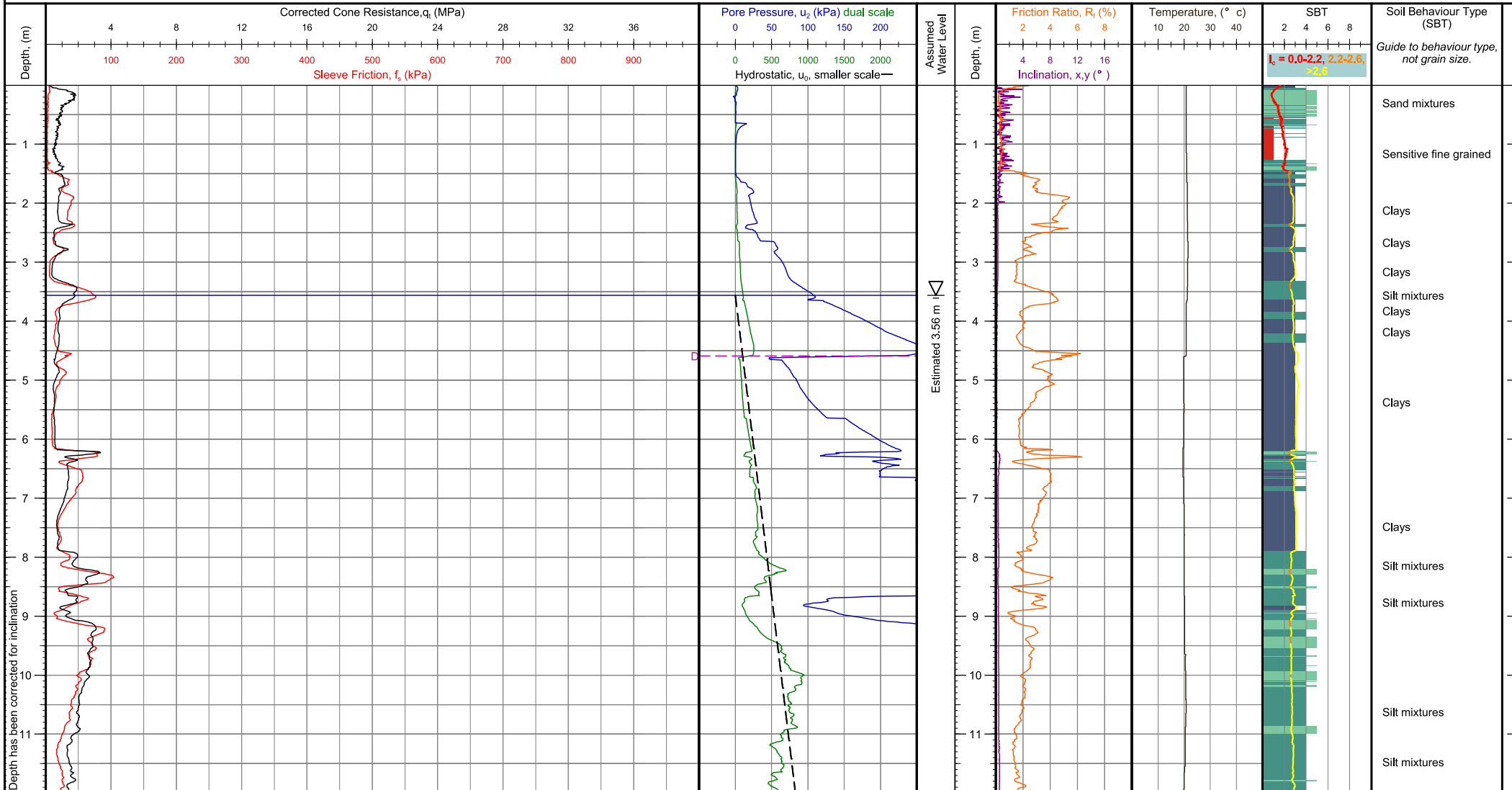


CONE PENETRATION TEST (CPT) LOG

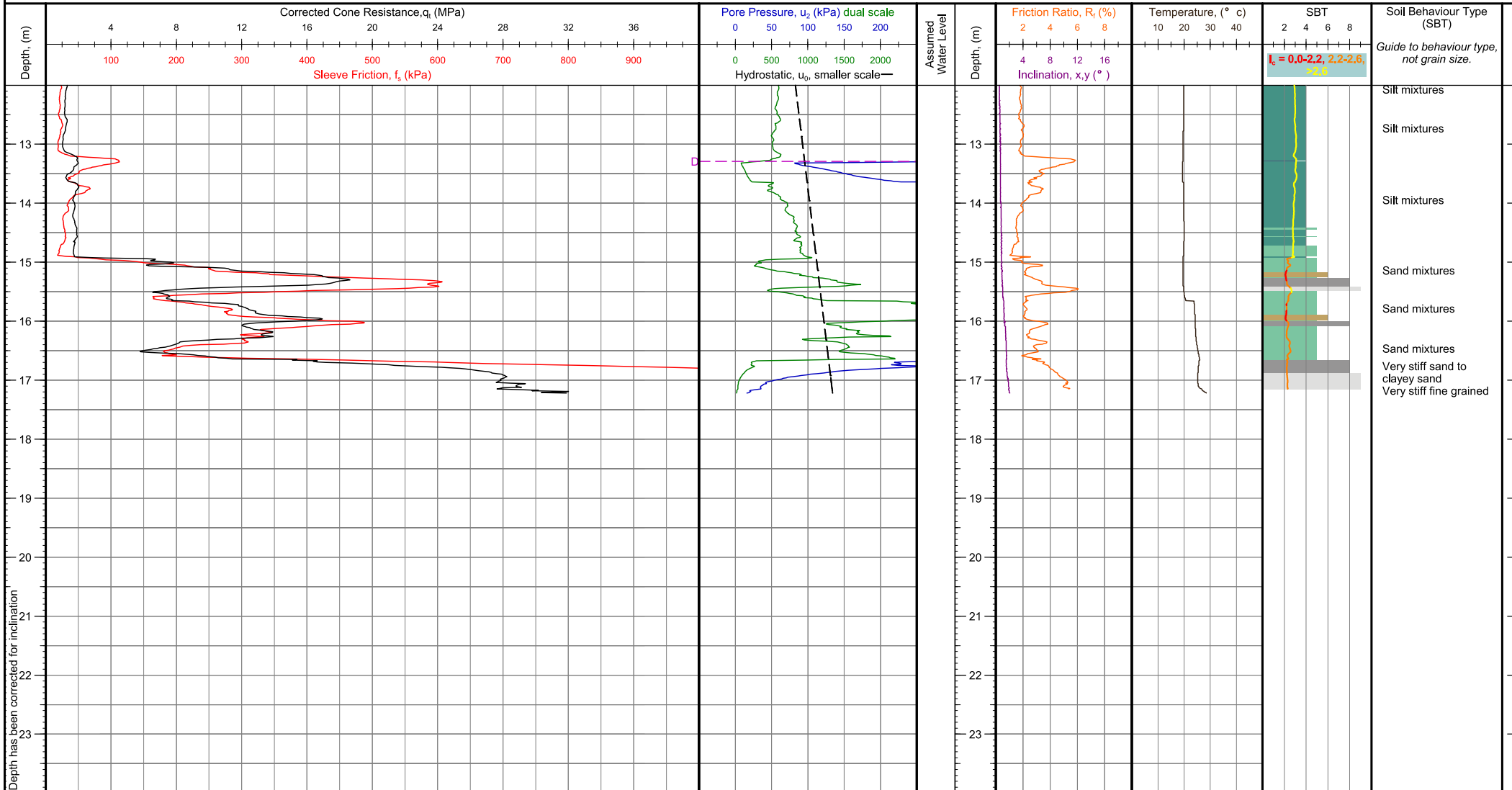


Client: Eastern Busway Alliance	Operator: Alyssa Malamatenios	NZTM 2000 N, E (m): 5911744.53, 1768335.45	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: MKJ311	WGS84 (deg): -36.925313, 174.889975	Date of Test: 8/03/2023	
Location: Eastern Busway	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 17.22	Test Number: CPT-301
Engineer: Mathew Crarer	Area Ratio: 0.79	Surveyor:	Pre Drill (m): N/A	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High total load		G.I. Job Ref: 230180

Comments: Dissipation tests @ 4.59m and 13.29m. Piezo installed 1.0m from CPT.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

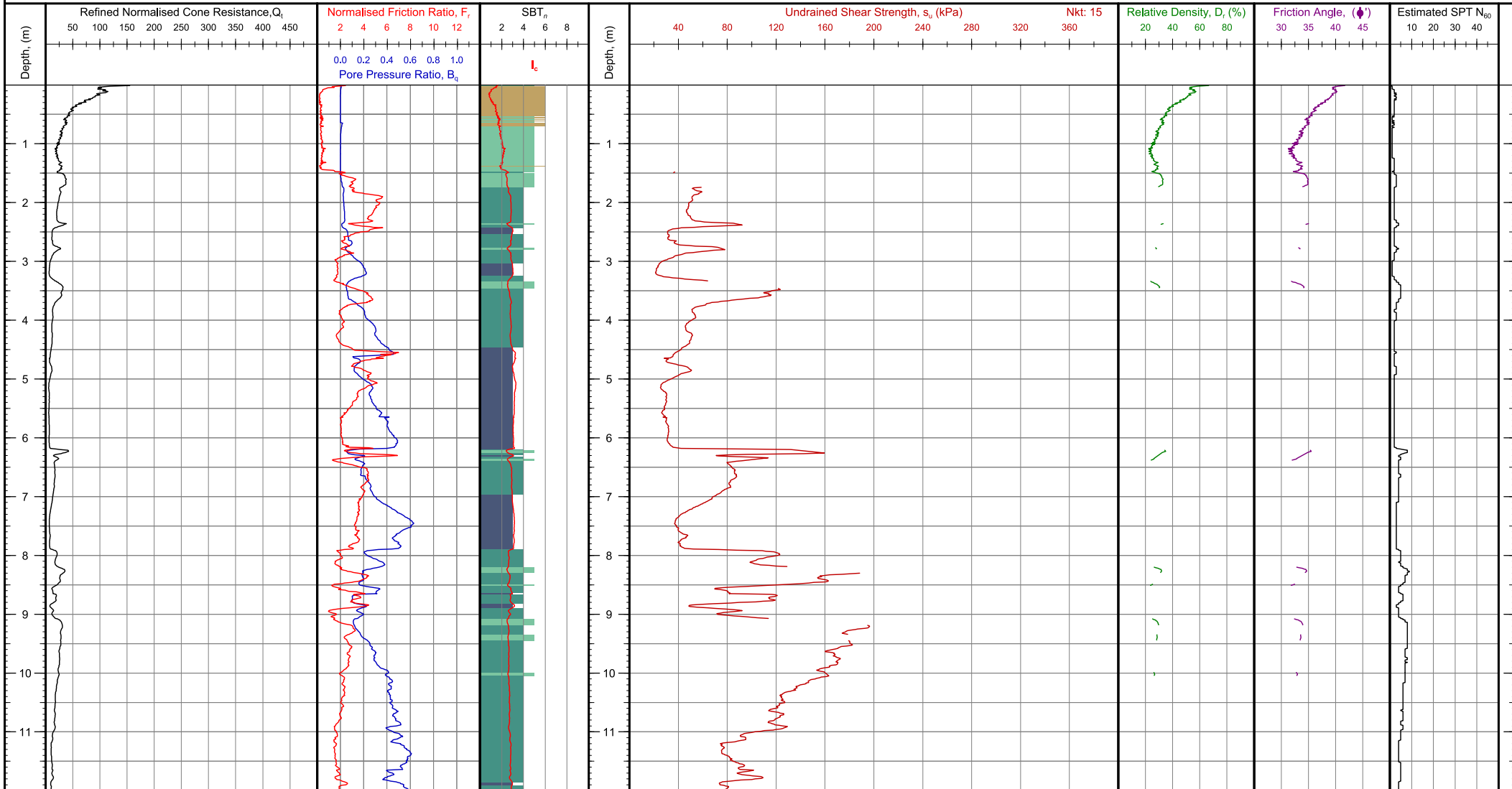
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Pakuranga to Botany East Location: Eastern Busway Engineer: Mathew Crarer Contractor: Ground Investigation Ltd	Operator: Alyssa Malamatenios Cone Ref: MKJ311 Cone Type: 10cm ² Compression Area Ratio: 0.79 Filter Type: u ₂	NZTM 2000 N, E (m): 5911744.53, 1768335.45 WGS84 (deg): -36.925313, 174.889975	Elevation (m): Unknown Date of Test: 8/03/2023	Client Reference: Test Number: CPT-301
		Location Method: Handheld GPS Surveyor: Termination Reason: High total load	Depth (m): 17.22 Pre Drill (m): N/A	

Comments: Dissipation tests @ 4.59m and 13.29m. Piezo installed 1.0m from CPT.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

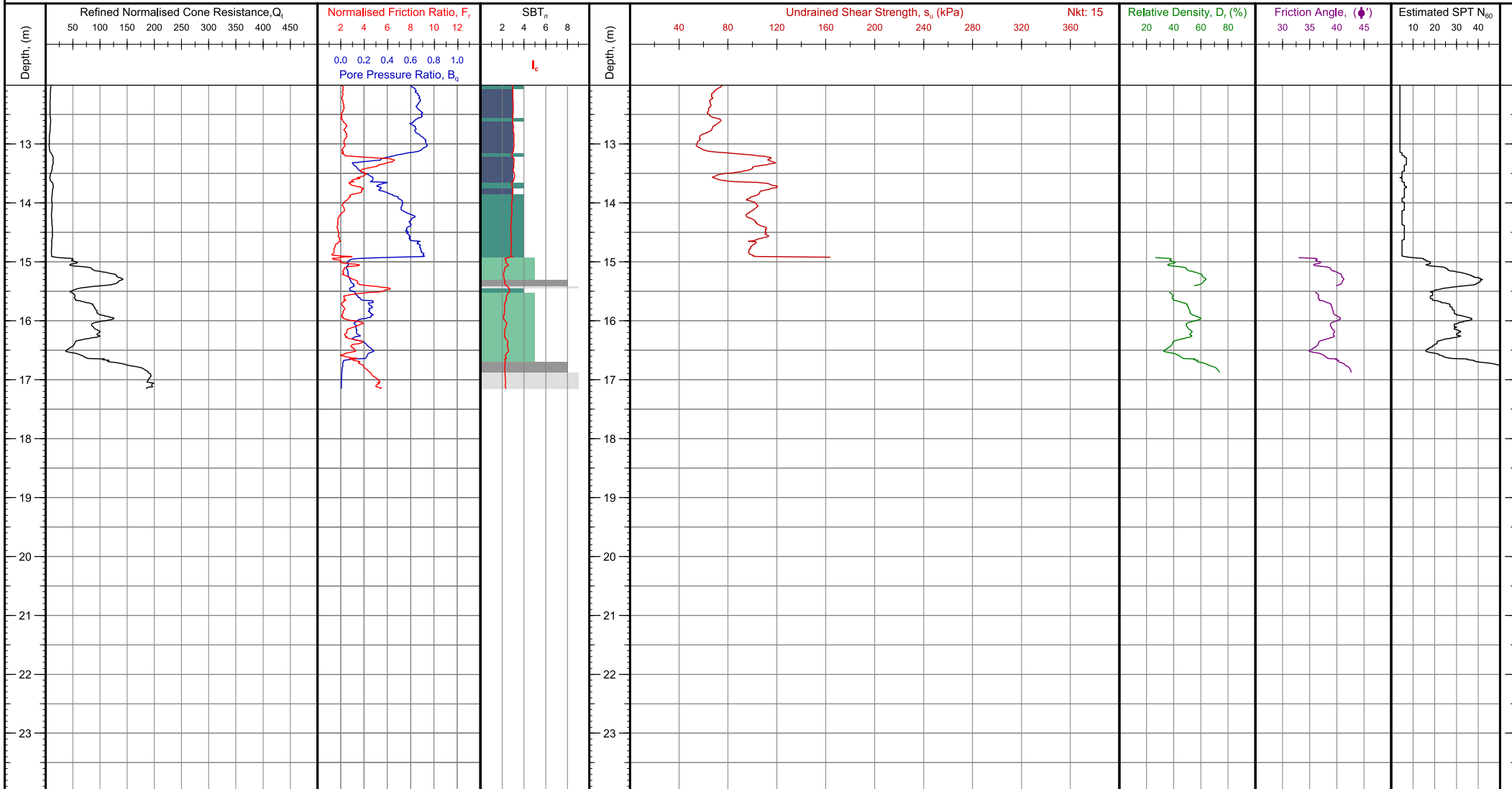
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:
Test Number: CPT-301
G.I. Job Ref: 230180

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

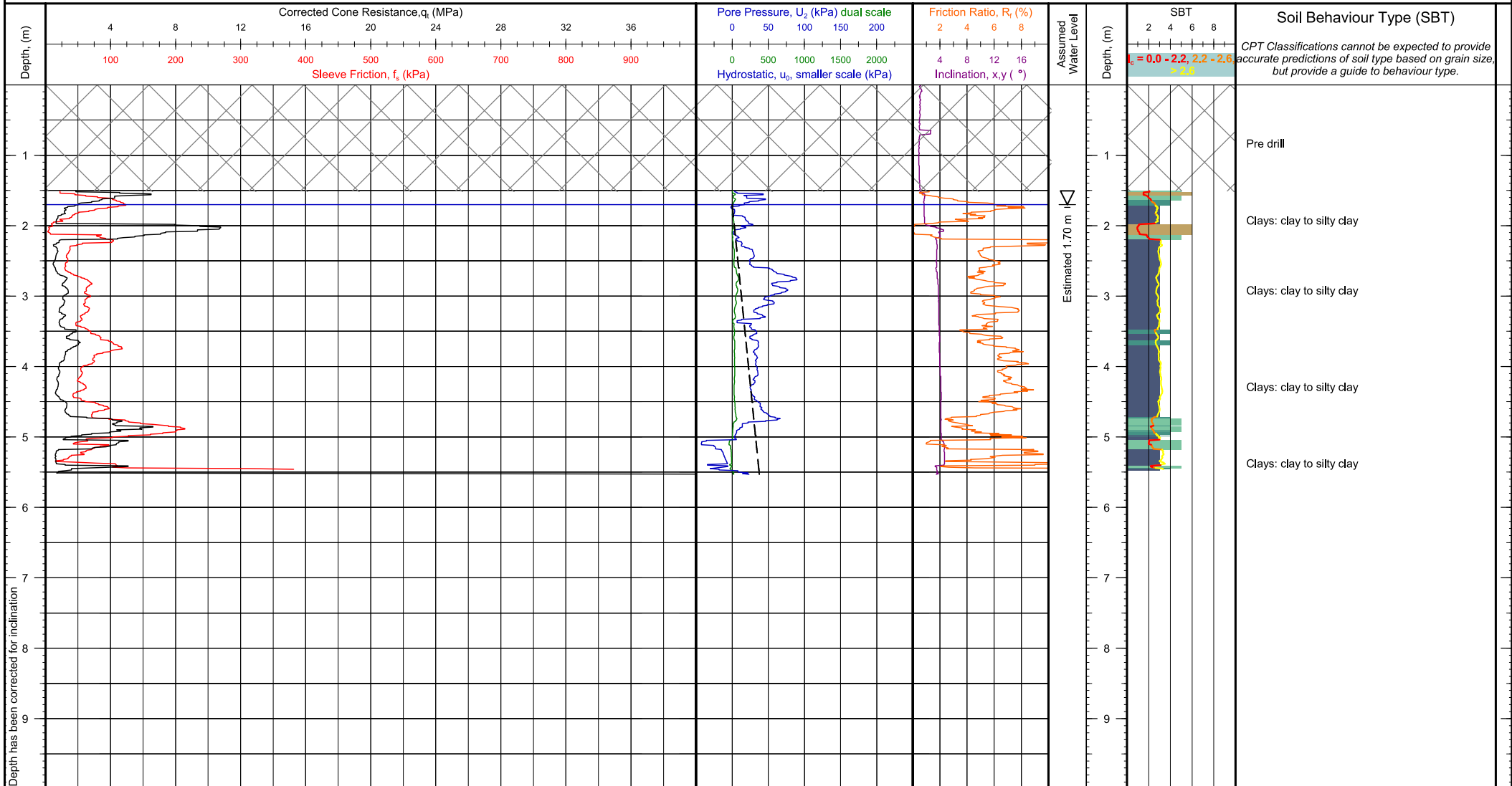
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-301

G.I. Job Ref: 230180

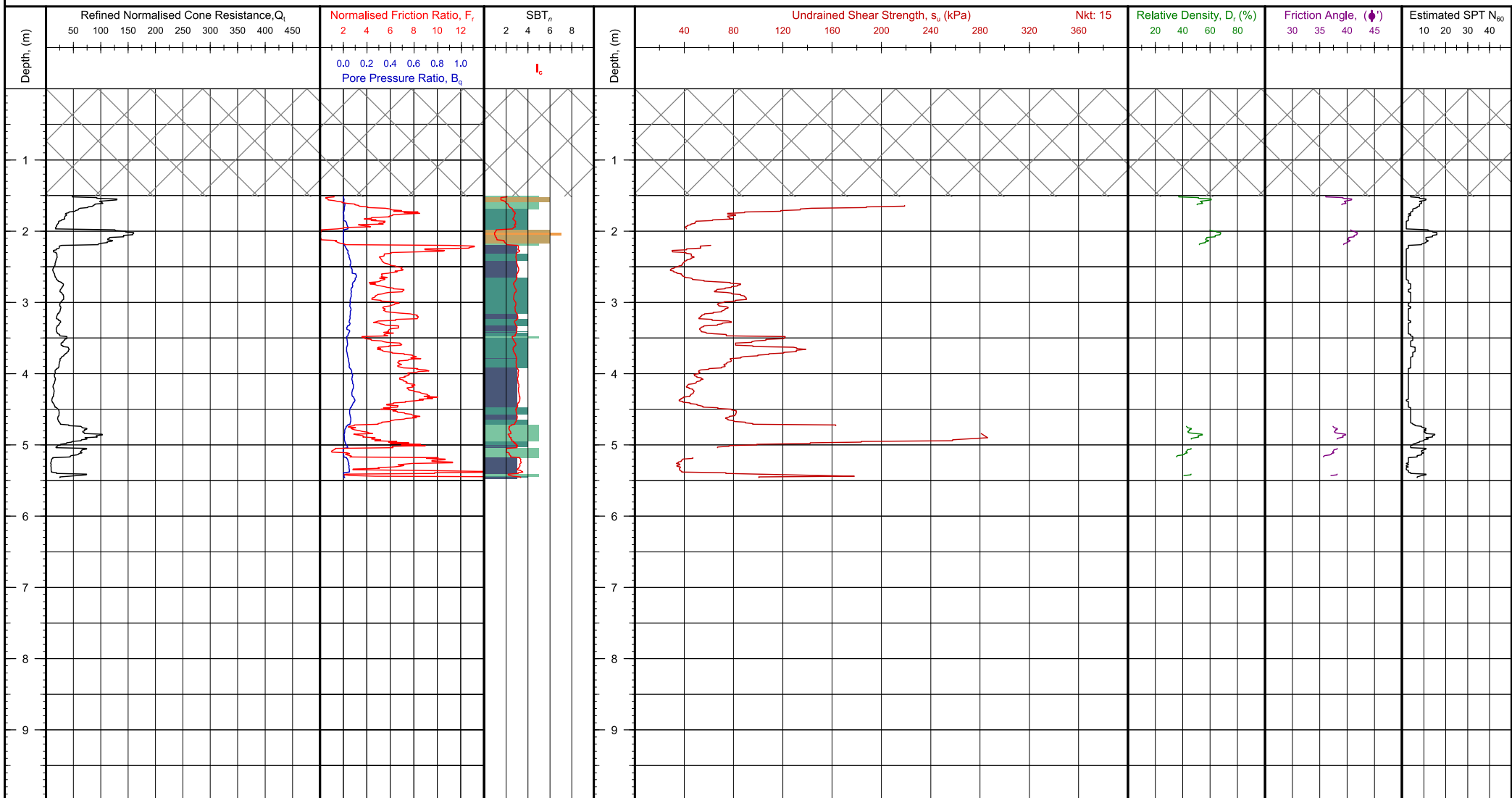
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Ben Thom	NZTM 2000 N, E (m): 5911708.24, 1768435.60	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKS865	WGS84 (deg): -36.925622, 174.891107	Date of Test: 21/10/2021	Test Number: CPT-302
Location: Auckland, New Zealand	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 5.53	
Engineer: Steve Semmens	Area Ratio: 0.78	Surveyor:	Pre Drill (m): 1.50 m	G.I. Job Ref: 210661
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High cone end resistance		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

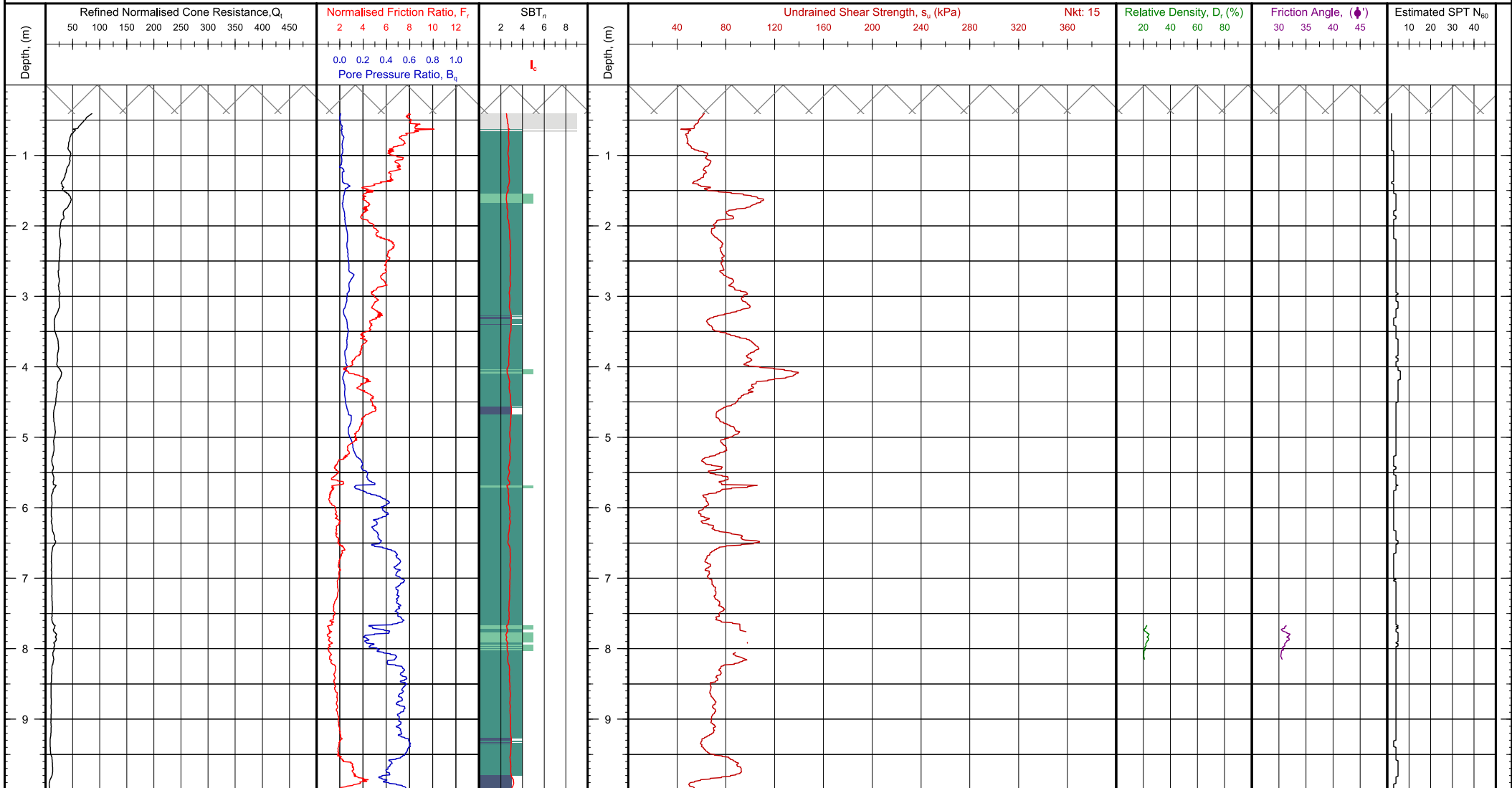
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:
Test Number: CPT-302
G.I. Job Ref: 210661

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

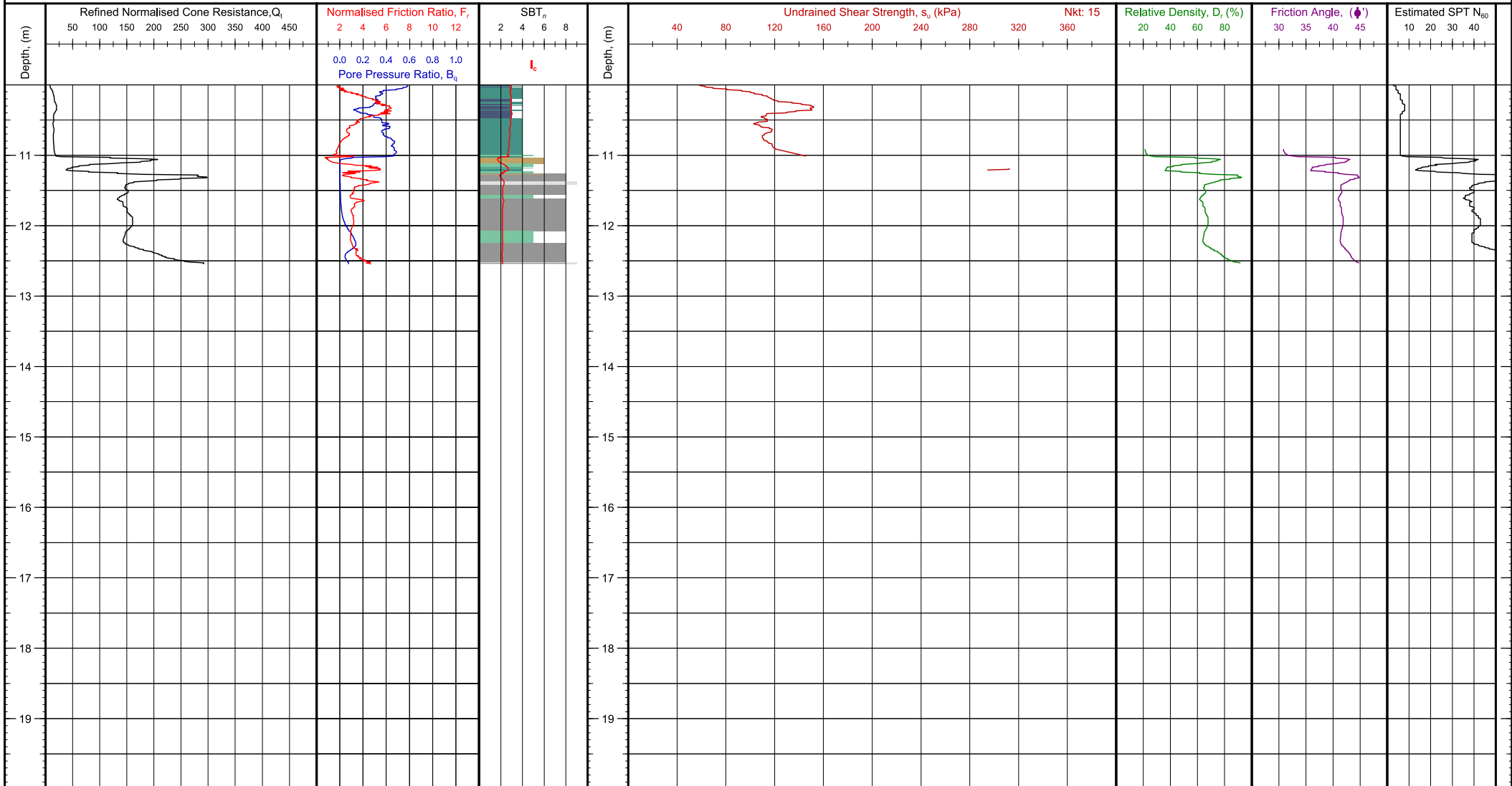
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: SCPT-303

G.I. Job Ref: 210661

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

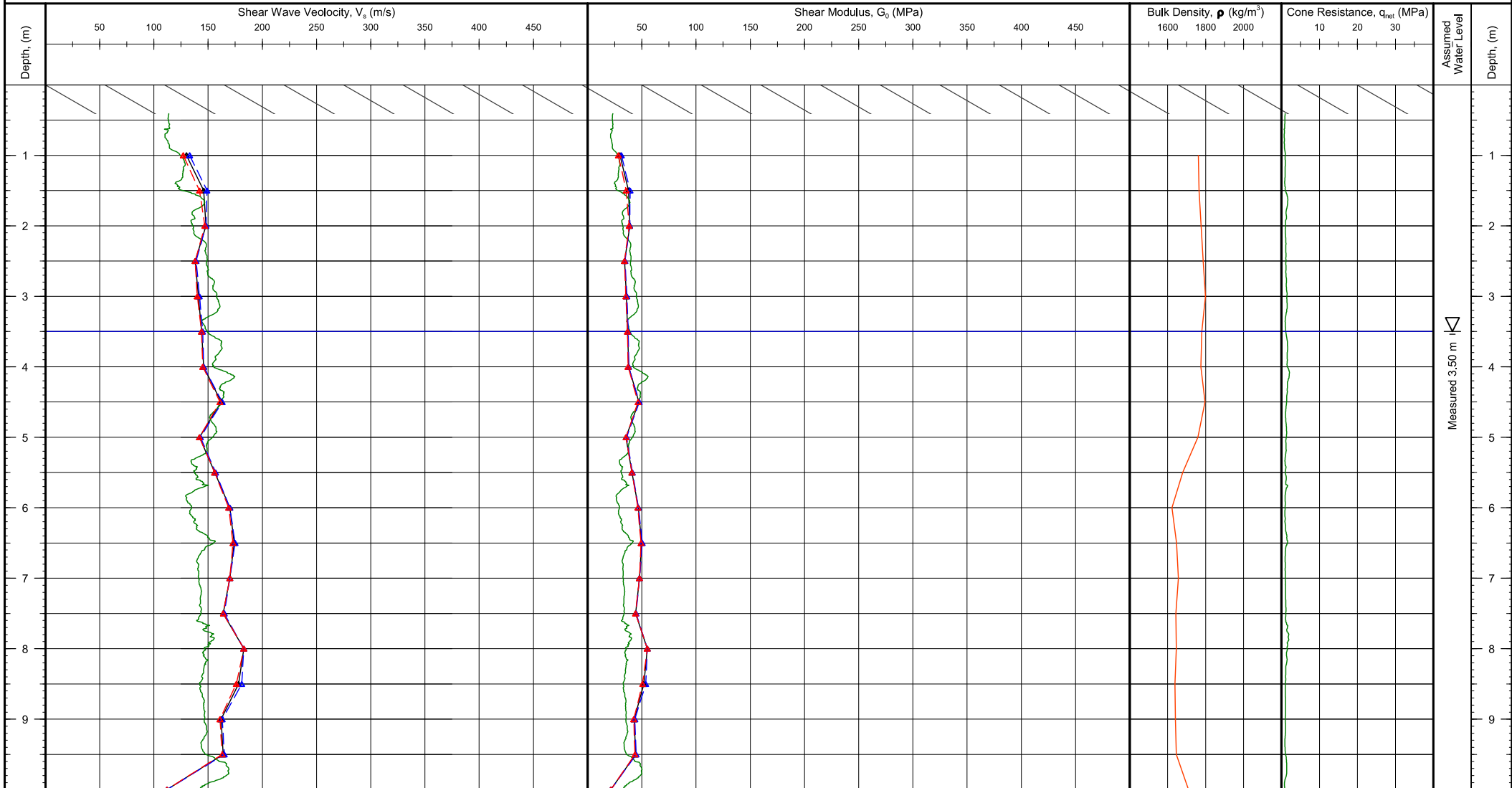
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: SCPT-303

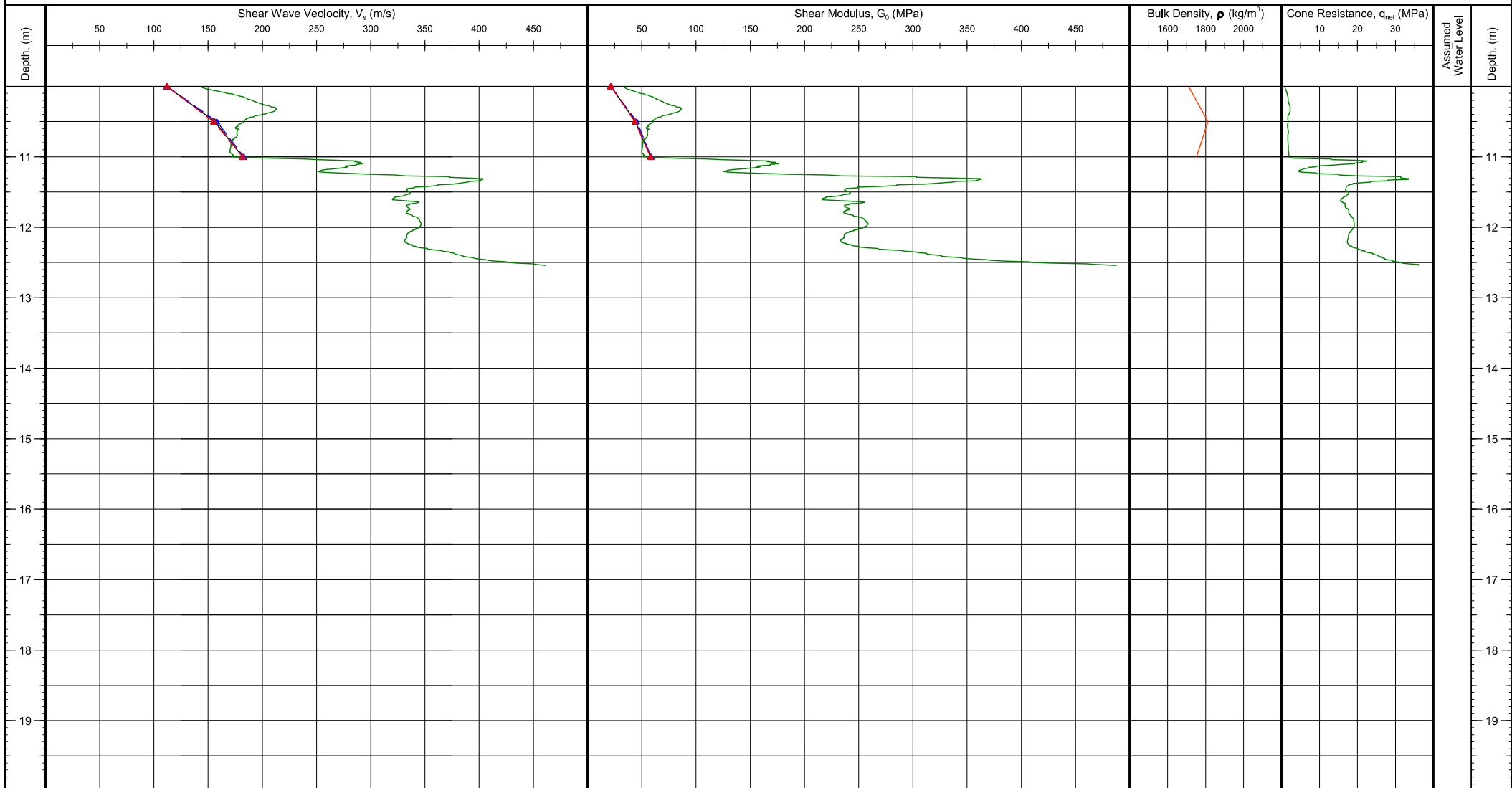
G.I. Job Ref: 210661

CPT SEISMIC TESTING LOG



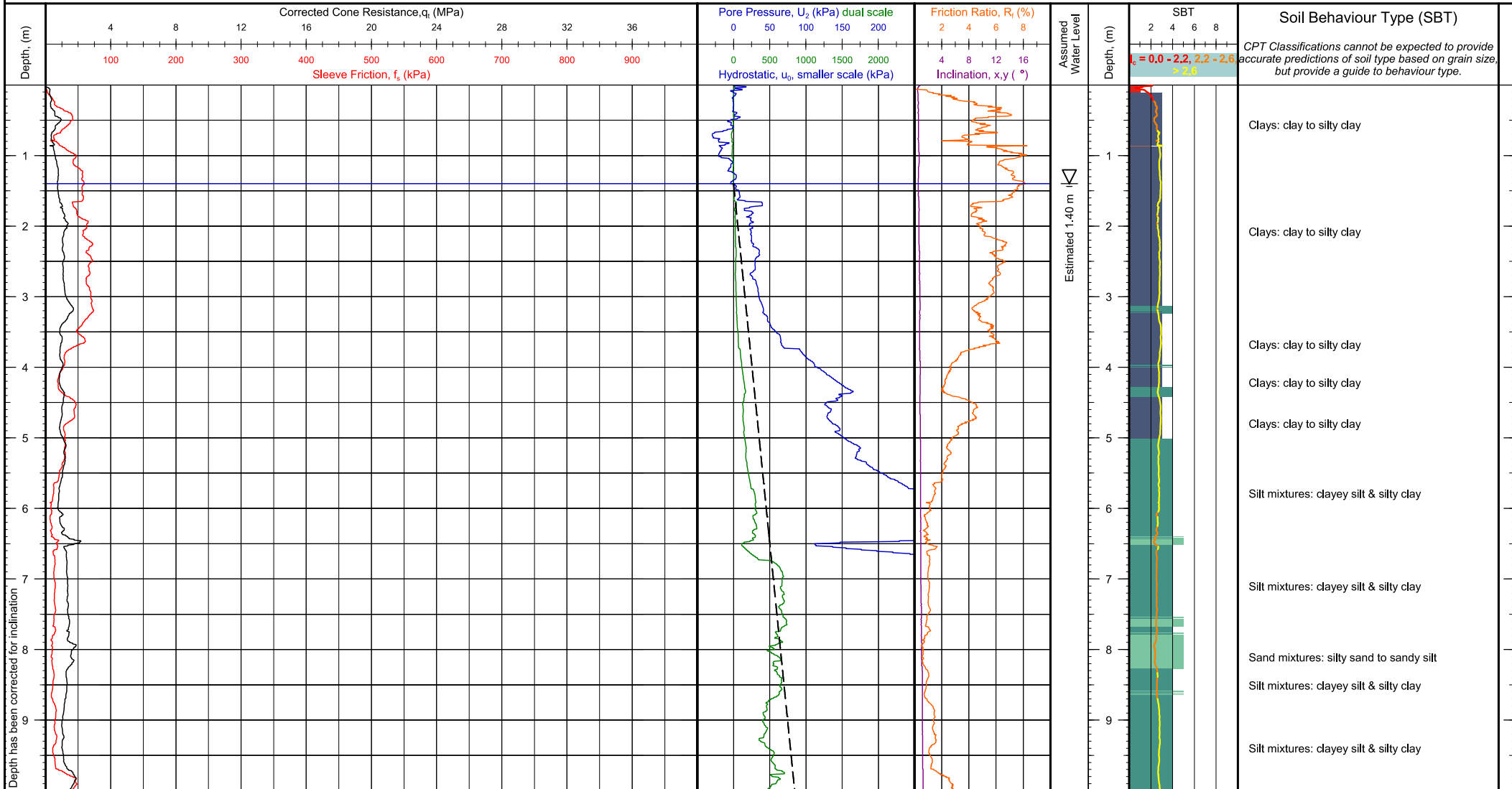
Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd Comments:	<ul style="list-style-type: none"> — Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation 	NZTM 2000 N, E (m): 5911729.13, 1768456.96 WGS84 (deg): -36.925430, 174.891342 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 20/10/2021 Depth (m): 12.61 Pre Drill (m): 0.40 m	Client Reference: Test Number: SCPT-303 G.I. Job Ref: 210661
		Termination Reason: High friction resistance		

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd Comments:	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911729.13, 1768456.96 WGS84 (deg): -36.925430, 174.891342 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 20/10/2021 Depth (m): 12.61 Pre Drill (m): 0.40 m	Client Reference: Test Number: SCPT-303 G.I. Job Ref: 210661
		Termination Reason: High friction resistance		

CONE PENETRATION TEST (CPT) LOG

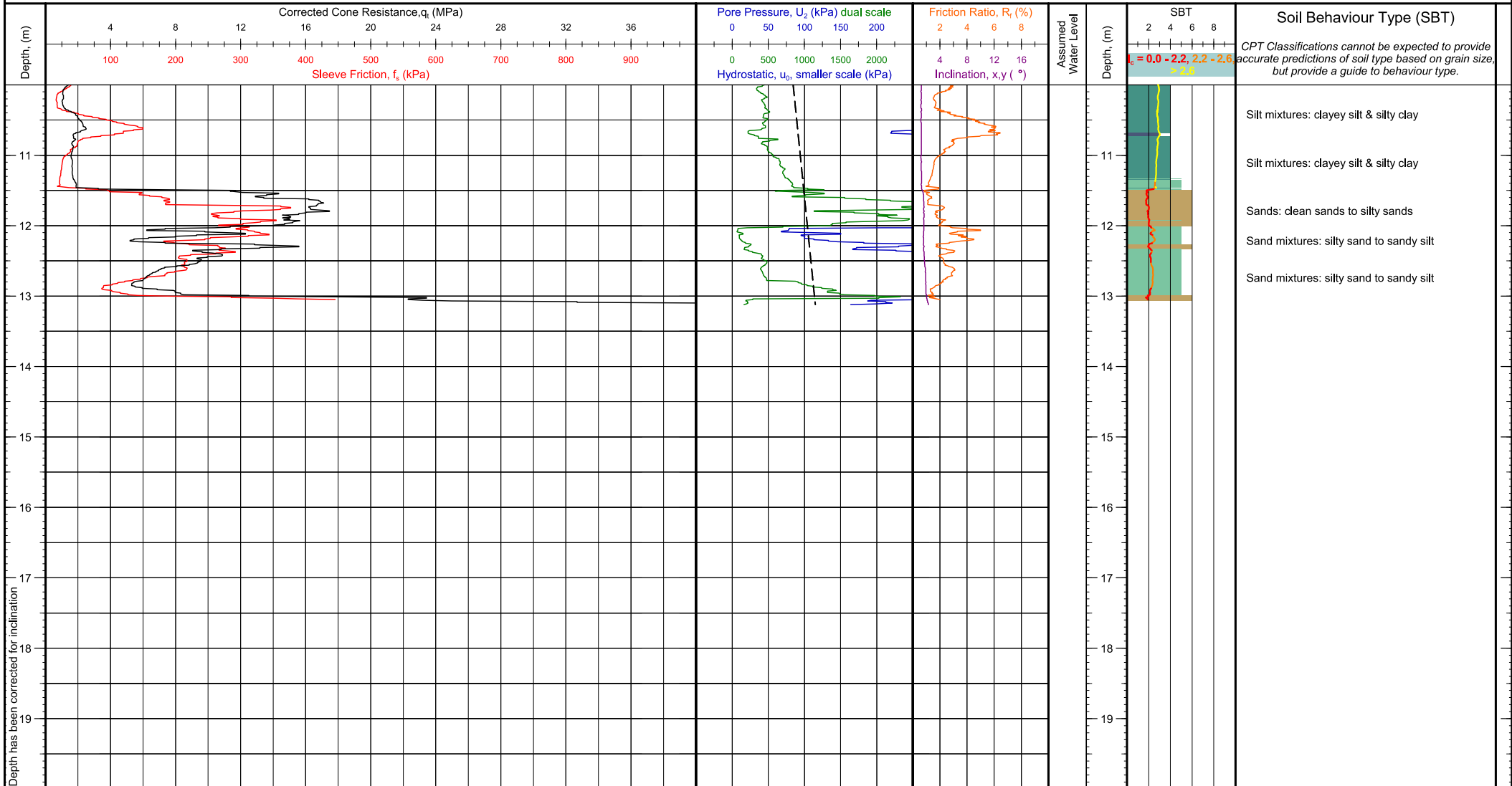


Client: Eastern Busway Alliance	Operator: Ben Thom	NZTM 2000 N, E (m): 5911718.56, 1768486.24	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ300	WGS84 (deg): -36.925520, 174.891673	Date of Test: 21/10/2021	Test Number: CPT-304
Location: Auckland, New Zealand	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 13.12	
Engineer: Steve Semmens	Area Ratio: 0.79	Surveyor:	Pre Drill (m): N/A	G.I. Job Ref: 210661
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High cone end resistance		

Comments:

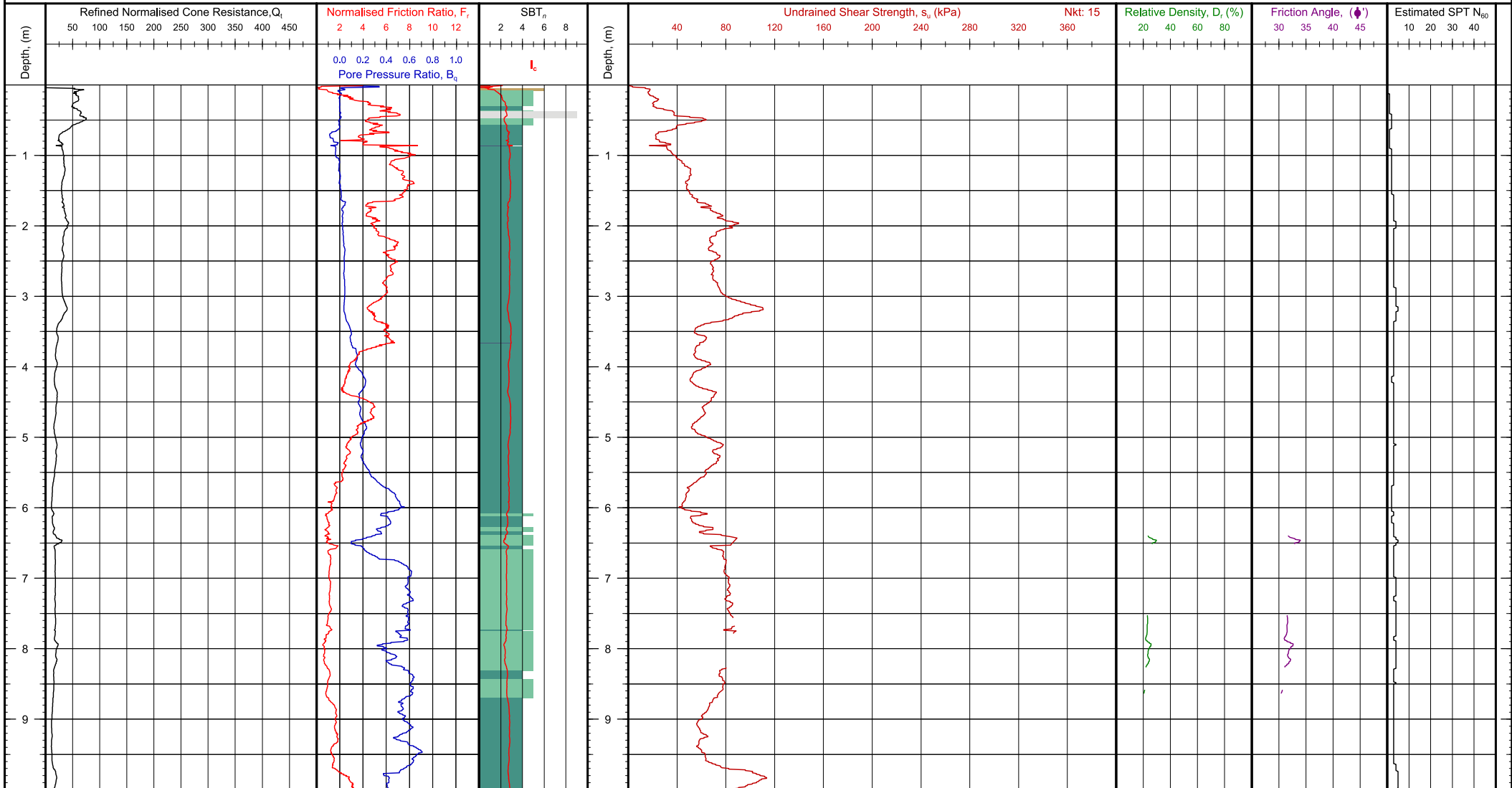
Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Ben Thom Cone Ref: MKJ300 Cone Type: 10cm ² Compression Area Ratio: 0.79 Filter Type: u ₂	NZTM 2000 N, E (m): 5911718.56, 1768486.24	Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.925520, 174.891673	Date of Test: 21/10/2021	
Comments:		Location Method: Handheld GPS	Depth (m): 13.12	Test Number: CPT-304
		Surveyor:	Pre Drill (m): N/A	
Termination Reason: High cone end resistance			G.I. Job Ref: 210661	

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

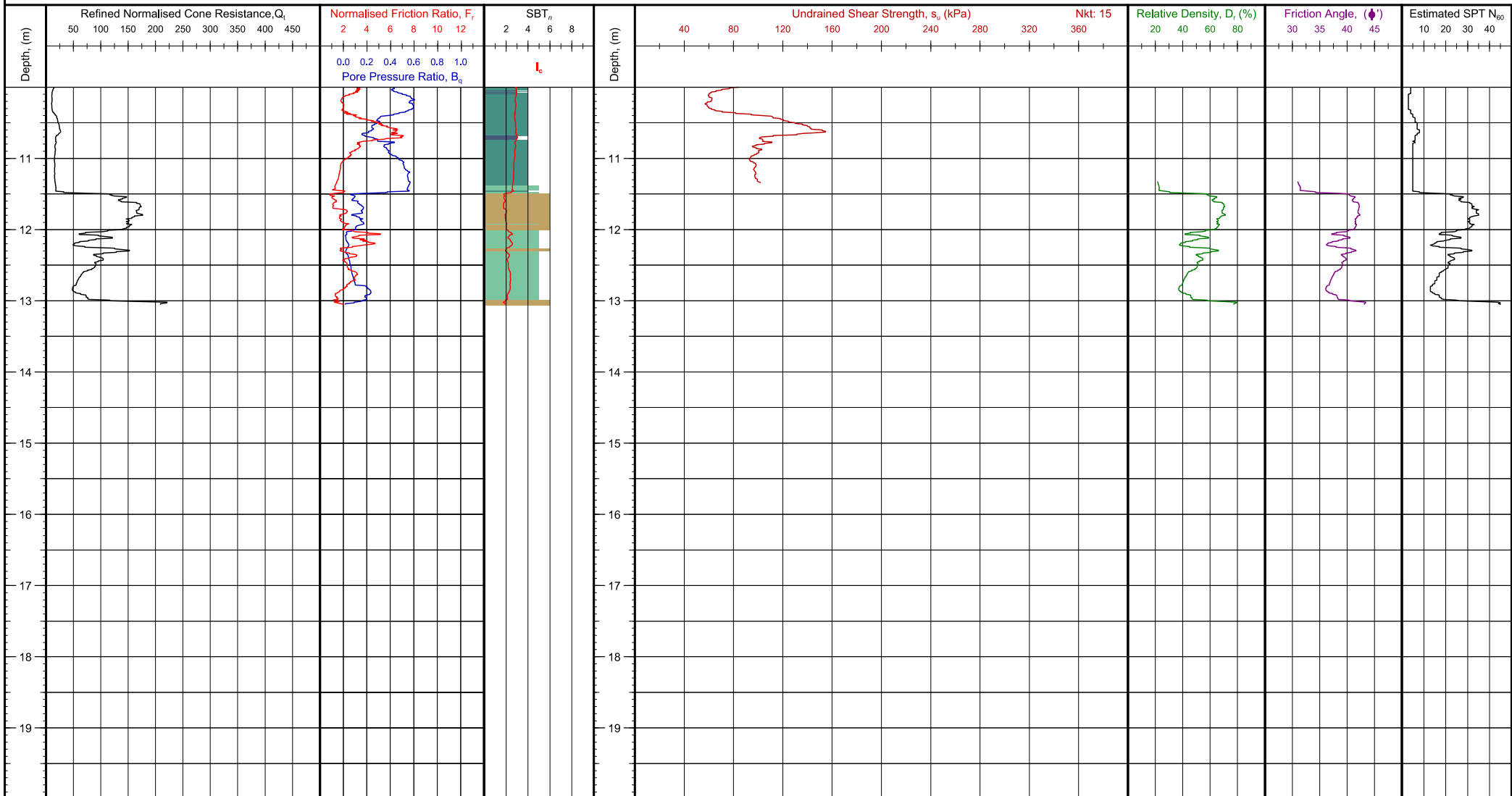
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-304

G.I. Job Ref: 210661



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

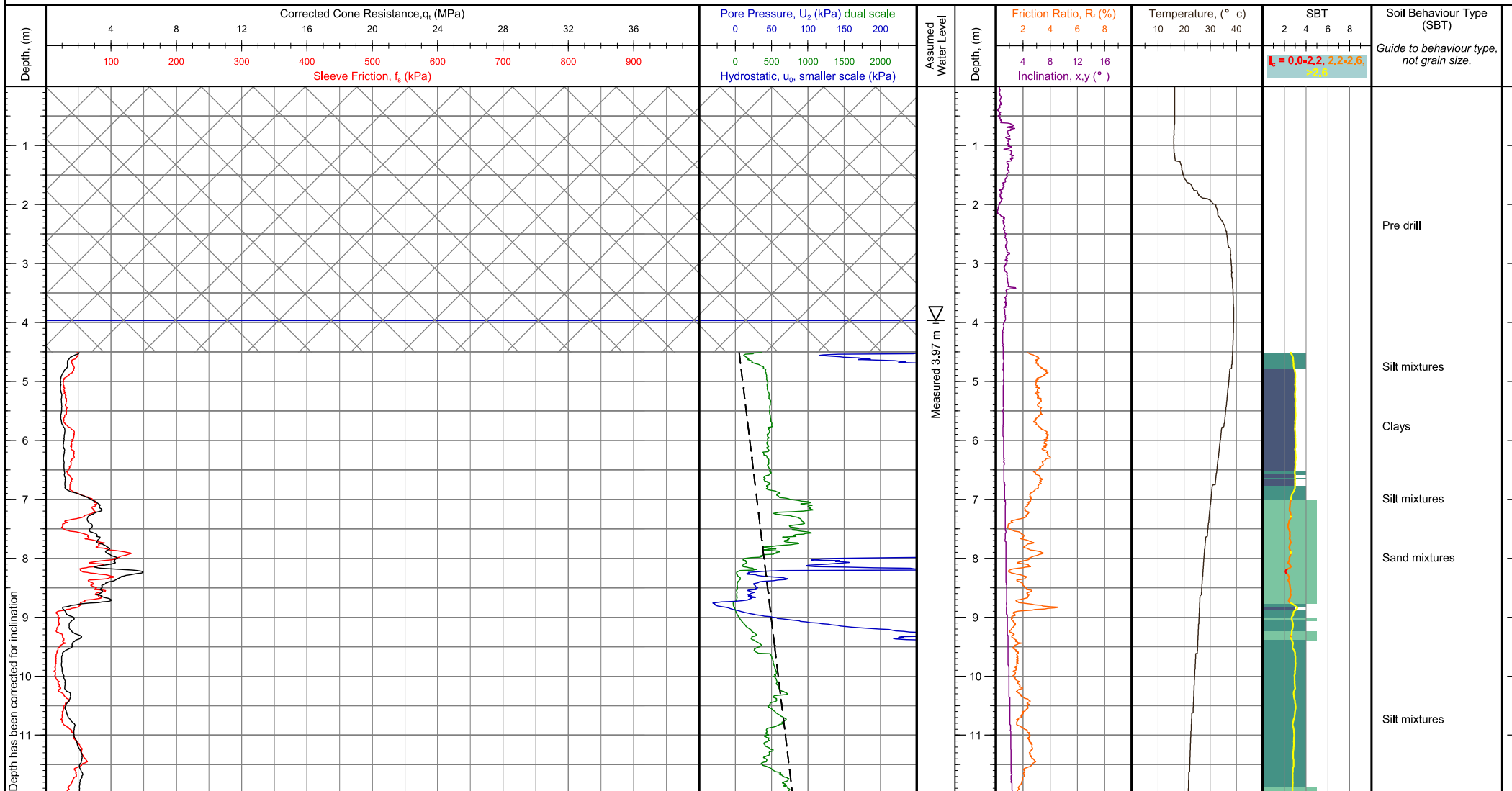
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-304

G.I. Job Ref: 210661

CONE PENETRATION TEST (CPT) LOG

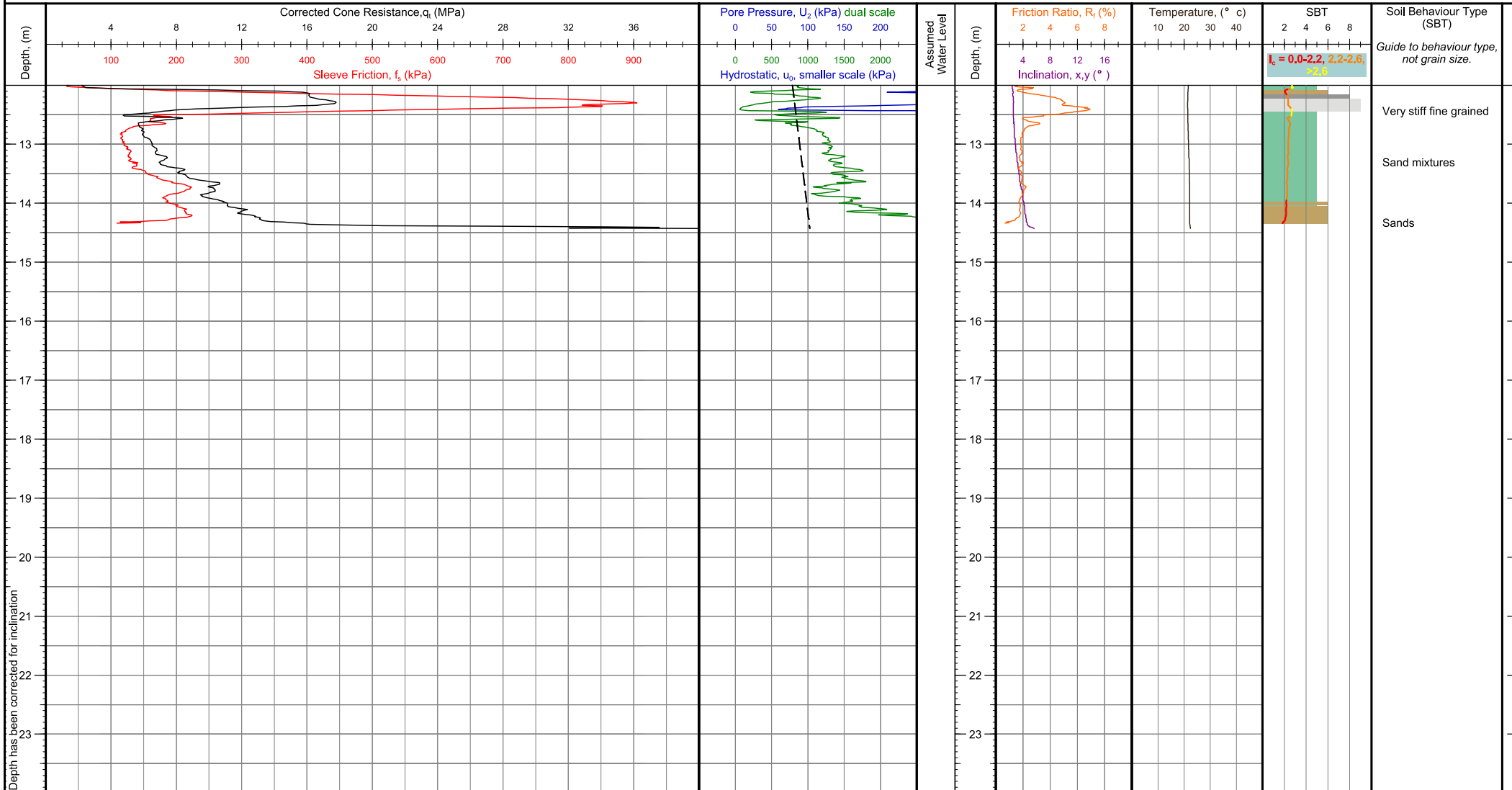


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911813.05, 1768612.96	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 71062	WGS84 (deg): -36.924646, 174.893074	Date of Test: 23/06/2022	
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 14.43	Test Number: SCPT-305
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 4.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure	G.I. Job Ref: 220198	

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

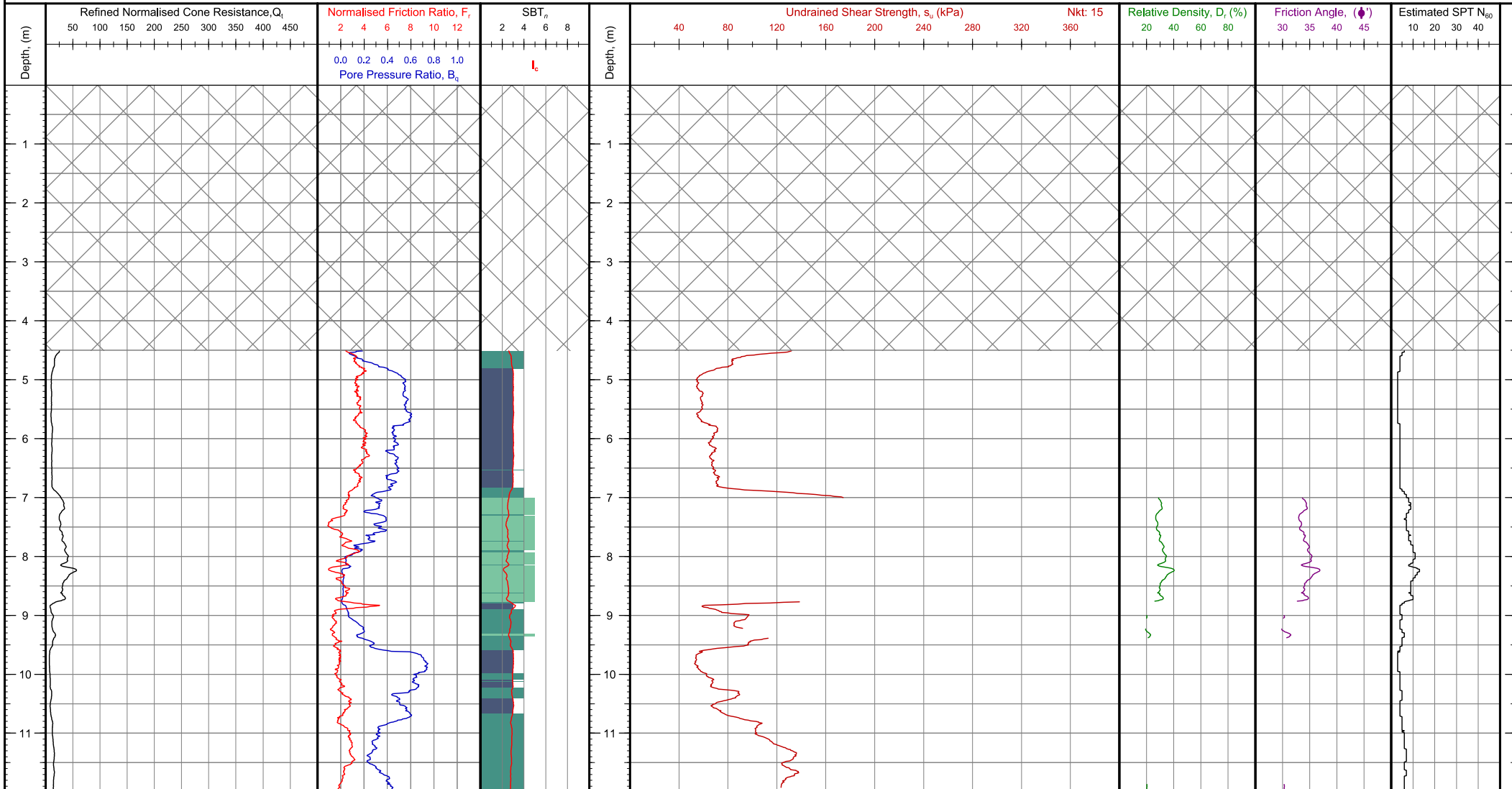
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911813.05, 1768612.96	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 71062	WGS84 (deg): -36.924646, 174.893074	Date of Test: 23/06/2022	Test Number: SCPT-305
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 14.43	
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 4.50 m	G.I. Job Ref: 220198
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure		

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

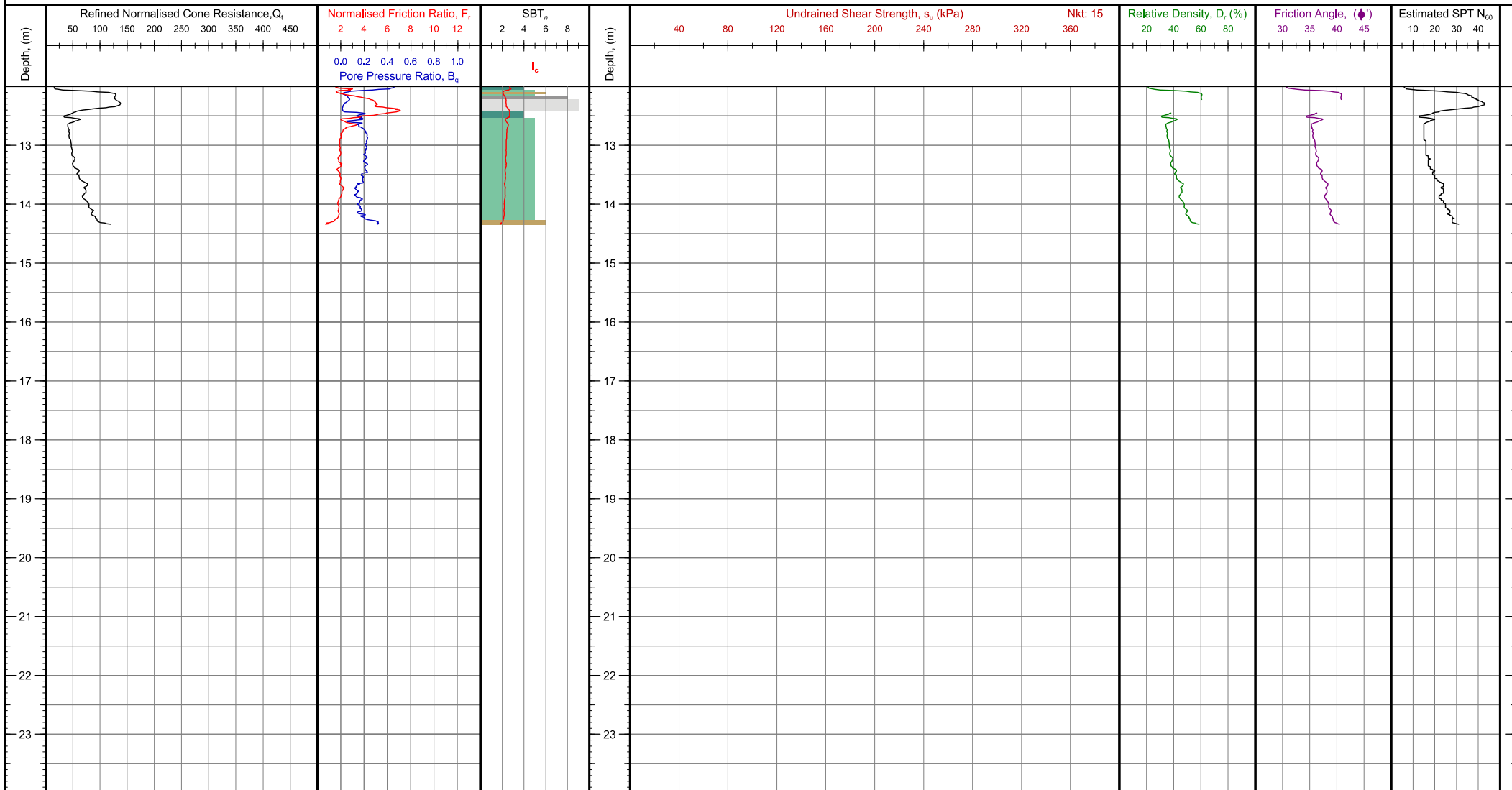
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: SCPT-305

G.I. Job Ref: 220198

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

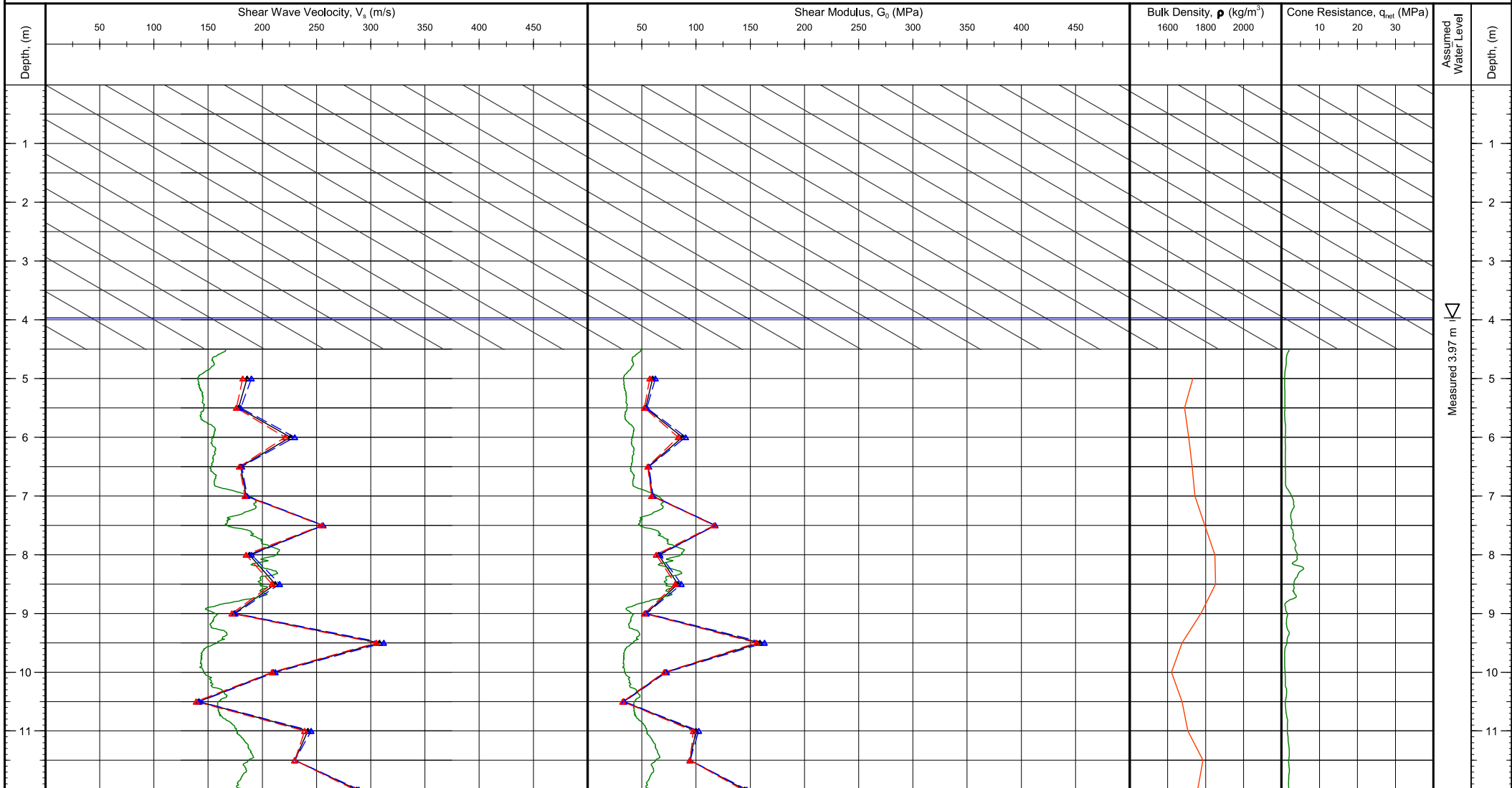
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: SCPT-305

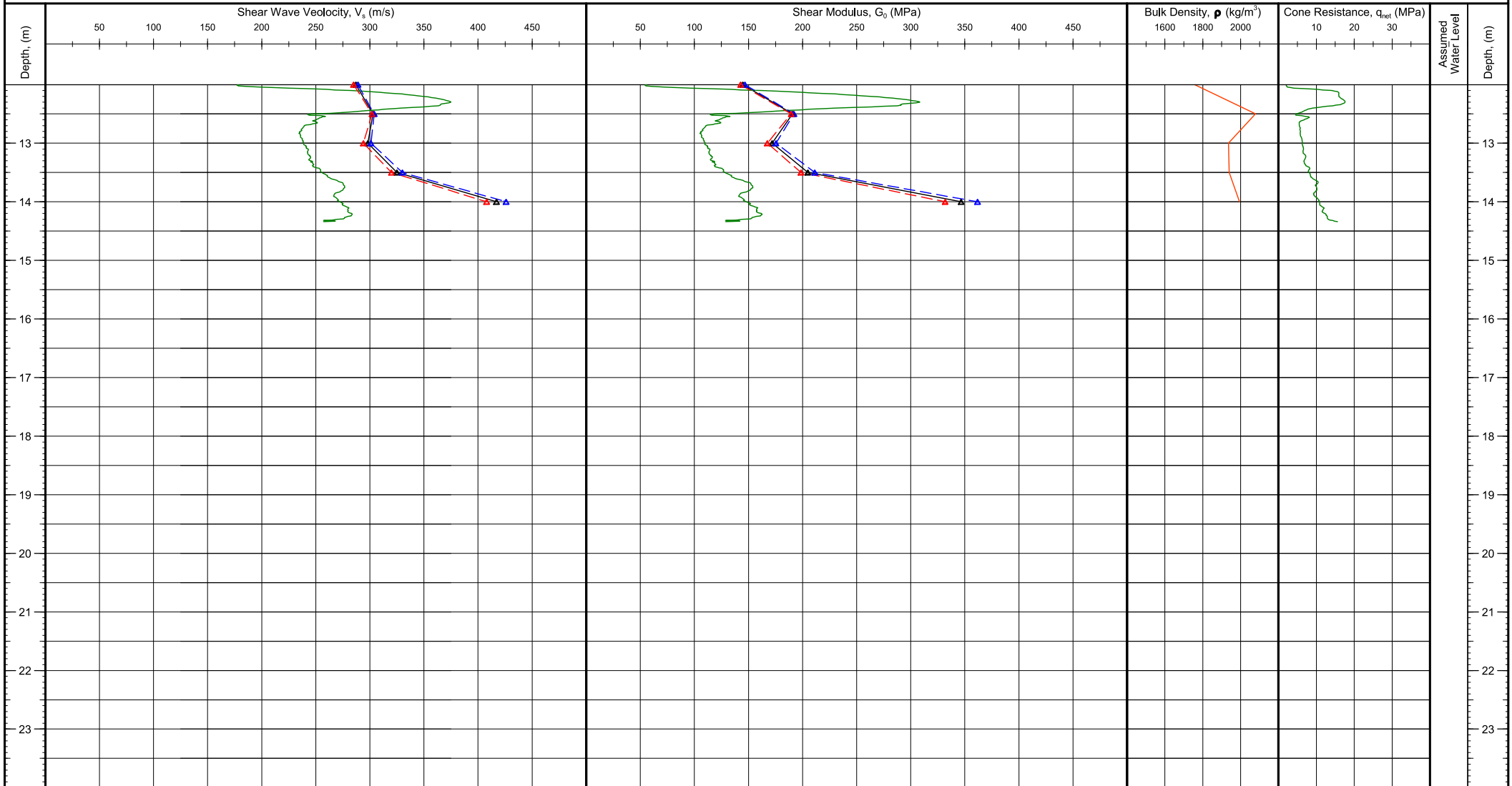
G.I. Job Ref: 220198

CPT SEISMIC TESTING LOG



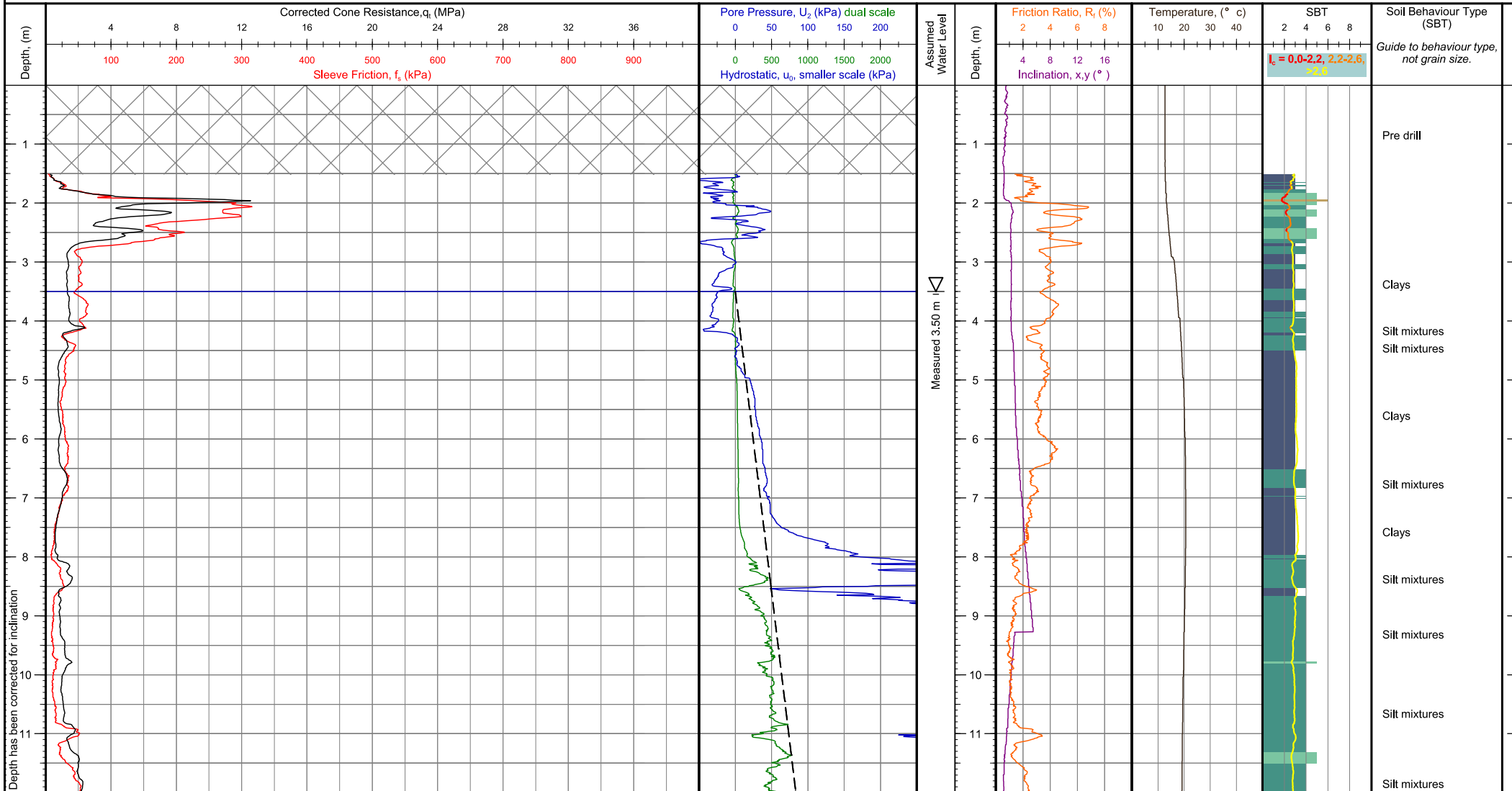
Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East, Auckland Engineer: Steve Semmens Contractor: Ground Investigation Ltd Comments: GWL provided by client on-site.	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911813.05, 1768612.96 WGS84 (deg): -36.924646, 174.893074 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 23/06/2022 Depth (m): 14.43 Pre Drill (m): 4.50 m	Client Reference: Test Number: SCPT-305 G.I. Job Ref: 220198
		Termination Reason: High pore water pressure		

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance	— Estimated from CPT	NZTM 2000 N, E (m): 5911813.05, 1768612.96	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	- - - Measured Lower Bound	WGS84 (deg): -36.924646, 174.893074	Date of Test: 23/06/2022	Test Number: SCPT-305
Location: Pakuranga to Botany East, Auckland	— Measured Average Bound	Location Method: Handheld GPS	Depth (m): 14.43	
Engineer: Steve Semmens	- - - Measured Upper Bound	Surveyor:	Pre Drill (m): 4.50 m	G.I. Job Ref: 220198
Contractor: Ground Investigation Ltd	— ρ from G_0 Calculation	Termination Reason: High pore water pressure		
Comments: GWL provided by client on-site.				

CONE PENETRATION TEST (CPT) LOG

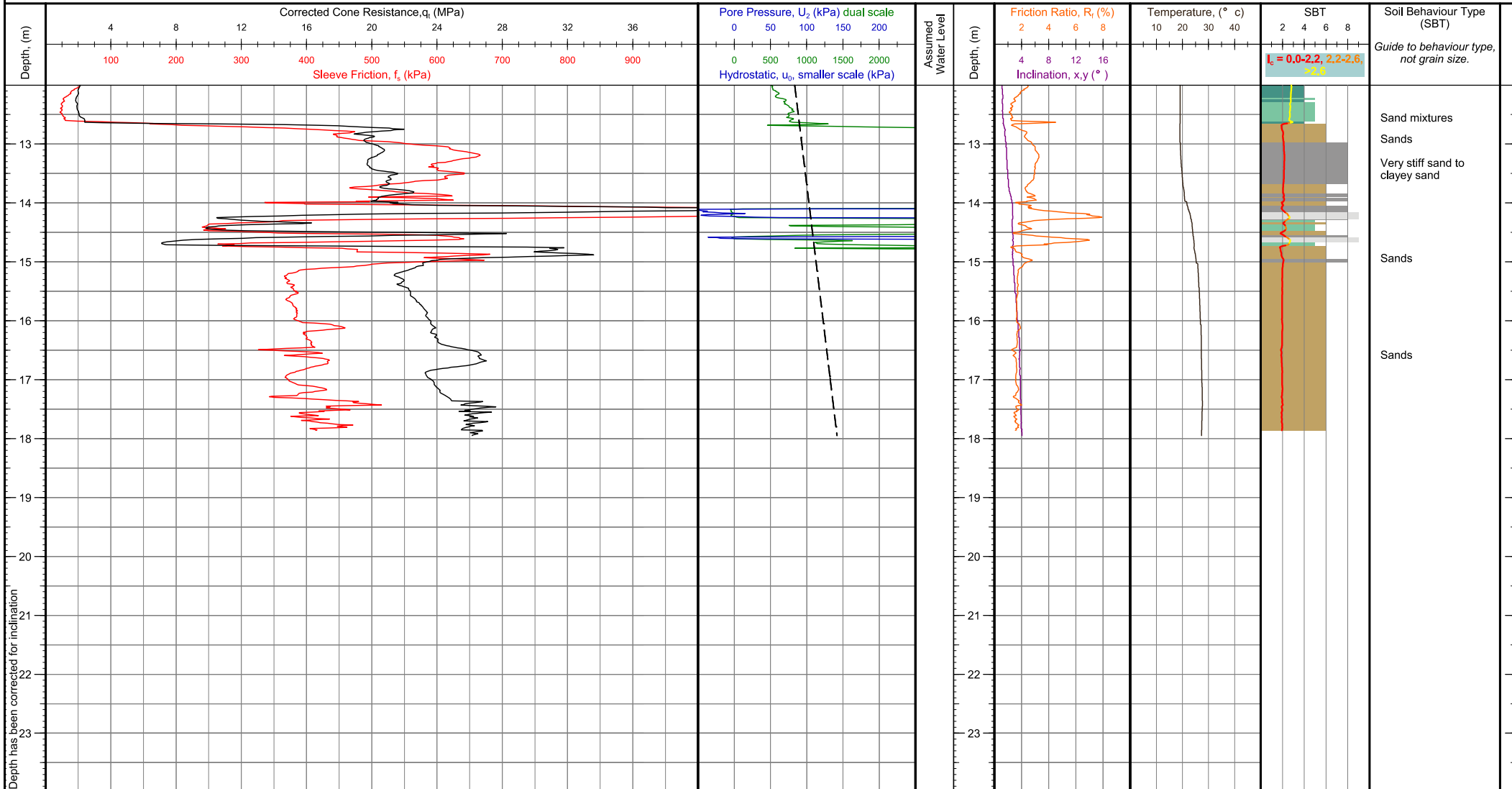


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911843.46, 1768618.74	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 70169	WGS84 (deg): -36.924371, 174.893132	Date of Test: 27/06/2022	
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 17.95	Test Number: CPT-306
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure	G.I. Job Ref: 220198	

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

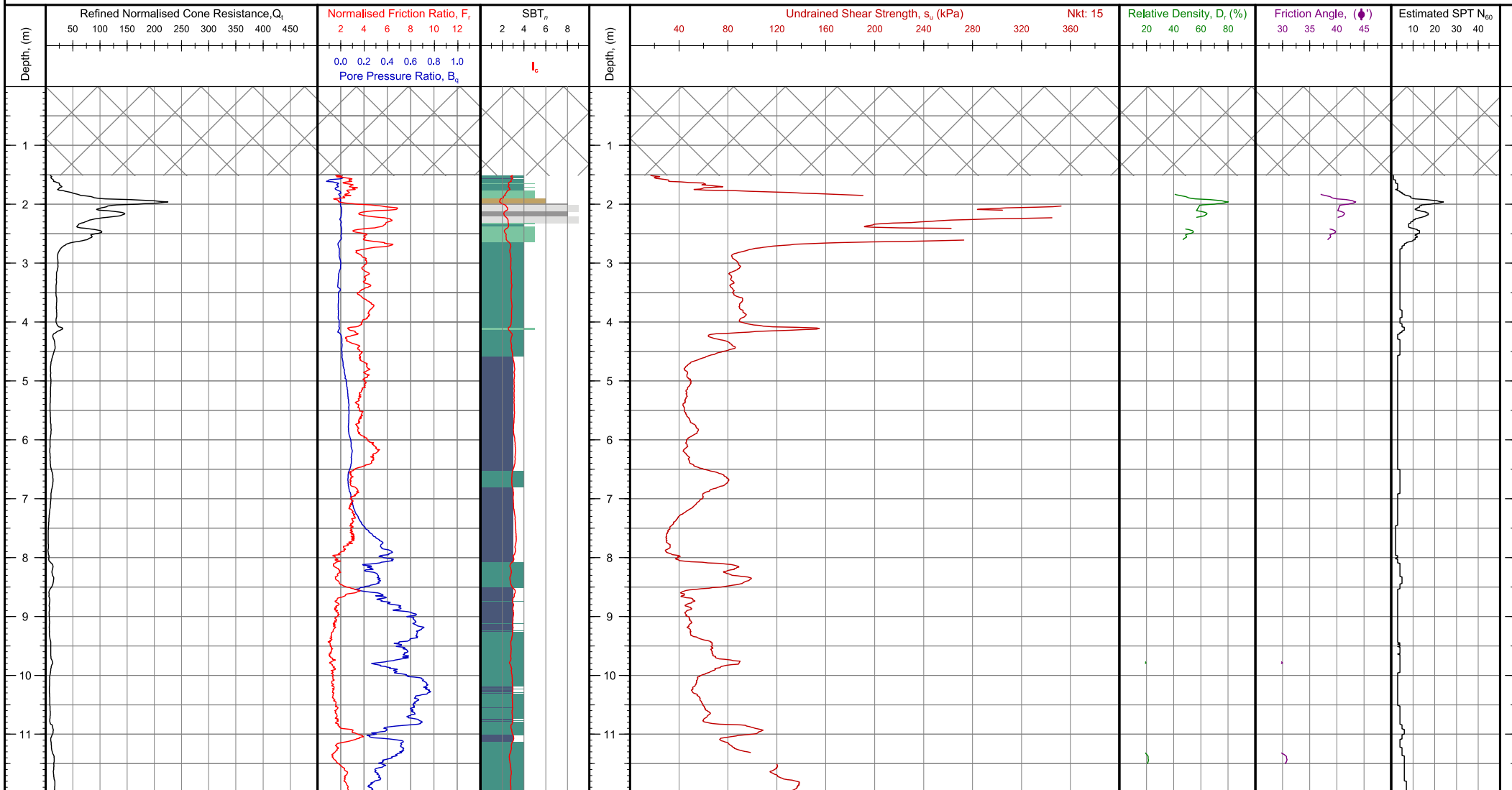
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East, Auckland Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Marcelo Martinez Cone Ref: 70169 Cone Type: 15cm ² Subtraction Area Ratio: 0.75 Filter Type: u ₂	NZTM 2000 N, E (m): 5911843.46, 1768618.74 WGS84 (deg): -36.924371, 174.893132 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 27/06/2022 Depth (m): 17.95 Pre Drill (m): 1.50 m	Client Reference: Test Number: CPT-306
		Termination Reason: High pore water pressure	G.I. Job Ref: 220198	

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

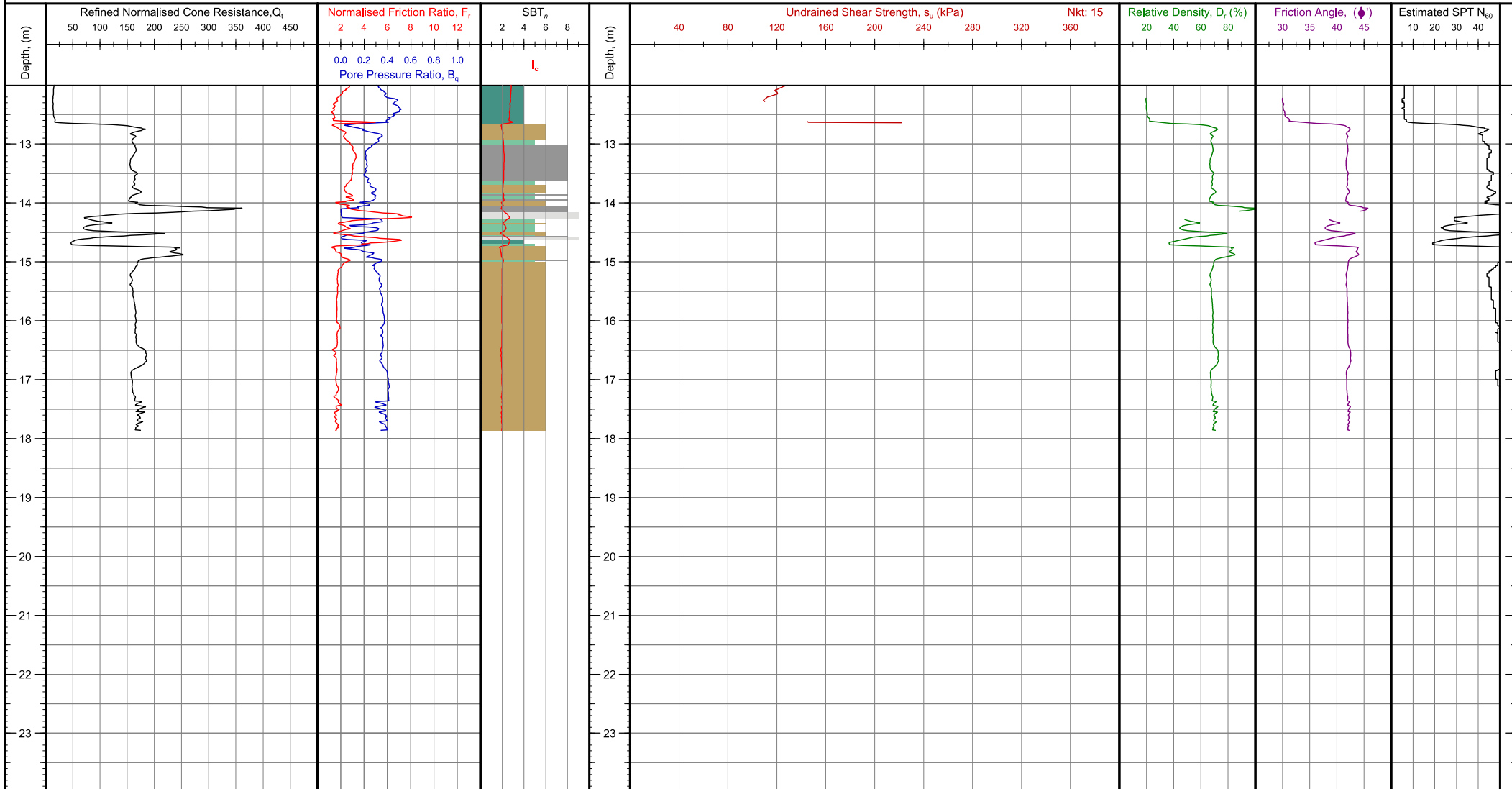
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-306

G.I. Job Ref: 220198



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

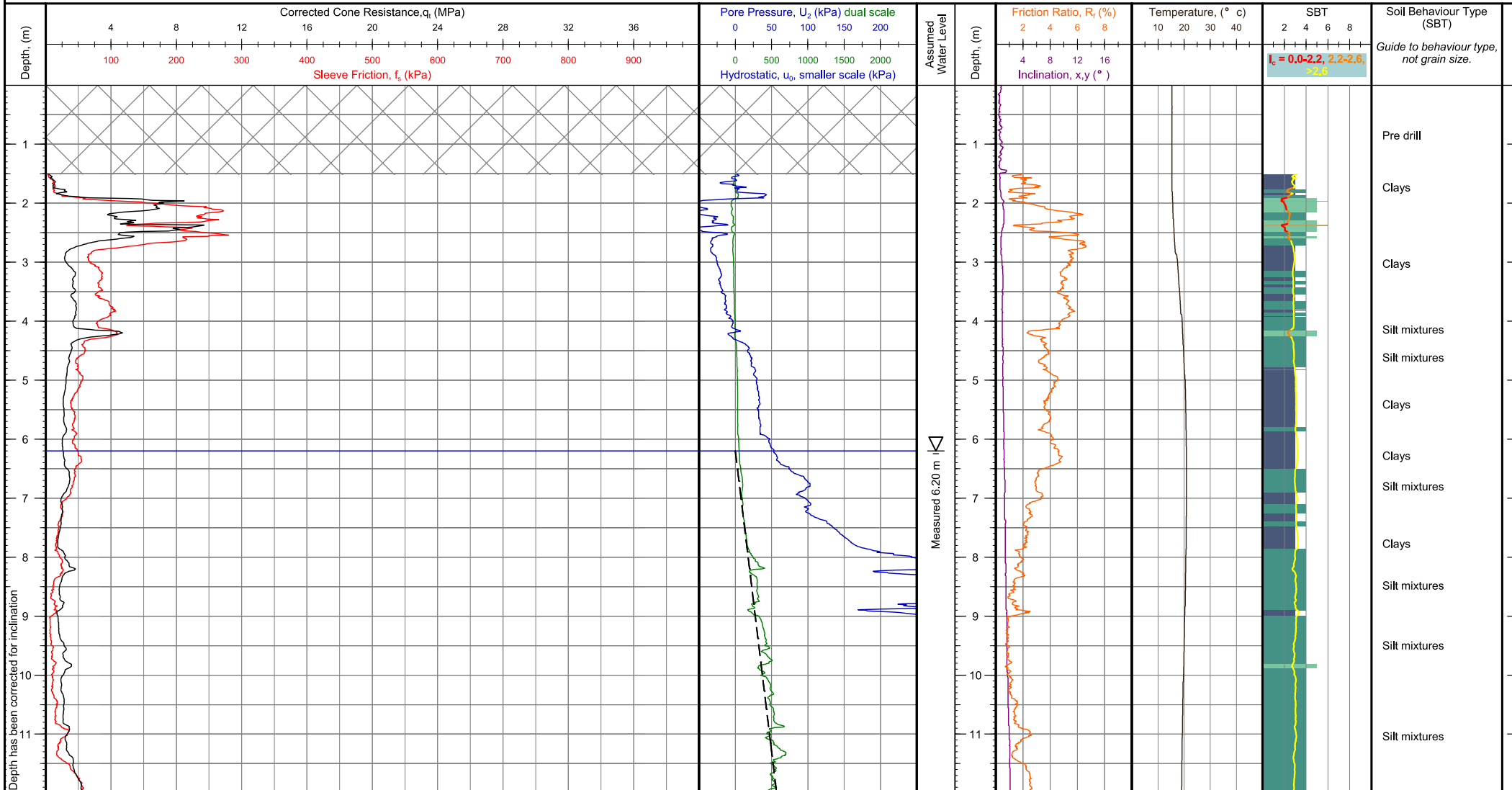
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-306

G.I. Job Ref: 220198

CONE PENETRATION TEST (CPT) LOG

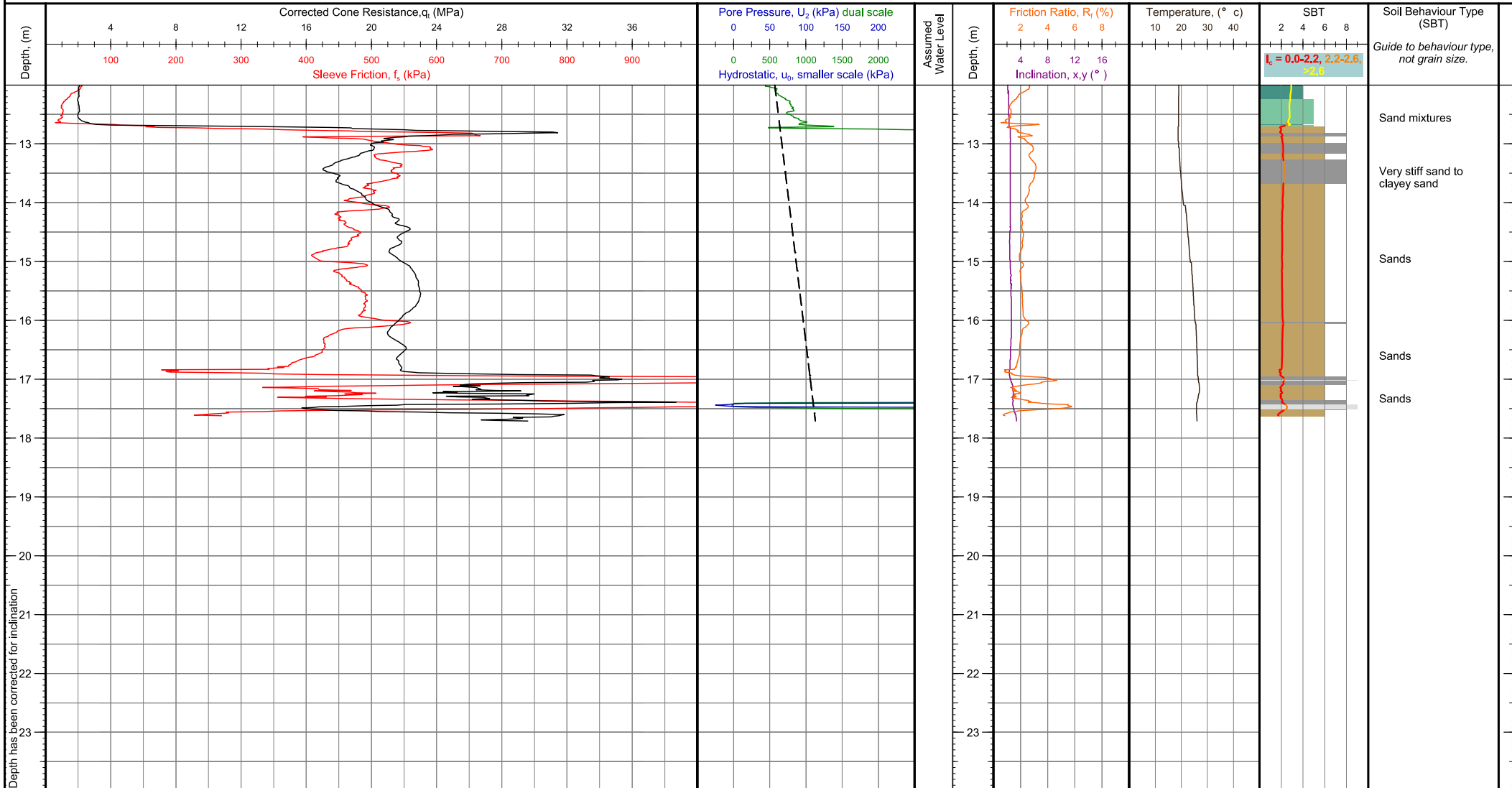


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911856.40, 1768626.57	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 71137	WGS84 (deg): -36.924253, 174.893217	Date of Test: 27/06/2022	
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 17.71	Test Number: SCPT-307
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure	G.I. Job Ref: 220198	

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

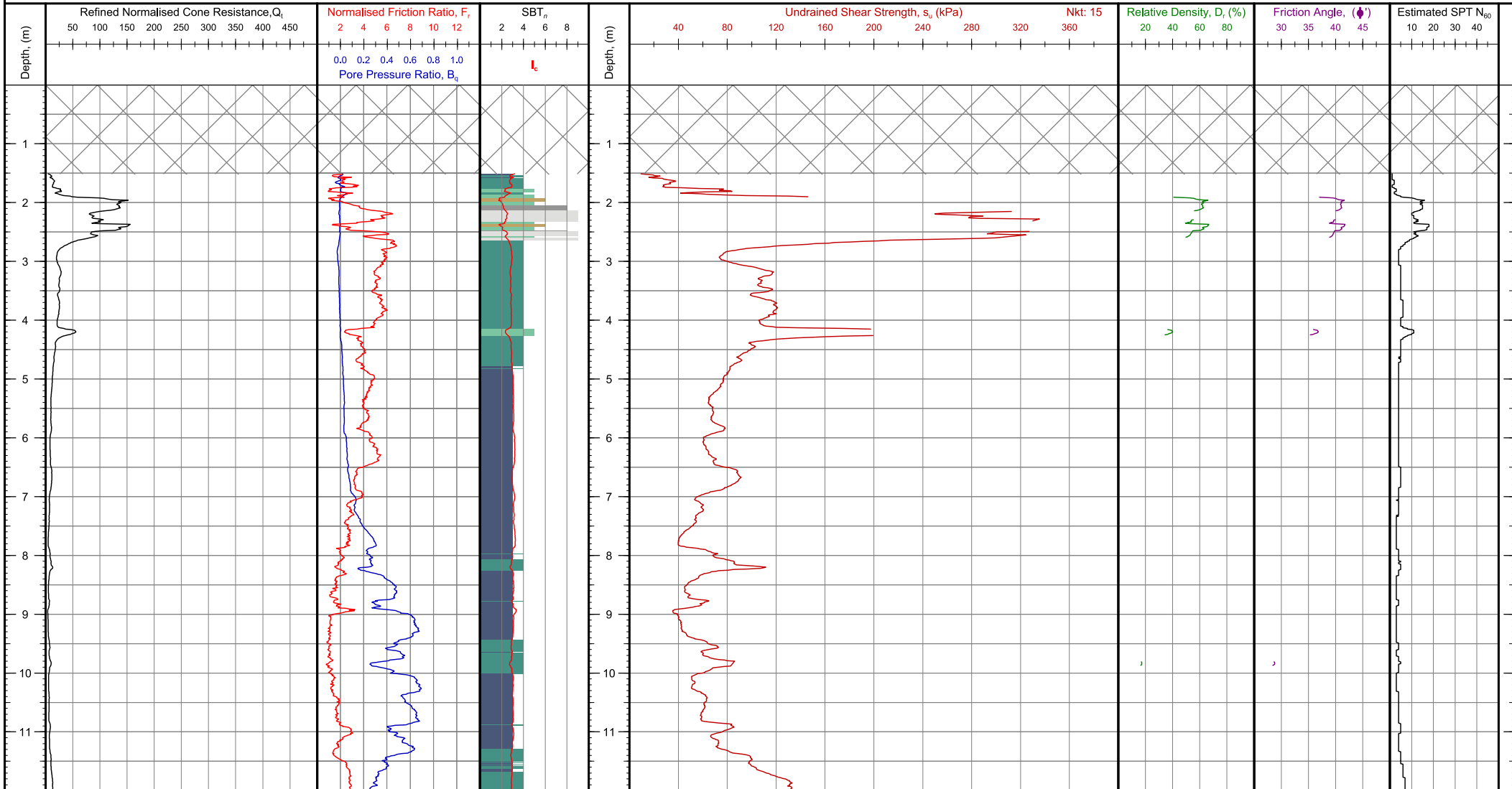
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911856.40, 1768626.57	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 71137	WGS84 (deg): -36.924253, 174.893217	Date of Test: 27/06/2022	
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 17.71	Test Number: SCPT-307
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High pore water pressure	G.I. Job Ref: 220198	

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



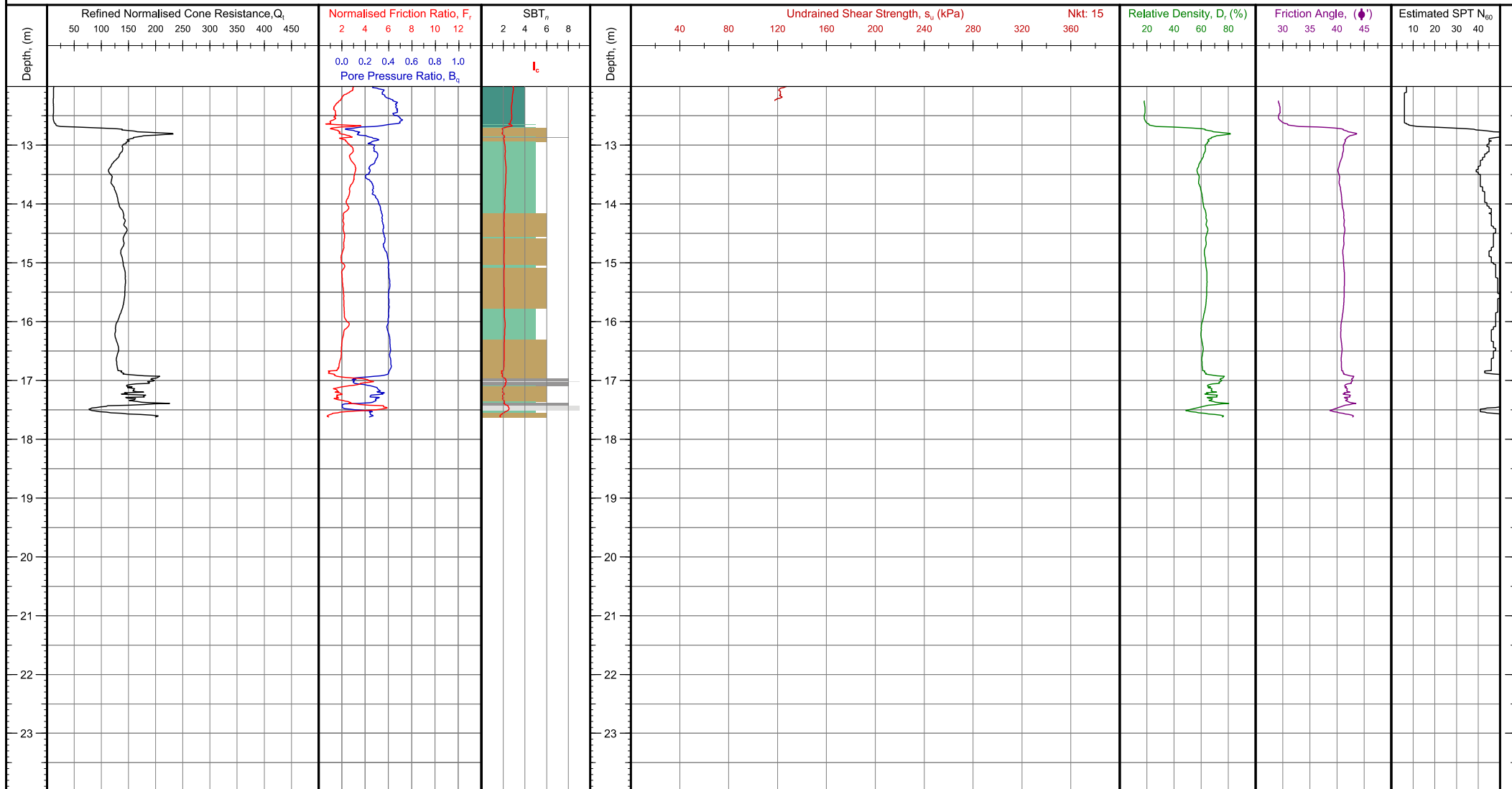
Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:
Test Number: SCPT-307
G.I. Job Ref: 220198



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

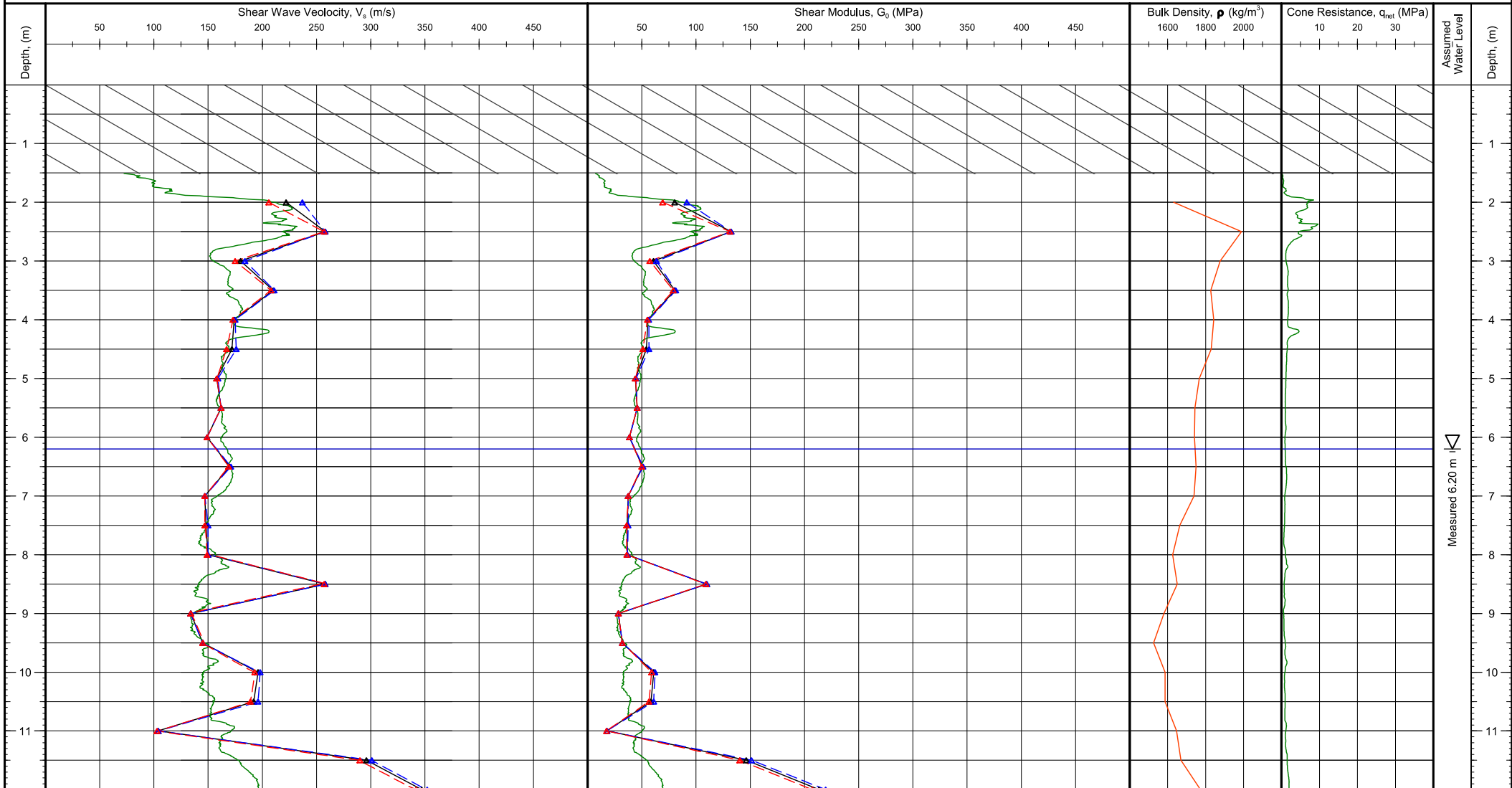
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: SCPT-307

G.I. Job Ref: 220198

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

— Estimated from CPT
 - - - Measured Lower Bound
 — Measured Average Bound
 - - - Measured Upper Bound
 — ρ from G_0 Calculation

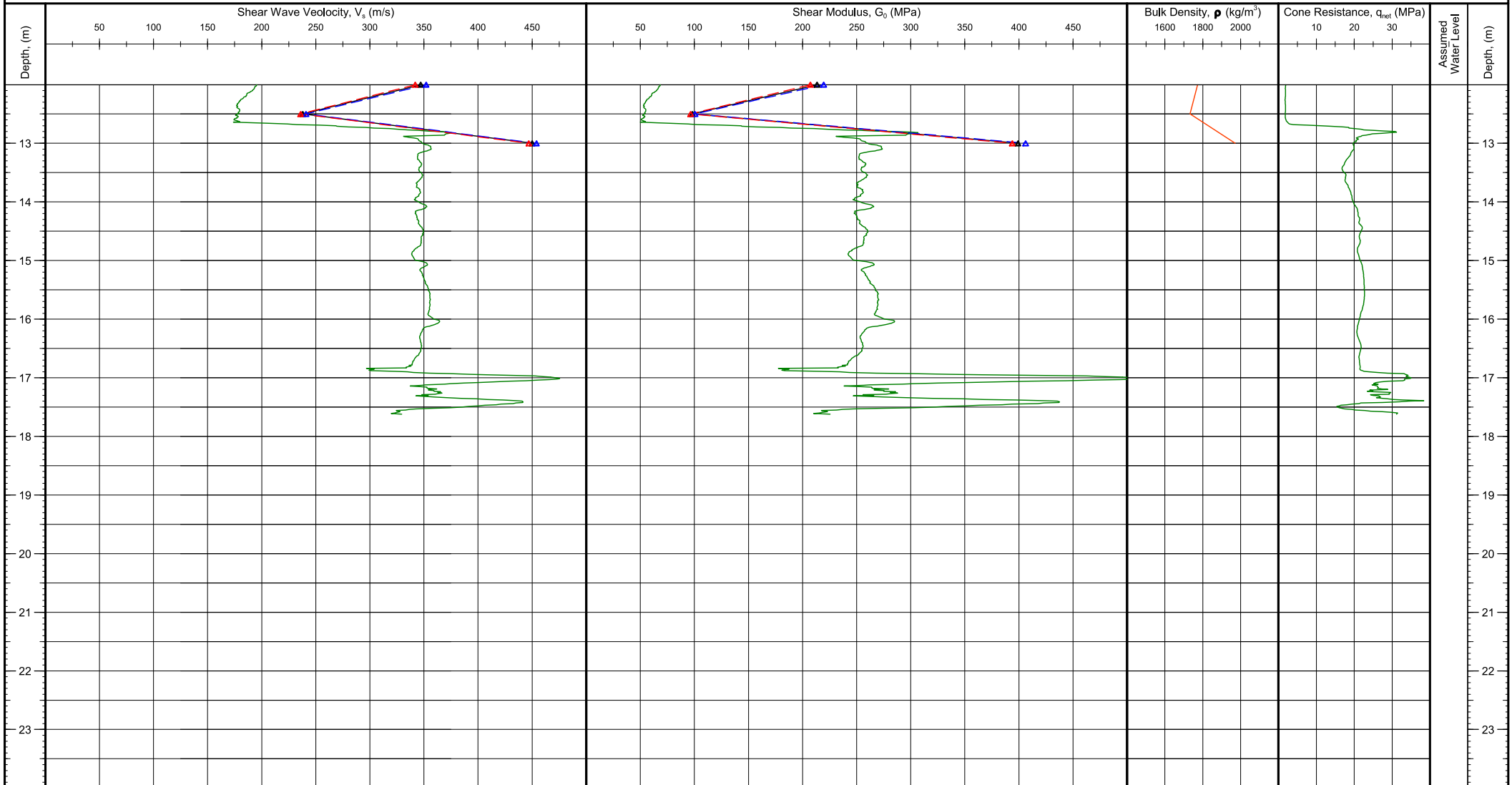
NZTM 2000 N, E (m): 5911856.40, 1768626.57
WGS84 (deg): -36.924253, 174.893217
Location Method: Handheld GPS
Surveyor:
Termination Reason: High pore water pressure

Elevation (m): Unknown
Date of Test: 27/06/2022
Depth (m): 17.71
Pre Drill (m): 1.50 m

Client Reference:
Test Number: SCPT-307
G.I. Job Ref: 220198

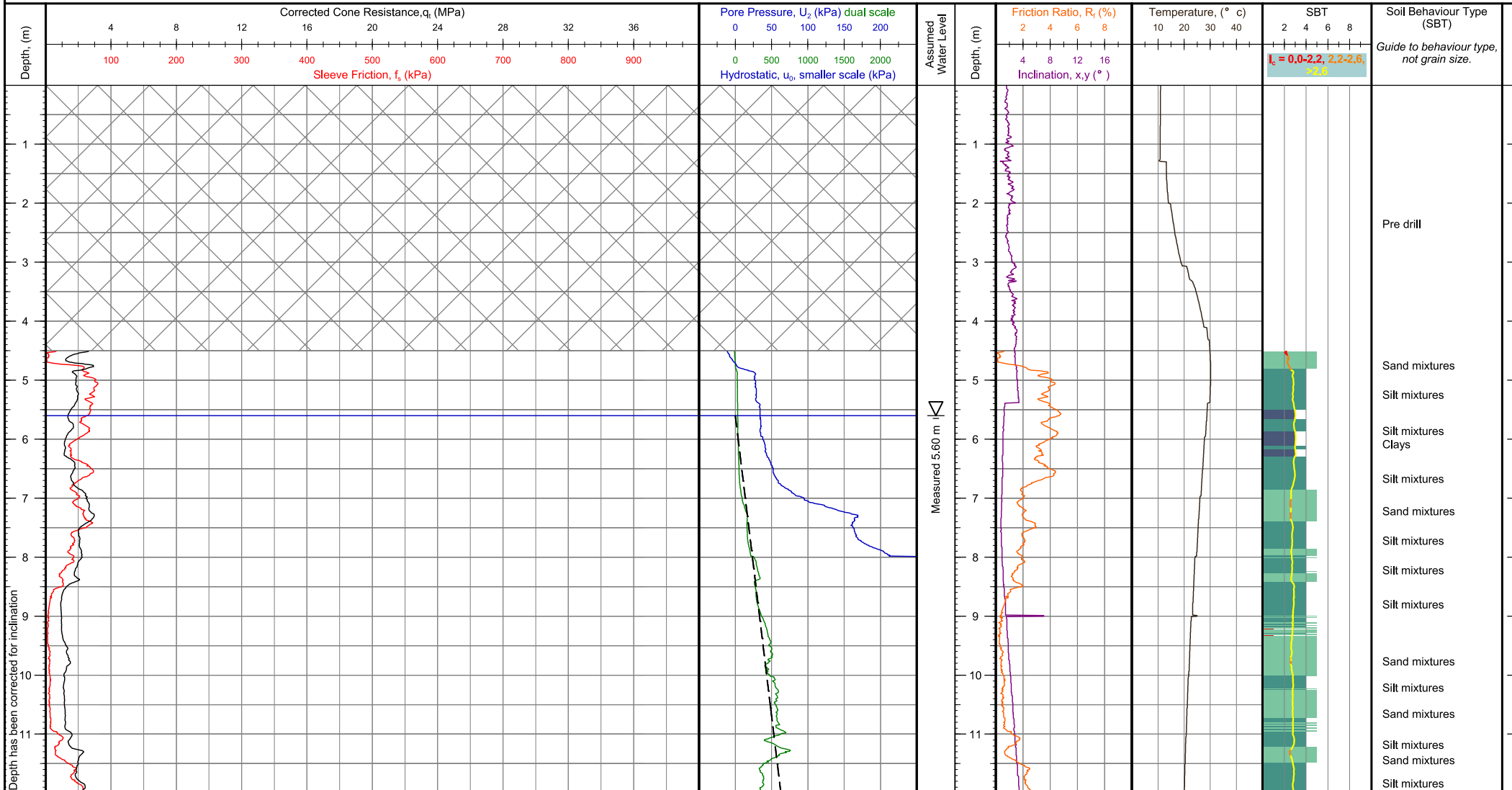
Comments: GWL provided by client on-site.

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East, Auckland Engineer: Steve Semmens Contractor: Ground Investigation Ltd Comments: GWL provided by client on-site.	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911856.40, 1768626.57 WGS84 (deg): -36.924253, 174.893217 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 27/06/2022 Depth (m): 17.71 Pre Drill (m): 1.50 m	Client Reference: Test Number: SCPT-307 G.I. Job Ref: 220198
		Termination Reason: High pore water pressure		

CONE PENETRATION TEST (CPT) LOG

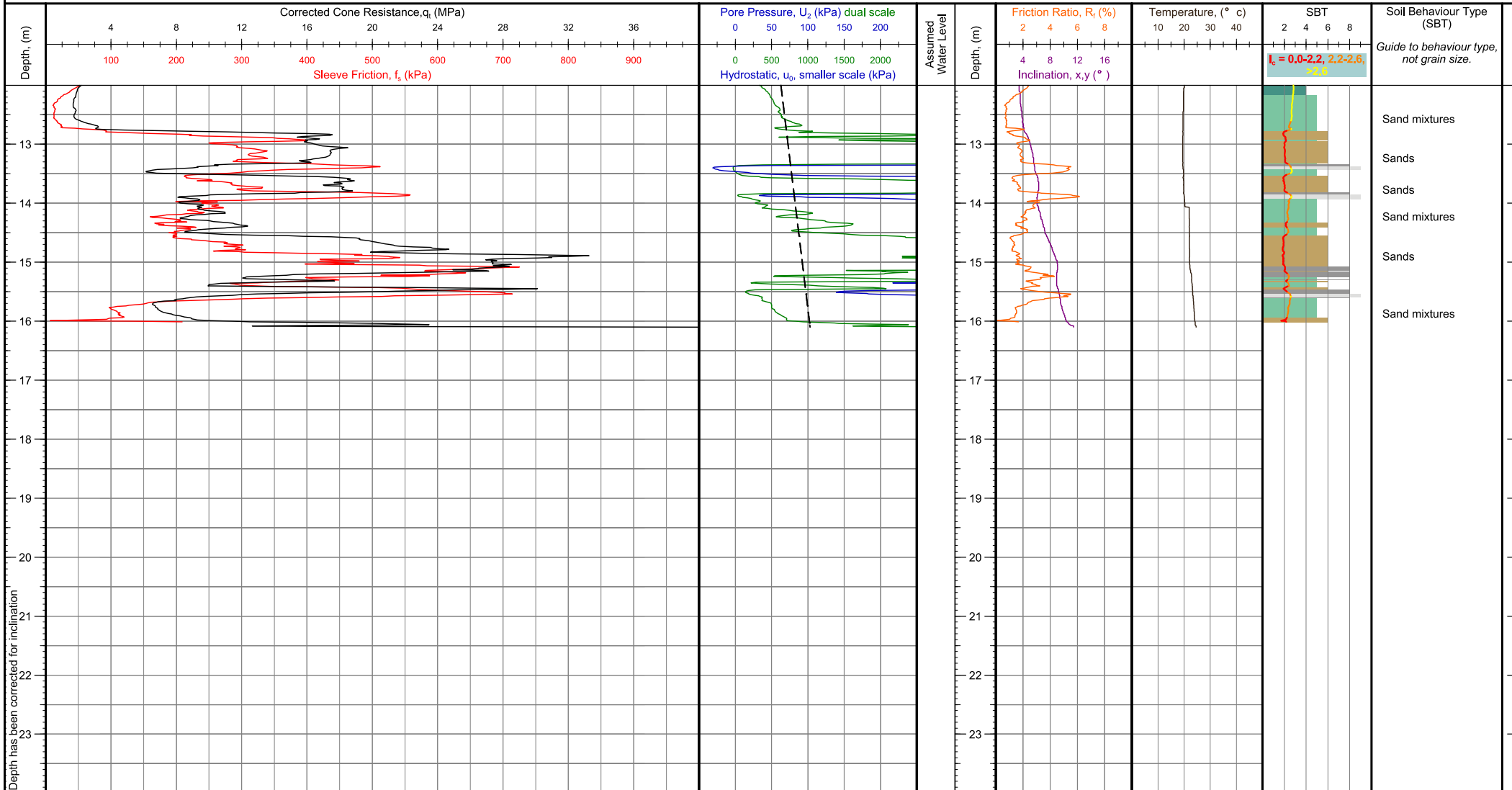


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911865.42, 1768641.72	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 70169	WGS84 (deg): -36.924169, 174.893385	Date of Test: 23/06/2022	
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 16.10	Test Number: SCPT-308
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 4.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Inclination high or rapid increase	G.I. Job Ref: 220198	

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

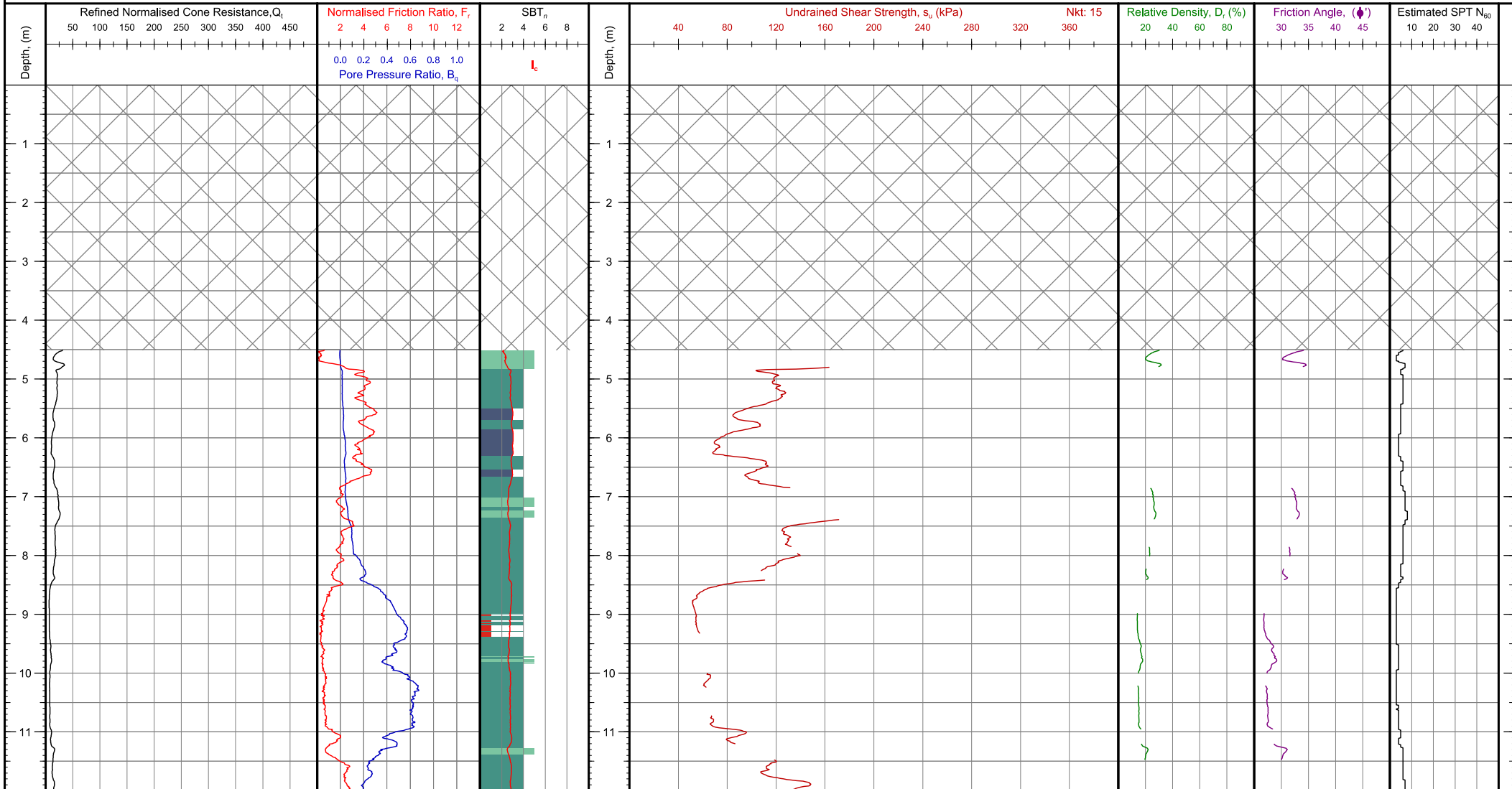
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911865.42, 1768641.72	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: 70169	WGS84 (deg): -36.924169, 174.893385	Date of Test: 23/06/2022	Test Number: SCPT-308
Location: Pakuranga to Botany East, Auckland	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 16.10	
Engineer: Steve Semmens	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 4.50 m	G.I. Job Ref: 220198
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Inclination high or rapid increase		

Comments: GWL provided by client on-site.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

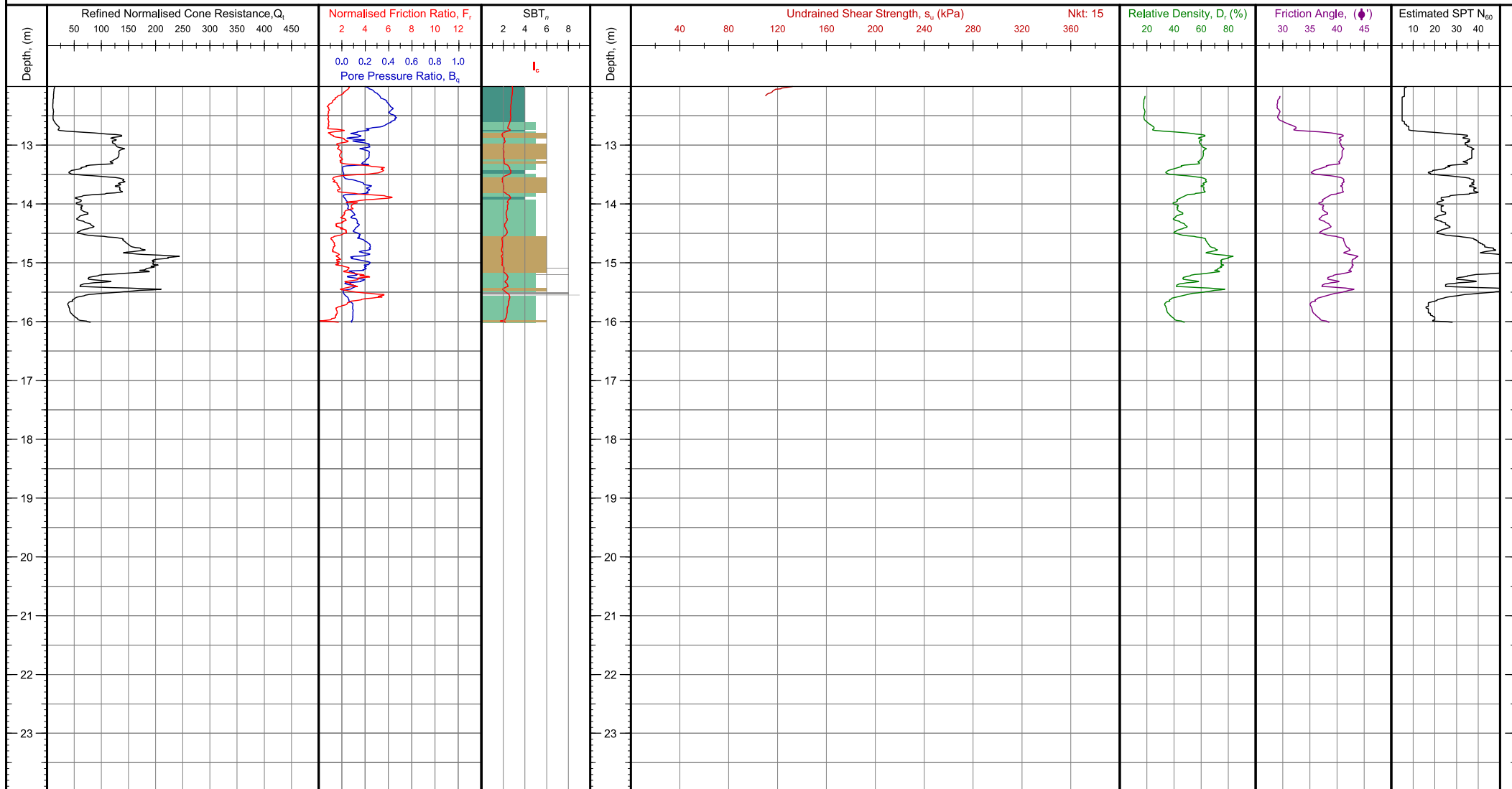
Notes and Limitations:
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Client Reference:

Test Number: SCPT-308

G.I. Job Ref: 220198

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

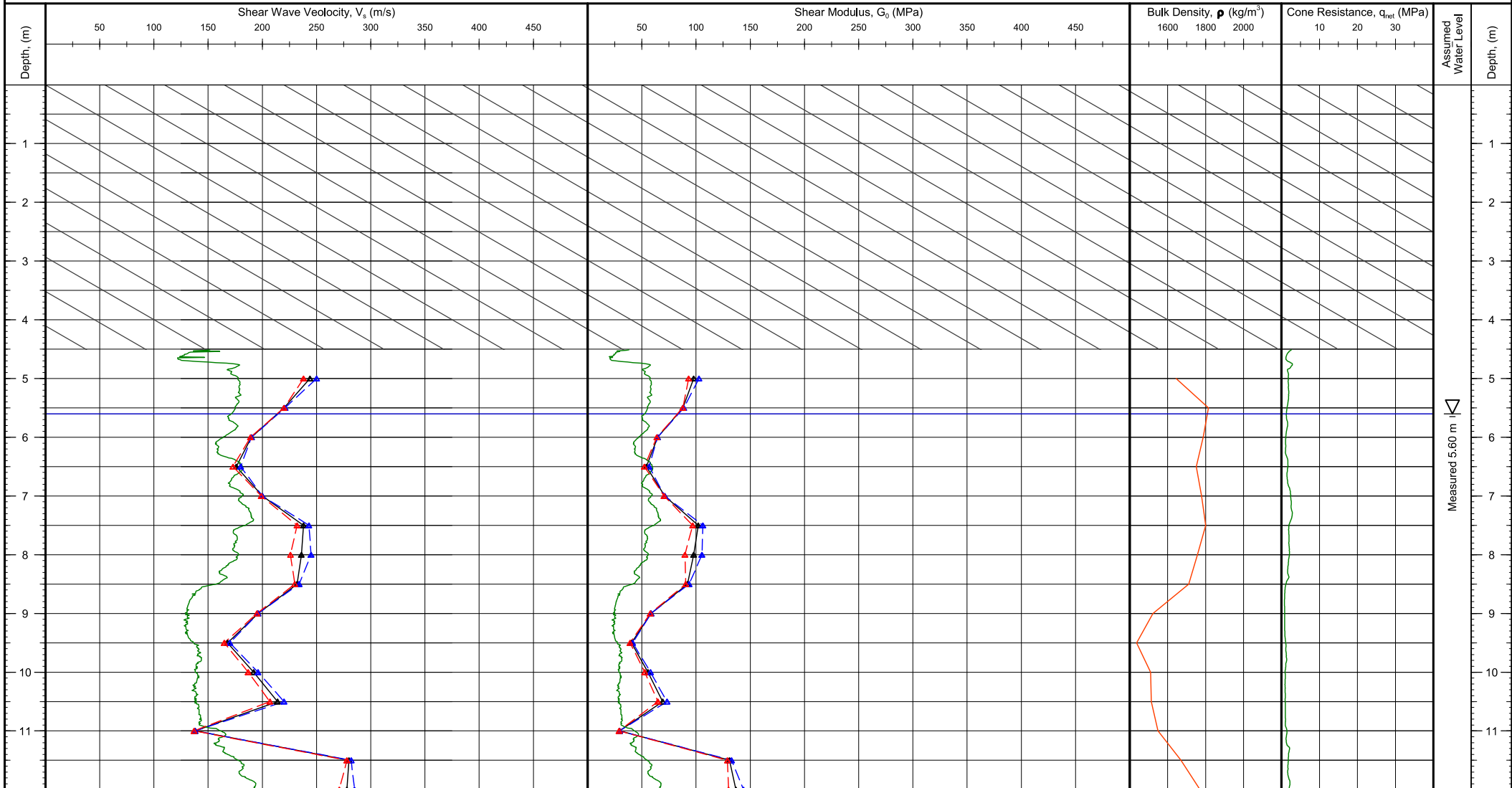
Notes and Limitations:
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Client Reference:

Test Number: SCPT-308

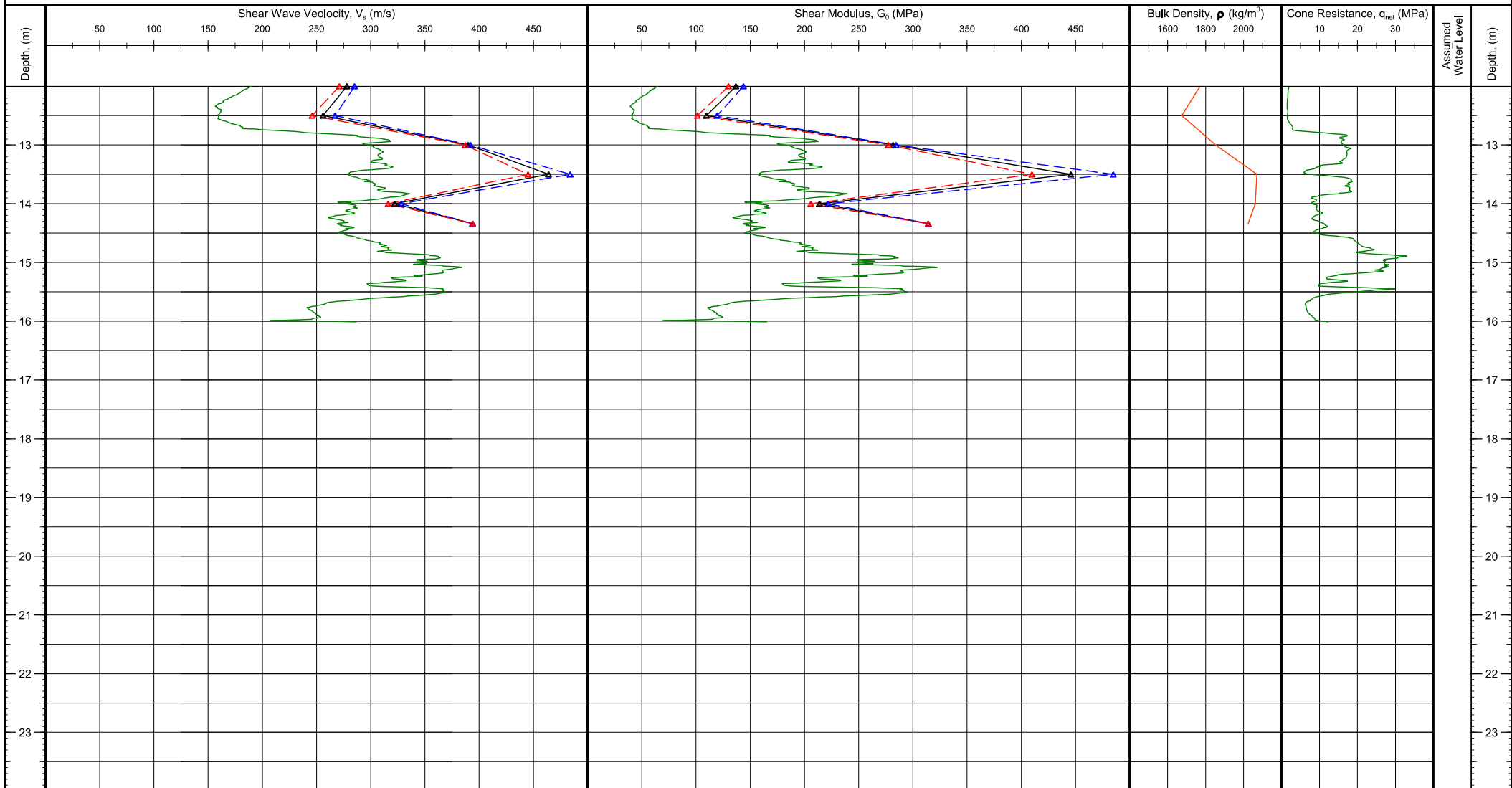
G.I. Job Ref: 220198

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East, Auckland Engineer: Steve Semmens Contractor: Ground Investigation Ltd Comments: GWL provided by client on-site.	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911865.42, 1768641.72 WGS84 (deg): -36.924169, 174.893385 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 23/06/2022 Depth (m): 16.10 Pre Drill (m): 4.50 m	Client Reference: Test Number: SCPT-308 G.I. Job Ref: 220198
		Termination Reason: Inclination high or rapid increase		

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

— Estimated from CPT
 - - - Measured Lower Bound
 — Measured Average Bound
 - - - Measured Upper Bound
 — ρ from G_0 Calculation

NZTM 2000 N, E (m): 5911865.42, 1768641.72
WGS84 (deg): -36.924169, 174.893385
Location Method: Handheld GPS
Surveyor:

Elevation (m): Unknown
Date of Test: 23/06/2022
Depth (m): 16.10
Pre Drill (m): 4.50 m

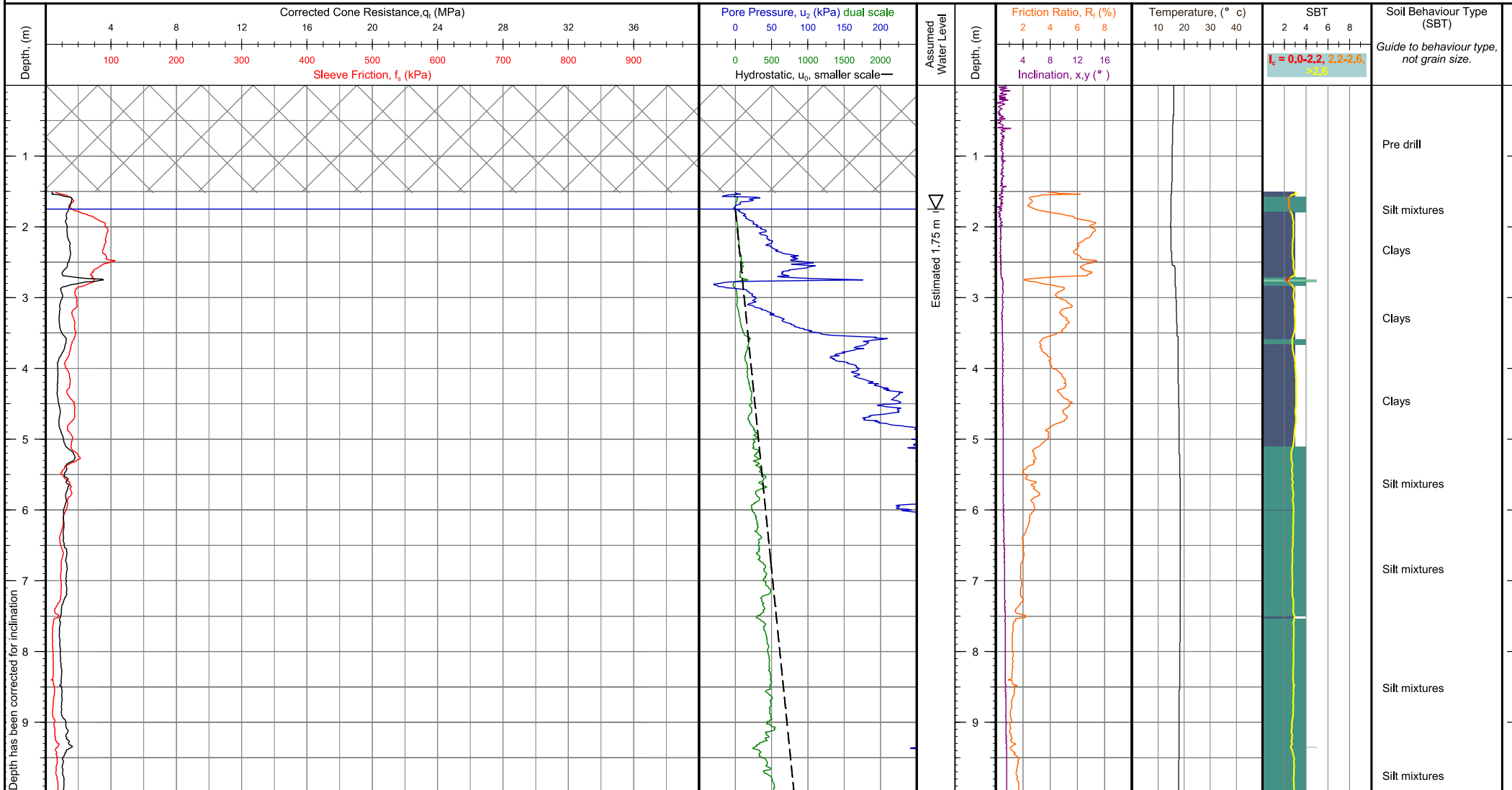
Client Reference:
Test Number: SCPT-308

Termination Reason: Inclination high or rapid increase

G.I. Job Ref: 220198

Comments: GWL provided by client on-site.

CONE PENETRATION TEST (CPT) LOG

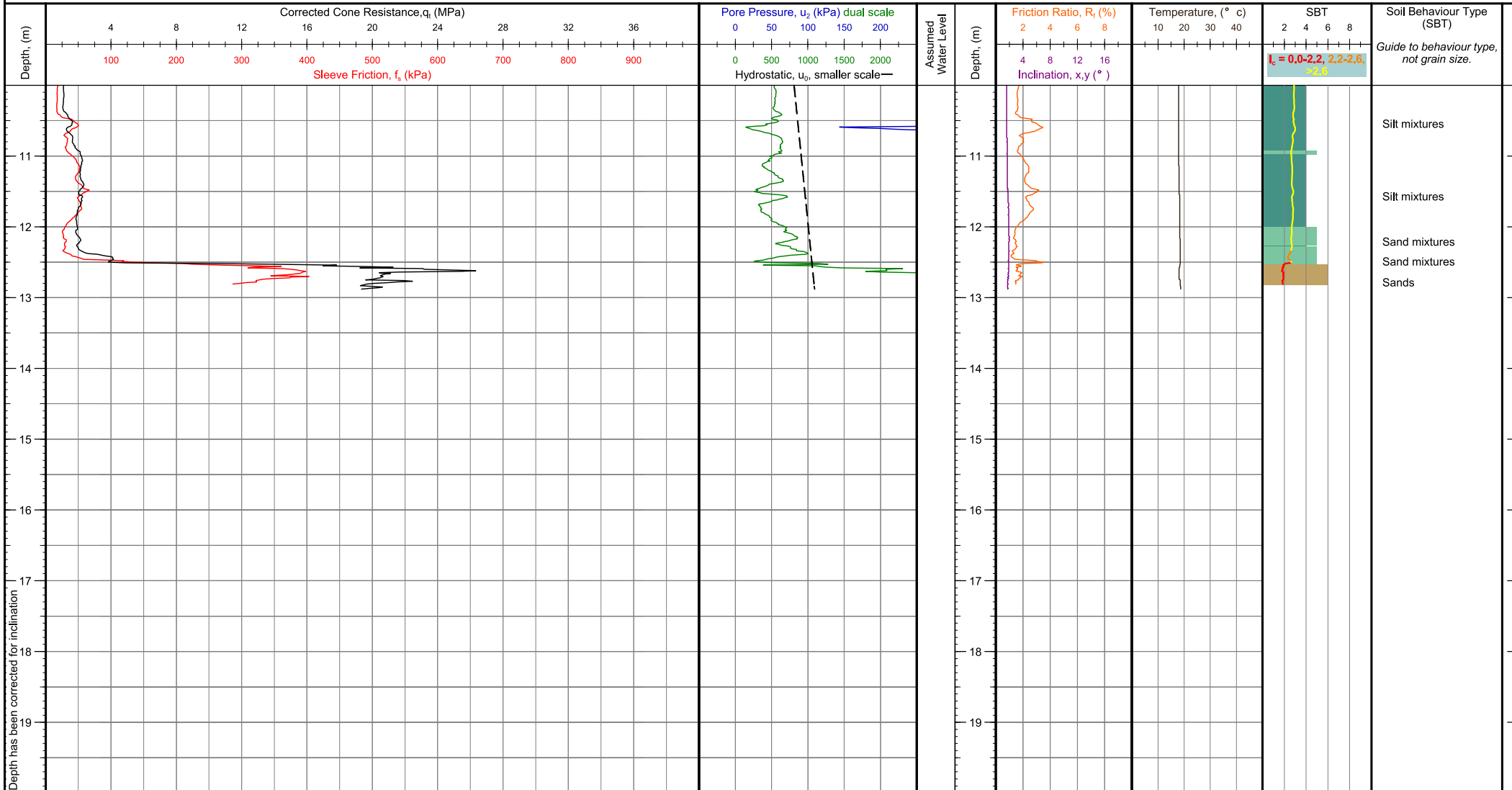


Client: Eastern Busway Alliance	Operator: Dan Cooper	NZTM 2000 N, E (m): 5911882.83, 1768709.52	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ333	WGS84 (deg): -36.924000, 174.894142	Date of Test: 6/10/2022	
Location: Pakuranga to Botany East	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 12.88	Test Number: SCPT-309
Engineer: Mathew Crarer	Area Ratio: 0.80	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High pore water pressure	G.I. Job Ref: 221211	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

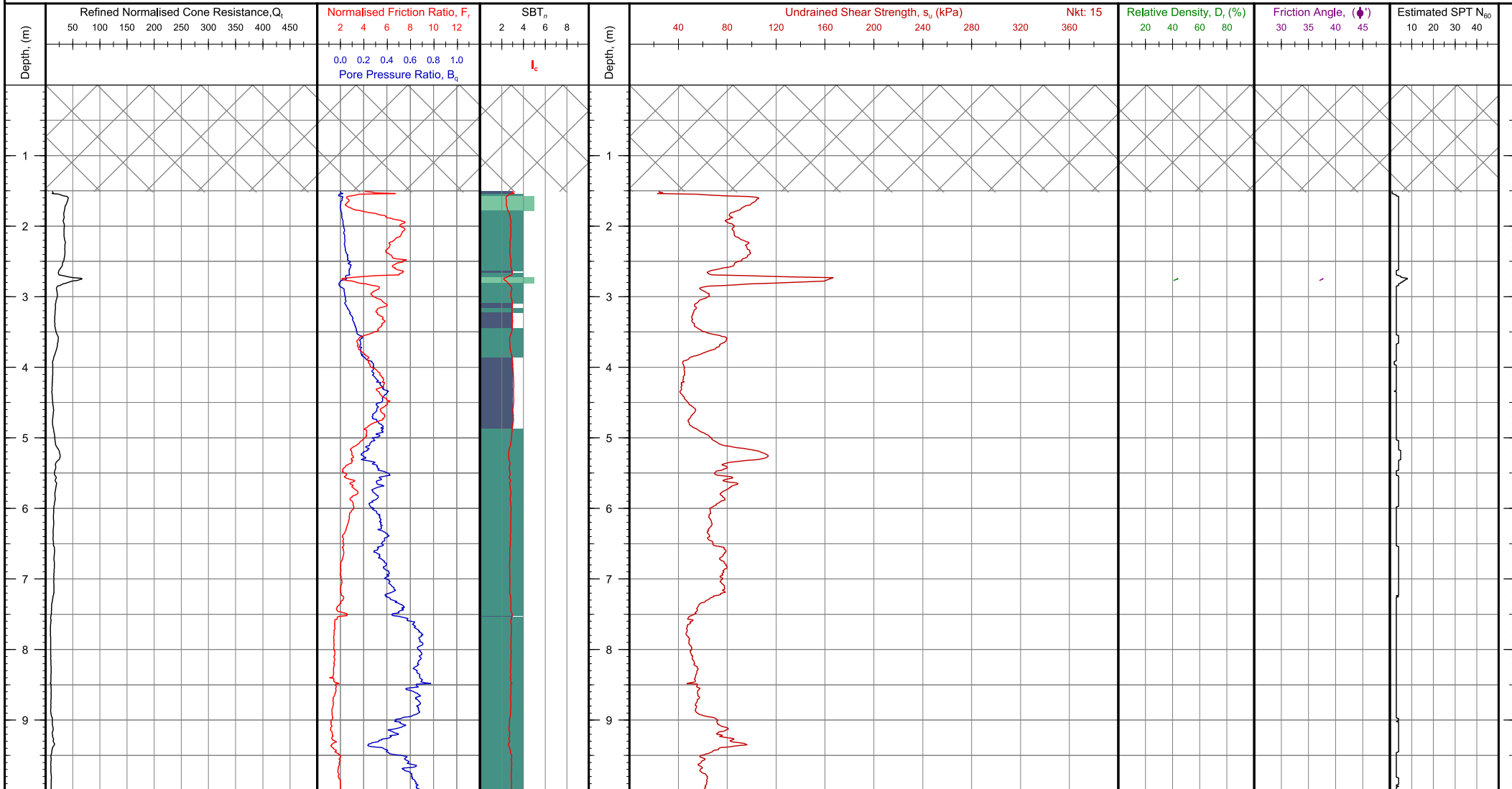
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East Engineer: Mathew Crarer Contractor: Ground Investigation Ltd	Operator: Dan Cooper Cone Ref: MKJ333 Cone Type: 10cm ² Compression Area Ratio: 0.80 Filter Type: u ₂	NZTM 2000 N, E (m): 5911882.83, 1768709.52	Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.924000, 174.894142	Date of Test: 6/10/2022	
Comments:		Location Method: Handheld GPS	Depth (m): 12.88	Test Number: SCPT-309
		Surveyor:	Pre Drill (m): 1.50 m	
Termination Reason: High pore water pressure				G.I. Job Ref: 221211

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

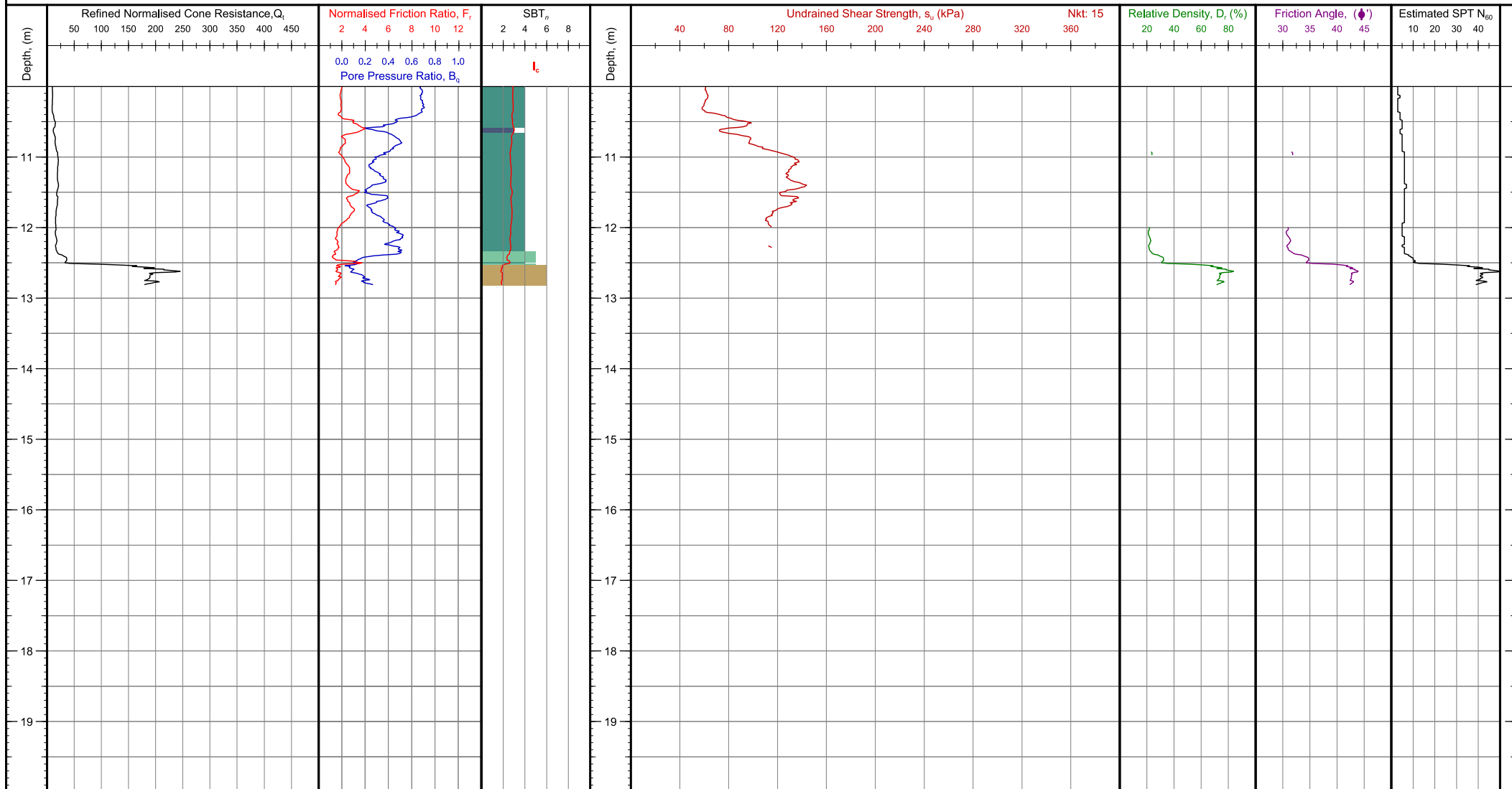
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:

Test Number: SCPT-309

G.I. Job Ref: 221211



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

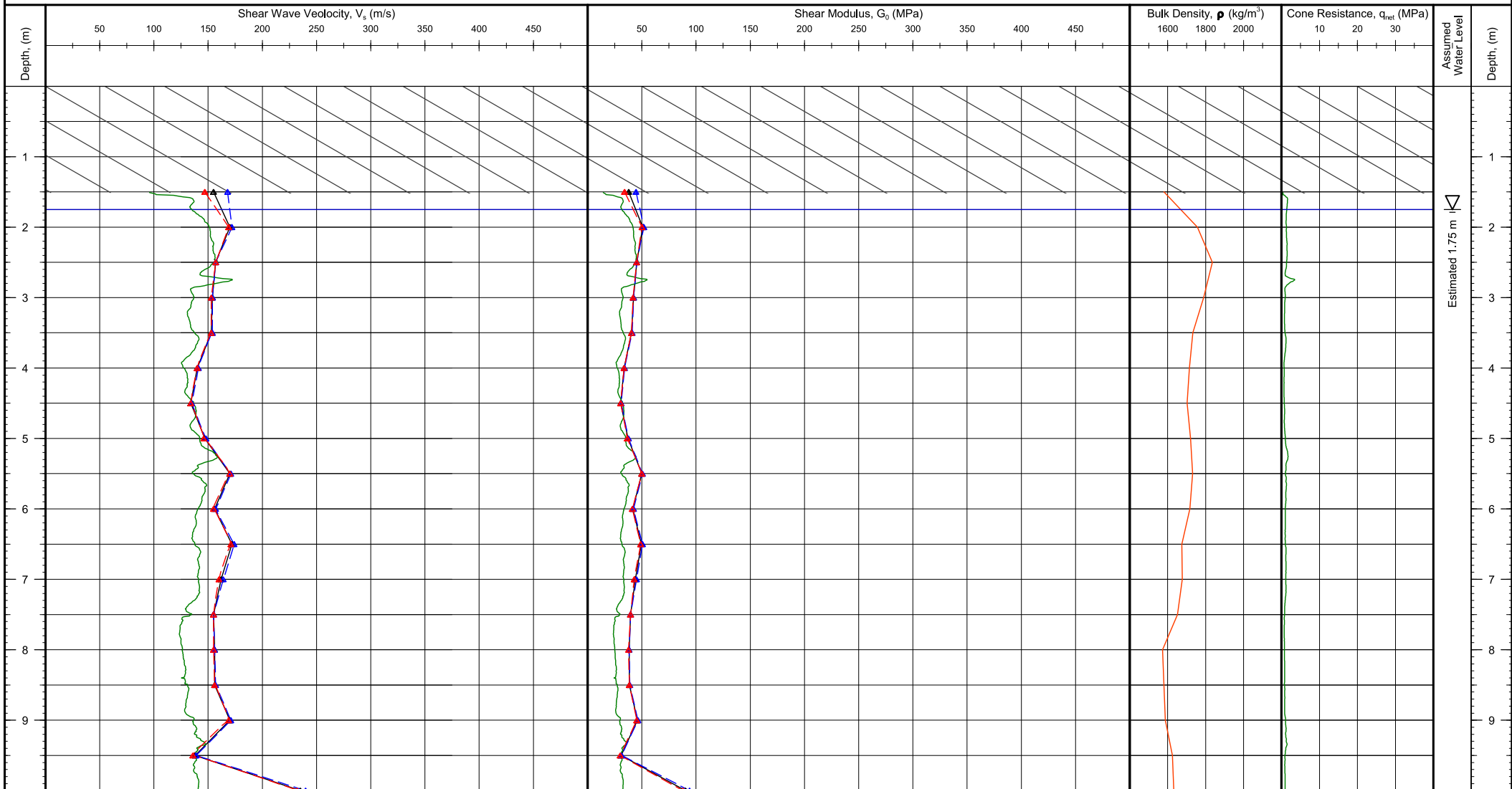
Notes and Limitations:
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Client Reference:

Test Number: SCPT-309

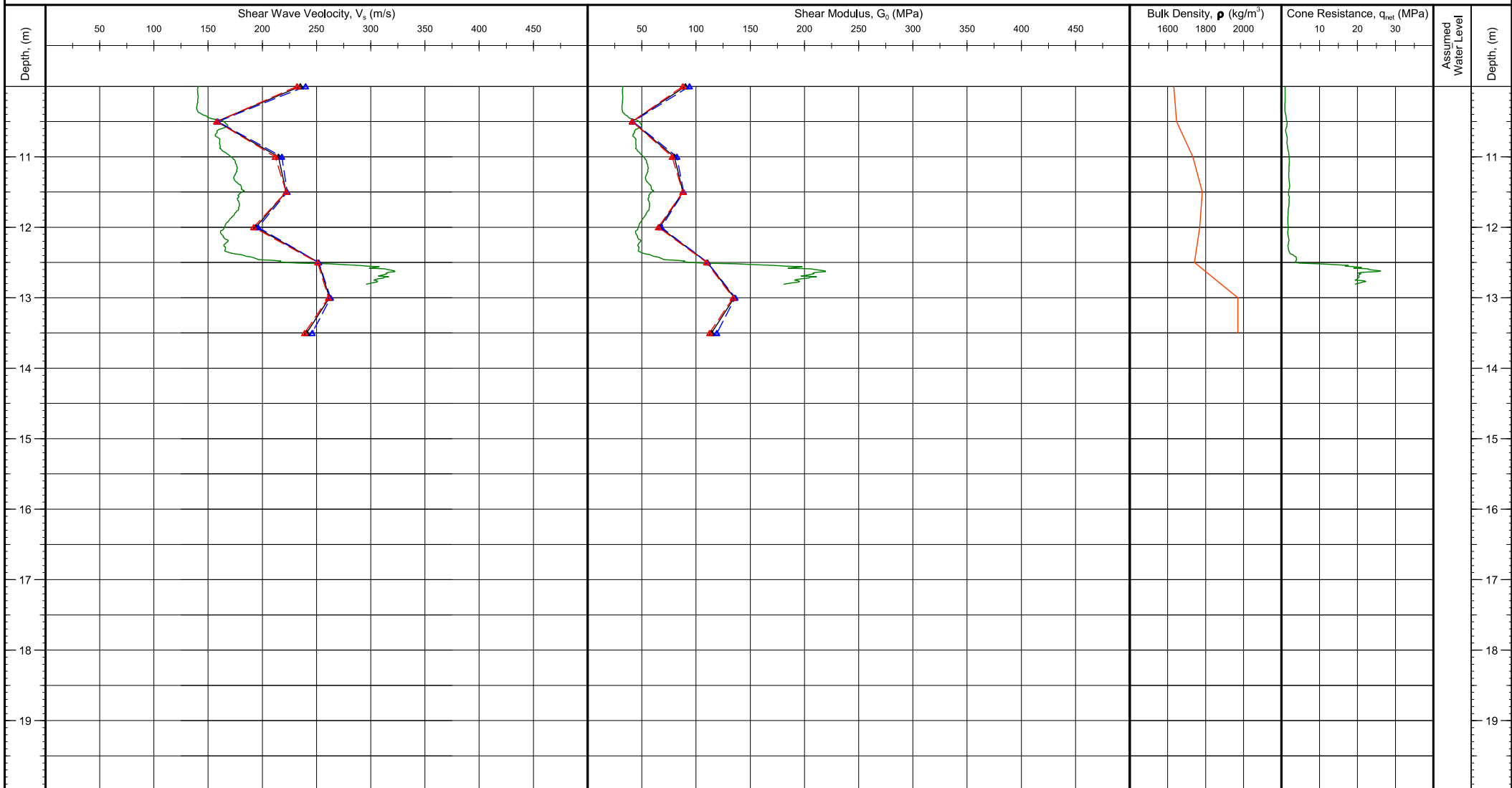
G.I. Job Ref: 221211

CPT SEISMIC TESTING LOG



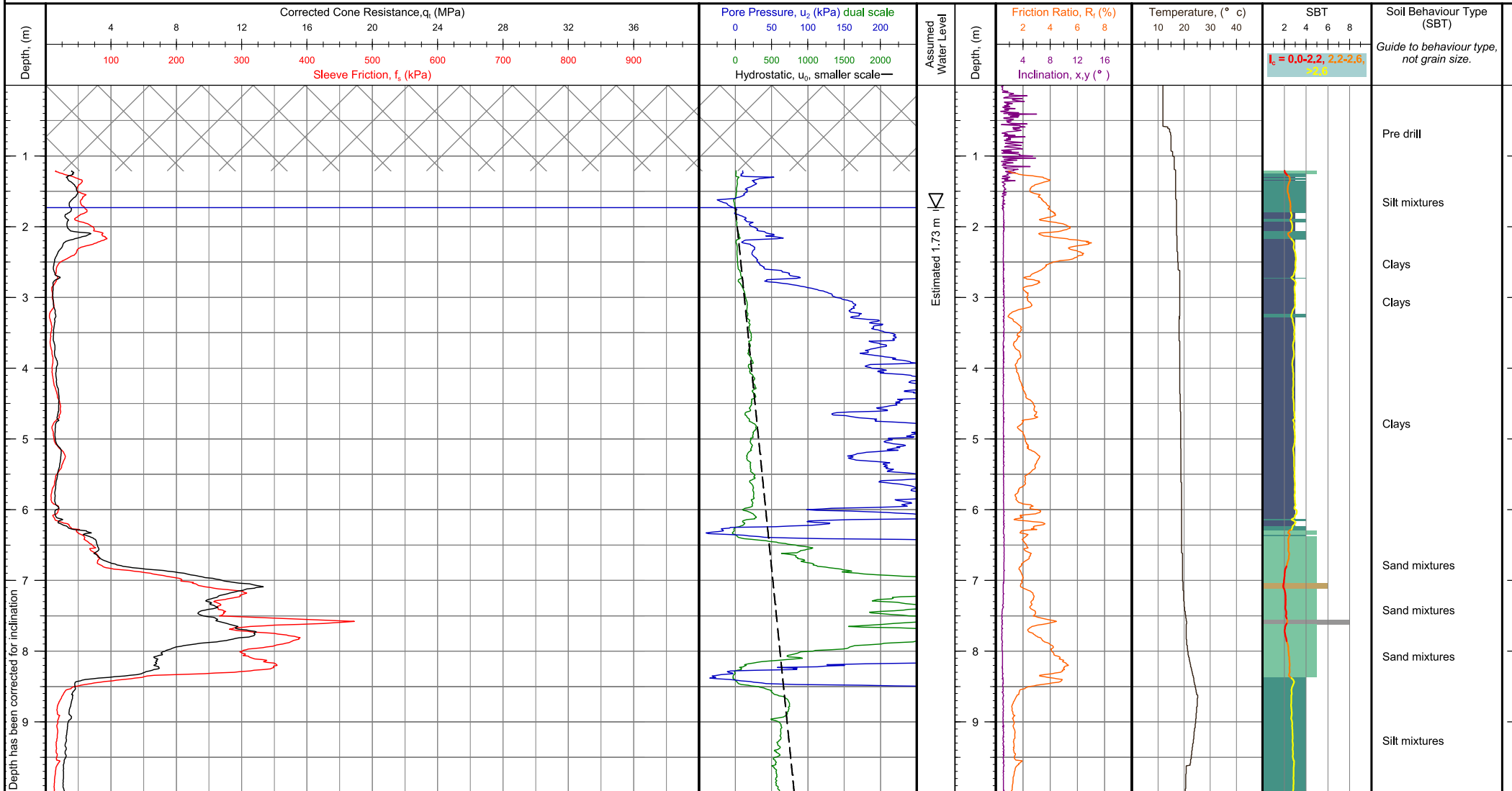
Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East Engineer: Mathew Crarer Contractor: Ground Investigation Ltd Comments:	<ul style="list-style-type: none"> — Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation 	NZTM 2000 N, E (m): 5911882.83, 1768709.52 Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.924000, 174.894142 Location Method: Handheld GPS Surveyor:	Date of Test: 6/10/2022 Depth (m): 12.88 Pre Drill (m): 1.50 m
Termination Reason: High pore water pressure			

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Pakuranga to Botany East Engineer: Mathew Crarer Contractor: Ground Investigation Ltd Comments:	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911882.83, 1768709.52 WGS84 (deg): -36.924000, 174.894142 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 6/10/2022 Depth (m): 12.88 Pre Drill (m): 1.50 m	Client Reference: Test Number: SCPT-309 G.I. Job Ref: 221211
		Termination Reason: High pore water pressure		

CONE PENETRATION TEST (CPT) LOG

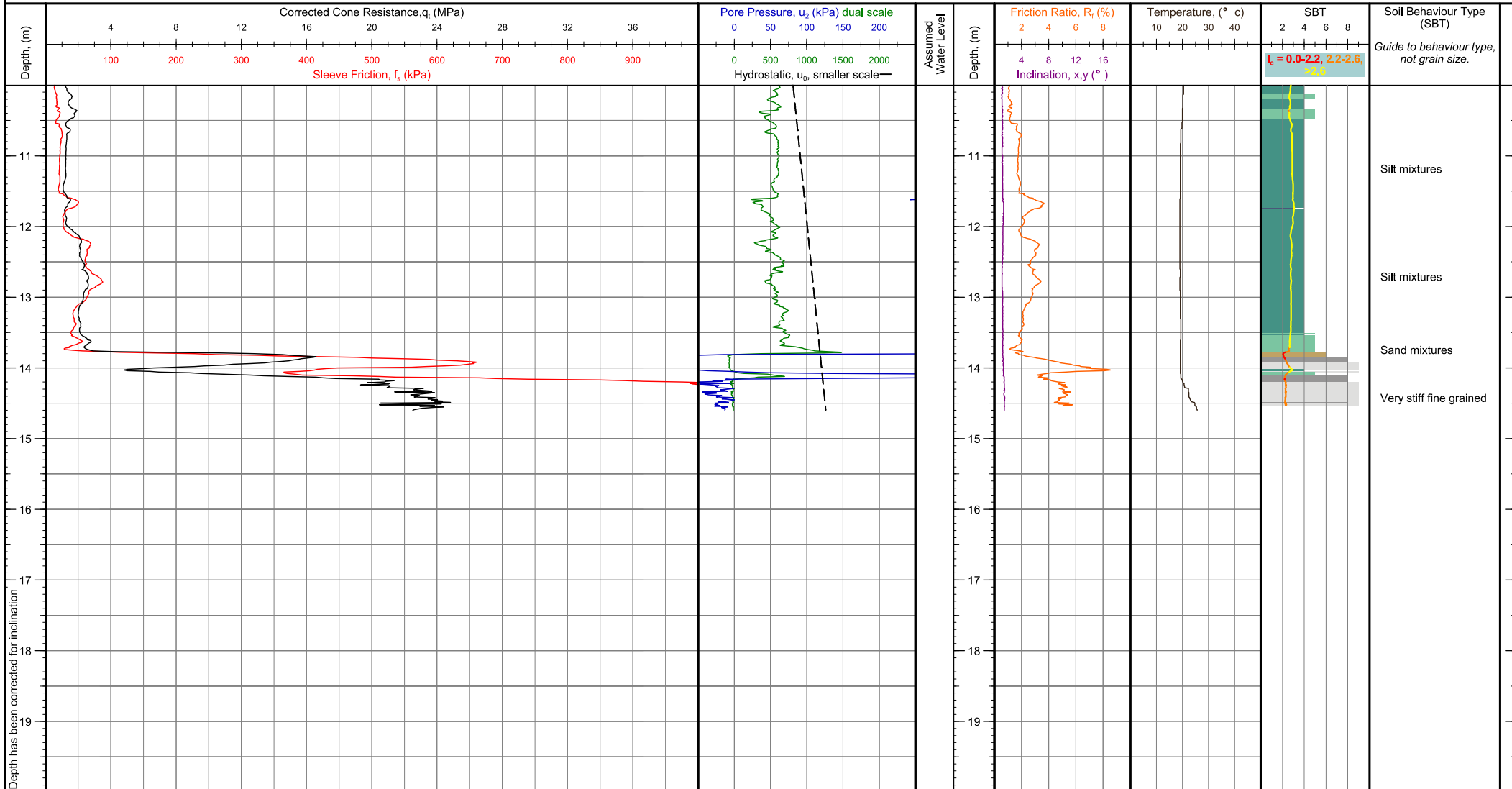


Client: Eastern Busway Alliance	Operator: Dan Cooper	NZTM 2000 N, E (m): 5911855.08, 1768748.98	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ311	WGS84 (deg): -36.924243, 174.894591	Date of Test: 6/10/2022	
Location: Pakuranga to Botany East	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 14.60	Test Number: CPT-310
Engineer: Mathew Crarer	Area Ratio: 0.79	Surveyor:	Pre Drill (m): 1.20 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High total load	G.I. Job Ref: 221211	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

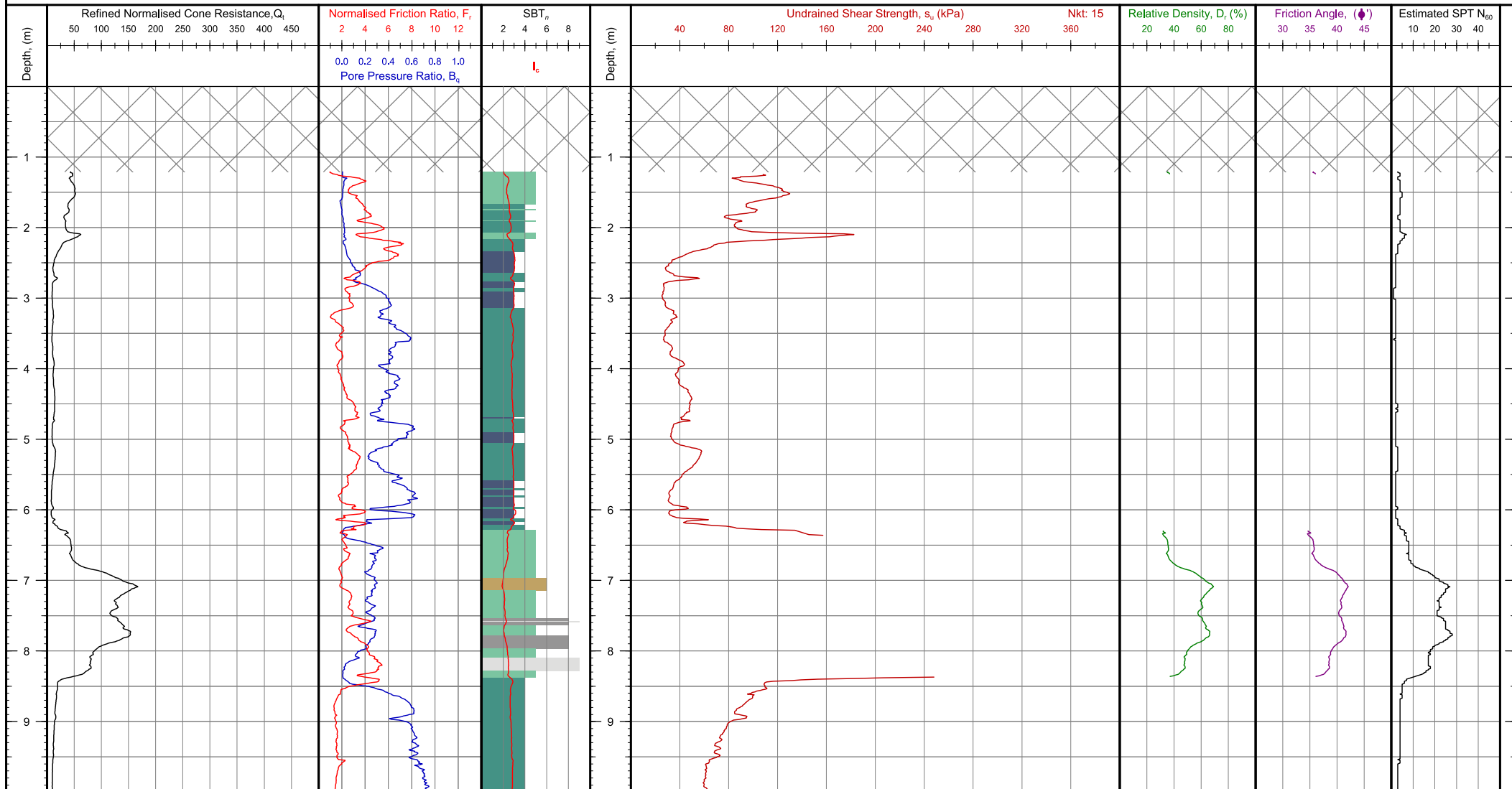


Client: Eastern Busway Alliance	Operator: Dan Cooper	NZTM 2000 N, E (m): 5911855.08, 1768748.98	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ311	WGS84 (deg): -36.924243, 174.894591	Date of Test: 6/10/2022	
Location: Pakuranga to Botany East	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 14.60	Test Number: CPT-310
Engineer: Mathew Crarer	Area Ratio: 0.79	Surveyor:	Pre Drill (m): 1.20 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High total load	G.I. Job Ref: 221211	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CPT PARAMETER LOG



Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:

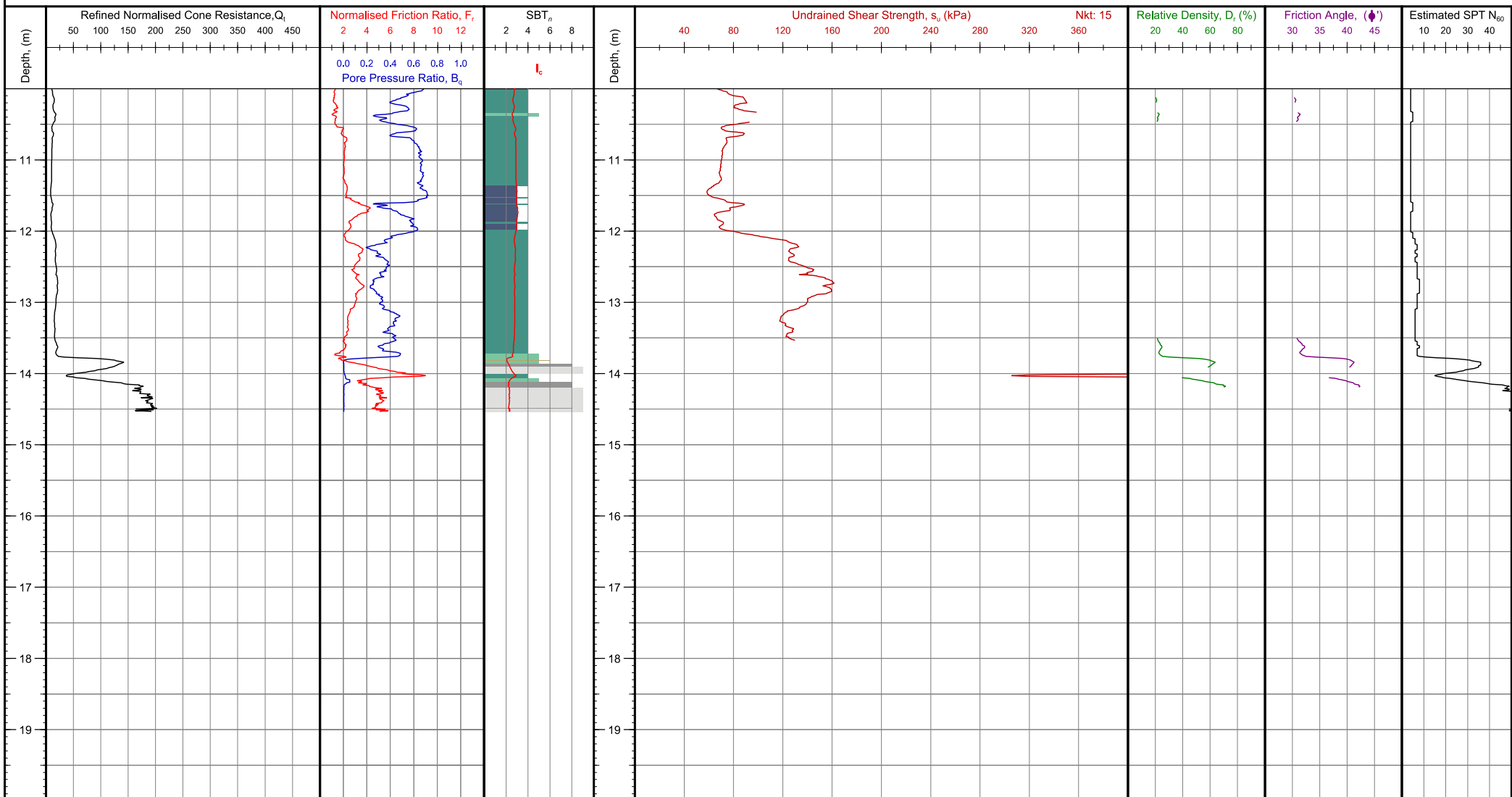
Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-310

G.I. Job Ref: 221211

Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

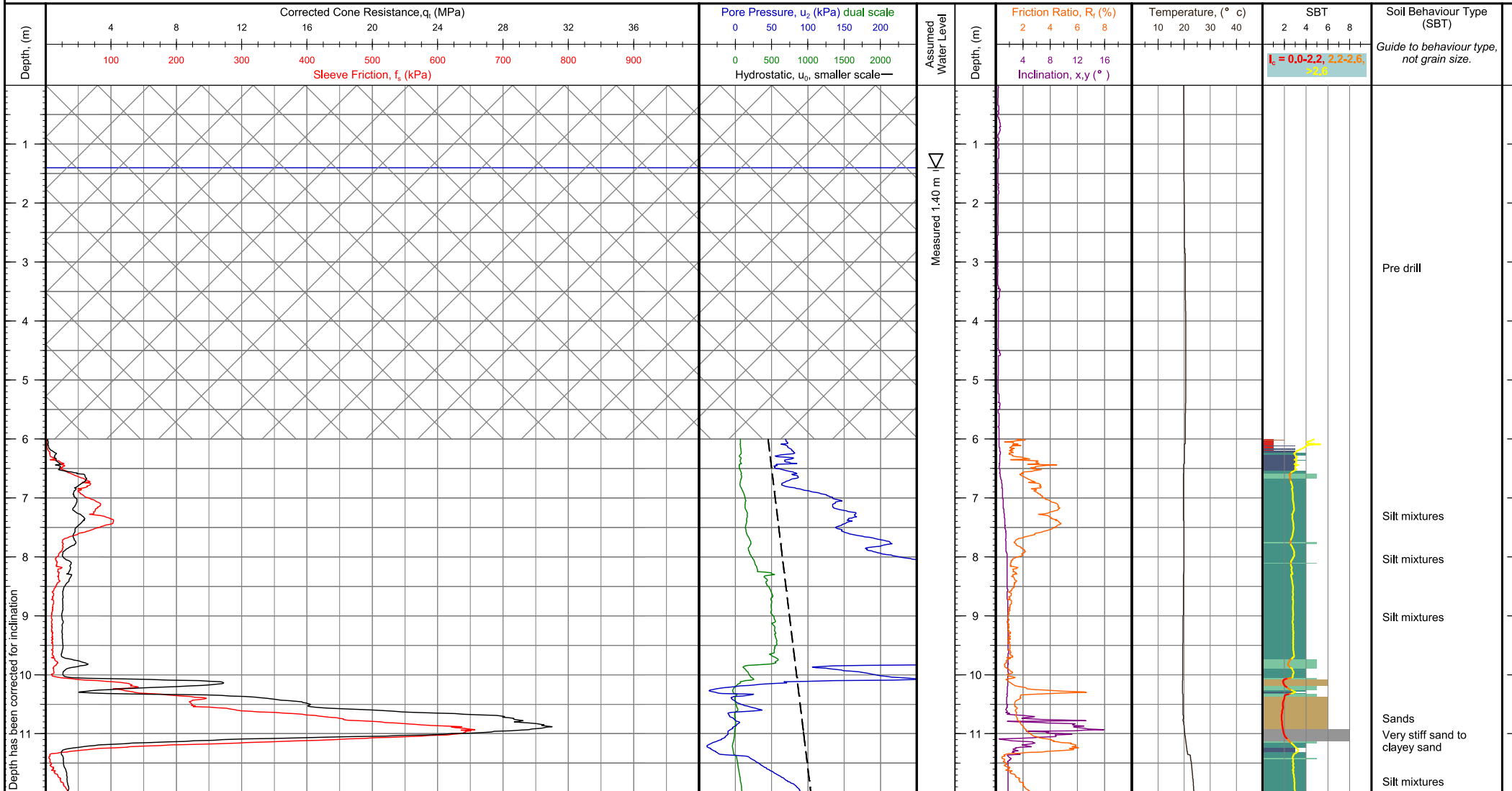
Notes and Limitations:
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Client Reference:

Test Number: CPT-310

G.I. Job Ref: 221211

CONE PENETRATION TEST (CPT) LOG

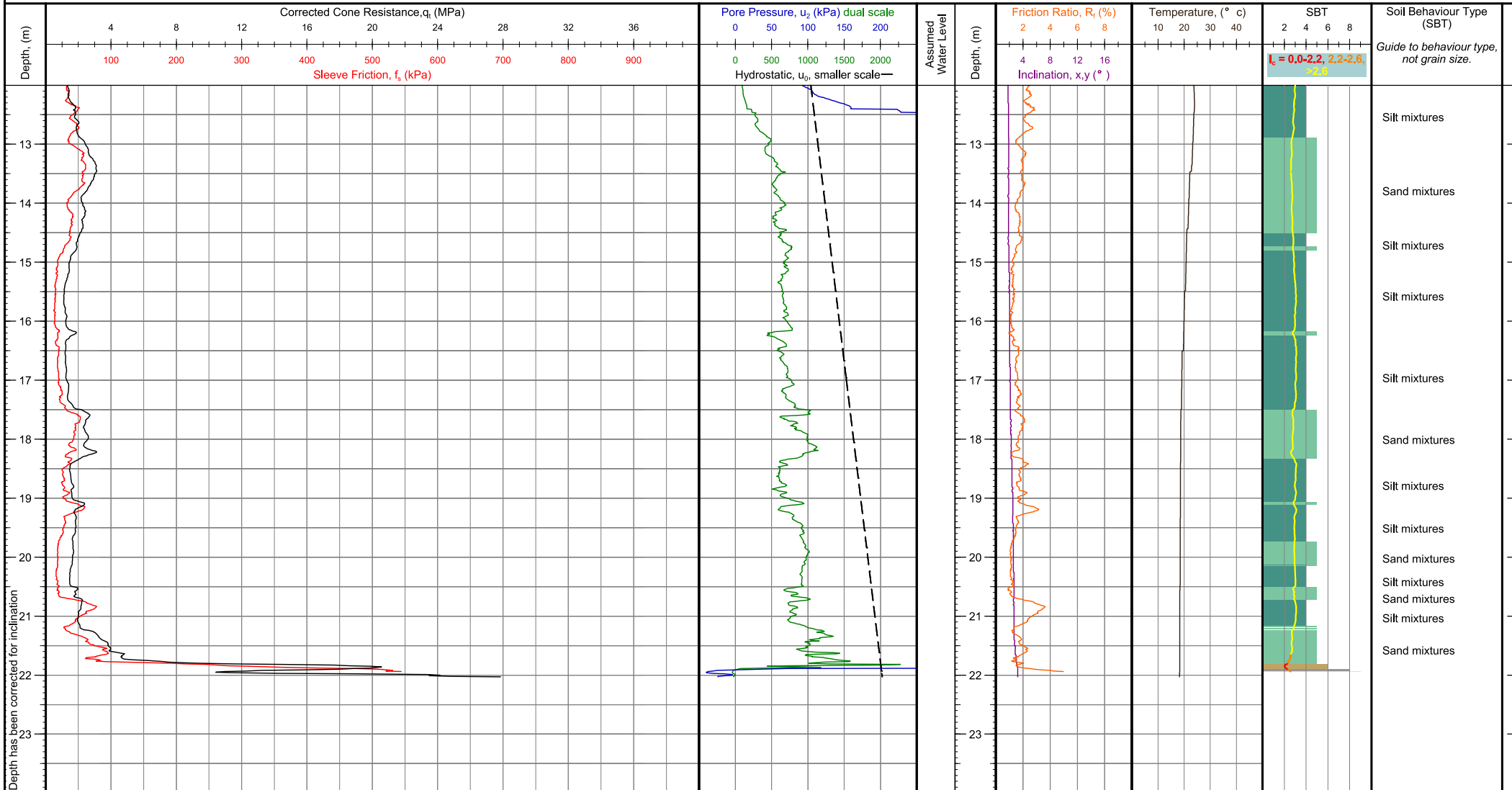


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911797.93, 1769055.11	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71136	WGS84 (deg): -36.924703, 174.898039	Date of Test: 21/02/2023	Test Number: SCPT-314
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 22.03	
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 6.00 m	G.I. Job Ref: 230061
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Danger of buckling rods		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

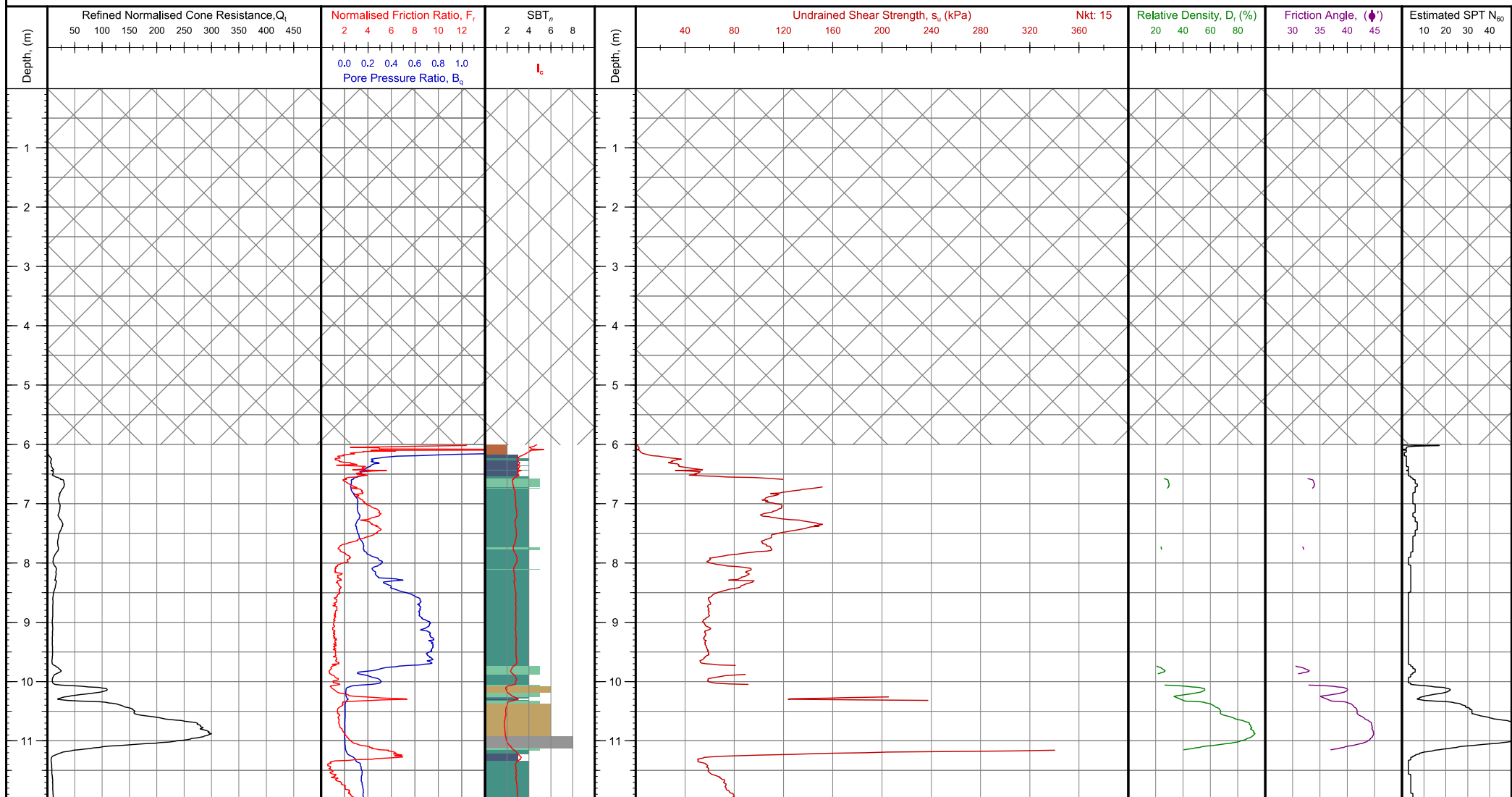
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911797.93, 1769055.11	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71136	WGS84 (deg): -36.924703, 174.898039	Date of Test: 21/02/2023	Test Number: SCPT-314
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 22.03	
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 6.00 m	G.I. Job Ref: 230061
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Danger of buckling rods		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:

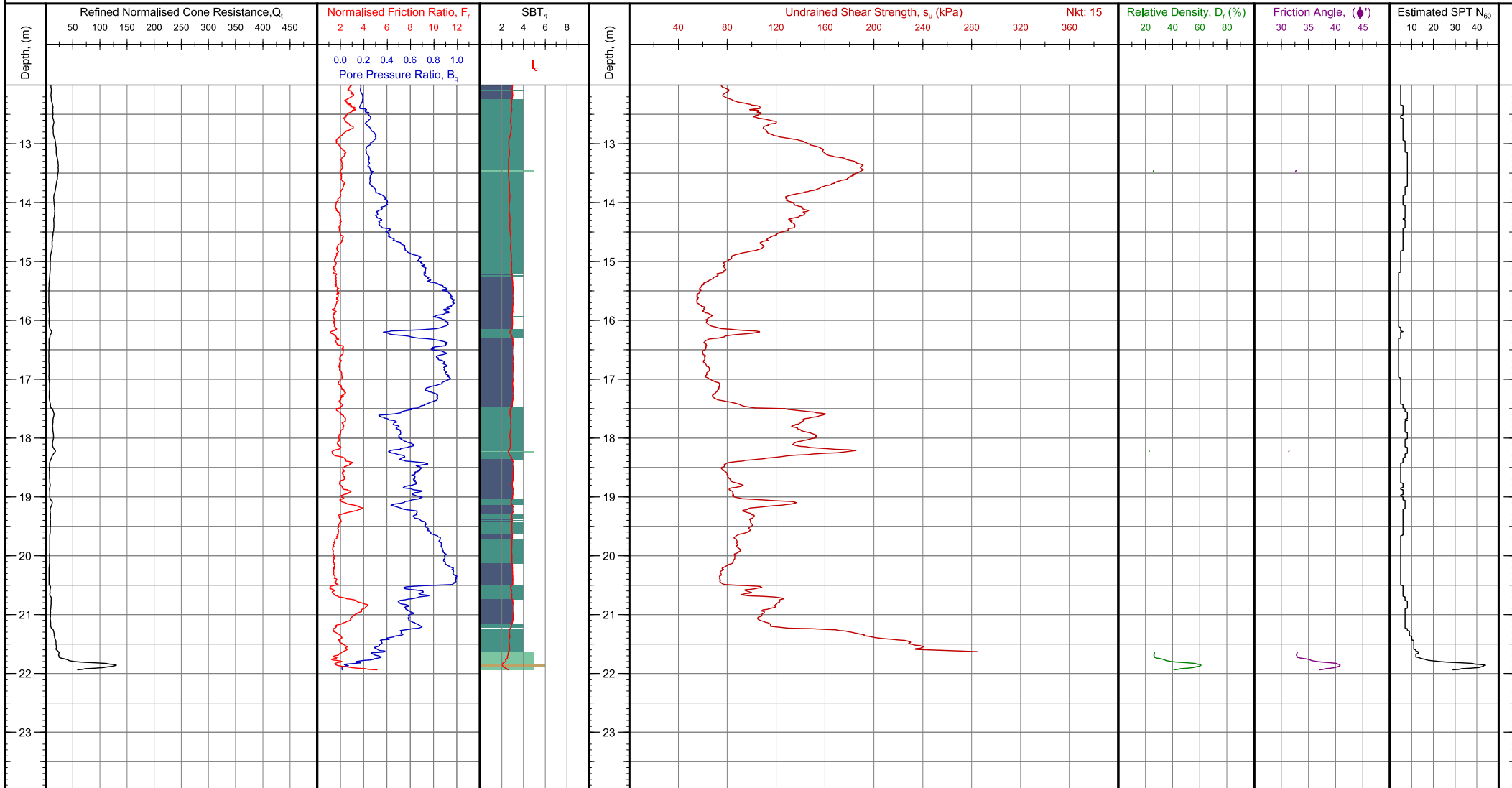
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Client Reference:

Test Number: SCPT-314

G.I. Job Ref: 230061

Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

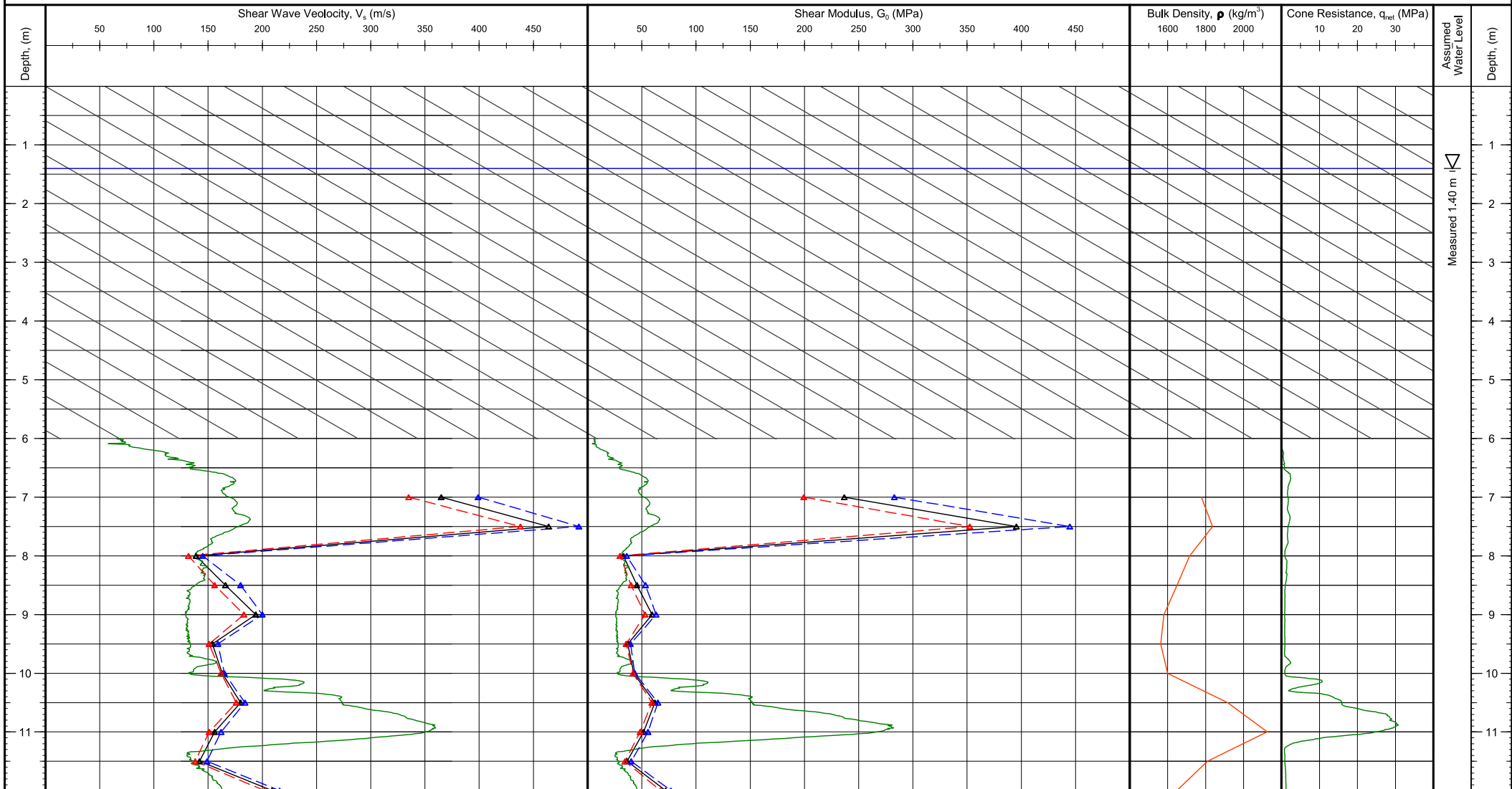
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
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Notes and Limitations:
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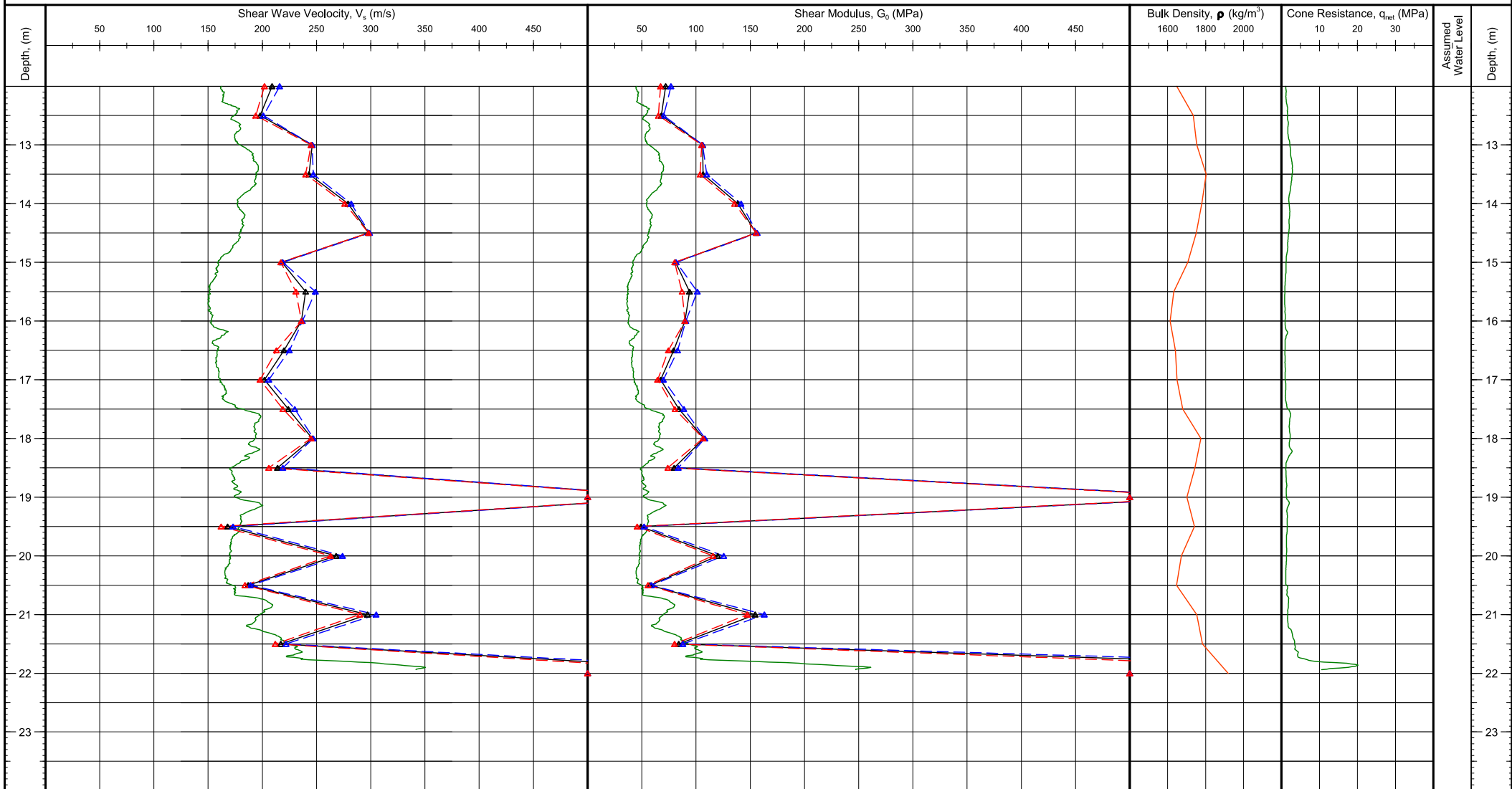
Client Reference:
Test Number: SCPT-314
G.I. Job Ref: 230061

CPT SEISMIC TESTING LOG



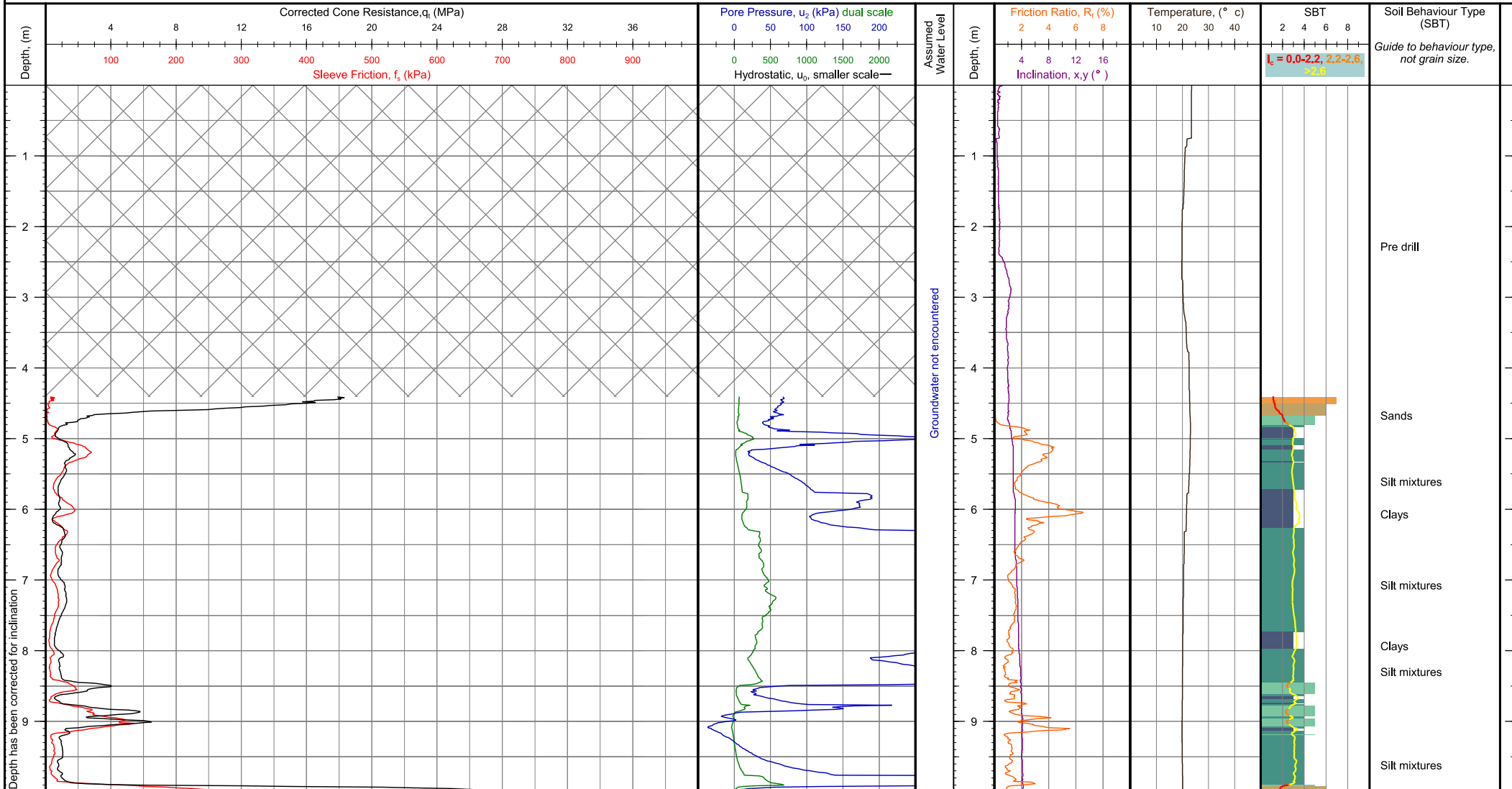
Client: Eastern Busway Alliance Project: Pakuranga to Botany East Location: Eastern Busway Engineer: Mathew Crarer Contractor: Ground Investigation Ltd Comments:	<ul style="list-style-type: none"> — Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation 	NZTM 2000 N, E (m): 5911797.93, 1769055.11 Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.924703, 174.898039 Location Method: Handheld GPS Surveyor:	Date of Test: 21/02/2023 Depth (m): 22.03 Pre Drill (m): 6.00 m Termination Reason: Danger of buckling rods

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance Project: Pakuranga to Botany East Location: Eastern Busway Engineer: Mathew Crarer Contractor: Ground Investigation Ltd Comments:	<ul style="list-style-type: none"> — Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation 	NZTM 2000 N, E (m): 5911797.93, 1769055.11 Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.924703, 174.898039 Location Method: Handheld GPS Surveyor:	Date of Test: 21/02/2023 Depth (m): 22.03 Pre Drill (m): 6.00 m
Termination Reason: Danger of buckling rods			

CONE PENETRATION TEST (CPT) LOG

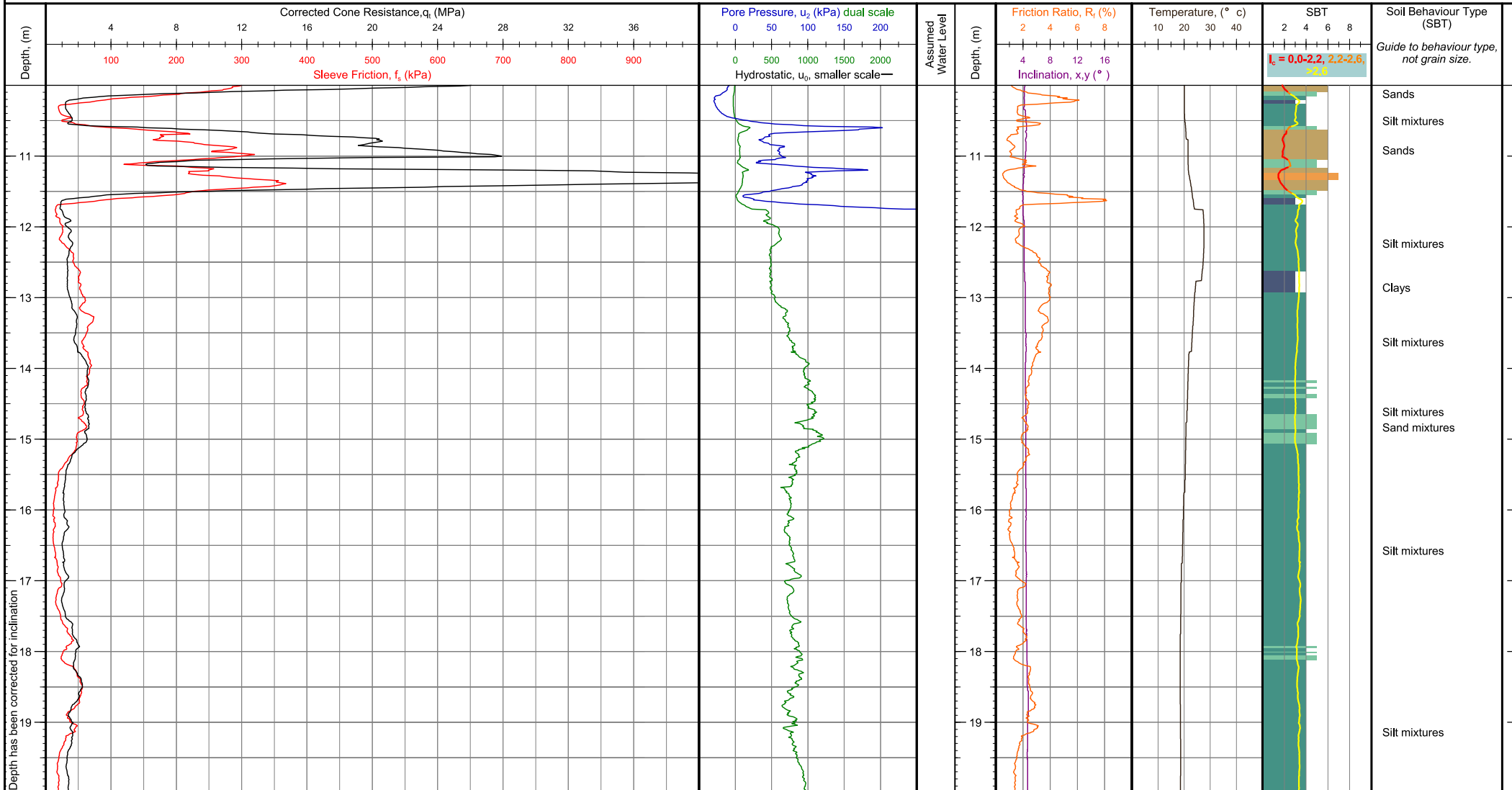


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911765.43, 1769143.31	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ167	WGS84 (deg): -36.924980, 174.899036	Date of Test: 20/10/2022	Test Number: CPT-315
Location: Pakuranga to Botany East	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 22.56	
Engineer: Mathew Crarer	Area Ratio: 0.79	Surveyor:	Pre Drill (m): 4.40 m	G.I. Job Ref: 221211
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure		

Comments: No final zeroes taken due to probe being stuck in the ground overnight.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

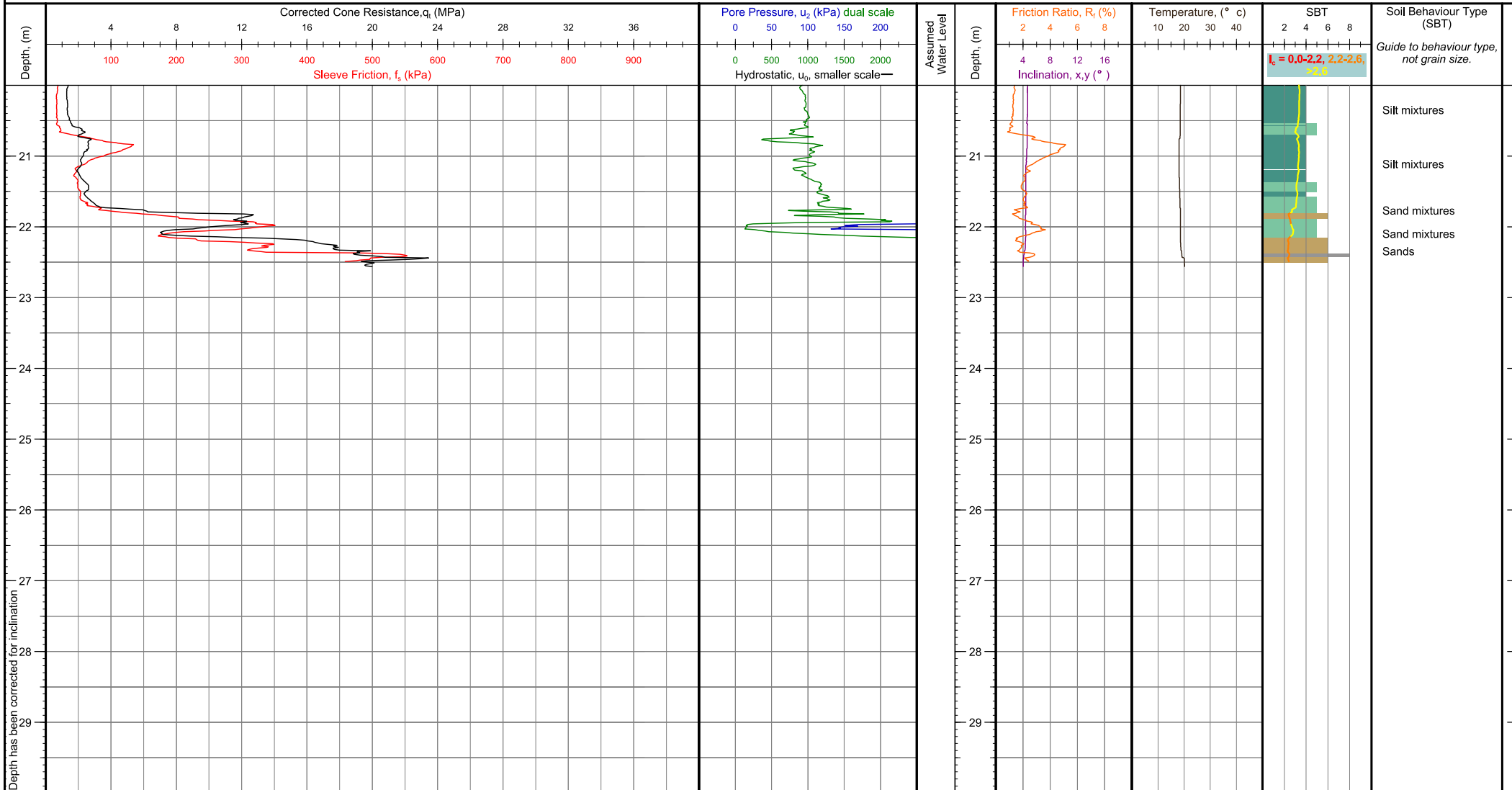


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911765.43, 1769143.31	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ167	WGS84 (deg): -36.924980, 174.899036	Date of Test: 20/10/2022	
Location: Pakuranga to Botany East	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 22.56	Test Number: CPT-315
Engineer: Mathew Crarer	Area Ratio: 0.79	Surveyor:	Pre Drill (m): 4.40 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure	G.I. Job Ref: 221211	

Comments: No final zeroes taken due to probe being stuck in the ground overnight.

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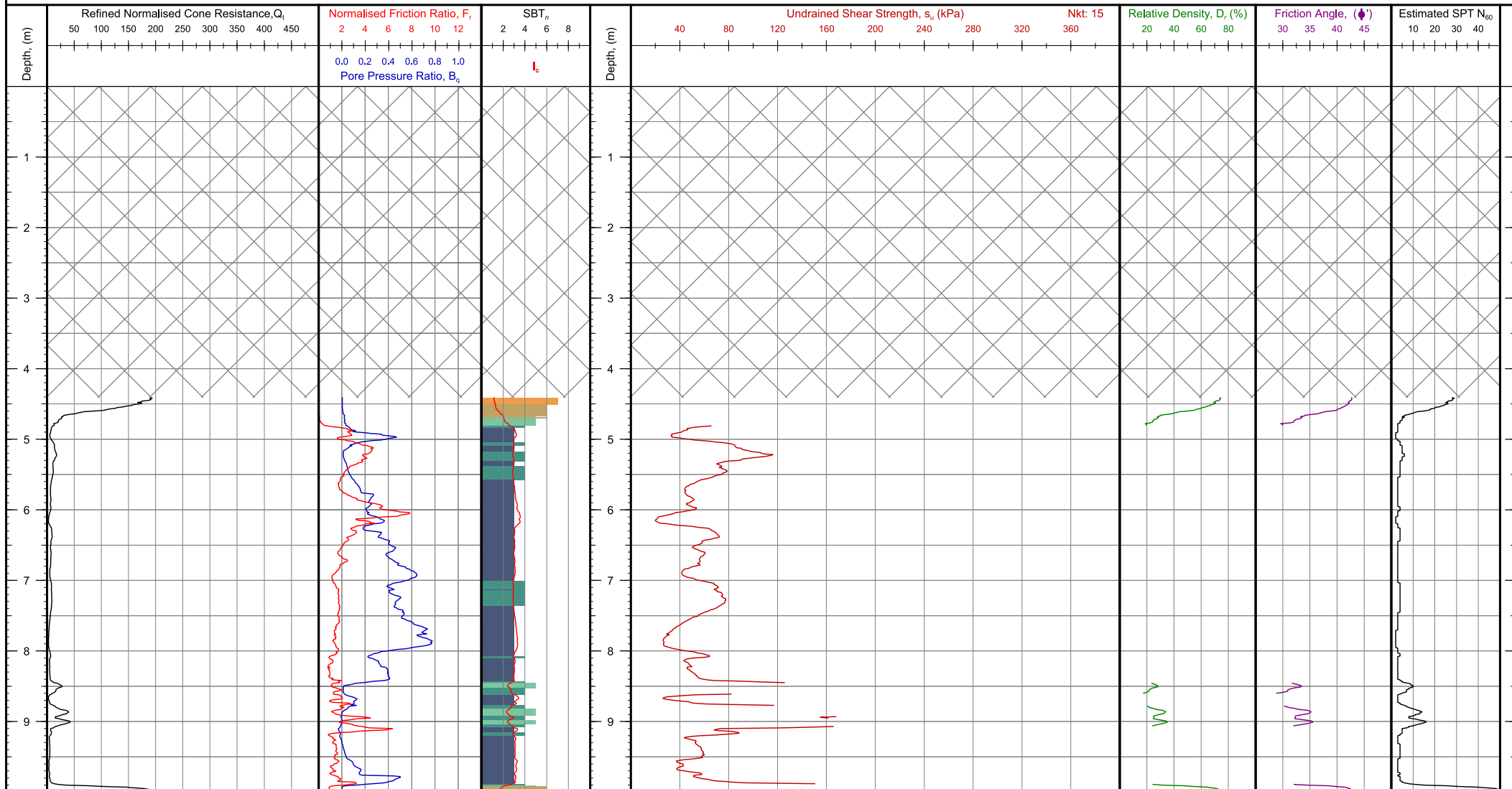
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911765.43, 1769143.31	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ167	WGS84 (deg): -36.924980, 174.899036	Date of Test: 20/10/2022	Test Number: CPT-315
Location: Pakuranga to Botany East	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 22.56	
Engineer: Mathew Crarer	Area Ratio: 0.79	Surveyor:	Pre Drill (m): 4.40 m	G.I. Job Ref: 221211
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure		

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Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:

Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

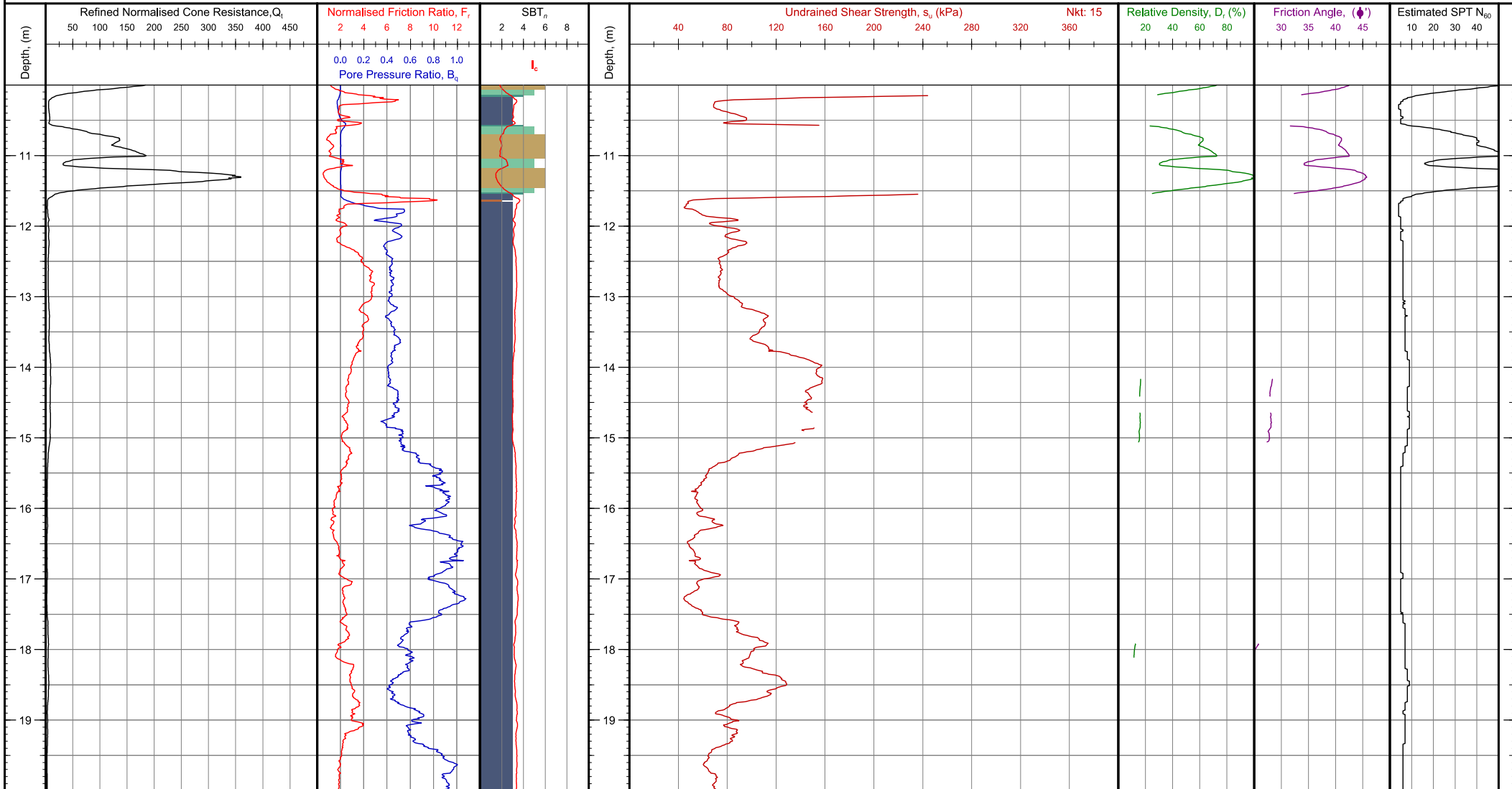
Client Reference:

Test Number: CPT-315

G.I. Job Ref: 221211

Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
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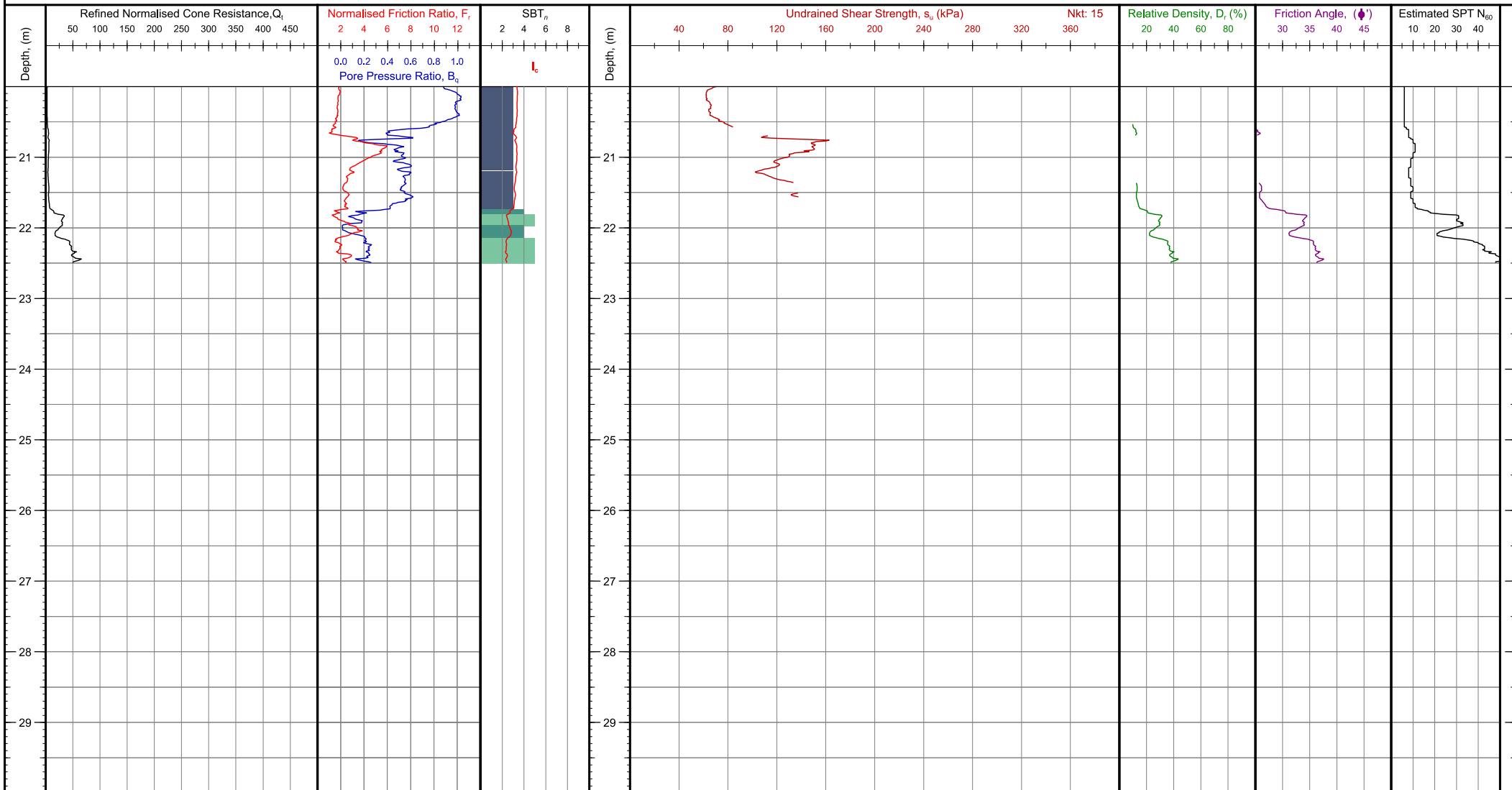
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Client Reference:

Test Number: CPT-315

G.I. Job Ref: 221211

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

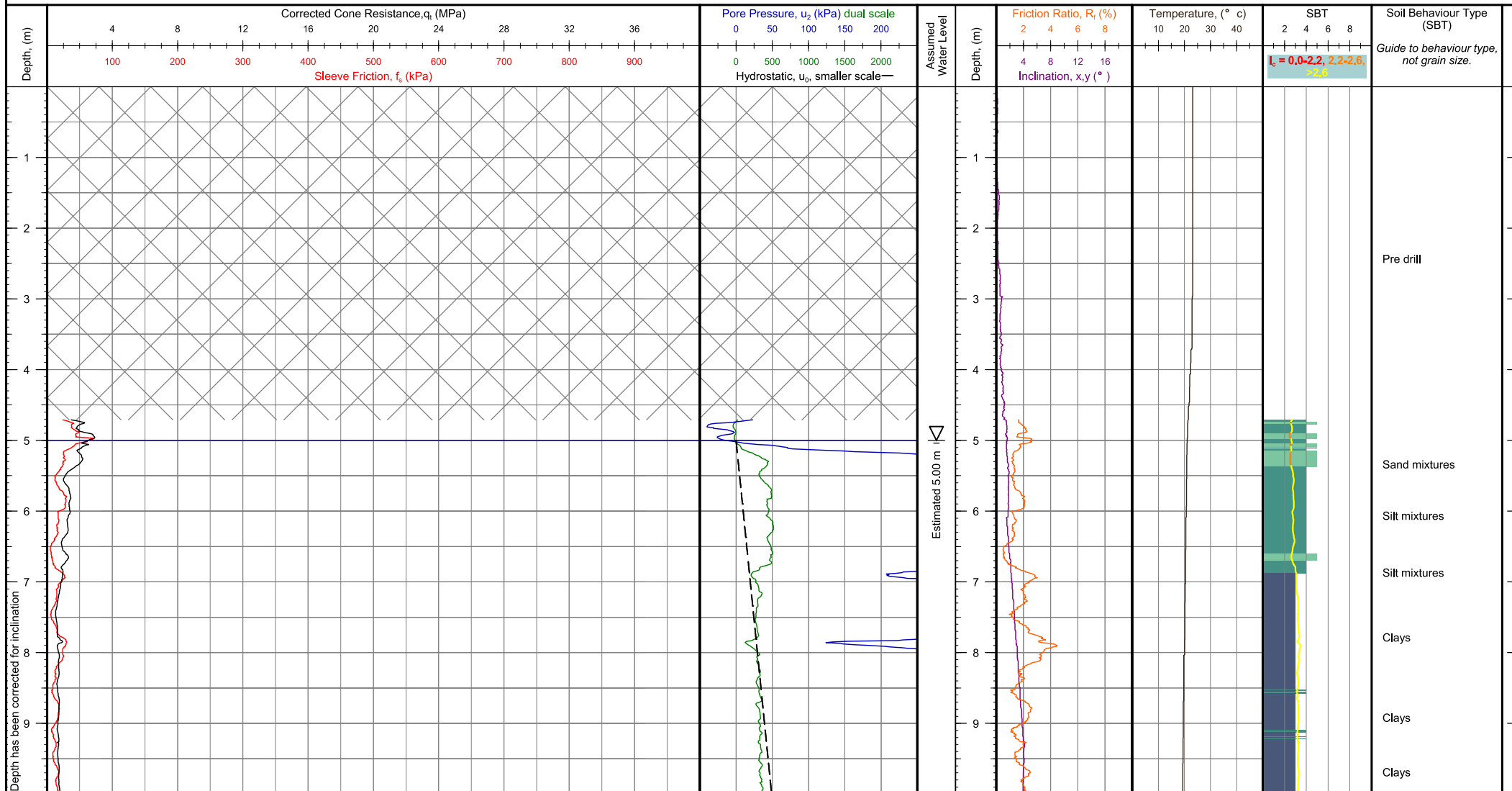
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Client Reference:

Test Number: CPT-315

G.I. Job Ref: 221211

CONE PENETRATION TEST (CPT) LOG

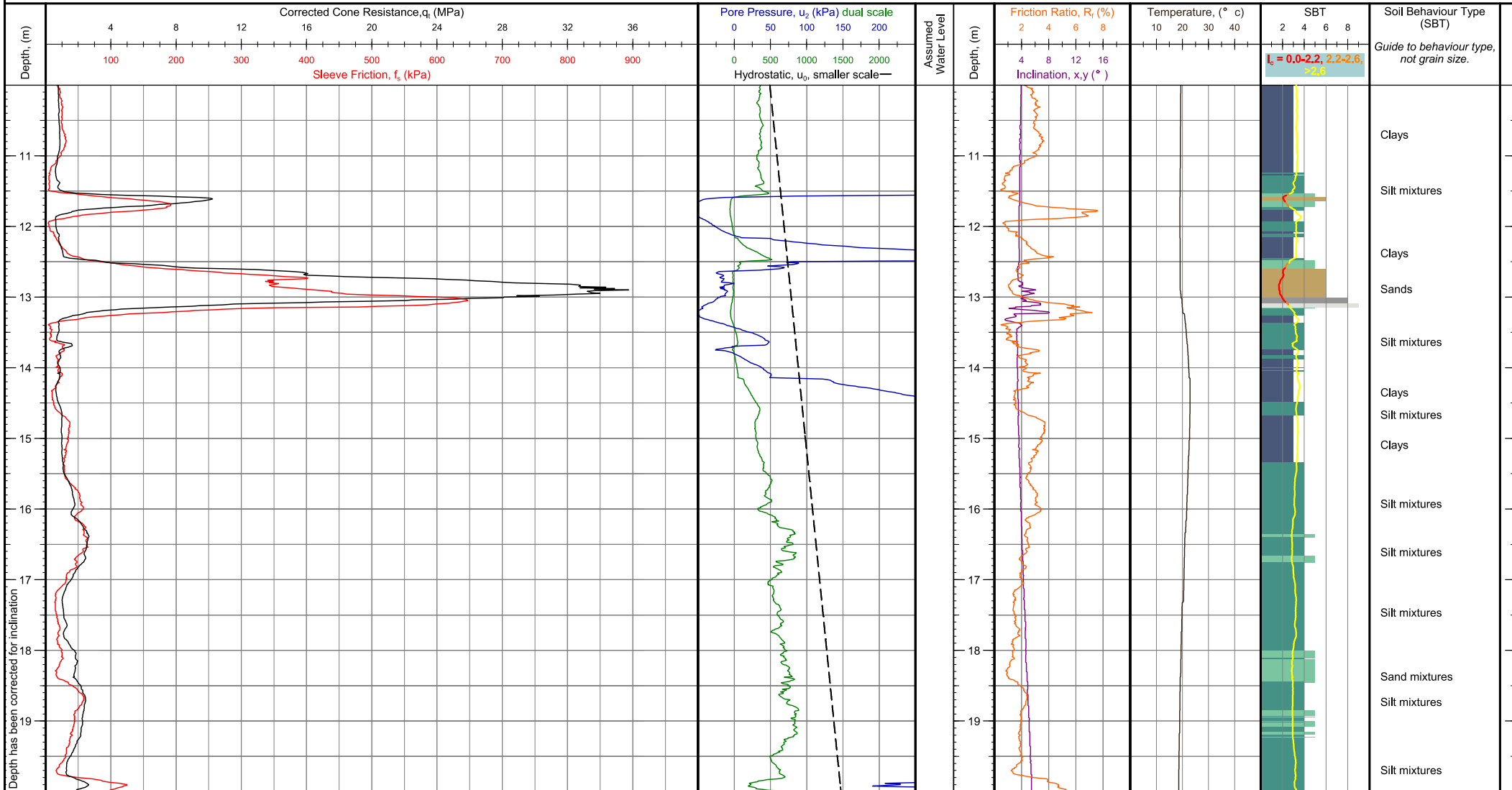


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911717.75, 1769274.87	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71136	WGS84 (deg): -36.925386, 174.900523	Date of Test: 29/11/2022	Test Number: CPT316
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 27.24	
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 4.70 m	G.I. Job Ref: 221401
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Danger of buckling rods		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

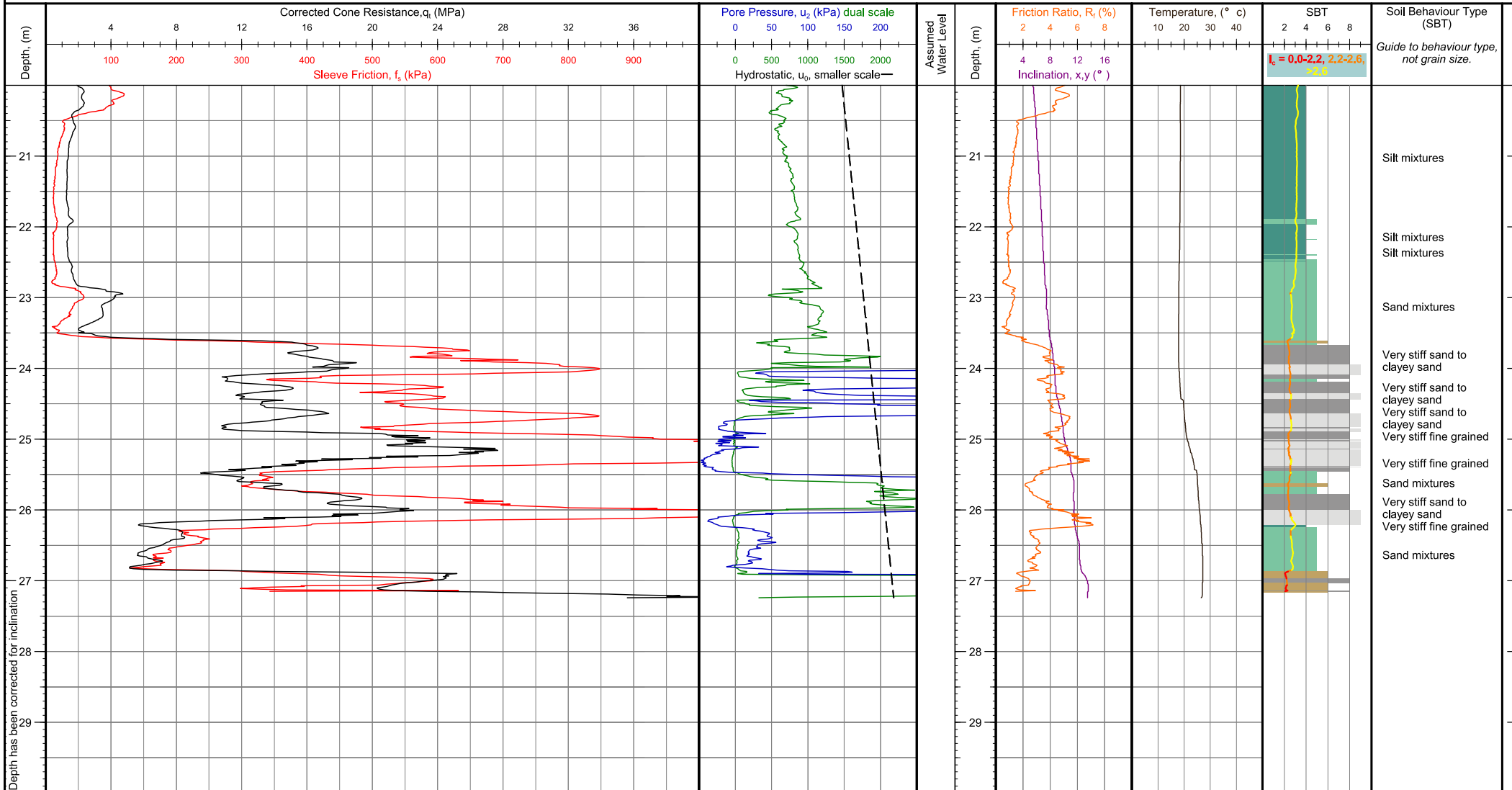
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Pakuranga to Botany East Location: Eastern Busway Engineer: Mathew Crarer Contractor: Ground Investigation Ltd	Operator: Cesar Etchevarne Cone Ref: 71136 Cone Type: 15cm ² Subtraction Area Ratio: 0.75 Filter Type: u ₂	NZTM 2000 N, E (m): 5911717.75, 1769274.87	Elevation (m): Unknown	Client Reference: Test Number: CPT316 G.I. Job Ref: 221401
		WGS84 (deg): -36.925386, 174.900523	Date of Test: 29/11/2022	
Comments:		Location Method: Handheld GPS	Depth (m): 27.24	
		Surveyor:	Pre Drill (m): 4.70 m	
		Termination Reason: Danger of buckling rods		

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

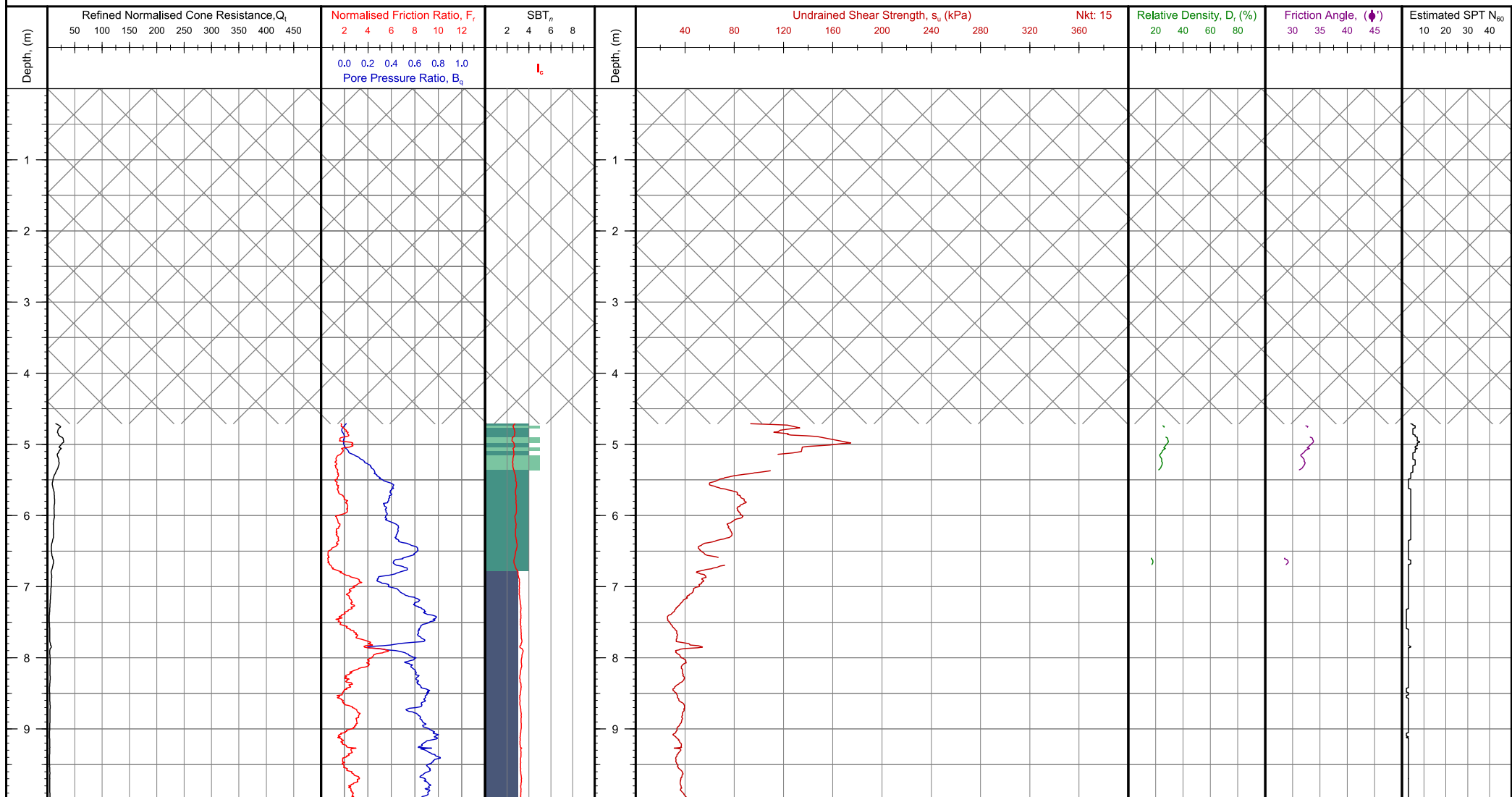
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911717.75, 1769274.87	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71136	WGS84 (deg): -36.925386, 174.900523	Date of Test: 29/11/2022	Test Number: CPT316
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 27.24	
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 4.70 m	G.I. Job Ref: 221401
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Danger of buckling rods		

Comments:

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Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

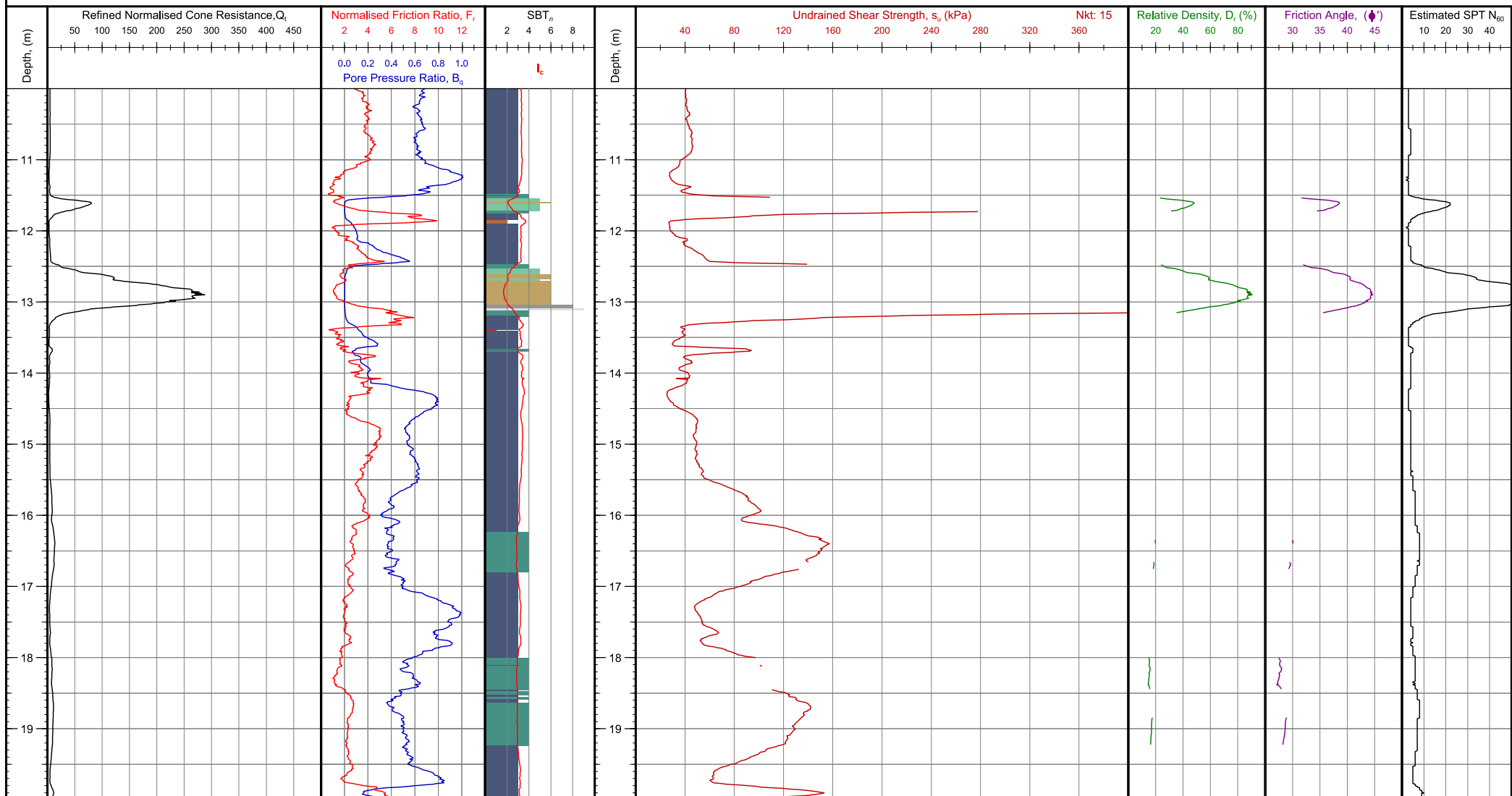
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:

Test Number: CPT316

G.I. Job Ref: 221401



Soil Behaviour Type SBT_n - Robertson et al. 1990

- | | | | |
|---|---|---|---|
| 0 | Undefined | 5 | Sand mixtures: silty sand to sandy silt |
| 1 | Sensitive fine grained | 6 | Sands: clean sands to silty sands |
| 2 | Organic: Organic clay/silt, peat | 7 | Dense sand to gravelly sand |
| 3 | Clay: clay to silty clay | 8 | Stiff sand to clayey sand |
| 4 | Silt mixtures: clayey silt & silty clay | 9 | Stiff silt/clay |

Notes and Limitations:

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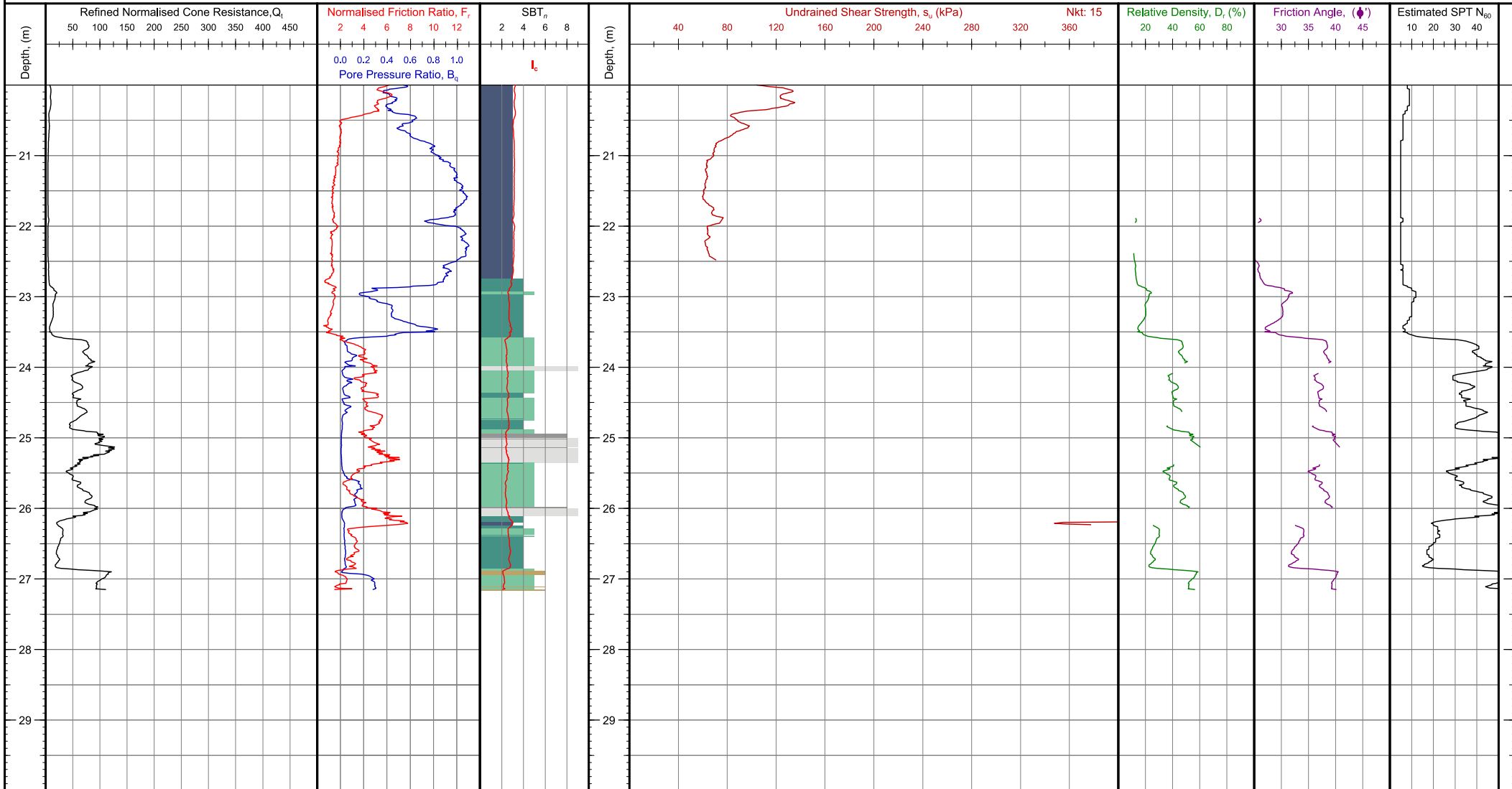
Client Reference:

Test Number: CPT316

G.I. Job Ref: 221401

Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

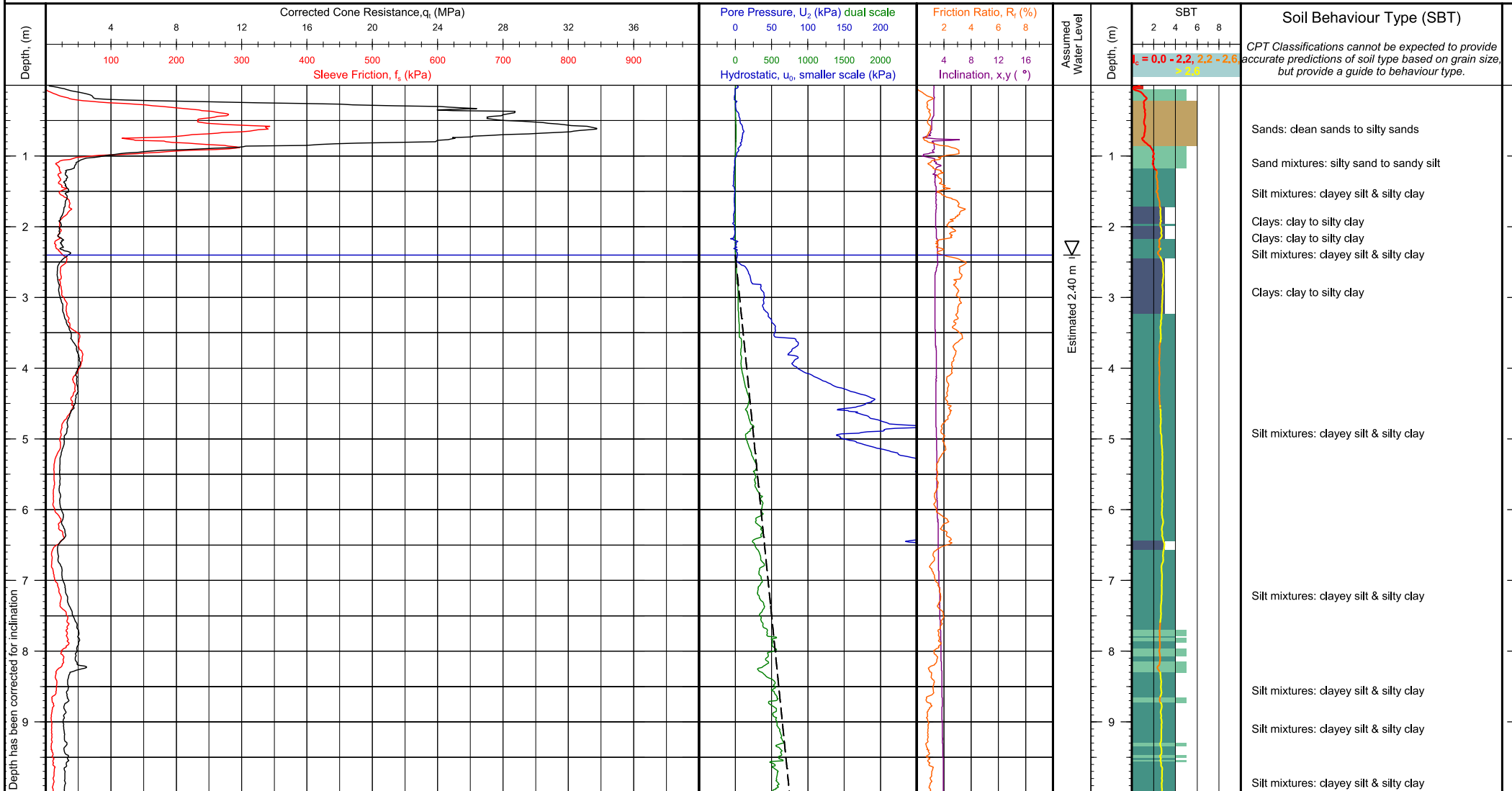
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT316

G.I. Job Ref: 221401

CONE PENETRATION TEST (CPT) LOG

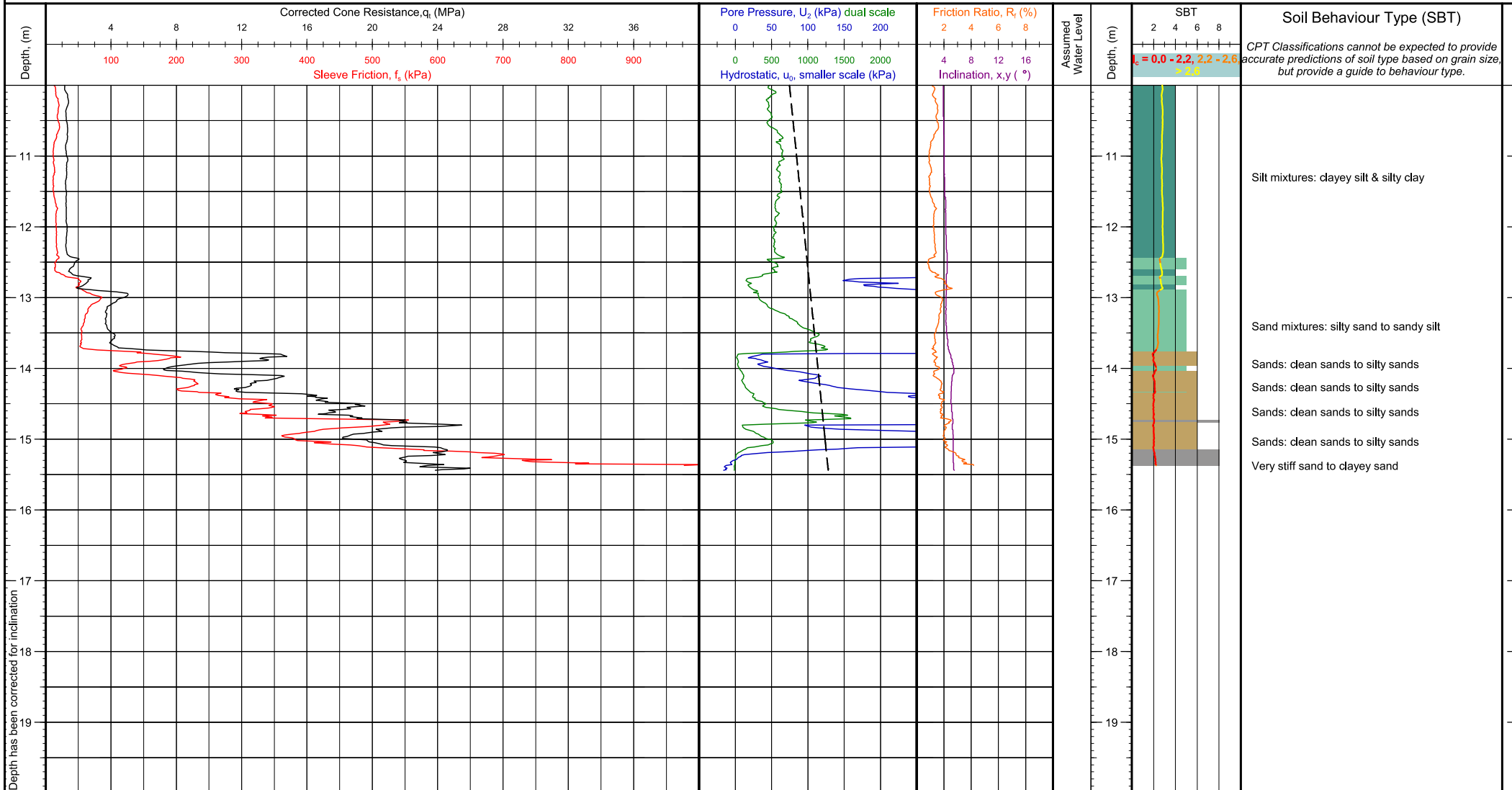


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911479.15, 1769479.07	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ539	WGS84 (deg): -36.927499, 174.902868	Date of Test: 10/02/2022	Test Number: CPT-320
Location: Auckland, New Zealand	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 15.44	
Engineer: Steve Semmens	Area Ratio: 0.79	Surveyor:	Pre Drill (m): N/A	G.I. Job Ref: 220052
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High total load		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

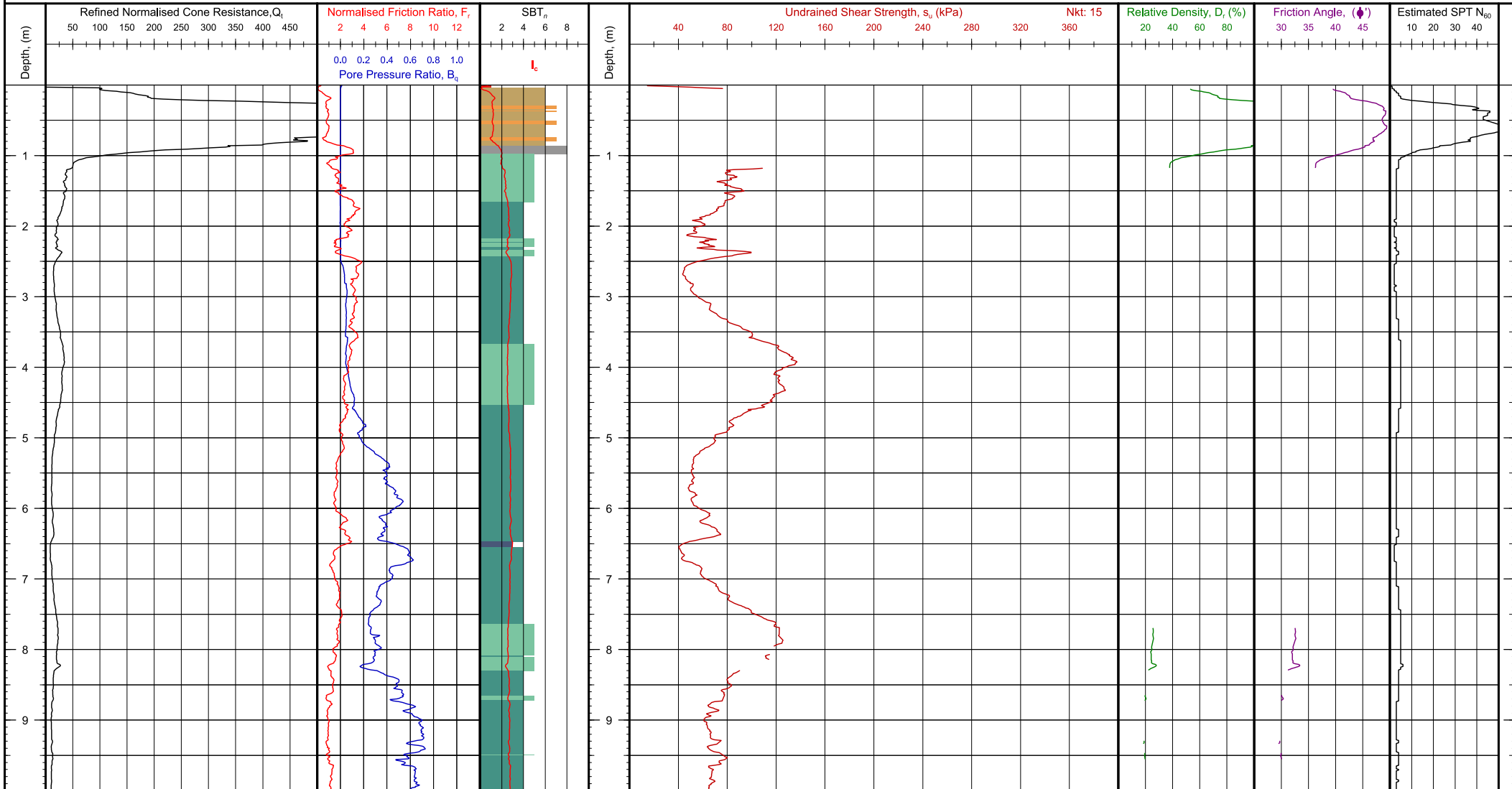
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911479.15, 1769479.07	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ539	WGS84 (deg): -36.927499, 174.902868	Date of Test: 10/02/2022	Test Number: CPT-320
Location: Auckland, New Zealand	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 15.44	
Engineer: Steve Semmens	Area Ratio: 0.79	Surveyor:	Pre Drill (m): N/A	G.I. Job Ref: 220052
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High total load		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type S_{BT_n} - Robertson et al. 1990

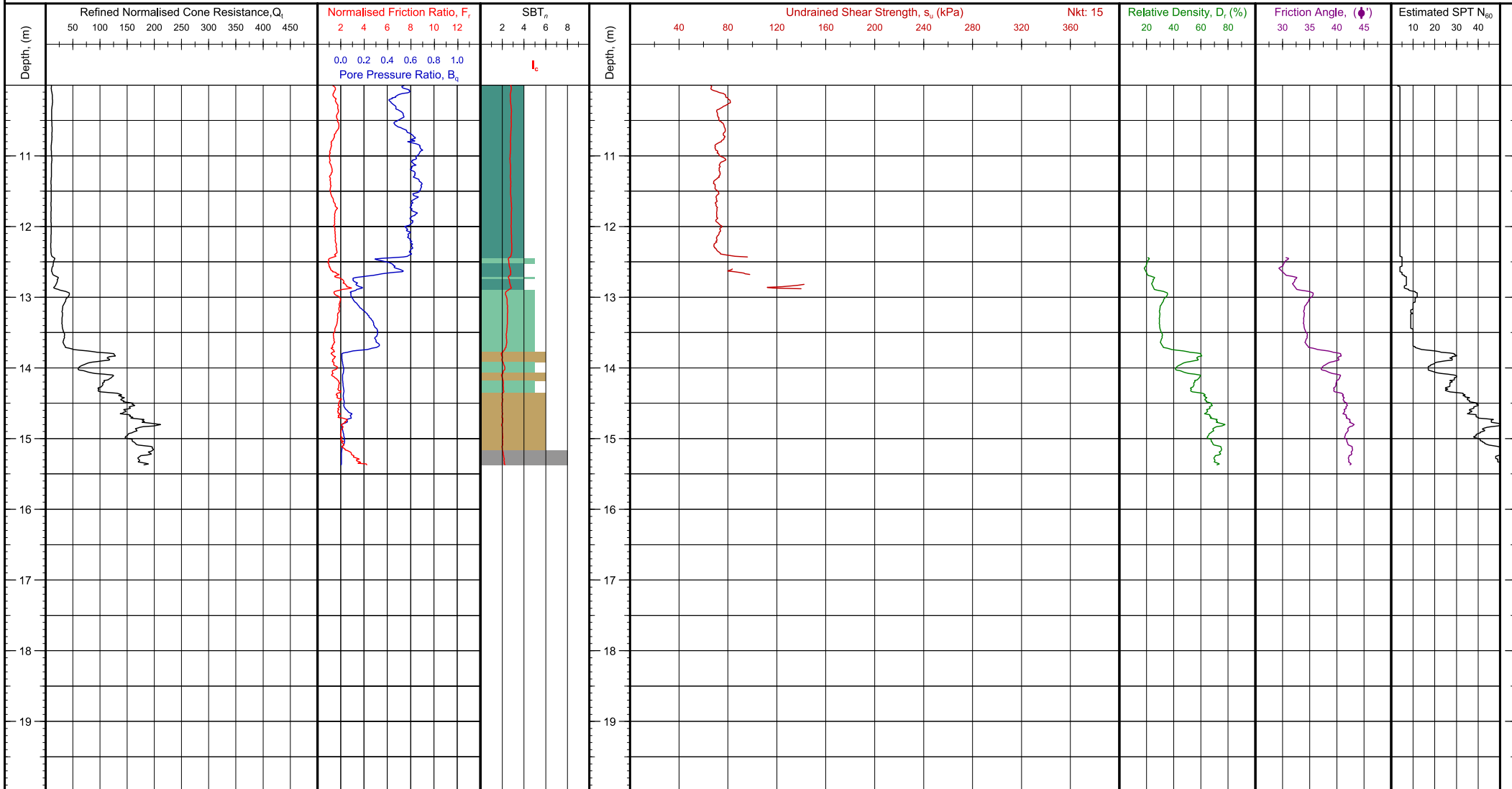
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-320

G.I. Job Ref: 220052



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type S_{BT_n} - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

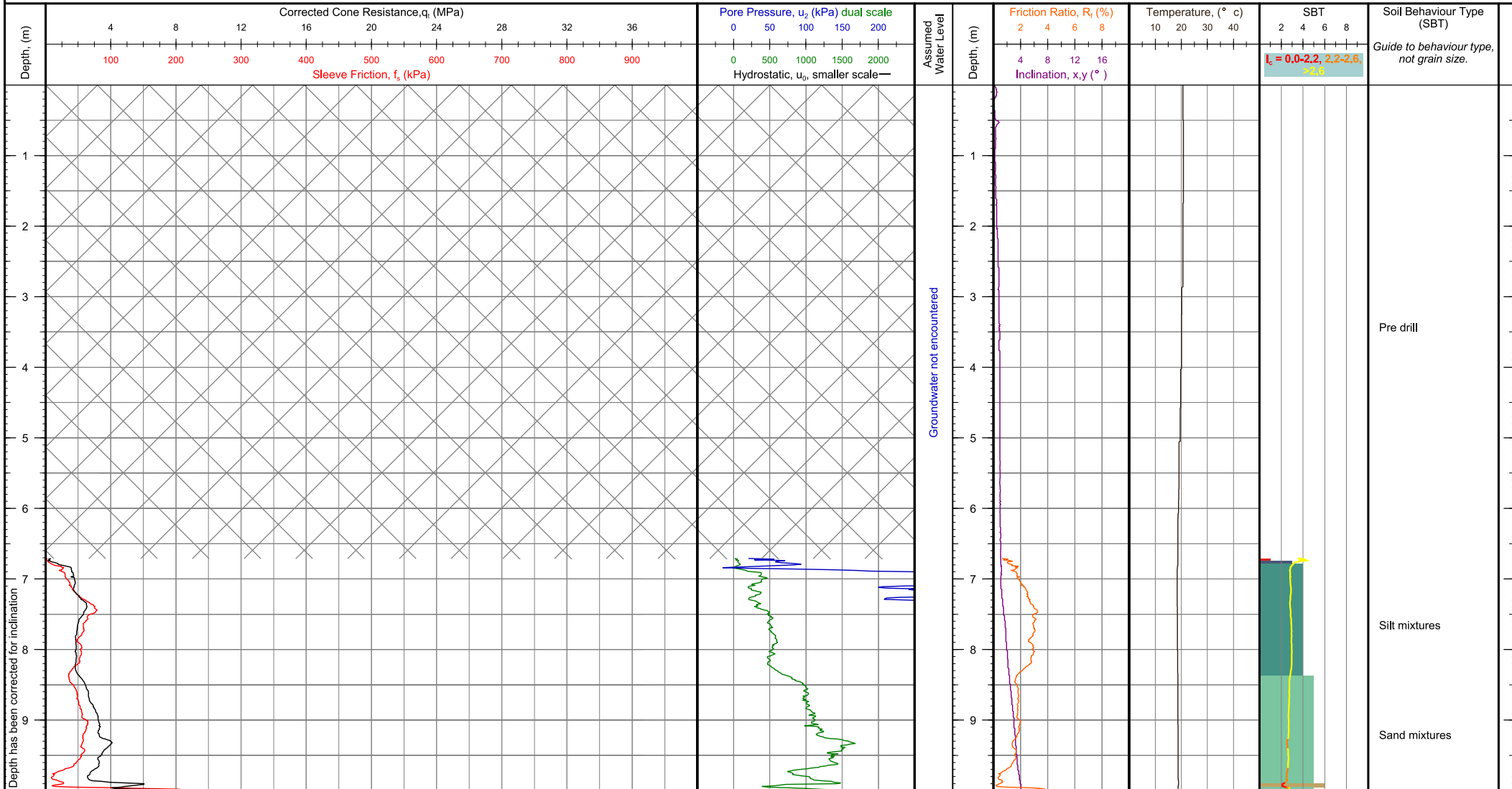
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-320

G.I. Job Ref: 220052

CONE PENETRATION TEST (CPT) LOG

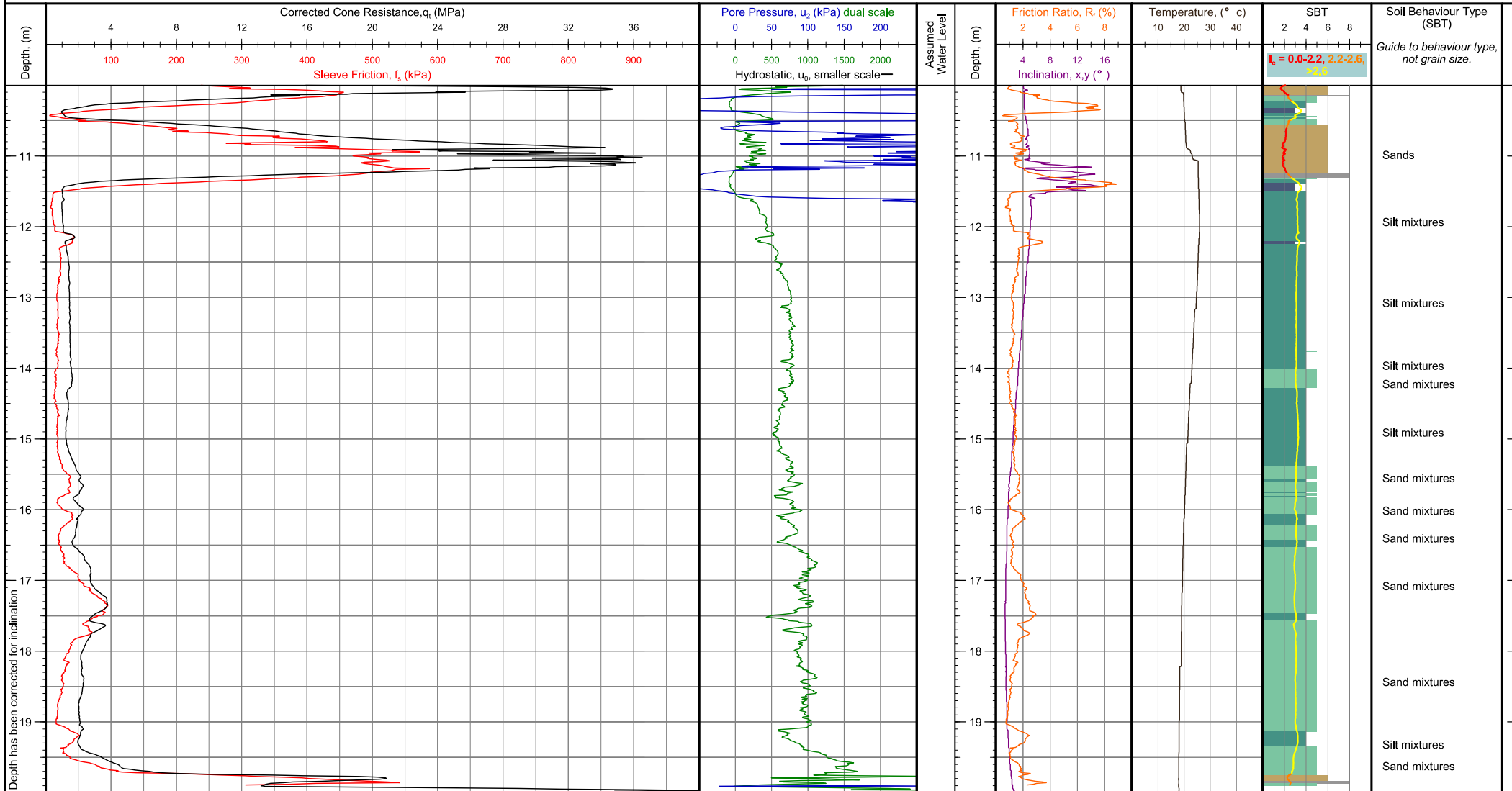


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911820.49, 1768869.58	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71137	WGS84 (deg): -36.924533, 174.895952	Date of Test: 29/11/2022	Test Number: CPT321
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 19.98	
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 6.70 m	G.I. Job Ref: 221401
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High pore water pressure		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

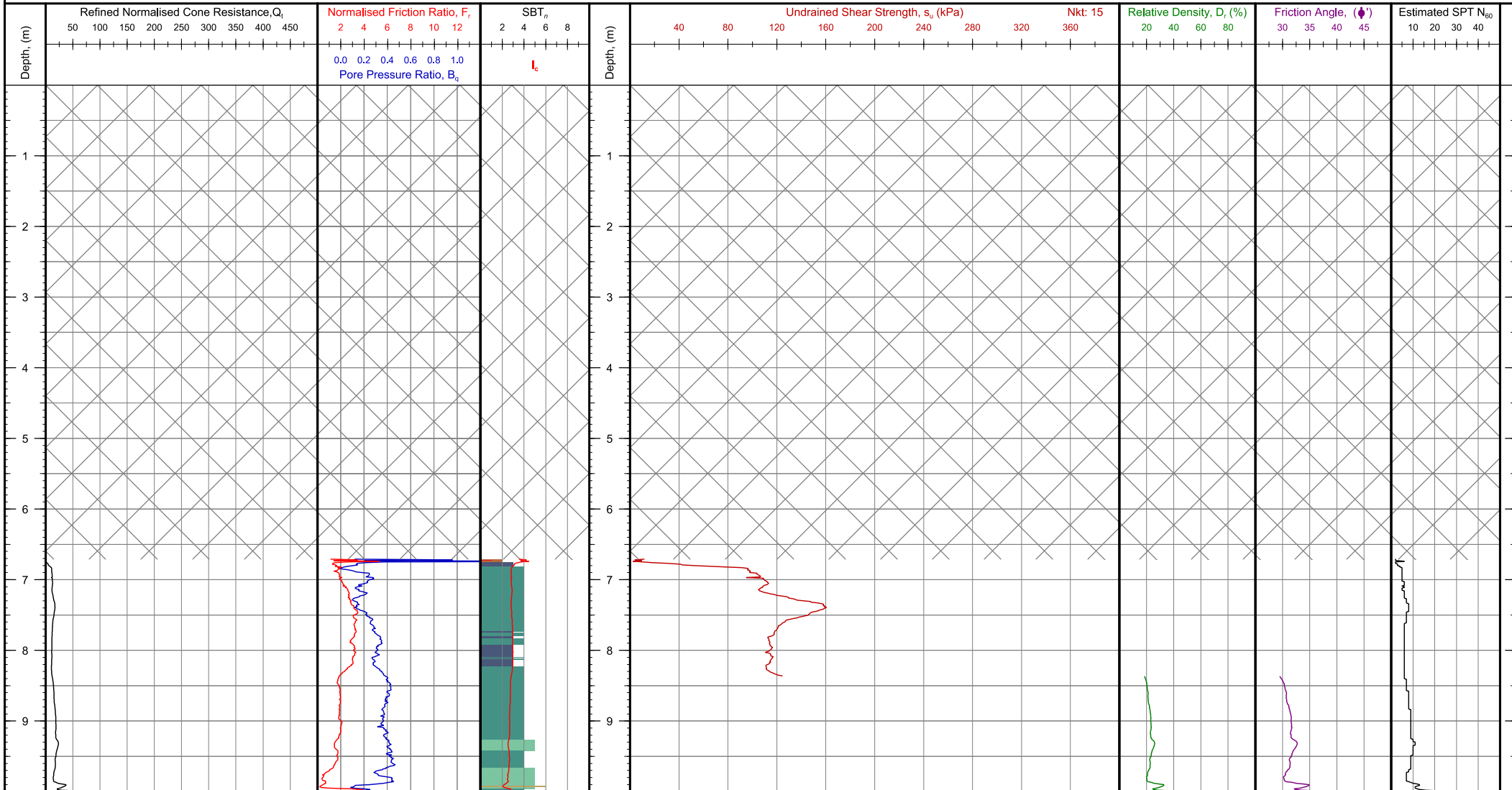


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911820.49, 1768869.58	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71137	WGS84 (deg): -36.924533, 174.895952	Date of Test: 29/11/2022	
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 19.98	Test Number: CPT321
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 6.70 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure	G.I. Job Ref: 221401	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

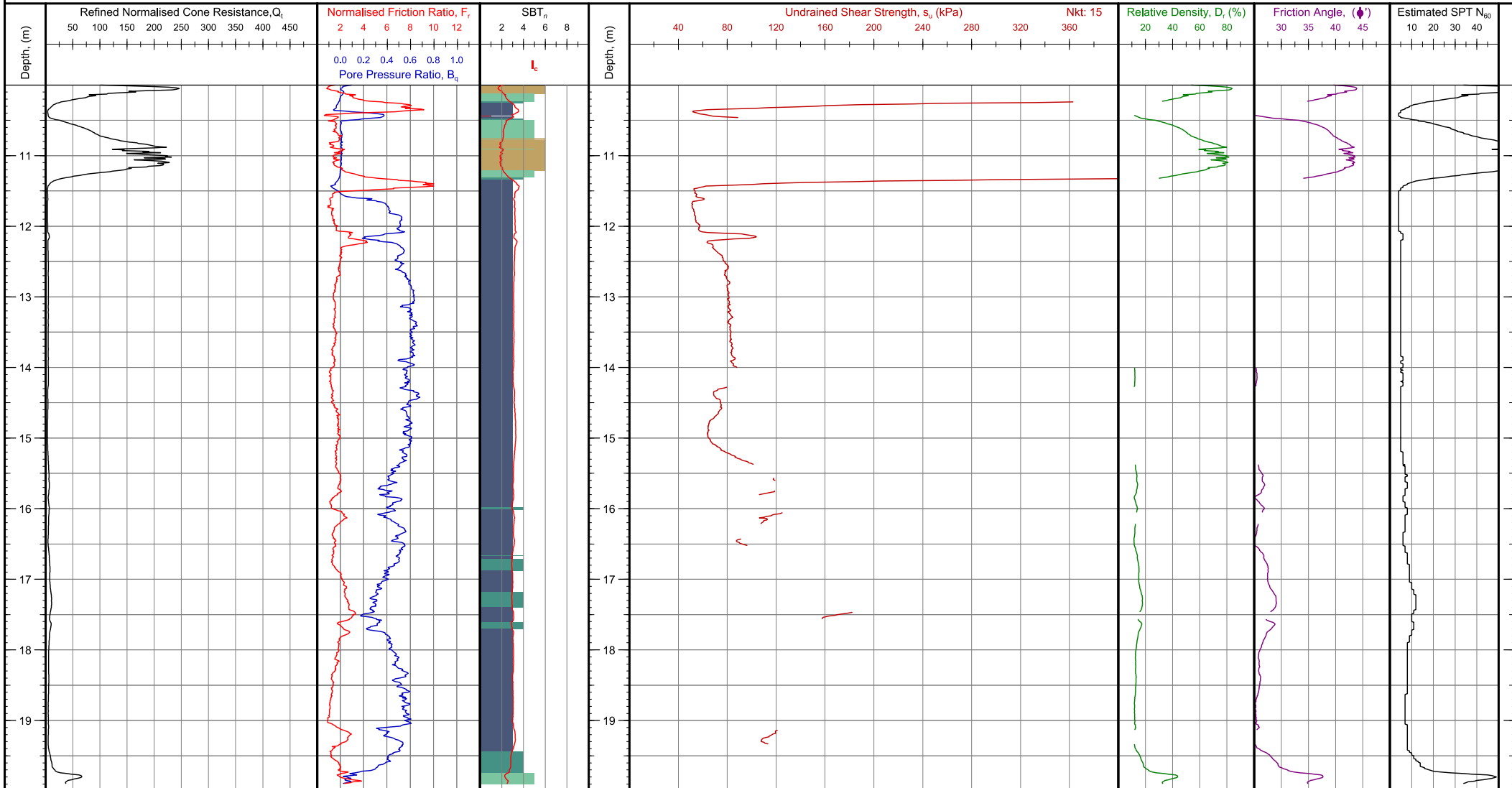
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT321

G.I. Job Ref: 221401



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

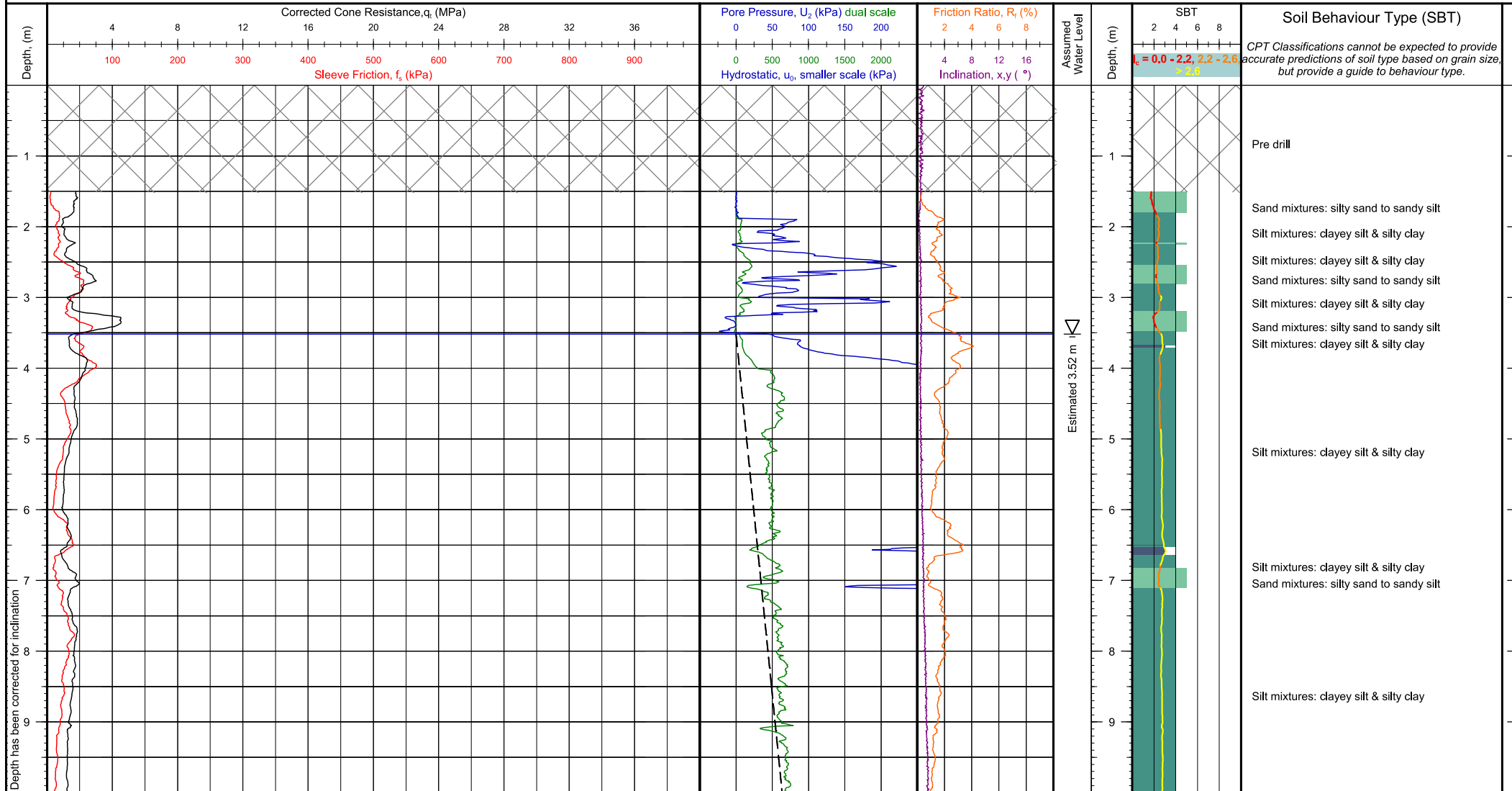
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT321

G.I. Job Ref: 221401

CONE PENETRATION TEST (CPT) LOG

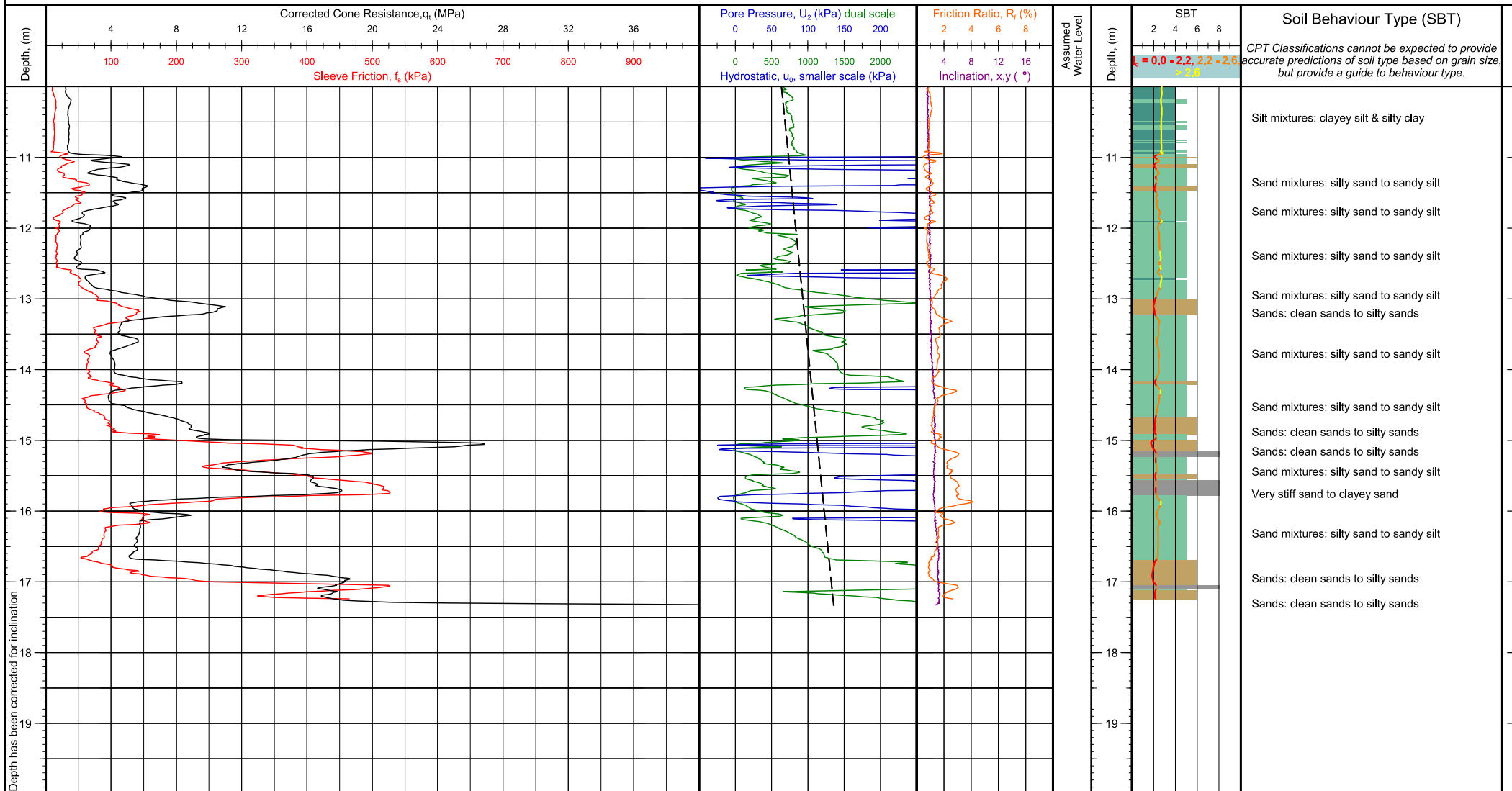


Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Jared Topzand Cone Ref: C18614 Cone Type: 15cm ² Compression Area Ratio: 0.80 Filter Type: u ₂	NZTM 2000 N, E (m): 5911471.70, 1769474.11 WGS84 (deg): -36.927567, 174.902814	Elevation (m): Unknown Date of Test: 3/02/2022	Client Reference: Test Number: CPT-322
		Location Method: Handheld GPS Surveyor: Termination Reason: High total load	Depth (m): 17.33 Pre Drill (m): 1.50 m	

Comments:

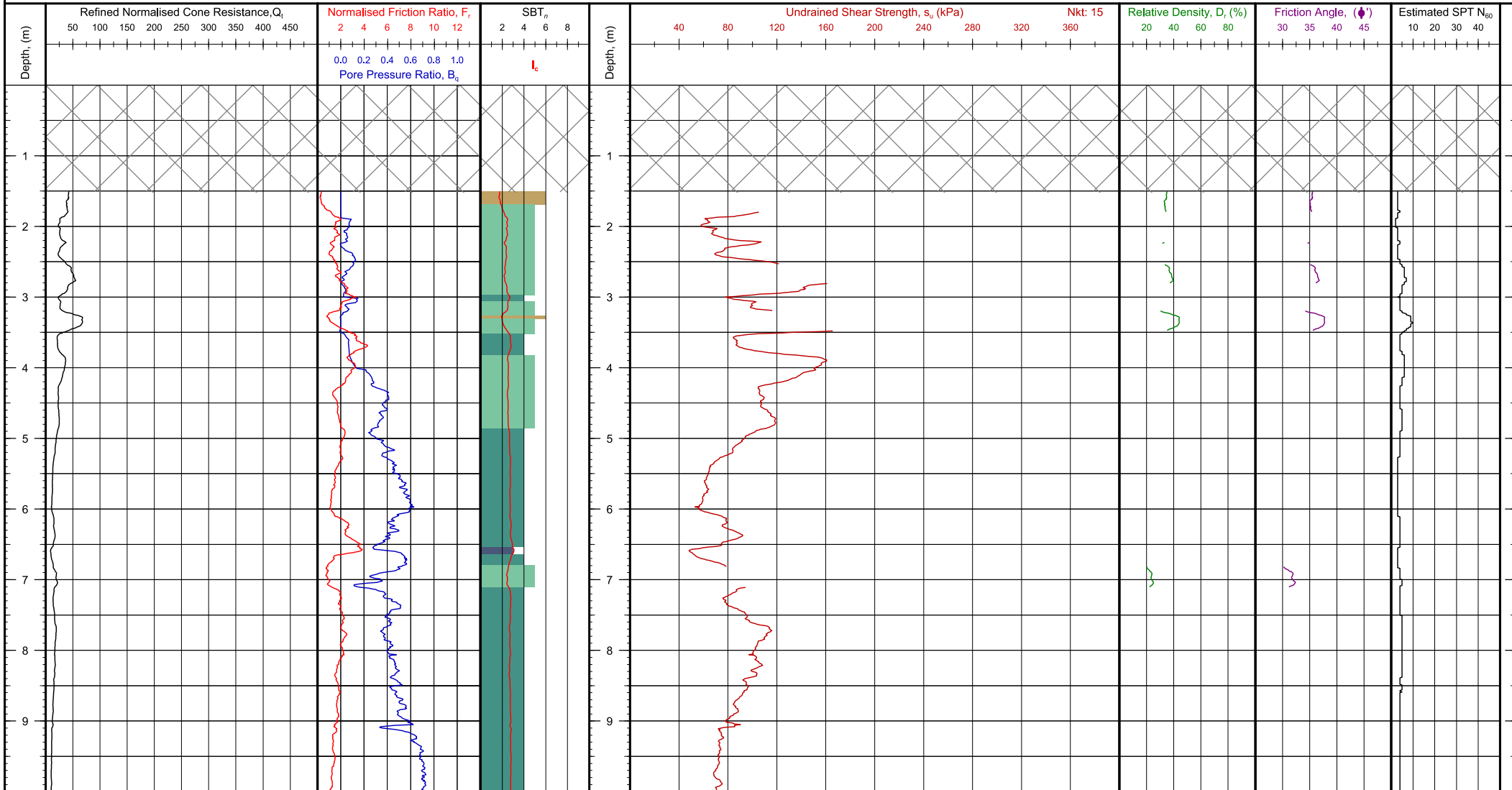
Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Jared Topzand Cone Ref: C18614 Cone Type: 15cm ² Compression Area Ratio: 0.80 Filter Type: u ₂	NZTM 2000 N, E (m): 5911471.70, 1769474.11	Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.927567, 174.902814	Date of Test: 3/02/2022	
Comments:		Location Method: Handheld GPS	Depth (m): 17.33	Test Number: CPT-322
		Surveyor:	Pre Drill (m): 1.50 m	
		Termination Reason: High total load		

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



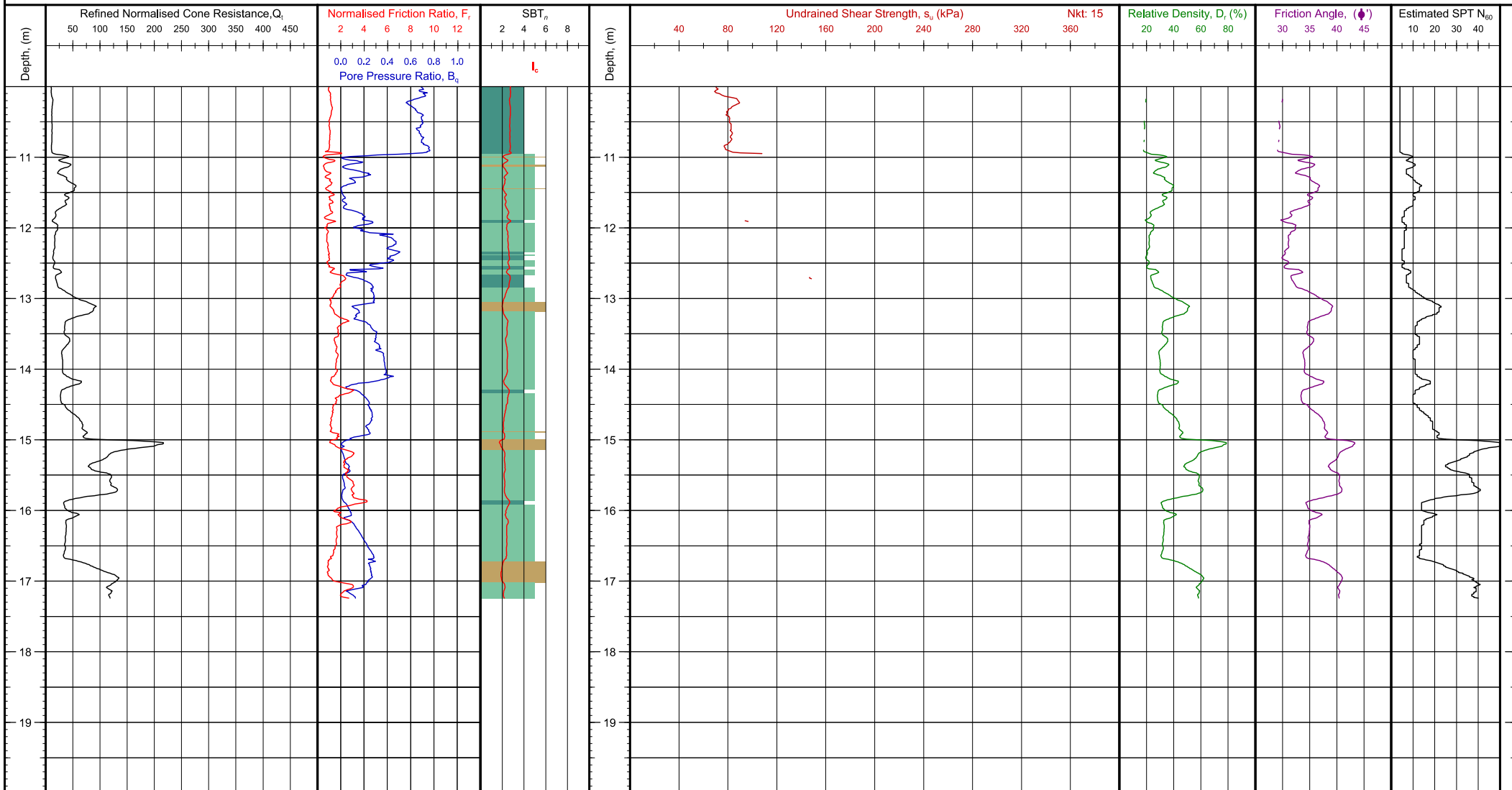
Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:
Test Number: CPT-322
G.I. Job Ref: 220052



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

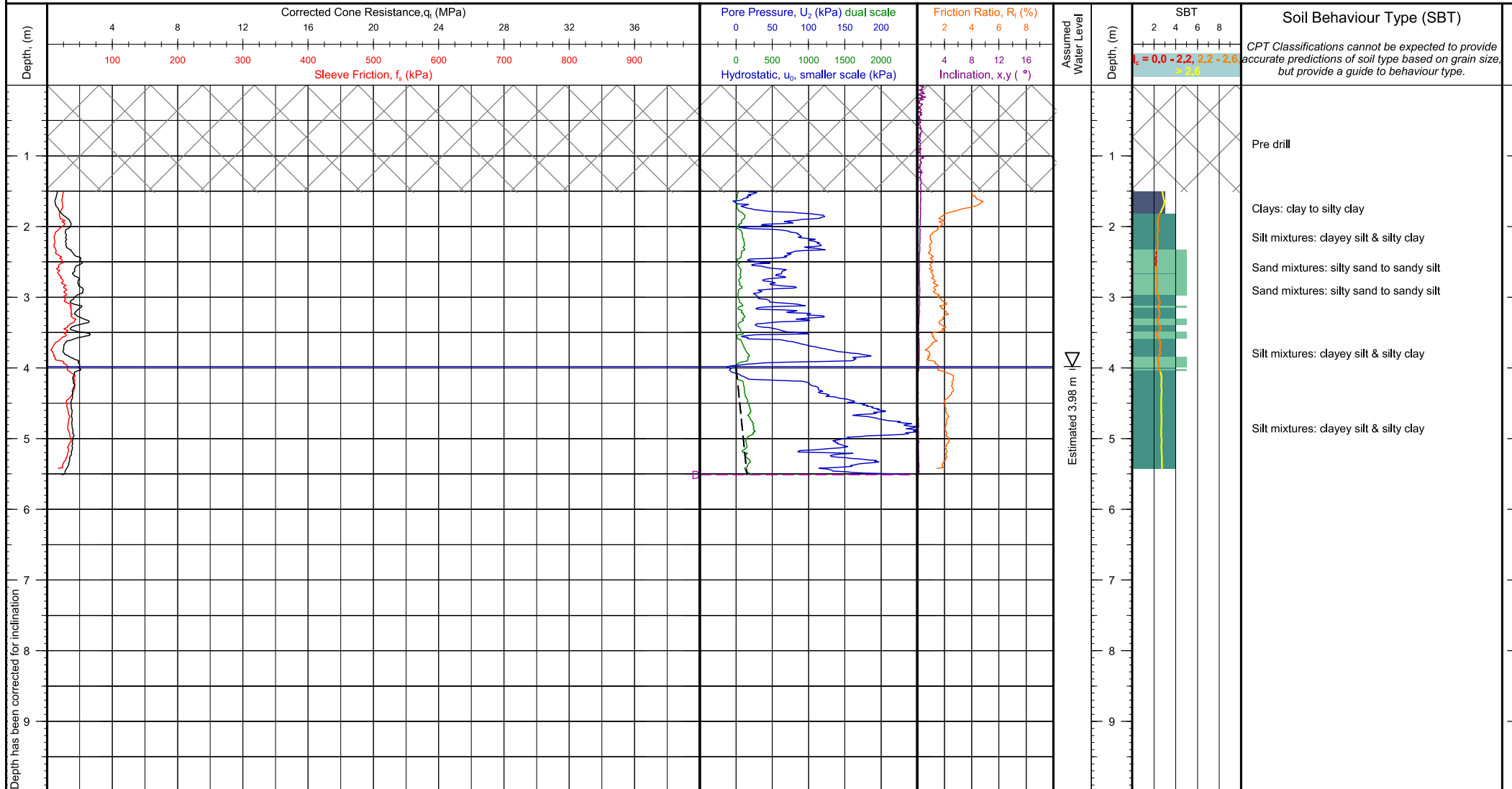
Notes and Limitations:
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Client Reference:

Test Number: CPT-322

G.I. Job Ref: 220052

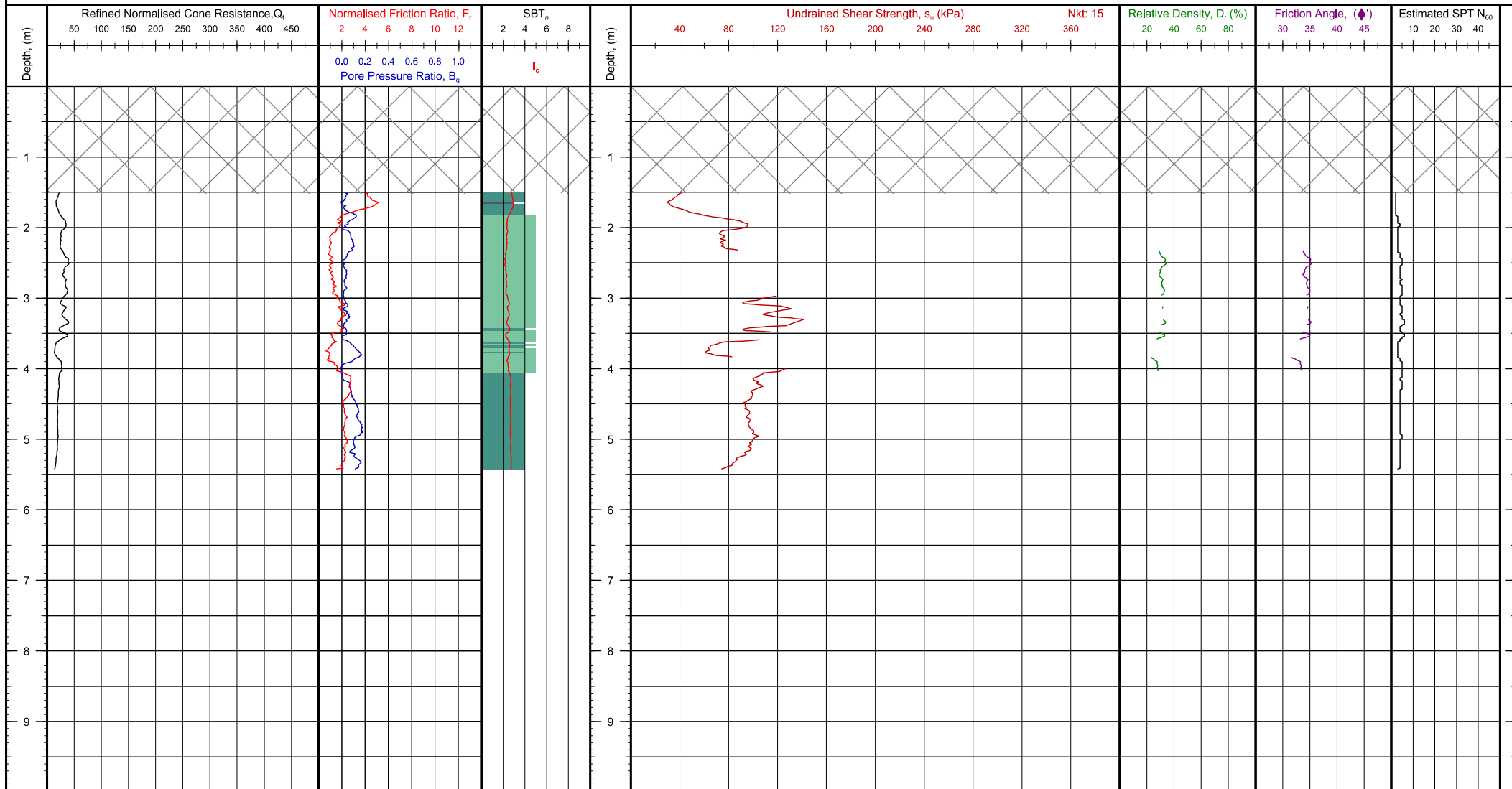
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Jared Topzand	NZTM 2000 N, E (m): 5911475.68, 1769474.73	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18608	WGS84 (deg): -36.927531, 174.902820	Date of Test: 3/02/2022	
Location: Auckland, New Zealand	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 5.51	Test Number: CPT-322-D
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Target depth	G.I. Job Ref: 220052	

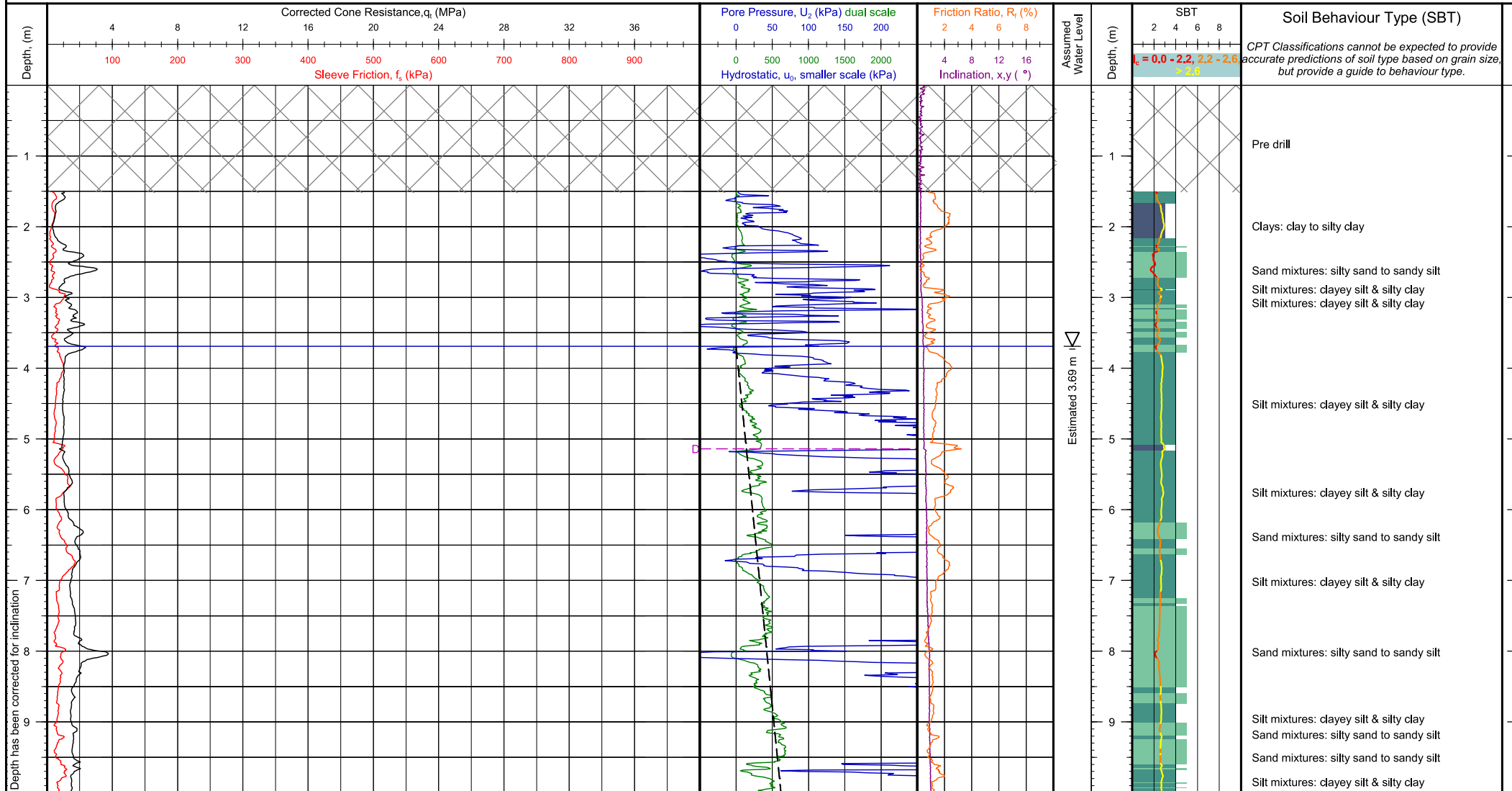
Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



<p>Client: Eastern Busway Alliance</p> <p>Project: Eastern Busway</p> <p>Location: Auckland, New Zealand</p> <p>Engineer: Steve Semmens</p> <p>Contractor: Ground Investigation Ltd</p>	<p>Soil Behaviour Type SBT_n - Robertson et al. 1990</p> <table border="0"> <tr> <td>0</td><td>Undefined</td> <td>5</td><td>Sand mixtures: silty sand to sandy silt</td> </tr> <tr> <td>1</td><td>Sensitive fine grained</td> <td>6</td><td>Sands: clean sands to silty sands</td> </tr> <tr> <td>2</td><td>Organic: Organic clay/silt, peat</td> <td>7</td><td>Dense sand to gravelly sand</td> </tr> <tr> <td>3</td><td>Clay: clay to silty clay</td> <td>8</td><td>Stiff sand to clayey sand</td> </tr> <tr> <td>4</td><td>Silt mixtures: clayey silt & silty clay</td> <td>9</td><td>Stiff silt/clay</td> </tr> </table>	0	Undefined	5	Sand mixtures: silty sand to sandy silt	1	Sensitive fine grained	6	Sands: clean sands to silty sands	2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand	3	Clay: clay to silty clay	8	Stiff sand to clayey sand	4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay	<p>Notes and Limitations:</p> <p>Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.</p>	<p>Client Reference:</p> <p>Test Number: CPT-322-D</p> <p>G.I. Job Ref: 220052</p>
	0	Undefined	5	Sand mixtures: silty sand to sandy silt																			
1	Sensitive fine grained	6	Sands: clean sands to silty sands																				
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand																				
3	Clay: clay to silty clay	8	Stiff sand to clayey sand																				
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay																				

CONE PENETRATION TEST (CPT) LOG

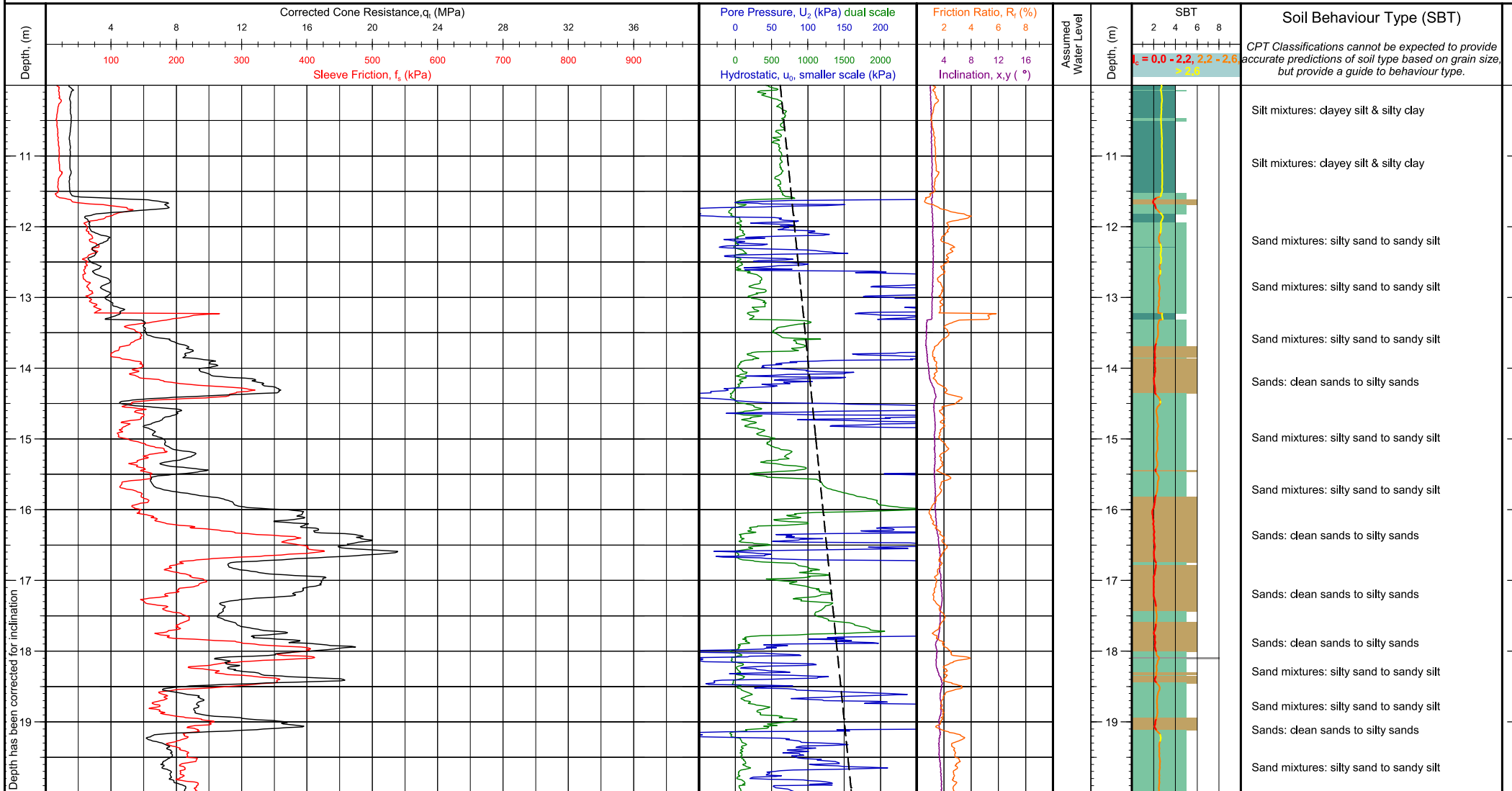


Client: Eastern Busway Alliance	Operator: Jared Topzand	NZTM 2000 N, E (m): 5911457.57, 1769586.82	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18608	WGS84 (deg): -36.927674, 174.904082	Date of Test: 4/02/2022	
Location: Auckland, New Zealand	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 24.39	Test Number: CPT-323-D
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High total load	G.I. Job Ref: 220052	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

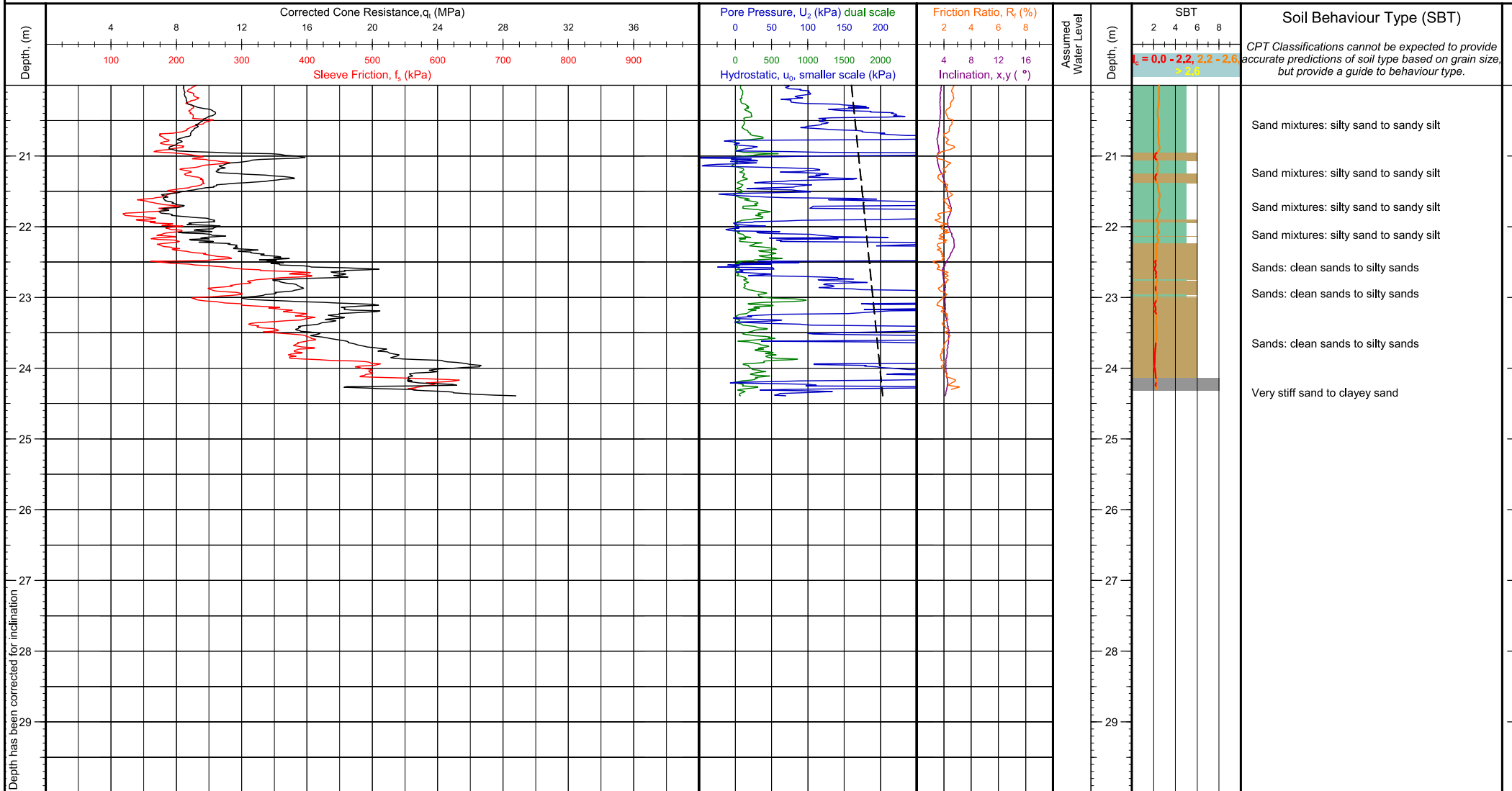
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Jared Topzand Cone Ref: C18608 Cone Type: 15cm ² Compression Area Ratio: 0.80 Filter Type: u ₂	NZTM 2000 N, E (m): 5911457.57, 1769586.82	Elevation (m): Unknown	Client Reference: Test Number: CPT-323-D G.I. Job Ref: 220052
		WGS84 (deg): -36.927674, 174.904082	Date of Test: 4/02/2022	
Comments:		Location Method: Handheld GPS	Depth (m): 24.39	
		Surveyor:	Pre Drill (m): 1.50 m	
		Termination Reason: High total load		

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

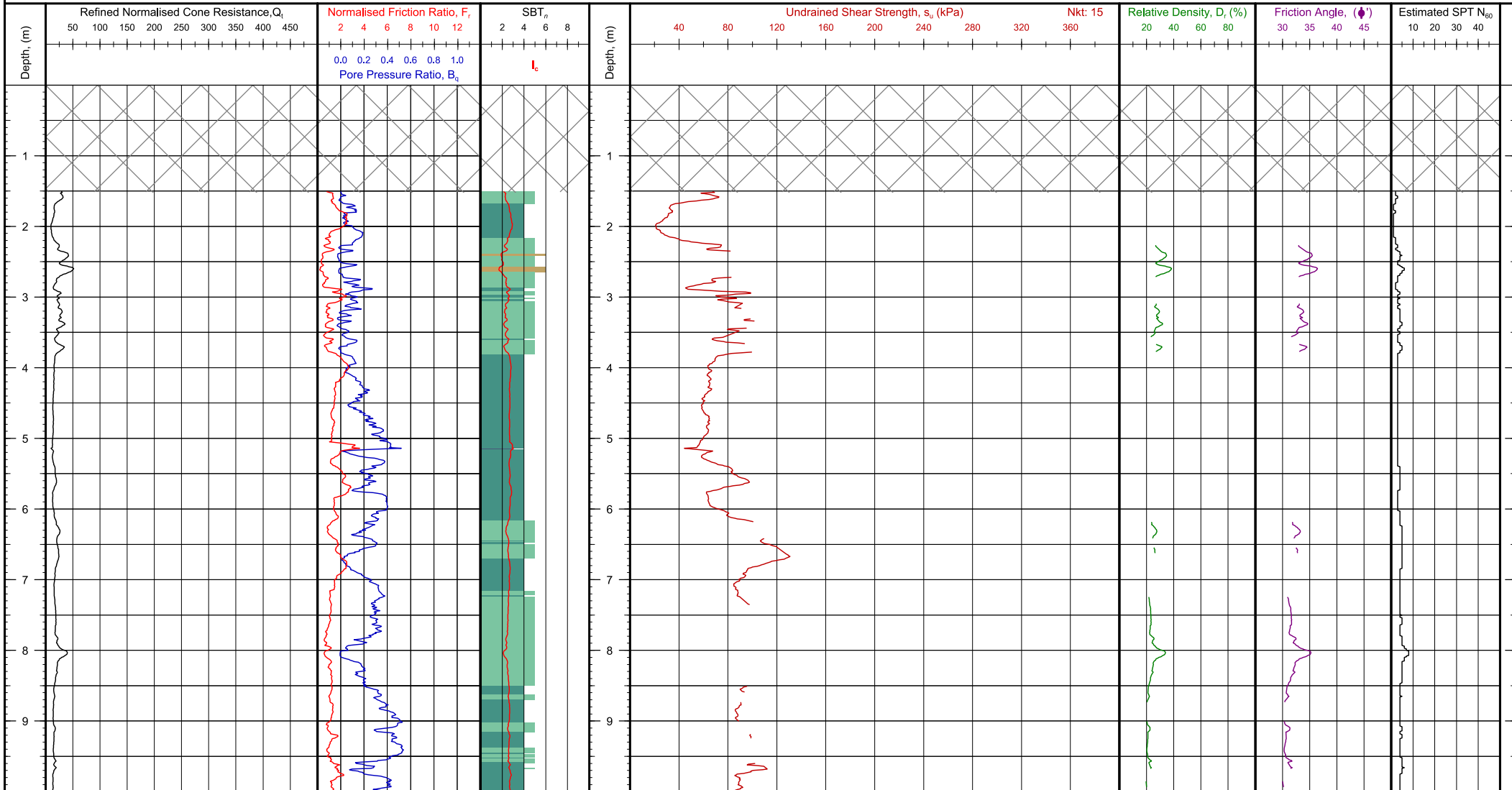
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Jared Topzand	NZTM 2000 N, E (m): 5911457.57, 1769586.82	Elevation (m): Unknown	Client Reference:
Location: Auckland, New Zealand	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 24.39	G.I. Job Ref: 220052
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High total load		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



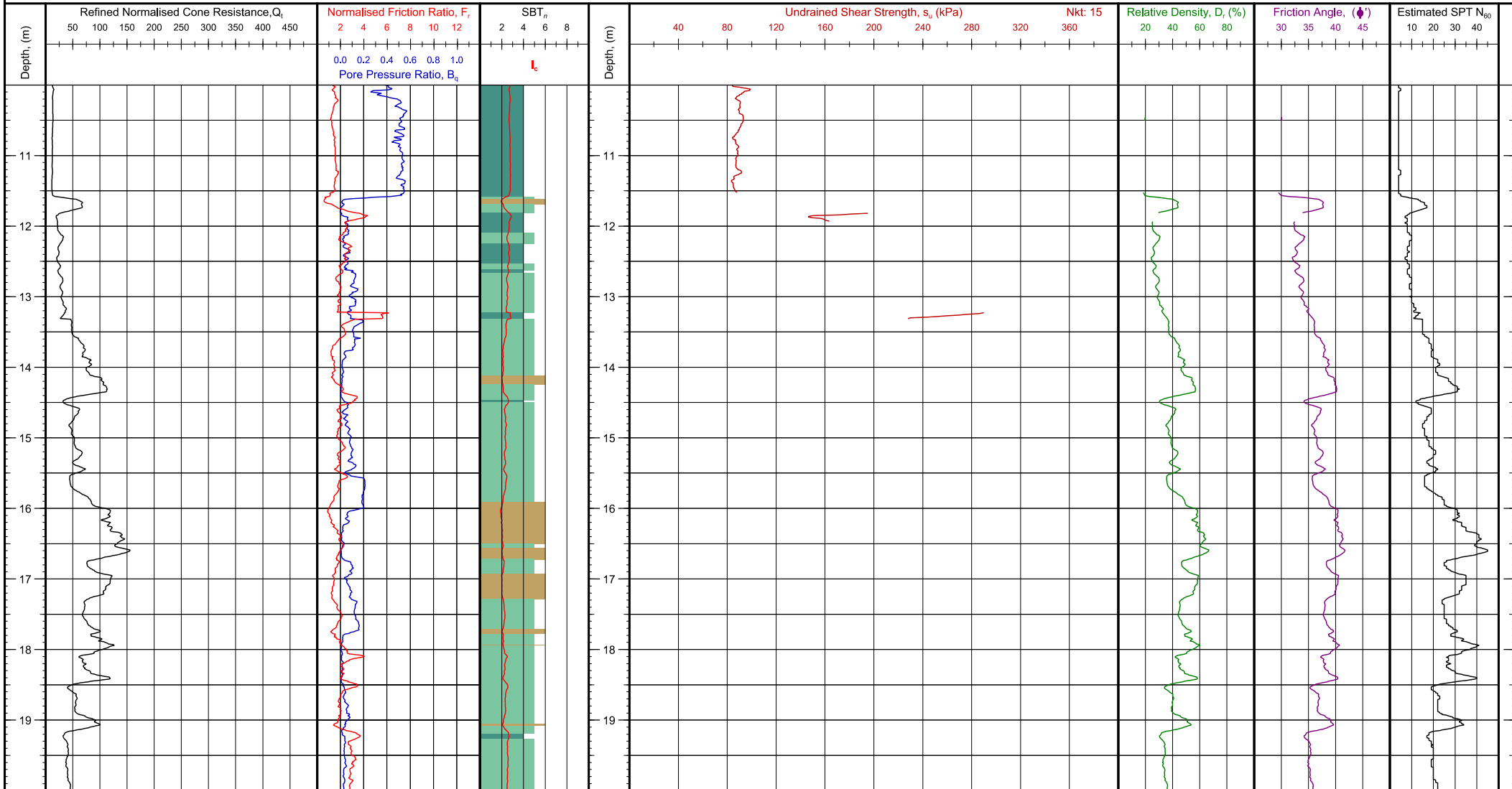
Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:
Test Number: CPT-323-D
G.I. Job Ref: 220052



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

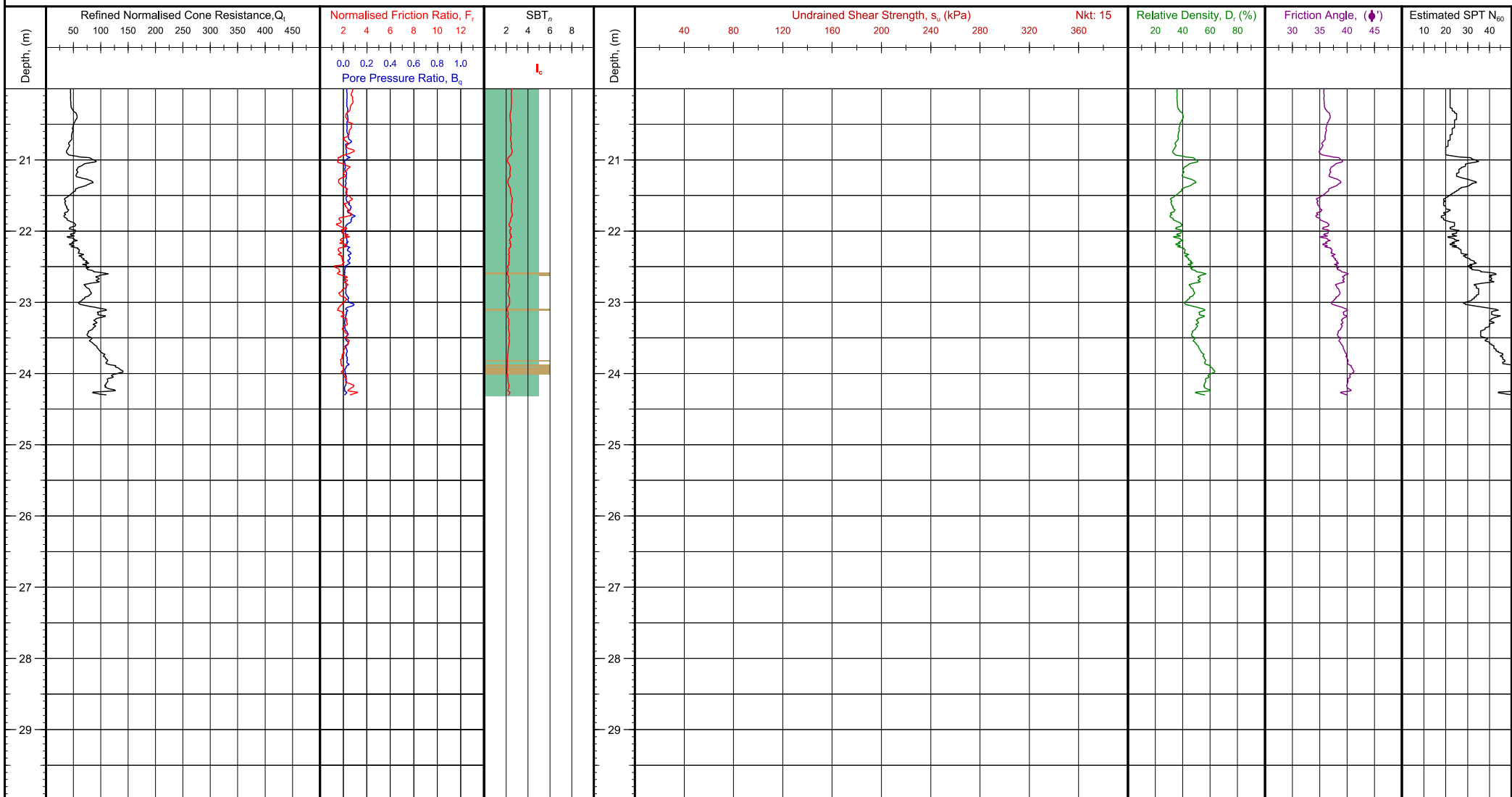
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:

Test Number: CPT-323-D

G.I. Job Ref: 220052



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

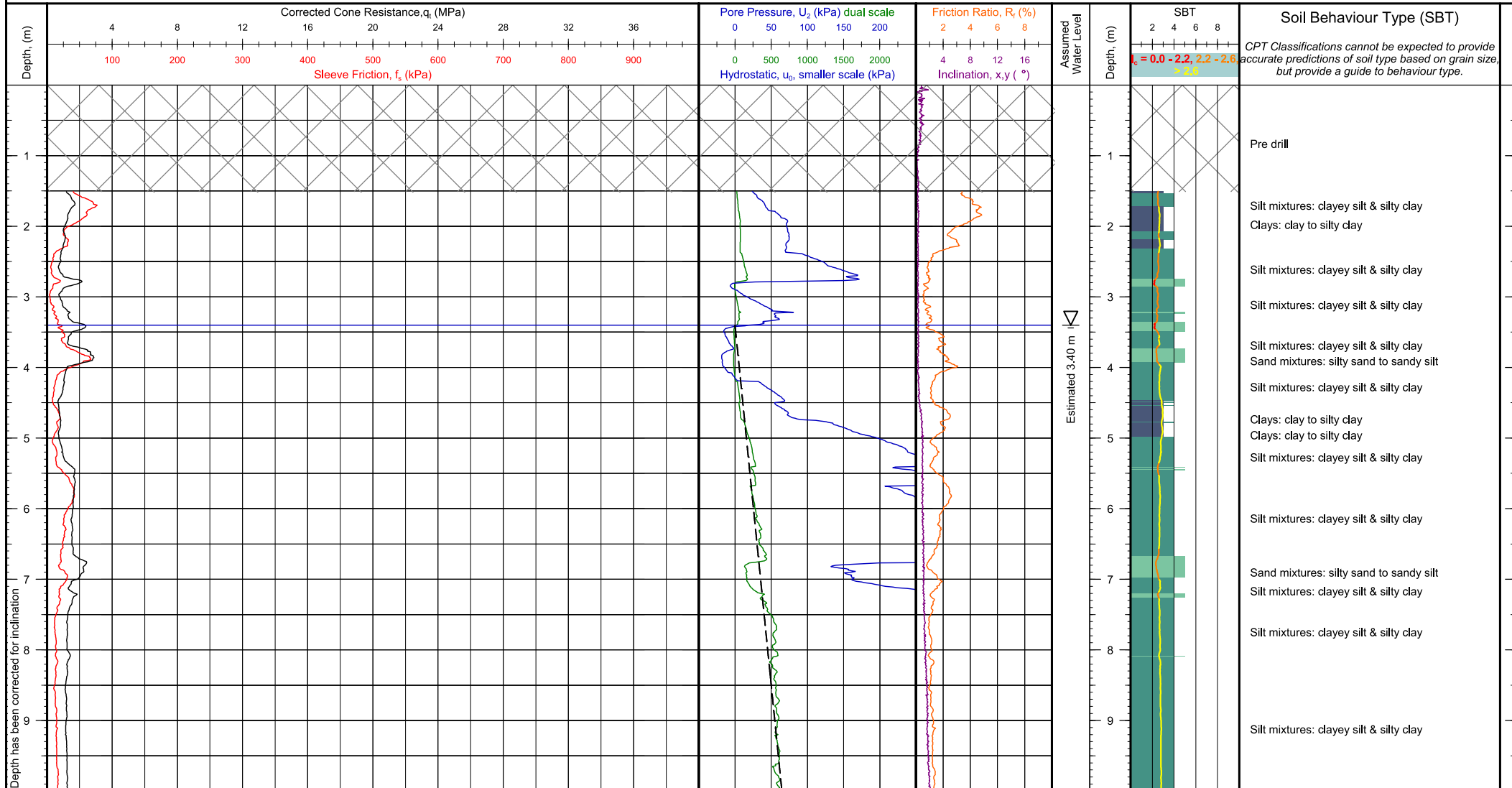
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:
Test Number: CPT-323-D
G.I. Job Ref: 220052

CONE PENETRATION TEST (CPT) LOG

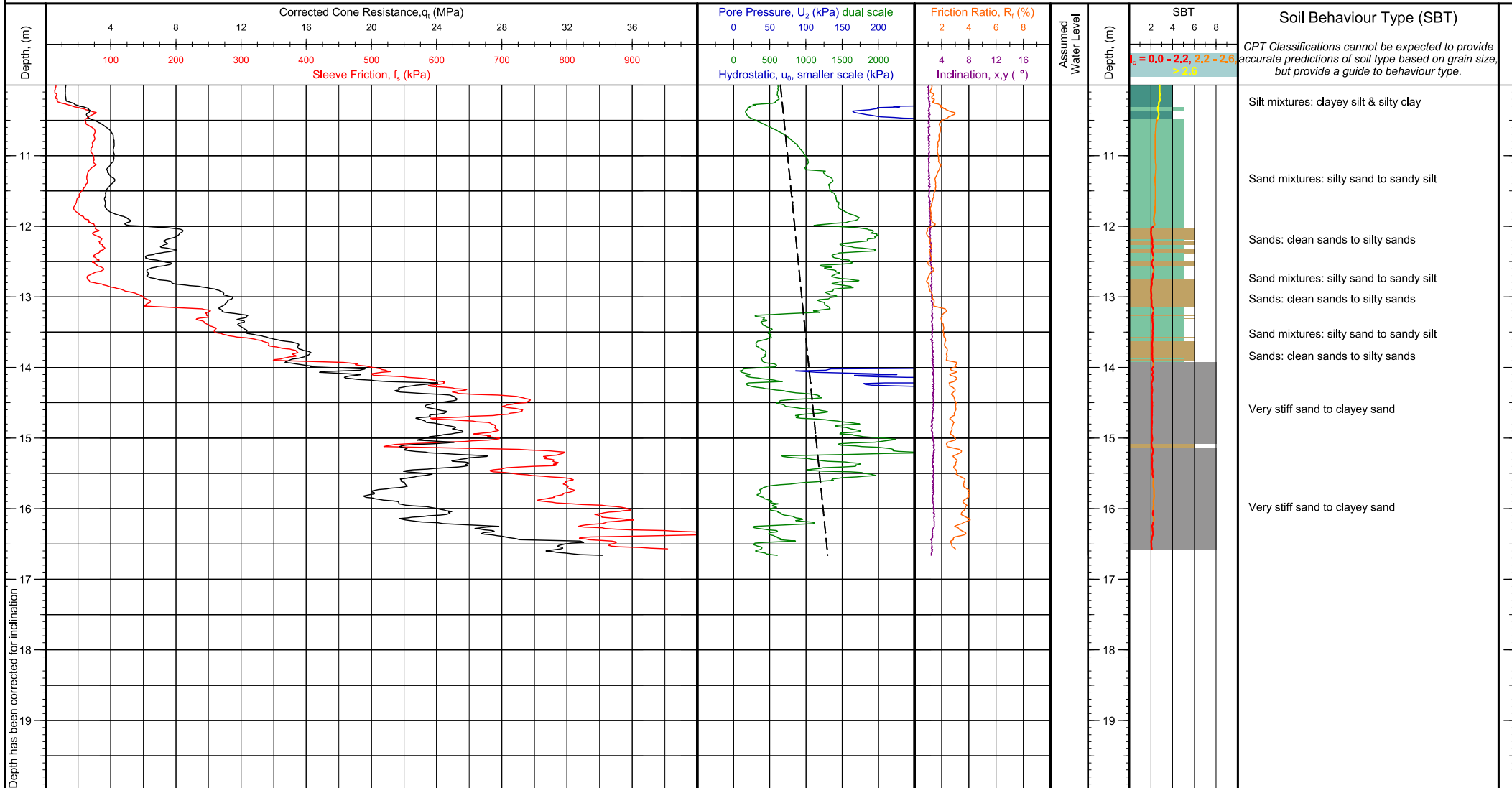


Client: Eastern Busway Alliance	Operator: Jared Topzand	NZTM 2000 N, E (m): 5911431.73, 1769646.63	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18614	WGS84 (deg): -36.927896, 174.904759	Date of Test: 3/02/2022	
Location: Auckland, New Zealand	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 16.66	Test Number: SCPT-324
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High total load	G.I. Job Ref: 220052	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

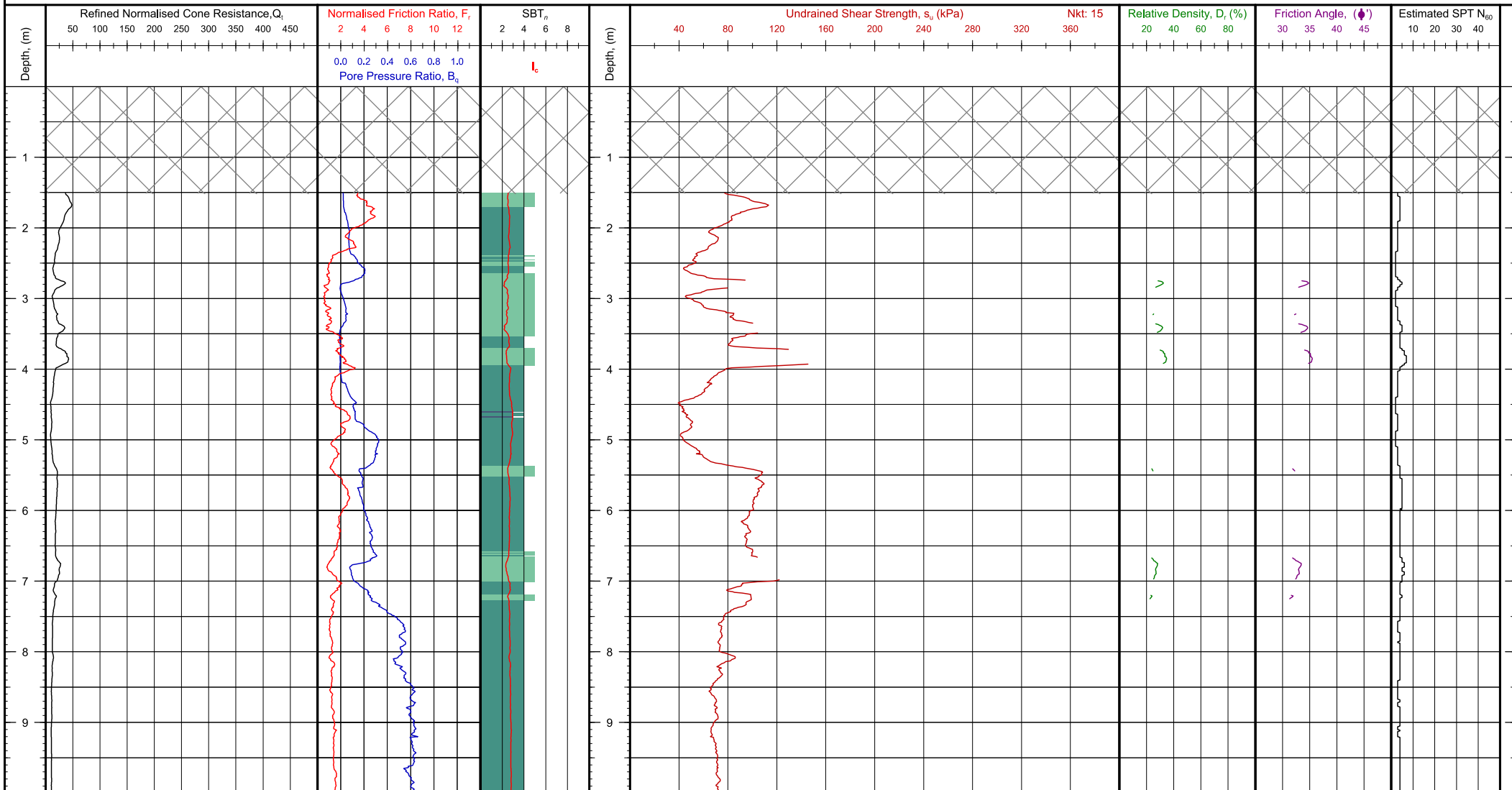
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Jared Topzand	NZTM 2000 N, E (m): 5911431.73, 1769646.63	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18614	WGS84 (deg): -36.927896, 174.904759	Date of Test: 3/02/2022	
Location: Auckland, New Zealand	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 16.66	Test Number: SCPT-324
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): 1.50 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High total load	G.I. Job Ref: 220052	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

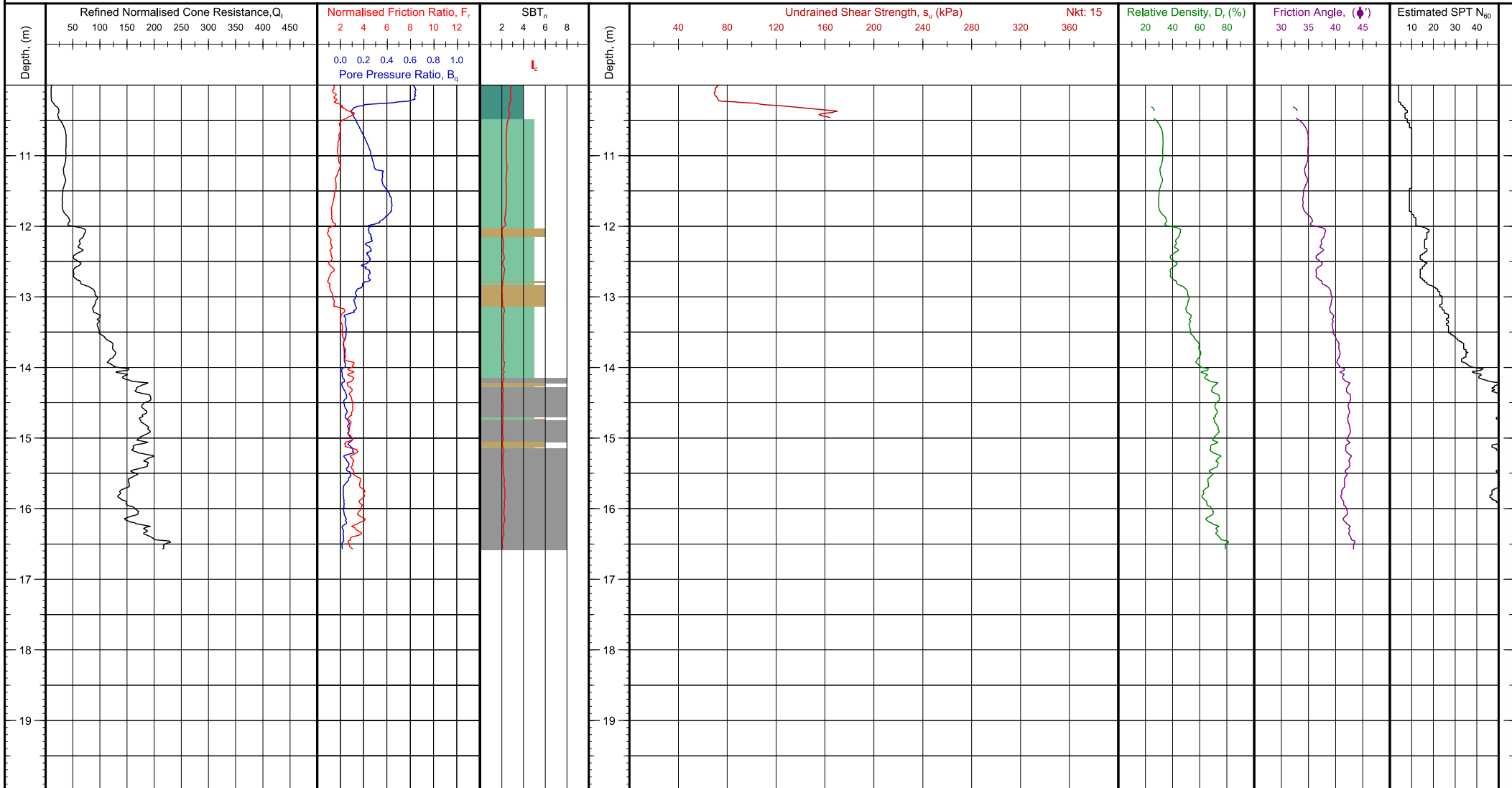
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:

Test Number: SCPT-324

G.I. Job Ref: 220052



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

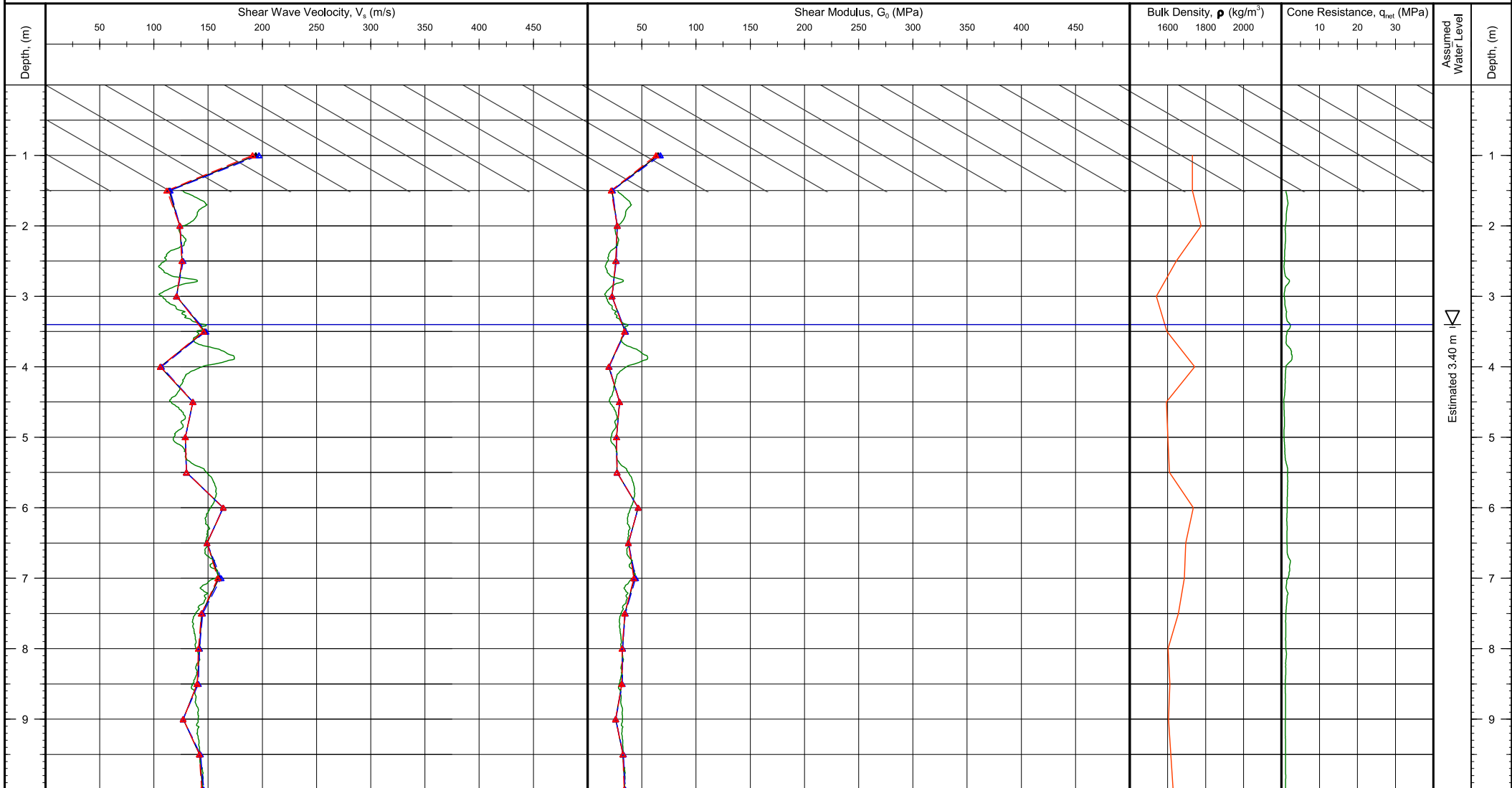
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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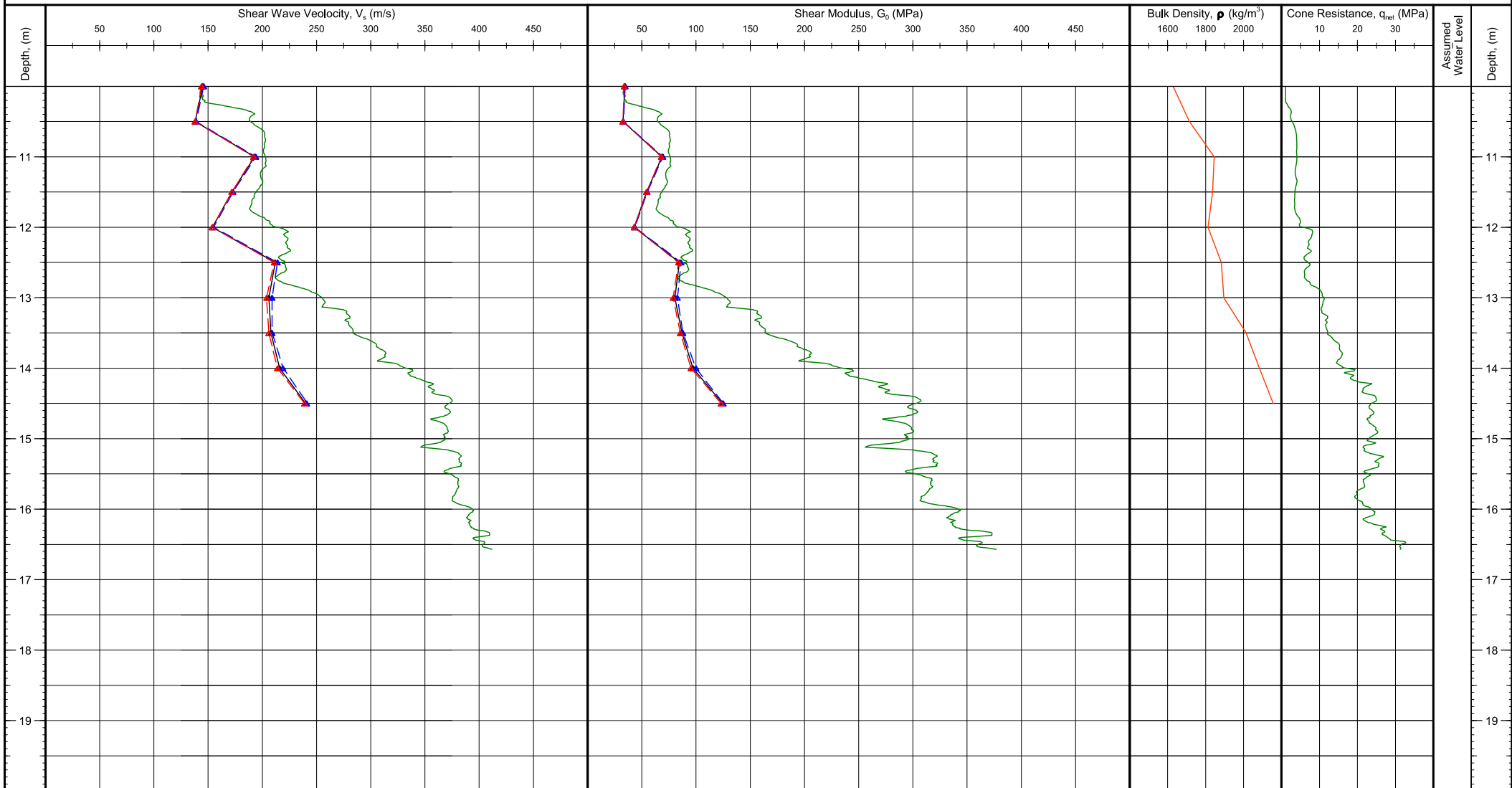
Client Reference:
Test Number: SCPT-324
G.I. Job Ref: 220052

CPT SEISMIC TESTING LOG



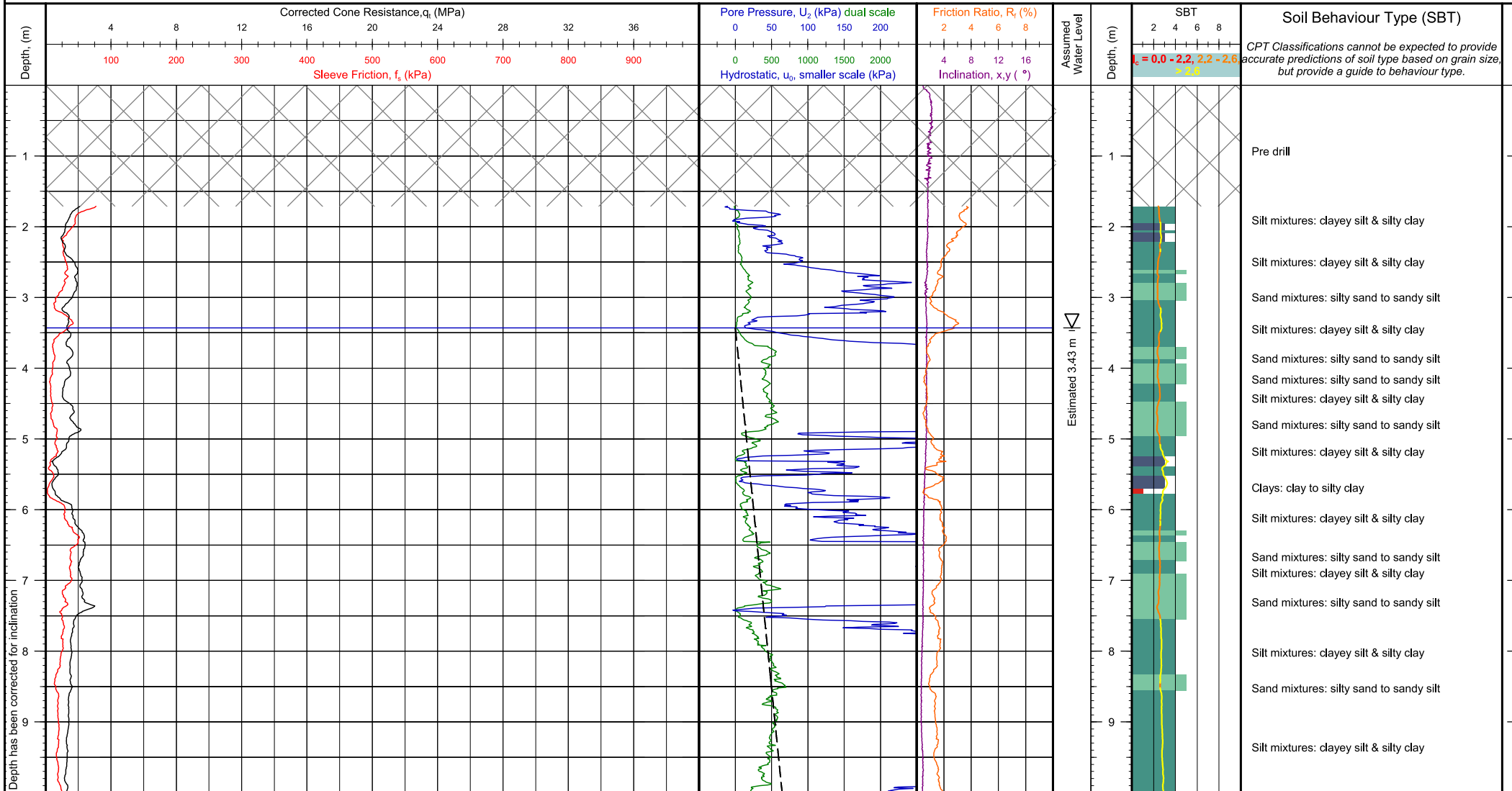
Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911431.73, 1769646.63 WGS84 (deg): -36.927896, 174.904759 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 3/02/2022 Depth (m): 16.66 Pre Drill (m): 1.50 m	Client Reference: Test Number: SCPT-324
		Termination Reason: High total load	G.I. Job Ref: 220052	
Comments:				

CPT SEISMIC TESTING LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd Comments:	— Estimated from CPT - - - Measured Lower Bound — Measured Average Bound - - - Measured Upper Bound — ρ from G_0 Calculation	NZTM 2000 N, E (m): 5911431.73, 1769646.63 WGS84 (deg): -36.927896, 174.904759 Location Method: Handheld GPS Surveyor:	Elevation (m): Unknown Date of Test: 3/02/2022 Depth (m): 16.66 Pre Drill (m): 1.50 m	Client Reference: Test Number: SCPT-324 G.I. Job Ref: 220052
		Termination Reason: High total load		

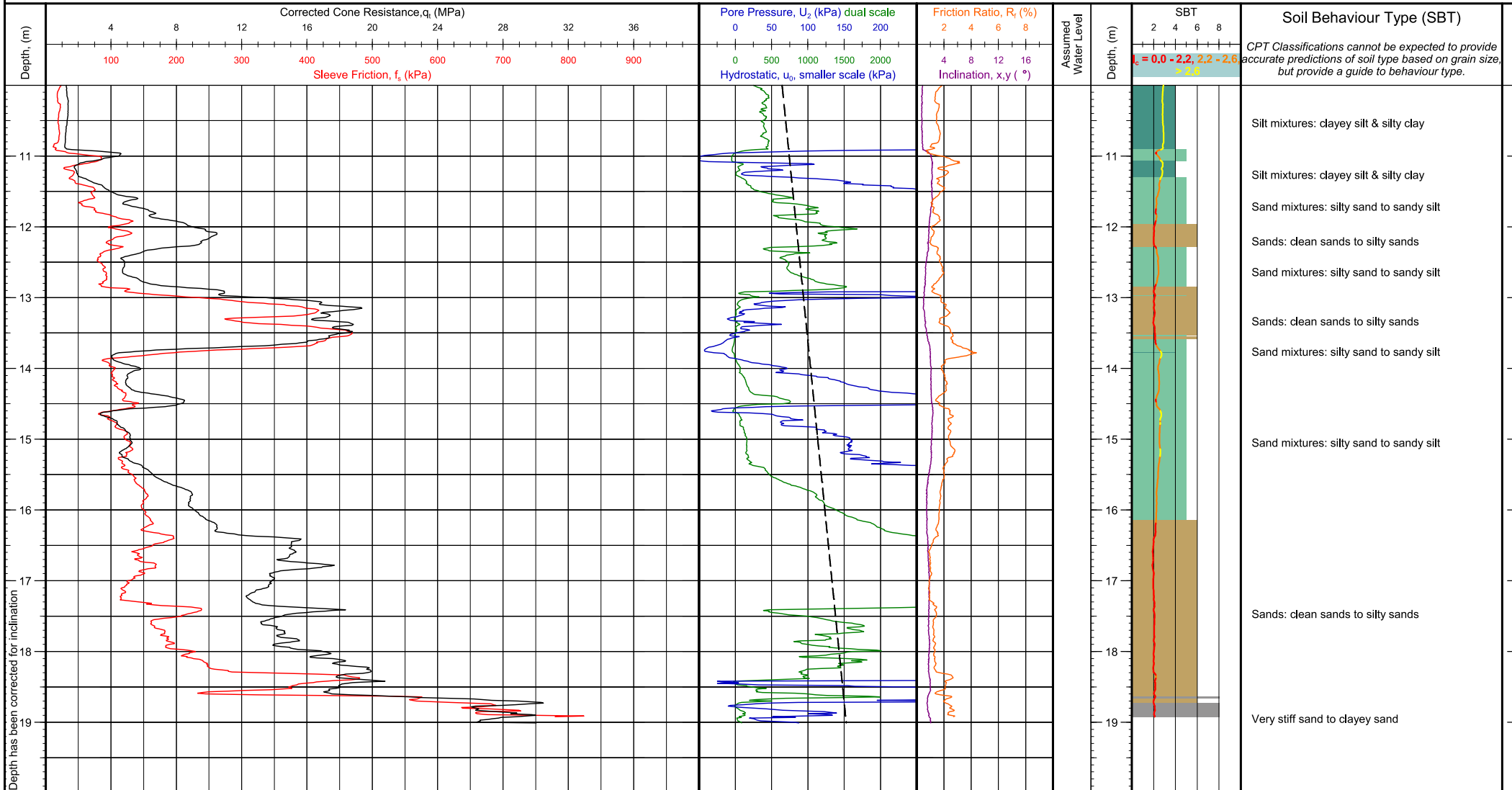
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Jared Topzand Cone Ref: C18608 Cone Type: 15cm ² Compression Area Ratio: 0.80 Filter Type: u ₂	NZTM 2000 N, E (m): 5911399.84, 1769670.94	Elevation (m): Unknown	Client Reference:
		WGS84 (deg): -36.928179, 174.905039	Date of Test: 3/02/2022	
		Location Method: Handheld GPS	Depth (m): 19.01	Test Number: CPT-325
		Surveyor:	Pre Drill (m): 1.70 m	
Comments:		Termination Reason: High total load		G.I. Job Ref: 220052

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

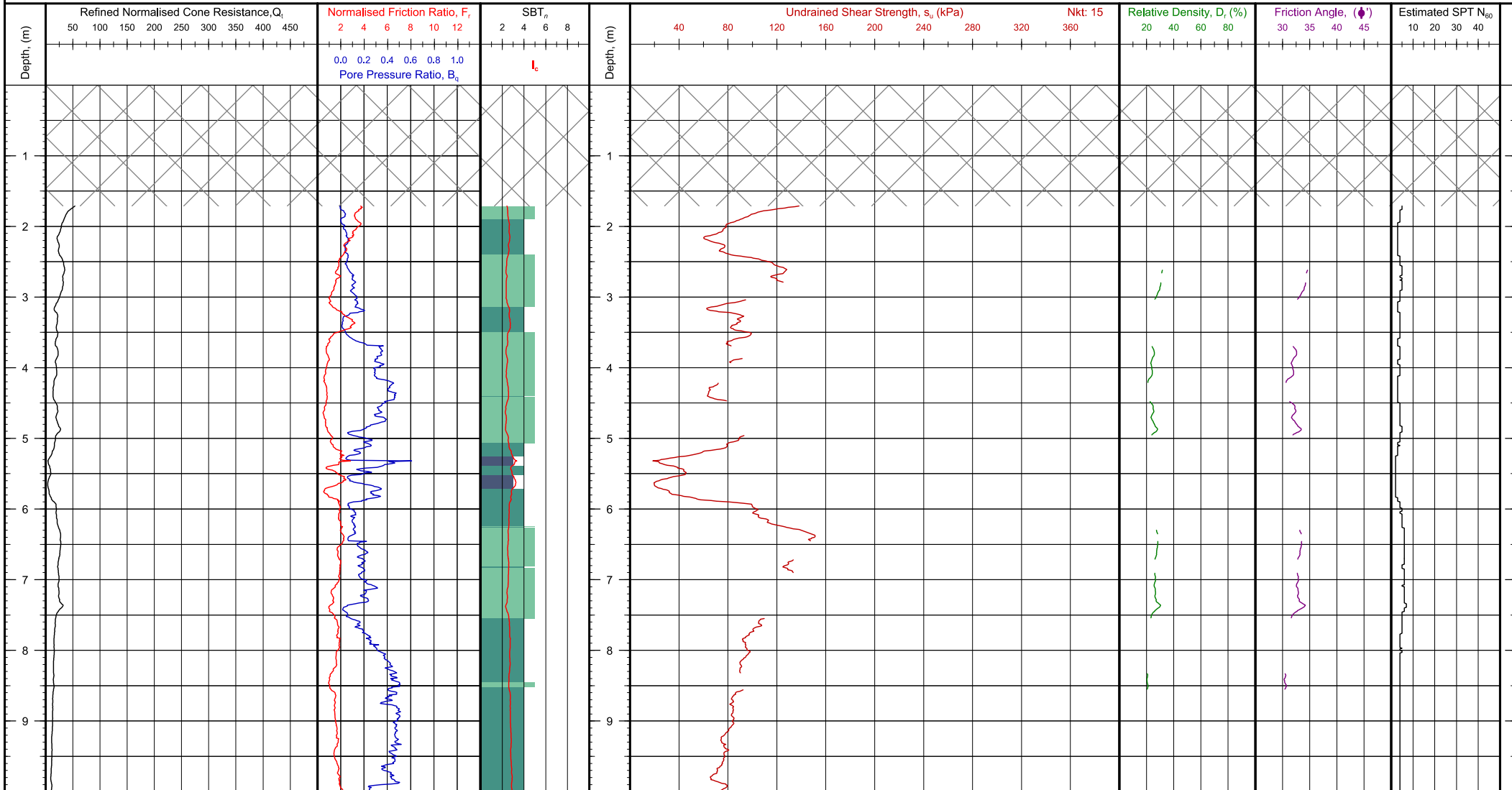
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance Project: Eastern Busway Location: Auckland, New Zealand Engineer: Steve Semmens Contractor: Ground Investigation Ltd	Operator: Jared Topzand Cone Ref: C18608 Cone Type: 15cm ² Compression Area Ratio: 0.80 Filter Type: u_2	NZTM 2000 N, E (m): 5911399.84, 1769670.94 WGS84 (deg): -36.928179, 174.905039	Elevation (m): Unknown Date of Test: 3/02/2022	Client Reference: Test Number: CPT-325 G.I. Job Ref: 220052
		Location Method: Handheld GPS Surveyor: Termination Reason: High total load	Depth (m): 19.01 Pre Drill (m): 1.70 m	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

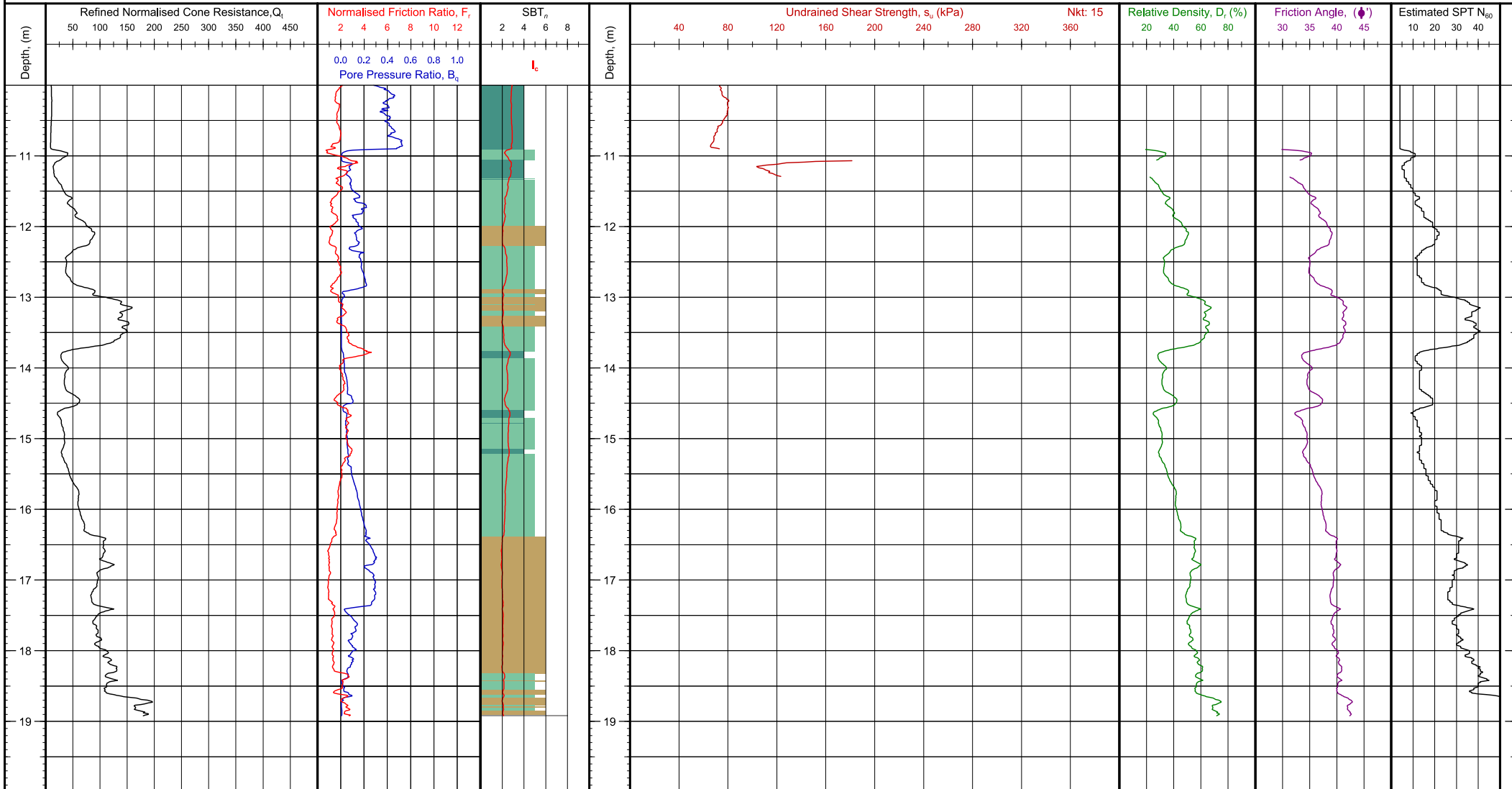
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:

Test Number: CPT-325

G.I. Job Ref: 220052



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Auckland, New Zealand
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

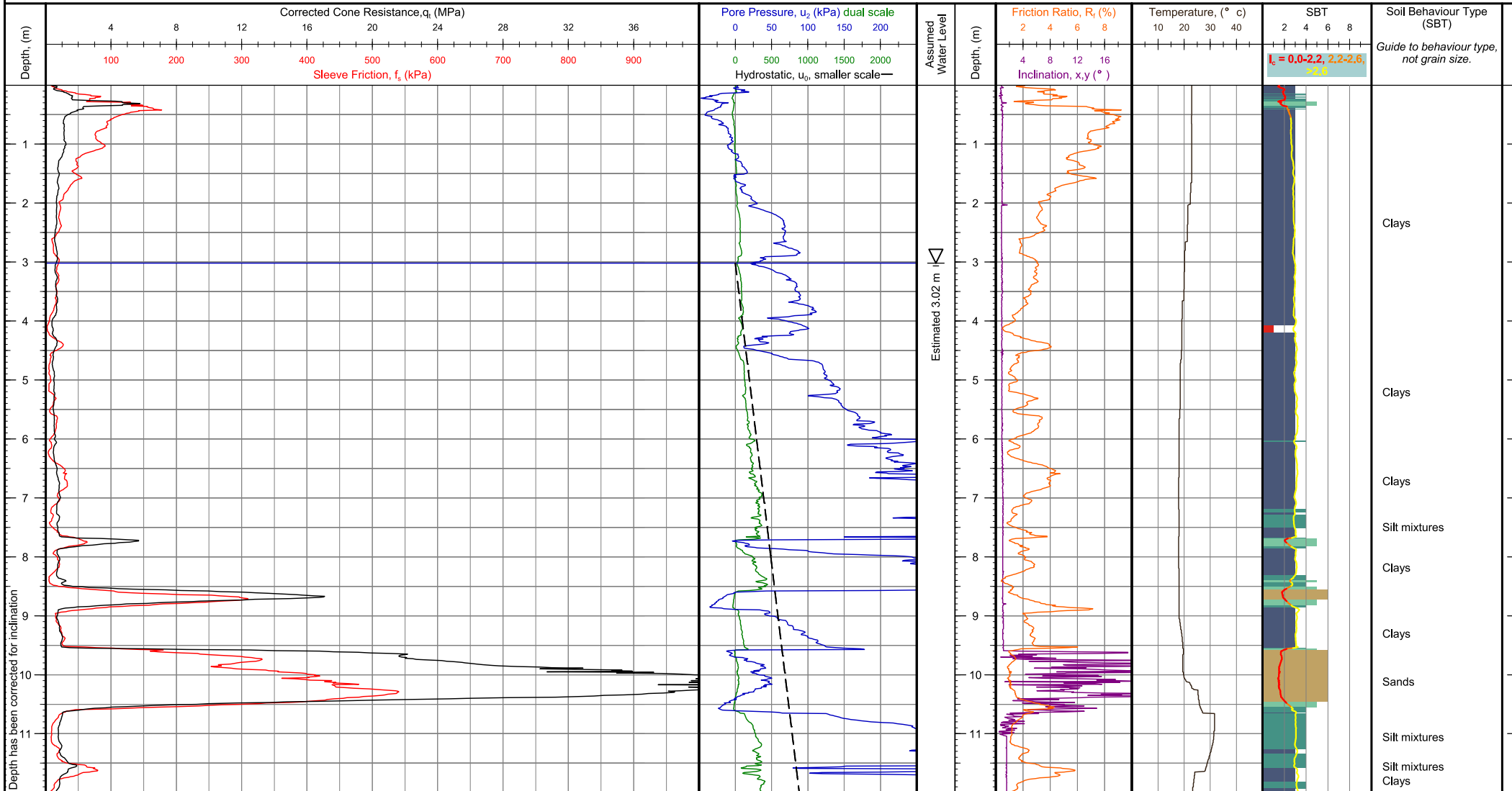
Notes and Limitations:
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Client Reference:

Test Number: CPT-325

G.I. Job Ref: 220052

CONE PENETRATION TEST (CPT) LOG

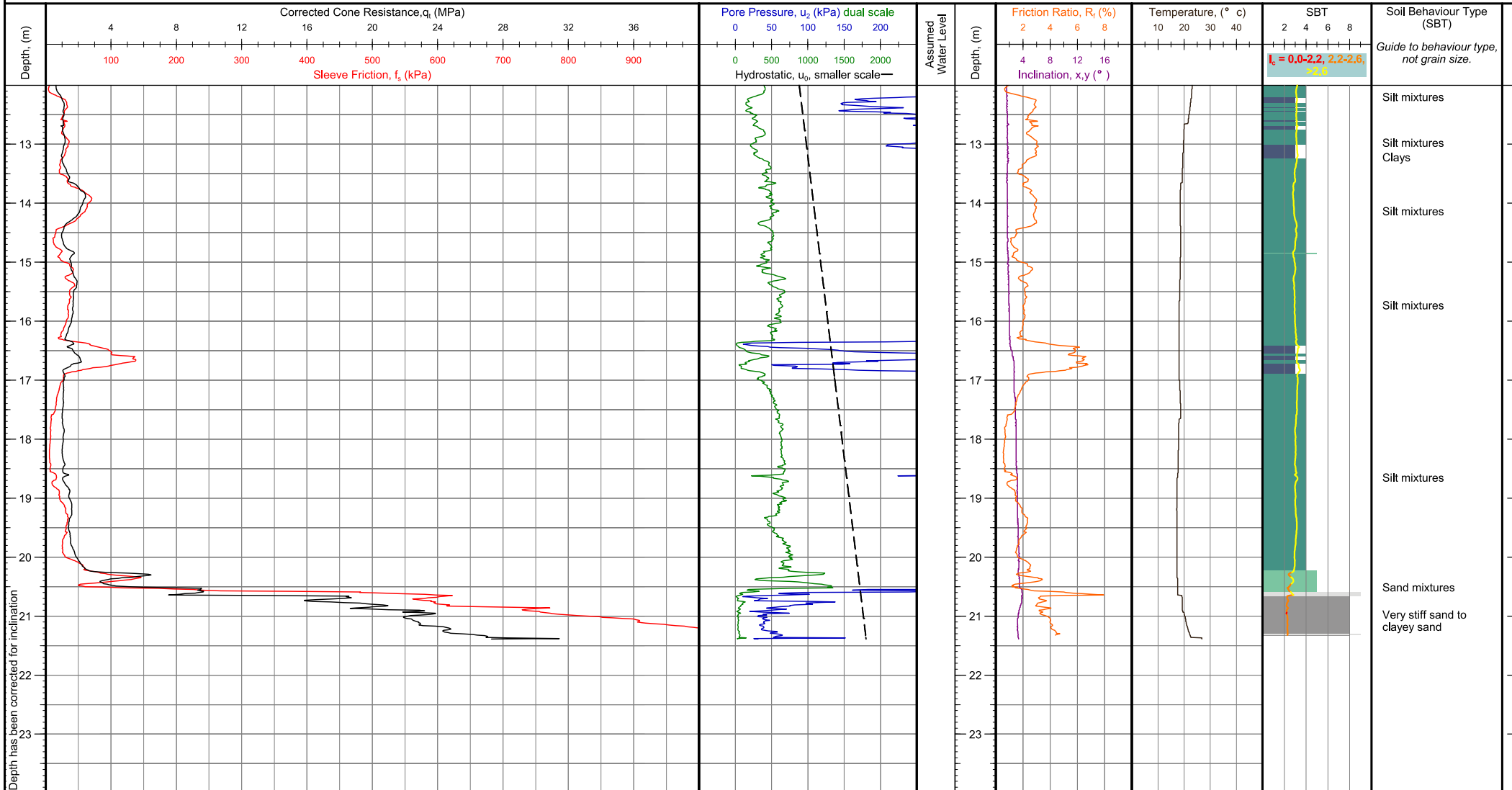


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911630.89, 1769395.04	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: MKJ333	WGS84 (deg): -36.926147, 174.901891	Date of Test: 28/02/2023	Test Number: CPT-327
Location: Eastern Busway	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 21.39	
Engineer: Mathew Crarer	Area Ratio: 0.80	Surveyor:	Pre Drill (m): N/A	G.I. Job Ref: 230180
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Target depth		

Comments: Hole collapsed @ 2.60m and dipped dry.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

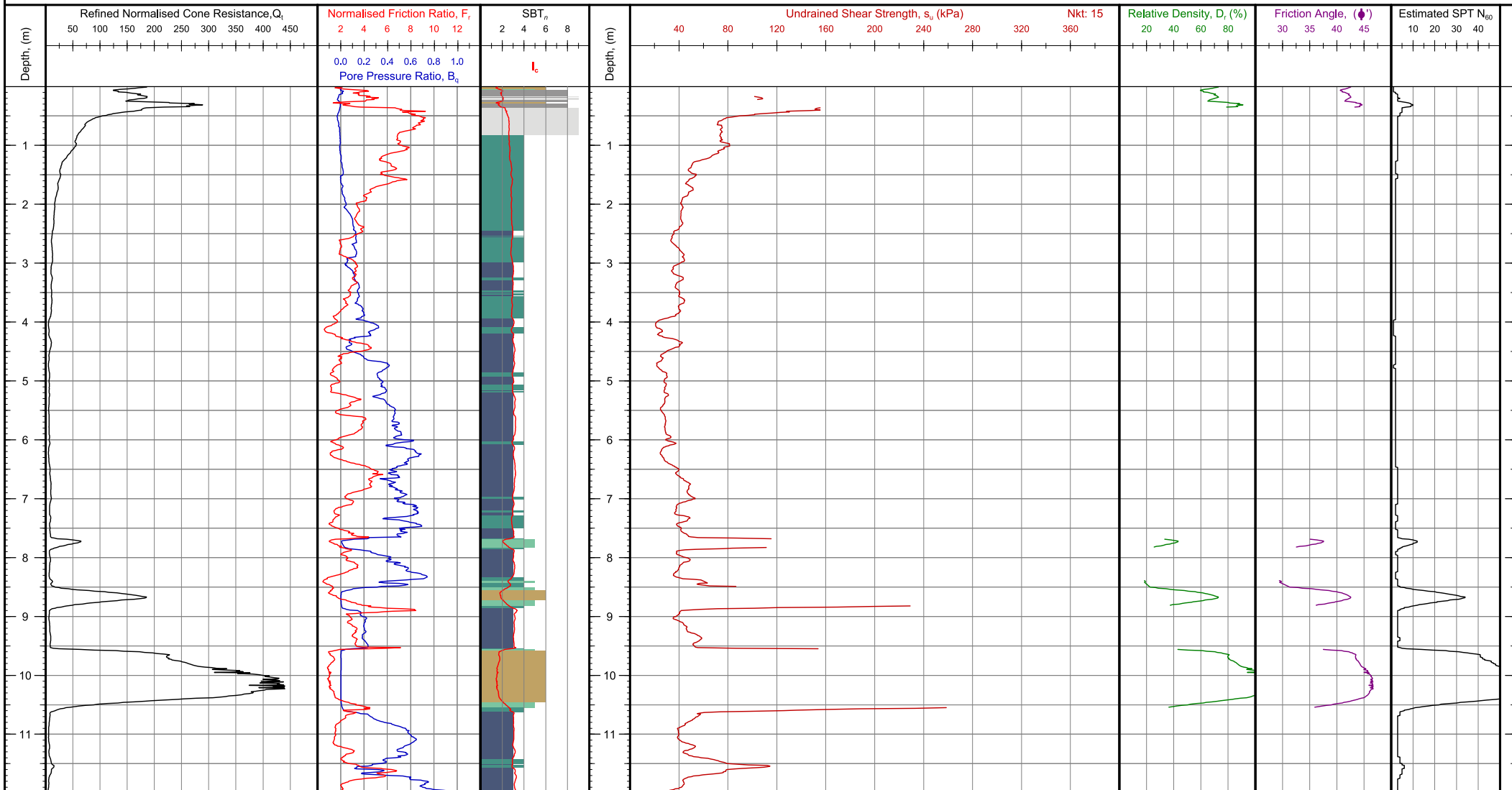
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911630.89, 1769395.04	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: MKJ333	WGS84 (deg): -36.926147, 174.901891	Date of Test: 28/02/2023	Test Number: CPT-327
Location: Eastern Busway	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 21.39	
Engineer: Mathew Crarer	Area Ratio: 0.80	Surveyor:	Pre Drill (m): N/A	G.I. Job Ref: 230180
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Target depth		

Comments: Hole collapsed @ 2.60m and dipped dry.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

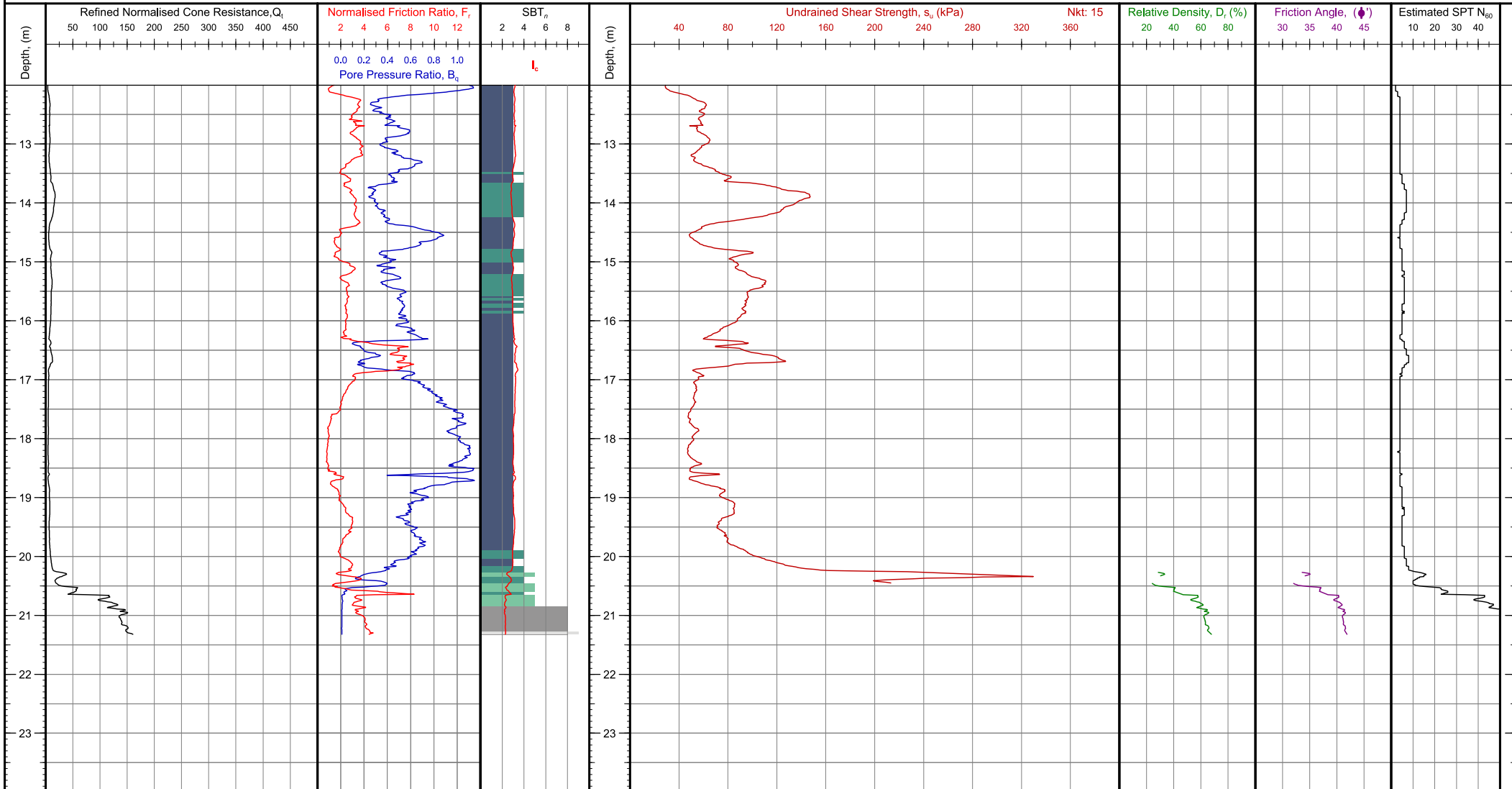
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
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Client Reference:

Test Number: CPT-327

G.I. Job Ref: 230180



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

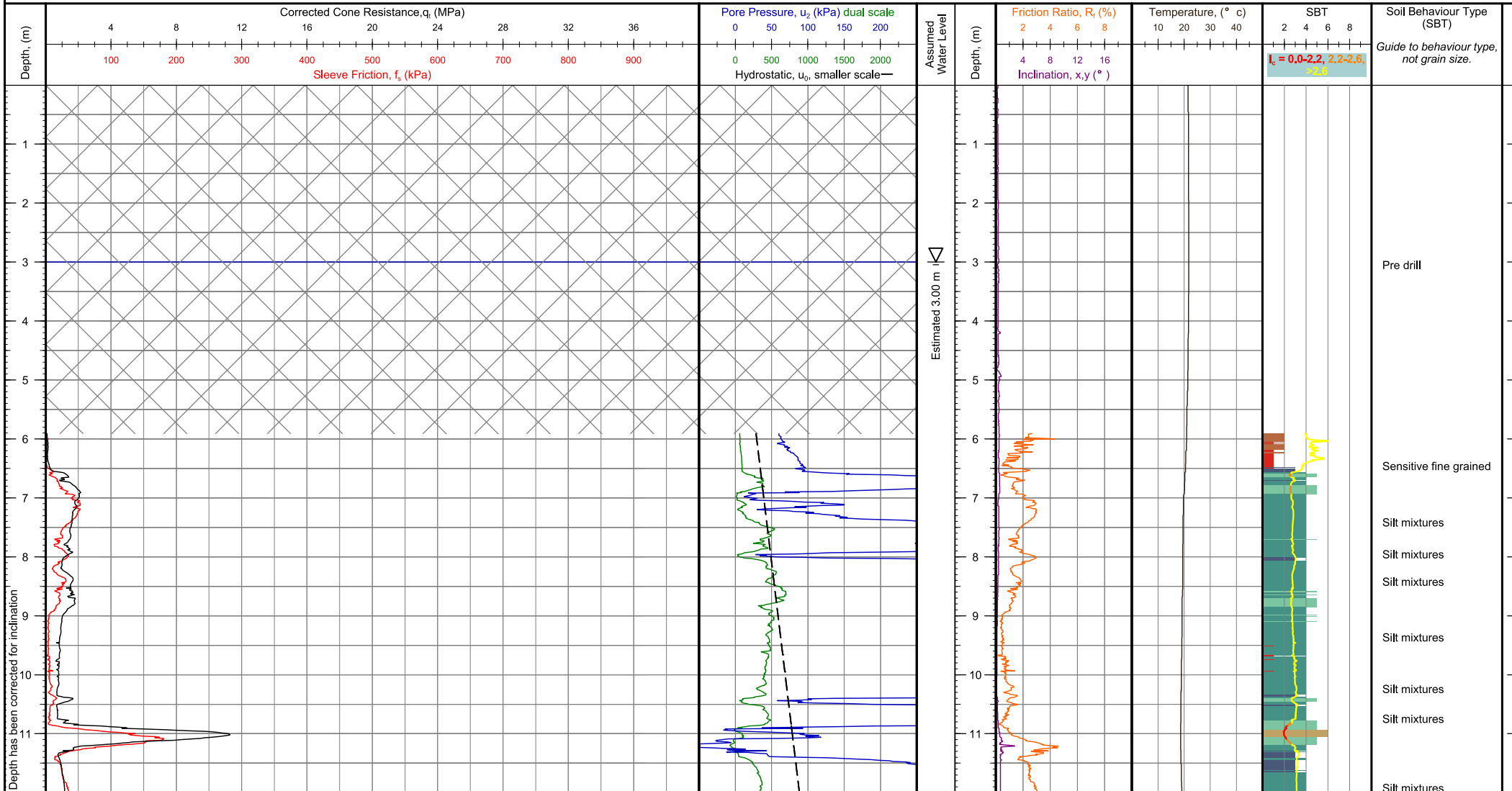
Notes and Limitations:
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Client Reference:

Test Number: CPT-327

G.I. Job Ref: 230180

CONE PENETRATION TEST (CPT) LOG

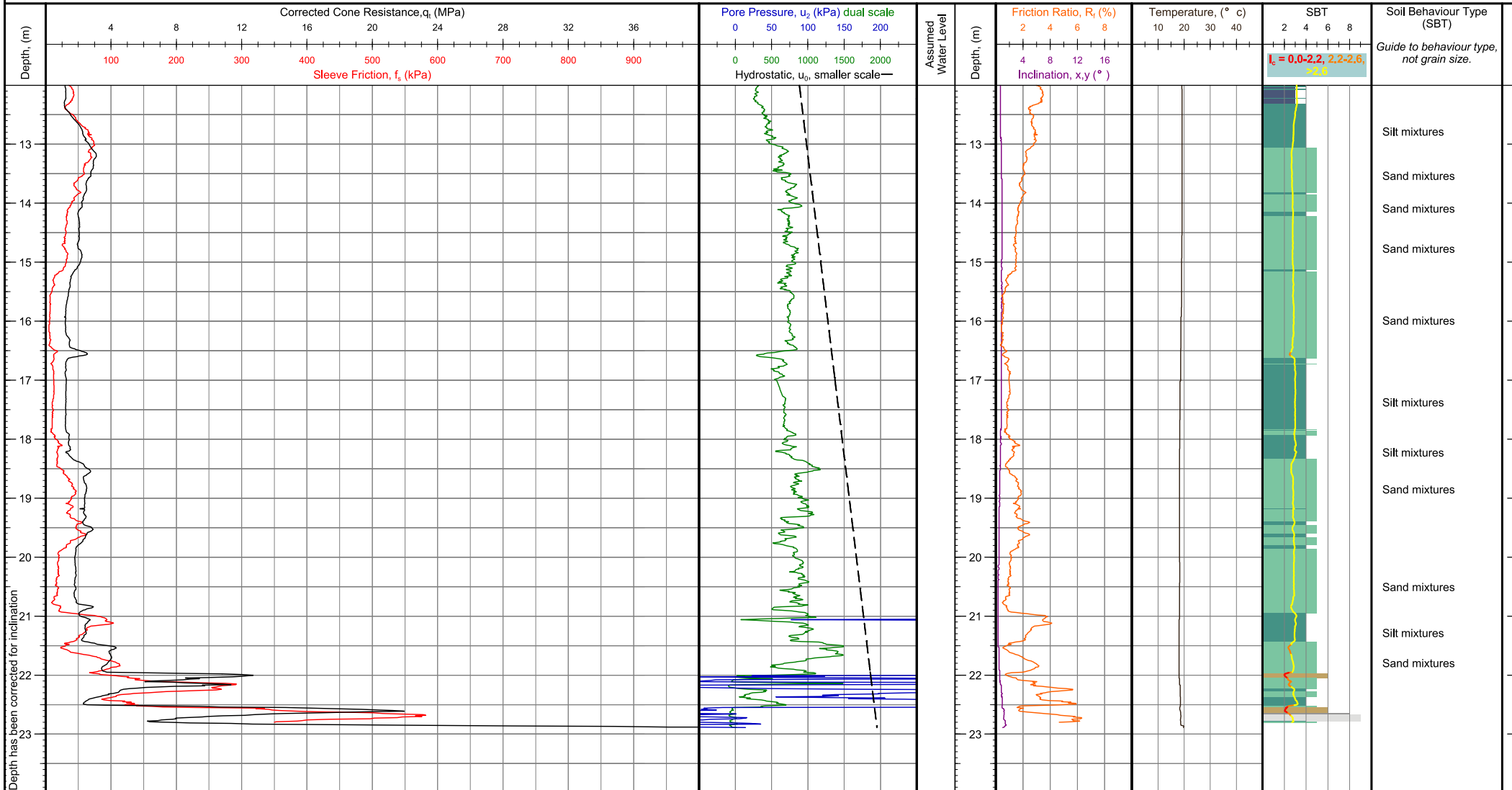


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911790.61, 1769021.46	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71136	WGS84 (deg): -36.924775, 174.897663	Date of Test: 7/02/2023	
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 22.89	Test Number: CPT-328
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 5.90 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Danger of buckling rods	G.I. Job Ref: 230061	

Comments: CPT performed to identify dissipation target per client's request. Hole collapsed @ 0.20m and dipped dry after test.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

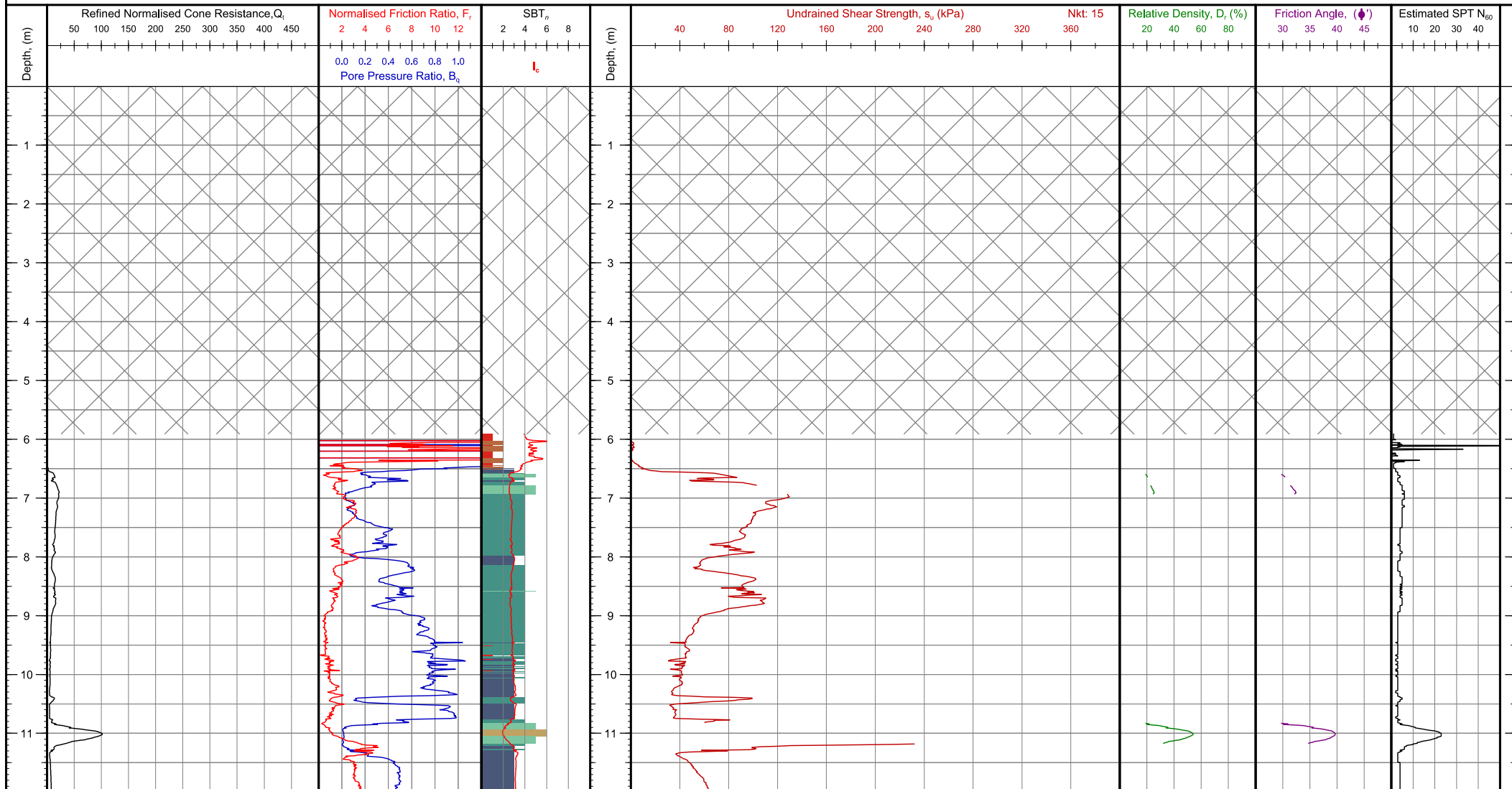
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911790.61, 1769021.46	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71136	WGS84 (deg): -36.924775, 174.897663	Date of Test: 7/02/2023	
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 22.89	Test Number: CPT-328
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 5.90 m	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: Danger of buckling rods	G.I. Job Ref: 230061	

Comments: CPT performed to identify dissipation target per client's request. Hole collapsed @ 0.20m and dipped dry after test.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL



Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:

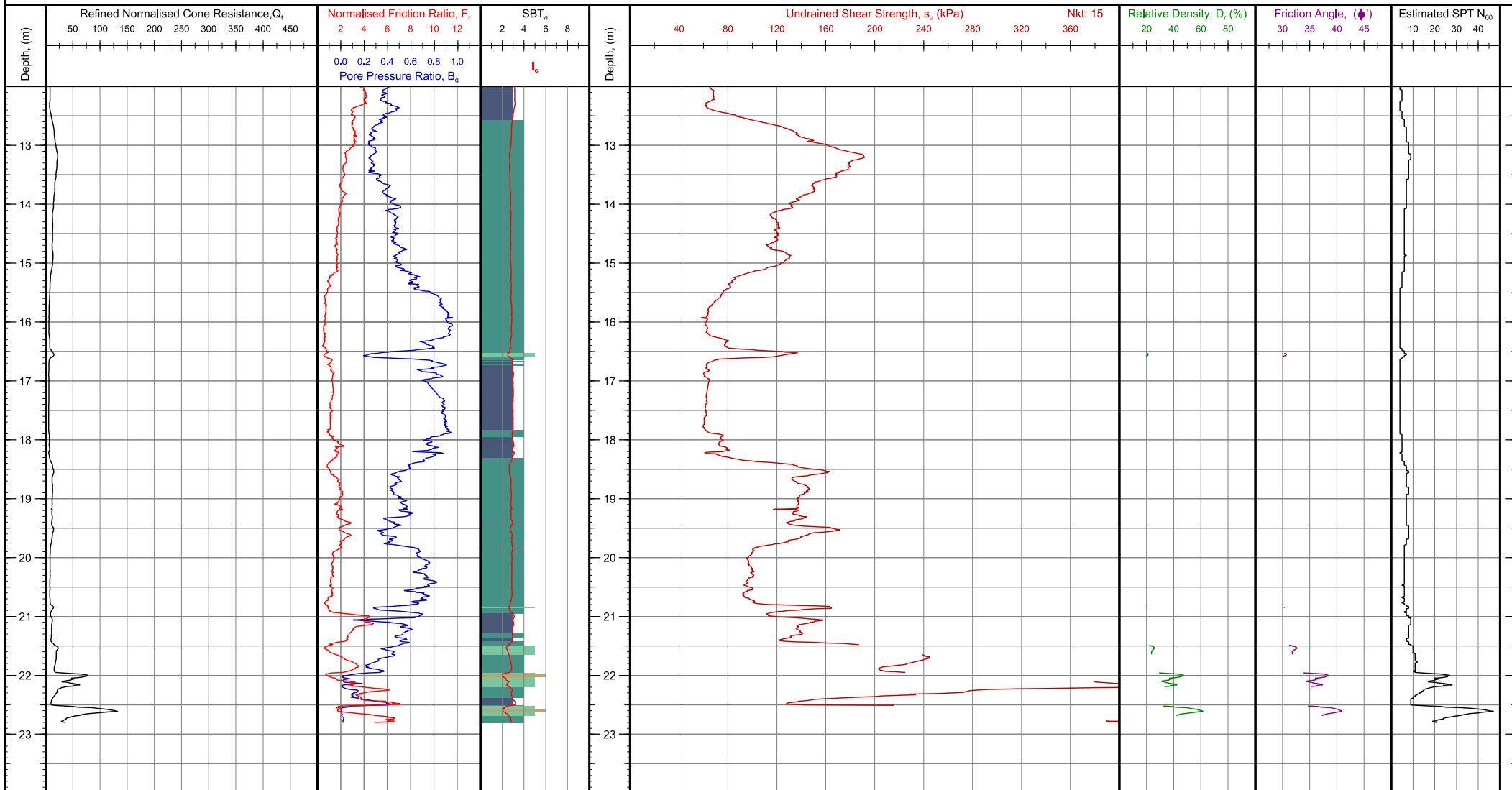
Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-328

G.I. Job Ref: 230061

Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd



Client: Eastern Busway Alliance
Project: Pakuranga to Botany East
Location: Eastern Busway
Engineer: Mathew Crarer
Contractor: Ground Investigation Ltd

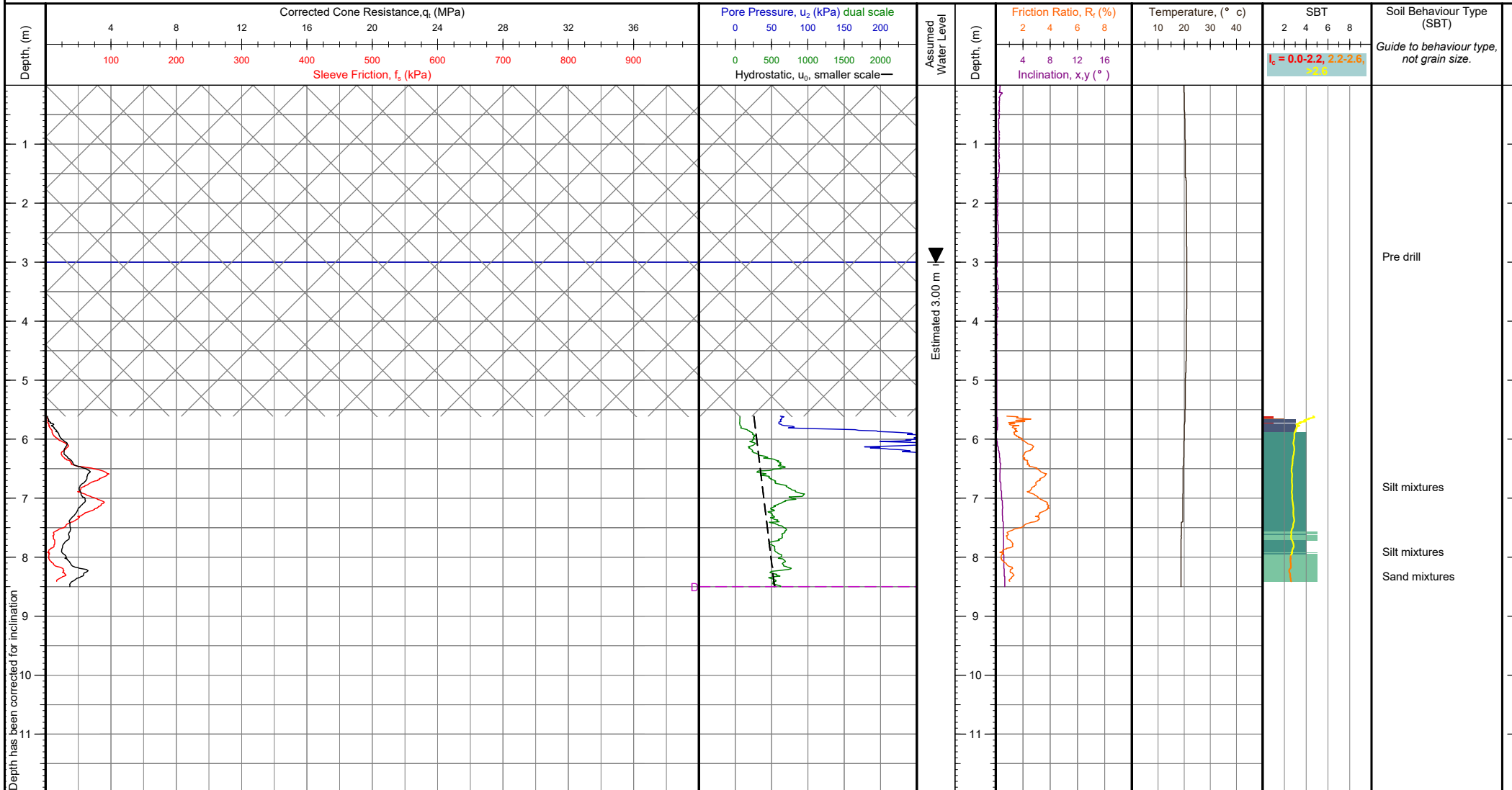
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
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Client Reference:
Test Number: CPT-328
G.I. Job Ref: 230061

CONE PENETRATION TEST (CPT) LOG

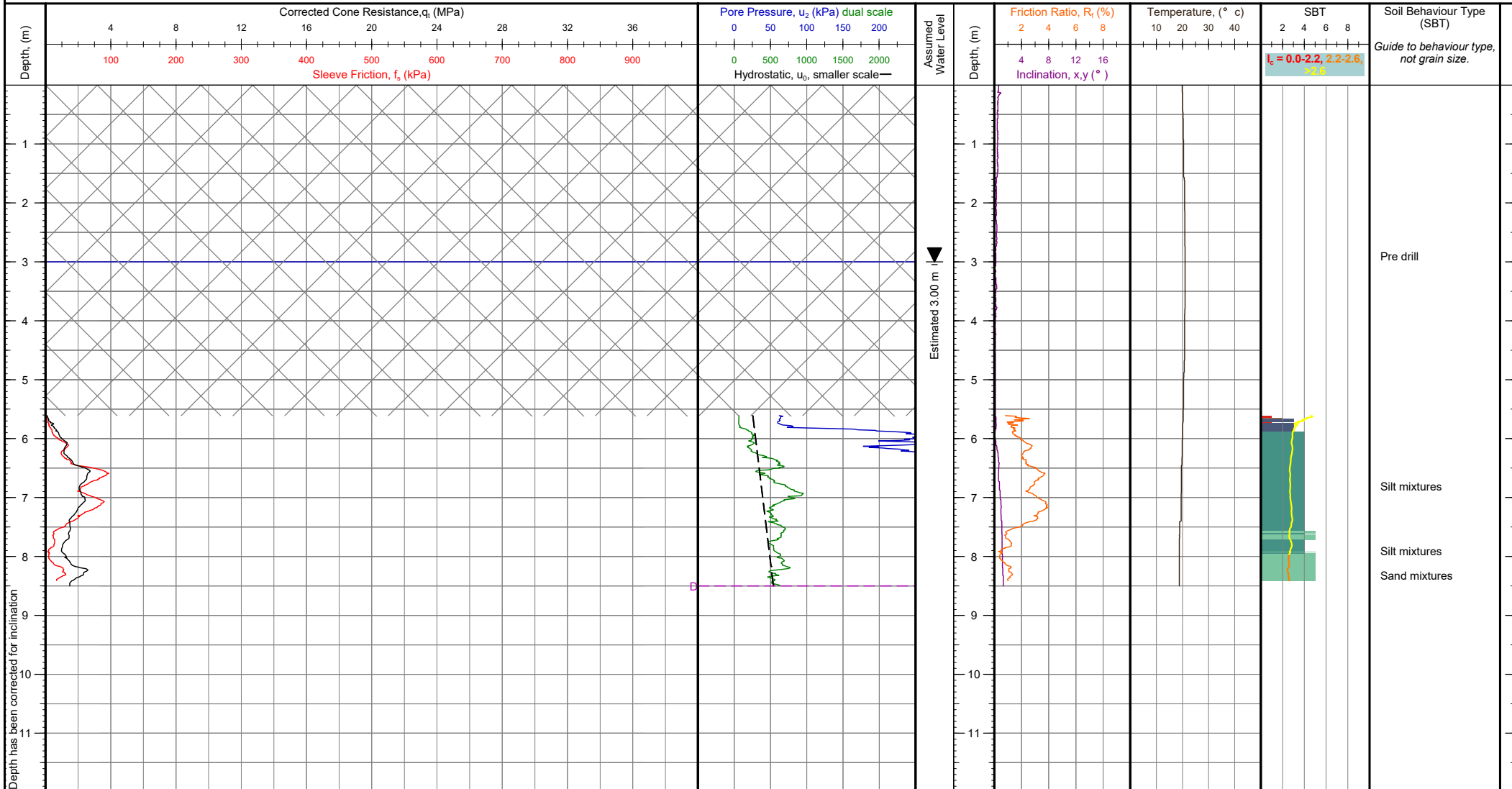


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911792.27, 1769021.93	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71137	WGS84 (deg): -36.924760, 174.897668	Date of Test: 7/02/2023	
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 8.50	Test Number: CPT-328-D
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 5.60 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Target depth	G.I. Job Ref: 230061	

Comments: Dissipation performed @ 8.50m per client's request. Hole collapsed @ surface and dipped dry after test.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

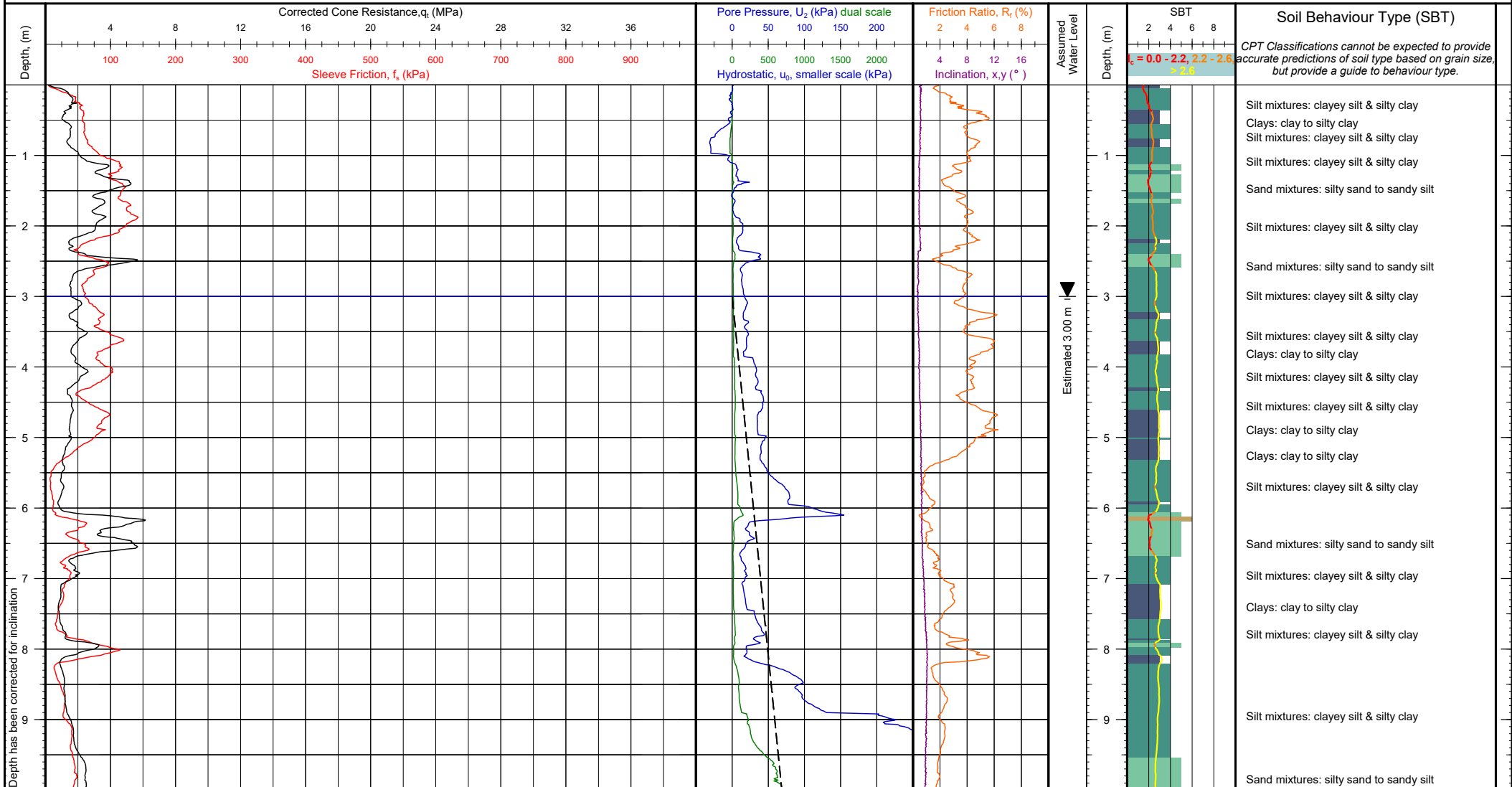


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911792.27, 1769021.93	Elevation (m): Unknown	Client Reference:
Project: Pakuranga to Botany East	Cone Ref: 71137	WGS84 (deg): -36.924760, 174.897668	Date of Test: 7/02/2023	
Location: Eastern Busway	Cone Type: 15cm ² Subtraction	Location Method: Handheld GPS	Depth (m): 8.50	Test Number: CPT-328-D
Engineer: Mathew Crarer	Area Ratio: 0.75	Surveyor:	Pre Drill (m): 5.60 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Target depth	G.I. Job Ref: 230061	

Comments: Dissipation performed @ 8.50m per client's request. Hole collapsed @ surface and dipped dry after test.

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

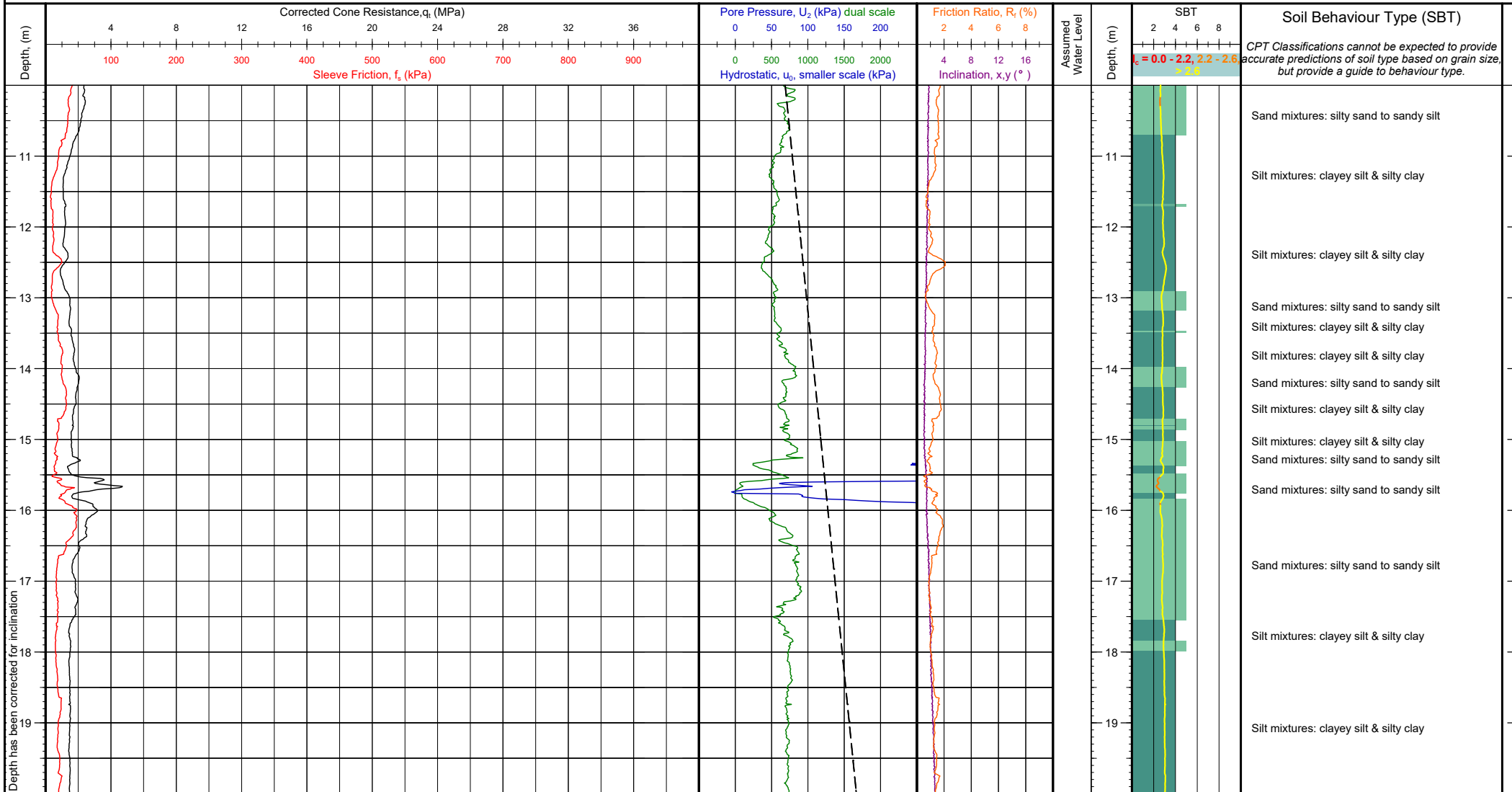


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911445.34, 1769432.15	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18611	WGS84 (deg): -36.927812, 174.902349	Date of Test: 31/03/2022	Test Number: CPT-329
Location: Pakuranga, Auckland	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 25.25	
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): N/A	G.I. Job Ref: 220326
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High pore water pressure		

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

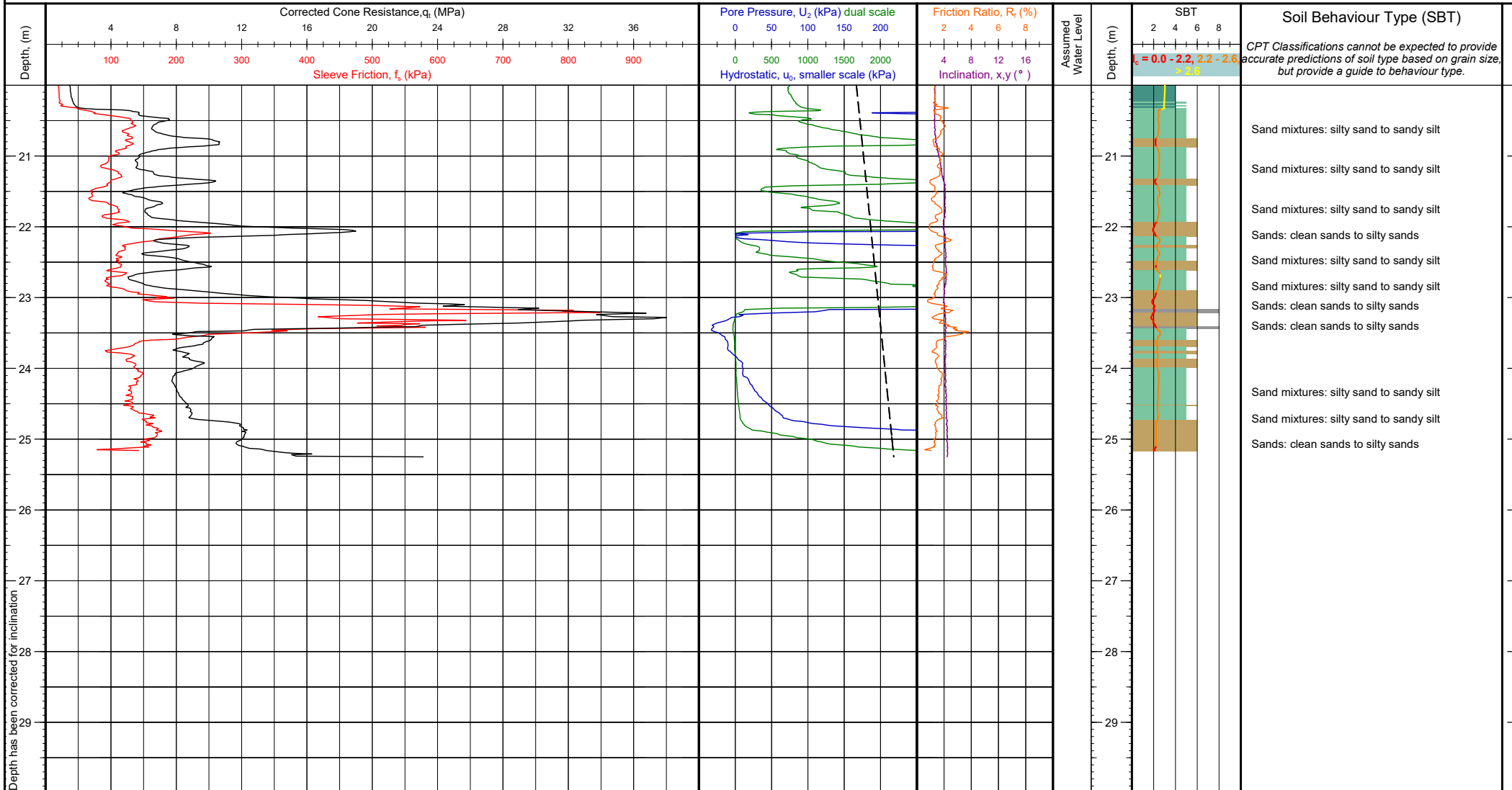


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911445.34, 1769432.15	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18611	WGS84 (deg): -36.927812, 174.902349	Date of Test: 31/03/2022	
Location: Pakuranga, Auckland	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 25.25	Test Number: CPT-329
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): N/A	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: High pore water pressure		G.I. Job Ref: 220326

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CONE PENETRATION TEST (CPT) LOG

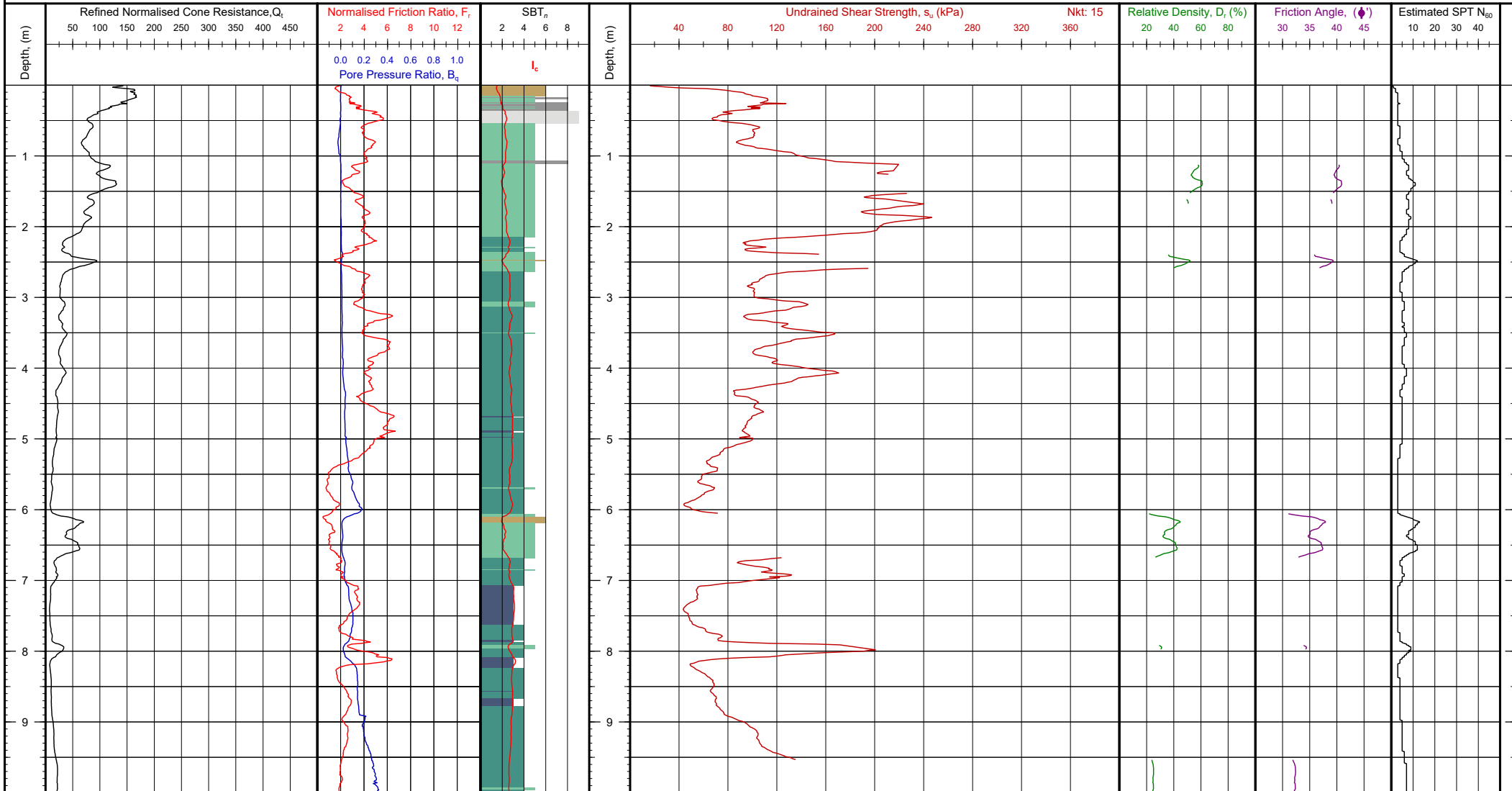


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911445.34, 1769432.15	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18611	WGS84 (deg): -36.927812, 174.902349	Date of Test: 31/03/2022	
Location: Pakuranga, Auckland	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 25.25	Test Number: CPT-329
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): N/A	
Contractor: Ground Investigation Ltd	Filter Type: u ₂	Termination Reason: High pore water pressure		G.I. Job Ref: 220326

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

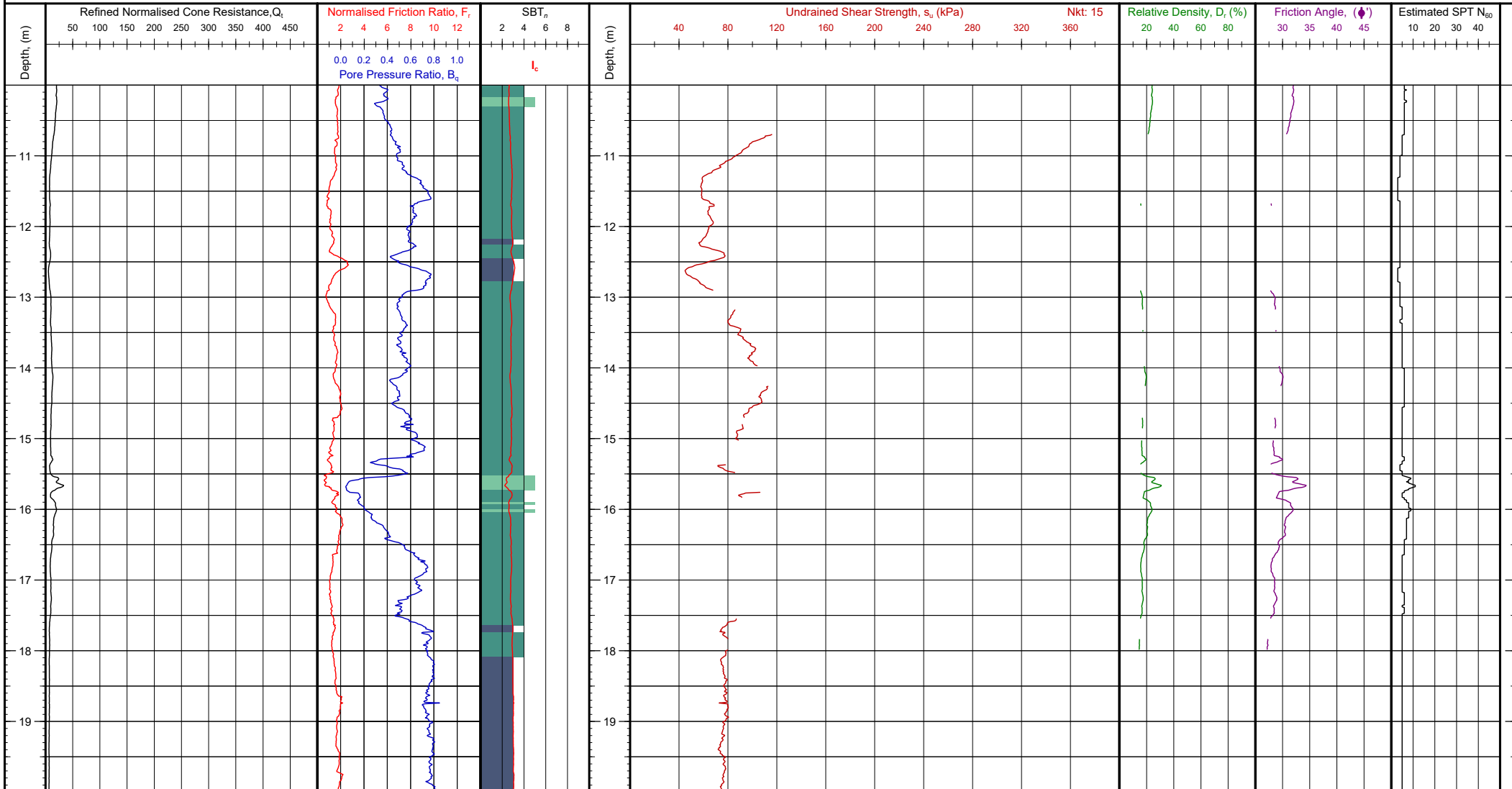
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-329

G.I. Job Ref: 220326

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

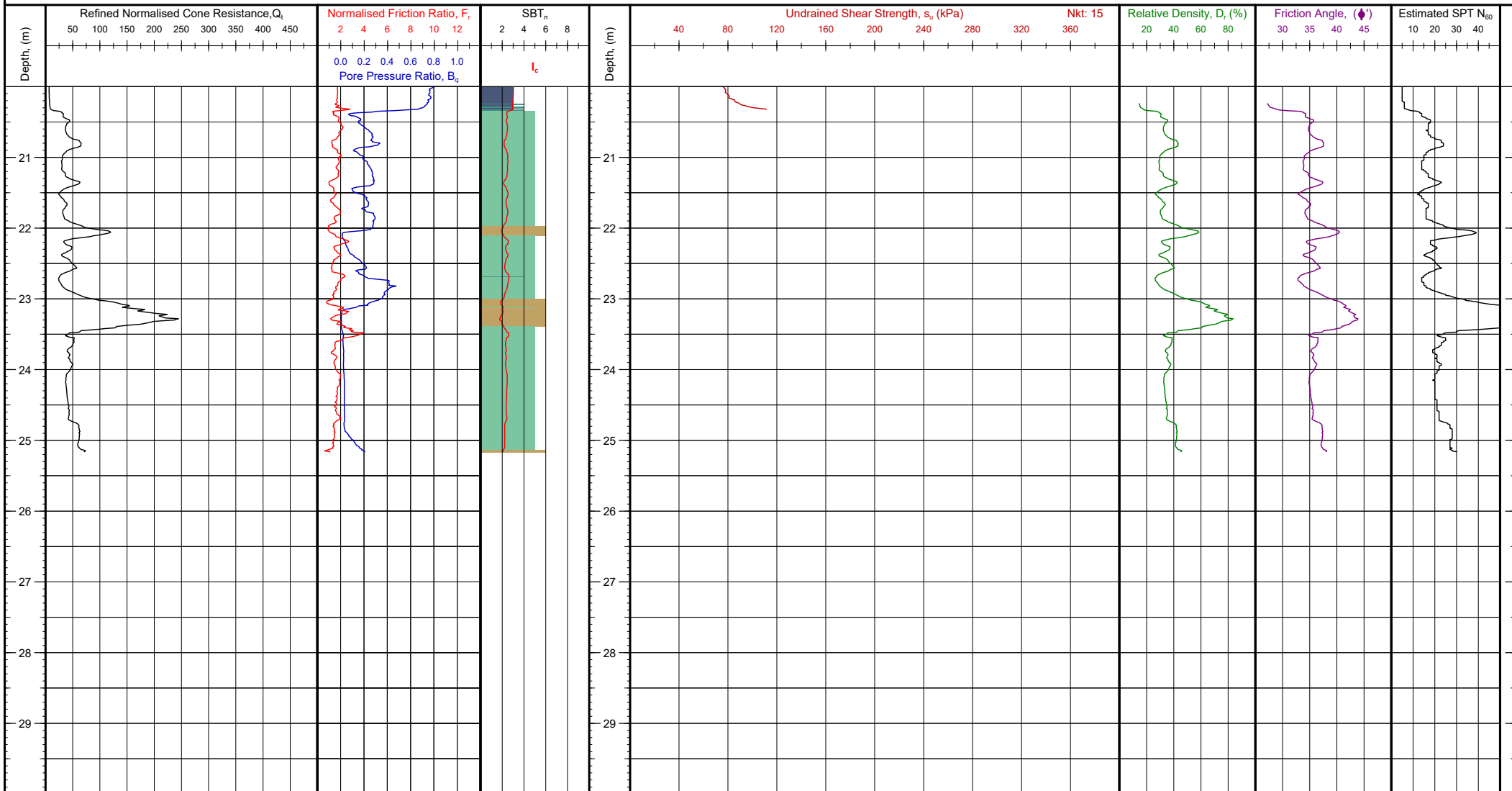
Notes and Limitations:
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Client Reference:

Test Number: CPT-329

G.I. Job Ref: 220326

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

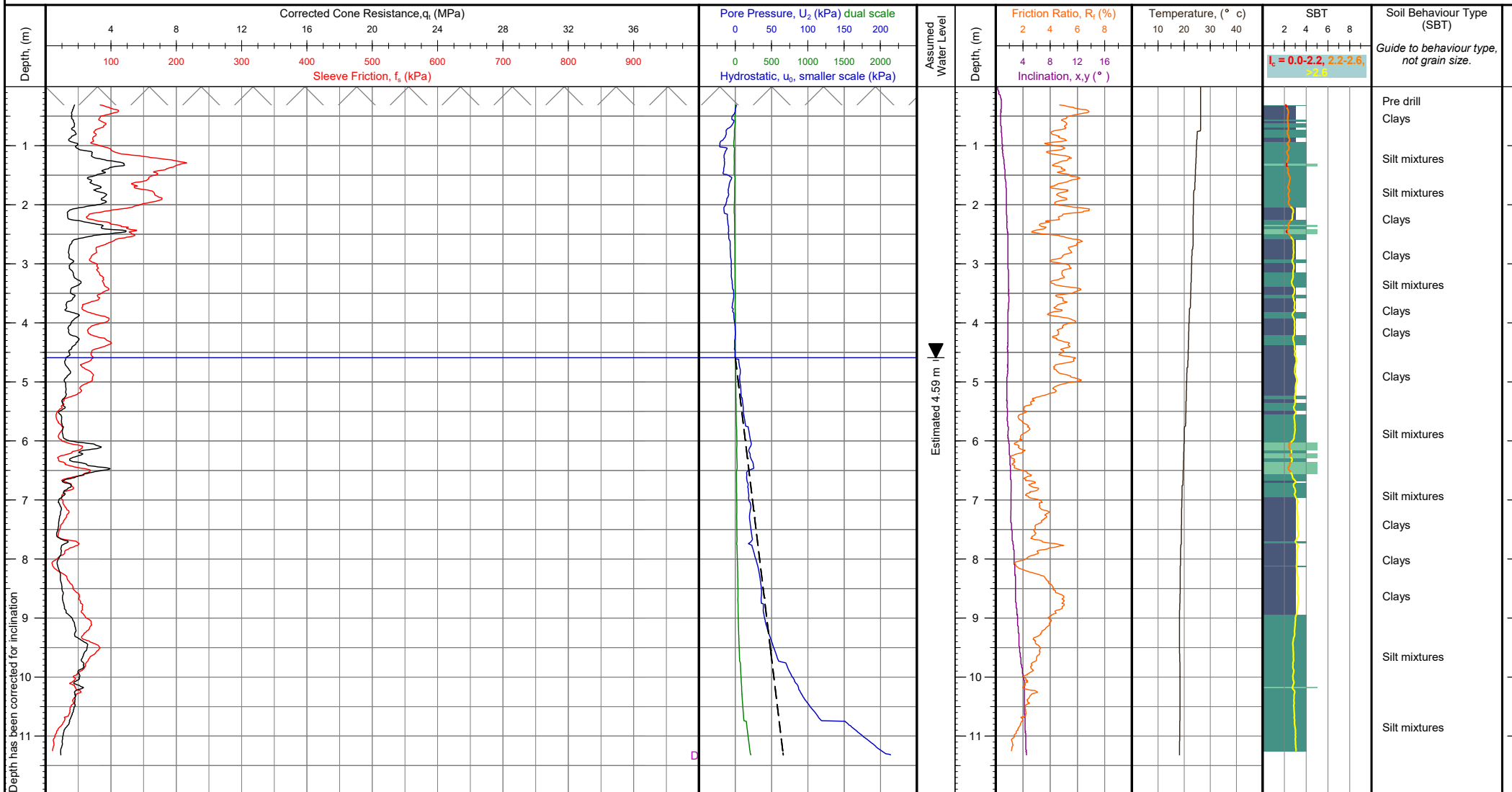
Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:

Test Number: CPT-329

G.I. Job Ref: 220326

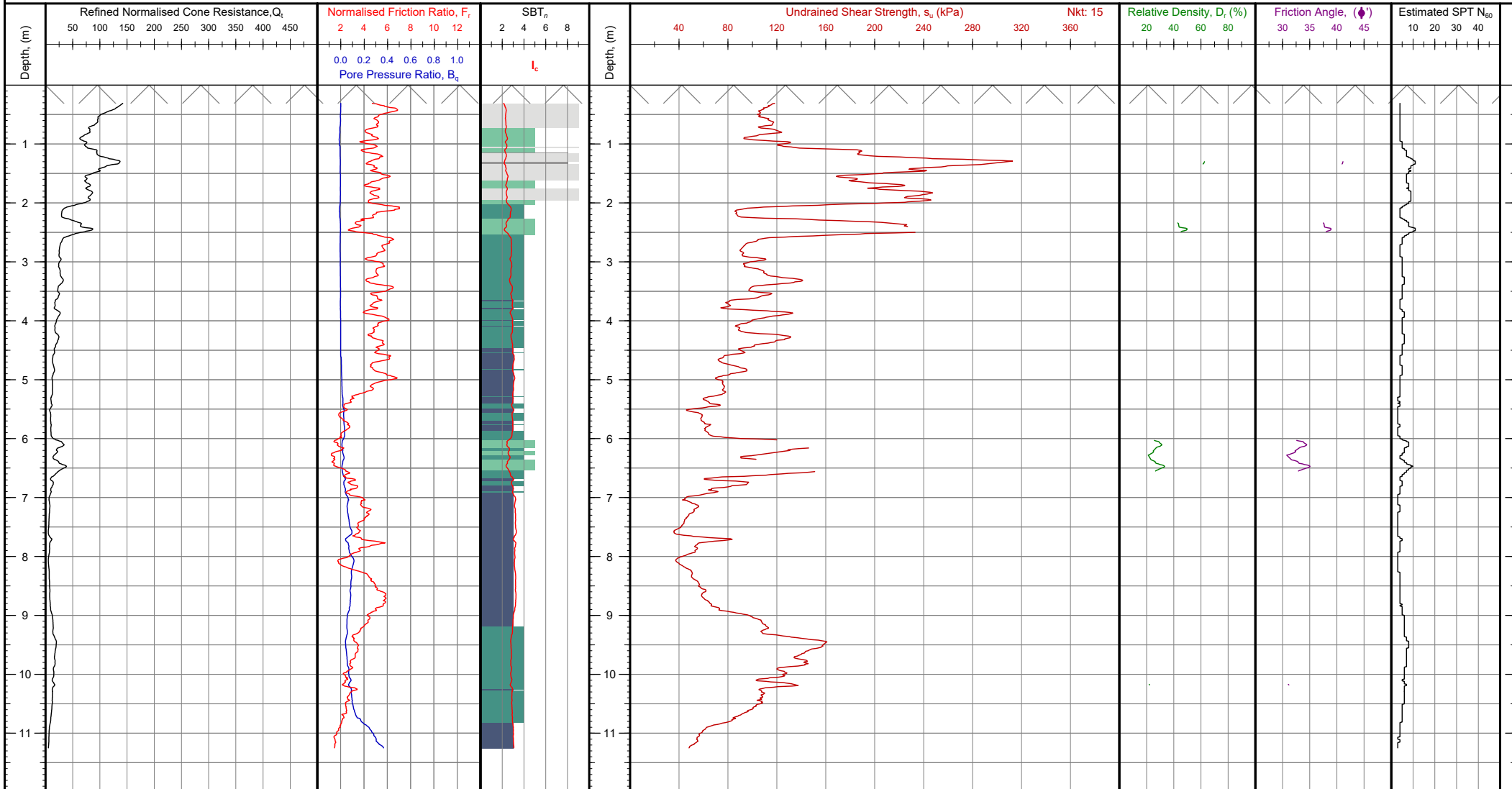
CONE PENETRATION TEST (CPT) LOG



Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911441.77, 1769432.88	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ208	WGS84 (deg): -36.927844, 174.902358	Date of Test: 2/05/2022	
Location: Pakuranga to Botany East, Auckland	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 11.32	Test Number: CPT-329-D
Engineer: Steve Semmens	Area Ratio: 0.78	Surveyor:	Pre Drill (m): 0.30 m	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Target depth	G.I. Job Ref: 220198	

Comments: Dissipation performed at 11.33m depth.

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga to Botany East, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

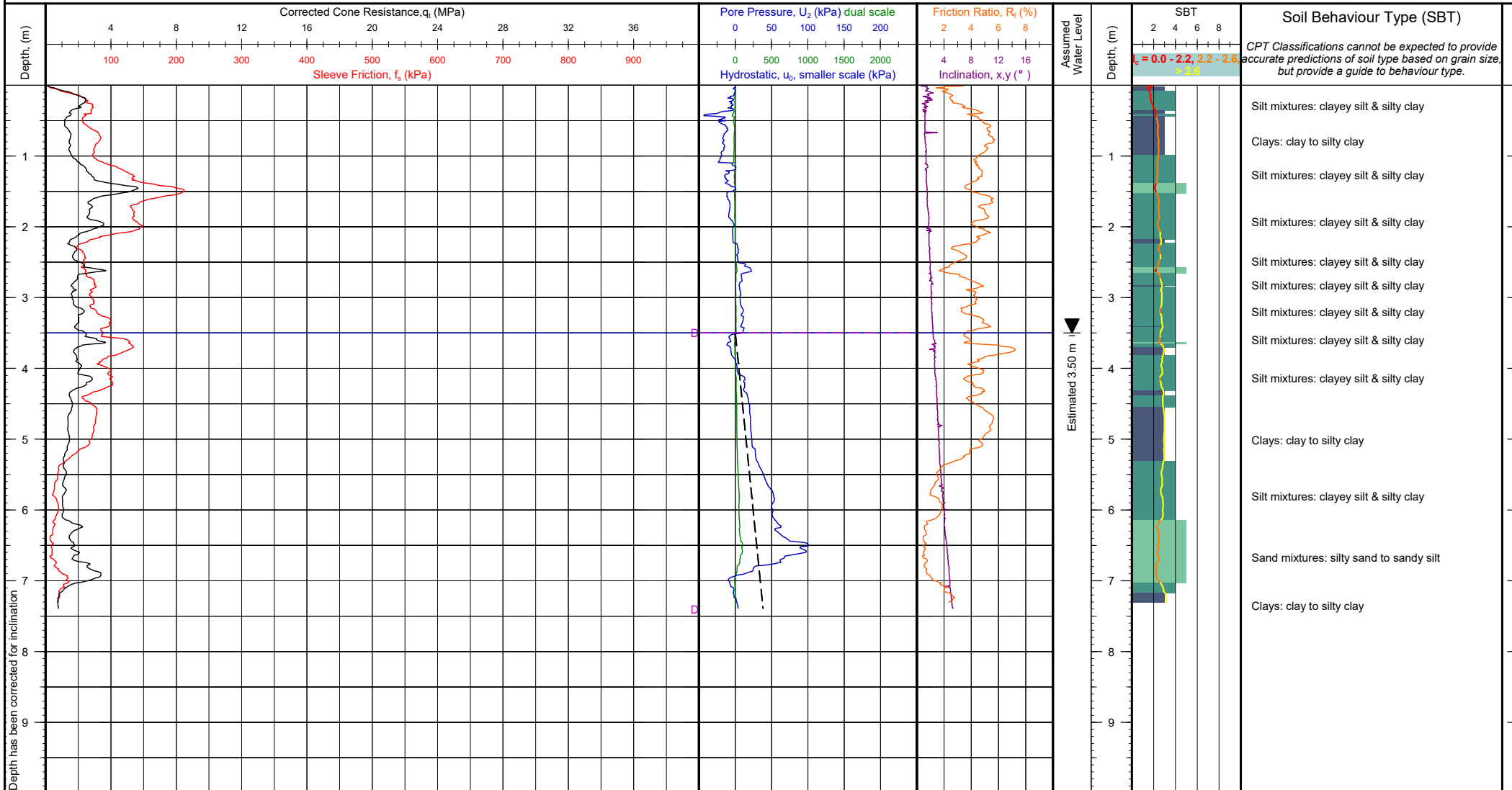
Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

Notes and Limitations:
 Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.

Client Reference:
Test Number: CPT-329-D
G.I. Job Ref: 220198

CONE PENETRATION TEST (CPT) LOG

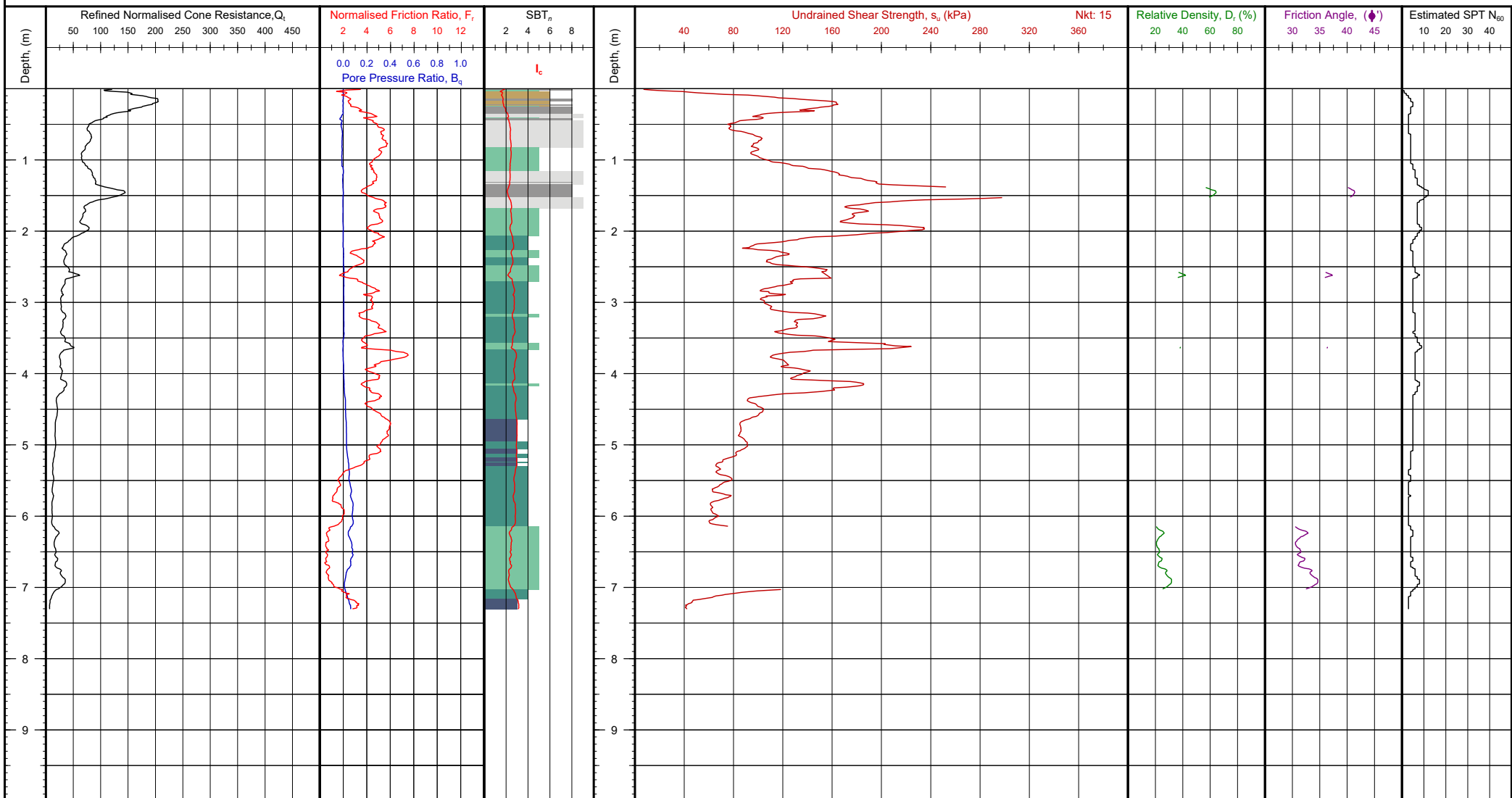


Client: Eastern Busway Alliance	Operator: Marcelo Martinez	NZTM 2000 N, E (m): 5911445.48, 1769430.90	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: C18611	WGS84 (deg): -36.927811, 174.902335	Date of Test: 4/04/2022	
Location: Pakuranga, Auckland	Cone Type: 15cm ² Compression	Location Method: Handheld GPS	Depth (m): 7.39	Test Number: CPT-329(A)-D
Engineer: Steve Semmens	Area Ratio: 0.80	Surveyor:	Pre Drill (m): N/A	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Target depth	G.I. Job Ref: 220326	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CPT PARAMETER LOG



Client: Eastern Busway Alliance
Project: Eastern Busway
Location: Pakuranga, Auckland
Engineer: Steve Semmens
Contractor: Ground Investigation Ltd

Soil Behaviour Type SBT_n - Robertson et al. 1990

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine grained	6	Sands: clean sands to silty sands
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand
3	Clay: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay

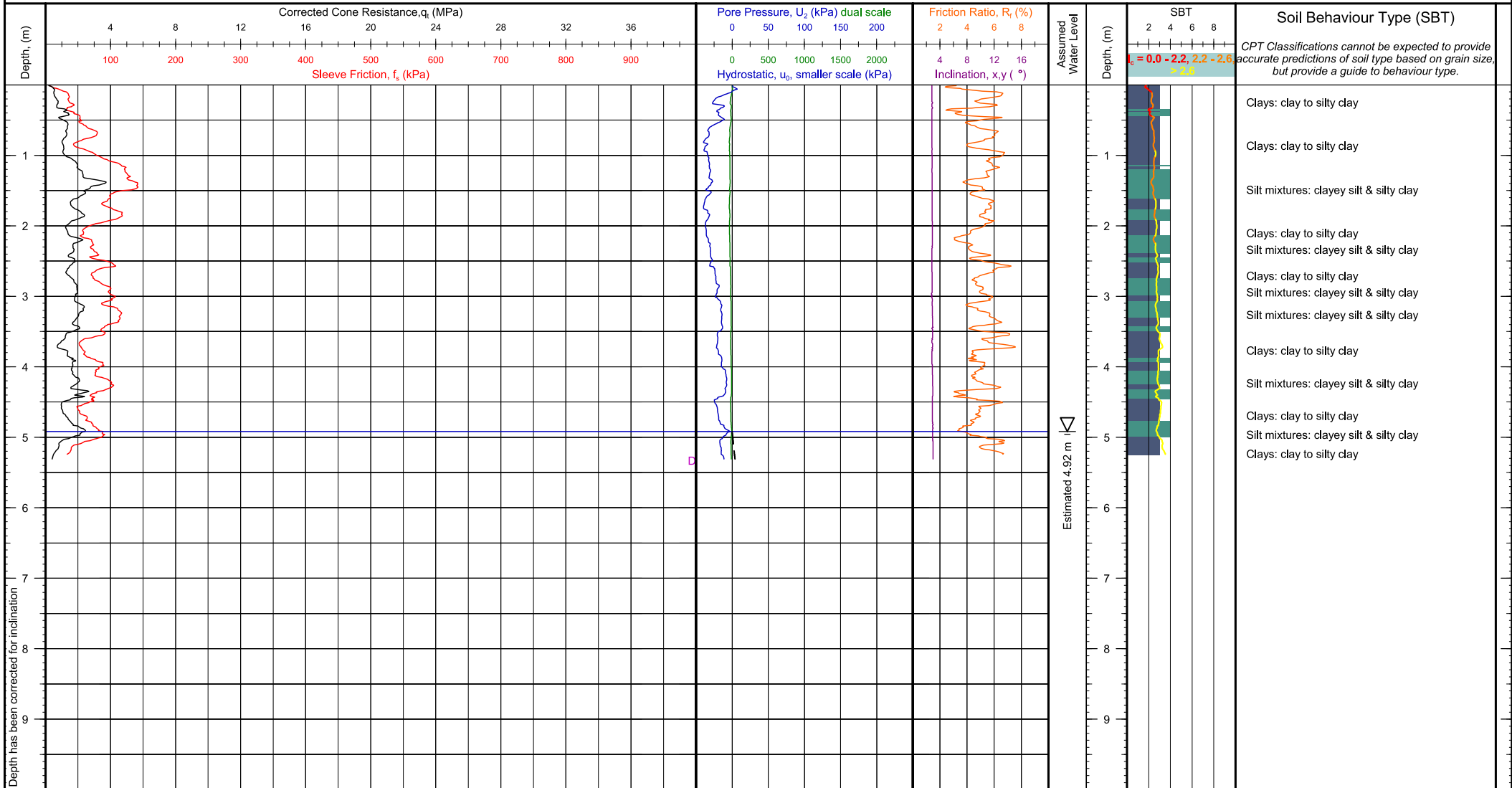
Notes and Limitations:
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Client Reference:

Test Number: CPT-329(A)-D

G.I. Job Ref: 220326

CONE PENETRATION TEST (CPT) LOG

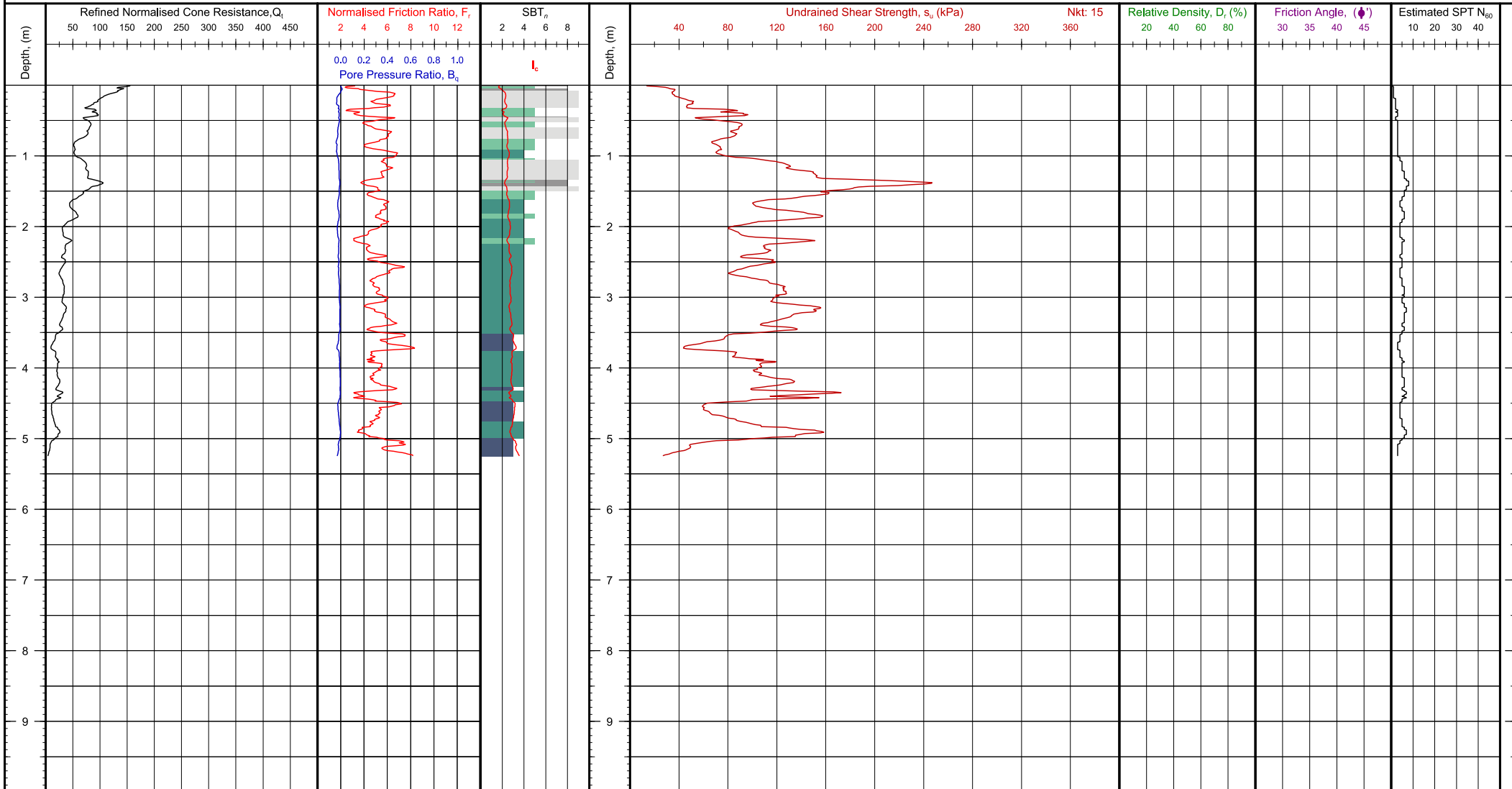


Client: Eastern Busway Alliance	Operator: Cesar Etchevarne	NZTM 2000 N, E (m): 5911443.52, 1769434.43	Elevation (m): Unknown	Client Reference:
Project: Eastern Busway	Cone Ref: MKJ539	WGS84 (deg): -36.927828, 174.902375	Date of Test: 11/02/2022	
Location: Auckland, New Zealand	Cone Type: 10cm ² Compression	Location Method: Handheld GPS	Depth (m): 5.31	Test Number: CPT-329(B)-D
Engineer: Steve Semmens	Area Ratio: 0.79	Surveyor:	Pre Drill (m): N/A	
Contractor: Ground Investigation Ltd	Filter Type: u_2	Termination Reason: Target depth	G.I. Job Ref: 220052	

Comments:

Where possible GWL is measured after testing, or estimated in the office. This may not represent the true GWL

CPT PARAMETER LOG



<p>Client: Eastern Busway Alliance</p> <p>Project: Eastern Busway</p> <p>Location: Auckland, New Zealand</p> <p>Engineer: Steve Semmens</p> <p>Contractor: Ground Investigation Ltd</p>	<p>Soil Behaviour Type SBT_n - Robertson et al. 1990</p> <table border="0"> <tr> <td>0</td><td>Undefined</td> <td>5</td><td>Sand mixtures: silty sand to sandy silt</td> </tr> <tr> <td>1</td><td>Sensitive fine grained</td> <td>6</td><td>Sands: clean sands to silty sands</td> </tr> <tr> <td>2</td><td>Organic: Organic clay/silt, peat</td> <td>7</td><td>Dense sand to gravelly sand</td> </tr> <tr> <td>3</td><td>Clay: clay to silty clay</td> <td>8</td><td>Stiff sand to clayey sand</td> </tr> <tr> <td>4</td><td>Silt mixtures: clayey silt & silty clay</td> <td>9</td><td>Stiff silt/clay</td> </tr> </table>	0	Undefined	5	Sand mixtures: silty sand to sandy silt	1	Sensitive fine grained	6	Sands: clean sands to silty sands	2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand	3	Clay: clay to silty clay	8	Stiff sand to clayey sand	4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay	<p>Notes and Limitations:</p> <p>Data shown on this report has been assessed to provide a basic interpretation in terms of Soil Behaviour Type (SBT) and various geotechnical soil and design parameters using methods published in P.K. Robertson and K.L. Cabel (2010), Guide to Cone Penetration Testing for Geotechnical Engineering, 4th Edition. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed by the user. Ground Investigation Ltd. does not warrant the correctness or applicability of any of the geotechnical soil and design parameter shown and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used to derive data shown in this report.</p>	<p>Client Reference:</p> <p>Test Number: CPT-329(B)-D</p> <p>G.I. Job Ref: 220052</p>
0	Undefined	5	Sand mixtures: silty sand to sandy silt																				
1	Sensitive fine grained	6	Sands: clean sands to silty sands																				
2	Organic: Organic clay/silt, peat	7	Dense sand to gravelly sand																				
3	Clay: clay to silty clay	8	Stiff sand to clayey sand																				
4	Silt mixtures: clayey silt & silty clay	9	Stiff silt/clay																				

Cone Reference	CPT Name	Push Number	Tip Resistance			Local Friction			Pore Pressure		
			Initial (MPa)	Final (MPa)	Difference (kPa)	Initial (MPa)	Final (MPa)	Difference (kPa)	Initial (MPa)	Final (MPa)	Difference (kPa)
MKS865	CPT-204(D)	1	21.974	21.968	-5.5	0.2479	0.2480	0.1	2.9832	2.9831	-0.1
C18614	CPT-204(F)	1	0.034	0.017	-16.8	0.0038	0.0048	1.0	-0.0067	-0.0052	1.5
C18611	CPT-204(F)_D2	1	0.169	0.198	29.0	0.0120	0.0132	1.2	0.0059	0.0063	0.4
MKS866	CPT-204B	1	22.380	22.391	11.1	0.2654	0.2648	-0.6	2.9905	2.9901	-0.4
MKS865	CPT-206_D	1	21.968	21.974	5.5	0.2481	0.2481	0.0	2.9840	2.9834	-0.6
MKS865	CPT-216	1	22.040	22.046	5.5	0.2480	0.2482	0.2	2.9842	2.9843	0.1
MKJ300	CPT-217	1	20.829	20.803	-26.0	0.2685	0.2699	1.4	2.8579	2.8579	0.0
MKS865	CPT-302	1	21.957	22.018	61.0	0.2484	0.2482	-0.2	2.9837	2.9839	0.2
MKJ300	CPT-304	1	20.850	20.819	-31.3	0.2690	0.2695	0.5	2.8571	2.8577	0.6
MKS865	SCPT-303	1	21.974	21.941	-33.3	0.2481	0.2485	0.4	2.9839	2.9837	-0.2

Cone Reference	CPT Name	Push	Tip Resistance					Local Friction					Pore Pressure				
			Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)
71137	CPT-207	1	0.683	0.688	N/A	5.5	N/A	0.0483	0.0482	N/A	0.0	N/A	0.8153	0.8153	N/A	0.0	N/A
MKJ167	CPT-228	1	18.344	18.365	N/A	20.9	N/A	0.2557	0.2563	N/A	0.6	N/A	3.0560	3.0491	N/A	-6.9	N/A
C17195	CPT-229	1	-0.028	-0.021	N/A	7.0	N/A	0.0038	0.0039	N/A	0.1	N/A	-0.0076	-0.0082	N/A	-0.6	N/A
70169	CPT-306	1	0.680	0.681	N/A	1.8	N/A	0.0540	0.0540	N/A	0.0	N/A	0.9051	0.9179	N/A	12.8	N/A
C17195	SCPT-230	1	-0.010	-0.019	N/A	-9.1	N/A	0.0039	0.0040	N/A	0.1	N/A	-0.0027	-0.0045	N/A	-1.8	N/A
71062	SCPT-305	1	0.715	0.711	N/A	-4.5	N/A	0.0467	0.0464	N/A	-0.2	N/A	0.8193	0.8139	N/A	-5.4	N/A
71137	SCPT-307	1	0.681	0.681	N/A	0.0	N/A	0.0479	0.0474	N/A	-0.5	N/A	0.8162	0.8162	N/A	0.0	N/A
70169	SCPT-308	1	0.666	0.674	N/A	8.0	N/A	0.0536	0.0536	N/A	-0.1	N/A	0.9051	0.9042	N/A	-0.9	N/A

Cone Reference	CPT Name	Push	Tip Resistance					Local Friction					Pore Pressure				
			Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)
MKJ311	CPT-310	1	20.611	20.627	N/A	15.6	N/A	0.2536	0.2546	N/A	0.9	N/A	3.0112	3.0119	N/A	0.8	N/A
MKJ167	CPT-315	1	18.366		N/A		N/A	0.2572		N/A		N/A	3.0181		N/A		N/A
MKJ333	SCPT-309	1	20.496	20.496	N/A	0.0	N/A	0.2746	0.2745	N/A	-0.2	N/A	1.8805	1.8814	N/A	0.9	N/A

Cone Reference	CPT Name	Push	Tip Resistance					Local Friction					Pore Pressure				
			Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)
C18611	CPT-329	1	0.106	0.101	N/A	-5.0	N/A	0.0099	0.0102	N/A	0.4	N/A	0.0152	0.0156	N/A	0.4	N/A
C18611	CPT-329(A)-D	1	0.096	0.129	N/A	33.0	N/A	0.0096	0.0117	N/A	2.1	N/A	0.0167	0.0149	N/A	-1.8	N/A

Cone Reference	CPT Name	Push Number	Tip Resistance			Local Friction			Pore Pressure		
			Initial (MPa)	Final (MPa)	Difference (kPa)	Initial (MPa)	Final (MPa)	Difference (kPa)	Initial (MPa)	Final (MPa)	Difference (kPa)
MKJ539	CPT-320	1	21.408	21.382	-25.7	0.2560	0.2560	0.0	2.8688	2.8668	-2.0
MKJ539	CPT-329(B)-D	1	21.392	21.397	5.1	0.2559	0.2553	-0.6	2.8669	2.8656	-1.3

Cone Reference	CPT Name	Push Number	Tip Resistance			Local Friction			Pore Pressure		
			Initial (MPa)	Final (MPa)	Difference (kPa)	Initial (MPa)	Final (MPa)	Difference (kPa)	Initial (MPa)	Final (MPa)	Difference (kPa)
C18614	CPT-322	1	-0.151	-0.159	-8.3	0.0009	0.0024	1.5	-0.0063	-0.0041	2.2
C18608	CPT-322-D	1	0.003	0.025	22.3	0.0048	0.0052	0.4	0.0016	0.0044	2.8
C18608	CPT-323-D	1	0.025	0.025	0.0	0.0052	0.0053	0.1	0.0044	0.0096	5.2
C18608	CPT-325	1	0.054	0.097	43.1	0.0050	0.0049	-0.1	0.0048	0.0086	3.8
C18614	SCPT-324	1	-0.157	-0.170	-13.3	0.0007	0.0019	1.2	-0.0048	-0.0036	1.2

Cone Reference	CPT Name	Push	Tip Resistance					Local Friction					Pore Pressure				
			Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)	Initial (MPa)	Final (MPa)	Cleaned (MPa)	I - F Difference (kPa)	I - C Difference (kPa)
71136	CPT-328	1	0.651	0.651	N/A	0.4	N/A	0.0434	0.0435	N/A	0.1	N/A	0.8410	0.8401	N/A	-0.9	N/A
71137	CPT-328-D	1	0.659	0.661	N/A	1.5	N/A	0.0417	0.0415	N/A	-0.1	N/A	0.7662	0.7654	N/A	-0.9	N/A
71136	SCPT-314	1	0.661	0.663	N/A	1.7	N/A	0.0459	0.0460	N/A	0.1	N/A	0.8427	0.8427	N/A	0.0	N/A