



Our Ref: 2203011.005.02
Your Ref:

06 September 2024

Cardiff House
Cardiff Road
Barry
Vale of Glamorgan
CF63 2AW

Geraint Thomas
J G Hale Construction Ltd
Unit 3 JCG Building
Milland Road Industrial Estate
Neath
SA11 1NJ

t: 01446 731290
w: www.tecon.co.uk

Dear Geraint

**DEVONSHIRE PLACE, PORT TALBOT – SUPPLEMENTARY GEOENVIRONMENTAL ASSESSMENT (POST DEMOLITION)
ADDITIONAL TESTING**

Further to instruction, TEC has undertaken additional testing following the supplementary geochemical assessment at the abovementioned site and following recent demolition works to potentially refine the remedial requirements, in support of the proposed site development. Works have been undertaken in accordance with our proposal letter ST.2203011.005 and dated 13 March 2024.

Background

The site currently comprises the recently demolished former Dyffryn Lower Comprehensive School, located on Devonshire Place, south-east of Port Talbot (Figure 1). The site covers an area of approximately 0.74 hectares with the centre of the site situated at National Grid Reference 277060, 189470. The nearest postcode is SA13 1SG.

Previous works have been undertaken at the site by TEC on behalf of Linc Cymru Housing Association, as detailed within the following reports:

- 'Devonshire Place, Port Talbot: Desk Study'. Ref: 2203011.001.01, dated June 2022;
- 'Devonshire Place, Port Talbot: Ground Investigation Report'. Ref: 2203011.002.01, dated June 2022;
- 'Devonshire Place, Port Talbot: Remediation Strategy and Verification Plan'. Ref: 2203011.003.01, dated July 2022; and
- 'Devonshire Place, Port Talbot: Winter Groundwater Monitoring (October 2022 to July 2023). Ref: 2203011.004.01, August 2023.

Additional works have also been undertaken by TEC on behalf of J G Hale Construction Ltd following the demolition of the existing buildings on site, as detailed within the following report as well as this current letter report:

- 'Devonshire Place, Port Talbot: Supplementary Geoenvironmental Assessment (Post Demolition)' Ref: 2203011.005.01, dated 16 August 2024.

It is understood that J G Hale Construction Ltd have been instructed by Linc Cymru Housing Association as part of the development and therefore it is assumed that J G Hale Construction Ltd have reliance upon all the above reports for the purposes of this assessment. Reference should be made to all previous reports for full site condition details, although salient information is summarised within this letter report.



Tweedie Evans Consulting Limited trading as TEC
Registered Office: One New Street, Wells, BA5 2LA Company Registration No. 5186011



Summary of Previous Works

The previous investigation works undertaken at the site, recorded made ground to depths of between 0.2m and 1.0mbgl. No visual or olfactory evidence of significant contamination was recorded during the ground investigation. However, a slight hydrocarbon odour was recorded within BH01 between 0.3m and 0.5mbgl.

Laboratory analytical results of the encountered made ground materials reported elevated contaminants of potential concern, including heavy metals (arsenic), PAHs and TPH when considering a residential site end use with homegrown produce. Therefore, where soft landscaping is proposed and where made ground remains onsite after finished site levels have been achieved, exposure to potential contaminants cannot be discounted.

The Remediation Strategy and Verification Plan prepared for the site indicated a simple cover system would be required across the majority of the site; however, an engineered cover system would be required within some areas given the recorded elevated concentrations of contaminants recorded within the made ground in these areas. Notwithstanding this, it was noted that as demolition works, and site strip (removal of foundations etc) would be required at the site as part of the development works, it was suggested that additional testing within the proposed areas of soft landscaping where the structures were previously recorded at the site could be undertaken, following site preparation works, to potentially refine the remedial requirements.

Post Demolition Supplementary Geoenvironmental Assessment

Phase 1: TEC July 2024

Following the partial completion of the site strip, with most of the structures demolished, additional intrusive works including sampling were undertaken by TEC on 24 July 2024, comprising the excavation of 6No. shallow trial pits (TP101 to TP106) to a maximum depth of 1.3mbgl beneath the footprint of the previously inaccessible areas of the site (i.e. beneath the former structures).

Encountered Ground Conditions

Made Ground

Made ground was recorded across the site to depths between 0.4m and 1.0mbgl and generally comprised reddish brown slightly gravelly, sandy clay / clayey sand gravel with low cobble content. The gravel and cobbles were recorded as limestone, chert, sandstone, mudstone, slate, rare metal, clinker, wood fragments, slag, coal fragments, charcoal, brick, black carbonaceous material, and concrete. Reworked made ground was also recorded within TP105 between 0.6m and 1.0mbgl.

Reworked Natural Ground

Reworked ground was recorded within TP101 between 0.6m and 1.0mbgl, TP102 between 0.4m and 0.7mbgl, and TP106 between 0.8m and 1.0mbgl. Similar material was recorded in TP101 and TP102, comprising firm reddish brown slightly sandy, slightly gravelly clay was recorded with gravel of medium to coarse subangular to subrounded chert, sandstone and rare black carbonaceous material. Whilst TP106 recorded reddish brown slightly sandy clayey gravel of medium to coarse subrounded to subangular chert and sandstone with pockets of firm brown slightly gravelly clay recorded throughout the material.

Superficial Deposits

Within TP103 only, a band of cohesive superficial deposits was recorded between 0.5m and 0.7mbgl and was noted to comprise firm yellowish brown slightly gravelly, slightly sandy friable clay with low cobble content.

Granular superficial natural ground was recorded below the made ground/reworked ground and cohesive superficial deposits encountered across the remainder of the exploratory hole locations. The material was noted to generally comprise reddish brown to light brown slightly sandy, clayey gravel with low cobble content to depths between 0.8m and 1.3mbgl. The gravel and cobbles were recorded as medium to coarse subangular to subrounded chert and sandstone.

Groundwater

No groundwater was recorded to a maximum observed depth of 1.3mbgl during this phase of works.

Contamination Observations

No visual or olfactory evidence of contamination was recorded during the ground investigation. Screening of soil samples with a photo-ionisation detector (PID) recorded concentrations of volatile organic compounds (VOCs) to be less than the instrument level of detection (i.e. 0.0ppm).

General

It was noted that the made ground and shallow superficial deposits were noted to be similar in nature to the ground conditions previously recorded during the intrusive works by TEC in 2022.

Geochemical Analysis

Samples of made ground taken during this phase of works recorded localised and marginal exceedances of the GAC's, identifying the following contaminants of potential concern (CoPC) within the made ground encountered beneath the former structures;

- Heavy metals – arsenic (TP103 at 0.2-0.3mbgl); and
- PAHs – benzo(b)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene – TP104 at 0.4-0.5mbgl.

No asbestos was recorded within the sampled made ground materials.

Phase 2: TEC August 2024

An additional site visit was undertaken by TEC on 20 August 2024 following the completion of the site strip, with all structures demolished. Additional intrusive works, including sampling was undertaken by TEC on 20 August 2024 and comprised the excavation of 12No. shallow trial pits (TP201 to TP212) to a maximum depth of 0.9mbgl within previously inaccessible areas of the site (i.e. beneath the former structures).

Encountered Ground Conditions

The exploratory hole logs are presented in Appendix A while exploratory hole locations are presented on Figure 2.

Made Ground

Made ground was recorded across the site to depths between 0.15m (TP212) and 0.85mbgl (TP206) and generally comprised reddish brown/brown gravelly, sandy clay with low cobble content. The gravel and cobbles were recorded as red brick, concrete, limestone, chert, sandstone, mudstone, slate, rare metal, plastic, clinker, wood fragments, glass and black carbonaceous material.

Reworked Natural Ground

Reworked ground was recorded within TP205 between 0.5m and 0.7mbgl only, comprising yellowish brown slightly clayey sandy gravel of sandstone, siltstone and rare chert.

Superficial Deposits

A combination of granular and cohesive superficial deposits were recorded beneath the encountered made ground/reworked natural ground to depths in excess of 0.9mbgl. The granular superficial deposits were generally encountered as reddish brown to yellowish brown slightly clayey sandy gravel with low cobble content, with gravel and cobbles of sandstone, siltstone and chert.

The cohesive superficial deposits were generally encountered as firm reddish brown to orangish brown slightly sandy slightly gravelly clay, with gravel of chert, sandstone and siltstone.

Groundwater

No groundwater was recorded to a maximum observed depth of 0.9mbgl during this phase of works.

Contamination Observations

No visual or olfactory evidence of contamination was recorded during the ground investigation.

Geochemical Testing

Laboratory testing was scheduled on the basis of the potential contaminants identified within the previous risk assessments and field observations. 13No. representative soil samples were collected and chemically tested at i2 Analytical Ltd, a UKAS/MCERTS accredited laboratory, for a selection of the following parameters:

Soils (Totals)

- Speciated Polyaromatic Hydrocarbons (PAH);
- Total Petroleum Hydrocarbons (TPH-CWG);
- BTEX and MTBE; and
- Arsenic bioaccessibility testing.

Geochemical certificates of analysis are presented within Appendix B.

Contamination Risk Assessment

Human Health

Detailed information on the background legislation and selection of the GAC used within this assessment for human health is presented in Appendix C for the additional samples obtained following the demolition of the former structures onsite.

TEC have referenced the Environment Agency SGV's, Defra Category 4 Screening Levels (C4SLs) and LQM/CIEH S4ULs for Human Health Risk Assessment 'Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3126. All rights reserved.'

The standard land use for the site, for use in this generic assessment, has been defined as "residential with homegrown produce" based on the proposed development and in accordance with current guidance.

All GAC's used within the assessment are based on a sandy loam as defined in SR3 (Environment Agency, 2009) and Soil Organic Matter (SOM) of 1% where applicable, which is considered the most conservative initial screening approach.

As the site investigation methodology involved targeted sampling, statistical analysis has not been undertaken and the results have been directly compared to the GAC.

Summary of Results

The full human health generic quantitative risk assessment is presented in Appendix C.

Made Ground

The results of the assessment recorded localised and marginal exceedances of the GAC and therefore the following contaminants of potential concern (CoPC) have been identified within the shallow made ground encountered during this latest phase of works:

PAHs

- Benzo(a)anthracene – TP207 at 0.2-0.3mbgl and TP208 at 0.1-0.2mbgl.
- Benzo(b)fluoranthene – TP206 at 0.3-0.4mbgl, TP207 at 0.2-0.3mbgl, TP208 at 0.1-0.2mbgl and TP210 at 0.5-0.6mbgl.
- Benzo(a)pyrene – TP206 at 0.3-0.4mbgl, TP207 at 0.2-0.3mbgl, TP208 at 0.1-0.2mbgl and TP210 at 0.5-0.6mbgl.
- Dibenz(a,h)anthracene – TP206 at 0.3-0.4mbgl, TP207 at 0.2-0.3mbgl, TP208 at 0.1-0.2mbgl and TP210 at 0.5-0.6mbgl.

BARGE (UBM) Testing

BARGE testing was undertaken on 1No. samples of the underlying made ground and 2No. samples of natural ground to assess the bioaccessible fraction of arsenic within the sampled soil materials. The results are presented within Appendix B and are summarised in Table 1 below.

Table 1: Summary of Arsenic BARGE Test Results

Determinand	Made Ground (mg/kg)	Natural Ground (mg/kg)	
	TP201 (0.3 – 0.4mbgl)	TP207 (0.5-0.6mbgl)	TP212 (0.2-0.3mbgl)
Total Arsenic (mg/kg)	47	12	22
Arsenic Gastric Bioaccessible (%)	0.4	<0.1	0.1
Arsenic Gastro Intestinal Bioaccessible (%)	1.1	0.2	0.2
Total Bioaccessible (%)	2.3	1.6	<1

It should be noted that bioaccessibility testing is only relevant to the assessment of natural soils (and therefore on this site also for reworked natural soils), the test result for the made ground within TP201 has not been subject to further detailed assessment within this report, and the standard GAC of 37mg/kg for a Residential (with Homegrown Produce) would remain applicable both for this sample, and all samples previously taken from made ground across the site.

Review of the above bioaccessibility test results for natural ground (TP207 and TP212) confirms that, based on a limited dataset, a maximum bioaccessible fraction of 1.6% within the underlying natural soils (granular superficial deposits) can be assumed. To add conservatism to the risk assessment, a bioaccessible fraction of 2% has therefore been applied to CLEA 1.07.1, to derive a Site-Specific Assessment Criteria (SSAC) for arsenic within natural soils at the site.

06 September 2024

The following SSAC has been derived for natural (and reworked natural) soils at the site, based on the limited testing undertaken to date:

- Residential (with Homegrown Produce) – 395mg/kg

A copy of the CLEA output datasheet is presented within Appendix D.

Re-assessment of arsenic results for all phases of investigation

When all arsenic results (including those from all earlier phases of investigation) representative of natural soils underlying the site are compared to the revised Residential (with Homegrown Produce) SSAC of 395mg/kg, there are no exceedences.

An assessment of all arsenic results (including those from all earlier phases of investigation) representative of made ground underlying the site are compared to the GAC for made ground at the site of 37mg/kg, 4No. exceedences have been identified across the site in the following locations:

- WS02 (2022 investigation) – 0.3-0.4mbgl, 53mg/kg total arsenic; and
- WS03 (2022 investigation) – 0.6-0.7mbgl, 43mg/kg total arsenic; and
- TP103 (2024 investigation) – 0.2-0.3mbgl, 48mg/kg total arsenic; and
- TP201 (2024 investigation) – 0.3-0.4mbgl, 47mg/kg total arsenic.

These locations, therefore, will require remediation works to be completed, as detailed in the conclusions and recommendations section below.

Conclusions and Recommendations

Based upon the supplementary testing undertaken at the site following the demolition of the structures, localised contaminants of potential concern (CoPC) have been recorded within the shallow made ground materials when considering a residential site end use.

Therefore, where soft landscaping is proposed in such areas and where made ground remains after finished site levels have been achieved, localised exposure to potential contaminants cannot be discounted and a suitable cover system may be required within areas of soft landscaping.

Furthermore, given this additional assessment, an updated Remediation Strategy and Verification Plan will be prepared.

Closure

We hope you find the above to your satisfaction, but should you have any queries please do not hesitate to contact us.

Yours sincerely



Hannah Jeffery

Senior Consultant

For and on behalf of

TEC



Claire Hooley

Director

Figure 1 - Site Location Plan

Figure 2 - Exploratory Hole Location Plan

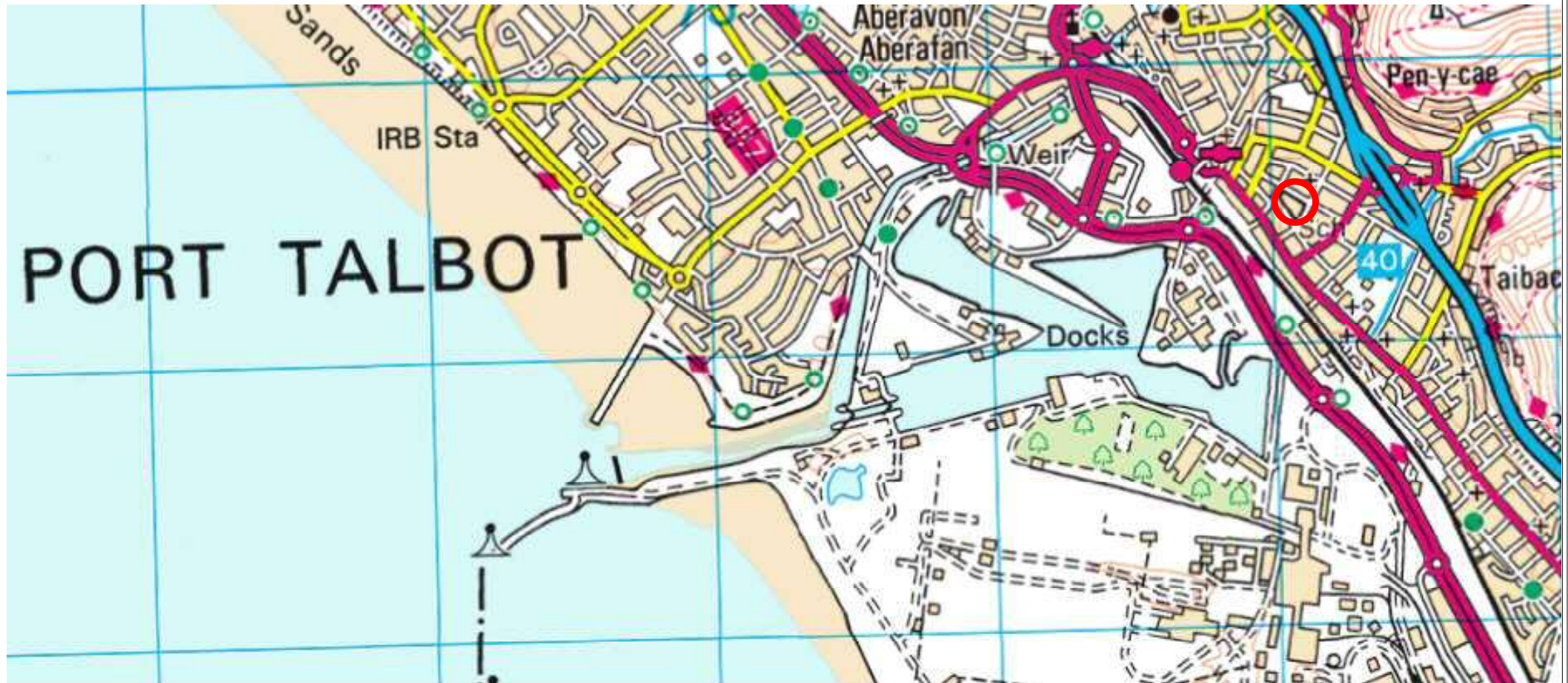
Appendix A - Exploratory Hole Logs

Appendix B - i2 Analytical Report No. 24-03847-1 and i2 Analytical Report No. 24-038479-1

Appendix C - Generic Quantitative Risk Assessment: Human Health

Appendix D - CLEA output data sheet

Figures



Approximate Site Location:



Ordnance Survey © Crown Copyright [2024] All rights reserved.
Licence number 100043301



TEC
The Old Chapel
35a Southover
Wells, Somerset
BAS 1UH

Tel: 01749 677760
Email: info@tecon.co.uk
Web: www.tecon.co.uk

Site Name:

Devonshire Place, Port Talbot

Drawing Name:

Site Location Plan

Client Name:

J G Hale Construction Ltd

Project No:

2203011.005

Figure No:

1

Date:

September 2024

Scale:

NTS



 TEC Trial Pit (August 2024)

Extract of Austin Smith Lord - Devonshire Place 'Proposed Surfaces & Furniture Plan'. Job No.: 222006 Dwg No. ASL - XX - XX - DR - L - 0002, P1, March 2023



TEC
The Old Chapel
35a Southover
Wells, Somerset
BA5 1UH

Tel: 01749 677760
Email: info@tecon.co.uk
Web: www.tecon.co.uk

Site Name:

Devonshire Place, Port Talbot

Scale:

NTS

Drawing Name:

Proposed Development and Supplementary
Geochemical Testing Plan

Client Name:

J G Hales Construction Ltd

Project No:

2203011.005.02

Date:

September
2024

Figure No:

2

Appendix A

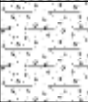
Exploratory Hole Logs

		Trial Pit Log					Trial Pit No. TP201 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot				Client: J G Hales Construction Ltd			Date: 20/08/2024		
Location:				Contractor:					
Project No. 2203011.005.02				Drilling Equipment: Zaxis300LC			Level:		
Hole Type: TP				Logged By: ST			Scale: 1:15		
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.30 - 0.40	ES		0.40			MADE GROUND: Brown to dark brown slightly gravelly locally sandy, silty clay with frequent rootlets and roots. Gravel of concrete, chert, mudstone, slate and sandstone.	1	
				0.60			MADE GROUND: Brown slightly gravelly silty clay. Gravel of chert, mudstone and slate. <i>Old pipe at 0.5mbgl</i>		
				0.70			SUPERFICIAL DEPOSITS: Reddish brown to brown slightly clayey sandy GRAVEL with low cobble content. Gravel of medium to coarse and cobbles of sub-rounded siltstone, sandstone and chert. End of Trial Pit at 0.70m		
Dimensions		Trial Pit Support		Soakage Testing					
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks	
2.70	1.40	Stable	None						
Remarks: No groundwater encountered.									

		Trial Pit Log					Trial Pit No. TP202 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot				Client: J G Hales Construction Ltd			Date: 20/08/2024		
Location:				Contractor:					
Project No. 2203011.005.02				Drilling Equipment: Zaxis300LC			Level:		
Hole Type: TP				Logged By: ST			Scale: 1:15		
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.20 - 0.30						MADE GROUND: Oranigsh brown to brown slightly sandy, gravelly clay with low cobble content. Gravel of sandstone, siltstone, chert, ceramics, red brick, concrete, yellow brick, rare wood and glass.		
				0.80			SUPERFICIAL DEPOSITS: Firm reddish brown to orangish brown sandy, gravelly CLAY. Gravel of medium to coarse subrounded to rounded chert and sandstone.	1	
				0.90			End of Trial Pit at 0.90m	2	
Dimensions		Trial Pit Support		Soakage Testing					
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks	
2.80	1.30	Stable	None						
Remarks: No groundwater encountered.									

		Trial Pit Log					Trial Pit No. TP204 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot			Client: J G Hales Construction Ltd			Date: 20/08/2024			
Location:			Contractor:						
Project No. 2203011.005.02			Drilling Equipment: Zaxis300LC			Level:			
Hole Type: TP			Logged By: ST			Scale: 1:15			
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.20 - 0.30	ES		0.20			MADE GROUND: Dark brown to greyish brown slightly silty, slightly gravelly clay. Gravel of chert, sandstone, siltstone, red brick, yellow brick, clinker, metal and rare black carbonaceous material.		
							MADE GROUND: Brown to reddish brown slightly gravelly, silty clay. Gravel of chert, clinker, sandstone, rare metal and black carbonaceous material.		
									SUPERFICIAL DEPOSITS: Firm reddish brown slightly sandy, slightly gravelly CLAY. Gravel of medium subangular chert and sandstone.
							End of Trial Pit at 0.75m		
				0.40					
				0.75					
Dimensions Pit Length (m) 2.70 Pit Width (m) 1.30 Trial Pit Support Pit Stability Stable Shoring Used None Soakage Testing Test No. Date Test Duration (hh:mm) Soil Infiltration Rate (m/s) Remarks No groundwater encountered.									
									

		Trial Pit Log					Trial Pit No. TP206 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot				Client: J G Hales Construction Ltd			Date: 20/08/2024		
Location:				Contractor:					
Project No. 2203011.005.02				Drilling Equipment: Zaxis300LC			Level:		
Hole Type: TP				Logged By: ST			Scale: 1:15		
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.30 - 0.40	ES		0.85 0.90			MADE GROUND: Reddish brown slightly gravelly clay with low cobble content. Gravel of sandstone, siltstone, concrete, red brick, ceramics and rare wood and glass. <i>Increasing cobble content below 0.4mbgl.</i>	1	
						SUPERFICIAL DEPOSITS: Reddish brown slightly clayey sandy GRAVEL with low cobble content. Gravel of coarse and cobbles subrounded to subangular chert, sandstone and siltstone. End of Trial Pit at 0.90m			
									2
Dimensions		Trial Pit Support		Soakage Testing					
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks	
2.70	1.40	Stable	None						
Remarks: No groundwater encountered.									

		Trial Pit Log					Trial Pit No. TP207 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot				Client: J G Hales Construction Ltd			Date: 20/08/2024		
Location:				Contractor:					
Project No. 2203011.005.02				Drilling Equipment: Zaxis300LC			Level:		
Hole Type: TP				Logged By: ST			Scale: 1:15		
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.20 - 0.30	ES		0.20			MADE GROUND: Brown slightly sandy gravelly clay with low cobble content. Gravel and cobbles of sandstone, siltstone, and rare clinker, plastic and red brick.	1	
				0.40			MADE GROUND: Brown mottled greyish brown locally slightly ashy, slightly gravelly, sandy clay with low cobble content. Cobbles of sandstone, concrete, chert and slate.		
	0.50 - 0.60	ES		0.60			Pockets of dark grey clay with rare rootlets between 0.3-0.4mbgl SUPERFICIAL DEPOSITS: Reddish brown slightly clayey sandy GRAVEL. Gravel of medium to coarse subrounded chert, siltstone and rare sandstone. End of Trial Pit at 0.60m		
Dimensions		Trial Pit Support		Soakage Testing					
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks	
2.90	1.40	Stable	None						
Remarks: No groundwater encountered.									

		Trial Pit Log					Trial Pit No. TP208 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot				Client: J G Hales Construction Ltd			Date: 20/08/2024		
Location:				Contractor:					
Project No. 2203011.005.02				Drilling Equipment: Zaxis300LC			Level:		
Hole Type: TP				Logged By: ST			Scale: 1:15		
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.10 - 0.20	ES		0.20			MADE GROUND: Brown locally yellowish and greyish brown slightly silty, locally sandy, gravelly clay with low cobble content. Gravel and cobbles of red brick, chert, concrete, sandstone and rare metal and plastic.		1
							SUPERFICIAL DEPOSITS: Firm yellowish brown to orangish brown slightly gravelly, sandy CLAY. Gravel of medium to coarse subangular to subrounded chert, siltstone and sandstone.		
							End of Trial Pit at 0.40m		
				0.40					2
Dimensions		Trial Pit Support		Soakage Testing					
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks	
2.70	1.30	Stable	None						
Remarks: No groundwater encountered.									

		Trial Pit Log					Trial Pit No. TP209 Sheet 1 of 1		
Project Name: Devonshire Place, Port Talbot				Client: J G Hales Construction Ltd			Date: 20/08/2024		
Location:				Contractor:					
Project No. 2203011.005.02				Drilling Equipment: Zaxis300LC			Level:		
Hole Type: TP				Logged By: ST			Scale: 1:15		
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	0.10 - 0.20	ES		0.10			MADE GROUND: Black tarmacadam.		1
				0.20			MADE GROUND: Greyish brown slightly gravelly clayey sand. Gravel of limestone, chert and rare tarmacadam.		
							SUPERFICIAL DEPOSITS: Firm orangish brown to yellowis brown slightly gravelly sandy CLAY. Gravel of medium to coarse chert.		
				0.50			End of Trial Pit at 0.50m		
Dimensions		Trial Pit Support		Soakage Testing					
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks	
2.60	1.40	Stable	None						
Remarks: No groundwater encountered.									



Trial Pit Log

Trial Pit No.

TP210

Sheet 1 of 1

Project Name: Devonshire Place, Port Talbot

Client: J G Hales Construction Ltd

Date: 20/08/2024

Location:

Contractor:

Project No. 2203011.005.02

Drilling Equipment: Zaxis300LC

Level:

Hole Type: TP

Logged By: ST

Scale: 1:15

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth (m)	Type	Results				
	0.50 - 0.60	ES		0.80		MADE GROUND: Brown to yellowish brown, locally reddish brown slightly gravelly silty clay with low cobble content. Gravel and cobbles of red brick, ceramics, sandstone, siltstone, clinker, plastic and rare slate.	
				0.90		Pockets of brown clay between 0.4-0.8mbgl	
						SUPERFICIAL DEPOSITS: Reddish brown to yellowish brown slightly clayey sandy GRAVEL with low cobble content. Gravel of medium to coarse and cobbles of subrounded sandstone and siltstone. End of Trial Pit at 0.90m	

Dimensions		Trial Pit Support		Soakage Testing				
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks
2.70	1.30	Stable	None					

Remarks:	No groundwater encountered.
----------	-----------------------------





Trial Pit Log

Trial Pit No.

TP212

Sheet 1 of 1

Project Name: Devonshire Place, Port Talbot

Client: J G Hales Construction Ltd

Date: 20/08/2024

Location:

Contractor:

Project No. 2203011.005.02

Drilling Equipment: Zaxis300LC

Level:

Hole Type: TP

Logged By: ST

Scale: 1:15

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.05 - 0.15	ES		0.15			MADE GROUND: Reddish brown slightly sandy gravelly clay. Gravel of limestone, chert, silstone and rare sandstone.	1 -
	0.20 - 0.30	ES					SUPERFICIAL DEPOSITS: Reddish brown slightly clayey sandy GRAVEL. Gravel of medium subrounded chert and sandstone.	
						0.30	End of Trial Pit at 0.30m	

Dimensions		Trial Pit Support		Soakage Testing				
Pit Length (m)	Pit Width (m)	Pit Stability	Shoring Used	Test No.	Date Test	Duration (hh:mm)	Soil Infiltration Rate (m/s)	Remarks
2.60	1.40	Stable	None					

Remarks:	No groundwater encountered.
----------	-----------------------------



Appendix B

i2 Analytical Reports



Tweedie Evans Consulting Ltd
The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

t: 01749 677 760

e: sophie.thomas@tecon.co.uk

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 24-038471

Project / Site name:	Devonshire Place, Port Talbot	Samples received on:	23/08/2024
Your job number:	2203011.005.02	Samples instructed on/ Analysis started on:	23/08/2024
Your order number:		Analysis completed by:	02/09/2024
Report Issue Number:	1	Report issued on:	02/09/2024
Samples Analysed:	11 soil samples		

Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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

Analytical Report Number: 24-038471

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297878	297879	297880	297881	297882
Sample Reference				TP201	TP202	TP203	TP204	TP205
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.20-0.30	0.30-0.40	0.20-0.30	0.20-0.30
Date Sampled				21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	8.9	15	14	14
Total mass of sample received	kg	0.1	NONE	0.1	0.1	0.1	0.1	0.1

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.32	-	0.1	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.21	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	0.13	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	0.27	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	3.7	-	0.63	0.38
Anthracene	mg/kg	0.05	MCERTS	-	0.79	-	0.11	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	4.6	-	0.59	0.51
Pyrene	mg/kg	0.05	MCERTS	-	3.6	-	0.53	0.43
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.9	-	0.29	0.25
Chrysene	mg/kg	0.05	MCERTS	-	2	-	0.39	0.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	1.9	-	0.29	0.42
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	0.95	-	0.17	0.15
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.7	-	0.23	0.25
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.81	-	0.13	0.16
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.85	-	0.15	0.18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	23.7	-	3.61	3.14
-----------------------------	-------	-----	-----------	---	------	---	------	------

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	< 10	< 10	< 10	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	4.2	< 2.0	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	14	< 10	< 10	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	13	12	< 10	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	31	12	< 10	-

Analytical Report Number: 24-038471

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297878	297879	297880	297881	297882
Sample Reference				TP201	TP202	TP203	TP204	TP205
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.20-0.30	0.30-0.40	0.20-0.30	0.20-0.30
Date Sampled				21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-038471

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297883	297884	297885	297886	297887
Sample Reference				TP206	TP207	TP208	TP209	TP210
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.20-0.30	0.10-0.20	0.10-0.20	0.50-0.60
Date Sampled				21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	9	12	13	12
Total mass of sample received	kg	0.1	NONE	0.1	0.2	0.1	0.2	0.1

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	3.5	0.59	1	< 0.05	0.4
Acenaphthylene	mg/kg	0.05	MCERTS	0.13	3.3	1.7	< 0.05	0.37
Acenaphthene	mg/kg	0.05	MCERTS	1.3	0.66	0.65	< 0.05	0.14
Fluorene	mg/kg	0.05	MCERTS	1.1	3.2	1.8	< 0.05	0.27
Phenanthrene	mg/kg	0.05	MCERTS	14	22	20	0.26	3.6
Anthracene	mg/kg	0.05	MCERTS	2.5	6.4	4.6	0.06	0.8
Fluoranthene	mg/kg	0.05	MCERTS	12	32	31	0.31	4.9
Pyrene	mg/kg	0.05	MCERTS	10	23	25	0.27	4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.5	15	14	0.16	2.2
Chrysene	mg/kg	0.05	MCERTS	4.6	13	12	0.2	2.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	4.5	12	15	0.22	3.3
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	2.2	6	6	0.1	1.3
Benzo(a)pyrene	mg/kg	0.05	MCERTS	4	11	13	0.16	2.8
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.8	3.9	5.5	0.11	1.4
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.31	0.91	1.1	< 0.05	0.29
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2	3.4	5.4	0.14	1.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	69.3	157	157	1.98	29.5
-----------------------------	-------	-----	-----------	------	-----	-----	------	------

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	-

Analytical Report Number: 24-038471

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297883	297884	297885	297886	297887
Sample Reference				TP206	TP207	TP208	TP209	TP210
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.20-0.30	0.10-0.20	0.10-0.20	0.50-0.60
Date Sampled				21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-038471

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297888
Sample Reference				TP211
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				21/08/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	14
Total mass of sample received	kg	0.1	NONE	0.2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.31
Anthracene	mg/kg	0.05	MCERTS	0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.22
Pyrene	mg/kg	0.05	MCERTS	0.18
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.13
Chrysene	mg/kg	0.05	MCERTS	0.16
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.17
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.09
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.06
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.38
-----------------------------	-------	-----	-----------	------

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-

Analytical Report Number: 24-038471

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297888
Sample Reference				TP211
Sample Number				None Supplied
Depth (m)				0.20-0.30
Date Sampled				21/08/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-
Benzene	µg/kg	5	MCERTS	-
Toluene	µg/kg	5	MCERTS	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	5	MCERTS	-
o-Xylene	µg/kg	5	MCERTS	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-038471

Project / Site name: Devonshire Place, Port Talbot

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
297878	TP201	None Supplied	0.30-0.40	Brown sand with gravel
297879	TP202	None Supplied	0.20-0.30	Brown sand with gravel and vegetation
297880	TP203	None Supplied	0.30-0.40	Brown loam and sand with gravel and vegetation
297881	TP204	None Supplied	0.20-0.30	Brown loam and clay with gravel
297882	TP205	None Supplied	0.20-0.30	Brown clay and sand with gravel
297883	TP206	None Supplied	0.30-0.40	Brown clay and sand with gravel
297884	TP207	None Supplied	0.20-0.30	Brown sand with gravel
297885	TP208	None Supplied	0.10-0.20	Brown clay and sand with gravel
297886	TP209	None Supplied	0.10-0.20	Brown sand with gravel
297887	TP210	None Supplied	0.50-0.60	Brown sand with gravel
297888	TP211	None Supplied	0.20-0.30	Brown sand with gravel

Analytical Report Number : 24-038471

Project / Site name: Devonshire Place, Port Talbot

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

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

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

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Tweedie Evans Consulting Ltd
The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

t: 01749 677 760

e: sophie.thomas@tecon.co.uk

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 24-038479

Project / Site name:	Devonshire Place, Port Talbot	Samples received on:	23/08/2024
Your job number:	2203011.005.02	Samples instructed on/ Analysis started on:	23/08/2024
Your order number:		Analysis completed by:	05/09/2024
Report Issue Number:	1	Report issued on:	05/09/2024
Samples Analysed:	3 soil samples		

Signed: 

Joanna Szwagrak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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

Analytical Report Number: 24-038479

Project / Site name: Devonshire Place, Port Talbot

Lab Sample Number				297908	297909	297910
Sample Reference				TP201	TP207	TP212
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.50-0.60	0.20-0.30
Date Sampled				21/08/2024	21/08/2024	21/08/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Mass of stone > 0.25mm	%	0.1	NONE	43	54	67.3
Moisture Content	%	0.01	NONE	13	5.1	6.3
Total mass of sample received	kg	0.1	NONE	0.7	0.4	0.3

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	47	12	22
----------------------------------	-------	---	--------	----	----	----

Stomach Phase

ARSENIC (Bioaccessible)	mg/kg	0.1	NONE	0.4	<0.1	0.1
ARSENIC Bioaccessible Fraction	%	-	NONE	< 1	< 1	< 1

Stomach and Intestine Phase

ARSENIC (Bioaccessible)	mg/kg	0.1	NONE	1.1	0.2	0.2
ARSENIC Bioaccessible Fraction	%	-	NONE	2.3	1.6	< 1

Bioaccessibility Summary Data (Maximum value) Stomach Phase (S) or Stomach and Intestine Phase (SI)

ARSENIC Bioaccessible Fraction	%	-	NONE	2.3 % (SI)	1.6 % (SI)	< 1 % (SI)
--------------------------------	---	---	------	------------	------------	------------

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-038479

Project / Site name: Devonshire Place, Port Talbot

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
297908	TP201	None Supplied	0.30-0.40	Brown sand with gravel
297909	TP207	None Supplied	0.50-0.60	Brown sand with gravel
297910	TP212	None Supplied	0.20-0.30	Brown sand with gravel

Analytical Report Number : 24-038479

Project / Site name: Devonshire Place, Port Talbot

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
UBM Method Required		In-house method	L019B	D	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

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

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

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Appendix C

Generic Quantitative Risk Assessment: Human Health



Project Number: 2203011.005		Lab Sample Number:	297878	297879	297880	297881	297882	297883	297884	297909	297885	297886	297887	297888	297910
Project Name: Devonshire Place		Sample Reference:	TP201	TP202	TP203	TP204	TP205	TP206	TP207	TP207	TP208	TP209	TP210	TP211	TP212
Site End Use:		Sample Number:													
Residential with Home Grown Produce		Depth (m):	0.30-0.40	0.20-0.30	0.30-0.40	0.20-0.30	0.20-0.30	0.30-0.40	0.20-0.30	0.50-0.60	0.10-0.20	0.10-0.20	0.50-0.60	0.20-0.30	0.20-0.30
		Date Sampled:	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
		Time Taken:													
Determinand	GAC	Units													
Arsenic	37 ⁽¹⁾	mg/kg	47	-	-	-	-	-	-	12	-	-	-	-	22
Naphthalene	15 ⁽¹⁾	mg/kg	-	0.32	-	0.1	< 0.05	3.5	0.59	-	1	< 0.05	0.4	< 0.05	-
Acenaphthylene	170 ⁽²⁾	mg/kg	-	0.21	-	< 0.05	< 0.05	0.13	3.3	-	1.7	< 0.05	0.37	< 0.05	-
Acenaphthene	210 ⁽²⁾	mg/kg	-	0.13	-	< 0.05	< 0.05	1.3	0.66	-	0.65	< 0.05	0.14	< 0.05	-
Fluorene	170 ⁽²⁾	mg/kg	-	0.27	-	< 0.05	< 0.05	1.1	3.2	-	1.8	< 0.05	0.27	< 0.05	-
Phenanthrene	95 ⁽²⁾	mg/kg	-	3.7	-	0.63	0.38	14	22	-	20	0.26	3.6	0.31	-
Anthracene	2400 ⁽²⁾	mg/kg	-	0.79	-	0.11	< 0.05	2.5	6.4	-	4.6	0.06	0.8	0.05	-
Fluoranthene	280 ⁽²⁾	mg/kg	-	4.6	-	0.59	0.51	12	32	-	31	0.31	4.9	0.22	-
Pyrene	620 ⁽²⁾	mg/kg	-	3.6	-	0.53	0.43	10	23	-	25	0.27	4	0.18	-
Benzo(a)anthracene	7.2 ⁽²⁾	mg/kg	-	1.9	-	0.29	0.25	4.5	15	-	14	0.16	2.2	0.13	-
Chrysene	15 ⁽²⁾	mg/kg	-	2	-	0.39	0.4	4.6	13	-	12	0.2	2.4	0.16	-
Benzo(b)fluoranthene	2.6 ⁽²⁾	mg/kg	-	1.9	-	0.29	0.42	4.5	12	-	15	0.22	3.3	0.17	-
Benzo(k)fluoranthene	77 ⁽²⁾	mg/kg	-	0.95	-	0.17	0.15	2.2	6	-	6	0.1	1.3	< 0.05	-
Benzo(a)pyrene	2.2 ⁽²⁾	mg/kg	-	1.7	-	0.23	0.25	4	11	-	13	0.16	2.8	0.09	-
Indeno(1,2,3-cd)pyrene	27 ⁽²⁾	mg/kg	-	0.81	-	0.13	0.16	1.8	3.9	-	5.5	0.11	1.4	0.06	-
Dibenz(a,h)anthracene	0.24 ⁽²⁾	mg/kg	-	< 0.05	-	< 0.05	< 0.05	0.31	0.91	-	1.1	< 0.05	0.29	< 0.05	-
Benzo(ghi)perylene	320 ⁽²⁾	mg/kg	-	0.85	-	0.15	0.18	2	3.4	-	5.4	0.14	1.4	< 0.05	-
Speciated Total EPA-16 PAHs	-	mg/kg	-	23.7	-	3.61	3.14	69.3	157		157	1.98	29.5	1.38	
Benzene	200 ⁽¹⁾	µg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	130000 ⁽²⁾	µg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	47000 ⁽²⁾	µg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
p & m-xylene	56000 ⁽²⁾	µg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	60000 ⁽²⁾	µg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	49000 ⁽⁴⁾	µg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH Aliphatic C5 - C6	42 ⁽²⁾	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	-	-	-	-	-	-	-	-	-
TPH Aliphatic C6 - C8	100 ⁽²⁾	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	-	-	-	-	-	-	-	-	-
TPH Aliphatic C8 - C10	27 ⁽²⁾	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	-	-	-	-	-	-	-	-	-
TPH Aliphatic C10 - C12	130 ⁽²⁾	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-
TPH Aliphatic C12 - C16	1100 ⁽²⁾	mg/kg	< 2.0	< 2.0	< 2.0	< 2.0	-	-	-	-	-	-	-	-	-
TPH Aliphatic C16 - C21	65000 ⁽²⁾	mg/kg	< 8.0	< 8.0	< 8.0	< 8.0	-	-	-	-	-	-	-	-	-
TPH Aliphatic C21 - C35	65000 ⁽²⁾	mg/kg	< 8.0	< 8.0	< 8.0	< 8.0	-	-	-	-	-	-	-	-	-
TPH Aromatic C5 - C7	70 ⁽²⁾	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	-	-	-	-	-	-	-	-	-
TPH Aromatic C7 - C8	130 ⁽²⁾	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	-	-	-	-	-	-	-	-	-
TPH Aromatic C8 - C10	34 ⁽²⁾	mg/kg	< 0.020	< 0.020	< 0.020	< 0.020	-	-	-	-	-	-	-	-	-
TPH Aromatic C10 - C12	74 ⁽²⁾	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-
TPH Aromatic C12 - C16	140 ⁽²⁾	mg/kg	< 2.0	4.2	< 2.0	< 2.0	-	-	-	-	-	-	-	-	-
TPH Aromatic C16 - C21	260 ⁽²⁾	mg/kg	< 10	14	< 10	< 10	-	-	-	-	-	-	-	-	-
TPH Aromatic C21 - C35	1100 ⁽²⁾	mg/kg	< 10	13	12	< 10	-	-	-	-	-	-	-	-	-

Notes:

⁽¹⁾ DEFRA C4SLs (2014)

⁽²⁾ LQM/CIEH S4ULs (2015)

⁽³⁾ Environment Agency SGVs (2009)

⁽⁴⁾ CL:AIRE, AGS & EIS (2009)

⁽⁵⁾ Dutch Intervention Value for free cyanide (VROM 2000)

*All GACs based on a sandy soil and Soil Organic Matter (SOM) of 1% where applicable.

Concentration does not exceed GAC
Concentration exceeds GAC
No set GAC

Appendix D

CLEA output data sheet

Report generated 06-Sep-24

Report title Devonshire Place, Port Talbot

Created by MT at TEC



RESULTS

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]