

Our Ref: TF-25-079-CA/HotspotValidationV2

Your Ref:

Contact: Tomas Marquez

19th May 2026

Castell Construction Ltd.
5 Dyffryn Court
Swansea Vale
Llansamlet
Swansea
SA7 0AP

HOTSPOT VALIDATION REPORT: FACTORY ROAD, NEWPORT

Section 1 Introduction

Castell Constructions Ltd. is proposing a residential development on a plot of land off Factory Road, Newport, formerly occupied by a vacant commercial unit. Multiple phases of investigation have confirmed widespread contamination across the site resulting from previous site activities.

Leachable contamination was identified in the Made Ground at the location of TP15 from a sample taken at 0.30 m depth. Copper and lead were recorded at concentrations exceeding the relevant guideline values.

TFW Group Limited provided a remediation strategy for the site (T2-201025-TF-25-079-CA-2). The strategy consisted of the excavation and removal of impacted soils around the TP15 location to protect the aquatic environment. It recommended that an initial excavation with a 2 m radius centred on TP15 should be excavated to a depth of 1.00m, after which the base and sidewalls must be tested to confirm that impacted soils have been removed. If exceedances remain, the excavation should be extended and sampling repeated. This process should continue until all impacted material has been removed.

A first remediation visit was undertaken on 11 March 2026 in accordance with the strategy. A 2 m radius excavation to 1.00 m depth was completed, and ten validation samples were collected and submitted for leachate analysis. All samples exceeded the relevant guideline values, confirming that contamination remained in situ and that further excavation was required.

This report presents the results of the second remediation visit, undertaken to extend the excavation following the exceedances recorded during the initial works. During this visit, the excavation was widened to a 4 m radius centred on TP15 and deepened to 1.50 m. Additional validation samples were collected from the base and sidewalls of the extended excavation to determine whether the remaining impacted soils had been successfully removed.

TFW Group Limited have been commissioned by Castell Constructions Ltd. to validate the removal of the hotspot.

In due course TFW Group Ltd will also undertake validation works to confirm thickness of the capping soil, and its suitability to be used in residential gardens with plant uptake based upon their chemical concentrations.

Section 2 Hotspot Investigation and Sampling

The second site visit was carried out by a Terra Firma engineer on 28th April 2026.

An excavation was undertaken at the Hotspot location (TP15) using an excavator fitted with a toothed bucket. The location of the hotspot can be seen in **Figure 2.1**.



Figure 2.1: Location of Hotspot (approx.) in Yellow.

Section 3 Ground Conditions

The ground conditions encountered by the excavation can in general be summarised as shown in **Table 3.1**.

Table 3.1 Summary of Typical Ground Conditions

Depth (m)			Thickness (m)	Stratum
0.00	-	0.20	0.20	MADE GROUND. Medium dense reddish brown clayey sandy angular to subangular fine to coarse GRAVEL of concrete, brick, ceramic, mudstone with medium cobble content of subangular concrete, brick.
0.20	-	1.50	1.50	Stiff reddish brown slightly gravelly CLAY . Gravel is angular to subrounded fine to coarse mudstone.

A clay pipe was exposed at the base of the trial pit, aligned west–east.

No groundwater was encountered during the excavation.

Table 3.2 records the samples tested during the first site visit.

Table 3.2 Summary of Samples Tested (Visit 1)

Location	Sample No.	Sample Depth (m)	Sample Location
Hotspot (TP15)	Sample 1	0.30	East Side Wall
Hotspot (TP15)	Sample 2	0.60	Southeast Side Wall
Hotspot (TP15)	Sample 3	0.20	South Side Wall
Hotspot (TP15)	Sample 4	0.80	Southwest Side Wall
Hotspot (TP15)	Sample 5	0.60	West Side Wall
Hotspot (TP15)	Sample 6	0.50	Northwest Side Wall
Hotspot (TP15)	Sample 7	0.40	North Side Wall
Hotspot (TP15)	Sample 8	0.30	Northeast Side Wall
Hotspot (TP15)	Sample 9	1.00	West Base
Hotspot (TP15)	Sample 10	1.00	East Base

Photographs of the excavation with the sample locations are presented in **Annex A**.

Table 3.3 records the samples tested in the second site visit.

Table 3.3 Summary of Samples Tested (Visit 2)

Location	Sample No.	Sample Depth (m)	Sample Location
Hotspot (TP15)	Sample 1	1.00	Northwest Side Wall
Hotspot (TP15)	Sample 2	1.30	North Side Wall
Hotspot (TP15)	Sample 3	1.20	Northeast Side Wall

Hotspot (TP15)	Sample 4	1.10	East Side Wall
Hotspot (TP15)	Sample 5	1.40	Southeast Side Wall
Hotspot (TP15)	Sample 6	1.20	South Side Wall
Hotspot (TP15)	Sample 7	1.40	Southwest Side Wall
Hotspot (TP15)	Sample 8	1.10	West Side Wall
Hotspot (TP15)	Sample 9	1.50	Northwest Base
Hotspot (TP15)	Sample 10	1.50	Southeast Base

Photographs of the excavation with the sample locations are presented in **Annex A**.

Section 4 Soil Chemical Testing

Ten samples of soil were taken, on each of the two visits, from the excavation in the location of TP15 and despatched to the laboratories of DETS for leachate testing of copper and lead.

Analytical results have been compared with available published guidelines in the Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 and the Water Supply (Water Quality) Regulations 2016. The results for Visit 1 can be found in **Table 4.1** with the results for Visit 2 in **Table 4.2**.

Table 4.1 Summary of Leachate Chemical Test Results (Visit 1)

Determinant	Threshold Value (µg/l)	Source	Measured Concentrations (µg/l)		Number of Exceedances
			Minimum	Maximum	
Copper	1.0	WFD2	1.33	10.32	10
Lead	1.2	WFD1	1.38	30.54	10
Notes: WFD1 - Water Framework Directive – Inland Surface Waters (AA) WFD2 - Water Framework Directive – Freshwater (Long Term Mean) Copper: 10 Sample Lead: 10 Samples					

The Visit 1 laboratory test certificates can be found in **Annex B**.

Table 4.2 Summary of Leachate Chemical Test Results (Visit 2)

Determinant	Threshold Value (µg/l)	Source	Measured Concentrations (µg/l)		Number of Exceedances
			Minimum	Maximum	
Copper	1.0	WFD2	<0.40	0.82	0
Lead	1.2	WFD1	<0.09	0.50	0
Notes: WFD1 - Water Framework Directive – Inland Surface Waters (AA) WFD2 - Water Framework Directive – Freshwater (Long Term Mean) Copper: 10 Sample Lead: 10 Samples					

The Visit 2 laboratory test certificates can be found in **Annex C**.

Section 5 Conclusion

All tested leachate parameters were recorded below their respective threshold values during the second round of testing. The source–pathway–receptor linkage is not active, and the hotspot location is considered suitable for its intended use.

We trust that the above is to your satisfaction, however, if you have any queries or require any further information, please do not hesitate to contact us.

Yours sincerely

for: TFW Group Limited



Mr Tomas Marquez

Enc.

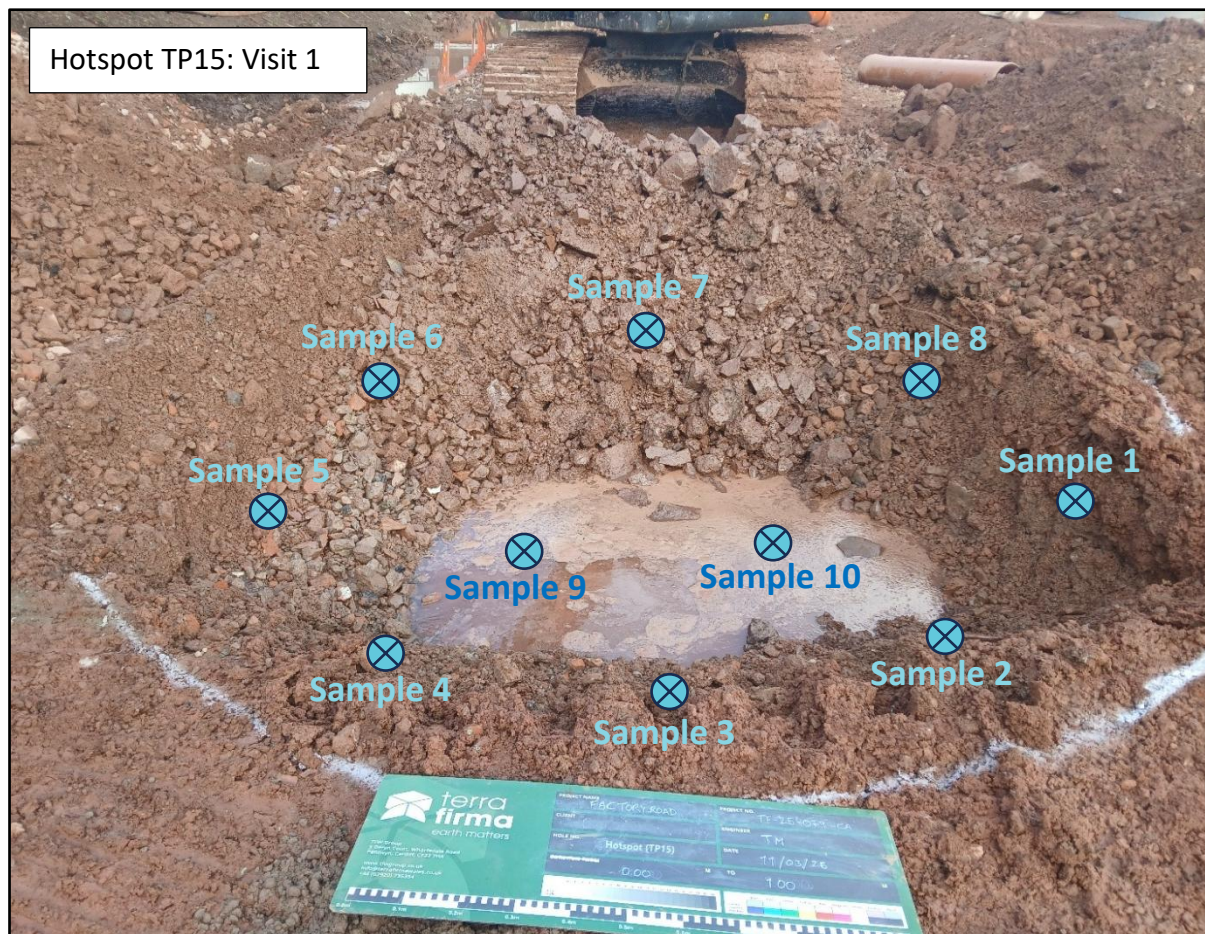
Annex A – Hotspot Validation Photographs

Annex B – Chemical Test Report: Visit 1

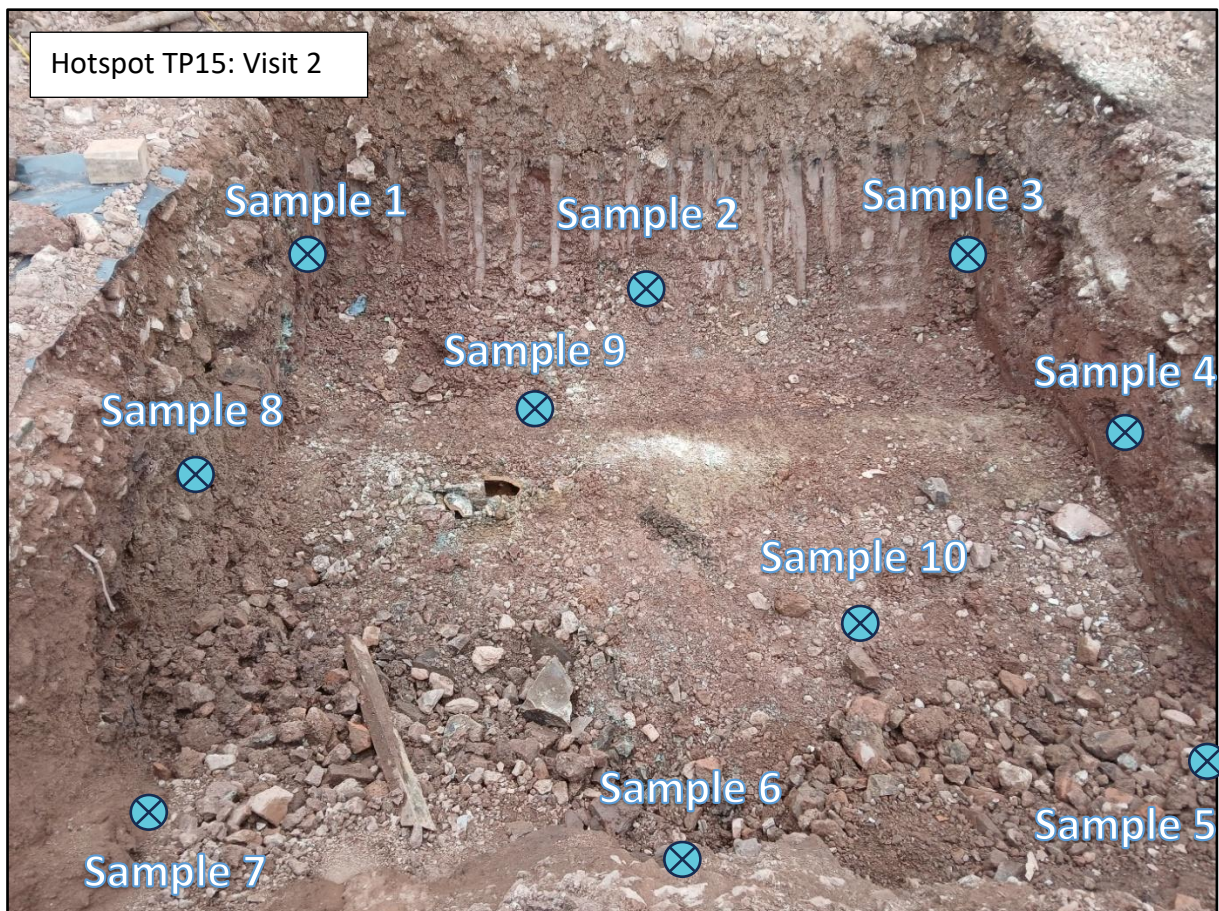
Annex C – Chemical Test Report: Visit 2

ANNEX A
Hotspot Validation Photographs

Hotspot TP15: Visit 1



Hotspot TP15: Visit 2



ANNEX B
Chemical Test Report: Visit 1

Certificate of Analysis

Certificate Number 26-06060

Issued: 23-Mar-26

Client Terra Firma Group
5 Deryn Court
Wharfedale Road
Pentwyn
Cardiff
CF23 7HA

Our Reference 26-06060

Client Reference ~ TF-25-079-CA

Order No ~ TF-25-078-CA/TM

Contract Title ~ Factory Road - Hotspot Validation

Description 10 Leachate prepared by DETS samples.

Date Received 13-Mar-26

Date Started 13-Mar-26

Date Completed 23-Mar-26

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in grey ink, appearing to read "Adam Geddes".

Adam Geddes
Laboratory Manager



Summary of Chemical Analysis

Leachate Samples

Our Ref 26-06060

Client Ref ~ TF-25-079-CA

Contract Title ~ Factory Road - Hotspot Validation

Lab No	2655787	2655788	2655789	2655790	2655791	2655792	2655793	2655794	2655795	2655796
Sample ID ~	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Depth ~	0.30	0.60	0.20	0.80	0.60	0.50	0.40	0.30	1.00	1.00
Other ID ~										
Sample Type ~	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	11/03/2026	11/03/2026	11/03/2026	11/03/2026	11/03/2026	11/03/2026	11/03/2026	11/03/2026	11/03/2026	11/03/2026
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units										
Preparation													
BS EN 12457 10:1	DETS 1009*			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Metals													
Copper, Dissolved	DETS 2306	0.4	ug/l	4.18	10.32	6.23	3.64	1.83	2.99	2.42	4.09	2.57	1.33
Lead, Dissolved	DETS 2306	0.09	ug/l	20.68	30.54	10.66	18.71	3.45	13.76	8.26	14.25	3.57	1.38

Information in Support of the Analytical Results

Our Ref 26-06060
 Client Ref ~ TF-25-079-CA
 Contract ~ Factory Road - Hotspot Validation

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2655787	Sample 1 0.30 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655788	Sample 2 0.60 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655789	Sample 3 0.20 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655790	Sample 4 0.80 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655791	Sample 5 0.60 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655792	Sample 6 0.50 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655793	Sample 7 0.40 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655794	Sample 8 0.30 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655795	Sample 9 1.00 LEACHATE	11/03/26	GJ 250ml, PT 1L		
2655796	Sample 10 1.00 LEACHATE	11/03/26	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report Ver 26.03.14

ANNEX C
Chemical Test Report: Visit 2

Certificate of Analysis

Certificate Number 26-10341

Issued: 08-May-26

Client Terra Firma Group
5 Deryn Court
Wharfedale Road
Pentwyn
Cardiff
CF23 7HA

Our Reference 26-10341

Client Reference ~ TF-25-079-CA

Order No ~ TF-25-079-CA

Contract Title ~ Factory Road - Hotspot Validation

Description 10 Leachate prepared by DETS samples.

Date Received 30-Apr-26

Date Started 30-Apr-26

Date Completed 08-May-26

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Louise Cook
Contracts Manager



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Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info-dets@normecgroup.com • normecdets.com

Summary of Chemical Analysis

Leachate Samples

Our Ref 26-10341

Client Ref ~ TF-25-079-CA

Contract Title ~ Factory Road - Hotspot Validation

Lab No	2679409	2679410	2679411	2679412	2679413	2679414	2679415	2679416	2679417	2679418
Sample ID ~	Sample 101	Sample 102	Sample 103	Sample 104	Sample 105	Sample 106	Sample 107	Sample 108	Sample 109	Sample 110
Depth ~	0.30	0.60	0.20	0.80	0.60	0.50	0.40	0.30	1.00	1.00
Other ID ~										
Sample Type ~	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Sampling Date ~	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units										
Preparation													
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Metals													
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.40	< 0.40	0.79	0.82	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	0.45
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	0.50	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09

Information in Support of the Analytical Results

Our Ref 26-10341
 Client Ref ~ TF-25-079-CA
 Contract ~ Factory Road - Hotspot Validation

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2679409	Sample 101 0.30 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679410	Sample 102 0.60 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679411	Sample 103 0.20 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679412	Sample 104 0.80 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679413	Sample 105 0.60 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679414	Sample 106 0.50 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679415	Sample 107 0.40 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679416	Sample 108 0.30 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679417	Sample 109 1.00 LEACHATE	28/04/26	GJ 250ml, PT 1L		
2679418	Sample 110 1.00 LEACHATE	28/04/26	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

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 t/f -to follow.
 nd -not detected.

Symbol key at end of report

Information in Support of the Analytical Results

Our Ref 26-10341

Client Ref ~ TF-25-079-CA

Contract ~ Factory Road - Hotspot Validation

End of Report Ver 26.03.15