



Mr T Daly
Armstrong Projects Ltd
The Annexe
Rear of 26 Church Street
Altrincham
WA14 4DW

BY EMAIL

Our Ref: NW149/02/OGjcl4

7th February 2024

Dear Tom

Smithybridge Pub, Littleborough
Post Demolition Supplementary Investigation

In accordance with your instruction, we have undertaken the supplementary ground investigation and testing at Smithybridge Pub, Littleborough following the demolition of the former building. Details are provided below.

Background

During the ARP site investigation in 2021 (see report NW149/02r1V2) contamination testing revealed the made ground, in WS4 only, to contain elevated benzo(b)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene at concentrations of 20mg/kg, 15mg/kg and 2.6mg/kg. Assessment of the PAH double ratio plot showed the elevation probably to be as a result of coal tar, tyre oil, or creosote, and it was concluded to be appropriate to treat this location as a localised "hotspot" area.

In order to delineate the extent of PAH contamination in the vicinity of WS4, it was recommended that further testing should be undertaken to minimise affected volumes of remediation. Further sampling and testing was also recommended within the building footprint, following demolition, to identify any potential undetected contamination sources.

Supplementary Sampling and Testing

The demolition of the former pub was undertaken between the week commencing 8th January 2024 and 18th January 2024. The supplementary sampling was undertaken by an ARP Engineer on 18th January 2024. At the time of the sampling visit, the building had been demolished and all slabs had been removed.

Five hand dug pits (referenced HP1 to HP5) were excavated to 0.3m depth at and around the location of the hotspot WS4, on a grid basis. At the time of our sampling visit, the floor slabs of the former buildings, and external hard surfacing, had been removed and no made ground was identified within any of the hand pits. Therefore, samples of natural soil were collected from each location within the upper 0.3m and sent to a UKAS accredited laboratory for testing for speciated PAH and total organic carbon.



In addition, three machine excavated trial pits (TP1, TP2 and TP3) were dug to a maximum depth of 2m within the footprint of the former building. Made ground, comprising generally cohesive fill with gravel sized fragments of concrete and sandstone, was encountered in TP2 to 0.4m depth, underlain by natural reddish-brown clay with lenses of sandy gravel to the base of the pit at 2.0m. No made ground was identified in TP1 and TP3, with natural deposits of firm clay with lenses of gravel identified from the surface to 2.0m depth. No visual or olfactory signs of contamination were identified. Samples were collected from the made ground in TP2, at 0.3m depth, with samples of natural soils collected from TP1 and TP3 at a similar depth and sent to a UKAS accredited laboratory and tested for a general suite of determinands including metals, total TPH and speciated PAH.

Analysis of Laboratory Test Results

All five samples of soil (natural) tested in the vicinity of WS4 (HP1 to HP5) were below the screening values for all PAH compounds. No made ground was identified at any of the locations. This would indicate the minimal made ground identified in WS4 during the original investigation was removed along with the floor slabs and bitmac surfacing, probably due to the difficulty of selective excavation.

For the additional trial pits within the footprint of the former building, elevated concentrations of PAH, including benzo(a)pyrene (BaP) at 26mg/kg, and lead at 560mg/kg, was identified within the made ground in TP2. No made ground was identified in TP1 and TP3 and testing on the natural soils, at similar depth, revealed all determinands to be below screening values, with BaP concentrations below the laboratories limit of detection of 0.1mg/kg.

Updated Risk Assessment and revised Remediation Measures

It can be seen from the trial pit logs, and the attached photographs, that the majority of the made ground identified during the original investigation has been removed as part of the strip of the bitmac surfacing and the floor slabs of the former building.

No made ground was identified in the vicinity of WS4 and the laboratory results confirm that no PAH contamination has leached into the underlying natural soils. Therefore, the hotspot at WS4 is no longer considered to be present on site. Therefore, no remediation measures are required at this location.

Made ground was only identified in TP2 to 0.4m depth. The concentrations of PAH, including BaP at 26mg/kg and lead at 560mg/kg, exceed the screening value for residential without plant uptake and the BaP concentration also exceeds the screening value for areas of Public Open Space near residential.

Where any landscape areas overlie the contaminated made ground around TP2, a minimum 0.6m thickness of uncontaminated soils (topsoil and subsoil) should be provided. In areas of hardstanding or building footprints, the cover blanket is not required. Validated removal of the material from site is also an option.

The Contamination Remediation Statement NW149/02rem V2 has been updated to reflect the findings of the supplementary investigation.



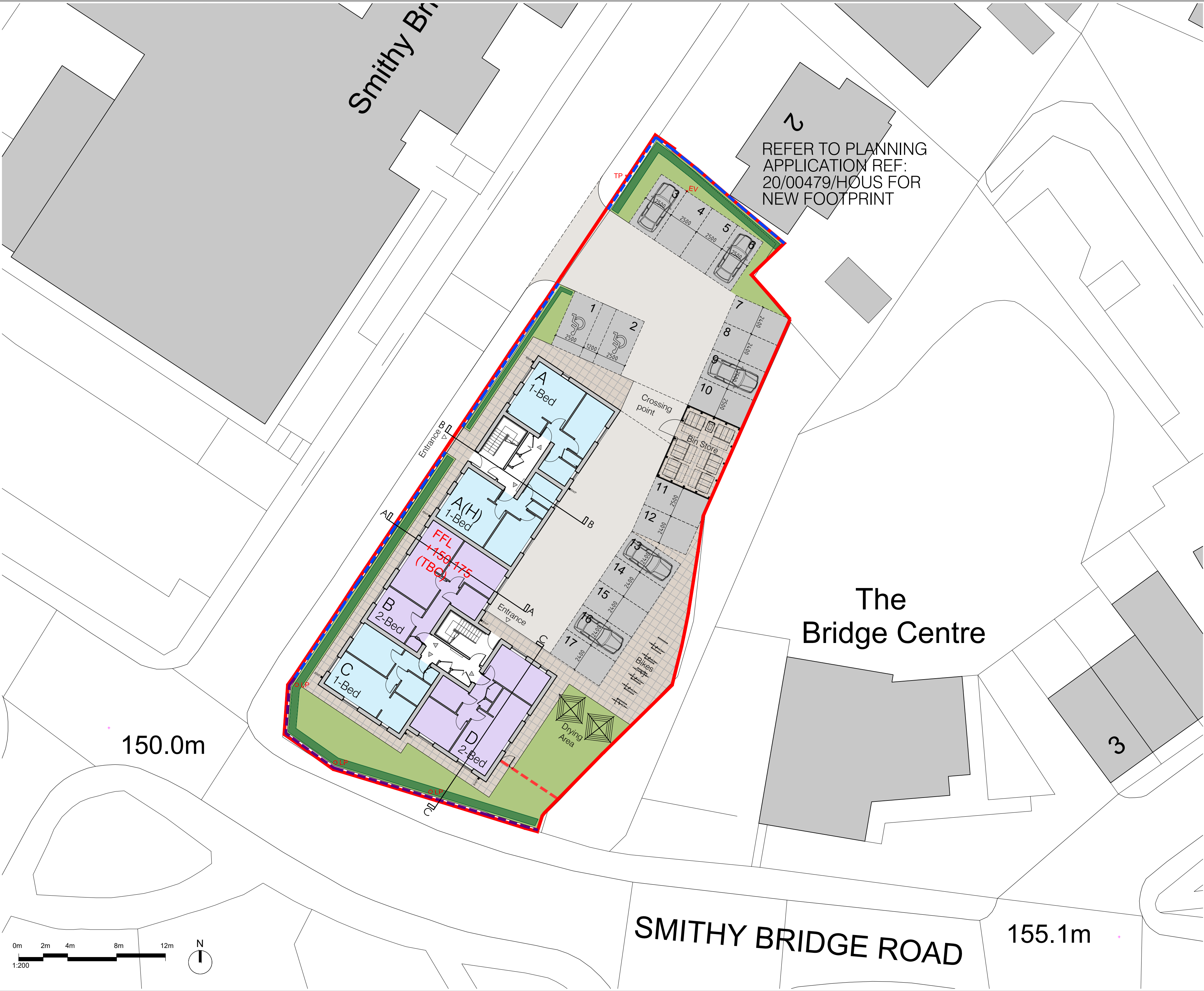
The assessment above is subject to regulatory approval. We trust the above details are acceptable. However, if you have any comments or queries, please do not hesitate to contact us at your convenience.

Yours sincerely
for ARP (NOTH WEST)

A handwritten signature in black ink, appearing to be 'O Gwilym'.

O Gwilym

Encs



REFER TO PLANNING APPLICATION REF: 20/00479/HOUS FOR NEW FOOTPRINT

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- REPORT ERRORS & OMISSIONS TO ARCHITECT.
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- CHECK ALL DIMENSIONS ON SITE.
- DRAWING TO BE READ IN CONJUNCTION WITH THE HEALTH & SAFETY PLAN, AND ALL RELEVANT RISK ASSESSMENTS AND THE FOLLOWING DRAWINGS:

Schedule of Accommodation

Housetype	Description	Area/m2	Total
A	1B2P Apartment	42.7	2
A(H)	1B2P Apartment	42.7	2
B	2B4P Apartment	60.1	2
C	1B2P Apartment	44.1	2
D	2B4P Apartment	59.7	2
E	1B2P Apartment	43.7	1
F	1B2P Apartment	43.4	1
G	1B2P Apartment	45.4	1
H	1B2P Apartment	45.1	1
Total			14 units
Car parking : 19No (136% Parking)			

Landscape Key

- | | | | |
|--|---------------------------------------|--|-----------------------------------|
| | Car Park Space (Permeable surface) | | Bin Location |
| | Tarmac | | Buff Paving (450x450 Paving) |
| | Grass | | Existing Telephone Pole relocated |
| | New Hedge | | Existing Lamppost relocated |
| | IP Rated 13A double electrical socket | | Site Boundary (0.12Ha) |

Boundary Treatments

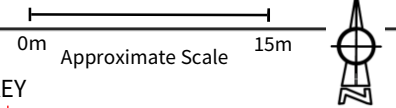
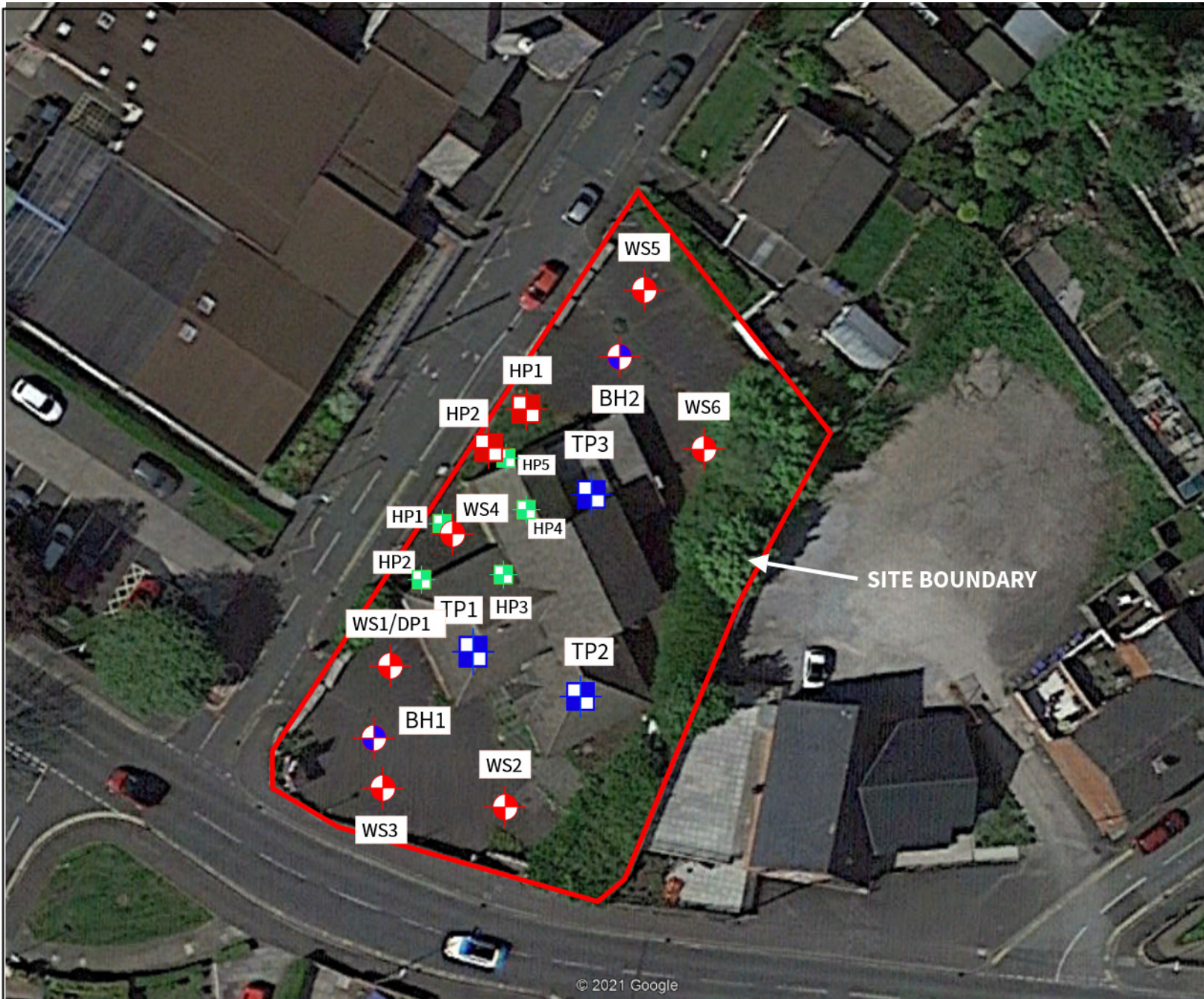
- 900MM HIGH RAILINGS & METAL POSTS
- LOW RETAINING WALL UPSTAND WITH 1100MM RAILINGS ABOVE (FALL PROTECTION)
- 2100MM HIGH CONCRETE POST AND amended. Entrance to Stair 1 amended.
- A Building re-aligned, bin store & car parking amended. Entrance to Stair 1 amended.

Rev	Date	By	Remarks				
Client: Armstrong Projects Ltd							
Project Name: The Smithybridge Pub, Littleborough							
Drawing Name: Proposed Site Plan							
Drawing Purpose: PLANNING							
CDE no.	Project no.		Drawing Number:	Revision:			
	20-027		04	A			
	Project	Origin	Vol/Sys	Level	Type	Role	Number
Status:		Scale @		Drawn:	Checked:	Date:	
A2:		1:200@A2		AJD	BPM	JULY 2021	



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13 Fairfield Street,
Manchester,
M12 6EL



- KEY**
- Windowless Sample Boreholes (2021)
WS1
 - Dynamic probe (2021)
DP
 - Hand Pits (2021)
HP1
 - Cable Percussive boreholes (2024)
BH1
 - Post demolition trial pits (2024)
 - Post demolition hand pits surrounding WS4 (2024)

ARP
ARP NORTH WEST LTD
CHARTERED CONSULTING ENGINEERS
2nd Floor · 3 Hardman Square · Manchester M3 3EB
Telephone : 0113 245 8498 · E-Mail : manchester@arnorthwest.co.uk

Project	THE FORMER SMITHYBRIDGE PUB LITTLEBOROUGH	
Client	ARMSTRONG PROJECTS LTD	
Title	COMBINED SITE INVESTIGATION PLAN	
Date	JANUARY 2024	
Drawn	OG	Scale AS SHOWN
Job No.	NW149/02	



Photograph 1: Footprint of former building following demolition.



Photograph 2: Footprint of former building following demolition.



Photograph 3: Footprint of former building following demolition.



Photograph 4: Footprint of former building following demolition.



Site
Smithybridge Pub, Littleborough

**Trial Pit
Number
HP01**

Machine : Hand Tools
Method : Trial Pit

Dimensions

Ground Level (mOD)

Client
Armstrong Projects Ltd

**Job
Number**
NW149/02

Location

Dates
18/01/2024

Engineer
OG

Sheet
1/1

[illegible]

Remarks

1. Ground checked for services with CAT prior to excavation.
2. No ground water encountered.
3. Hand pit terminated at 0.3m target depth reached.
4. Pit Infilled with arisings to surface.

Scale (approx)	Logged By	Figure No.
1:20	WW	NW149/02.HP01

ARP ARP GEOTECHNICAL LTD CHARTERED CONSULTING ENGINEERS						Site Smithybridge Pub, Littleborough		Trial Pit Number HP02	
Machine : Hand Tools Method : Trial Pit		Dimensions		Ground Level (mOD)		Client Armstrong Projects Ltd		Job Number NW149/02	
		Location		Dates 18/01/2024		Engineer OG		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
						Firm reddish brown CLAY.			
					(0.30)				
					0.30	Complete at 0.30m			
Plan						Remarks			
.						Ground checked for services with CAT prior to excavation.			
.						No ground water encountered.			
.						Hand pit terminated at 0.3m target depth reached.			
.						Pit Infilled with arisings to surface.			
.									
.									
.									
.									
.									
.									
						Scale (approx)		Logged By	
						1:20		WW	
								Figure No.	
								NW149/02.HP02	



Site
Smithybridge Pub, Littleborough

**Trial Pit
Number
HP03**

Machine : Hand Tools
Method : Trial Pit

Dimensions

Ground Level (mOD)

Client
Armstrong Projects Ltd

Job Number
NW149/02

Location

Dates
18/01/2024

Engineer
OG

Sheet
1/1

[illegible]

Remarks

1. Ground checked for services with CAT prior to excavation.
2. No ground water encountered.
3. Hand pit terminated at 0.3m target depth reached.
4. Pit infilled with arisings to surface.

Scale (approx)	Logged By	Figure No.
1:20	WW	NW149/02.HP03

ARP ARP GEOTECHNICAL LTD CHARTERED CONSULTING ENGINEERS						Site Smithybridge Pub, Littleborough		Trial Pit Number HP04	
Machine : Hand Tools Method : Trial Pit		Dimensions		Ground Level (mOD)		Client Armstrong Projects Ltd		Job Number NW149/02	
		Location		Dates 18/01/2024		Engineer OG		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
						Firm reddish brown very sandy CLAY. (0.30) 0.30 Complete at 0.30m			
Plan					Remarks				
					1. Ground checked for services with CAT prior to excavation. 2. No ground water encountered. 3. Hand pit terminated at 0.3m target depth reached. 4. Pit Infilled with arisings to surface.				
					Scale (approx)		Logged By		Figure No.
					1:20		WW		NW149/02.HP04



Site
Smithybridge Pub, Littleborough

**Trial Pit
Number
HP05**

Machine : Hand Tools
Method :

Dimensions

Ground Level (mOD)

Client
Armstrong Projects Ltd

**Job
Number**
NW149/02

Location

Dates
18/01/2024

Engineer
OG

Sheet
1/1

[illegible]

Remarks

1. Ground checked for services with CAT prior to excavation.
2. No ground water encountered.
3. Hand pit terminated at 0.3m target depth reached.
4. Pit infilled with arisings to surface.

Scale (approx)	Logged By	Figure No.
1:20	WW	NW149/02.HP05



Site
Smithybridge Pub, Littleborough

**Trial Pit
Number
TP01**

Machine : Liebherr Excavator
with 1600mm
thoothed bucket

Method : Trial Pit

Dimensions
Top of Pit: 3m x 1.6m
Bottom of Pit:: 2.5 mx 1.6m

Ground Level (mOD)

Client
Armstrong Projects Ltd

**Job
Number**
NW149/02

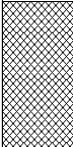
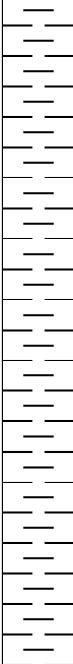
Location

Dates
18/01/2024

Engineer
OG

Sheet
1/1

Plan	.	.	.	.	.	.	.	.	.	.
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	.	.	.	.	.	.	.	.	.	.
Remarks 1. Ground checked for services with CAT prior to excavation. 2. Significant water flow from the base of the gravels at 0.8m. 3. Trial pit terminated at 2 m below ground level target depth reached. 4. Pit Infilled with arisings to surface.										
Scale (approx) 1:50					Logged By WW			Figure No. NW149/02.TP01		

ARP ARP GEOTECHNICAL LTD CHARTERED CONSULTING ENGINEERS						Site Smithybridge Pub, Littleborough		Trial Pit Number TP02	
Machine : Liebherr Excavator with 1600mm thoothed bucket		Dimensions Top of Pit: 3m x 1.6m Bottom of Pit:: 2.5 mx 1.6m		Ground Level (mOD)		Client Armstrong Projects Ltd		Job Number NW149/02	
Method : Trial Pit		Location		Dates 18/01/2024		Engineer OG		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.30-0.30 0.30-0.30	D J				(0.40)	MADE GROUND. Dark brown sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse angular to subangular of concrete and sandstone.			
					0.40	Firm, medium strength, reddish brown CLAY. From 0.4m to 1.6m depth, on north long wall of pit, lense of light brown sandy fine to coarse sub angular to sub rounded GRAVEL of sandstone with medium cobble content. Cobbles are subangular to rounded fine grained brown sandstone.			
1.00-1.00	SV 40/20 kN/m2				(1.80)				
					2.20	Complete at 2.20m			
Plan						Remarks			
.						1. Ground checked for services with CAT prior to excavation.			
.						2. Water flow from within the gravels at 1.0m.			
.						3. Trial pit terminated at 2 m below ground level target depth reached.			
.						4. Pit Infilled with arisings to surface.			
.									
.									
						Scale (approx)		Logged By	
						1:20		WW	
								Figure No.	
								NW149/02.TP02	

ARP ARP GEOTECHNICAL LTD CHARTERED CONSULTING ENGINEERS						Site Smithybridge Pub, Littleborough		Trial Pit Number TP03		
Machine : Liebherr Excavator with 1600mm thoothed bucket		Dimensions Top of Pit: 3m x 1.6m Bottom of Pit:: 2.5 mx 1.6m		Ground Level (mOD)		Client Armstrong Projects Ltd		Job Number NW149/02		
Method : Trial Pit		Location		Dates 18/01/2024		Engineer OG		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.40-0.40 0.40-0.40	D J					Firm, medium strength, reddish brown CLAY.				
1.00-1.00	SV 66/20 kN/m2				(2.00)	At 0.5m, firm orangish brown sandy clay lense on north long wall of pit. Sand is fine to coarse. Lense is 0.5m thick and 1m in length.				
						At 0.8m, on long north wall of pit, light brown sandy fine to coarse sub angular to sub rounded GRAVEL of sandstone with medium cobble content. Lense is 0.8m thick and 1m in length.				
					2.00	Complete at 2.00m				
Plan					Remarks					
					1. Ground checked for services with CAT prior to excavation.					
					2. Water inflow from gravel lense on side of pit at 1m .					
					3. Trial pit terminated at 2 m below ground level target depth reached.					
					4. Pit Infilled with arisings to surface.					
					Scale (approx)		Logged By		Figure No.	
					1:20		WW		NW149/02.TP03	



ARP GEOTECHNICAL LIMITED
SOIL CONTAMINANT SCREENING VALUES
PUBLIC OPEN SPACE NEAR RESIDENTIAL

Determinand	S4UL (mg/kg)			C4SL (mg/kg)		
Arsenic	79			79		
Cadmium	120			220		
Chromium (trivalent)	1500					
Chromium (hexavalent)	7.7			21		
Copper	12000					
Lead				630		
Inorganic Mercury	120					
Nickel	230					
Selenium	1100					
Zinc	81000					
Acidity (pH)	*Should be Greater Than 5					
	1% SOM	2.5% SOM	6% SOM	1% SOM	2.5% SOM	6% SOM
Naphthalene	4900	4900	4900			
Acenaphthylene	15000	15000	15000			
Acenaphthene	15000	15000	15000			
Fluorene	9900	9900	9900			
Phenanthrene	3100	3100	3100			
Anthracene	74000	74000	74000			
Fluoranthene	3100	3100	3100			
Pyrene	7400	7400	7400			
Benzo(a)anthracene	29	29	29			
Chrysene	57	57	57			
Benzo(b)fluoranthene	7.1	7.2	7.2			
Benzo(k)fluoranthene	190	190	190			
Benzo(a)pyrene	5.7	5.7	5.7			10
Indeno(1,2,3-cd)pyrene	82	82	82			
Dibenzo(a,h)anthracene	0.57	0.57	0.57			
Benzo(g,h,i)perylene	640	640	640			
Phenols	440	690	1300			
Total TPH	*Above 3,800, speciate and compare with values below:					
C5 to C6 Aliphatic	570000	590000	600000			
C6 to C8 Aliphatic	600000	610000	620000			
C8 to C10 Aliphatic	13000	13000	13000			
C10 to C12 Aliphatic	13000	13000	13000			
C12 to C16 Aliphatic	13000	13000	13000			
C16 to C35 Aliphatic	250000	250000	250000			
C35 TO C44 Aliphatic	250000	250000	250000			
C5 to C7 Aromatic (Benzene)	56000	56000	56000			
C7 to C8 Aromatic (Toluene)	56000	56000	56000			
C8 to C10 Aromatic	5000	5000	5000			
C10 to C12 Aromatic	5000	5000	5000			
C12 to C16 Aromatic	5100	5100	5000			
C16 to C21 Aromatic	3800	3800	3800			
C21 TO C35 Aromatic	3800	3800	3800			
C35 TO C44 Aromatic	3800	3800	3800			
Asbestos	*Should be None Detected			*Should be None Detected		

* In House Value/Approach S4UL = Suitable 4 Use Level, CIEH/LQM 2014 C4SL = Cat 4 Screening Level, DEFRA, 2014

Blank cell indicates no published value or in-house value. Some values presented are above saturation limits.

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ARP GEOTECHNICAL LIMITED
SOIL CONTAMINANT SCREENING VALUES
RESIDENTIAL WITHOUT HOME-GROWN PRODUCE

Determinand	S4UL (mg/kg)			C4SL (mg/kg)		
Arsenic	40			40		
Cadmium	85			150		
Chromium (trivalent)	910					
Chromium (hexavalent)	6			21		
Lead				310		
Inorganic Mercury	56					
Selenium	430					
Copper	7100					
Nickel	180					
Zinc	40000					
Acidity (pH)	*Should be Greater Than 5			*Should be Greater Than 5		
	1% SOM	2.5% SOM	6% SOM	1% SOM	2.5% SOM	6% SOM
Acenaphthene	3000	4700	6000			
Acenaphthylene	2900	4600	6000			
Anthracene	31000	35000	37000			
Benzo(a)anthracene	11	14	15			
Benzo(a)pyrene	3.2	3.2	3.2			5.3
Benzo(b)fluoranthene	3.9	4	4			
Benzo(g,h,i)perylene	360	360	360			
Benzo(k)fluoranthene	110	110	110			
Chrysene	30	31	32			
Dibenzo(a,h)anthracene	0.31	0.32	0.32			
Fluoranthene	1500	1600	1600			
Fluorene	2800	3800	4500			
Indeno(1,2,3-cd)pyrene	45	46	46			
Naphthalene	2.3	5.6	13			
Phenanthrene	1300	1500	1500			
Pyrene	3700	3800	3800			
Phenols	440	690	1200			
Total TPH	*Above 500, speciate and compare with values below:					
C5 to C6 Aliphatic	42	78	160			
C6 to C8 Aliphatic	100	230	530			
C8 to C10 Aliphatic	27	65	150			
C10 to C12 Aliphatic	130	330	770			
C12 to C16 Aliphatic	1100	2400	4400			
C16 to C35 Aliphatic	65000	92000	110000			
C35 TO C44 Aliphatic	65000	92000	110000			
C5 to C7 Aromatic (Benzene)	370	690	1400			
C7 to C8 Aromatic (Toluene)	860	1800	3900			
C8 to C10 Aromatic	47	110	270			
C10 to C12 Aromatic	250	590	1200			
C12 to C16 Aromatic	1800	2300	2500			
C16 to C21 Aromatic	1900	1900	1900			
C21 TO C35 Aromatic	1900	1900	1900			
C35 TO C44 Aromatic	1900	1900	1900			
Asbestos	*Should be None Detected			*Should be None Detected		

* In House Value/Approach S4UL = Suitable 4 Use Level, CIEH/LQM 2014 C4SL = Cat 4 Screening Level, DEFRA, 2014

Blank cell indicates no published value or in-house value. Some values presented are above saturation limits.

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Final Report

Report No.: 24-02055-1

Initial Date of Issue: 30-Jan-2024

Re-Issue Details:

Client ARP Geotechnical Ltd

Client Address: The Annexe
Rear of 26 Church Street
Altrincham
WA14 4DW

Contact(s): William Watkins

Project NW149/02 Smithy Bridge Pub,
Smithybridge

Quotation No.: Q24-33517

Date Received: 24-Jan-2024

Order No.: NW149/02

Date Instructed: 24-Jan-2024

No. of Samples: 8

Turnaround (Wkdays): 5

Results Due: 30-Jan-2024

Date Approved: 30-Jan-2024

Approved By:

Details: Stuart Henderson, Technical
Manager
Nick Watson, Operations Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: NW149/02 Smithy Bridge Pub, Smithybridge

Client: ARP Geotechnical Ltd		Chemtest Job No.:		24-02055	24-02055	24-02055	24-02055	24-02055	24-02055	24-02055	24-02055	24-02055
Quotation No.: Q24-33517		Chemtest Sample ID.:		1757702	1757703	1757704	1757705	1757706	1757707	1757708	1757709	
		Sample Location:		TP1	TP2	TP3	HP1	HP2	HP3	HP4	HP5	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	
		Bottom Depth (m):		1.3	2.2	0.5	0.8	0.6	1.2	0.8	1.4	
		Date Sampled:		18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	
		Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB						
Determinand	HWOL Code	Accred.	SOP	Units	LOD							
ACM Type		U	2192		N/A	-	-	-				
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected				
Moisture		N	2030	%	0.020	15	22	20	13	13	19	16
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones and Roots	Stones	Stones	Stones and Roots	Stones	Stones
Soil Texture		N	2040		N/A	Loam	Clay	Clay	Clay	Clay	Clay	Clay
pH at 20C		M	2010		4.0	8.4	7.9	8.3				
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	0.40	< 0.010				
Sulphate (Total)		U	2430	mg/kg	100	280	4600	1300				
Arsenic		M	2455	mg/kg	0.5	12	26	7.6				
Cadmium		M	2455	mg/kg	0.10	0.89	1.3	0.94				
Chromium		M	2455	mg/kg	0.5	24	26	31				
Copper		M	2455	mg/kg	0.50	34	170	27				
Mercury		M	2455	mg/kg	0.05	0.07	0.75	< 0.05				
Nickel		M	2455	mg/kg	0.50	34	33	38				
Lead		M	2455	mg/kg	0.50	46	560	15				
Selenium		M	2455	mg/kg	0.25	1.9	1.9	1.5				
Zinc		M	2455	mg/kg	0.50	79	250	61				
Chromium (Trivalent)		N	2490	mg/kg	1.0	24	26	31				
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50				
Organic Matter		M	2625	%	0.40	0.80	14	1.4	1.1	1.8	1.7	0.64
Total TPH >C6-C40		M	2670	mg/kg	10	< 10	1200	< 10				
Naphthalene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Anthracene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Pyrene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Chrysene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: NW149/02 Smithy Bridge Pub, Smithybridge

Client: ARP Geotechnical Ltd		Chemtest Job No.:		24-02055	24-02055	24-02055	24-02055	24-02055	24-02055	24-02055	24-02055	24-02055
Quotation No.: Q24-33517		Chemtest Sample ID.:		1757702	1757703	1757704	1757705	1757706	1757707	1757708	1757709	1757709
		Sample Location:		TP1	TP2	TP3	HP1	HP2	HP3	HP4	HP5	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	
		Bottom Depth (m):		1.3	2.2	0.5	0.8	0.6	1.2	0.8	1.4	
		Date Sampled:		18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	18-Jan-2024	
		Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB						
Determinand	HWOL Code	Accred.	SOP	Units	LOD							
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		M	2700	mg/kg	2.0				< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10	1.1	0.19				
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	2.4	< 0.10				
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	1.9	< 0.10				
Fluorene		M	2800	mg/kg	0.10	< 0.10	2.3	< 0.10				
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	34	0.23				
Anthracene		M	2800	mg/kg	0.10	< 0.10	11	< 0.10				
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	60	0.17				
Pyrene		M	2800	mg/kg	0.10	< 0.10	51	0.17				
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	24	< 0.10				
Chrysene		M	2800	mg/kg	0.10	< 0.10	24	< 0.10				
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	30	< 0.10				
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	11	< 0.10				
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	26	< 0.10				
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	17	< 0.10				
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	2.7	< 0.10				
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	16	< 0.10				
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	310	< 2.0				
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10				

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

- DW - Drinking Water
- GW - Ground Water
- LE - Land Leachate
- NA - Not Applicable
- PL - Prepared Leachate
- PW - Processed Water

Report Information

RE - Recreational Water

SA - Saline Water

SW - Surface Water

TE - Treated Effluent

TS - Treated Sewage

UL - Unspecified Liquid

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com