



Edge Lane, Openshaw
Pre- Construction Remediation Verification Report
Your Housing Group

REPORT No: 19YHG001/VR

Date: April 2021

Document Control

Author		K Rodway
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Authorised		M Fawcett
Revision	- 0 draft for client comment	

1. Introduction

Betts Geo have been commissioned by Your Housing Group to undertake a Verification Report covering remedial works that have been undertaken by Skillings Ltd and Civils & Remediation Ltd in 2020 and 2021 over two phases.

This report should be read in conjunction with the Betts Geo Remediation Statement (ref. 19YHG001/RS Rev. C, dated April 2021), which has been updated as and when additional features / changes in methodology have been dealt with.

Skillings Ltd and Civils & Remediation Ltd were to undertake pre-construction demolition and remediation to address the following points;

- Demolition and processing of existing above and below ground structures.
- Delineation and remediation of hotspots
- Identification, excavation, treatment and burying of invasive species.

Site works were undertaken between May 2020 and April 2021.

Betts were in attendance twice a week and at any key hold points, as was requested by Your Housing Group.

For ease of use, the remaining areas for remediation after the issue of the intrusive investigation report (19YHG001/GI/Rev1) were numbered as per the below sketch to aid in identification and description between site and office staff;



2. Demolition of Above and Below Ground Structures

Prior to the start of the remedial work, Skillings were commissioned to demolish and process the remaining factory buildings and sub-surface obstructions. The resulting stockpiles were left on site for reuse with appropriate crush testing certificates. Skillings completed the demolition prior to Civils and Remediation Ltd arriving onsite to undertake part of the earthworks. The earthworks were then revisited by Skillings to complete the work.

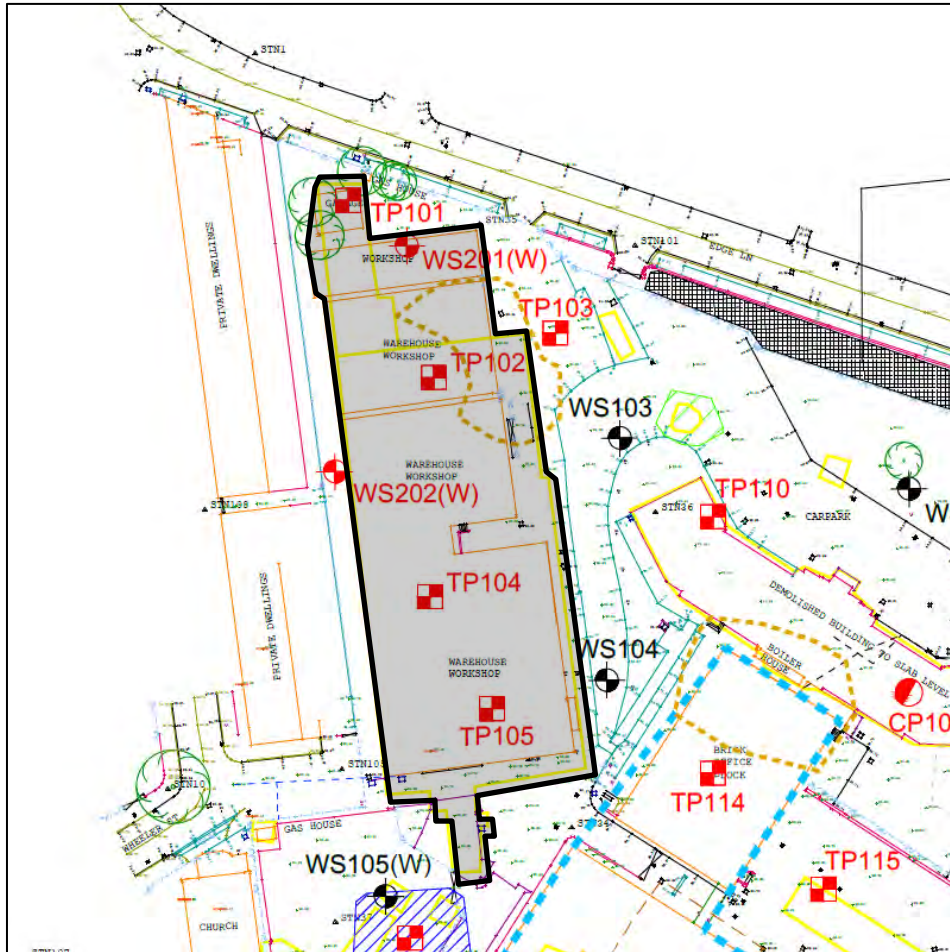
The selected photos below show the demolition works;



3. Delineation and Remediation of Area A

Delineation of Area A TP104 was taken to the approximate boundaries of the historical building and showed minor exceedances of various determinants. To remove traces of asbestos the area was scraped and a surface pick was carried out with suspected materials placed within the burial cells, as described within Section 5.

The resultant remedial area requires a 600mm clean and inert capping system with geotextile at the base will be installed the areas identified on the drawing below which will provide sufficient protection to the end users.



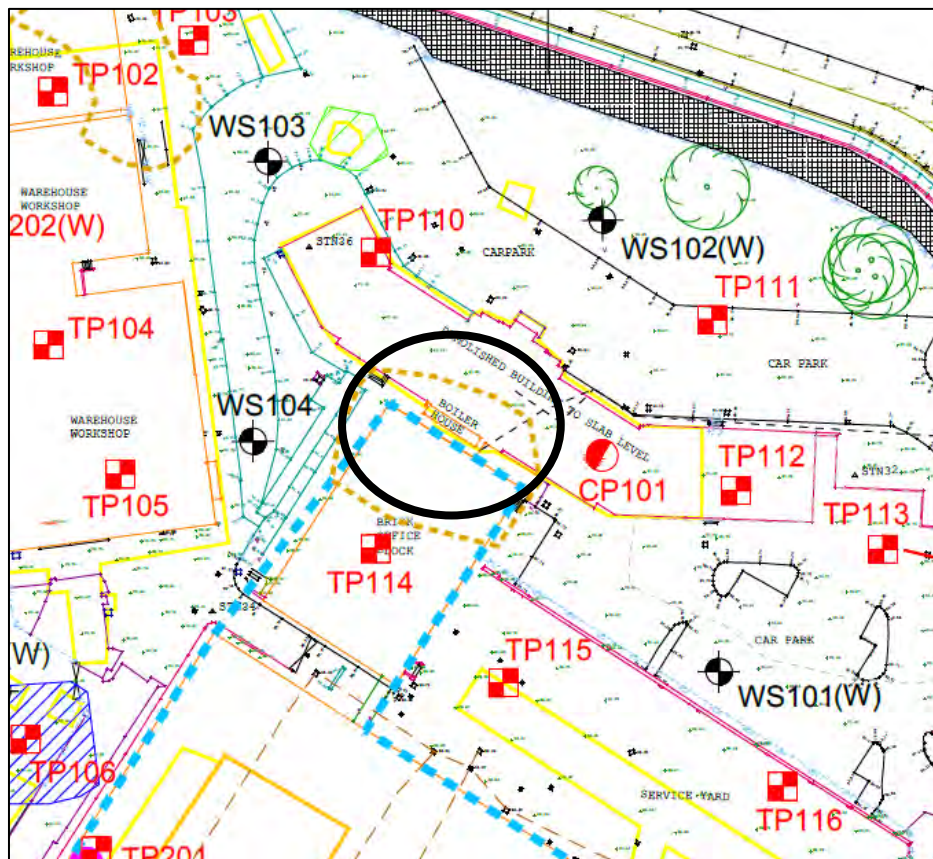
The selected photos below show the scrape and asbestos pick and site scrape;





4. Delineation of Basement Boiler House

The boiler house located in the central northern area of the site and required further investigation due to observed hydrocarbon odors during existing foundation exposure / removal work. The original location was deemed too deep to be investigated during the initial investigations (>4.5m deep from existing levels). The approximate location of the boiler house is shown below;



Samples collected from the base of the excavation showed no significantly elevated PAH, TPH or VOC/SVOC readings. The impacted materials are therefore considered to have been removed during the enabling works. The resulting void was backfilled by Skillings. Photo below shows the boiler house dig area;



No further remedial action required.

5. Machine Pit Investigation

During the demolition works (for which Betts Geo had a part time watching brief on) a machine pit was identified and excavated. The machine pit is located in the west of the site and is shown approximately on the plan below, this area is also shown as an historic pond.

The materials excavated from this area were shown to contain potential asbestos containing materials. Further investigation was carried out to show the extent of the machine pit / pond and determine the concentration of asbestos, as detailed in the section below.

6. Possible Asbestos Containing Material Stockpile

A small stockpile generated comprised, in part, of asbestos containing materials (ACM), this material has been surveyed and sampled. The approximate volume has been determined as 21m³, and 3no. samples were collected.

Testing of the materials determined the following concentrations;

Sample	Concentration (%)	Notes
ASP1	2.321	Amosite and Chrysotile
ASP2	0.766	
ASP3	4.346	

This stockpile was buried at a depth >2.00m below proposed finished site levels, within the former boiler house excavation, and was encapsulated within natural clay at the base and sides, overlain by engineered fill and a membrane. Burial depth was determined by the proposed drainage depth and will be placed below any statutory buried service depth.

The above, and additional asbestos from the scrape in remediation Area A and Area F, with the invasive species from Area G, were also deposited in the excavation.

Regulatory approval agreed with Rebecca Twigg MCC via site meeting followed by Email confirmation (agreed that the asbestos burial must not coincide with private driveways, gardens and or under plots). The agreed burial location is shown on the sketch below;

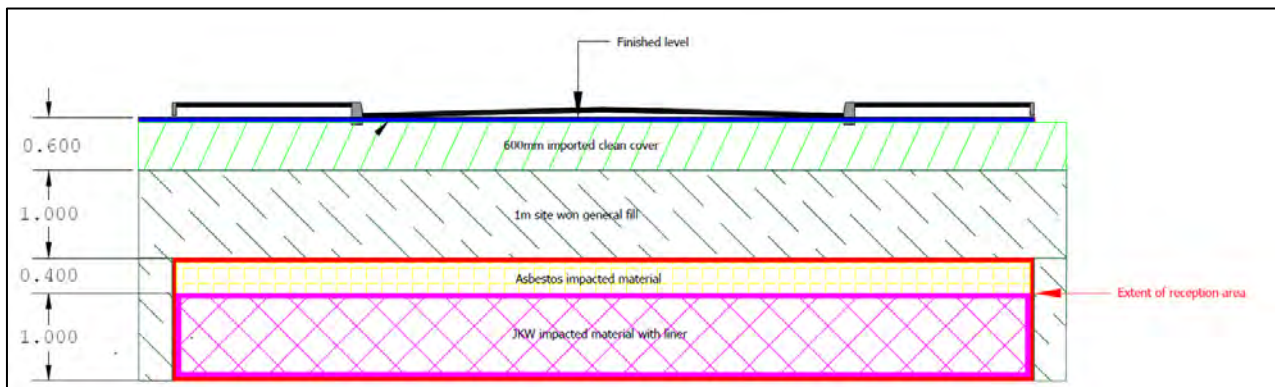
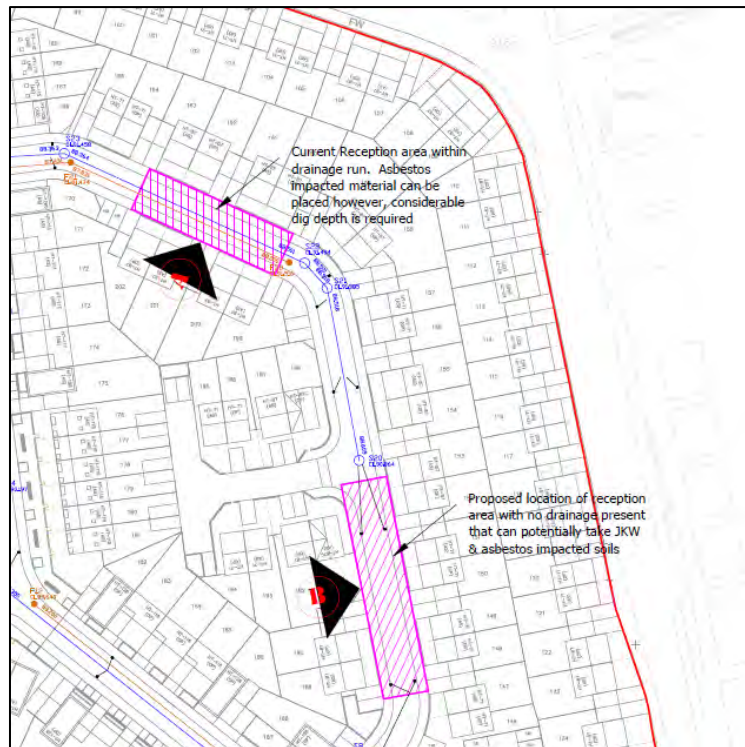
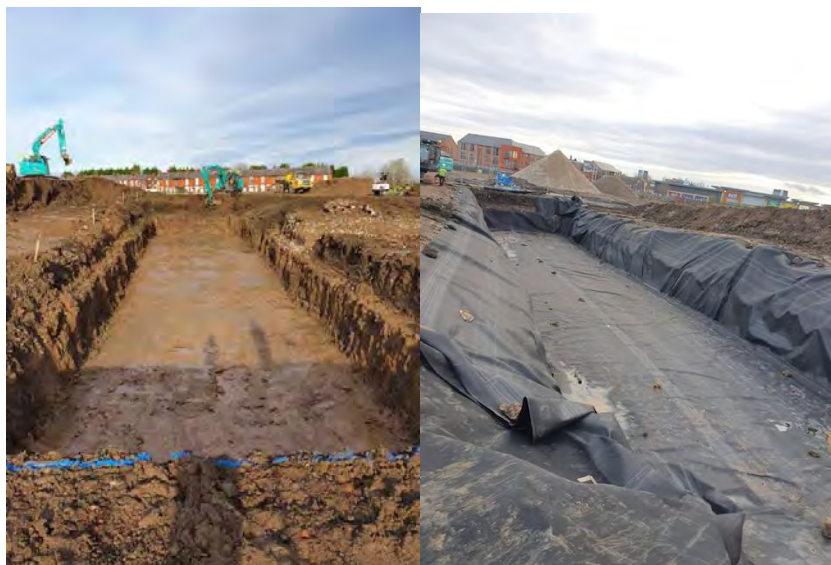


Photo of the northern pit excavation and burial is shown below;



Photo of the eastern pit excavation and burial is shown below;



7. Hydraulic Test Bay (Accumulator) / Boiler House Area B

This area contained a deep concrete lined void that had been backfilled with general demolition waste, this void had accumulated water overtime which required pumping to tanker and removing from site. The water was tested, prior to offsite disposal, by CSG Ltd and removed by CSG Ltd under supervision of Skillings (certificates attached).

Backfill previously identified as the hotspot was excavated and disposed off site to a suitably licensed landfill with certification provided (attached) circa 700m³ were removed.

The concrete structure was broken out using large (48T tracked excavator) sides benched down to the west to make safe access and resultant void backfilled with site won granular material tracked in 200mm layers. This area was previously down to be vibro improved but due to the depth of the fill and clay sides a piled solution is to be adopted. The concrete

was removed by Skillings for crushing and samples collected from the surrounding natural stiff clay strata for validation purposes. All results came back as below residential threshold.



No further remedial action required.

8. Sump Soil Sampling Area C

Delineation of the sump, known as Area C, was undertaken via sampling trial pits to the centre, north, south, east and west.

The sump structure was broken out and crushed for reuse.

Testing of these samples showed exceedances were only recorded in southern and western delineation holes are recorded against lead, arsenic and several PAHs.

None of the above exceedances are deemed to pose when a risk where overlain by a 600mm clean and inert cover system. No further remedial action required.

9. Area D Delineation

Area D was broken out and delineated via 4no. trial pits with samples of the surrounding strata collected.

The sump structure was broken out and crushed for reuse.

The materials were analysed for a broad range of determinants and no significantly elevated concentrations were observed. The area is considered to have been delineated with no additional hotspot identified.

None of the above exceedances are deemed to pose when a risk where overlain by a 600mm clean and inert cover system. No further remedial action required.

10. Basements / Air Raid Shelters Area E

During the Japanese knotweed scrape further basements / air raid shelters were noted on the western boundary. Their location is shown on the sketch below;



These locations were treated in two phases. The top half, above the water line was broken out and stockpiled separately over Visqueen, before being deposited in the Japanese knotweed cell.



The water sampled showed concentrations below WFD Drinking Water Standards and were therefore considered to not pose a risk to the wider environment.

The water contained within the void was pumped out and the remaining structure broken down and crushed on site for reuse.



11. Area F Delineation

Area was delineated via five trial pits with samples collected from the approximate north, east south, west and central areas of hotspot.

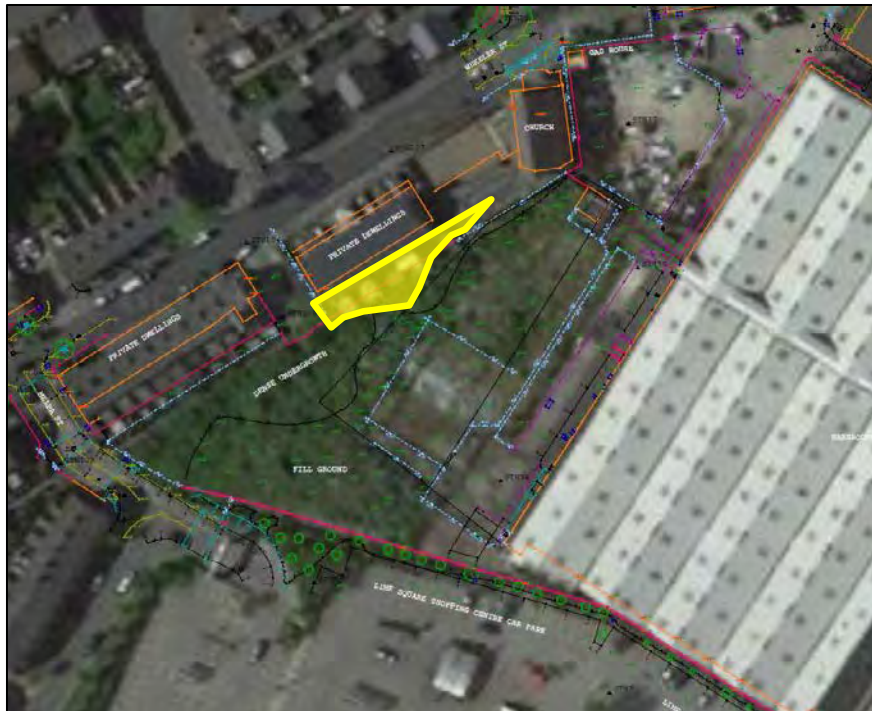
Exceedances of lower magnitude were recorded in the southern and western pits of Area F and were noted against Arsenic and Lead.

None of the exceedances are deemed to pose a risk where overlain by a 600mm clean and inert cover system geotextile at the base.

No further work was considered necessary.

12. Japanese Knotweed (JKW) Excavation and Burial (Area G)

A Japanese knotweed stand was observed in the southeast of the site, as shown approximately on the sketch below. These materials were excavated, encapsulated and buried at depth on site, as detailed in section 5.



The area was chosen based on its location away from proposed drainage runs and plots/driveways, movement was managed by a JKW Consultant and under a management plan.

13. Testing of Site Generated MOT

A sample of the MOT onsite was collected and tested for a broad range of determinants. The sample was returned with all concentrations below residential thresholds.

14. Verification Testing of Deposited Fill

As part of the remediation strategy and MMP additional sampling of earthworks materials was required to prove their suitability for reuse as earthworks fill. Three samples were shown to contain trace amounts of asbestos, these locations were scraped and added to the burial cells.

All samples were shown to be suitable for reuse under a 600mm clean cover system and basal geotextile.

15. Gas Protection Measures

Ground Gas Summary

Betts Geo has had confirmation from the client that no additional ground gas monitoring was undertaken on site as part of the Wardell Armstrong site investigation.

Following the completion of the Betts gas monitoring programme no elevated gas concentrations of gas screening values have been identified indicating that the investigated area of site is classified as Green/CS1.

Site Area	Site Classification	Recommended Ground Gas Protection Measures
Majority of site	Green	No specialist ground gas protection is required.
Specific areas	Amber 1	Hydrocarbon VOC resistant membrane required in specific site areas

Due to the naphthalene and TPH levels encountered during the ground investigation, a hydrocarbon resistant membrane may be required in proposed dwellings located in the vicinity of TP104, TP105, TP112, TP116 and TP118.

During earthworks, additional PID screening and testing for SVOC / VOC TPH and PAH was undertaken. PID screening results ranged from 0.1 to 0.7 ppm.

Whilst the PID showed negligible results some previously targeted investigation / hotspots still identified elevated occurrences.

Whilst there is little guidance for the determinants it is deemed prudent on a nuisance level that a HC / VOC membrane is installed along with a ventilated void. These are shown on the below sketch and will need replication on the foundation zoning plan.



16. Conclusion

No unforeseen contamination was observed during the remediation works and the aims and objectives of the remediation strategy have been met.

Additional testing undertaken by Betts Geo has shown that the fill left onsite is suitable for reuse, as discussed in section 12.

A Construction Phase Verification report is required for garden clean cover systems.

We trust that this information is satisfactory for your further assessment to release of associated conditions.

Should you require any further clarification, please do not hesitate to contact us.

Yours Sincerely,



K Rodway

Senior Geo-Environmental Engineer

BETTS GEO ENVIRONMENTAL

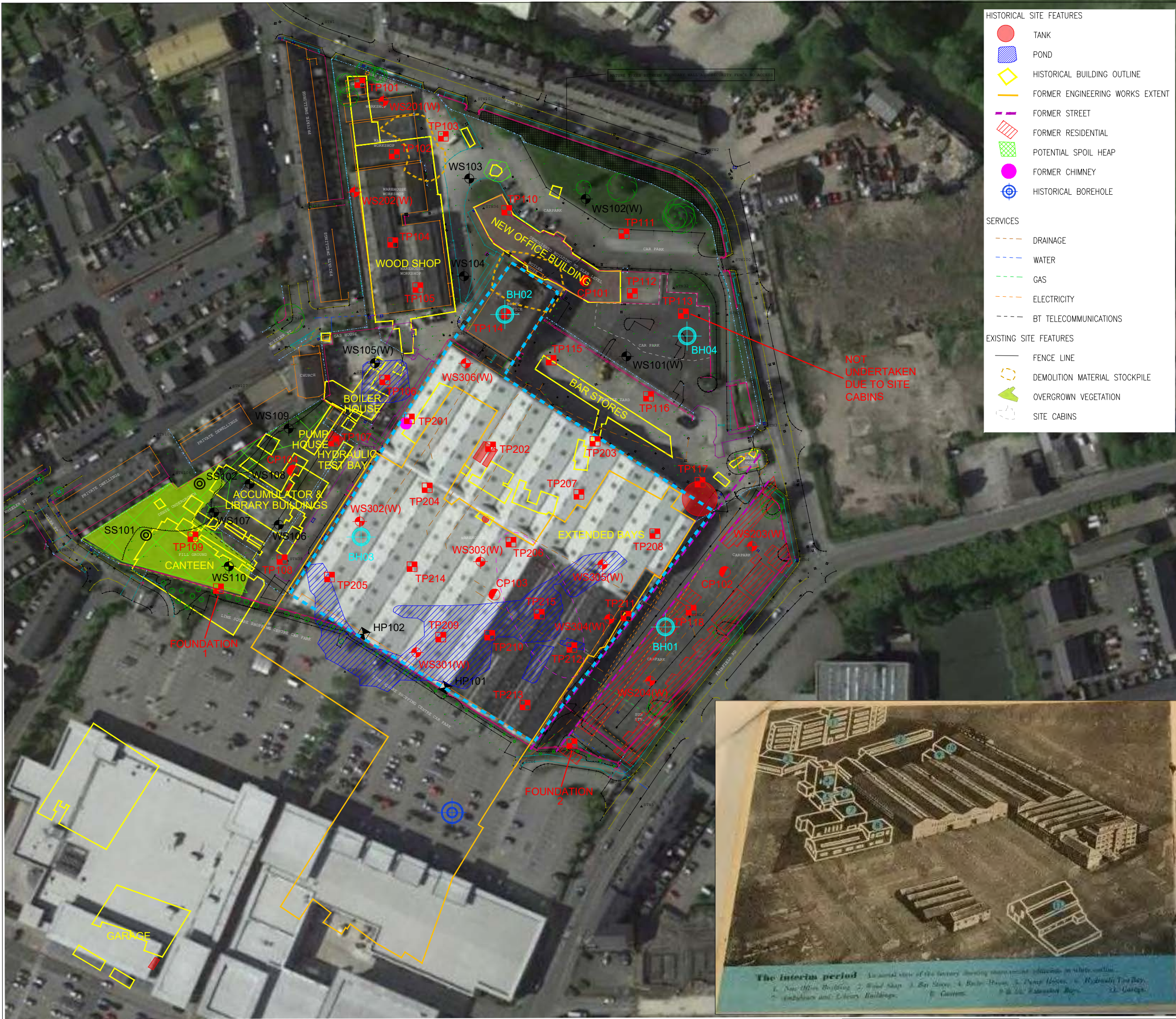
Appended -

Chemical Testing Certificates and Plans

Waste Transfer Notes

Japanese Knotweed Third Party verification.

Betts Geo - Chemical Testing Certificates and Plans



- HISTORICAL SITE FEATURES**
- TANK
 - POND
 - HISTORICAL BUILDING OUTLINE
 - FORMER ENGINEERING WORKS EXTENT
 - FORMER STREET
 - FORMER RESIDENTIAL
 - POTENTIAL SPOIL HEAP
 - FORMER CHIMNEY
 - HISTORICAL BOREHOLE
- SERVICES**
- DRAINAGE
 - WATER
 - GAS
 - ELECTRICITY
 - BT TELECOMMUNICATIONS
- EXISTING SITE FEATURES**
- FENCE LINE
 - DEMOLITION MATERIAL STOCKPILE
 - OVERGROWN VEGETATION
 - SITE CABINS

DO NOT SCALE

NOTES

THIS SKETCH SHOWS THE INDICATIVE LOCATIONS OF EXPLORATORY HOLES OVERLAIN SELECTED DIGITISED HISTORICAL FEATURES OVERLAIN THE TOPOGRAPHICAL SURVEY (Dwg; Proposed Development at Edge Lane, Openshaw, No.; 030919/TOP, Dated; Sept 2019, By; G J Brookes Ltd, For; Chilton Estates Ltd) OVERLAIN AN AERIAL IMAGE TAKEN FROM GOOGLE MAPS (IMAGERY ©2020 Google, MAP DATA ©2020 Google, www.google.co.uk/maps).

EXPLORATORY HOLES PREVIOUSLY UNDERTAKEN BY WARDELL ARMSTRONG ARE ALSO SHOWN (Dwg, Site Investigation Location Plan, No.; SH12240-002, Dated; 18/12/18, By; Wardell Armstrong, For; Chilton Estates Limited).

- KEY**
- POST DEMOLITION INVESTIGATION PHASE
 - AREA OF DELINEATION POST DEMOLITION
 - EXPLORATORY HOLES – WARDELL ARMSTRONG – 2018
 - HP101 HAND PIT
 - SS102 SOIL SAMPLE
 - WS103 WINDOW SAMPLE
 - WS101(W) WINDOW SAMPLE WITH WELL INSTALL
 - EXPLORATORY HOLES – BETTS GEO – 2020
 - WS201(W) WINDOW SAMPLE BOREHOLE WITH WELL INSTALL
 - WS206 WINDOW SAMPLE BOREHOLE
 - CP101 CABLE PERCUSSIVE BOREHOLE TO 15mbgl
 - TP101 TRIAL PIT
 - BH01 POST DEMO CABLE PERCUSSIVE BOREHOLE

E	15/01/21	RD	POST DEMO CP HOLES ADDED	MJF
D	27/07/20	RD	UPDATED POST 2ND PHASE SI	MJF
C	09/07/20	RD	BUILDINGS LABELED	MJF
B	05/03/20	RD	UPDATED POST SI	JS
A	12/02/20	RD	IDS RENUMBERED & SERVICES ADDED	JS
REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: **DRAFT**

BETTS GEO
CONSULTING ENGINEERS

Unit 6, Old Marsh Farm Barns, Welsh Road, Sedland, Flintshire CH5 2LY
Tel: 01244 288178 Fax: 01244 288516 enquiries@betts-associates.co.uk

Your
HOUSING GROUP

PROJECT: **EDGE LANE
OPENSRAW**

TITLE: **PROPOSED EXPLORATORY
HOLE LOCATION PLAN**

DATE: 27/01/20	SCALE @ SIZE: NTS	DRAWN: RD	CHECKED: MJF
PROJECT No: 19YHG001	DRAWING No: PROP EXP 001	REV: E	

5M DENLINEATION TRENCH
TRIAL PIT

Area A

Area G

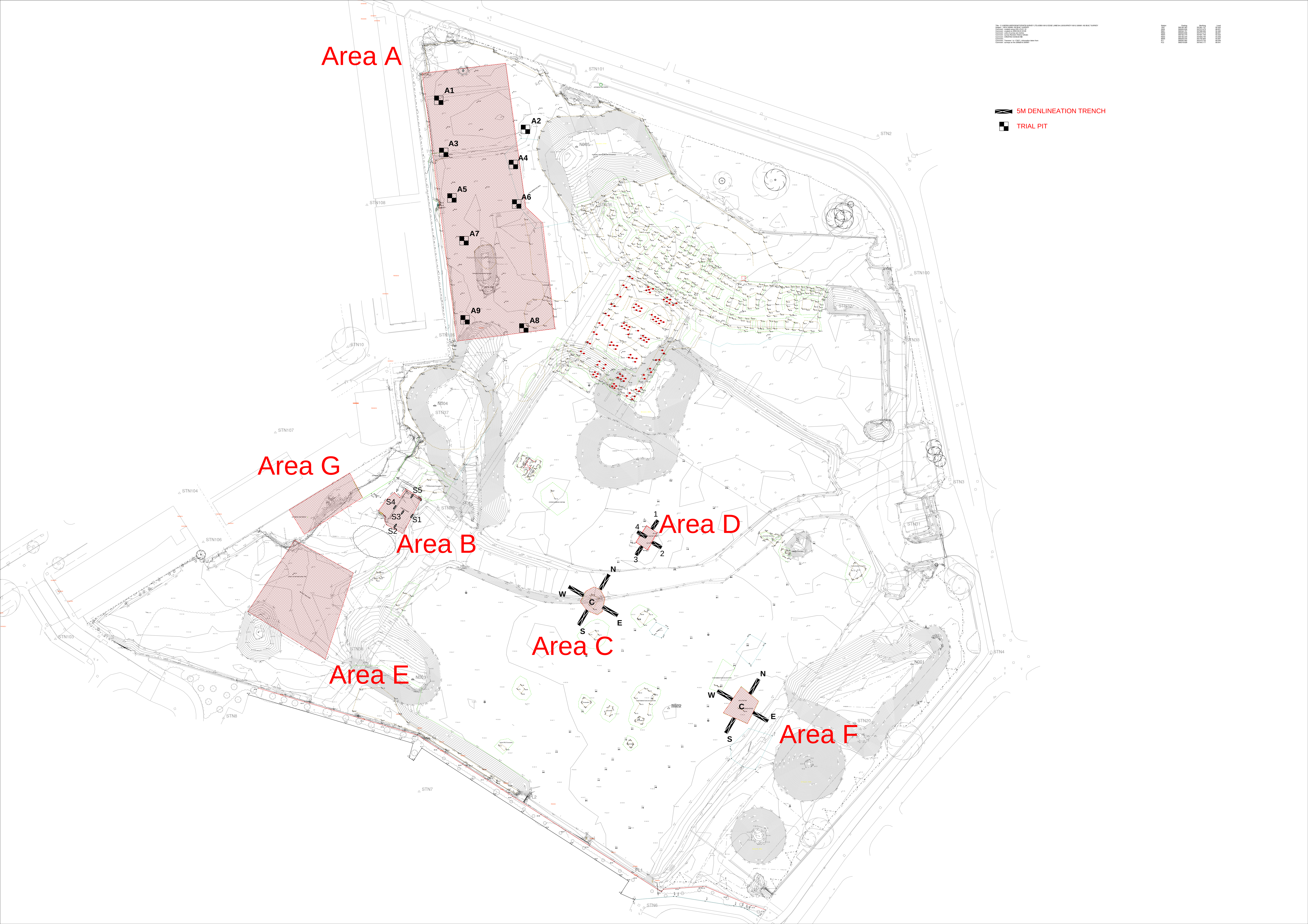
Area B

Area E

Area C

Area D

Area F



FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/09413
Issue Number: 1

Date: 17 November, 2020

Client: Betts Geo Environmental
Old Marsh Farm Barns
Welsh Road
Sealand
Flintshire
UK
CH5 2LY

Project Manager: Betts Geolab
Project Name: Edge Lane
Project Ref: 119YHG001
Order No: BG3916
Date Samples Received: 04/11/20
Date Instructions Received: 05/11/20
Date Analysis Completed: 17/11/20

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Holly Neary-King
Client Services Supervisor

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/1	20/09413/2	20/09413/3	20/09413/4	20/09413/5	20/09413/6	20/09413/7	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area F- C	Area F- S	Area F- E	Area F- W	Area F- N	Area C- E - sump	Area C- C			
Depth to Top	1	0.8	1.5	1.2	0.55		1.5			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	4A	6ABE	4A	5A	5AE	5A			
% Stones >10mm _A	2.7	3.2	44.7	8.1	<0.1	3.4	1.5	% w/w	0.1	A-T-044
pH _D ^{M#}	8.26	7.81	8.36	8.64	7.58	8.38	8.57	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.19	0.70	0.24	0.34	0.02	0.13	0.41	g/l	0.01	A-T-026s
Organic matter _D ^{M#}	5.8	13.5	4.0	23.5	1.4	10.6	7.3	% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	7	54	9	25	<1	23	15	mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.9	1.7	0.9	1.4	<0.5	1.7	1.2	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	89	498	160	367	8	227	102	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	95	865	144	257	11	187	120	mg/kg	1	A-T-024s
Mercury _D	0.39	1.15	1.22	0.48	<0.17	2.42	1.58	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	33	135	55	97	12	395	204	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	2	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	134	318	121	226	35	1040	146	mg/kg	5	A-T-024s
VPH total (>C5-C10)	1	<10	<1	<5	<1	<1	<1	mg/kg	1	Calc-stone+mois

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/1	20/09413/2	20/09413/3	20/09413/4	20/09413/5	20/09413/6	20/09413/7	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area F- C	Area F- S	Area F- E	Area F- W	Area F- N	Area C- E - sump	Area C- C			
Depth to Top	1	0.8	1.5	1.2	0.55		1.5			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	4A	6ABE	4A	5A	5AE	5A			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

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Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20	03-Nov-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	4A	6ABE	4A	5A	5AE	5A			
PAH-16MS										
Acenaphthene _A ^{M#}	0.67	0.73	0.12	1.58	<0.01	0.24	0.10	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	0.06	0.02	0.05	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.93	1.51	0.30	2.41	<0.02	0.81	0.30	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.95	4.69	1.52	5.59	<0.04	1.39	0.73	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.52	3.51	1.41	4.43	<0.04	1.41	0.66	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	2.05	4.32	1.86	5.52	<0.05	1.83	0.91	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.77	2.03	0.85	2.18	<0.05	0.99	0.43	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.68	1.58	0.66	2.01	<0.07	0.60	0.31	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	2.01	4.30	1.45	5.14	<0.06	1.47	0.81	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.17	0.45	0.17	0.47	<0.04	0.18	0.08	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	5.22	11.1	3.34	14	<0.08	3.11	1.70	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.34	0.46	0.06	0.91	<0.01	0.17	0.07	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.89	2.54	0.98	2.54	<0.03	1.03	0.48	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.08	0.26	<0.03	0.38	<0.03	0.08	0.05	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	4.70	6.64	1.20	11.1	<0.03	2.01	1.03	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	4.55	10.3	3.03	12.6	<0.07	2.88	1.53	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	26.5	54.5	17	70.9	<0.08	18.2	9.19	mg/kg	0.01	A-T-019s

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Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5A	4A	6ABE	4A	5A	5AE	5A			
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<10	<1	<5	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<10	<1	<5	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	19	<1	22	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	1	162	<1	280	<1	<1	4	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	9	5950	7	1870	4	7	40	mg/kg	1	A-T-055s
Total Aliphatics _A	11	6140	7	2180	4	7	43	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	1	<10	<1	<5	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12 _A	1	<10	<1	9	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	7	119	1	112	<1	3	6	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	665	9	886	<1	14	30	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	58	1560	32	644	5	37	76	mg/kg	1	A-T-055s
Total Aromatics _A	97	2340	43	1660	5	54	112	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	107	8480	50	3820	8	61	155	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
% Stones >10mm _A	27.7	4.6	<0.1	<0.1	<0.1	2.6	12.7	% w/w	0.1	A-T-044
pH _D ^{M#}	8.23	8.12	7.61	7.98	7.94	7.96	8.09	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.30	0.21	0.25	0.03	0.10	0.06	0.03	g/l	0.01	A-T-026s
Organic matter _D ^{M#}	14.7	14.5	16.6	15.4	5.9	25.9	9.9	% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	19	30	110	28	20	18	16	mg/kg	1	A-T-024s
Cadmium _D ^{M#}	1.0	1.5	1.5	4.4	1.1	0.8	0.9	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	61	141	1490	337	67	83	84	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	81	241	2160	353	176	62	141	mg/kg	1	A-T-024s
Mercury _D	<0.17	1.88	1.36	0.51	<0.17	0.35	0.58	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	227	346	67	37	83	162	42	mg/kg	1	A-T-024s
Selenium _D ^{M#}	1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	83	216	259	715	195	80	155	mg/kg	5	A-T-024s
VPH total (>C5-C10)	<1	<1	<1	1	3	3	1	mg/kg	1	Calc- stone+mois

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Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	Amosite	Chrysotile	NAD	NAD			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	Loose Fibres	Loose Fibres	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) _D	-	-	-	0.001	0.059	-	-	% w/w	0.001	A-T-054

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Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
PAH-16MS										
Acenaphthene _A ^{M#}	0.50	0.07	5.10	0.52	0.32	1.55	0.88	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02	0.06	2.50	0.02	0.13	0.08	0.06	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	1.17	0.38	14.5	0.91	0.89	3.29	1.08	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.24	0.99	19.4	2.65	1.85	13.3	3.10	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.10	2.25	10.3	2.27	1.61	10.8	2.68	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.42	2.53	12.7	2.98	2.00	14.1	3.46	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.66	2.90	3.35	1.15	0.85	5.57	1.51	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.47	0.86	5.18	1.06	0.72	5.31	1.15	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.21	1.24	19.8	2.64	1.78	13.3	2.95	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.13	0.36	1.19	0.26	0.17	1.33	0.33	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	3.49	1.76	47.5	6.14	4.71	27.7	6.93	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.50	0.06	9.40	0.32	0.44	1.51	0.79	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.73	2.61	4.47	1.36	0.96	6.58	1.61	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.06	0.10	9.67	0.17	0.14	0.44	0.31	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	3.76	0.68	73.7	3.92	3.65	16.4	5.62	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.98	1.76	46	5.44	4.32	26.9	7.00	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	19.4	18.6	285	31.8	24.5	148	39.5	mg/kg	0.01	A-T-019s

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Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.02	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	1	<1	<1	3	5	6	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	4	4	1	6	3	10	216	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	29	70	14	75	10	275	762	mg/kg	1	A-T-055s
Total Aliphatics _A	33	75	15	81	16	292	985	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1	1	3	3	1	mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	1	38	8	2	mg/kg	1	A-T-055s
Aro >C12-C16 _A	6	6	4	11	104	61	17	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	24	29	12	57	220	288	140	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	82	176	40	134	364	915	124	mg/kg	1	A-T-055s
Total Aromatics _A	114	211	56	205	729	1280	284	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	147	286	71	286	745	1560	1270	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
SVOC										
4-Bromophenyl phenyl ether _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobenzene _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Diethyl phthalate _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Dimethyl phthalate _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Dibenzofuran _A	-	-	-	-	-	1220	-	µg/kg	100	A-T-052s
Carbazole _A	-	-	-	-	-	906	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	-	-	-	-	-	872	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Nitrophenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
3+4-Methylphenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Nitrophenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylphenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chlorophenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	-	-	-	-	-	495	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenol _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Pentachlorophenol (SVOC) _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Diethylphthalate _A	-	-	-	-	-	<500	-	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	-	-	-	-	-	6640	-	µg/kg	100	A-T-052s
Nitrobenzene _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Isophorone _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
Hexachloroethane _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorocyclopentadiene _A	-	-	-	-	-	<100	-	µg/kg	100	A-T-052s
Perylene _A	-	-	-	-	-	2470	-	µg/kg	100	A-T-052s

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
VOC										
Dichlorodifluoromethane _A	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Chloromethane _A	-	-	-	-	-	<10	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromomethane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Chloroethane _A [#]	-	-	-	-	-	56	-	µg/kg	1	A-T-006s
Trichlorofluoromethane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1-Dichloroethene _A [#]	-	-	-	-	-	8	-	µg/kg	1	A-T-006s
Carbon Disulphide _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Dichloromethane _A	-	-	-	-	-	<5	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1-Dichloroethane _A [#]	-	-	-	-	-	250	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene _A [#]	-	-	-	-	-	3	-	µg/kg	1	A-T-006s
2,2-Dichloropropane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromochloromethane _A [#]	-	-	-	-	-	<5	-	µg/kg	5	A-T-006s
Chloroform _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane _A [#]	-	-	-	-	-	514	-	µg/kg	1	A-T-006s
1,1-Dichloropropene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Carbon Tetrachloride _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dichloroethane _A [#]	-	-	-	-	-	<2	-	µg/kg	2	A-T-006s
Benzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Trichloroethene _A [#]	-	-	-	-	-	3	-	µg/kg	1	A-T-006s
1,2-Dichloropropane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Dibromomethane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromodichloromethane _A [#]	-	-	-	-	-	<10	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Toluene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,3-Dichloropropane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Tetrachloroethene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Dibromochloromethane _A [#]	-	-	-	-	-	<3	-	µg/kg	3	A-T-006s
1,2-Dibromoethane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s

Envirolab Job Number: 20/09413

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID	20/09413/8	20/09413/9	20/09413/10	20/09413/11	20/09413/12	20/09413/13	20/09413/14	Units	Limit of Detection	Method ref
Client Sample No	MG	MG	MG	MG	MG	MG	MG			
Client Sample ID	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7			
Depth to Top	1	1	1.4	0.25	0.6	1	1			
Depth To Bottom										
Date Sampled	03-Nov-20	03-Nov-20	03-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20	04-Nov-20			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Solid	Soil - ES	Soil - ES			
Sample Matrix Code	4ABE	4A	7	5AE	7	4A	5A			
Chlorobenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane _A	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Ethylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
m & p Xylene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
o-Xylene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Styrene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromoform _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Isopropylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane _A	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromobenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
n-Propylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
2-Chlorotoluene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
4-Chlorotoluene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
tert-Butylbenzene _A [#]	-	-	-	-	-	<2	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
sec-Butylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
4-Isopropyltoluene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene _A	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
n-Butylbenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) _A	-	-	-	-	-	<2	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene _A	-	-	-	-	-	<3	-	µg/kg	3	A-T-006s
Hexachlorobutadiene _A [#]	-	-	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene _A	-	-	-	-	-	<3	-	µg/kg	3	A-T-006s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

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

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

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

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

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

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: Betts Geo Environmental, Old Marsh Farm Barns, Welsh Road, Sealand,
Flintshire, UK, CH5 2LY

Project: Edge Lane
Clients Project No: 119YHG001

Project No: 20/09413
Date Received: 05/11/2020 (am)
Cool Box Temperatures (°C): 7.9, 8.1

NO DEVIATIONS IDENTIFIED

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

SUMMARY OF CONTAMINATION ANALYSIS: SOIL

SUMMARY OF CONTAMINATION ANALYSIS: METALS

Project Name Edge Lane
Project No 119YHG001
Date 03/11/20

SOIL TYPE	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
SAMPLE LOCATION	Area F- C	Area F- S	Area F- E	Area F- W	Area F- N	Area C- E - sumn	Area C- C	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7
DEPTH (m)	1	0.8	1.5	1.2	0.55		1.5	1	1	1.4	0.25	0.6	1	1
pH	8.26	7.81	8.36	8.64	7.58	8.38	8.57	8.23	8.12	7.61	7.98	7.94	7.96	8.09
Sulphate (water sol 2:1)	0.19	0.7	0.24	0.34	0.02	0.13	0.41	0.3	0.21	0.25	0.03	0.1	0.06	0.03
Organic matter	5.8	13.5	4	23.5	1.4	10.6	7.3	14.7	14.5	16.6	15.4	5.9	25.9	9.9
Arsenic	7	54	9	25	<1	23	15	19	30	110	28	20	18	16
Cadmium	0.9	1.7	0.9	1.4	<0.5	1.7	1.2	1	1.5	1.5	4.4	1.1	0.8	0.9
Copper	89	498	160	367	8	227	102	61	141	1490	337	67	83	84
Chromium (hexavalent)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	95	865	144	257	11	187	120	81	241	2160	353	176	62	141
Mercury	0.39	1.15	1.22	0.48	<0.17	2.42	1.58	<0.17	1.88	1.36	0.51	<0.17	0.35	0.58
Nickel	33	135	55	97	12	395	204	227	346	67	37	83	162	42
Selenium	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Zinc	134	318	121	226	35	1040	146	83	216	259	715	195	80	155
Asbestos in Soil	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	Amosite	Chrysotile	NAD	NAD
Asbestos Matrix	-	-	-	-	-	-	-	-	-	-	Loose Fibres	Loose Fibres	-	-
Quantification	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.001	0.059	N/A	N/A
Organic matter	5.8	13.5	4	23.5	1.4	10.6	7.3	14.7	14.5	16.6	15.4	5.9	25.9	9.9

Metals	Mean Value Test *	Range		AtRisk 2017 (mg/kg)	AtRisk 2017 (mg/kg)	DEFRA C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	With Homegrown Produce (1% SOM)	With Homegrown Produce (6% SOM)	
pH	8.26	8.64	7.58			-
Sulphate (water sol 2:1)	0.30	0.70	0.02			-
Organic matter	15.43	25.90	1.40			-
Arsenic	39.58	110.00	<1	32	32	37
Cadmium	1.84	4.40	<0.5	10	10	22.1
Copper	444.73	1490.00	8.00	4730	4790	-
Chromium (hexavalent)	1.00	<1	<1	3.62	3.63	20.5
Lead	615.07	2160.00	11.00			200
Mercury	1.23	2.42	<0.17	8.81	15.8	-
Nickel	191.82	395.00	12.00	EA/AtRisk withdrawn Aug 2015		-
Selenium	1.20	2.00	<1	375	375	-
Zinc	397.15	1040.00	35.00	20000	20300	-

NOTE:

Any individual results and mean value tests above SGVs are shown RED highlighted.

Any outlier values which exceed relevant SGVs are shown in red

* - The calculations for the mean value test include outliers

** - Results for this determinand are assessed with no background levels taken into account

Results are expressed as mg/kg unless otherwise stated

ALL RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

SGVs are derived from the EA 2009 SGVs which are taken from AtRisk 2015. Category 4 screening levels have been adopted by the EA and have been included as new guidance.

Note: The SGV for elemental mercury has been used to assess total mercury concentrations at the site. The Environment Agency's Science Report SC050021 /Mercury SGV states that 'for general surface contamination and to simplify the assessment the SGV's for inorganic mercury can normally be compared with chemical analysis for total mercury content...'. Based on the latter, SGV for elemental mercury (170mg/kg) in the soil assessment is used

NAD - NO ASBESTOS DETECTED

TS - Topsoil, MG - Made Ground and N - Natural Ground

SUMMARY OF CONTAMINATION ANALYSIS: SOIL

SUMMARY OF CONTAMINATION ANALYSIS: TPH

Project Name Edge Lane
 Project No 119YHG001
 Date 03/11/20

SOIL TYPE	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
SAMPLE LOCATION	Area F- C	Area F- S	Area F- E	Area F- W	Area F- N	Area C- E - sumn	Area C- C	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7
DEPTH (m)	1	0.8	1.5	1.2	0.55		1.5	1	1	1.4	0.25	0.6	1	1
Ali >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.02
Ali >C8-C10	<1	<10	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C10-C12	<1	<10	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	1	<1
Ali >C12-C16	<1	19	<1	22	<1	<1	<1	<1	1	<1	<1	3	5	6
Ali >C16-C21	1	162	<1	280	<1	<1	4	4	4	1	6	3	10	216
Ali >C21-C35	9	5950	7	1870	4	7	40	29	70	14	75	10	275	762
Total Aliphatics	11	6140	7	2180	4	7	43	33	75	15	81	16	292	985
Aro >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	1	<10	<1	<5	<1	<1	<1	<1	<1	<1	1	3	3	1
Aro >C10-C12	1	<10	<1	9	<1	<1	<1	<1	<1	<1	1	38	8	2
Aro >C12-C16	7	119	1	112	<1	3	6	6	6	4	11	104	61	17
Aro >C16-C21	29	665	9	886	<1	14	30	24	29	12	57	220	288	140
Aro >C21-C35	58	1560	32	644	5	37	76	82	176	40	134	364	915	124
Total Aromatics	97	2340	43	1660	5	54	112	114	211	56	205	729	1280	284
TPH (Ali & Aro)	107	8480	50	3820	8	61	155	147	286	71	286	745	1560	1270
BTEX - Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MTBE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Organic Matter	5.8	13.5	4	23.5	1.4	10.6	7.3	14.7	14.5	16.6	15.4	5.9	25.9	9.9

TPH	Mean Value Test *	Range		AtRisk 2017 (mg/kg) Residential with Home Grown Produce	AtRisk 2017 (mg/kg) Residential with Home Grown Produce	DEFRA C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***
Ali >C5-C6	0.01	0.00	0.00	42.7	369	-
Ali >C6-C8	0.01	0.03	0.02	99.3	1240	-
Ali >C8-C10	3.14	0.00	0.00	13.9	204	-
Ali >C10-C12	3.14	1.00	1.00	81.7	1180	-
Ali >C12-C16	7.87	22.00	1.00	385	4130	-
Ali >C16-C21	94.49	280.00	1.00	210000	210100	-
Ali >C21-C35	1412.78	5950.00	4.00			
Total Aliphatics	1499.84	6140.00	4.00			
Aro >C5-C7	0.01	0.00	0.00	0.137	0.871	-
Aro >C7-C8	0.01	0.00	0.00	113	780	-
Aro >C8-C10	3.42	3.00	1.00	20.5	232	-
Aro >C10-C12	10.14	38.00	1.00	70	468	-
Aro >C12-C16	54.23	119.00	1.00	165	830	-
Aro >C16-C21	301.15	886.00	9.00	319	1040	-
Aro >C21-C35	515.59	1560.00	5.00	1120	1710	-
Total Aromatics	858.85	2340.00	5.00			
TPH (Ali & Aro)	2320.41	8480.00	8.00			
BTEX - Benzene	0.01	0.00	0.00	0.0493	0.33	0.871
BTEX - Toluene	0.01	0.00	0.00	113	780	-
BTEX - Ethyl Benzene	0.01	0.00	0.00	50.7	453	-
BTEX - m & p Xylene	0.01	0.00	0.00	24	312	-
BTEX - o Xylene	0.01	0.00	0.00	26.4	336	-
MTBE	0.01	0.00	0.00	27.6	220	

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

*** THESE RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

NOTES:

For the Purpose of this investigation- results will be assessed against RESIDENTIAL GUIDELINES WITH HOMEGROWN PRODUCE WITH NO FREE PRODUCT.

UU Drinking Water Guidelines	
PE Threshold	
Total BTEX & MTBE	0.1
EC5-EC10 Ali- Aro	2
EC10-EC16 Ali-Aro	10
EC16-EC40 Ali-Aro	500

SUMMARY OF CONTAMINATION ANALYSIS: SOIL

SUMMARY OF CONTAMINATION ANALYSIS: PAH

Project Name Edge Lane
Project No 119YHG001
Date 03/11/20

SOIL TYPE	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
SAMPLE LOCATION	Area F- C	Area F- S	Area F- E	Area F- W	Area F- N	Area C- E - sump	Area C- C	Area C- N	Area C- W	Area C- S	A1	A3	A4	A7
DEPTH (m)	1	0.8	1.5	1.2	0.55		1.5	1	1	1.4	0.25	0.6	1	1
Acenaphthene	0.67	0.73	0.12	1.58	<0.01	0.24	0.1	0.5	0.07	5.1	0.52	0.32	1.55	0.88
Acenaphthylene	<0.01	0.06	0.02	0.05	<0.01	<0.01	<0.01	0.02	0.06	2.5	0.02	0.13	0.08	0.06
Anthracene	0.93	1.51	0.3	2.41	<0.02	0.81	0.3	1.17	0.38	14.5	0.91	0.89	3.29	1.08
Benzo(a)anthracene	1.95	4.69	1.52	5.59	<0.04	1.39	0.73	1.24	0.99	19.4	2.65	1.85	13.3	3.1
Benzo(a)pyrene	1.52	3.51	1.41	4.43	<0.04	1.41	0.66	1.1	2.25	10.3	2.27	1.61	10.8	2.68
Benzo(b)fluoranthene	2.05	4.32	1.86	5.52	<0.05	1.83	0.91	1.42	2.53	12.7	2.98	2	14.1	3.46
Benzo(ghi)perylene	0.77	2.03	0.85	2.18	<0.05	0.99	0.43	0.66	2.9	3.35	1.15	0.85	5.57	1.51
Benzo(k)fluoranthene	0.68	1.58	0.66	2.01	<0.07	0.6	0.31	0.47	0.86	5.18	1.06	0.72	5.31	1.15
Chrysene	2.01	4.3	1.45	5.14	<0.06	1.47	0.81	1.21	1.24	19.8	2.64	1.78	13.3	2.95
Dibenzo(ah)anthracene	0.17	0.45	0.17	0.47	<0.04	0.18	0.08	0.13	0.36	1.19	0.26	0.17	1.33	0.33
Fluoranthene	5.22	11.1	3.34	14	<0.08	3.11	1.7	3.49	1.76	47.5	6.14	4.71	27.7	6.93
Fluorene	0.34	0.46	0.06	0.91	<0.01	0.17	0.07	0.5	0.06	9.4	0.32	0.44	1.51	0.79
Indeno(123-cd)pyrene	0.89	2.54	0.98	2.54	<0.03	1.03	0.48	0.73	2.61	4.47	1.36	0.96	6.58	1.61
Naphthalene	0.08	0.26	<0.03	0.38	<0.03	0.08	0.05	0.06	0.1	9.67	0.17	0.14	0.44	0.31
Phenanthrene	4.7	6.64	1.2	11.1	<0.03	2.01	1.03	3.76	0.68	73.7	3.92	3.65	16.4	5.62
Pyrene	4.55	10.3	3.03	12.6	<0.07	2.88	1.53	2.98	1.76	46	5.44	4.32	26.9	7
Organic Matter	5.8	13.5	4	23.5	1.4	10.6	7.3	14.7	14.5	16.6	15.4	5.9	25.9	9.9

PAH	Mean Value Test *	Range		AtRisk 2017 (mg/kg) Residential with Home Grown Produce	AtRisk 2017 (mg/kg) Residential with Home Grown Produce	DEFRA's C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***
Acenaphthene	1.51	5.10	<0.01	608	2760	-
Acenaphthylene	0.53	2.50	<0.01			-
Anthracene	3.78	14.50	<0.02	10200	26200	-
Benzo(a)anthracene	6.78	19.40	<0.04	4.52	8.54	-
Benzo(a)pyrene	4.72	10.80	<0.04	1.51	2.05	4.95
Benzo(b)fluoranthene	5.98	14.10	<0.05	7.72	9.86	-
Benzo(ghi)perylene	2.36	5.57	<0.05	96.2	103	-
Benzo(k)fluoranthene	2.27	5.31	<0.07	84.4	100	-
Chrysene	6.79	19.80	<0.06	585	927	-
Dibenzo(ah)anthracene	0.57	1.33	<0.04	0.838	1	-
Fluoranthene	15.90	47.50	<0.08	983	2980	-
Fluorene	2.23	9.40	<0.01	735	2610	-
Indeno(123-cd)pyrene	2.75	6.58	<0.03	7.31	9.75	-
Naphthalene	2.05	9.67	<0.03	0.829	12.2	-
Phenanthrene	18.58	73.70	<0.03			-
Pyrene	15.20	46.00	<0.07	668	2120	-

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

*** THESE RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

NOTES:

For the Purpose of this investigation- results will be assessed against RESIDENTIAL GUIDELINES WITH HOMEGROWN PRODUCE WITH NO FREE PRODUCT.

Envirolab Job Number: 20/09413

Client: Betts Geo Environmental

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID			20/09413/13
Client Sample No			MG
Client Sample ID			A4
Depth to Top			1
Depth to Bottom			
Date Sampled			04-Nov-20
Sample Type			Soil - ES
Sample Matrix Code			4A
	Units	Limit of Detection	
SVOC			
4-Bromophenyl phenyl ether	µg/kg	100	<100
Hexachlorobenzene	µg/kg	100	<100
Diethyl phthalate	µg/kg	100	<100
Dimethyl phthalate	µg/kg	100	<100
Dibenzofuran	µg/kg	100	1220
Carbazole	µg/kg	100	906
Butylbenzyl phthalate	µg/kg	100	<100
Bis(2-ethylhexyl)phthalate	µg/kg	500	872
Bis(2-chloroethoxy)methane	µg/kg	100	<100
Bis(2-chloroethyl)ether	µg/kg	100	<100
4-Nitrophenol	µg/kg	100	<100
3+4-Methylphenol	µg/kg	100	<100
4-Chloro-3-methylphenol	µg/kg	100	<100
2-Nitrophenol	µg/kg	100	<100
2-Methylphenol	µg/kg	100	<100
2-Chlorophenol	µg/kg	100	<100
2,6-Dinitrotoluene	µg/kg	100	<100
2,4-Dinitrotoluene	µg/kg	100	<100
2,4-Dimethylphenol	µg/kg	100	<100
2,4-Dichlorophenol	µg/kg	100	<100
2,4,6-Trichlorophenol	µg/kg	100	<100
2,4,5-Trichlorophenol	µg/kg	100	<100
2-Chloronaphthalene	µg/kg	100	<100
2-Methylnaphthalene	µg/kg	100	495
Bis(2-chloroisopropyl)ether	µg/kg	100	<100
Phenol	µg/kg	100	<100
Pentachlorophenol (SVOC)	µg/kg	100	<100
n-Nitroso-n-dipropylamine	µg/kg	100	<100
n-Dioctylphthalate	µg/kg	500	<500
n-Dibutylphthalate	µg/kg	100	6640
Nitrobenzene	µg/kg	100	<100
Isophorone	µg/kg	100	<100
Hexachloroethane	µg/kg	100	<100
Hexachlorocyclopentadiene	µg/kg	100	<100
Perylene	µg/kg	100	2470
VOC			
Dichlorodifluoromethane	µg/kg	1	<1
Chloromethane	µg/kg	10	<10
Vinyl Chloride (Chloroethene)	µg/kg	1	<1
Bromomethane	µg/kg	1	<1
Chloroethane	µg/kg	1	56
Trichlorofluoromethane	µg/kg	1	<1
1,1-Dichloroethene	µg/kg	1	8
Carbon Disulphide	µg/kg	1	<1
Dichloromethane	µg/kg	5	<5
trans 1,2-Dichloroethene	µg/kg	1	<1
1,1-Dichloroethane	µg/kg	1	250
cis 1,2-Dichloroethene	µg/kg	1	3
2,2-Dichloropropane	µg/kg	1	<1
Bromochloromethane	µg/kg	5	<5
Chloroform	µg/kg	1	<1

Envirolab Job Number: 20/09413

Client: Betts Geo Environmental

Client Project Name: Edge Lane

Client Project Ref: 119YHG001

Lab Sample ID			20/09413/13
Client Sample No			MG
Client Sample ID			A4
Depth to Top			1
Depth to Bottom			
Date Sampled			04-Nov-20
Sample Type			Soil - ES
Sample Matrix Code			4A
	Units	Limit of Detection	
1,1,1-Trichloroethane	µg/kg	1	514
1,1-Dichloropropene	µg/kg	1	<1
Carbon Tetrachloride	µg/kg	1	<1
1,2-Dichloroethane	µg/kg	2	<2
Benzene	µg/kg	1	<1
Trichloroethene	µg/kg	1	3
1,2-Dichloropropane	µg/kg	1	<1
Dibromomethane	µg/kg	1	<1
Bromodichloromethane	µg/kg	10	<10
cis 1,3-Dichloropropene	µg/kg	1	<1
Toluene	µg/kg	1	<1
trans 1,3-Dichloropropene	µg/kg	1	<1
1,1,2-Trichloroethane	µg/kg	1	<1
1,3-Dichloropropane	µg/kg	1	<1
Tetrachloroethene	µg/kg	1	<1
Dibromochloromethane	µg/kg	3	<3
1,2-Dibromoethane	µg/kg	1	<1
Chlorobenzene	µg/kg	1	<1
1,1,1,2-Tetrachloroethane	µg/kg	1	<1
Ethylbenzene	µg/kg	1	<1
m & p Xylene	µg/kg	1	<1
o-Xylene	µg/kg	1	<1
Styrene	µg/kg	1	<1
Bromoform	µg/kg	1	<1
Isopropylbenzene	µg/kg	1	<1
1,1,2,2-Tetrachloroethane	µg/kg	1	<1
1,2,3-Trichloropropane	µg/kg	1	<1
Bromobenzene	µg/kg	1	<1
n-Propylbenzene	µg/kg	1	<1
2-Chlorotoluene	µg/kg	1	<1
1,3,5-Trimethylbenzene	µg/kg	1	<1
4-Chlorotoluene	µg/kg	1	<1
tert-Butylbenzene	µg/kg	2	<2
1,2,4-Trimethylbenzene	µg/kg	1	<1
sec-Butylbenzene	µg/kg	1	<1
4-Isopropyltoluene	µg/kg	1	<1
1,3-Dichlorobenzene	µg/kg	1	<1
1,4-Dichlorobenzene	µg/kg	1	<1
n-Butylbenzene	µg/kg	1	<1
1,2-Dichlorobenzene	µg/kg	1	<1
1,2-Dibromo-3-chloropropane (DCBP)	µg/kg	2	<2
1,2,4-Trichlorobenzene	µg/kg	3	<3
Hexachlorobutadiene	µg/kg	1	<1
1,2,3-Trichlorobenzene	µg/kg	3	<3

SUMMARY OF CONTAMINATION ANALYSIS: METALS

Project Name Edge Lane
Project No 19YHG001
Date 07/04/21

SOIL TYPE	COHESIVE - N	COHESIVE - N	COHESIVE - N	COHESIVE - N	COHESIVE - N
SAMPLE LOCATION	Area B SP1	Area B SP2	Area B SP3	Area B SP4	Area B SP5
DEPTH (m)	-	-	-	-	-
pH	8.79	9.35	9.68	7.63	9.06
Sulphate (water sol 2:1)	<0.01	0.02	<0.01	0.02	0.02
Organic matter	1.4	1.7	1.9	1.4	1.9
Arsenic	<1	<1	<1	<1	<1
Cadmium	0.9	0.9	0.7	1.1	0.9
Copper	24	26	21	26	24
Chromium (hexavalent)	<1	<1	<1	<1	<1
Lead	10	11	9	11	10
Mercury	<0.17	<0.17	<0.17	<0.17	<0.17
Nickel	32	35	24	44	32
Selenium	<1	1	<1	1	<1
Zinc	57	60	52	57	61
Asbestos in Soil	NAD	NAD	NAD	NAD	NAD
Asbestos Matrix	N/A	N/A	N/A	N/A	N/A
Quantification	N/A	N/A	N/A	N/A	N/A
Organic matter	1.4	1.7	1.9	1.4	1.9

Metals	Mean Value Test *	Range		AtRisk 2017 (mg/kg)	AtRisk 2017 (mg/kg)	DEFRA C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	With Homegrown Produce (1% SOM)	With Homegrown Produce (6% SOM)	
pH	9.65	9.68	7.63			-
Sulphate (water sol 2:1)	0.02	0.02	0.02			-
Organic matter	1.90	1.90	1.40			
Arsenic	1.00	<1	<1	32	32	37
Cadmium	1.03	1.10	0.70	10	10	22.1
Copper	26.15	26.00	21.00	4730	4790	-
Chromium (hexavalent)	1.00	<1	<1	3.62	3.63	20.5
Lead	11.00	11.00	9.00			200
Mercury	0.17	<0.17	<0.17	8.81	15.8	-
Nickel	40.26	44.00	24.00	EA/AtRisk withdrawn Aug 2015		
Selenium	1.00	1.00	<1	375	375	-
Zinc	60.74	61.00	52.00	20000	20300	-

NOTE:

Any individual results and mean value tests above SGVs are shown RED highlighted.
 Any outlier values which exceed relevant SGVs are shown in red

* - The calculations for the mean value test include outliers

** - Results for this determinand are assessed with no background levels taken into account

Results are expressed as mg/kg unless otherwise stated

ALL RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

SGVs are derived from the EA 2009 SGVs which are taken from AtRisk 2015. Category 4 screening levels have been adopted by the EA and have been included as new guidance.

Note: The SGV for elemental mercury has been used to assess total mercury concentrations at the site. The Environment Agency's Science Report SC050021 /Mercury SGV states that 'for general surface contamination and to simplify the assessment the SGV's for inorganic mercury can normally be compared with chemical analysis for total mercury content...'. Based on the latter, SGV for elemental mercury (170mg/kg) in the soil assessment is used

NAD - NO ASBESTOS DETECTED

TS - Topsoil, MG - Made Ground and N - Natural Ground

SUMMARY OF CONTAMINATION ANALYSIS: TPH

Project Name Edge Lane
Project No 19YHG001
Date 07/04/21

SOIL TYPE	COHESIVE - N	COHESIVE - N	COHESIVE - N	COHESIVE - N	COHESIVE - N
SAMPLE LOCATION	Area B SP1	Area B SP2	Area B SP3	Area B SP4	Area B SP5
DEPTH (m)	-	-	-	-	-
Ali >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C8-C10	<1	<1	2	<1	1
Ali >C10-C12	<1	<1	1	<1	2
Ali >C12-C16	1	1	5	1	3
Ali >C16-C21	<1	1	5	2	2
Ali >C21-C35	2	2	6	5	10
Total Aliphatics	3	5	19	8	19
Aro >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	<1	<1	1	<1	<1
Aro >C10-C12	<1	<1	1	8	<1
Aro >C12-C16	1	1	7	28	3
Aro >C16-C21	2	1	11	4	3
Aro >C21-C35	2	4	16	5	10
Total Aromatics	5	6	36	45	17
TPH (Ali & Aro)	9	11	55	53	36
BTEX - Benzene	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	<0.01	<0.01	<0.01	<0.01	<0.01
MTBE	<0.01	<0.01	<0.01	<0.01	<0.01
Organic Matter	1.4	1.7	1.9	1.4	1.9

TPH	Mean Value Test *	Range		AtRisk 2017 (mg/kg) Residential with Home Grown Produce	AtRisk 2017 (mg/kg) Residential with Home Grown Produce	DEFRA C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***
Ali >C5-C6	0.01	<0.01	<0.01	42.7	369	-
Ali >C6-C8	0.01	<0.01	<0.01	99.3	1240	-
Ali >C8-C10	1.63	2.00	<1	13.9	204	-
Ali >C10-C12	1.63	2.00	<1	81.7	1180	-
Ali >C12-C16	3.91	5.00	1.00	385	4130	-
Ali >C16-C21	3.77	5.00	<1	210000	210100	-
Ali >C21-C35	8.16	10.00	2.00			
Total Aliphatics	18.14	19.00	3.00			
Aro >C5-C7	0.01	<0.01	<0.01	0.137	0.871	-
Aro >C7-C8	0.01	<0.01	<0.01	113	780	-
Aro >C8-C10	1.00	1.00	<1	20.5	232	-
Aro >C10-C12	5.38	8.00	<1	70	468	-
Aro >C12-C16	18.91	28.00	1.00	165	830	-
Aro >C16-C21	7.98	11.00	2.00	319	1040	-
Aro >C21-C35	12.78	16.00	2.00	1120	1710	-
Total Aromatics	38.95	45.00	5.00			
TPH (Ali & Aro)	53.87	55.00	9.00			
BTEX - Benzene	0.01	<0.01	<0.01	0.0493	0.33	0.871
BTEX - Toluene	0.01	<0.01	<0.01	113	780	-
BTEX - Ethyl Benzene	0.01	<0.01	<0.01	50.7	453	-
BTEX - m & p Xylene	0.01	<0.01	<0.01	24	312	-
BTEX - o Xylene	0.01	<0.01	<0.01	26.4	336	-
MTBE	0.01	<0.01	<0.01	27.6	220	

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

*** THESE RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

NOTES:

UU Drinking Water Guidelines	
PE Threshold	
Total BTEX & MTBE	0.1
EC5-EC10 Ali-Aro	2
EC10-EC16 Ali-Aro	10
EC16-EC40 Ali-Aro	500

Total BTEX & MTBE	0.1
EC5-EC10 Ali-Aro	2
EC10-EC16 Ali-Aro	10
EC16-EC40 Ali-Aro	500

SUMMARY OF CONTAMINATION ANALYSIS: PAH

Project Name Edge Lane
Project No 19YHG001
Date 07/04/21

SOIL TYPE	COHESIVE - N	COHESIVE - N	COHESIVE - N	COHESIVE - N	COHESIVE - N
SAMPLE LOCATION	Area B SP1	Area B SP2	Area B SP3	Area B SP4	Area B SP5
DEPTH (m)	-	-	-	-	-
Acenaphthene	<0.01	<0.01	<0.01	0.04	<0.01
Acenaphthylene	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	<0.07	<0.07	<0.07	<0.07	<0.07
Chrysene	<0.06	<0.06	<0.06	<0.06	<0.06
Dibenzo(ah)anthracene	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	<0.08	<0.08	<0.08	<0.08	<0.08
Fluorene	<0.01	<0.01	<0.01	0.06	<0.01
Indeno(123-cd)pyrene	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	<0.03	<0.03	<0.03	0.07	<0.03
Phenanthrene	0.07	0.08	<0.03	0.05	0.06
Pyrene	<0.07	<0.07	<0.07	<0.07	<0.07
Organic Matter	1.4	1.7	1.9	1.4	1.9

PAH	Mean Value Test *	Range		AtRisk 2017 (mg/kg) Residential with Home Grown Produce	AtRisk 2017 (mg/kg) Residential with Home Grown Produce	DEFRA's C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***
Acenaphthene	0.03	0.04	<0.01	608	2760	-
Acenaphthylene	0.01	<0.01	<0.01			-
Anthracene	0.02	<0.02	<0.02	10200	26200	-
Benzo(a)anthracene	0.04	<0.04	<0.04	4.52	8.54	-
Benzo(a)pyrene	0.04	<0.04	<0.04	1.51	2.05	4.95
Benzo(b)fluoranthene	0.05	<0.05	<0.05	7.72	9.86	-
Benzo(ghi)perylene	0.05	<0.05	<0.05	96.2	103	-
Benzo(k)fluoranthene	0.07	<0.07	<0.07	84.4	100	-
Chrysene	0.06	<0.06	<0.06	585	927	-
Dibenzo(ah)anthracene	0.04	<0.04	<0.04	0.838	1	-
Fluoranthene	0.08	<0.08	<0.08	983	2980	-
Fluorene	0.04	0.06	<0.01	735	2610	-
Indeno(123-cd)pyrene	0.03	<0.03	<0.03	7.31	9.75	-
Naphthalene	0.06	0.07	<0.03	0.829	12.2	-
Phenanthrene	0.08	0.08	<0.03			-
Pyrene	0.07	<0.07	<0.07	668	2120	-

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

*** THESE RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

NOTES:

For the Purpose of this investigation- results will be assessed against RESIDENTIAL GUIDELINES WITH HOMEGROWN PRODUCE WITH NO FREE PRODUCT.

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/03673
Issue Number: 1
Date: 19 April, 2021

Client: Betts Geo Environmental
Old Marsh Farm Barns
Welsh Road
Sealand
Flintshire
UK
CH5 2LY

Project Manager: Betts Geolab
Project Name: Edge Lane
Project Ref: 19YHG001
Order No: BG4123
Date Samples Received: 08/04/21
Date Instructions Received: 08/04/21
Date Analysis Completed: 18/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 21/03673

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03673/1							Units	Limit of Detection	Method ref
Client Sample No	COHESIVE									
Client Sample ID	Area B SP5									
Depth to Top										
Depth To Bottom										
Date Sampled	08-Apr-21									
Sample Type	Soil - ES									
Sample Matrix Code	3A									
% Stones >10mm _A	<0.1							% w/w	0.1	A-T-044
pH _D ^{M#}	9.06							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.02							g/l	0.01	A-T-026s
Organic matter _D ^{M#}	1.9							% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	<1							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.9							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	24							mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1							mg/kg	1	A-T-040s
Lead _D ^{M#}	10							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	32							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	61							mg/kg	5	A-T-024s
VPH total (>C5-C10)	1							mg/kg	1	Calc-stone+mois

Envirolab Job Number: 21/03673

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03673/1							Units	Limit of Detection	Method ref
Client Sample No	COHESIVE									
Client Sample ID	Area B SP5									
Depth to Top										
Depth To Bottom										
Date Sampled	08-Apr-21									
Sample Type	Soil - ES									
Sample Matrix Code	3A									
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD									A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A									A-T-045

Envirolab Job Number: 21/03673

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03673/1							Units	Limit of Detection	Method ref
Client Sample No	COHESIVE									
Client Sample ID	Area B SP5									
Depth to Top										
Depth To Bottom										
Date Sampled	08-Apr-21									
Sample Type	Soil - ES									
Sample Matrix Code	3A									
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.06							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08							mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03673/1

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03673/1									
Client Sample No	COHESIVE									
Client Sample ID	Area B SP5									
Depth to Top										
Depth To Bottom										
Date Sampled	08-Apr-21									
Sample Type	Soil - ES									
Sample Matrix Code	3A									
TPH CWG										
Ali >C5-C6 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	1							mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	2							mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	3							mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	2							mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	10							mg/kg	1	A-T-055s
Total Aliphatics _A	19							mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1							mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1							mg/kg	1	A-T-055s
Aro >C12-C16 _A	3							mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	3							mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	10							mg/kg	1	A-T-055s
Total Aromatics _A	17							mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	36							mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01							mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

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

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

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

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

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

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: Betts Geo Environmental, Old Marsh Farm Barns, Welsh Road, Sealand,
Flintshire, UK, CH5 2LY

Project: Edge Lane
Clients Project No: 19YHG001

Project No: 21/03673
Date Received: 08/04/2021 (am)
Cool Box Temperatures (°C): 8.2

NO DEVIATIONS IDENTIFIED

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

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/03624
Issue Number: 1
Date: 19 April, 2021

Client: Betts Geo Environmental
Old Marsh Farm Barns
Welsh Road
Sealand
Flintshire
UK
CH5 2LY

Project Manager: Betts Geolab
Project Name: Edge Lane
Project Ref: 19YHG001
Order No: BG4123
Date Samples Received: 07/04/21
Date Instructions Received: 08/04/21
Date Analysis Completed: 18/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 21/03624

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03624/1	21/03624/2	21/03624/3	21/03624/4				Units	Limit of Detection	Method ref
Client Sample No	COHESIVE	COHESIVE	COHESIVE	COHESIVE						
Client Sample ID	Area B SP1	Area B SP2	Area B SP3	Area B SP4						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Apr-21	07-Apr-21	07-Apr-21	07-Apr-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	5AE	4A	5A	5AE						
% Stones >10mm _A	5.1	<0.1	<0.1	<0.1				% w/w	0.1	A-T-044
pH _D ^{M#}	8.79	9.35	9.68	7.63				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.02	<0.01	0.02				g/l	0.01	A-T-026s
Organic matter _D ^{M#}	1.4	1.7	1.9	1.4				% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.9	0.9	0.7	1.1				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	24	26	21	26				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	10	11	9	11				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	32	35	24	44				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	1	<1	1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	57	60	52	57				mg/kg	5	A-T-024s
VPH total (>C5-C10)	<1	<1	4	<1				mg/kg	1	Calc-stone+mois

Envirolab Job Number: 21/03624

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03624/1	21/03624/2	21/03624/3	21/03624/4				Units	Limit of Detection	Method ref
Client Sample No	COHESIVE	COHESIVE	COHESIVE	COHESIVE						
Client Sample ID	Area B SP1	Area B SP2	Area B SP3	Area B SP4						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Apr-21	07-Apr-21	07-Apr-21	07-Apr-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	5AE	4A	5A	5AE						
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD						A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 21/03624

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03624/1	21/03624/2	21/03624/3	21/03624/4				Units	Limit of Detection	Method ref
Client Sample No	COHESIVE	COHESIVE	COHESIVE	COHESIVE						
Client Sample ID	Area B SP1	Area B SP2	Area B SP3	Area B SP4						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Apr-21	07-Apr-21	07-Apr-21	07-Apr-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	5AE	4A	5A	5AE						
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	0.04				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	<0.06				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08	<0.08				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	0.06				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	0.07				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.07	0.08	<0.03	0.05				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	0.08	<0.08	0.22				mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03624

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03624/1	21/03624/2	21/03624/3	21/03624/4				Units	Limit of Detection	Method ref
Client Sample No	COHESIVE	COHESIVE	COHESIVE	COHESIVE						
Client Sample ID	Area B SP1	Area B SP2	Area B SP3	Area B SP4						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Apr-21	07-Apr-21	07-Apr-21	07-Apr-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	5AE	4A	5A	5AE						
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	2	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	1	1	5	1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	1	5	2				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	2	2	6	5				mg/kg	1	A-T-055s
Total Aliphatics _A	3	5	19	8				mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	1	<1				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	1	8				mg/kg	1	A-T-055s
Aro >C12-C16 _A	1	1	7	28				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	2	1	11	4				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	2	4	16	5				mg/kg	1	A-T-055s
Total Aromatics _A	5	6	36	45				mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	9	11	55	53				mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

REPORT NOTES

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

Soil chemical analysis:

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

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

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

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

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

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

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

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: Betts Geo Environmental, Old Marsh Farm Barns, Welsh Road, Sealand,
Flintshire, UK, CH5 2LY

Project: Edge Lane
Clients Project No: 19YHG001

Project No: 21/03624
Date Received: 08/04/2021 (am)
Cool Box Temperatures (°C): 8.7

NO DEVIATIONS IDENTIFIED

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

SUMMARY OF CONTAMINATION ANALYSIS: METALS

Project Name Edge Lane
Project No 19YHG001
Date 22/03/21

SOIL TYPE	-	-	-	-
SAMPLE LOCATION	Area D TP1	Area D TP2	Area D TP3	Area D TP4
DEPTH (m)	0.70	1.20	2.00	2.00
pH	8.91	8.63	8.63	8.81
Sulphate (water sol 2:1)	0.05	0.08	0.25	0.05
Organic matter	1.4	1.2	2	1.7
Arsenic	<1	<1	4	<1
Cadmium	1	1.3	1.4	1
Copper	33	113	99	31
Chromium (hexavalent)	<1	<1	<1	<1
Lead	12	13	49	14
Mercury	0.21	0.25	0.79	<0.17
Nickel	40	50	47	39
Selenium	1	1	1	<1
Zinc	66	73	85	65
Asbestos in Soil	NAD	NAD	NAD	NAD
Asbestos Matrix	N/A	N/A	N/A	N/A
Quantification	N/A	N/A	N/A	N/A
Organic matter	1.4	1.2	2	1.7

Metals	Mean Value Test *	Range		AtRisk 2017 (mg/kg)	AtRisk 2017 (mg/kg)	DEFRA C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	With Homegrown Produce (1% SOM)	With Homegrown Produce (6% SOM)	
pH	8.91	8.91	8.63			-
Sulphate (water sol 2:1)	0.22	0.25	0.05			-
Organic matter	1.99	2.00	1.20			
Arsenic	3.52	4.00	<1	32	32	37
Cadmium	1.42	1.40	1.00	10	10	22.1
Copper	119.73	113.00	31.00	4730	4790	-
Chromium (hexavalent)	1.00	<1	<1	3.62	3.63	20.5
Lead	43.20	49.00	12.00			200
Mercury	0.70	0.79	<0.17	8.81	15.8	-
Nickel	50.30	50.00	39.00	EA/AtRisk withdrawn Aug 2015		
Selenium	1.00	1.00	1.00	375	375	-
Zinc	83.09	85.00	65.00	20000	20300	-

NOTE:

Any individual results and mean value tests above SGVs are shown RED highlighted.
 Any outlier values which exceed relevant SGVs are shown in red

* - The calculations for the mean value test include outliers

** - Results for this determinand are assessed with no background levels taken into account

Results are expressed as mg/kg unless otherwise stated

ALL RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

SGVs are derived from the EA 2009 SGVs which are taken from AtRisk 2015. Category 4 screening levels have been adopted by the EA and have been included as new guidance.

Note: The SGV for elemental mercury has been used to assess total mercury concentrations at the site. The Environment Agency's Science Report SC050021 /Mercury SGV states that 'for general surface contamination and to simplify the assessment the SGV's for inorganic mercury can normally be compared with chemical analysis for total mercury content...'. Based on the latter, SGV for elemental mercury (170mg/kg) in the soil assessment is used

NAD - NO ASBESTOS DETECTED

TS - Topsoil, MG - Made Ground and N - Natural Ground

SUMMARY OF CONTAMINATION ANALYSIS: TPH

Project Name Edge Lane
Project No 19YHG001
Date 22/03/21

SOIL TYPE	-	-	-	-
SAMPLE LOCATION	Area D TP1	Area D TP2	Area D TP3	Area D TP4
DEPTH (m)	0.70	1.20	2.00	2.00
Ali >C5-C6	<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	<0.01	<0.01	<0.01	<0.01
Ali >C8-C10	<1	<1	<1	<1
Ali >C10-C12	<1	<1	<1	<1
Ali >C12-C16	1	<1	1	1
Ali >C16-C21	<1	<1	1	<1
Ali >C21-C35	2	<1	5	2
Total Aliphatics	4	<1	7	4
Aro >C5-C7	<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	<1	<1	<1	<1
Aro >C10-C12	<1	<1	<1	<1
Aro >C12-C16	1	<1	5	2
Aro >C16-C21	1	<1	16	5
Aro >C21-C35	2	<1	35	8
Total Aromatics	5	<1	56	15
TPH (Ali & Aro)	8	<1	63	19
BTEX - Benzene	<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	<0.01	<0.01	<0.01	<0.01
MTBE	<0.01	<0.01	<0.01	<0.01
Organic Matter	1.4	1.2	2	1.7

TPH	Mean Value Test *	Range		AtRisk 2017 (mg/kg) Residential with Home Grown Produce	AtRisk 2017 (mg/kg) Residential with Home Grown Produce	DEFRA C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***
Ali >C5-C6	0.01	<0.01	<0.01	42.7	369	-
Ali >C6-C8	0.01	<0.01	<0.01	99.3	1240	-
Ali >C8-C10	1.00	<1	<1	13.9	204	-
Ali >C10-C12	1.00	<1	<1	81.7	1180	-
Ali >C12-C16	1.00	1.00	<1	385	4130	-
Ali >C16-C21	1.00	1.00	<1	210000	210100	-
Ali >C21-C35	4.54	5.00	<1			
Total Aliphatics	6.88	7.00	<1			
Aro >C5-C7	0.01	<0.01	<0.01	0.137	0.871	-
Aro >C7-C8	0.01	<0.01	<0.01	113	780	-
Aro >C8-C10	1.00	<1	<1	20.5	232	-
Aro >C10-C12	1.00	<1	<1	70	468	-
Aro >C12-C16	4.48	5.00	<1	165	830	-
Aro >C16-C21	14.09	16.00	<1	319	1040	-
Aro >C21-C35	30.29	35.00	<1	1120	1710	-
Total Aromatics	48.90	56.00	<1			
TPH (Ali & Aro)	55.51	63.00	<1			
BTEX - Benzene	0.01	<0.01	<0.01	0.0493	0.33	0.871
BTEX - Toluene	0.01	<0.01	<0.01	113	780	-
BTEX - Ethyl Benzene	0.01	<0.01	<0.01	50.7	453	-
BTEX - m & p Xylene	0.01	<0.01	<0.01	24	312	-
BTEX - o Xylene	0.01	<0.01	<0.01	26.4	336	-
MTBE	0.01	<0.01	<0.01	27.6	220	

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

*** THESE RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 ASSUMING NO FREE PRODUCT WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

NOTES:

For the Purpose of this investigation- results will be assessed against RESIDENTIAL GUIDELINES WITH HOME GROWN PRODUCE WITH NO FREE PRODUCT.

UU Drinking Water Guidelines	
PE Threshold	
Total BTEX & MTBE	0.1
EC5-EC10 Ali-Aro	2
EC10-EC16 Ali-Aro	10
EC16-EC40 Ali-Aro	500

SUMMARY OF CONTAMINATION ANALYSIS: PAH

Project Name Edge Lane
Project No 19YHG001
Date 22/03/21

SOIL TYPE	-	-	-	-
SAMPLE LOCATION	Area D TP1	Area D TP2	Area D TP3	Area D TP4
DEPTH (m)	0.70	1.20	2.00	2.00
Acenaphthene	<0.01	<0.01	0.02	0.02
Acenaphthylene	<0.01	<0.01	<0.01	<0.01
Anthracene	<0.02	<0.02	0.02	0.04
Benzo(a)anthracene	<0.04	<0.04	<0.04	0.08
Benzo(a)pyrene	<0.04	<0.04	<0.04	0.07
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	0.08
Benzo(ghi)perylene	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	<0.07	<0.07	<0.07	<0.07
Chrysene	<0.06	<0.06	<0.06	0.11
Dibenzo(ah)anthracene	<0.04	<0.04	<0.04	<0.04
Fluoranthene	<0.08	<0.08	0.15	0.21
Fluorene	<0.01	<0.01	0.01	0.02
Indeno(123-cd)pyrene	<0.03	<0.03	<0.03	<0.03
Naphthalene	<0.03	<0.03	<0.03	<0.03
Phenanthrene	<0.03	<0.03	0.12	0.2
Pyrene	<0.07	<0.07	0.15	0.19
Organic Matter	1.4	1.2	2	1.7

PAH	Mean Value Test *	Range		AtRisk 2017 (mg/kg) Residential with Home Grown Produce	AtRisk 2017 (mg/kg) Residential with Home Grown Produce	DEFRA's C4SL 2017
	US ₉₅	Largest Value (mg/kg)	Smallest Value (mg/kg)	1% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***	6% SOM WITHOUT Free Product***
Acenaphthene	0.02	0.02	<0.01	608	2760	-
Acenaphthylene	0.01	0.00	<0.01			-
Anthracene	0.04	0.04	<0.02	10200	26200	-
Benzo(a)anthracene	0.07	0.08	<0.04	4.52	8.54	-
Benzo(a)pyrene	0.07	0.07	<0.04	1.51	2.05	4.95
Benzo(b)fluoranthene	0.08	0.08	<0.05	7.72	9.86	-
Benzo(ghi)perylene	0.05	<0.05	<0.05	96.2	103	-
Benzo(k)fluoranthene	0.07	<0.07	<0.07	84.4	100	-
Chrysene	0.10	0.11	<0.06	585	927	-
Dibenzo(ah)anthracene	0.04	0.00	<0.04	0.838	1	-
Fluoranthene	0.20	0.21	<0.08	983	2980	-
Fluorene	0.02	0.02	<0.01	735	2610	-
Indeno(123-cd)pyrene	0.03	<0.03	<0.03	7.31	9.75	-
Naphthalene	0.03	<0.03	<0.03	0.829	12.2	-
Phenanthrene	0.19	0.20	<0.03			-
Pyrene	0.19	0.19	<0.07	668	2120	-

Results expressed as mg/kg air dried unless otherwise stated.

* - The calculations for the mean value test include outliers

*** THESE RESULTS PRESENTED ARE ASSESSED UNDER THE COMBINED CLEA ASSESSMENT CRITERION AS OUTLINED WITHIN SR4 **ASSUMING NO FREE PRODUCT** WAS OBSERVED DURING FIELDWORK- SEE 'GUIDANCE NOTES ON CONTAMINATION'.

NOTES:

For the Purpose of this investigation- results will be assessed against **RESIDENTIAL GUIDELINES WITH HOMEGROWN PRODUCE WITH NO FREE PRODUCT**.

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/03026
Issue Number: 1
Date: 01 April, 2021

Client: Betts Geo Environmental
Old Marsh Farm Barns
Welsh Road
Sealand
Flintshire
UK
CH5 2LY

Project Manager: Betts Geolab
Project Name: Edge Lane
Project Ref: 19YHG001
Order No: TBC
Date Samples Received: 22/03/21
Date Instructions Received: 23/03/21
Date Analysis Completed: 01/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Richard Wong
Client Manager

Envirolab Job Number: 21/03026

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03026/1	21/03026/2	21/03026/3	21/03026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Area D TP1	Area D TP2	Area D TP3	Area D TP4						
Depth to Top	0.70	1.20	2.00	2.00						
Depth To Bottom										
Date Sampled	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6A	6A	6A	6A						
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1				% w/w	0.1	A-T-044
pH _D ^{M#}	8.91	8.63	8.63	8.81				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.05	0.08	0.25	0.05				g/l	0.01	A-T-026s
Organic matter _D ^{M#}	1.4	1.2	2.0	1.7				% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	<1	<1	4	<1				mg/kg	1	A-T-024s
Cadmium _D ^{M#}	1.0	1.3	1.4	1.0				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	33	113	99	31				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	12	13	49	14				mg/kg	1	A-T-024s
Mercury _D	0.21	0.25	0.79	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	40	50	47	39				mg/kg	1	A-T-024s
Selenium _D ^{M#}	1	1	1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	66	73	85	65				mg/kg	5	A-T-024s
VPH total (>C5-C10)	<1	<1	<1	<1				mg/kg	1	Calc-stone+mois

Envirolab Job Number: 21/03026

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03026/1	21/03026/2	21/03026/3	21/03026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Area D TP1	Area D TP2	Area D TP3	Area D TP4						
Depth to Top	0.70	1.20	2.00	2.00						
Depth To Bottom										
Date Sampled	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6A	6A	6A	6A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD						A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 21/03026

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03026/1	21/03026/2	21/03026/3	21/03026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Area D TP1	Area D TP2	Area D TP3	Area D TP4						
Depth to Top	0.70	1.20	2.00	2.00						
Depth To Bottom										
Date Sampled	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6A	6A	6A	6A						
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	0.02	0.02				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	0.02	0.04				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04	0.08				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04	0.07				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05	0.08				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06	0.11				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	0.15	0.21				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	0.01	0.02				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	0.12	0.20				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	0.15	0.19				mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	0.47	1.02				mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03026

Client Project Name: Edge Lane

Client Project Ref: 19YHG001

Lab Sample ID	21/03026/1	21/03026/2	21/03026/3	21/03026/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Area D TP1	Area D TP2	Area D TP3	Area D TP4						
Depth to Top	0.70	1.20	2.00	2.00						
Depth To Bottom										
Date Sampled	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	6A	6A	6A	6A						
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	1	<1	1	1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	1	<1				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	2	<1	5	2				mg/kg	1	A-T-055s
Total Aliphatics _A	4	<1	7	4				mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A	1	<1	5	2				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	1	<1	16	5				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	2	<1	35	8				mg/kg	1	A-T-055s
Total Aromatics _A	5	<1	56	15				mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	8	<1	63	19				mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

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

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

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

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

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

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

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

Soil chemical analysis:

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

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

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

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

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

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

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

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

Asbestos:

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

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

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

Predominant Matrix Codes:

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

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

Secondary Matrix Codes:

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

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

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

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

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: Betts Geo Environmental, Old Marsh Farm Barns, Welsh Road, Sealand,
Flintshire, UK, CH5 2LY

Project: Edge Lane
Clients Project No: 19YHG001

Project No: 21/03026
Date Received: 23/03/2021 (am)
Cool Box Temperatures (°C): 8.2

NO DEVIATIONS IDENTIFIED

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

Waste Transfer Notes



HAZARDOUS WASTE RETURNS SUMMARY

Collection Address:	Customer:	Account No:	Customer's Ref:	Our Ref:
14 Edge Lane, M11 1DG	Skillings Crushing Co Ltd	SK0231	Stephen Spencer	0179319

Consignment No.	Consignment Type	Round No.	Collection No.	Date Received	Postcode of Place of Production	EWC Code	Hazard	Physical Form	Weight (kg)	R&D Code	Ref
SKILLI/34603	Single			31/03/2021	M11 1DG	130508*	HP7	Liquid	25400.00	D09	WA-0106900

Generated:06/04/2021



HAZARDOUS WASTE RETURNS SUMMARY

Collection Address:	Customer:	Account No:	Customer's Ref:	Our Ref:
14 Edge Lane, M11 1DG	Skillings Crushing Co Ltd	SK0231		0180104

Consignment No.	Consignment Type	Round No.	Collection No.	Date Received	Postcode of Place of Production	EWC Code	Hazard	Physical Form	Weight (kg)	R&D Code	Ref
SKILLI/34604	Single			31/03/2021	M11 1DG	130508*	HP7	Liquid	19440.00	D09	WA-0107767

Generated:06/04/2021



WHITEHEAD RESTORATION LTD

Producer Declaration Form

REFERENCE: MMWH12032021/10 EDGE LANE, DROYLSDEN

Section A - General Information

Name and Address of Company (state if broker)		Name and Address of Producer (if different)	
A1 SERVICES(MANCHESTER) LTD		SILLINGS CRUSHING COMPANY LTD.	
MAYO HOUSE, 4 OVERMAN WAY, SWINTON,		THE YARD, PARK RD, PADIHAM,	
MANCHESTER M27 8BQ		BB12 8ED.	
		Name and Address of Haulier (if different)	
Tel: 0161 736 2020 Fax:		AMP NW LTD.	
Contact Name: MIKE WALSH SNR.		BRIDGE ST, DROYLSDEN,	
Email: info@a1services-manchester.co.uk		M43 6SJ.	
Carrier Reg No: CBDU97331		Carrier Reg No: CB0V217114.	

Source of Waste (location):	EDGE LANE, DROYLSDEN		
General Description of Waste:	EXCAVATED SOILS & STONE		
Process from which waste arises including SIC Code:	43.11		
Quantity: 700 M3	Frequency:	AS REQUIRED	
The Waste is:	Inert / Non-Hazardous / Hazardous	(delete as applicable)	
Physical Nature:	Solid / Sludge / Powder	(delete as applicable)	
Odour:	NONE		

Relevant Chemical Components and Concentrations:

Answer Yes or No in the columns below, if yes please specify including concentrations.

Components	Yes	No	Details
Toxic Metals	☐	☐	
Oils	☐	☐	
Solvents	☐	☐	AS PER ANALYSIS
Halogenated Solvents	☐	☐	
PCB / Dioxins	☐	☐	SUPPLIED
Phenols	☐	☐	
Cyanide / Isocyanates	☐	☐	
Biocides	☐	☐	
Oxidising Agents	☐	☐	
Radioactive Materials	☐	☐	
Liquids	☐	☐	
Explosives	☐	☐	
Corrosive Materials	☐	☐	
Flammable Materials	☐	☐	
Hospital / Clinical Waste	☐	☐	
R&D Laboratory Waste	☐	☐	
Whole Tyres	☐	☐	
Asbestos	☐	☐	

Duty of care: waste transfer note Keep this page and copy it for future use. Please write as clearly as possible.

Section A – Description of waste

A1 Description of the waste being transferred

EXCAVATED SOILS

List of Waste Regulations code(s)

17-05-04

A2 How is the waste contained?

Loose ☐ Sacks ☐ Skip ☐ Drum ☐

Other ☒

A3 How much waste? For example, number of sacks, weight

8 x 4 W TIPPER LOADS

Section B – Current holder of the waste – Transferor

By signing in Section D below I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011 Yes ☐

B1 Full name

SKILLINGS CRUSHING COMPANY LTD.

Company name and address

THE YARD, PARK RD,

PAOIHAM

Postcode BB12 8EP SIC code (2007) 23700

B2 Name of your unitary authority or council

B3 Are you:

The producer of the waste? ☒

The importer of the waste? ☐

The local authority? ☐

The holder of an environmental permit? ☐

Permit number

Issued by

Registered waste exemption? ☐

Details, including registration number

A registered waste carrier, broker or dealer? ☐

Registration number

Details (are you a carrier, broker or dealer?)

Section C – Person collecting the waste – Transferee

C1 Full name

AMP NW LTD

Company name and address

Bridge House

Bridge St

Droylsden

Postcode M43 6SJ

C2 Are you:

The local authority? ☐

C3 Are you:

The holder of an environmental permit? ☐

Permit number

Issued by

Registered waste exemption? ☐

Details, including registration number

A registered waste carrier, broker or dealer? ☒

Registration number CBDU217114

Details (are you a carrier, broker or dealer?)

Waste Carrier

Section D – The transfer

D1 Address of transfer or collection point

EDGE LANE,

DROYLSDEN,

Postcode M43 6SJ

Date of transfer (DD/MM/YYYY) 25-03-21

D2 Broker or dealer who arranged this transfer (if applicable)

Postcode

Registration number

Time(s)

Transferor's signature

Name S. SPENCER

Representing SKILLINGS CRUSHING

Transferee's signature

Name ANDY SINGH

Representing AMP NW LTD

Duty of care: waste transfer note Keep this page and copy it for future use. Please write as clearly as possible.

Section A – Description of waste

A1 Description of the waste being transferred

SOIL & STONES

List of Waste Regulations code(s)

17-05-04

A2 How is the waste contained?

Loose ☐ Sacks ☐ Skip ☐ Drum ☐

Other ☒

A3 How much waste? For example, number of sacks, weight

8 x 9 W TIPPED LOADS.

Section B – Current holder of the waste – Transferor

By signing in Section D below I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011 Yes ☐

B1 Full name

SKILLINGS CRUSHING COMPANY LTD

Company name and address

THE YARD, PARK RD,

PADIHAM

Postcode BB12 8ED

SIC code (2007) 23700

B2 Name of your unitary authority or council

B3 Are you:

The producer of the waste? ☒

The importer of the waste? ☐

The local authority? ☐

The holder of an environmental permit? ☐

Permit number

Issued by

Registered waste exemption? ☐

Details, including registration number

A registered waste carrier, broker or dealer? ☐

Registration number

Details (are you a carrier, broker or dealer?)

Section C – Person collecting the waste – Transferee

C1 Full name

AMP NW LTD

Company name and address

Bridge House

Bridge St

Droylsden

Postcode M43 6SJ

C2 Are you:

The holder of an environmental permit? ☐

Permit number

Issued by

Registered waste exemption? ☐

Details, including registration number

A registered waste carrier, broker or dealer? ☒

Registration number CBDU217114

Details (are you a carrier, broker or dealer?)

Waste Carrier

Section D – The transfer

D1 Address of transfer or collection point

EDGE LANE

DROYLSDEN

Postcode M43 6SJ

Date of transfer (DD/MM/YYYY) 25-03-21

D2 Broker or dealer who arranged this transfer (if applicable)

Postcode

Registration number

Time(s)

Transferor's signature

Name S. SPENCER

Representing SKILLINGS CRUSHING

Transferee's signature

Name ANDY SINGH

Representing AMP NW LTD

Section B – Requirements under the Landfill Directive

EWC Code:	17/05/04	Hazard Codes:	N/A
Does the waste require treatment under article 6(a) of the Landfill Directive?		Yes ☐	No ☐
If No, please provide reason for exemption			
If Yes, please provide details of treatment in place to meet the requirements of the Environment Agency Guidance on the waste treatment requirements of article 6(a) of the Landfill Directive.			
Have you applied the Waste Hierarchy to this waste as per The Waste Regulations 2011 (England and Wales)			
1. Prevention of Waste	Yes ☒	No ☐	
2. Preparing for Re-Use	Yes ☒	No ☐	
3. Recycling	Yes ☒	No ☐	
4. Recovery	Yes ☒	No ☐	
5. Disposal	Yes ☒	No ☐	
Sampling Plan:			
1. Has the sample been taken using an approved method or plan?	Yes ☒	No ☐	
2. Has the sample been taken by a trained person	Yes ☒	No ☐	
(if possible, please provide details of 1 and 2)			

Section C - Requirements under the Animal By-Products Order 1992

Does the waste contain Tannery Waste	Yes ☐	No ☒
Does the waste contain Catering Waste	Yes ☐	No ☒
Does the waste contain Animal By-Products	Yes ☐	No ☒

DECLARATION:

I / We certify that the above information and any enclosures are correct in every respect.

Customer Signed:	<i>Mike Walsh</i>	Name:	MIKE WALSH	Date:	23-03-21.
Producer Signed:	<i>S. Spencer</i>	Name:	S. SPENCER	Date:	23-03-21
Haulier Signed:	<i>Andy Singh</i>	Name:	ANDY SINGH	Date:	23-03-21.

NPL Use:		EWC Code	Yes	No
		Banned	Yes	No
		Treated	Yes	No
		Accept	Yes	No
Name	Date	Position	Signature	
		Sales Contact		
		Technical Waste Coordinator		
		Site Manager / Supervisor		

Japanese Knotweed Third Party verification.



KNOTWEED ERADICATION

**Specialist Weed Control &
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EXCAVATION REPORT FOR

YOUR HOUSING

EDGE LANE BUSINESS PARK

EDGE LANE

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KNOTWEED ERADICATION

NEW INN FARM

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LEYLAND

PRESTON

PR25 5DB

TEL: 01772621013

FAX: 01772623658

info@knotweederadication.co.uk

www.knotweederadication.co.uk



Date	19 th May 2021
Inspected by	G Parry / L Seddon
Checked by	J Howard
Authorised by	G Andrews
Project	Edge Lane Business Park
Report number	IWMP2202A

LIMITATIONS

Knotweed Eradication has prepared this report with reasonable skill, care and diligence and taking account of the contract terms and conditions and manpower and resources devoted to it in agreement with the client. Knotweed Eradication disclaims any responsibility to the client and others in respect of any matters outside the scope of the above.

This report has been prepared based on the information received during the timescale available and all potential contamination; constraints or liabilities associated with the site may not necessarily have been revealed. The report is only valid when it is used in its entirety.

This report is confidential to the client and Knotweed Eradication accepts no responsibility to third parties to whom the report, or any part thereof, is made known. Any such party using any information contained within the report does so at their own risk.

1. JAPANESE KNOTWEED REPORT

- 1.1 In July 2020 Knotweed Eradication was approached by Your Housing regarding the possible treatment options of Japanese Knotweed within the proposed development site at Edge Lane Business Park, Edge Lane, Openshaw.
- 1.2 Site consists of the old Welspun works industrial site located on Edge Lane, Openshaw that has been demolished to ground level in preparation for the building of residential dwellings.
- 1.3 Surrounding areas comprise of residential properties to the west and further industrial areas to the north, east and south.
- 1.4 The site was inspected on 23rd July 2020 during the expected growing season with three areas of visible knotweed being identified within the site.
- 1.5 The first area of visible knotweed was located on the north western boundary adjacent to the church. The vegetation adjacent to the knotweed has been scraped up and there was visible rhizome within the open soil.
- 1.6 The second area of visible knotweed was also located on the north western boundary approximately fifteen metres away from the first area. This area has not had vegetation removed as closely as the first.
- 1.7 A third area of knotweed was visible within a strip of tarmac between a palisade security fence and the outer brick wall that forms the both eastern boundary on Edge Lane.
- 1.8 The knotweed will be excavated and if found to extend beyond the north eastern boundary then CuTex geomembrane root barrier will be installed vertically to prevent future ingress into site of any knotweed vegetation. Contaminated material will be placed on visqueen in a temporary stockpile for burial on site within an area of POS or car parking.
- 1.9 Along with an abundance of Buddleia around the site (mainly on the perimeter) there was an area of visible Field Horsetail within the raised, uncleared section of vegetation in the far eastern corner of site adjacent Morrisons.
- 1.10 In November 2020 Your Housing appointed Knotweed Eradication to act on their behalf with regards to the treatment of the knotweed within the site.
- 1.11 The knotweed material was excavated under the supervision of Luke Seddon and Gwyn Parry from Knotweed Eradication on the 15th and 16th November 2021. Three excavations were carried out with the contaminated material placed into a burial cell fully lined with CuTex geomembrane and backfilled with clean soil.
- 1.12 During the growing season, a monitoring visit will be carried out to inspect for any remaining knotweed regrowth on site or immediately beyond the boundary.
- 1.13 Original JK areas have been marked on the attached plan (fig 1)
- 1.14 This report has been produced on the 19th May 2021 to form a written and photographic record of actions carried out to date.

2. JAPANESE KNOTWEED

- 2.1 Japanese knotweed is a non-native perennial plant, which originated in Japan and was brought into the United Kingdom in Victorian times as a decorative garden plant. It has subsequently 'escaped' into the wild and has spread extensively across the country. It is tolerant of a wide range of conditions and so is a very successful coloniser particularly of brownfield with made ground, unused dormant sites and un-maintained areas of open space. Railway and river corridors are particularly vulnerable as the plant is often left untreated with inaccessible areas and allowed to flourish.
- 2.2 The plant is an aggressive, persistent plant that is particularly invasive and can cause severe environmental damage. It is harmful to the natural habitats as it shades out the diversity of native plants and is a very poor environment for wildlife. Its reproduction in the UK is vegetative from a sterile female clone. Its method of reproduction is generally via underground stems (rhizome) although it regenerates readily from both rhizome and stem material and the smallest of viable stem or rhizome material (less than 1 gram) can regenerate successfully in both terrestrial and aquatic media.
- 2.3 The plant begins to grow in April from the base of the old 'crown' and any new underground rhizomes resulting from the previous season's growth, producing dark pink spiked shoots. By mid summer, in its mature growth state, Japanese knotweed forms dense leafy stands up to 3.5 metres tall. These persist into late September when the plant begins to lose its leaves. In the winter, during its dormant period, the leafless dry brown stems remain upright throughout the season. The cycle of growth begins again in following spring. The plant is very vigorous and is very difficult to eradicate as its roots (rhizomes) are extensive and can grow as much as 2.0 – 4.0 metres deep particularly in loose fill material. From the edges of existing stands rhizomes can rapidly grow outwards for as much as 7.0 metres in a single season given the right conditions and therefore it is capable of spreading extensively in a comparatively short timescale. The rhizomes can also spread beneath building structures and roads to colonise new areas that might be deemed cut off from existing stands.
- 2.4 Of particular concern in many situations is the damage, which could occur to constructed surfaces as the plant is capable of easily growing through hard surfaces, particularly tarmac and block paving and under building foundations if not treated effectively. It can also penetrate joints and cracks in brick and block walls and open up these areas to cause structural instability over time. There is also the potential for growth and infestation in soft areas where its future control may be limited if not impossible due to difficulties in access and for the plant to spread unchecked onto adjacent land to further colonise areas.
- 2.5 There are very few 10km squares found in a recent botanical survey of the UK (by the Botanical Society of the British Isles) in which Japanese knotweed is not now present. Its spread and consequential cost of removal is currently exponential. Regions such as the South West of England and Wales, where the plant thrives due to the wetter climate, are now suffering economically due to its spread. The Environment Agency believes it is a major environmental problem currently within the UK. There are no indigenous biological controls and although research in this area is ongoing it is likely to take several years before it is established that the controls are not detrimental to other British wildlife.

3. LEGAL STATUS

- 3.1 Material and soils containing Japanese knotweed are deemed contaminated and its treatment is controlled by legislation. In legal terms it is an offence under *the Wildlife and Countryside Act 1981(as amended)* to plant or otherwise cause the plant to grow in the wild. An offence under this Act may result in criminal prosecution. In addition, under *Section 34 of the Environmental Protection Act (1990)*, Japanese knotweed (stem and root and soil containing roots) is classed as ‘controlled waste’ and as such must be disposed of safely at a licensed landfill site according to the *Environmental Protection Act (Duty of Care) Regulations 1991*. Infringement can result in the Environment Agency taking enforcement action, which may result in an unlimited fine.
- 3.2 *The Rio Summit 1992, Convention on Biological Diversity, Article 8(h)* calls on participating nations to ‘prevent the introduction of, (to) control, or (to) eradicate those alien species which threaten ecosystems, habitats or species’.
- 3.3 Effective removal or control can be carried out by a competent contractor following good procedures and guidelines to contain the plant and prevent careless spreading during removal and disposal. On site burial of knotweed material whether stem parts or soil containing rhizomes may require a *Waste Management Licence* under *the Waste Management Licensing Regulations 1994* and the *Landfill Regulations 2002* depending on the engineering operations of on site work. Exemptions may be available as set out in Schedule 3 of the Regulations and will require registration with the Environment Agency. Disposal off site to landfill will require a Waste Transfer Certificate. Advice should be sought from the Environment Agency who have provided *The Knotweed Code of Practice (2006)* and who also issue appropriate licences/certificates for waste control. Treatment of knotweed by herbicide within 10 metres of a watercourse will require approval from the Environment Agency for the use of herbicide applied in or near a watercourse. An approved herbicide for such use must be specified and used.
- 3.4 Third parties may also be held liable for costs incurred from the spread of Japanese knotweed across adjacent landowner’s property or by re-using infested soil.
- 3.5 Other legislation relevant to the control of non-native invasive weeds includes the following.
- *Town and Country Planning Act 1990.*
 - *Highways Act 1980.*
 - *Water Resources Act 1991.*
 - *The Waste Management and Licensing Regulations 1994.*
 - *The Landfill (England and Wales) Regulations 2002.*
 - *The Control of Pesticides Regulations 1986 (under the Food and Environment Protection Act 1985).*
 - *The Control of Substances Hazardous to Health Regulations 2002 (COSHH)*

4. POSSIBLE CONTROL OPTIONS

4.1 Control of Japanese knotweed is usually carried out by manual or chemical methods or a combination of both. Herbicide treatment is labour intensive and there is no 'quick fix' effective herbicide as they may have to be continued for a number of years before effective total control is achieved. The 'dig and dump' approach is generally very effective but is not a sustainable approach and can incur high costs when disposing of plant or soil contaminated with Japanese knotweed rhizomes if taken to a licensed landfill site in accordance with current guidelines. In some instances it is impractical to use machinery for excavation such as where knotweed is located within the root zone of trees. Similarly access and feasible use of machines may be impossible due to ground conditions or severe slopes. Control of the knotweed and the prevention of its spread by herbicide treatment on 'dormant' sites are essential where future excavation and disposal to landfill in the longer term is considered a possibility. Whatever control method is used, the effective eradication of the plant's rhizome system is essential if lasting control of Japanese knotweed is to be achieved.

4.2 Options

4.2.1 Chemical and Manual Control

4.2.1.1 Chemical treatment of the plant is the most commonly used method followed by a pulling and/or cutting and mowing regime. However, it may take several years, depending on the herbicide used and frequency of the seasonal treatments, to fully eradicate the plant even with treatment carried out every year to the re-growth of the plant. However, certain herbicide treatment, which is carried out persistently over the season to any new emerging shoots using translocated total and residual herbicides, have given good results in a 3 year period.

4.2.1.2 Where development footprints of buildings, car parks, paths and drives do not conflict with areas of knotweed it should be possible to leave the plant in situ in order that it can be treated over time by herbicide application. Care must be taken that access to the stands for spraying will be possible and that it will not limit the planting of new landscapes which could be affected by the herbicide spraying.

4.2.2 Excavation

4.2.2.1 Where situations require a much more rapid treatment of control in order for the site to be developed in the short term it is recommended that a programme of cutting and burning of the top growth and deep and extensive digging to remove the rhizomes is carried out. Removal of excavated material is often to landfill sites but the material can be stocked piled in controlled areas elsewhere if space is available on site for future herbicide treatment. Alternatively, it can be spread in areas of proposed public soft landscaping, again for in situ herbicide treatment. A rigorous management regime needs to be put in place if this approach is to be successful.

4.2.3 Combined Treatment

- 4.2.3.1 Where sufficient space exists on site a combined treatment can be used which in many instances has proved to be very effective. The method involves the spraying of the plant with a non-selective herbicide followed by removal and stockpiling of the top 300mm of soil containing the knotweed 'crowns' and majority of rhizomes. The exposed ground is then cultivated to a depth of 500mm and the excavated material re-spread over the cultivated area. This process stimulates the rhizomes to produce a higher ratio of stem ratio to below ground rhizomes, which renders the plant more vulnerable to herbicide treatment. Subsequent herbicide treatment has, in some instances, been observed to eradicate the knotweed after two herbicide applications, which may be performed within the same growing season. If work commences late in the season when the plant is dying back for its dormant period, digging can be carried out during the winter months without an initial pre-treatment with herbicide, and re-growth treated during the spring and summer. However, this is dependant on the timing of operations and offers no outright guarantees of total eradication in a single year.

4.2.4 Root Barriers

- 4.2.4.1 Where treatment of any kind is not feasible, particularly where Japanese knotweed is located off site in the ownership of others but adjacent to development areas, the use of polyethylene root barriers can be effective. These can be purchased as proprietary products and inserted into narrow trenches along boundaries or foundation lines to prevent knotweed rhizomes growing in a specific direction. The use of concrete as a barrier can also prove extremely effective providing care is taken where any joints occur.

5. EXCAVATION PHOTOS



Pic 1 - JK Area 1 before



Pic 2 - JK area 1 after excavation



Pic 3 - JK area 1 with cutex along fence boundary



Pic 4 - JK area 2 before



Pic 5 - JK area 2 after



Pic 6 - JK Area 3 before



Pic 7 – JK area 3 after excavation



Pic 8 – JK Area 3 with CuTex and backfilled



Pic 9 - Final excavated stockpile prior to being moved



Pic 10 - burial cell before cutex



Pic 11 – Cutex burial cell before



Pic 12 – Cell being filled with JK material



Pic 13 - Burial cell completed

5.1 Conclusion

- 5.1.1 Excavation of knotweed material from three areas within site was undertaken by CPC, under supervision from Knotweed Eradication, in November 2020 with the excavated material being placed into a burial cell that was lined and covered with CuTex geomembrane and backfilled with clean material.
- 5.1.2 Installation of CuTex was used to line the boundary of Japanese knotweed areas 1 and 3. Root barrier was also installed at JK area 1 along the brick building area as a temporary measure, until the corner of the building is demolished at a later date, once the client has agreed what will happen with the remaining building.
- 5.1.3 Continued monitoring of site will be undertaken as part of ongoing maintenance prior to the commencement of a 5 year warranty period, once excavation works have been completed and the post-excavation monitoring visits have been made.

6. HEALTH AND SAFETY

6.1 *Relevant health and safety legislation must be observed in the UK. The relevant regulations are outlined in The UK Pesticide Guide produced annually.*

6.2 *The legislation relevant to the use of herbicides is: -*

- *The Control of Substances Hazardous to Health Regulations (COSHH) 2002. All operatives must comply with the regulations and wear protective clothing and observe a strict code of hygiene of washing hands before drinking and eating.*
- *The Control of Pesticides Regulations 1986 under the Food and Environment Protection Act (FEPA) 1995.*
- *Pesticides: Code of Practice 1990 (Published by MAFF/HSE).*

6.3 Health and Safety Guidelines

- All operatives must hold a Certificate of Competence for herbicide application (NPTC) or be under the direct supervision of qualified operative prior to commencing a spraying programme.
- All operatives must act responsibly in the storage and handling of the herbicide. The disposal of the herbicide and empty containers must be carried out by operatives in a responsible way. Any spillage must be guarded against and if occurring shall be dealt with and cleaned up. All operatives must carry a basic first aid kit.
- The area of work should be protected from the general public during the treatment and use of the herbicide.
- The use of herbicides should be carried out in compliance with the product label instructions.
- Advice on herbicide application should be sought from a BASIS qualified advisor

7 HERBICIDES

Product	Mapp	Areas of Use
Round up Pro Vantage	15534	Hard surfaces, Amenity vegetation, Forestry, in or near water, Stem injection.
Garlon Ultra (under Stewardship)	16211	Industrial sites, Motorway embankments, Rail embankments, Cemeteries, Grass land of no agricultural interests.
Synero (under stewardship)	14708	Industrial sites, Motorway embankments, Rail embankments, central reservations, Power stations.
Blaster Pro	15752	Amenity Grassland.

7.1 All contractors must be able to supply the following in relation to herbicide treatment or excavation of knotweed.

- Specific method statement for treatment including risk assessments.
- Supervision of Japanese knotweed removal.
- Certification of disposal facilities
- COSHH for herbicides used.
- Certificates for operatives using and handling herbicides.
- Personal protective equipment for operatives using herbicides.
- Third party insurance for all works.

8. WARRANTY PERIOD

8.1 Following completion of the treatment programme, a 5 year warranty period will commence during which time continued monitoring of the site will be undertaken with any reoccurrence of knotweed within the locations specified in this report being treated at no additional cost to the client or subsequent plot owner, subject to the attached terms and conditions.

9 REFERENCES

The Knotweed Code of Practice (2006)

The Environment Agency.

Available to download: www.environment-agency.gov.uk

Child, L. and Wade, M. (2000) *The Japanese knotweed Manual*

Packard Publishing Limited, Chichester.

Nature Conservation

www.nationaltrust.org.uk/environronment/htm/nat_con/_fspapers/fs_plant01

Japanese Knotweed Control Forum

www.ex.ac.uk/knotweed

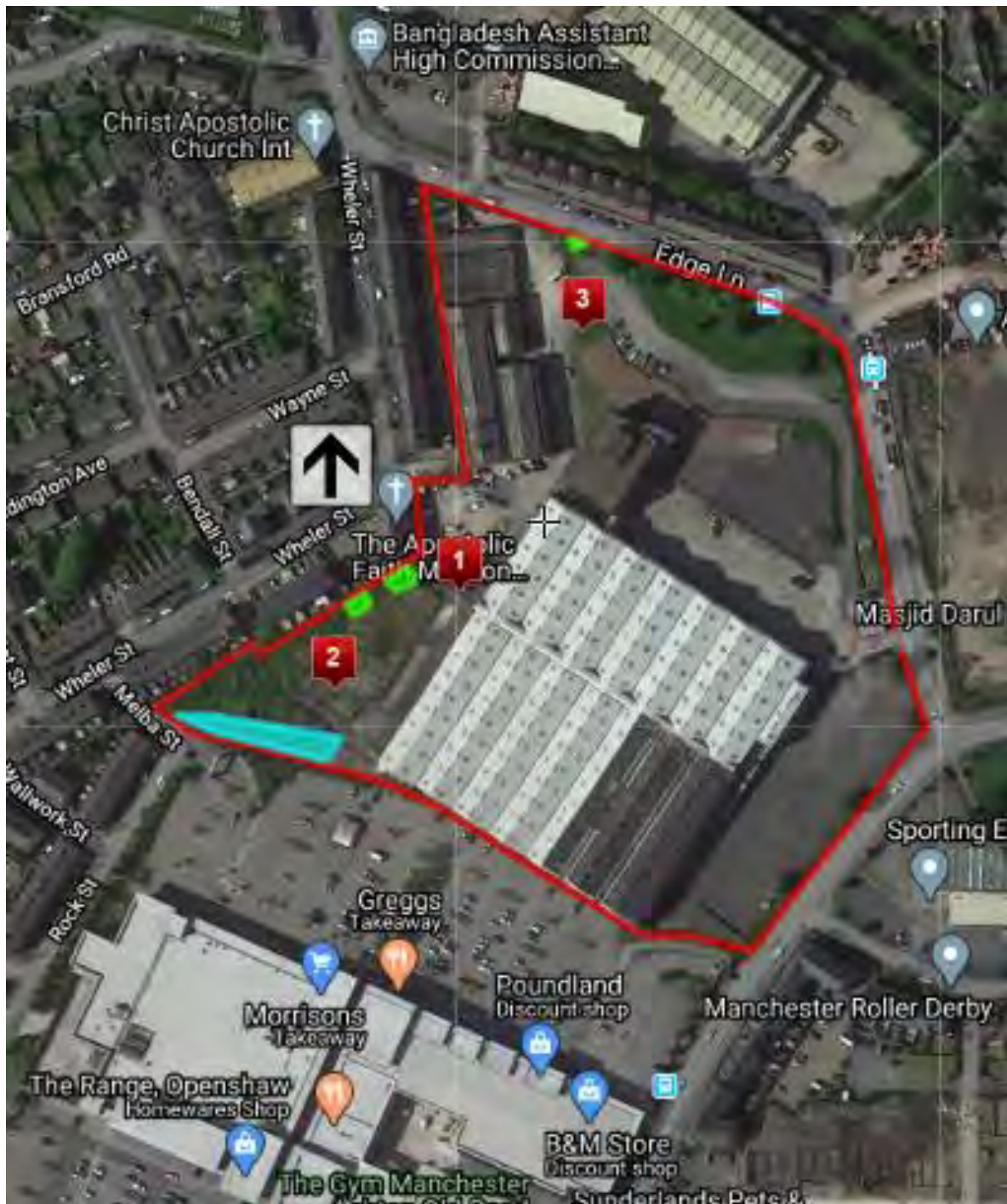


Fig 1. Original JK locations

- Site Boundary
- Rhizome Buffer Zone
- JK Within site
- JK Beyond site
- JK Beyond site not to be treated
- Himalayan Balsam
- Giant Hogweed
- Other as identified within report



New Inn Farm, Dawson Lane, Leyland PR25 5DB
www.knotweederadication.co.uk
info@knotweederadication.co.uk

Date: 19th May 2021
 Client: Your Housing
 Project Ref: IWMP2202A
 Site: Edge Lane Business Park
 Scale: NTS