



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP08

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP08

CLIENT

Kirkland Investments

ENGINEER

Punch Consulting Engineers

DATE

August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP09

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP09	
CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025

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Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP09

CLIENT

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Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP09	
CLIENT	Kirkland Investments
ENGINEER	Punch Consulting Engineers
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP09

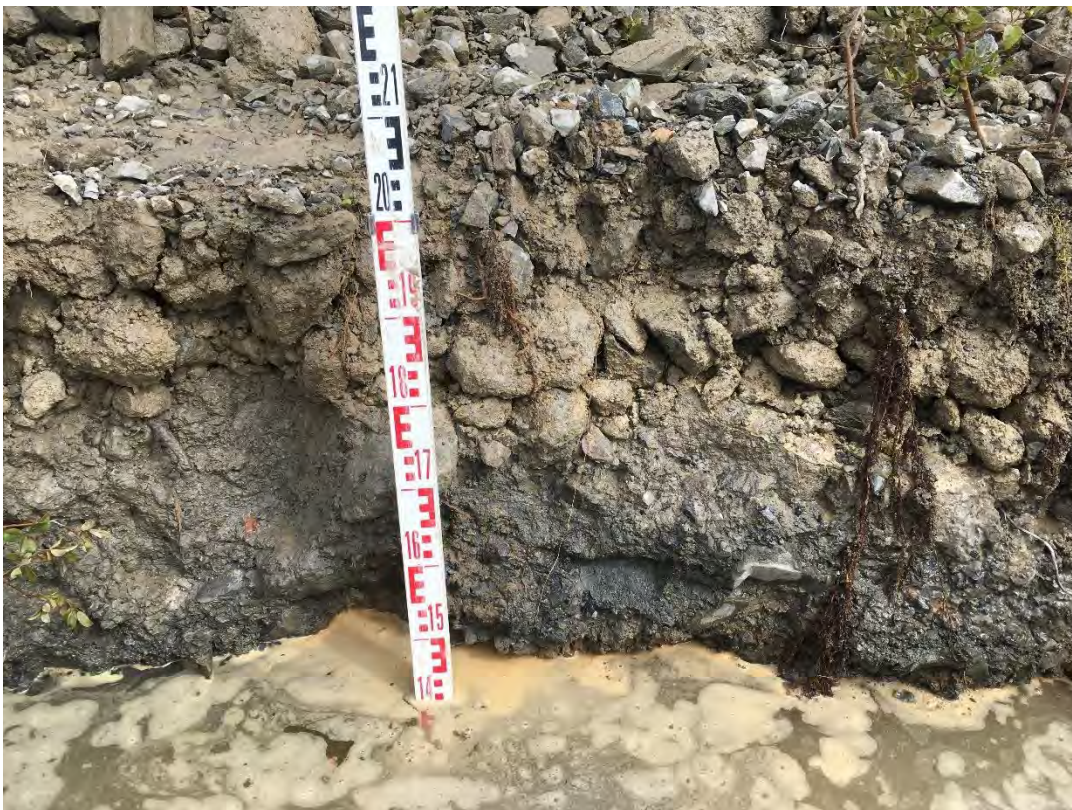
CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP10

CLIENT Kirkland Investments	
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Parkway Valley Phase 1,
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Limerick

TP10	
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ENGINEER	Punch Consulting Engineers
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Parkway Valley Phase 1,
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TP10

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TP10

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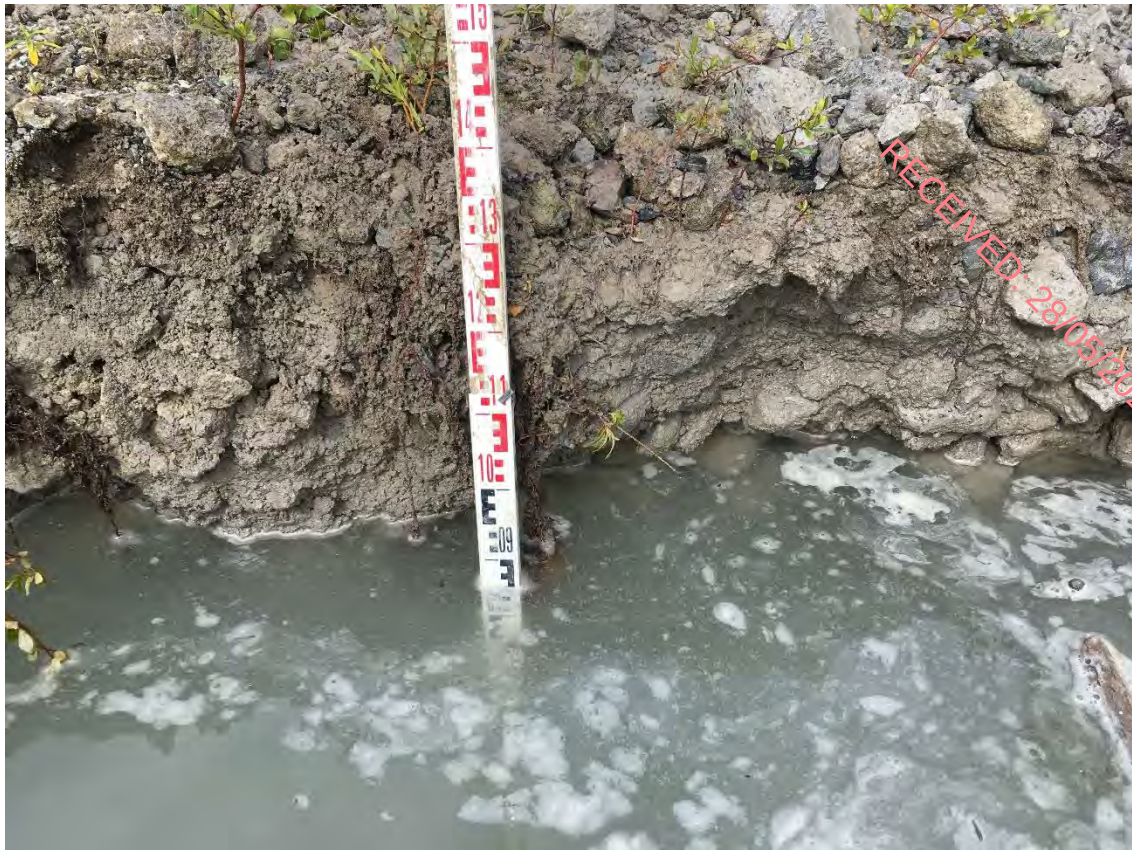
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Parkway Valley Phase 1,
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Limerick

TP11

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ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
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Limerick

TP11

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TP11

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TP11

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Parkway Valley Phase 1,
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TP12

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ENGINEER Punch Consulting Engineers	
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TP12

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ENGINEER Punch Consulting Engineers	
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Limerick

TP12

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



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Dublin Road, Singland,
Limerick

TP12

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP12	
CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP13

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP13

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025



Parkway Valley Phase 1,
Dublin Road, Singland,
Limerick

TP13

CLIENT Kirkland Investments	
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DATE	August 2025



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Appendix G

Plate Load Test Data



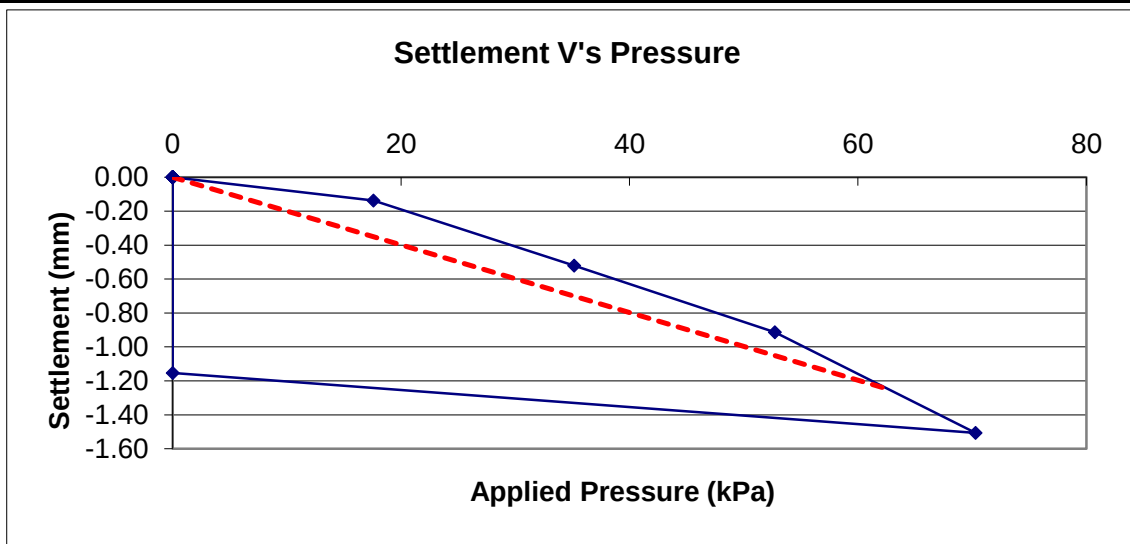
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.01
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co Limerick	Tested By	NOK
		Date Tested	Tuesday 5 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.01		
Location	Load Cycle 1 - Trial Pit 02		
Material Description	Sub Soil		



RESULTS	
Maximum Pressure applied to surface =	70.30 kPa
Modulus of subgrade reaction (k762) =	32.55 MPa/m
Approximate calculated CBR value =	4.03 %
Estimated stiffness modulus (E) =	19.76 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

NOK
Operator

13 August 2025
Date Reported

Approved
Technical Manager
Deputy Technical Manager

End of Test

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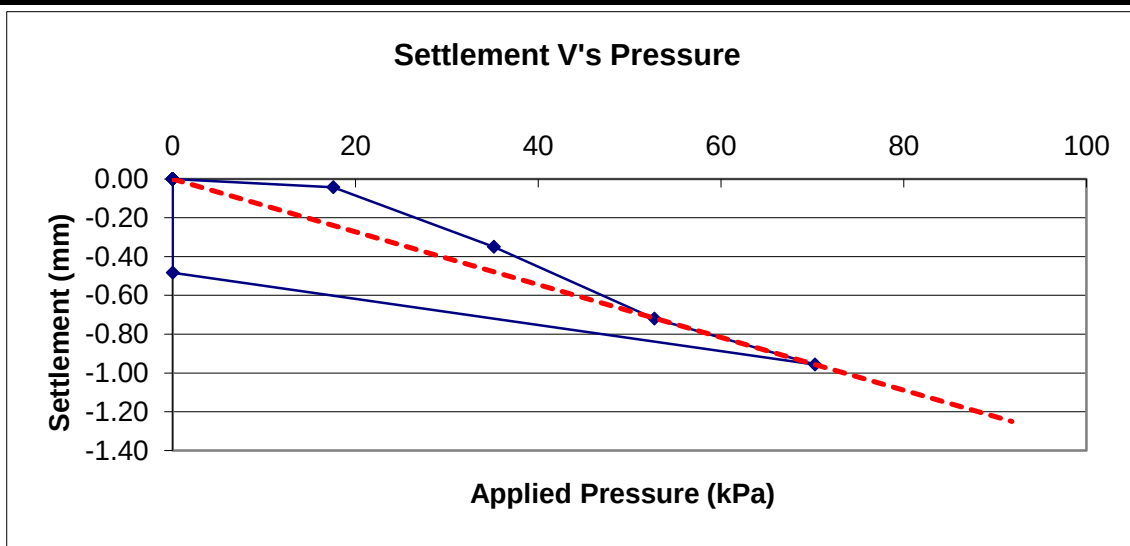
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-01
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co. Limerick	Tested By	NOK
Site Ref	-	Date Tested	Tuesday 5 August 2025
Client Ref		Specification	Site
Location	PBT.01		
Material Description	Re-Load Cycle 2 - Trial Pit 02		
	Sub Soil		



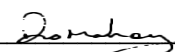
RESULTS	
Maximum Pressure applied to surface =	70.30 kPa
Modulus of subgrade reaction (k762) =	47.69 MPa/m
Approximate calculated CBR value =	7.82 %
Estimated stiffness modulus (E) =	28.95 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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Technical Manager
Deputy Technical Manager



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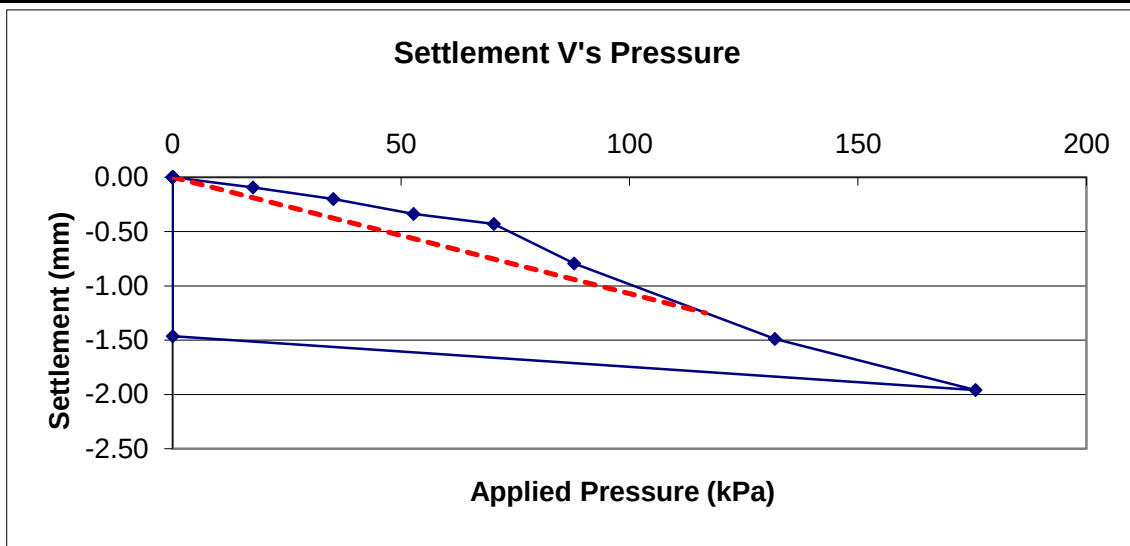
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.02
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co Limerick	Tested By	NOK
		Date Tested	Tuesday 5 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.02		
Location	Load Cycle 1 - Trial Pit 03		
Material Description	Sub Soil		



RESULTS	
Maximum Pressure applied to surface =	175.70 kPa
Modulus of subgrade reaction (k762) =	60.57 MPa/m
Approximate calculated CBR value =	11.83 %
Estimated stiffness modulus (E) =	36.77 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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07 August 2025
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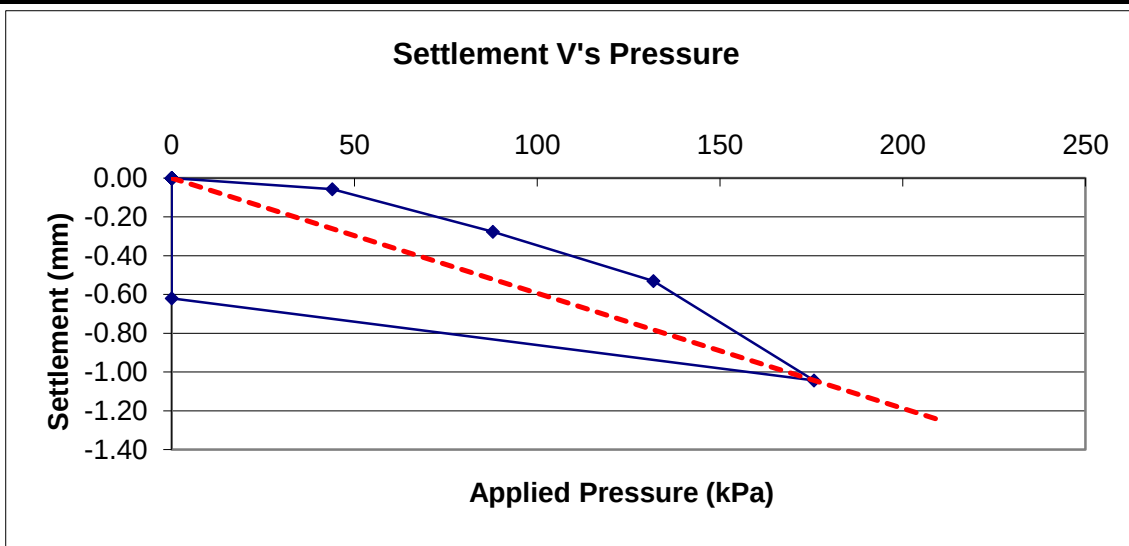
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-02
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co. Limerick	Tested By	NOK
Site Ref	-	Date Tested	Tuesday 5 August 2025
Client Ref		Specification	Site
Location	PBT.02		
Material Description	Re-Load Cycle 2 - Trial Pit 03		
	Sub Soil		



RESULTS	
Maximum Pressure applied to surface =	175.70 kPa
Modulus of subgrade reaction (k_{762}) =	109.31 MPa/m
Approximate calculated CBR value =	32.91 %
Estimated stiffness modulus (E) =	66.35 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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Technical Manager
Deputy Technical Manager

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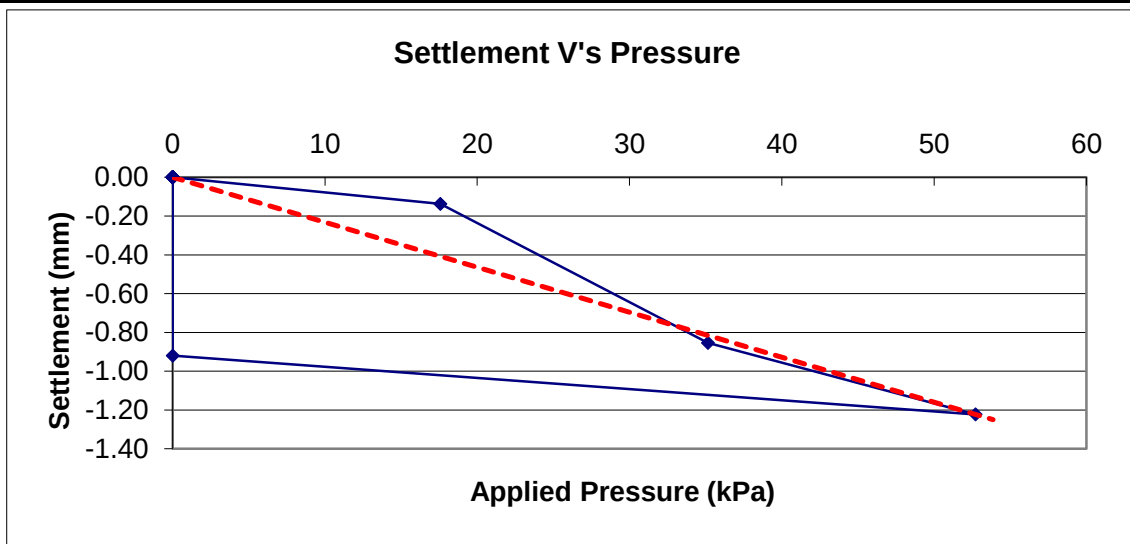
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.03
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co Limerick	Tested By	NOK
		Date Tested	Tuesday 5 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.03		
Location	Load Cycle 1 - Trial Pit 04		
Material Description	Sub Soil		



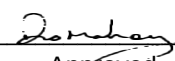
RESULTS	
Maximum Pressure applied to surface =	52.70 kPa
Modulus of subgrade reaction (k762) =	27.97 MPa/m
Approximate calculated CBR value =	3.10 %
Estimated stiffness modulus (E) =	16.98 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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13 August 2025
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Technical Manager
Deputy Technical Manager

End of Test

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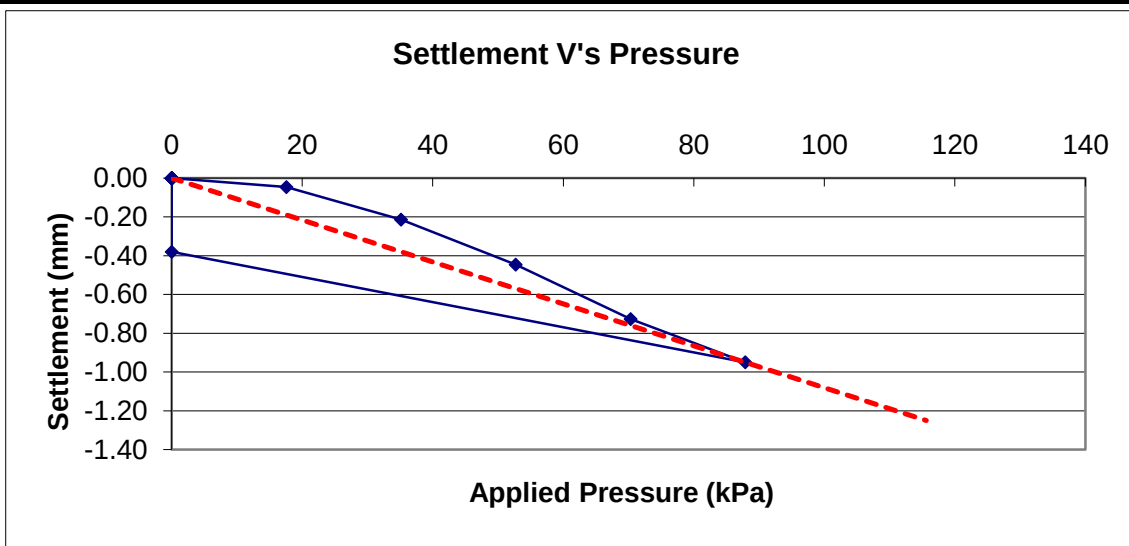
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-03
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co, Limerick	Tested By	NOK
Site Ref	-	Date Tested	Tuesday 5 August 2025
Client Ref		Specification	Site
Location	PBT.03		
Material Description	Re-Load Cycle 2 - Trial Pit 04		
	Sub Soil		



RESULTS	
Maximum Pressure applied to surface =	87.90 kPa
Modulus of subgrade reaction (k762) =	60.03 MPa/m
Approximate calculated CBR value =	11.65 %
Estimated stiffness modulus (E) =	36.44 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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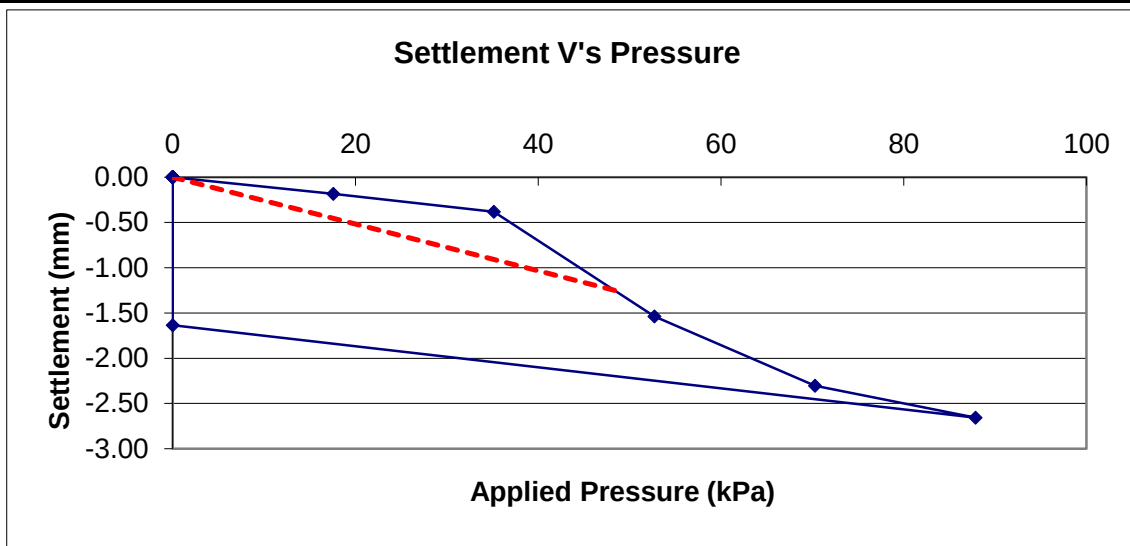
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.04
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co Limerick	Tested By	NOK
		Date Tested	Tuesday 5 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.04		
Location	Load Cycle 1 - Trial Pit 06		
Material Description	Sub Soil		



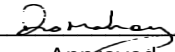
RESULTS	
Maximum Pressure applied to surface =	87.90 kPa
Modulus of subgrade reaction (k762) =	25.11 MPa/m
Approximate calculated CBR value =	2.57 %
Estimated stiffness modulus (E) =	15.24 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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13 August 2025
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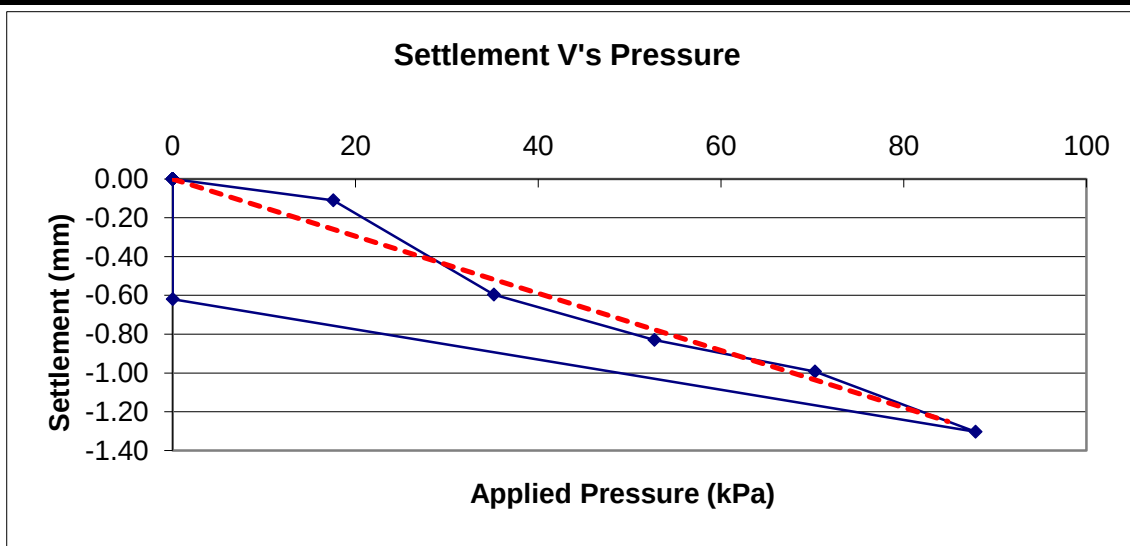
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-04
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	600mm
	Co. Limerick	Tested By	NOK
		Date Tested	Tuesday 5 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT - 04		
Location	Re-Load Cycle 2 - Trial Pit - 06		
Material Description	Sub Soil		



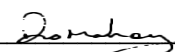
RESULTS	
Maximum Pressure applied to surface =	87.90 kPa
Modulus of subgrade reaction (k762) =	44.05 MPa/m
Approximate calculated CBR value =	6.81 %
Estimated stiffness modulus (E) =	26.74 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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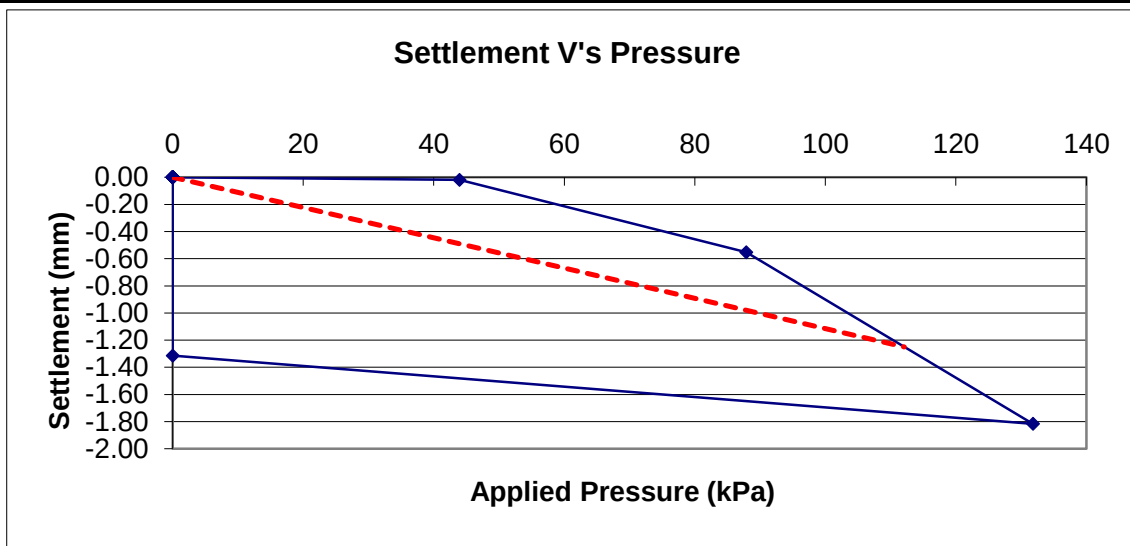
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.05
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	300mm
	Co Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.05		
Location	Load Cycle 1 - Trial Pit 08		
Material Description	Made Ground		



RESULTS	
Maximum Pressure applied to surface =	131.80 kPa
Modulus of subgrade reaction (k762) =	58.20 MPa/m
Approximate calculated CBR value =	11.04 %
Estimated stiffness modulus (E) =	35.33 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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Operator

25 August 2025
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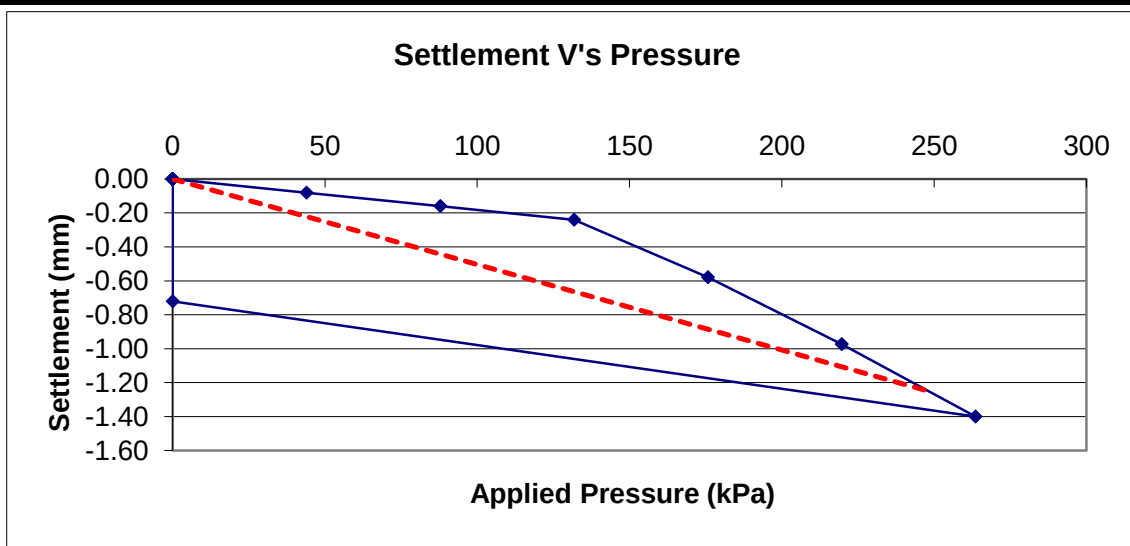
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-05
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	300mm
	Co. Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT - 05		
Location	Re-Load Cycle 2 - Trial Pit - 08		
Material Description	Made Ground		



RESULTS	
Maximum Pressure applied to surface =	263.60 kPa
Modulus of subgrade reaction (k_{762}) =	128.84 MPa/m
Approximate calculated CBR value =	43.76 %
Estimated stiffness modulus (E) =	78.21 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

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Technical Manager
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End of Test

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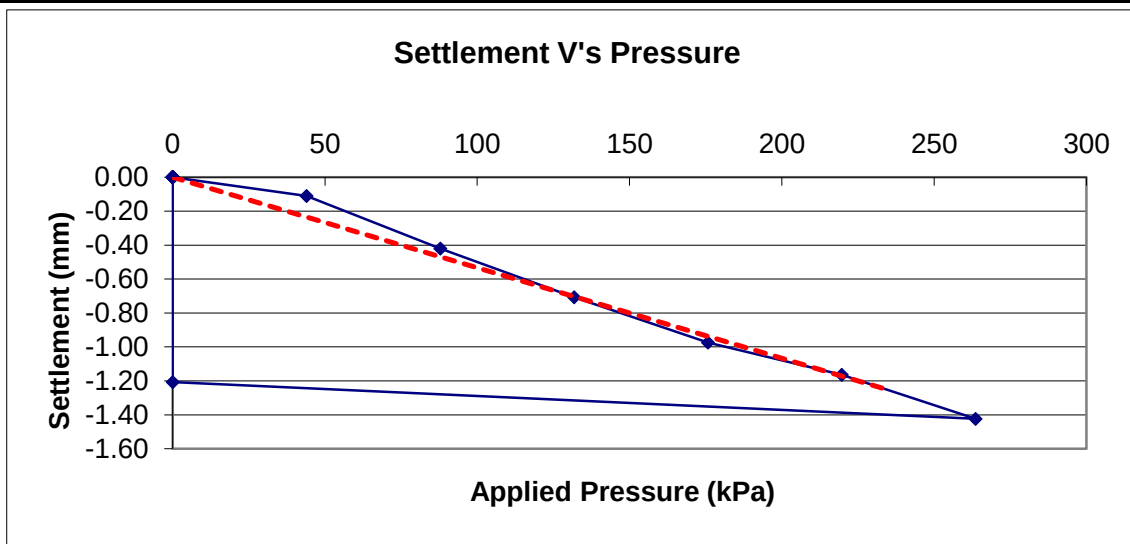
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.06
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	N/A
	Co Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.06		
Location	Load Cycle 1 - Trial Pit 04		
Material Description	Made Ground, Surface Level		



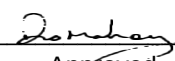
RESULTS	
Maximum Pressure applied to surface =	263.60 kPa
Modulus of subgrade reaction (k762) =	121.65 MPa/m
Approximate calculated CBR value =	39.61 %
Estimated stiffness modulus (E) =	73.84 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
Operator

25 August 2025
Date Reported


Approved
Technical Manager
Deputy Technical Manager



End of Test

Form No: CMT 020 Rev 1

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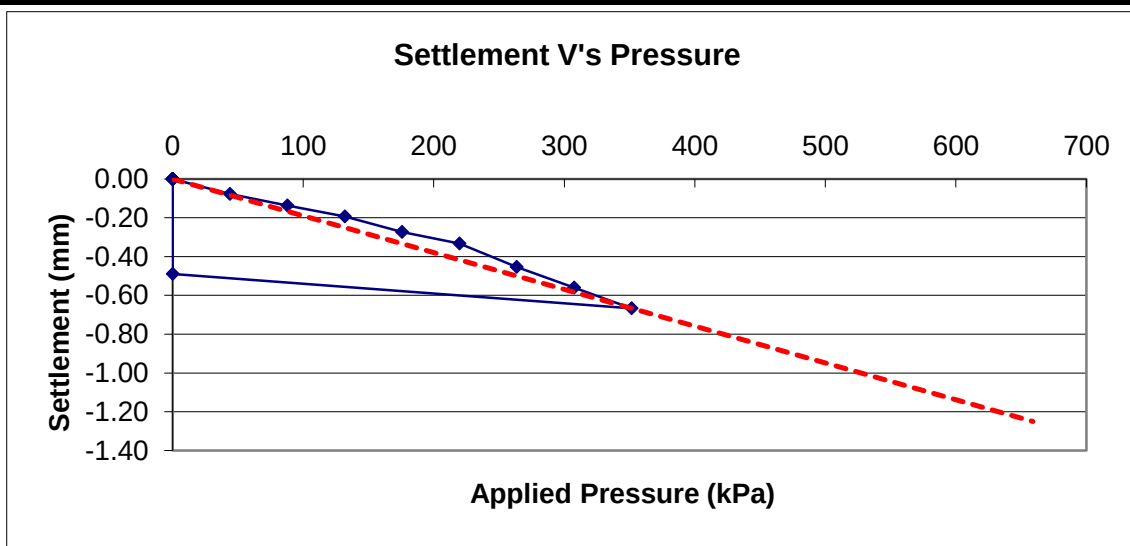
METLAB LTD

Unit 6 Airways Technology Park, Ballygarvan, Cork.
T: (021) 4311614 F: (021) 4311714 email: www.metlab.ie
Metlab Limited - registered in Ireland (No. 84894)



PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-06
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	N/A
	Co. Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT - 06		
Location	Re-Load Cycle 2 - Trial Pit - 04		
Material Description	Made Ground, Surface Level		



RESULTS	
Maximum Pressure applied to surface =	351.50 kPa
Modulus of subgrade reaction (k762) =	342.15 MPa/m
Approximate calculated CBR value =	237.75 %
Estimated stiffness modulus (E) =	207.68 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
Operator

25 August 2025
Date Reported

Approved
Technical Manager
Deputy Technical Manager



End of Test

Form No: CMT 020 Rev 1

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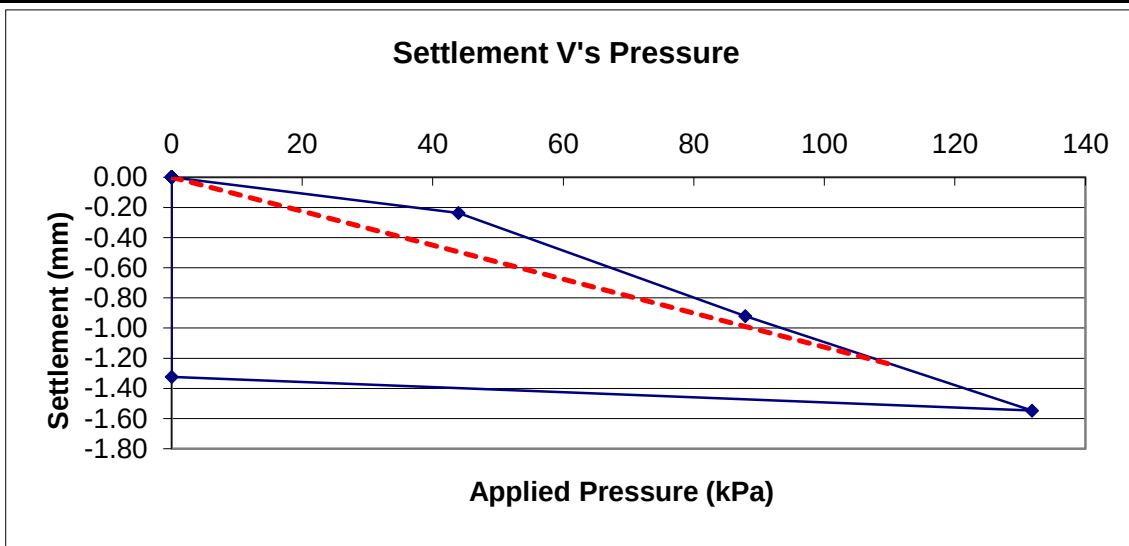
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.07
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	N/A
	Co Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.07		
Location	Load Cycle 1 - Trial Pit 06		
Material Description	Made Ground, Surface Level		



RESULTS	
Maximum Pressure applied to surface =	131.80 kPa
Modulus of subgrade reaction (k762) =	57.63 MPa/m
Approximate calculated CBR value =	10.85 %
Estimated stiffness modulus (E) =	34.98 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
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25 August 2025
Date Reported

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Technical Manager
Deputy Technical Manager

End of Test

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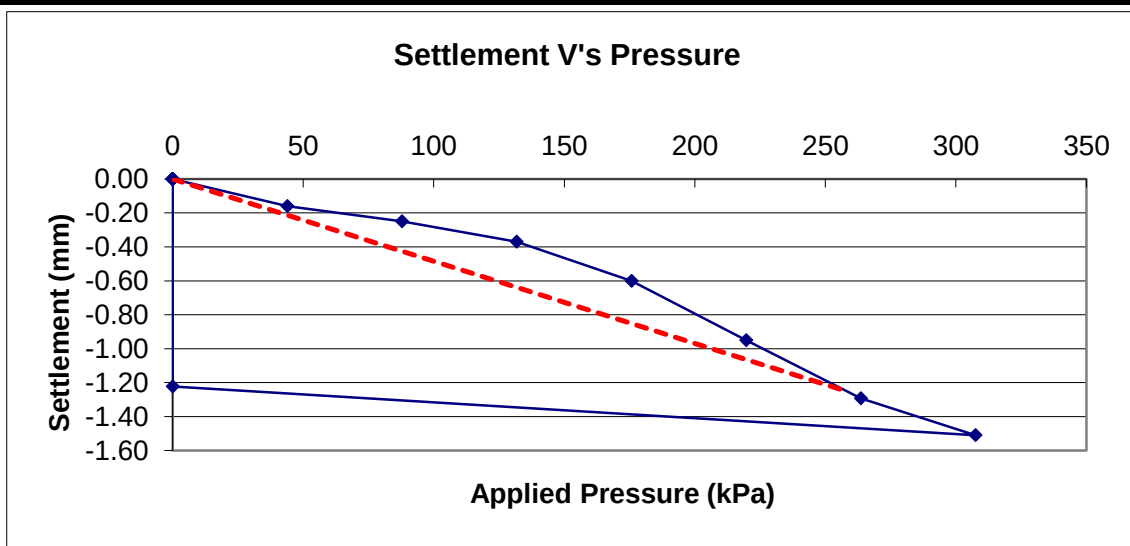
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-07
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	N/A
	Co. Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT - 07		
Location	Re-Load Cycle 2 - Trial Pit - 06		
Material Description	Made Ground, Surface Level		



RESULTS	
Maximum Pressure applied to surface =	307.50 kPa
Modulus of subgrade reaction (k762) =	133.98 MPa/m
Approximate calculated CBR value =	46.83 %
Estimated stiffness modulus (E) =	81.33 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
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Deputy Technical Manager



End of Test

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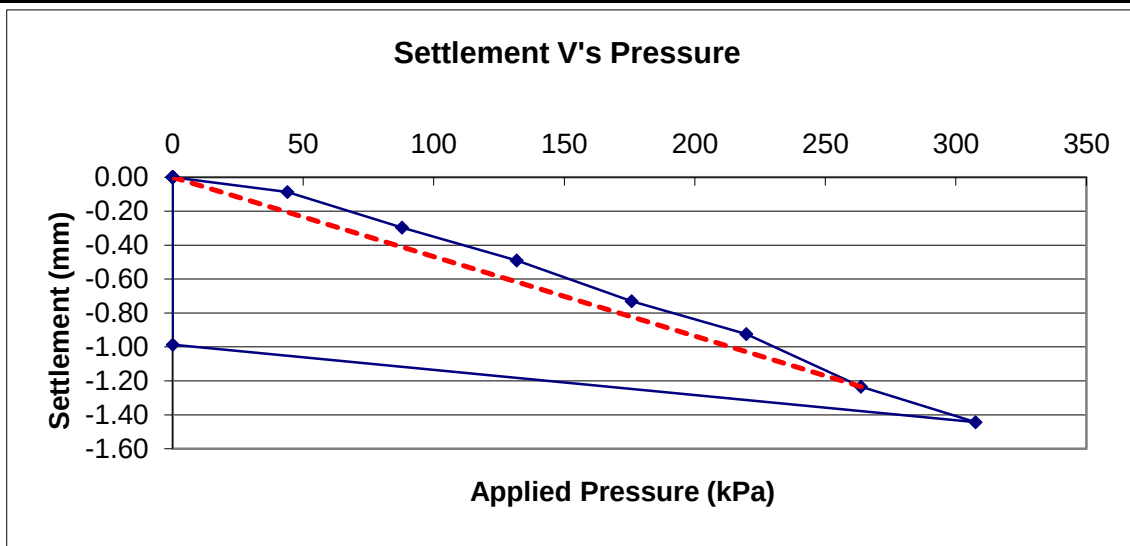
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.08
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	N/A
	Co Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.08		
Location	Load Cycle 1 - Trial Pit 10		
Material Description	Made Ground, Surface Level		



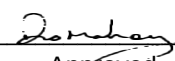
RESULTS	
Maximum Pressure applied to surface =	307.50 kPa
Modulus of subgrade reaction (k_{762}) =	138.67 MPa/m
Approximate calculated CBR value =	49.70 %
Estimated stiffness modulus (E) =	84.17 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
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25 August 2025
Date Reported


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Deputy Technical Manager



End of Test

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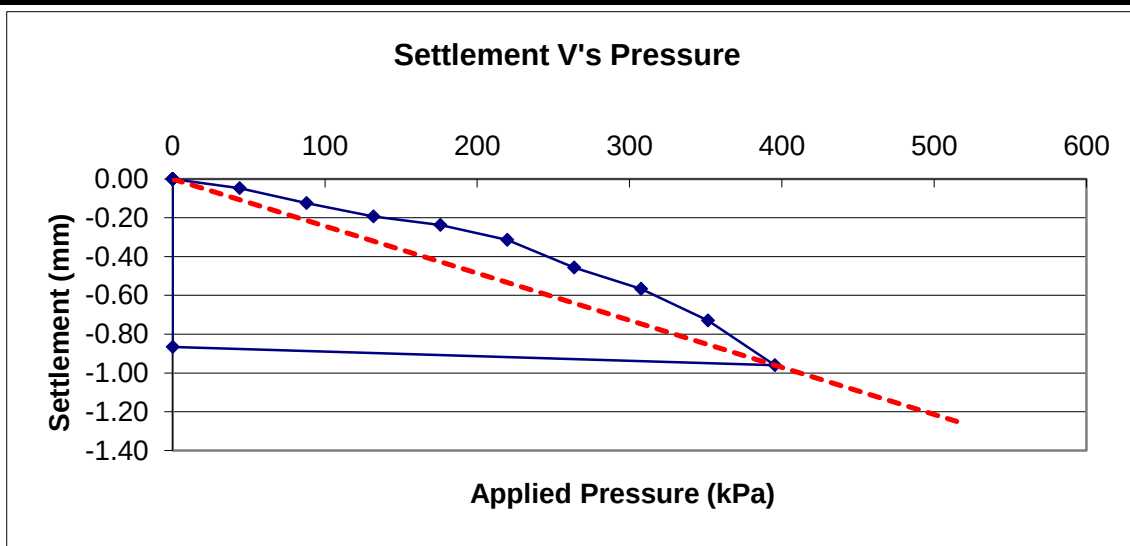
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-08
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	N/A
	Co. Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT - 08		
Location	Re-Load Cycle 2 - Trial Pit - 10		
Material Description	Made Ground, Surface Level		



RESULTS	
Maximum Pressure applied to surface =	395.40 kPa
Modulus of subgrade reaction (k762) =	267.30 MPa/m
Approximate calculated CBR value =	155.00 %
Estimated stiffness modulus (E) =	162.25 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
Operator

25 August 2025
Date Reported

Approved
Technical Manager
Deputy Technical Manager

End of Test

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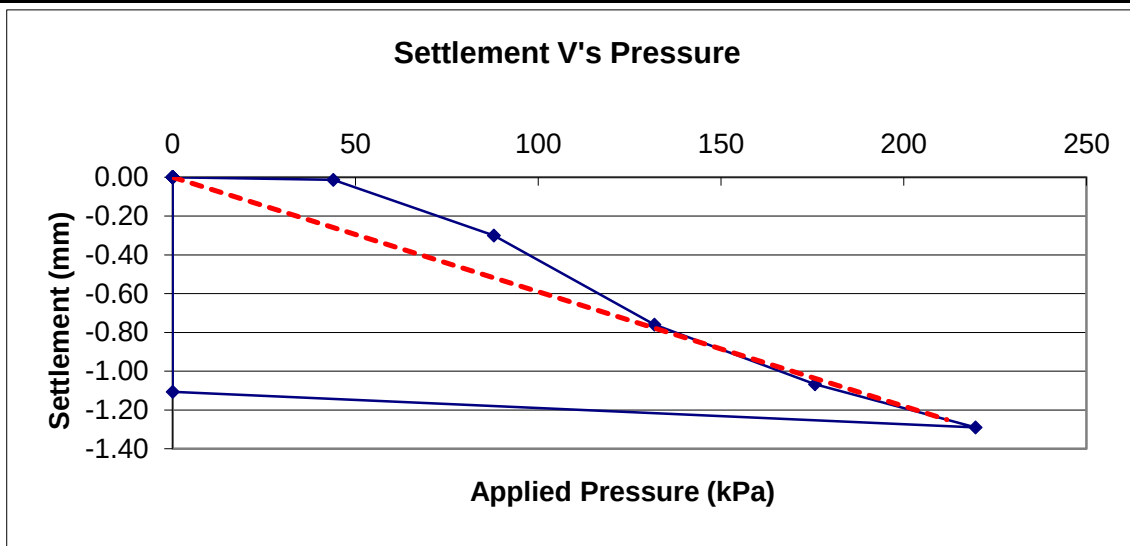
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832-PBT.09
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	400mm
	Co Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT.09		
Location	Load Cycle 1 - Trial Pit 10		
Material Description	Made Ground		



RESULTS	
Maximum Pressure applied to surface =	219.70 kPa
Modulus of subgrade reaction (k_{762}) =	109.96 MPa/m
Approximate calculated CBR value =	33.25 %
Estimated stiffness modulus (E) =	66.75 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
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25 August 2025
Date Reported

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Technical Manager
Deputy Technical Manager

End of Test

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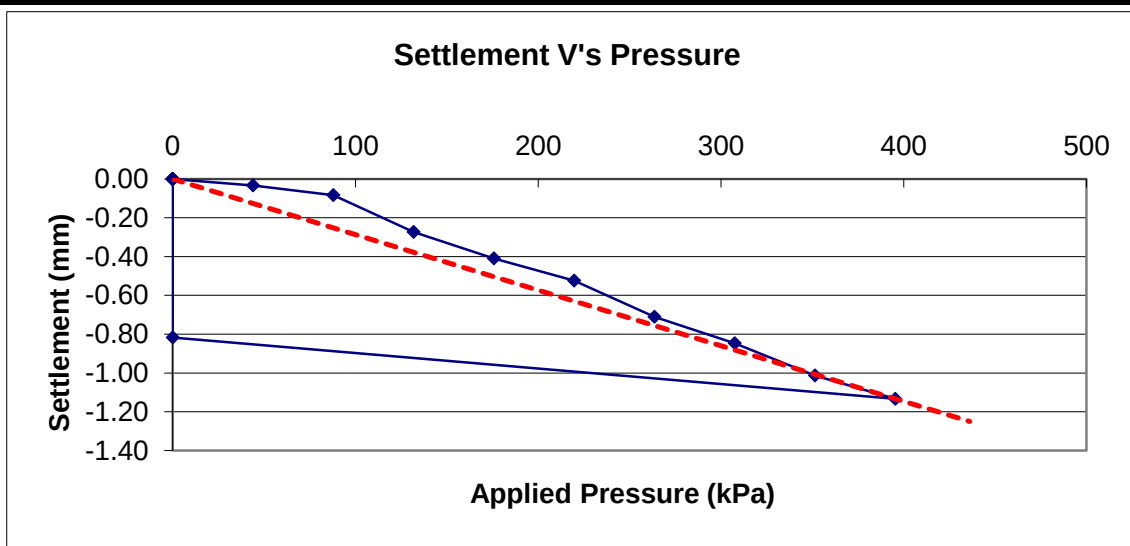
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PLATE BEARING TEST REPORT TESTED IN ACCORDANCE WITH PROCEDURE 300/PBT

Contract No	J3832	Report No	J3832 - PBT-09
Client Contact	Mr. Mark Nyhan	Plate Diameter	455mm
Client	OCB Geotechnical	Sand Used	Yes
Contract	Parkways	Depth	400mm
	Co. Limerick	Tested By	KOK
		Date Tested	Friday 22 August 2025
Site Ref	N/A	Specification	Site
Client Ref	PBT - 09		
Location	Re-Load Cycle 2 - Trial Pit - 10		
Material Description	Made Ground		



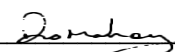
RESULTS	
Maximum Pressure applied to surface =	395.40 kPa
Modulus of subgrade reaction (k_{762}) =	226.42 MPa/m
Approximate calculated CBR value =	116.25 %
Estimated stiffness modulus (E) =	137.44 MPa

Remarks:

- Bulb of pressure due to loading distributed down approximately 1.5 times plate diameter only.
- Secant modulus shown as dashed red line on graph.
- Procedure 300/PBT is an in-house procedure referenced to BS 1377:Part 9 1990 & draft HD 25.

KOK
Operator

25 August 2025
Date Reported


Approved
Technical Manager
Deputy Technical Manager



End of Test

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RECEIVED: 28/05/2026

Appendix H Geotechnical Soil Laboratory Test Results

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-09
		Date Received:	04/09/2025
		Date Tested:	08/09/2025
		Date Reported:	09/09/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	BH01
Date Sampled:	02/09/2025	Sample Ref:	BH01 1.2-1.5m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 25.90

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

A handwritten signature in black ink, appearing to read 'Michael O'Connell', is shown within a rectangular box.

Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-08
		Date Received:	04/09/2025
		Date Tested:	08/09/2025
		Date Reported:	09/09/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	BH01
Date Sampled:	02/09/2025	Sample Ref:	BH01 1.5-2m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 9.49

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-10
		Date Received:	04/09/2025
		Date Tested:	08/09/2025
		Date Reported:	09/09/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	BH01
Date Sampled:	02/09/2025	Sample Ref:	BH01 3-3.8m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 9.48

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-03
		Date Received:	04/08/2025
		Date Tested:	05/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP02
Date Sampled:	31/07/2025	Sample Ref:	TP02 1-1.5m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 12.29

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-04
		Date Received:	04/08/2025
		Date Tested:	05/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP02
Date Sampled:	31/07/2025	Sample Ref:	TP02 1.7-2.2m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 14.72

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-02
		Date Received:	04/08/2025
		Date Tested:	05/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP04
Date Sampled:	31/07/2025	Sample Ref:	TP04 1.3-1.8m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 14.64

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

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Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-01
		Date Received:	04/08/2025
		Date Tested:	05/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP04
Date Sampled:	31/07/2025	Sample Ref:	TP04 2.5-3m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 21.03

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

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Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-05
		Date Received:	04/08/2025
		Date Tested:	12/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP08
Date Sampled:	01/08/2025	Sample Ref:	TP08 1.2-1.7m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 13.46

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Approved Signature
OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-06
		Date Received:	04/08/2025
		Date Tested:	12/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP10
Date Sampled:	01/08/2025	Sample Ref:	TP10 1.8-2m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 23.76

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

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OCB Geotechnical Services Ltd
General Manager

OCB Geotechnical Services Ltd
Unit 1, Carrigogna, Midleton, Co. Cork
Tel: 021 4638474



LABORATORY TEST REPORT

MOISTURE CONTENT BS 1377 : Part 2 : 1990 Oven Drying Method cl 3.2

Site:	Parkway Valley, Dublin Road, Singland, Limerick	Job No.:	25-049
Client:	Kirkland Investments	Lab Ref No.:	mc25-049-07
		Date Received:	04/08/2025
		Date Tested:	12/08/2025
		Date Reported:	18/08/2025
Originator:	E.W.	Specification:	Punch Consulting Engineers

Sampled by:	G.O'C	Sample Type:	Bulk
Sampling Cert:	NA	Location:	TP12
Date Sampled:	01/08/2025	Sample Ref:	TP12 1.5-2m
Material Type:	Soil		
Supplier/Source:	N/A		

Moisture Content (%): 25.11

Tested in accordance with BS 1377: Part 2: 1990
Sample preparation by cone and quarter

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Approved Signature
OCB Geotechnical Services Ltd
General Manager



Particle Size Determination Test

Project: Parkway Valley, Dublin Road, Singland, Limerick

Test ID: psd25-049-07

Project ID: 25-049

Supplier:

Customer: Punch Consulting Engineers

Date of measurement: 08/09/2025

Performed by: EW

Sample

Field test: BH

Sample type: disturbed

Sample index: BH01 3-3.8m

Geotechnical type: B

Depth from: 3.00 m

Description:

Depth to: 3.80 m

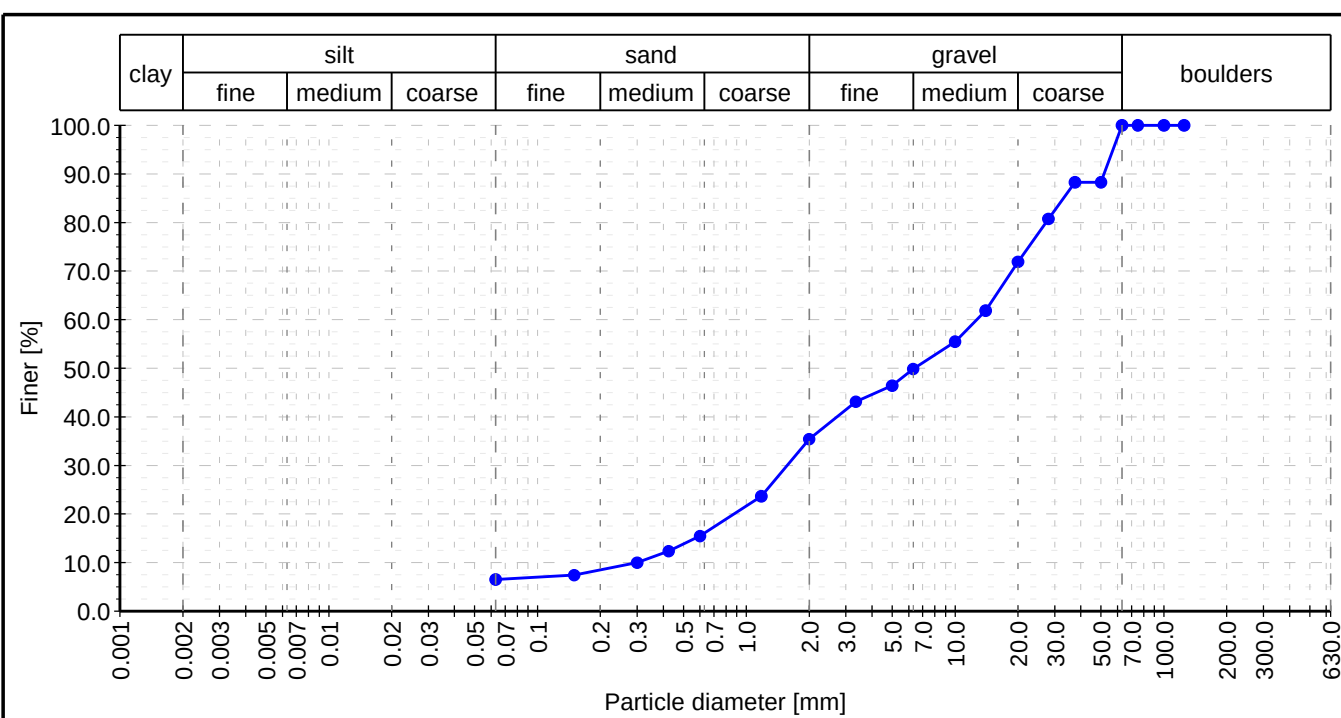
Soil

Specimen

Specimen ID: BH01

Depth: 3.00 m

Measured values and results



Fraction content:	Total weight: 2800.80 g
Clay: 6.5 %	Weight check: 2800.80 g
Silt: 0.0 %	Check limit:
Sand: 28.9 %	Verification: 0.0 %
Gravel: 64.6 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient : 42.69	Coefficient of curvature : 0.68
Soil class: saGr (EN ISO 14688-2 (2018))	

Notes	
Verified by: MOC	Date of issue: 10/09/2025
Stamp and signature	



Particle Size Determination Test

Project: Parkway Valley, Dublin Road, Singland, Limerick

Test ID: PSD25-049-08

Project ID: 25-049

Supplier:

Customer: Punch Consulting Engineers

Date of measurement: 24/09/2025

Performed by: EW

Sample

Field test: BH

Sample type: disturbed

Sample index: BH02 5-6m

Geotechnical type: B

Depth from: 5.00 m

Description:

Depth to: 6.00 m

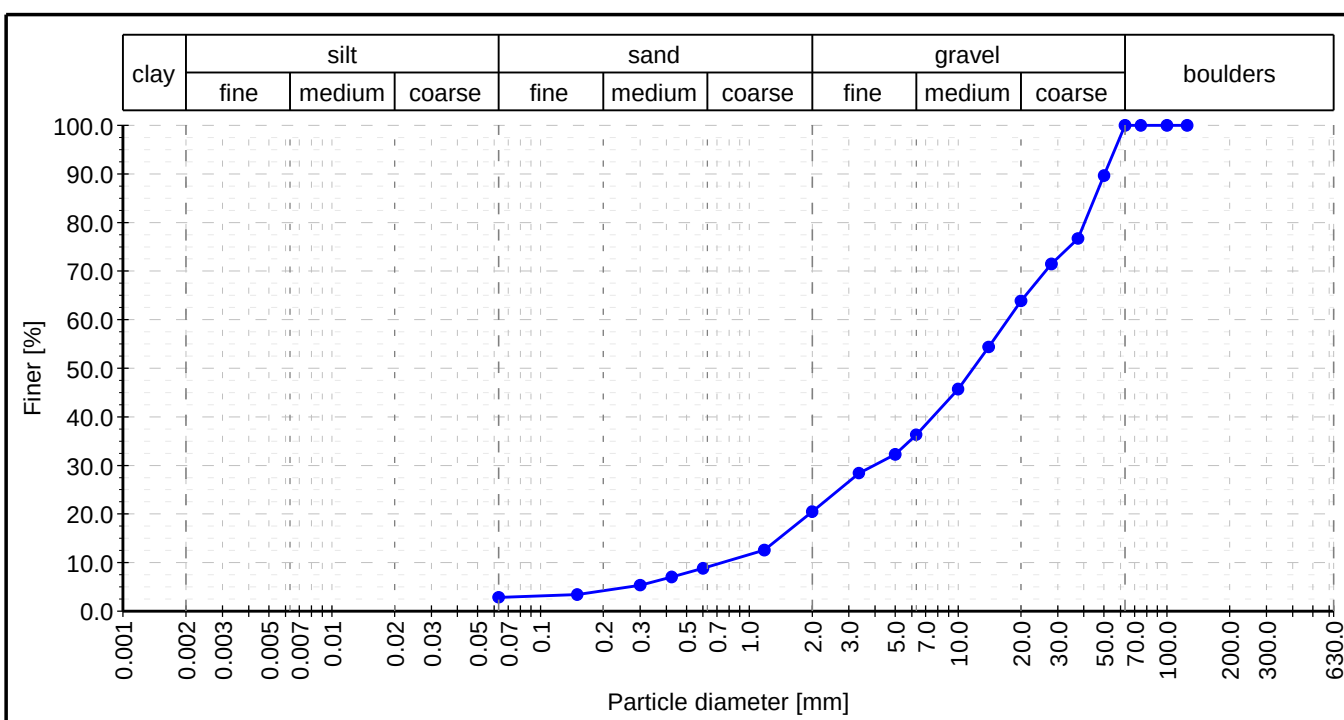
Soil

Specimen

Specimen ID: BH02

Depth: 5.00 m

Measured values and results



Fraction content:	Total weight: 4601.37 g
Clay: 2.8 %	Weight check: 4601.37 g
Silt: 0.0 %	Check limit:
Sand: 17.6 %	Verification: 0.0 %
Gravel: 79.5 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient : 22.43	Coefficient of curvature : 1.18
Soil class: Gr (EN ISO 14688-2 (2018))	

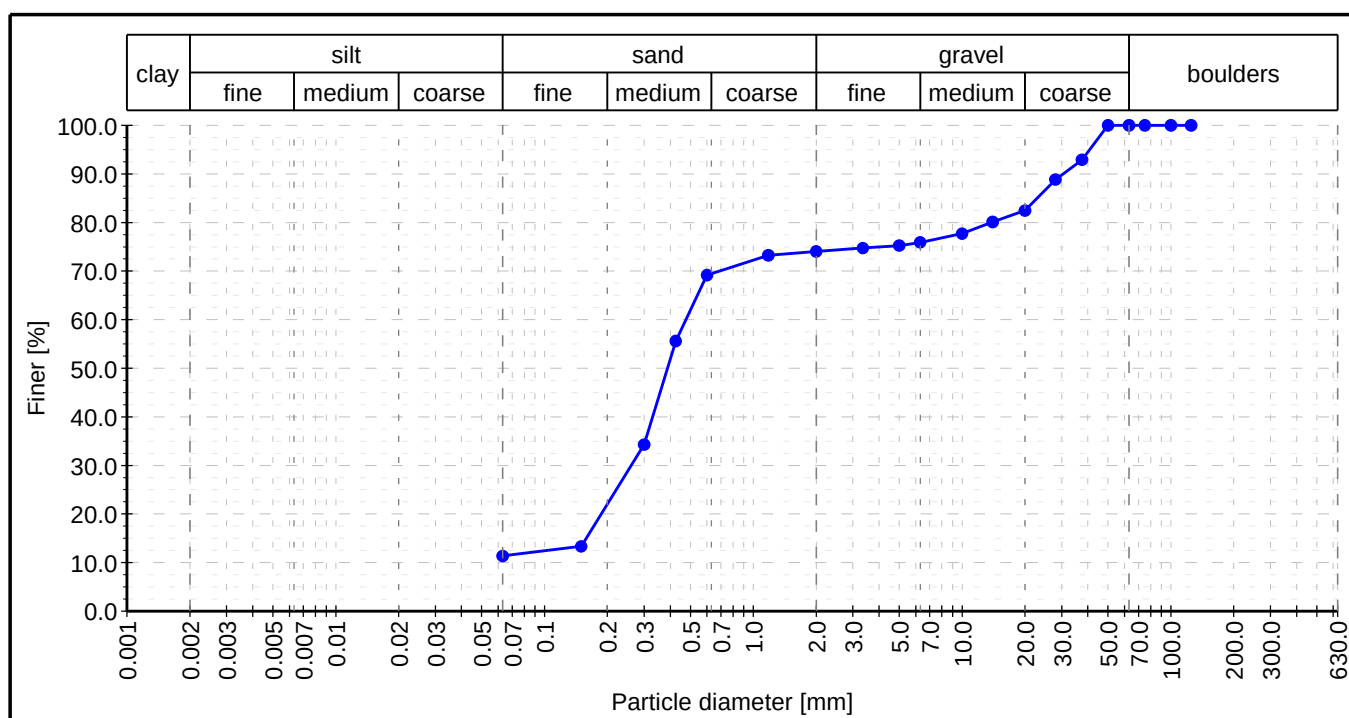
Notes	
Verified by: MOC	Date of issue: 29/09/2025
Stamp and signature	

	Particle Size Determination Test	
	Project: Parkway Valley, Dublin Road, Singland, Limerick	
Test ID: PSD25-049-01		Project ID: 25-049
Supplier:		Customer: Punch Consulting Engineers
Date of measurement: 06/08/2025		Performed by: EW

Sample	
Field test: TP	Sample type: disturbed
Sample index: TP02 1-1.5m	Geotechnical type: B
Depth from: 1.00 m	Description:
Depth to: 1.50 m	Soil

Specimen	
Specimen ID: TP02	Depth: 1.00 m

Measured values and results



Fraction content:	Total weight: 2398.50 g
Clay: 11.4 %	Weight check: 2398.50 g
Silt: 0.0 %	Check limit:
Sand: 62.7 %	Verification: 0.0 %
Gravel: 26.0 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient :	Coefficient of curvature :
Soil class: grSa (EN ISO 14688-2 (2018))	

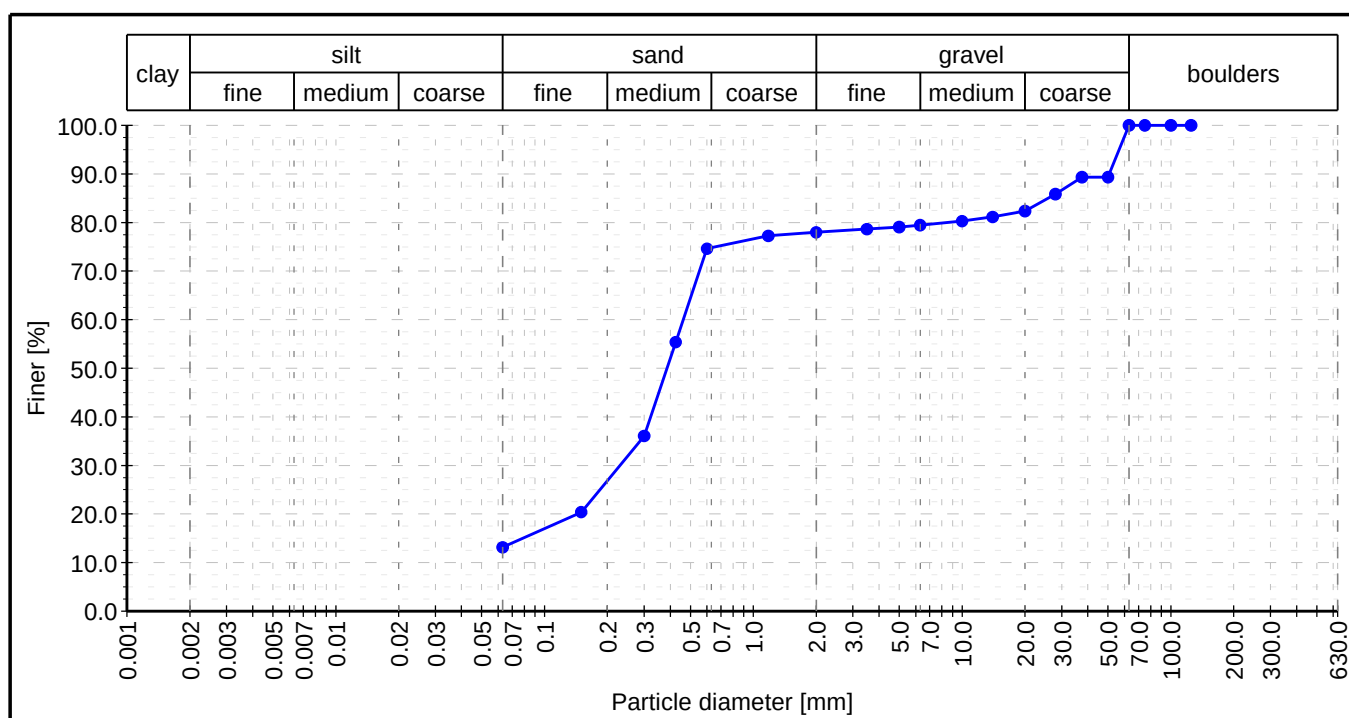
Notes	
Verified by: MOC	Date of issue: 18/08/2025
Stamp and signature	

	Particle Size Determination Test	
	Project: Parkway Valley, Dublin Road, Singland, Limerick	
Test ID: PSD25-049-02		Project ID: 25-049
Supplier:		Customer: Punch Consulting Engineers
Date of measurement: 06/08/2025		Performed by: EW

Sample	
Field test: TP	Sample type: disturbed
Sample index: TP02 1.7-2.2m	Geotechnical type: B
Depth from: 1.70 m	Description:
Depth to: 2.20 m	Soil

Specimen	
Specimen ID: TP02	Depth: 1.70 m

Measured values and results



Fraction content:	Total weight: 2495.64 g
Clay: 13.1 %	Weight check: 2495.64 g
Silt: 0.0 %	Check limit:
Sand: 64.8 %	Verification: 0.0 %
Gravel: 22.0 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient :	Coefficient of curvature :
Soil class: grSa (EN ISO 14688-2 (2018))	

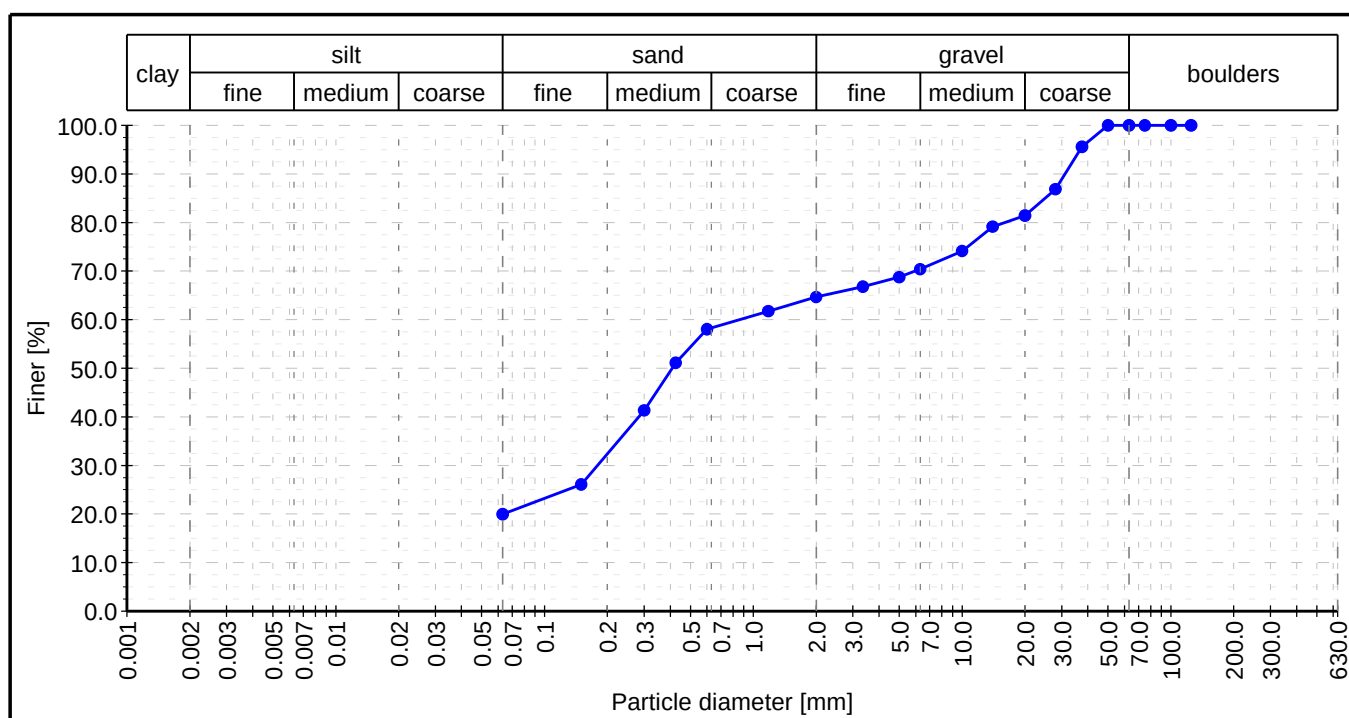
Notes	
Verified by: MOC	Date of issue: 18/08/2025
Stamp and signature	

	Particle Size Determination Test	
	Project: Parkway Valley, Dublin Road, Singland, Limerick	
Test ID: PSD25-049-03		Project ID: 25-049
Supplier:		Customer: Punch Consulting Engineers
Date of measurement: 06/08/2025		Performed by: EW

Sample	
Field test: TP	Sample type: disturbed
Sample index: TP04 1.3-1.8m	Geotechnical type: B
Depth from: 1.30 m	Description:
Depth to: 1.80 m	Soil

Specimen	
Specimen ID: TP04	Depth: 1.30 m

Measured values and results



Fraction content:	Total weight: 2450.38 g
Clay: 20.0 %	Weight check: 2450.38 g
Silt: 0.0 %	Check limit:
Sand: 44.7 %	Verification: 0.0 %
Gravel: 35.3 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient :	Coefficient of curvature :
Soil class: (EN ISO 14688-2 (2018))	

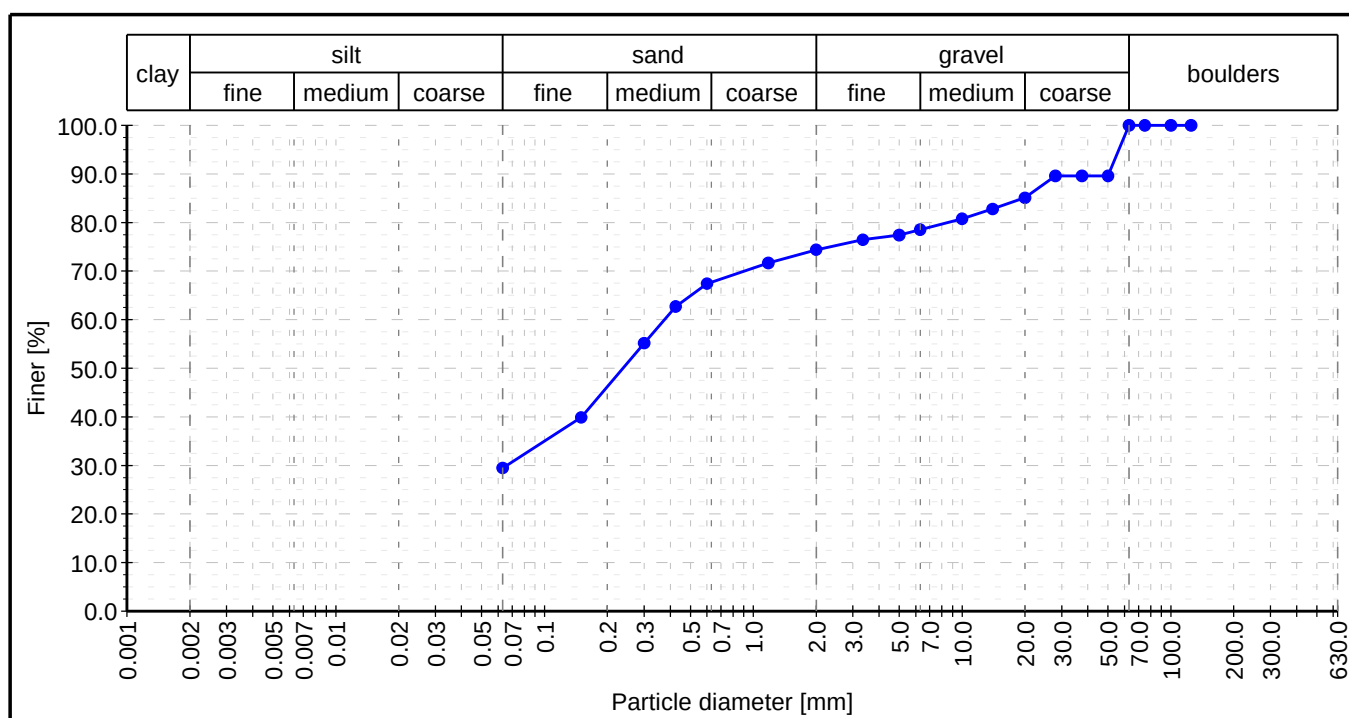
Notes	
Verified by: MOC	Date of issue: 18/08/2025
Stamp and signature	

	Particle Size Determination Test	
	Project: Parkway Valley, Dublin Road, Singland, Limerick	
Test ID: PSD25-049-04		Project ID: 25-049
Supplier:		Customer: Punch Consulting Engineers
Date of measurement: 11/08/2025		Performed by: EW

Sample	
Field test: TP	Sample type: disturbed
Sample index: TP04 2.5-3m	Geotechnical type: B
Depth from: 2.50 m	Description:
Depth to: 3.00 m	Soil

Specimen	
Specimen ID: TP04	Depth: 2.50 m

Measured values and results



Fraction content:	Total weight: 2385.11 g
Clay: 29.5 %	Weight check: 2385.11 g
Silt: 0.0 %	Check limit:
Sand: 44.9 %	Verification: 0.0 %
Gravel: 25.6 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient :	Coefficient of curvature :
Soil class: (EN ISO 14688-2 (2018))	

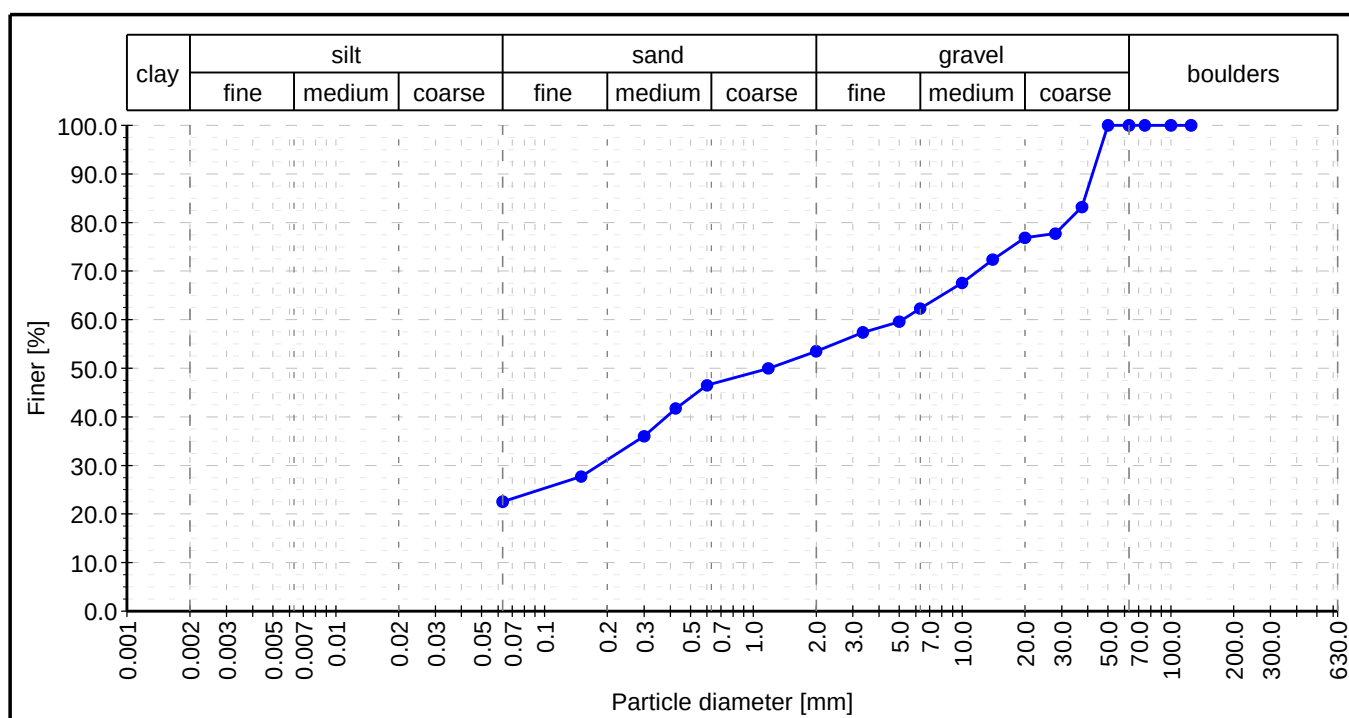
Notes	
Verified by: MOC	Date of issue: 18/08/2025
Stamp and signature	

	Particle Size Determination Test	
	Project: Parkway Valley, Dublin Road, Singland, Limerick	
Test ID: PSD25-049-05		Project ID: 25-049
Supplier:		Customer: Punch Consulting Engineers
Date of measurement: 13/08/2025		Performed by: EW

Sample	
Field test: TP	Sample type: disturbed
Sample index: TP08 1.2-1.7m	Geotechnical type: B
Depth from: 1.20 m	Description:
Depth to: 1.70 m	Soil

Specimen	
Specimen ID: TP08	Depth: 1.20 m

Measured values and results



Fraction content:	Total weight: 2293.86 g
Clay: 22.5 %	Weight check: 2293.86 g
Silt: 0.0 %	Check limit:
Sand: 31.0 %	Verification: 0.0 %
Gravel: 46.5 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient :	Coefficient of curvature :
Soil class: (EN ISO 14688-2 (2018))	

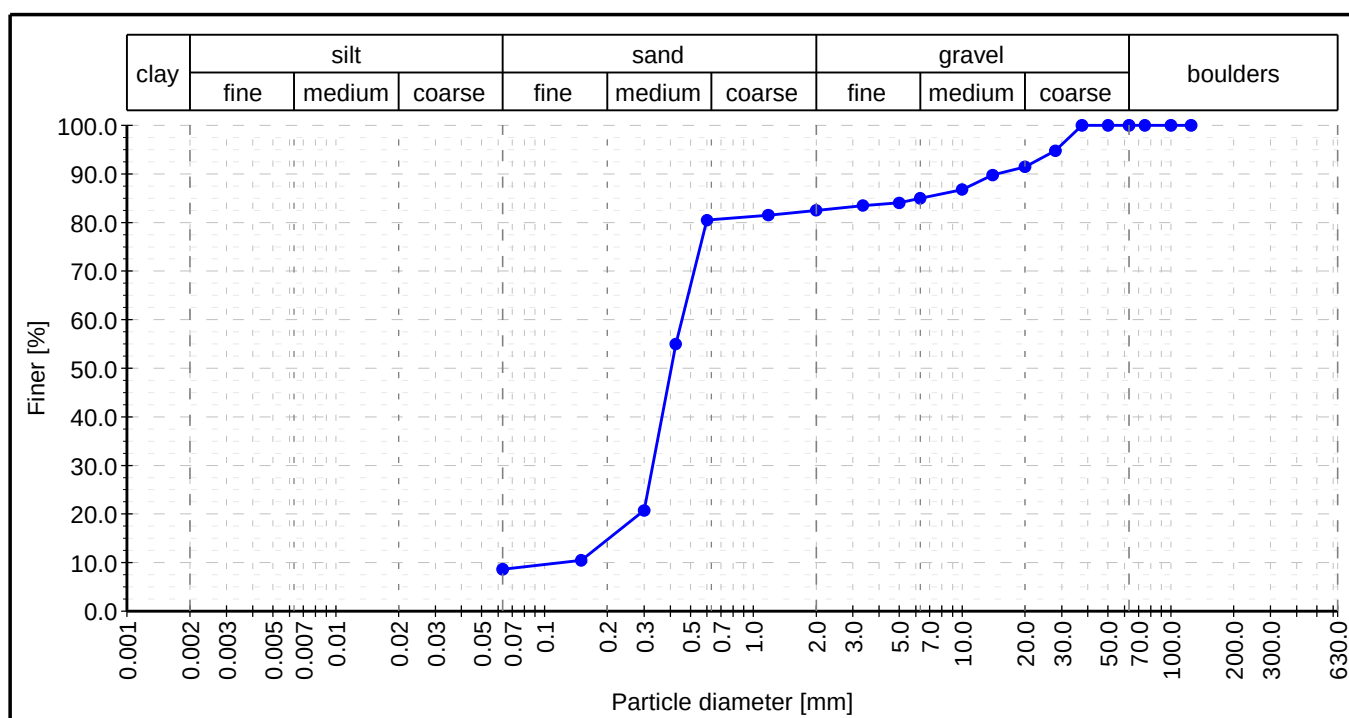
Notes	
Verified by: MOC	Date of issue: 18/08/2025
Stamp and signature	

	Particle Size Determination Test	
	Project: Parkway Valley, Dublin Road, Singland, Limerick	
Test ID: PSD25-049-06		Project ID: 25-049
Supplier:		Customer: Punch Consulting Engineers
Date of measurement: 13/08/2025		Performed by: EW

Sample	
Field test: TP	Sample type: disturbed
Sample index: TP10 1.8-2m	Geotechnical type: B
Depth from: 1.80 m	Description:
Depth to: 2.00 m	Soil

Specimen	
Specimen ID: TP10	Depth: 1.80 m

Measured values and results



Fraction content:	Total weight: 2012.93 g
Clay: 8.6 %	Weight check: 2012.93 g
Silt: 0.0 %	Check limit:
Sand: 73.9 %	Verification: 0.0 %
Gravel: 17.5 %	Result: Satisfactory
Stones: 0.0 %	

Uniformity coefficient : 3.59	Coefficient of curvature : 1.90
Soil class: Sa (EN ISO 14688-2 (2018))	

Notes	
Verified by: MOC	Date of issue: 18/08/2025
Stamp and signature	

OCB Geotechnical Services Ltd
Unit 1,
Carrigogna,
Midleton,
Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-08
Originator: E.W.	Date Received:	04/09/2025
	Date Reported:	09/09/2025
	Material:	Soil
	Date Tested:	08/09/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	02/09/2025
Source:	BH01	Sampled by:	G.O'C
Sample depth:	3-3.8m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	8.82	

Comments:

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Tested in accordance with the above specifications

Approved Signature
Michael O'Connell, General Manager
OCB Geotechnical Services Ltd

OCB Geotechnical Services Ltd
Unit 1,
Carrigogna,
Midleton,
Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-01
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	31/07/2025
Source:	TP02	Sampled by:	G.O'C
Sample depth:	1-1.5m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	8.05	

Comments:

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Tested in accordance with the above specifications

Approved Signature
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OCB Geotechnical Services Ltd

OCB Geotechnical Services Ltd
Unit 1,
Carrigogna,
Midleton,
Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-02
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	31/07/2025
Source:	TP02	Sampled by:	G.O'C
Sample depth:	1.7-2.2m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	8.32	

Comments:

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

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Approved Signature
Michael O'Connell, General Manager
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Carrigogna,
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Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-03
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	31/07/2025
Source:	TP04	Sampled by:	G.O'C
Sample depth:	1.3-1.8m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	8.16	

Comments:

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Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-04
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	31/07/2025
Source:	TP04	Sampled by:	G.O'C
Sample depth:	2.5-3m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	7.65	

Comments:

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OCB Geotechnical Services Ltd

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Midleton,
Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-05
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	01/08/2025
Source:	TP08	Sampled by:	G.O'C
Sample depth:	1.2-1.7m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	8.68	

Comments:

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Tested in accordance with the above specifications

Approved Signature
Michael O'Connell, General Manager
OCB Geotechnical Services Ltd

OCB Geotechnical Services Ltd
Unit 1,
Carrigogna,
Midleton,
Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-06
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	01/08/2025
Source:	TP10	Sampled by:	G.O'C
Sample depth:	1.8-2m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	11.3	

Comments:

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Tested in accordance with the above specifications

Approved Signature
Michael O'Connell, General Manager
OCB Geotechnical Services Ltd

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Unit 1,
Carrigogna,
Midleton,
Co. Cork



LABORATORY TEST REPORT

To determine the pH Value of Soils in accordance with BS 1377 : Part3 : 2018 - Clause 12, Electrometric Method

Project: Parkway Valley, Dublin Road, Singland, Limerick	Job Nr:	25-049
Client: Kirkland Investments	Lab Ref nr:	ph25-049-07
Originator: E.W.	Date Received:	04/08/2025
	Date Reported:	18/08/2025
	Material:	Soil
	Date Tested:	13/08/2025
	Specification:	Punch Consulting Engineers

Sample Details:	Soil	Date of Sampling:	01/08/2025
Source:	TP12	Sampled by:	G.O'C
Sample depth:	1.5-2m	Sampling reason:	Request

Results

Parameter	Result	
pH Value	9.82	

Comments:

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.

Tested in accordance with the above specifications

Approved Signature
Michael O'Connell, General Manager
OCB Geotechnical Services Ltd

RECEIVED: 28/05/2026

Appendix I Geotechnical Rock Laboratory Test Results



POINT LOAD TEST DATA

Project Name: Parkway Valley, Dublin Road, Singland, Limerick	
Project No.: 25-049	Date: 08/10/25

BH	Depth (m)	Type	D (mm)	P (kN)	D2 (mm2)	Is (Mpa)	F	Is50 (Mpa)	UCS (Is50*22)	Strength
RC02	9.59 - 9.73	d	84	24.8	7056	3.51	1.5	5.27	116.0	V. Strong
RC02	10.25 - 10.38	d	84	10.0	7056	1.42	1.5	2.13	46.8	M. Strong
RC02	11.42 - 11.54	d	84	6.4	7056	0.91	1.5	1.36	29.9	M. Strong
RC03	4.65 - 4.87	d	84	29.2	7056	4.14	1.5	6.21	136.6	V. Strong
RC03	6.03 - 6.17	d	84	27.5	7056	3.90	1.5	5.85	128.6	V. Strong
RC04	6.80 - 6.95	d	84	24.0	7056	3.40	1.5	5.10	112.2	V. Strong
RC07	4.14 - 4.43	d	84	10.2	7056	1.45	1.5	2.17	47.7	M. Strong
RC07	5.24 - 5.33	d	84	11.0	7056	1.56	1.5	2.34	51.4	Strong
RC07	5.33 - 5.42	d	84	3.5	7056	0.50	1.5	0.74	16.4	Weak
RC07	7.11 - 7.43	d	84	33.0	7056	4.68	1.5	7.02	154.3	V. Strong
RC07	9.10 - 9.29	d	84	23.9	7056	3.39	1.5	5.08	111.8	V. Strong

RECEIVED: 28/05/2026

Appendix J Environmental Laboratory Test Results

RECEIVED: 28/05/2026

A copy of this certificate is available on www.fitzsci.ie.

Customer supplied information appear in italics.

Customer	Mick OConnell OCB Geotechnical Unit 1 Carrigogna Middleton	Lab Report Ref. No.	7299/2508012/01
		Date of Receipt	08/08/2025 10:27
		Sampled On	05/08/2025 09:45
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	94.5	%	
% Loss on Ignition	310	Ashing @ 550 C	0.65	%	
% Moisture Content	302	Calculation	5.5	%	
1,1,2-tetrachloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,1-Trichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,2,2-Tetrachloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,2-Trichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2 Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2 Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,3-Trichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,3-Trichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,4-Trichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,4-Trimethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dibromo-3-chloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dibromoethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,3,5-Trimethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	



Signed:

A Harmon

Date: 10/10/2025

Aoife Harmon - Laboratory Supervisor

Acc. : Accredited Parameters by ISO/IEC 17025:2017

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested (P) : Presumptive Results (C) : Confirmed Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2024)

Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.

Fitz Scientific maintain all customer information in the strictest confidence which is legally enforceable.



RECEIVED: 28/05/2026

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Customer supplied information appear in italics.

Customer	Mick OConnell OCB Geotechnical Unit 1 Carrigogna Middleton	Lab Report Ref. No.	7299/2508012/01
		Date of Receipt	08/08/2025 10:27
		Sampled On	05/08/2025 09:45
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
1,3-Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,3-Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,4-Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
2,2-Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
2,4-Dinitrotoluene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2,6-dinitrotoluene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Chloronaphthalene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Chlorotoluene (Soil) VOC	203	GCMS	<1	mg/Kg	
2-Methylnaphthalene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Nitroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
3-Nitroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Bromophenylphenyl ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chloroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chlorodiphenyl ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chlorotoluene (Soil) VOC	203	GCMS	<1	mg/Kg	
Acenaphthene (Solid)	200	GCMS	<0.1	mg/kg	
Acenaphthylene (Solid)	200	GCMS	<0.1	mg/kg	
Acid Neutralisation capacity (pH4)	314	Titrimetry	<0.5	mol/Kg	
Acid Neutralisation Capacity (pH7)	314	Titrimetry	<0.5	mol/Kg	
Acid Reserve	582	Titrimetry	<0.05	g NaOH/100g	



Signed:

A Harmon

Aoife Harmon - Laboratory Supervisor

Date: 10/10/2025

Acc. : Accredited Parameters by ISO/IEC 17025:2017

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested (P) : Presumptive Results (C) : Confirmed Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2024)

Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.

Fitz Scientific maintain all customer information in the strictest confidence which is legally enforceable.



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Customer supplied information appear in italics.

Customer	Mick OConnell OCB Geotechnical Unit 1 Carrigogna Middleton	Lab Report Ref. No.	7299/2508012/01
		Date of Receipt	08/08/2025 10:27
		Sampled On	05/08/2025 09:45
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Alkali Reserve	582	Titrimetry	<0.05	g NaOH/100g	
Ammonia (Leachate)	114	Colorimetry	0.72	mg/Kg as N	
Anthracene (Solid)	200	GCMS	<0.1	mg/kg	
Antimony (Leachate)	177	ICPMS	<0.02	mg/kg	
Antimony Solid (Other)	224	ICP-OES	4.78	mg/kg	
Arsenic (Leachate)	177	ICPMS	0.081	mg/kg	
Arsenic Solid (Other)	224	ICP-OES	7.42	mg/kg	
Asbestos Identification	574	Microscopy	Not Detected	NA	
Barium (Leachate)	177	ICPMS	0.498	mg/kg	
Barium Solid (Other)	224	ICP-OES	24.12	mg/kg	
Benzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Benzo(a)anthracene (Solid)	200	GCMS	<0.10	mg/kg	
Benzo(a)pyrene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(b)fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(g,h,i)perylene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(k)fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzyl alcohol (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloro-1-methylethyl) ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloroethoxy)methane (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloroethyl)ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	



Signed:

A Harmon

Aoife Harmon - Laboratory Supervisor

Date: 10/10/2025

Acc. : Accredited Parameters by ISO/IEC 17025:2017

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		Sampled On	05/08/2025 09:45
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
Customer PO	Cork P25 PX22	Condition on Receipt	Acceptable
		Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
bis (2-ethylhexyl)phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Boron (Leachate)	177	ICPMS	3.64	mg/kg	
Boron Solid (Other)	224	ICP-OES	3.73	mg/kg	
Bromobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromochloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromodichloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromoform (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromomethane (Solid) VOC	203	GC/MS (Headspace)	<1	mg/kg	
BTEX Total (Solid) VOC	203	GC/MS (Headspace)	<1.00	mg/kg	
Butyl benzyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Cadmium (Leachate)	177	ICPMS	<0.001	mg/kg	
Cadmium Solid (Other)	224	ICP-OES	0.54	mg/kg	
Carbon tetrachloride (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloride (Leachate WAC)	190	IC	22.6	mg/Kg	
Chlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloroform (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Chromium (Leachate)	177	ICPMS	0.039	mg/kg	
Chromium III (Solid)	177	Calculation	31.21	mg/kg	



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		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
Customer PO	Cork P25 PX22	Condition on Receipt	Acceptable
		Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Chromium Solid (Other)	224	ICP-OES	31.21	mg/kg	
Chromium VI (Solid)	645	Flow analysis	<0.6	mg/kg	
Chrysene (Solid)	200	GCMS	<0.1	mg/Kg	
cis-1,2-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
cis-1,3-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
Conductivity (Leachate) (Solid)(at 20C)	112	Electrometry	61	us/cm @ 20C	INAB
Copper (Leachate)	177	ICPMS	0.033	mg/kg	
Copper Solid (Other)	224	ICP-OES	15.65	mg/kg	
Coronene (Solid)	200	GCMS	<0.1	mg/Kg	
Dibenzo(a,h)anthracene (Solid)	200	GCMS	<0.1	mg/Kg	
Dibenzofuran (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Dibromochloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dibromomethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dichlorodifluoromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dichloromethane (Solid) VOC	203	GC/MS (Headspace)	<1	mg/kg	
di-ethyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-methyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-n-butyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-n-octyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
DOC (Leachate)	621	TOC Analyser	10.0	mg/Kg	



Signed:

A Harmon

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		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Fluorene (Solid)	200	GCMS	<0.1	mg/Kg	
Fluoride (Leachate WAC)	190	IC	<0.5	mg/Kg	
Hexachlorobenzene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Hexachlorobutadiene (Soil) VOC	203	GCMS	<1	mg/Kg	
Hexachlorocyclopentadiene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Hexachloroethane (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Indeno(1,2,3-cd)pyrene (Solid)	200	GCMS	<0.1	mg/Kg	
Isophorone (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Isopropylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Lead (Leachate)	177	ICPMS	0.043	mg/kg	
Lead Solid (Other)	224	ICP-OES	11.59	mg/kg	
m- + p-Xylene (Soil) VOC	203	GCMS	<1	mg/Kg	
Mercury (Leachate)	178	ICPMS	<0.001	mg/kg	
Mercury Solid (OES)	229	ICP-OES	<0.0025	mg/kg	
Mineral Oil (Solid) C10-40	572	GC x GC-FID	<10	mg/kg	
Molybdenum (Leachate)	226	ICPMS	<0.05	mg/kg	
Molybdenum Solid (OES)	228	ICP-OES	0.812	mg/kg	
MtBE (Solid) VOC	203	GCMS	<1	mg/kg	



Signed:

A Harmon

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		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Naphthalene (Soil) VOC	203	GCMS	<1	mg/Kg	
n-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Nickel (Leachate)	177	ICPMS	0.035	mg/kg	
Nickel Solid (Other)	224	ICP-OES	31.14	mg/kg	
Nitrobenzene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
N-nitrosodi-n-propylamine (Solid) SVOC	155	GCMS	<2.5	mg/kg	
n-nitrosodiphenylamine (Solid) SVOC	155	GCMS	<2.5	mg/kg	
n-Propylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
o-Xylene (Soil) VOC	203	GCMS	<1	mg/Kg	
PAHs Solid (Sum of 17)	200	GCMS	<0.1	mg/Kg	
PCB 101 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 118 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 138 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 153 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 180 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 28 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 52 (Solid)	323	GCMS	<0.005	mg/Kg	
PCBs Solid (Sum of 7)	323	GCMS	<0.005	mg/Kg	
pH (Leachate)	110	Electrometry	8.30	pH Units	INAB
pH (Solid)	110	Electrometry	8.97	pH Units	



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		Sampled On	05/08/2025 09:45
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phenanthrene (Solid)	200	GCMS	<0.1	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	<0.01	mg/Kg	
p-Isopropyltoluene (Soil) VOC	203	GCMS	<1	mg/kg	
Pyrene (Solid)	200	GCMS	<0.1	mg/kg	
sec-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Selenium (Leachate)	177	ICPMS	<0.03	mg/kg	
Selenium Solid (Other)	224	ICP-OES	0.99	mg/kg	
Solids (Total Dissolved) Leachate	105	Evaporation/ Gravimetry	640	mg/Kg	INAB
Styrene (Soil) VOC	203	GCMS	<1	mg/Kg	
Sulphate (Leachate WAC)	190	IC	50.0	mg/Kg	
Sulphate (Solid)	119	Colorimetry	39.39	mg/Kg as SO ₄	
tert-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
TOC (Solid)	315	TOC Analyser	<1.0	%	
Toluene (Soil) VOC	203	GCMS	<1	mg/Kg	
TPH Solid Aliphatics (>C10-C12)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C12-C16)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C16-C21)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C21-C35)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C35-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (C8-C10)	572	GC x GC-FID	<10.0	mg/kg	



Signed:

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		Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
TPH Solid Aromatics (>C10-C12)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C12-C16)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C16-C21)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C21-C35)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C35-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (C8-C10)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total Aliphatics (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total Aromatics (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
trans-1,2-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
trans-1,3-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
Trichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
Trichlorofluoromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Vinyl Chloride (Soil)	203	GCMS	<1	mg/Kg	
Zinc (Leachate)	177	ICPMS	0.237	mg/kg	
Zinc Solid (Other)	224	ICP-OES	159.18	mg/kg	



Signed:

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Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP03 1.0-1.5	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

NOTES

- Note 1:** The customer is responsible for taking a representative sample. Where drying is required, solid samples are dry crushed to a uniform 2 mm particle size. All pebbles, stones, glass and wood are included, unless removal is requested by the customer. Metal pieces are excluded.
- Note 2:** Please refer to the certificate of analysis for details relating to sample deviation. If samples have been classed as deviating, data may not be representative of the sample at the time of sampling and it is possible that results may be compromised.
- Note 3:** Group LODs are reported as less than the lowest individual LOD.
- Note 4:** Samples are retained for 14 days after the certificate date and will then be disposed of.
- Note 5:** Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.
- Note 6:** Results shall not be reproduced, except in full, without the approval of Fitz Scientific.
- Note 7:** Results contained in this report relate only to the samples tested.
- Note 8:** Fitz Scientific maintain all customer information in the strictest confidence which is legally enforceable.
- Note 9:** The stability period for a test is defined as the time elapsed between sampling and the start of sample preparation. Testing completed any time after this period will be deemed deviant.
- Note 10:** Elemental analysis for soil and construction & demolition waste samples is reported on a dry weight basis.
- Note 11:** Our Total TPH method is a GC X GC method. We do not currently complete a clean up stage. Reported TPH results may include humics and other non TPH organics.
- Note 12:** Please refer to the relevant waste licence conditions at the proposed disposal site.
- Note 13:** Samples are leached in accordance with EN 12457-2:latest revision.
- Note 14:** Leachate results are reported as L/S 10. These results have been calculated in accordance with EN 12457-2:latest revision.
- Note 15:** Asbestos analysis is carried out as only a qualitative method, which means we determine either presence or absence.
- Note 16:** All organic results are analysed as received and all results are corrected for dry weight at 104 C
- Note 17:** In accordance with EN 12457-2:2002, conductivity analysis is performed after the leachate preparation is completed.

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		Sampled On	05/08/2025 11:05
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	93.2	%	
% Loss on Ignition	310	Ashing @ 550 C	1.17	%	
% Moisture Content	302	Calculation	6.8	%	
1,1,1,2-tetrachloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,1-Trichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,2,2-Tetrachloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,2-Trichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2 Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2 Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,3-Trichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,3-Trichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,4-Trichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,4-Trimethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dibromo-3-chloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dibromoethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,3,5-Trimethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	



Signed:

A Harmon

Date: 10/10/2025

Aoife Harmon - Laboratory Supervisor

Acc. : Accredited Parameters by ISO/IEC 17025:2017

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		Sampled On	05/08/2025 11:05
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
1,3-Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,3-Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,4-Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
2,2-Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
2,4-Dinitrotoluene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2,6-dinitrotoluene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Chloronaphthalene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Chlorotoluene (Soil) VOC	203	GCMS	<1	mg/Kg	
2-Methylnaphthalene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Nitroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
3-Nitroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Bromophenylphenyl ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chloroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chlorodiphenyl ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chlorotoluene (Soil) VOC	203	GCMS	<1	mg/Kg	
Acenaphthene (Solid)	200	GCMS	<0.1	mg/kg	
Acenaphthylene (Solid)	200	GCMS	<0.1	mg/kg	
Acid Neutralisation capacity (pH4)	314	Titrimetry	<0.5	mol/Kg	
Acid Neutralisation Capacity (pH7)	314	Titrimetry	<0.5	mol/Kg	
Acid Reserve	582	Titrimetry	<0.05	g NaOH/100g	



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Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Alkali Reserve	582	Titrimetry	<0.05	g NaOH/100g	
Ammonia (Leachate)	114	Colorimetry	0.99	mg/Kg as N	
Anthracene (Solid)	200	GCMS	<0.1	mg/kg	
Antimony (Leachate)	177	ICPMS	<0.02	mg/kg	
Antimony Solid (Other)	224	ICP-OES	3.46	mg/kg	
Arsenic (Leachate)	177	ICPMS	0.034	mg/kg	
Arsenic Solid (Other)	224	ICP-OES	11.29	mg/kg	
Asbestos Identification	574	Microscopy	Not Detected	NA	
Barium (Leachate)	177	ICPMS	0.177	mg/kg	
Barium Solid (Other)	224	ICP-OES	57.31	mg/kg	
Benzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Benzo(a)anthracene (Solid)	200	GCMS	<0.10	mg/kg	
Benzo(a)pyrene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(b)fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(g,h,i)perylene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(k)fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzyl alcohol (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloro-1-methylethyl) ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloroethoxy)methane (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloroethyl)ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	



Signed:

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Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
bis (2-ethylhexyl)phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Boron (Leachate)	177	ICPMS	2.08	mg/kg	
Boron Solid (Other)	224	ICP-OES	7.55	mg/kg	
Bromobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromochloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromodichloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromoform (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromomethane (Solid) VOC	203	GC/MS (Headspace)	<1	mg/kg	
BTEX Total (Solid) VOC	203	GC/MS (Headspace)	<1.00	mg/kg	
Butyl benzyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Cadmium (Leachate)	177	ICPMS	<0.001	mg/kg	
Cadmium Solid (Other)	224	ICP-OES	0.61	mg/kg	
Carbon tetrachloride (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloride (Leachate WAC)	190	IC	24.4	mg/Kg	
Chlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloroform (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Chromium (Leachate)	177	ICPMS	0.026	mg/kg	
Chromium III (Solid)	177	Calculation	29.39	mg/kg	



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Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Chromium Solid (Other)	224	ICP-OES	29.39	mg/kg	
Chromium VI (Solid)	645	Flow analysis	<0.6	mg/kg	
Chrysene (Solid)	200	GCMS	<0.1	mg/Kg	
cis-1,2-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
cis-1,3-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
Conductivity (Leachate) (Solid)(at 20C)	112	Electrometry	289	us/cm @ 20C	INAB
Copper (Leachate)	177	ICPMS	0.042	mg/kg	
Copper Solid (Other)	224	ICP-OES	18.10	mg/kg	
Coronene (Solid)	200	GCMS	<0.1	mg/Kg	
Dibenzo(a,h)anthracene (Solid)	200	GCMS	<0.1	mg/Kg	
Dibenzofuran (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Dibromochloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dibromomethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dichlorodifluoromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dichloromethane (Solid) VOC	203	GC/MS (Headspace)	<1	mg/kg	
di-ethyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-methyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-n-butyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-n-octyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
DOC (Leachate)	621	TOC Analyser	17.6	mg/Kg	



Signed:

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Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Fluorene (Solid)	200	GCMS	<0.1	mg/Kg	
Fluoride (Leachate WAC)	190	IC	0.9	mg/Kg	
Hexachlorobenzene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Hexachlorobutadiene (Soil) VOC	203	GCMS	<1	mg/Kg	
Hexachlorocyclopentadiene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Hexachloroethane (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Indeno(1,2,3-cd)pyrene (Solid)	200	GCMS	<0.1	mg/Kg	
Isophorone (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Isopropylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Lead (Leachate)	177	ICPMS	0.0025	mg/kg	
Lead Solid (Other)	224	ICP-OES	9.71	mg/kg	
m- + p-Xylene (Soil) VOC	203	GCMS	<1	mg/Kg	
Mercury (Leachate)	178	ICPMS	<0.001	mg/kg	
Mercury Solid (OES)	229	ICP-OES	<0.0025	mg/kg	
Mineral Oil (Solid) C10-40	572	GC x GC-FID	<10	mg/kg	
Molybdenum (Leachate)	226	ICPMS	<0.05	mg/kg	
Molybdenum Solid (OES)	228	ICP-OES	0.430	mg/kg	
MtBE (Solid) VOC	203	GCMS	<1	mg/kg	



Signed:

A Harmon

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Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Naphthalene (Soil) VOC	203	GCMS	<1	mg/Kg	
n-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Nickel (Leachate)	177	ICPMS	0.017	mg/kg	
Nickel Solid (Other)	224	ICP-OES	35.91	mg/kg	
Nitrobenzene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
N-nitrosodi-n-propylamine (Solid) SVOC	155	GCMS	<2.5	mg/kg	
n-nitrosodiphenylamine (Solid) SVOC	155	GCMS	<2.5	mg/kg	
n-Propylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
o-Xylene (Soil) VOC	203	GCMS	<1	mg/Kg	
PAHs Solid (Sum of 17)	200	GCMS	<0.1	mg/Kg	
PCB 101 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 118 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 138 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 153 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 180 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 28 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 52 (Solid)	323	GCMS	<0.005	mg/Kg	
PCBs Solid (Sum of 7)	323	GCMS	<0.005	mg/Kg	
pH (Leachate)	110	Electrometry	9.91	pH Units	INAB
pH (Solid)	110	Electrometry	10.69	pH Units	



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Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phenanthrene (Solid)	200	GCMS	<0.1	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	<0.01	mg/Kg	
p-Isopropyltoluene (Soil) VOC	203	GCMS	<1	mg/kg	
Pyrene (Solid)	200	GCMS	<0.1	mg/kg	
sec-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Selenium (Leachate)	177	ICPMS	<0.03	mg/kg	
Selenium Solid (Other)	224	ICP-OES	0.39	mg/kg	
Solids (Total Dissolved) Leachate	105	Evaporation/ Gravimetry	980	mg/Kg	INAB
Styrene (Soil) VOC	203	GCMS	<1	mg/Kg	
Sulphate (Leachate WAC)	190	IC	183.8	mg/Kg	
Sulphate (Solid)	119	Colorimetry	16.09	mg/Kg as SO ₄	
tert-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
TOC (Solid)	315	TOC Analyser	<1.0	%	
Toluene (Soil) VOC	203	GCMS	<1	mg/Kg	
TPH Solid Aliphatics (>C10-C12)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C12-C16)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C16-C21)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C21-C35)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C35-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (C8-C10)	572	GC x GC-FID	<10.0	mg/kg	



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Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

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Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
TPH Solid Aromatics (>C10-C12)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C12-C16)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C16-C21)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C21-C35)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C35-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (C8-C10)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total Aliphatics (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total Aromatics (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
trans-1,2-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
trans-1,3-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
Trichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
Trichlorofluoromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Vinyl Chloride (Soil)	203	GCMS	<1	mg/Kg	
Zinc (Leachate)	177	ICPMS	<0.005	mg/kg	
Zinc Solid (Other)	224	ICP-OES	67.34	mg/kg	



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Customer supplied information appear in italics.

Customer	Mick OConnell OCB Geotechnical Unit 1 Carrigogna Middleton	Lab Report Ref. No.	7299/2508012/02
		Date of Receipt	08/08/2025 10:27
		Sampled On	05/08/2025 11:05
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP10 0.7-1.20	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

NOTES

- Note 1:** The customer is responsible for taking a representative sample. Where drying is required, solid samples are dry crushed to a uniform 2 mm particle size. All pebbles, stones, glass and wood are included, unless removal is requested by the customer. Metal pieces are excluded.
- Note 2:** Please refer to the certificate of analysis for details relating to sample deviation. If samples have been classed as deviating, data may not be representative of the sample at the time of sampling and it is possible that results may be compromised.
- Note 3:** Group LODs are reported as less than the lowest individual LOD.
- Note 4:** Samples are retained for 14 days after the certificate date and will then be disposed of.
- Note 5:** Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.
- Note 6:** Results shall not be reproduced, except in full, without the approval of Fitz Scientific.
- Note 7:** Results contained in this report relate only to the samples tested.
- Note 8:** Fitz Scientific maintain all customer information in the strictest confidence which is legally enforceable.
- Note 9:** The stability period for a test is defined as the time elapsed between sampling and the start of sample preparation. Testing completed any time after this period will be deemed deviant.
- Note 10:** Elemental analysis for soil and construction & demolition waste samples is reported on a dry weight basis.
- Note 11:** Our Total TPH method is a GC X GC method. We do not currently complete a clean up stage. Reported TPH results may include humics and other non TPH organics.
- Note 12:** Please refer to the relevant waste licence conditions at the proposed disposal site.
- Note 13:** Samples are leached in accordance with EN 12457-2:latest revision.
- Note 14:** Leachate results are reported as L/S 10. These results have been calculated in accordance with EN 12457-2:latest revision.
- Note 15:** Asbestos analysis is carried out as only a qualitative method, which means we determine either presence or absence.
- Note 16:** All organic results are analysed as received and all results are corrected for dry weight at 104 C
- Note 17:** In accordance with EN 12457-2:2002, conductivity analysis is performed after the leachate preparation is completed.

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		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	92.2	%	
% Loss on Ignition	310	Ashing @ 550 C	0.8	%	
% Moisture Content	302	Calculation	7.8	%	
1,1,1,2-tetrachloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,1-Trichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,2,2-Tetrachloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1,2-Trichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,1-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2 Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2 Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,3-Trichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,3-Trichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,4-Trichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2,4-Trimethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dibromo-3-chloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dibromoethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,2-Dichloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,3,5-Trimethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	



Signed:

A Harmon

Date: 10/10/2025

Aoife Harmon - Laboratory Supervisor

Acc. : Accredited Parameters by ISO/IEC 17025:2017

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		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
1,3-Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
1,3-Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
1,4-Dichlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
2,2-Dichloropropane (Soil) VOC	203	GCMS	<1	mg/Kg	
2,4-Dinitrotoluene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2,6-dinitrotoluene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Chloronaphthalene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Chlorotoluene (Soil) VOC	203	GCMS	<1	mg/Kg	
2-Methylnaphthalene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
2-Nitroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
3-Nitroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Bromophenylphenyl ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chloroaniline (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chlorodiphenyl ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
4-Chlorotoluene (Soil) VOC	203	GCMS	<1	mg/Kg	
Acenaphthene (Solid)	200	GCMS	<0.1	mg/kg	
Acenaphthylene (Solid)	200	GCMS	<0.1	mg/kg	
Acid Neutralisation capacity (pH4)	314	Titrimetry	<0.5	mol/Kg	
Acid Neutralisation Capacity (pH7)	314	Titrimetry	<0.5	mol/Kg	
Acid Reserve	582	Titrimetry	<0.05	g NaOH/100g	



Signed:

A Harmon

Aoife Harmon - Laboratory Supervisor

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		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Alkali Reserve	582	Titrimetry	<0.05	g NaOH/100g	
Ammonia (Leachate)	114	Colorimetry	0.99	mg/Kg as N	
Anthracene (Solid)	200	GCMS	<0.1	mg/kg	
Antimony (Leachate)	177	ICPMS	<0.02	mg/kg	
Antimony Solid (Other)	224	ICP-OES	1.56	mg/kg	
Arsenic (Leachate)	177	ICPMS	0.024	mg/kg	
Arsenic Solid (Other)	224	ICP-OES	6.21	mg/kg	
Asbestos Identification	574	Microscopy	Not Detected	NA	
Barium (Leachate)	177	ICPMS	0.187	mg/kg	
Barium Solid (Other)	224	ICP-OES	34.35	mg/kg	
Benzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Benzo(a)anthracene (Solid)	200	GCMS	<0.10	mg/kg	
Benzo(a)pyrene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(b)fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(g,h,i)perylene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzo(k)fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Benzyl alcohol (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloro-1-methylethyl) ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloroethoxy)methane (Solid) SVOC	155	GCMS	<2.5	mg/kg	
bis (2-chloroethyl)ether (Solid) SVOC	155	GCMS	<2.5	mg/kg	



Signed:

A Harmon

Aoife Harmon - Laboratory Supervisor

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Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
bis (2-ethylhexyl)phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Boron (Leachate)	177	ICPMS	1.25	mg/kg	
Boron Solid (Other)	224	ICP-OES	2.89	mg/kg	
Bromobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromochloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromodichloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromoform (Soil) VOC	203	GCMS	<1	mg/Kg	
Bromomethane (Solid) VOC	203	GC/MS (Headspace)	<1	mg/kg	
BTEX Total (Solid) VOC	203	GC/MS (Headspace)	<1.00	mg/kg	
Butyl benzyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Cadmium (Leachate)	177	ICPMS	<0.001	mg/kg	
Cadmium Solid (Other)	224	ICP-OES	0.41	mg/kg	
Carbon tetrachloride (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloride (Leachate WAC)	190	IC	22.2	mg/Kg	
Chlorobenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloroethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloroform (Soil) VOC	203	GCMS	<1	mg/Kg	
Chloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Chromium (Leachate)	177	ICPMS	0.033	mg/kg	
Chromium III (Solid)	177	Calculation	13.25	mg/kg	



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Customer PO	Cork P25 PX22	Condition on Receipt	Acceptable
		Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Chromium Solid (Other)	224	ICP-OES	13.25	mg/kg	
Chromium VI (Solid)	645	Flow analysis	<0.6	mg/kg	
Chrysene (Solid)	200	GCMS	<0.1	mg/Kg	
cis-1,2-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
cis-1,3-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
Conductivity (Leachate) (Solid)(at 20C)	112	Electrometry	422	us/cm @ 20C	INAB
Copper (Leachate)	177	ICPMS	0.017	mg/kg	
Copper Solid (Other)	224	ICP-OES	17.87	mg/kg	
Coronene (Solid)	200	GCMS	<0.1	mg/Kg	
Dibenzo(a,h)anthracene (Solid)	200	GCMS	<0.1	mg/Kg	
Dibenzofuran (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Dibromochloromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dibromomethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dichlorodifluoromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Dichloromethane (Solid) VOC	203	GC/MS (Headspace)	<1	mg/kg	
di-ethyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-methyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-n-butyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
di-n-octyl phthalate (Solid) SVOC	155	GCMS	<2.5	mg/kg	
DOC (Leachate)	621	TOC Analyser	14.0	mg/Kg	



Signed:

A Harmon

Aoife Harmon - Laboratory Supervisor

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		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Ethylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Fluoranthene (Solid)	200	GCMS	<0.1	mg/Kg	
Fluorene (Solid)	200	GCMS	<0.1	mg/Kg	
Fluoride (Leachate WAC)	190	IC	0.8	mg/Kg	
Hexachlorobenzene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Hexachlorobutadiene (Soil) VOC	203	GCMS	<1	mg/Kg	
Hexachlorocyclopentadiene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Hexachloroethane (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Indeno(1,2,3-cd)pyrene (Solid)	200	GCMS	<0.1	mg/Kg	
Isophorone (Solid) SVOC	155	GCMS	<2.5	mg/kg	
Isopropylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Lead (Leachate)	177	ICPMS	0.0032	mg/kg	
Lead Solid (Other)	224	ICP-OES	24.86	mg/kg	
m- + p-Xylene (Soil) VOC	203	GCMS	<1	mg/Kg	
Mercury (Leachate)	178	ICPMS	<0.001	mg/kg	
Mercury Solid (OES)	229	ICP-OES	<0.0025	mg/kg	
Mineral Oil (Solid) C10-40	572	GC x GC-FID	<10	mg/kg	
Molybdenum (Leachate)	226	ICPMS	<0.05	mg/kg	
Molybdenum Solid (OES)	228	ICP-OES	0.198	mg/kg	
MtBE (Solid) VOC	203	GCMS	<1	mg/kg	



Signed:

A Harmon

Aoife Harmon - Laboratory Supervisor

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Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Naphthalene (Soil) VOC	203	GCMS	<1	mg/Kg	
n-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Nickel (Leachate)	177	ICPMS	0.012	mg/kg	
Nickel Solid (Other)	224	ICP-OES	19.18	mg/kg	
Nitrobenzene (Solid) SVOC	155	GCMS	<2.5	mg/kg	
N-nitrosodi-n-propylamine (Solid) SVOC	155	GCMS	<2.5	mg/kg	
n-nitrosodiphenylamine (Solid) SVOC	155	GCMS	<2.5	mg/kg	
n-Propylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
o-Xylene (Soil) VOC	203	GCMS	<1	mg/Kg	
PAHs Solid (Sum of 17)	200	GCMS	<0.1	mg/Kg	
PCB 101 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 118 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 138 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 153 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 180 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 28 (Solid)	323	GCMS	<0.005	mg/Kg	
PCB 52 (Solid)	323	GCMS	<0.005	mg/Kg	
PCBs Solid (Sum of 7)	323	GCMS	<0.005	mg/Kg	
pH (Leachate)	110	Electrometry	9.92	pH Units	INAB
pH (Solid)	110	Electrometry	9.91	pH Units	



Signed:

A Harmon

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Aoife Harmon - Laboratory Supervisor

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Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
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Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Phenanthrene (Solid)	200	GCMS	<0.1	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	<0.01	mg/Kg	
p-Isopropyltoluene (Soil) VOC	203	GCMS	<1	mg/kg	
Pyrene (Solid)	200	GCMS	<0.1	mg/kg	
sec-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
Selenium (Leachate)	177	ICPMS	<0.03	mg/kg	
Selenium Solid (Other)	224	ICP-OES	0.15	mg/kg	
Solids (Total Dissolved) Leachate	105	Evaporation/ Gravimetry	1700	mg/Kg	INAB
Styrene (Soil) VOC	203	GCMS	<1	mg/Kg	
Sulphate (Leachate WAC)	190	IC	399.7	mg/Kg	
Sulphate (Solid)	119	Colorimetry	146.78	mg/Kg as SO ₄	
tert-Butylbenzene (Soil) VOC	203	GCMS	<1	mg/Kg	
TOC (Solid)	315	TOC Analyser	<1.0	%	
Toluene (Soil) VOC	203	GCMS	<1	mg/Kg	
TPH Solid Aliphatics (>C10-C12)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C12-C16)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C16-C21)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C21-C35)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (>C35-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aliphatics (C8-C10)	572	GC x GC-FID	<10.0	mg/kg	



Signed:

A Harmon

Date: 10/10/2025

Aoife Harmon - Laboratory Supervisor

Acc. : Accredited Parameters by ISO/IEC 17025:2017

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested (P) : Presumptive Results (C) : Confirmed Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2024)

Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.

Fitz Scientific maintain all customer information in the strictest confidence which is legally enforceable.



A copy of this certificate is available on www.fitzsci.ie.

Customer supplied information appear in italics.

Customer	Mick OConnell OCB Geotechnical Unit 1 Carrigogna Middleton	Lab Report Ref. No.	7299/2508012/03
		Date of Receipt	08/08/2025 10:27
		Sampled On	05/08/2025 14:05
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
TPH Solid Aromatics (>C10-C12)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C12-C16)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C16-C21)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C21-C35)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (>C35-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Aromatics (C8-C10)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total Aliphatics (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
TPH Solid Total Aromatics (C8-C40)	572	GC x GC-FID	<10.0	mg/kg	
trans-1,2-Dichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
trans-1,3-Dichloropropene (Soil) VOC	203	GCMS	<1	mg/Kg	
Trichloroethene (Soil) VOC	203	GCMS	<1	mg/Kg	
Trichlorofluoromethane (Soil) VOC	203	GCMS	<1	mg/Kg	
Vinyl Chloride (Soil)	203	GCMS	<1	mg/Kg	
Zinc (Leachate)	177	ICPMS	0.035	mg/kg	
Zinc Solid (Other)	224	ICP-OES	43.51	mg/kg	



Signed:

A Harmon

Date: 10/10/2025

Aoife Harmon - Laboratory Supervisor

Acc. : Accredited Parameters by ISO/IEC 17025:2017

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested (P) : Presumptive Results (C) : Confirmed Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2024)

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Customer	Mick OConnell OCB Geotechnical Unit 1 Carrigogna Middleton	Lab Report Ref. No.	7299/2508012/03
		Date of Receipt	08/08/2025 10:27
		Sampled On	05/08/2025 14:05
		Date Testing Commenced	08/08/2025
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	Cork P25 PX22	Date of Report	10/10/2025
Customer Ref	25-049 TP07 0.40-.70	Sample Type	Construction & Demolition Waste
Ref 2			
Ref 3			

CERTIFICATE OF ANALYSIS

NOTES

- Note 1:** The customer is responsible for taking a representative sample. Where drying is required, solid samples are dry crushed to a uniform 2 mm particle size. All pebbles, stones, glass and wood are included, unless removal is requested by the customer. Metal pieces are excluded.
- Note 2:** Please refer to the certificate of analysis for details relating to sample deviation. If samples have been classed as deviating, data may not be representative of the sample at the time of sampling and it is possible that results may be compromised.
- Note 3:** Group LODs are reported as less than the lowest individual LOD.
- Note 4:** Samples are retained for 14 days after the certificate date and will then be disposed of.
- Note 5:** Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.
- Note 6:** Results shall not be reproduced, except in full, without the approval of Fitz Scientific.
- Note 7:** Results contained in this report relate only to the samples tested.
- Note 8:** Fitz Scientific maintain all customer information in the strictest confidence which is legally enforceable.
- Note 9:** The stability period for a test is defined as the time elapsed between sampling and the start of sample preparation. Testing completed any time after this period will be deemed deviant.
- Note 10:** Elemental analysis for soil and construction & demolition waste samples is reported on a dry weight basis.
- Note 11:** Our Total TPH method is a GC X GC method. We do not currently complete a clean up stage. Reported TPH results may include humics and other non TPH organics.
- Note 12:** Please refer to the relevant waste licence conditions at the proposed disposal site.
- Note 13:** Samples are leached in accordance with EN 12457-2:latest revision.
- Note 14:** Leachate results are reported as L/S 10. These results have been calculated in accordance with EN 12457-2:latest revision.
- Note 15:** Asbestos analysis is carried out as only a qualitative method, which means we determine either presence or absence.
- Note 16:** All organic results are analysed as received and all results are corrected for dry weight at 104 C
- Note 17:** In accordance with EN 12457-2:2002, conductivity analysis is performed after the leachate preparation is completed.

WASTE CHARACTERISATION REPORT



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MONITORING & TESTING

Mick O'Connell
OCB Geotechnical
Unit 1 Carrigogna
Middleton

Cork P25 PX22

Fitz Scientific
Unit 35
Boyne Business Park
Drogheda
Co. Louth

REPORT REFERENCE: 7299_2508012_R114L

DATE OF ISSUE 10/10/2025
RECEIVED/COLLECTED Courier: DPD
SAMPLES RECEIVED 08/08/2025 - 10:27
ANALYSIS COMMENCED 08/08/2025
NUMBER OF SAMPLES IN THIS REPORT 3

A Harmon

Prepared by: Aoife Harmon | Laboratory Supervisor
Date: 10/10/2025

RECEIVED: 28/05/2026



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WASTE CHARACTERISATION REPORT

Company: OCB Geotechnical

Customer: Mick OConnell

Receipt Time: 08/08/2025 - 10:27

LabRef	7299/2508012/01	7299/2508012/02	7299/2508012/03
Sample Number	01	02	03
Sampled On	05/08/2025	05/08/2025	05/08/2025
Client Reference	25-049 TPO3 1.0-1.5	25-049 TP10 0.7-1.20	25-049 TP07 0.40-0.70
Client Reference 2			

WAC Solid Analysis

	Inert	Stable	Hazardous	LOD	Units	SOP
% Dry Matter				63	%	302
% Loss on Ignition			10	0.2	%	310
BTEX Total (Solid) VOC				1	mg/kg	203
Mineral Oil (Solid) C10-40 [EH_2D_Total]	500			10	mg/kg	572
PAHs Solid (Sum of 17)	100			0.1	mg/kg	200
PCBs Solid (Sum of 7)	1			0.005	mg/Kg	323
pH (Solid)		>6		0	pH Units	110
TOC (Solid)	3	5	6	1	%	315
Acid Neutralisation capacity (pH4)				0.5	mol/Kg	314
Acid Reserve				0.05	g NaOH/100g	582
Acid Neutralisation Capacity (pH7)				0.5	mol/Kg	314
Alkali Reserve				0.05	g NaOH/100g	582

RECEIVED: 28/05/2026



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WASTE CHARACTERISATION REPORT

Company: OCB Geotechnical

Customer: Mick O'Connell

Receipt Time: 08/08/2025 - 10:27

LabRef	7299/2508012/01	7299/2508012/02	7299/2508012/03
Sample Number	01	02	03
Sampled On	05/08/2025	05/08/2025	05/08/2025
Client Reference	25-049 TP03 1.0-1.5	25-049 TP10 0.7-1.20	25-049 TP07 0.40-0.70
Client Reference 2			

WAC Leachate Analysis

	Inert	Stable	Hazardous	LOD	Units	SOP
Antimony (Leachate)	0.06	0.7	5	0.002	mg/kg	177
Arsenic (Leachate)	0.5	2	25	0.0007	mg/kg	177
Barium (Leachate)	20	100	300	0.0003	mg/kg	177
Cadmium (Leachate)	0.04	1	5	0.0001	mg/kg	177
Chloride (Leachate WAC)	800	15000	25000	0.5	mg/kg	190
Chromium (Leachate)	0.5	10	70	0.0001	mg/kg	177
Conductivity (Leachate) (Solid) (at 20C)				21	us/cm @ 20C	112
Copper (Leachate)	2	50	100	0.0001	mg/kg	177
DOC (Leachate)	500	800	1000	22	mg/Kg	621
Fluoride (Leachate WAC)	10	150	500	0.5	mg/Kg	190
Lead (Leachate)	0.5	10	50	0.0001	mg/kg	177
Mercury (Leachate)	0.01	0.2	2	0.0001	mg/kg	178
Molybdenum (Leachate)	0.5	10	30	0.005	mg/kg	226
Nickel (Leachate)	0.4	10	40	0.0001	mg/kg	177
Phenol Index (Leachate)	1			0.01	mg/Kg	128
Selenium (Leachate)	0.1	0.5	7	0.003	mg/kg	177
Solids (Total Dissolved) Leachate	4000	60000	100000	54	mg/Kg	105
Sulphate (Leachate WAC)	1000	20000	50000	0.5	mg/Kg	190
Zinc (Leachate)	4	50	200	0.0005	mg/kg	177

RECEIVED: 28/05/2026



Company: OCB Geotechnical
Customer: Mick OConnell
Receipt Time: 08/08/2025 - 11:00

TPH

Metals OESAsbestos

Asbestos Identification	Not Detected	Not Detected	0	NA	574
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Company: OCB Geotechnical
Customer: Mick OConnell
Receipt Time: 08/08/2025 - 14:00

[illegible]

PAH

Benzo(a)pyrene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Acenaphthene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Anthracene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Phenanthrene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Pyrene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Chrysene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Benzo(b)fluoranthene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Benzo(k)fluoranthene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Indeno(1,2,3-cd)pyrene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Dibenz(a,h)anthracene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Benzo(g,h,i)perylene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Acenaphthylene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Fluoranthene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Fluorene (Solid)	<0.1			<0.1			0.1	mg/kg	200
Benzo(a)anthracene (Solid)	<0.10			<0.10			0.1	mg/kg	200
Coronene (Solid)	<0.1			<0.1			0.1	mg/kg	200

PCB

PCB 28 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323
PCB 52 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323
PCB 101 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323
PCB 118 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323
PCB 153 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323
PCB 138 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323
PCB 180 (Solid)	<0.005	<0.005	<0.005	0.005	mg/Kg	323

mg/kg	323
mg/kg	323
mg/kg	323

WASTE CHARACTERISATION REPORT

Company: OCB Geotechnical
Customer: Mick OConnell
Receipt Time: 08/08/2025 - 10:27

LabRef	7299/2508012/01	7299/2508012/02	7299/2508012/03
Sample Number	01	02	03
Sampled On	05/08/2025	05/08/2025	05/08/2025
Client Reference	25-049 TP03 1.0-1.5	25-049 TP10 0.7-1.20	25-049 TP07 0.40-.70
Client Reference 2			

SVOC

	LOD	Units	SOP
2,4-Dinitrotoluene (Solid) SVOC	<2.5	mg/kg	155
2,6-Dinitrotoluene (Solid) SVOC	<2.5	mg/kg	155
2-Chloronaphthalene (Solid) SVOC	<2.5	mg/kg	155
2-Methylnaphthalene (Solid) SVOC	<2.5	mg/kg	155
2-Nitroaniline (Solid) SVOC	<2.5	mg/kg	155
3-Nitroaniline (Solid) SVOC	<2.5	mg/kg	155
4-Bromophenylphenyl ether (Solid) SVOC	<2.5	mg/kg	155
4-Chloroaniline (Solid) SVOC	<2.5	mg/kg	155
4-Chlorodiphenyl ether (Solid) SVOC	<2.5	mg/kg	155
Benzyl alcohol (Solid) SVOC	<2.5	mg/kg	155
bis (2-chloro-1-methylethyl) ether (Solid) SVOC	<2.5	mg/kg	155
bis (2-chloroethoxy)methane (Solid) SVOC	<2.5	mg/kg	155
bis (2-chloroethyl) ether (Solid) SVOC	<2.5	mg/kg	155
bis (2-ethylhexyl)phthalate (Solid) SVOC	<2.5	mg/kg	155
Butyl benzyl phthalate (Solid) SVOC	<2.5	mg/kg	155
Dibenzofuran (Solid) SVOC	<2.5	mg/kg	155
di-ethyl phthalate (Solid) SVOC	<2.5	mg/kg	155
di-methyl phthalate (Solid) SVOC	<2.5	mg/kg	155
di-n-butyl phthalate (Solid) SVOC	<2.5	mg/kg	155
di-n-octyl phthalate (Solid) SVOC	<2.5	mg/kg	155
Hexachlorobenzene (Solid) SVOC	<2.5	mg/kg	155
Hexachlorocyclopentadiene (Solid) SVOC	<2.5	mg/kg	155
Hexachloroethane (Solid) SVOC	<2.5	mg/kg	155
Isophorone (Solid) SVOC	<2.5	mg/kg	155
Nitrobenzene (Solid) SVOC	<2.5	mg/kg	155
N-nitrosodi-n-propylamine (Solid) SVOC	<2.5	mg/kg	155
n-nitrosodiphenylamine (Solid) SVOC	<2.5	mg/kg	155

VOC

Bromomethane (Solid) VOC	<1	mg/kg	203
Dichloromethane (Solid) VOC	<1	mg/kg	203
MtBE (Solid) VOC	<1	mg/kg	203



WASTE CHARACTERISATION REPORT

Company: OCB Geotechnical

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Receipt Time: 08/08/2025 - 10:27

LabRef	7299/2508012/01	7299/2508012/02	7299/2508012/03
Sample Number	01	02	03
Sampled On	05/08/2025	05/08/2025	05/08/2025
Client Reference	25-049 TP03 1.0-1.5	25-049 TP10 0.7-1.20	25-049 TP07 0.40-70
Client Reference 2			

Other

% Moisture Content	5.5	6.8	7.8	1.5	%	LOD	Units	SOP
1,1,1,2-tetrachloroethane (Soil) VOC	<1	<1	<1	1	mg/Kg	302		203
1,1,1-Trichloroethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,1,2,2-Tetrachloroethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,1,2-Trichloroethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,1-Dichloroethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,1-Dichloroethene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,1-Dichloropropene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2-Dichlorobenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2-Dichloropropane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2,3-Trichlorobenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2,3-Trichloropropane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2,4-Trichlorobenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2,4-Trimethylbenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2-Dibromo-3-chloropropane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2-Dibromoethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,2-Dichloroethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,3,5-Trimethylbenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,3-Dichlorobenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,3-Dichloropropane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
1,4-Dichlorobenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
2,2-Dichloropropane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
2-Chlorotoluene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
4-Chlorotoluene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
Ammonia (Leachate)	0.72	0.99	0.99	0.01	mg/Kg as N	114		203
Antimony Solid (Other)	4.78	3.46	1.56	0.1	mg/kg	224		203
Arsenic Solid (Other)	7.42	11.29	6.21	0.1	mg/kg	224		203
Barium Solid (Other)	24.12	57.31	34.35	0.1	mg/kg	224		203
Benzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
Boron (Leachate)	3.64	2.08	1.25	0.0017	mg/kg	177		203
Boron Solid (Other)	3.73	7.55	2.89	0.1	mg/kg	224		203
Bromobenzene (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
Bromochloromethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203
Bromodichloromethane (Soil) VOC	<1	<1	<1	1	mg/Kg	203		203

WASTE CHARACTERISATION REPORT

Company: OCB Geotechnical

Customer: Mick OConnell

Receipt Time: 08/08/2025 - 10:27

Bromoform (Soil) VOC	<1	<1	<1	<1	1	mg/kg	203
Cadmium Solid (Other)	0.54	0.61	0.41	0.1	0.1	mg/kg	224
Carbon tetrachloride (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Chlorobenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Chloroethane (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Chloroform (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Chloromethane (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Chromium III (Solid)	31.21	29.39	13.25	0.01	0.01	mg/kg	177
Chromium Solid (Other)	31.21	29.39	13.25	0.1	0.1	mg/kg	224
Chromium VI (Solid)	<0.6	<0.6	<0.6	0.6	0.6	mg/kg	645
cis-1,2-Dichloroethene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
cis-1,3-Dichloropropene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Copper Solid (Other)	15.65	18.10	17.87	0.1	0.1	mg/kg	224
Dibromochloromethane (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Dibromomethane (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Dichlorodifluoromethane (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Ethylbenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Hexachlorobutadiene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Isopropylbenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Lead Solid (Other)	11.59	9.71	24.86	0.1	0.1	mg/kg	224
m- + p-Xylene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Naphthalene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
n-Butylbenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Nickel Solid (Other)	31.14	35.91	19.18	0.1	0.1	mg/kg	224
n-Propylbenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
o-Xylene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
pH (Leachate)	8.30	9.91	9.92	4	4	pH Units	110
p-Isopropyltoluene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
sec-Butylbenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Selenium Solid (Other)	0.99	0.39	0.15	0.1	0.1	mg/kg	224
Styrene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Sulphate (Solid)	39.39	16.09	146.78	1.39	1.39	mg/kg as SO4	119
tert-Butylbenzene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Toluene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
trans-1,2-Dichloroethene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
trans-1,3-Dichloropropene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Trichloroethene (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Trichlorofluoromethane (Soil) VOC	<1	<1	<1	1	1	mg/kg	203
Vinyl Chloride (Soil)	<1	<1	<1	1	1	mg/kg	203
Zinc Solid (Other)	159.18	67.34	43.51	0.1	0.1	mg/kg	224



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Parameter	Description	Preparation Step	Analysis	Report On	SOP	Matrix Accreditation	HWOL Acronym
% Loss on Ignition	Dried sample is placed in furnace.	Sample is dried	Dried	Dry Weight	310	Soil, Solids (CDW, BDW, RA), Sludge	
% Moisture Content	Determination of moisture content using gravimetric measurement and 104 °C as drying condition.	No preparation is required	As Received	Wet Weight	302	Soil, Solids (CDW, BDW, RA), Sludge	
% Dry Matter	Determination of dry matter using gravimetric measurement and 104°C as drying condition	No preparation is required	As Received	Wet Weight	302	Soil, Solids (CDW, BDW, RA), Sludge	
BTEX (Solid)	Determination of the sum of benzene, toluene, ethylbenzene and xylenes using headspace GC-FID.	Sample is weighed as received and immersed in ultrapure water	As Received	Dry Weight	198	No	HS_ID_Total
Mineral Oil (Solid) C10-C40	Determination of extractable mineral oil in soils and solids by GCxGC-FID.	Sample is weighed as received and extracted using dichloromethane as solvent and PAL RTC System as automatic extraction.	As Received	Dry Weight	572	Soil & Solid (CDW)	EH_2D_Total
PAH (Sum of 17)	Determination of PAHs compounds using manual solvent extraction followed by GC-MS detection.	Extraction of solid samples using ASE system. After evaporation in ExcelVap reduced 1 mL and analysis is proceeded	As Received	Dry Weight	200	No	
PCBs (Sum of 7)	Determination of PAHs compounds using method for manual solvent extraction followed by GC-MS detection.	Extraction of solid samples using ultrasonic bath. After evaporation in ExcelVap reduced 1 mL and analysis is proceeded	As Received	Dry Weight	201	No	
pH	Determination of pH of a sample immersed in water using pH meter.	Sample is dried and grinded before analysis. Sample is weighed as received, immersed in ultrapure water and shook for an hour.	Dried	N/A	300	Soil, Solids (CDW, BDW, RA), Sludge, Leachate	
Acid Neutralisation Capacity (pH 4)	Titration of the sample using either acid or alkaline solutions to determine the buffer capacity of the sample.	Sample is dried and grinded before analysis. Sample is weighed as received, immersed in ultrapure water and shook for an hour.	Dried	N/A	314	No	
Acid Neutralisation Capacity (pH 7)	Titration of the sample using either acid or alkaline solutions to determine the buffer capacity of the sample.	Sample is dried and grinded before analysis. Sample is weighed as received, immersed in ultrapure water and shook for an hour.	Dried	N/A	314	No	

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Parameter	Description	Preparation Step	Analysis	Report On	SOP	Matrix Accreditation	HWOL Acronym
Acid Reserve	Titration of the sample using either acid or alkaline solutions to determine the buffer capacity of the sample.	Sample is dried and grinded before analysis. Sample is weighed as received, immersed in ultrapure water and shaken for an hour.	Dried	N/A	582	No	
Alkali Reserve	Titration of the sample using either acid or alkaline solutions to determine the buffer capacity of the sample.	Sample is dried and grinded before analysis. Sample is weighed as received, immersed in ultrapure water and shaken for an hour.	Dried	N/A	582	No	
Antimony (Leachate), Arsenic (Leachate), Barium (Leachate), Cadmium (Leachate), Chromium (Leachate), Copper (Leachate), Lead (Leachate), Mercury Leachate, Molybdenum (Leachate), Nickel (Leachate), Selenium (Leachate), Zinc (Leachate), Vanadium (Leachate)	Determination of Trace Metals in Leachate by ICP-MS.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Addition of Nitric Acid to the filtrate (leachate).	Leachate	Dry Weight	177	No	
Chloride (Leachate)	Determination of Anions in Leachate by Ion Chromatography.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Final microfiltration of the filtrate (leachate).	Leachate	Dry Weight	622	Soil & Solid (CDW/RA)	
DOC (Leachate)	Determination of Dissolved Organic Carbon in Leachate by TOC Analyser.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration under vacuum. Final microfiltration of the filtrate (leachate). Addition of Phosphoric acid to leachate.	Leachate	Dry Weight	621	Soil & Solid (CDW/RA)	
Fluoride (Leachate)	Determination of Anions in Leachate by Ion Chromatography.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Final microfiltration of the filtrate (leachate).	Leachate	Dry Weight	622	Soil & Solid (CDW/RA)	
Phenol Index (Leachate)	Determination of Phenols in Leachate by Spectrophotometry.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hrs. Proceeded by filtration. Addition of alkaline solution to Filtrate (leachate), phenol reagents. Finally extracted using chloroform by liquid-liquid extraction.	Leachate	Dry Weight	162	No	



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Parameter	Description	Preparation Step	Analysis	Report On	SOP	Matrix Accreditation	HWOL Acronym
Solids (Total Dissolved) (Leachate)	Determination of solids dissolved using gravimetric measurement and 180 °C as drying condition.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Additional filtration of the filtrate (leachate).	Leachate	Dry Weight	105	Soil & Solid (CDW/RA)	
Sulphate (Leachate)	Determination of Anions in Leachate by Ion Chromatography.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Final microfiltration of the filtrate (leachate).	Leachate	Dry Weight	622	Soil & Solid (CDW/RA)	
Total Petroleum Hydrocarbons	Determination of TPH compounds using automatic solvent extraction followed by GC X GC - FID.	GC X GC - no clean up	As Received	Dry Weight	572	Soil, Construction & Demolition Waste	
TOC	Determination of Total Organic Carbon by difference method using Total Inorganic Carbon by dosing acid and Total Carbon by combustion in TOC furnace in the presence of oxygen.	Sample is dried, grinded and sieved before analysis.	Dried	Dry Weight	315	Soil & Solid (CDW/RA/BDW)	
Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Vanadium, Zinc	Determination of Trace Metals by ICP-OES.	Sample is dried, grinded and sieved before analysis. Sample is digested with reflux of diluted Nitric Acid solution at 110C for 1 hour.	Dried	Dry Weight	616	Soil	
Antimony, Boron, Beryllium, Cobalt, Manganese, Cadmium, SRS, Silver, Strontium, Thallium	Determination of Trace Metals by ICP-OES.	Sample is dried, grinded and sieved before analysis. Sample is digested with reflux of diluted Nitric Acid solution at 110C for 1 hour.	Dried	Dry Weight	224	No	
Mercury	Determination of Trace Metals by ICP-OES.	Sample is dried, grinded and sieved before analysis. Sample is digested with reflux of diluted Nitric Acid solution at 110C for 1 hour.	Dried	Dry Weight	229	No	
Molybdenum	Determination of Trace Metals by ICP-OES.	Sample is dried, grinded and sieved before analysis. Sample is digested with reflux of diluted Nitric Acid solution at 110C for 1 hour.	Dried	Dry Weight	228	No	



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Parameter	Description	Preparation Step	Analysis	Report On	SOP	Matrix Accreditation	HWOL Acronym
Asbestos Identification	Identification of Asbestos in Bulk Materials, Soils and Solids using PLM Microscope.	Solid samples are analysed with visual inspection under stereo microscope.	As Received	N/A	574	No	
Sulphate	Determination of Sulphate by Colorimetry	Sample is weighed and immersed in standard solution, shaken for 30 min filtered. Filtrate solution is analysed.	As Received	Dry Weight	119	No	
MtBE VOC	Determination of MtBE by GC-MS detection.	Extraction of solid samples using microwave. After slow evaporation solvent is reduced 1 mL and analysis is proceeded.	As Received	Dry Weight	203	No	
VOCs	Determination of VOCs by GC-MS	Extraction of solid samples using ASE system. After evaporation in ExcelVap reduced 1 mL and analysis is proceeded.	As Received	Dry Weight	644	Soil & Solid (CDW)	
SVOCs	Determination of SVOCs by GC-MS	Extraction of solid samples using ASE system. After evaporation in ExcelVap reduced 1 mL and analysis is proceeded.	As Received	Dry Weight	155	No	
Ammonia	Determination of Ammonia in Leachate by Colorimetry	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Final microfiltration of the filtrate (leachate).	Leachate	Dry Weight	114	No	
Soil Classification	Determination of soil type by sieving and gravimetric measurement	Sample is dried	Dried	N/A	207	No	
Stones Content	Determination of stones type by sieving and gravimetric measurement	Sample is dried	Dried	N/A	126	No	

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Parameter	Description	Preparation Step	Analysis	Report On	SOP	Matrix Accreditation	HWOL Acronym
Conductivity (Solid) 1:5 or 1:2	Conductivity Meter	Sample is dried and grinded before analysis.	Dried	N/A	112	No	
Conductivity (Leachate)	Conductivity Meter	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration.	Leachate	N/A	112	Soil & Solid (CDW/RA)	
Nitrogen (Total Kjeldahl) Solid	Digestion and Distillation	Sample is dried and grinded before analysis.	Dried	Dry Weight	104	No	
Carbon Nitrogen Ratio	By Calculation	Sample is dried and grinded before analysis.	Dried	N/A	124	No	
Phosphorus (Available)	Standard soil analysis using Morgan's Extract	Sample is dried and grinded before analysis.	Dried	Dry Weight	301	Soil	
Potassium Exchangeable	Standard soil analysis using Morgan's Extract	Sample is dried and grinded before analysis.	Dried	Dry Weight	303	Soil	
Magnesium Exchangeable	Standard soil analysis using Morgan's Extract	Sample is dried and grinded before analysis.	Dried	Dry Weight	303	Soil	
Available Lime	Based on Shoemaker, McLean and Pratt (SMP) 1960	Sample is dried and grinded before analysis.	Dried	Dry Weight	304	Soil - Mineral & Peat	
Sulphate (Solid)	Colormetric determination	Sample is dried and grinded before analysis.	Dried	Dry Weight	119	No	



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Parameter	Description	Preparation Step	Analysis	Report On	SOP	Matrix Accreditation	HWOL Acronym
Ammonia (Solid)	Colormetric determination	Sample is dried and grinded before analysis.	Dried	Dry Weight	114	No	
Cr VI	Determination of Trace Metals in Solid matrix	Sample is dried and grinded prior to extraction with acidic solution and analyzed with Discrete Analyzer.	Dried	Dry Weight	146	No	
Arsenic	Determination of Trace Metals in Solid by ICP-OES	Sample is dried and grinded prior to digestion with Aqua Regia in reflux.	Dried	Dry Weight	224	No	
Lead	Determination of Trace Metals in Solid by ICP-OES	Sample is dried and grinded prior to digestion with Aqua Regia in reflux.	Dried	Dry Weight	224	No	
Vanadium (Leachate)	Determination of Trace Metals in Solid by ICP-OES	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Addition of Nitric Acid to the filtrate (leachate).	Leachate	Dry Weight	177	No	
Phenols	Determination of Phenols compounds using method for manual solvent extraction of leachate solution followed by GC-MS	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration. Final extraction with solvent. After evaporation in ExcelVap reduced 1 mL and analysis is proceeded.	Leachate	Dry Weight	223	No	
Sulphate Water Soluble, Chloride Water Soluble	Determination of Anions in Leachate by Ion Chromatography.	After drying and sieving, the sample is immersed in ultrapure water and shaken for 24 hours. Proceeded by filtration under vacuum. Final microfiltration of the filtrate (leachate).	Leachate 1:2	Dry Weight	622	No	
Total Neutralization Value	Titration of the sample using alkaline solutions to determine the neutralization capacity of the sample.	Sample is dried, weighed, HCl is added and heated to boil for 5 minutes before analysis.	Dried	N/A	552	No	

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Abbreviation Description

LOD	Limit of Detection
BTEX	Sum of Benzene, Toluene, Ethylbenzene and Xylenes
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
TOC	Total Organic Carbon
TIC	Total Inorganic Carbon
TC	Total Carbon (TOC + TIC)
ICP-OES	Inductively Coupled Plasma - Optical Emissions Spectrometry
GC	Gas Chromatography
GCxGC	Gas Chromatography using 2 columns and a modulator
FID	Flame Ionisation Detector
PCM	Polarised Light Microscope

GLOSSARY

HWOL Acronym Description

HS	Headspace
EH	Extractable Hydrocarbons
CU	Clean up - e.g. by florisil or silica gel
ID	GC Single coil gas chromatography
Total	Aliphatic and aromatic
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double coil gas chromatography
MS	Mass Spectrometry
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
-	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

NOTES

- NOTE 1:** Please refer to attached method schedule for basis of reported units.
- NOTE 2:** Elemental analysis for soil and construction & demolition waste samples is reported on a dry weight basis.
- NOTE 3:** Elemental analysis for sludge samples is reported on a wet weight basis.
- NOTE 4:** We define sludge, as generally, any solid samples with a moisture content >70%.
- NOTE 5:** Please refer to the certificate of analysis for details relating to sample deviation. If samples have been classed as deviating, data may not be representative of the sample at the time of sampling and it is possible that results may be compromised.
- NOTE 6:** Our Total TPH method is a GC X GC method. We do not currently complete a clean up stage. Reported TPH results may include humics and other non TPH organics.
- NOTE 7:** The stability period for a test is defined as the time elapsed between sampling and the start of sample preparation. Testing completed any time after this period will be deemed deviant.
- NOTE 8:** The customer is responsible for taking a representative sample. Where drying is required, solid samples are dry crushed to a uniform 2mm particle size. All pebbles, stones, glass and wood are included, unless removal is requested by the customer. Metal pieces are excluded.
- NOTE 9:** Group LODs are reported as less than the lowest individual LOD.
- NOTE 10:** Results shall not be reproduced, except in full, without the approval of Fitz Scientific.
- NOTE 11:** Results contained in this report relate only to the samples tested.
- NOTE 12:** Final results will be issued without any estimated uncertainty of measurement being applied. This can be supplied on request.
- NOTE 13:** Samples are retained for 14 days after the certificate date and will then be disposed of.
- NOTE 14:** Please refer to the relevant waste licence conditions at the proposed disposal site.
- NOTE 15:** Samples are leached in accordance with EN 12457-2:2002.
- NOTE 16:** Leachate results are reported as L/S 10. These results have been calculated in accordance with EN 12457-2:2002.
- NOTE 17:** Inert, stable and hazardous values are taken from Criteria and Procedures for the acceptance of Waste at Landfills (2003/33/EC).
- NOTE 18:** Asbestos analysis is carried out as only a qualitative method, which means we determine either presence or absence.

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Appendix K Rock Outcrop Photographs



Parkway Valley, Dublin
Road, Singland,
Limerick

**Rock Outcrops at
South End of Site**

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	July 2025



Parkway Valley, Dublin
Road, Singland,
Limerick

**Rock Outcrop and
Scree at South Slope**

CLIENT

Kirkland Investments

ENGINEER

Punch Consulting Engineers

DATE

July 2025



Parkway Valley, Dublin
Road, Singland,
Limerick

**Rock Outcrop at
South End of Site**

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers	
DATE	August 2025

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Parkway Valley, Dublin
Road, Singland,
Limerick

**Rock Outcrop at
South End of Site**

CLIENT Kirkland Investments	
ENGINEER Punch Consulting Engineers.	
DATE	August 2025