug/kg	TM31/PM12
Toluene #	-	-	<5	-	<5	-	-	<5	-	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	<5	-	<5	-	-	<5	-	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	<5	-	<5	-	-	<5	-	-	<5	ug/kg	TM31/PM12
o-Xylene #	-	-	<5	-	<5	-	-	<5	-	-	<5	ug/kg	TM31/PM12
Natural Moisture Content	19.8	17.8	21.1	19.4	17.9	27.6	17.4	20.6	21.5	18.1	<0.1	%	PM4/PM0
Total Organic Carbon #	3.41	2.08	1.77	1.55	1.87	NDP	1.35	1.97	1.89	1.41	<0.02	%	TM21/PM24
pH #	6.37	7.09	6.75	6.39	7.97	7.97	7.12	6.30	7.12	6.49	<0.01	pH units	TM73/PM11

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Exova Jones Environmental

Registered Office: Exova Environmental UK Limited, 10 Lower Grosvenor Place, London, SW1W 0EN. Reg No. 11371415

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

ALM Consult Limited
Paddock Business Centre
2 Paddock Road
West Pimbo
Skelmersdale
Lancashire
WN8 9PL

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781



Attention :	Keith Lyon
Date :	26th March, 2019
Your reference :	30158
Our reference :	Test Report 19/4234 Batch 1
Location :	St Kevins Drive, Kirkby
Date samples received :	14th March, 2019
Status :	Final report
Issue :	1

Four samples were received for analysis on 14th March, 2019 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

Compiled By:

Simon Gomery BSc
Project Manager

Please see attached notes for all abbreviations and acronyms

Client Name: ALM Consult Limited

Reference: 30158

Location: St Kevins Drive, Kirkby

Contact: Keith Lyon

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 19/4234

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

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

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

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Please include all sections of this report if it is reproduced

ABBREVIATIONS and ACRONYMS USED

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

JE Job No: 19/4234

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

Note:

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

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
 Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
19/3808	1	Topsoil 19		1	14/03/2019	General Description (Bulk Analysis)	Soil/Stones
					14/03/2019	Asbestos Fibres	NAD
					14/03/2019	Asbestos ACM	NAD
					14/03/2019	Asbestos Type	NAD
					14/03/2019	Asbestos Level Screen	NAD
19/3808	1	Topsoil 21		3	14/03/2019	General Description (Bulk Analysis)	Soil/Stones
					14/03/2019	Asbestos Fibres	NAD
					14/03/2019	Asbestos ACM	NAD
					14/03/2019	Asbestos Type	NAD
					14/03/2019	Asbestos Level Screen	NAD
19/3808	1	Topsoil 23		5	14/03/2019	General Description (Bulk Analysis)	Soil/Stones
					14/03/2019	Asbestos Fibres	NAD
					14/03/2019	Asbestos ACM	NAD
					14/03/2019	Asbestos Type	NAD
					14/03/2019	Asbestos Level Screen	NAD
19/3808	1	Topsoil 25		7	14/03/2019	General Description (Bulk Analysis)	Soil/Stones
					14/03/2019	Asbestos Fibres	NAD
					14/03/2019	Asbestos ACM	NAD
					14/03/2019	Asbestos Type	NAD
					14/03/2019	Asbestos Level Screen	NAD
19/3808	1	Topsoil 27		9	14/03/2019	General Description (Bulk Analysis)	soil-stones
					14/03/2019	Asbestos Fibres	Free Fibres
					14/03/2019	Asbestos ACM	NAD
					14/03/2019	Asbestos Type	Amosite
					14/03/2019	Asbestos Level Screen	less than 0.1%
19/3808	1	Topsoil 29		11	14/03/2019	General Description (Bulk Analysis)	soil-stones
					14/03/2019	Asbestos Fibres	NAD
					14/03/2019	Asbestos ACM	NAD
					14/03/2019	Asbestos Type	NAD
					14/03/2019	Asbestos Level Screen	NAD
19/3808	1	Topsoil 31		13	14/03/2019	General Description (Bulk Analysis)	soil-stones
					14/03/2019	Asbestos Fibres	NAD
					14/03/2019	Asbestos ACM	NAD

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

[illegible]

Note:

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Signed on behalf of Jones Environmental Laboratory:

[illegible]

Note:

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Signed on behalf of Jones Environmental Laboratory:

[illegible]

SUBSOIL



St Kevin's Drive, Kirkby

Summary of Chemical Test Results Performed on Soils:-

Inorganic Determinands

Hole ID	Depth (m)	Stratum	pH	SOM	As	Cd	Cr III	Cr VI	Copper	Lead	Mercury	Nickel	Selenium	Zinc	Cn	WS SO4	SO4	WS B	Asbestos
			units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	g/l	mg/kg	mg/kg	
			-	-	37	11 (a)	910 (a)	6 (a)	200 (b)	200 (c)	40 (a)	130 (a)	250 (a)	300 (b)	20 (d)	0.5 (e)	2400 (e)	3(f)	Presence
TP1	0.3	MG:Reworked Topsoil	7.8	5.2	18.6	0.6	44.5	n/t	50.7	79.7	<0.5	31.5	<1.0	97.5	n/t	0.03	480	n/t	NAD
TP21	0.2	MG:Reworked Topsoil	8.4	4.5	23.7	0.6	51.3	n/t	85	214	0.6	34.3	<1.0	235	n/t	n/t	n/t	n/t	n/t
TP102	0.1	MG:Reworked Topsoil	7.2	2.82	36.2	0.3	61.4	n/t	25	58	<0.1	14.1	2	59	n/t	n/t	n/t	0.5	NAD
TP103	0.2	MG:Reworked Topsoil	6.7	3.27	3.4	0.2	64.2	n/t	16	41	<0.1	7.8	<1.0	30	n/t	n/t	n/t	0.6	NAD
TP105	0.3	MG:Reworked Topsoil	8.2	2.7	8.2	0.1	61.7	n/t	21	34	<0.1	12.4	<1.0	61	n/t	n/t	n/t	0.4	NAD
TP106	0.1	MG:Reworked Topsoil	8.1	2.82	20.5	0.1	76.8	n/t	38	231	<0.1	21.5	<1.0	79	n/t	n/t	n/t	1	NAD
TP107	0.1	MG:Reworked Topsoil	8.3	n/t	12.2	0.2	17.9	n/t	58	162	<0.1	28.5	<1.0	161	n/t	n/t	n/t	0.2	Chrysotile
TP108	0.2	MG:Reworked Topsoil	7.9	3.08	8.9	0.4	71.8	n/t	30	56	0.3	10.8	<1.0	103	n/t	n/t	n/t	0.8	NAD
TP112	0.05	MG:Reworked Topsoil	7.9	6.14	6.6	0.4	63.3	n/t	28	52	<0.1	15.3	<1.0	84	n/t	n/t	n/t	0.7	NAD
TP113	0.1	MG:Reworked Topsoil	7.9	2.2	5.2	0.1	59.6	n/t	16	25	<0.1	10.5	<1.0	48	n/t	n/t	n/t	0.5	NAD
TP116	0.1	MG:Reworked Topsoil	7.0	2.12	1.5	0.1	65.6	n/t	9	15	<0.1	6.3	<1.0	28	n/t	n/t	n/t	0.3	NAD
TP117	0.1	MG:Reworked Topsoil	6.9	15.51	8.8	0.2	70.4	n/t	38	44	<0.1	18.2	<1.0	58	n/t	n/t	n/t	0.8	NAD
TP118	0.1	MG:Reworked Topsoil	6.4	3.59	10.7	0.4	55.5	n/t	49	92	<0.1	19.4	<1.0	134	n/t	n/t	n/t	0.8	NAD
TP119	0.1	MG:Reworked Topsoil	5.0	1.39	4.4	0.3	63.5	n/t	14	25	<0.1	10.7	<1.0	50	n/t	n/t	n/t	0.6	NAD
TP120	0.1	MG:Reworked Topsoil	7.1	2.99	9	0.2	67.3	n/t	47	88	<0.1	17.6	<1.0	143	n/t	n/t	n/t	0.6	NAD
TP125	0.1	MG:Reworked Topsoil	5.2	4.83	5	0.2	60.6	n/t	26	34	<0.1	13.5	<1.0	35	n/t	n/t	n/t	0.4	NAD
TP126	0.1	MG:Reworked Topsoil	6.5	3.46	6.5	0.3	65.2	n/t	25	50	<0.1	17.6	<1.0	64	n/t	n/t	n/t	0.8	NAD
TP127	0.1	MG:Reworked Topsoil	5.9	3.51	6.6	0.3	69.9	n/t	49	56	<0.1	13.3	<1.0	49	n/t	n/t	n/t	0.4	NAD
TP1	0.6	MG:Culvert Backfill	9.4	2.2	14	<0.5	48.6	n/t	38.8	70.4	<0.5	36.9	<1.0	80.4	n/t	0.06	560	n/t	NAD
TP4	0.6	MG:Culvert Backfill	7.9	4.8	12.9	<0.5	30	n/t	50.9	122	<0.5	20.9	<1.0	80.7	n/t	0.03	230	n/t	NAD
WS9	0.25	MG:Culvert Backfill	6.8	2	4.2	<0.5	16.8	n/t	14.7	17.5	<0.5	10.7	<1.0	25	n/t	n/t	n/t	n/t	NAD
WS12	0.2	MG:Culvert Backfill	7.7	1	7.3	<0.5	45.9	n/t	24.8	15.2	<0.5	41.5	<1.0	53.9	n/t	n/t	n/t	n/t	NAD
TP15	0.5	MG: Demolition Fill	7.3	7.5	16	0.6	37.3	n/t	67.5	87.6	<0.5	33.3	<1.0	103	n/t	0.03	430	n/t	NAD
TP21	0.7	MG: Demolition Fill	8.5	n/t	9.2	<0.5	25.7	n/t	39.1	85.5	<0.5	13.7	<1.0	100	n/t	0.04	260	n/t	n/t
TP22	0.25	MG: Demolition Fill	8.8	0.7	33.1	<0.5	34.2	n/t	23	22.6	<0.5	26.3	<1.0	55	n/t	n/t	n/t	n/t	n/t
TP23	0.6	MG: Demolition Fill	8.4	5.6	6.4	<0.5	29.6	n/t	32	39.6	<0.5	17.4	<1.0	56.6	n/t	n/t	n/t	n/t	n/t
TP27	0.4	MG: Demolition Fill	8.9	4	43	2.1	37.7	n/t	52.3	128	<0.5	36.2	<1.0	124	n/t	0.05	500	n/t	NAD
TP29	0.5	MG: Demolition Fill	9.3	1.3	9.1	<0.5	19.2	n/t	33.1	19.2	<0.5	22.9	<1.0	39.1	n/t	0.05	240	n/t	NAD
TP29	1.1	MG: Demolition Fill	9.9	n/t	17.2	<0.5	43.1	n/t	70.3	16.8	<0.5	58.3	<1.0	48.8	n/t	n/t	n/t	n/t	n/t
TP31	0.3	MG: Demolition Fill	7.0	n/t	15.1	0.6	37.1	n/t	70.4	104	<0.5	37.9	<1.0	117	n/t	0.03	400	n/t	NAD
TP31	0.9	MG: Demolition Fill	7.4	n/t	6.3	<0.5	57.1	n/t	32.1	13.8	<0.5	49.2	<1.0	63.6	n/t	n/t	n/t	n/t	n/t
TP32	0.5	MG: Demolition Fill	10.6	3.4	10.7	<0.5	41.9	n/t	45.2	77.8	<0.5	35.9	<1.0	133	n/t	0.1	910	n/t	NAD
WS3	0.5	MG: Demolition Fill	8.4	3	13.7	<0.5	40	n/t	38.5	70.8	<0.5	34.1	<1.0	122	n/t	n/t	n/t	n/t	NAD
TP106	0.3	MG: Demolition Fill	8.3	n/t	19.2	0.1	15.8	n/t	63	59	<0.1	38.8	<1.0	253	n/t	n/t	n/t	0.2	Crocidolite
TP106	0.6	MG: Demolition Fill	7.7	n/t	8.3	0.2	74	n/t	20	444	<0.1	9.2	<1.0	263	n/t	n/t	n/t	0.1	Chrysotile
TP107	0.4	MG: Demolition Fill	8.2	n/t	6.4	<0.1	10.6	n/t	25	16	<0.1	16.2	<1.0	20	n/t	n/t	n/t	0.1	Amosite
WS704	0.6	MG: Cohesive	7.6	n/t	2.7	<0.21	11.5	<0.1	9.6	17.6	<0.5	10	<0.5	26.2	<0.6	0.136	422	n/t	Amosite
TP707	0.7	MG: Granular	8.5	n/t	7.7	0.23	18.7	<0.1	24.2	45.2	<0.51	17	<0.5	60.8	<0.6	0.21	772	n/t	NAD
WS702	0.6	MG: Granular	8	3.24	8.3	0.3	16.5	<0.1	31.2	54.6	<0.50	14.3	0.6	50.9	<0.6	0.068	436	n/t	NAD
WS706	0.9	MG: Granular	7.6	n/t	6.8	0.24	10.7	<0.1	18.3	34	<0.52	10.6	0.6	48.1	<0.6	0.054	305	n/t	NAD
TP102	0.6	MG: Granular	7.12	3.61	8.1	0.3	61.4	n/t	28	68	<0.1	12.2	<1.0	59	n/t	n/t	n/t	0.6	NAD
TP112	0.4	MG: Granular	8.28	3.94	5.1	0.2	85.5	n/t	26	41	<0.1	13.5	<1.0	44	n/t	n/t	n/t	0.5	NAD
TP113	0.3	MG: Granular	6.79	3.37	8.9	0.2	67.3	n/t	28	56	<0.1	15.7	<1.0	77	n/t	n/t	n/t	0.7	NAD
TP116	0.4	MG: Granular	6.3	1.82	1.5	<0.1	62.3	n/t	8	15	<0.1	5.7	<1.0	18	n/t	n/t	n/t	0.3	NAD
TP117	0.4	MG: Granular	6.34	2.6	2.3	0.1	61.2	n/t	13	25	<0.1	5.9	<1.0	20	n/t	n/t	n/t	0.3	NAD
TP18	0.15	Natural Topsoil	6.0	6.9	13.4	0.6	56	n/t	55.6	79.3	<0.5	25.1	<1.0	102	n/t	n/t	n/t	n/t	n/t
TP25	0.25	Natural Topsoil	6.4	n/t	17.5	1.1	32.6	n/t	83.8	131	<0.5	26.2	<1.0	126	n/t	n/t	n/t	n/t	n/t
TP34	0.5	Natural Topsoil	6.9	6.3	16.7	0.6	39.5	n/t	72.7	110	<0.5	40.5	<1.0	119	n/t	n/t	n/t	n/t	NAD
WS1	0.2	Natural Topsoil	6.9	2.3	9.6	<0.5	22.7	n/t	38	62	<0.5	17.4	<1.0	61.9	n/t	n/t	n/t	n/t	NAD
WS8	0.3	Natural Topsoil	7.2	8.6	14.5	0.6	44.3	n/t	72	89	<0.5	31.6	<1.0	98.5	n/t	n/t	n/t	n/t	n/t
WS13	0.05	Natural Topsoil	7.4	3	13.7	<0.5	30.7	n/t	34.8	59.7	<0.5	25.2	<1.0	67.6	n/t	n/t	n/t	n/t	NAD
TP110	0.2	Natural Topsoil	6.4	3.46	6.7	0.5	71.6	n/t	38	67	<0.1	13.6	<1.0	89	n/t	n/t	n/t	0.4	NAD
TP111	0.2	Natural Topsoil	7.7	4.87	8.6	0.3	73.4	n/t	38	67	0.1	22.2	<1.0	69	n/t	n/t	n/t	0.7	NAD
TP121	0.1	Natural Topsoil	5.2	4.75	8.2	0.3	70	n/t	36	58	<0.1	17.2	<1.0	61	n/t	n/t	n/t	0.7	NAD
TP122	0.1	Natural Topsoil	6.8	4.45	5	0.3	86.9	n/t	28	43	<0.1	17.4	<1.0	47	n/t	n/t	n/t	0.8	NAD
TP123	0.1	Natural Topsoil	6.7	3.34	8.3	0.5	94.1	n/t	36	51	<0.1	16	<1.0	88	n/t	n/t	n/t	0.7	NAD
TP124	0.1	Natural Topsoil	6.2	4.54	8.7	0.6	86.5	n/t	42	54	0.1	20	<1.0	133	n/t	n/t	n/t	1	NAD
TP6	0.3	Glacial Clay	6.5	8.3	14.9	0.6	43.8	n/t	54.5	80.4	<0.5	24.4	<1.0	90.9	n/t	0.02	370	n/t	NAD
TP16	0.3	Glacial Clay	6.7	6.2	15.8	0.6	40.1	n/t	67.9	87	<0.5	29.7	<1.0	100	n/t	n/t	n/t	n/t	n/t
WS1	0.6	Glacial Clay	7.2	n/t	<1.0	<0.5	6.8	n/t	5.7	<5.0	<0.5	<5.0	<1.0	9.3	n/t	<0.02	290	n/t	n/t
WS6	0.35	Glacial Clay	7.8	0.4	5.1	<0.5	54.3	n/t	27	12.3	<0.5	52.9	<1.0	62.4	n/t	n/t	n/t	n/t	NAD
WS7	0.3	Glacial Clay	8.9	5.8	14.7	<0.5	33	n/t	57.7	67.1	<0.5	30.7	<1.0	96.1	n/t	n/t	n/t	n/t	NAD
WS7	0.8	Glacial Clay	8.1	n/t	5.4	<0.5	49.9	n/t	33.6	14.6	<0.5	58.1	<1.0	65.3	n/t	0.03	200	n/t	n/t
WS8	1.1	Glacial Clay	8.2	n/t	6.8	<0.5	50.7	n/t	28.7	11.6	<0.5	50.9	<1.0	58.1	n/t	0.02	180	n/t	n/t
TP11	0.4	Glacial Sand	7.1	n/t	2.6	<0.5	10.5	n/t	13.7	17.3	<0.5	<5.0	<1.0	21.7	n/t	0.02	170	n/t	n/t
TP18	0.4	Glacial Sand	6.4	n/t	2.2	<0.5	14.7	n/t	14.7	13.5	<0.5	<5.0	<1.0	19.9	n/t	n/t	n/t	n/t	n/t
TP25	0.9	Glacial Sand	6.5	n/t	25.2	0.6	33.6	n/t	119	203	0.6	29.7	1.1	117	n/t	0.02	230	n/t	n/t
TP22	0.6	Glacial Sand	7.9	n/t	1.5	<0.5	6.9	n/t	10.8	<5.0	<0.5	<5.0	<1.0	11	n/t	n/t	n/t	n/t	n/t
TP26	0.5	Glacial Sand	7.6	n/t	1.5	<0.5	10.5	n/t	14.1	7.8	<0.5	<5.0	<1.0	13	n/t	0.03	170	n/t	n/t
TP27	0.8	Glacial Sand	7.4	n/t	3.7	<0.5	11.1	n/t	19.5	19.6	<0.5	8.3	<1.0	21.4	n/t	n/t	n/t	n/t	n/t
WS2	0.3	Glacial Sand	7.6	1.8	3.6	<0.5	11	n/t	13.4	21.9	<0.5	8.5	<1.0	27.8	n/t	n/t	n/t	n/t	n/t
WS2	0.8	Glacial Sand	7.4	n/t	17.3	<0.5	31.6	n/t	70.2	118	<0.5	3							

St Kevin's Drive, Kirkby

Summary of Chemical Test Results Performed on Soils:-

Organic Determinands

			Screening Value (a)	TP701	TP702	TP703	TP704	TP705	TP706	WS709	WS710	WS711	TP18	TP25	TP34	WS1	WS8	WS13	TP110	TP111	TP121	TP122	TP123	TP124	TP6	TP16	WS1	WS6	WS7	WS7	WS8	TP11	TP18	TP25	TP22	TP26	TP27	WS2	WS2	WS5	WS10	WS11	WS11	WS12	WS14	WS14	WS705	WS707	WS708		
Determinand	Units		(a)	0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											
				0.5	0.8	0.8	1.1	0.9	1.0	1.0	1.2	1.2	0.15	0.25	0.5	0.2	0.3	0.65	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.6	0.35	0.3	0.8	1.1	0.4	0.4	0.9	0.6	0.5	0.8	0.3	0.8	0.4	0.4	0.3	1	1.1	0.2	0.8	1.0	0.5	0.8		
				Shirdley Hill Sand												Natural Topsoil												Glacial Clay												Glacial Sand											

NOTES

n/t
NV

Parameter Not Tested For
Parameter Tested exceeds
No Published Screening V

a Suitable For Use Level (S4UL) For Residential Use With Plant Uptake for 1% SOM (LQM/CIH S4ULs for Human Health Risk Assessment (2015))

a Suitable For Use Level (S4UL) For Residential Use With Plant Uptake for 1% SOM (LQM/CIEH S4ULs for Hum
b Soil Guidance Value (SGV) For Residential Use (Environment Agency Science Report SC050051/Dioxins SGV

ST KEVIN'S DRIVE, KIRKBY
VALIDATION OF SOIL COVER DEPTHS
(Plots No. 69-72)

Prepared for
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ST KEVIN'S DRIVE, KIRKBY VERIFICATION OF SOIL COVER DEPTHS

ALM Consult Limited (ALM) carried out a site visit on Wednesday 10th February 2021, to verify cover depths in the rear gardens of Plots No.69-72 at the McDermott Homes development at St Kevin's Drive, Kirkby.

Verification of cover depth consisted of the excavation of hand dug pits, penetrating the soil cover, and the inspection of the resulting void, in rear garden areas of the plots. A location plan showing the location of inspection pit / inspection location is presented as Drawing No. 30158-CDV2 in Appendix A.

The site has been subject to previous phases of desk study and intrusive ground investigation, undertaken by ESG and CCG in the eastern half of the site (2015) and western half of the site (2016) respectively. The previous studies were re-presented along with a supplementary phase of ground investigation, undertaken by ALM in 2017, and reported in ALM Report No.30158-1. The ground investigations identified the presence of traces of asbestos fibres, and localised slightly elevated concentrations of PAH and TPH in made ground beneath the former Bramcote/Northfield Primary School in northern central parts of the site.

ALM Report No.30158-2 Rev A 'Remediation Strategy for land off St Kevin's Drive, Kirkby', date November 2017, recommended either the removal of asbestos impacted made ground or it's retention beneath a 1m thick clean soil cover, due to no asbestos quantification tests being undertaken on the asbestos impacted soils. ALM Letter Ref: 30158-016, dated 24th February 2020, details the results of further soil analysis demonstrating a concentration of <0.001% asbestos in made ground, and recommends soils may be retained beneath a 600m thick clean soil cover. Comments received from Knowsley Council (dated 27th April 2020) in a response regarding an application to discharge Planning Condition 7 – Contaminated Land, indicate a requirement for a membrane to be placed beneath the clean soil cover system.

To prove that the criteria had been met, an ALM Engineer inspected the soil cover, and took photographs of the inspection pits (See Appendix B). Photographs of membrane installation at the base of the cover system, have been provided by the groundworker. In Plots No.69-72 a minimum of 600mm of soil cover had been placed either above made ground, or as replacement for removed made ground. The depth of clean soil cover encountered in the rear gardens of selected plots, is summarised in Table A below.

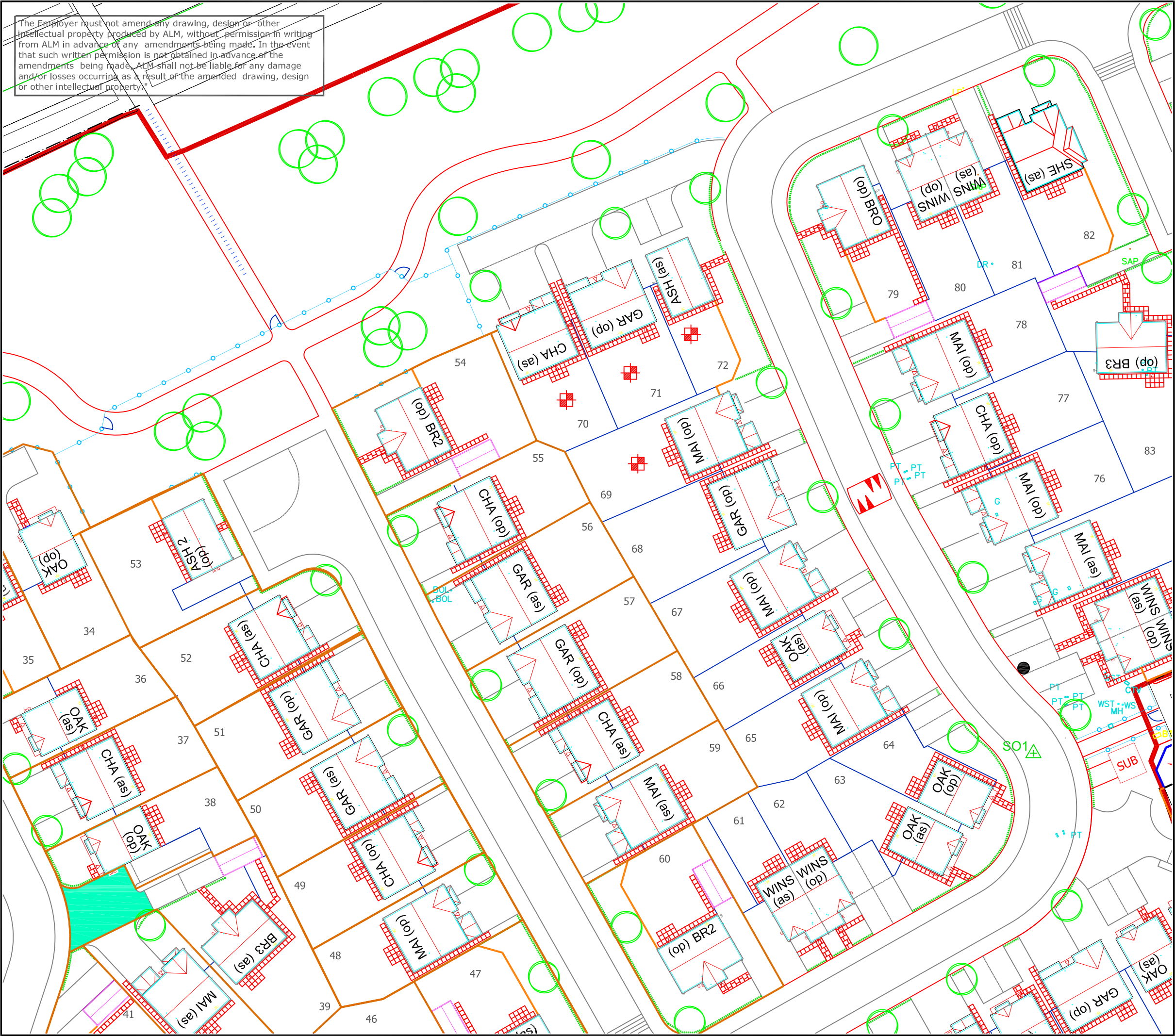
Topsoil material placed in Plots No.69-72 was won from Phase 3 and Phase 4 of the development. Subsoil placed in rear gardens of Plots No.69-72 comprised natural sand arisings from beneath the development. Chemical analyses confirming the chemical suitability of the topsoil and subsoil for use in private gardens at the development, are presented in Appendix C.

Table A: Clean Cover Verification Depths

Plot No.	Subsoil (mm)	Topsoil (mm)	Measured Thickness (mm)
69	350	290	640
70	350	260	610
71	350	260	610
72	400	250	650

APPENDIX A
INSPECTION PIT LOCATION PLAN

The Employer must not amend any drawing, design or other intellectual property produced by ALM, without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



KEY
INSPECTION PIT / INSPECTION LOCATION

DEVELOPMENT LAYOUT TAKEN FROM MCK ASSOCIATES LTD
"PROPOSED SITE LAYOUT", DRAWING NO.16-075-0003 REV M,
DATED OCTOBER 2016



ALM Consult Limited
Paddock Business Centre, 2 Paddock Road,
West Pimbo, Skelmersdale, Lancashire. WN8 9PL
T: 01695 213160 E: info@almconsult.co.uk

CLIENT			McDERMOTT HOMES		
JOB TITLE			ST KEVINS DRIVE, KIRKBY		
DRAWING TITLE			COVER DEPTH INSPECTION LOCATION PLAN		
STATUS			FINAL		
DRAWN BY	SIGNATURE		DATE		
KL			10-02-21		
APPROVED	SIGNATURE		DATE		
AA			10-02-21		
SCALE		DRG No.			
1:500@A3		30158-CDV2			

APPENDIX B
PHOTOGRAPHIC RECORD



PLATE 1: Overview of inspection in Plot No.69



PLATE 2: Depth of soil cover in Plot No.69 (640mm)



PLATE 3: Placement of membrane beneath soil cover in Plot No.70



PLATE 4: Overview of inspection of Plot No.70



PLATE 5: Depth of soil cover in Plot No.70 (610mm)



PLATE 6: Overview of inspection of Plot No.71



PLATE 7: Depth of soil cover in Plot No.71 (610mm)



PLATE 8: Overview of inspection in Plot No.72



PLATE 9: Depth of soil cover in Plot No.72 (650mm)

APPENDIX C
CHEMICAL ANALYSIS

TOPSOIL

18th December 2020

30158/019

Mr Mark Wilkinson
Technical Director
McDermott Homes Ltd
Jupiter House
1 Mercury Rise
Altham Business Park
Altham BB5 5BY

Dear Mark

Validation of Site Won Topsoil – Phases 3 & 4, St Kevin's Drive, Kirkby

Introduction

ALM attended site on Monday 23rd November 2020, to sample stockpiles of topsoil that had been stripped from the surface of the northern part of the Phase 3 development area (excluding the former Northfield/Bramcote School), and the Phase 4 development area at St Kevin's Drive, Kirkby, Liverpool.

A sample was also retrieved from subsoil immediately beneath the former electricity sub-station for subsequent testing to prove the absence of any residual PCB contamination.

The extent of the Phase 3 & 4 development areas is shown on ALM Drawing No.30158-12 in Appendix A.

Phase 3 (North) & Phase 4 Topsoil Test Results

18No. samples (Topsoil 53 to Topsoil 70) of topsoil were obtained from stockpiles across the Phase 3 & 4 area by an ALM Engineer on Monday 23rd November 2020.

The location of the topsoil stockpiles and locations of samples taken are shown on Drawing No.30158-14_Rev3 in Appendix A. Selected Photographs of the stockpiles are also included in Appendix B.

The 18No. samples of topsoil were submitted for a suite of analysis comprising; pH, metals (As, water sol.B, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn), %TOC, speciated PAH and asbestos screen. A further 5No. samples (approx. 25% of samples) were submitted for speciated TPH.

The results of the laboratory chemical analysis were compared against the CIEH/LQM 'Suitable for Use Levels' (S4UL) for residential development with home grown produce. With regard to lead, consideration is given to the DEFRA Category 4 Screening Level of 200mg/kg. With regard to phytotoxic determinands (copper and zinc), consideration was given to BS3882:2007 & BS8601:2013. Concentrations of water soluble boron were measured against former ICRCL Guidance Note 59/83, second edition (1987).



The results of the laboratory chemical analysis are included in Appendix C. None of the samples exhibited any concentrations of determinands above the chosen criteria. None of the samples reported the presence of asbestos.

ALM consider the topsoil stripped from the surface of the north of the Phase 3 area and the Phase 4 area of the site, is suitable for use as topsoil within the proposed development. The topsoil stripped from across the site has been, and should continue to be re-used to provide a minimum 150mm soil cover in private gardens, which will provide a growing medium for plants, although a greater thickness may be used.

Former Electricity Sub Station

A single sample of subsoil was taken from beneath the footprint of the former electricity sub-station in the north of the Phase 3 development area, located to the rear of Plot No.81 (Sample No. Sub-Station 1). The sample was submitted for analysis of PCB (7) and PCB (12) congeners.

No concentrations of PCB above laboratory detection limits were recorded in the sample. Therefore, no significant residual PCB contamination is present beneath this part of the site.

If you require any further information, please contact me.

Yours sincerely

A handwritten signature in black ink, reading 'Keith Lyon'. The signature is fluid and cursive, with the first name 'Keith' and the last name 'Lyon' clearly distinguishable.

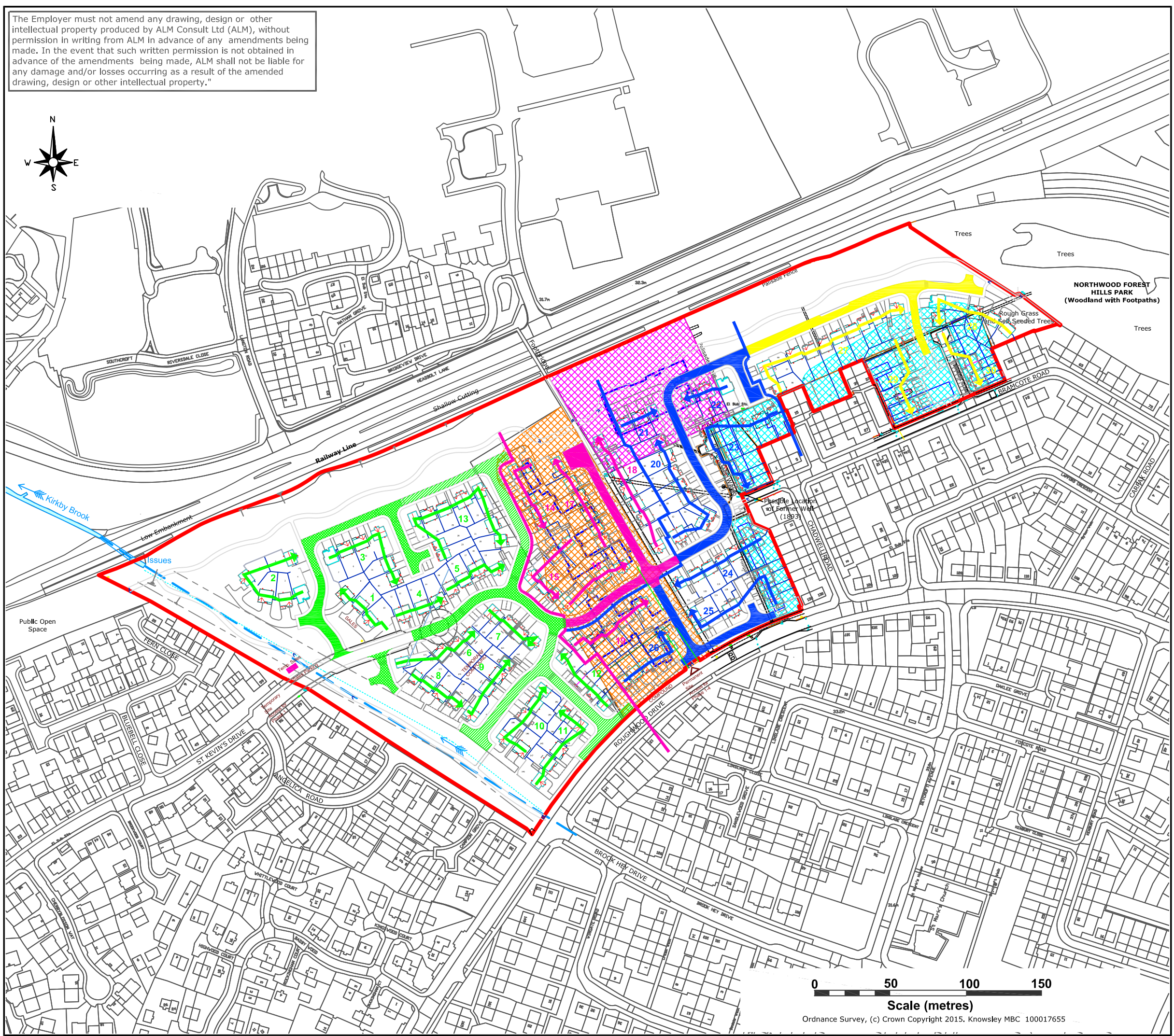
Keith Lyon
Director
ALM Consult Ltd

Appendix A - Drawings
Appendix B - Selected Photographs
Appendix C - Laboratory Chemical Analysis

APPENDIX A

Drawings

The Employer must not amend any drawing, design or other intellectual property produced by ALM Consult Ltd (ALM), without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



- KEY**
- Approx. Site Boundary
 - Contaminated Soils (former Bramcote/Northfield School)
To be Removed or Relocated beneath 1m Soil Cover*
(* if <0.001% asbestos)
 - Approximate Area Underlain by Demolition Fill
Turnover Recommended to Screen Oversized Materials
 - Approximate Area Underlain by Granular Made Ground
Turnover Recommended to Screen Oversized Materials
 - Approximate Outline of Historic Buildings
Turnover Recommended to Remove Any Relic Structures
 - Phase 1 Area (Feb 18 - Dec 19) - Unaffected by Known Contamination.
No Remediation Required
 - Phase 2 Area (Dec 19 - Oct 20) - Plots 54-56 and Open Space Affected by Contamination. Removal of Contamination and General Turnover of Made Ground to Remove Relic Structures & Oversize Recommended.
 - Phase 3 Area (Oct 20 - Dec 21) - Plots 69-72, 79-81, Roads, and Open Space Affected by Contamination. Removal of Contamination and General Turnover of Made Ground in South & East to Remove Relic Structures & Oversize Recommended.
 - Phase 4 Area (Dec 21 - Aug 22) - Unaffected by Known Contamination.
General Turnover of Made Ground to Remove Relic Structures & Oversize Recommended.



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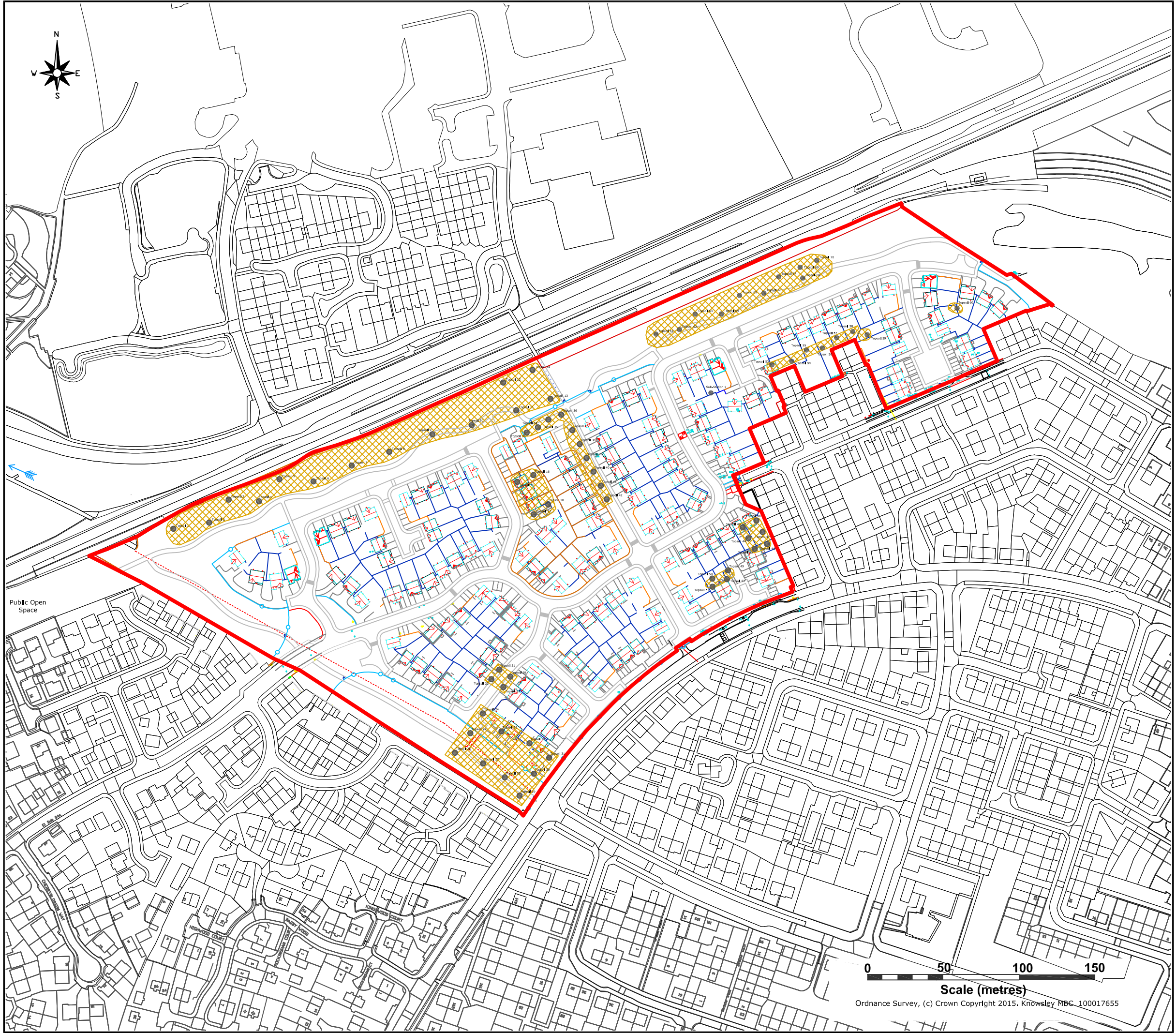


ST KEVIN'S DRIVE, KIRKBY

PHASED REMEDIATION ZONE PLAN

FINAL

DRAWN BY	SIGNATURE	DATE
KL		16/04/18
APPROVED	SIGNATURE	DATE
AA		16/04/18
SCALE	DRG No.	
1:2500@A3	30158-12	



KEY

Approx. Site Boundary

Topsoil

Topsoil 1

Sample Location

The Employer must not amend any drawing, design or other intellectual property produced by ALM Consult Ltd (ALM), without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."

ALM

CONSULT

ALM Consult Limited

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CLIENT

McDermott
HOMES

JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

DRAWING TITLE

SAMPLE LOCATION PLAN

STATUS		FINAL			
DRAWN BY		SIGNATURE		DATE	
KL				14/12/20	
APPROVED		SIGNATURE		DATE	
AA				14/12/20	
SCALE			DRG No.		
1:2500@A3			30158-14_REV3		

APPENDIX B

Selected Photos



PLATE 1: Soil stockpile along south side of Phase 4 area (Sample No.53-58)



PLATE 2: Separate small soil stockpile (Sample No.59)



PLATE 3: Face of large soil stockpile along northern edge of Phase 4 (Sample No.61-70)



PLATE 4: Large soil stockpile along the northern edge of Phase 4 (Sample No.61-70)

APPENDIX C

Laboratory Chemical Analysis

ALM Consult Limited
Paddock Business Centre
2 Paddock Road
West Pimbo
Skelmersdale
Lancashire
WN8 9PL



Attention : Keith Lyon
Date : 7th December, 2020
Your reference : 30158
Our reference : Test Report 20/16545 Batch 1
Location : St Kevins Drive, Kirkby
Date samples received : 25th November, 2020
Status : Final report
Issue : 1

Nineteen samples were received for analysis on 25th November, 2020 of which nineteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

Authorised By:



Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
Arsenic #	7.1	6.6	7.8	5.7	6.9	9.7	8.2	7.0	7.0	8.7	<0.5	mg/kg	TM30/PM15
Cadmium #	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	<0.1	mg/kg	TM30/PM15
Chromium #	75.5	27.9	76.3	69.9	79.4	82.4	29.2	39.2	74.2	70.4	<0.5	mg/kg	TM30/PM15
Copper #	31	28	34	23	23	23	25	26	27	31	<1	mg/kg	TM30/PM15
Lead #	51	53	135	55	47	54	37	42	53	66	<5	mg/kg	TM30/PM15
Mercury #	0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	11.8	11.4	11.8	10.3	12.0	14.1	13.8	15.9	12.7	13.4	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	0.3	0.4	0.5	0.3	0.5	0.4	0.6	0.5	0.5	<0.1	mg/kg	TM74/PM32
Zinc #	70	63	75	59	59	51	52	69	59	66	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.15 ^{AA}	<0.03	<0.03	<0.03	<0.15 ^{AA}	<0.03	<0.03	<0.03	<0.15 ^{AA}	<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.06	<0.25 ^{AA}	<0.05	<0.05	<0.05	<0.25 ^{AA}	<0.05	<0.05	<0.05	<0.25 ^{AA}	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.53	1.31 ^{AA}	0.15	0.21	0.14	<0.15 ^{AA}	0.11	0.11	0.20	0.44 ^{AA}	<0.03	mg/kg	TM4/PM8
Anthracene #	0.14	0.39 ^{AA}	<0.04	0.14	<0.04	<0.20 ^{AA}	<0.04	<0.04	0.06	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.17	2.74 ^{AA}	0.29	1.46	0.30	0.32 ^{AA}	0.24	0.21	0.43	0.71 ^{AA}	<0.03	mg/kg	TM4/PM8
Pyrene #	1.05	2.38 ^{AA}	0.27	1.36	0.29	0.30 ^{AA}	0.24	0.19	0.39	0.65 ^{AA}	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.58	1.29 ^{AA}	0.18	1.25	0.20	<0.30 ^{AA}	0.17	0.15	0.25	0.39 ^{AA}	<0.06	mg/kg	TM4/PM8
Chrysene #	0.63	1.25 ^{AA}	0.19	0.89	0.21	0.18 ^{AA}	0.18	0.15	0.27	0.41 ^{AA}	<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene #	1.07	2.06 ^{AA}	0.32	1.53	0.37	<0.35 ^{AA}	0.31	0.25	0.47	0.68 ^{AA}	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.60	1.22 ^{AA}	0.18	0.83	0.20	<0.20 ^{AA}	0.18	0.13	0.26	0.39 ^{AA}	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.39	0.87 ^{AA}	0.11	0.46	0.14	<0.20 ^{AA}	0.13	0.10	0.17	0.27 ^{AA}	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.07	<0.20 ^{AA}	<0.04	0.08	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.37	0.74 ^{AA}	0.12	0.40	0.14	<0.20 ^{AA}	0.13	0.10	0.18	0.25 ^{AA}	<0.04	mg/kg	TM4/PM8
PAH 16 Total	6.7	14.3 ^{AA}	1.8	8.6	2.0	<3.0 ^{AA}	1.7	1.4	2.7	4.2 ^{AA}	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.77	1.48 ^{AA}	0.23	1.10	0.27	<0.25 ^{AA}	0.22	0.18	0.34	0.49 ^{AA}	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.30	0.58 ^{AA}	0.09	0.43	0.10	<0.10 ^{AA}	0.09	0.07	0.13	0.19 ^{AA}	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	85	81 ^{AA}	86	83	86	83 ^{AA}	86	86	87	82 ^{AA}	<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	<4	-	-	-	<4	-	-	-	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	<7	-	-	-	<7	-	-	-	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	<7	-	-	-	<7	-	-	-	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	<19	-	-	-	<19	-	-	-	<19	<19	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	<4	-	-	-	<4	-	-	-	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	<7	-	-	-	<7	-	-	-	16	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	46	-	-	-	<7	-	-	-	84	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	46	-	-	-	<19	-	-	-	100	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	46	-	-	-	<38	-	-	-	100	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Benzene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Toluene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Ethylbenzene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
m/p-Xylene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
o-Xylene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
PCB 77	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 81	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 105	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 114	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 123	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 126	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 156	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 157	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 167	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 169	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 189	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 12 PCBs	-	-	-	-	-	-	-	-	-	-	<60	ug/kg	TM17/PM8
PCB 28 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	-	-	-	-	<35	ug/kg	TM17/PM8
Natural Moisture Content	16.8	16.0	17.3	17.1	16.1	15.6	19.6	20.9	19.5	17.8	<0.1	%	PM4/PM0
Total Organic Carbon #	2.73	1.77	2.13	1.55	1.78	1.47	3.24	2.61	2.29	2.41	<0.02	%	TM21/PM24

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
pH #	7.91	8.24	8.25	8.13	8.31	8.29	8.28	8.06	7.33	7.04	<0.01	pH units	TM73/PM11

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
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Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34	35-36	37-38		Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 63	TOPSOIL 64	TOPSOIL 65	TOPSOIL 66	TOPSOIL 67	TOPSOIL 68	TOPSOIL 69	TOPSOIL 70	SUB-STATION 1				
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	V J				
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020		LOD/LOR	Units	Method No.
Arsenic #	7.7	7.5	8.4	9.1	6.3	7.7	7.5	5.9	-		<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.2	0.2	0.2	0.2	0.3	0.6	0.2	-		<0.1	mg/kg	TM30/PM15
Chromium #	28.6	32.4	80.7	151.7	76.3	72.1	25.3	93.0	-		<0.5	mg/kg	TM30/PM15
Copper #	33	31	31	35	25	38	30	33	-		<1	mg/kg	TM30/PM15
Lead #	88	44	53	53	40	50	62	43	-		<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	-		<0.1	mg/kg	TM30/PM15
Nickel #	11.2	13.3	14.8	19.5	12.6	18.3	12.1	22.7	-		<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	-		<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	0.4	0.6	0.6	0.4	0.5	0.4	0.4	-		<0.1	mg/kg	TM74/PM32
Zinc #	59	45	56	60	71	67	64	53	-		<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.20 _{AA}	<0.04	<0.04	<0.04	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.15 _{AA}	<0.03	<0.03	<0.03	<0.15 _{AA}	-		<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.07	0.14	<0.05	<0.25 _{AA}	<0.05	<0.05	<0.05	<0.25 _{AA}	-		<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	0.08	<0.04	<0.20 _{AA}	<0.04	<0.04	<0.04	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.69	1.13	0.32	0.25 _{AA}	0.46	0.32	0.30	0.19 _{AA}	-		<0.03	mg/kg	TM4/PM8
Anthracene #	0.16	0.22	0.07	<0.20 _{AA}	0.11	0.09	0.08	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.34	1.24	0.56	0.54 _{AA}	0.72	0.75	0.64	0.40 _{AA}	-		<0.03	mg/kg	TM4/PM8
Pyrene #	1.29	1.23	0.54	0.49 _{AA}	0.70	0.68	0.60	0.36 _{AA}	-		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.68	0.53	0.32	<0.30 _{AA}	0.39	0.37	0.38	<0.30 _{AA}	-		<0.06	mg/kg	TM4/PM8
Chrysene #	0.70	0.54	0.33	0.33 _{AA}	0.43	0.40	0.37	0.24 _{AA}	-		<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene #	1.19	0.88	0.55	0.58 _{AA}	0.60	0.74	0.71	<0.35 _{AA}	-		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.74	0.54	0.30	0.32 _{AA}	0.34	0.43	0.38	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.46	0.32	0.21	0.25 _{AA}	0.23	0.27	0.25	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.08	0.06	0.05	<0.20 _{AA}	0.05	0.06	0.05	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.48	0.34	0.21	<0.20 _{AA}	0.22	0.25	0.28	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
PAH 16 Total	7.9	7.3	3.5	<3.0 _{AA}	4.3	4.4	4.0	<3.0 _{AA}	-		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.86	0.63	0.40	0.42 _{AA}	0.43	0.53	0.51	<0.25 _{AA}	-		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.33	0.25	0.15	0.16 _{AA}	0.17	0.21	0.20	<0.10 _{AA}	-		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	88	83	88	81 _{AA}	83	84	85	82 _{AA}	-		<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	-	-	<0.2	-	-	-	<0.2	-		<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	-	-	<4	-	-	-	<4	-		<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	-	-	<7	-	-	-	<7	-		<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	-	-	<7	-	-	-	<7	-		<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	-	-	<19	-	-	-	<19	-		<19	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

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EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34	35-36	37-38		Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 63	TOPSOIL 64	TOPSOIL 65	TOPSOIL 66	TOPSOIL 67	TOPSOIL 68	TOPSOIL 69	TOPSOIL 70	SUB-STATION 1				
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	V J				
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020		LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	-	-	<0.2	-	-	-	<0.2	-		<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	-	-	<4	-	-	-	<4	-		<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	-	-	12	-	-	-	8	-		<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	-	-	75	-	-	-	59	-		<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	-	-	87	-	-	-	67	-		<19	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-35)	-	-	-	87	-	-	-	67	-		<38	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Benzene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Toluene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Ethylbenzene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
m/p-Xylene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
o-Xylene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
PCB 77	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 81	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 105	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 114	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 118	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 123	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 126	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 156	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 157	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 167	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 169	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 189	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
Total 12 PCBs	-	-	-	-	-	-	-	-	<60		<60	ug/kg	TM17/PM8
PCB 28 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	-	-	<35		<35	ug/kg	TM17/PM8
Natural Moisture Content	20.6	17.0	17.1	19.0	22.0	18.7	20.2	18.5	14.8		<0.1	%	PM4/PM0
Total Organic Carbon #	1.92	2.75	2.52	3.47	1.88	3.05	2.19	3.26	-		<0.02	%	TM21/PM24

Element Materials Technology

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Report : Solid

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

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

[illegible]

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Note:

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

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

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

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/16545	1	TOPSOIL 53		2	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 54		4	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 55		6	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 56		8	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 57		10	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 58		12	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 59		14	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD

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EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/16545	1	TOPSOIL 59		14	02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 60		16	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 61		18	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 62		20	03/12/2020	General Description (Bulk Analysis)	Soil/Stones
					03/12/2020	Asbestos Fibres	NAD
					03/12/2020	Asbestos ACM	NAD
					03/12/2020	Asbestos Type	NAD
					03/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 63		22	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 64		24	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 65		26	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 66		28	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 67		30	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 68		32	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD

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[illegible]

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[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/16545

SOILS

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

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

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

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

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

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

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

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

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

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

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

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

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Measurement Uncertainty

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

ABBREVIATIONS and ACRONYMS USED

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

EMT Job No: 20/16545

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GC/FID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry); WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes

EMT Job No: 20/16545

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes

SUBSOIL



St Kevin's Drive, Kirkby

Summary of Chemical Test Results Performed on Soils:-

Inorganic Determinands

Hole ID	Depth (m)	Stratum	pH	SOM	As	Cd	Cr III	Cr VI	Copper	Lead	Mercury	Nickel	Selenium	Zinc	Cn	WS SO4	SO4	WS B	Asbestos
			units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	g/l	mg/kg	mg/kg	
			-	-	37	11 (a)	910 (a)	6 (a)	200 (b)	200 (c)	40 (a)	130 (a)	250 (a)	300 (b)	20 (d)	0.5 (e)	2400 (e)	3(f)	Presence
TP1	0.3	MG:Reworked Topsoil	7.8	5.2	18.6	0.6	44.5	n/t	50.7	79.7	<0.5	31.5	<1.0	97.5	n/t	0.03	480	n/t	NAD
TP21	0.2	MG:Reworked Topsoil	8.4	4.5	23.7	0.6	51.3	n/t	85	214	0.6	34.3	<1.0	235	n/t	n/t	n/t	n/t	n/t
TP102	0.1	MG:Reworked Topsoil	7.2	2.82	36.2	0.3	61.4	n/t	25	58	<0.1	14.1	2	59	n/t	n/t	n/t	0.5	NAD
TP103	0.2	MG:Reworked Topsoil	6.7	3.27	3.4	0.2	64.2	n/t	16	41	<0.1	7.8	<1.0	30	n/t	n/t	n/t	0.6	NAD
TP105	0.3	MG:Reworked Topsoil	8.2	2.7	8.2	0.1	61.7	n/t	21	34	<0.1	12.4	<1.0	61	n/t	n/t	n/t	0.4	NAD
TP106	0.1	MG:Reworked Topsoil	8.1	2.82	20.5	0.1	76.8	n/t	38	231	<0.1	21.5	<1.0	79	n/t	n/t	n/t	1	NAD
TP107	0.1	MG:Reworked Topsoil	8.3	n/t	12.2	0.2	17.9	n/t	58	162	<0.1	28.5	<1.0	161	n/t	n/t	n/t	0.2	Chrysotile
TP108	0.2	MG:Reworked Topsoil	7.9	3.08	8.9	0.4	71.8	n/t	30	56	0.3	10.8	<1.0	103	n/t	n/t	n/t	0.8	NAD
TP112	0.05	MG:Reworked Topsoil	7.9	6.14	6.6	0.4	63.3	n/t	28	52	<0.1	15.3	<1.0	84	n/t	n/t	n/t	0.7	NAD
TP113	0.1	MG:Reworked Topsoil	7.9	2.2	5.2	0.1	59.6	n/t	16	25	<0.1	10.5	<1.0	48	n/t	n/t	n/t	0.5	NAD
TP116	0.1	MG:Reworked Topsoil	7.0	2.12	1.5	0.1	65.6	n/t	9	15	<0.1	6.3	<1.0	28	n/t	n/t	n/t	0.3	NAD
TP117	0.1	MG:Reworked Topsoil	6.9	15.51	8.8	0.2	70.4	n/t	38	44	<0.1	18.2	<1.0	58	n/t	n/t	n/t	0.8	NAD
TP118	0.1	MG:Reworked Topsoil	6.4	3.59	10.7	0.4	55.5	n/t	49	92	<0.1	19.4	<1.0	134	n/t	n/t	n/t	0.8	NAD
TP119	0.1	MG:Reworked Topsoil	5.0	1.39	4.4	0.3	63.5	n/t	14	25	<0.1	10.7	<1.0	50	n/t	n/t	n/t	0.6	NAD
TP120	0.1	MG:Reworked Topsoil	7.1	2.99	9	0.2	67.3	n/t	47	88	<0.1	17.6	<1.0	143	n/t	n/t	n/t	0.6	NAD
TP125	0.1	MG:Reworked Topsoil	5.2	4.83	5	0.2	60.6	n/t	26	34	<0.1	13.5	<1.0	35	n/t	n/t	n/t	0.4	NAD
TP126	0.1	MG:Reworked Topsoil	6.5	3.46	6.5	0.3	65.2	n/t	25	50	<0.1	17.6	<1.0	64	n/t	n/t	n/t	0.8	NAD
TP127	0.1	MG:Reworked Topsoil	5.9	3.51	6.6	0.3	69.9	n/t	49	56	<0.1	13.3	<1.0	49	n/t	n/t	n/t	0.4	NAD
TP1	0.6	MG:Culvert Backfill	9.4	2.2	14	<0.5	48.6	n/t	38.8	70.4	<0.5	36.9	<1.0	80.4	n/t	0.06	560	n/t	NAD
TP4	0.6	MG:Culvert Backfill	7.9	4.8	12.9	<0.5	30	n/t	50.9	122	<0.5	20.9	<1.0	80.7	n/t	0.03	230	n/t	NAD
WS9	0.25	MG:Culvert Backfill	6.8	2	4.2	<0.5	16.8	n/t	14.7	17.5	<0.5	10.7	<1.0	25	n/t	n/t	n/t	n/t	NAD
WS12	0.2	MG:Culvert Backfill	7.7	1	7.3	<0.5	45.9	n/t	24.8	15.2	<0.5	41.5	<1.0	53.9	n/t	n/t	n/t	n/t	NAD
TP15	0.5	MG: Demolition Fill	7.3	7.5	16	0.6	37.3	n/t	67.5	87.6	<0.5	33.3	<1.0	103	n/t	0.03	430	n/t	NAD
TP21	0.7	MG: Demolition Fill	8.5	n/t	9.2	<0.5	25.7	n/t	39.1	85.5	<0.5	13.7	<1.0	100	n/t	0.04	260	n/t	n/t
TP22	0.25	MG: Demolition Fill	8.8	0.7	33.1	<0.5	34.2	n/t	23	22.6	<0.5	26.3	<1.0	55	n/t	n/t	n/t	n/t	n/t
TP23	0.6	MG: Demolition Fill	8.4	5.6	6.4	<0.5	29.6	n/t	32	39.6	<0.5	17.4	<1.0	56.6	n/t	n/t	n/t	n/t	n/t
TP27	0.4	MG: Demolition Fill	8.9	4	43	2.1	37.7	n/t	52.3	128	<0.5	36.2	<1.0	124	n/t	0.05	500	n/t	NAD
TP29	0.5	MG: Demolition Fill	9.3	1.3	9.1	<0.5	19.2	n/t	33.1	19.2	<0.5	22.9	<1.0	39.1	n/t	0.05	240	n/t	NAD
TP29	1.1	MG: Demolition Fill	9.9	n/t	17.2	<0.5	43.1	n/t	70.3	16.8	<0.5	58.3	<1.0	48.8	n/t	n/t	n/t	n/t	n/t
TP31	0.3	MG: Demolition Fill	7.0	n/t	15.1	0.6	37.1	n/t	70.4	104	<0.5	37.9	<1.0	117	n/t	0.03	400	n/t	NAD
TP31	0.9	MG: Demolition Fill	7.4	n/t	6.3	<0.5	57.1	n/t	32.1	13.8	<0.5	49.2	<1.0	63.6	n/t	n/t	n/t	n/t	n/t
TP32	0.5	MG: Demolition Fill	10.6	3.4	10.7	<0.5	41.9	n/t	45.2	77.8	<0.5	35.9	<1.0	133	n/t	0.1	910	n/t	NAD
WS3	0.5	MG: Demolition Fill	8.4	3	13.7	<0.5	40	n/t	38.5	70.8	<0.5	34.1	<1.0	122	n/t	n/t	n/t	n/t	n/t
TP106	0.3	MG: Demolition Fill	8.3	n/t	19.2	0.1	15.8	n/t	63	59	<0.1	38.8	<1.0	253	n/t	n/t	n/t	0.2	Crocidolite
TP106	0.6	MG: Demolition Fill	7.7	n/t	8.3	0.2	74	n/t	20	444	<0.1	9.2	<1.0	263	n/t	n/t	n/t	0.1	Chrysotile
TP107	0.4	MG: Demolition Fill	8.2	n/t	6.4	<0.1	10.6	n/t	25	16	<0.1	16.2	<1.0	20	n/t	n/t	n/t	0.1	Amosite
WS704	0.6	MG: Cohesive	7.6	n/t	2.7	<0.21	11.5	<0.1	9.6	17.6	<0.5	10	<0.5	26.2	<0.6	0.136	422	n/t	Amosite
TP707	0.7	MG: Granular	8.5	n/t	7.7	0.23	18.7	<0.1	24.2	45.2	<0.51	17	<0.5	60.8	<0.6	0.21	772	n/t	NAD
WS702	0.6	MG: Granular	8	3.24	8.3	0.3	16.5	<0.1	31.2	54.6	<0.50	14.3	0.6	50.9	<0.6	0.068	436	n/t	NAD
WS706	0.9	MG: Granular	7.6	n/t	6.8	0.24	10.7	<0.1	18.3	34	<0.52	10.6	0.6	48.1	<0.6	0.054	305	n/t	NAD
TP102	0.6	MG: Granular	7.12	3.61	8.1	0.3	61.4	n/t	28	68	<0.1	12.2	<1.0	59	n/t	n/t	n/t	0.6	NAD
TP112	0.4	MG: Granular	8.28	3.94	5.1	0.2	85.5	n/t	26	41	<0.1	13.5	<1.0	44	n/t	n/t	n/t	0.5	NAD
TP113	0.3	MG: Granular	6.79	3.37	8.9	0.2	67.3	n/t	28	56	<0.1	15.7	<1.0	77	n/t	n/t	n/t	0.7	NAD
TP116	0.4	MG: Granular	6.3	1.82	1.5	<0.1	62.3	n/t	8	15	<0.1	5.7	<1.0	18	n/t	n/t	n/t	0.3	NAD
TP117	0.4	MG: Granular	6.34	2.6	2.3	0.1	61.2	n/t	13	25	<0.1	5.9	<1.0	20	n/t	n/t	n/t	0.3	NAD
TP18	0.15	Natural Topsoil	6.0	6.9	13.4	0.6	56	n/t	55.6	79.3	<0.5	25.1	<1.0	102	n/t	n/t	n/t	n/t	n/t
TP25	0.25	Natural Topsoil	6.4	n/t	17.5	1.1	32.6	n/t	83.8	131	<0.5	26.2	<1.0	126	n/t	n/t	n/t	n/t	n/t
TP34	0.5	Natural Topsoil	6.9	6.3	16.7	0.6	39.5	n/t	72.7	110	<0.5	40.5	<1.0	119	n/t	n/t	n/t	n/t	NAD
WS1	0.2	Natural Topsoil	6.9	2.3	9.6	<0.5	22.7	n/t	38	62	<0.5	17.4	<1.0	61.9	n/t	n/t	n/t	n/t	NAD
WS8	0.3	Natural Topsoil	7.2	8.6	14.5	0.6	44.3	n/t	72	89	<0.5	31.6	<1.0	98.5	n/t	n/t	n/t	n/t	n/t
WS13	0.05	Natural Topsoil	7.4	3	13.7	<0.5	30.7	n/t	34.8	59.7	<0.5	25.2	<1.0	67.6	n/t	n/t	n/t	n/t	NAD
TP110	0.2	Natural Topsoil	6.4	3.46	6.7	0.5	71.6	n/t	38	67	<0.1	13.6	<1.0	89	n/t	n/t	n/t	0.4	NAD
TP111	0.2	Natural Topsoil	7.7	4.87	8.6	0.3	73.4	n/t	38	67	0.1	22.2	<1.0	69	n/t	n/t	n/t	0.7	NAD
TP121	0.1	Natural Topsoil	5.2	4.75	8.2	0.3	70	n/t	36	58	<0.1	17.2	<1.0	61	n/t	n/t	n/t	0.7	NAD
TP122	0.1	Natural Topsoil	6.8	4.45	5	0.3	86.9	n/t	28	43	<0.1	17.4	<1.0	47	n/t	n/t	n/t	0.8	NAD
TP123	0.1	Natural Topsoil	6.7	3.34	8.3	0.5	94.1	n/t	36	51	<0.1	16	<1.0	88	n/t	n/t	n/t	0.7	NAD
TP124	0.1	Natural Topsoil	6.2	4.54	8.7	0.6	86.5	n/t	42	54	0.1	20	<1.0	133	n/t	n/t	n/t	1	NAD
TP6	0.3	Glacial Clay	6.5	8.3	14.9	0.6	43.8	n/t	54.5	80.4	<0.5	24.4	<1.0	90.9	n/t	0.02	370	n/t	NAD
TP16	0.3	Glacial Clay	6.7	6.2	15.8	0.6	40.1	n/t	67.9	87	<0.5	29.7	<1.0	100	n/t	n/t	n/t	n/t	n/t
WS1	0.6	Glacial Clay	7.2	n/t	<1.0	<0.5	6.8	n/t	5.7	<5.0	<0.5	<5.0	<1.0	9.3	n/t	<0.02	290	n/t	n/t
WS6	0.35	Glacial Clay	7.8	0.4	5.1	<0.5	54.3	n/t	27	12.3	<0.5	52.9	<1.0	62.4	n/t	n/t	n/t	n/t	NAD
WS7	0.3	Glacial Clay	8.9	5.8	14.7	<0.5	33	n/t	57.7	67.1	<0.5	30.7	<1.0	96.1	n/t	n/t	n/t	n/t	NAD
WS7	0.8	Glacial Clay	8.1	n/t	5.4	<0.5	49.9	n/t	33.6	14.6	<0.5	58.1	<1.0	65.3	n/t	0.03	200	n/t	n/t
WS8	1.1	Glacial Clay	8.2	n/t	6.8	<0.5	50.7	n/t	28.7	11.6	<0.5	50.9	<1.0	58.1	n/t	0.02	180	n/t	n/t
TP11	0.4	Glacial Sand	7.1	n/t	2.6	<0.5	10.5	n/t	13.7	17.3	<0.5	<5.0	<1.0	21.7	n/t	0.02	170	n/t	n/t
TP18	0.4	Glacial Sand	6.4	n/t	2.2	<0.5	14.7	n/t	14.7	13.5	<0.5	<5.0	<1.0	19.9	n/t	n/t	n/t	n/t	n/t
TP25	0.9	Glacial Sand	6.5	n/t	25.2	0.6	33.6	n/t	119	203	0.6	29.7	1.1	117	n/t	0.02	230	n/t	n/t
TP22	0.6	Glacial Sand	7.9	n/t	1.5	<0.5	6.9	n/t	10.8	<5.0	<0.5	<5.0	<1.0	11	n/t	n/t	n/t	n/t	n/t
TP26	0.5	Glacial Sand	7.6	n/t	1.5	<0.5	10.5	n/t	14.1	7.8	<0.5	<5.0	<1.0	13	n/t	0.03	170	n/t	n/t
TP27	0.8	Glacial Sand	7.4	n/t	3.7	<0.5	11.1	n/t	19.5	19.6	<0.5	8.3	<1.0	21.4	n/t	n/t	n/t	n/t	n/t
WS2	0.3	Glacial Sand	7.6	1.8	3.6	<0.5	11	n/t	13.4	21.9	<0.5	8.5	<1.0	27.8	n/t	n/t	n/t	n/t	n/t
WS2	0.8	Glacial Sand	7.4	n/t	17.3	<0.5	31.6	n/t	70.2	118	<0.5	3							

St Kevin's Drive, Kirkby

Summary of Chemical Test Results Performed on Soils:-

Organic Determinands

[illegible]

NOTES

n/t
NV

Paramater Not Tested For

No Published Screening Value

Screening Value Source References

a Suitable For Use Level (S4UL) For Residential Use With Plant Uptake for 1%SOM (LQM/CIEH S4ULs for Human Health Risk Assessment (2015)

Soil Sampling Data (SSD) For Residential Use (Environmental Agents) - Science Report 00000001/Boxing SS

ST KEVIN'S DRIVE, KIRKBY
VALIDATION OF SOIL COVER DEPTHS
(Plots No. 78-81)

Prepared for
McDERMOTT HOMES LTD



ALM Consult Limited
Paddock Business Centre
2 Paddock Road
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ST KEVIN'S DRIVE, KIRKBY VERIFICATION OF SOIL COVER DEPTHS

ALM Consult Limited (ALM) carried out a site visit on Thursday 15th April, and again on Tuesday 20th April 2021, to verify cover depths in the rear gardens of Plots No.78-81 at the McDermott Homes development at St Kevin's Drive, Kirkby.

Verification of cover depth consisted of the excavation of hand dug pits, penetrating the soil cover, and the inspection of the resulting void, in rear garden areas of the plots. A location plan showing the location of inspection pit / inspection location is presented as Drawing No. 30158-CDV3 in Appendix A.

The site has been subject to previous phases of desk study and intrusive ground investigation, undertaken by ESG and CCG in the eastern half of the site (2015) and western half of the site (2016) respectively. The previous studies were re-presented along with a supplementary phase of ground investigation, undertaken by ALM in 2017, and reported in ALM Report No.30158-1. The ground investigations identified the presence of traces of asbestos fibres, and localised slightly elevated concentrations of PAH and TPH in made ground beneath the former Bramcote/Northfield Primary School in northern central parts of the site.

ALM Report No.30158-2 Rev A 'Remediation Strategy for land off St Kevin's Drive, Kirkby', date November 2017, recommended either the removal of asbestos impacted made ground or it's retention beneath a 1m thick clean soil cover, due to no asbestos quantification tests being undertaken on the asbestos impacted soils. ALM Letter Ref: 30158-016, dated 24th February 2020, details the results of further soil analysis demonstrating a concentration of <0.001% asbestos in made ground, and recommends soils may be retained beneath a 600mm thick clean soil cover. Comments received from Knowsley Council (dated 27th April 2020) in a response regarding an application to discharge Planning Condition 7 – Contaminated Land, indicate a requirement for a membrane to be placed beneath the clean soil cover system.

To prove that the criteria had been met, an ALM Engineer inspected the soil cover, and took photographs of the inspection pits (See Appendix B). Photographs of membrane installation at the base of the cover system, have been provided by the groundworker. In Plots No.78-81 a minimum of 600mm of soil cover had been placed either above made ground, or as replacement for removed made ground. The depth of clean soil cover encountered in the rear gardens of selected plots, is summarised in Table A below. The inspection pit for Plot No.78 was moved to the edge of the garden area due to the plot having been turfed and prepared.

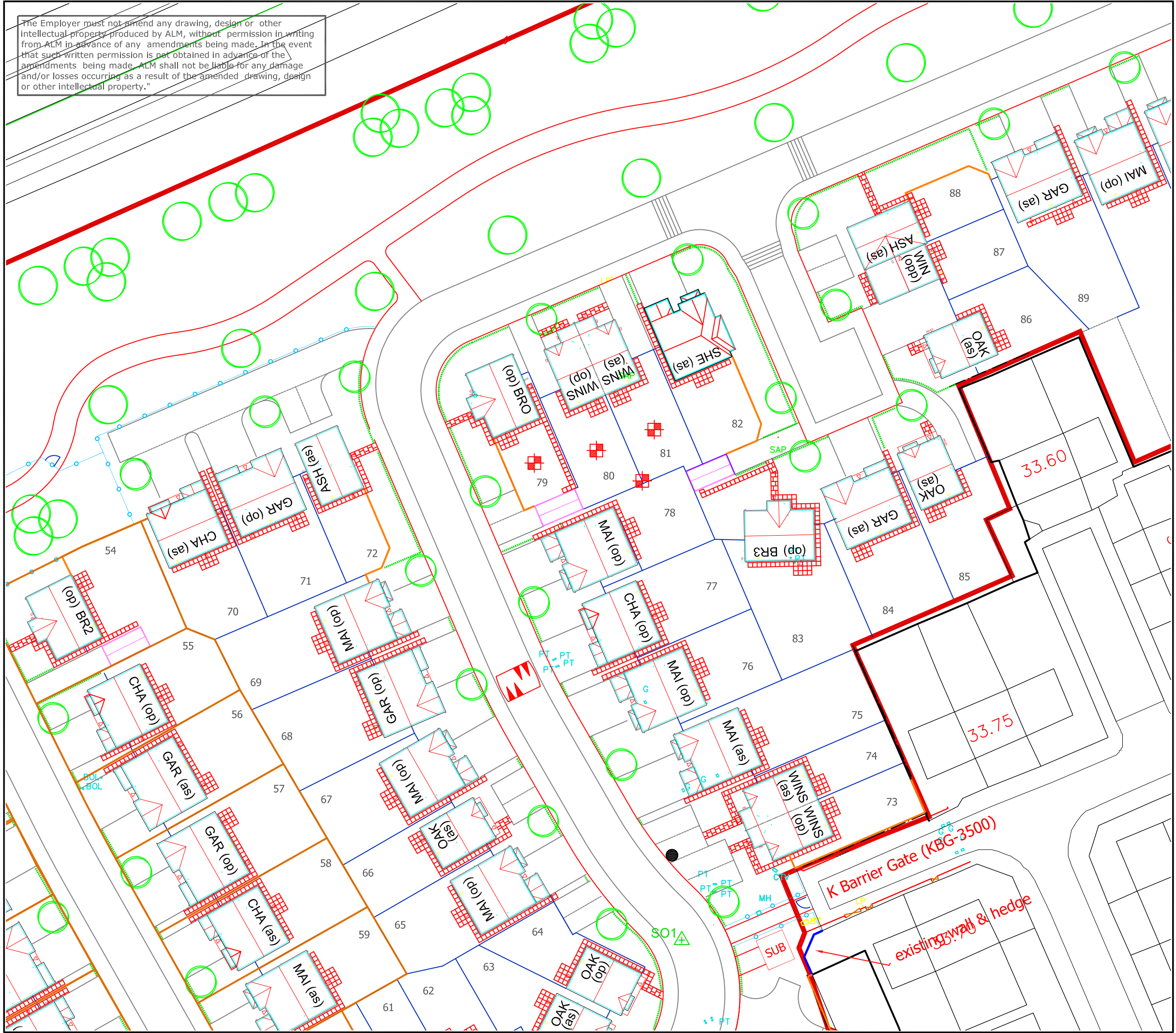
Topsoil material placed in Plots No.78-81 was won from the Phase 4 of the development. Chemical analyses confirming the chemical suitability of the topsoil for use in private gardens at the development, are presented in Appendix C.

Table A: Clean Cover Verification Depths

Plot No.	Subsoil (mm)	Topsoil (mm)	Measured Thickness (mm)
78	-	650	650
79	-	615	615
80	-	690	690
81	-	650	650

APPENDIX A
INSPECTION PIT LOCATION PLAN

The Employer must not amend any drawing, design or other intellectual property produced by ALM, without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



KEY

INSPECTION PIT / INSPECTION LOCATION

DEVELOPMENT LAYOUT TAKEN FROM MCK ASSOCIATES LTD
"PROPOSED SITE LAYOUT", DRAWING NO.16-075-0003 REV M,
DATED OCTOBER 2016



ALM Consult Limited
Paddock Business Centre, 2 Paddock Road,
West Pimbo, Skelmersdale, Lancashire. WN8 9PL
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CLIENT

McDERMOTT
HOMES

JOB TITLE

ST KEVINS DRIVE, KIRKBY

DRAWING TITLE

COVER DEPTH
INSPECTION LOCATION PLAN

STATUS		FINAL	
DRAWN BY	SIGNATURE	DATE	
KL		20-04-21	
APPROVED	SIGNATURE	DATE	
AA		20-04-21	
SCALE		DRG No.	
1:500@A3		30158-CDV3	

APPENDIX B
PHOTOGRAPHIC RECORD



PLATE 1: Placement of membrane beneath Plots 78, 80 and 81



PLATE 2: Overview of inspection at edge of Plot No.78



PLATE 3: Depth of soil cover in Plot No.78 (650mm)



PLATE 4: Overview of inspection of Plot No.79



PLATE 5: Depth of soil cover in Plot No.79 (615mm)



PLATE 6: Base of inspection pit in Plot No.79, showing membrane



PLATE 7: Overview of inspection in Plot No.80



PLATE 8: Depth of soil cover in Plot No.80 (690mm)



PLATE 9: Overview of inspection in Plot No.81



PLATE 10: Depth of soil cover in Plot No.81 (650mm)

APPENDIX C
CHEMICAL ANALYSIS

TOPSOIL

18th December 2020

30158/019

Mr Mark Wilkinson
Technical Director
McDermott Homes Ltd
Jupiter House
1 Mercury Rise
Altham Business Park
Altham BB5 5BY

Dear Mark

Validation of Site Won Topsoil – Phases 3 & 4, St Kevin's Drive, Kirkby

Introduction

ALM attended site on Monday 23rd November 2020, to sample stockpiles of topsoil that had been stripped from the surface of the northern part of the Phase 3 development area (excluding the former Northfield/Bramcote School), and the Phase 4 development area at St Kevin's Drive, Kirkby, Liverpool.

A sample was also retrieved from subsoil immediately beneath the former electricity sub-station for subsequent testing to prove the absence of any residual PCB contamination.

The extent of the Phase 3 & 4 development areas is shown on ALM Drawing No.30158-12 in Appendix A.

Phase 3 (North) & Phase 4 Topsoil Test Results

18No. samples (Topsoil 53 to Topsoil 70) of topsoil were obtained from stockpiles across the Phase 3 & 4 area by an ALM Engineer on Monday 23rd November 2020.

The location of the topsoil stockpiles and locations of samples taken are shown on Drawing No.30158-14_Rev3 in Appendix A. Selected Photographs of the stockpiles are also included in Appendix B.

The 18No. samples of topsoil were submitted for a suite of analysis comprising; pH, metals (As, water sol.B, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn), %TOC, speciated PAH and asbestos screen. A further 5No. samples (approx. 25% of samples) were submitted for speciated TPH.

The results of the laboratory chemical analysis were compared against the CIEH/LQM 'Suitable for Use Levels' (S4UL) for residential development with home grown produce. With regard to lead, consideration is given to the DEFRA Category 4 Screening Level of 200mg/kg. With regard to phytotoxic determinands (copper and zinc), consideration was given to BS3882:2007 & BS8601:2013. Concentrations of water soluble boron were measured against former ICRCL Guidance Note 59/83, second edition (1987).



The results of the laboratory chemical analysis are included in Appendix C. None of the samples exhibited any concentrations of determinands above the chosen criteria. None of the samples reported the presence of asbestos.

ALM consider the topsoil stripped from the surface of the north of the Phase 3 area and the Phase 4 area of the site, is suitable for use as topsoil within the proposed development. The topsoil stripped from across the site has been, and should continue to be re-used to provide a minimum 150mm soil cover in private gardens, which will provide a growing medium for plants, although a greater thickness may be used.

Former Electricity Sub Station

A single sample of subsoil was taken from beneath the footprint of the former electricity sub-station in the north of the Phase 3 development area, located to the rear of Plot No.81 (Sample No. Sub-Station 1). The sample was submitted for analysis of PCB (7) and PCB (12) congeners.

No concentrations of PCB above laboratory detection limits were recorded in the sample. Therefore, no significant residual PCB contamination is present beneath this part of the site.

If you require any further information, please contact me.

Yours sincerely

A handwritten signature in black ink, reading 'Keith Lyon'. The signature is written in a cursive, flowing style.

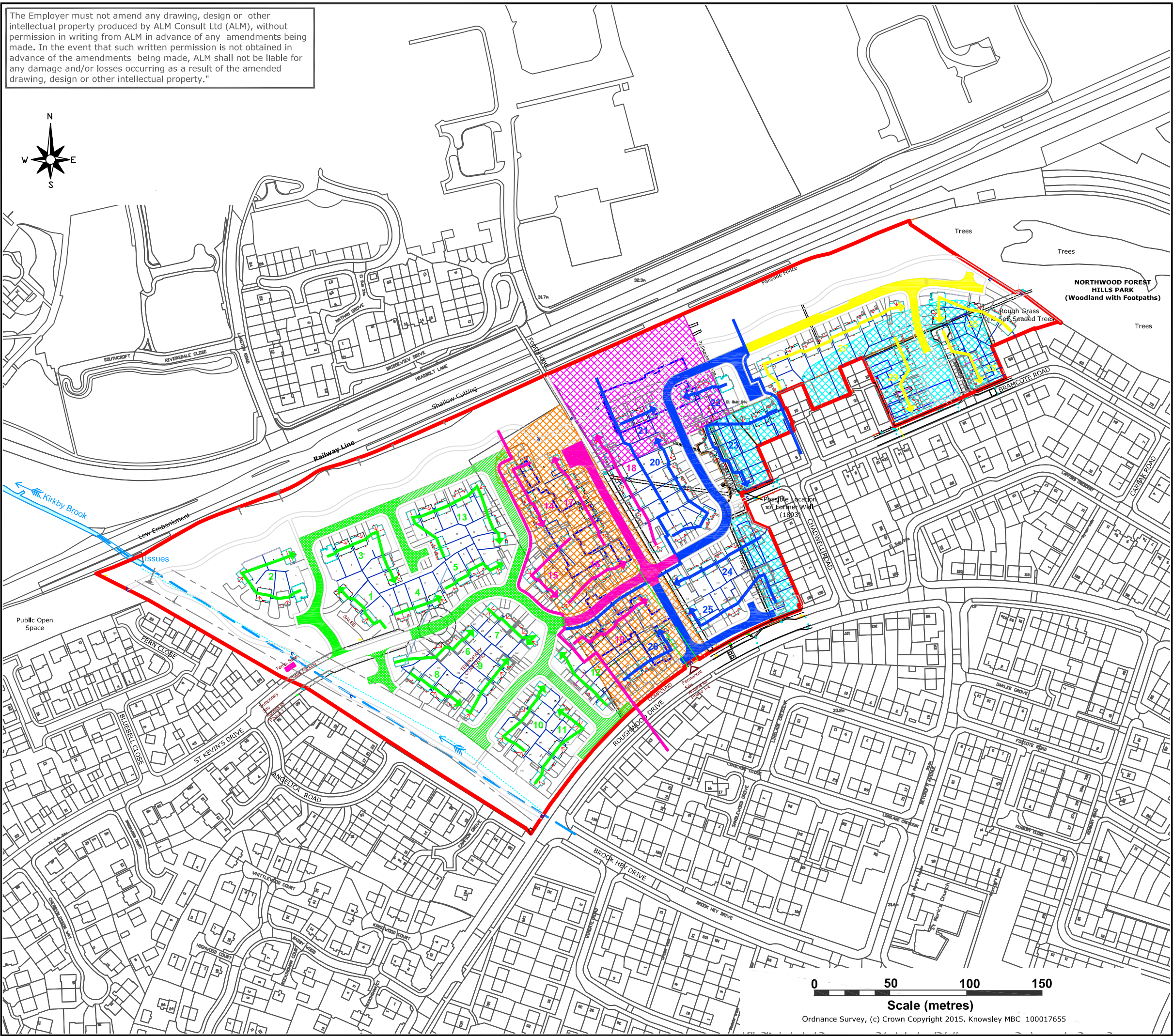
Keith Lyon
Director
ALM Consult Ltd

Appendix A - Drawings
Appendix B - Selected Photographs
Appendix C - Laboratory Chemical Analysis

APPENDIX A

Drawings

The Employer must not amend any drawing, design or other intellectual property produced by ALM Consult Ltd (ALM), without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



KEY

- Approx. Site Boundary
- Contaminated Soils (former Bramcote/Northfield School)
To be Removed or Relocated beneath 1m Soil Cover*
(* if <0.001% asbestos)
- Approximate Area Underlain by Demolition Fill
Turnover Recommended to Screen Oversized Materials
- Approximate Area Underlain by Granular Made Ground
Turnover Recommended to Screen Oversized Materials
- Approximate Outline of Historic Buildings
Turnover Recommended to Remove Any Relic Structures
- Phase 1 Area (Feb 18 - Dec 19) - Unaffected by Known Contamination.
No Remediation Required
- Phase 2 Area (Dec 19 - Oct 20) - Plots 54-56 and Open Space Affected
by Contamination. Removal of Contamination and General Turnover of
Made Ground to Remove Relic Structures & Oversize Recommended.
- Phase 3 Area (Oct 20 - Dec 21) - Plots 69-72, 79-81, Roads, and Open
Space Affected by Contamination. Removal of Contamination and General
Turnover of Made Ground in South & East to Remove Relic Structures &
Oversize Recommended.
- Phase 4 Area (Dec 21 - Aug 22) - Unaffected by Known Contamination.
General Turnover of Made Ground to Remove Relic Structures &
Oversize Recommended.

ALM CONSULT

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CLIENT

McDermott
HOMES

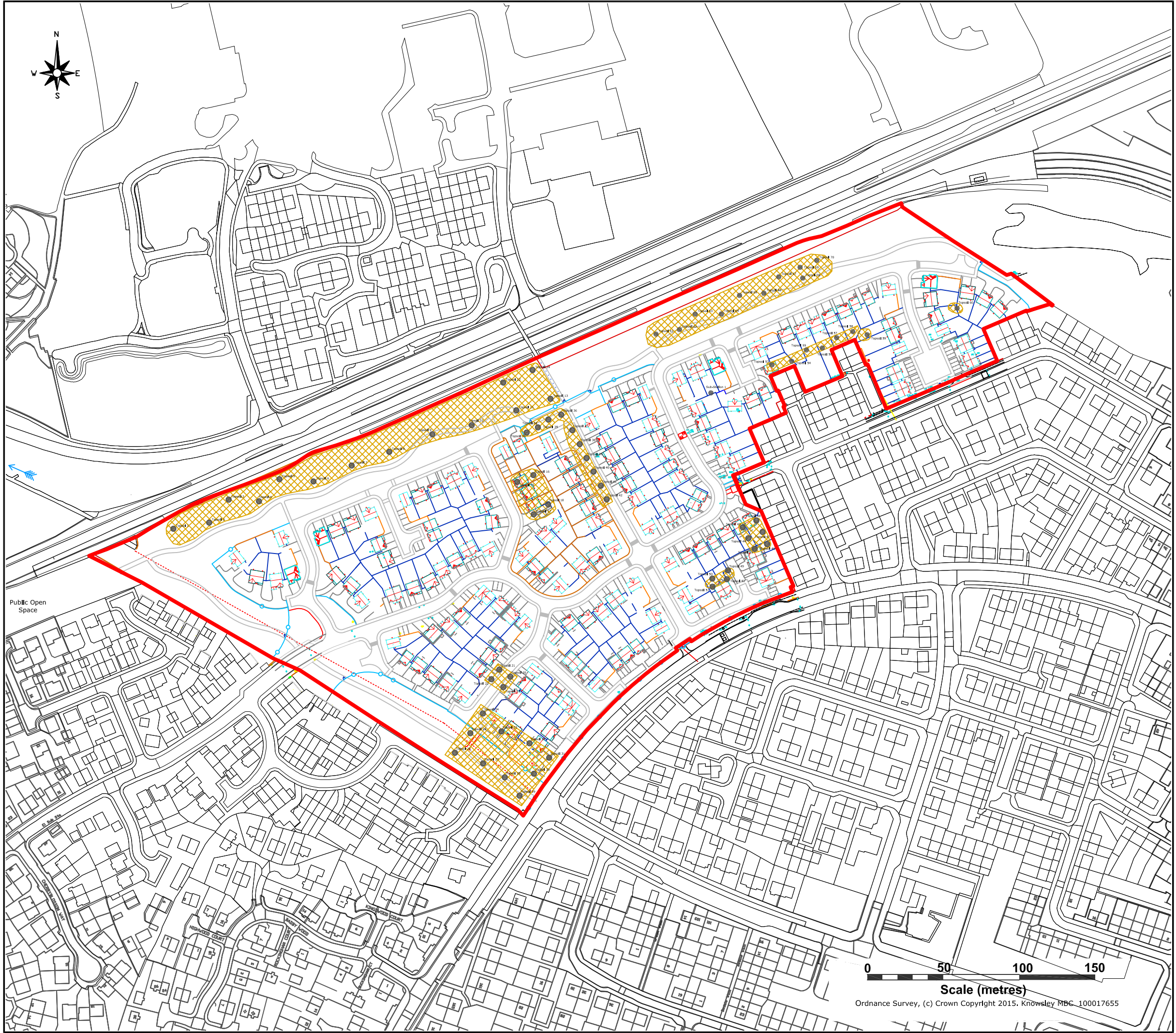
JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

DRAWING TITLE

PHASED REMEDIATION ZONE PLAN

STATUS			FINAL		
DRAWN BY		SIGNATURE		DATE	
KL				16/04/18	
APPROVED		SIGNATURE		DATE	
AA				16/04/18	
SCALE			DRG No.		
1:2500@A3			30158-12		



KEY

Approx. Site Boundary

Topsoil

Topsoil 1

Sample Location

The Employer must not amend any drawing, design or other intellectual property produced by ALM Consult Ltd (ALM), without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."

ALM

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CLIENT

McDermott
HOMES

JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

DRAWING TITLE

SAMPLE LOCATION PLAN

STATUS		FINAL			
DRAWN BY		SIGNATURE		DATE	
KL				14/12/20	
APPROVED		SIGNATURE		DATE	
AA				14/12/20	
SCALE			DRG No.		
1:2500@A3			30158-14_REV3		

APPENDIX B

Selected Photos



PLATE 1: Soil stockpile along south side of Phase 4 area (Sample No.53-58)



PLATE 2: Separate small soil stockpile (Sample No.59)



PLATE 3: Face of large soil stockpile along northern edge of Phase 4 (Sample No.61-70)



PLATE 4: Large soil stockpile along the northern edge of Phase 4 (Sample No.61-70)

APPENDIX C

Laboratory Chemical Analysis

ALM Consult Limited
Paddock Business Centre
2 Paddock Road
West Pimbo
Skelmersdale
Lancashire
WN8 9PL



Attention : Keith Lyon
Date : 7th December, 2020
Your reference : 30158
Our reference : Test Report 20/16545 Batch 1
Location : St Kevins Drive, Kirkby
Date samples received : 25th November, 2020
Status : Final report
Issue : 1

Nineteen samples were received for analysis on 25th November, 2020 of which nineteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

Authorised By:



Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
Arsenic #	7.1	6.6	7.8	5.7	6.9	9.7	8.2	7.0	7.0	8.7	<0.5	mg/kg	TM30/PM15
Cadmium #	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	<0.1	mg/kg	TM30/PM15
Chromium #	75.5	27.9	76.3	69.9	79.4	82.4	29.2	39.2	74.2	70.4	<0.5	mg/kg	TM30/PM15
Copper #	31	28	34	23	23	23	25	26	27	31	<1	mg/kg	TM30/PM15
Lead #	51	53	135	55	47	54	37	42	53	66	<5	mg/kg	TM30/PM15
Mercury #	0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	11.8	11.4	11.8	10.3	12.0	14.1	13.8	15.9	12.7	13.4	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	0.3	0.4	0.5	0.3	0.5	0.4	0.6	0.5	0.5	<0.1	mg/kg	TM74/PM32
Zinc #	70	63	75	59	59	51	52	69	59	66	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.15 ^{AA}	<0.03	<0.03	<0.03	<0.15 ^{AA}	<0.03	<0.03	<0.03	<0.15 ^{AA}	<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.06	<0.25 ^{AA}	<0.05	<0.05	<0.05	<0.25 ^{AA}	<0.05	<0.05	<0.05	<0.25 ^{AA}	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.53	1.31 ^{AA}	0.15	0.21	0.14	<0.15 ^{AA}	0.11	0.11	0.20	0.44 ^{AA}	<0.03	mg/kg	TM4/PM8
Anthracene #	0.14	0.39 ^{AA}	<0.04	0.14	<0.04	<0.20 ^{AA}	<0.04	<0.04	0.06	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.17	2.74 ^{AA}	0.29	1.46	0.30	0.32 ^{AA}	0.24	0.21	0.43	0.71 ^{AA}	<0.03	mg/kg	TM4/PM8
Pyrene #	1.05	2.38 ^{AA}	0.27	1.36	0.29	0.30 ^{AA}	0.24	0.19	0.39	0.65 ^{AA}	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.58	1.29 ^{AA}	0.18	1.25	0.20	<0.30 ^{AA}	0.17	0.15	0.25	0.39 ^{AA}	<0.06	mg/kg	TM4/PM8
Chrysene #	0.63	1.25 ^{AA}	0.19	0.89	0.21	0.18 ^{AA}	0.18	0.15	0.27	0.41 ^{AA}	<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene #	1.07	2.06 ^{AA}	0.32	1.53	0.37	<0.35 ^{AA}	0.31	0.25	0.47	0.68 ^{AA}	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.60	1.22 ^{AA}	0.18	0.83	0.20	<0.20 ^{AA}	0.18	0.13	0.26	0.39 ^{AA}	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.39	0.87 ^{AA}	0.11	0.46	0.14	<0.20 ^{AA}	0.13	0.10	0.17	0.27 ^{AA}	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.07	<0.20 ^{AA}	<0.04	0.08	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.37	0.74 ^{AA}	0.12	0.40	0.14	<0.20 ^{AA}	0.13	0.10	0.18	0.25 ^{AA}	<0.04	mg/kg	TM4/PM8
PAH 16 Total	6.7	14.3 ^{AA}	1.8	8.6	2.0	<3.0 ^{AA}	1.7	1.4	2.7	4.2 ^{AA}	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.77	1.48 ^{AA}	0.23	1.10	0.27	<0.25 ^{AA}	0.22	0.18	0.34	0.49 ^{AA}	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.30	0.58 ^{AA}	0.09	0.43	0.10	<0.10 ^{AA}	0.09	0.07	0.13	0.19 ^{AA}	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	85	81 ^{AA}	86	83	86	83 ^{AA}	86	86	87	82 ^{AA}	<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	<4	-	-	-	<4	-	-	-	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	<7	-	-	-	<7	-	-	-	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	<7	-	-	-	<7	-	-	-	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	<19	-	-	-	<19	-	-	-	<19	<19	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	<4	-	-	-	<4	-	-	-	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	<7	-	-	-	<7	-	-	-	16	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	46	-	-	-	<7	-	-	-	84	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	46	-	-	-	<19	-	-	-	100	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	46	-	-	-	<38	-	-	-	100	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Benzene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Toluene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Ethylbenzene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
m/p-Xylene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
o-Xylene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
PCB 77	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 81	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 105	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 114	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 123	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 126	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 156	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 157	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 167	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 169	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 189	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 12 PCBs	-	-	-	-	-	-	-	-	-	-	<60	ug/kg	TM17/PM8
PCB 28 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	-	-	-	-	<35	ug/kg	TM17/PM8
Natural Moisture Content	16.8	16.0	17.3	17.1	16.1	15.6	19.6	20.9	19.5	17.8	<0.1	%	PM4/PM0
Total Organic Carbon #	2.73	1.77	2.13	1.55	1.78	1.47	3.24	2.61	2.29	2.41	<0.02	%	TM21/PM24

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

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

[illegible]

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34	35-36	37-38		Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 63	TOPSOIL 64	TOPSOIL 65	TOPSOIL 66	TOPSOIL 67	TOPSOIL 68	TOPSOIL 69	TOPSOIL 70	SUB-STATION 1				
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	V J				
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020		LOD/LOR	Units	Method No.
Arsenic #	7.7	7.5	8.4	9.1	6.3	7.7	7.5	5.9	-		<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.2	0.2	0.2	0.2	0.3	0.6	0.2	-		<0.1	mg/kg	TM30/PM15
Chromium #	28.6	32.4	80.7	151.7	76.3	72.1	25.3	93.0	-		<0.5	mg/kg	TM30/PM15
Copper #	33	31	31	35	25	38	30	33	-		<1	mg/kg	TM30/PM15
Lead #	88	44	53	53	40	50	62	43	-		<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	-		<0.1	mg/kg	TM30/PM15
Nickel #	11.2	13.3	14.8	19.5	12.6	18.3	12.1	22.7	-		<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	-		<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	0.4	0.6	0.6	0.4	0.5	0.4	0.4	-		<0.1	mg/kg	TM74/PM32
Zinc #	59	45	56	60	71	67	64	53	-		<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.20 _{AA}	<0.04	<0.04	<0.04	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.15 _{AA}	<0.03	<0.03	<0.03	<0.15 _{AA}	-		<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.07	0.14	<0.05	<0.25 _{AA}	<0.05	<0.05	<0.05	<0.25 _{AA}	-		<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	0.08	<0.04	<0.20 _{AA}	<0.04	<0.04	<0.04	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.69	1.13	0.32	0.25 _{AA}	0.46	0.32	0.30	0.19 _{AA}	-		<0.03	mg/kg	TM4/PM8
Anthracene #	0.16	0.22	0.07	<0.20 _{AA}	0.11	0.09	0.08	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.34	1.24	0.56	0.54 _{AA}	0.72	0.75	0.64	0.40 _{AA}	-		<0.03	mg/kg	TM4/PM8
Pyrene #	1.29	1.23	0.54	0.49 _{AA}	0.70	0.68	0.60	0.36 _{AA}	-		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.68	0.53	0.32	<0.30 _{AA}	0.39	0.37	0.38	<0.30 _{AA}	-		<0.06	mg/kg	TM4/PM8
Chrysene #	0.70	0.54	0.33	0.33 _{AA}	0.43	0.40	0.37	0.24 _{AA}	-		<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene #	1.19	0.88	0.55	0.58 _{AA}	0.60	0.74	0.71	<0.35 _{AA}	-		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.74	0.54	0.30	0.32 _{AA}	0.34	0.43	0.38	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.46	0.32	0.21	0.25 _{AA}	0.23	0.27	0.25	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.08	0.06	0.05	<0.20 _{AA}	0.05	0.06	0.05	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.48	0.34	0.21	<0.20 _{AA}	0.22	0.25	0.28	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
PAH 16 Total	7.9	7.3	3.5	<3.0 _{AA}	4.3	4.4	4.0	<3.0 _{AA}	-		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.86	0.63	0.40	0.42 _{AA}	0.43	0.53	0.51	<0.25 _{AA}	-		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.33	0.25	0.15	0.16 _{AA}	0.17	0.21	0.20	<0.10 _{AA}	-		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	88	83	88	81 _{AA}	83	84	85	82 _{AA}	-		<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	-	-	<0.2	-	-	-	<0.2	-		<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	-	-	<4	-	-	-	<4	-		<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	-	-	<7	-	-	-	<7	-		<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	-	-	<7	-	-	-	<7	-		<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	-	-	<19	-	-	-	<19	-		<19	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34	35-36	37-38		Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 63	TOPSOIL 64	TOPSOIL 65	TOPSOIL 66	TOPSOIL 67	TOPSOIL 68	TOPSOIL 69	TOPSOIL 70	SUB-STATION 1				
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	V J				
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020		LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	-	-	<0.2	-	-	-	<0.2	-		<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	-	-	<4	-	-	-	<4	-		<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	-	-	12	-	-	-	8	-		<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	-	-	75	-	-	-	59	-		<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	-	-	87	-	-	-	67	-		<19	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-35)	-	-	-	87	-	-	-	67	-		<38	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Benzene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Toluene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Ethylbenzene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
m/p-Xylene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
o-Xylene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
PCB 77	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 81	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 105	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 114	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 118	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 123	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 126	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 156	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 157	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 167	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 169	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 189	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
Total 12 PCBs	-	-	-	-	-	-	-	-	<60		<60	ug/kg	TM17/PM8
PCB 28 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	-	-	<35		<35	ug/kg	TM17/PM8
Natural Moisture Content	20.6	17.0	17.1	19.0	22.0	18.7	20.2	18.5	14.8		<0.1	%	PM4/PM0
Total Organic Carbon #	1.92	2.75	2.52	3.47	1.88	3.05	2.19	3.26	-		<0.02	%	TM21/PM24

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

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

[illegible]

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

Note:

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

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

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

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/16545	1	TOPSOIL 53		2	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 54		4	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 55		6	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 56		8	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 57		10	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 58		12	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 59		14	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD

Client Name: ALM Consult Limited
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Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/16545	1	TOPSOIL 59		14	02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 60		16	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 61		18	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 62		20	03/12/2020	General Description (Bulk Analysis)	Soil/Stones
					03/12/2020	Asbestos Fibres	NAD
					03/12/2020	Asbestos ACM	NAD
					03/12/2020	Asbestos Type	NAD
					03/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 63		22	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 64		24	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 65		26	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 66		28	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 67		30	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 68		32	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

[illegible]

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/16545

SOILS

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

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

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

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

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

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

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

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

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

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

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

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

Please include all sections of this report if it is reproduced

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Measurement Uncertainty

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

ABBREVIATIONS and ACRONYMS USED

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

EMT Job No: 20/16545

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GC/FID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry); WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes

EMT Job No: 20/16545

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes

ST KEVIN'S DRIVE, KIRKBY
VALIDATION OF SOIL COVER DEPTHS
(Central North Section of Public Open Space)

Prepared for
McDERMOTT HOMES LTD



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Paddock Business Centre
2 Paddock Road
West Pimbo
Skelmersdale
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ST KEVIN'S DRIVE, KIRKBY VERIFICATION OF SOIL COVER DEPTHS

ALM Consult Limited (ALM) carried out a site visit on Thursday 5th May to verify cover depths in the public open space (POS) opposite plots 70-72 and 79-81 at the McDermott Homes development at St Kevin's Drive, Kirkby. Verification of cover depth consisted of the excavation of hand dug pits, penetrating the soil cover, and the inspection of the resulting void, in an area of proposed public open space (POS). A location plan showing the location of inspection pit / inspection location is presented as Drawing No. 30158-CDV4 in Appendix A.

The site has been subject to previous phases of desk study and intrusive ground investigation, undertaken by ESG and CCG in the eastern half of the site (2015) and western half of the site (2016) respectively. The previous studies were re-presented along with a supplementary phase of ground investigation, undertaken by ALM in 2017, and reported in ALM Report No.30158-1. The ground investigations identified the presence of traces of asbestos fibres, and localised slightly elevated concentrations of PAH and TPH in made ground beneath the former Bramcote/Northfield Primary School in northern central parts of the site.

ALM Report No.30158-2 Rev A 'Remediation Strategy for land off St Kevin's Drive, Kirkby', date November 2017, recommended either the removal of asbestos impacted made ground or it's retention beneath a 1m thick clean soil cover, due to no asbestos quantification tests being undertaken on the asbestos impacted soils. ALM Letter Ref: No.30158-016, dated 24th February 2020, details the results of further soil analysis demonstrating a concentration of <0.001% asbestos in made ground, and recommends soils may be retained beneath a 600mm thick clean soil cover.

This cover depth validation report is specific to the area of impacted ground proximal to the former Bramcote/Northfield Primary School. This is illustrated in Drawing No.30158-10 (Appendix A of ALM Report No.30158-2 Rev A), where it is shaded as purple and appropriately labelled in the drawing legend. The area is coincident with a designated development POS, illustrated in Drawing No. 0003 (Appendix A of ALM Report No.30158-2 Rev A). The impacted ground has initially been overlaid by materials excavated from plots 70-72 and 79-81 (see Drawing No. 0003 for context), where a reduced dig of (proven) contamination-free soils was undertaken to meet preferred site levels in the POS and residential area. To provide an appropriate clean soil cover in accordance with the remediation strategy, these materials have been further overlaid with 600mm of reworked site-won topsoil, proven to be chemically suitable for use at surface in the development (refer to ALM Letter Report No. 30158/019 in Appendix C).

To prove that the criteria had been met in the specified area of proposed POS, an ALM Engineer inspected the soil cover, and took photographs of the inspection pits (See Appendix B). Validation of the soil cover comprised the excavation of 4No. inspection pits (IP1-IP4) between a footbridge and former palisade fence, illustrated in Drawing No. 30158-2 (Appendix A of ALM Report No.30158-2 Rev A). Inspection pits confirmed the presence of a minimum 600mm clean soil cover, with depths summarised in Table A below.

Table A: Clean Cover Verification Depths

Inspection Pit No.	Subsoil (mm)	Topsoil (mm)	Thickness (mm)
IP1 (Furthest West)	-	620	620
IP2	-	600	600
IP3	-	600	600
IP4 (Furthest East)	-	630	630

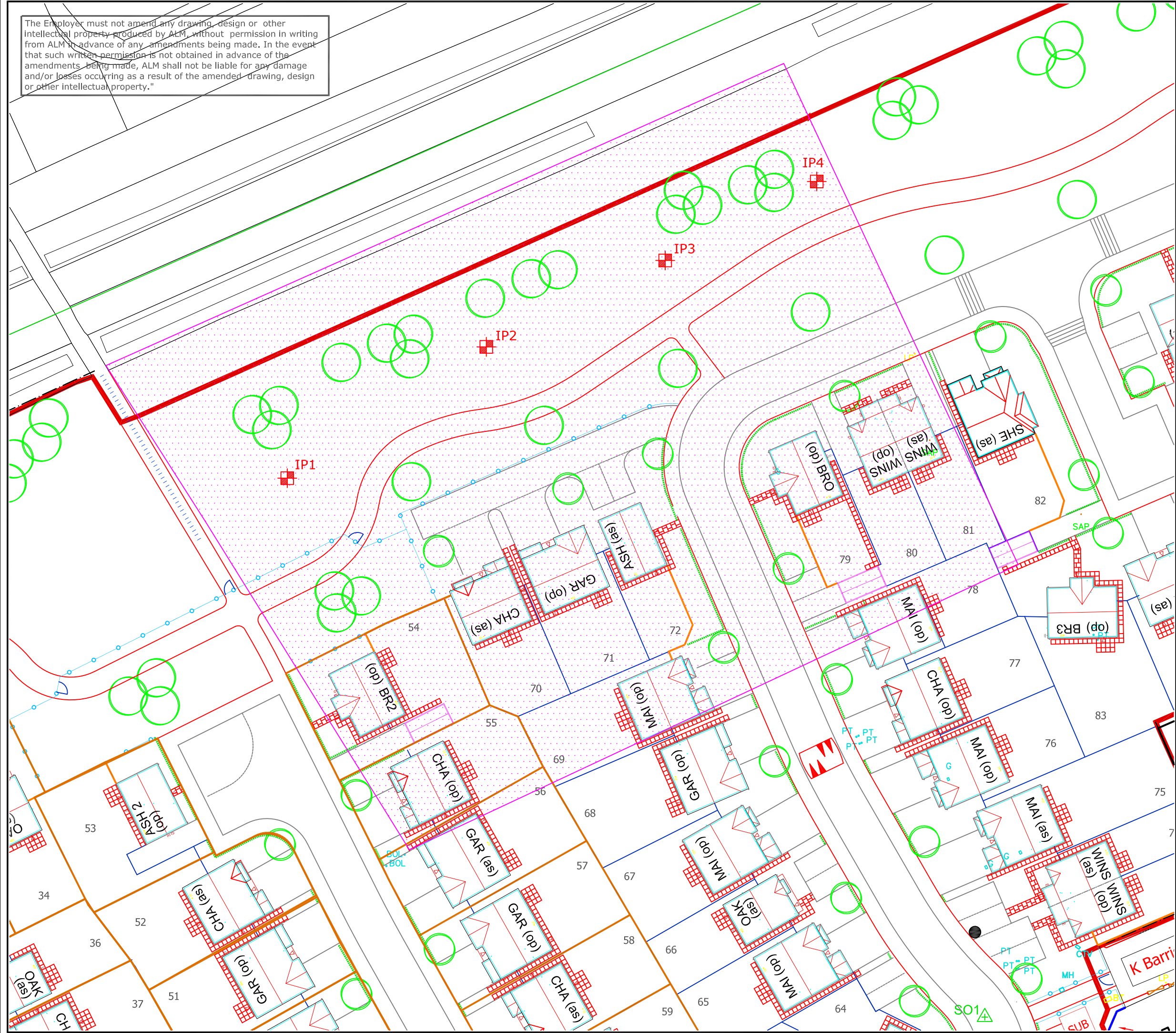
To further confirm soils directly below the clean soil cover (subgrade formed by excavated ground from plots 70-72 and 79-81) did not contain elevated concentrations of asbestos (>0.001%), 4No. soil samples were collected from immediately beneath the clean soil cover and scheduled for an asbestos screen. The results of this analysis are included in Appendix C and show no asbestos detected. Note, the sample depths are recorded as 0.6m, but are all taken from cohesive subsoil beneath the clean topsoil cover soils.

At the time of inspection in May 2022, cover soils had been placed, but had not been rotavated to remove any coarse fraction from the surface. PLATE 9 & PLATE 10 in Appendix B show the status of the public open space @ November 2025, which appears to maintained, and it is apparent that there is no longer any coarse fraction at the surface.

ALM are satisfied that a minimum 600mm of clean soil cover has been placed above made ground containing <0.001% asbestos in the public open space area coincident with the former Bramcote/Northfield Primary School.

APPENDIX A
INSPECTION PIT LOCATION PLAN

The Employer must not amend any drawing, design or other intellectual property produced by ALM without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



KEY

INSPECTION PIT / INSPECTION LOCATION

Contaminated Soils (former Bramcote/Northfield School)
Soils to be stripped from beneath private garden areas and subject to asbestos quantification testing. If <0.001% asbestos, soils may be retained beneath a 600mm clean soil cover, or if >0.001% asbestos, soil may be retained beneath a 1m clean soil cover, preferably beneath Public Open Space. If >0.1% asbestos, soils shall be exported from site as hazardous waste, to landfill.

DEVELOPMENT LAYOUT TAKEN FROM MCK ASSOCIATES LTD
"PROPOSED SITE LAYOUT", DRAWING NO.16-075-0003 REV M,
DATED OCTOBER 2016



ALM Consult Limited
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West Pimbo, Skelmersdale, Lancashire. WN8 9PL
T: 01695 213160 E: info@almconsult.co.uk

CLIENT		
McDERMOTT HOMES		
JOB TITLE		
ST KEVINS DRIVE, KIRKBY		
DRAWING TITLE		
COVER DEPTH INSPECTION LOCATION PLAN		
STATUS		
FINAL		
DRAWN BY	SIGNATURE	DATE
KL		06-05-22
APPROVED	SIGNATURE	DATE
KL		06-05-22
SCALE	DRG No.	
1:500@A3	30158-CDV4	

APPENDIX B
PHOTOGRAPHIC RECORD

**APPENDIX B
PHOTOGRAPHIC RECORD**

PLATE 1 – Inspection Pit IP1 in area of designated public open space (facing plot No.70) @ May 2022.



PLATE 2 – Depth of Soil Cover in IP1 (~620mm) @ May 2022.



PLATE 3 – IP 2 in area of designated public open space (facing plot No.71) @ May 2022.



PLATE 4 – Depth of Soil Cover in IP2 (~600mm) @ May 2022.



PLATE 5 – IP3 in area of designated public open space (facing plot No.79) @ May 2022.



PLATE 6 – Depth of Soil Cover in IP3 (~600mm) @ May 2022.



PLATE 7 – IP4 in area of designated public open space (facing plot No.81) @ May 2022.



PLATE 8 – Depth of Soil Cover in IP4 (~630mm) @ May 2022.



PLATE 9 – Current Public Open Space (western part near IP1 & IP2) @ November 2025.



PLATE 10 – Current Public Open Space (eastern part near IP3 & IP4) @ November 2025.

APPENDIX C
CHEMICAL ANALYSIS

TOPSOIL

18th December 2020

30158/019

Mr Mark Wilkinson
Technical Director
McDermott Homes Ltd
Jupiter House
1 Mercury Rise
Altham Business Park
Altham BB5 5BY

Dear Mark

Validation of Site Won Topsoil – Phases 3 & 4, St Kevin's Drive, Kirkby

Introduction

ALM attended site on Monday 23rd November 2020, to sample stockpiles of topsoil that had been stripped from the surface of the northern part of the Phase 3 development area (excluding the former Northfield/Bramcote School), and the Phase 4 development area at St Kevin's Drive, Kirkby, Liverpool.

A sample was also retrieved from subsoil immediately beneath the former electricity sub-station for subsequent testing to prove the absence of any residual PCB contamination.

The extent of the Phase 3 & 4 development areas is shown on ALM Drawing No.30158-12 in Appendix A.

Phase 3 (North) & Phase 4 Topsoil Test Results

18No. samples (Topsoil 53 to Topsoil 70) of topsoil were obtained from stockpiles across the Phase 3 & 4 area by an ALM Engineer on Monday 23rd November 2020.

The location of the topsoil stockpiles and locations of samples taken are shown on Drawing No.30158-14_Rev3 in Appendix A. Selected Photographs of the stockpiles are also included in Appendix B.

The 18No. samples of topsoil were submitted for a suite of analysis comprising; pH, metals (As, water sol.B, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn), %TOC, speciated PAH and asbestos screen. A further 5No. samples (approx. 25% of samples) were submitted for speciated TPH.

The results of the laboratory chemical analysis were compared against the CIEH/LQM 'Suitable for Use Levels' (S4UL) for residential development with home grown produce. With regard to lead, consideration is given to the DEFRA Category 4 Screening Level of 200mg/kg. With regard to phytotoxic determinands (copper and zinc), consideration was given to BS3882:2007 & BS8601:2013. Concentrations of water soluble boron were measured against former ICRCL Guidance Note 59/83, second edition (1987).



The results of the laboratory chemical analysis are included in Appendix C. None of the samples exhibited any concentrations of determinands above the chosen criteria. None of the samples reported the presence of asbestos.

ALM consider the topsoil stripped from the surface of the north of the Phase 3 area and the Phase 4 area of the site, is suitable for use as topsoil within the proposed development. The topsoil stripped from across the site has been, and should continue to be re-used to provide a minimum 150mm soil cover in private gardens, which will provide a growing medium for plants, although a greater thickness may be used.

Former Electricity Sub Station

A single sample of subsoil was taken from beneath the footprint of the former electricity sub-station in the north of the Phase 3 development area, located to the rear of Plot No.81 (Sample No. Sub-Station 1). The sample was submitted for analysis of PCB (7) and PCB (12) congeners.

No concentrations of PCB above laboratory detection limits were recorded in the sample. Therefore, no significant residual PCB contamination is present beneath this part of the site.

If you require any further information, please contact me.

Yours sincerely

A handwritten signature in black ink, reading 'Keith Lyon'. The signature is fluid and cursive, with the first name 'Keith' and the last name 'Lyon' clearly distinguishable.

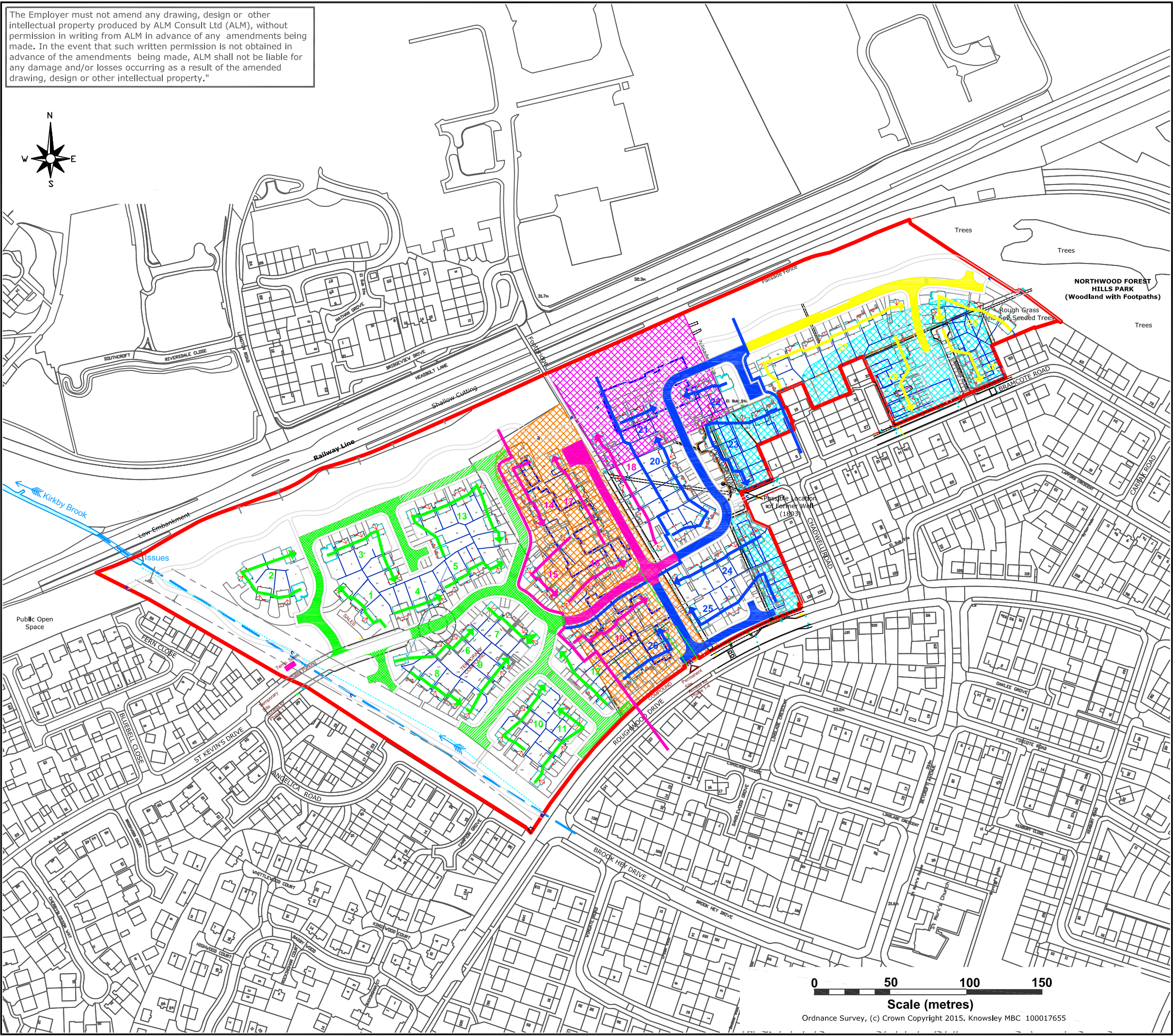
Keith Lyon
Director
ALM Consult Ltd

Appendix A - Drawings
Appendix B - Selected Photographs
Appendix C - Laboratory Chemical Analysis

APPENDIX A

Drawings

The Employer must not amend any drawing, design or other intellectual property produced by ALM Consult Ltd (ALM), without permission in writing from ALM in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, ALM shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or other intellectual property."



Ordnance Survey, (c) Crown Copyright 2015, Knowsley MBC 100017655

KEY

- Approx. Site Boundary
- Contaminated Soils (former Bramcote/Northfield School)
To be Removed or Relocated beneath 1m Soil Cover*
(* if <0.001% asbestos)
- Approximate Area Underlain by Demolition Fill
Turnover Recommended to Screen Oversized Materials
- Approximate Area Underlain by Granular Made Ground
Turnover Recommended to Screen Oversized Materials
- Approximate Outline of Historic Buildings
Turnover Recommended to Remove Any Relic Structures
- Phase 1 Area (Feb 18 - Dec 19) - Unaffected by Known Contamination.
No Remediation Required
- Phase 2 Area (Dec 19 - Oct 20) - Plots 54-56 and Open Space Affected by Contamination. Removal of Contamination and General Turnover of Made Ground to Remove Relic Structures & Oversize Recommended.
- Phase 3 Area (Oct 20 - Dec 21) - Plots 69-72, 79-81, Roads, and Open Space Affected by Contamination. Removal of Contamination and General Turnover of Made Ground in South & East to Remove Relic Structures & Oversize Recommended.
- Phase 4 Area (Dec 21 - Aug 22) - Unaffected by Known Contamination.
General Turnover of Made Ground to Remove Relic Structures & Oversize Recommended.

ALM CONSULT

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CLIENT

McDermott HOMES

JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

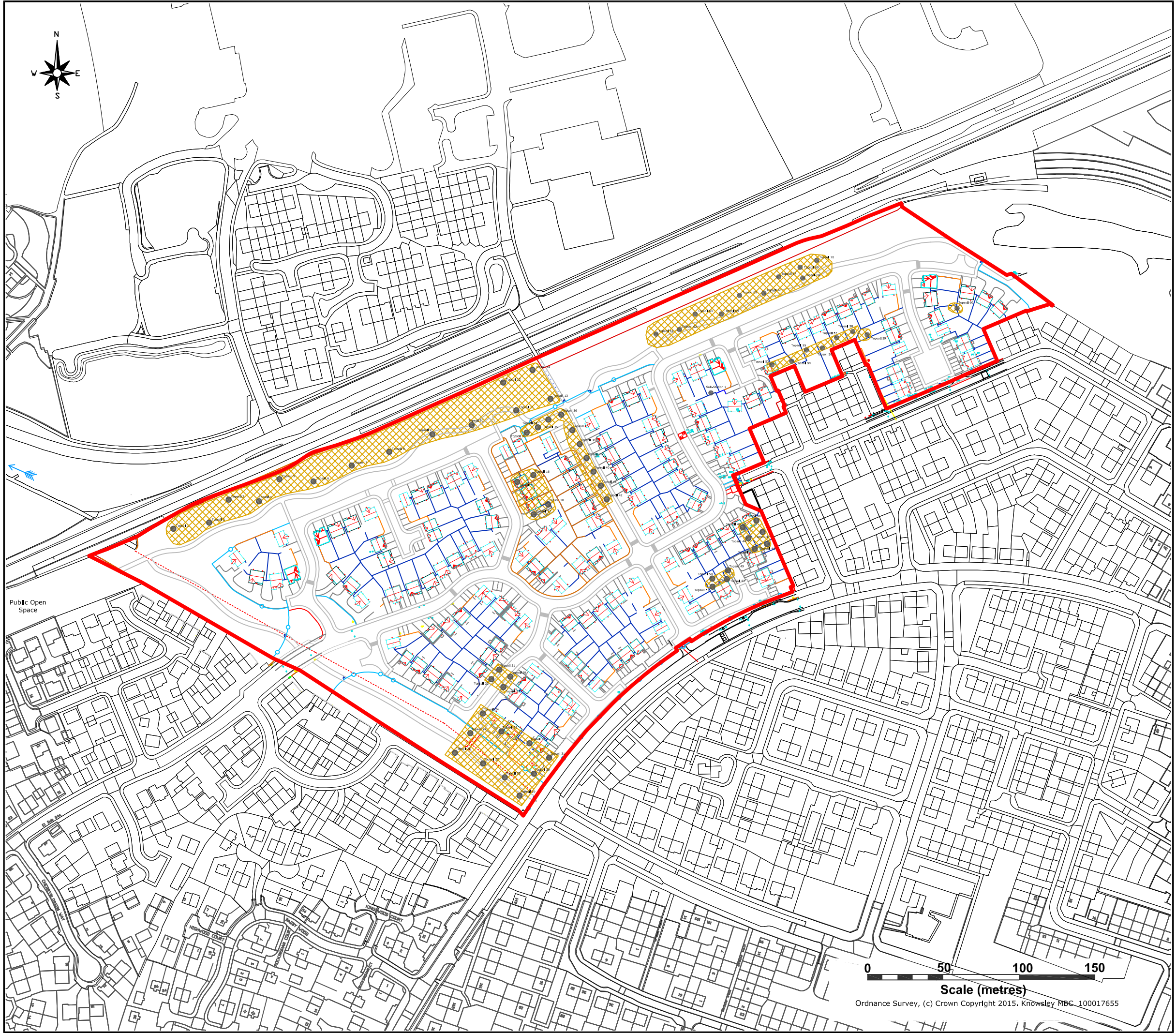
DRAWING TITLE

PHASED REMEDIATION ZONE PLAN

STATUS

FINAL

DRAWN BY	SIGNATURE	DATE
KL		16/04/18
APPROVED	SIGNATURE	DATE
AA		16/04/18
SCALE	DRG No.	
1:2500@A3	30158-12	



KEY

Approx. Site Boundary

Topsoil

Topsoil 1

Sample Location

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T: 01695 213160 E: info@almconsult.co.uk

CLIENT

JOB TITLE

ST KEVIN'S DRIVE, KIRKBY

DRAWING TITLE

SAMPLE LOCATION PLAN

STATUS

FINAL

DRAWN BY		SIGNATURE		DATE	
KL				14/12/20	
APPROVED		SIGNATURE		DATE	
AA				14/12/20	
SCALE			DRG No.		
1:2500@A3			30158-14_REV3		

APPENDIX B

Selected Photos



PLATE 1: Soil stockpile along south side of Phase 4 area (Sample No.53-58)



PLATE 2: Separate small soil stockpile (Sample No.59)



PLATE 3: Face of large soil stockpile along northern edge of Phase 4 (Sample No.61-70)



PLATE 4: Large soil stockpile along the northern edge of Phase 4 (Sample No.61-70)

APPENDIX C

Laboratory Chemical Analysis

ALM Consult Limited
Paddock Business Centre
2 Paddock Road
West Pimbo
Skelmersdale
Lancashire
WN8 9PL



Attention : Keith Lyon
Date : 7th December, 2020
Your reference : 30158
Our reference : Test Report 20/16545 Batch 1
Location : St Kevins Drive, Kirkby
Date samples received : 25th November, 2020
Status : Final report
Issue : 1

Nineteen samples were received for analysis on 25th November, 2020 of which nineteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

Authorised By:



Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
Arsenic #	7.1	6.6	7.8	5.7	6.9	9.7	8.2	7.0	7.0	8.7	<0.5	mg/kg	TM30/PM15
Cadmium #	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	<0.1	mg/kg	TM30/PM15
Chromium #	75.5	27.9	76.3	69.9	79.4	82.4	29.2	39.2	74.2	70.4	<0.5	mg/kg	TM30/PM15
Copper #	31	28	34	23	23	23	25	26	27	31	<1	mg/kg	TM30/PM15
Lead #	51	53	135	55	47	54	37	42	53	66	<5	mg/kg	TM30/PM15
Mercury #	0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	11.8	11.4	11.8	10.3	12.0	14.1	13.8	15.9	12.7	13.4	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	0.3	0.4	0.5	0.3	0.5	0.4	0.6	0.5	0.5	<0.1	mg/kg	TM74/PM32
Zinc #	70	63	75	59	59	51	52	69	59	66	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.15 ^{AA}	<0.03	<0.03	<0.03	<0.15 ^{AA}	<0.03	<0.03	<0.03	<0.15 ^{AA}	<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.06	<0.25 ^{AA}	<0.05	<0.05	<0.05	<0.25 ^{AA}	<0.05	<0.05	<0.05	<0.25 ^{AA}	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.53	1.31 ^{AA}	0.15	0.21	0.14	<0.15 ^{AA}	0.11	0.11	0.20	0.44 ^{AA}	<0.03	mg/kg	TM4/PM8
Anthracene #	0.14	0.39 ^{AA}	<0.04	0.14	<0.04	<0.20 ^{AA}	<0.04	<0.04	0.06	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.17	2.74 ^{AA}	0.29	1.46	0.30	0.32 ^{AA}	0.24	0.21	0.43	0.71 ^{AA}	<0.03	mg/kg	TM4/PM8
Pyrene #	1.05	2.38 ^{AA}	0.27	1.36	0.29	0.30 ^{AA}	0.24	0.19	0.39	0.65 ^{AA}	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.58	1.29 ^{AA}	0.18	1.25	0.20	<0.30 ^{AA}	0.17	0.15	0.25	0.39 ^{AA}	<0.06	mg/kg	TM4/PM8
Chrysene #	0.63	1.25 ^{AA}	0.19	0.89	0.21	0.18 ^{AA}	0.18	0.15	0.27	0.41 ^{AA}	<0.02	mg/kg	TM4/PM8
Benzo(b)fluoranthene #	1.07	2.06 ^{AA}	0.32	1.53	0.37	<0.35 ^{AA}	0.31	0.25	0.47	0.68 ^{AA}	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.60	1.22 ^{AA}	0.18	0.83	0.20	<0.20 ^{AA}	0.18	0.13	0.26	0.39 ^{AA}	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.39	0.87 ^{AA}	0.11	0.46	0.14	<0.20 ^{AA}	0.13	0.10	0.17	0.27 ^{AA}	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.07	<0.20 ^{AA}	<0.04	0.08	<0.04	<0.20 ^{AA}	<0.04	<0.04	<0.04	<0.20 ^{AA}	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.37	0.74 ^{AA}	0.12	0.40	0.14	<0.20 ^{AA}	0.13	0.10	0.18	0.25 ^{AA}	<0.04	mg/kg	TM4/PM8
PAH 16 Total	6.7	14.3 ^{AA}	1.8	8.6	2.0	<3.0 ^{AA}	1.7	1.4	2.7	4.2 ^{AA}	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.77	1.48 ^{AA}	0.23	1.10	0.27	<0.25 ^{AA}	0.22	0.18	0.34	0.49 ^{AA}	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.30	0.58 ^{AA}	0.09	0.43	0.10	<0.10 ^{AA}	0.09	0.07	0.13	0.19 ^{AA}	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	85	81 ^{AA}	86	83	86	83 ^{AA}	86	86	87	82 ^{AA}	<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	<4	-	-	-	<4	-	-	-	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	<7	-	-	-	<7	-	-	-	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	<7	-	-	-	<7	-	-	-	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	<19	-	-	-	<19	-	-	-	<19	<19	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 53	TOPSOIL 54	TOPSOIL 55	TOPSOIL 56	TOPSOIL 57	TOPSOIL 58	TOPSOIL 59	TOPSOIL 60	TOPSOIL 61	TOPSOIL 62			
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	J T	J T			
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	<4	-	-	-	<4	-	-	-	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	<7	-	-	-	<7	-	-	-	16	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	46	-	-	-	<7	-	-	-	84	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	46	-	-	-	<19	-	-	-	100	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	46	-	-	-	<38	-	-	-	100	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Benzene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Toluene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
Ethylbenzene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
m/p-Xylene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
o-Xylene #	-	<5	-	-	-	<5	-	-	-	<5	<5	ug/kg	TM36/PM12
PCB 77	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 81	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 105	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 114	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 123	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 126	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 156	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 157	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 167	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 169	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 189	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 12 PCBs	-	-	-	-	-	-	-	-	-	-	<60	ug/kg	TM17/PM8
PCB 28 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	-	-	-	-	<35	ug/kg	TM17/PM8
Natural Moisture Content	16.8	16.0	17.3	17.1	16.1	15.6	19.6	20.9	19.5	17.8	<0.1	%	PM4/PM0
Total Organic Carbon #	2.73	1.77	2.13	1.55	1.78	1.47	3.24	2.61	2.29	2.41	<0.02	%	TM21/PM24

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

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

[illegible]

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34	35-36	37-38		Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 63	TOPSOIL 64	TOPSOIL 65	TOPSOIL 66	TOPSOIL 67	TOPSOIL 68	TOPSOIL 69	TOPSOIL 70	SUB-STATION 1				
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	V J				
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020		LOD/LOR	Units	Method No.
Arsenic #	7.7	7.5	8.4	9.1	6.3	7.7	7.5	5.9	-		<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.2	0.2	0.2	0.2	0.3	0.6	0.2	-		<0.1	mg/kg	TM30/PM15
Chromium #	28.6	32.4	80.7	151.7	76.3	72.1	25.3	93.0	-		<0.5	mg/kg	TM30/PM15
Copper #	33	31	31	35	25	38	30	33	-		<1	mg/kg	TM30/PM15
Lead #	88	44	53	53	40	50	62	43	-		<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	-		<0.1	mg/kg	TM30/PM15
Nickel #	11.2	13.3	14.8	19.5	12.6	18.3	12.1	22.7	-		<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	-		<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	0.4	0.6	0.6	0.4	0.5	0.4	0.4	-		<0.1	mg/kg	TM74/PM32
Zinc #	59	45	56	60	71	67	64	53	-		<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.20 _{AA}	<0.04	<0.04	<0.04	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.15 _{AA}	<0.03	<0.03	<0.03	<0.15 _{AA}	-		<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.07	0.14	<0.05	<0.25 _{AA}	<0.05	<0.05	<0.05	<0.25 _{AA}	-		<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	0.08	<0.04	<0.20 _{AA}	<0.04	<0.04	<0.04	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.69	1.13	0.32	0.25 _{AA}	0.46	0.32	0.30	0.19 _{AA}	-		<0.03	mg/kg	TM4/PM8
Anthracene #	0.16	0.22	0.07	<0.20 _{AA}	0.11	0.09	0.08	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.34	1.24	0.56	0.54 _{AA}	0.72	0.75	0.64	0.40 _{AA}	-		<0.03	mg/kg	TM4/PM8
Pyrene #	1.29	1.23	0.54	0.49 _{AA}	0.70	0.68	0.60	0.36 _{AA}	-		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.68	0.53	0.32	<0.30 _{AA}	0.39	0.37	0.38	<0.30 _{AA}	-		<0.06	mg/kg	TM4/PM8
Chrysene #	0.70	0.54	0.33	0.33 _{AA}	0.43	0.40	0.37	0.24 _{AA}	-		<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.19	0.88	0.55	0.58 _{AA}	0.60	0.74	0.71	<0.35 _{AA}	-		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.74	0.54	0.30	0.32 _{AA}	0.34	0.43	0.38	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.46	0.32	0.21	0.25 _{AA}	0.23	0.27	0.25	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.08	0.06	0.05	<0.20 _{AA}	0.05	0.06	0.05	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.48	0.34	0.21	<0.20 _{AA}	0.22	0.25	0.28	<0.20 _{AA}	-		<0.04	mg/kg	TM4/PM8
PAH 16 Total	7.9	7.3	3.5	<3.0 _{AA}	4.3	4.4	4.0	<3.0 _{AA}	-		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.86	0.63	0.40	0.42 _{AA}	0.43	0.53	0.51	<0.25 _{AA}	-		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.33	0.25	0.15	0.16 _{AA}	0.17	0.21	0.20	<0.10 _{AA}	-		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	88	83	88	81 _{AA}	83	84	85	82 _{AA}	-		<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	-	-	<0.2	-	-	-	<0.2	-		<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	-	-	<4	-	-	-	<4	-		<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	-	-	<7	-	-	-	<7	-		<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	-	-	<7	-	-	-	<7	-		<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	-	-	<19	-	-	-	<19	-		<19	mg/kg	TM5/PM8/PM16/PM12/PM15

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

EMT Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34	35-36	37-38		Please see attached notes for all abbreviations and acronyms		
Sample ID	TOPSOIL 63	TOPSOIL 64	TOPSOIL 65	TOPSOIL 66	TOPSOIL 67	TOPSOIL 68	TOPSOIL 69	TOPSOIL 70	SUB-STATION 1				
Depth													
COC No / misc													
Containers	J T	J T	J T	J T	J T	J T	J T	J T	V J				
Sample Date	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020	23/11/2020				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020	25/11/2020		LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	-	-	<0.1	-	-	-	<0.1	-		<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	-	-	<0.2	-	-	-	<0.2	-		<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	-	-	<4	-	-	-	<4	-		<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	-	-	12	-	-	-	8	-		<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	-	-	75	-	-	-	59	-		<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	-	-	87	-	-	-	67	-		<19	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics(C5-35)	-	-	-	87	-	-	-	67	-		<38	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Benzene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Toluene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
Ethylbenzene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
m/p-Xylene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
o-Xylene #	-	-	-	<5	-	-	-	<5	-		<5	ug/kg	TM36/PM12
PCB 77	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 81	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 105	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 114	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 118	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 123	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 126	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 156	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 157	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 167	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 169	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 189	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
Total 12 PCBs	-	-	-	-	-	-	-	-	<60		<60	ug/kg	TM17/PM8
PCB 28 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	-	-	<5		<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	-	-	<35		<35	ug/kg	TM17/PM8
Natural Moisture Content	20.6	17.0	17.1	19.0	22.0	18.7	20.2	18.5	14.8		<0.1	%	PM4/PM0
Total Organic Carbon #	1.92	2.75	2.52	3.47	1.88	3.05	2.19	3.26	-		<0.02	%	TM21/PM24

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 20/16545

Report : Solid

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

[illegible]

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

Note:

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

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

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

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/16545	1	TOPSOIL 53		2	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 54		4	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 55		6	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 56		8	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 57		10	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 58		12	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 59		14	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/16545	1	TOPSOIL 59		14	02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 60		16	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 61		18	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 62		20	03/12/2020	General Description (Bulk Analysis)	Soil/Stones
					03/12/2020	Asbestos Fibres	NAD
					03/12/2020	Asbestos ACM	NAD
					03/12/2020	Asbestos Type	NAD
					03/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 63		22	02/12/2020	General Description (Bulk Analysis)	soil.stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 64		24	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 65		26	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 66		28	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 67		30	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD
					02/12/2020	Asbestos ACM	NAD
					02/12/2020	Asbestos Type	NAD
					02/12/2020	Asbestos Level Screen	NAD
20/16545	1	TOPSOIL 68		32	02/12/2020	General Description (Bulk Analysis)	soil/stones
					02/12/2020	Asbestos Fibres	NAD

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon

[illegible]

Client Name: ALM Consult Limited

Reference: 30158

Location: St Kevins Drive, Kirkby

Contact: Keith Lyon

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/16545

SOILS

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

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

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

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

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

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

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

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

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

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

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

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

Please include all sections of this report if it is reproduced

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Measurement Uncertainty

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

ABBREVIATIONS and ACRONYMS USED

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

EMT Job No: 20/16545

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GC/FID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry); WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes

EMT Job No: 20/16545

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes

SUBGRADE

ALM Consult Limited
Paddock Business Centre
2 Paddock Road
West Pimbo
Skelmersdale
Lancashire
WN8 9PL



Attention :	Keith Lyon
Date :	19th May, 2022
Your reference :	30158
Our reference :	Test Report 22/7515 Batch 1
Location :	St Kevins Drive, Kirkby
Date samples received :	7th May, 2022
Status :	Final Report
Issue :	1

Four samples were received for analysis on 7th May, 2022 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

Authorised By:



Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: ALM Consult Limited
Reference: 30158
Location: St Kevins Drive, Kirkby
Contact: Keith Lyon
EMT Job No: 22/7515

Report : Solid

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

[illegible]

Note:

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

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

[illegible]

Client Name: ALM Consult Limited

Reference: 30158

Location: St Kevins Drive, Kirkby

Contact: Keith Lyon

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 22/7515

SOILS and ASH

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

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

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

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

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

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

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

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

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

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

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

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

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

WATERS

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

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

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

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

STACK EMISSIONS

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

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

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

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

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

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

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Measurement Uncertainty

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

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

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

EMT Job No: 22/7515

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

APPENDIX E

U1 Waste Exemption

Waste exemption registration WEX299896

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

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

To check whether these exemptions are still valid, check the company's registration WEX299896 on the public register of waste exemptions:

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

Business responsibilities

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

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

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

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

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

Registration details

Registration details

Reference Number	WEX299896
Date registered	3 March 2022

Exemptions

U1: Use of waste in construction	Expires on 2 March 2025
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Your contact details

Your name	KEITH LYON
Your telephone number	07540703425
Your email address	keith@almconsult.co.uk

Waste operator details

Business or organisation type	Limited company
Waste operator responsible for these waste operations	McDermott Homes Ltd
Address of the Waste operator	MCDERMOTT DEVELOPMENT LTD 1

MERCURY RISE, ALTHAM BUSINESS PARK
ALTHAM
ACCRINGTON
BB5 5BY

Waste operations contact

Name	KEITH LYON
Position	Consultant
Telephone number	07540703425
Email	keith@almconsult.co.uk
Address	THE HUB PHARMACY LTD PADDOCK ROAD BUSINESS CENTRE, 2 PADDOCK ROAD SKELMERSDALE WN8 9PL

Waste operation details

Grid reference	SJ4188199943
Site details	New residential development off St Kevin's Drive, Kirkby, Liverpool