

## Soils Laboratory Results Summary

Address: **5 Westfield Court, Mirfield, West Yorkshire, WF14 9PT**

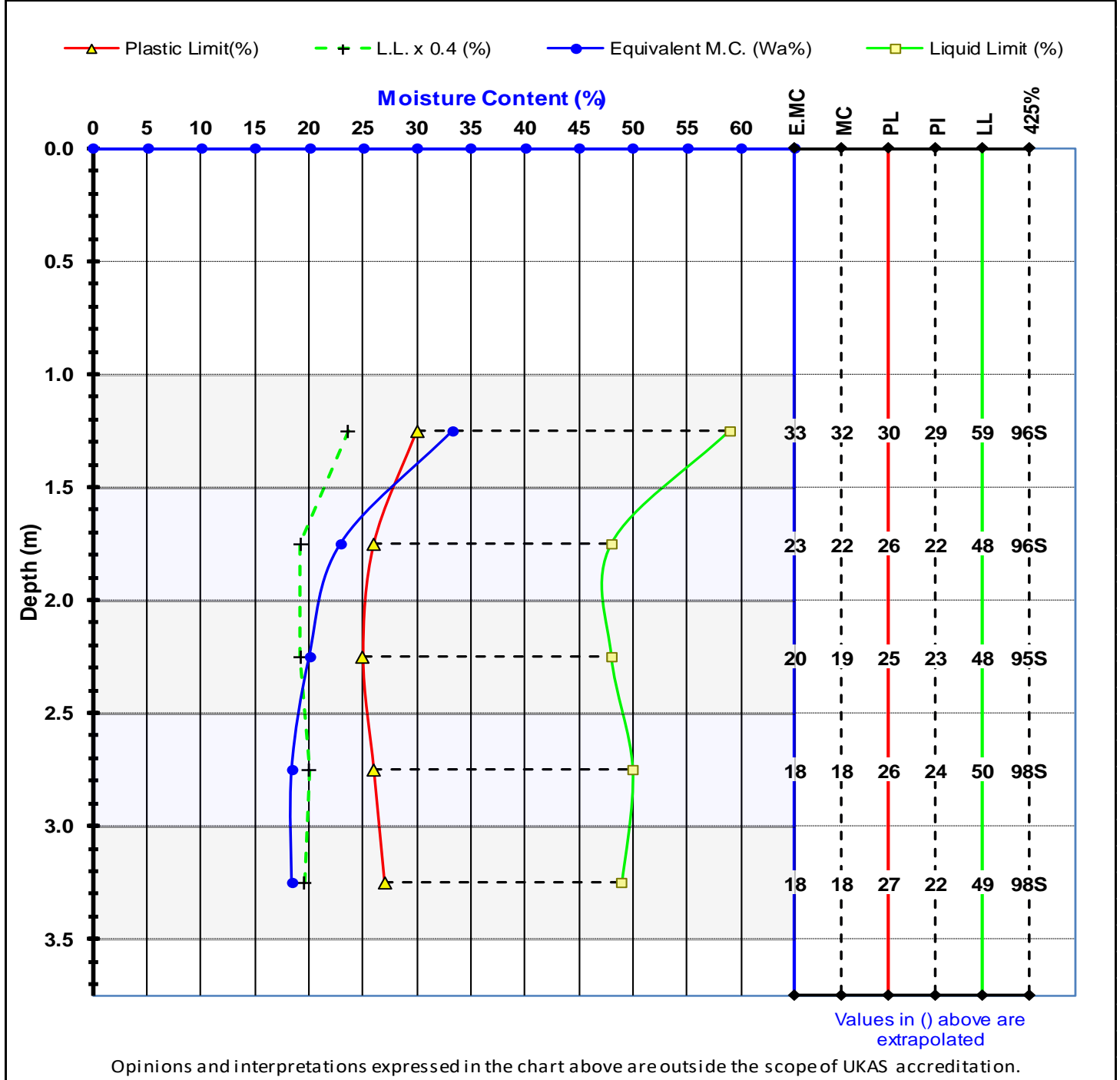
Reference: DLG-SN-22-005272

SI Date: 25-11-24

Laboratory: **DRC Soils Lab**

Lab Ref: LJ12002 Date: 17-12-24

Depth T (m)	Depth B (m)	1 - Rear LHC of extension		Plasticity (BS 5930)	Volume Change (BRE 240)	
		Brief Soil Description			M.PI	(BRE 240)
1	1.5	Firm light grey/dark brown slightly sandy/silty CLAY with some medium gravel & rare rootlets		High CH	28%	Medium
1.5	2	Firm light grey/brown slightly sandy/silty CLAY with some medium gravel		Intmd. CI	21%	Medium
2	2.5	Firm/stiff friable light grey/brown slightly sandy/silty CLAY with some medium gravel		Intmd. CI	22%	Medium
2.5	3	Firm/stiff friable grey/brown slightly sandy/silty CLAY with some medium gravel		Intmd. CI	24%	Medium
3	3.5	Firm/stiff friable grey/brown slightly sandy/silty CLAY with some medium gravel		Intmd. CI	22%	Medium



**Key:**

**MC** = Natural Moisture Content (%)

**E.MC** = Equivalent Moisture Content (%) =  $MC \times 100 / 425\%$

**M.PI** = Modified Plasticity Index (%) =  $PI \times 425\% / 100$

**425%** = Material passing the 425µm sieve (%) + (N = Natural or S = Sieved)

**Notes:** All samples received as Disturbed unless noted below in the comments.

Samples prepared in accordance to BS1377:Part 1:1990 Section 7 & described in general accordance with BS5930:1999.

Samples tested in accordance to BS1377:Part 2:1990 Section 3.2, 4.4 & 5.

**Comments:** Desiccated at depth.

**PL** = Plastic Limit (%)

**PI** = Plasticity Index (%) =  $LL - PL$

**LL** = Liquid Limit (%)

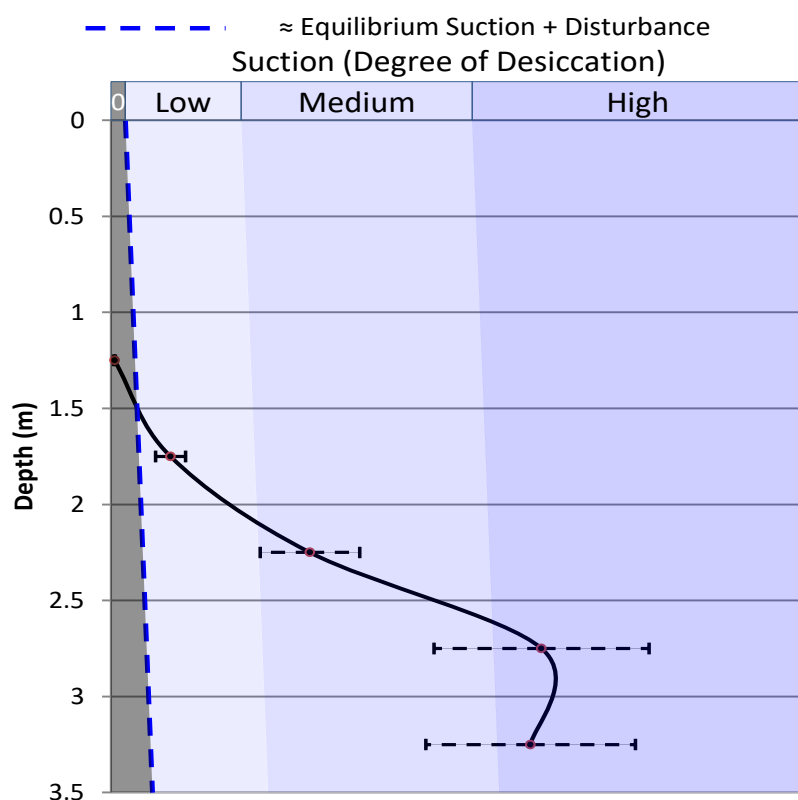
**LL x 0.4** = 40% of the LL (%)

**NP** = Non Plastic

## Soils Analysis

Address:	5 Westfield Court, Mirfield, West Yorkshire, WF14 9PT - Ref. DLG-SN-22-005272		
Lab Ref: LJ12002	SI Date: 25-11-24	1 - Rear LHC of extension	

### Predicted Suction Profile



The predicted suction profile to the left has been calculated from the present test results and analysed against a large database of previous test results and is based upon variables such as location, soil type, deposit type, likely previous stress history, depth, matric suction, MC, plasticity, % passing the 425µm sieve and oedometer tests among others.

Approximate potential error bars are shown. The potential heave below has been calculated from the predicted suction profile in accordance with: *BRE Digest 412 (1996) "Using suction profiles"*

≈ Heave Potential = 9 to 12mm      **Med. 11mm**  
 ∴ ≈ Predicted heave over the recorded depth of (1 to 3.5m) 2.5m is about:      **0 to 3cm.**

Below is a heave calculation based on: *BRE Digest 412 (1996) "Using water content profiles"*  
 The Equivalent MCs have been used.  
 The Equilibrium MC's have been calculated from the analysis above.

### Moisture Content Heave Calculation

Max Sample Depth	Moisture Content BH1	≈ Equilibrium Moisture Content	Layer Depth	Layer Water Deficiency	Cumulative Water Deficiency	Heave Potential
Z (m)	$w_f$ (%)	$w_i$ (%)	$\Delta H$ (mm)	(mm)	(mm)	(mm)
1.5	33	27	500	0	43	11
2.0	23	23	500	3	43	11
2.5	20	21	500	10	39	10
3.0	18	20	500	17	29	7
3.5	18	20	500	13	13	3
					<b>Total =</b>	<b>11mm</b>

## Soils Laboratory Results Summary

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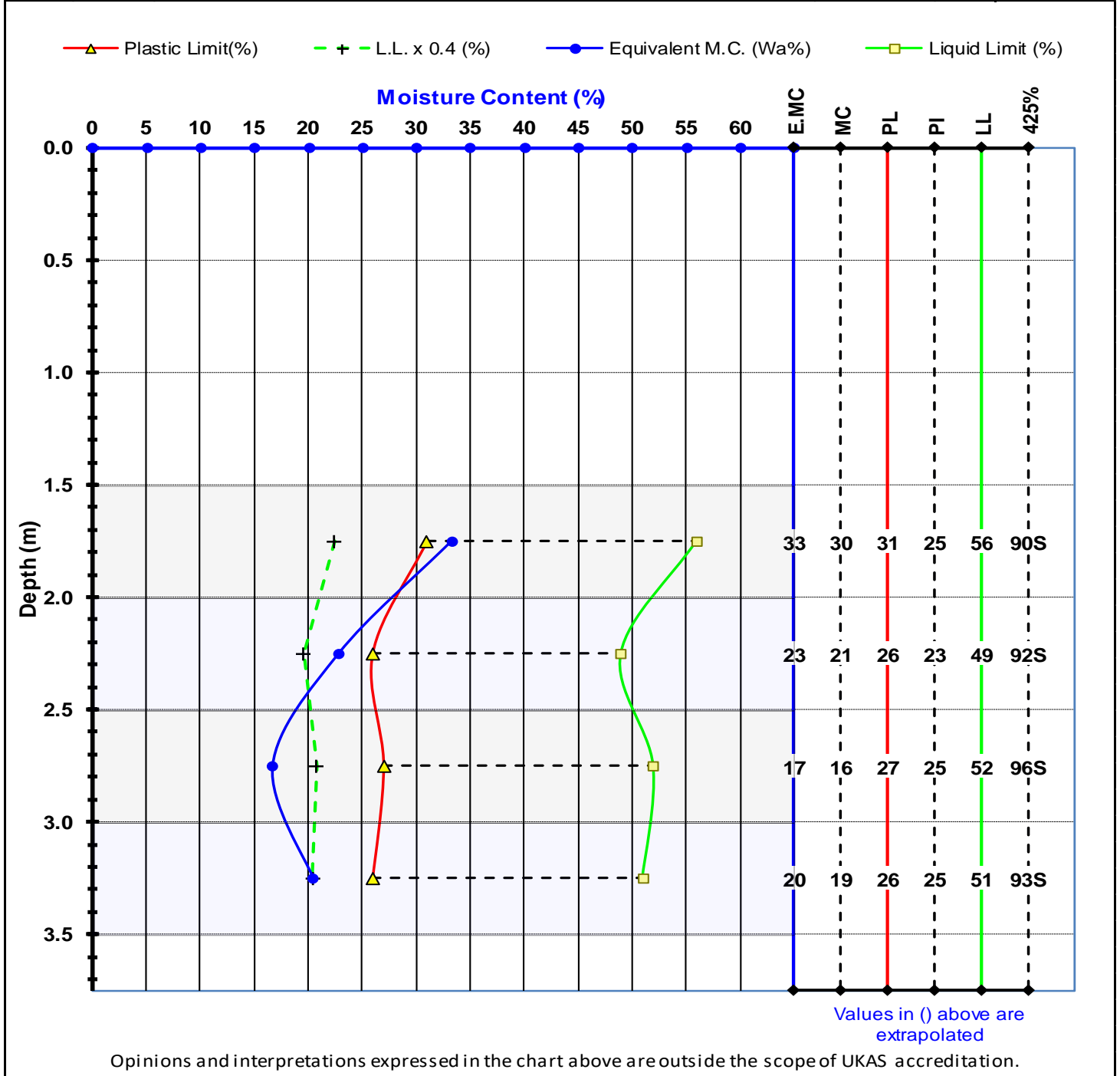
Reference: DLG-SN-22-005272

SI Date: 25-11-24

Laboratory: **DRC Soils Lab**

Lab Ref: LJ12002 Date: 17-12-24

Depth T (m)	Depth B (m)	2 - Midway original house	Plasticity (BS 5930)	Volume Change (BRE 240)	
		Brief Soil Description		M.PI	(%)
1.5	2	Soft/firm grey/brown slightly sandy/silty CLAY with some medium gravel & rare rootlets	High MH	23%	Medium
2	2.5	Firm grey/brown slightly sandy/silty CLAY with some medium gravel	Intmd. CI	21%	Medium
2.5	3	Firm/stiff friable grey/brown slightly sandy/silty CLAY with some medium gravel	High CH	24%	Medium
3	3.5	Firm/stiff friable grey/brown slightly sandy/silty CLAY with some medium gravel	High CH	23%	Medium



**Key:**

**MC** = Natural Moisture Content (%)

**E.MC** = Equivalent Moisture Content (%) =  $MC \times 100 / 425\%$

**M.PI** = Modified Plasticity Index (%) =  $PI \times 425\% / 100$

**425%** = Material passing the 425µm sieve (%) + (N = Natural or S = Sieved)

**Notes:** All samples received as Disturbed unless noted below in the comments.

Samples prepared in accordance to BS1377:Part 1:1990 Section 7 & described in general accordance with BS5930:1999.

Samples tested in accordance to BS1377:Part 2:1990 Section 3.2, 4.4 & 5.

**Comments:** Desiccated with typical bulge centred around 2.75m.

See Analysis Below:

**PL** = Plastic Limit (%)

**PI** = Plasticity Index (%) =  $LL - PL$

**LL** = Liquid Limit (%)

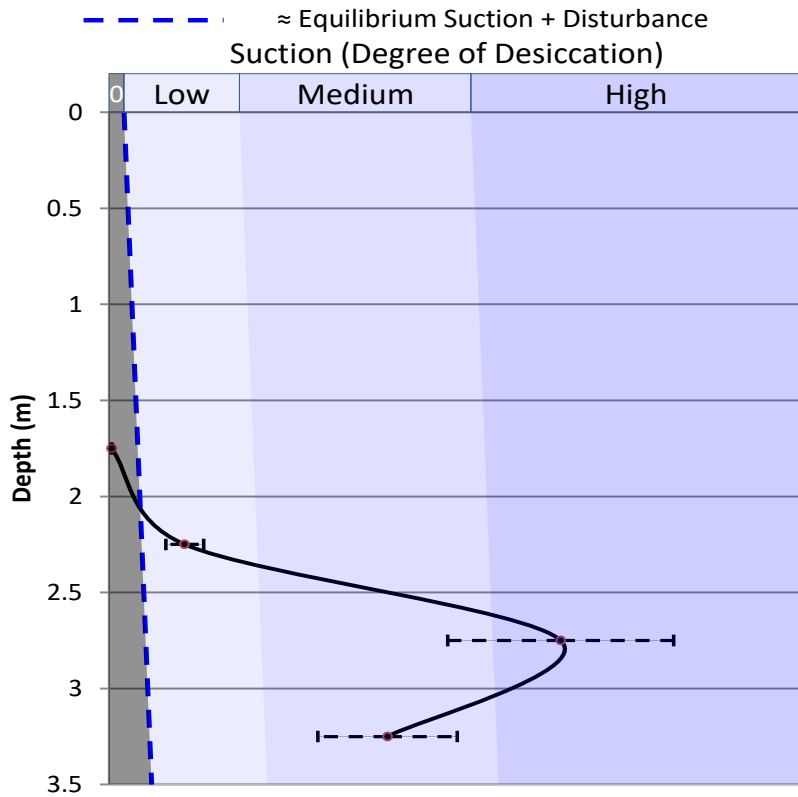
**LL x 0.4** = 40% of the LL (%)

**NP** = Non Plastic

# Soils Analysis

Address:	5 Westfield Court, Mirfield, West Yorkshire, WF14 9PT - Ref. DLG-SN-22-005272		
Lab Ref: LJ12002	SI Date: 25-11-24	2 - Midway original house	

## Predicted Suction Profile



The predicted suction profile to the left has been calculated from the present test results and analysed against a large database of previous test results and is based upon variables such as location, soil type, deposit type, likely previous stress history, depth, matric suction, MC, plasticity, % passing the 425µm sieve and oedometer tests among others.

Approximate potential error bars are shown. The potential heave below has been calculated from the predicted suction profile in accordance with: *BRE Digest 412 (1996) "Using suction profiles"*

≈ Heave Potential = 7 to 10mm      **Med. 8mm**  
 ∴ ≈ Predicted heave over the recorded depth of (1.5 to 3.5m) 2m is about:      **0 to 2cm.**

Below is a heave calculation based on: *BRE Digest 412 (1996) "Using water content profiles"*  
 The Equivalent MCs have been used.  
 The Equilibrium MC's have been calculated from the analysis above.

## Moisture Content Heave Calculation

Max Sample Depth	Moisture Content BH1	≈ Equilibrium Moisture Content	Layer Depth	Layer Water Deficiency	Cumulative Water Deficiency	Heave Potential
Z (m)	$w_f$ (%)	$w_i$ (%)	$\Delta H$ (mm)	(mm)	(mm)	(mm)
2.0	33	26	500	0	34	8
2.5	23	23	500	4	34	8
3.0	17	18	500	18	30	8
3.5	20	22	500	13	13	3
					<b>Total =</b>	<b>8mm</b>