

## CPT ANALYSIS NOTES




### Soil Type

Interpretation using chart of Robertson & Campanella (1983). This is a simple but well proven interpretation using cone tip resistance ( $q_c$ ) and friction ratio ( $f_R$ ) only. No normalisation for overburden stress is applied. Cone tip resistance measured with the piezocone is corrected with measured pore pressure ( $u_c$ ).

	sand (and gravel)
	silt-sand
	silt
	clay-silt
	clay
	peat

### Liquefaction Screening

The purpose of the screening is to highlight susceptible soils, that is sand and silt-sand in a relatively loose condition. This is not a full liquefaction risk assessment which requires knowledge of the particular earthquake risk at a site and additional analysis. The screening is based on the chart of Shibata and Teparaksa (1988).

	high susceptibility
	medium susceptibility
	low susceptibility

High susceptibility is here defined as requiring a shear stress ratio of 0.2 to cause liquefaction with  $D_{50}$  for sands assumed to be 0.25 mm and for silty sands to be 0.05 mm.

Medium susceptibility is here defined as requiring a shear stress ratio of 0.4 to cause liquefaction with  $D_{50}$  for sands assumed to be 0.25 mm and for silty sands to be 0.05 mm.

Low susceptibility is all other cases.

### Relative Density ( $D_R$ )

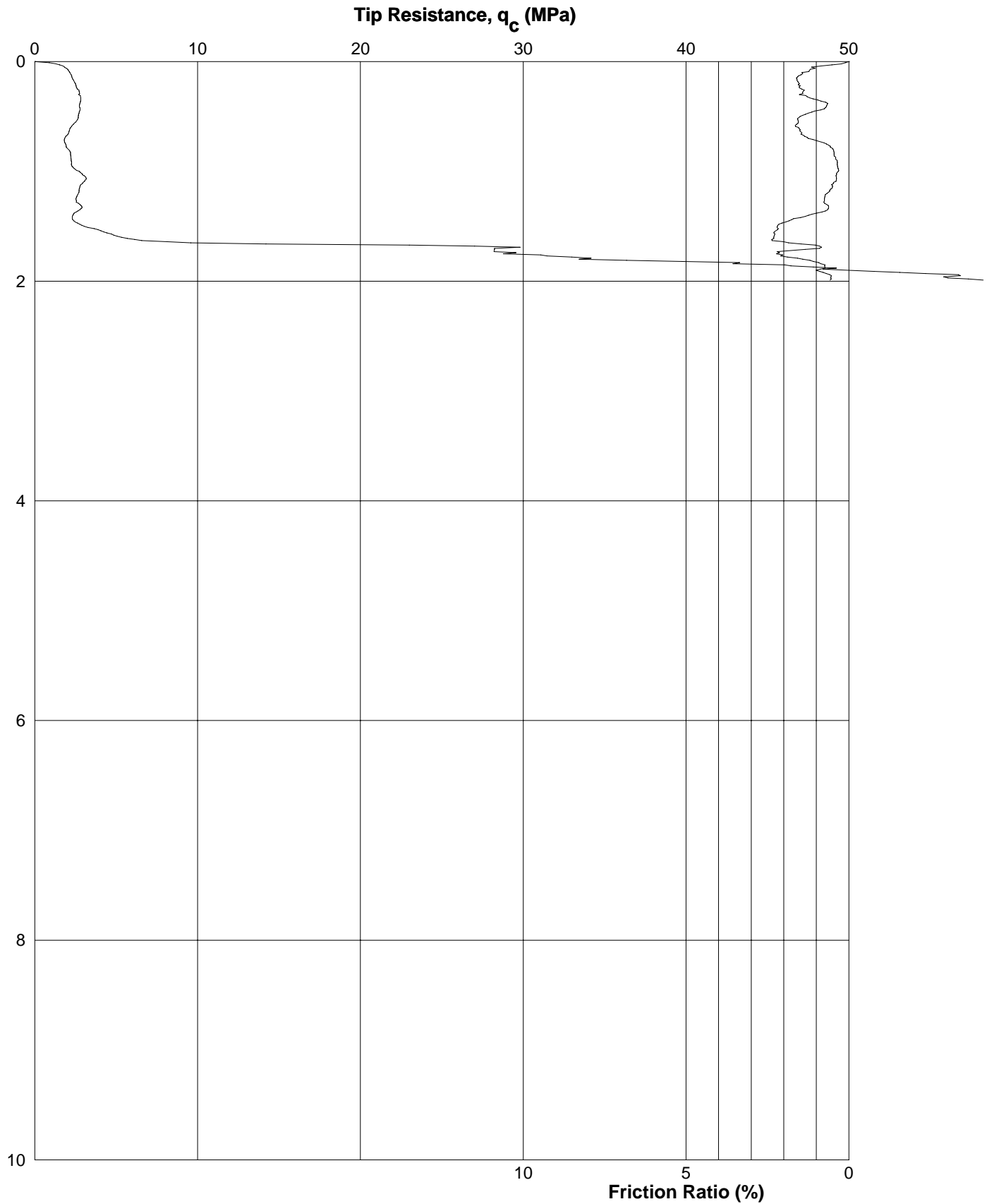
Based on the method of Baldi et. al. (1986) from data on normally consolidated sand.

### Undrained Shear Strength ( $S_u$ )

Derived from the bearing capacity equation using  $S_u = (q_c - \sigma_{vo})/15$ .



# STANDARD CONE PENETROMETER TEST (CPT) REPORT



Job No: 4974

CPT No: CPT001

Date: 24/10/07

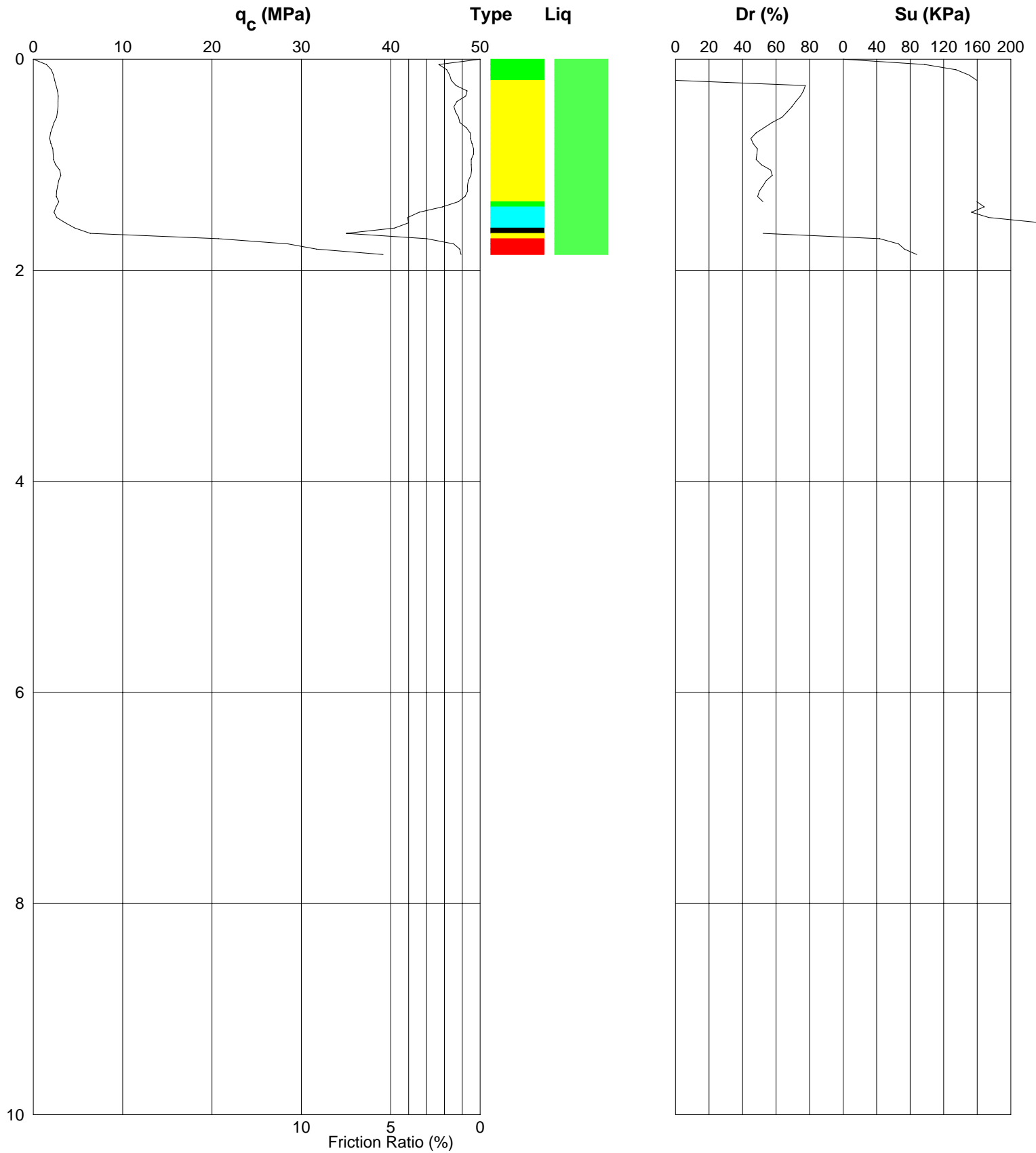
Project: URS New Zealand Ltd

Operator: J Harvey

Location: Russley Road / Memorial Ave, CHCH

Remark: Effective Refusal

# STANDARD CONE PENETROMETER TEST (CPT) INTERPRETIVE REPORT



Job No: 4974

CPT No: CPT001

Project: URS New Zealand Ltd

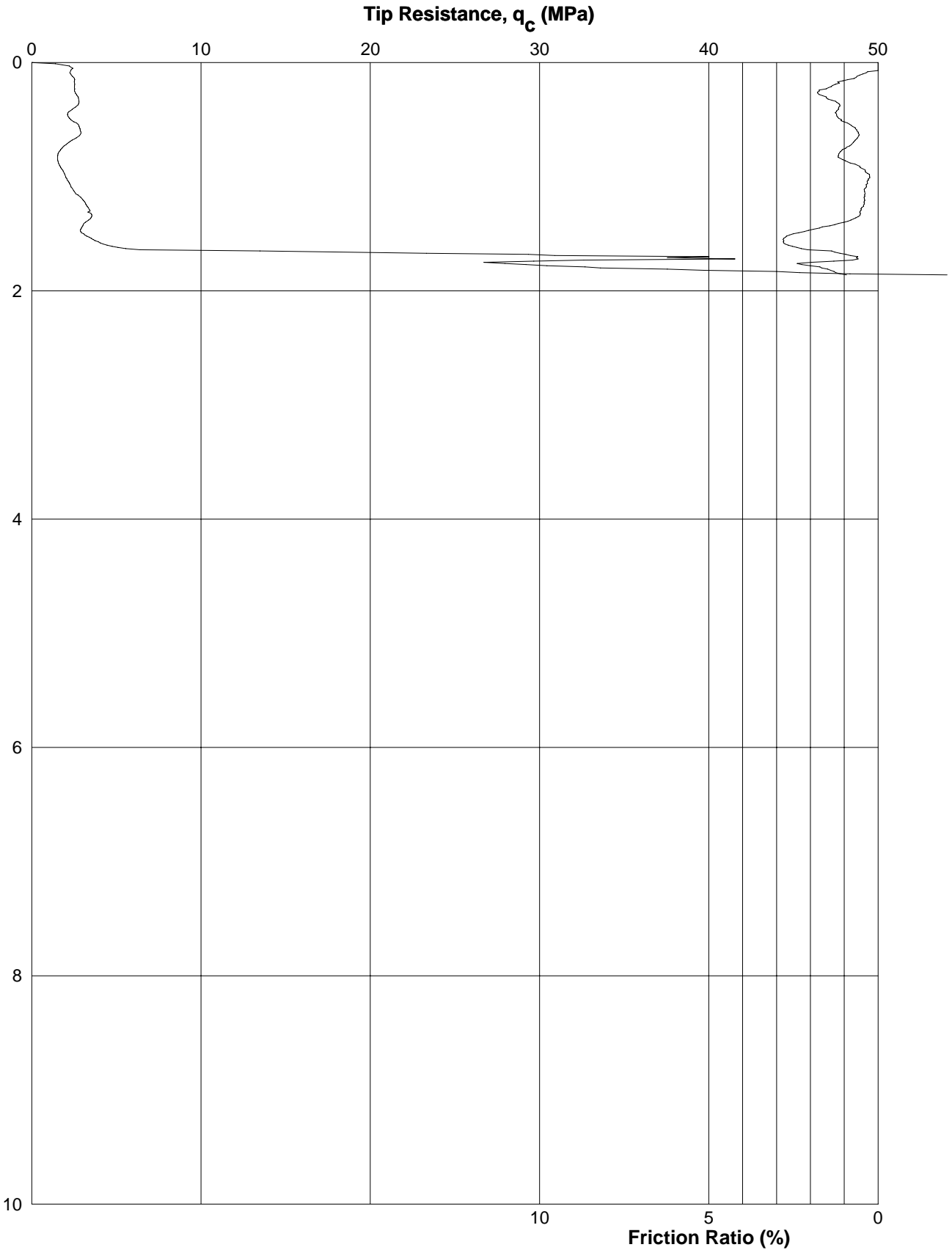
Location: Russley Road / Memorial Ave, CHCH

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# STANDARD CONE PENETROMETER TEST (CPT) REPORT



Job No: 4974

CPT No: CPT001R

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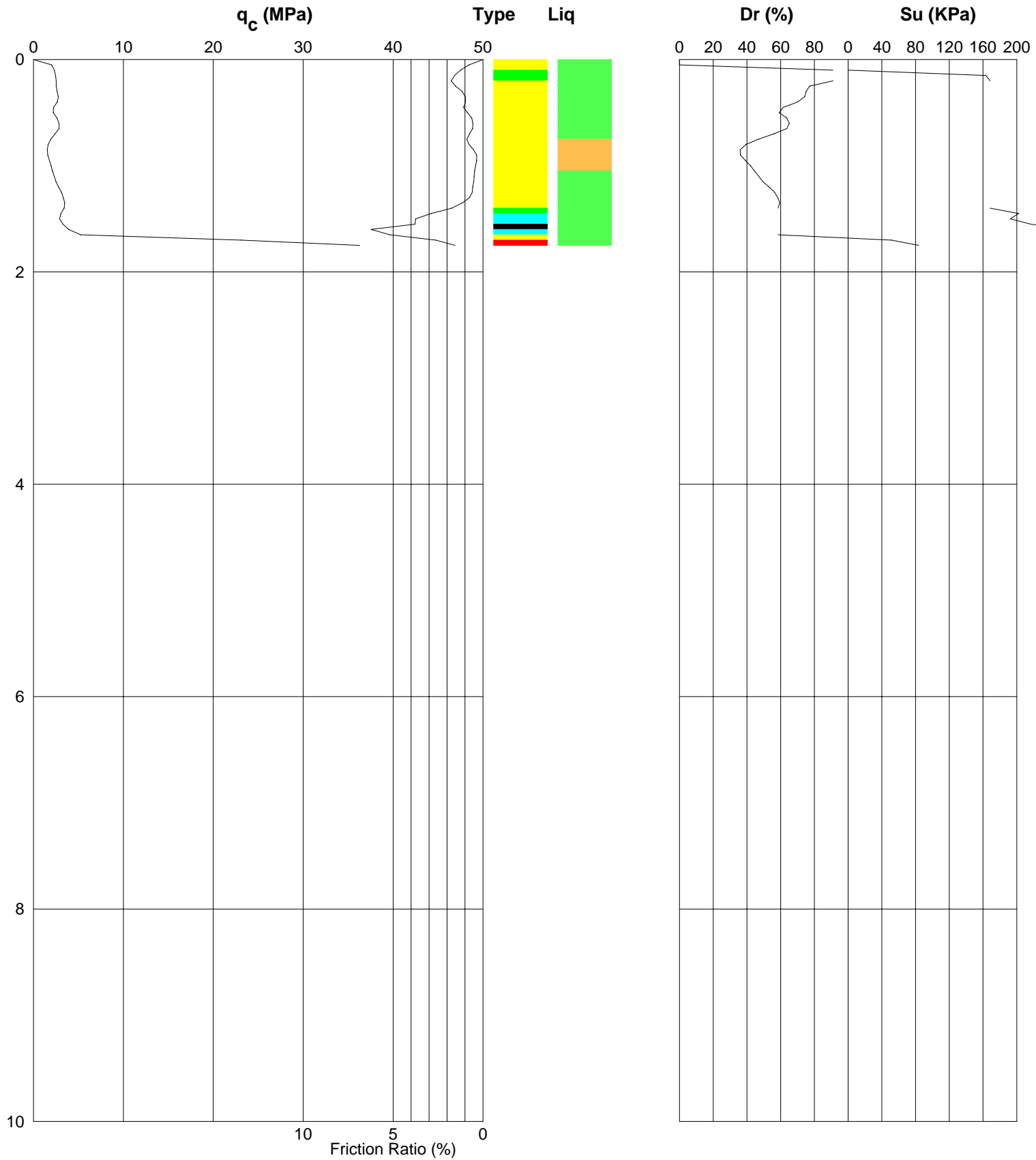
Project: URS New Zealand Ltd

Operator: J Harvey

Location: Russley Road / Memorial Ave, CHCH

Remark: CPT001 Repeat Effective Refusal

# STANDARD CONE PENETROMETER TEST (CPT) INTERPRETIVE REPORT



Job No: 4974

CPT No: CPT001R

Project: URS New Zealand Ltd

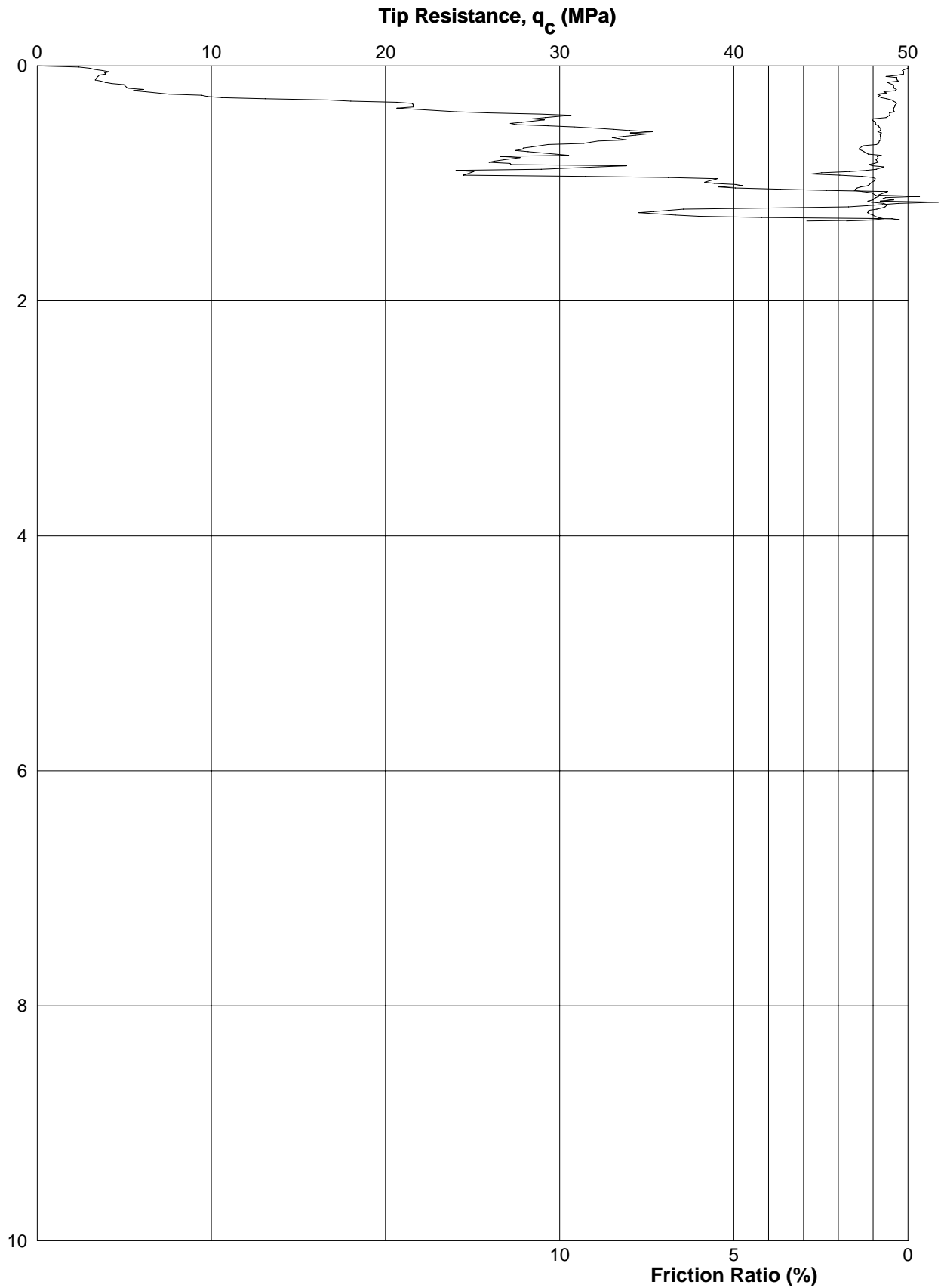
Location: Russley Road / Memorial Ave, CHCH

Date: 24/10/07

Operator: J Harvey

Remark: CPT001 Repeat Effective Refusal

# STANDARD CONE PENETROMETER TEST (CPT) REPORT



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CPT No: CPT002

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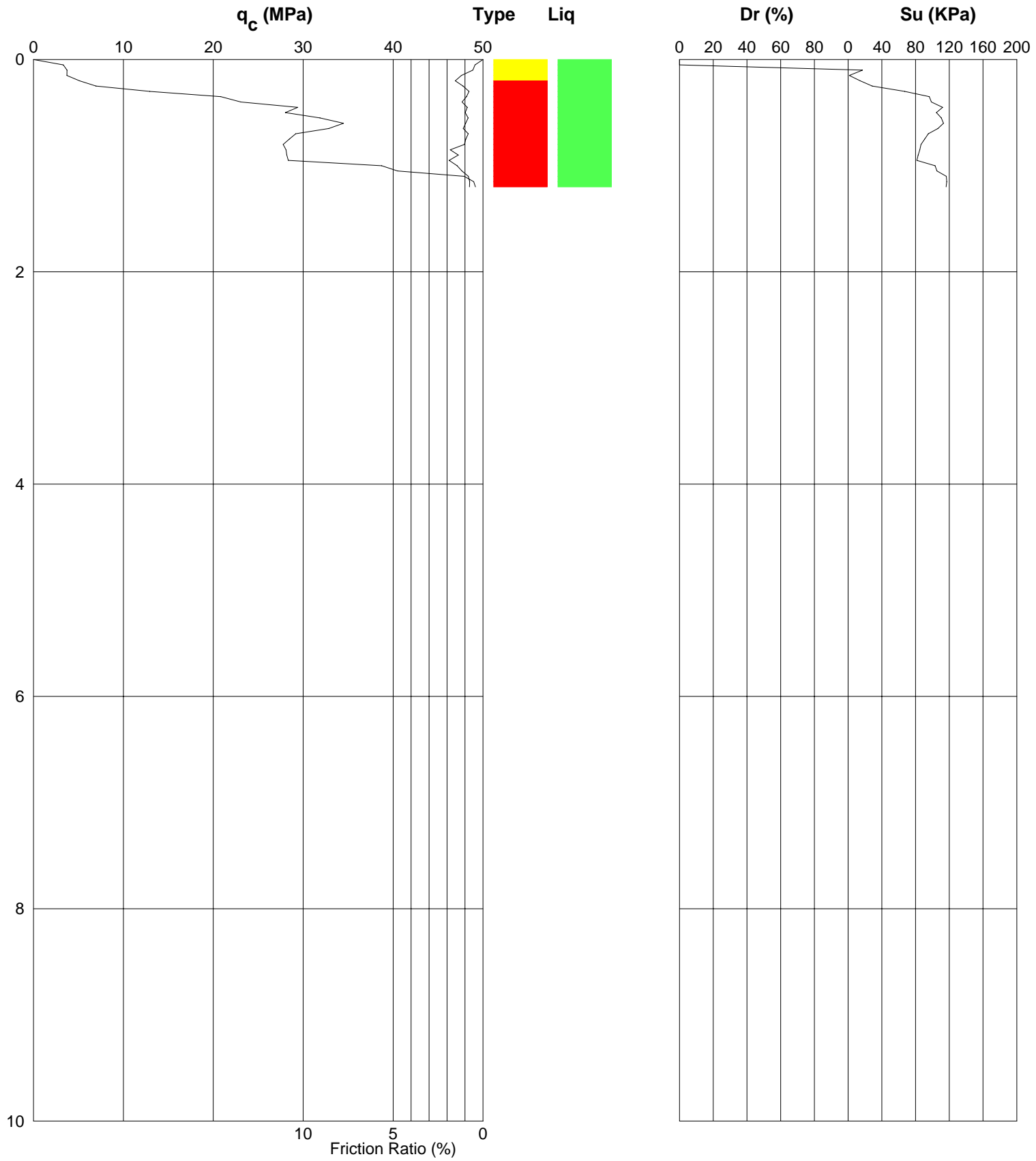
Project: URS New Zealand Ltd

Operator: J Harvey

Location: Russley Road / Memorial Ave, CHCH

Remark: Effective Refusal

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Job No: 4974

CPT No: CPT002

Project: URS New Zealand Ltd

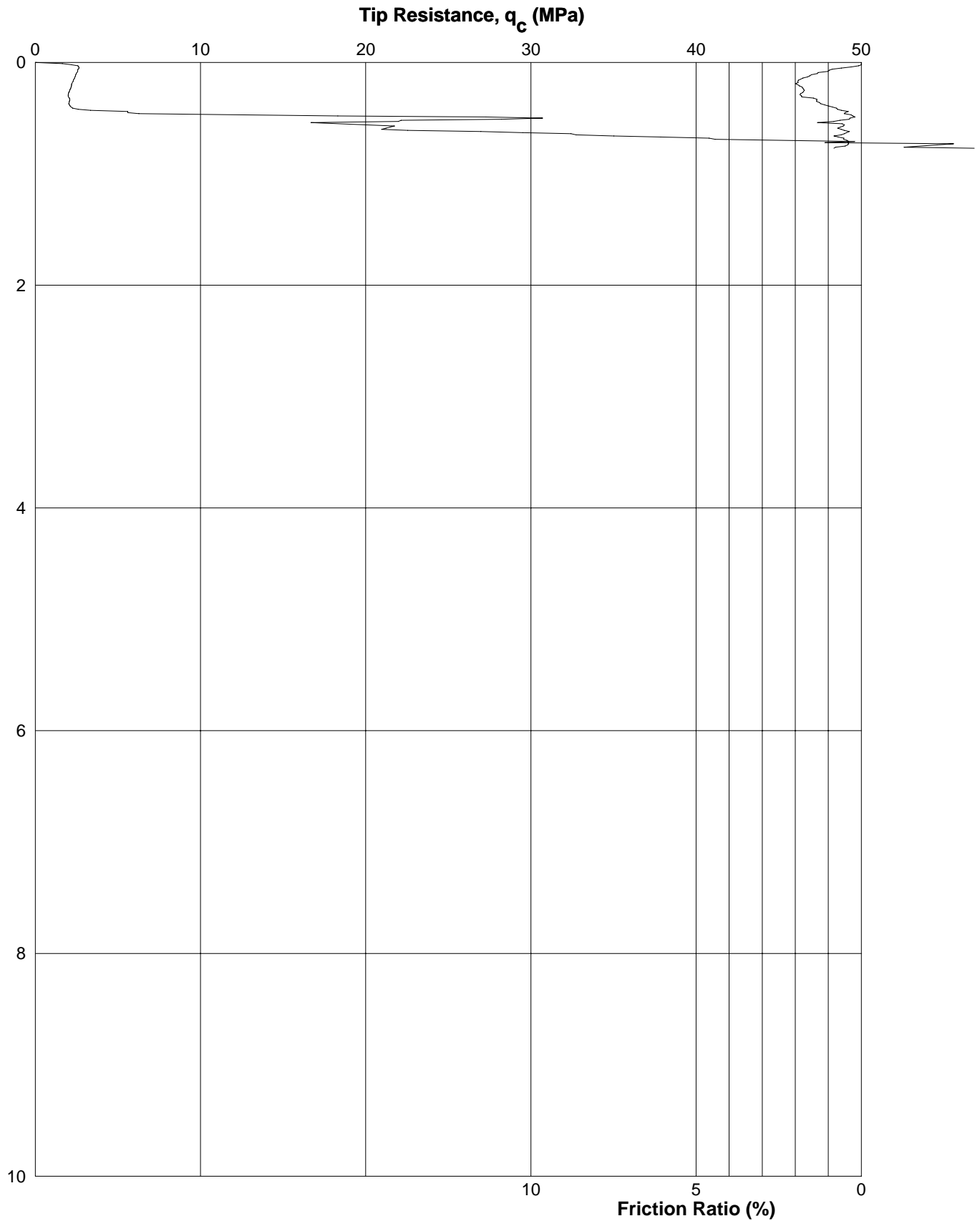
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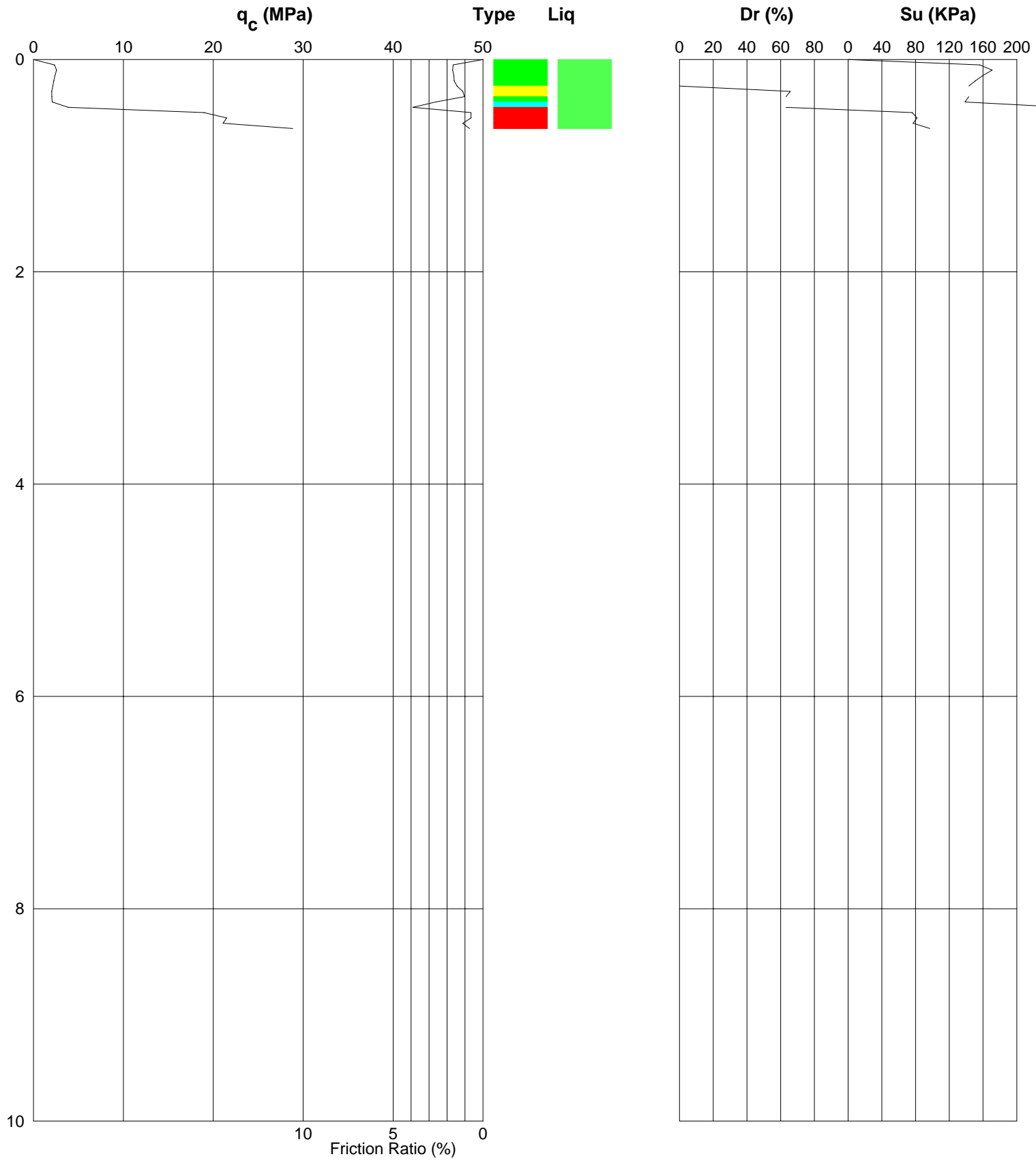
Project: URS New Zealand Ltd

Operator: J Harvey

Location: Russley Road / Memorial Ave, CHCH

Remark: Effective Refusal

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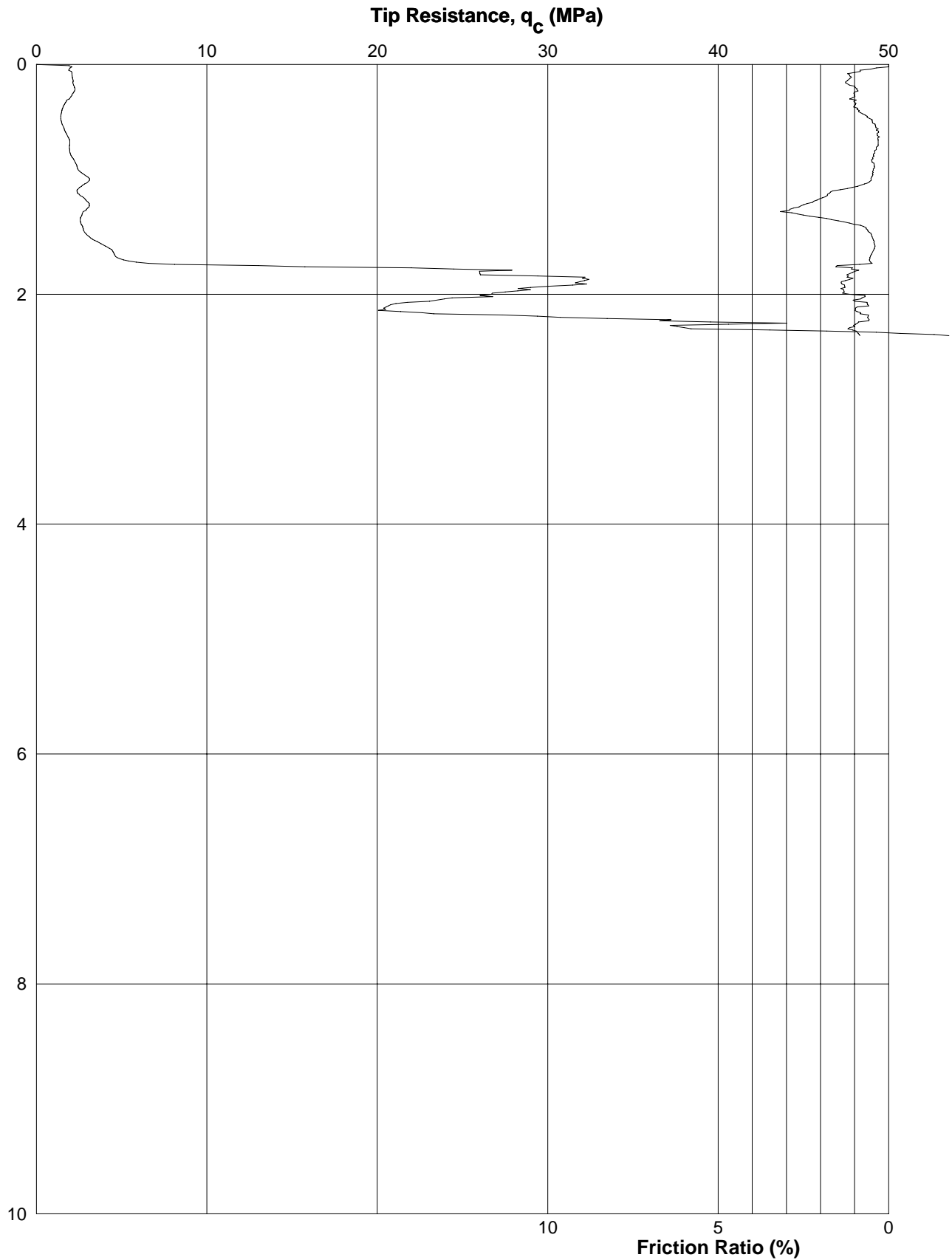
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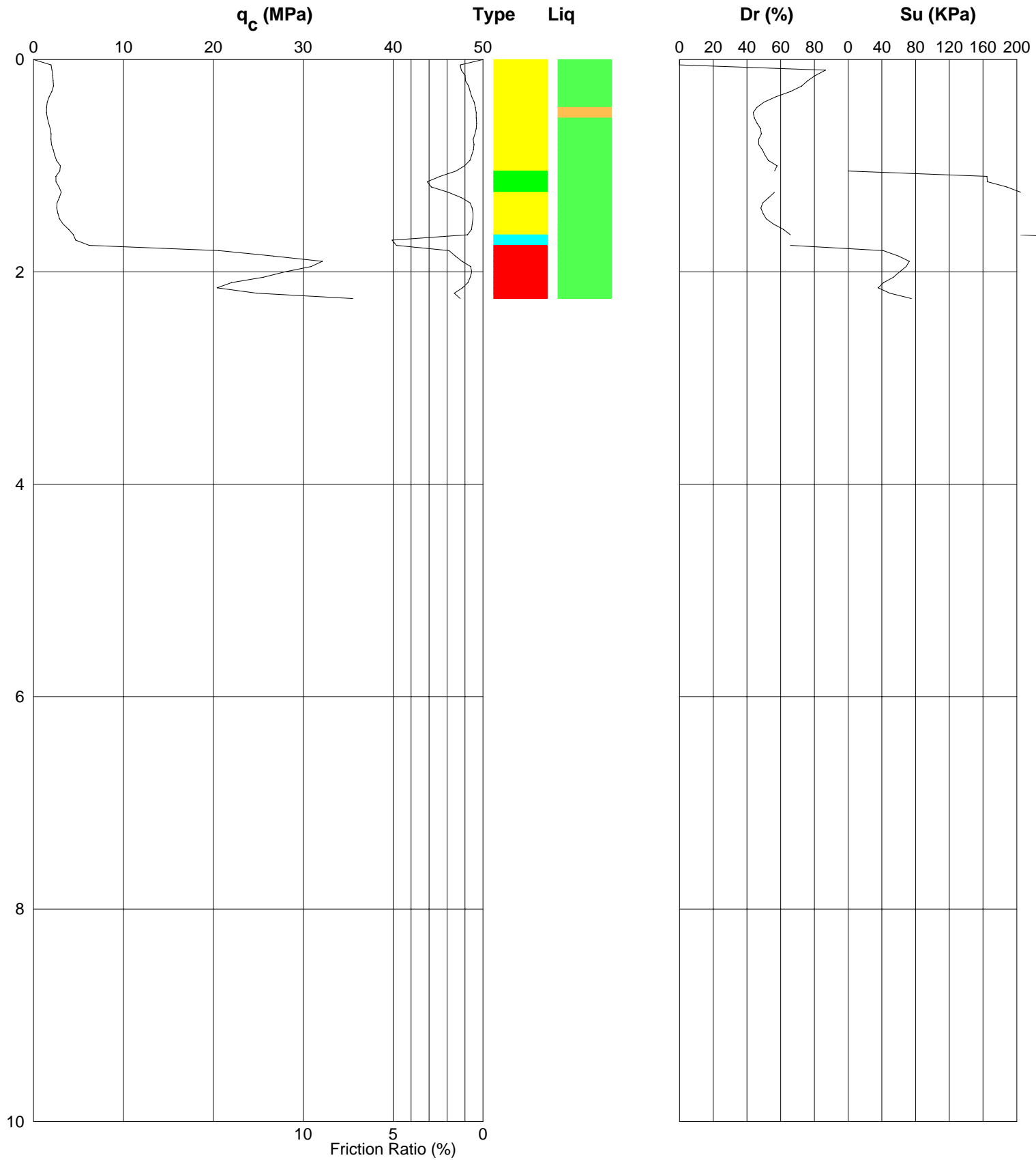
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Operator: J Harvey

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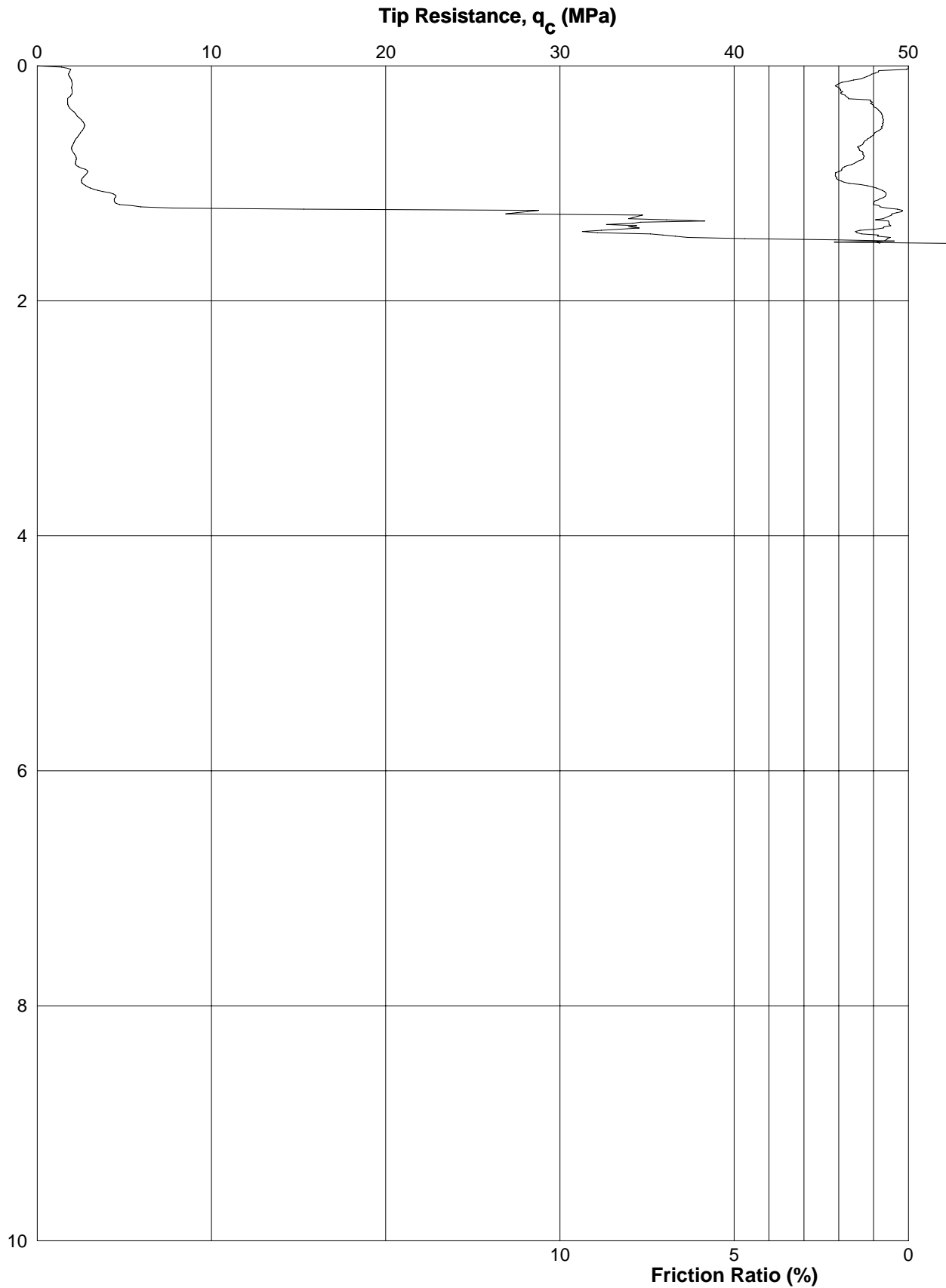
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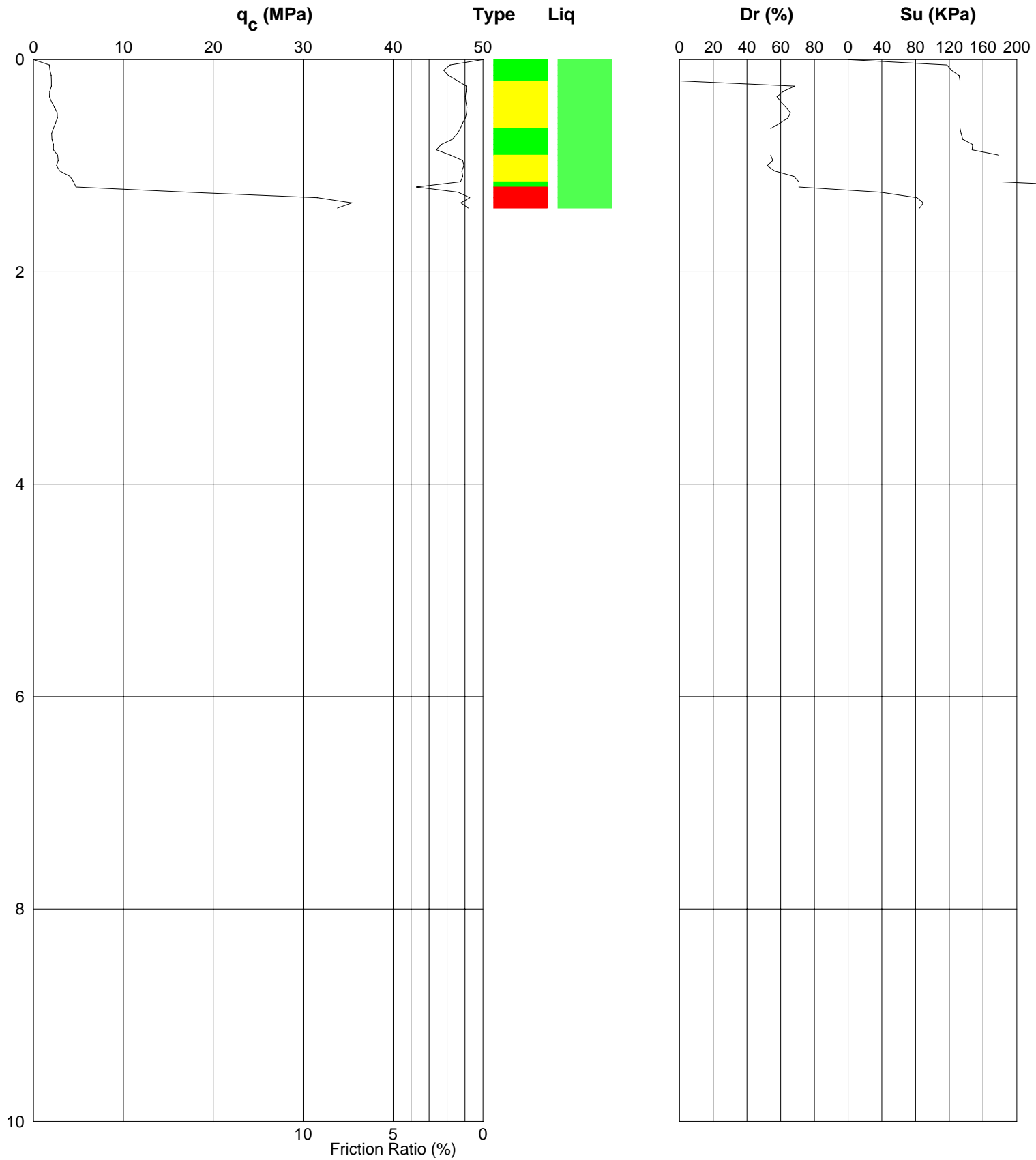
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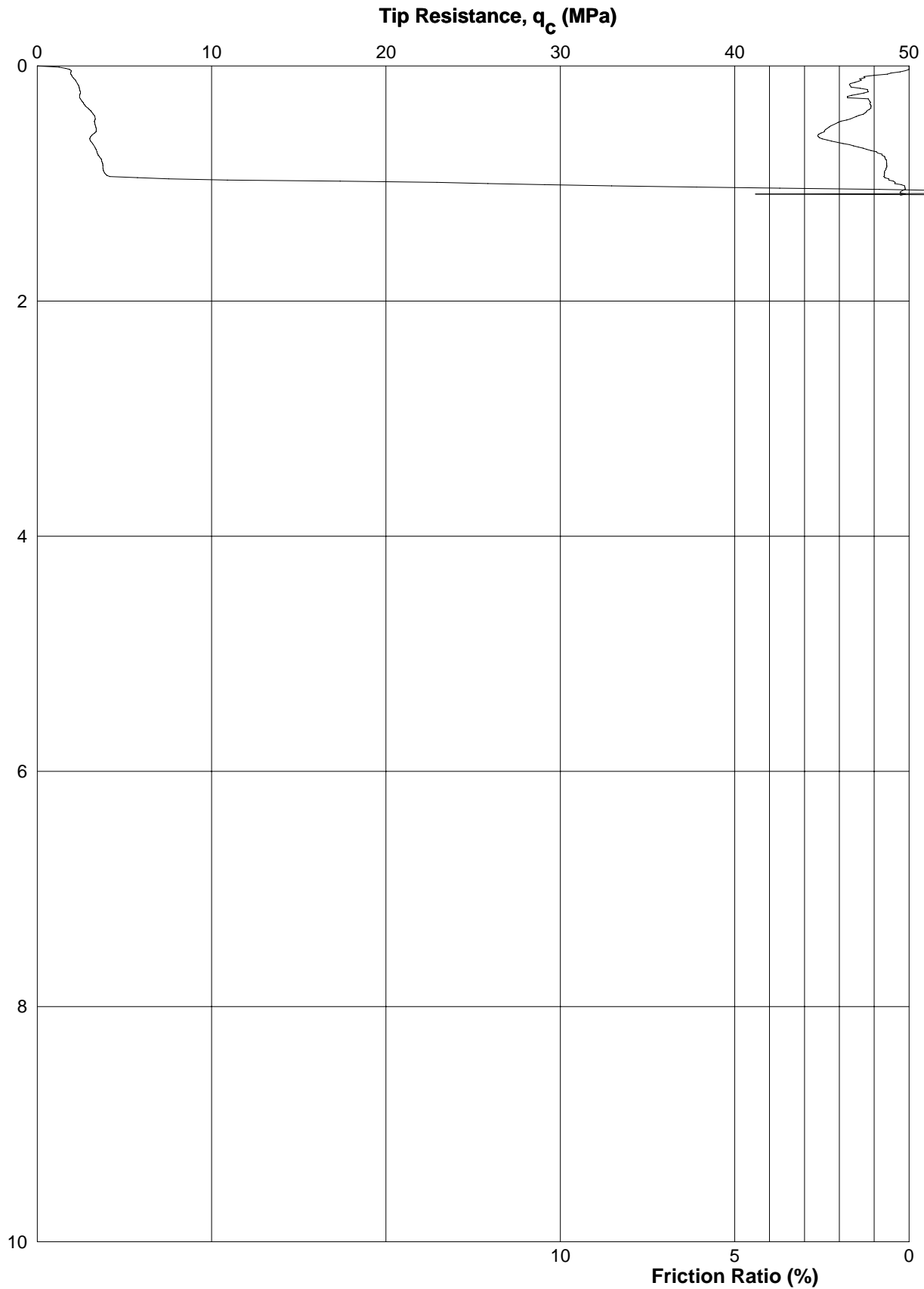
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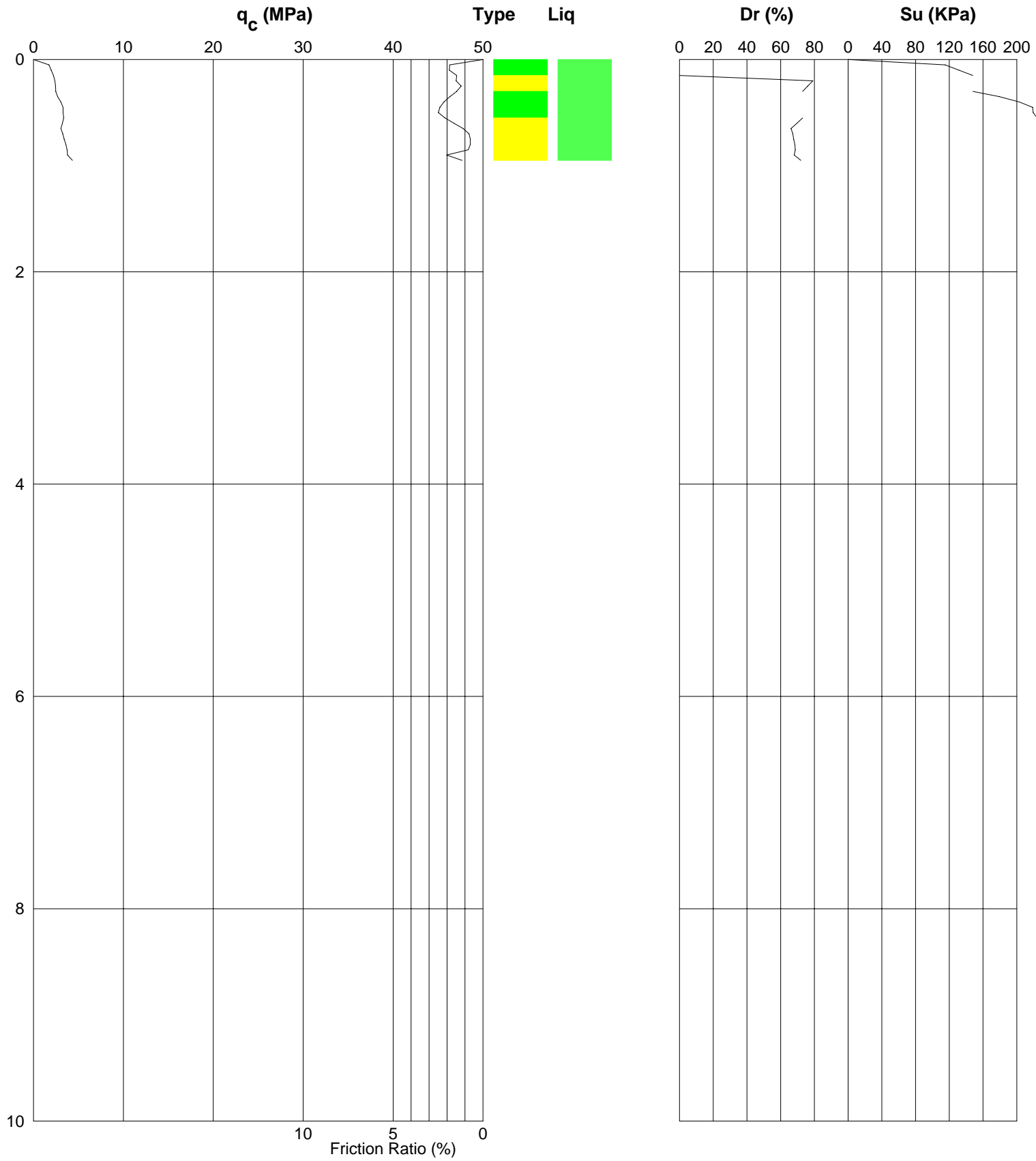
Project: URS New Zealand Ltd

Operator: J Harvey

Location: Russley Road / Memorial Ave, CHCH

Remark: Effective Refusal

# STANDARD CONE PENETROMETER TEST (CPT) INTERPRETIVE REPORT



Job No: 4974

CPT No: CPT006

Project: URS New Zealand Ltd

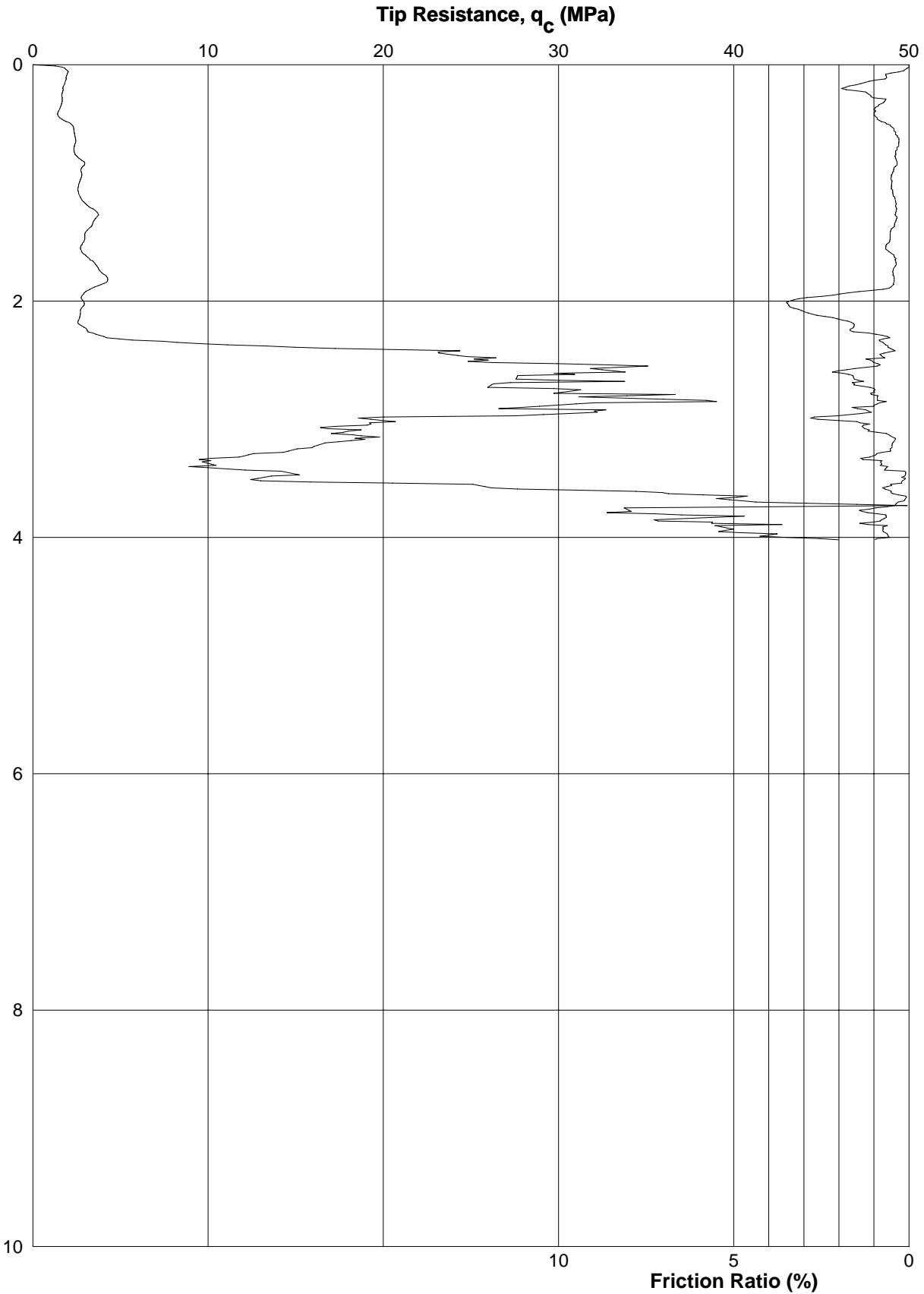
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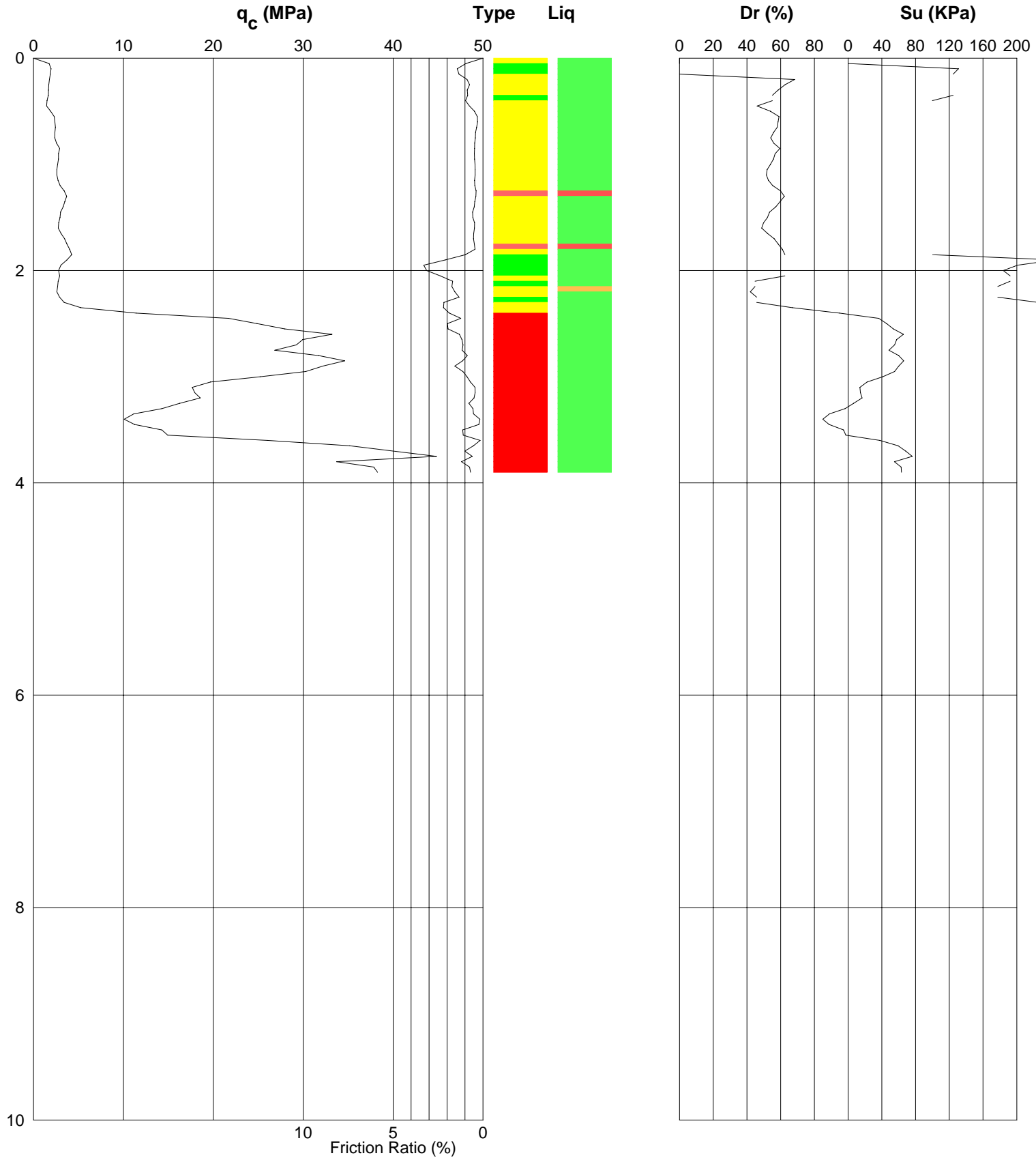
Project: URS New Zealand Ltd

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Location: Russley Road / Memorial Ave, CHCH

Remark: Effective Refusal

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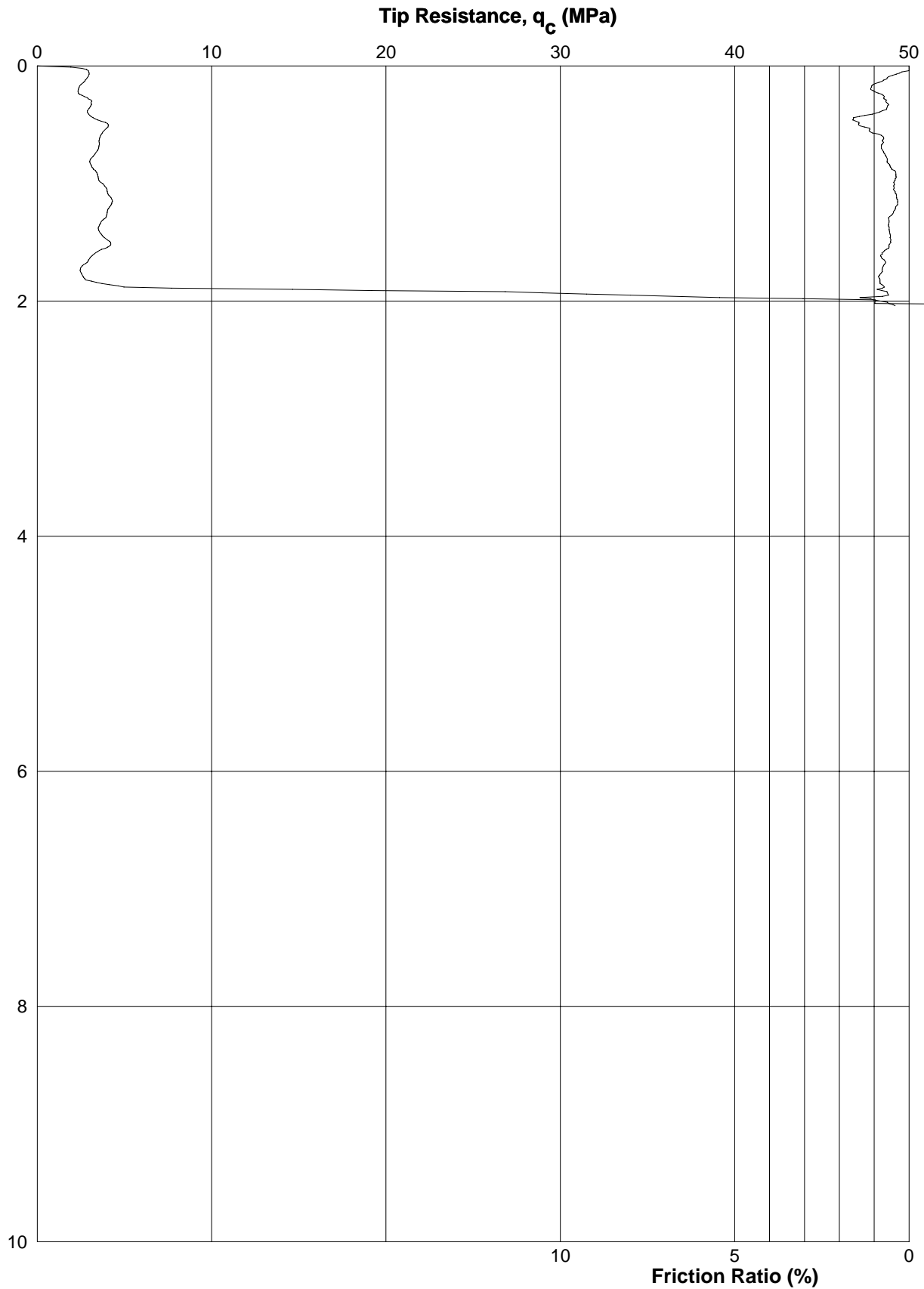
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CPT No: CPT008

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Operator: J Harvey

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Job No: 4974

CPT No: CPT008

Project: URS New Zealand Ltd

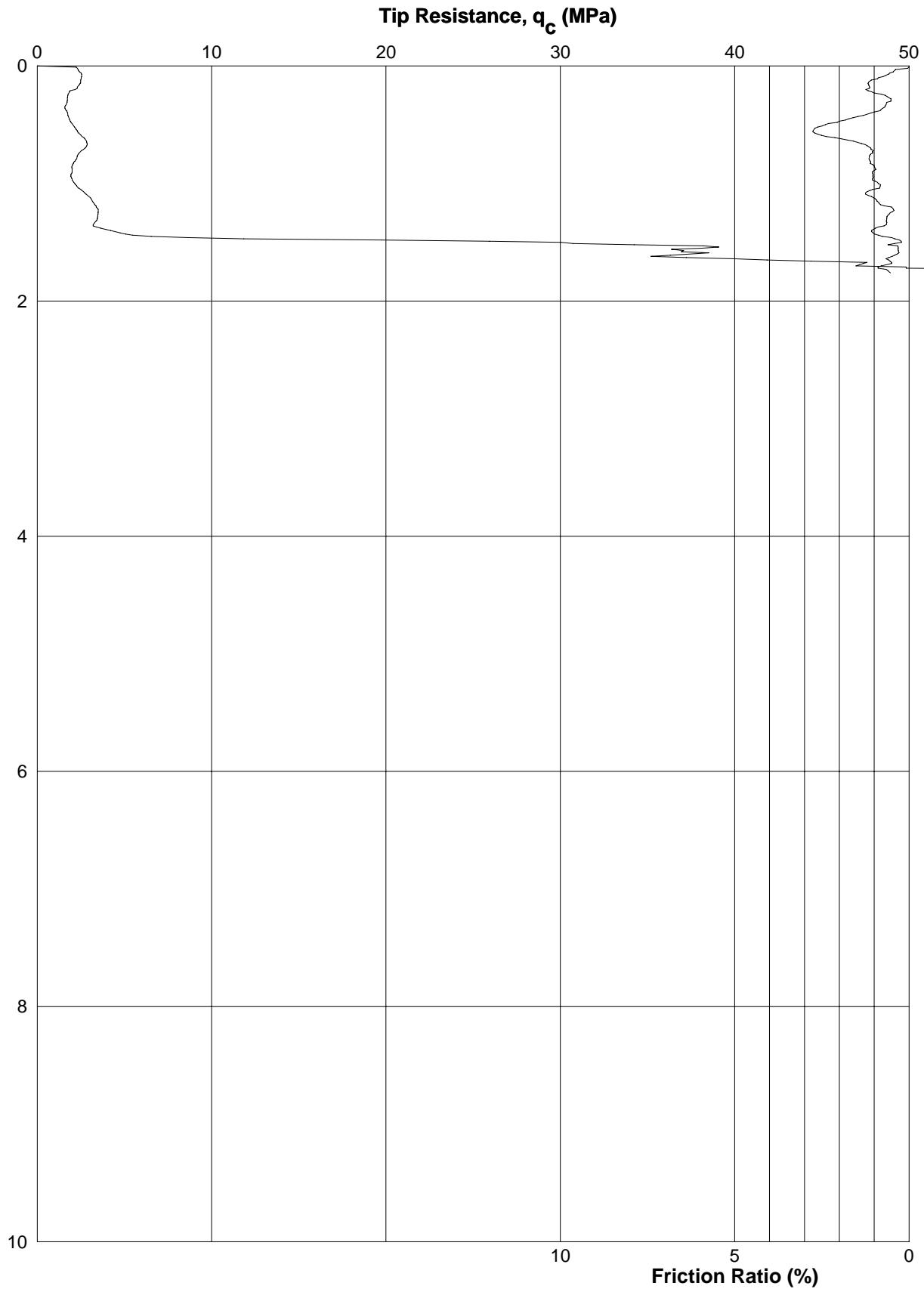
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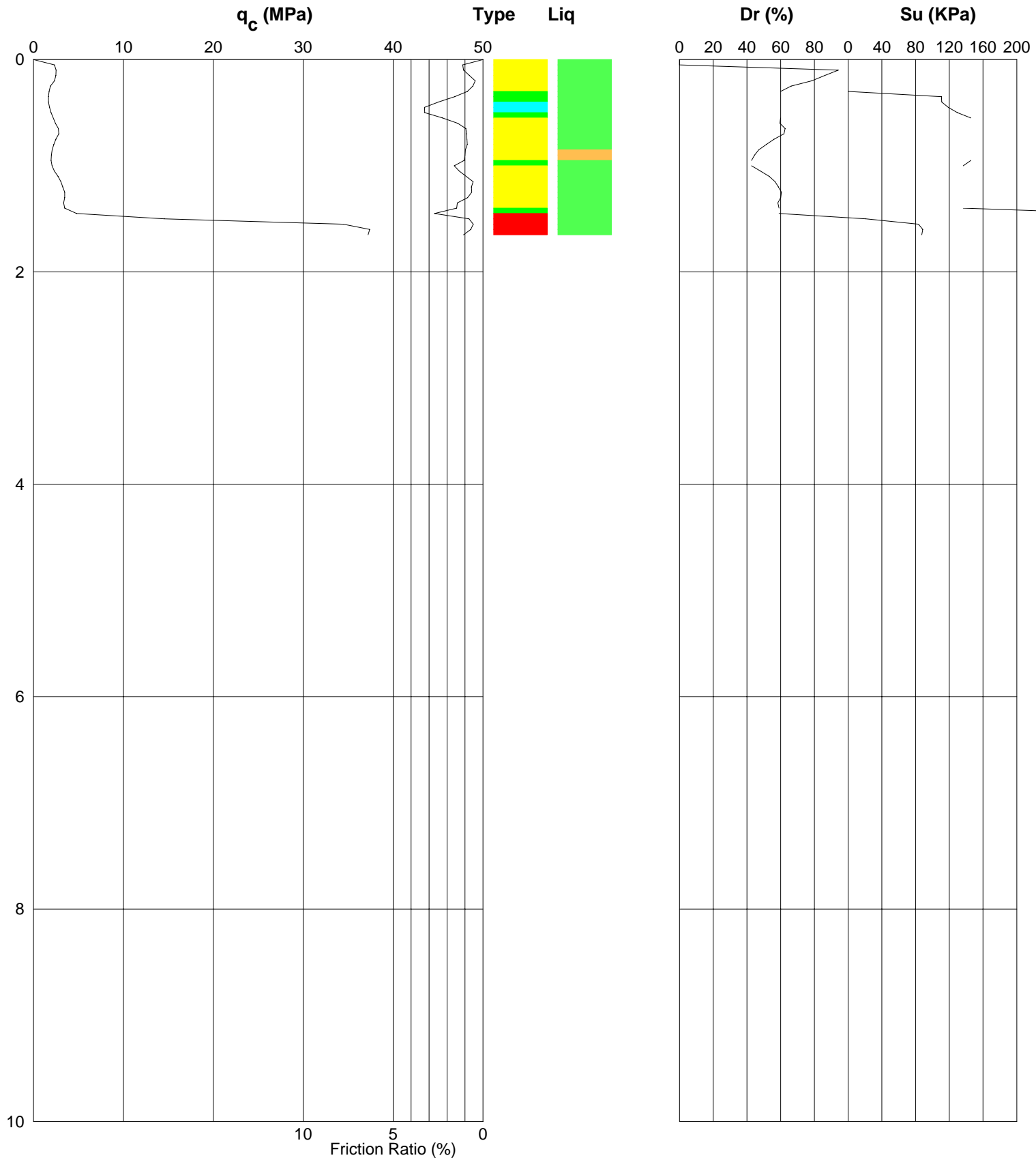
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Operator: J Harvey

Location: Russley Road / Memorial Ave, CHCH

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Job No: 4974

CPT No: CPT009

Project: URS New Zealand Ltd

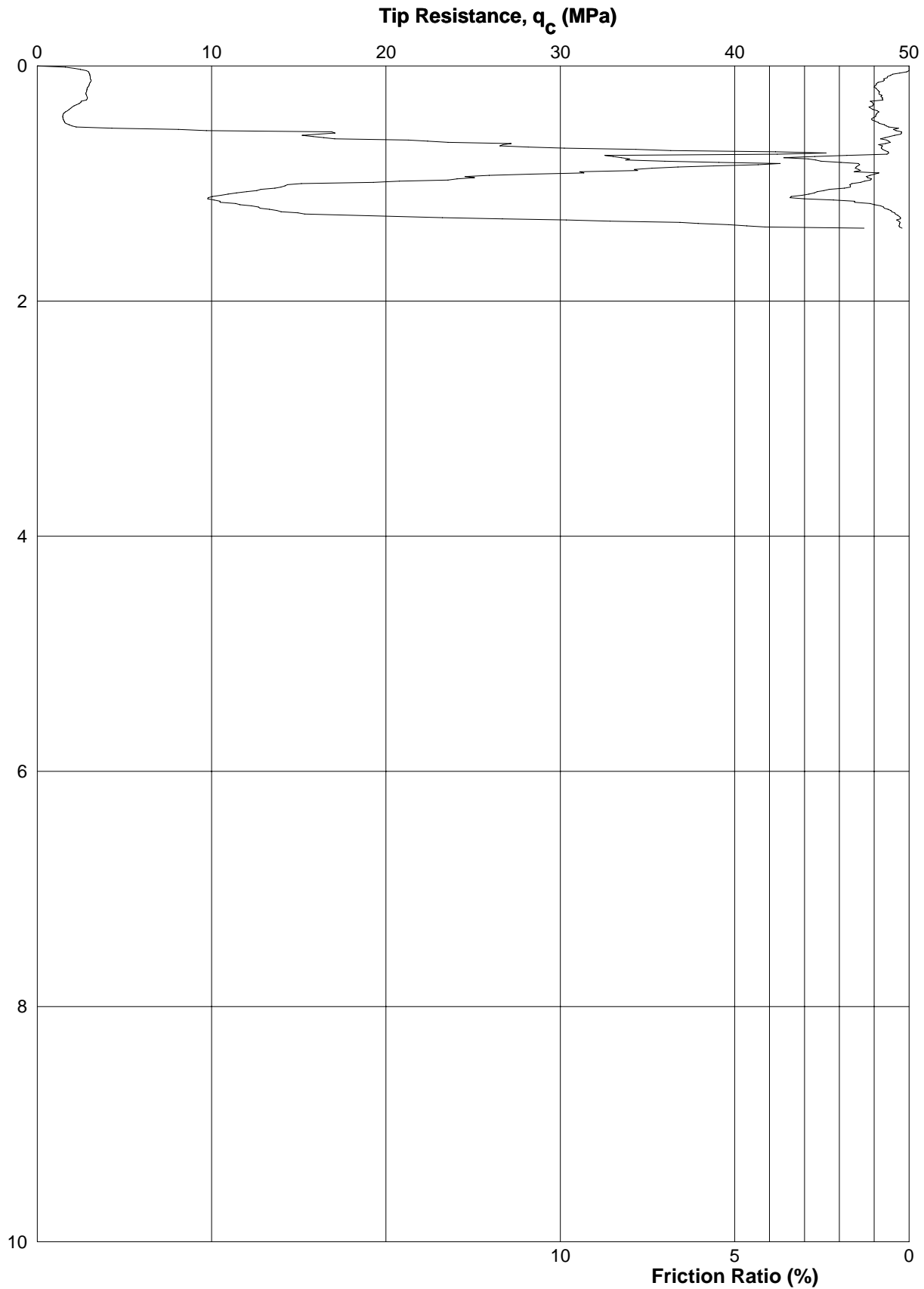
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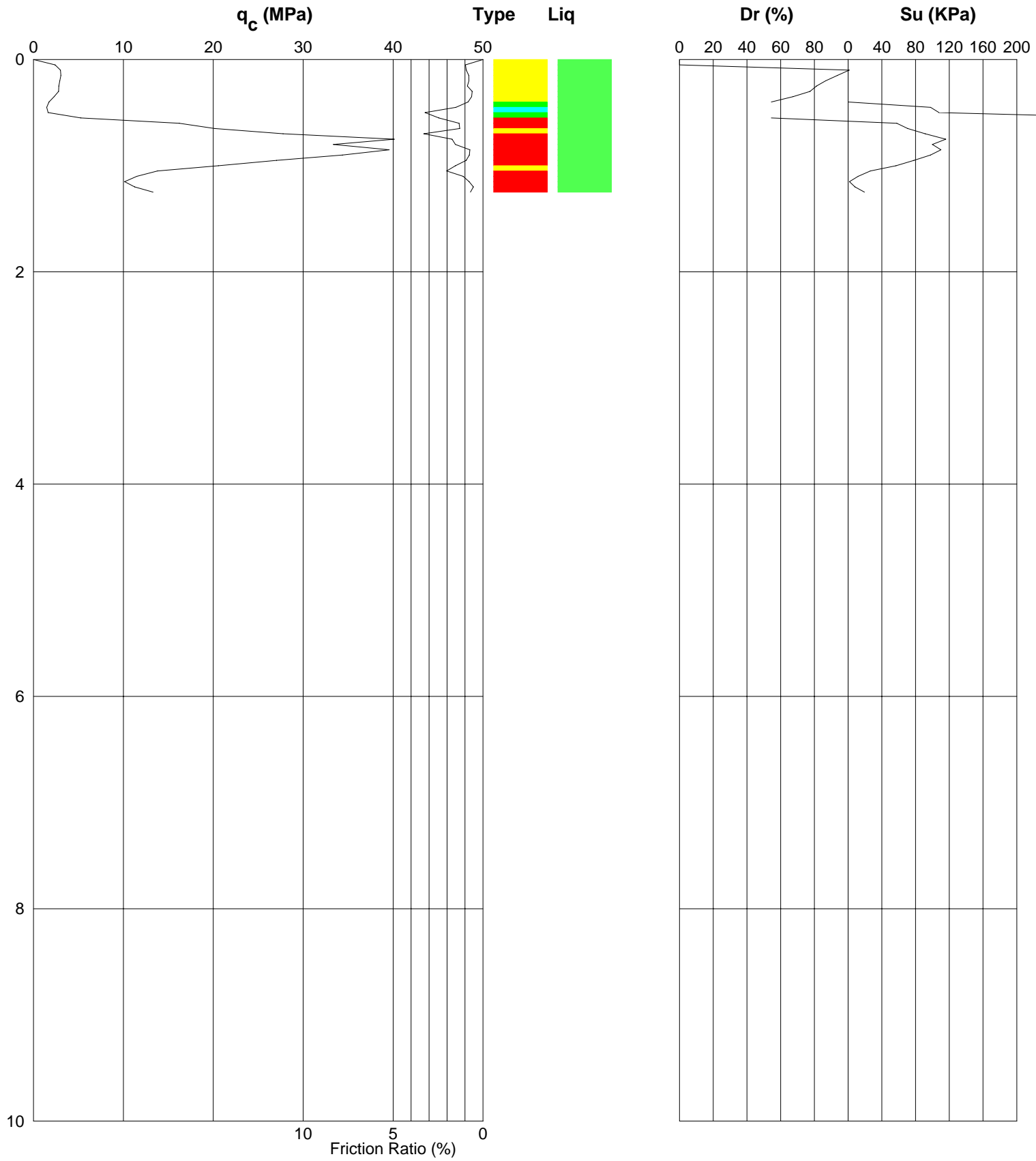
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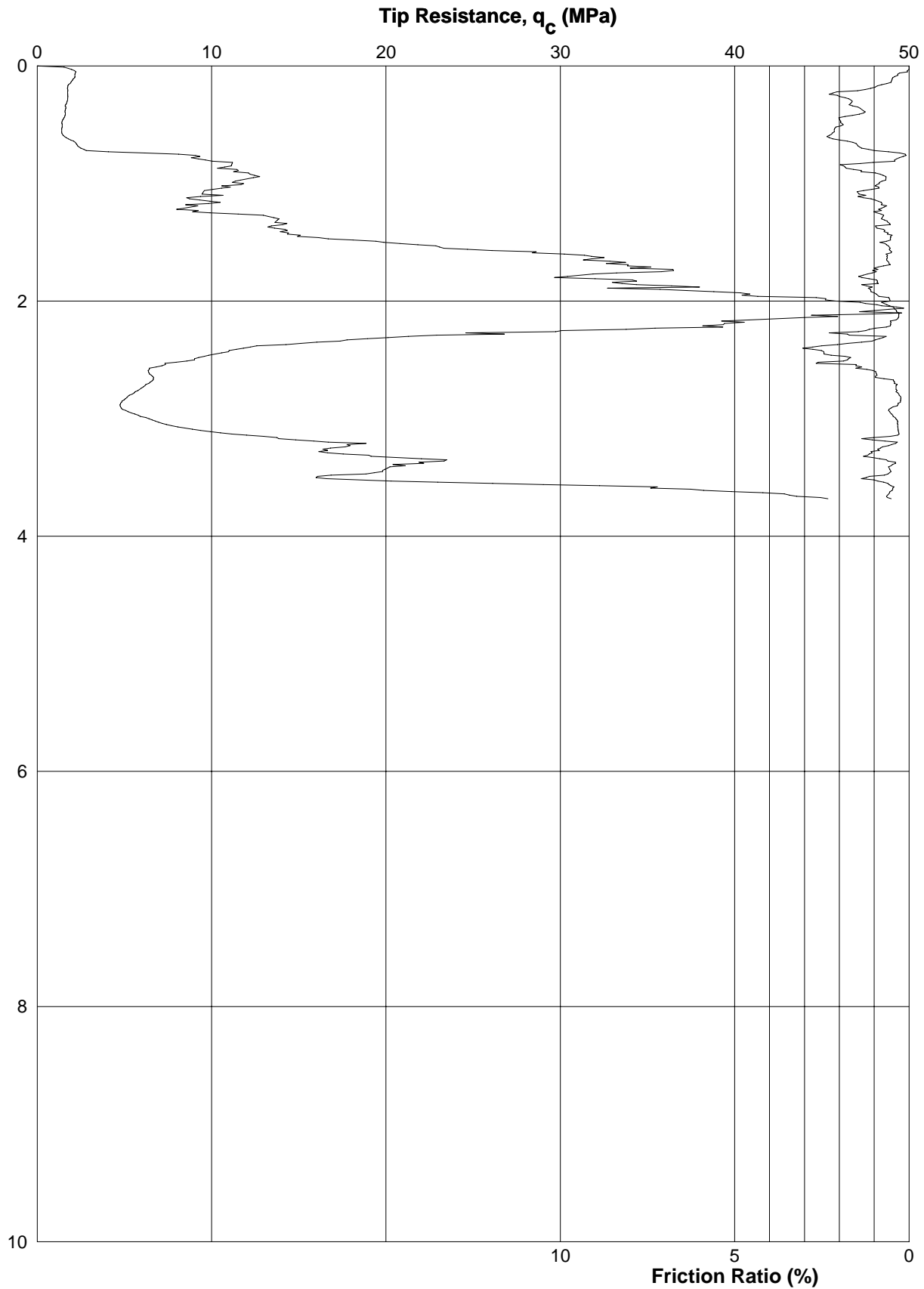
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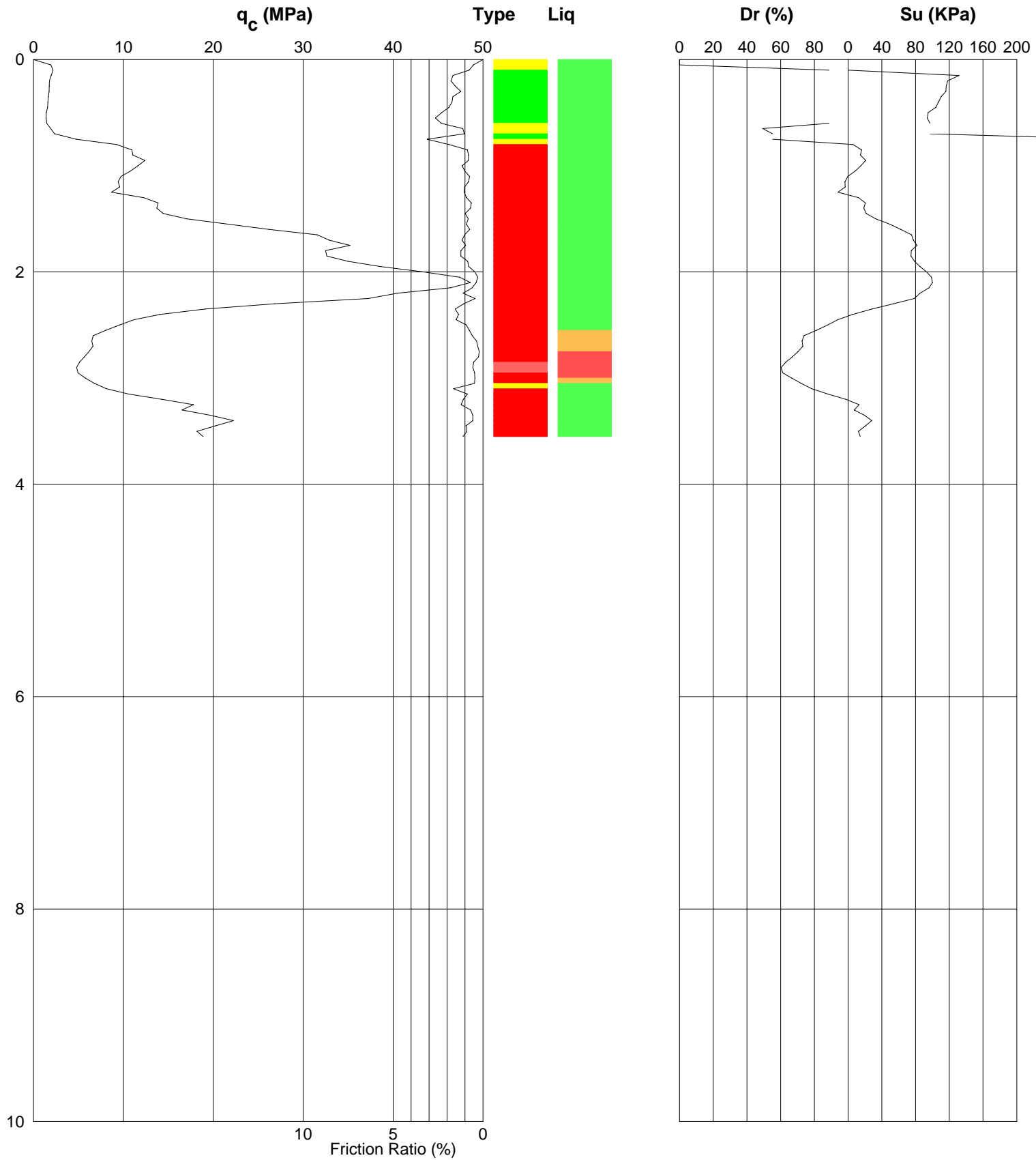
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