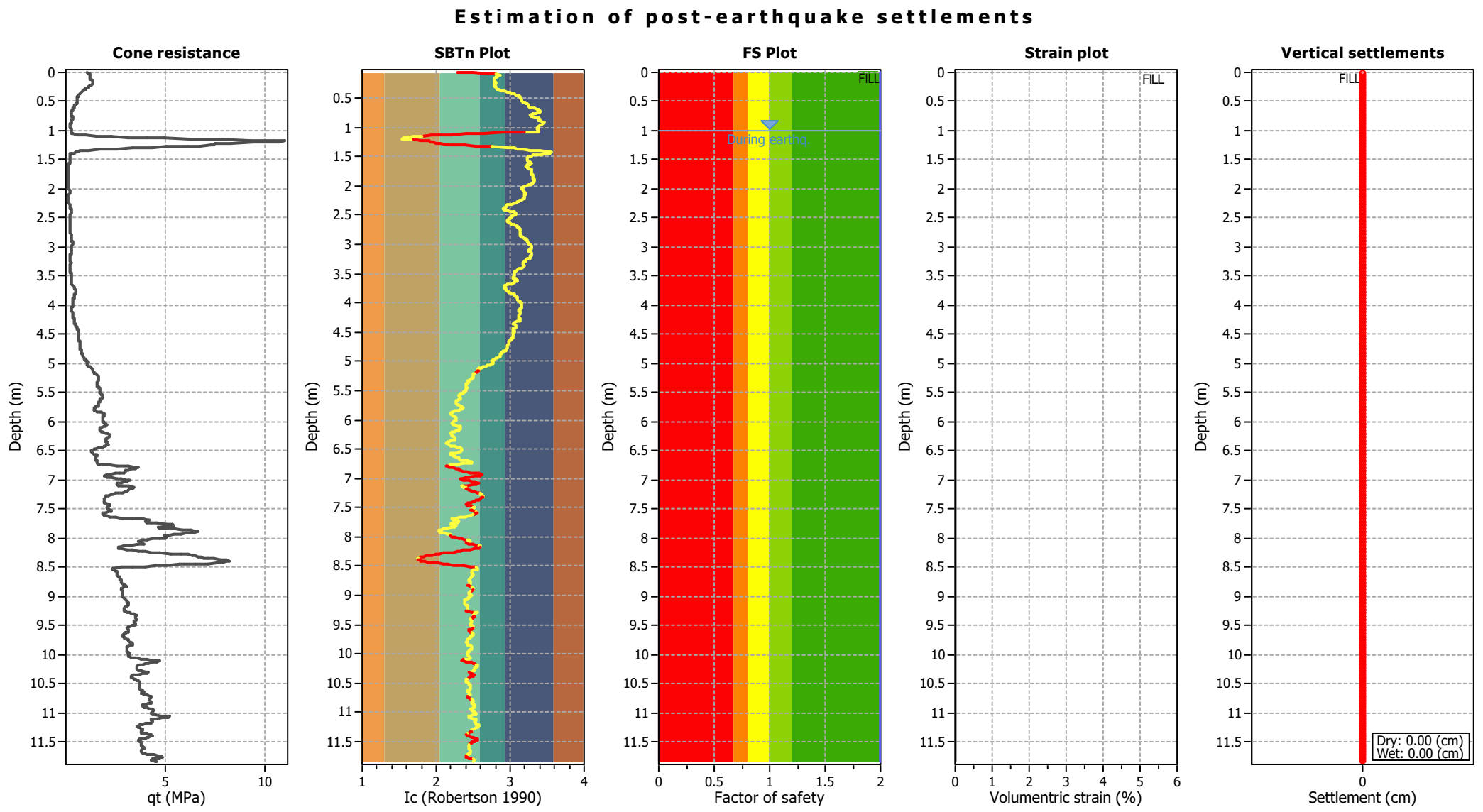
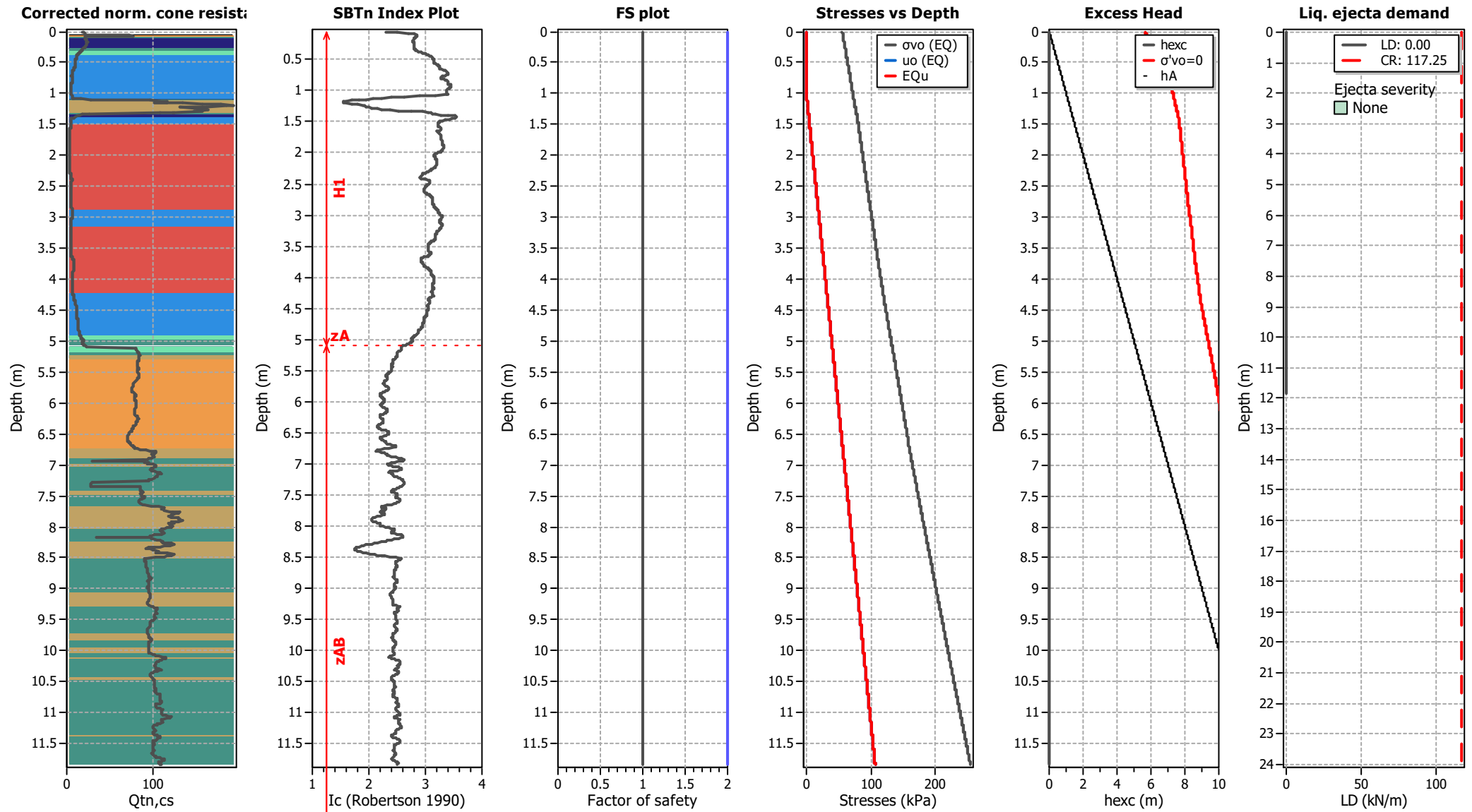




Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

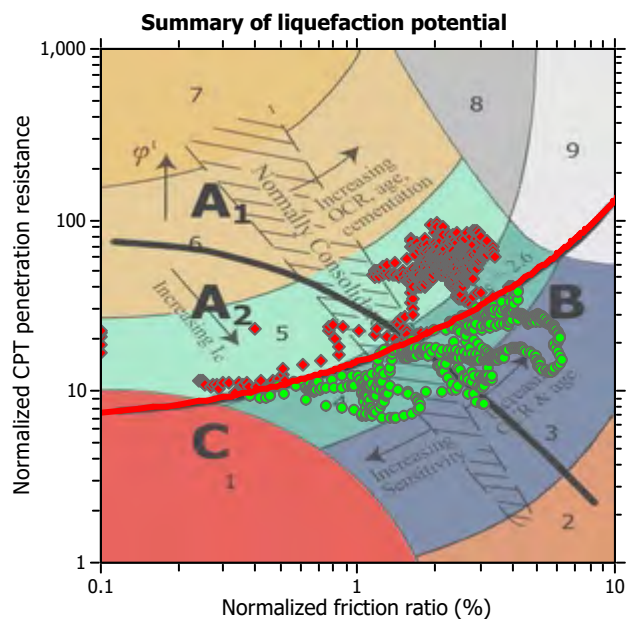
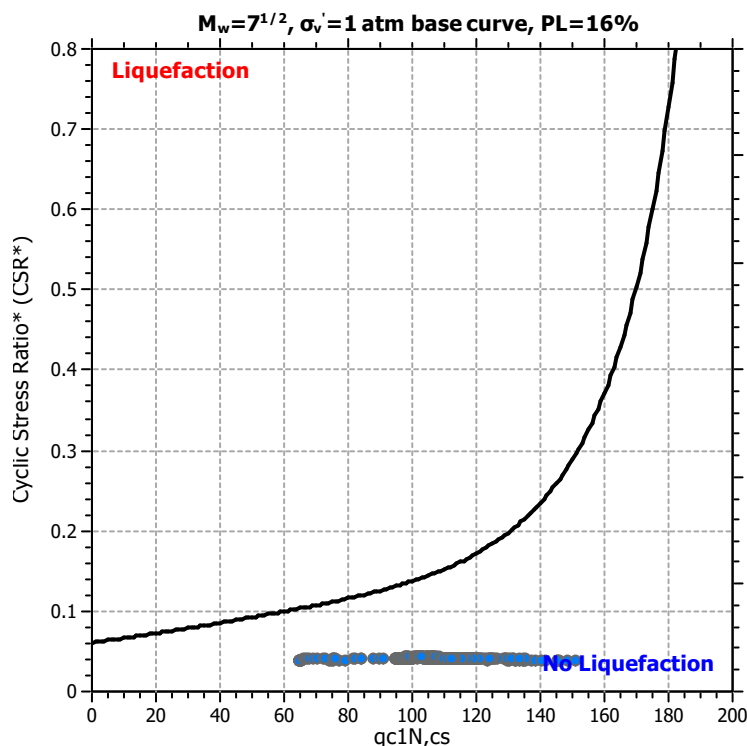
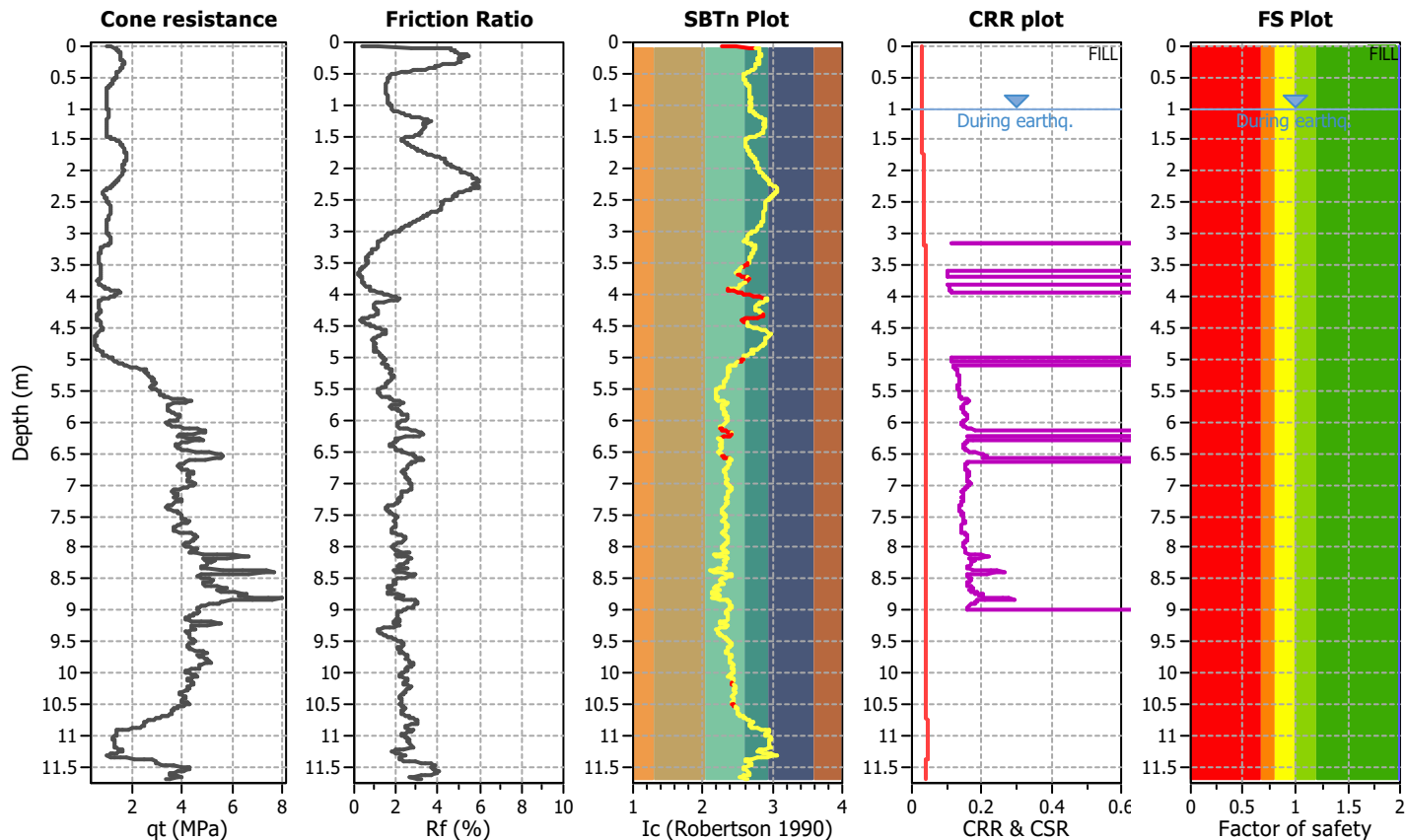
Project title : Sunfield Landholding

Location :

CPT file : CPT405

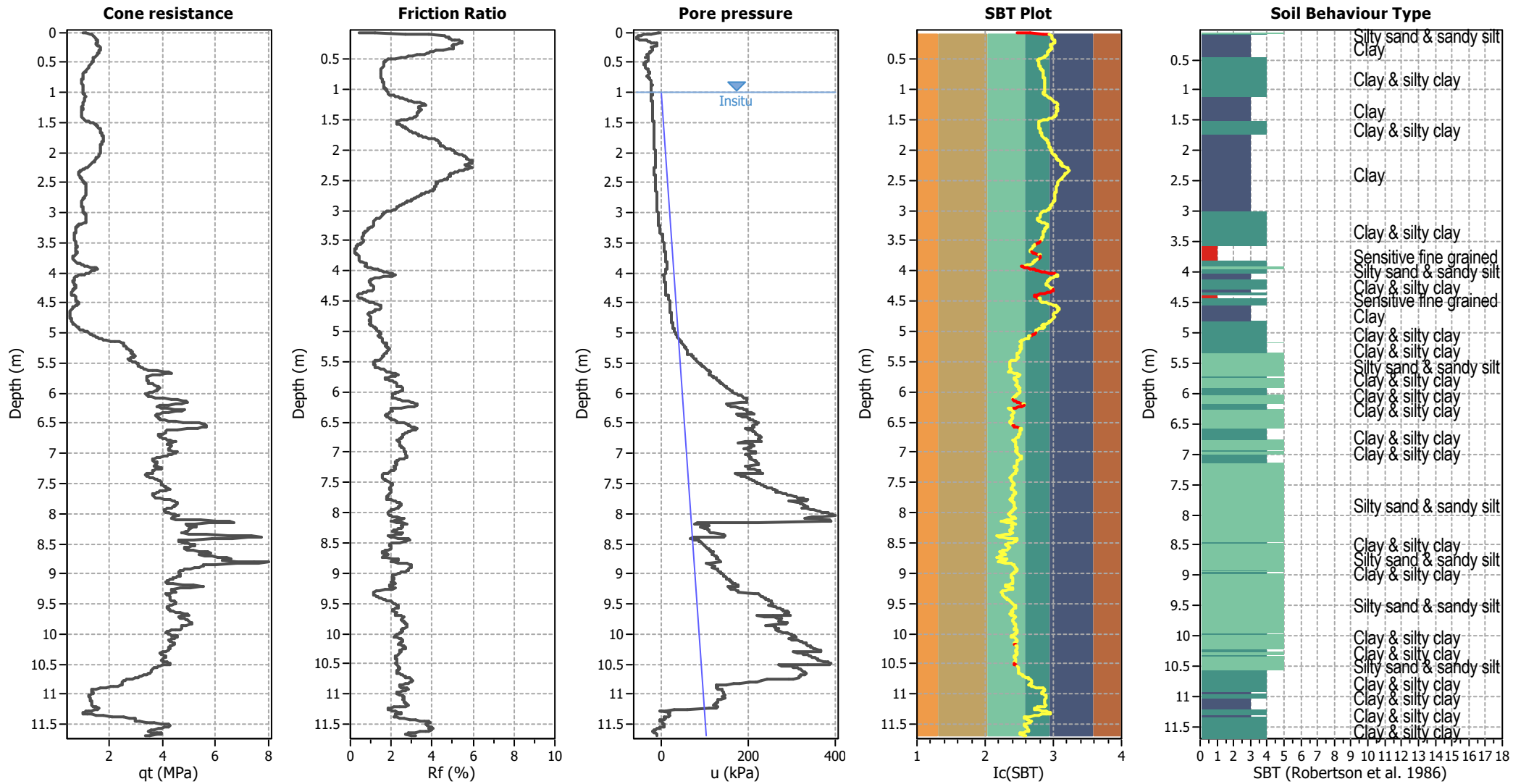
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

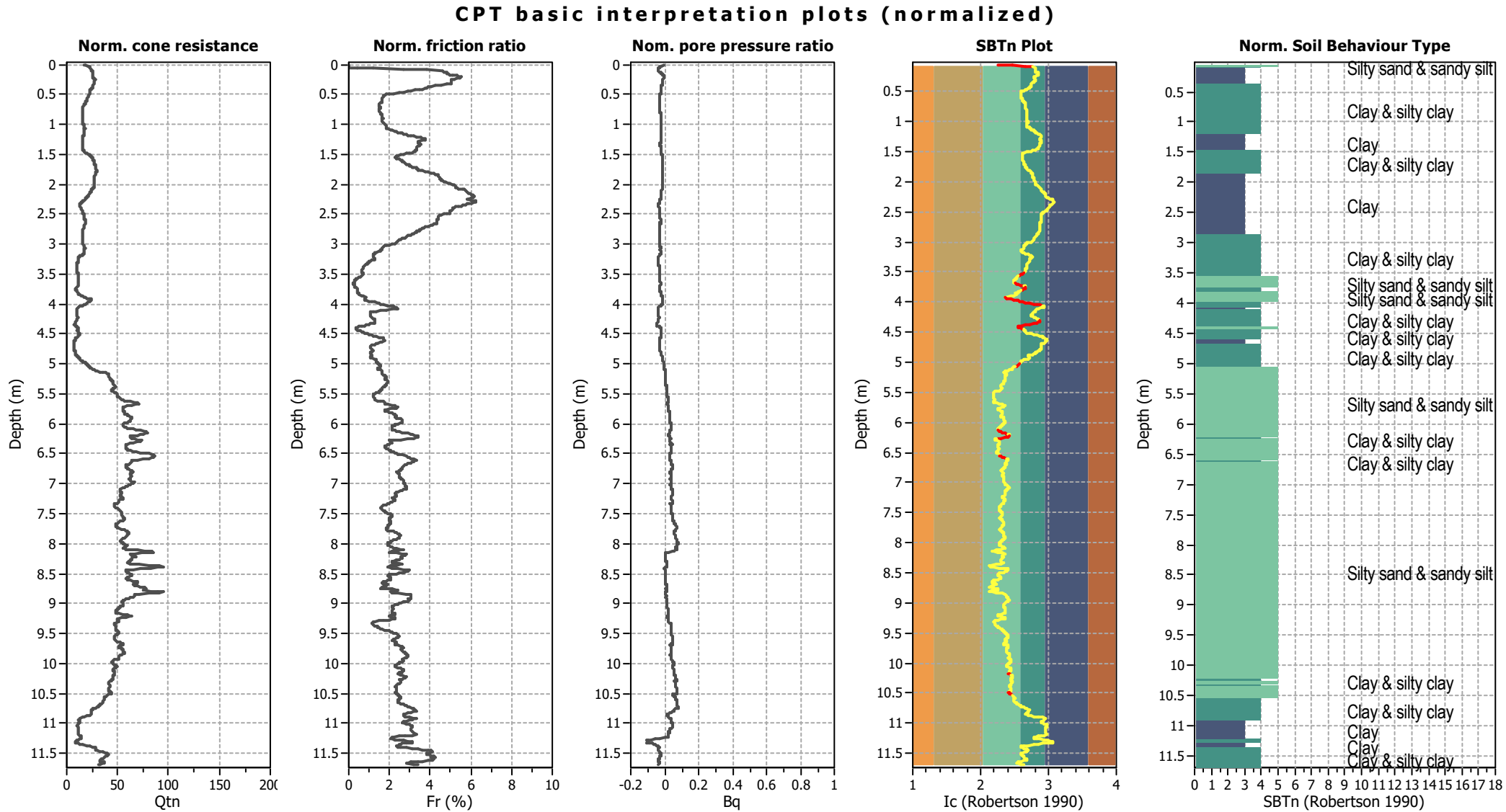


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



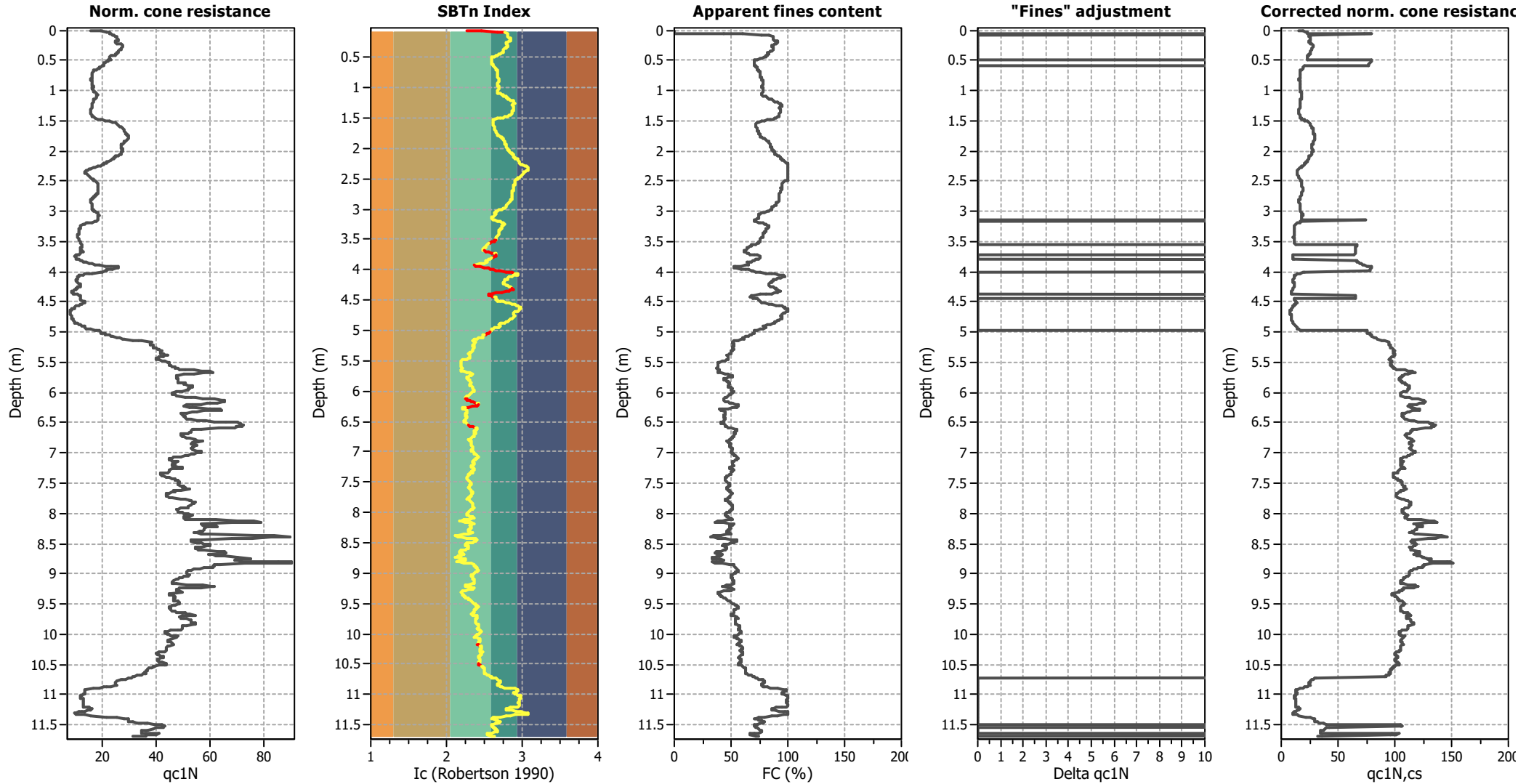
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

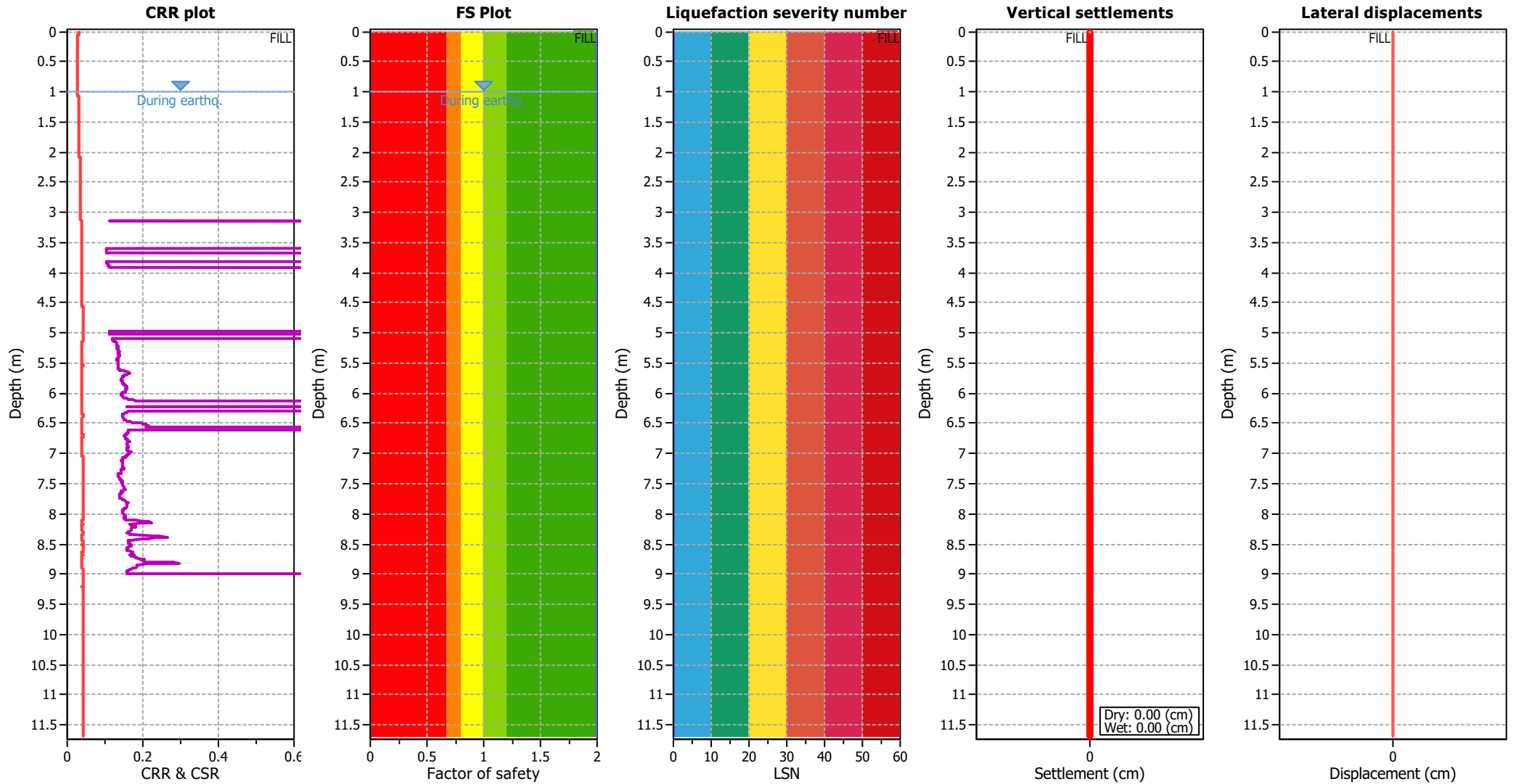
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

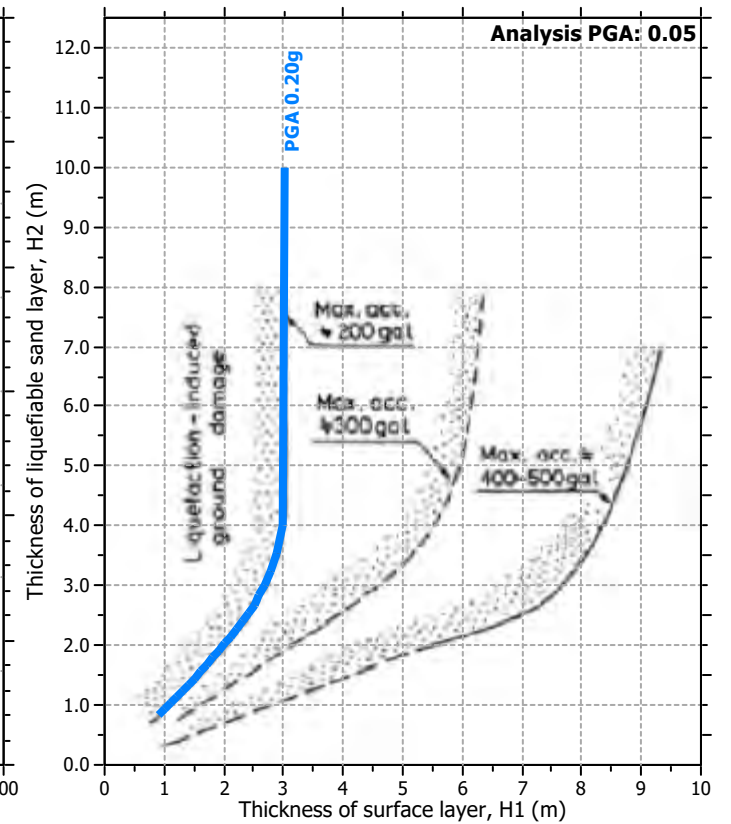
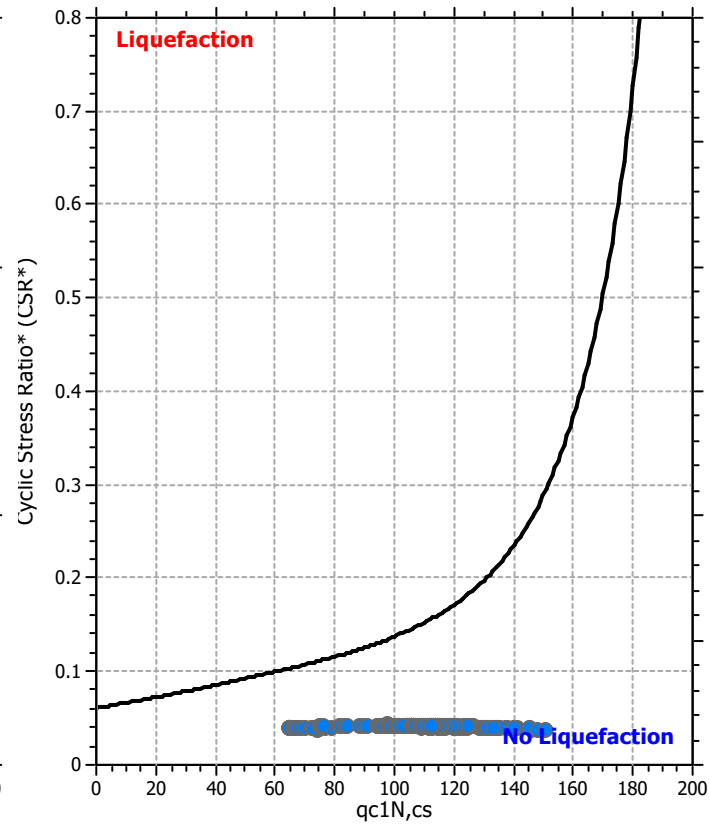
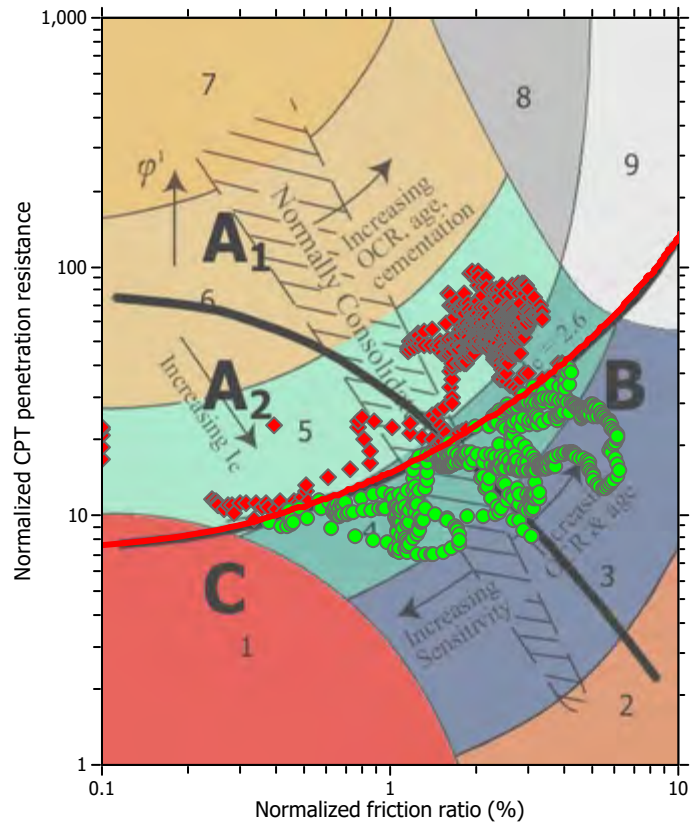
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

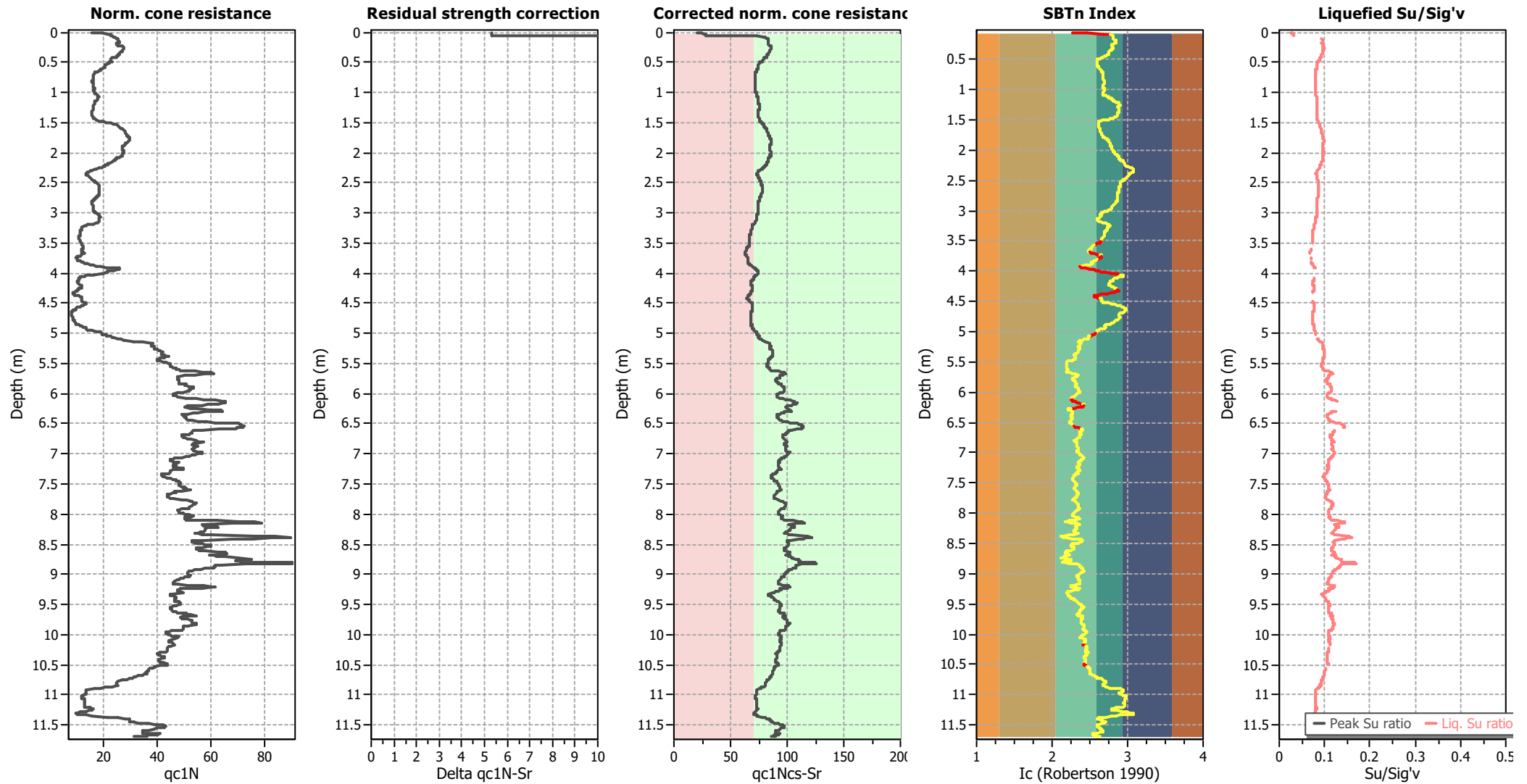
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

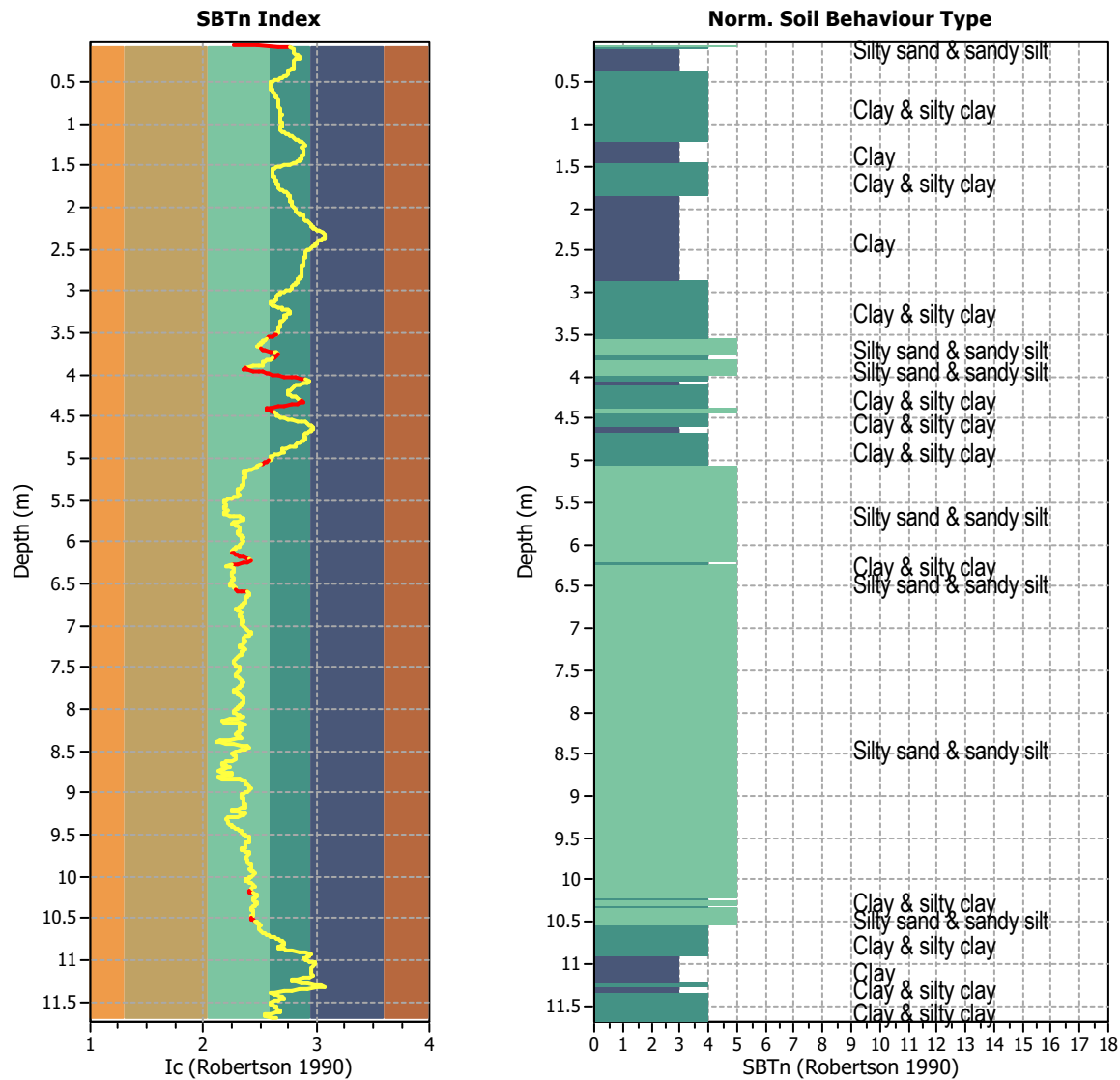
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

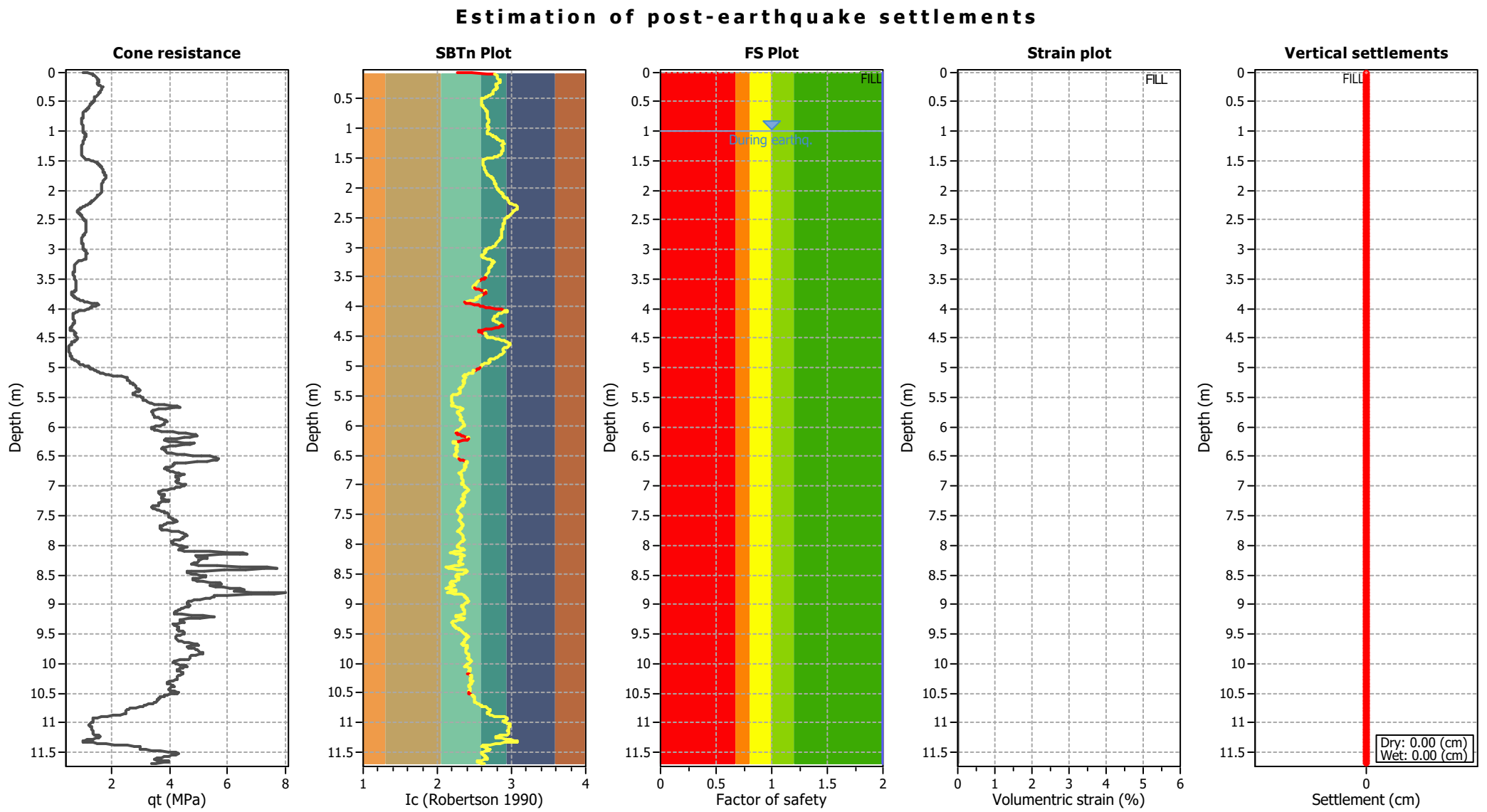


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

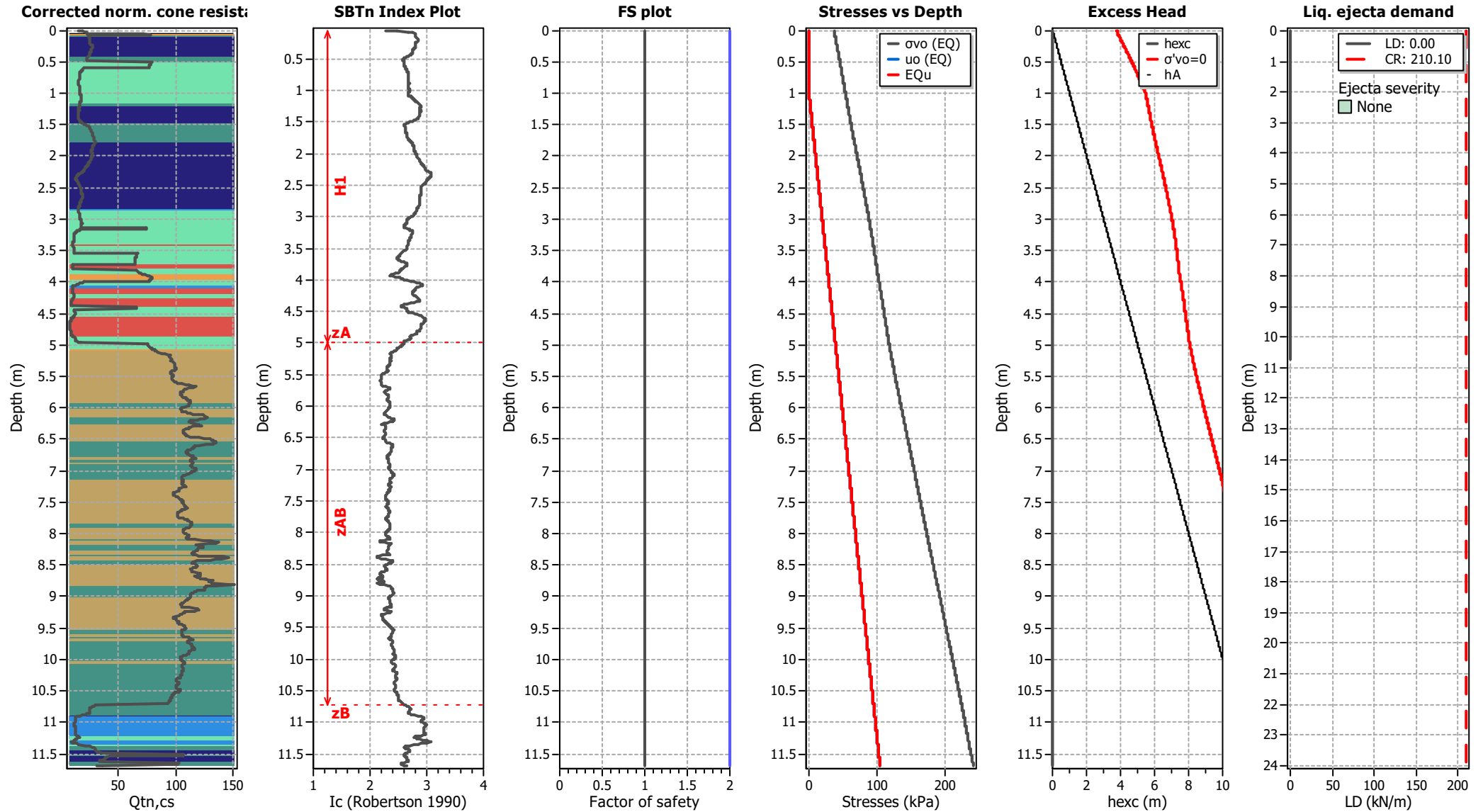
Total points in CPT file: 1169
Total points excluded: 88
Exclusion percentage: 7.53%
Number of layers detected: 13



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

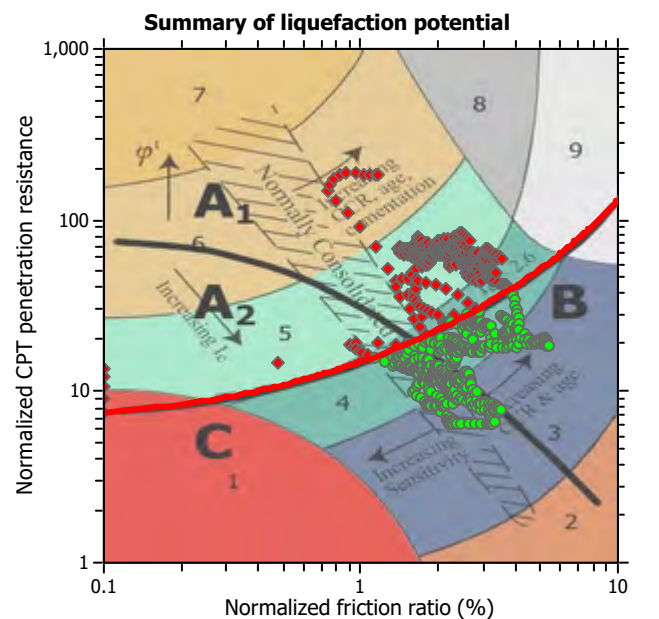
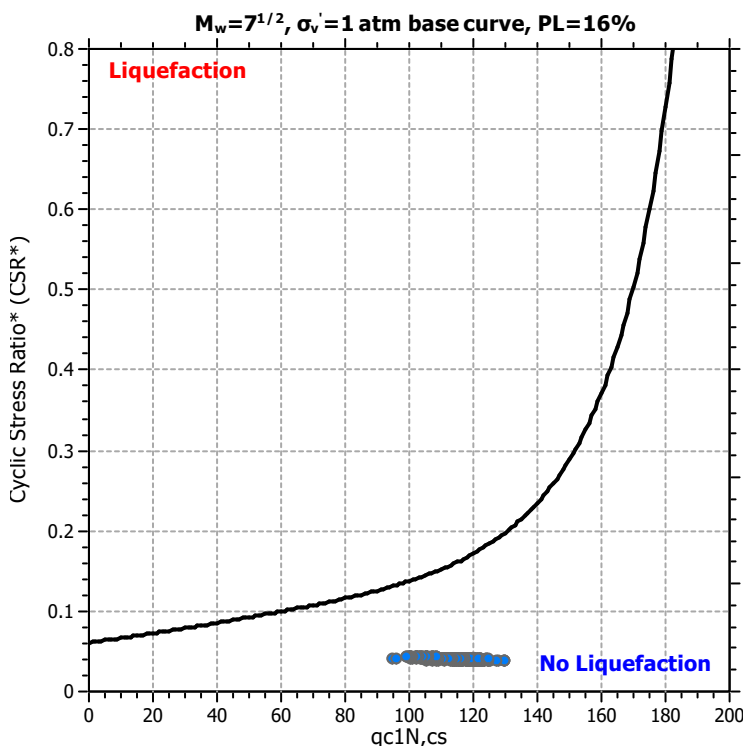
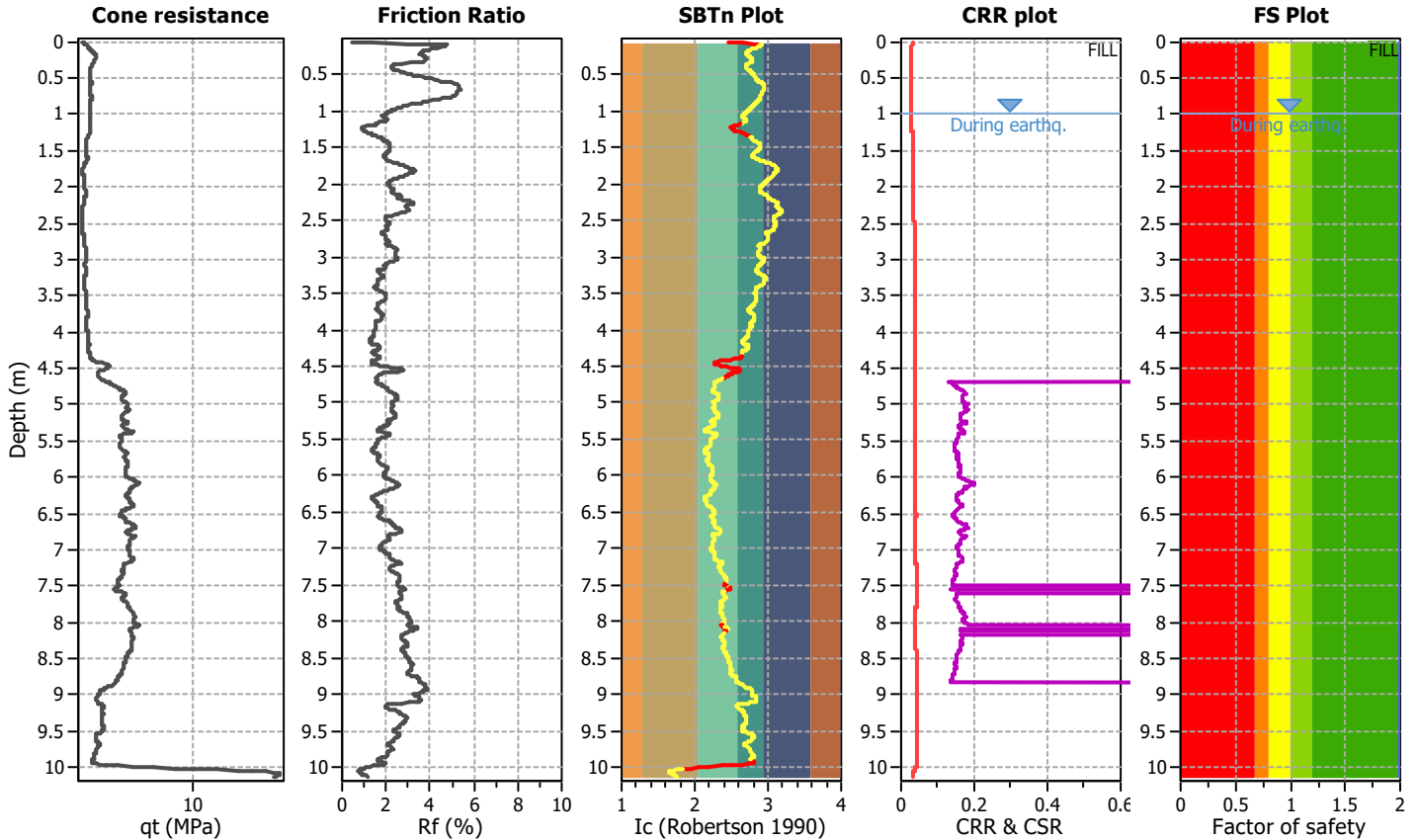
Project title : Sunfield Landholding

Location :

CPT file : CPT406

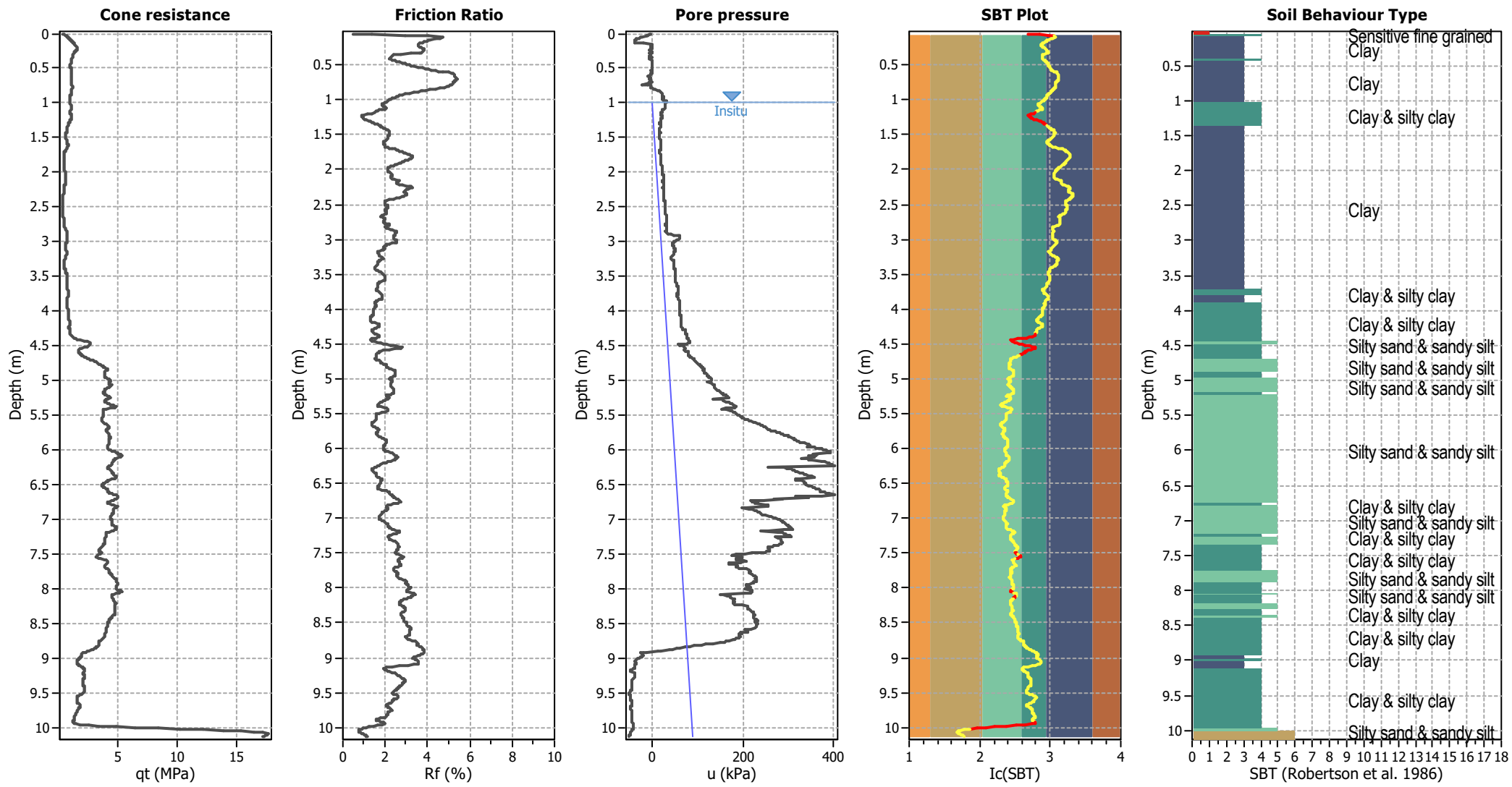
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

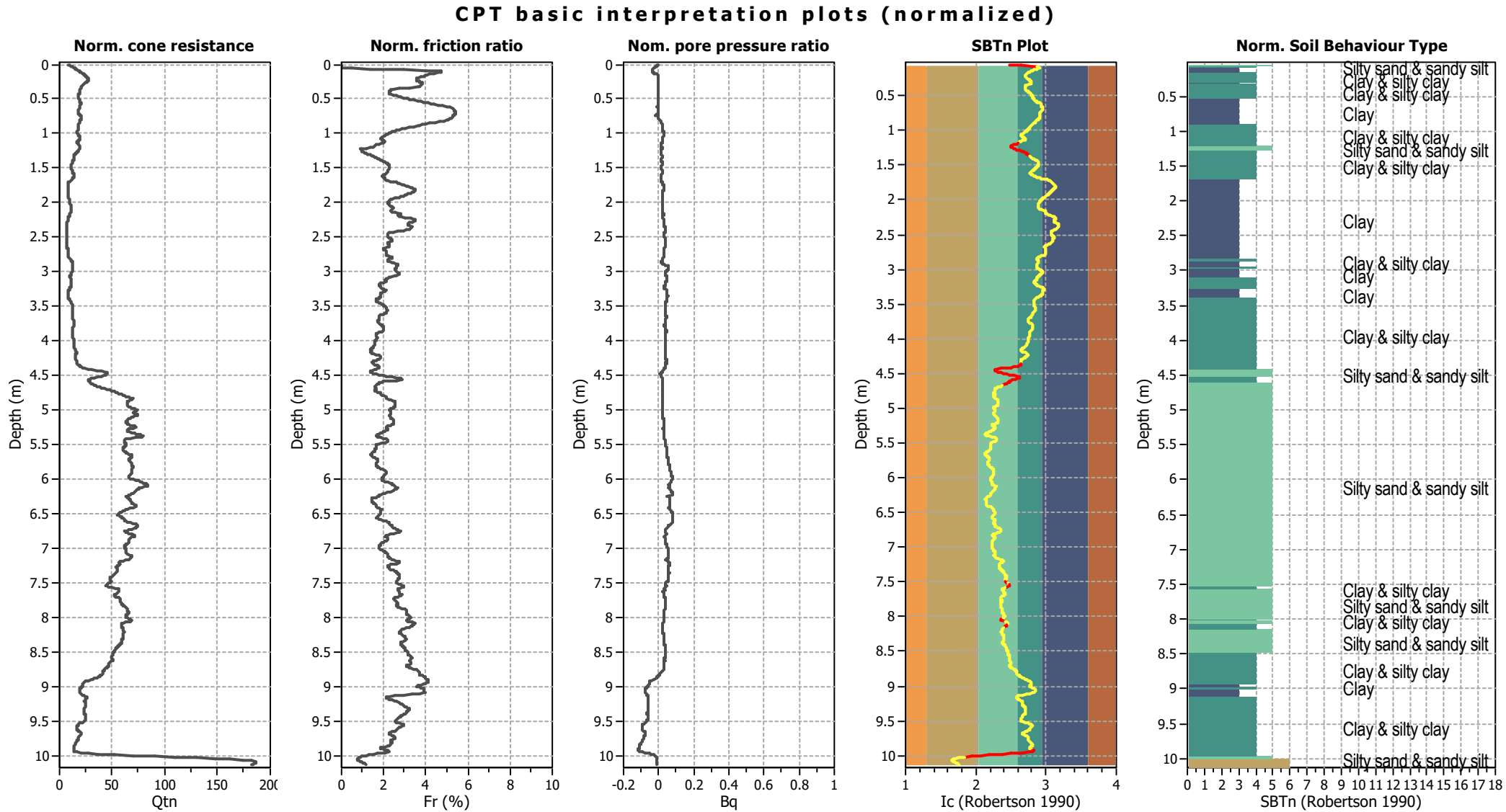


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

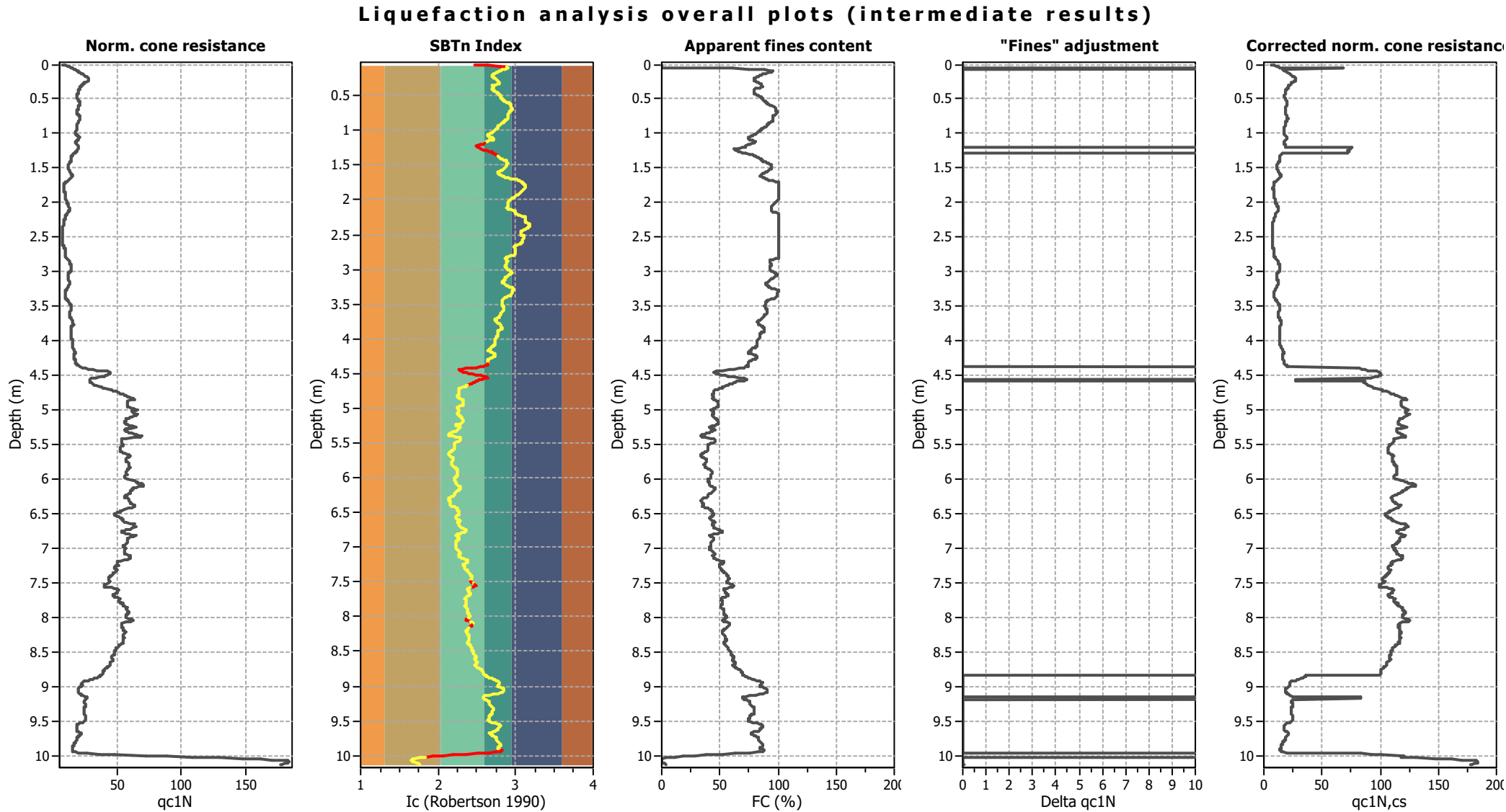
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



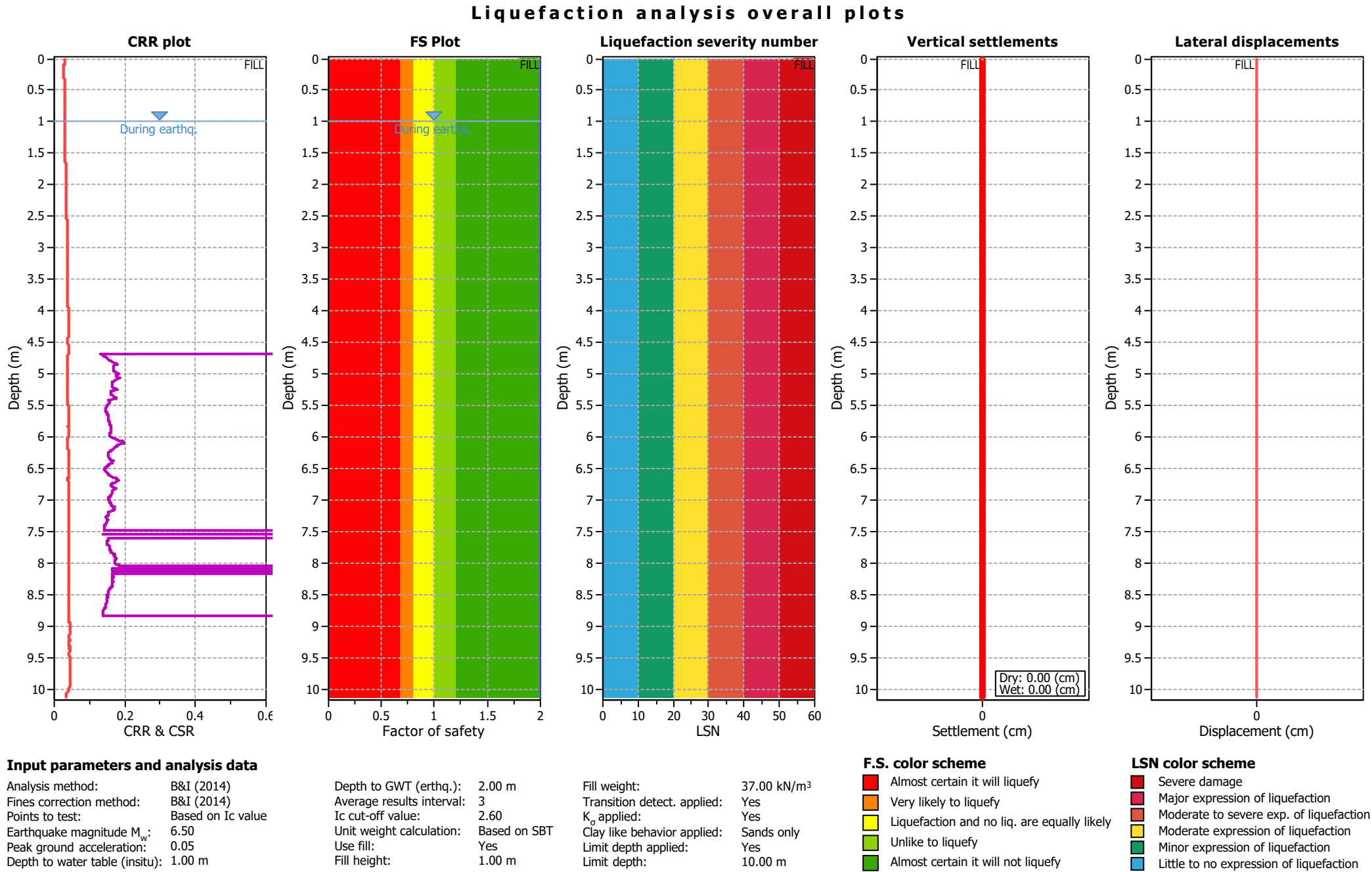
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³	SBTn legend					
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes	  	1. Sensitive fine grained 2. Organic material 3. Clay to silty clay	  	4. Clayey silt to silty 5. Silty sand to sandy silt 6. Clean sand to silty sand	  	7. Gravely sand to sand 8. Very stiff sand to 9. Very stiff fine grained
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes						
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only						
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes						
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m						

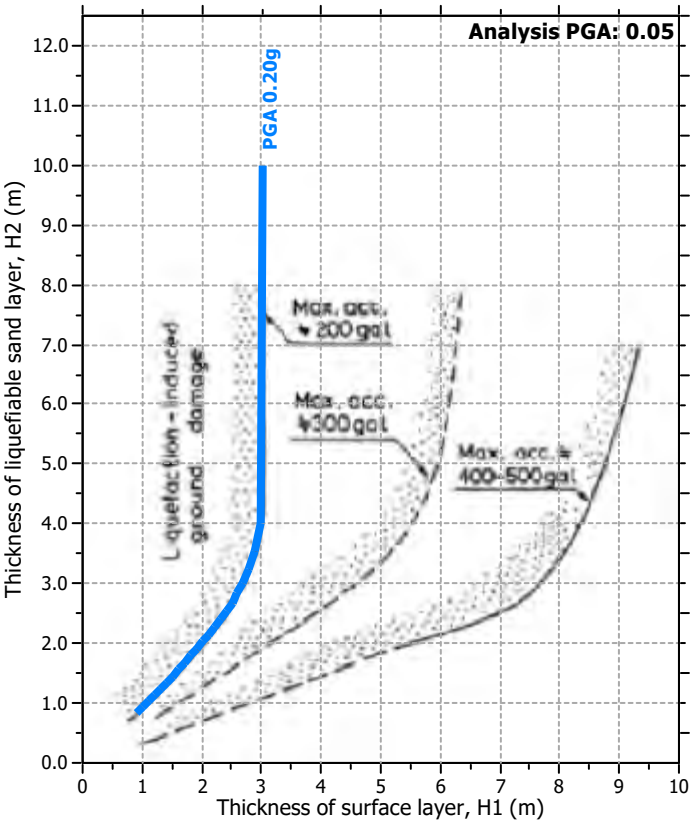
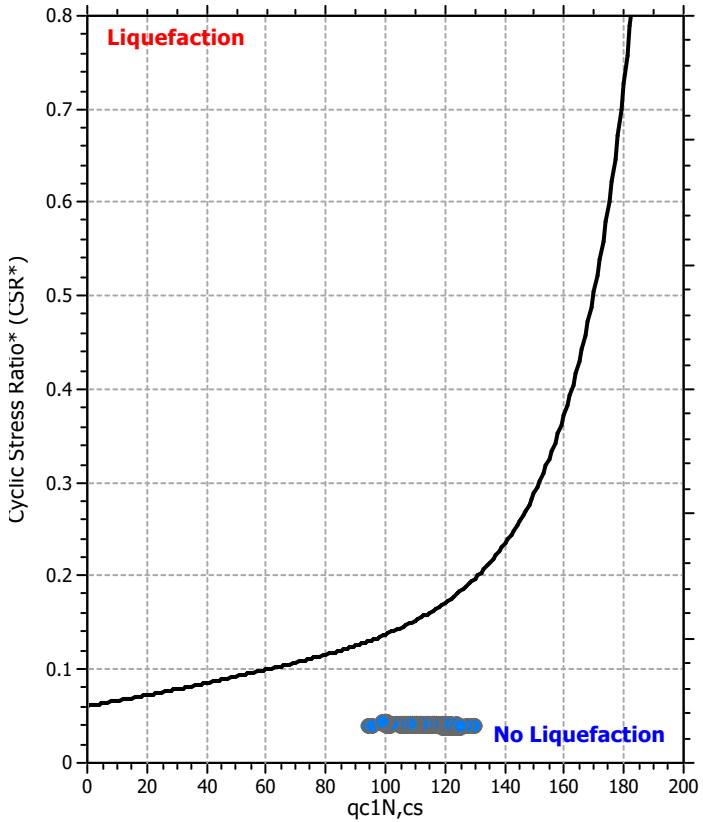
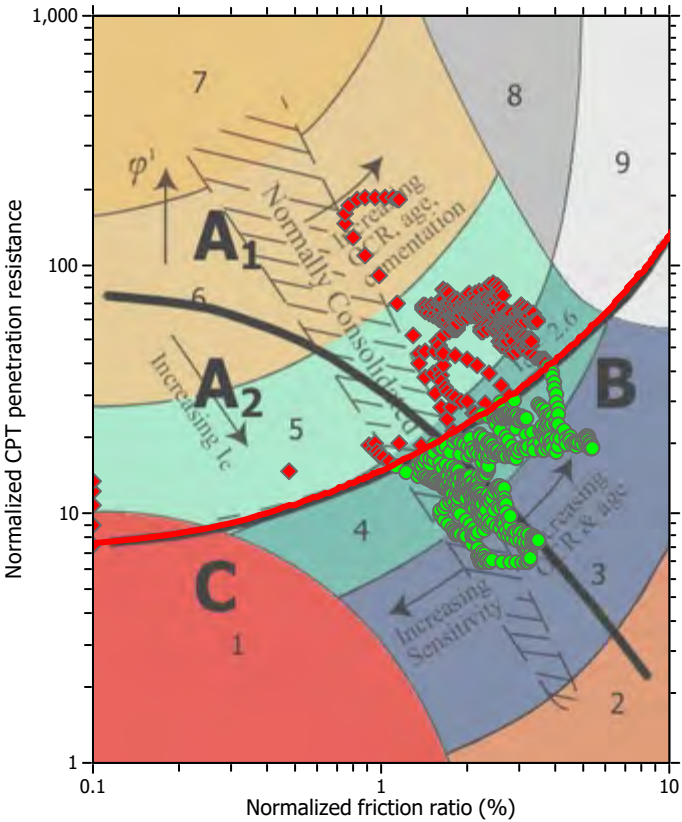


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



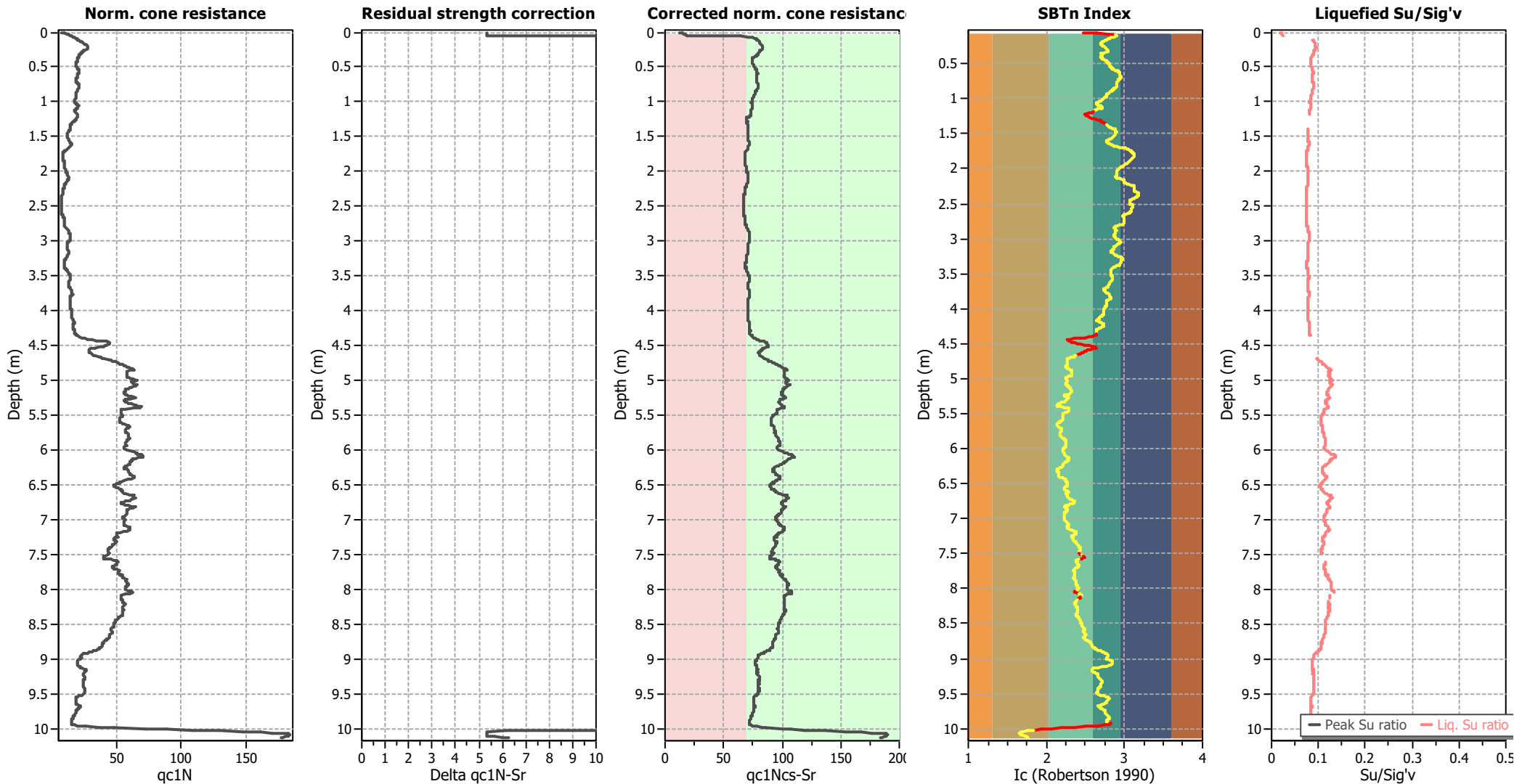
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

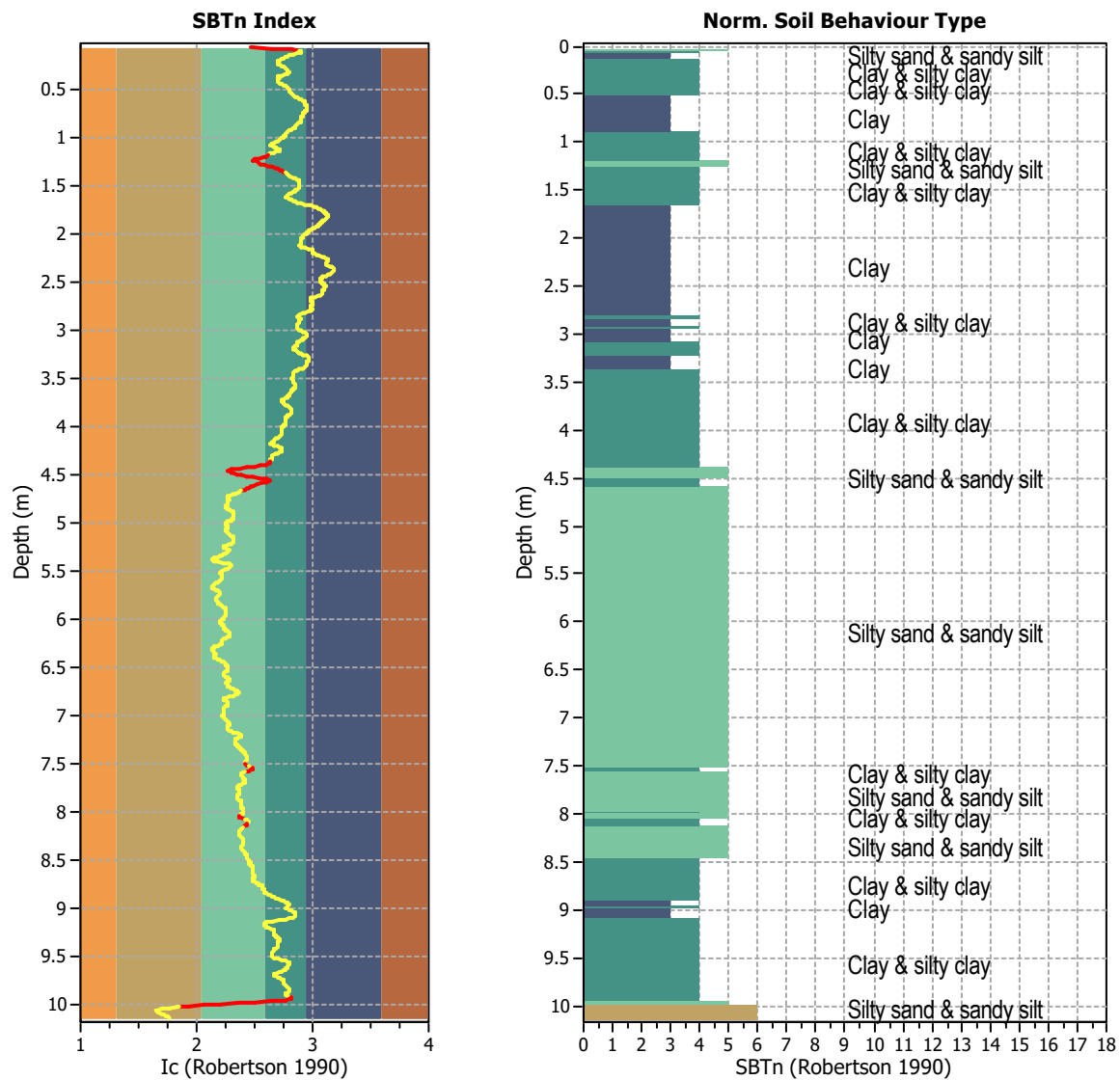
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



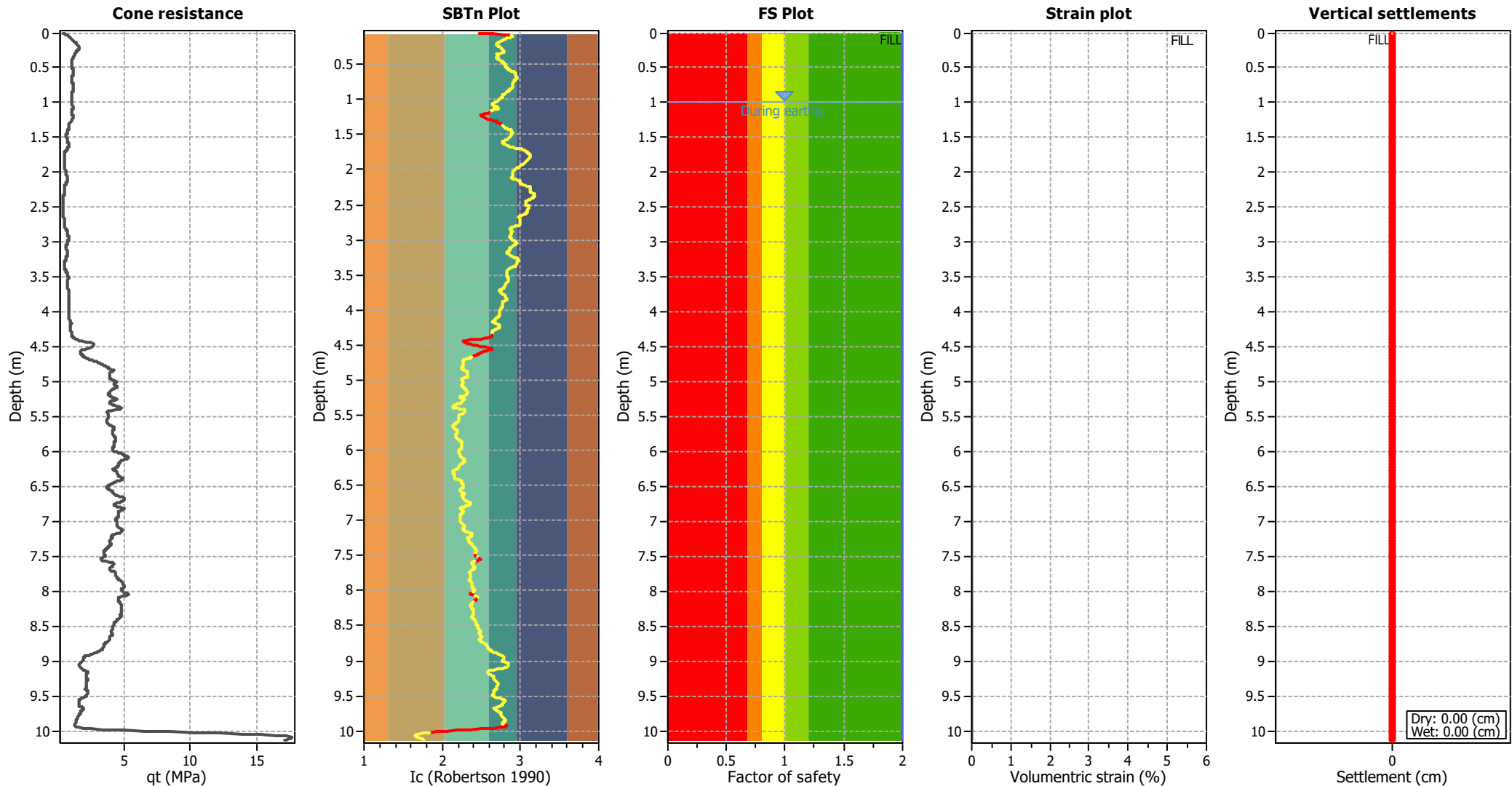
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1013
Total points excluded: 83
Exclusion percentage: 8.19%
Number of layers detected: 11

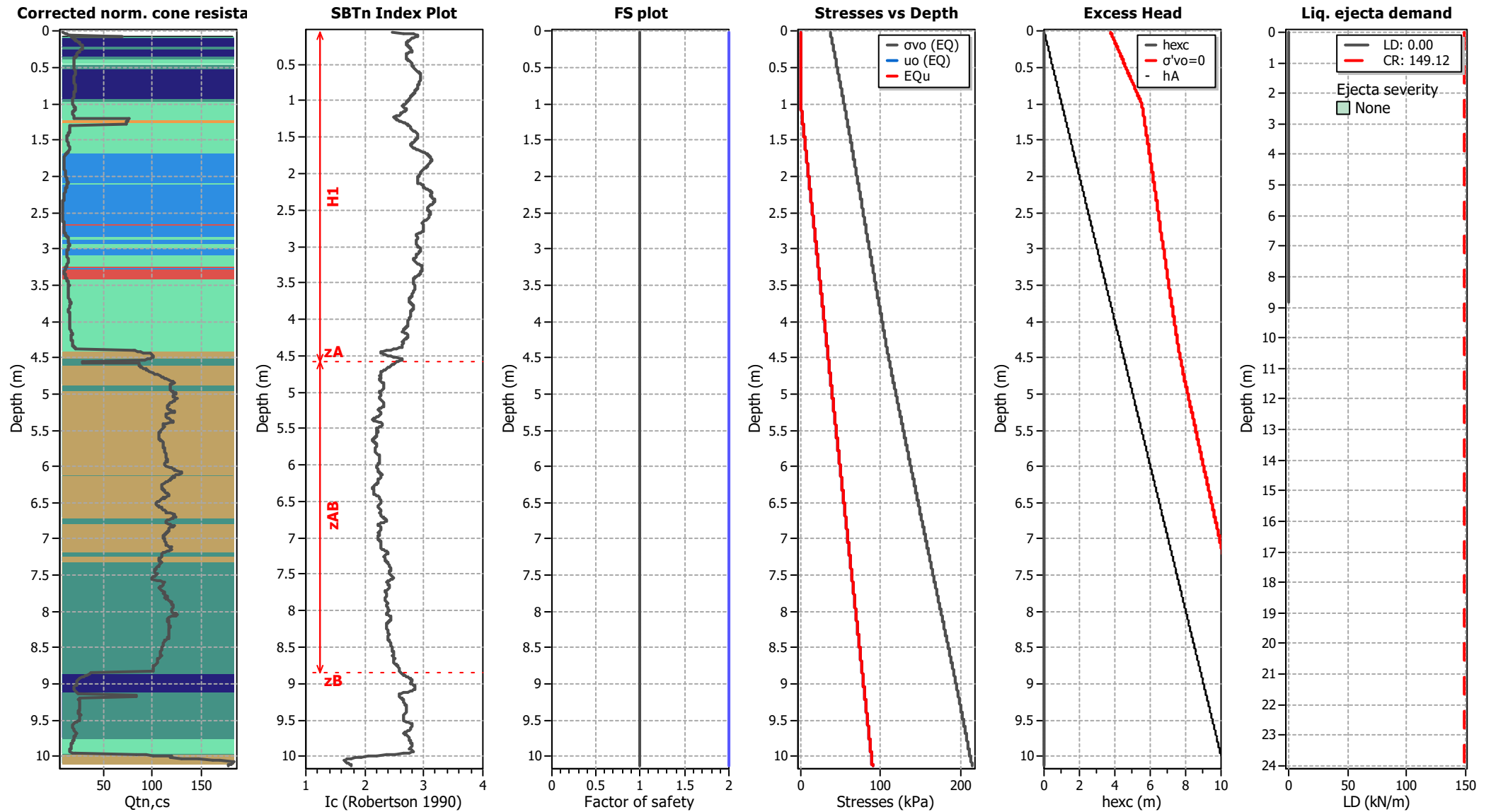
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

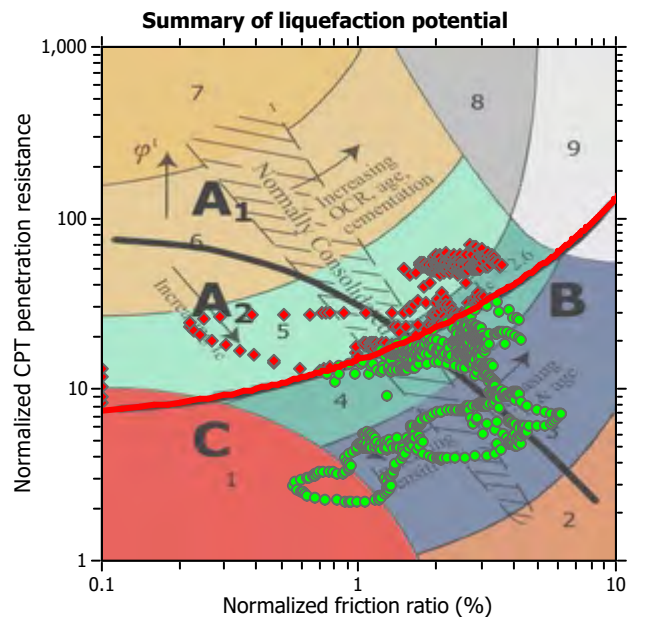
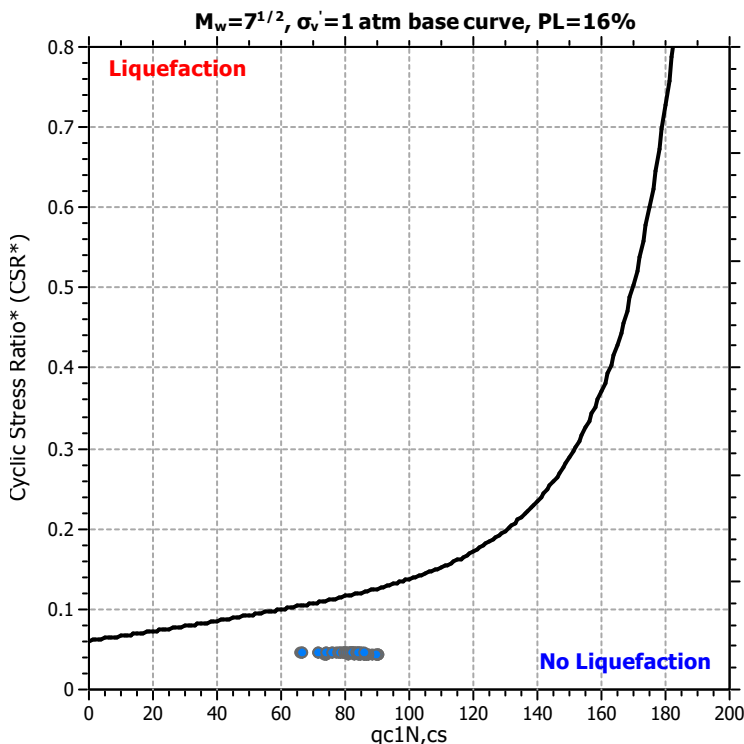
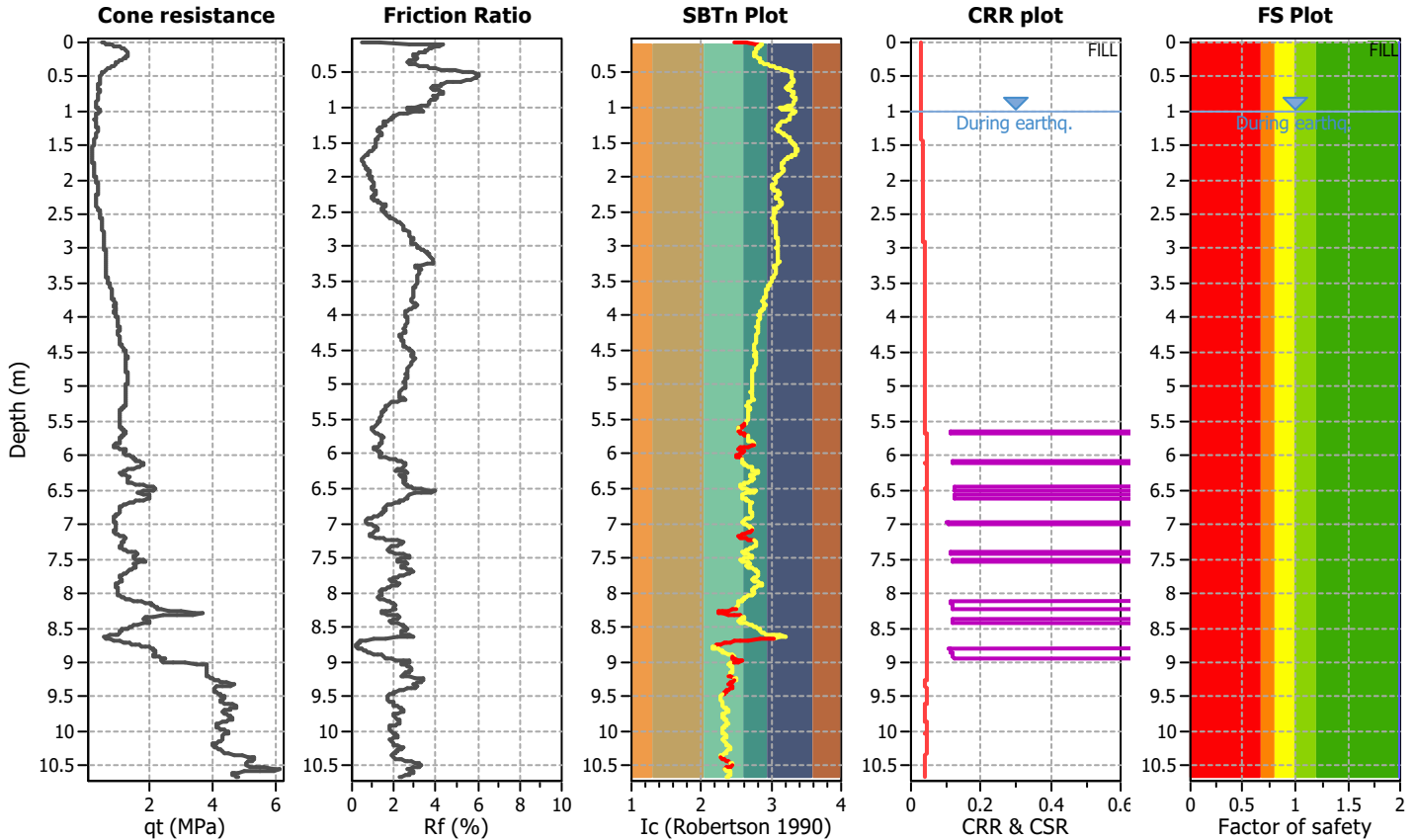
Project title : Sunfield Landholding

Location :

CPT file : CPT407

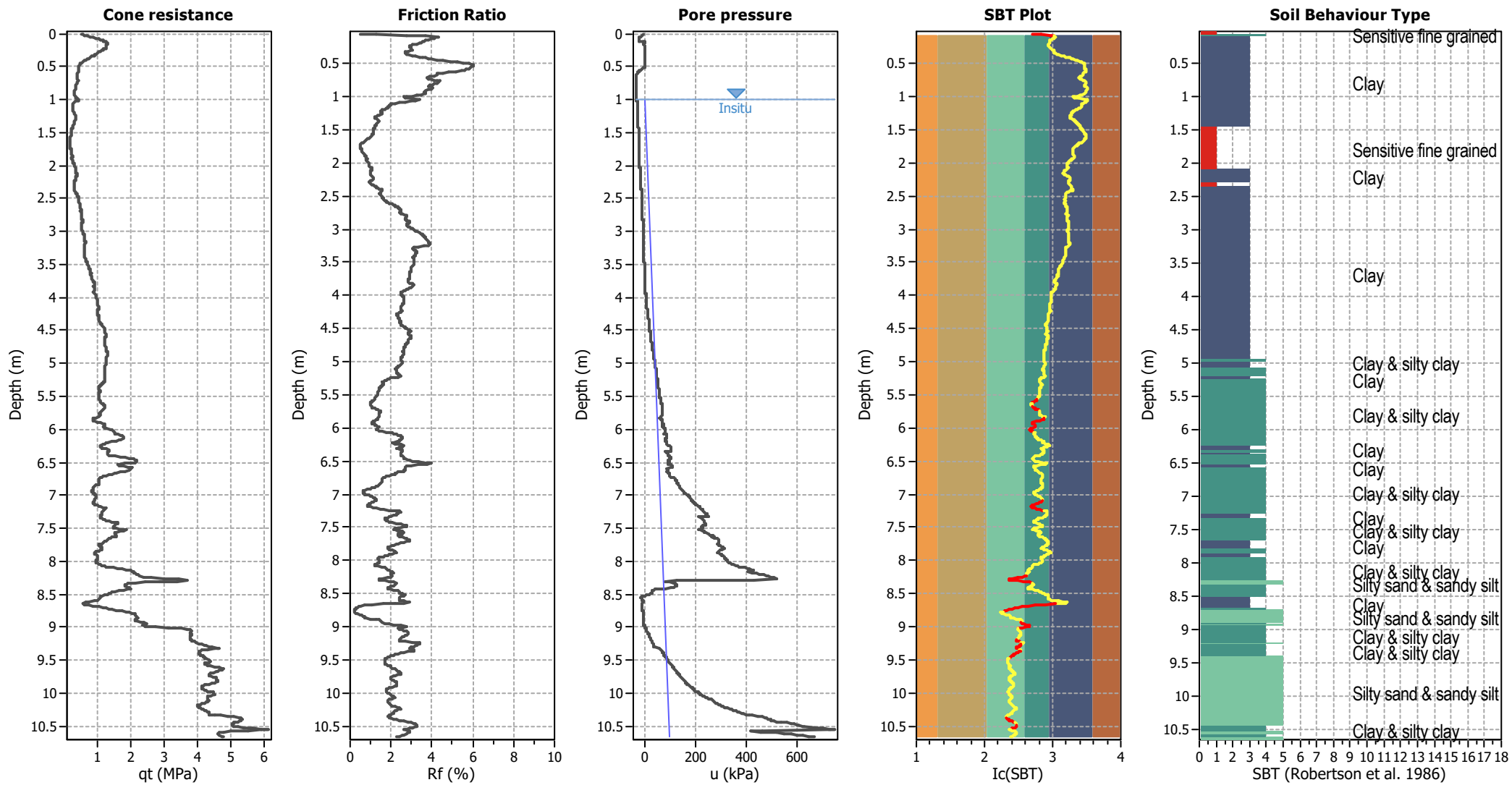
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

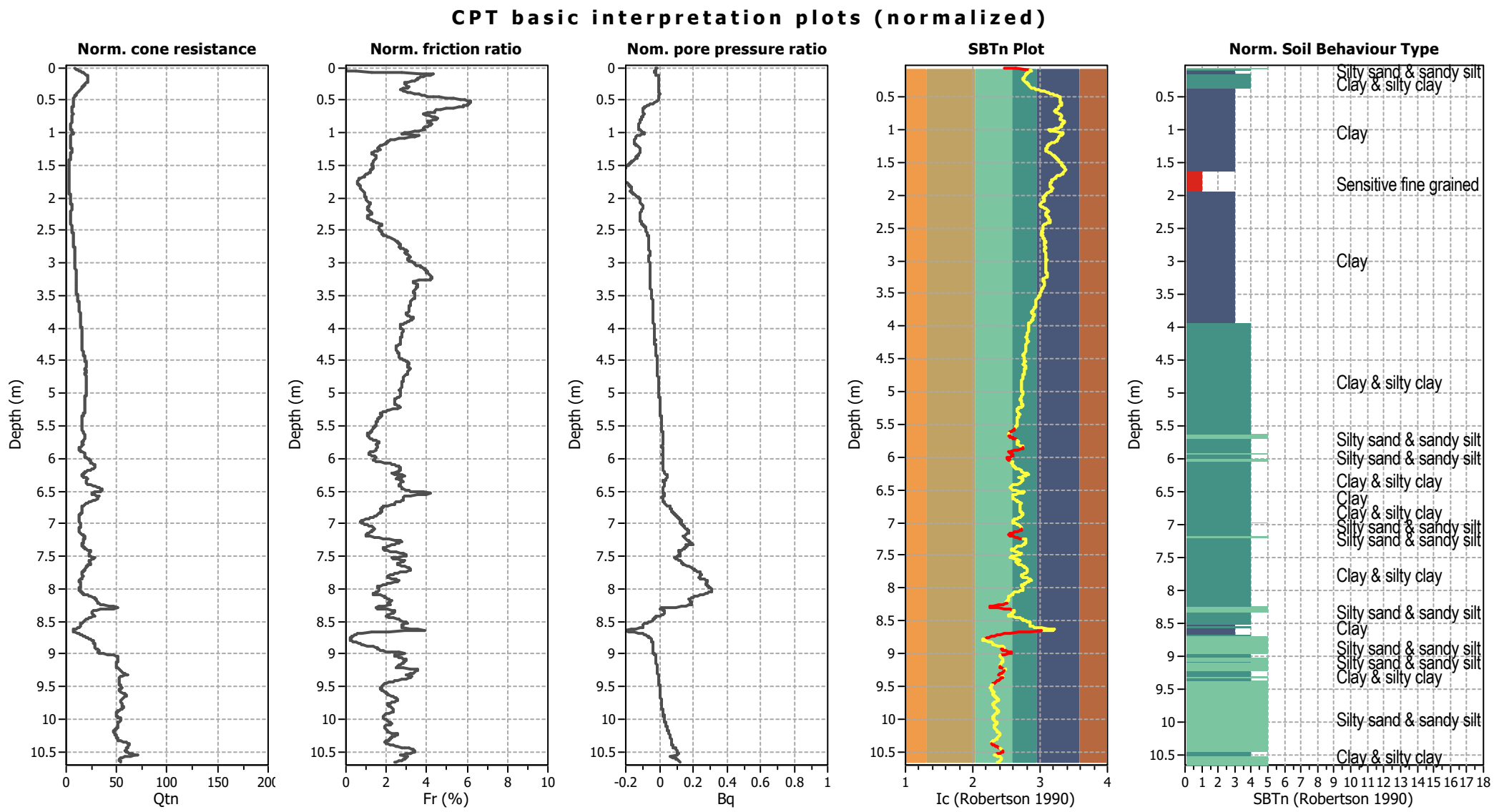


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

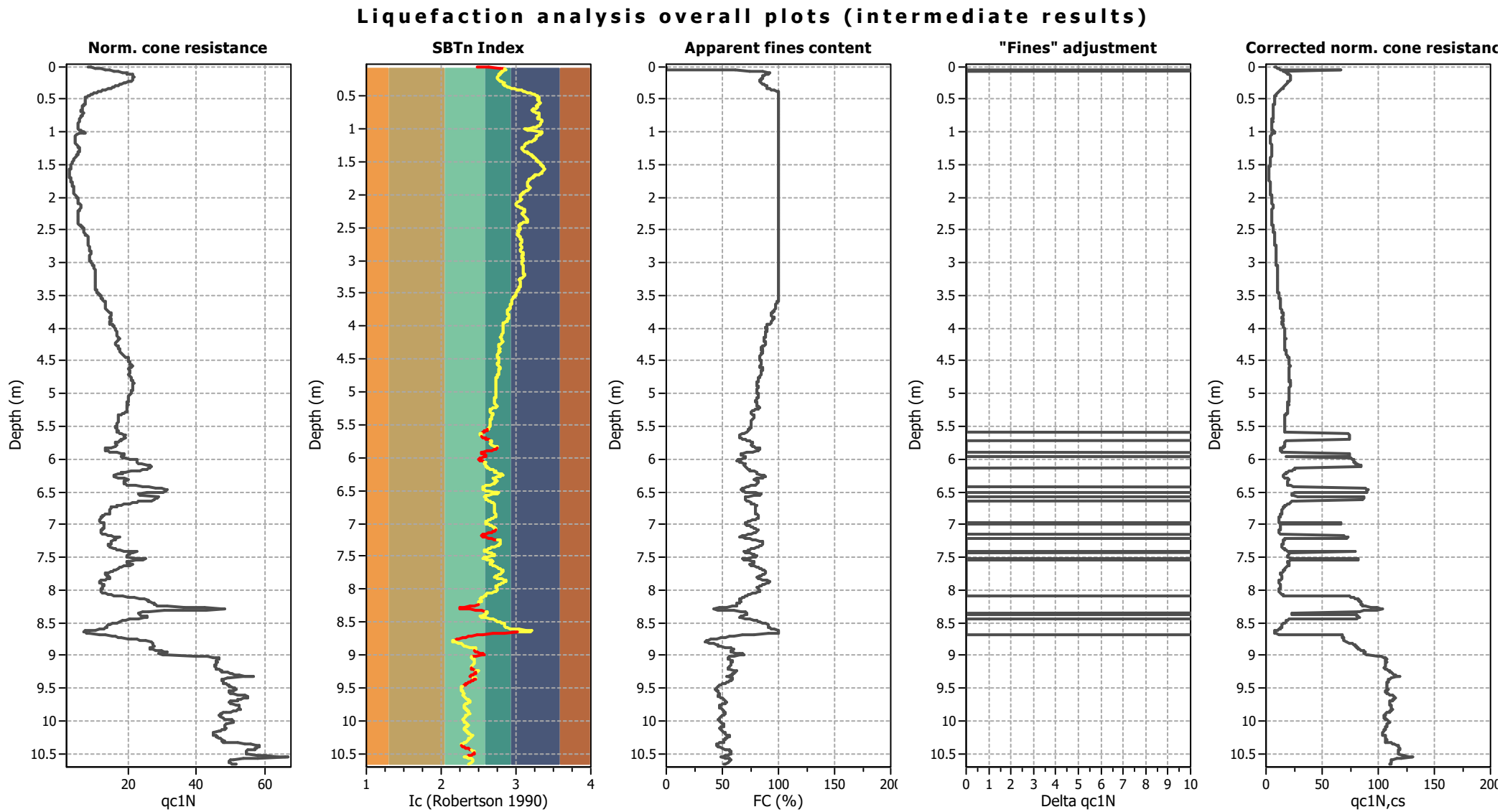
5. Silty sand to sandy silt

6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

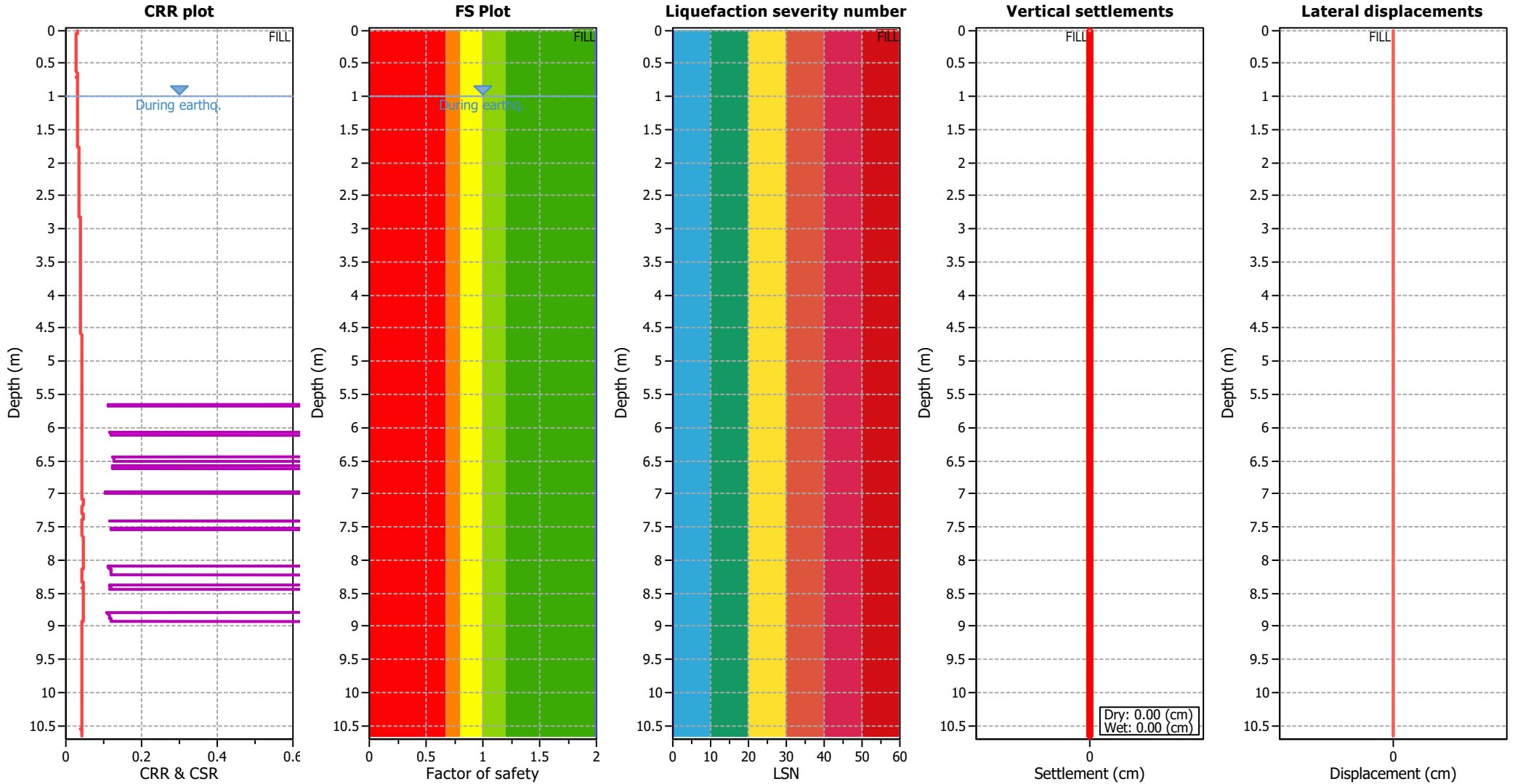
9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

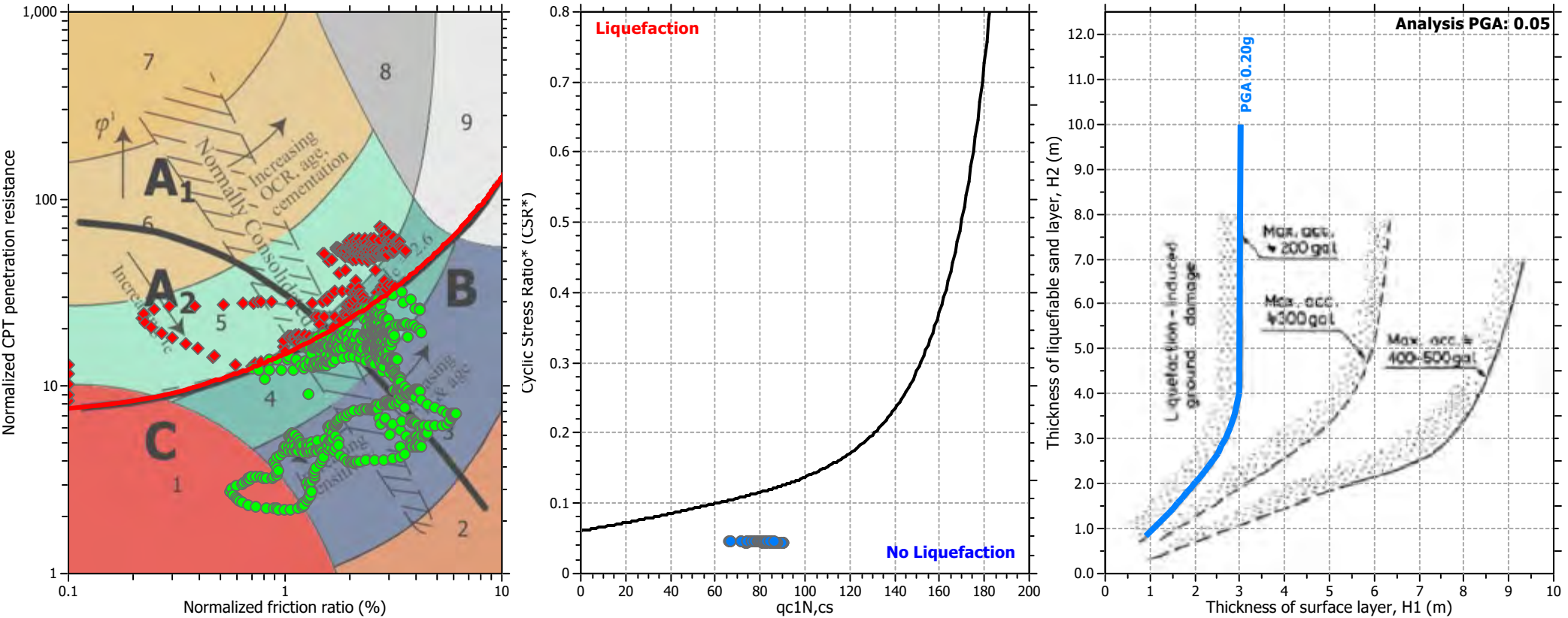
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

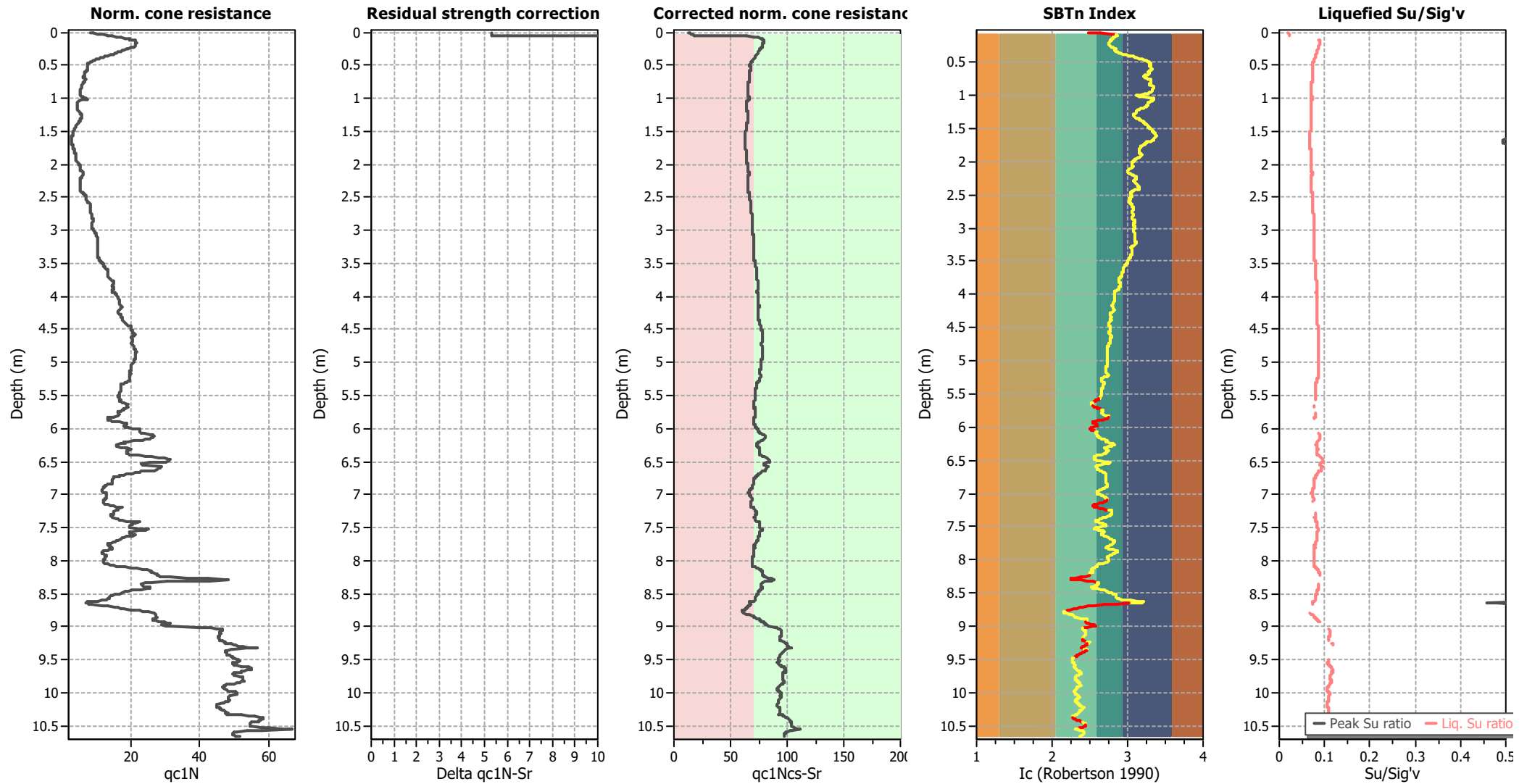
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

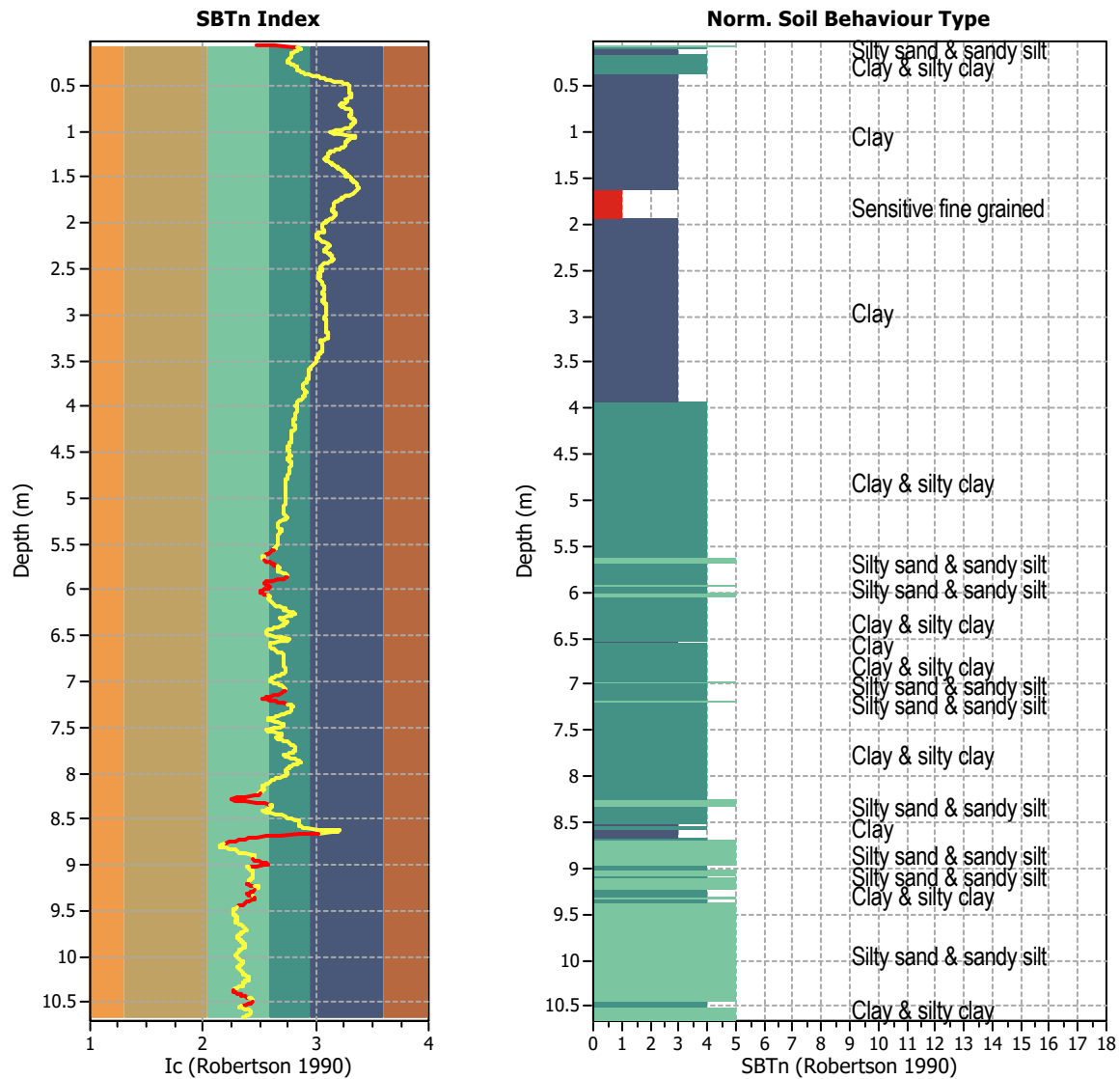
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

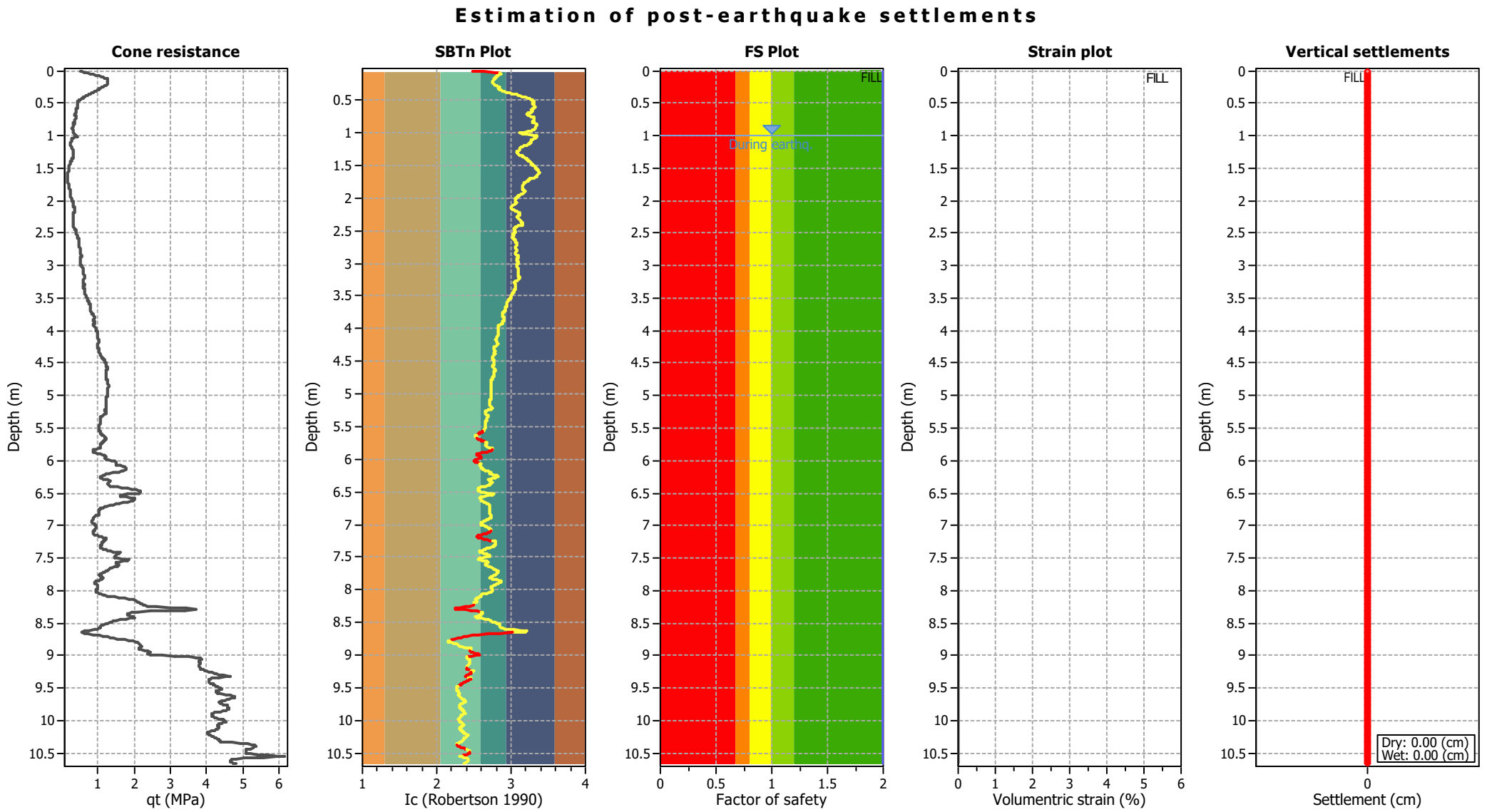


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

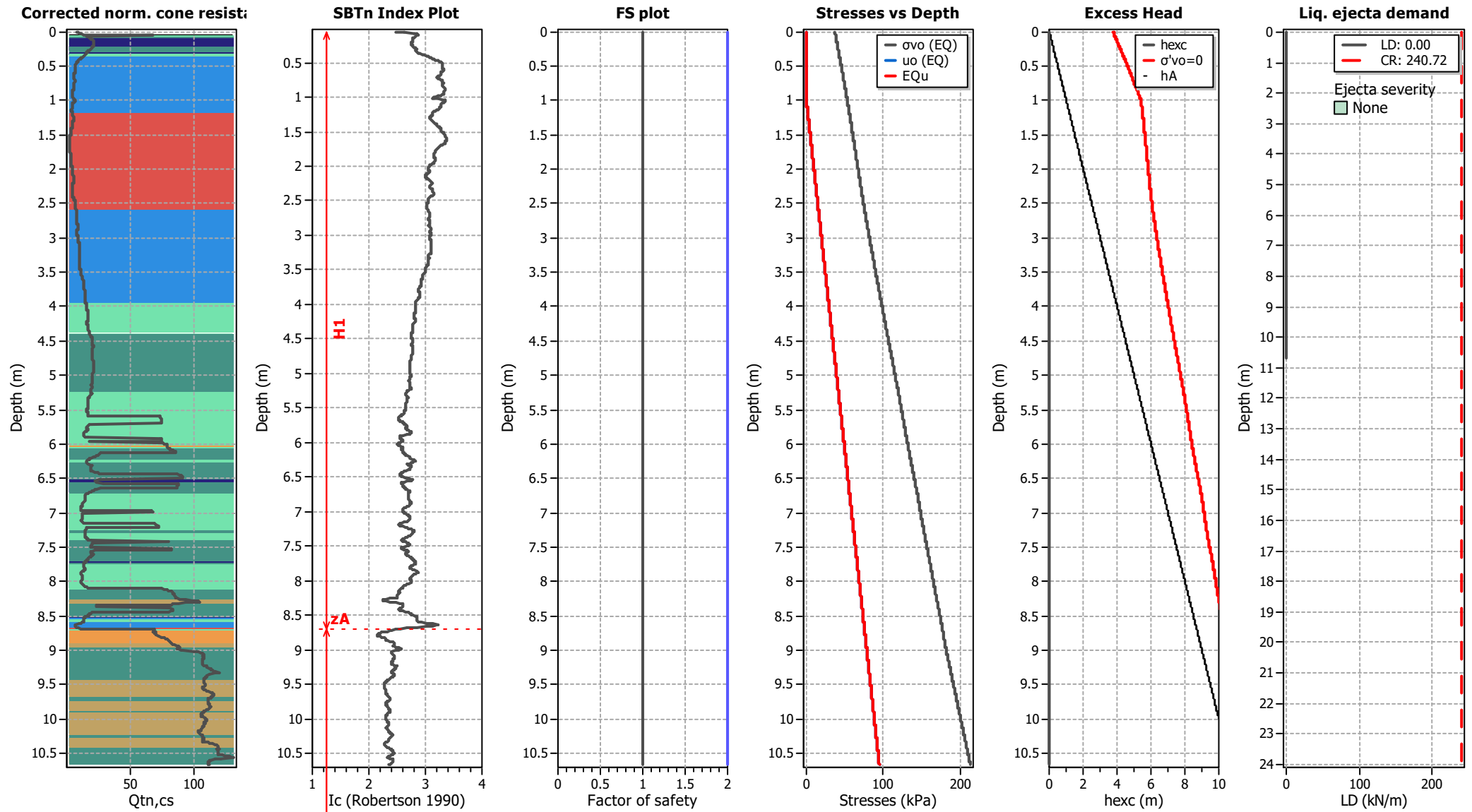
Total points in CPT file: 1066
Total points excluded: 131
Exclusion percentage: 12.29%
Number of layers detected: 20



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

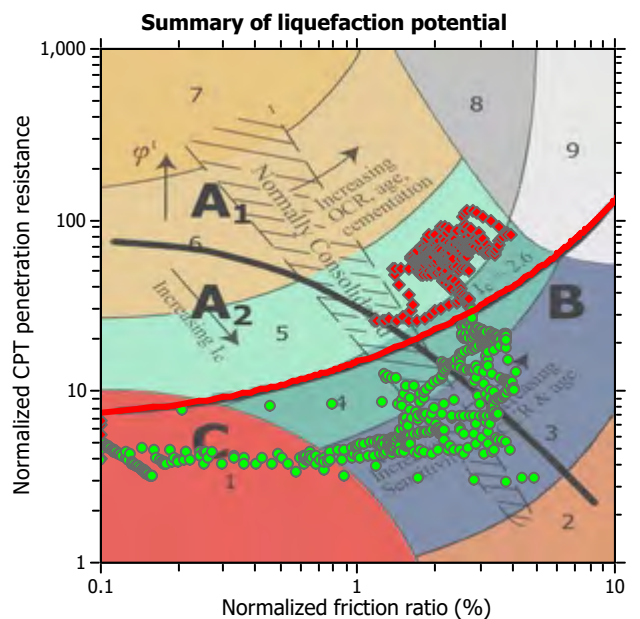
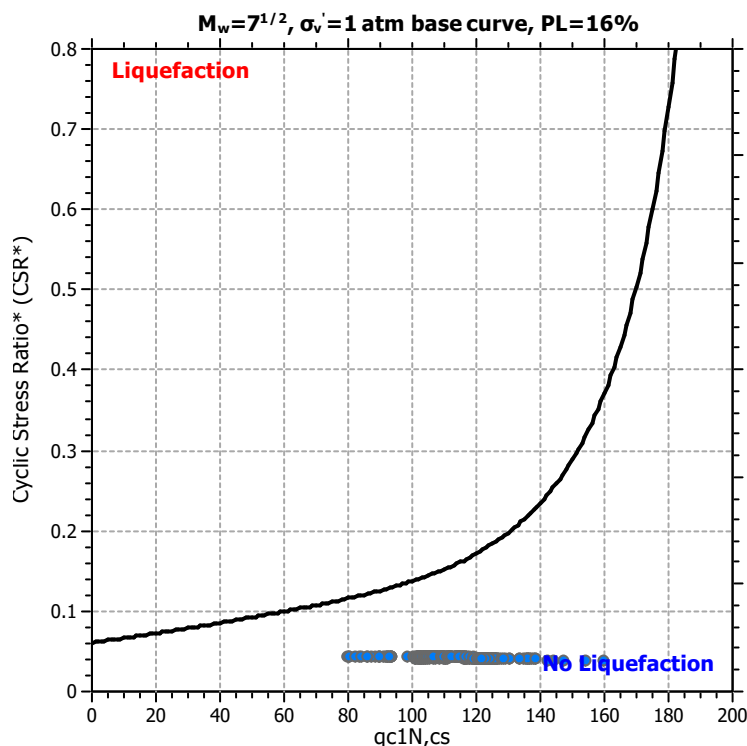
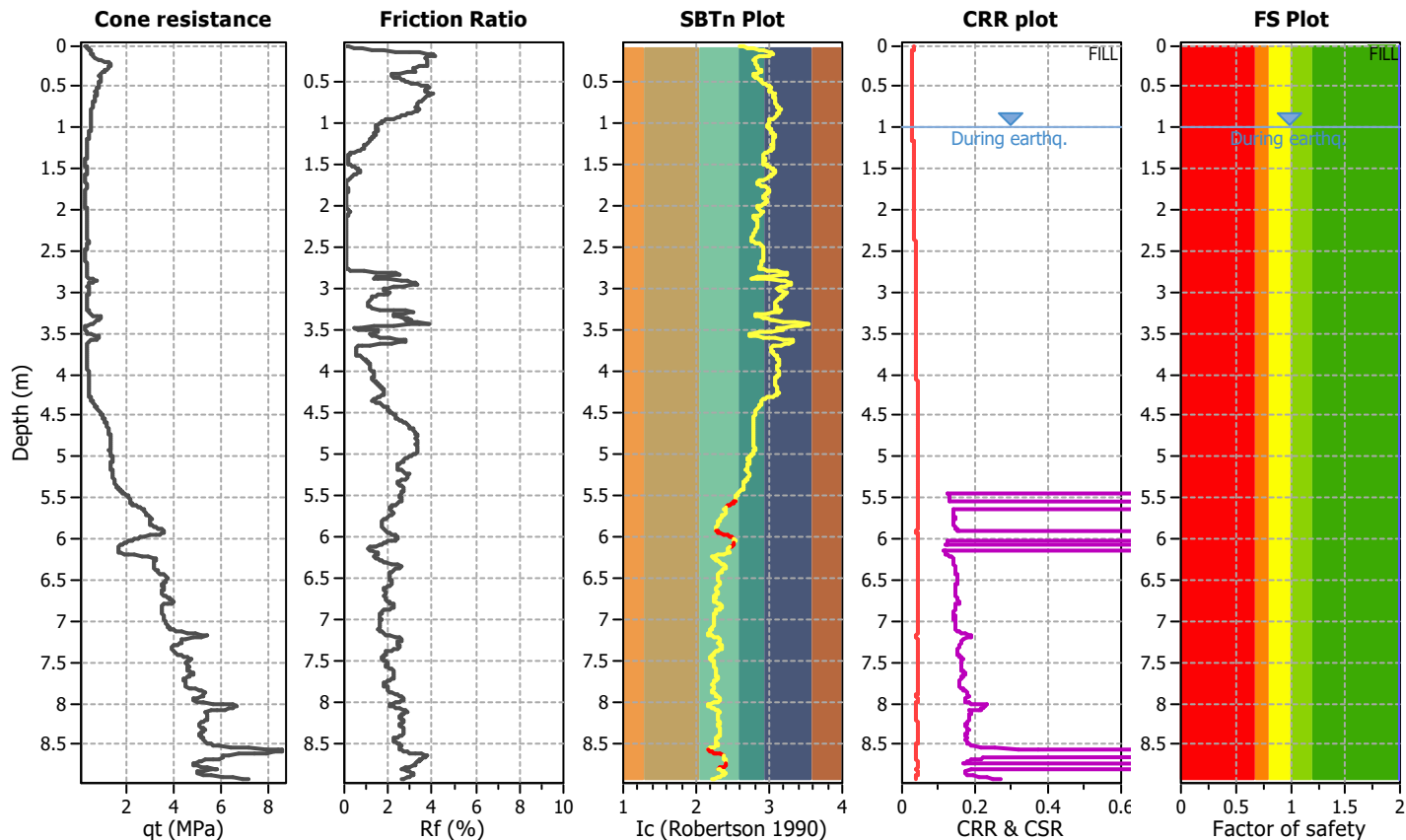
Project title : Sunfield Landholding

Location :

CPT file : CPT408

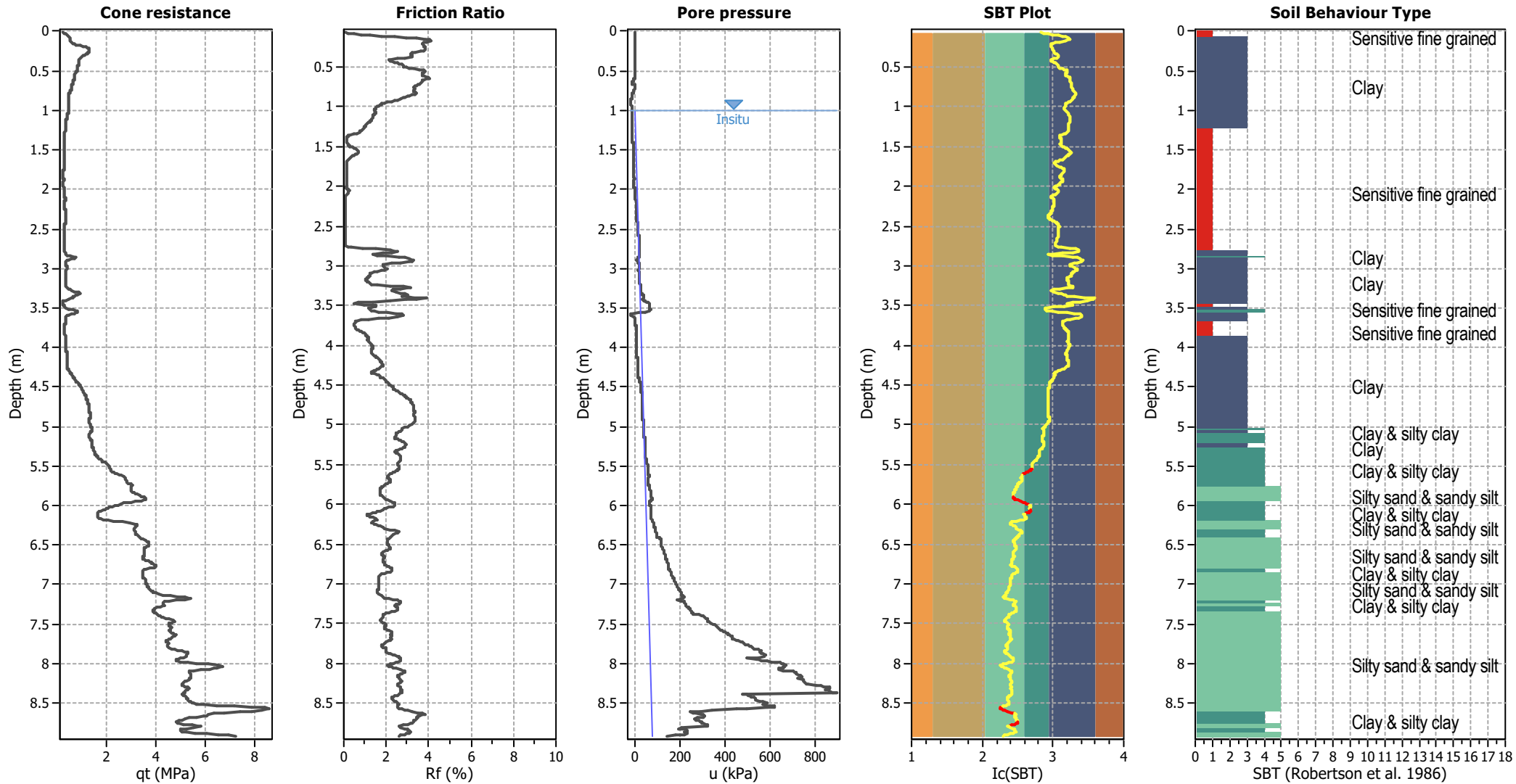
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

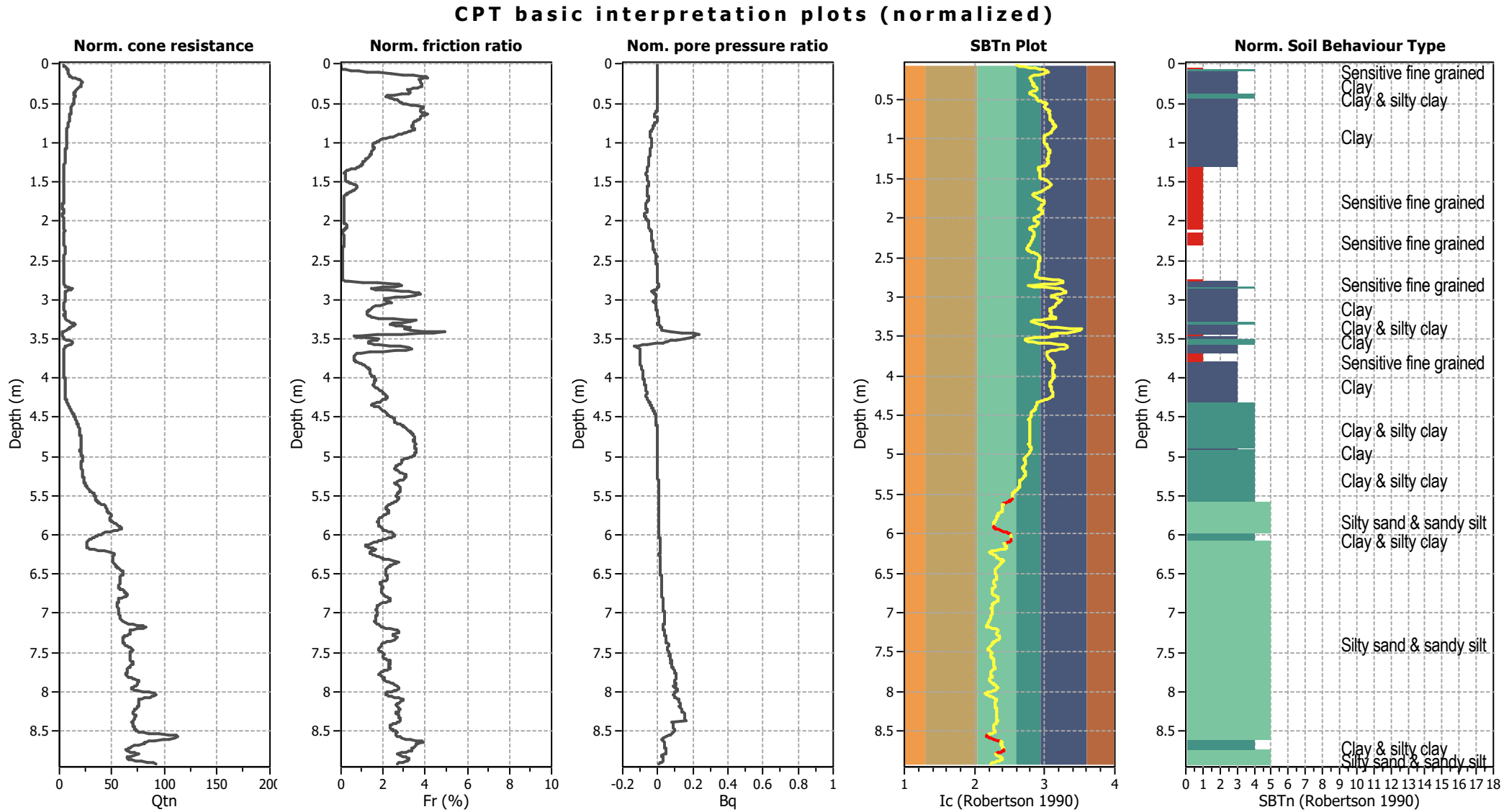


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

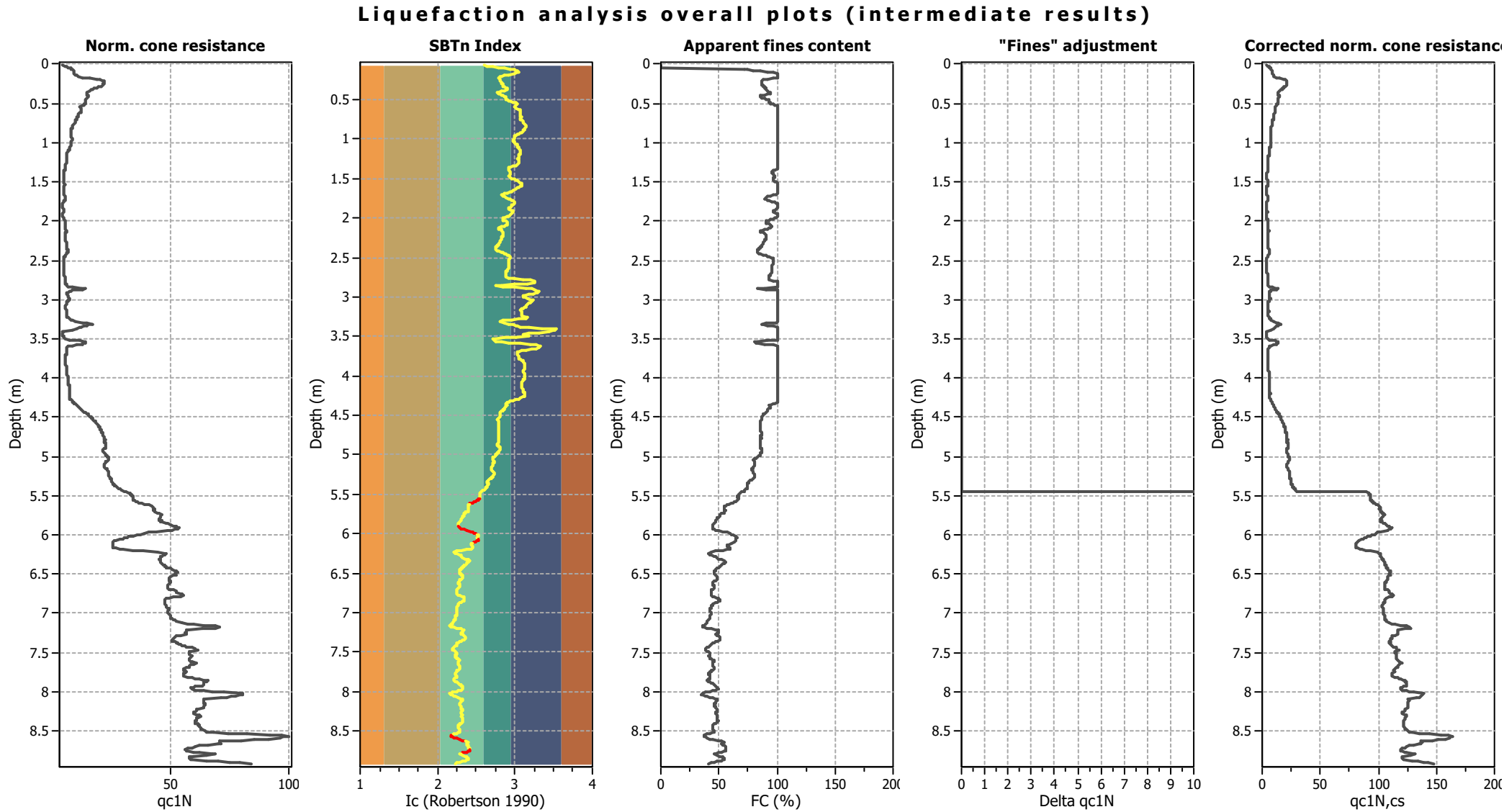
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



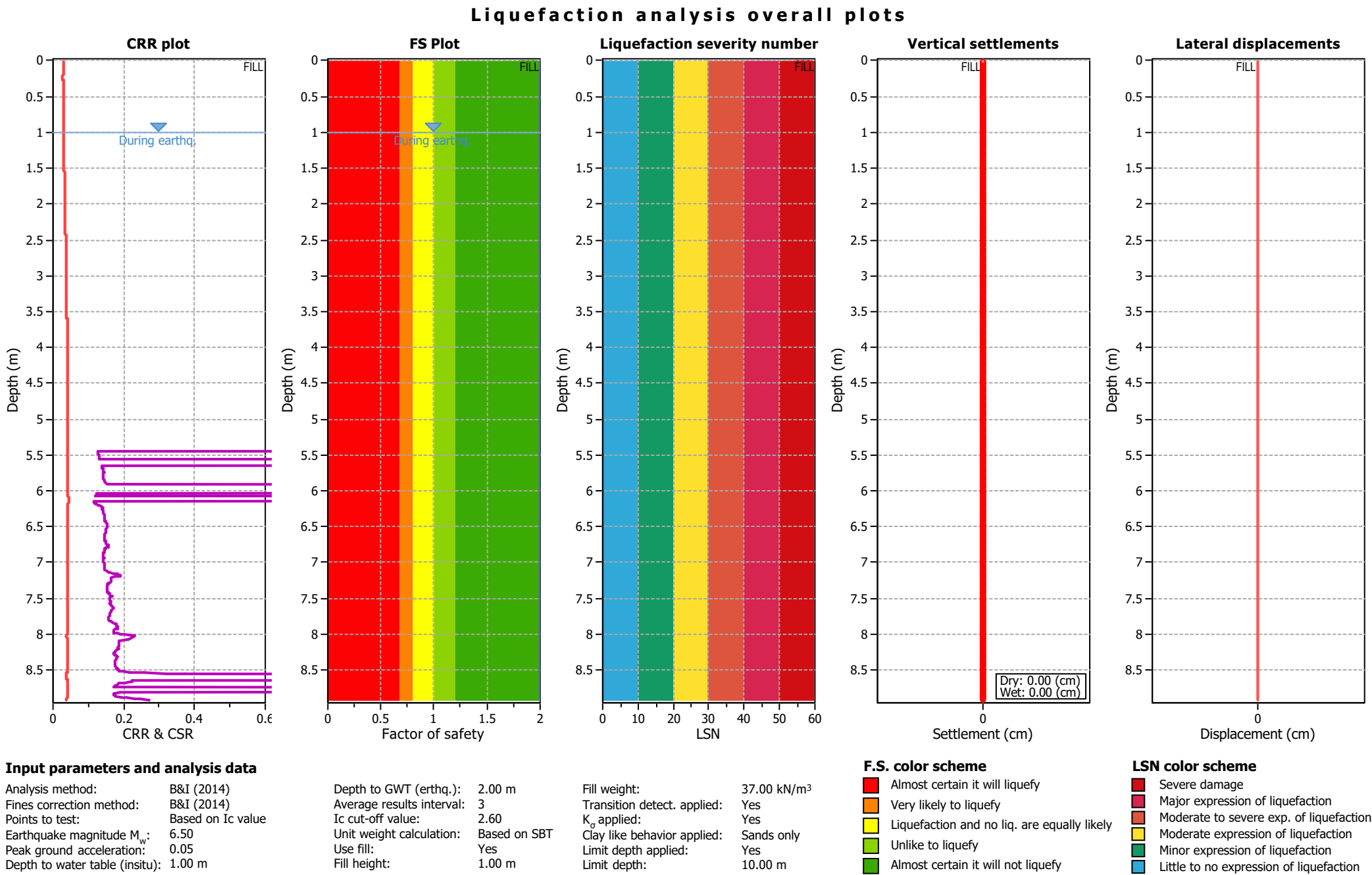
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³	SBTn legend					
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes		1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes		2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only		3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes						
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m						

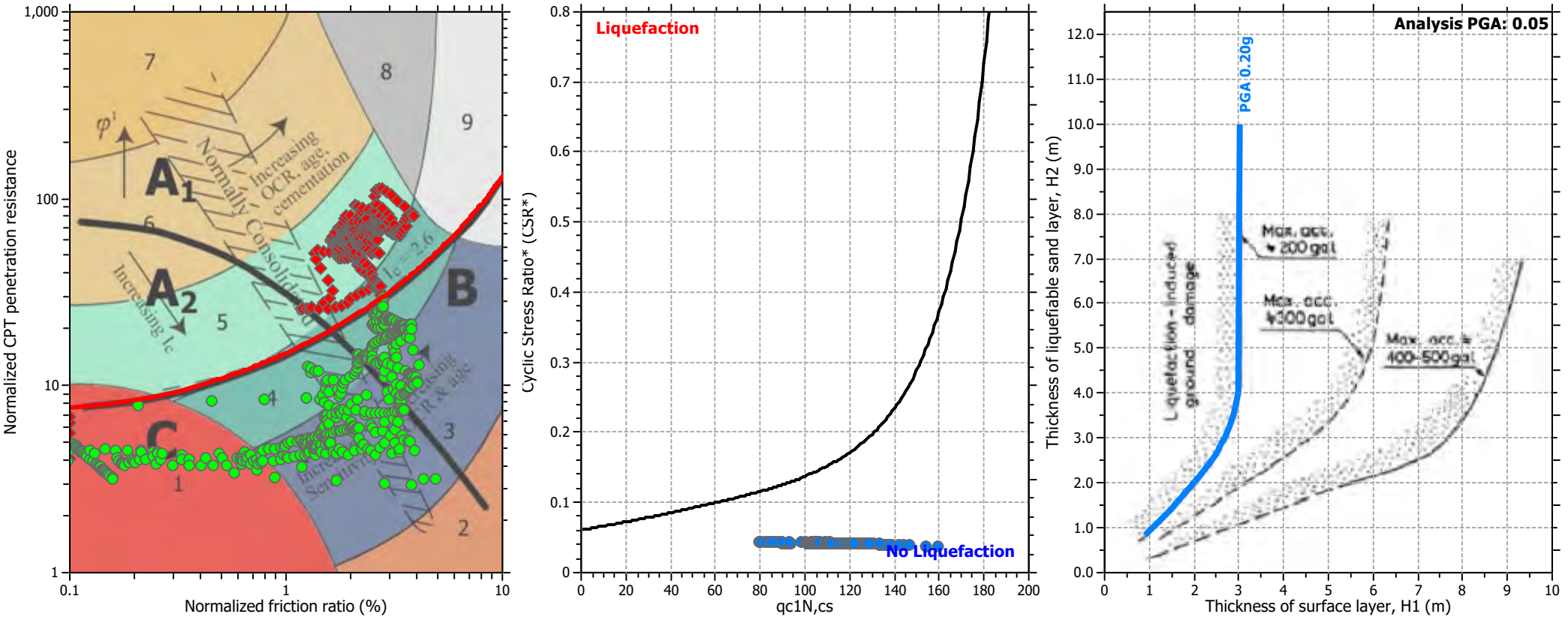


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



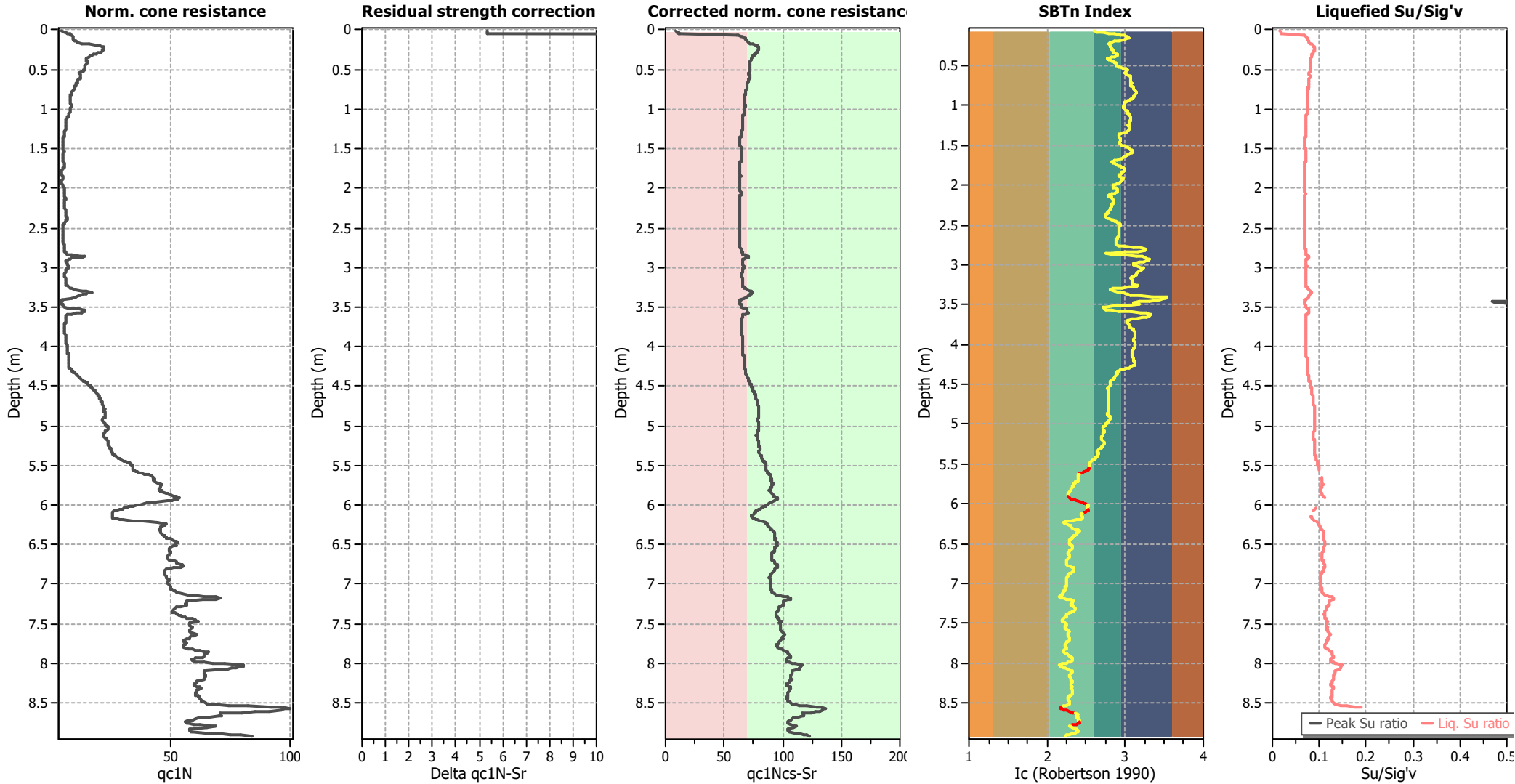
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

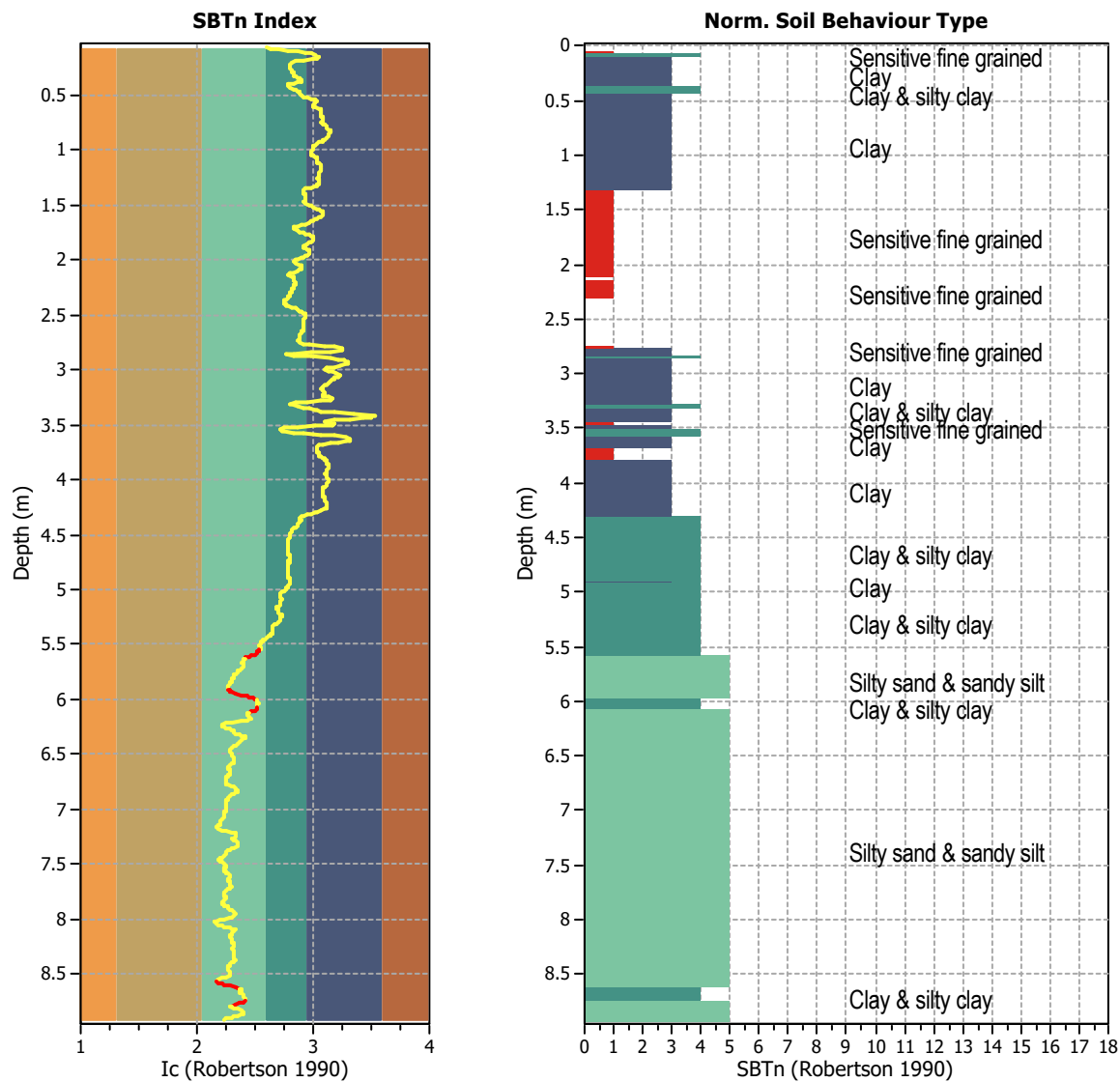
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

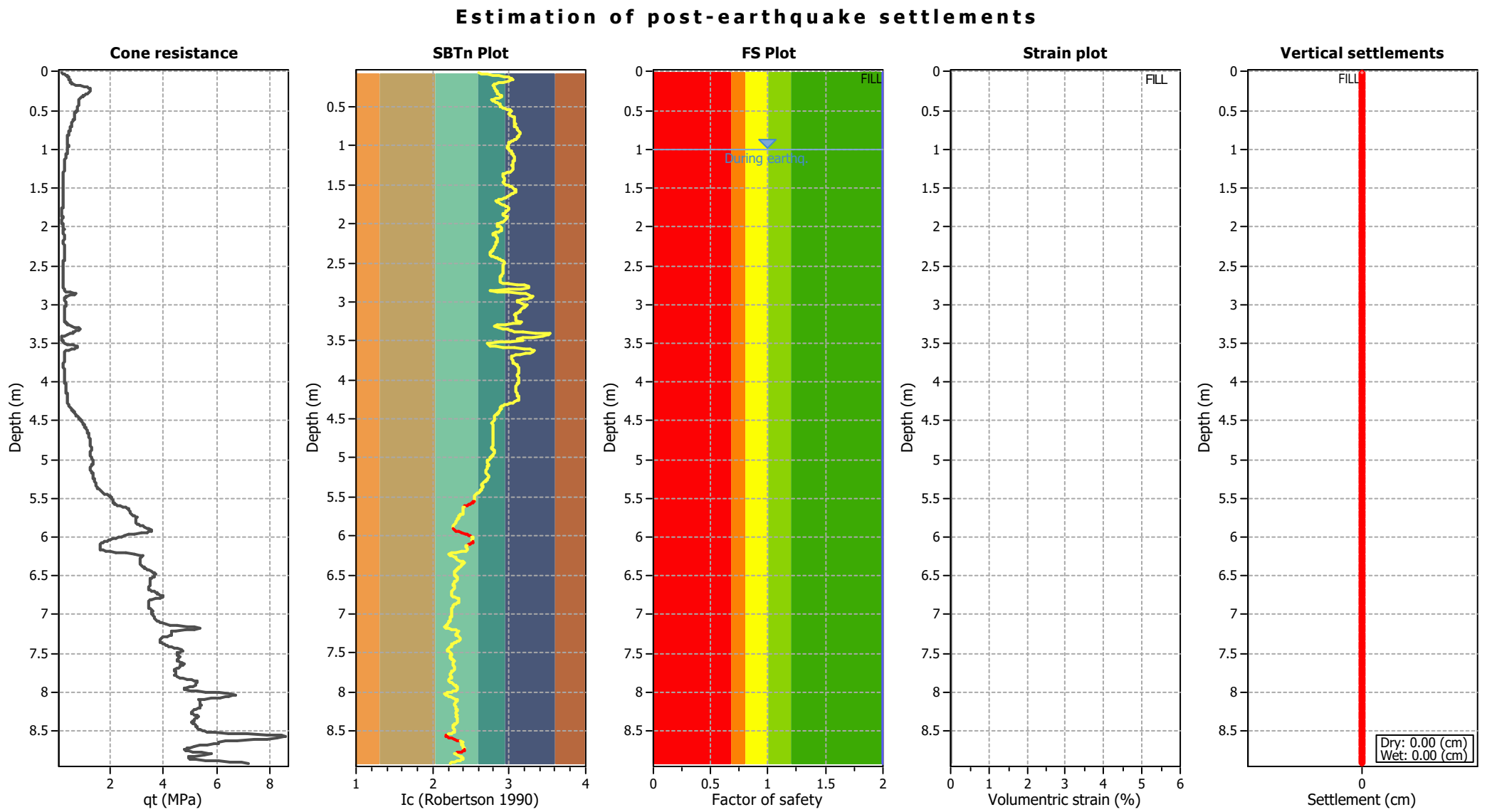


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

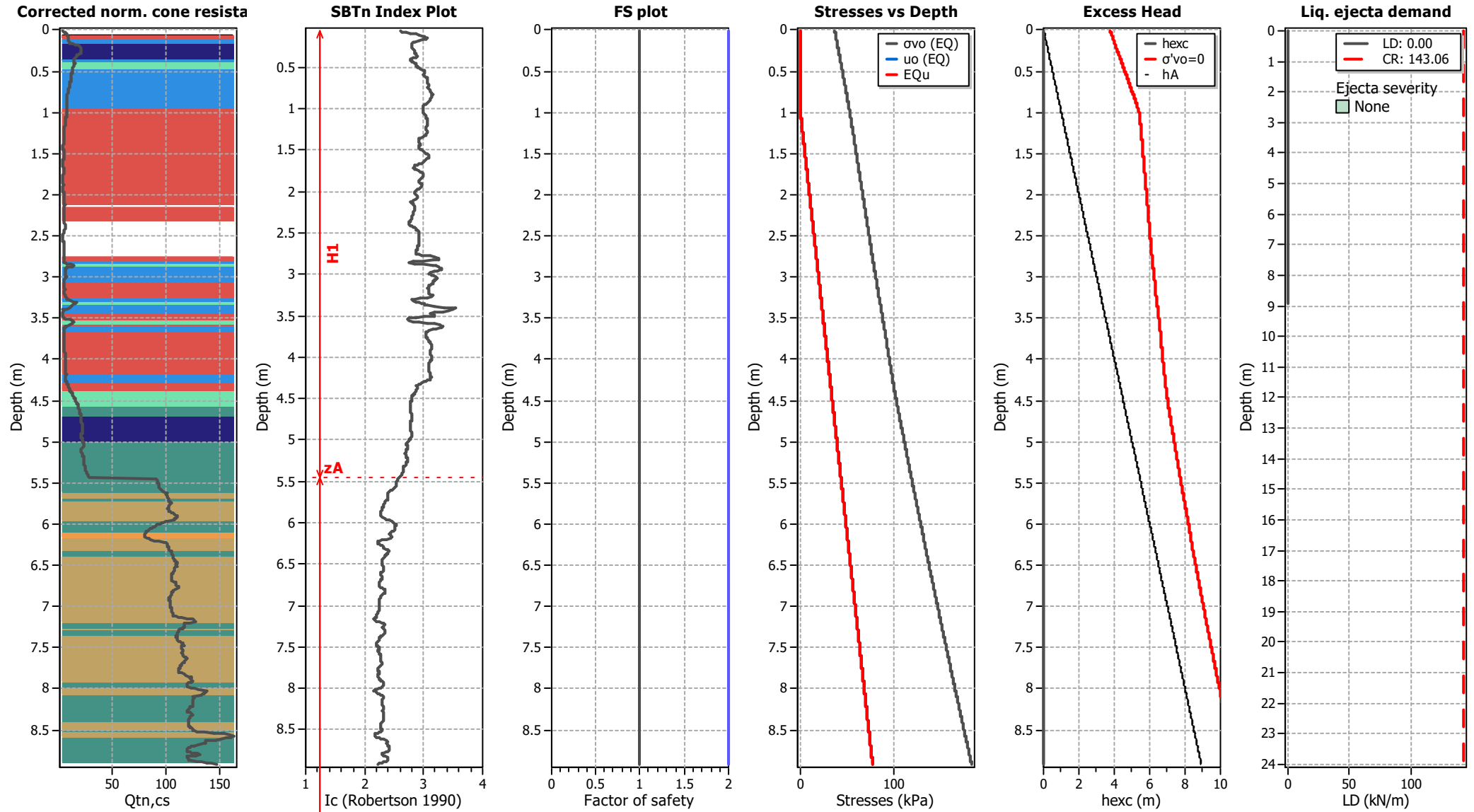
Total points in CPT file: 892
Total points excluded: 40
Exclusion percentage: 4.48%
Number of layers detected: 5



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

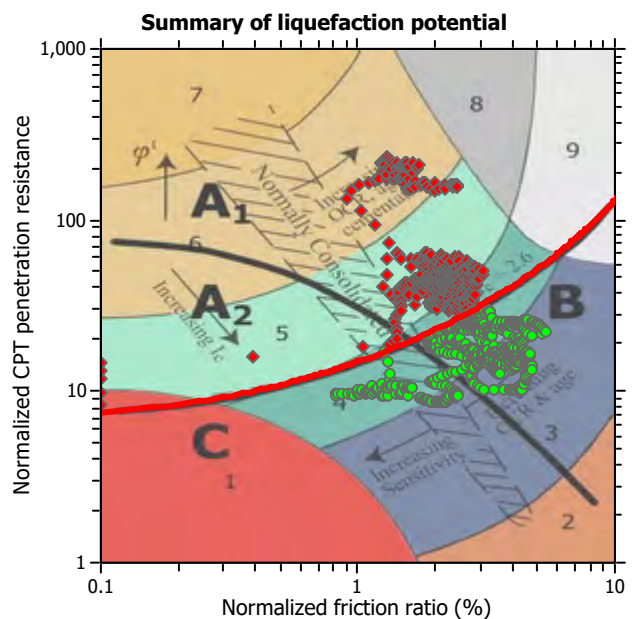
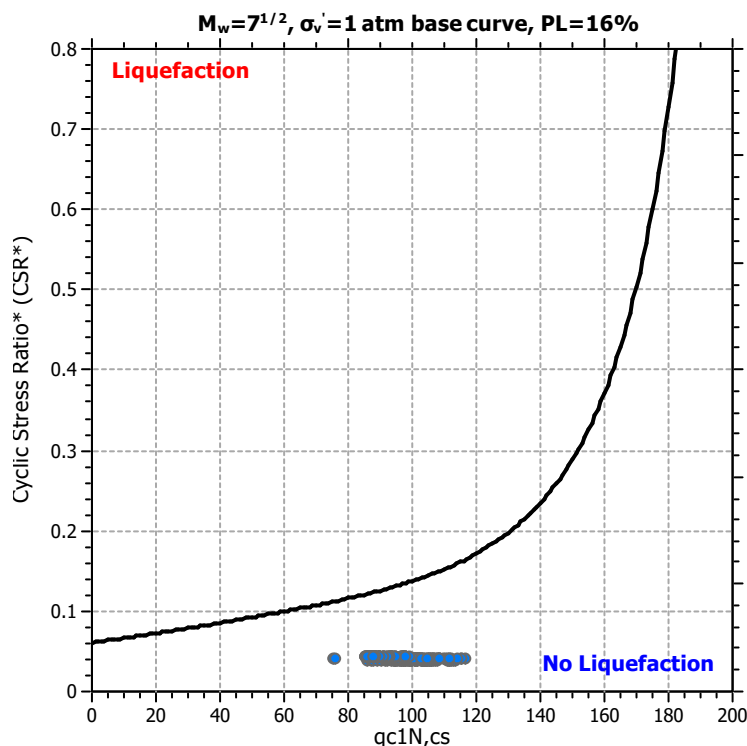
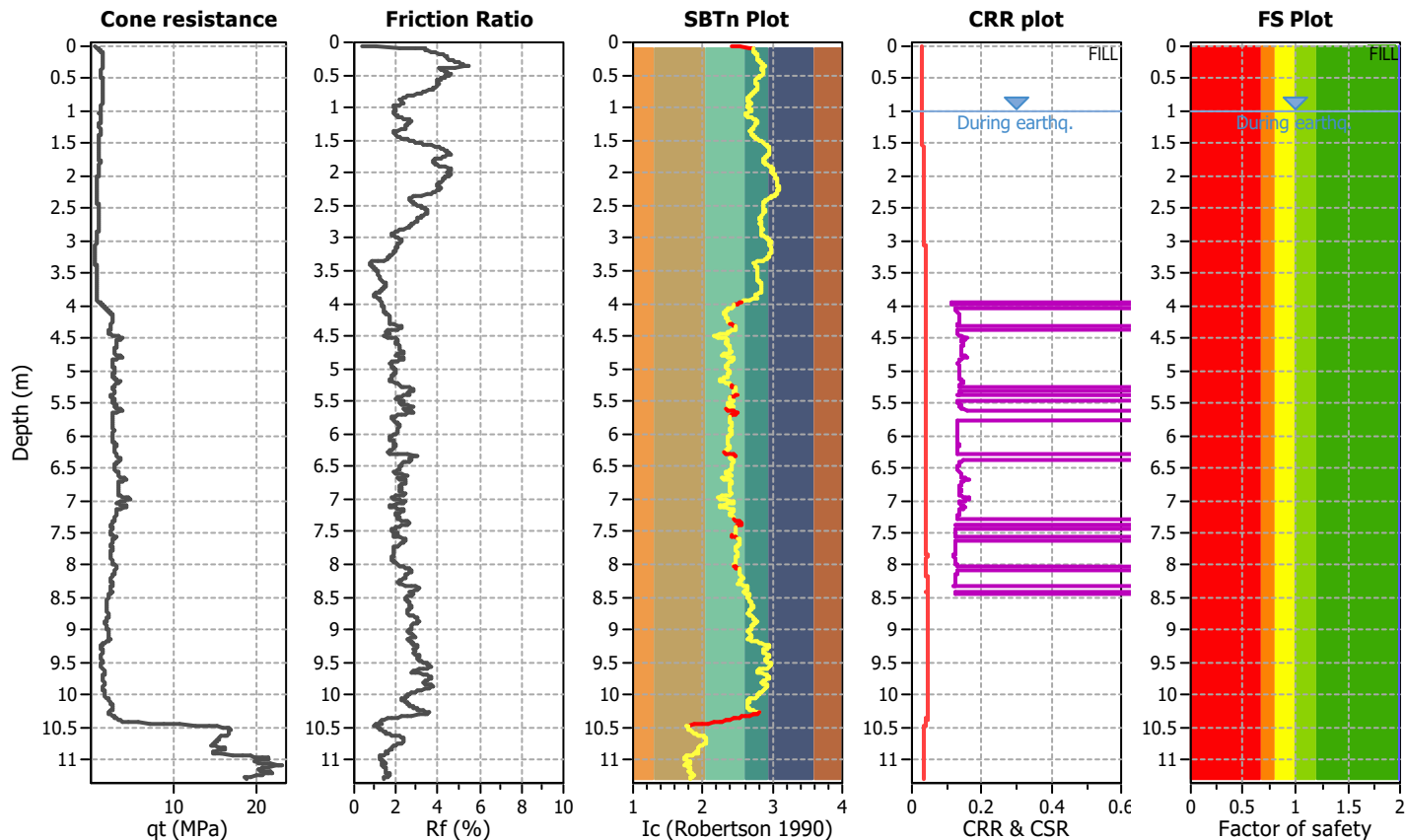
Project title : Sunfield Landholding

Location :

CPT file : CPT409

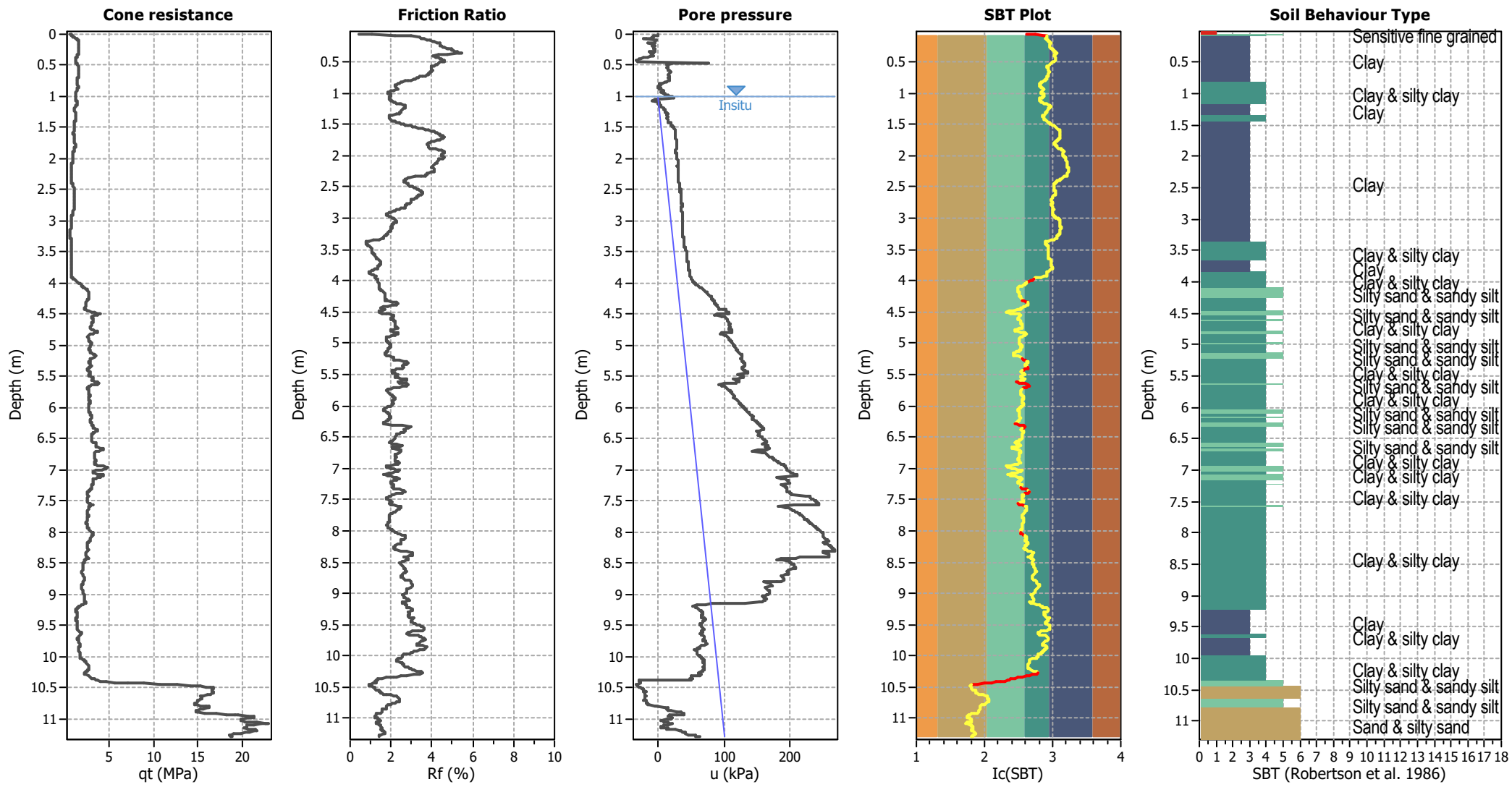
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

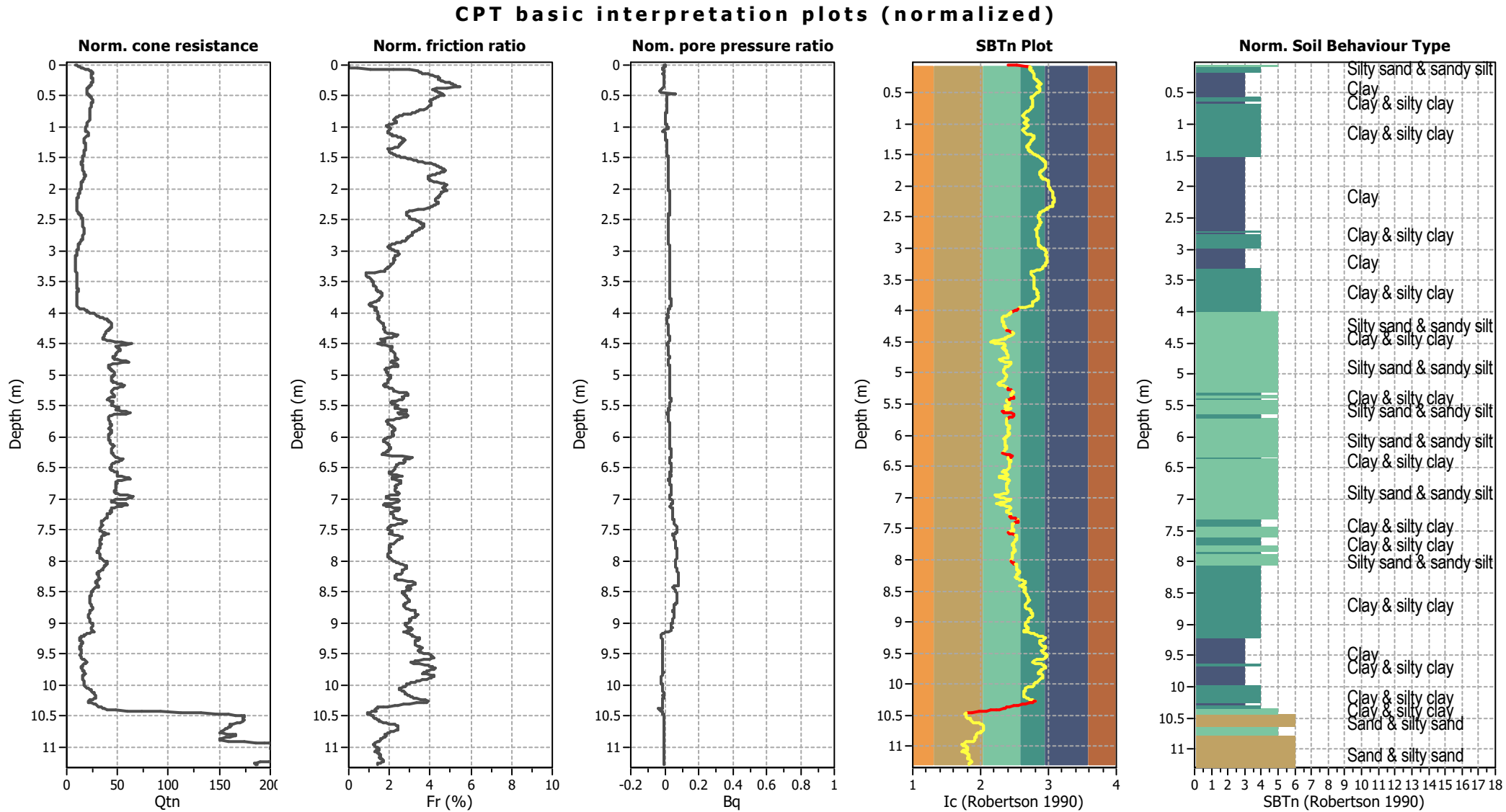
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

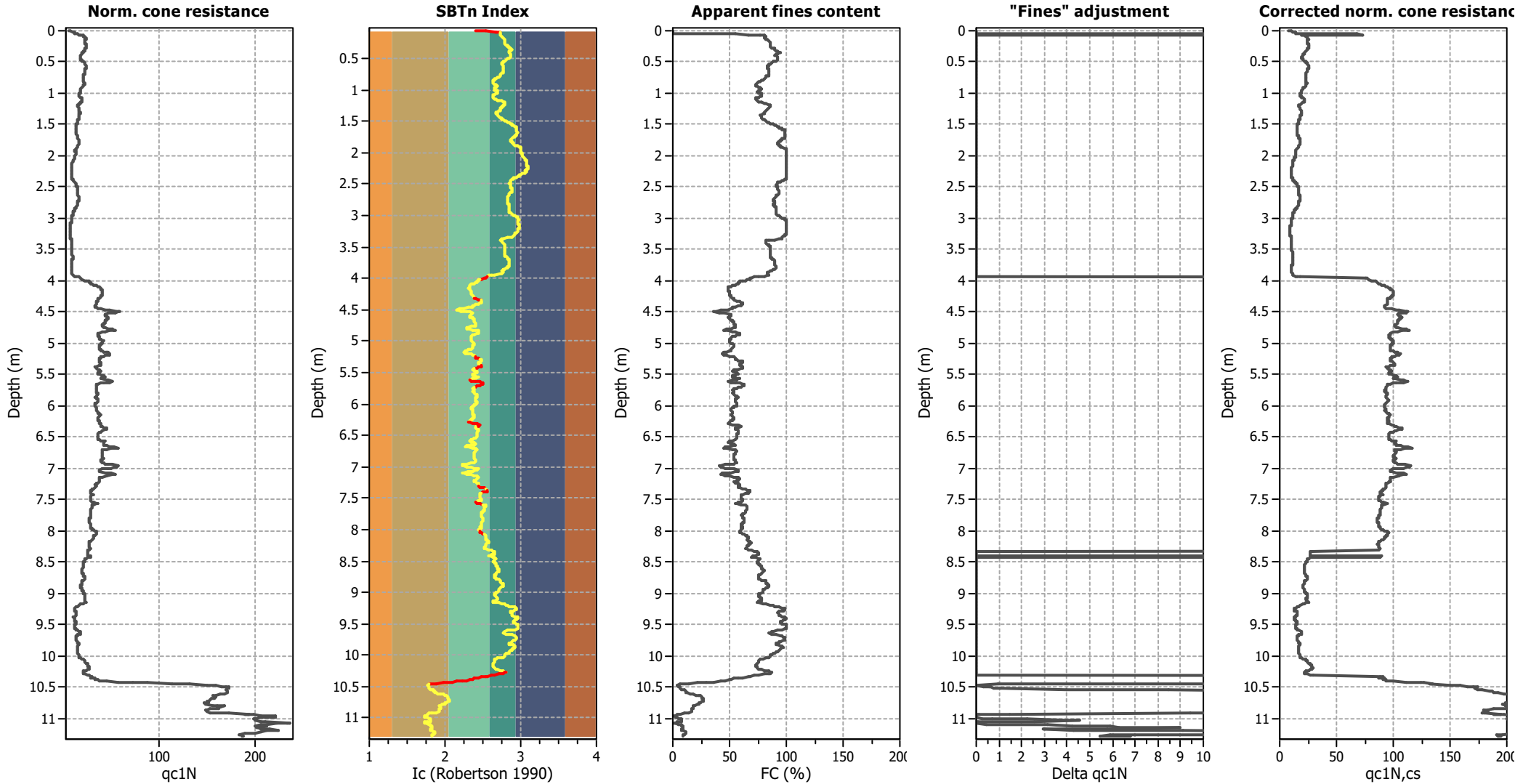
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

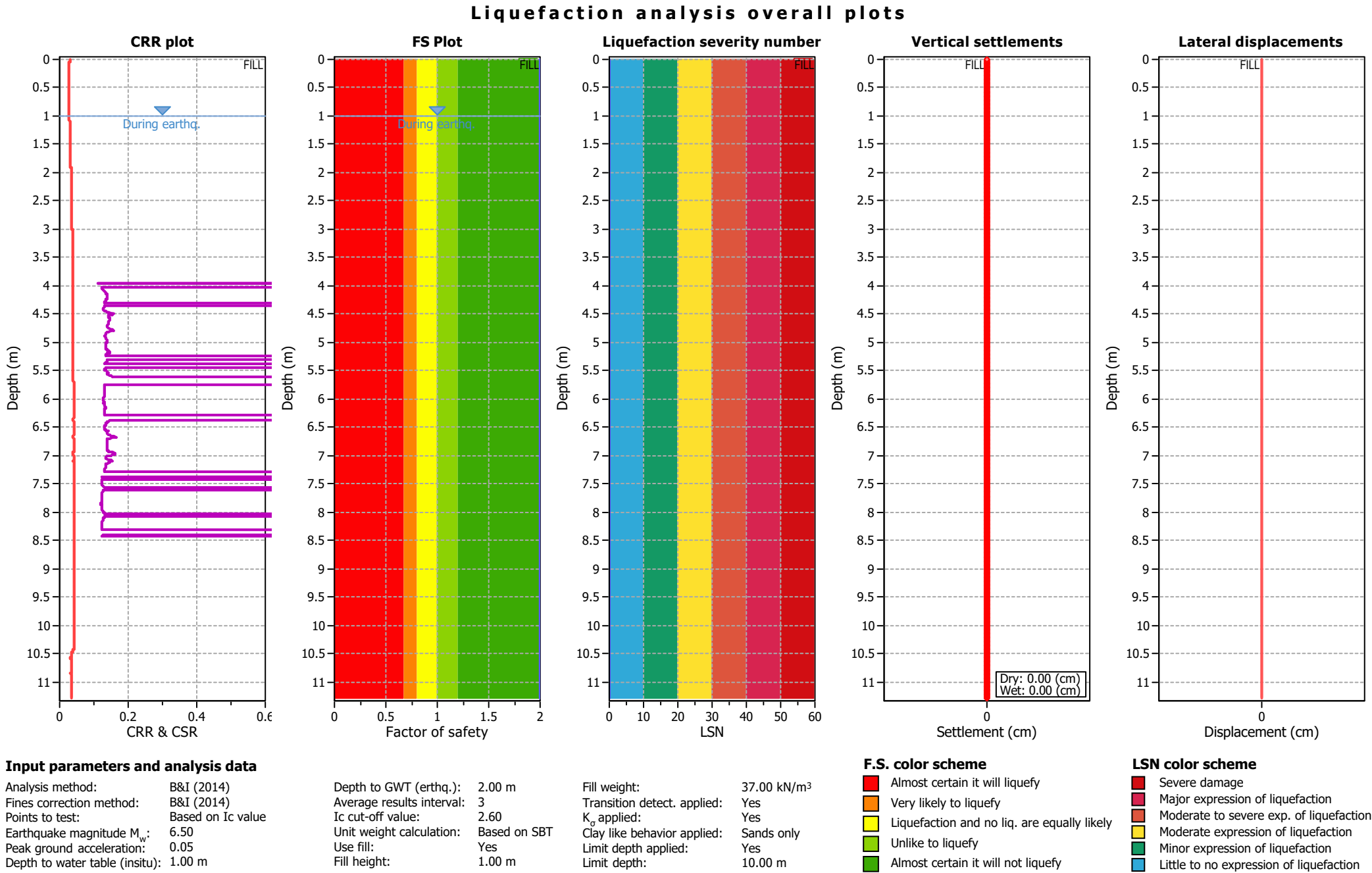
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

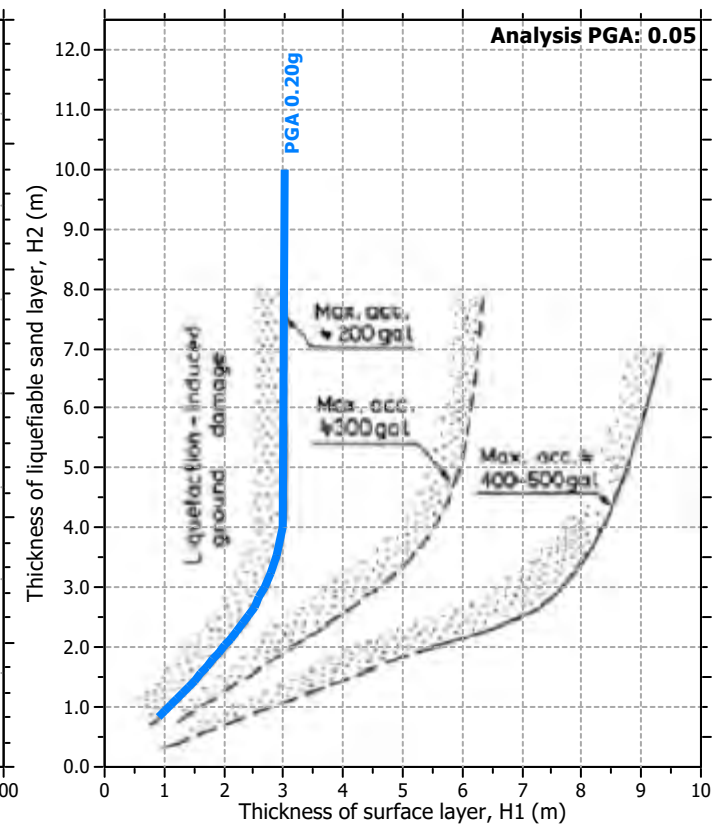
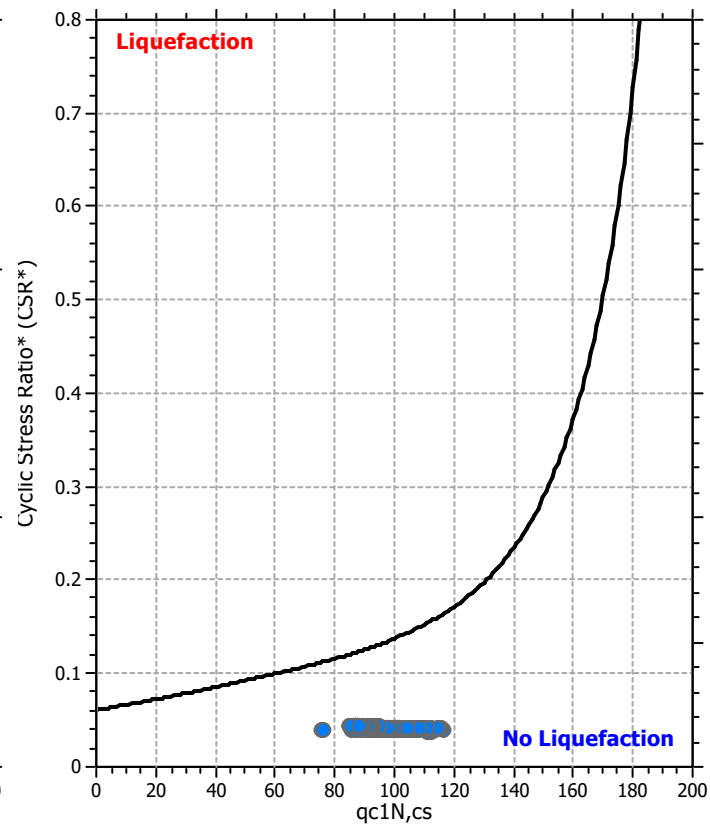
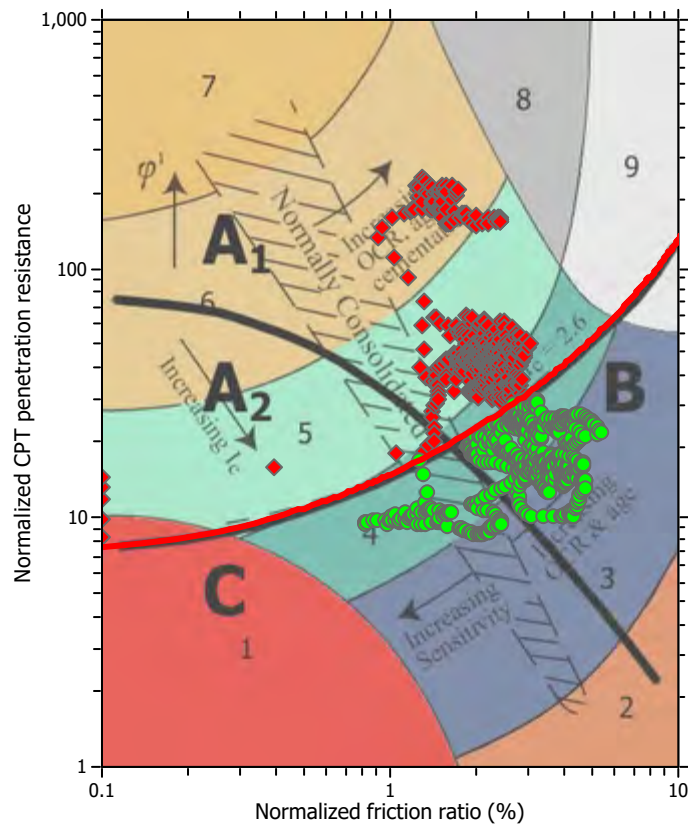


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

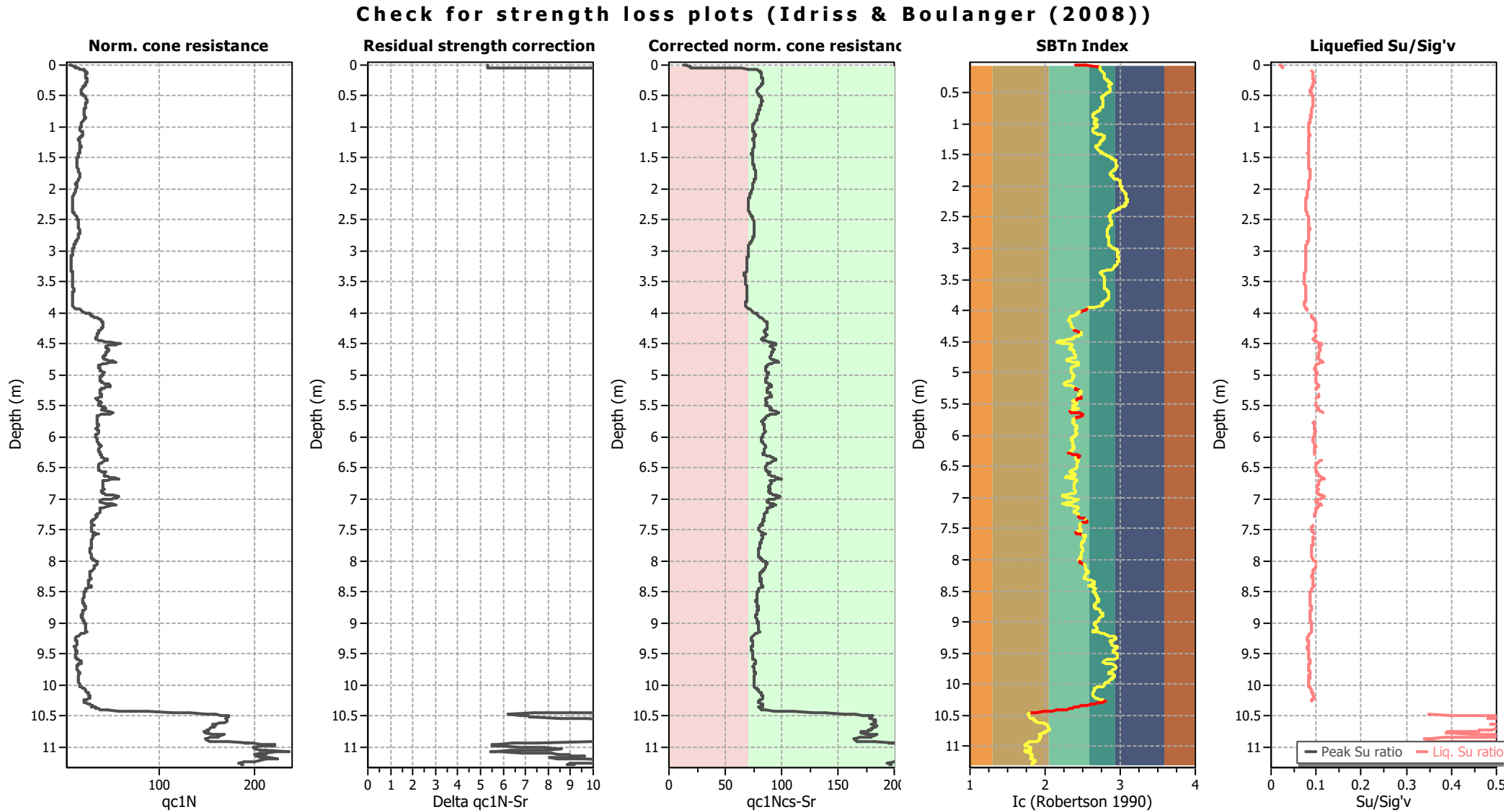


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

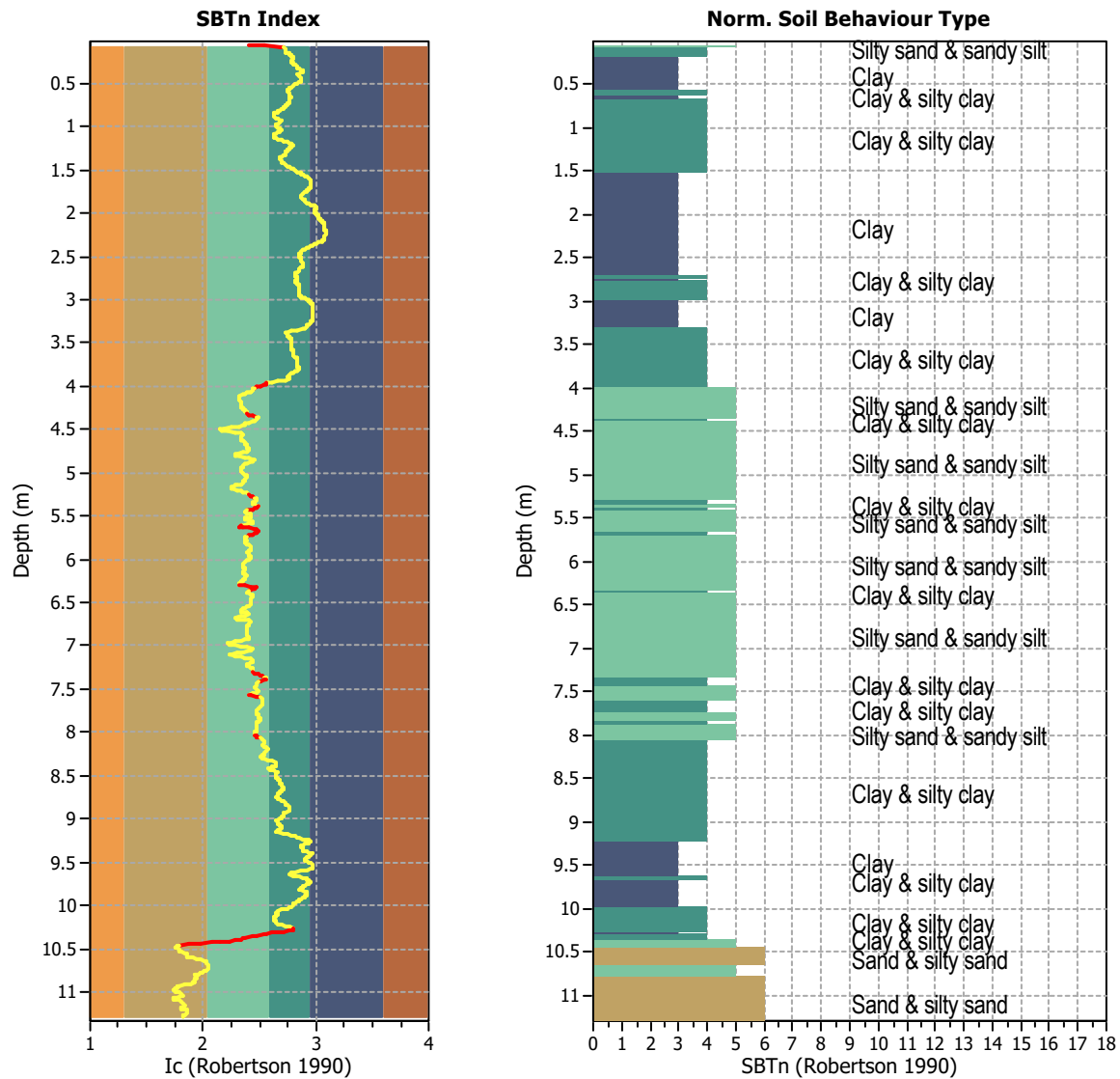
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

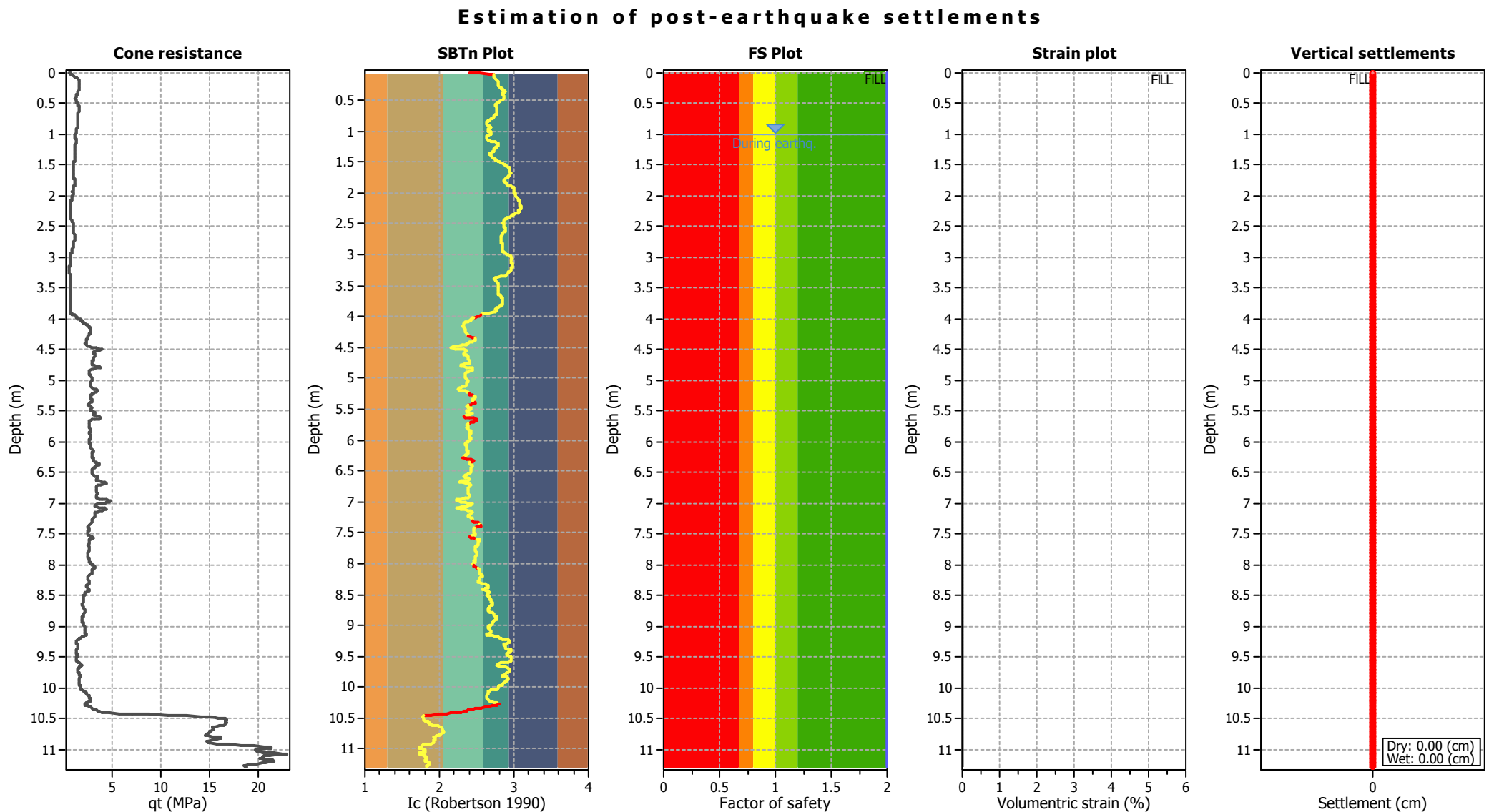


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

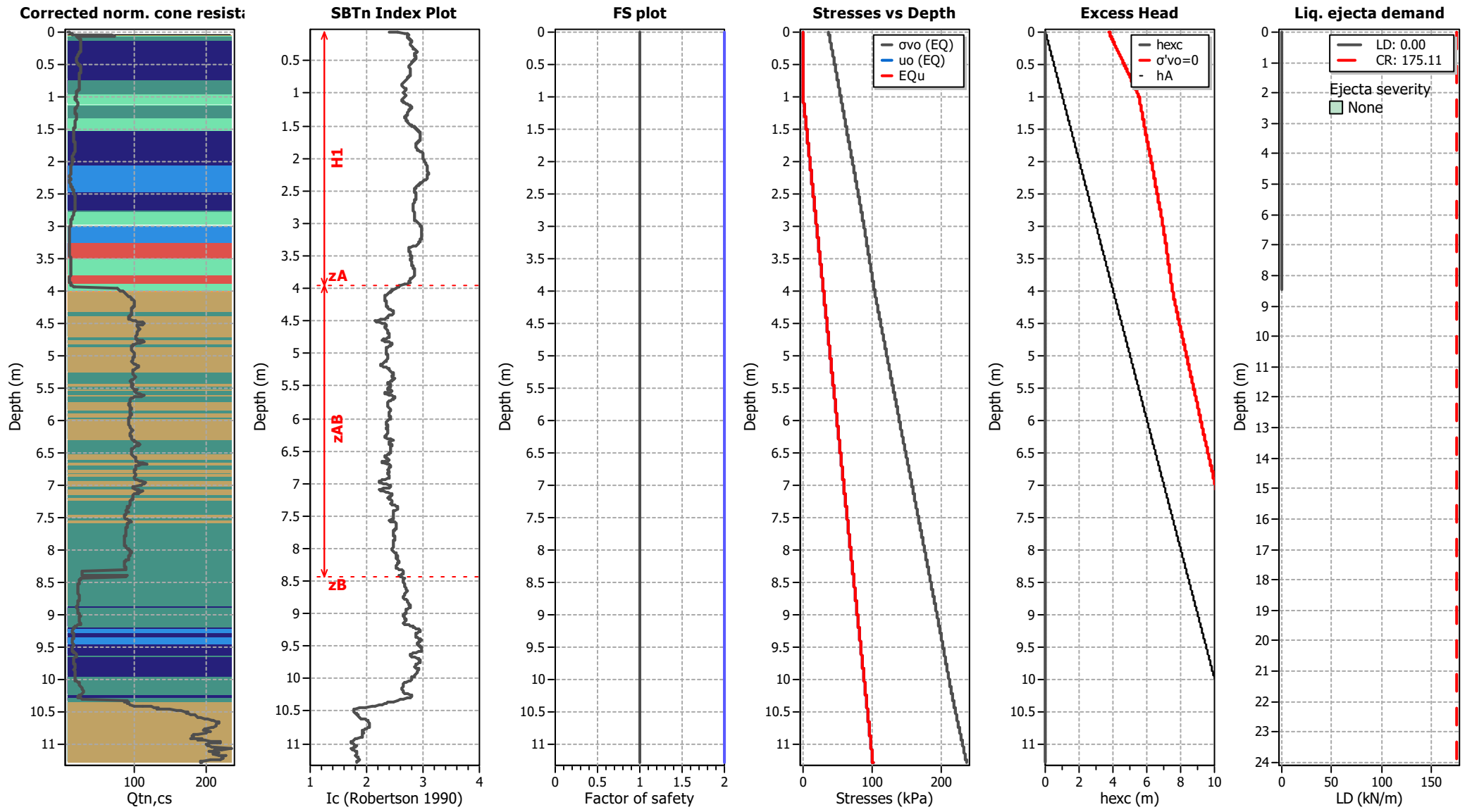
Total points in CPT file: 1129
Total points excluded: 91
Exclusion percentage: 8.06%
Number of layers detected: 14



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

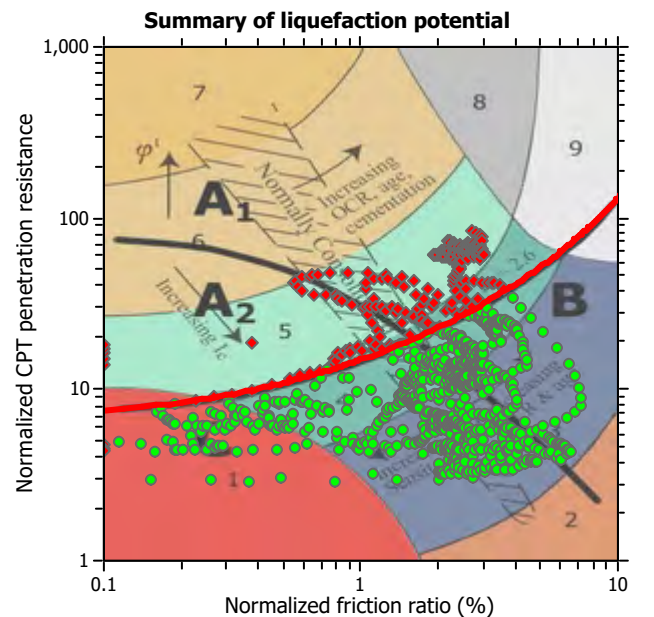
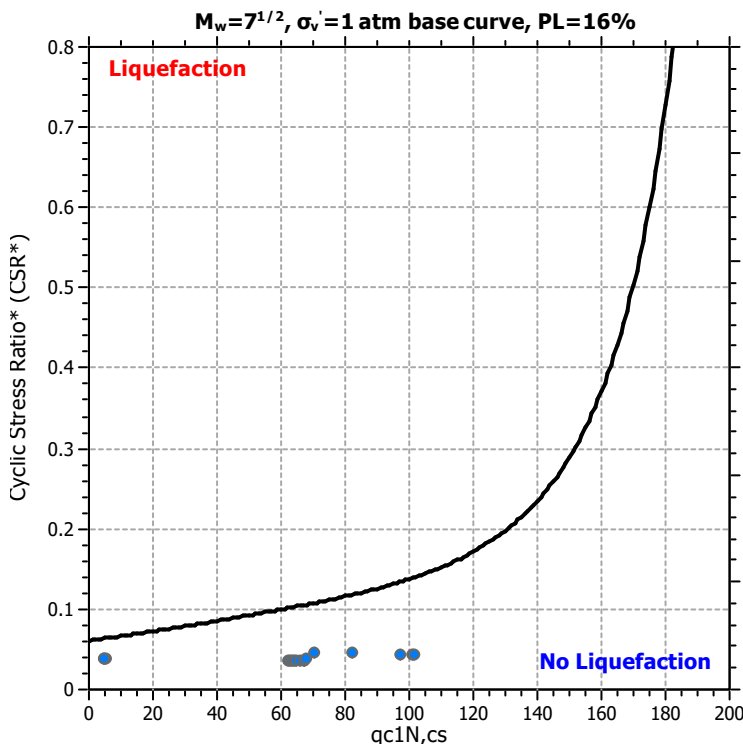
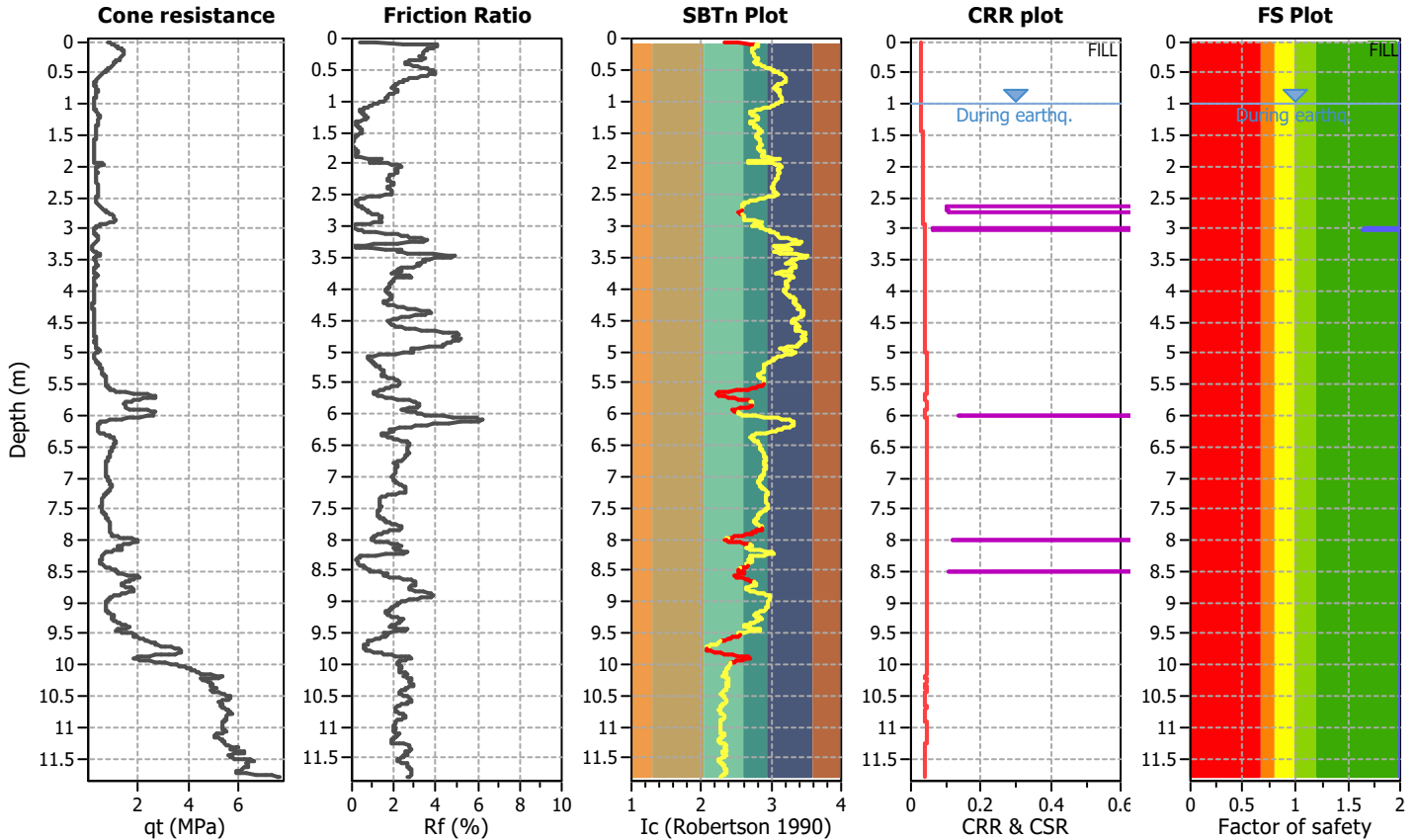
Project title : Sunfield Landholding

Location :

CPT file : CPT410

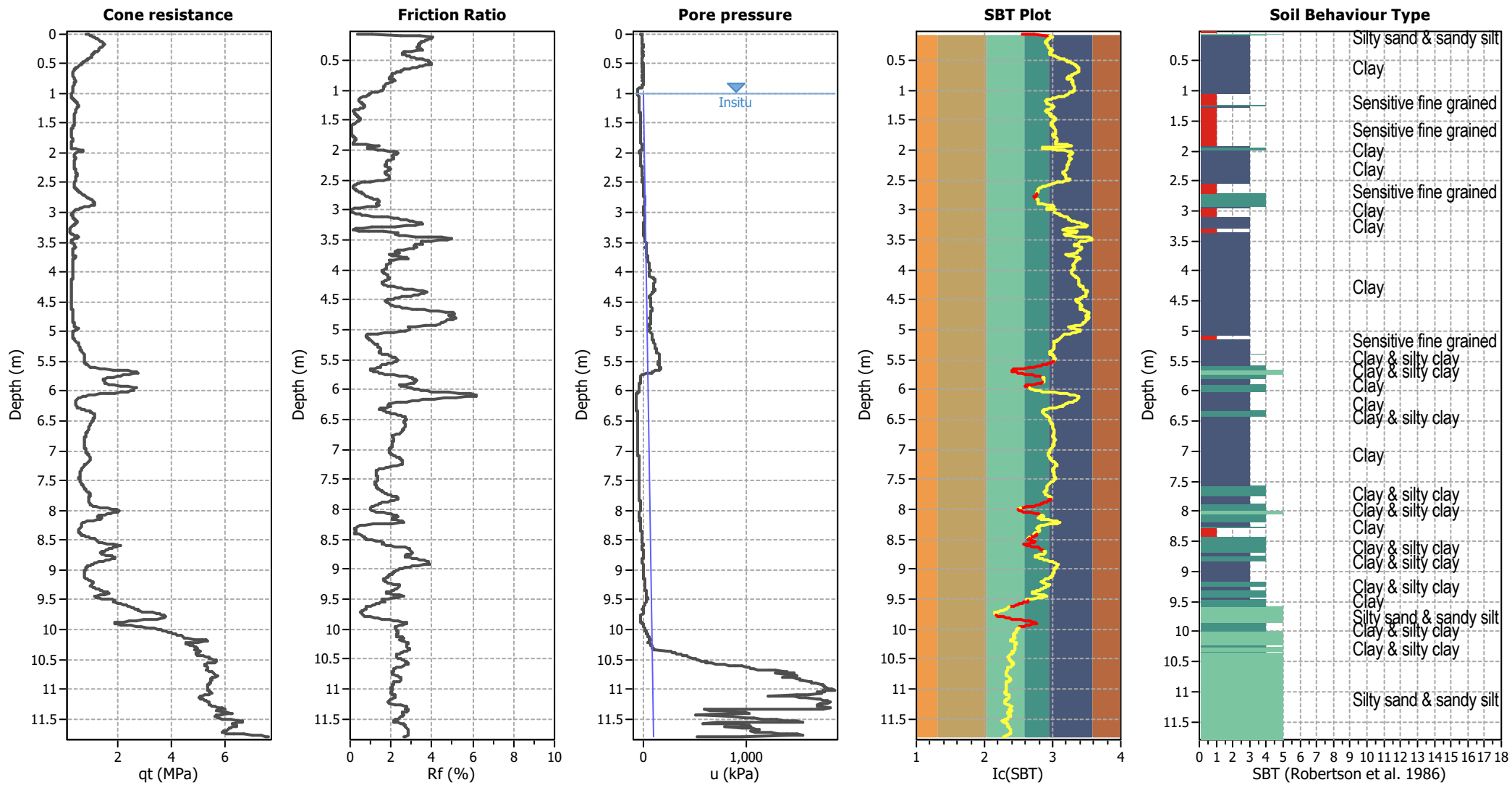
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Depth (m)

0

0.5

1

1.5

2

2.5

3

3.5

4

4.5

5

5.5

6

6.5

7

7.5

8

8.5

9

9.5

10

10.5

11

11.5

qt (MPa)

2

4

6

Rf (%)

0

2

4

6

8

10

Depth (m)

0

0.5

1

1.5

2

2.5

3

3.5

4

4.5

5

5.5

6

6.5

7

7.5

8

8.5

9

9.5

10

10.5

11

11.5

u (kPa)

0

1,000

Depth (m)

0

0.5

1

1.5

2

2.5

3

3.5

4

4.5

5

5.5

6

6.5

7

7.5

8

8.5

9

9.5

10

10.5

11

11.5

Ic(SBT)

1

2

3

4

Depth (m)

0

0.5

1

1.5

2

2.5

3

3.5

4

4.5

5

5.5

6

6.5

7

7.5

8

8.5

9

9.5

10

10.5

11

11.5

SBT (Robertson et al. 1986)

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

Silty sand & sandy silt

Clay

Sensitive fine grained

Sensitive fine grained

Clay

Clay

Sensitive fine grained

Clay

Clay

Clay

Sensitive fine grained

Clay & silty clay

Clay & silty clay

Clay

Clay

Clay & silty clay

Clay

Clay & silty clay

Clay & silty clay

Clay

Clay & silty clay

Clay & silty clay

Silty sand & sandy silt

Clay & silty clay

Clay & silty clay

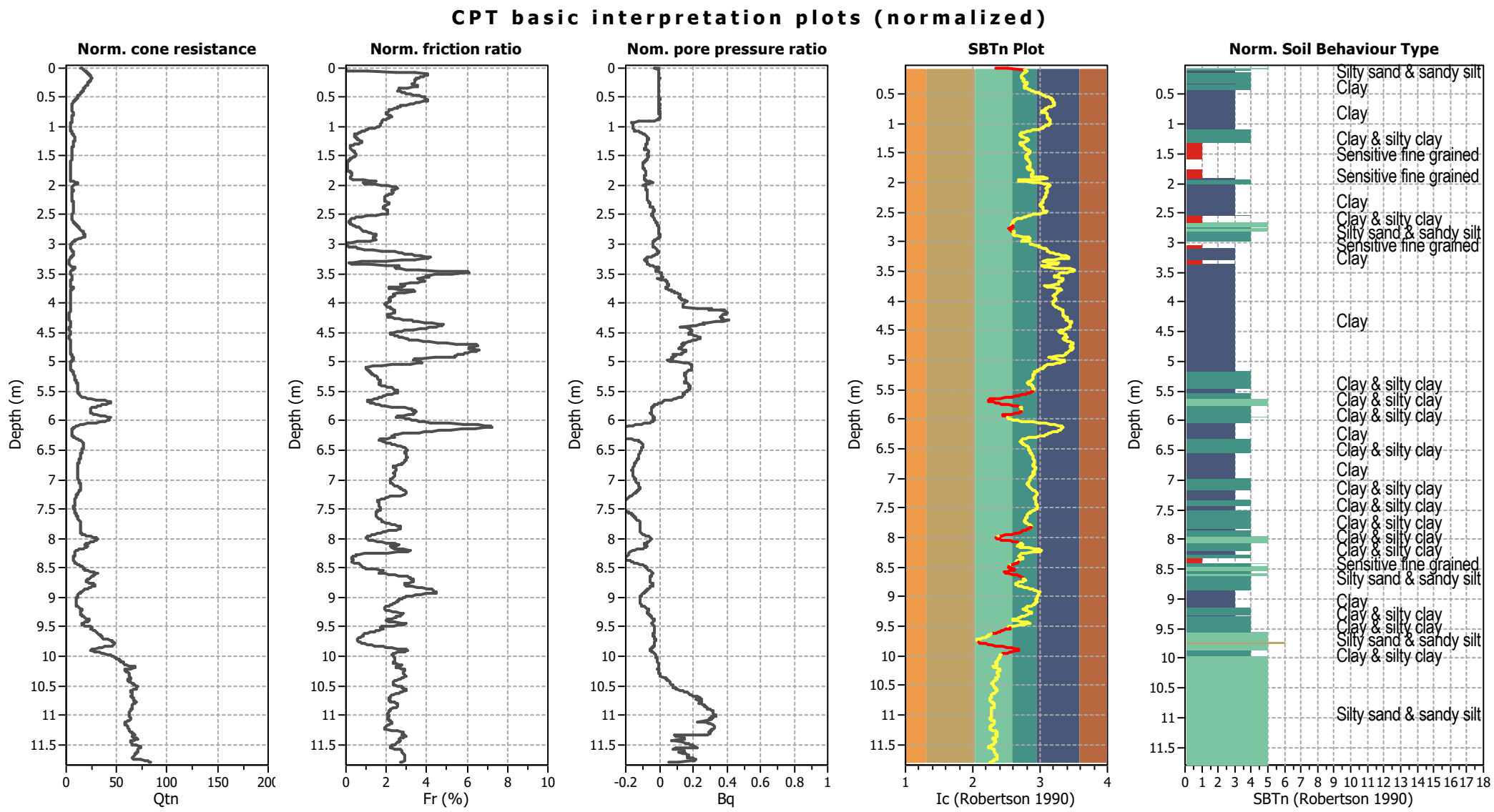
Silty sand & sandy silt

Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

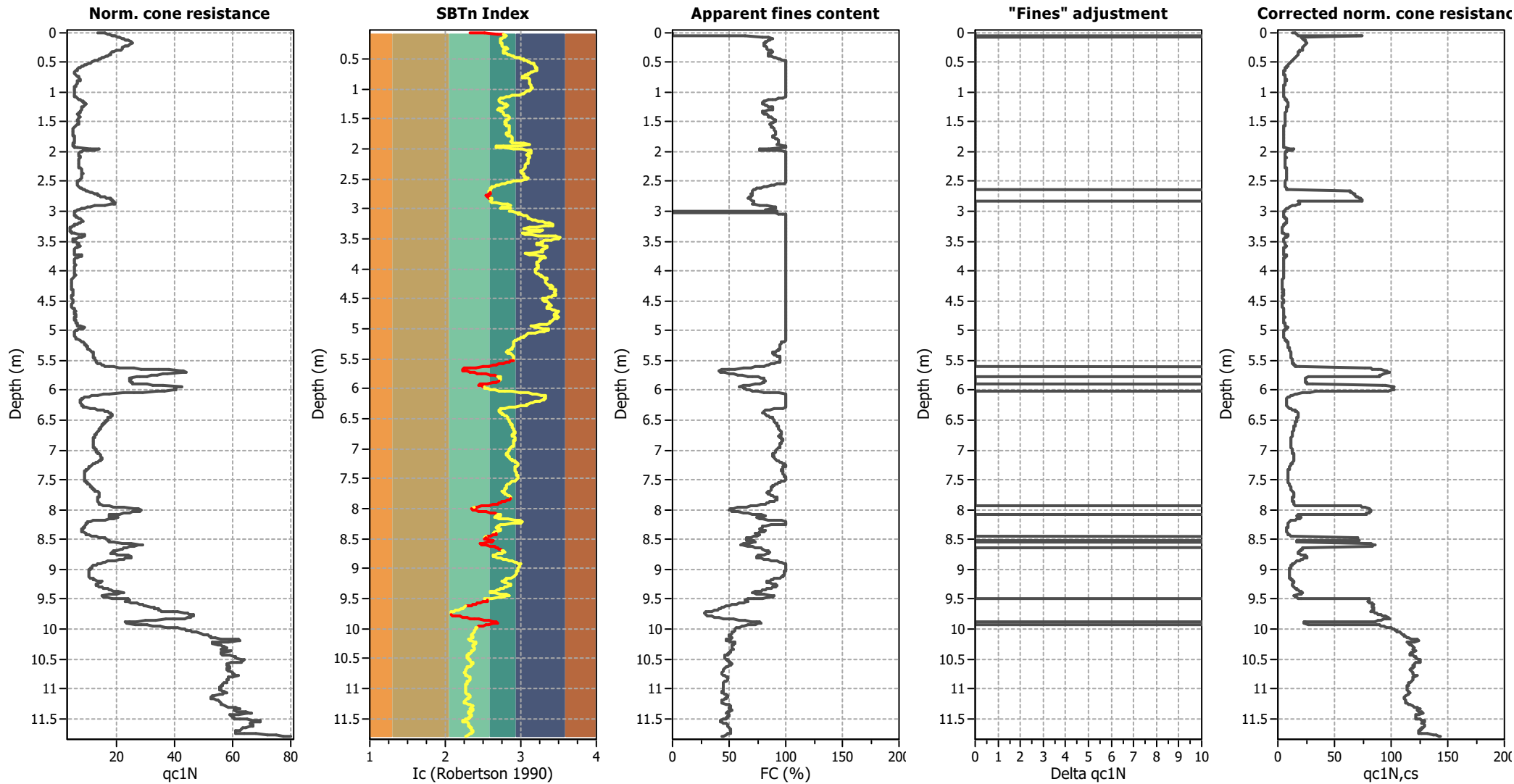
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

9. Very stiff fine grained

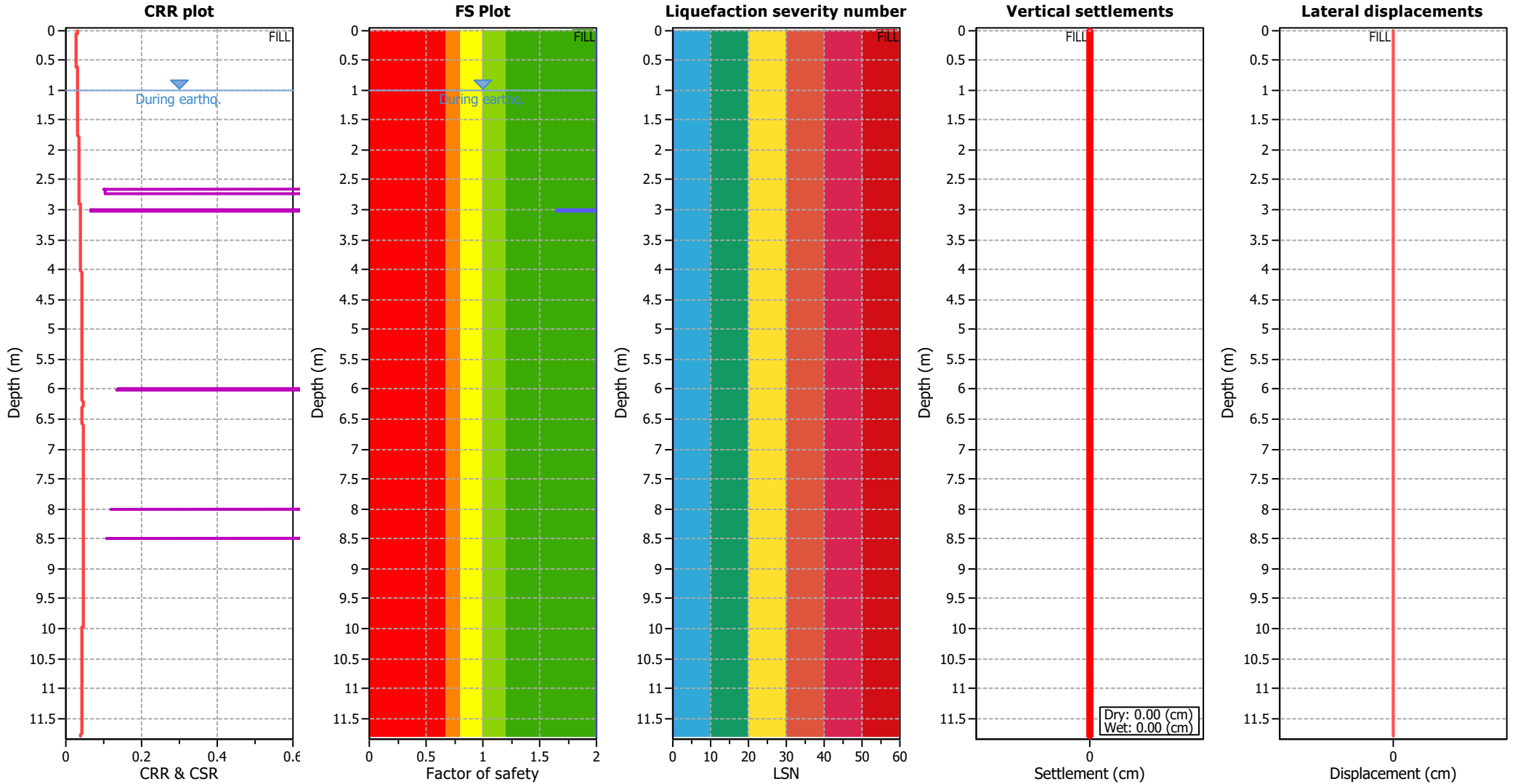
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

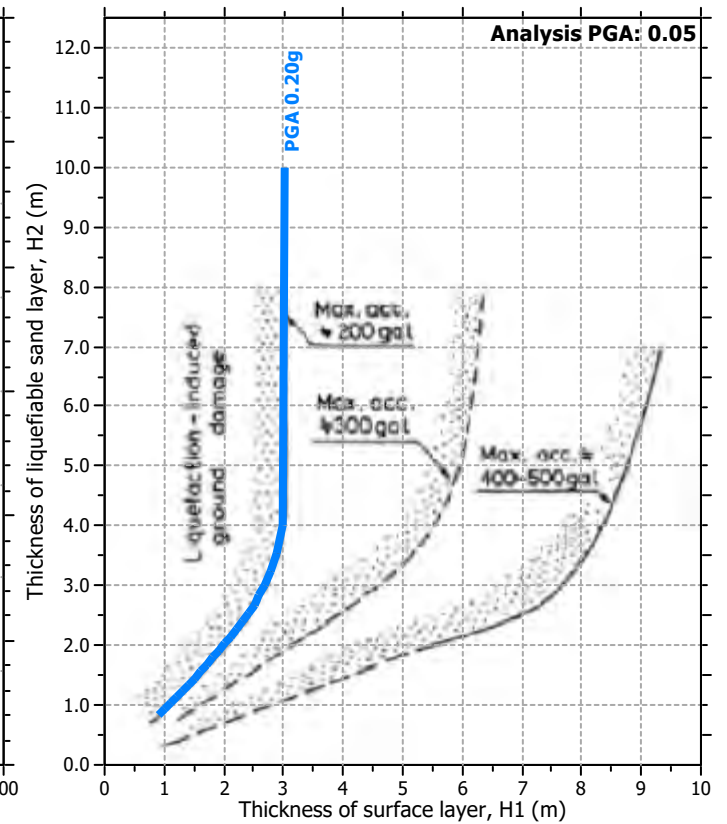
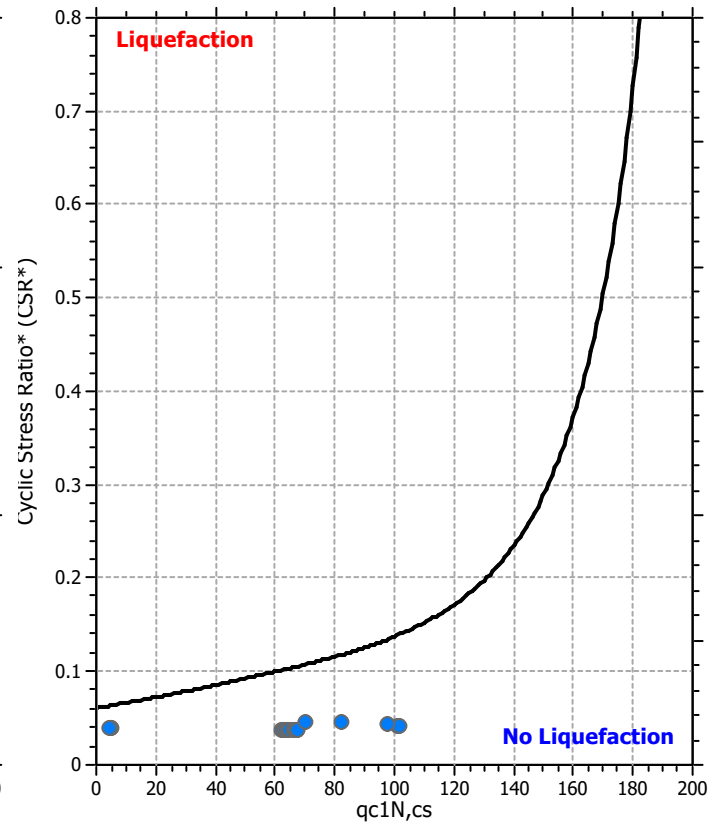
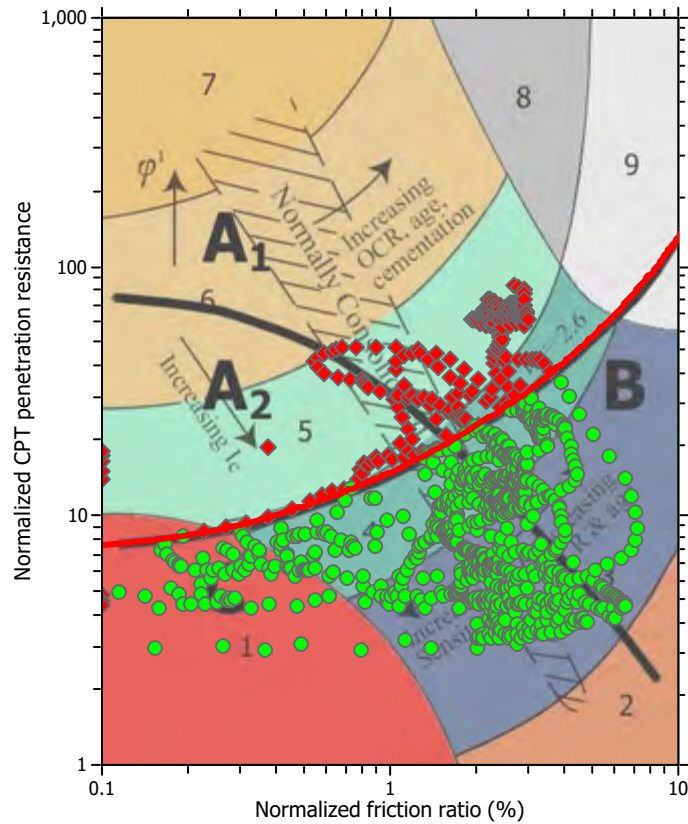
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

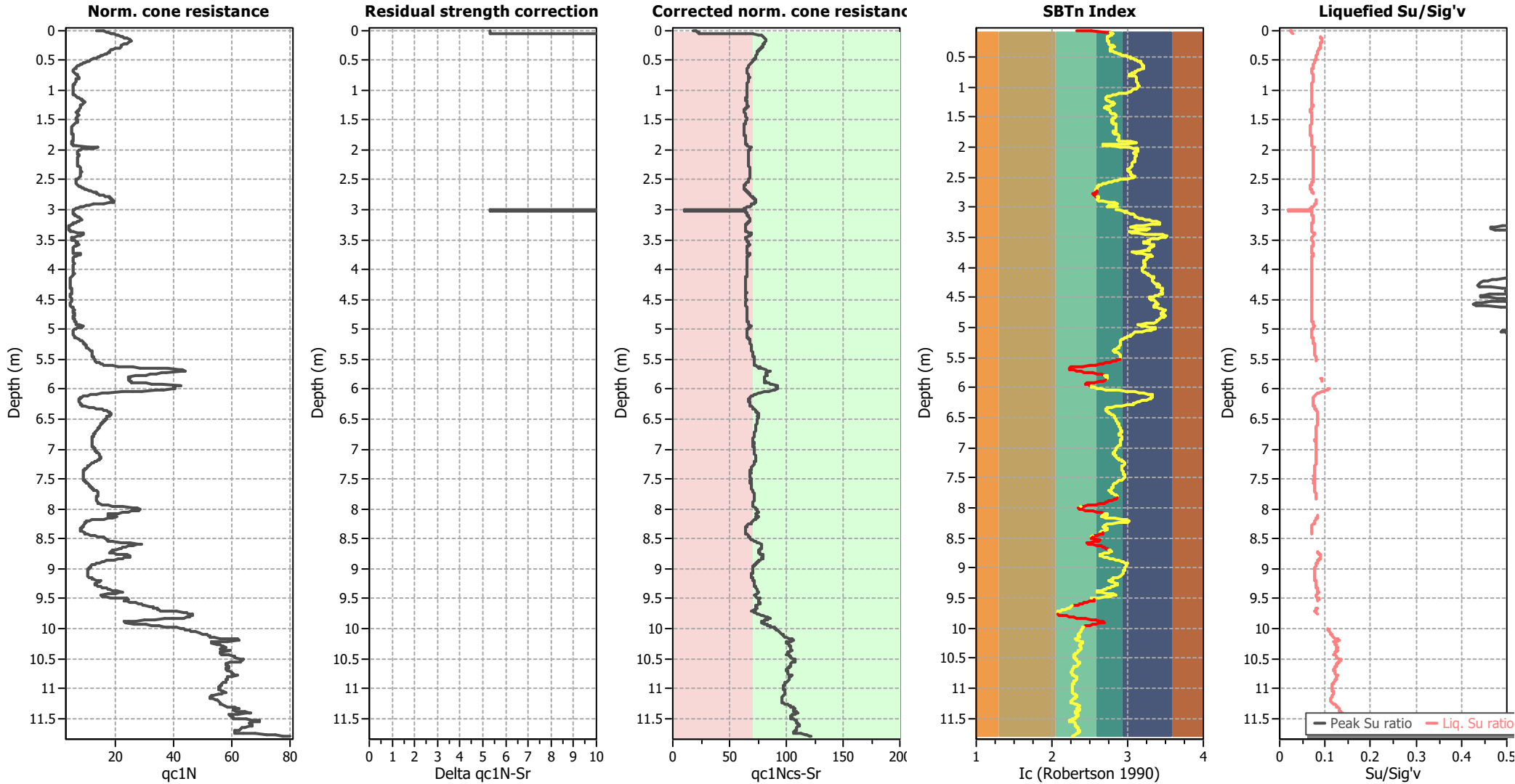
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

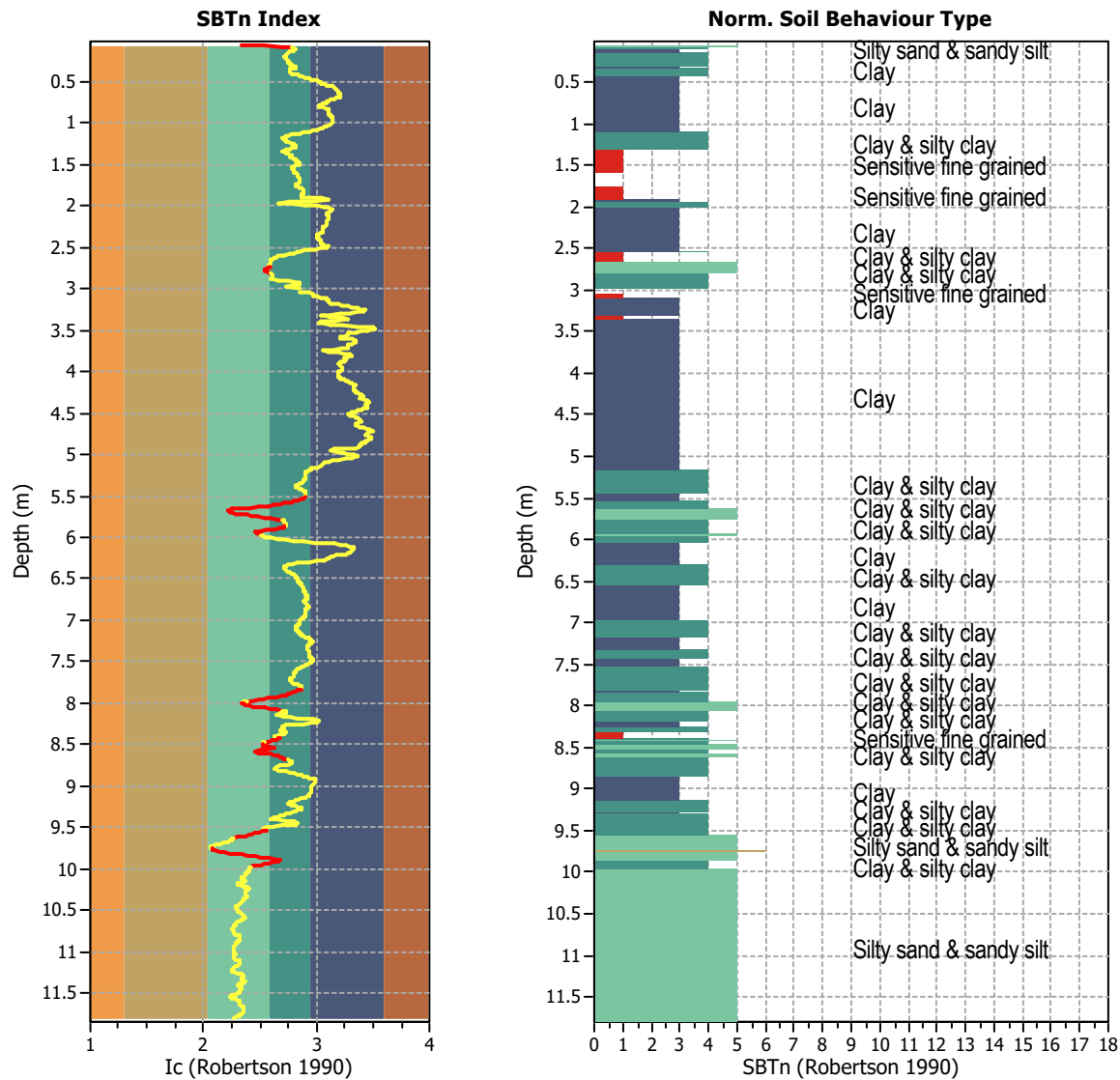
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



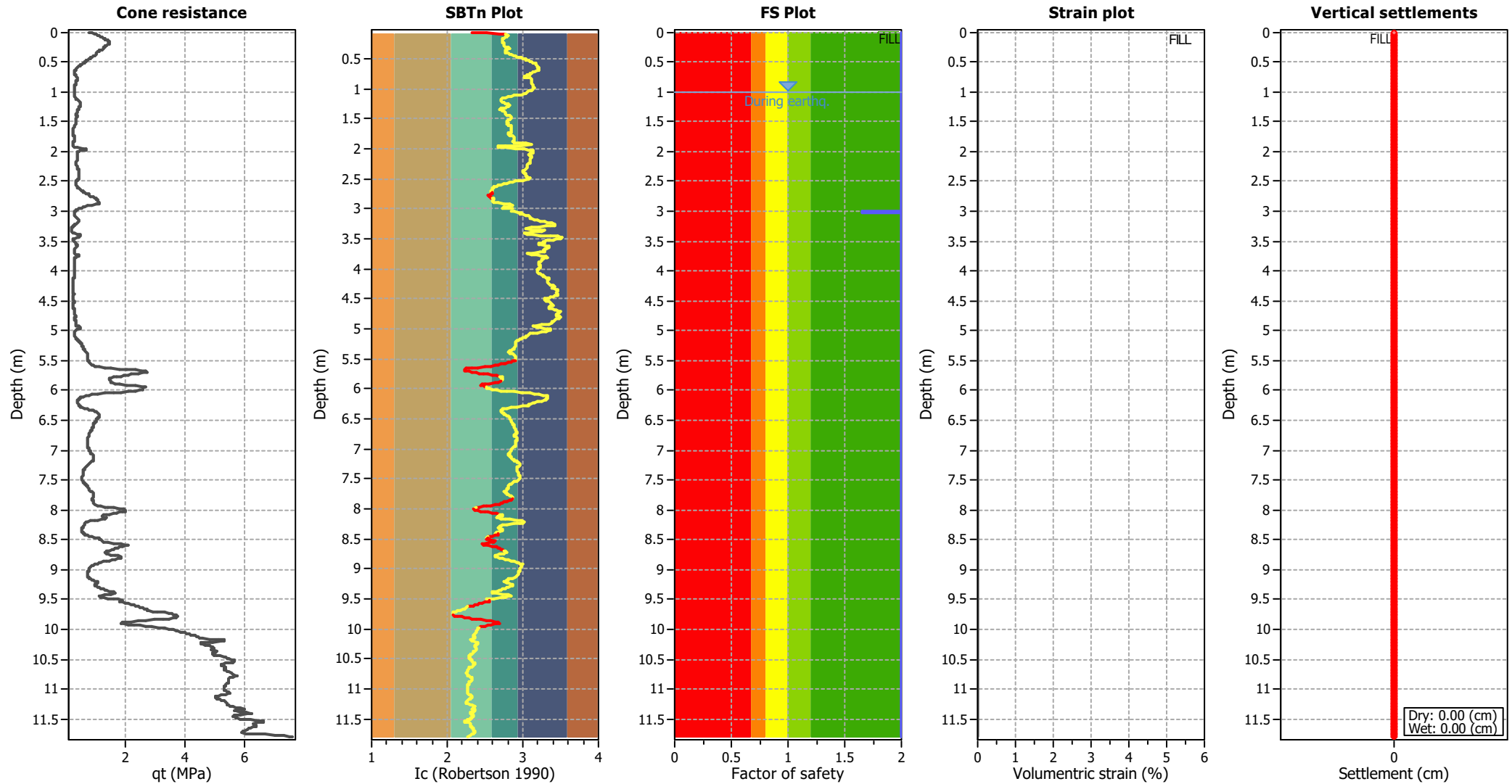
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1180
Total points excluded: 143
Exclusion percentage: 12.12%
Number of layers detected: 16

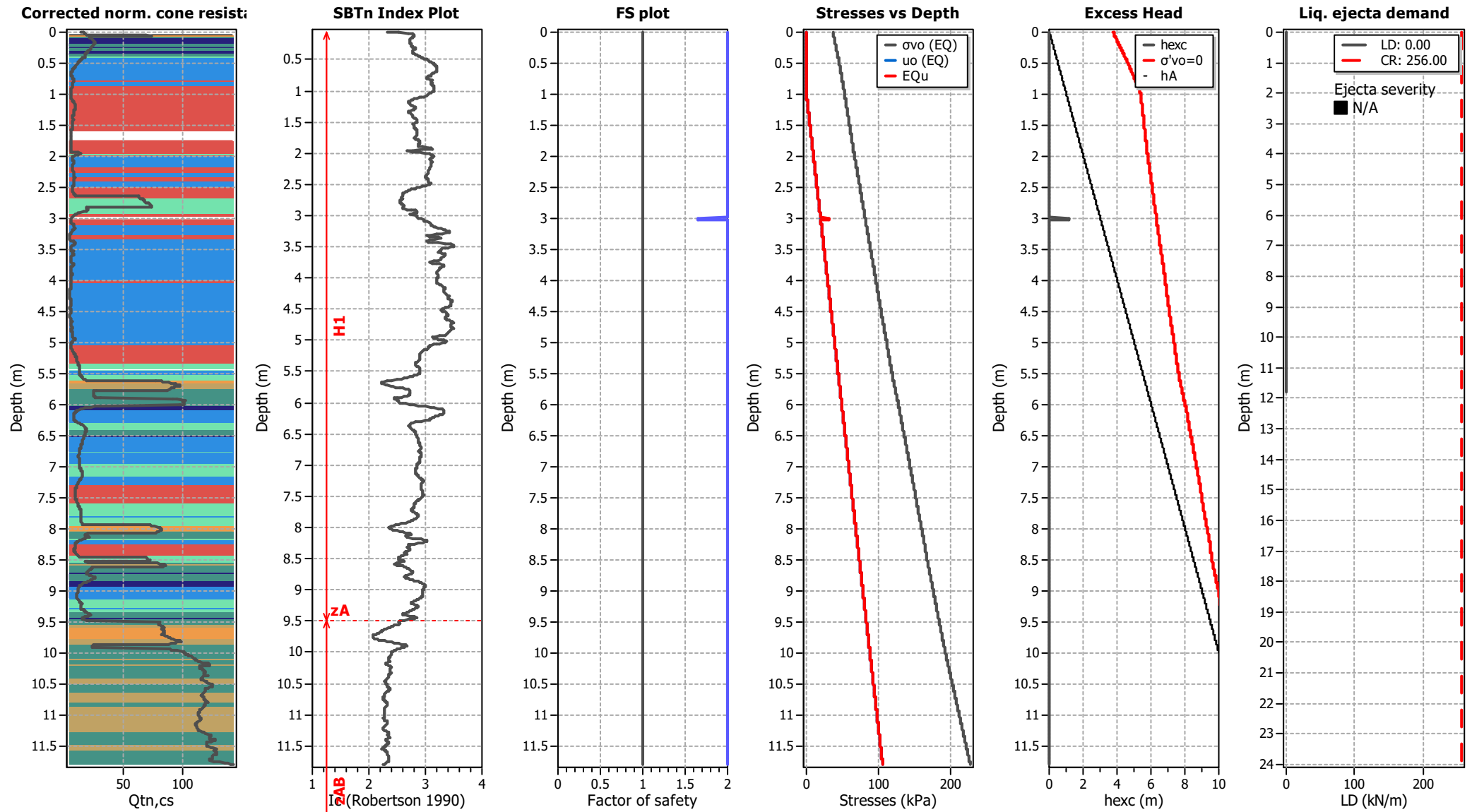
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

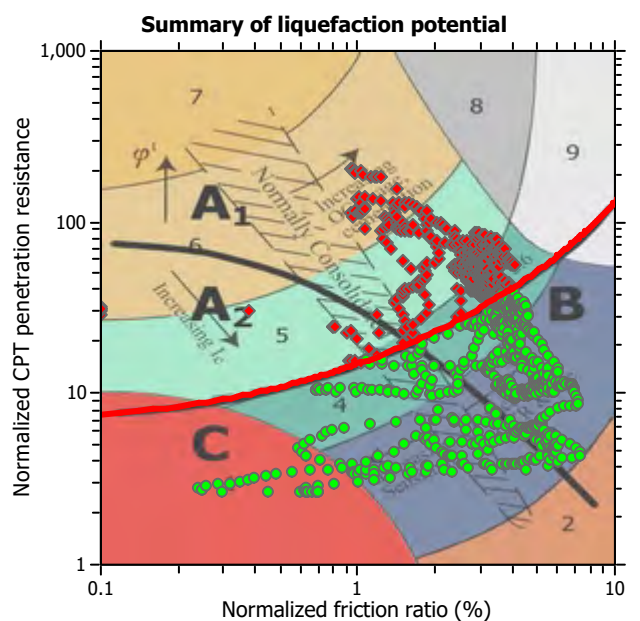
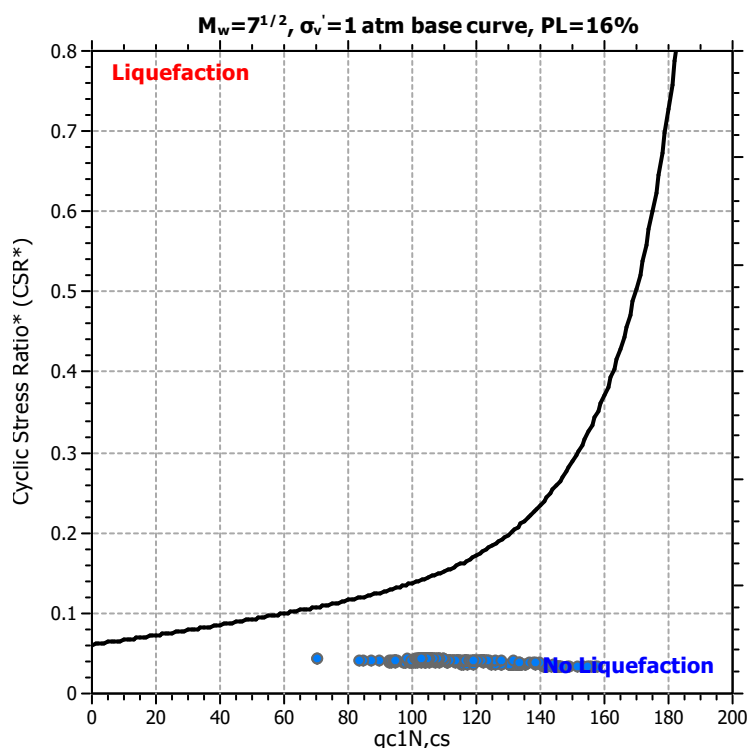
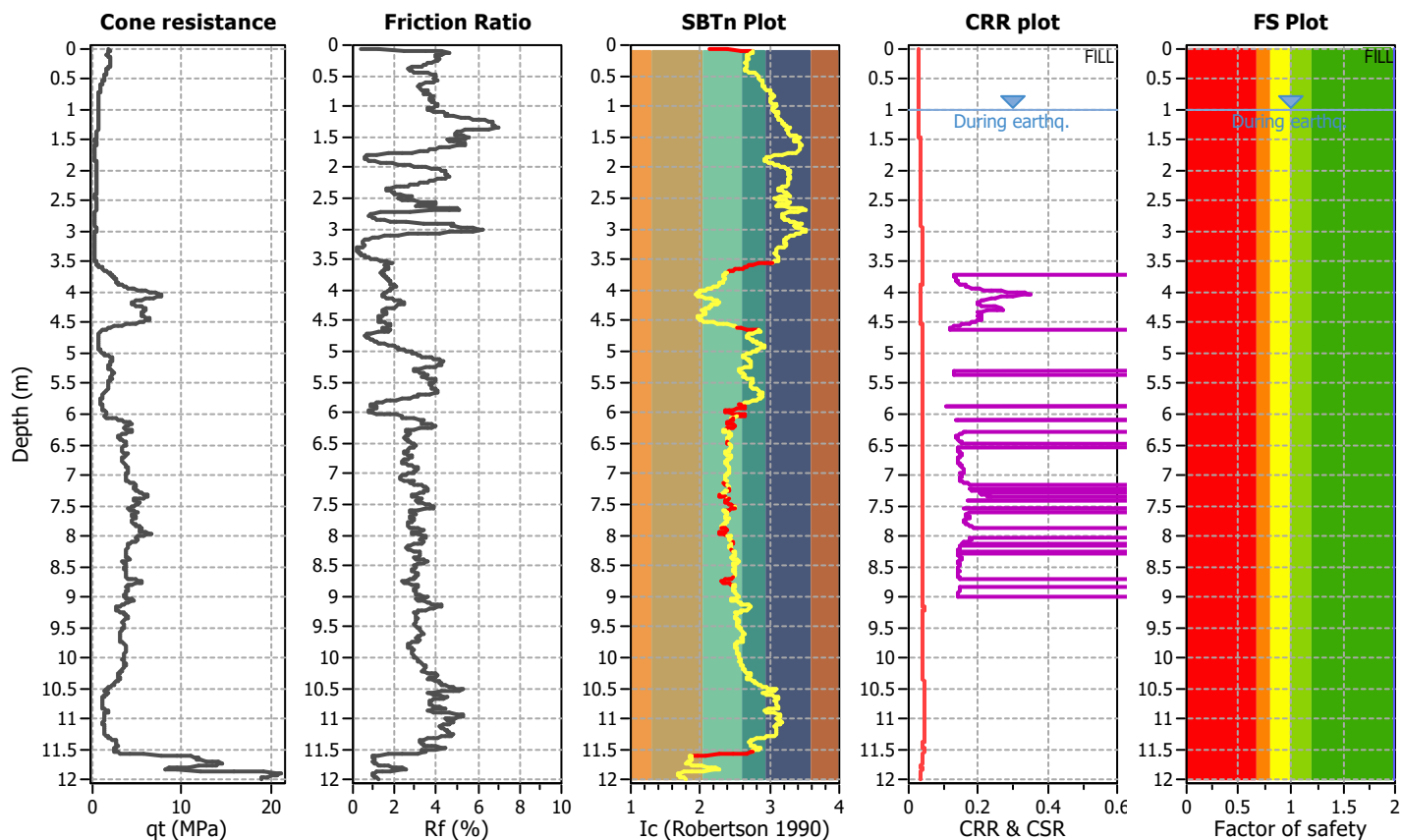
Project title : Sunfield Landholding

Location :

CPT file : CPT411

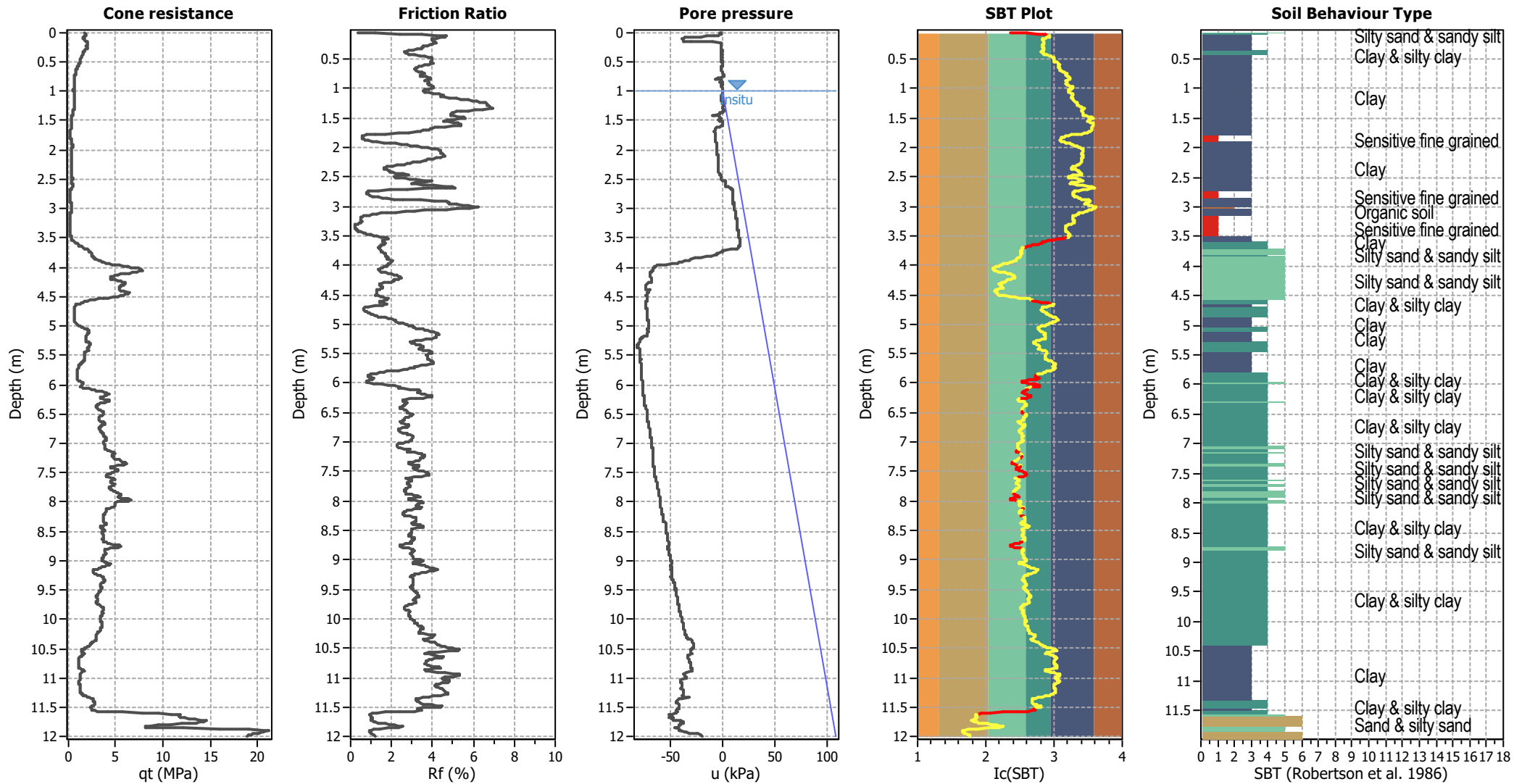
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



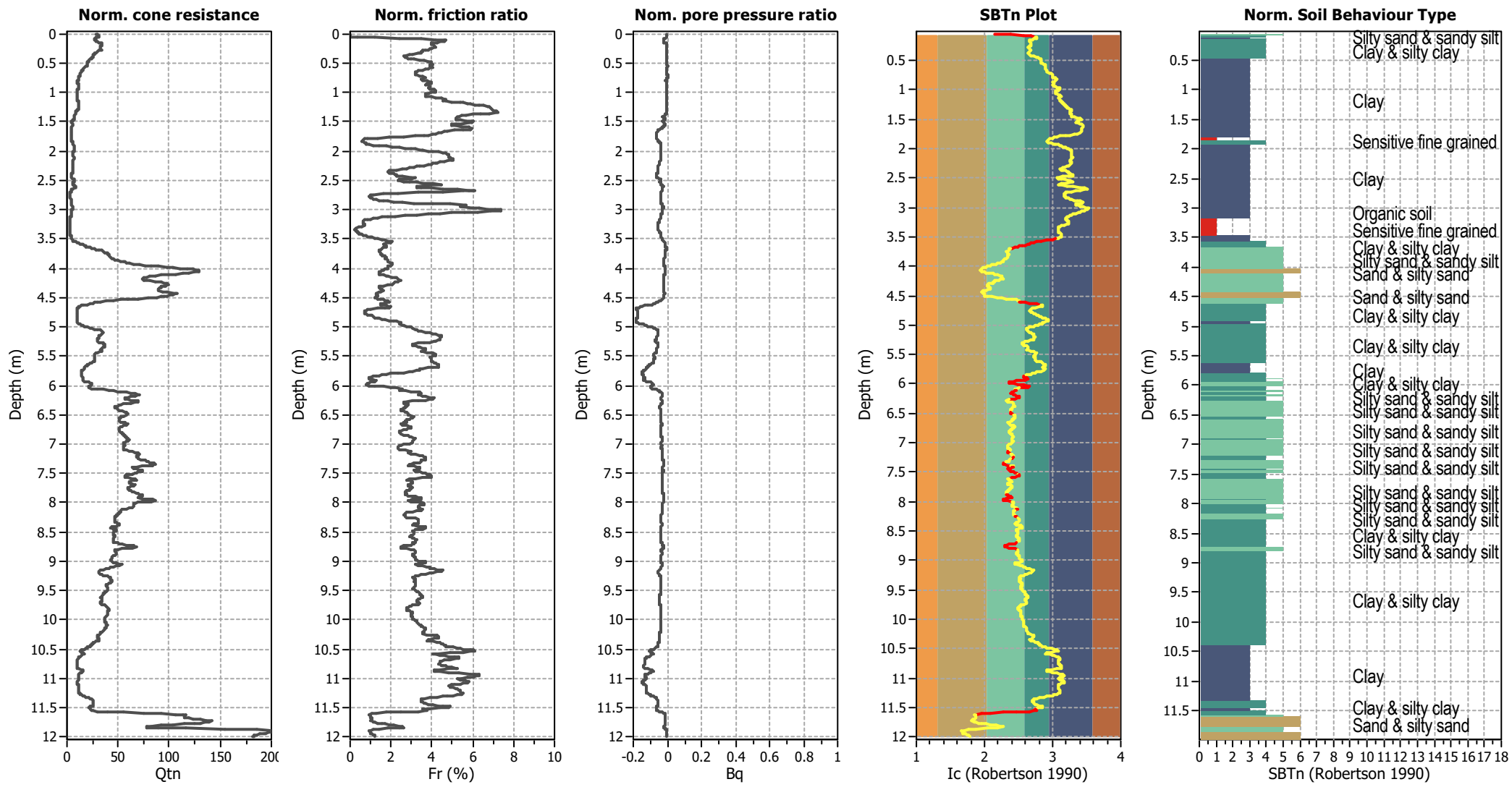
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)

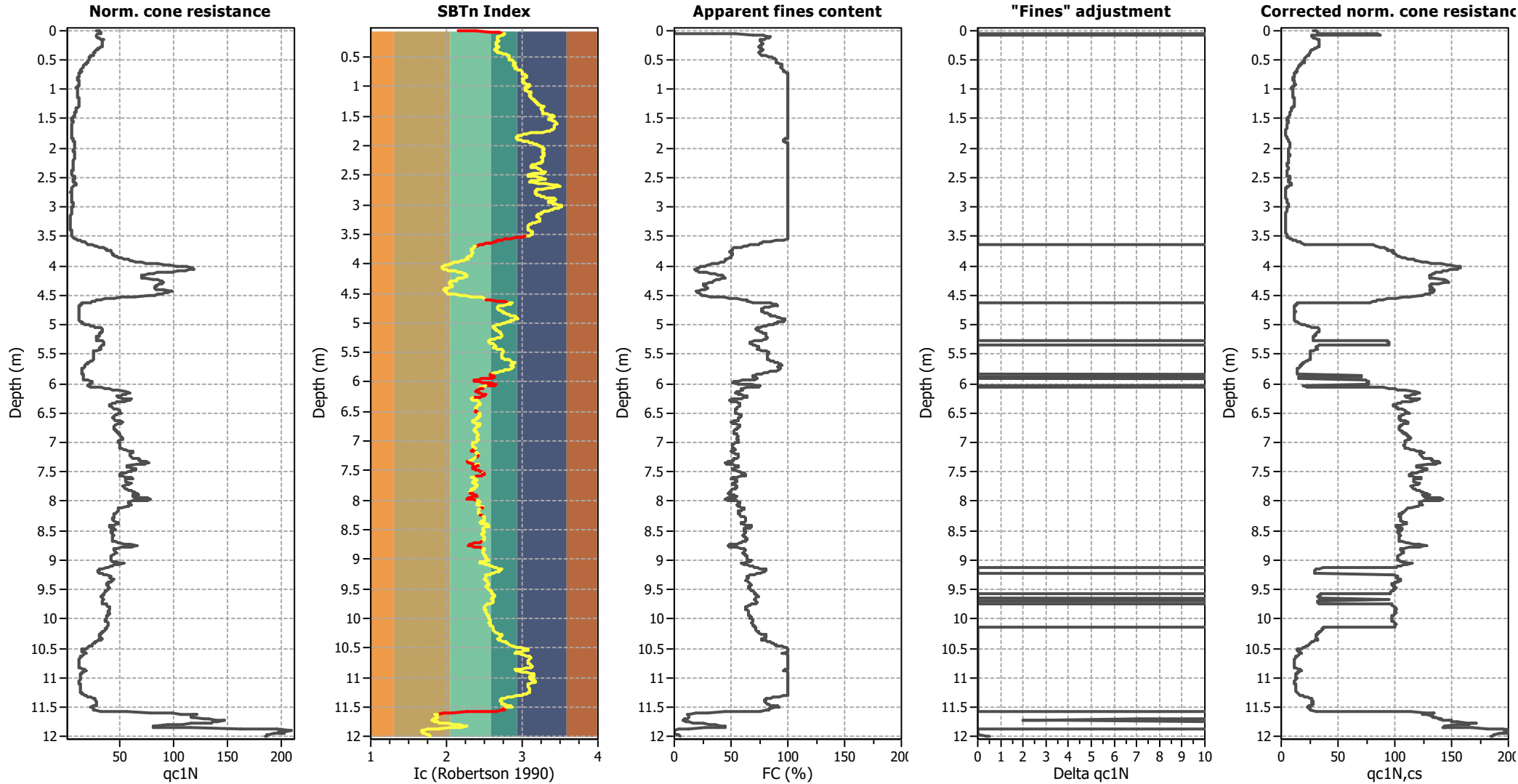


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

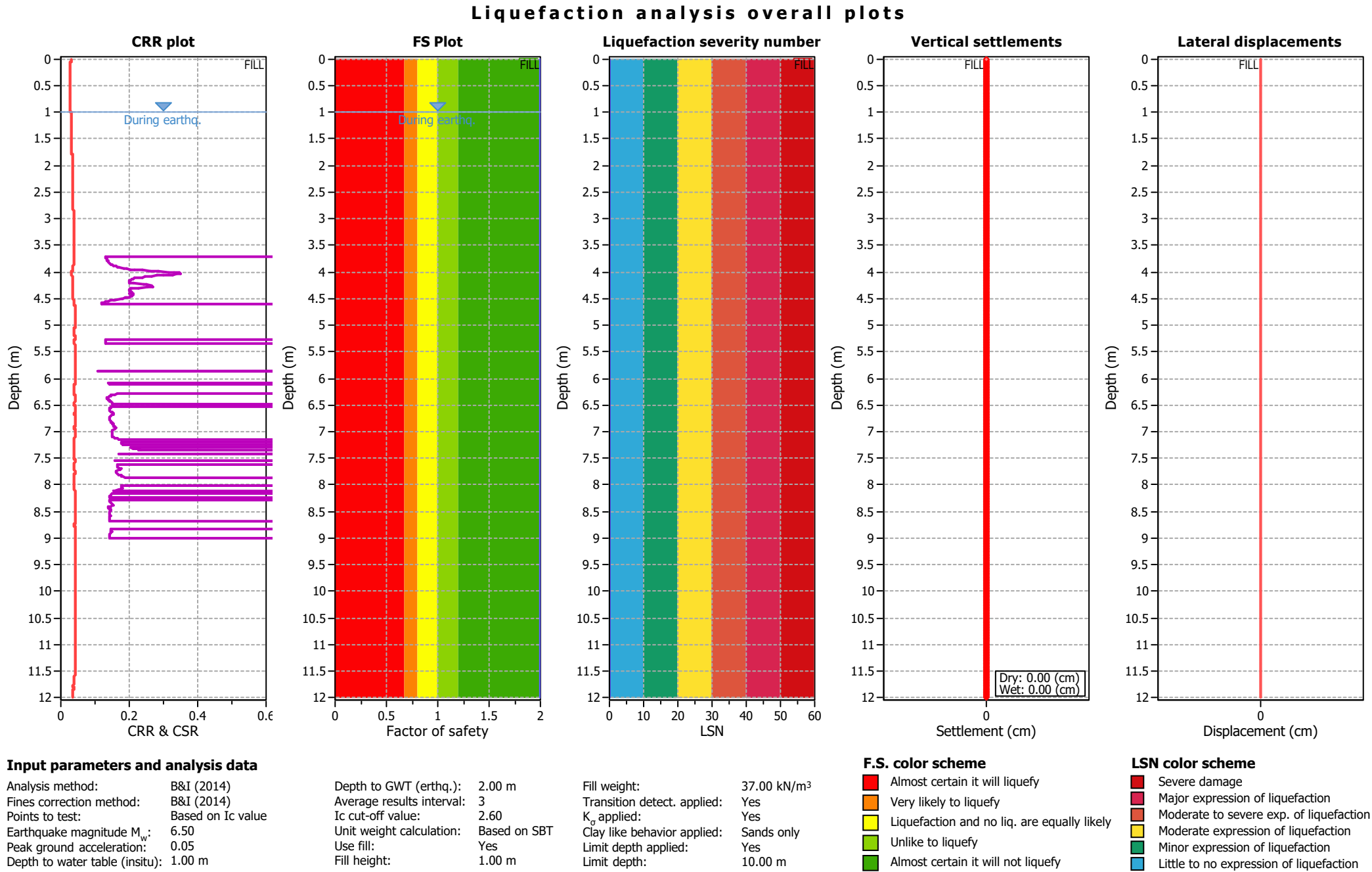
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

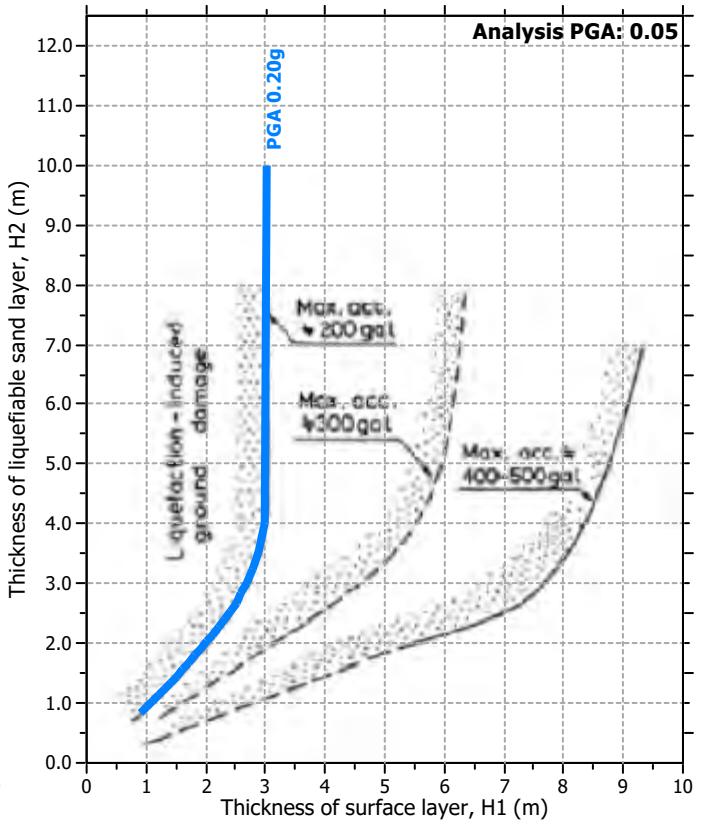
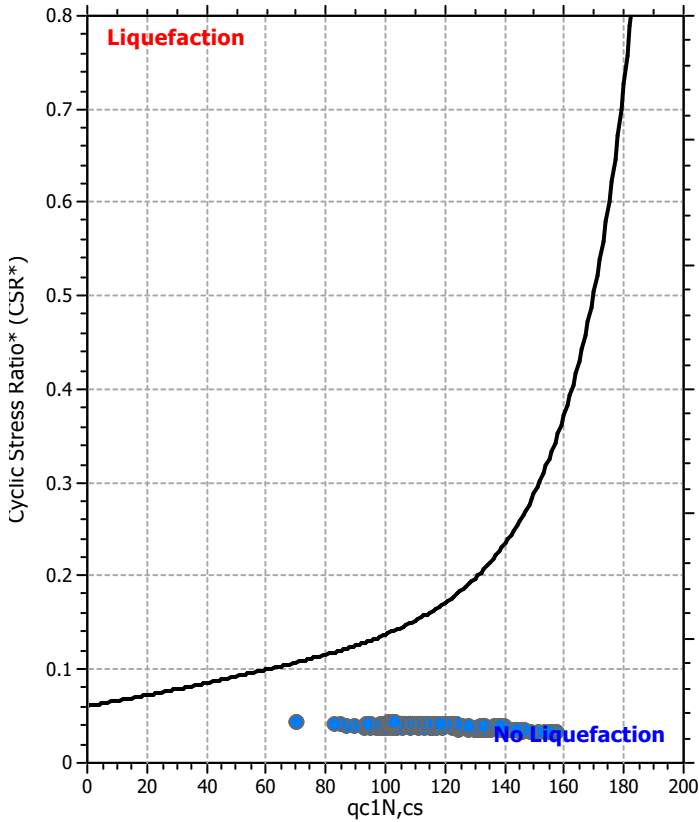
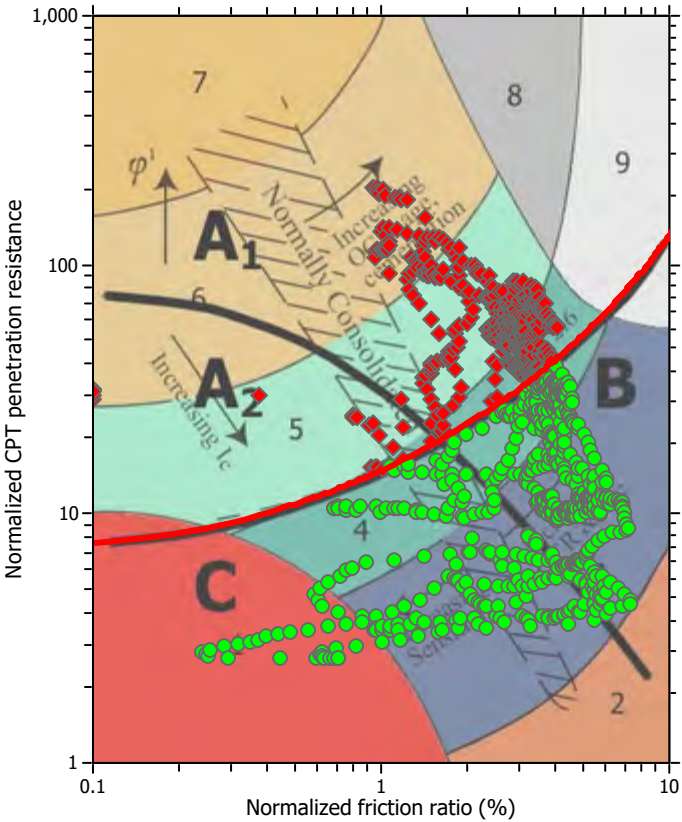


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



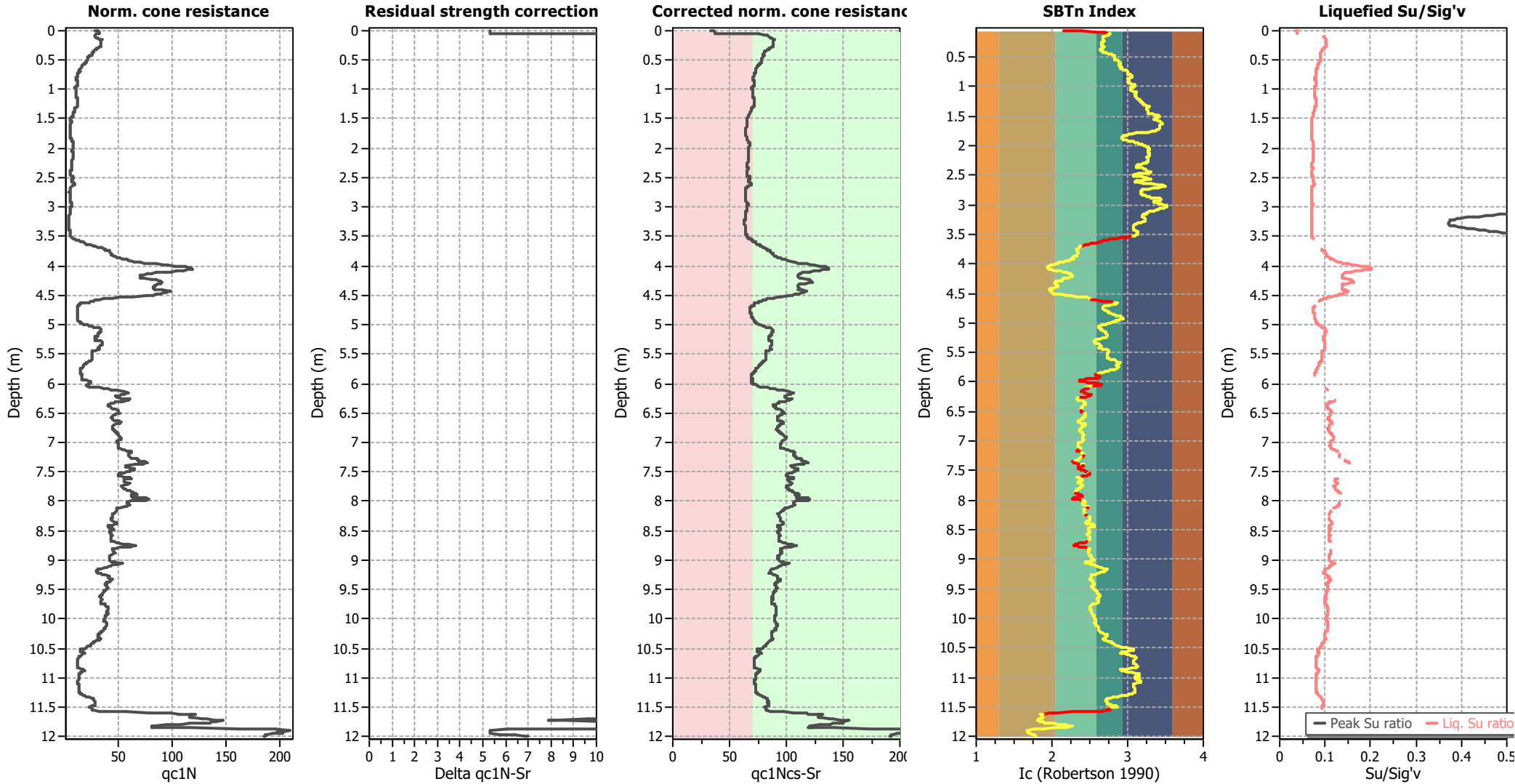
Liquefaction analysis summary plots



Input parameters and analysis data

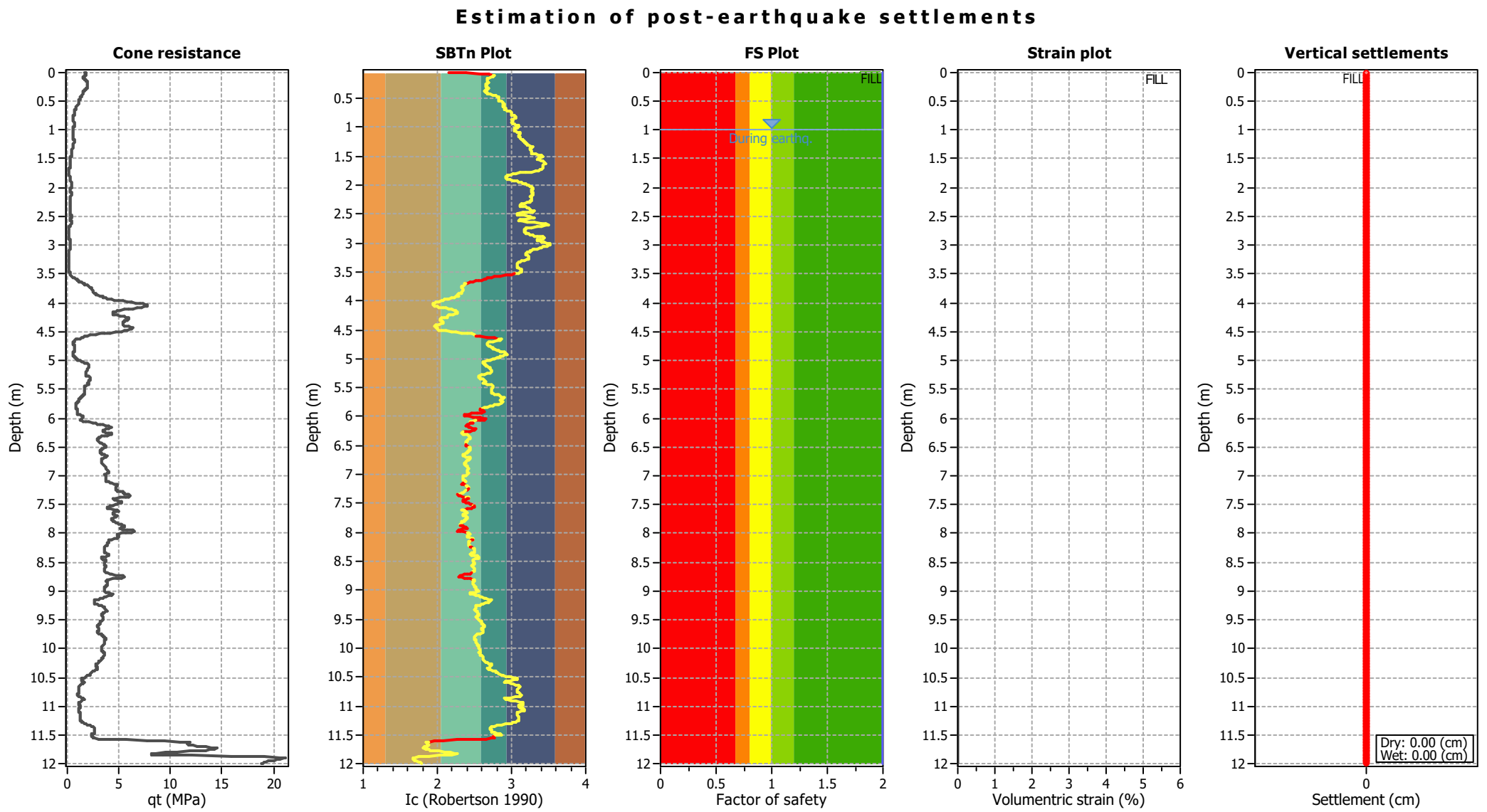
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

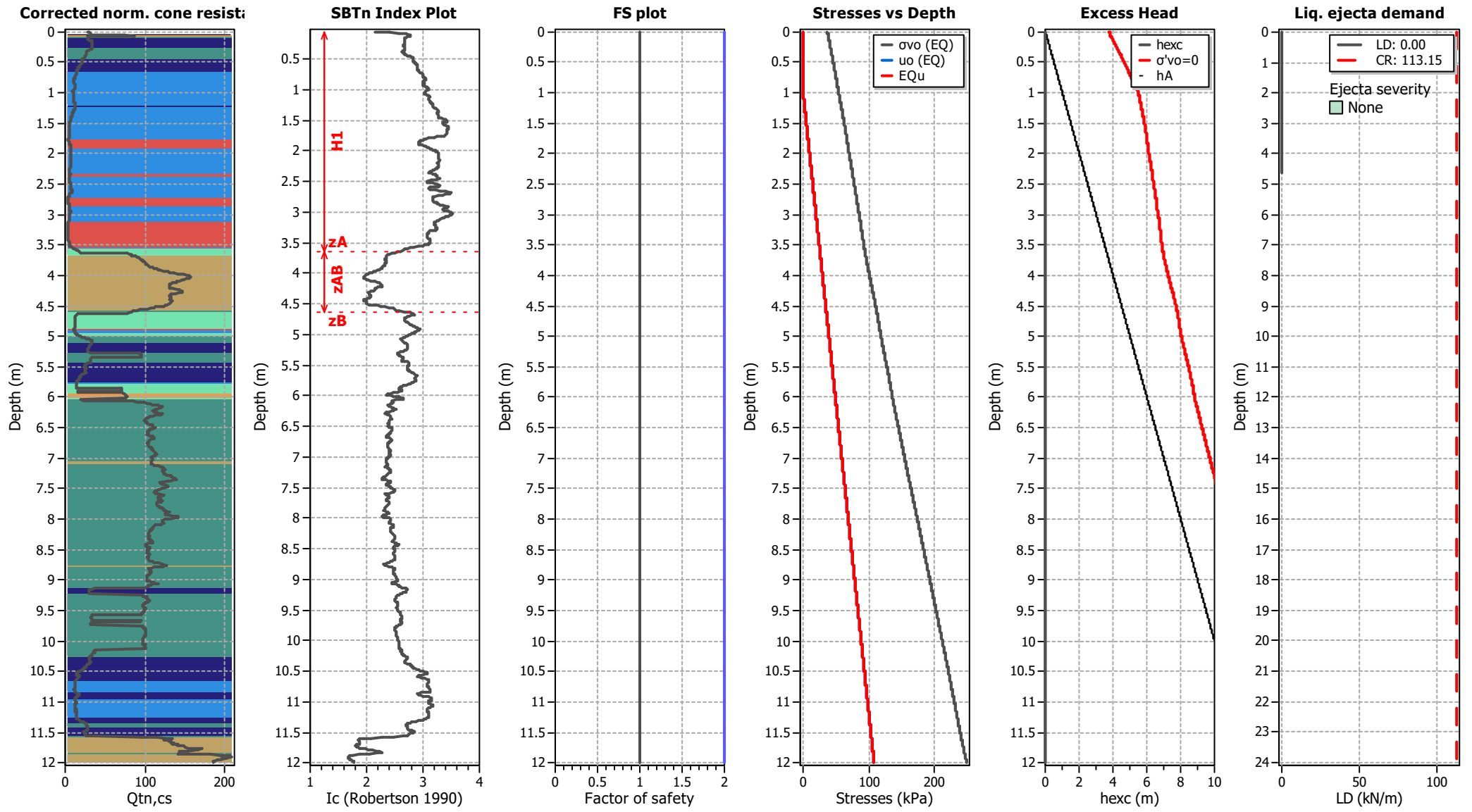
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

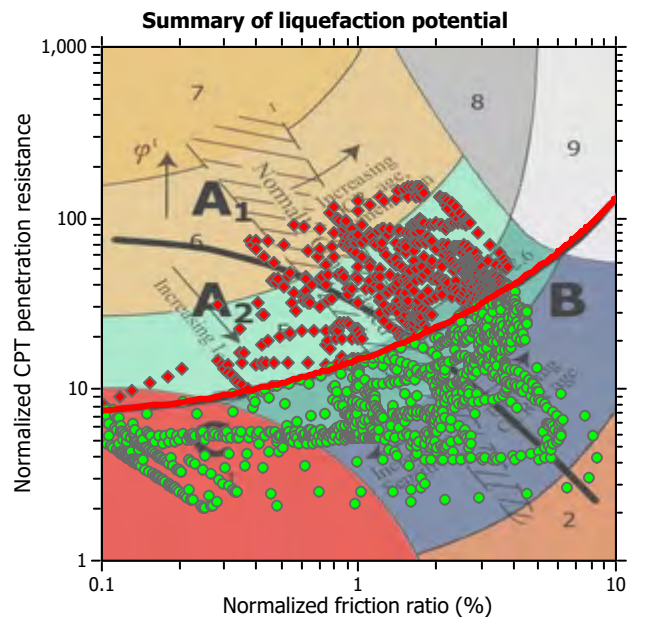
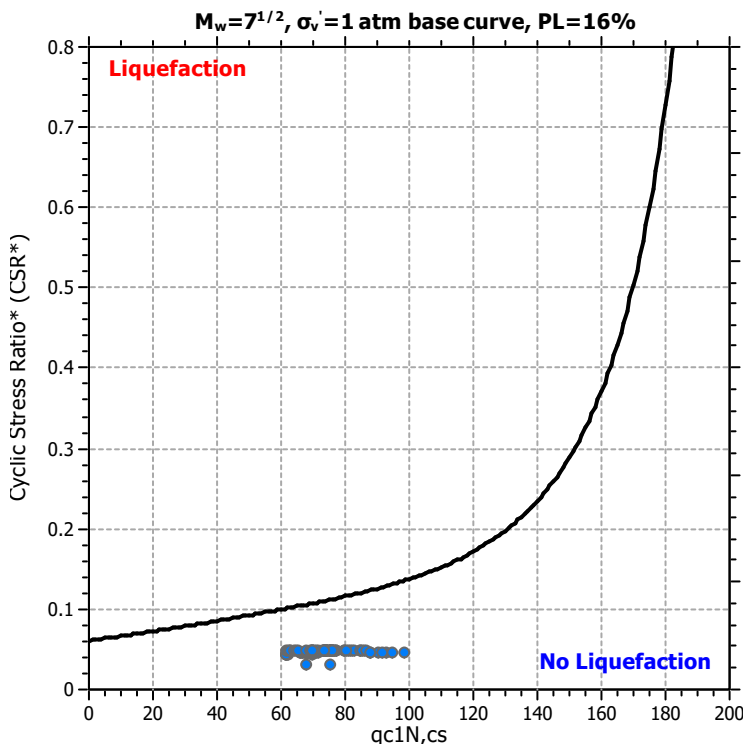
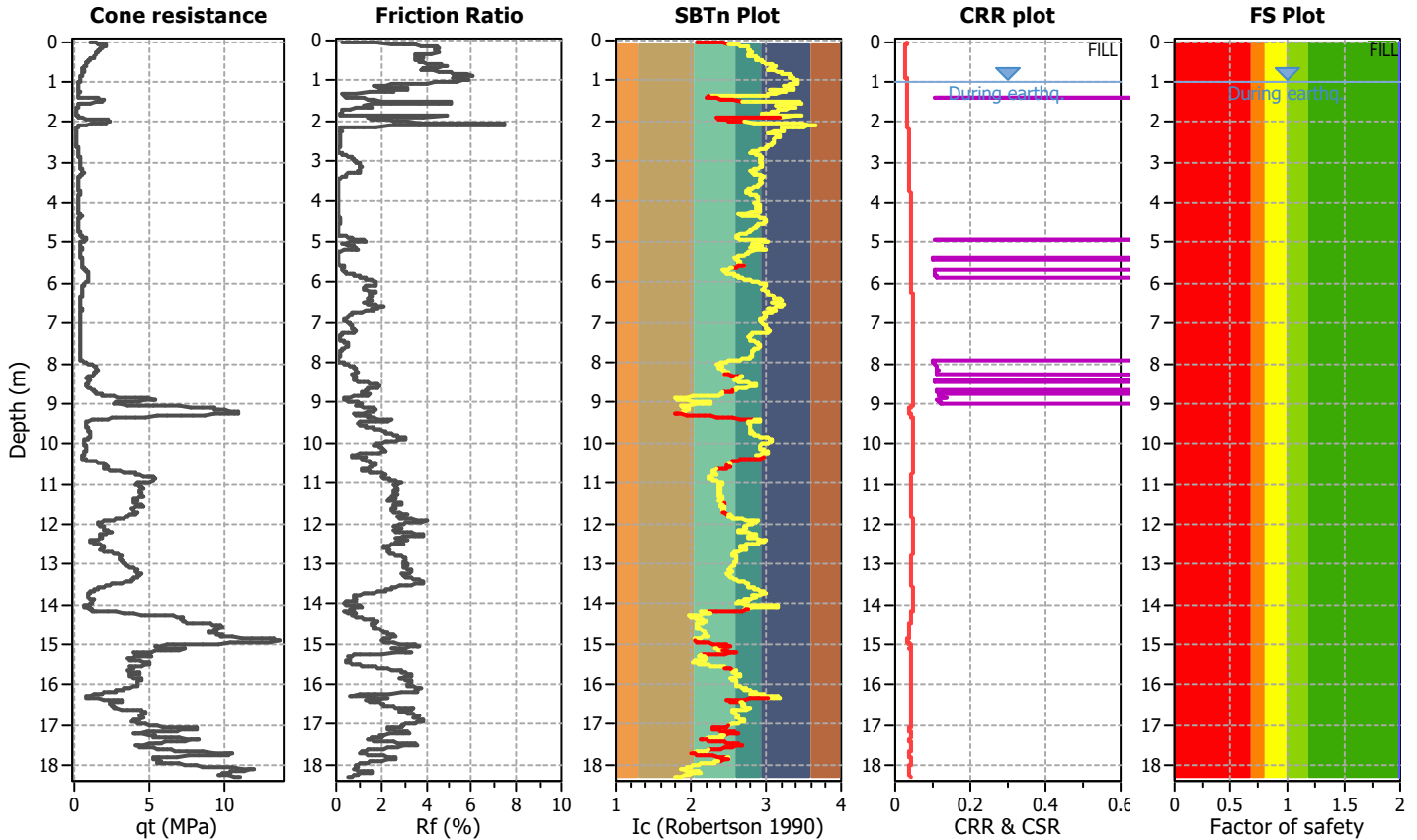
Project title : Sunfield Landholding

Location :

CPT file : CPT412

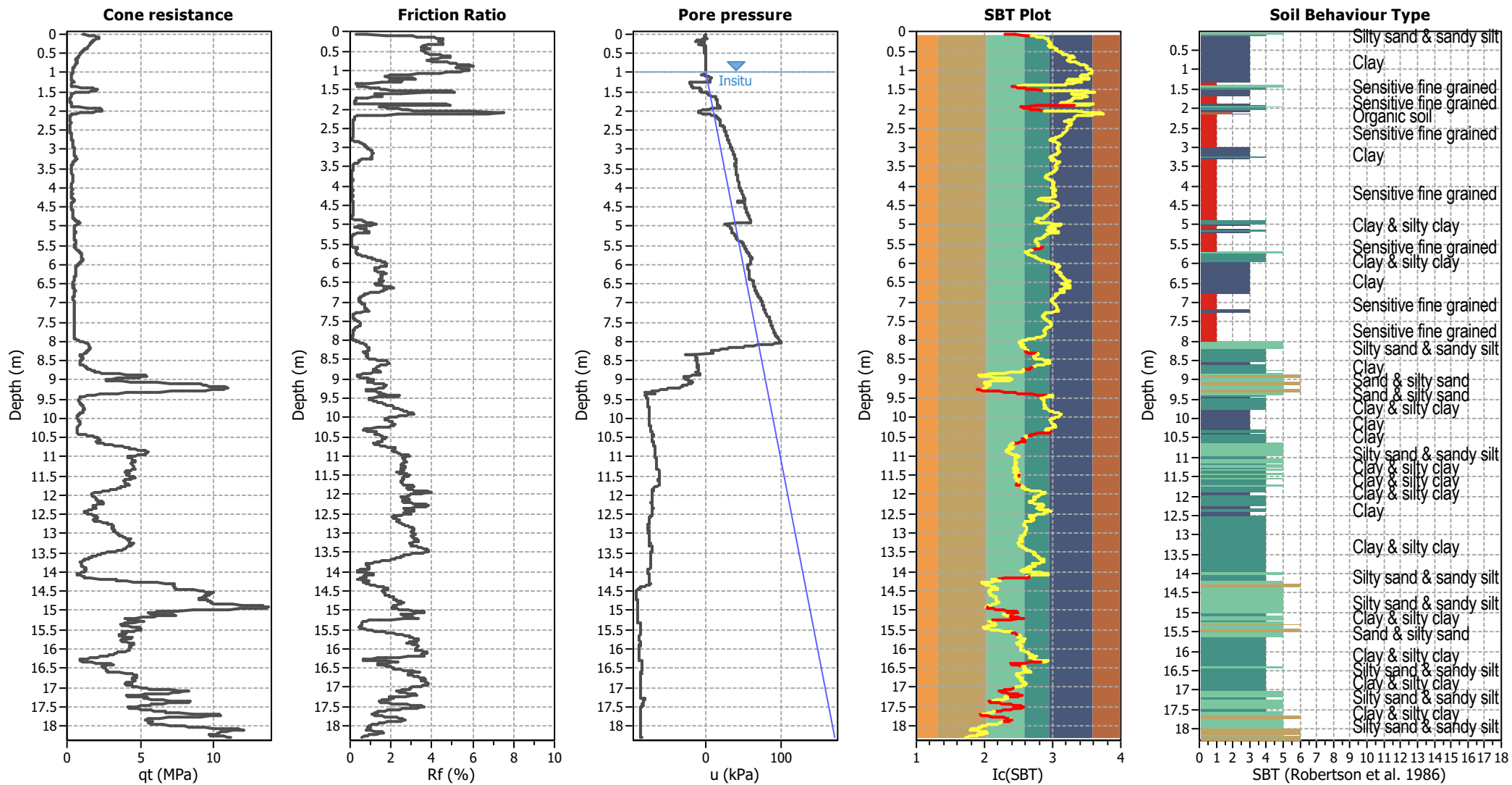
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

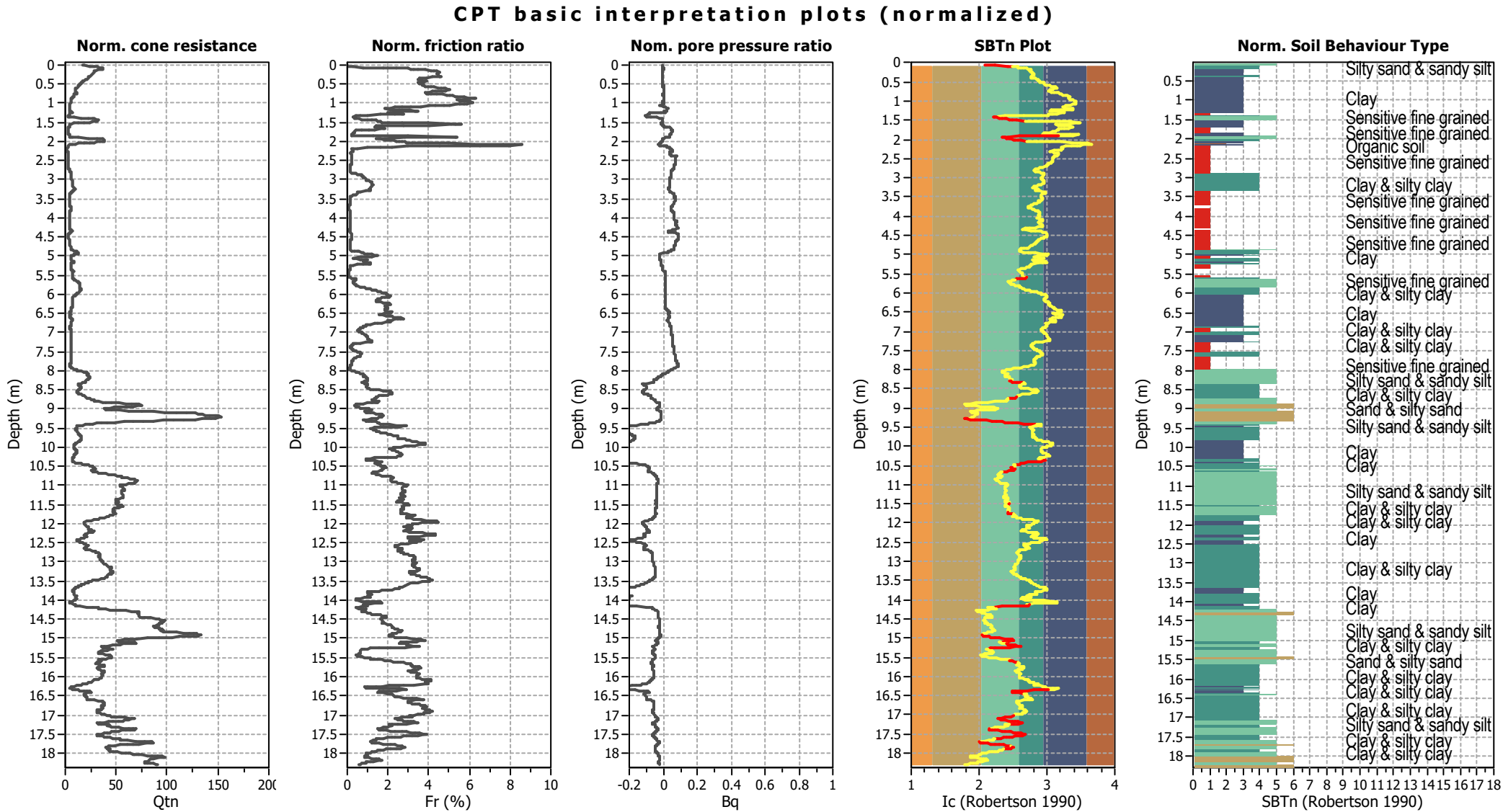


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



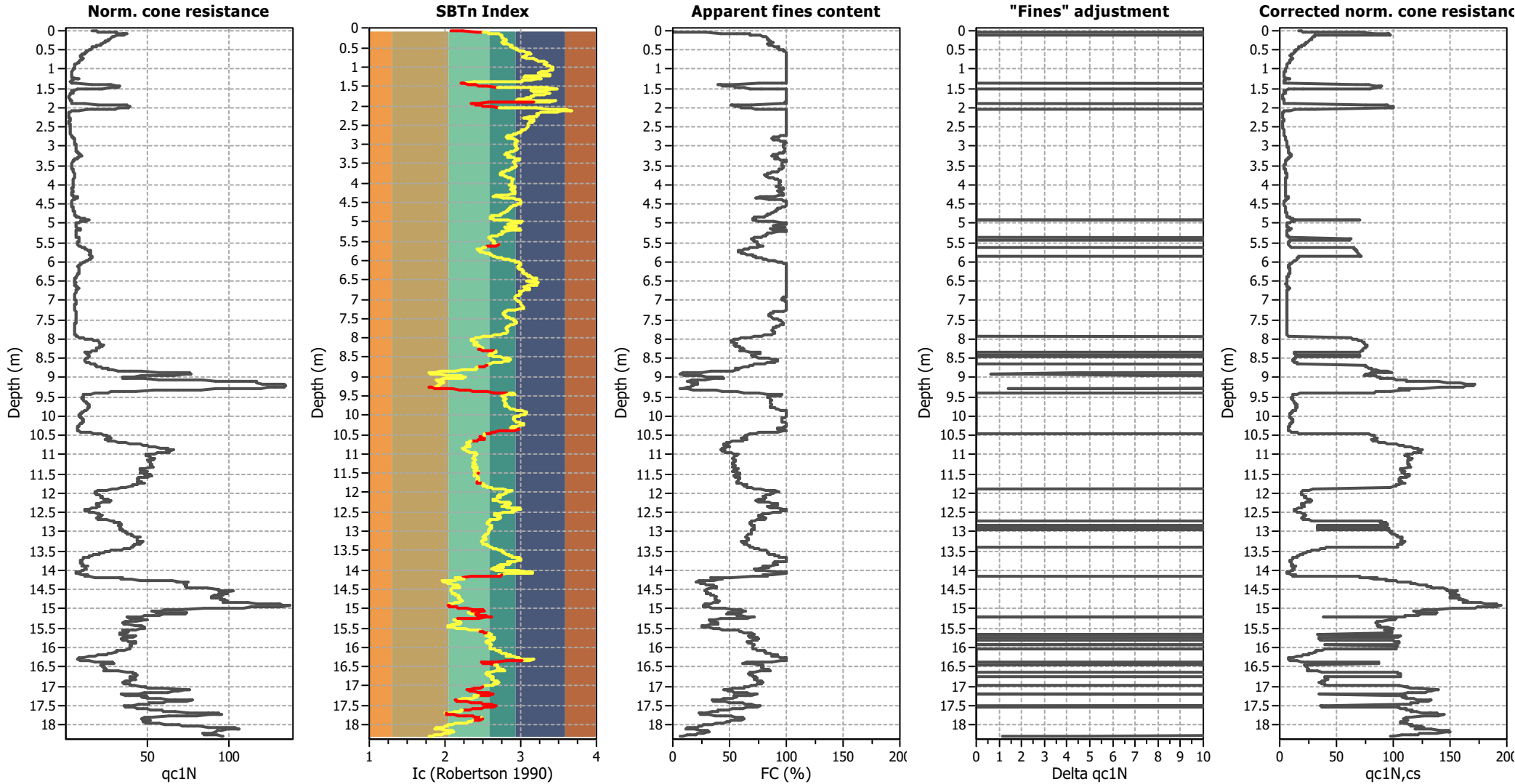
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

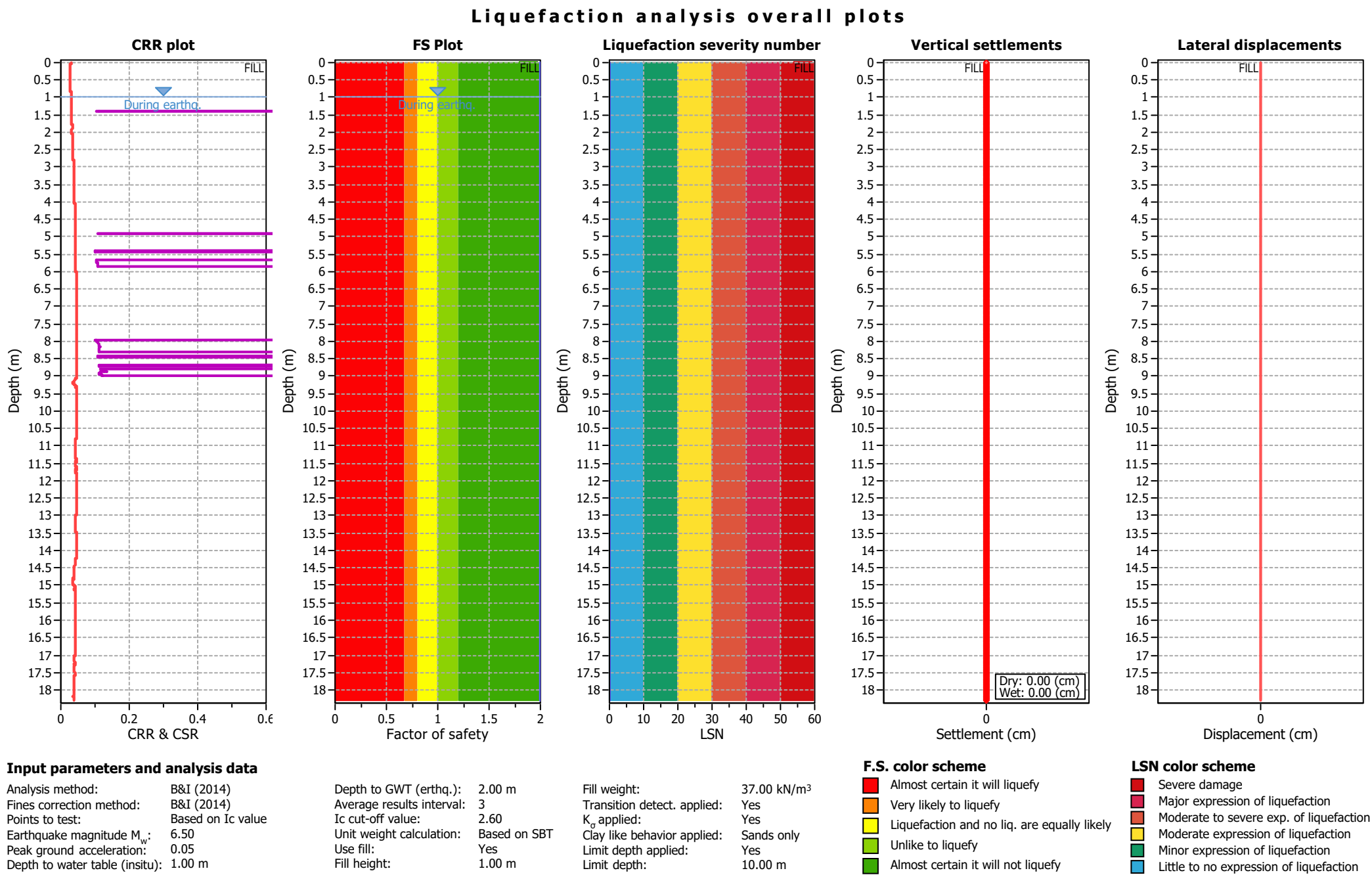
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

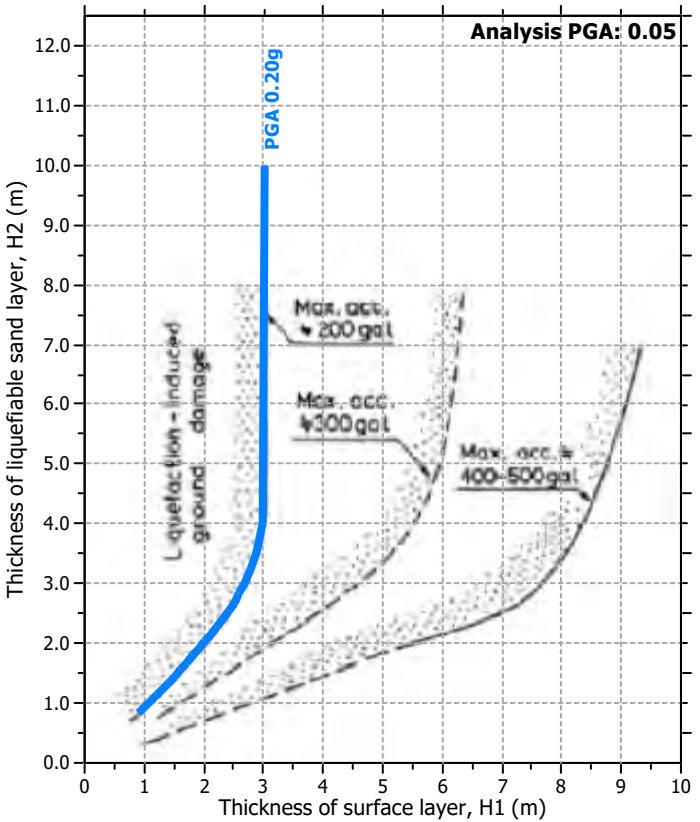
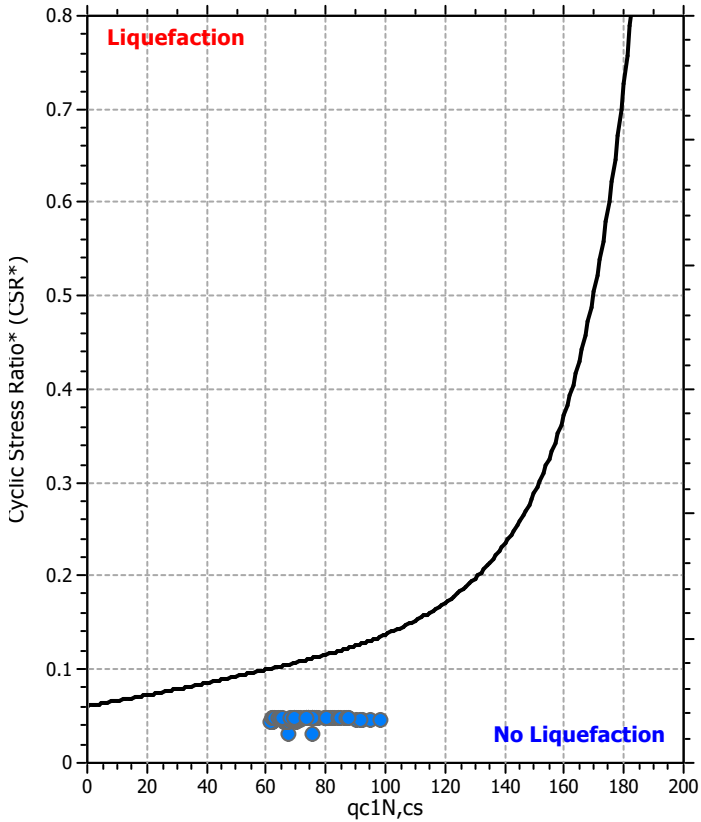
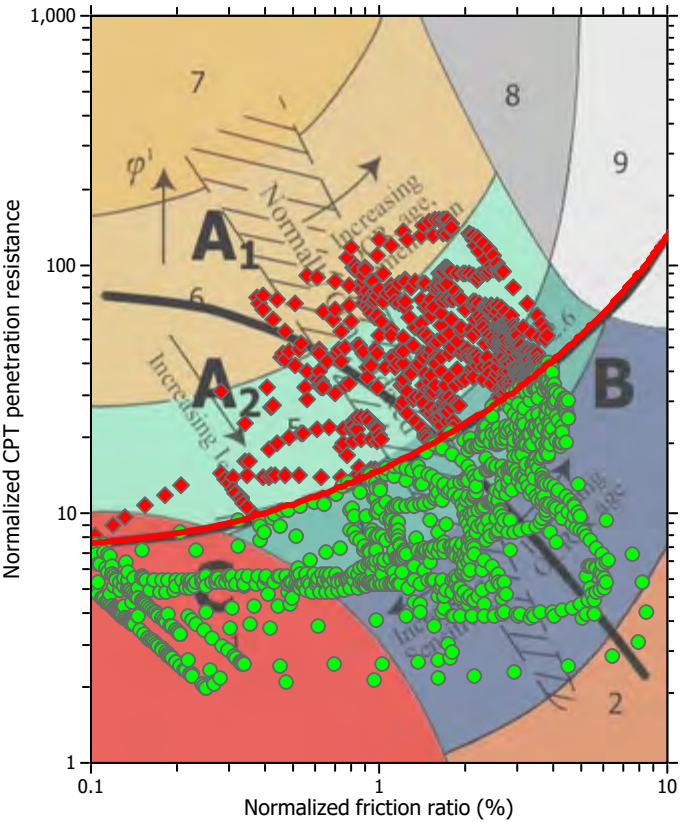


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



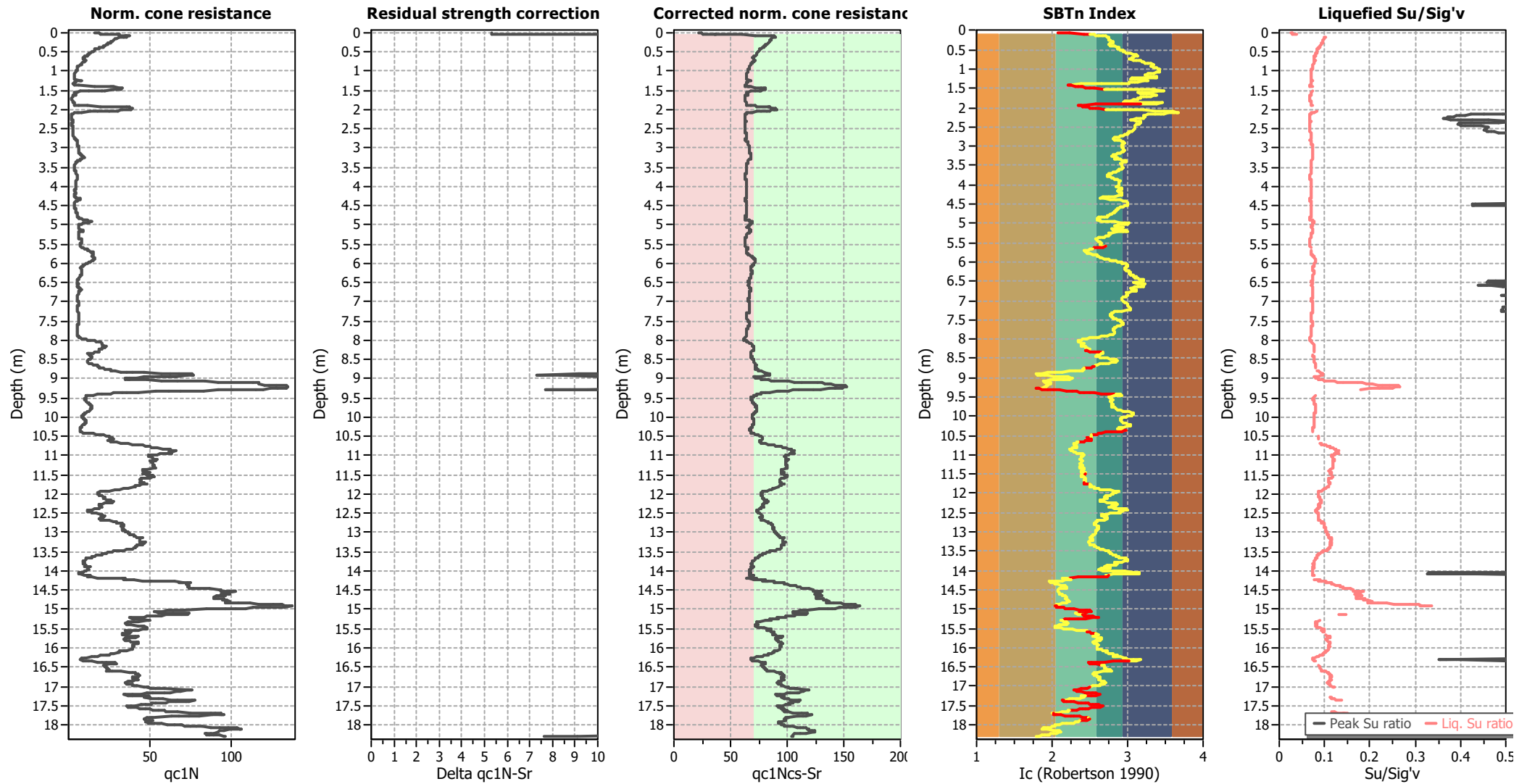
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

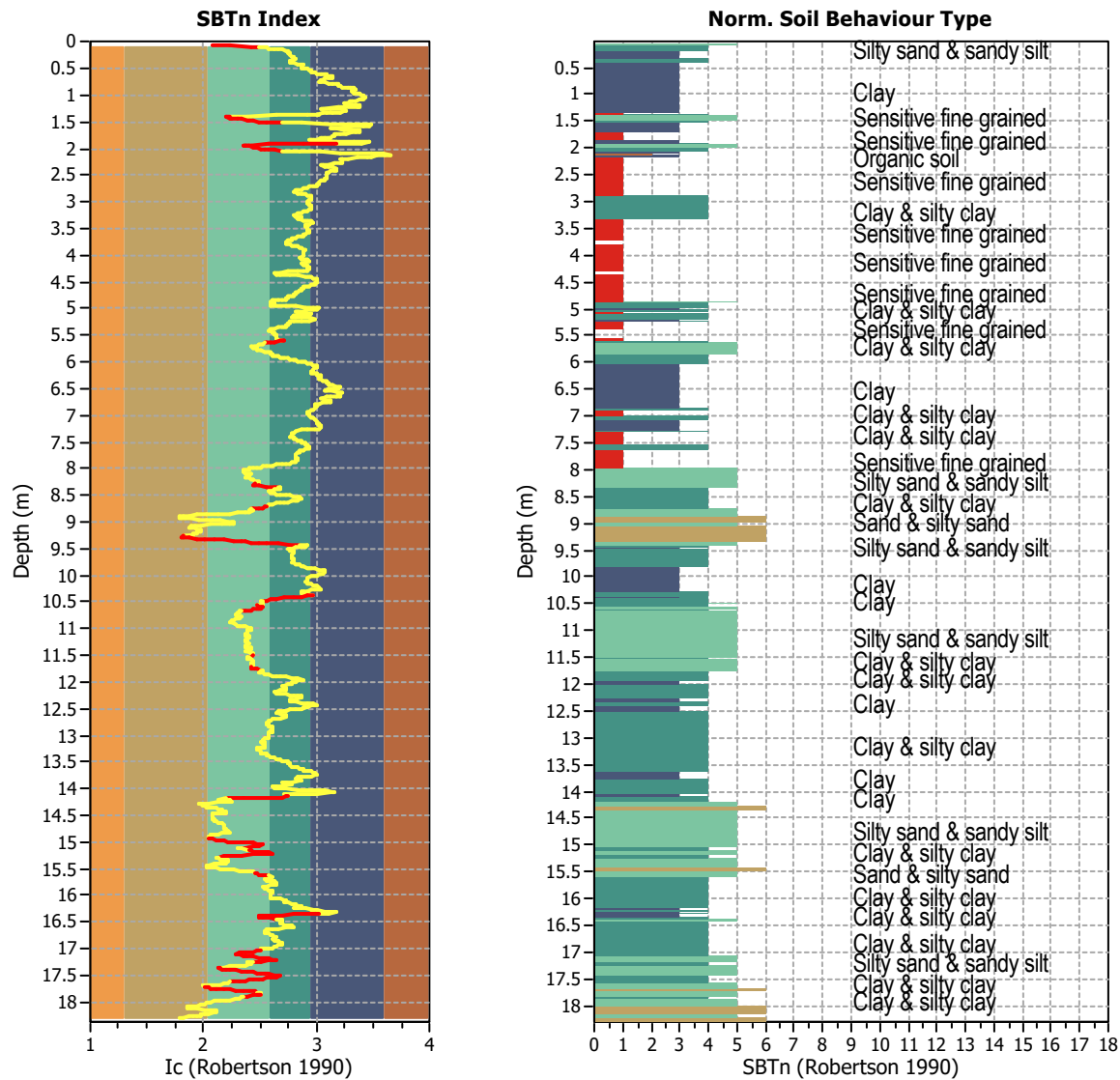
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



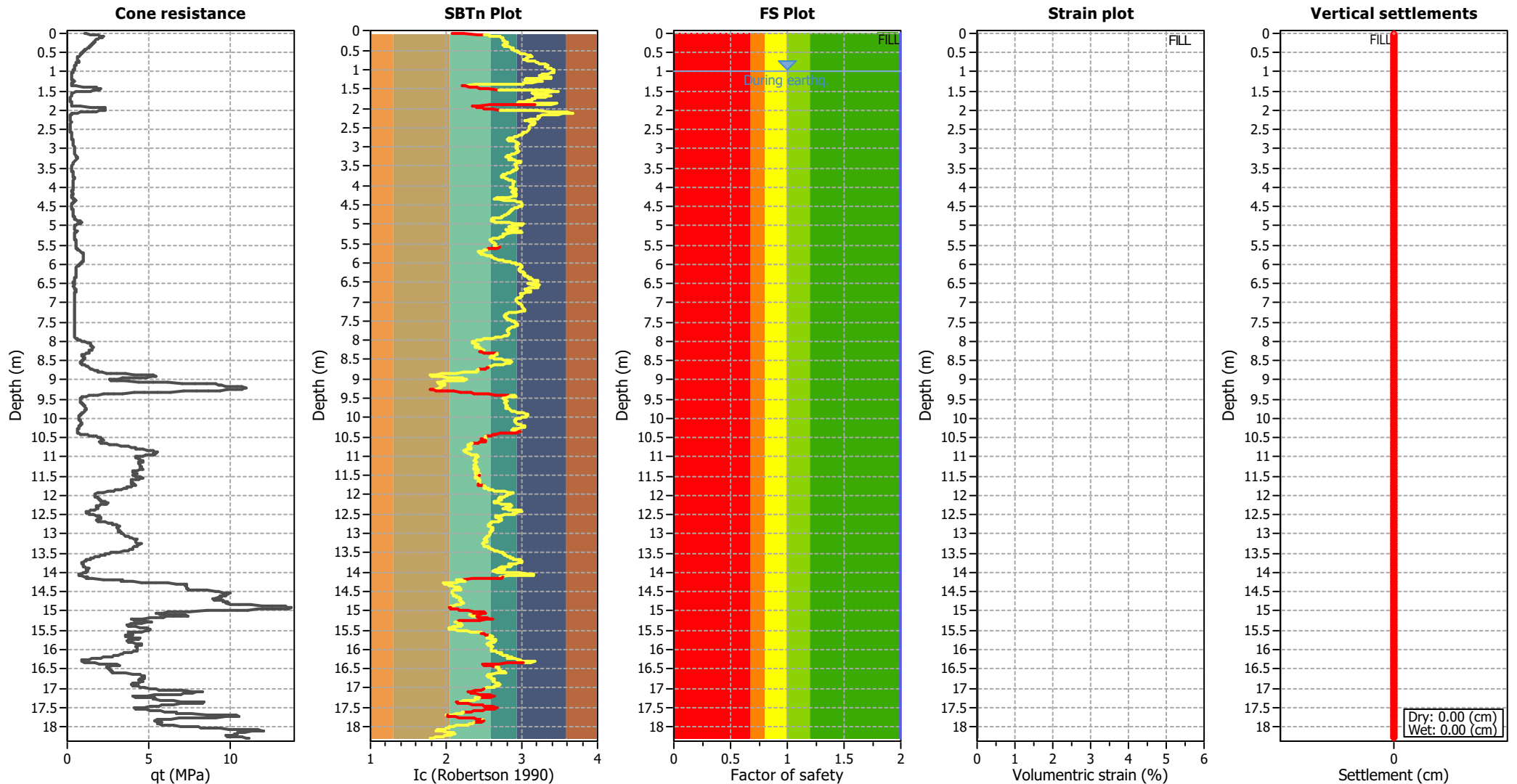
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1830
Total points excluded: 234
Exclusion percentage: 12.79%
Number of layers detected: 28

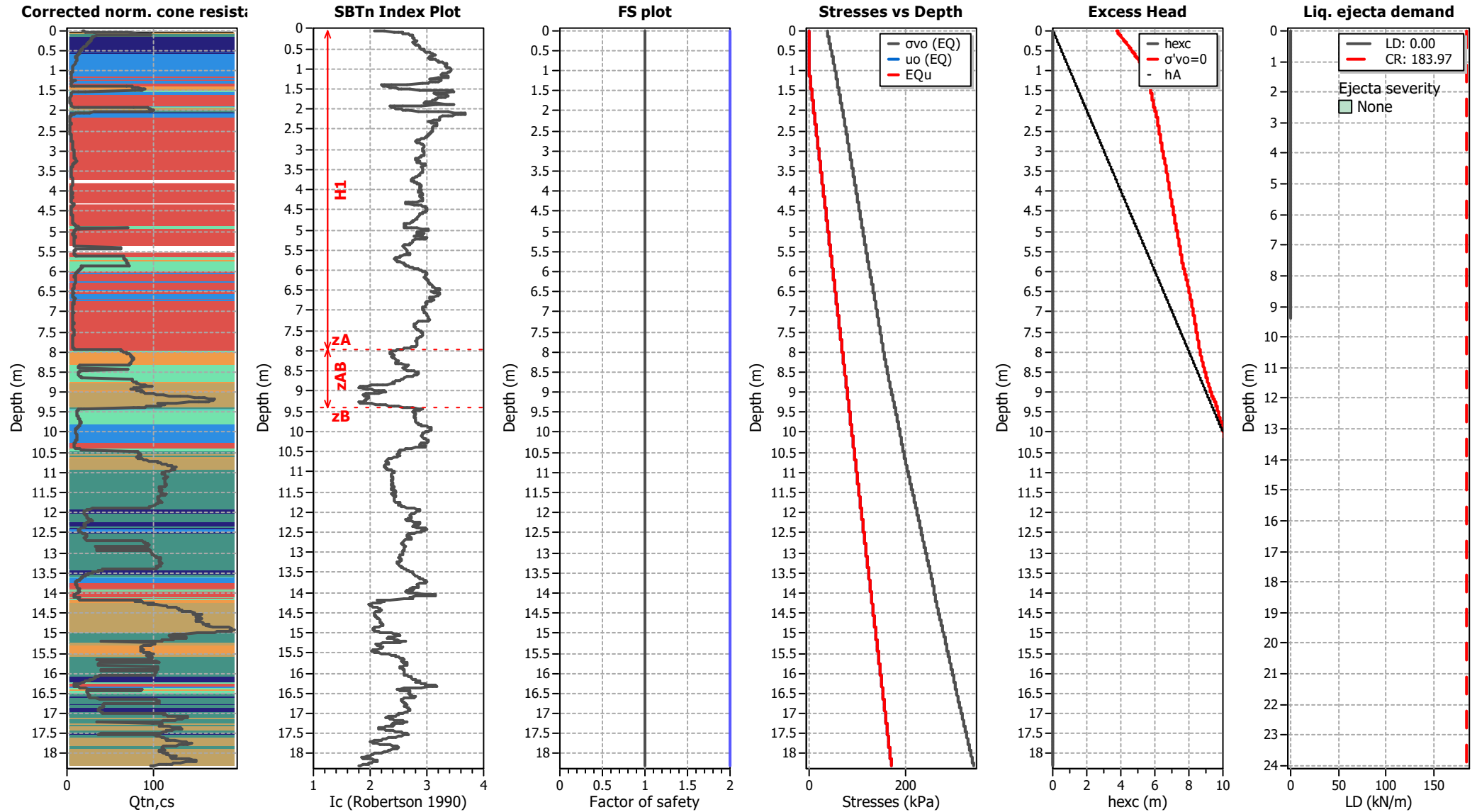
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

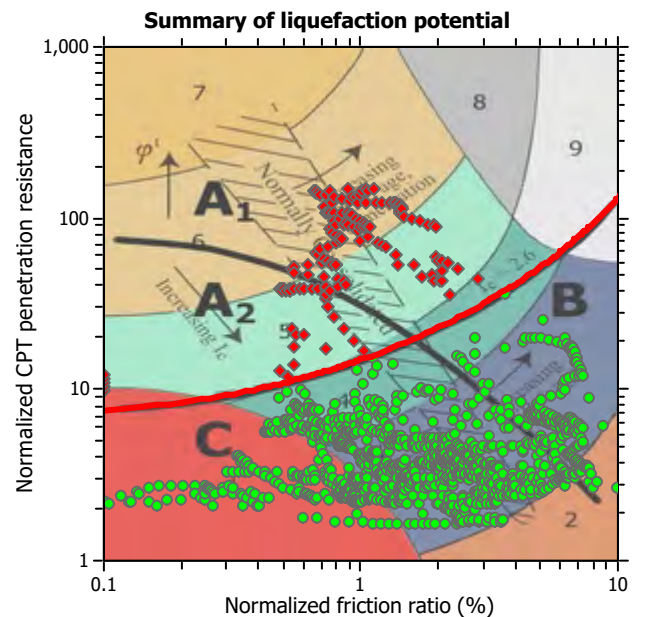
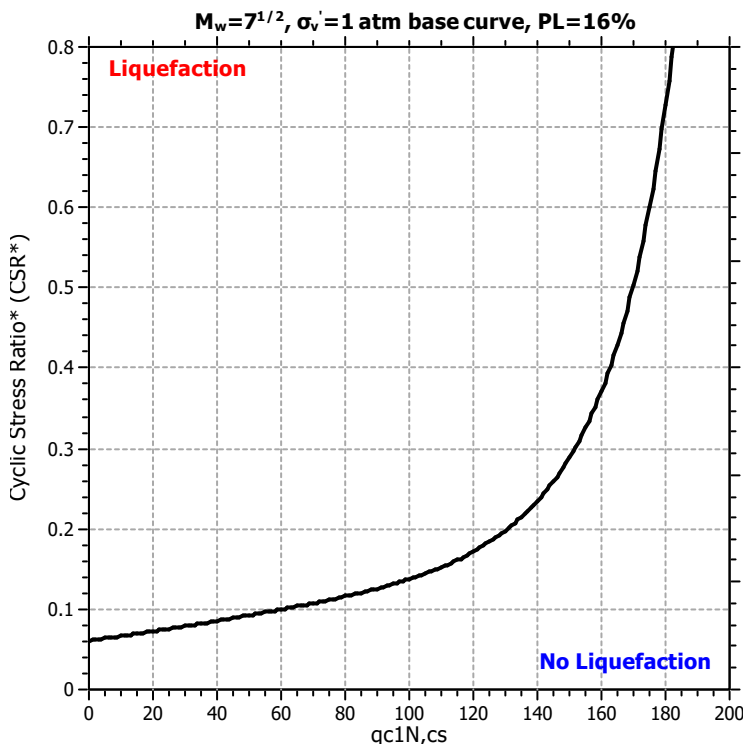
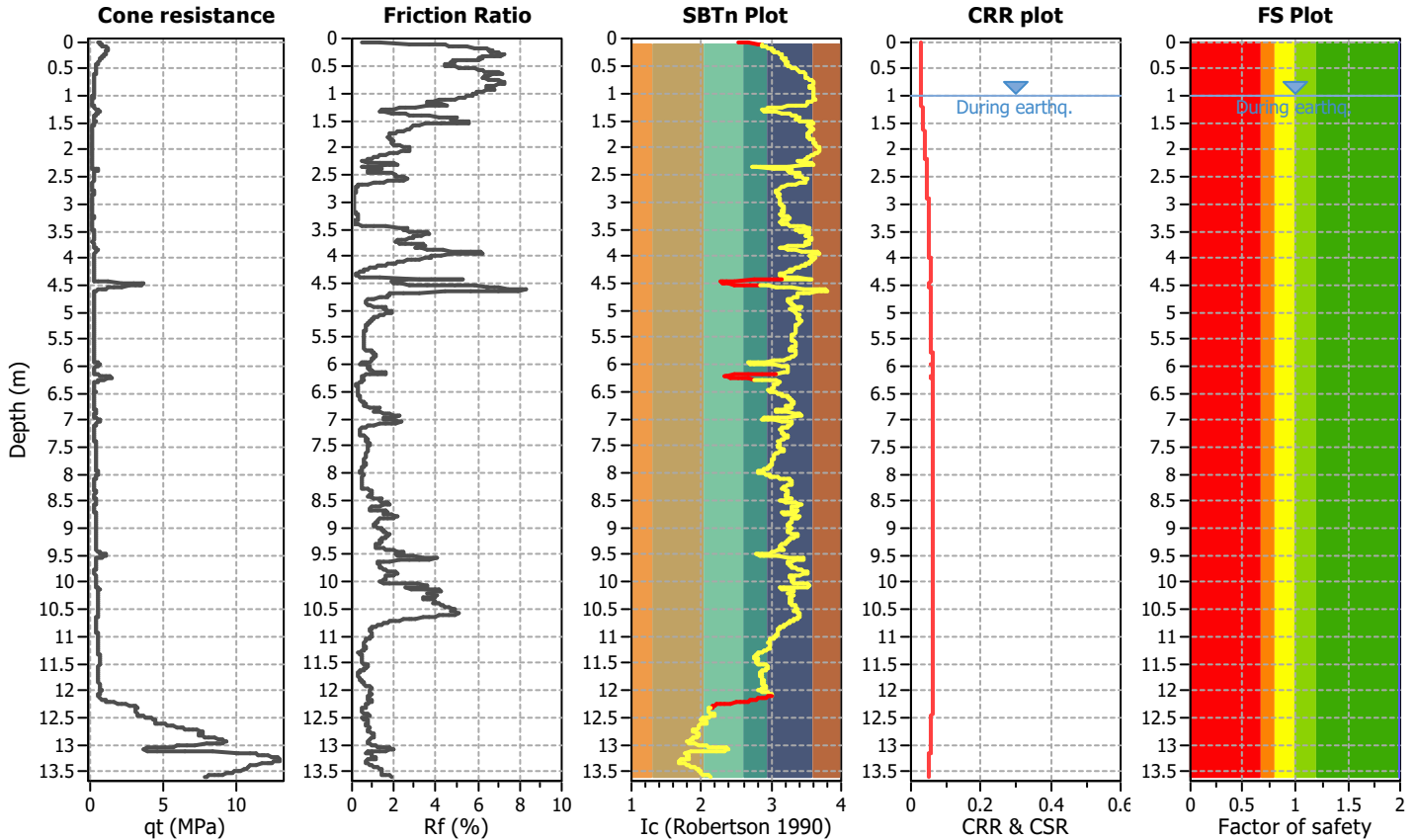
Project title : Sunfield Landholding

Location :

CPT file : CPT413

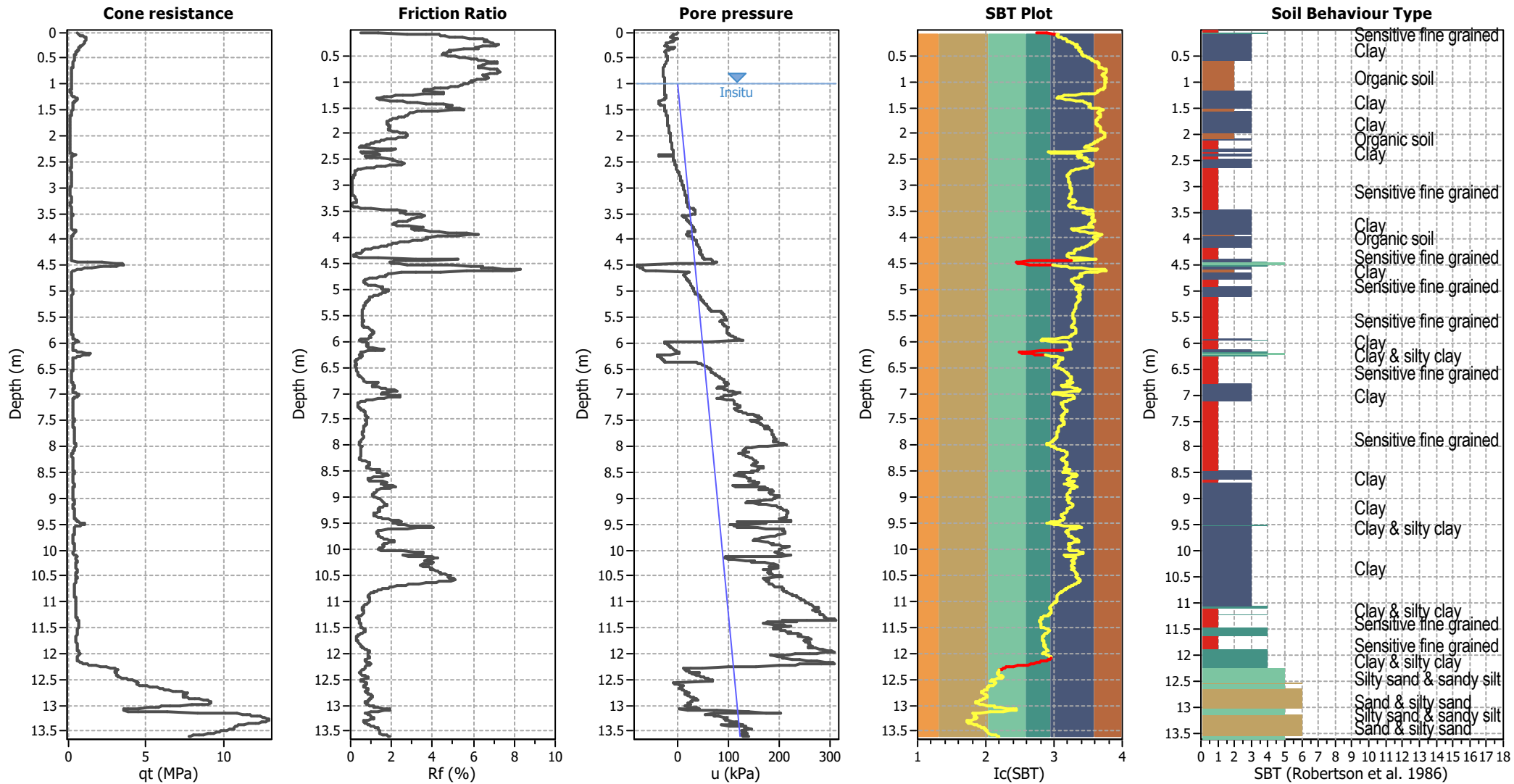
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

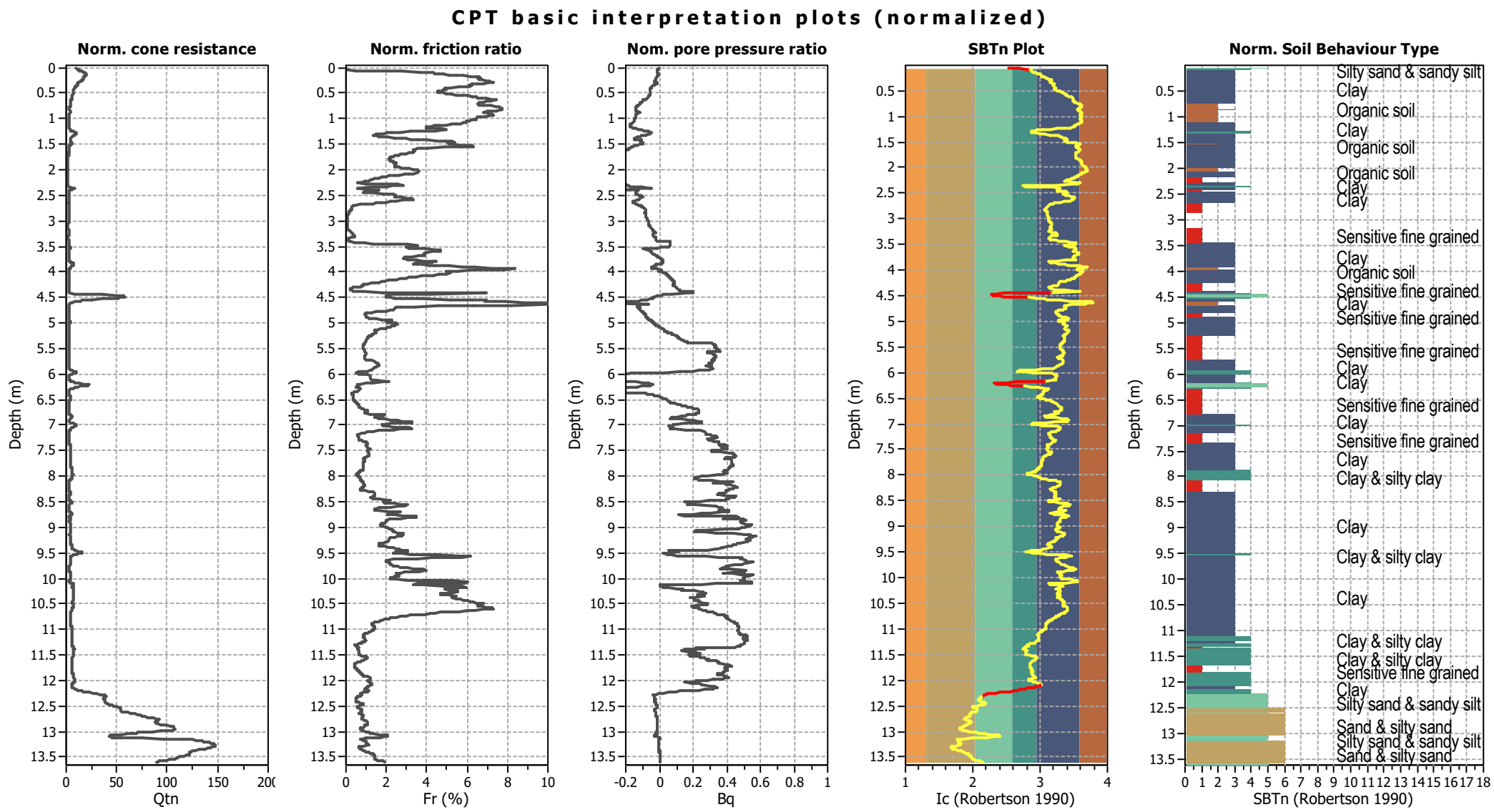


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

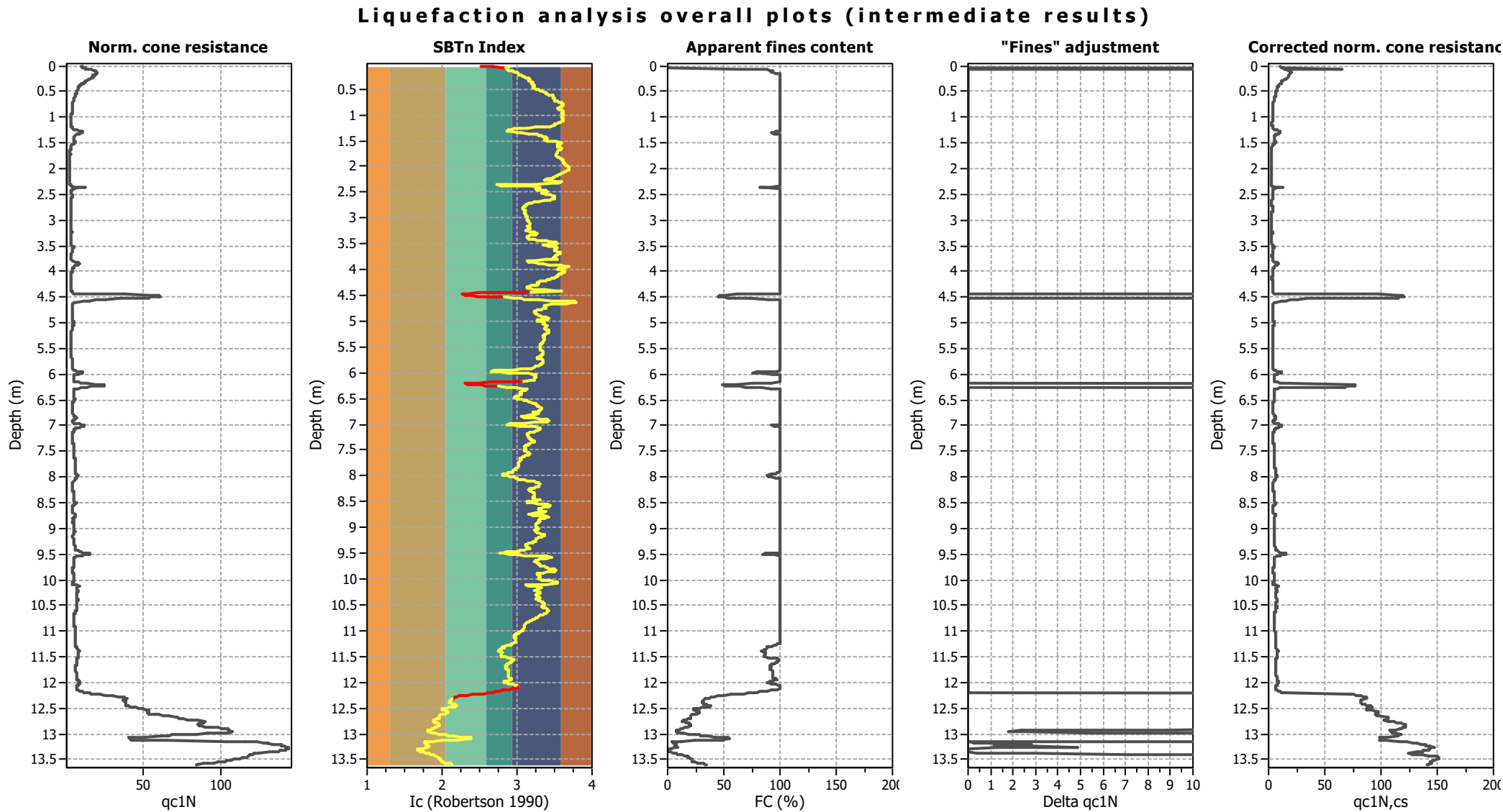


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend

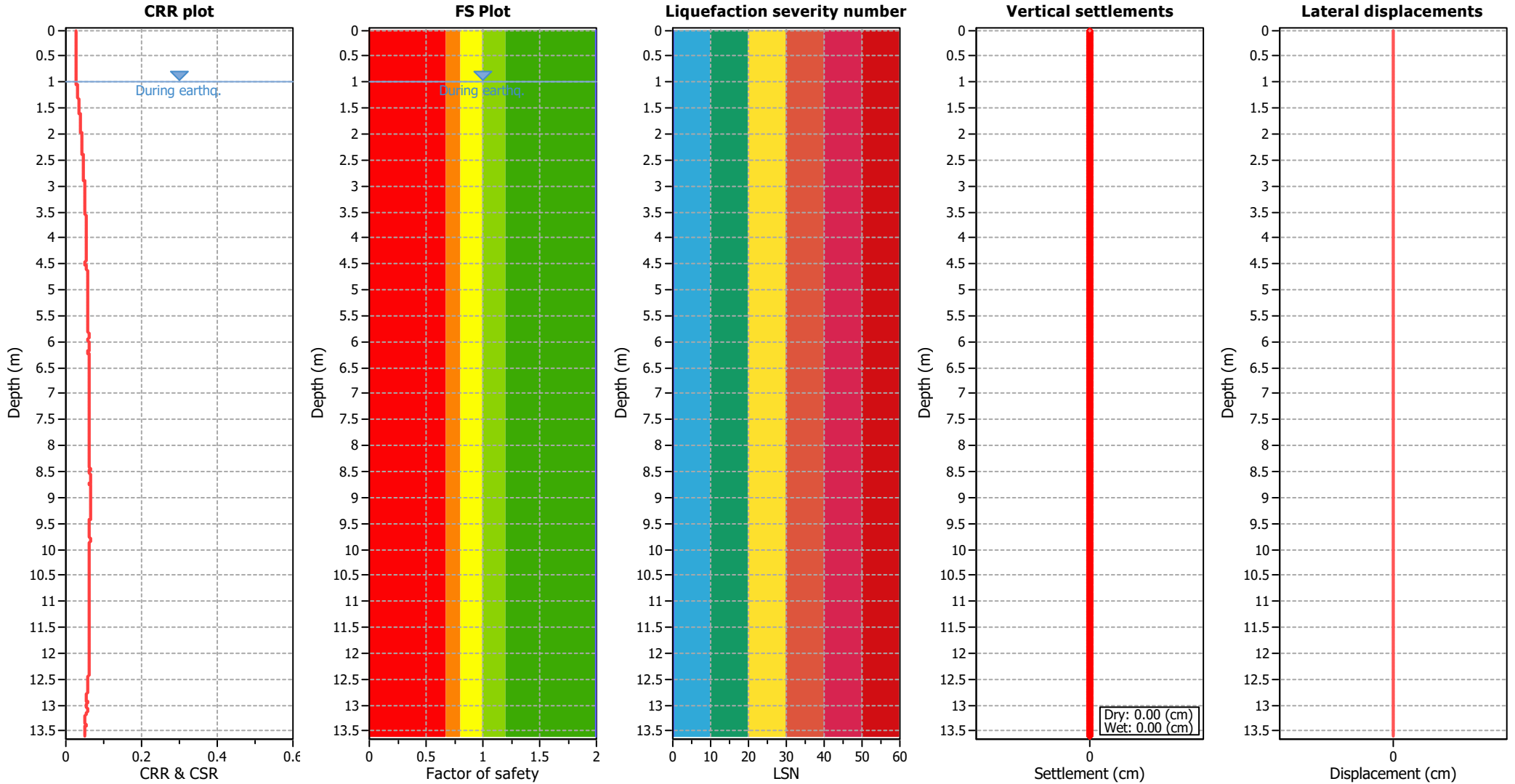
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

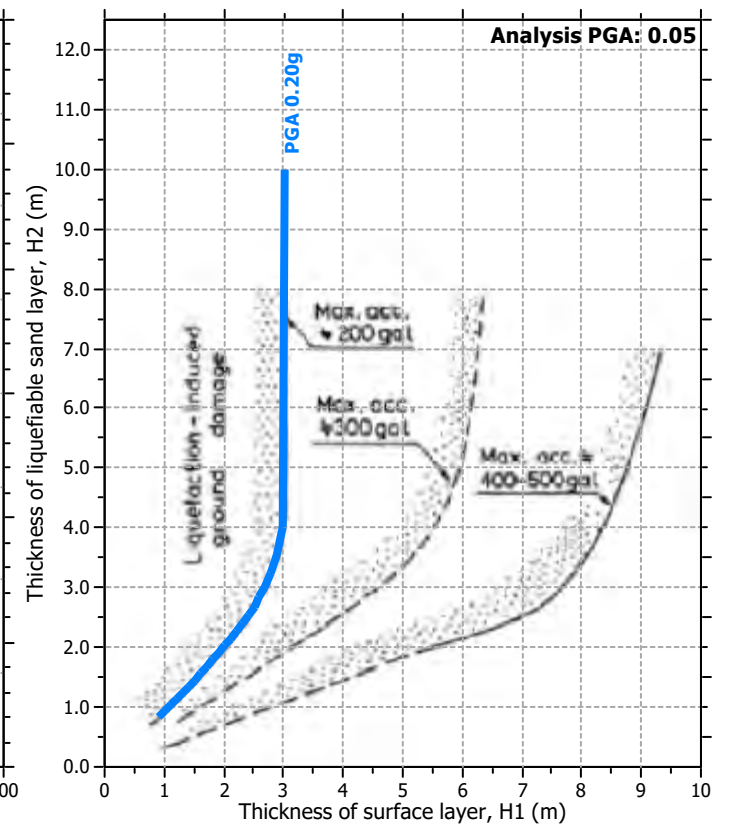
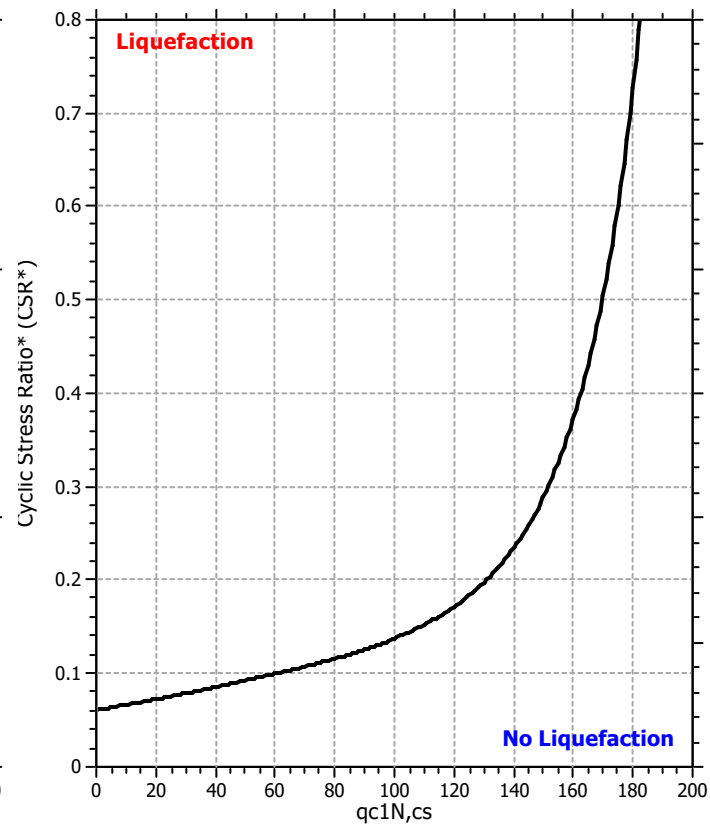
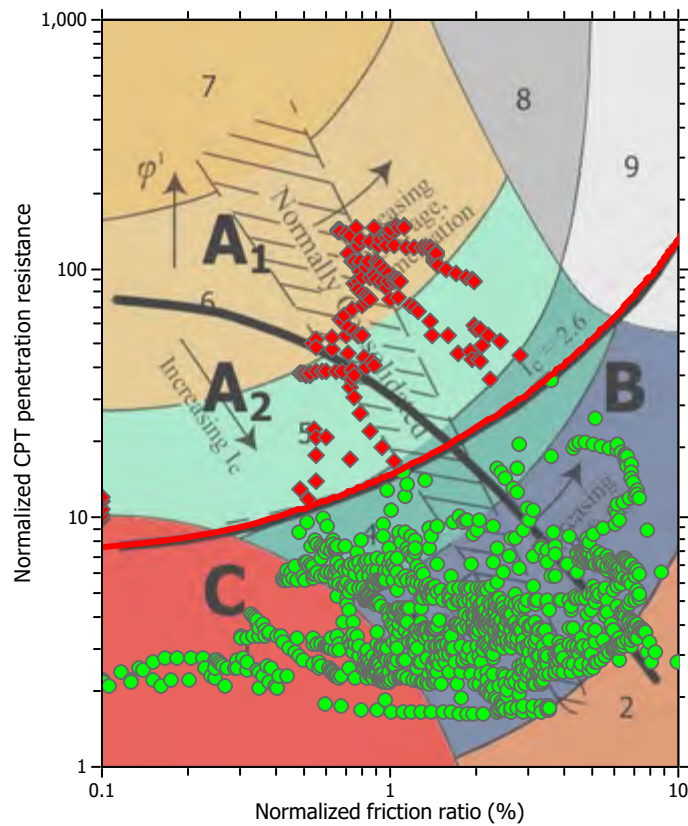
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

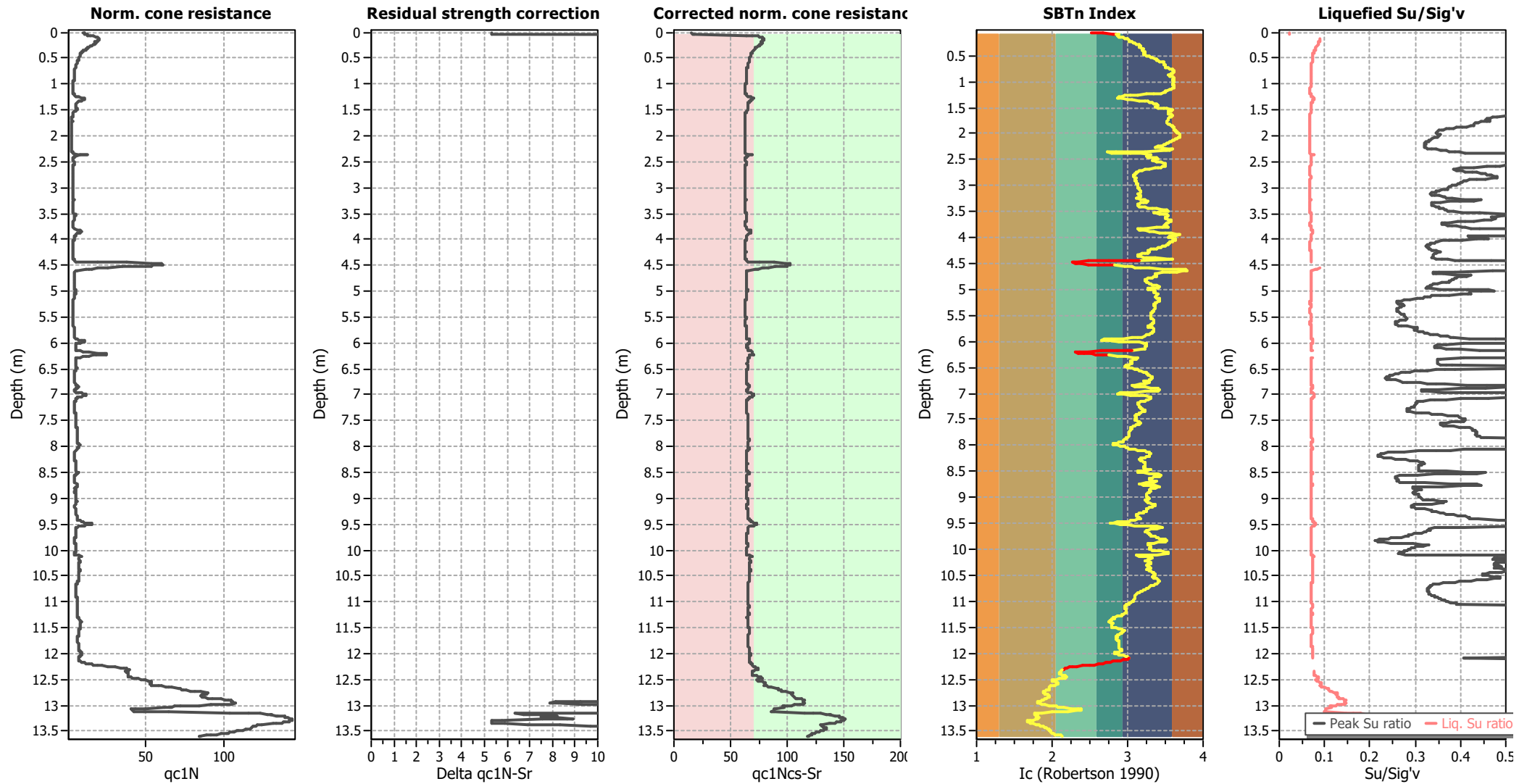
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

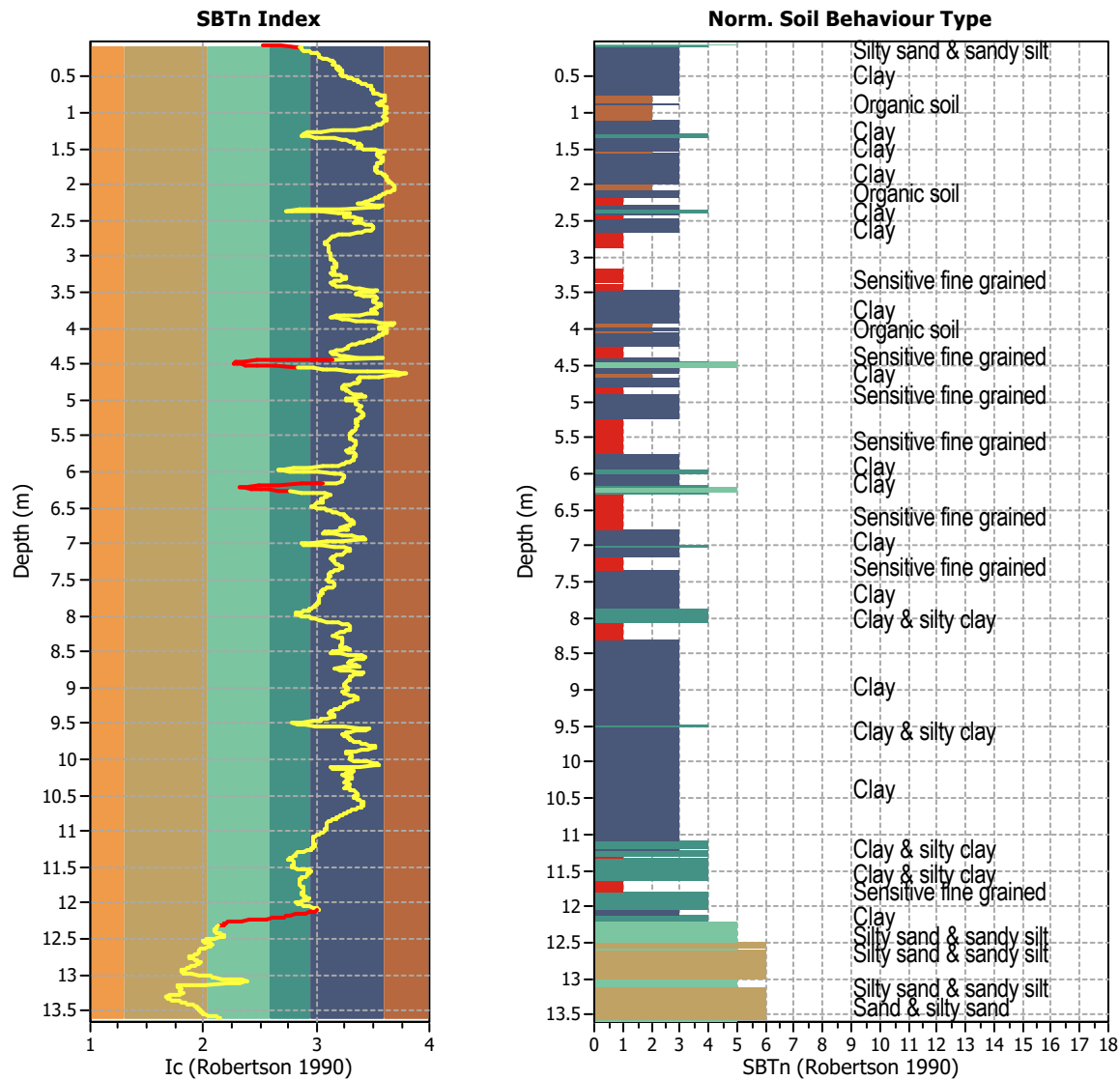
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

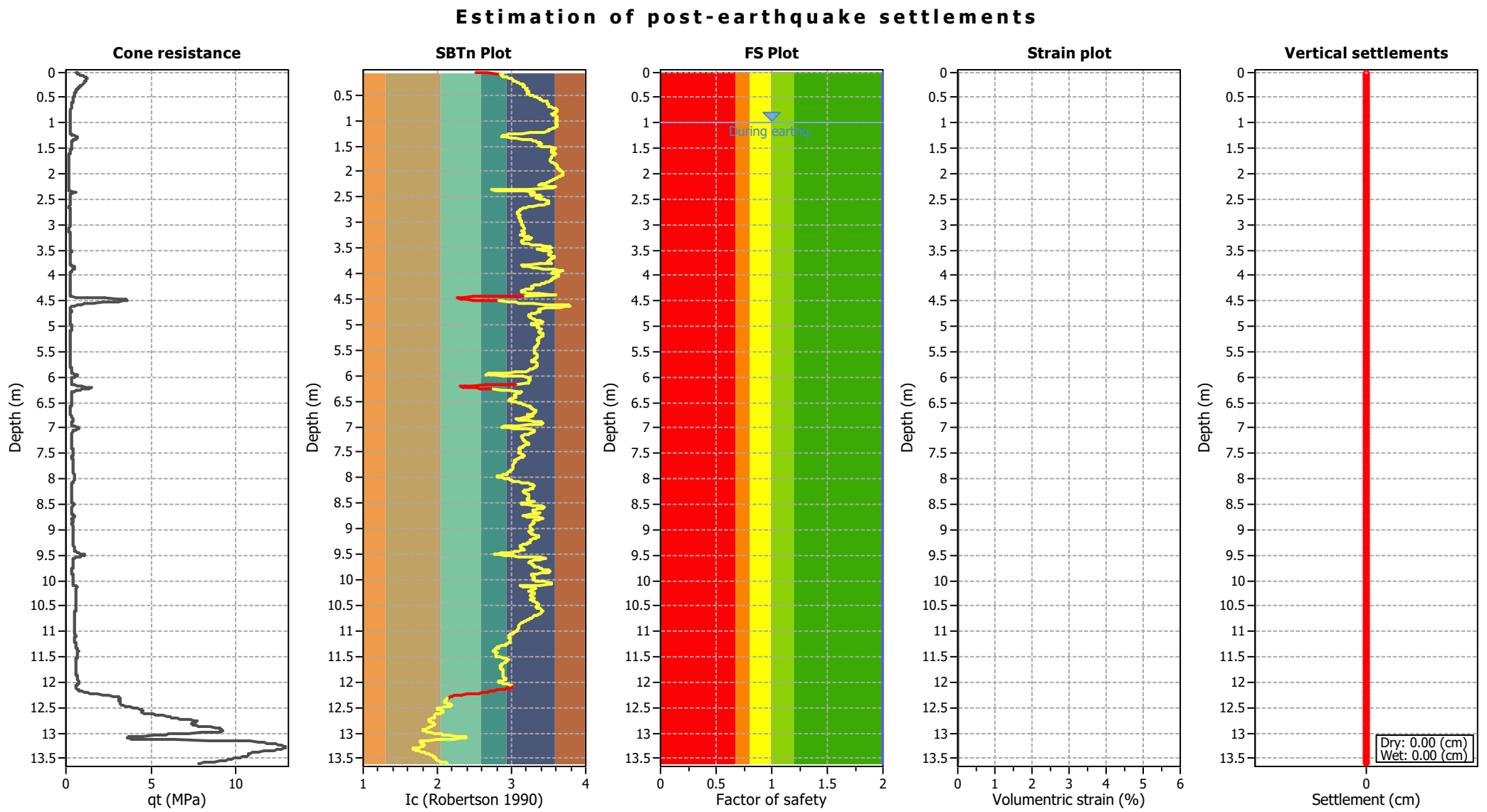


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

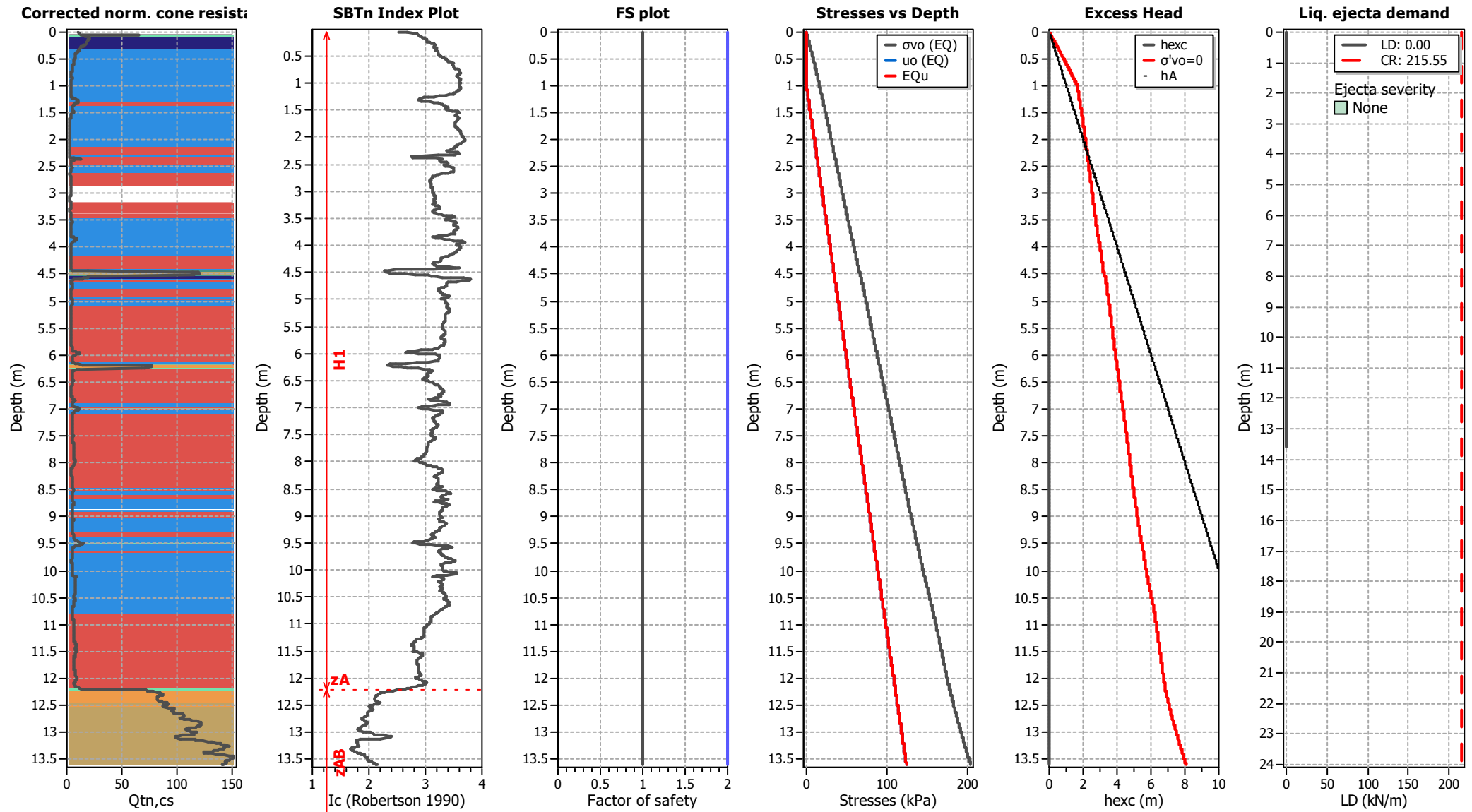
Total points in CPT file: 1360
Total points excluded: 54
Exclusion percentage: 3.97%
Number of layers detected: 6



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

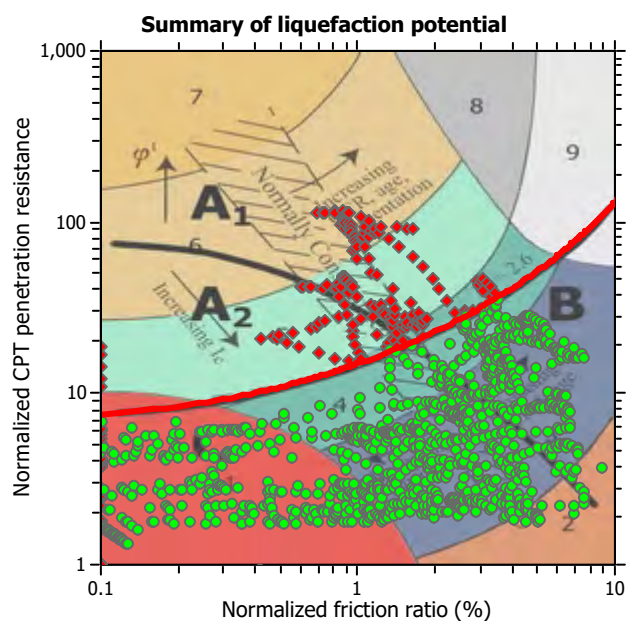
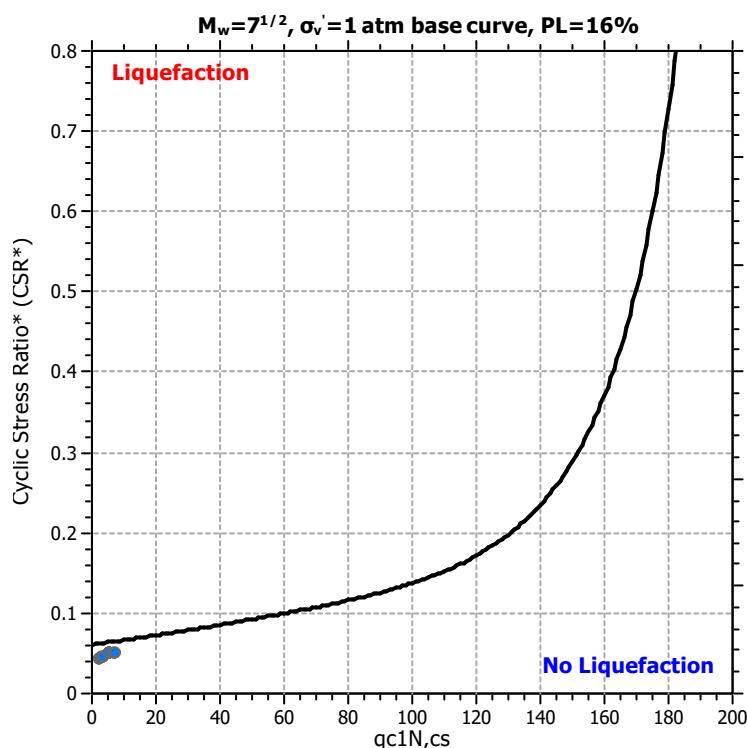
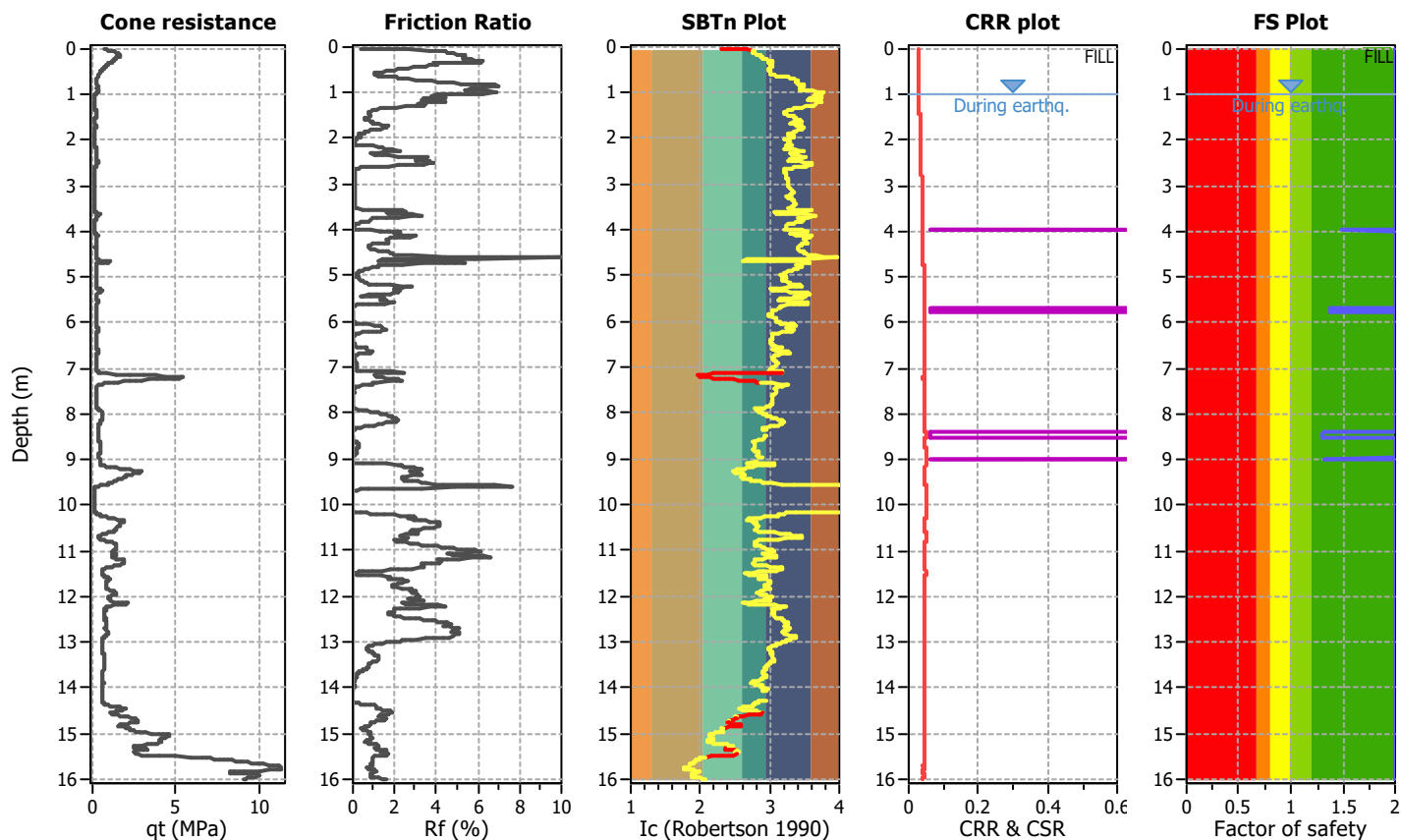
Project title : Sunfield Landholding

Location :

CPT file : CPT414

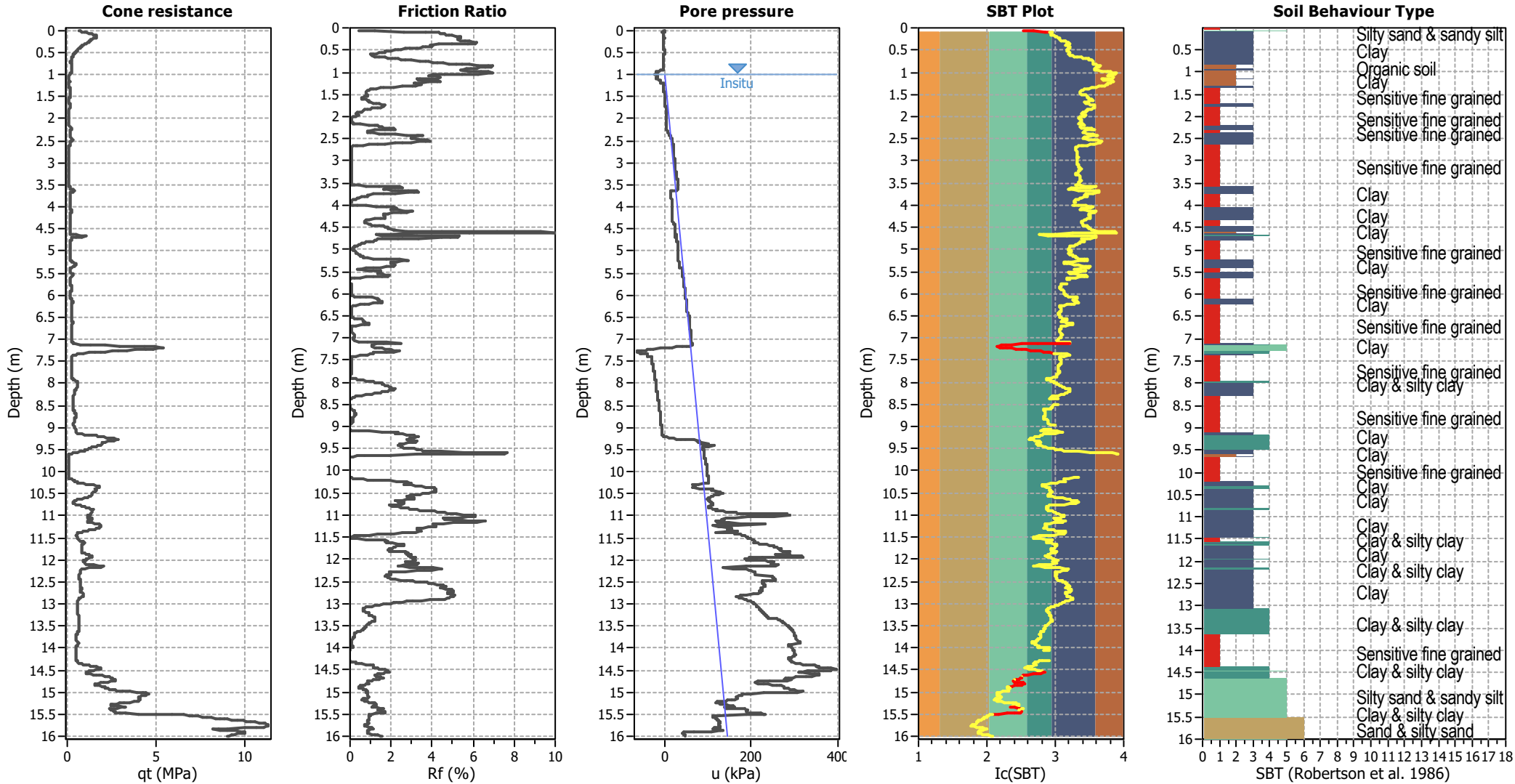
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



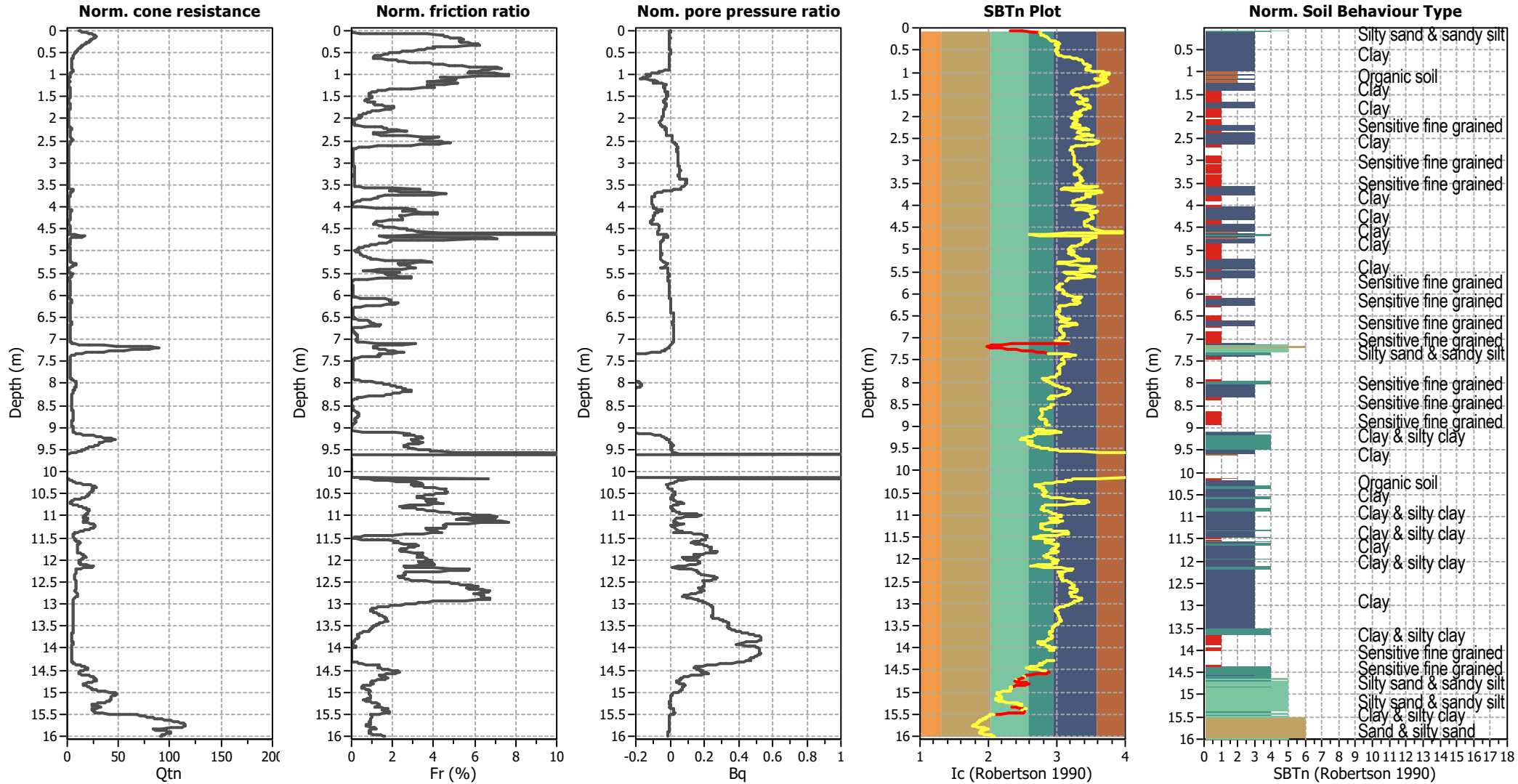
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



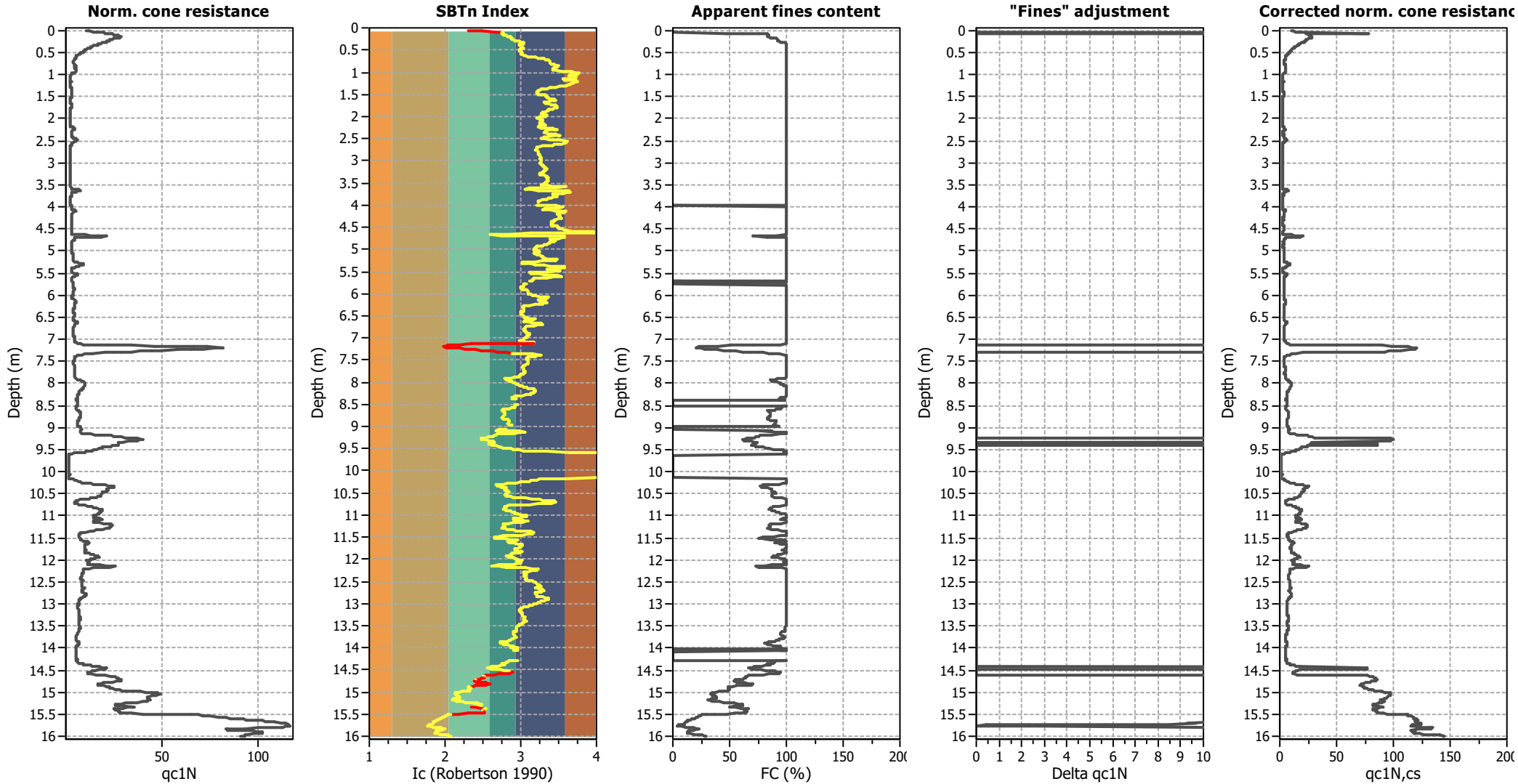
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

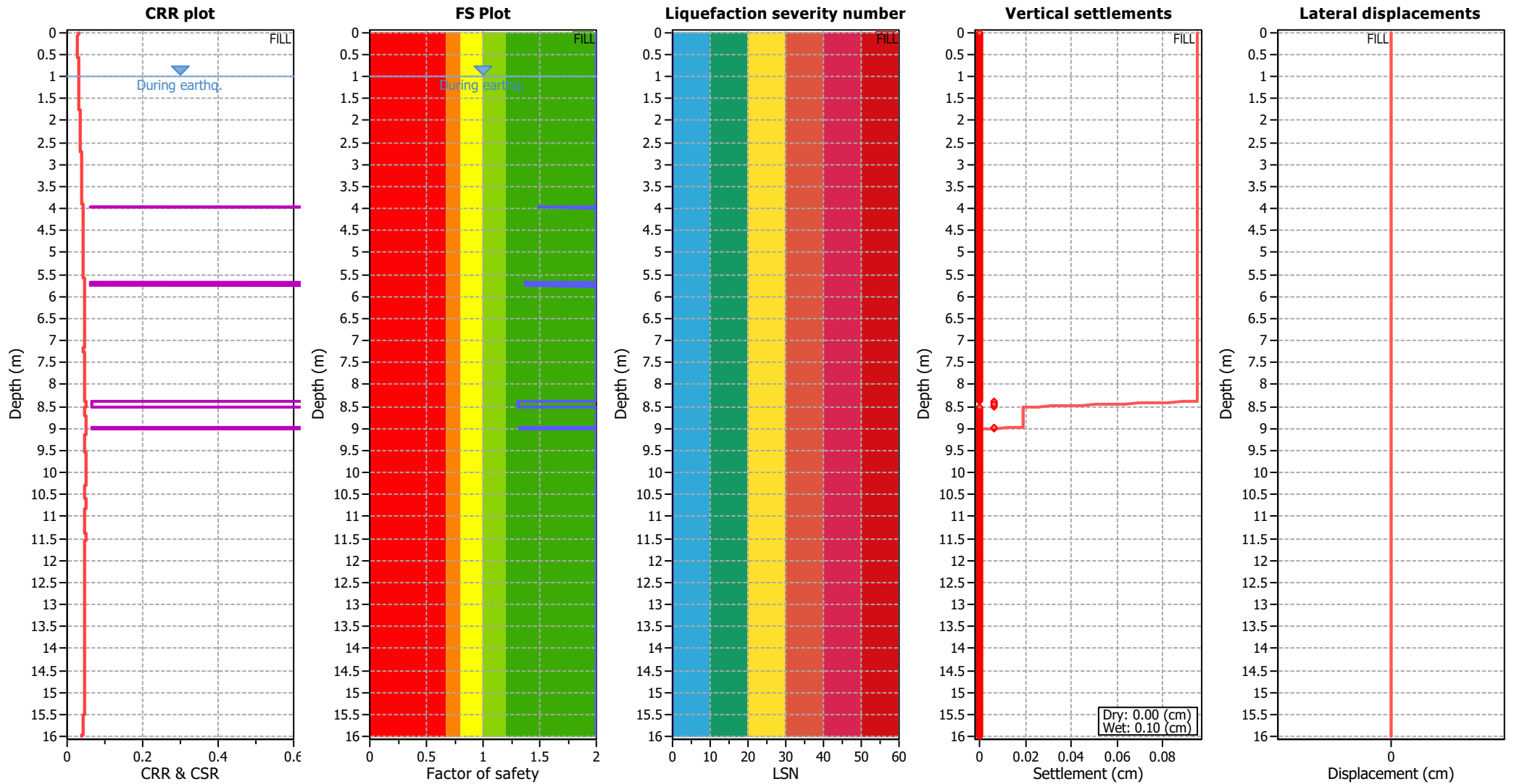
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

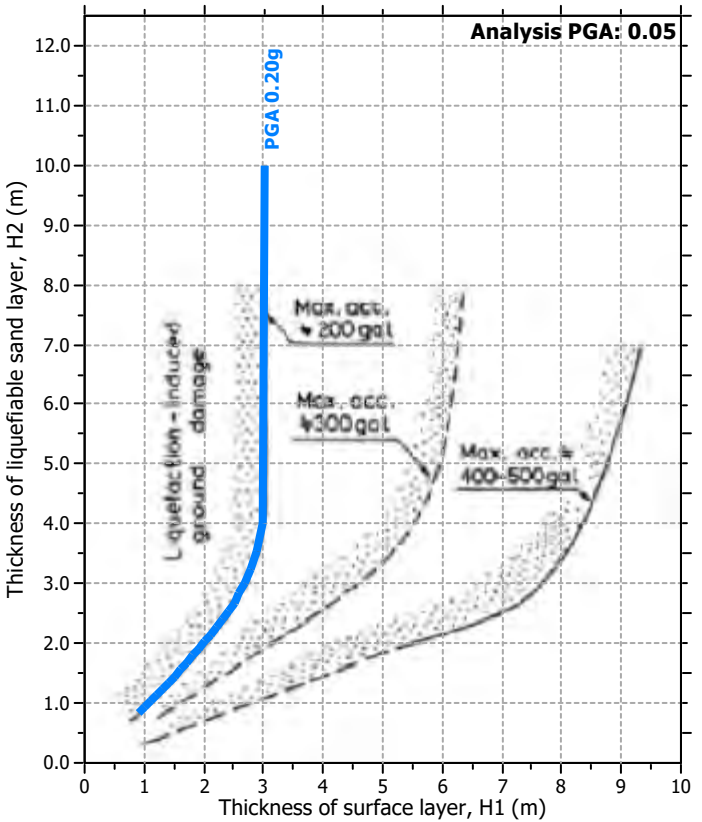
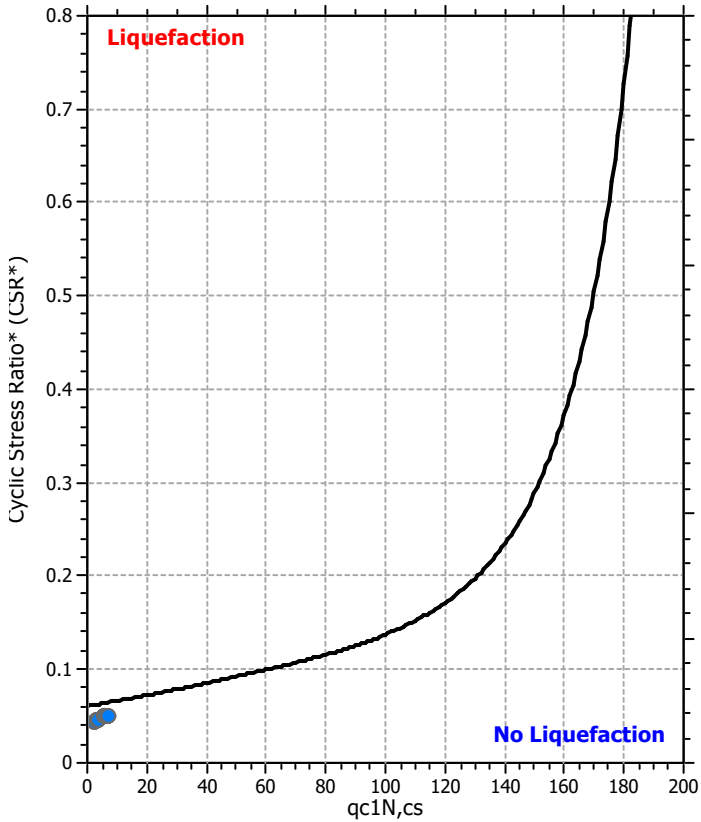
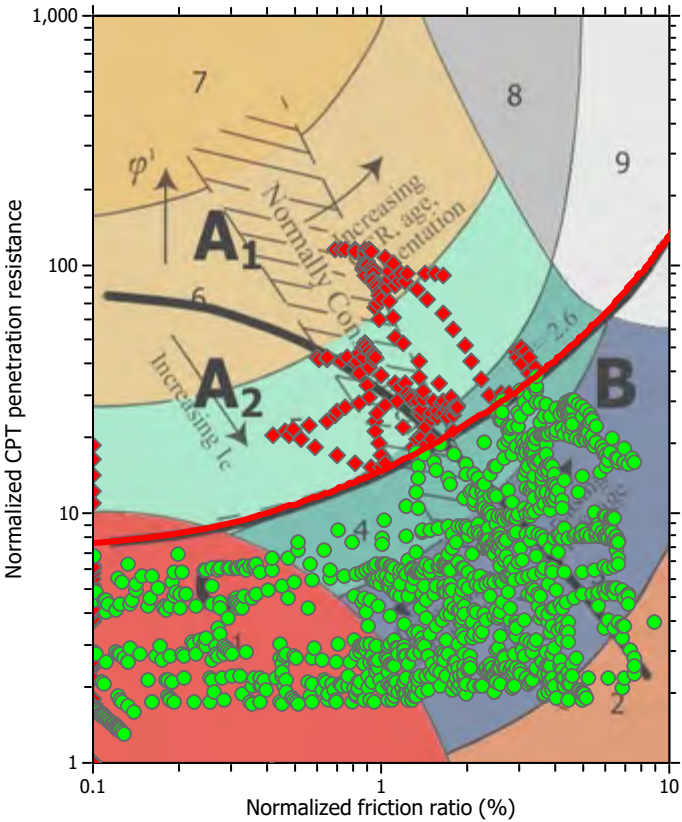
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

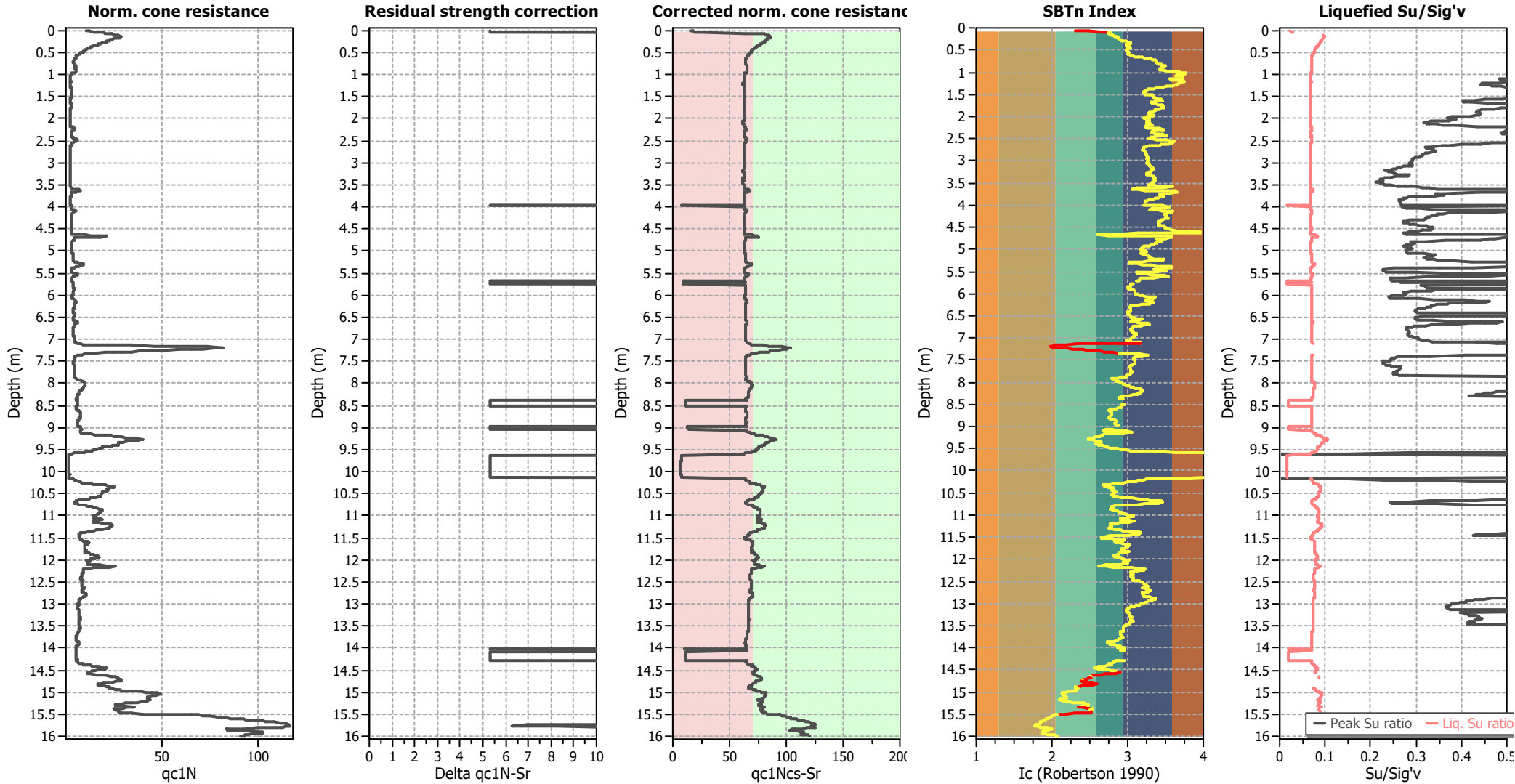
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

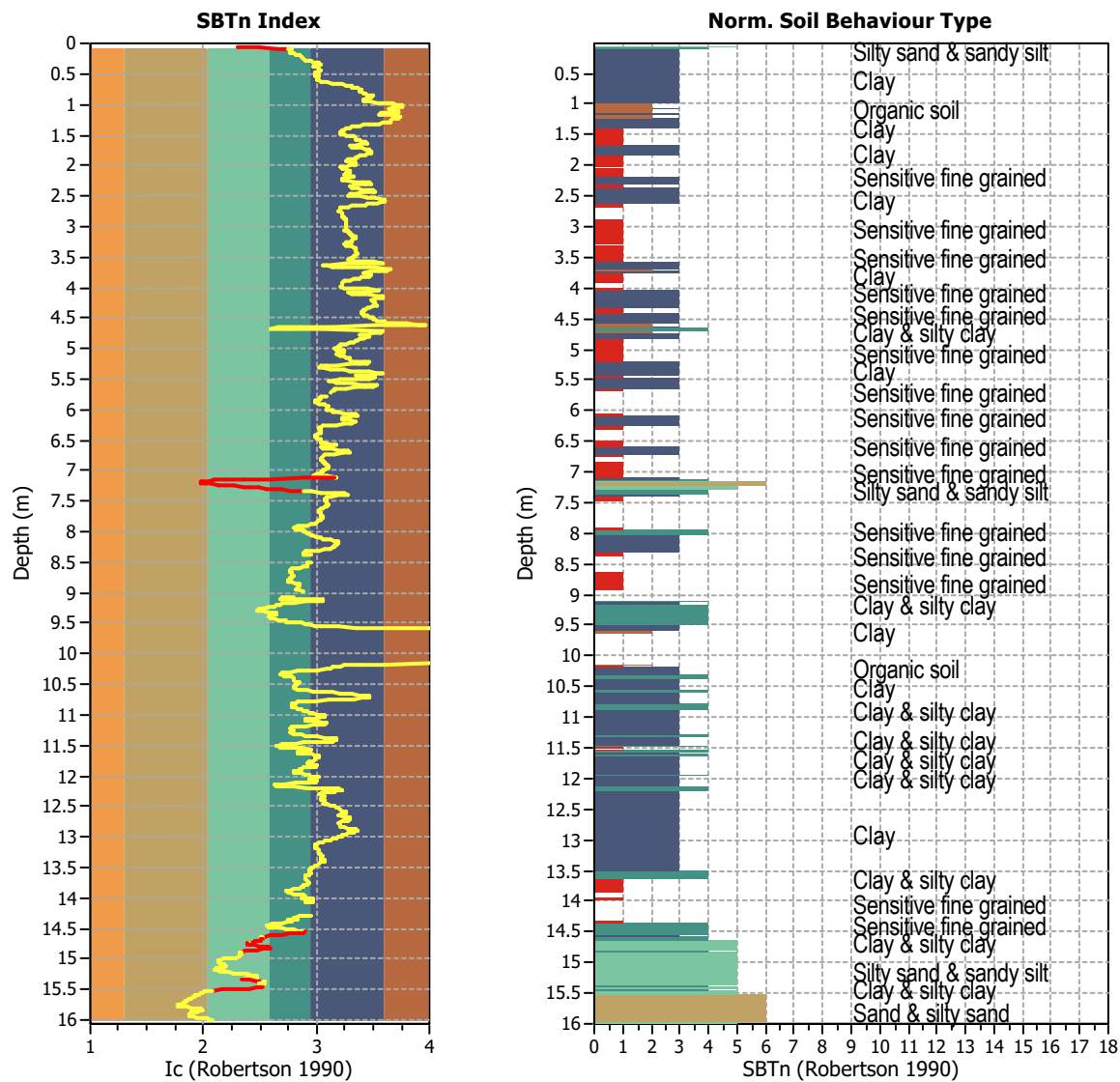
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

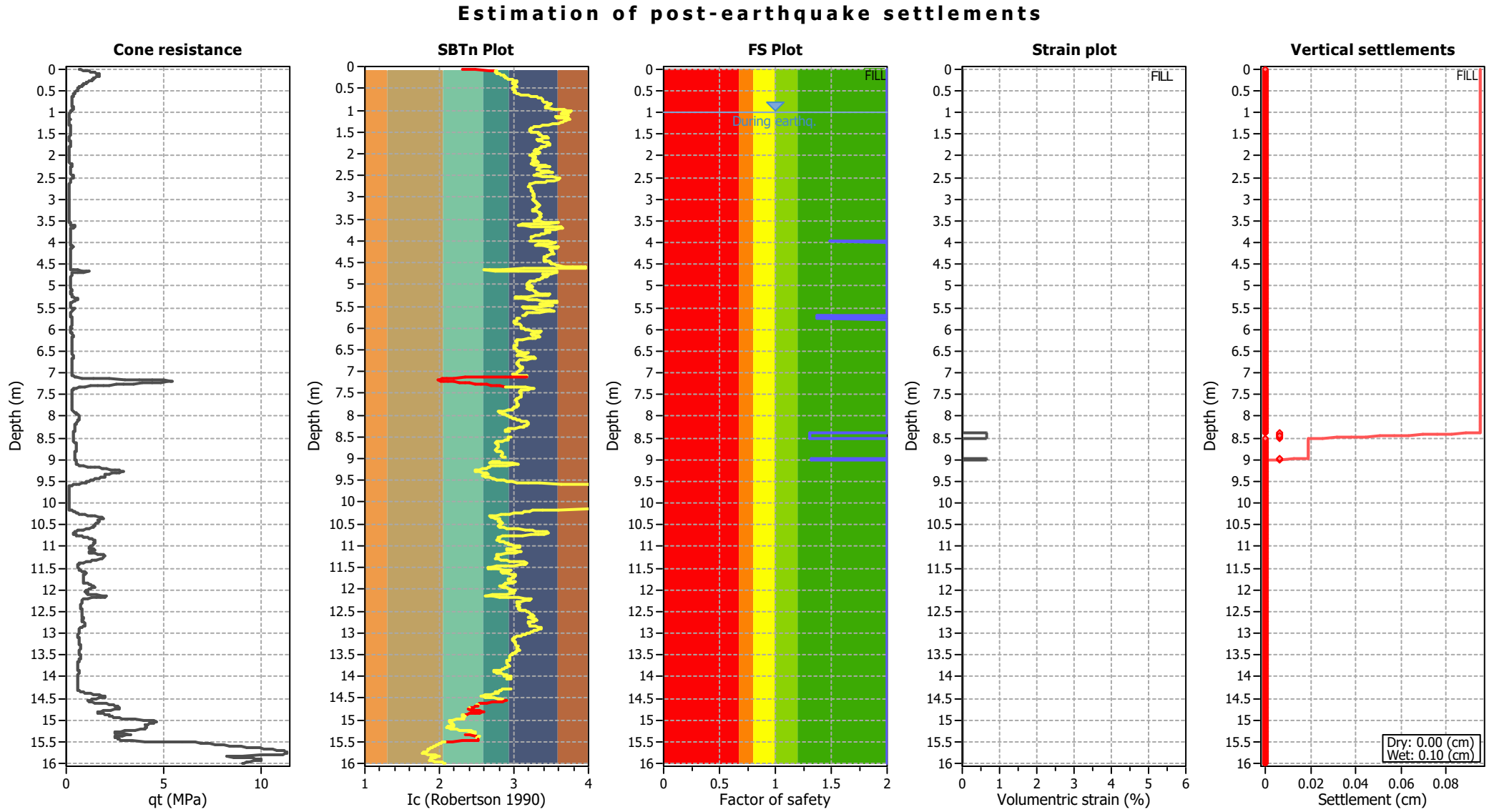


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

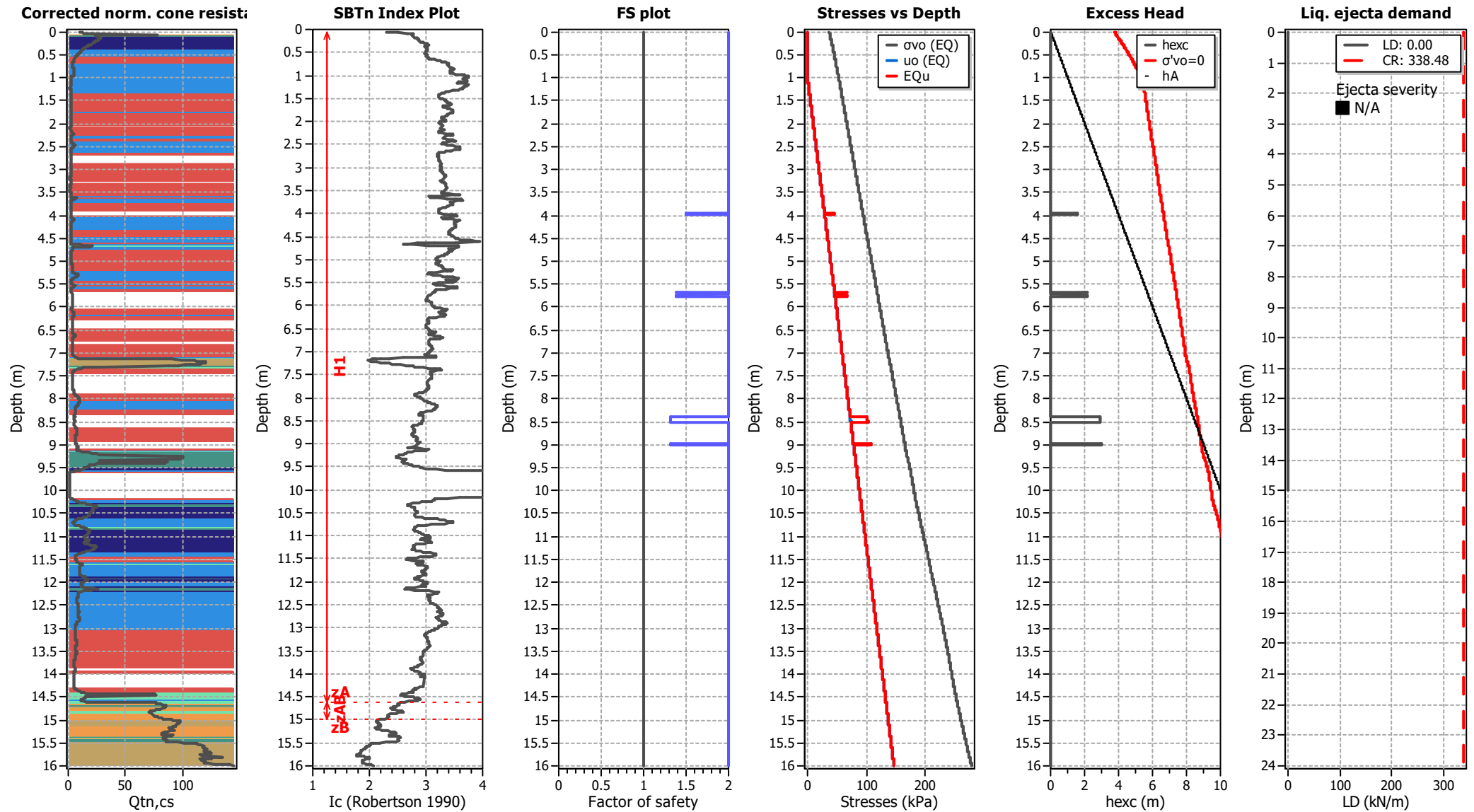
Total points in CPT file: 1600
Total points excluded: 72
Exclusion percentage: 4.50%
Number of layers detected: 9



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

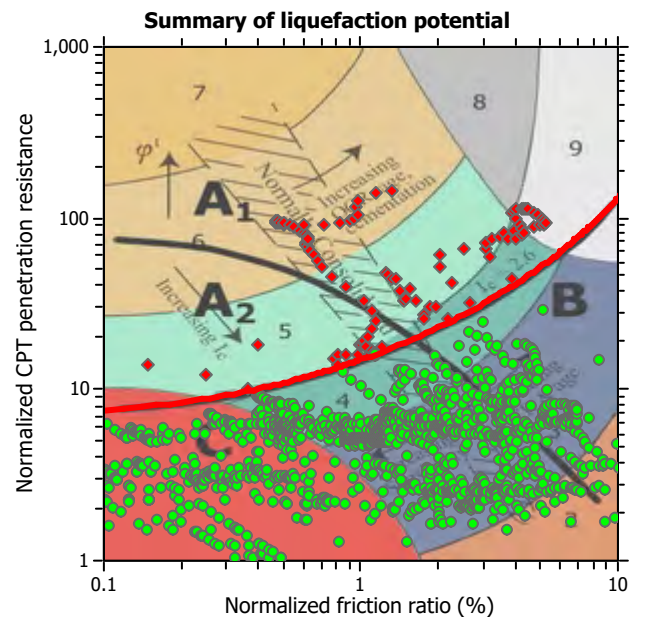
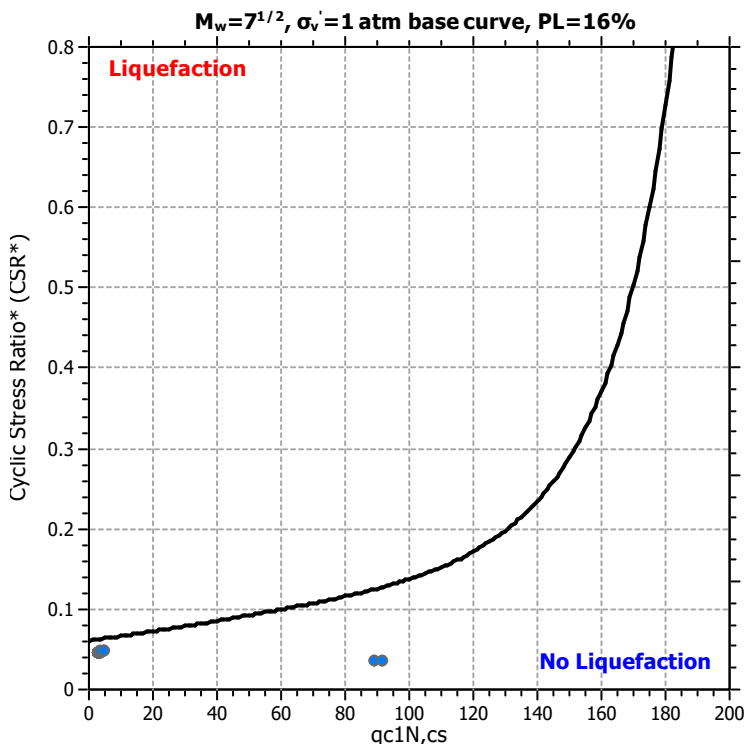
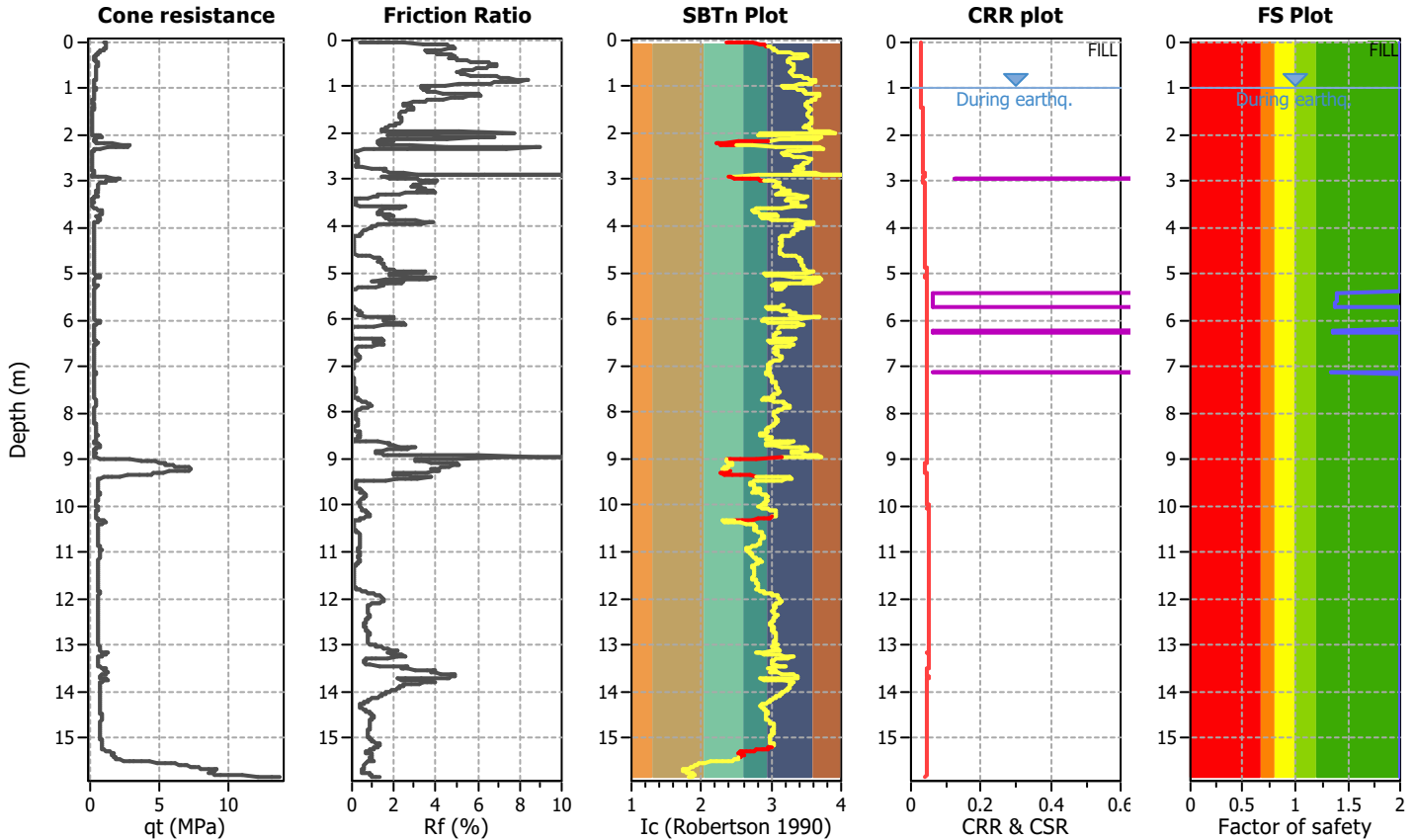
Project title : Sunfield Landholding

Location :

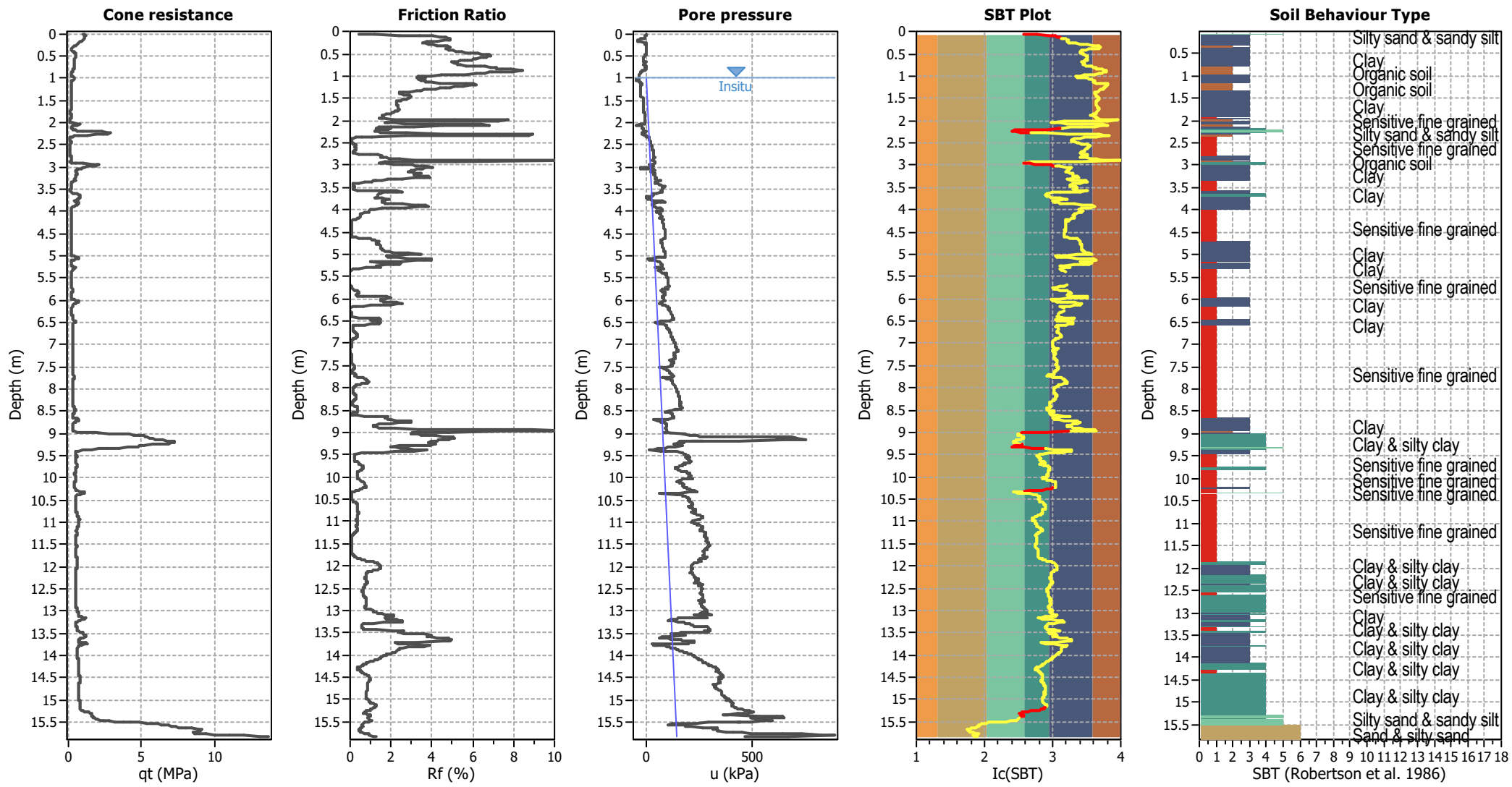
CPT file : CPT415A

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.05	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

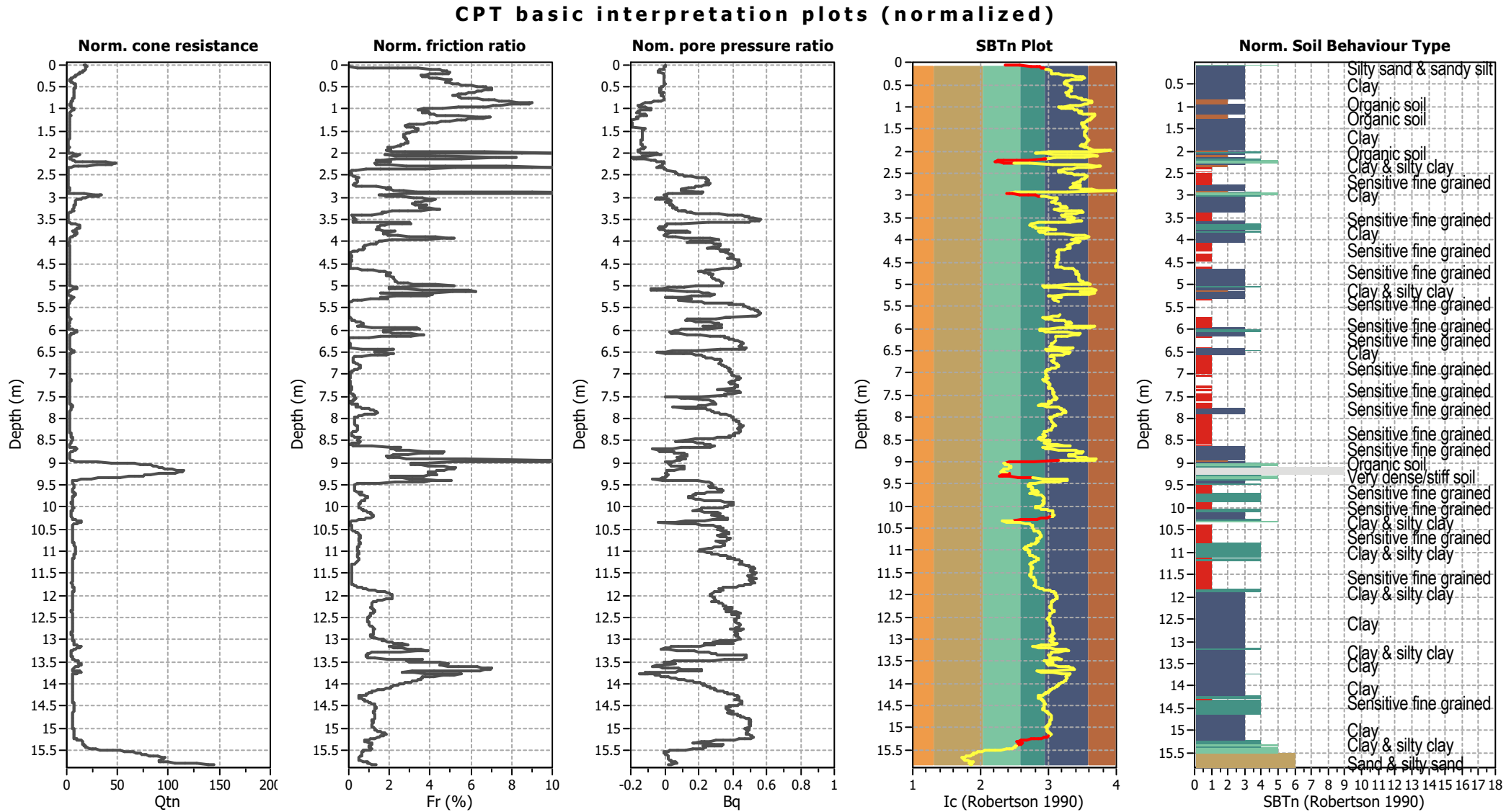


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



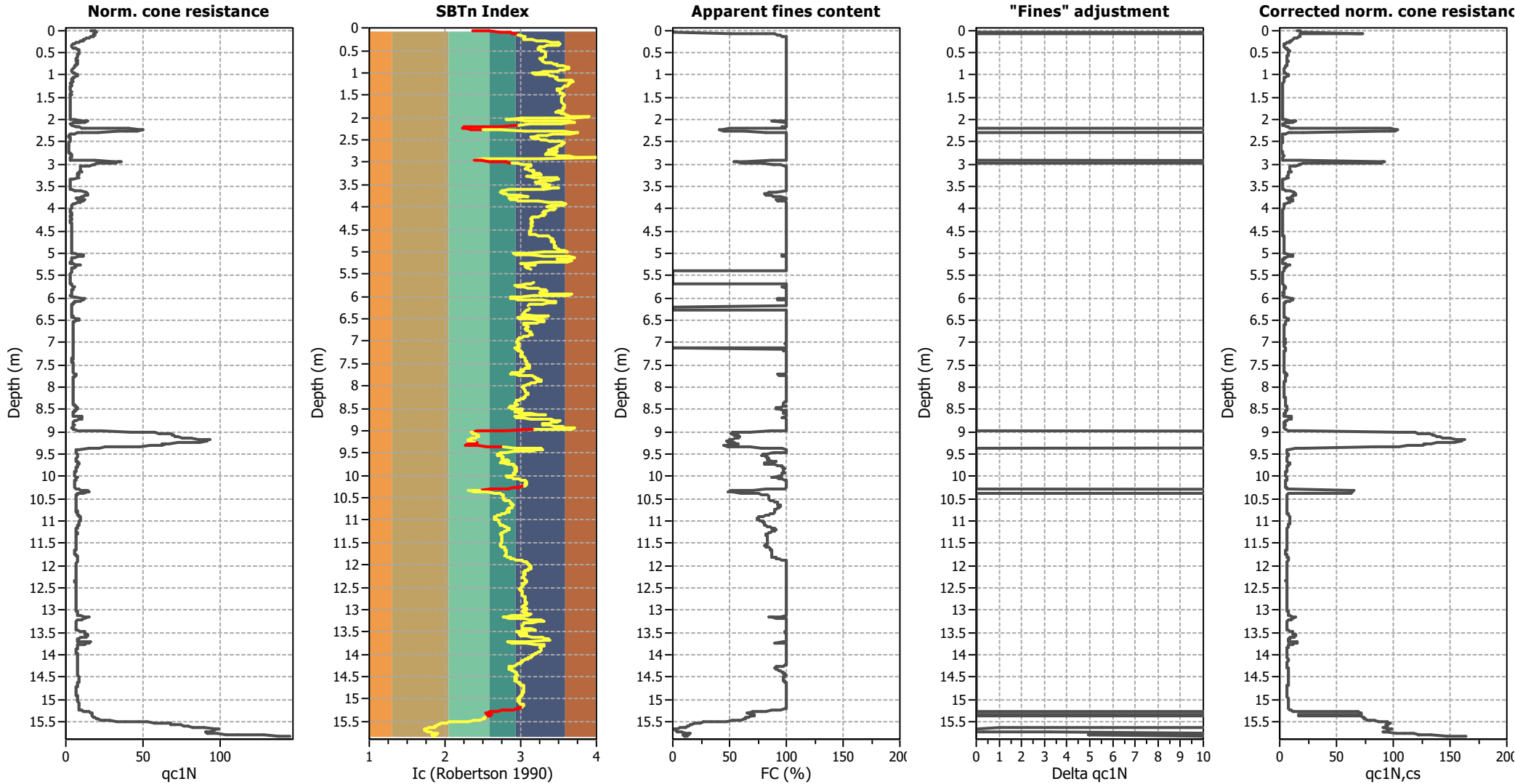
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

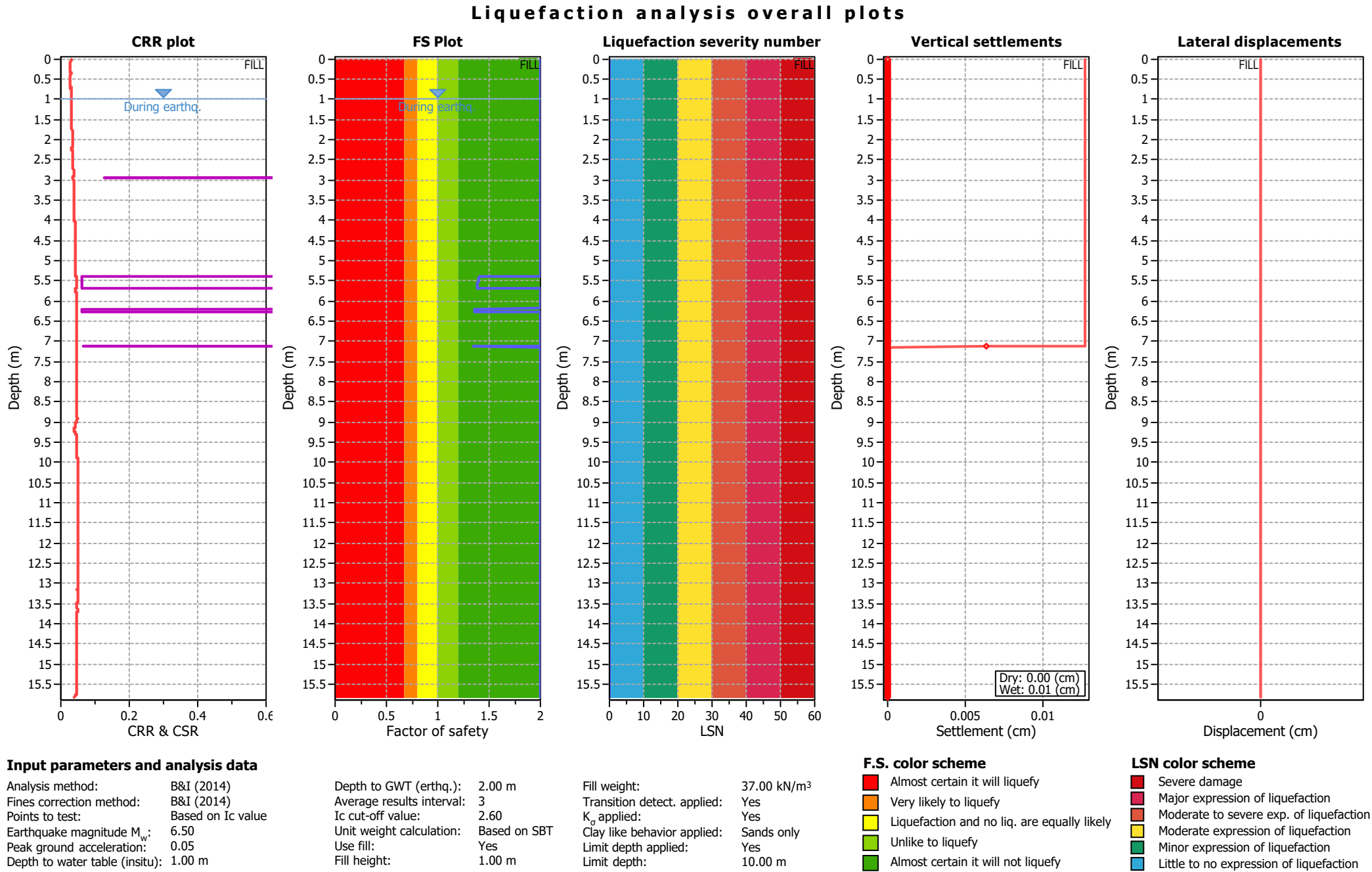
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

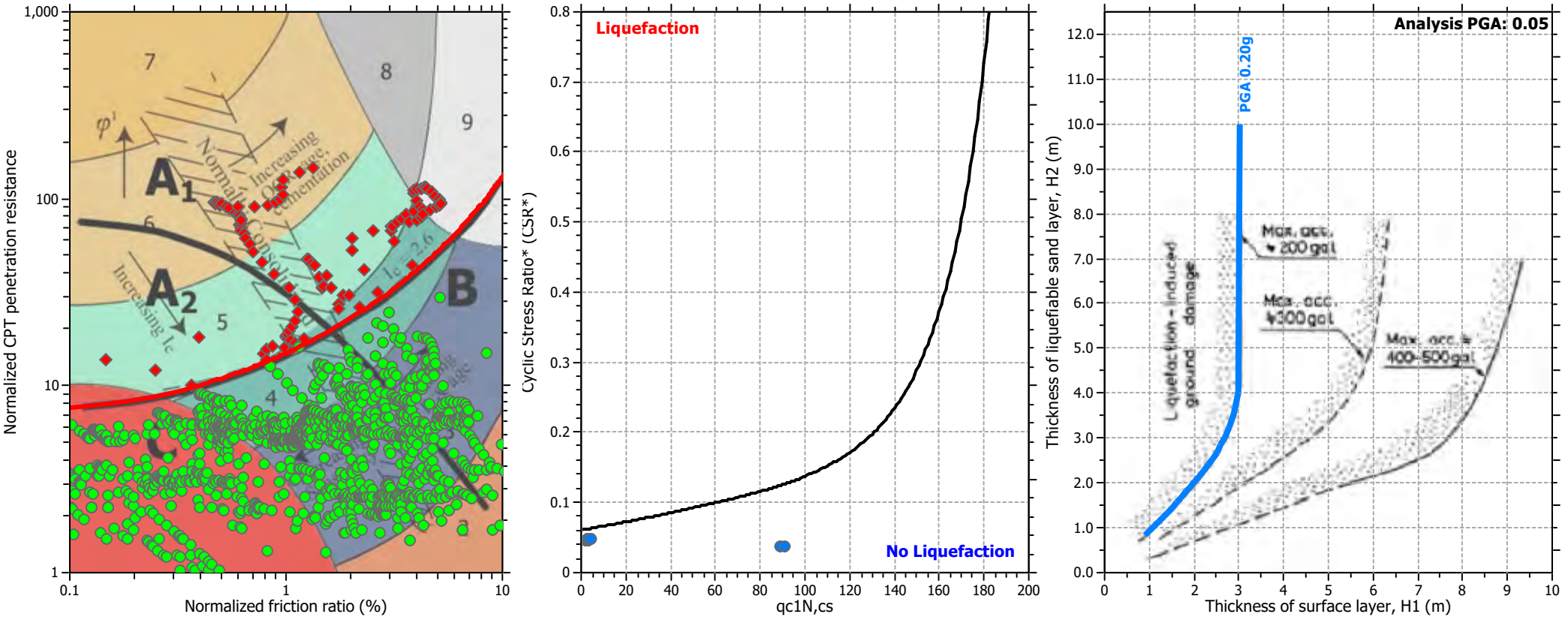


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



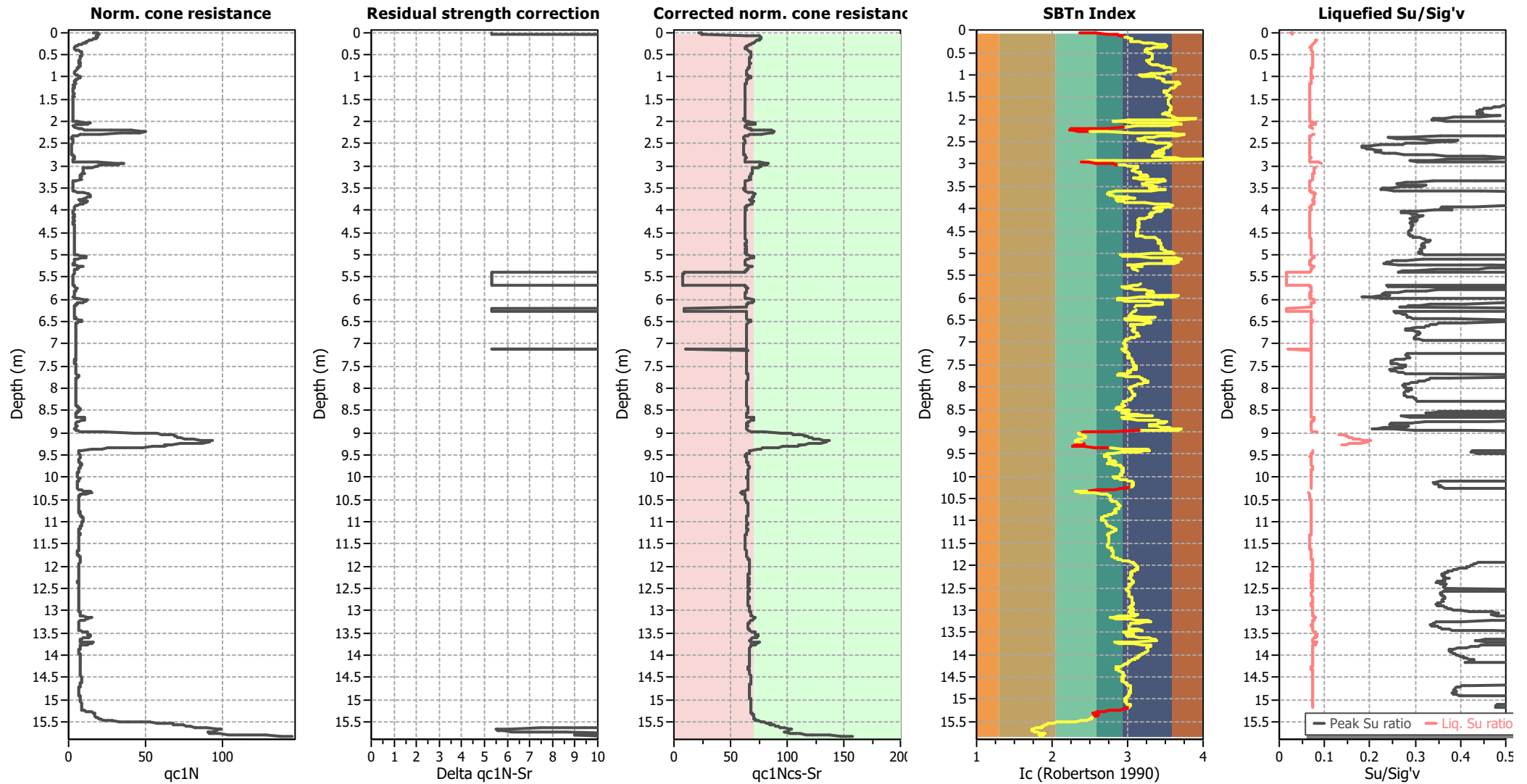
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.05	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

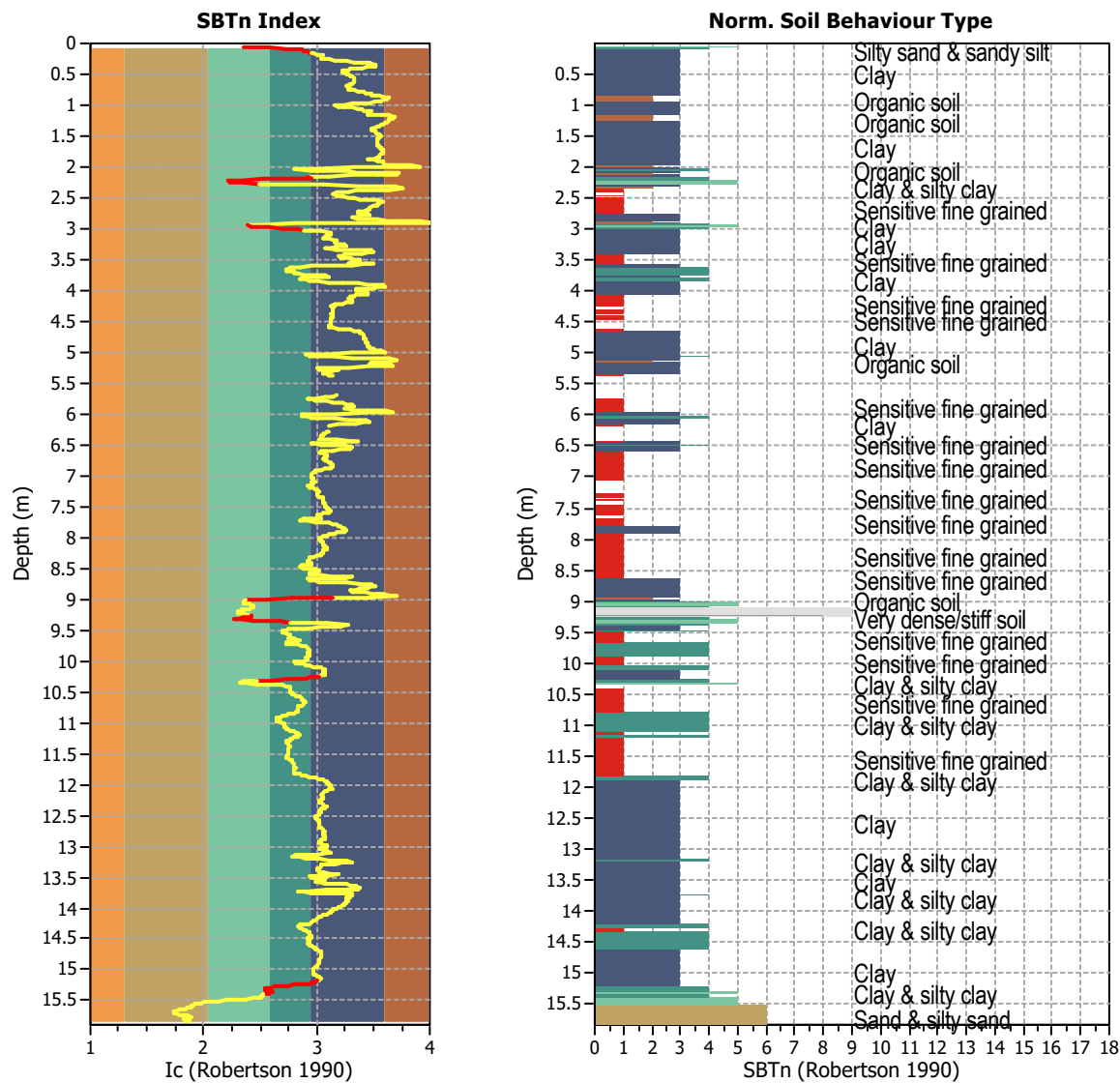
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



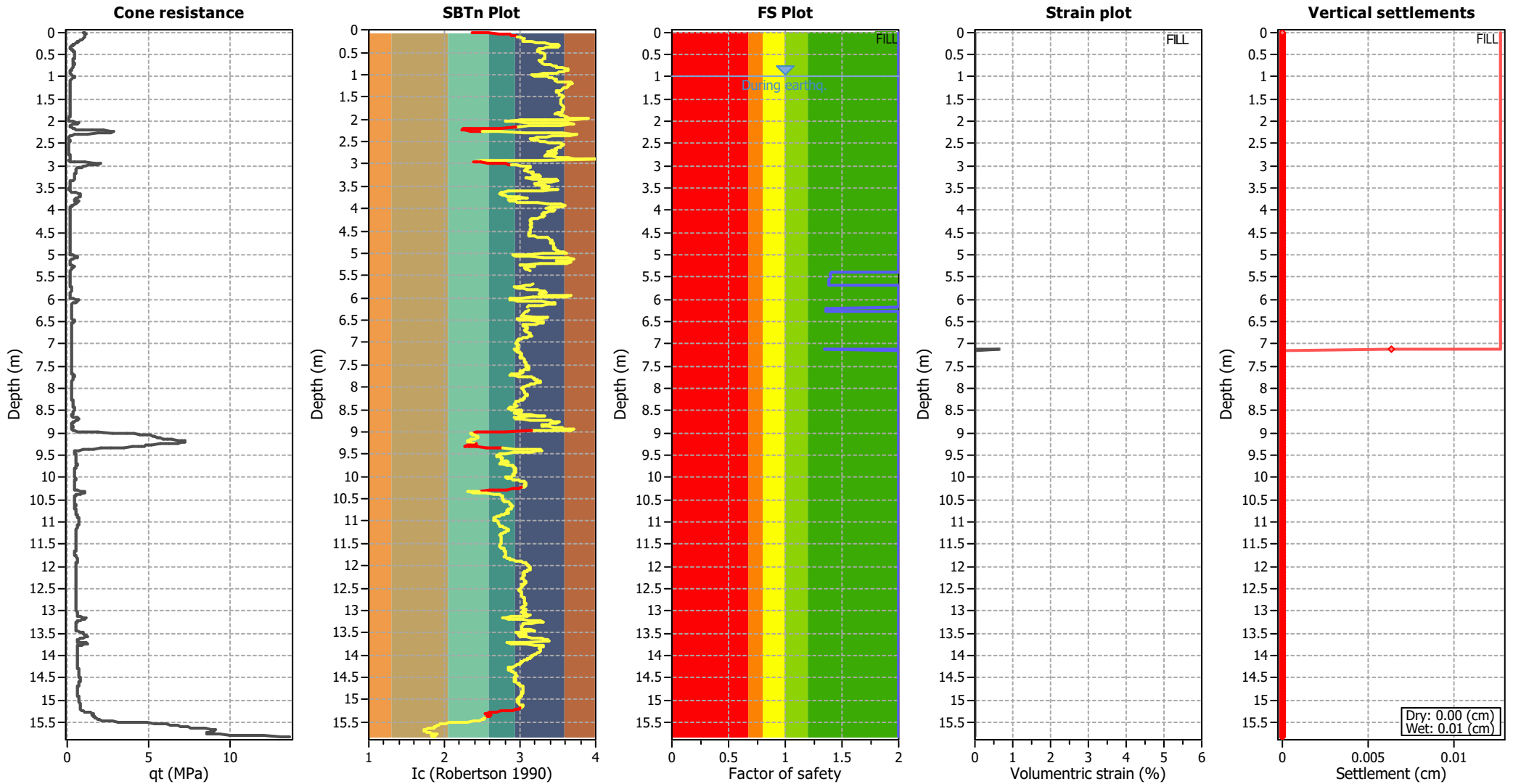
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1583
Total points excluded: 80
Exclusion percentage: 5.05%
Number of layers detected: 11

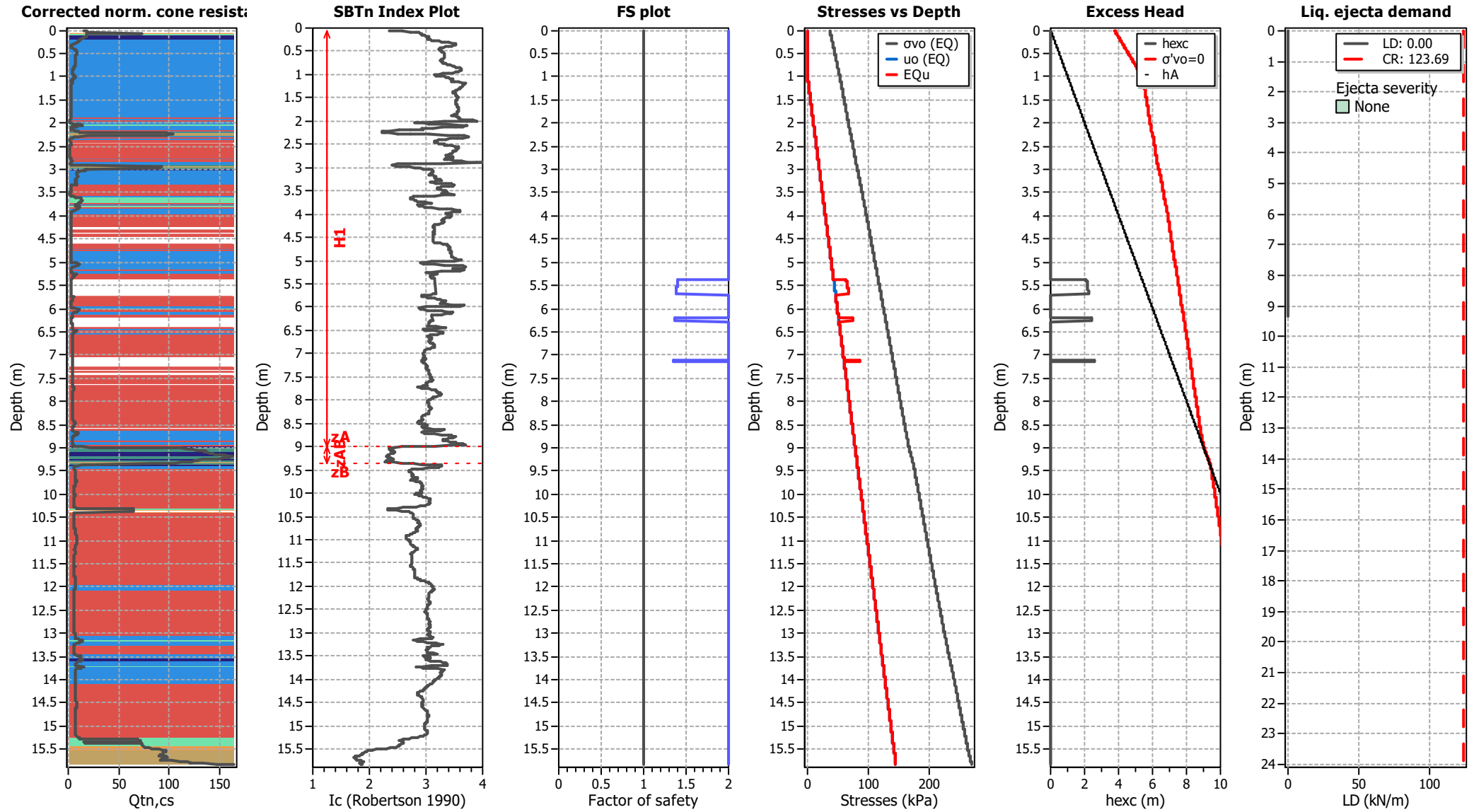
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

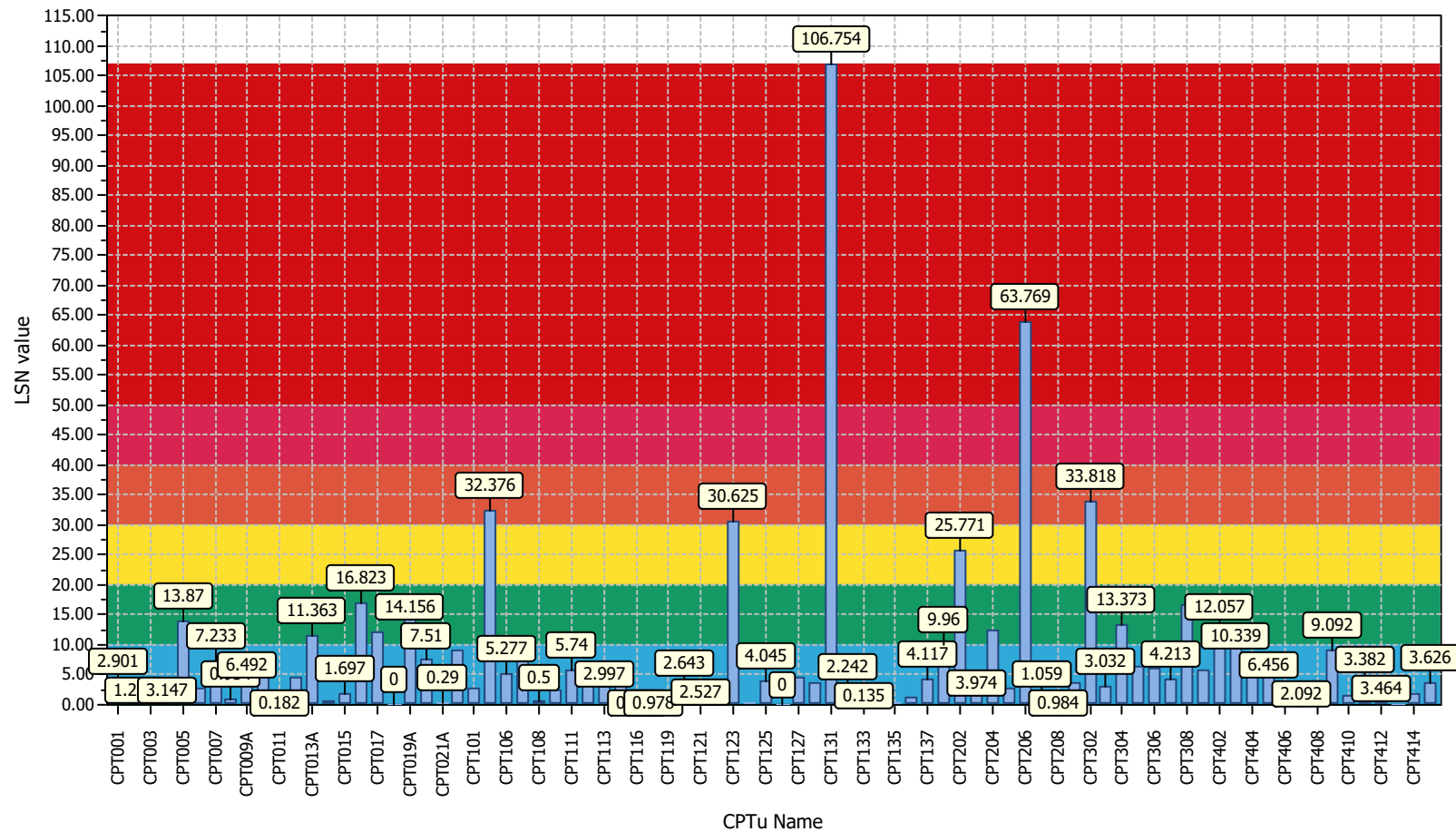
Ejecta Severity Estimation



Project title : Sunfield Landholding

Location :

Overall Liquefaction Severity Number report



LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

Basic statistics

Total CPT number: 82
 80% little liquefaction
 12% minor liquefaction
 1% moderate liquefaction
 4% moderate to major liquefaction
 0% major liquefaction
 2% severe liquefaction

LIQUEFACTION ANALYSIS REPORT

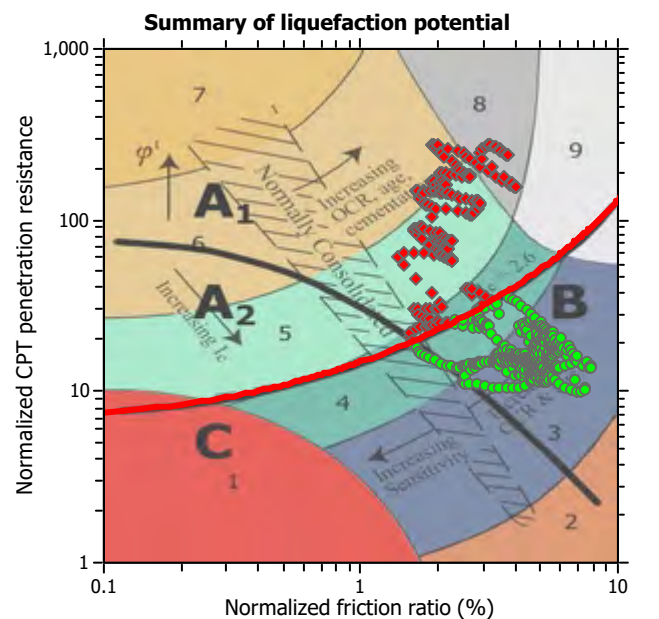
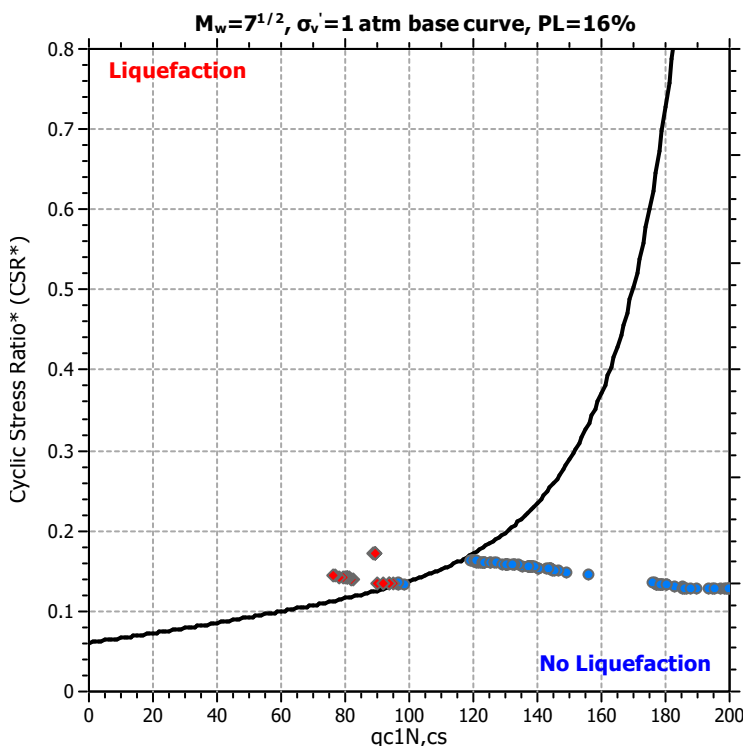
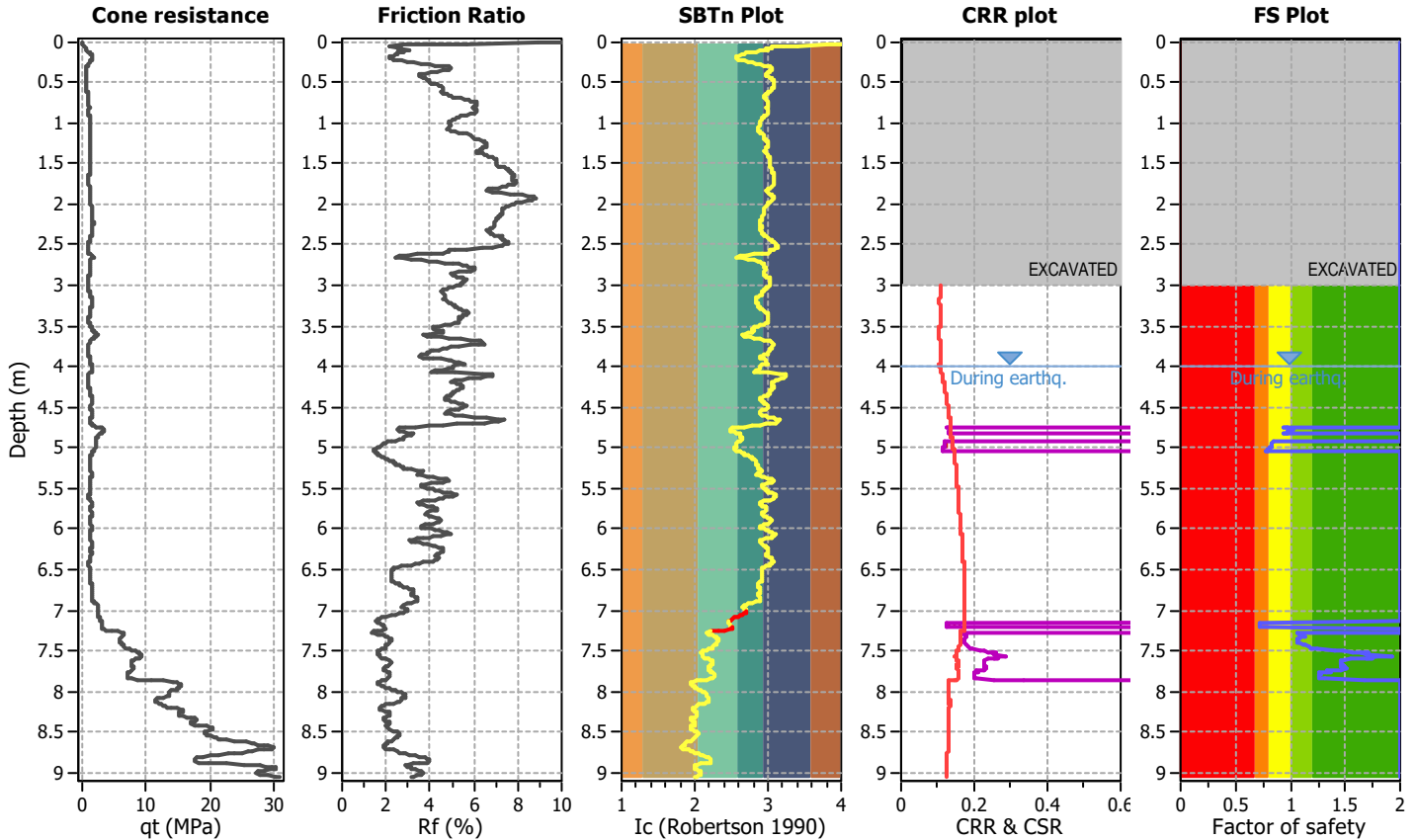
Project title : Sunfield Landholding

Location :

CPT file : CPT001

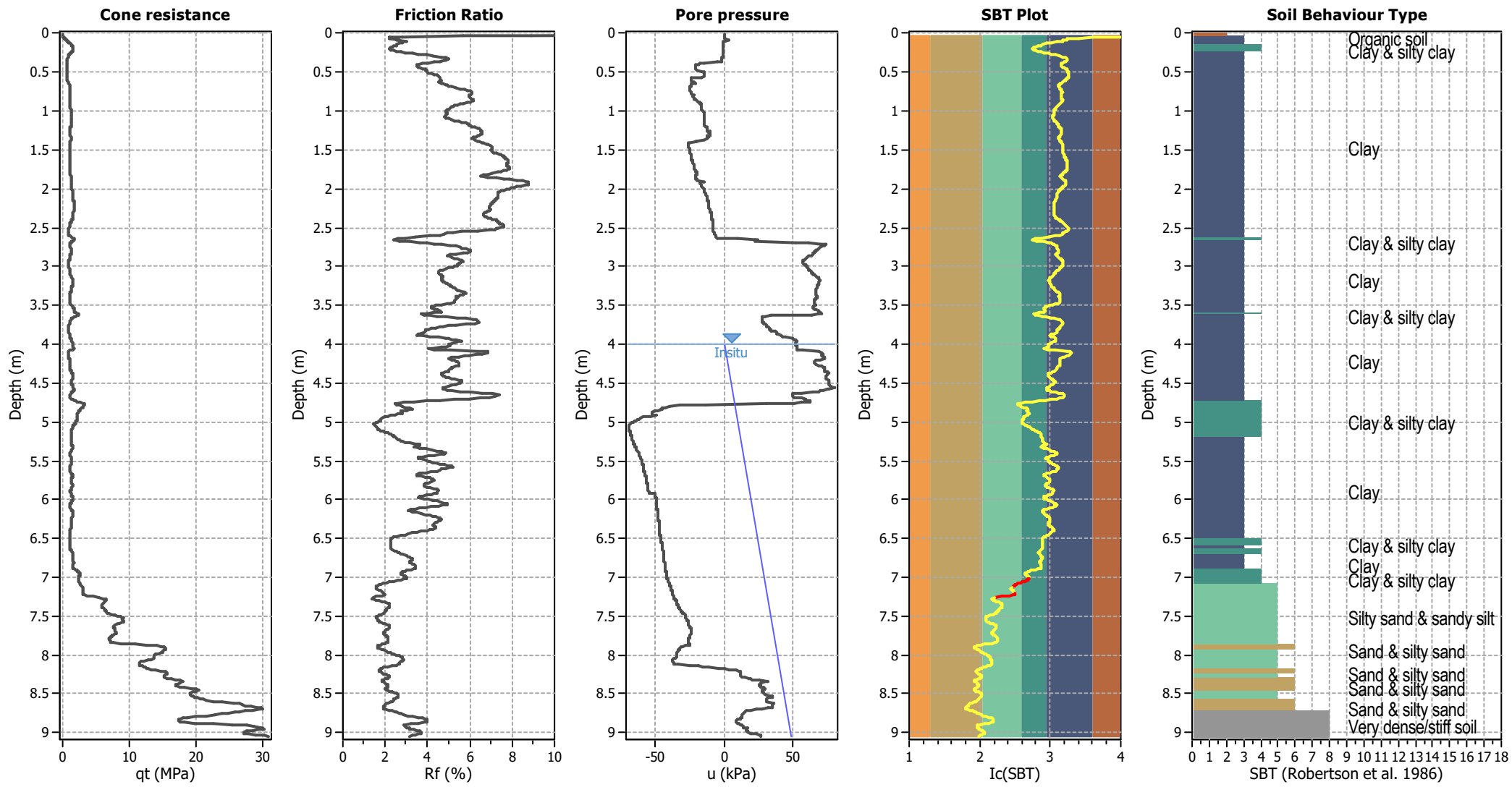
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

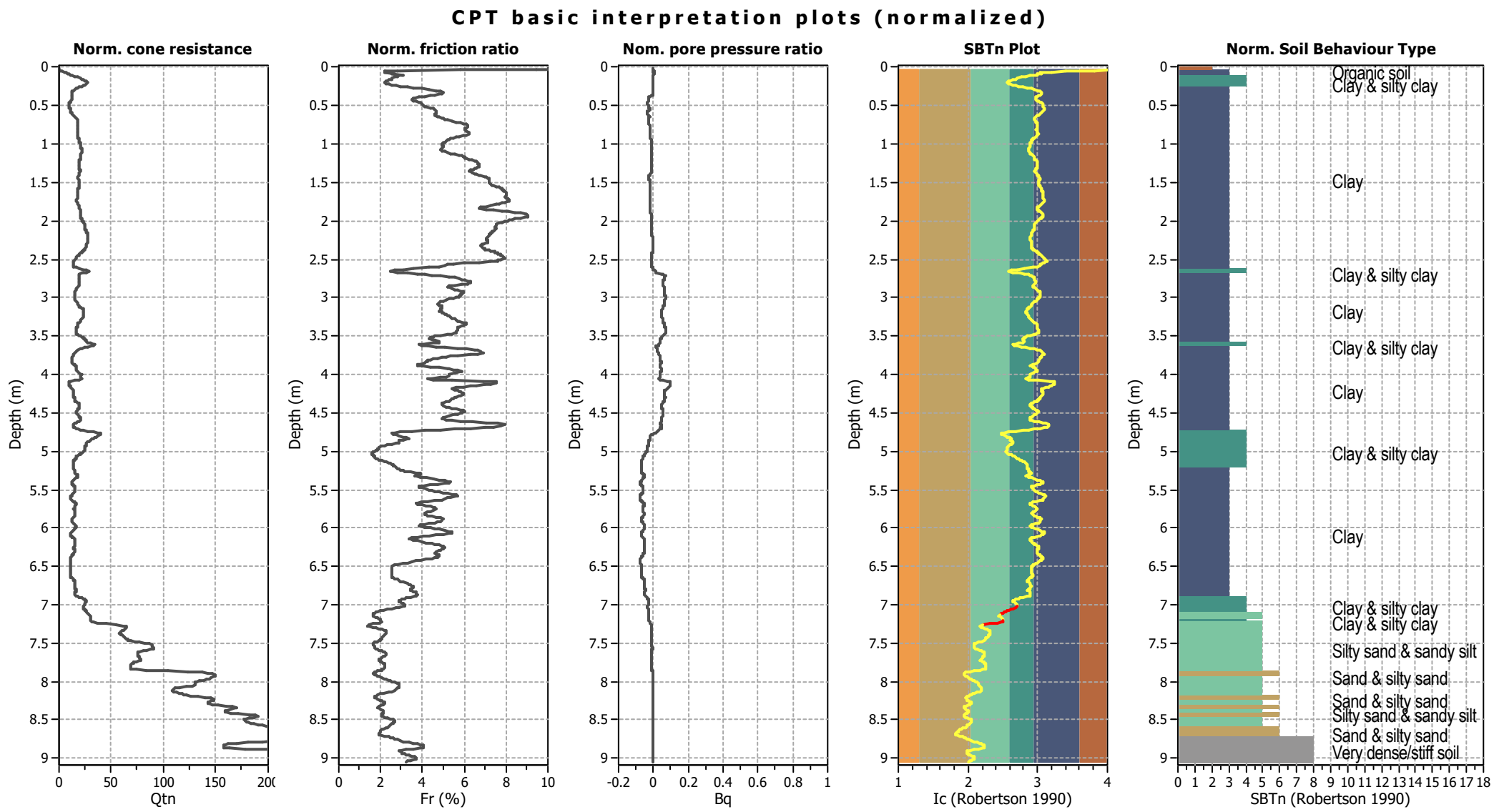
CPT basic interpretation plots

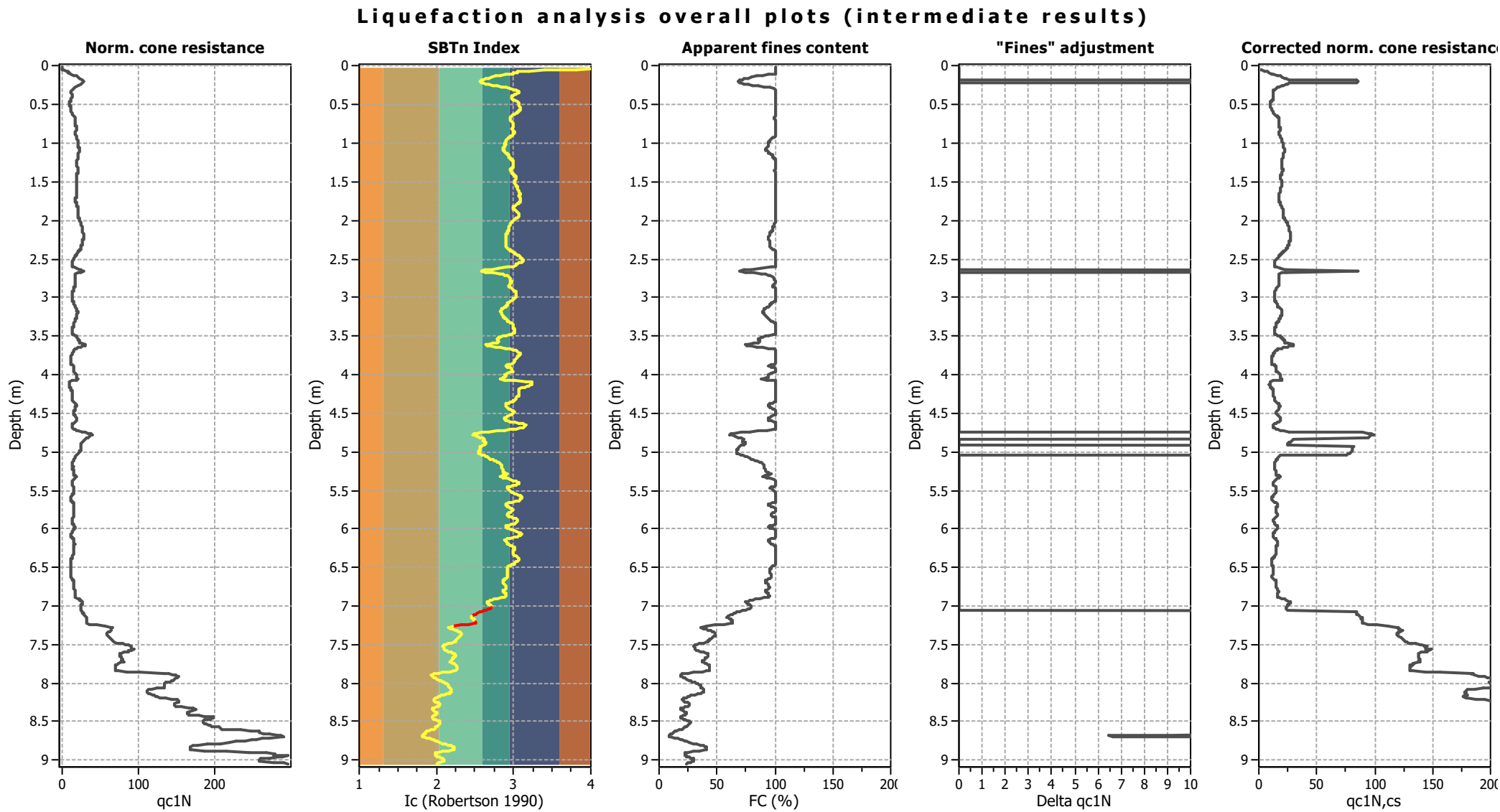


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

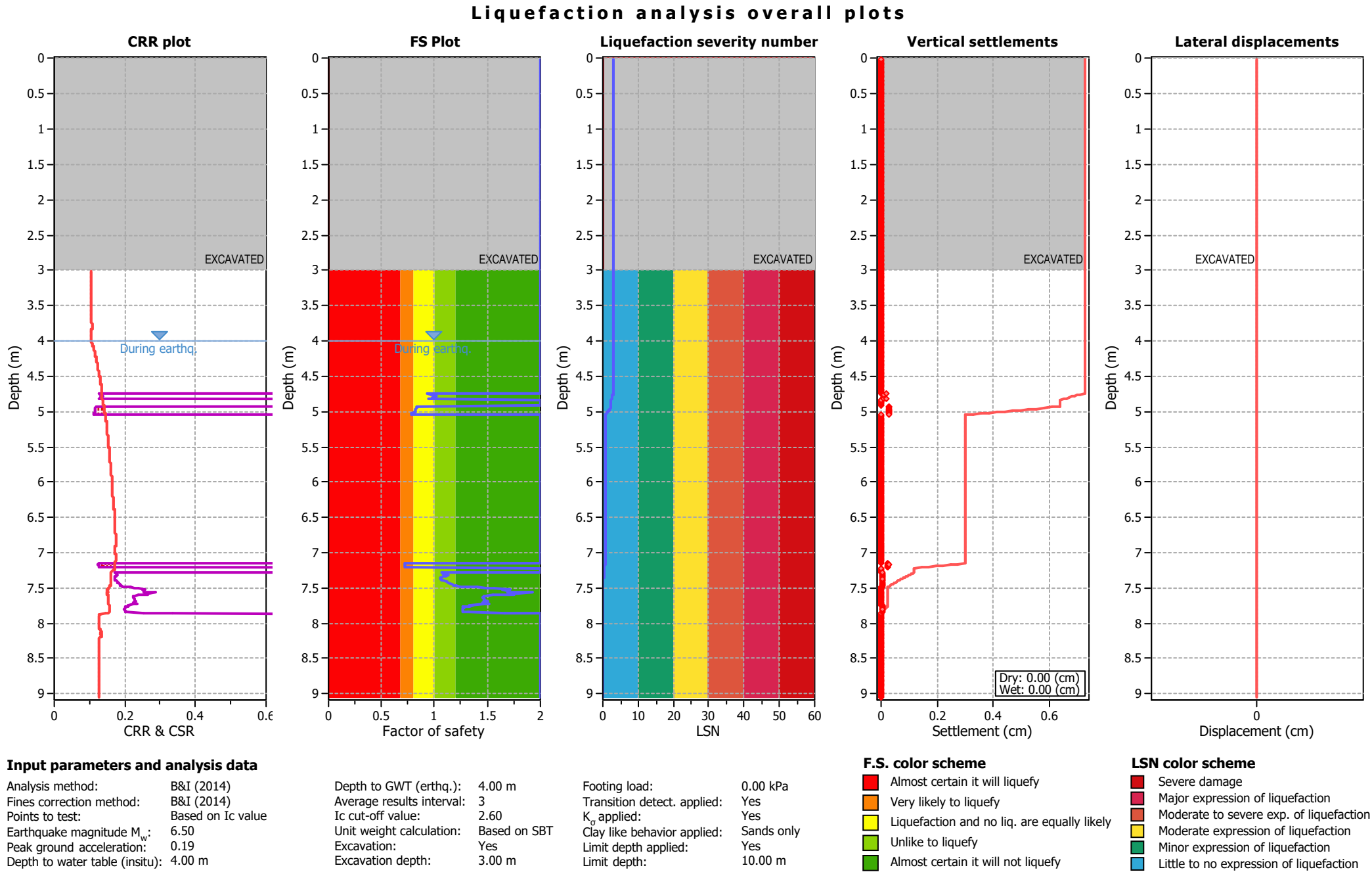
SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



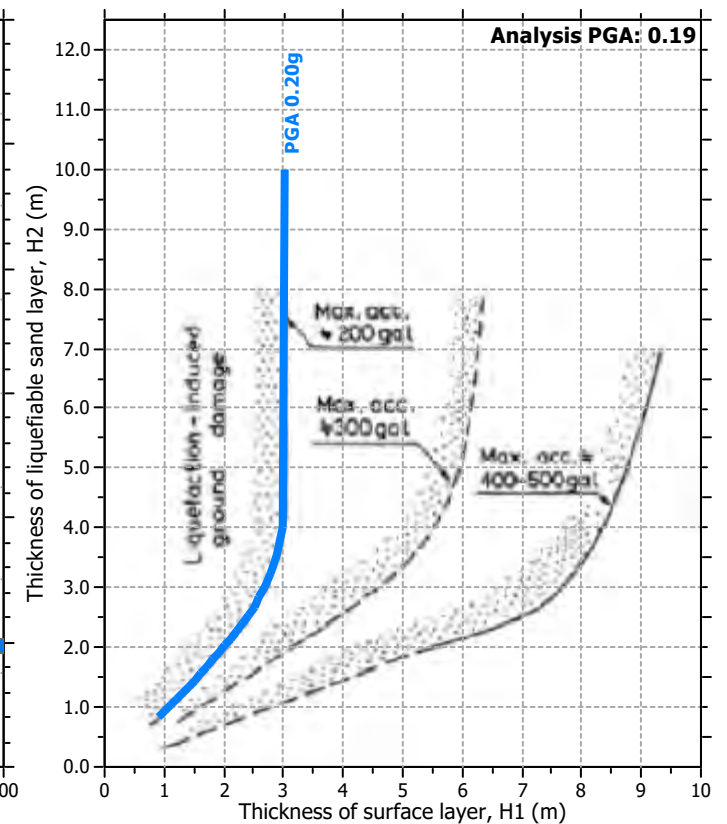
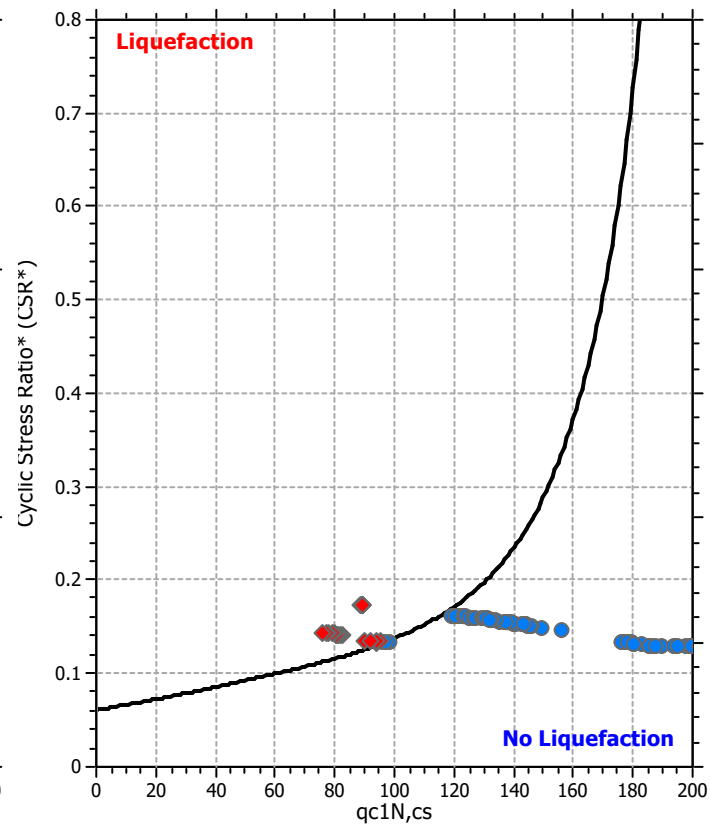
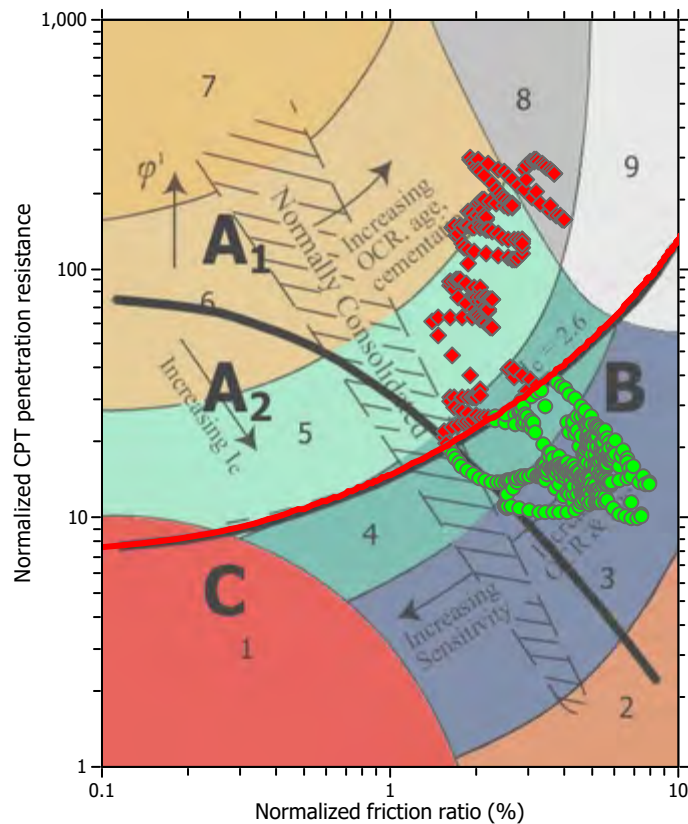


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



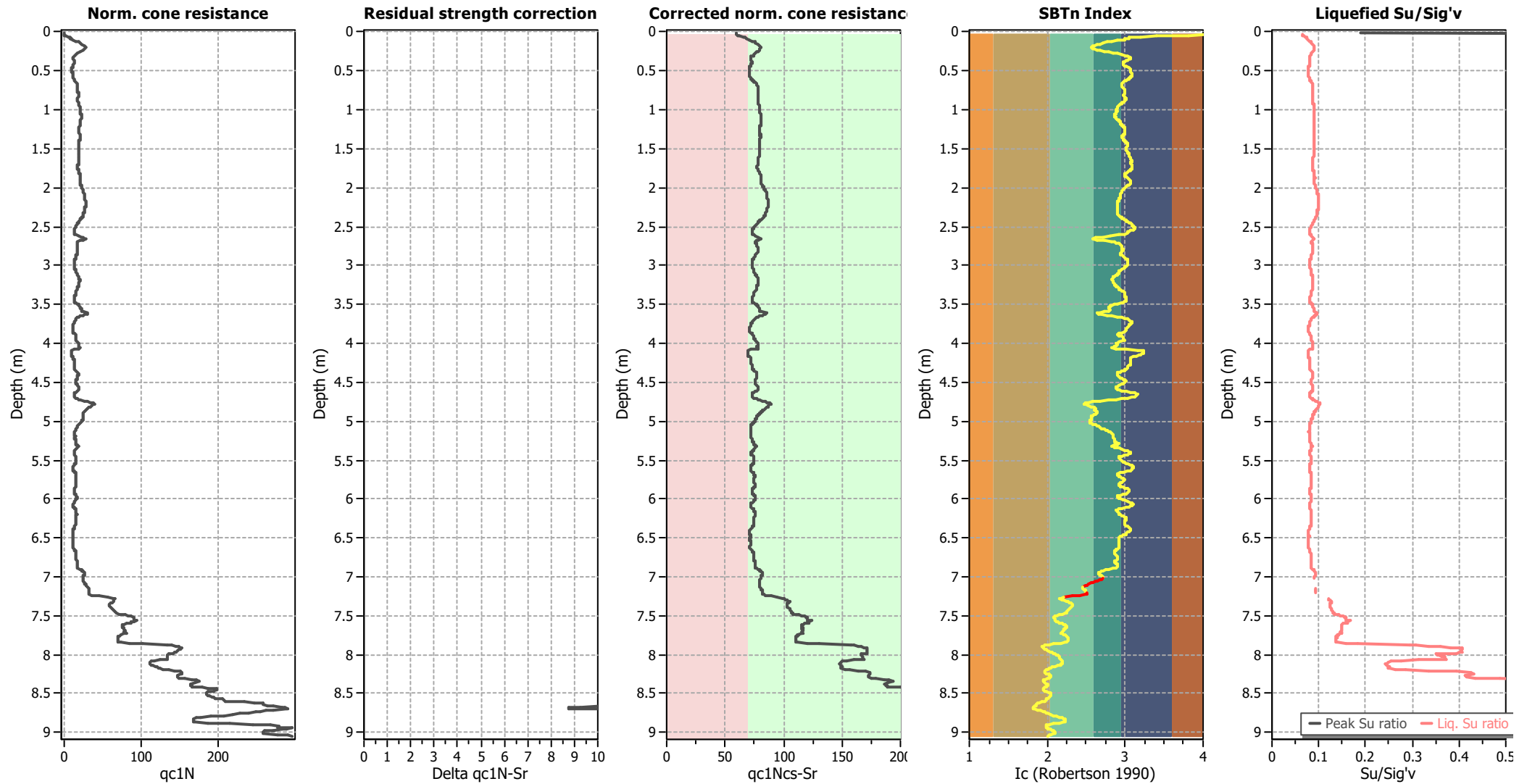
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

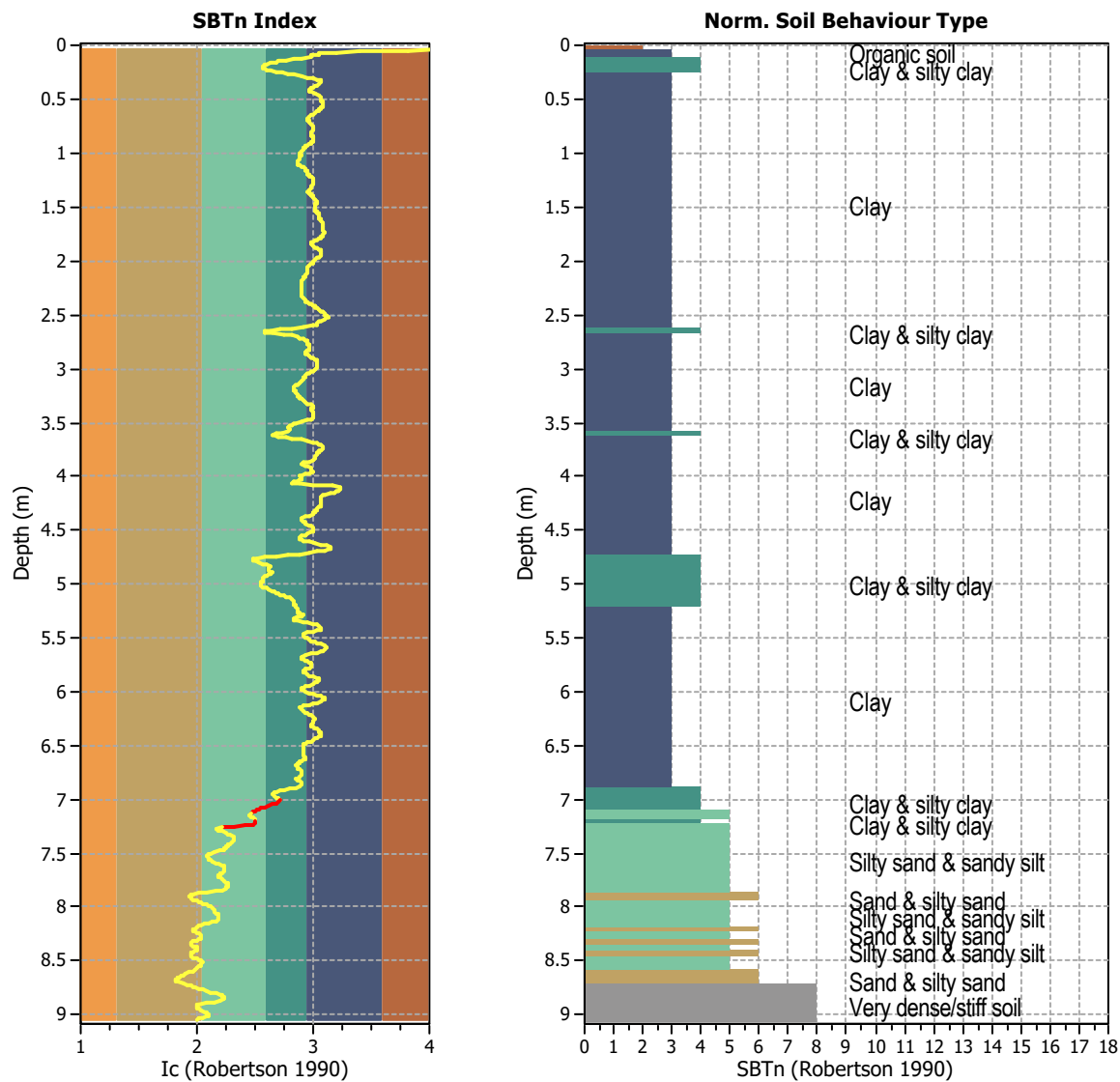
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

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The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



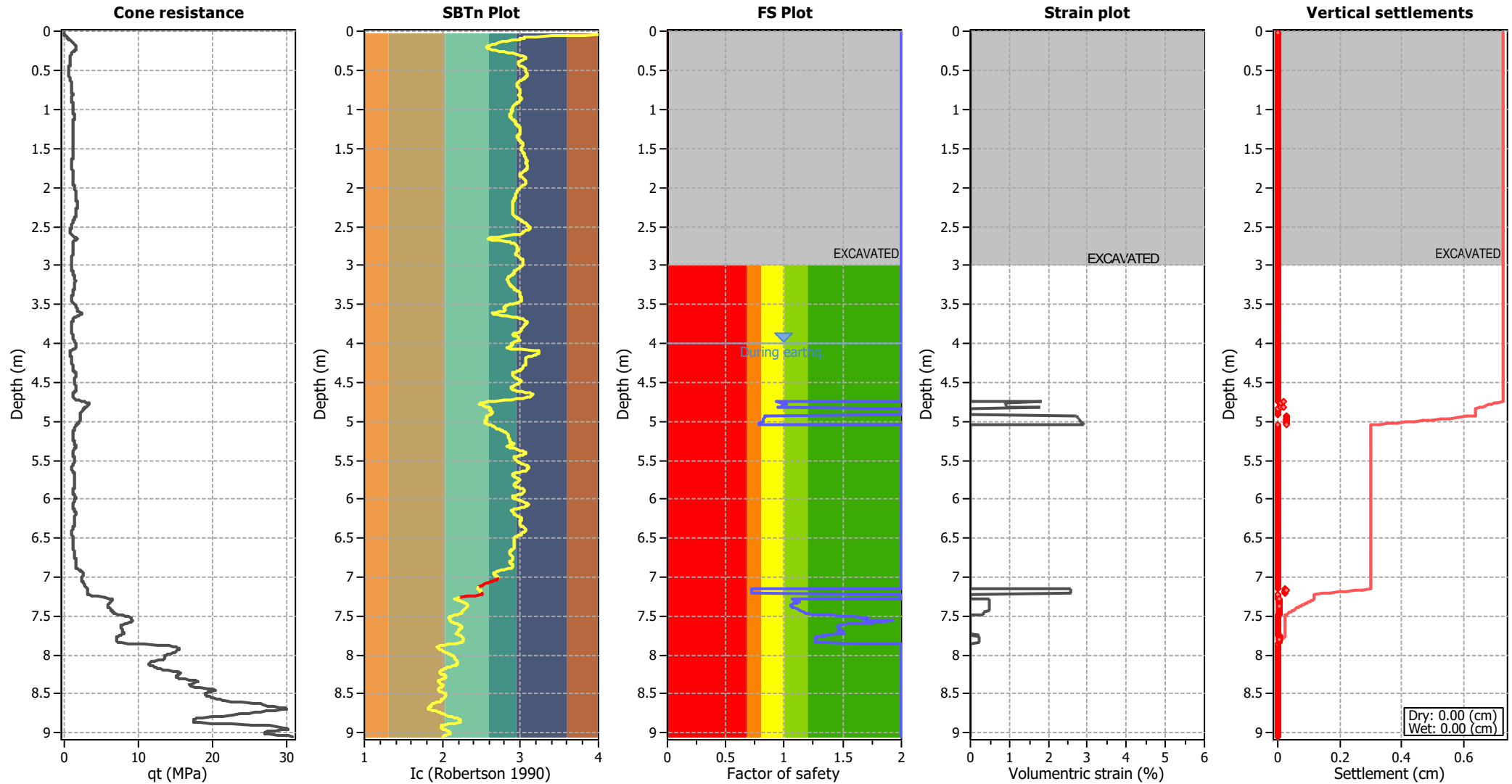
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 905
Total points excluded: 19
Exclusion percentage: 2.10%
Number of layers detected: 2

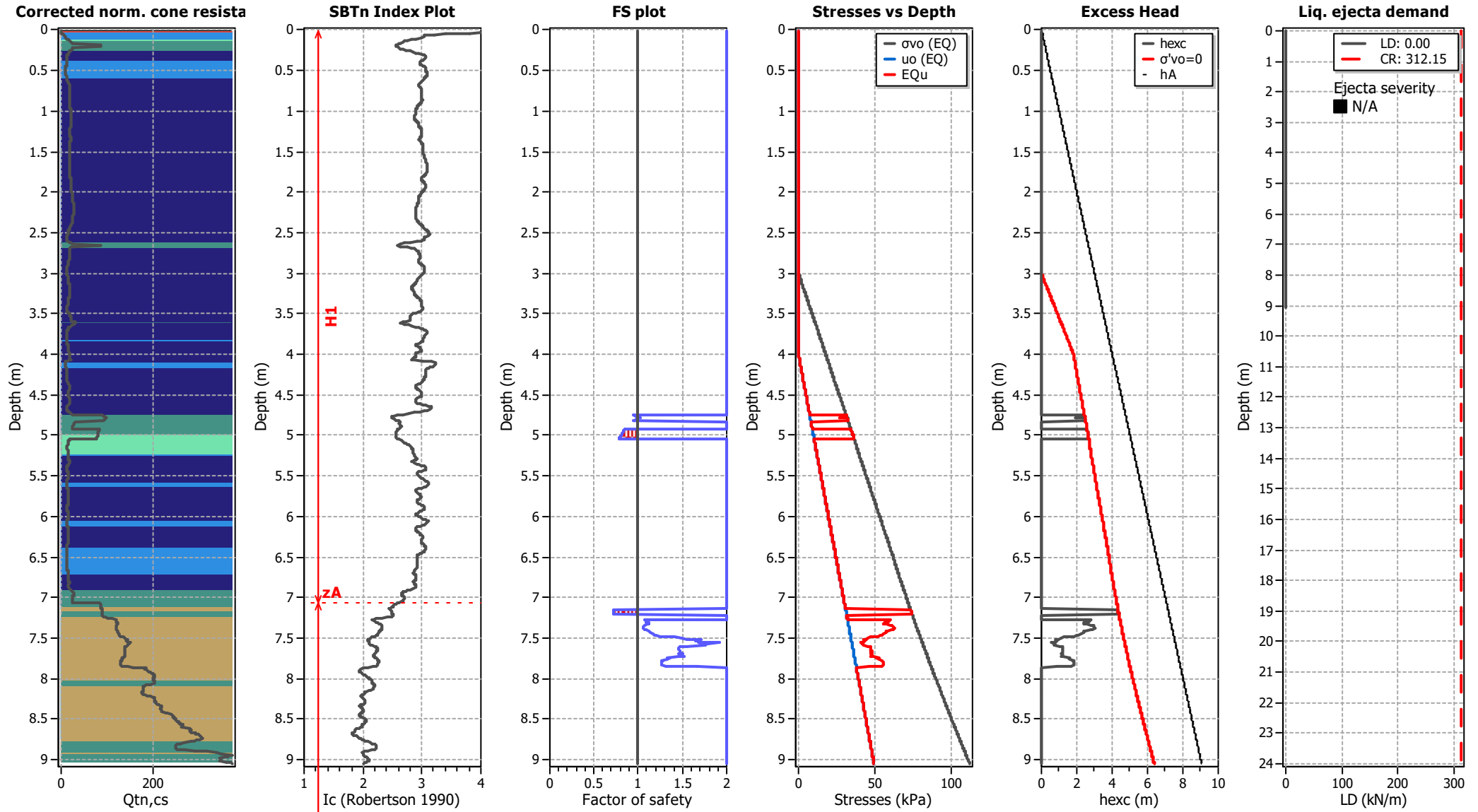
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

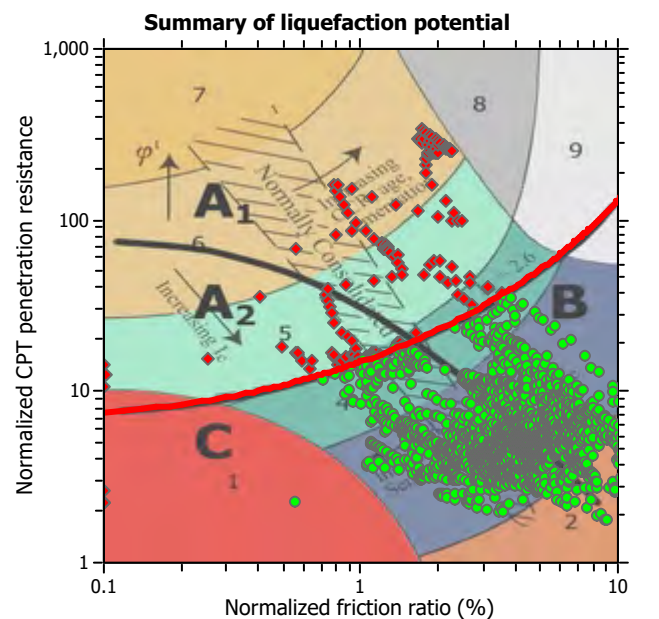
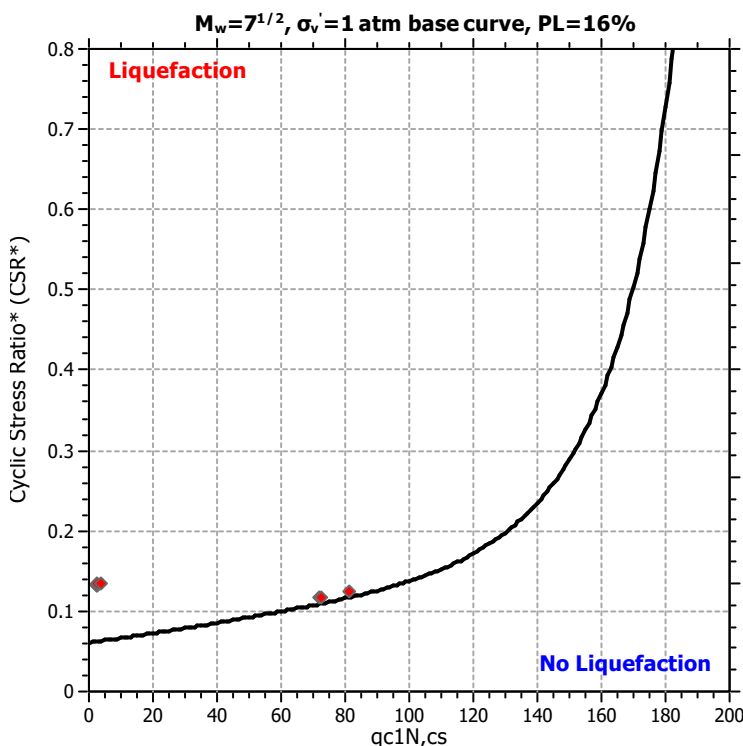
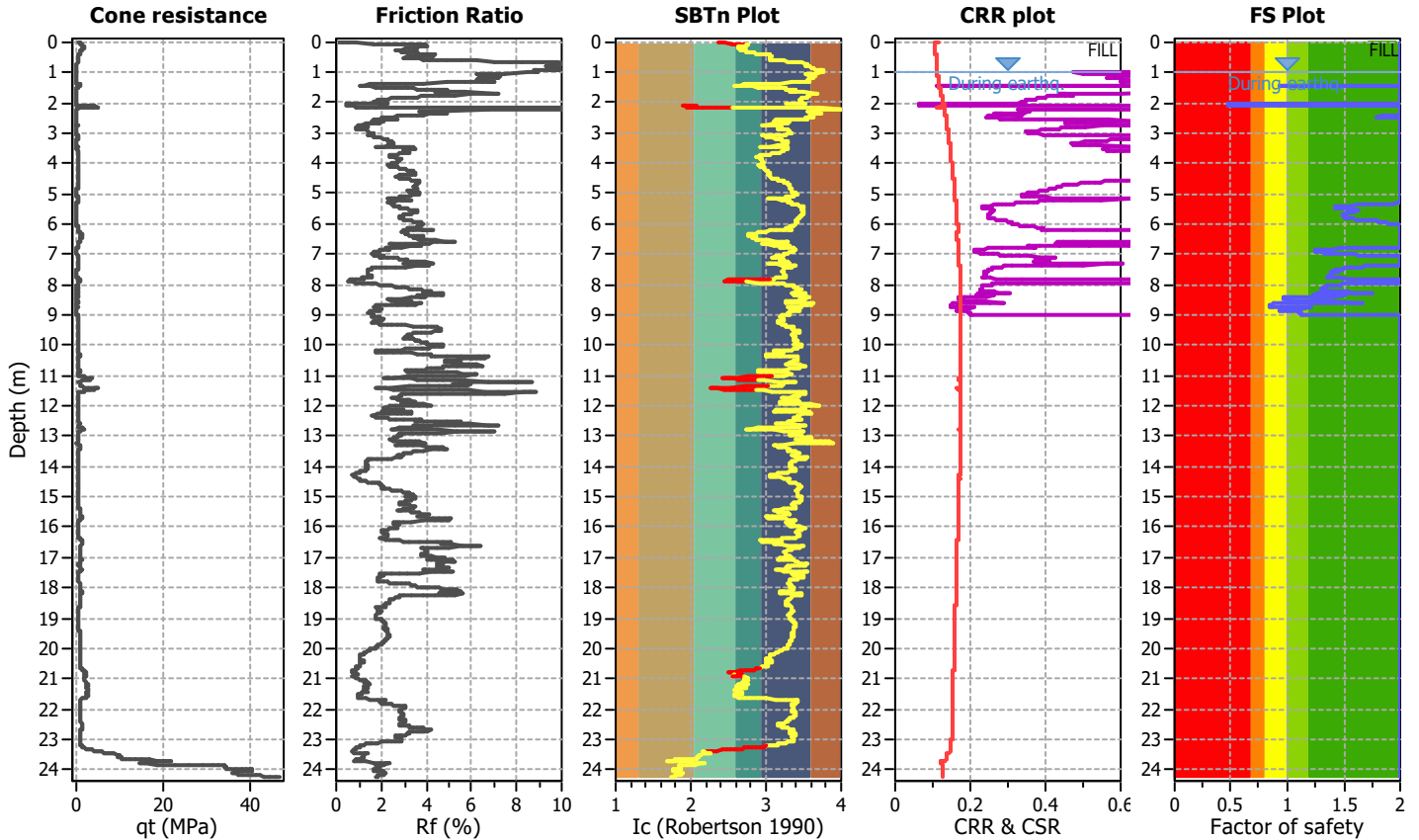
Project title : Sunfield Landholding

Location :

CPT file : CPT002

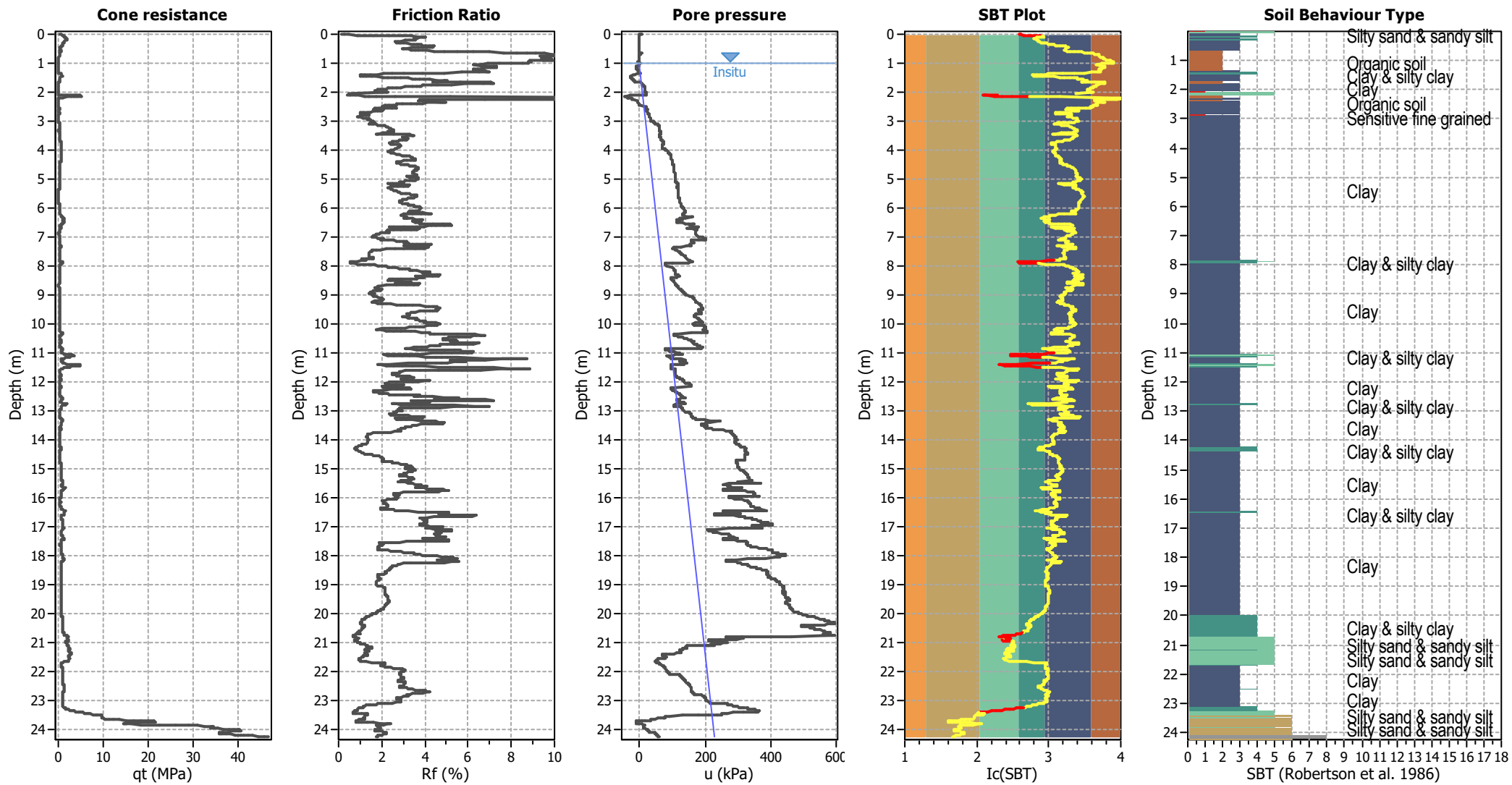
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

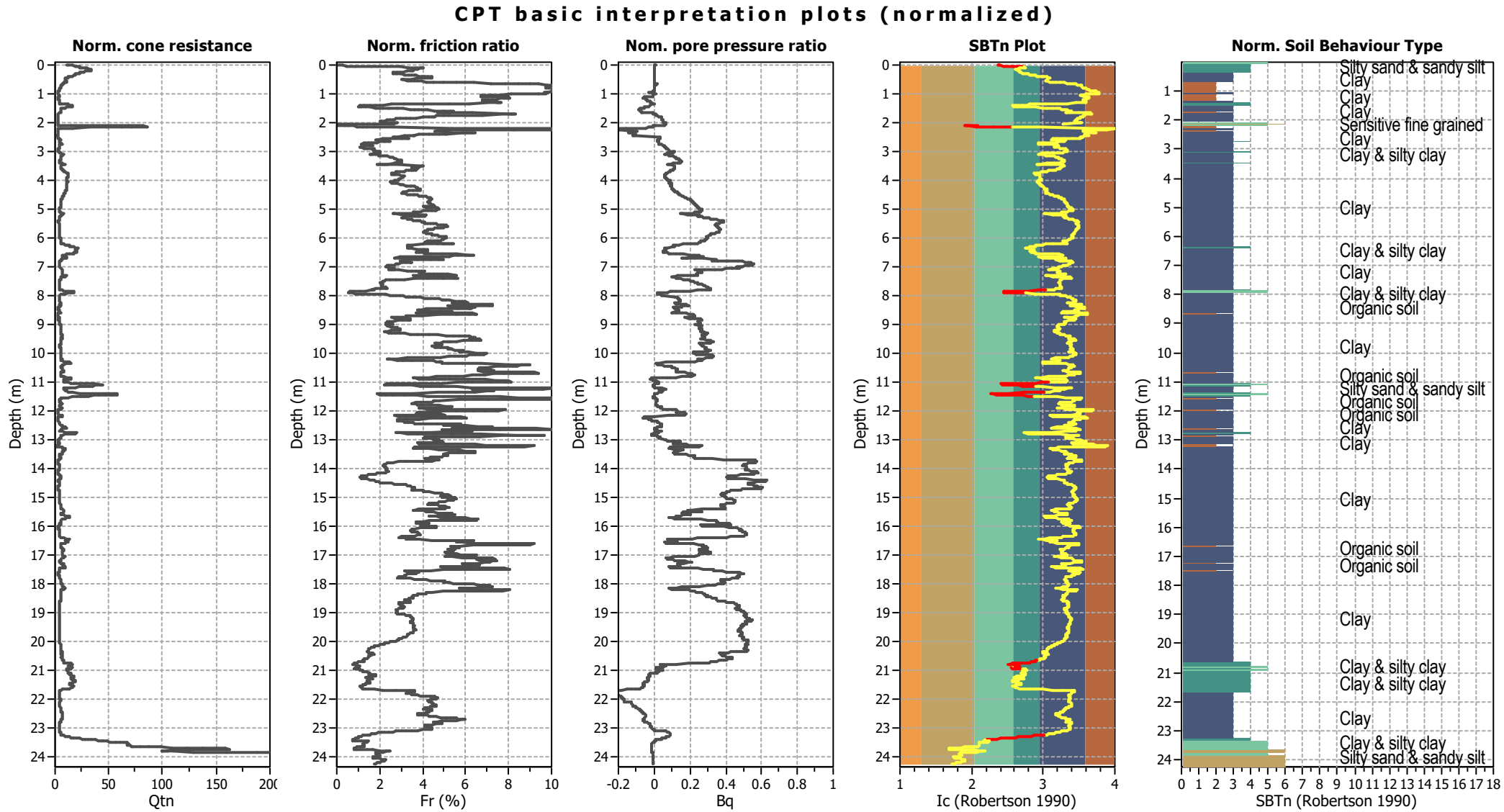


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

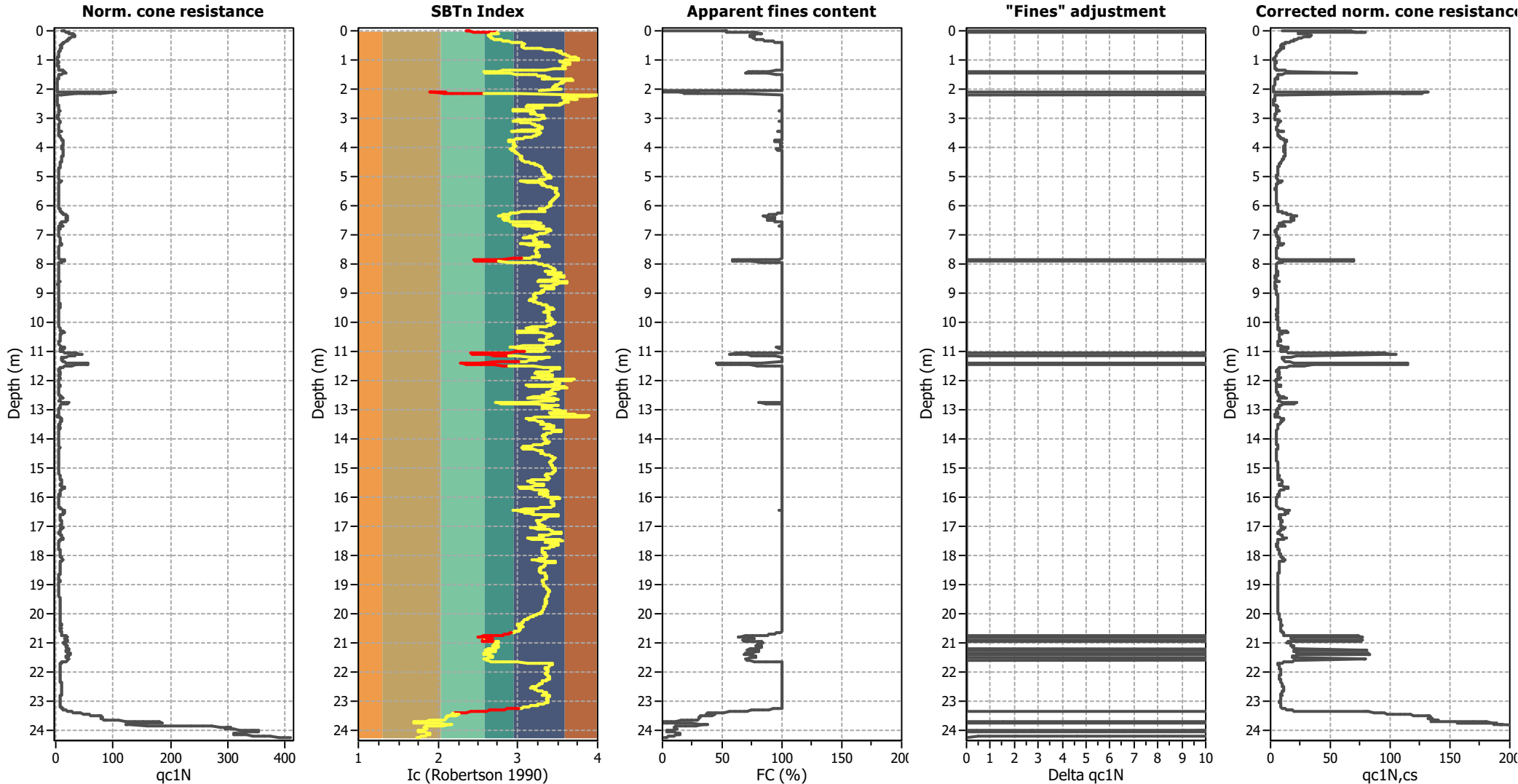
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

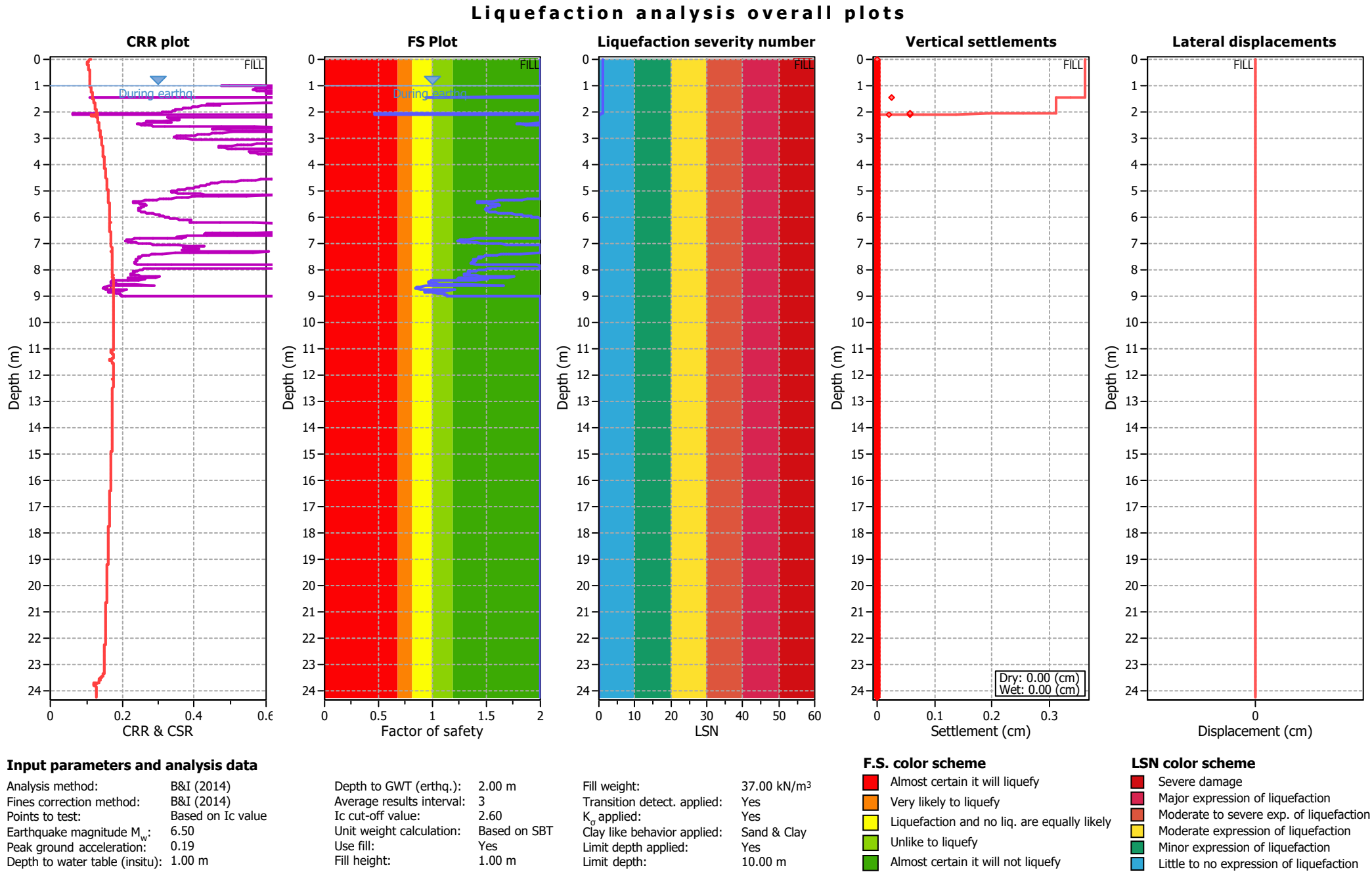
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

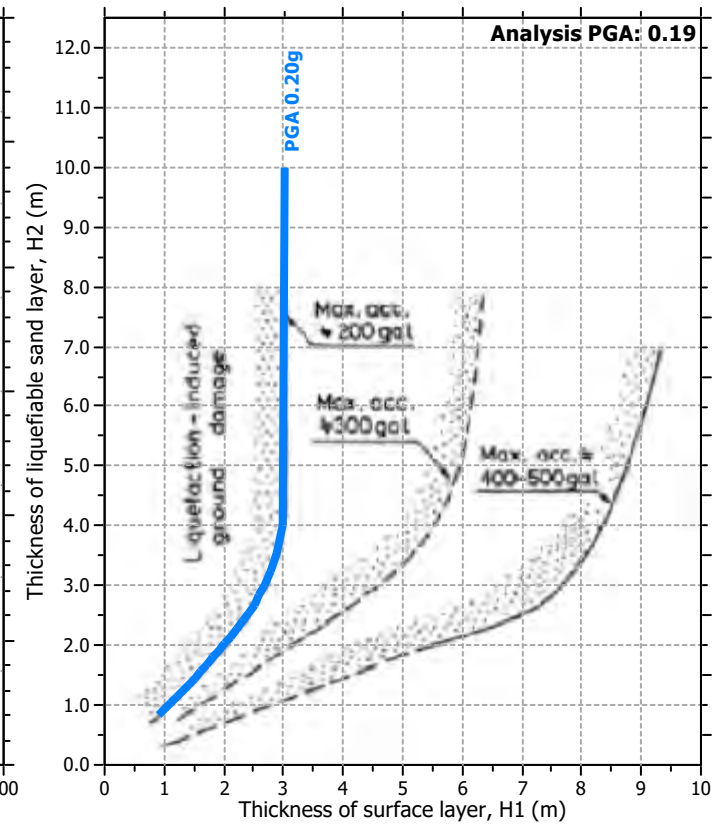
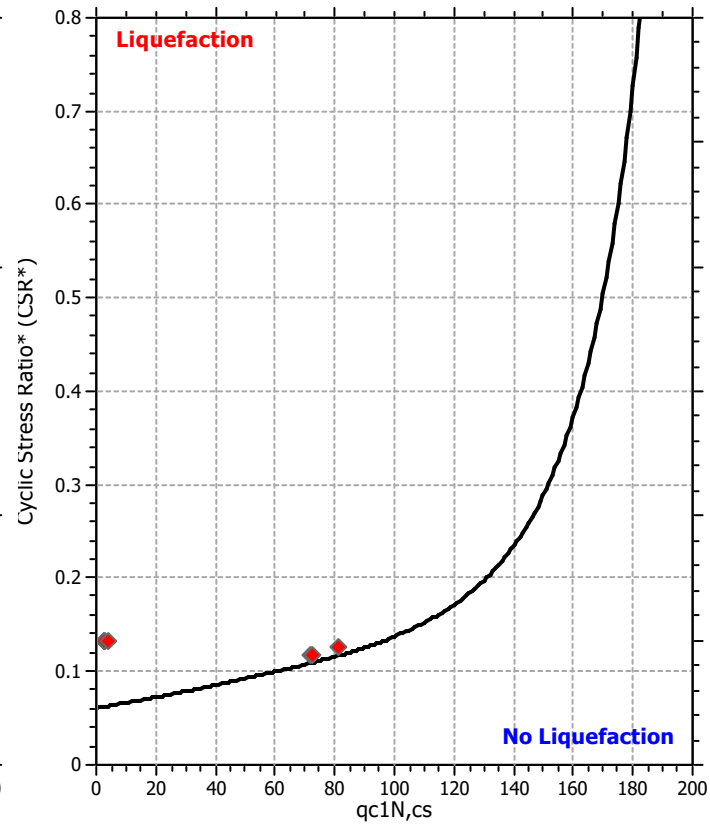
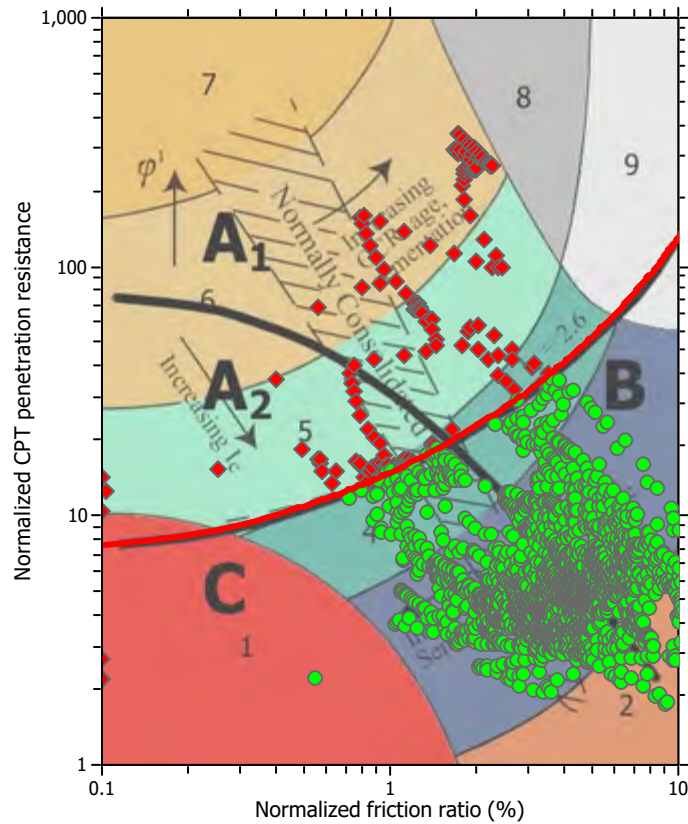


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



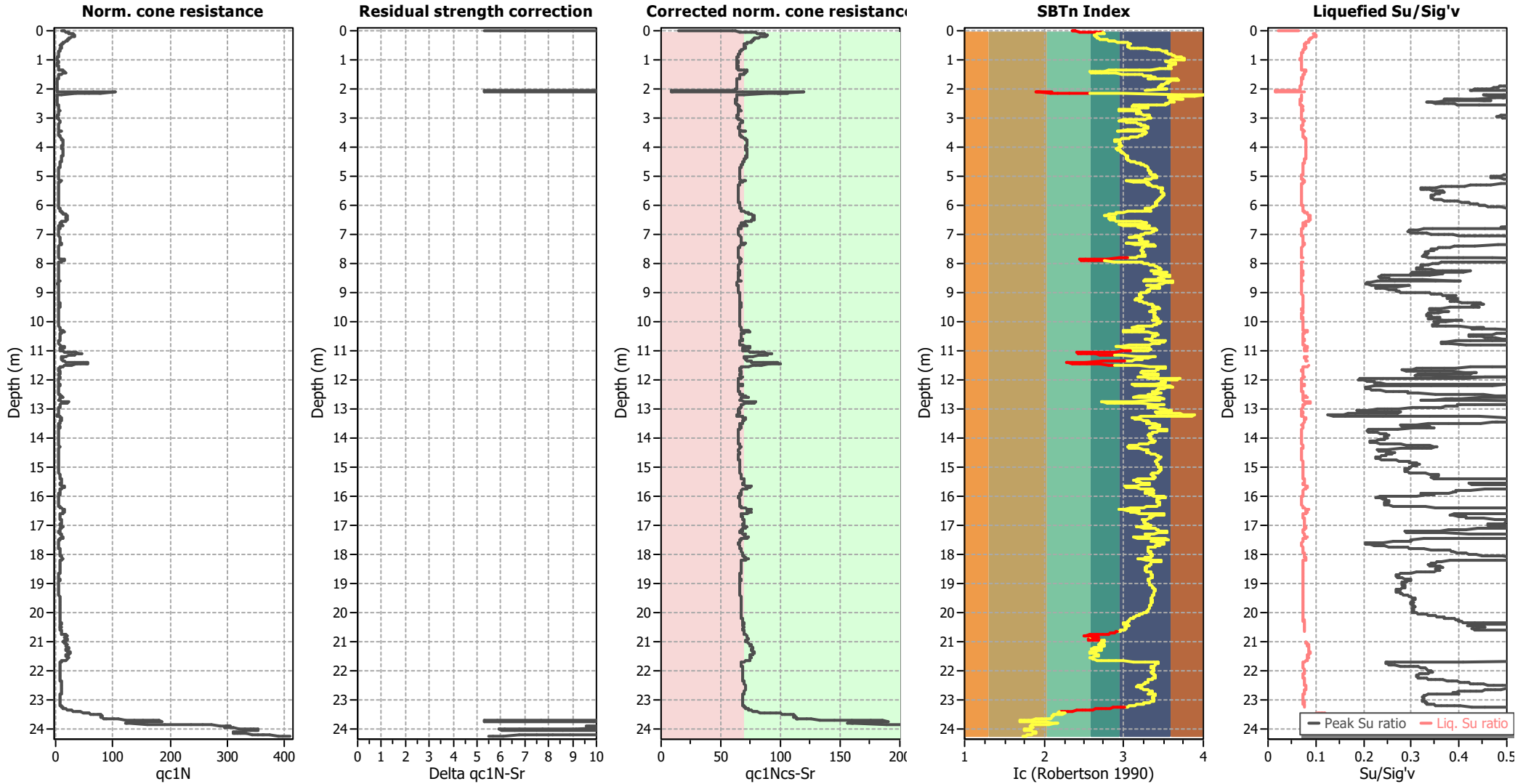
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

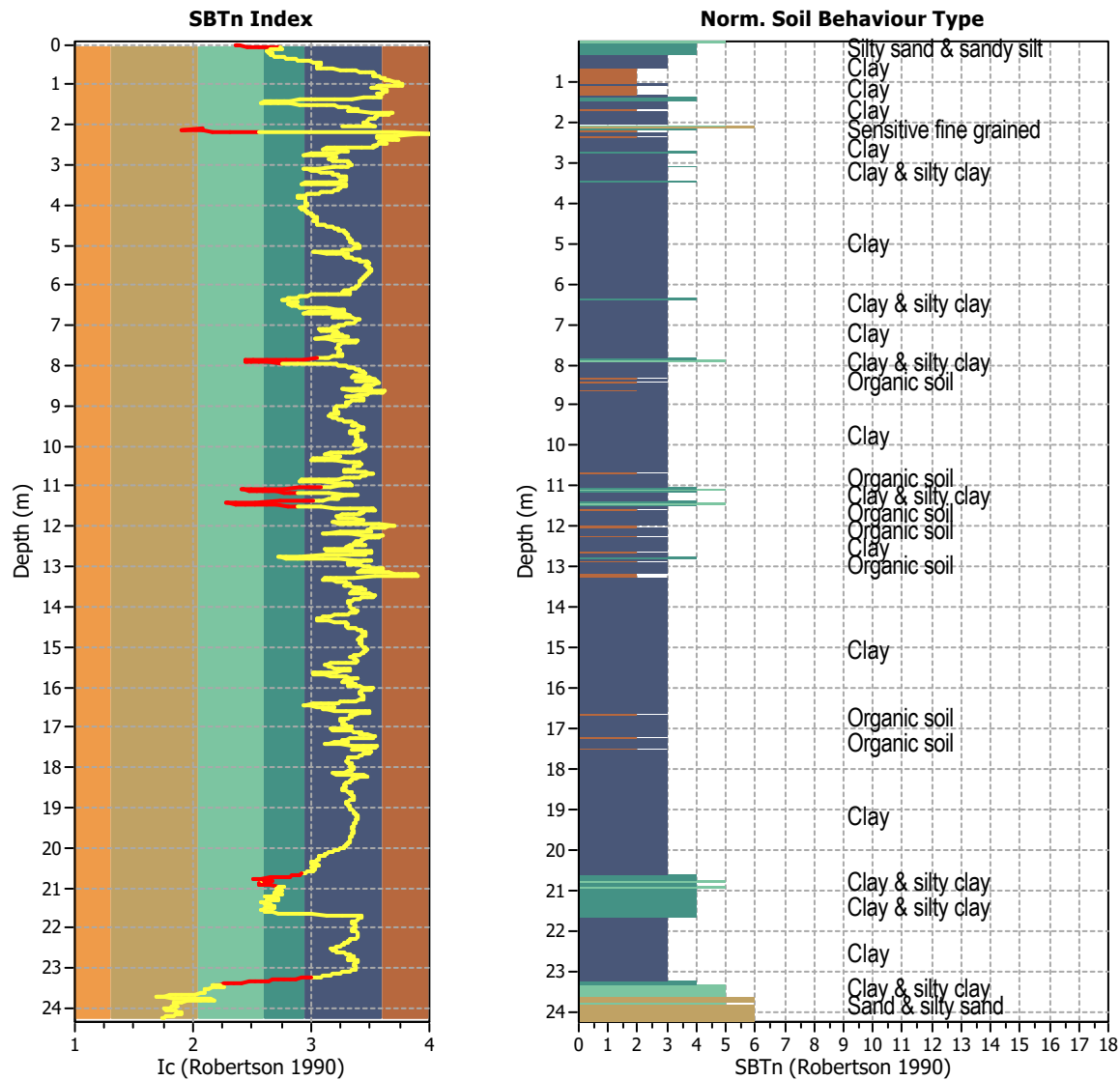
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



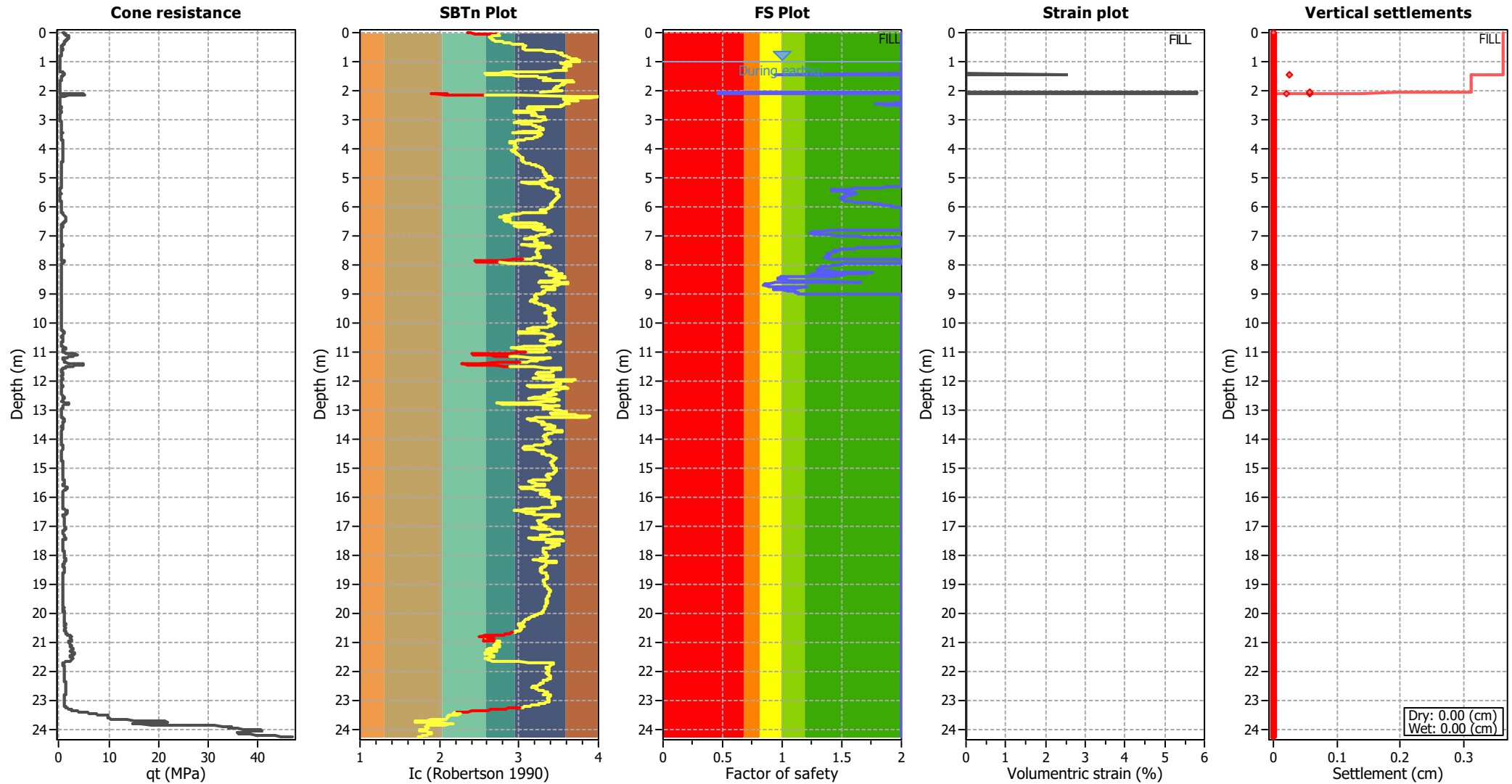
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 2424
Total points excluded: 111
Exclusion percentage: 4.58%
Number of layers detected: 13

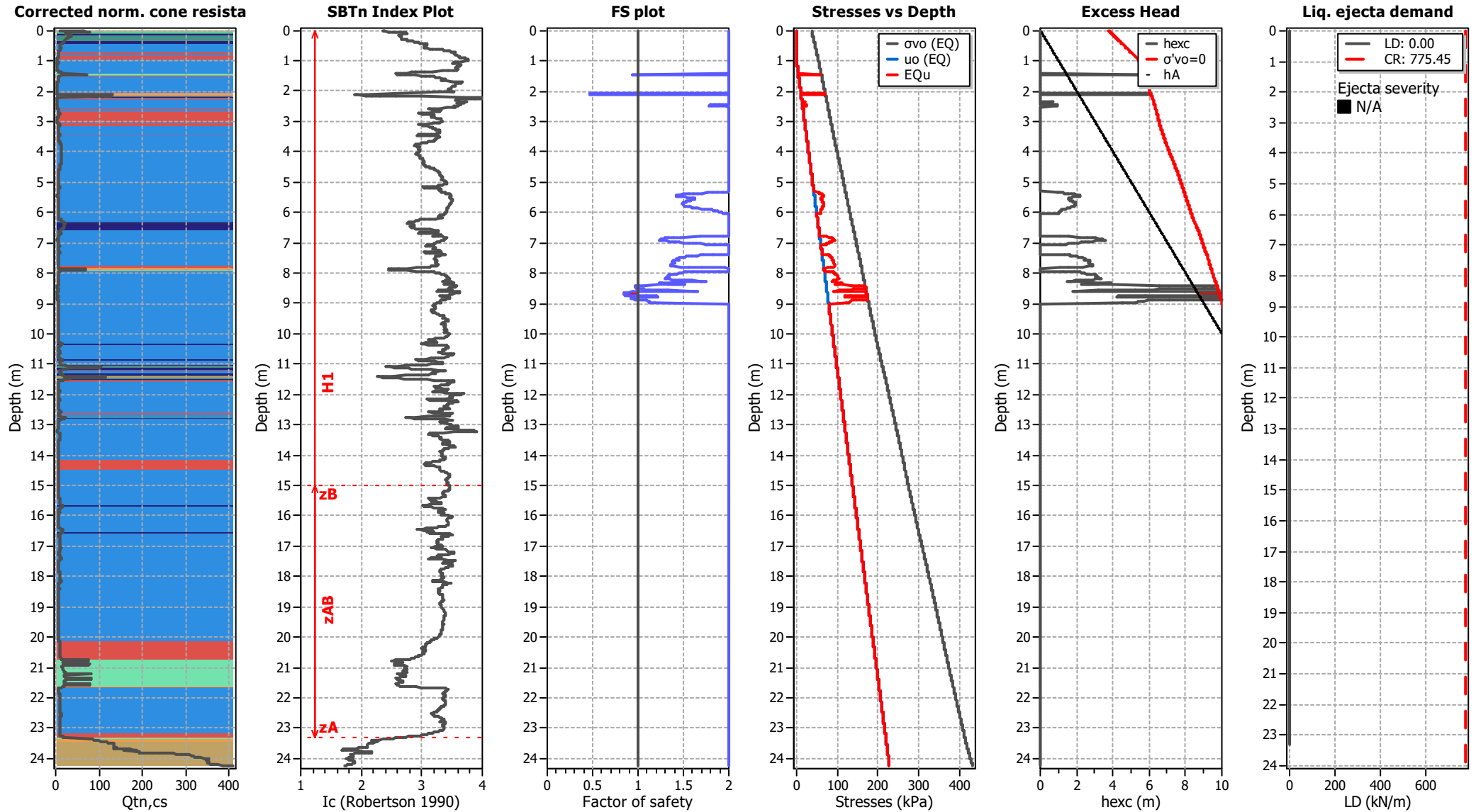
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

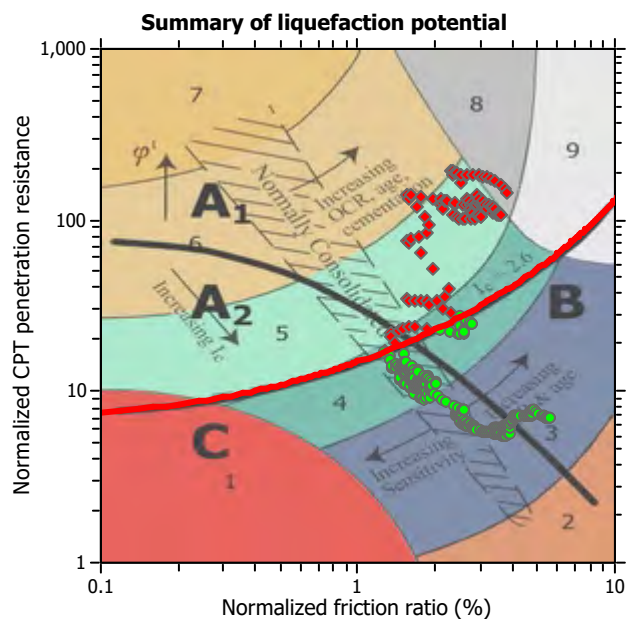
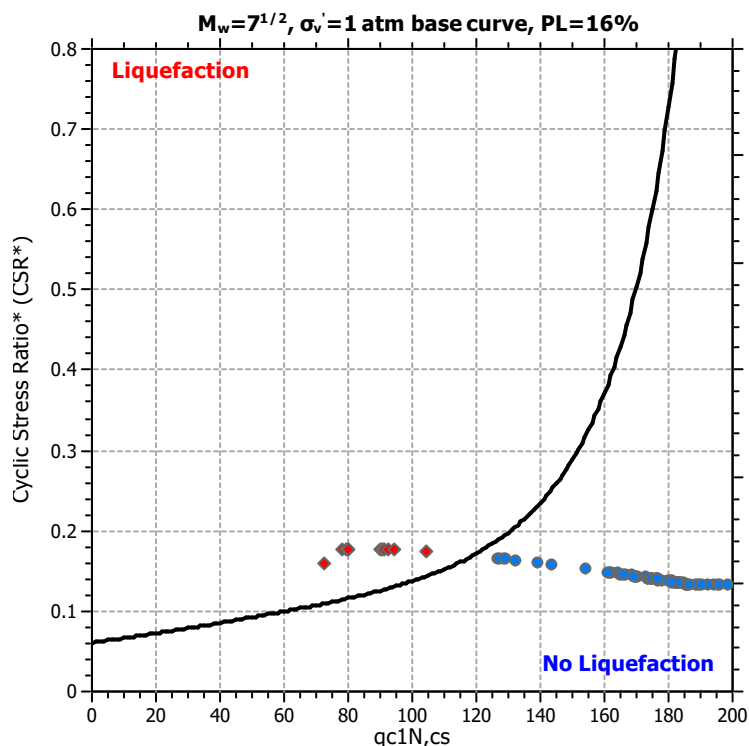
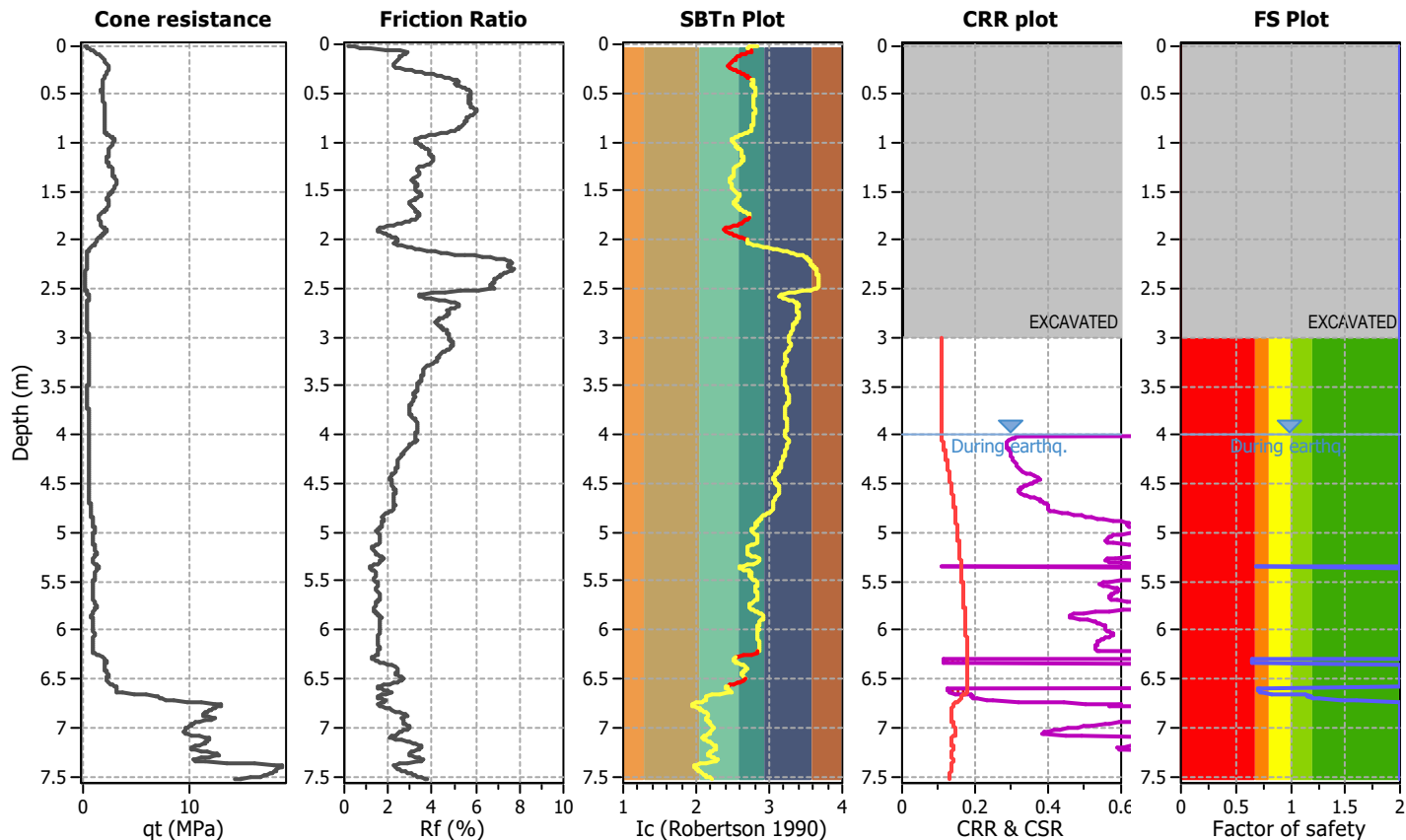
Project title : Sunfield Landholding

Location :

CPT file : CPT003

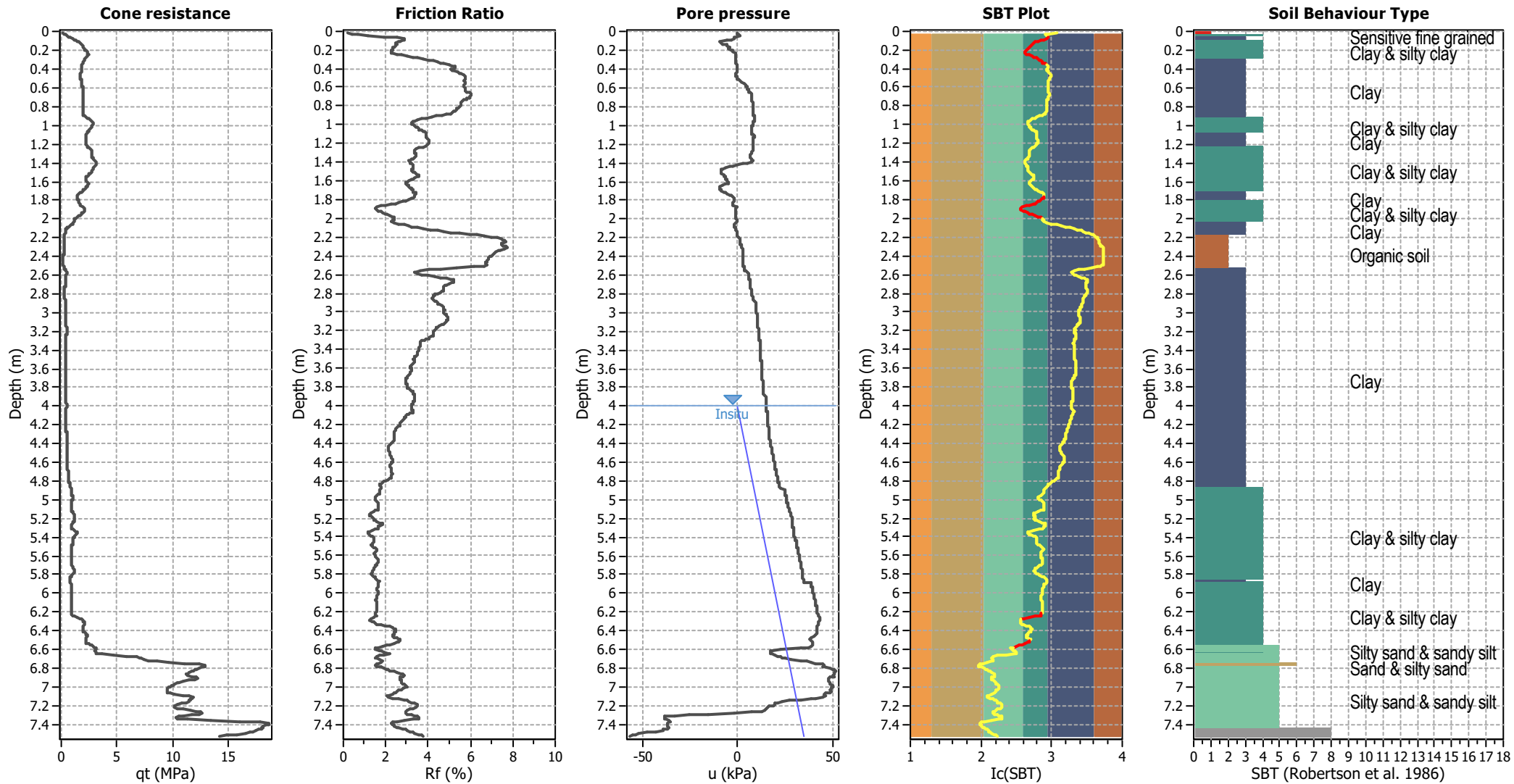
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

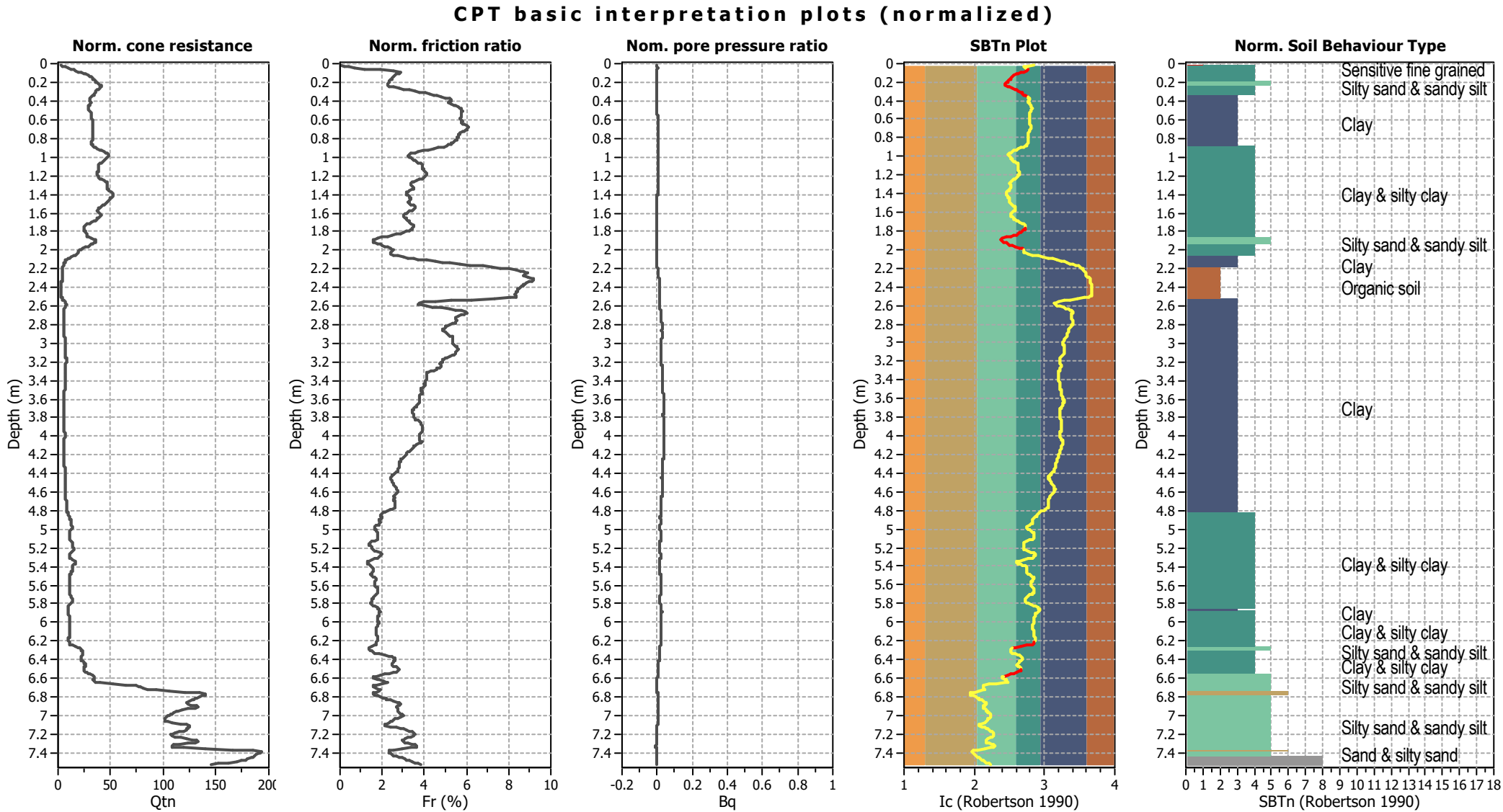


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

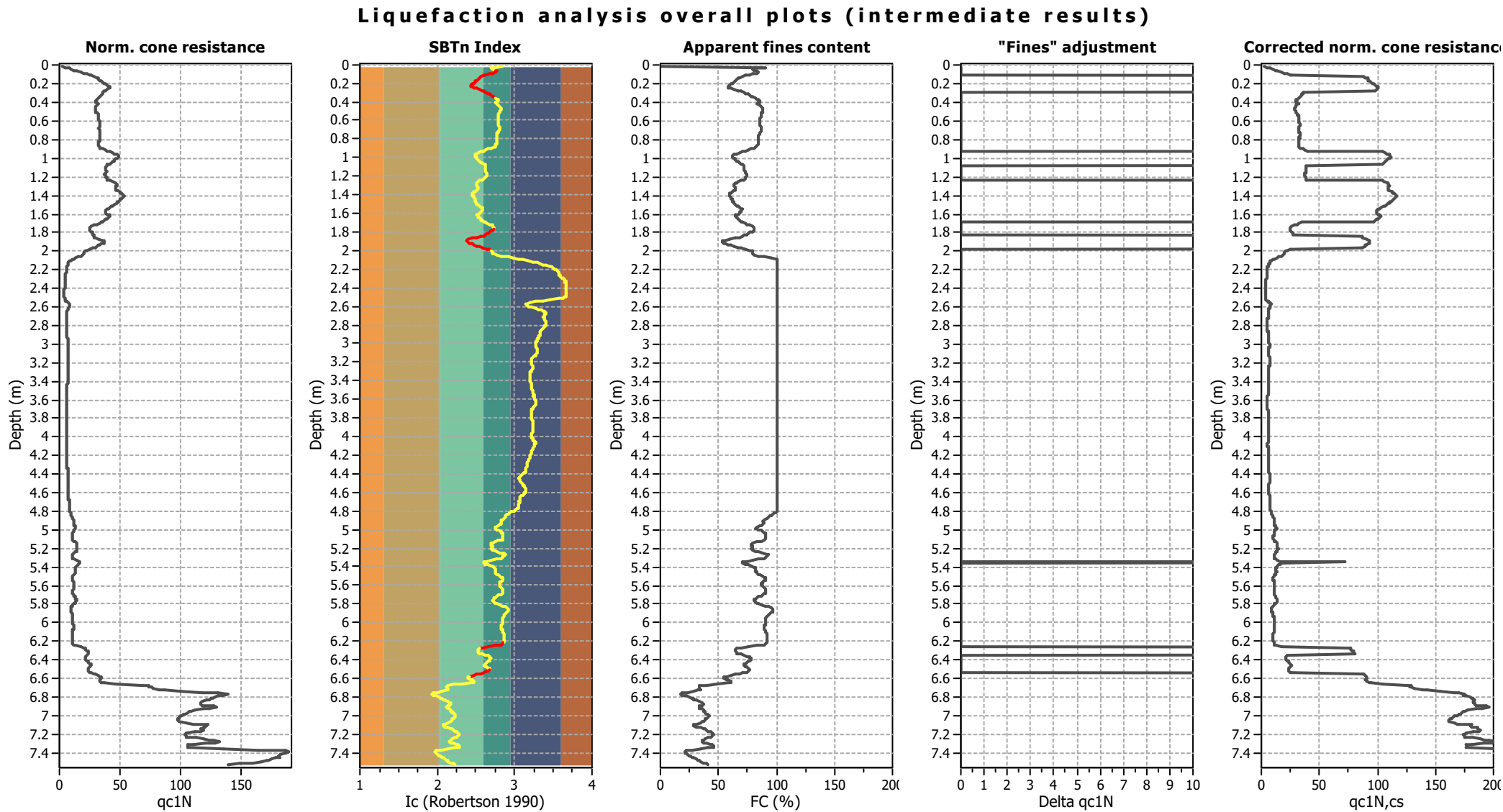


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

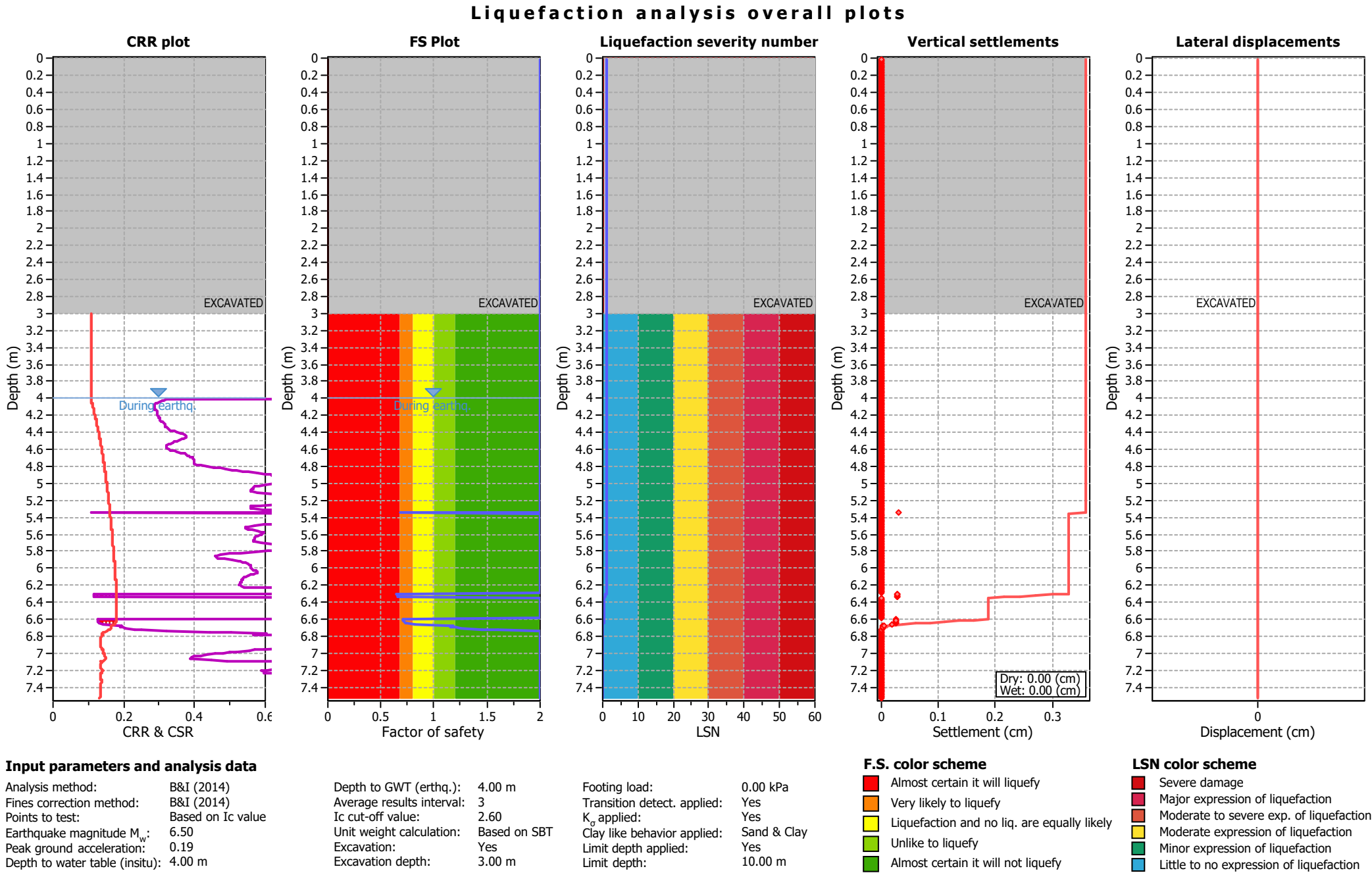
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

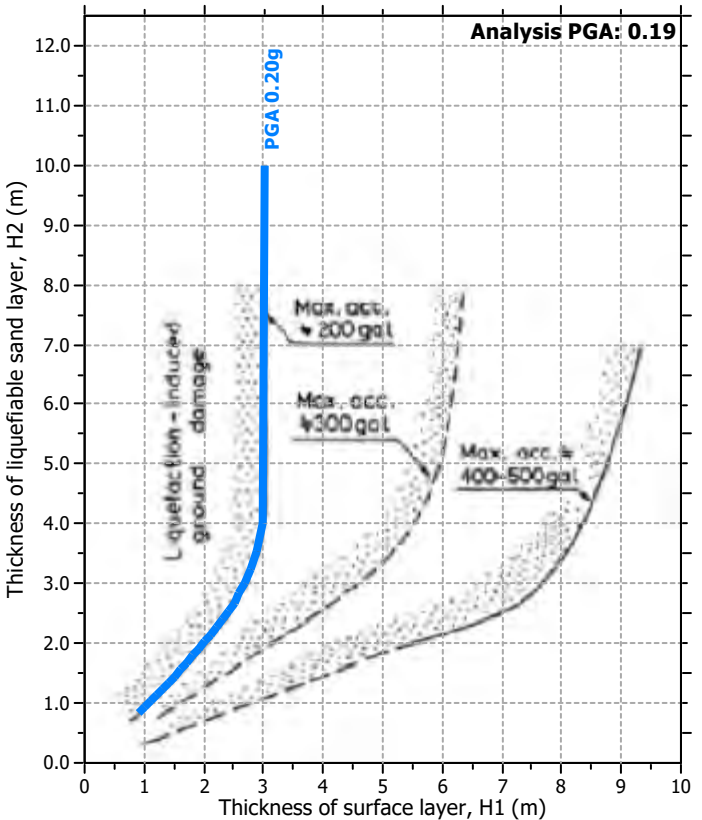
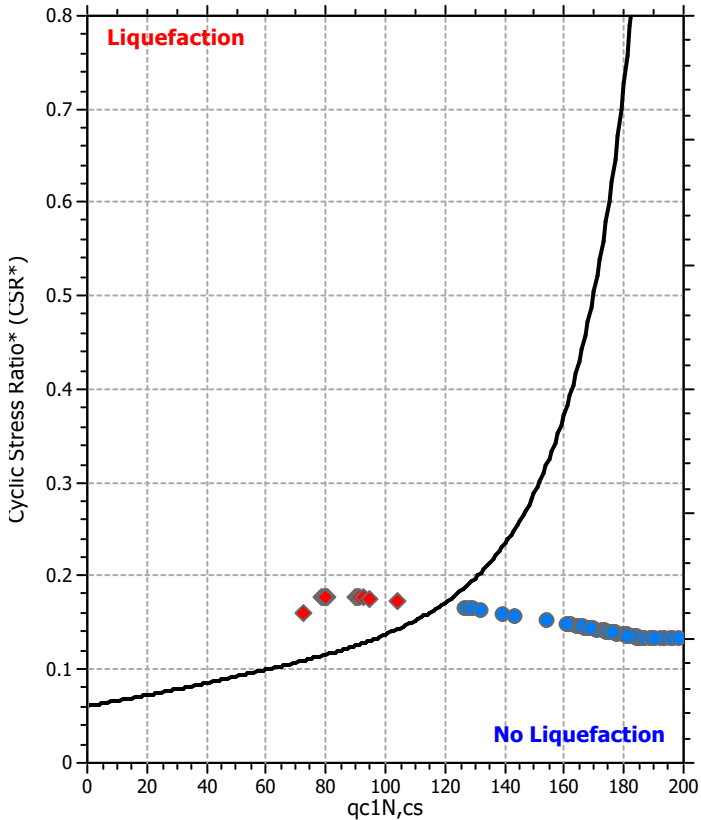
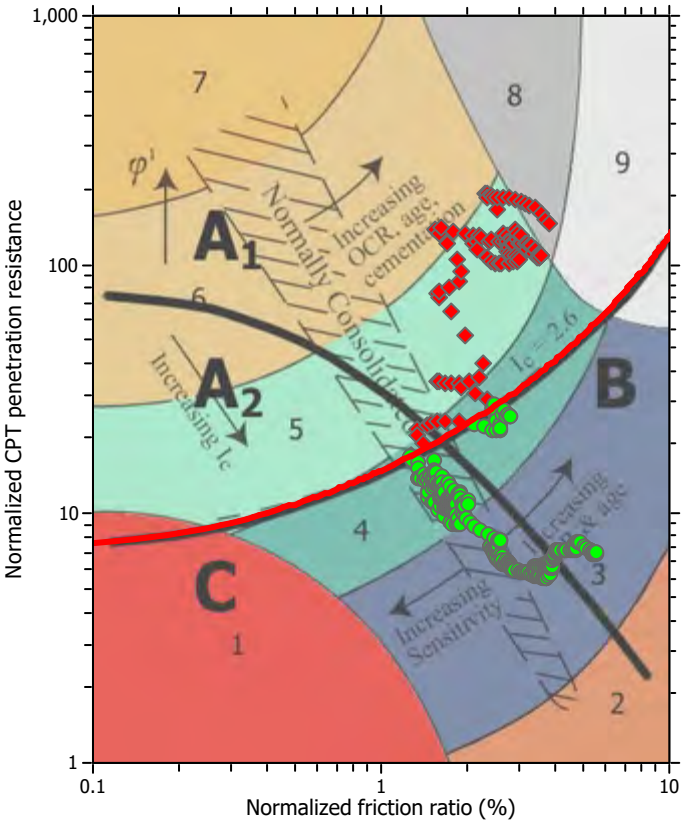


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

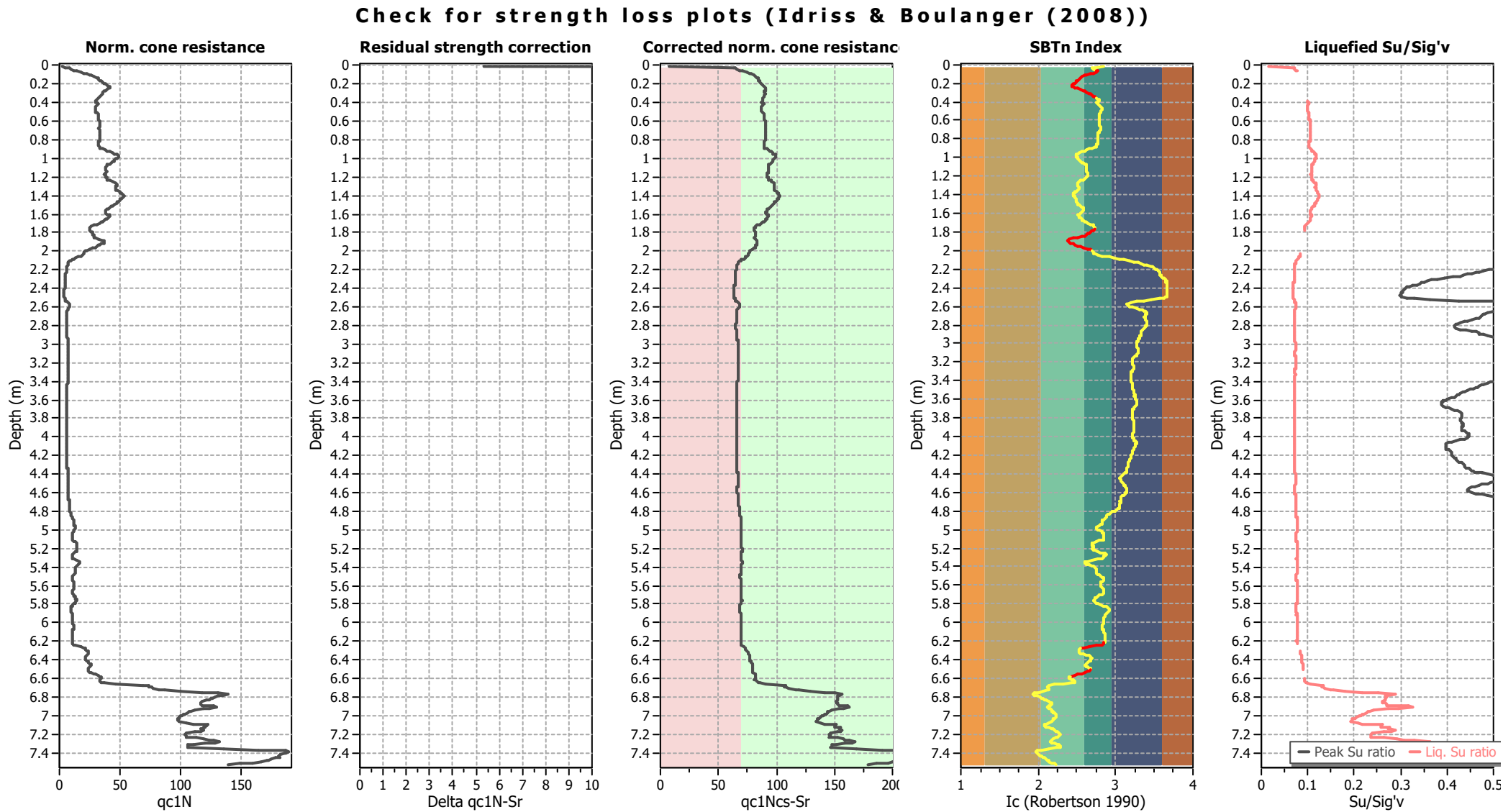


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

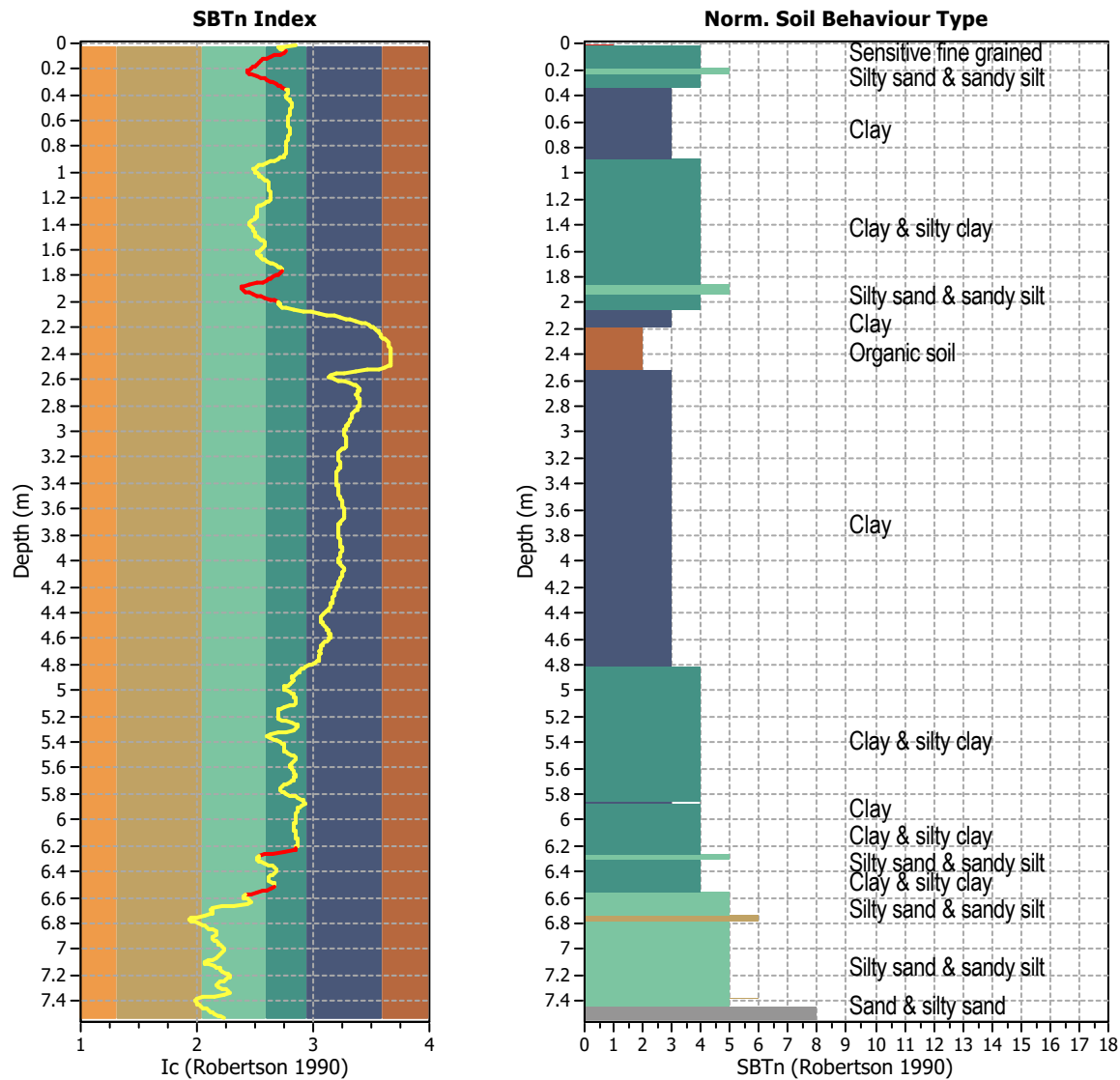
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



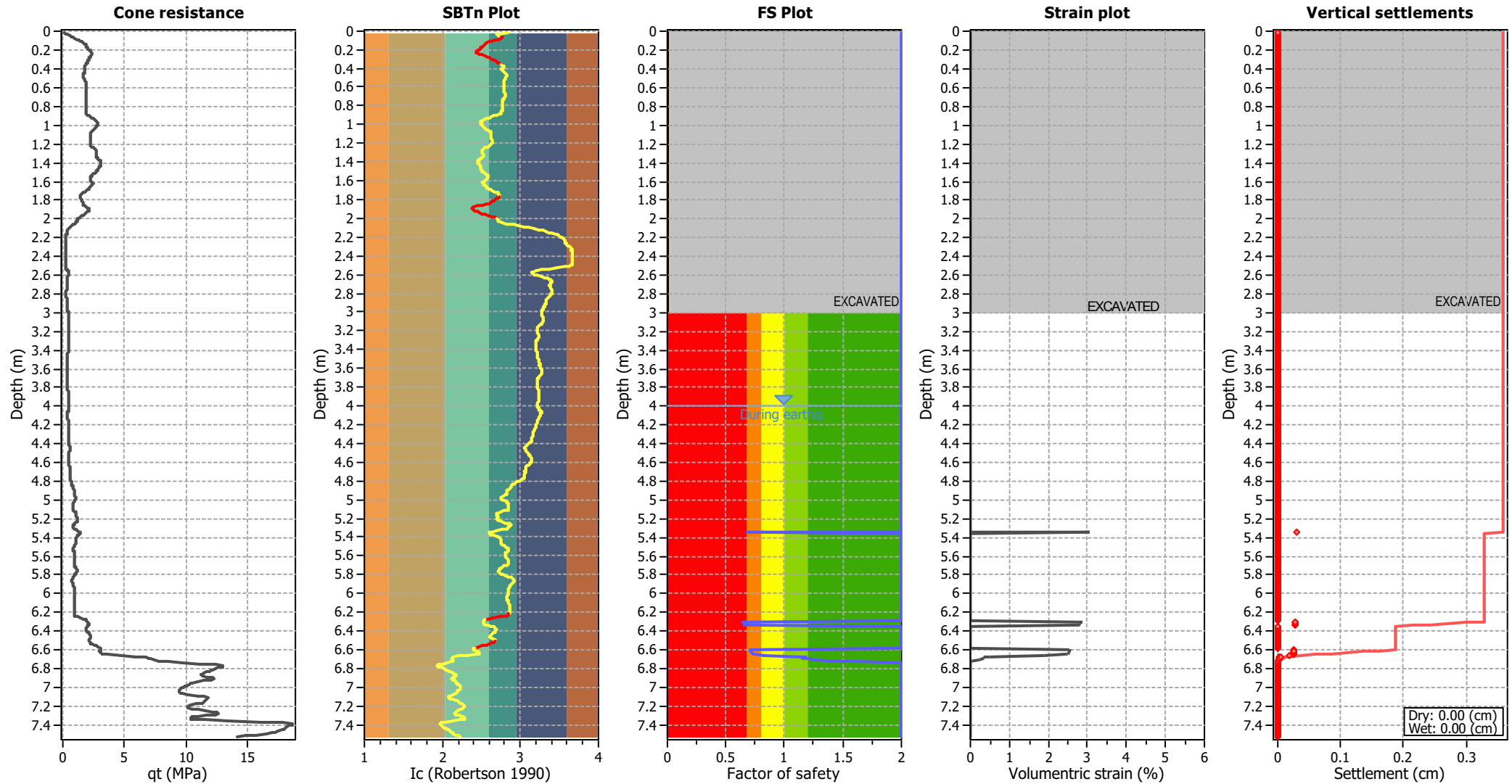
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 753
Total points excluded: 70
Exclusion percentage: 9.30%
Number of layers detected: 6

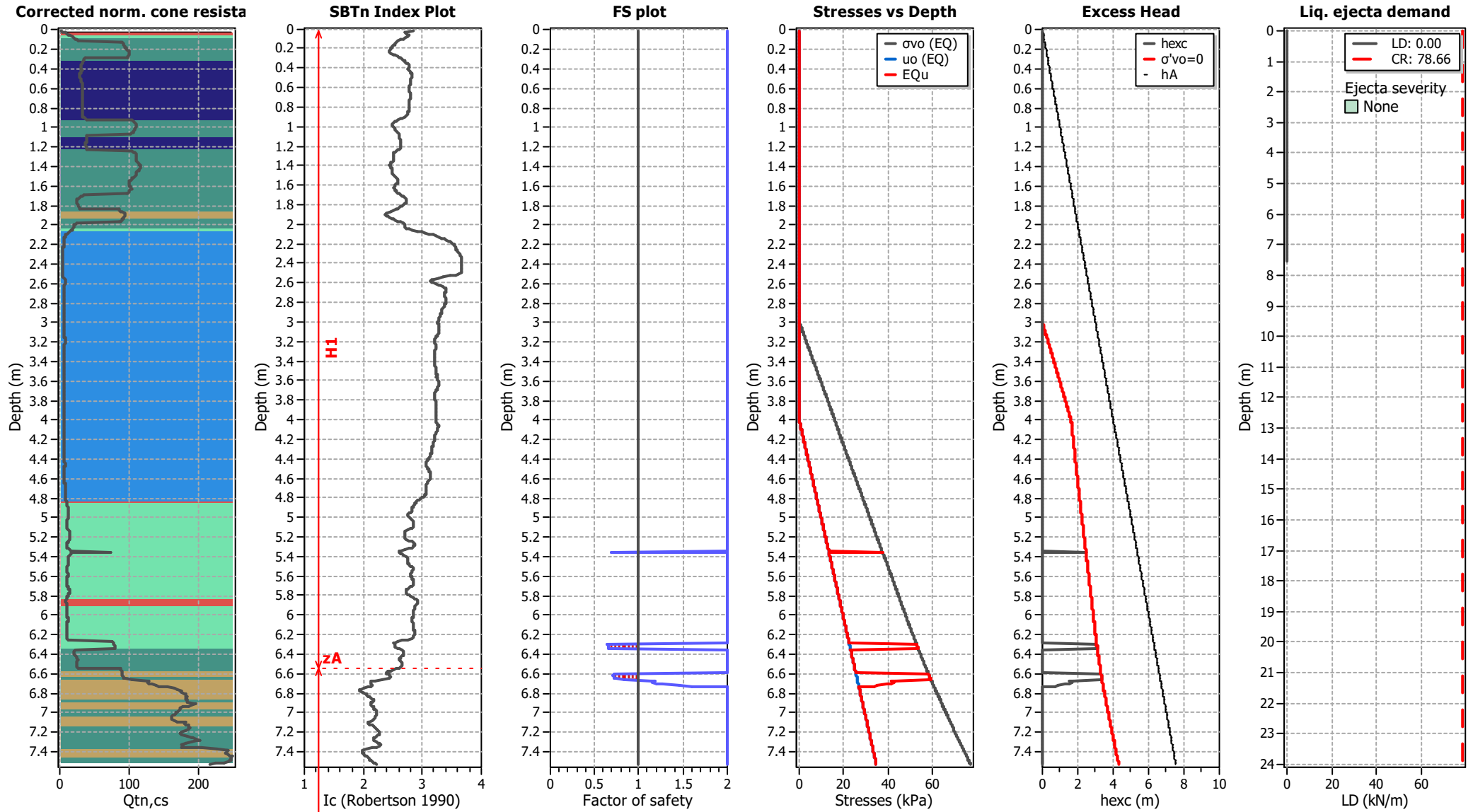
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

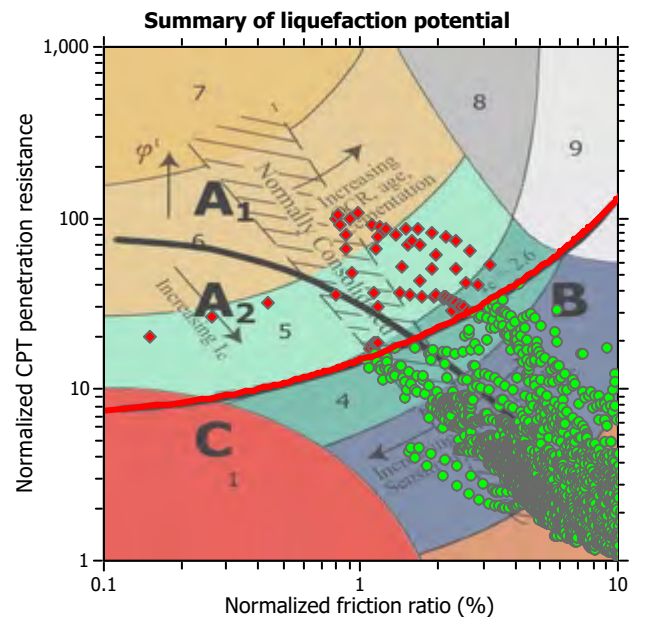
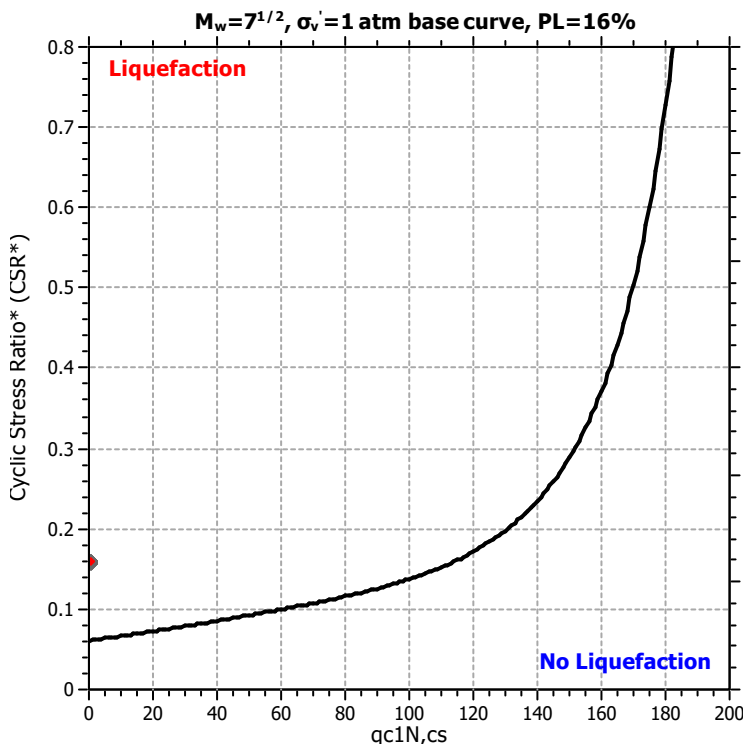
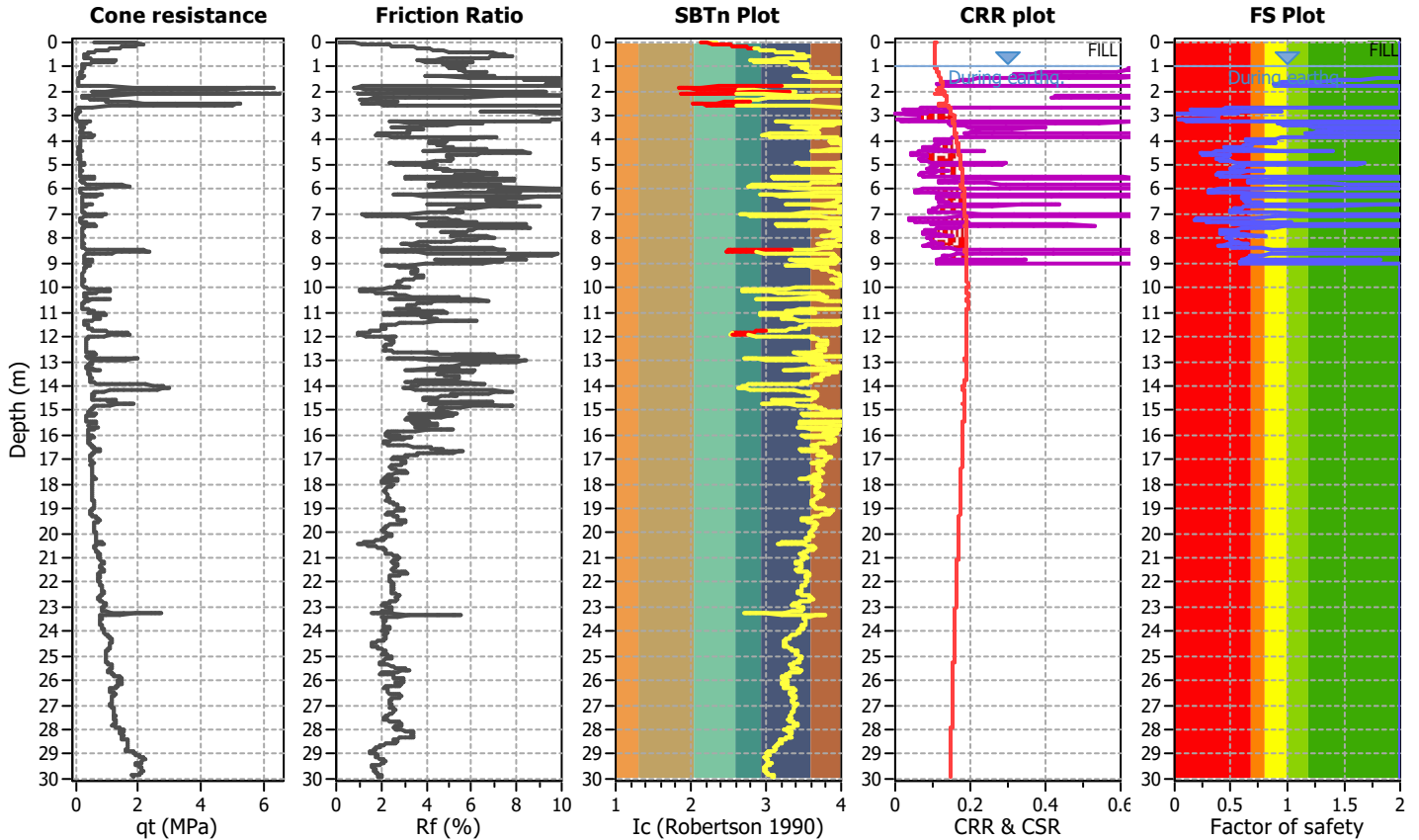
Project title : Sunfield Landholding

Location :

CPT file : CPT004

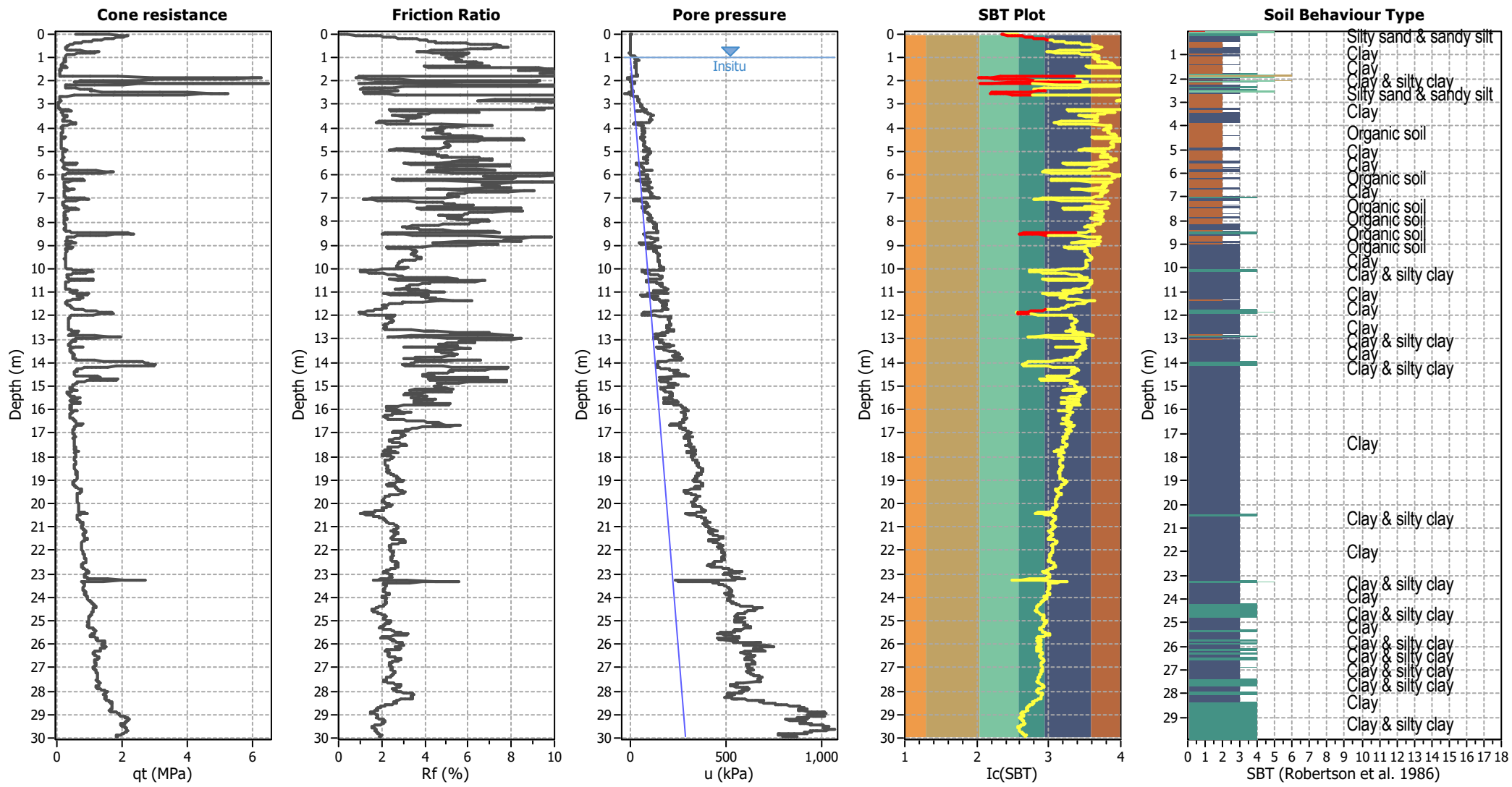
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

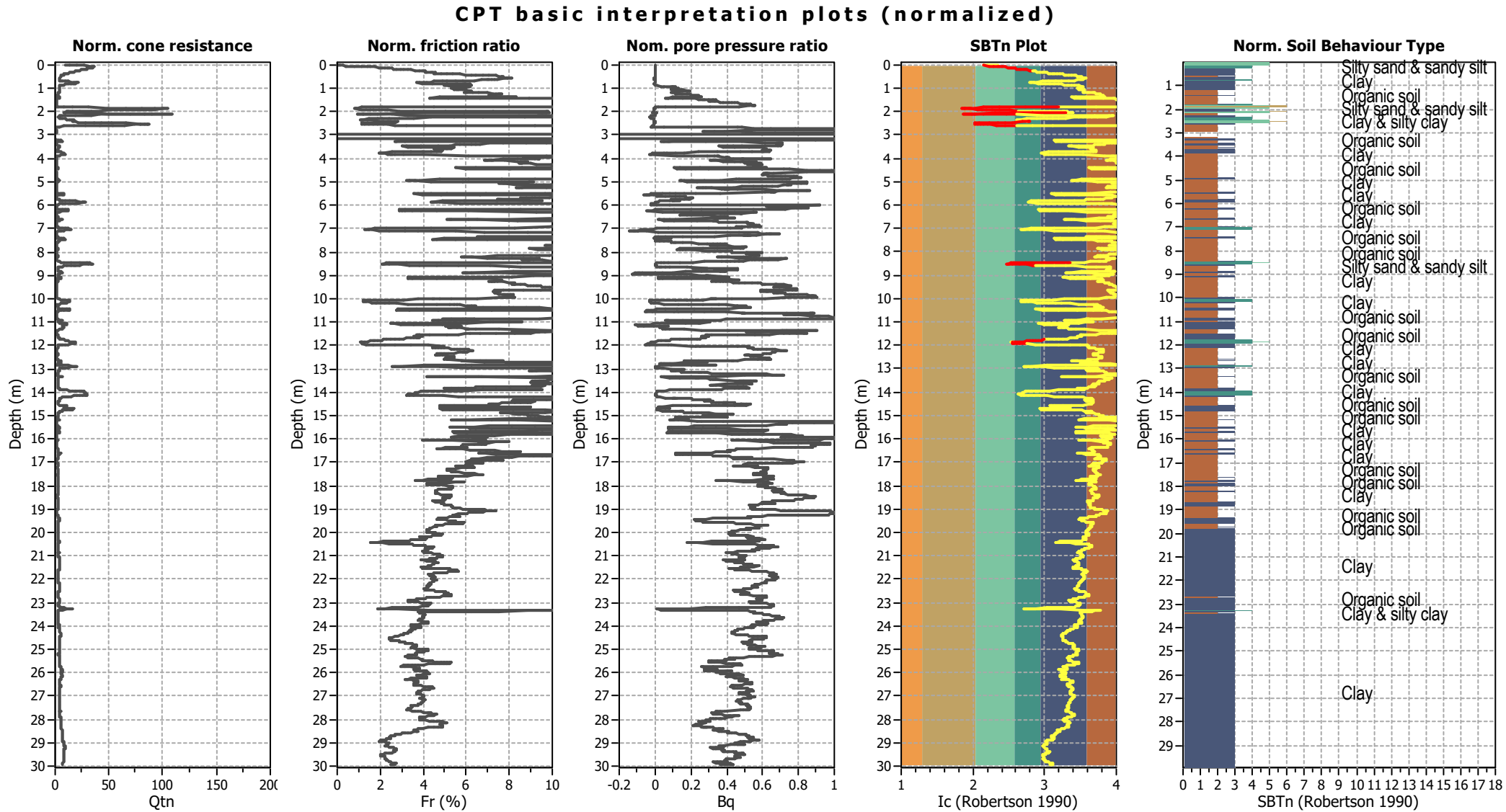


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

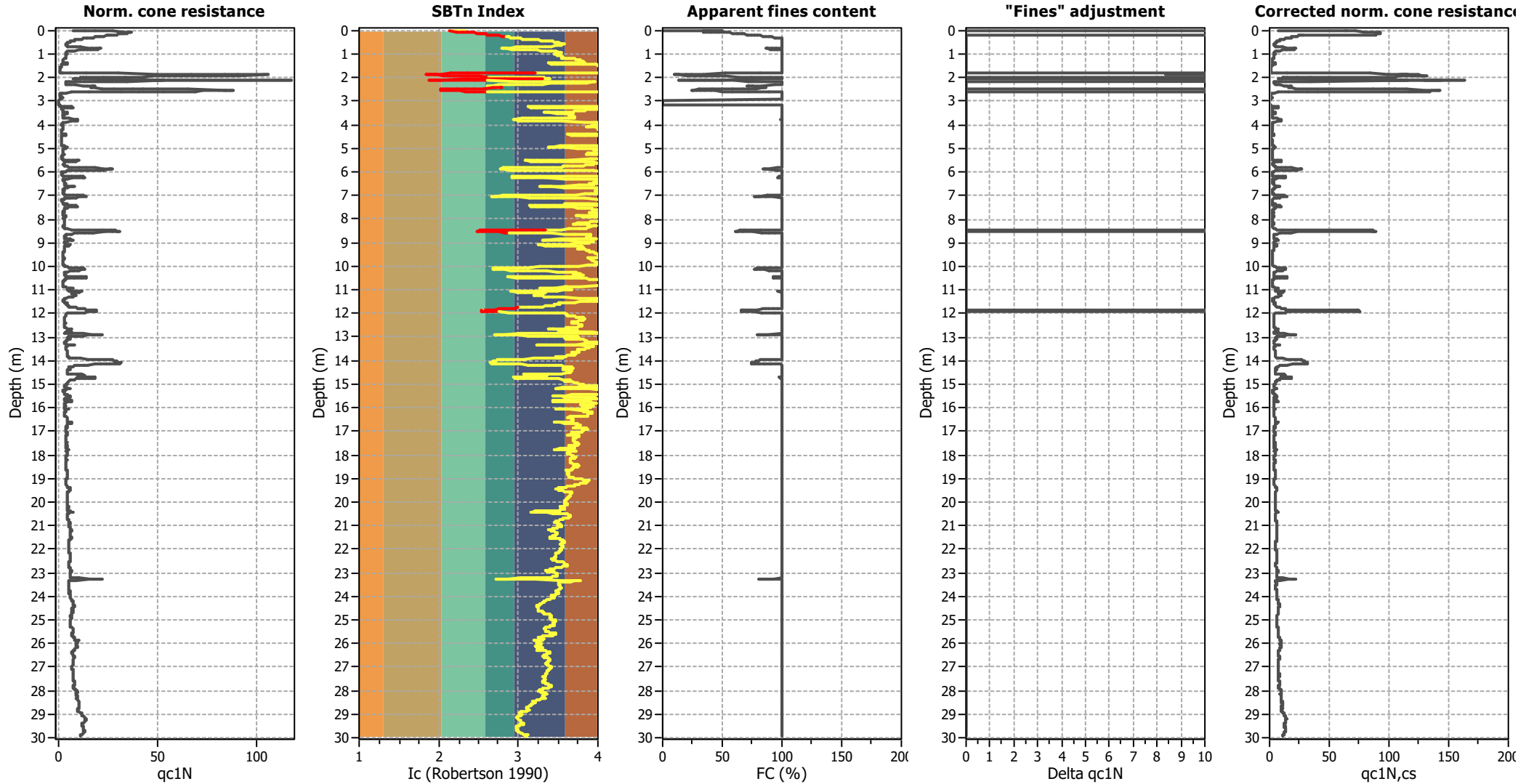
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

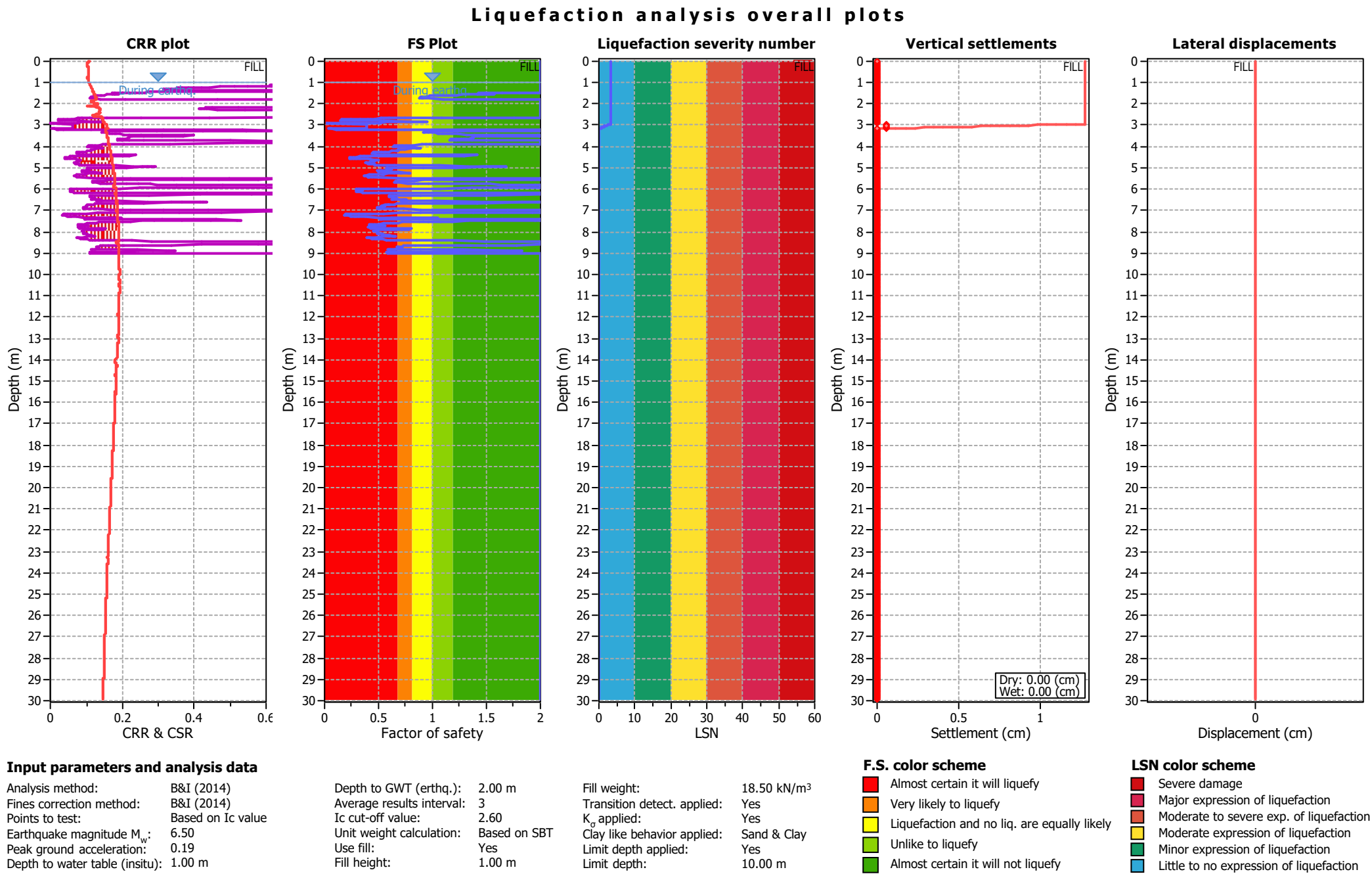
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

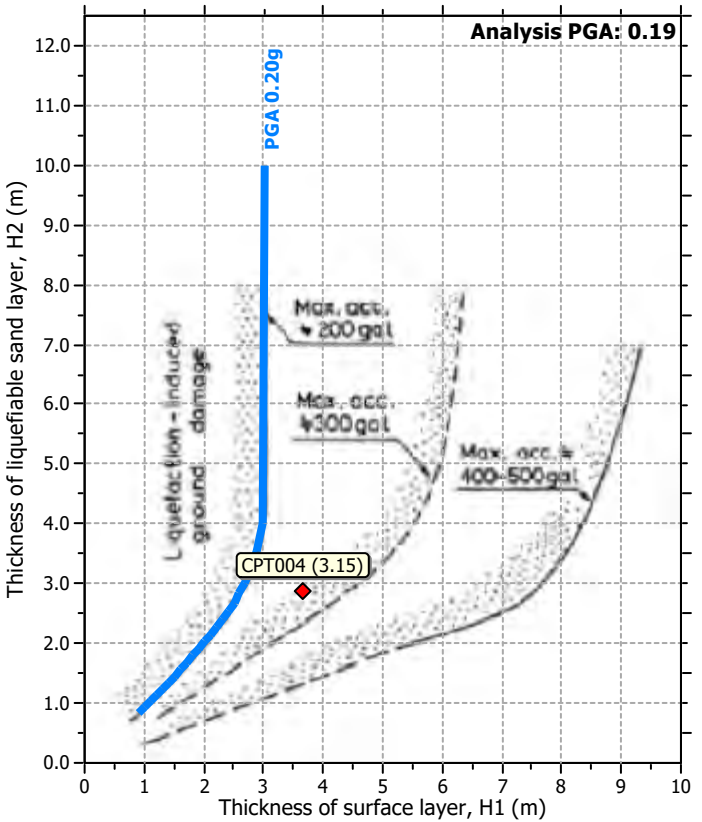
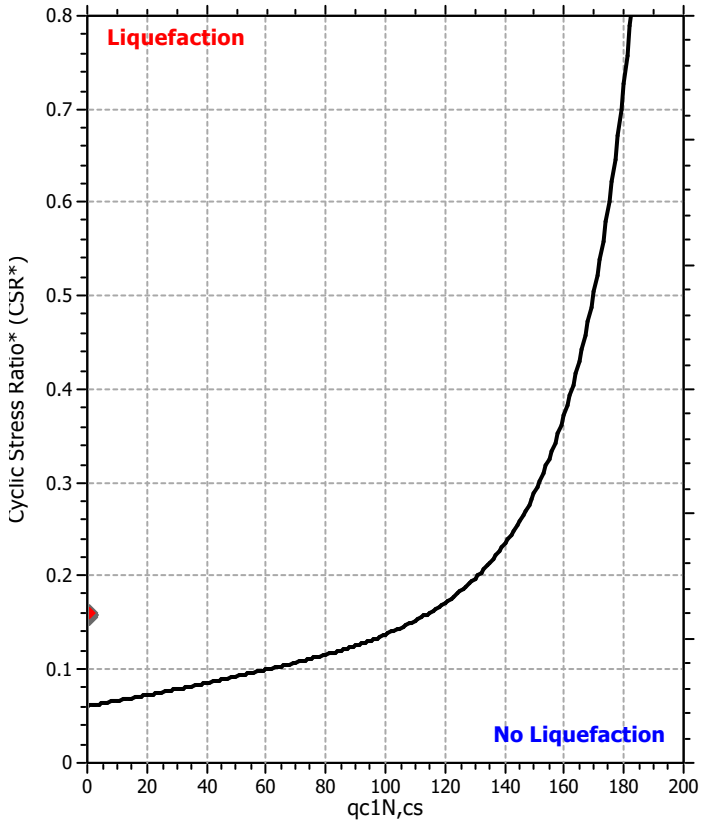
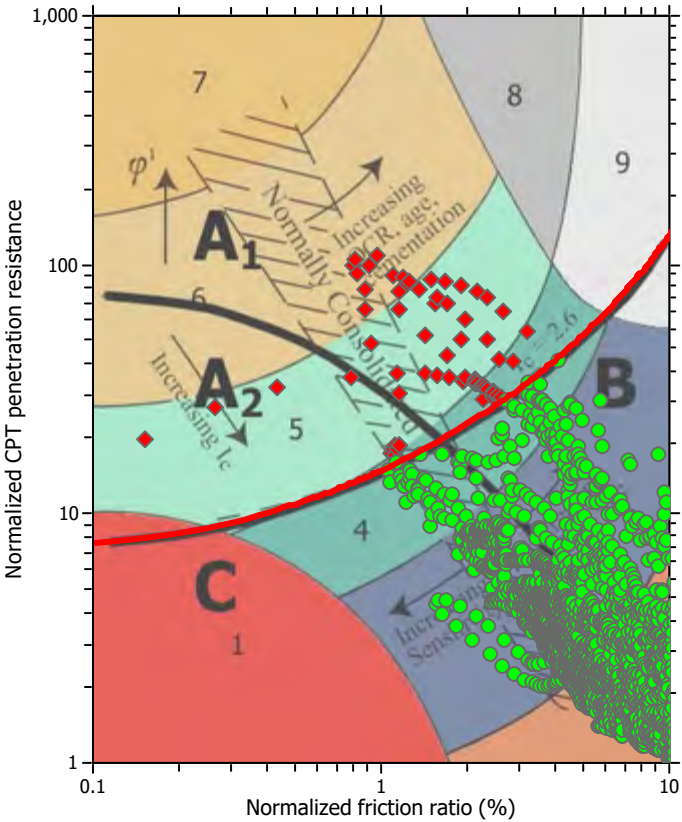


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

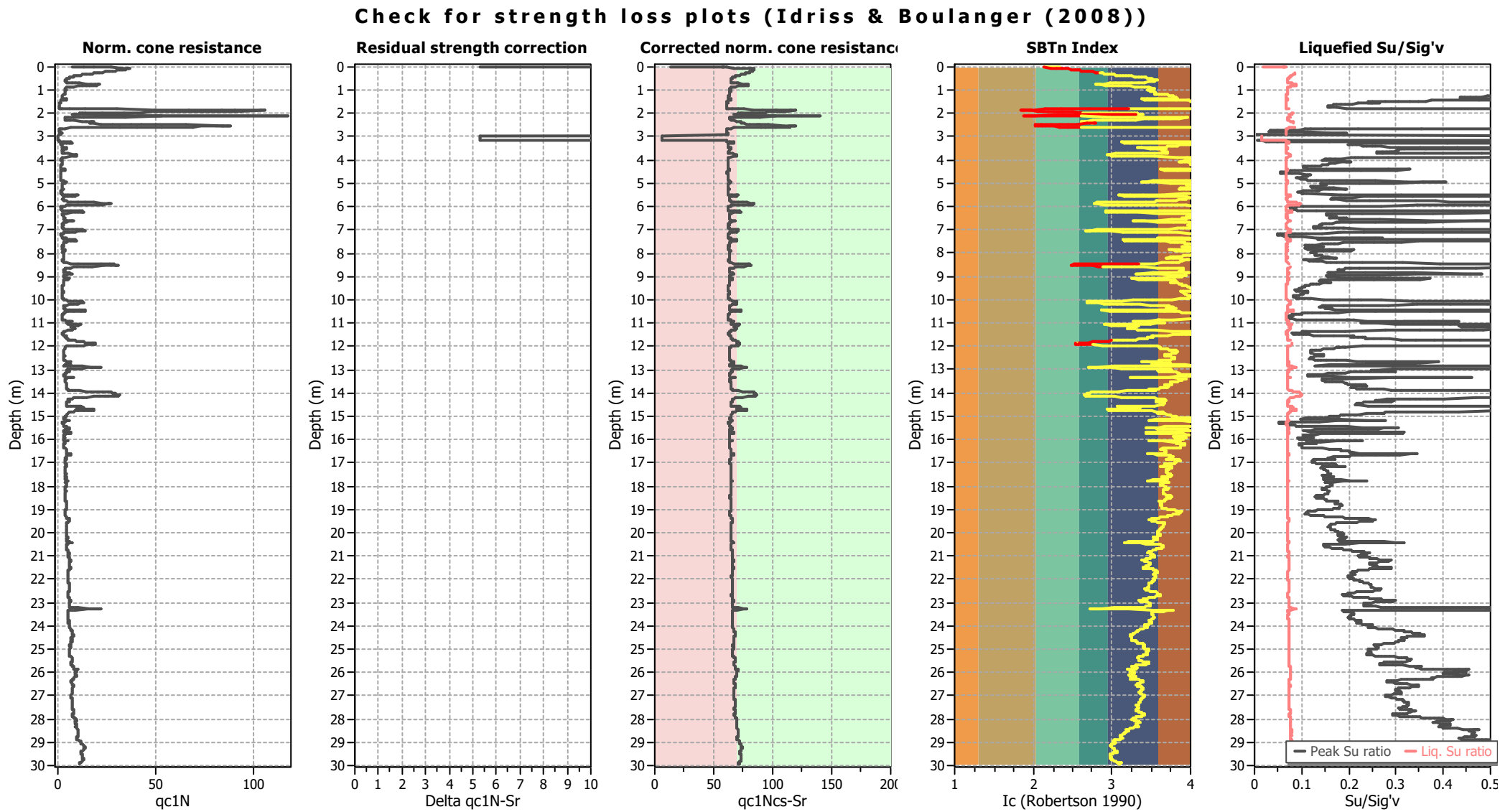


Liquefaction analysis summary plots



Input parameters and analysis data

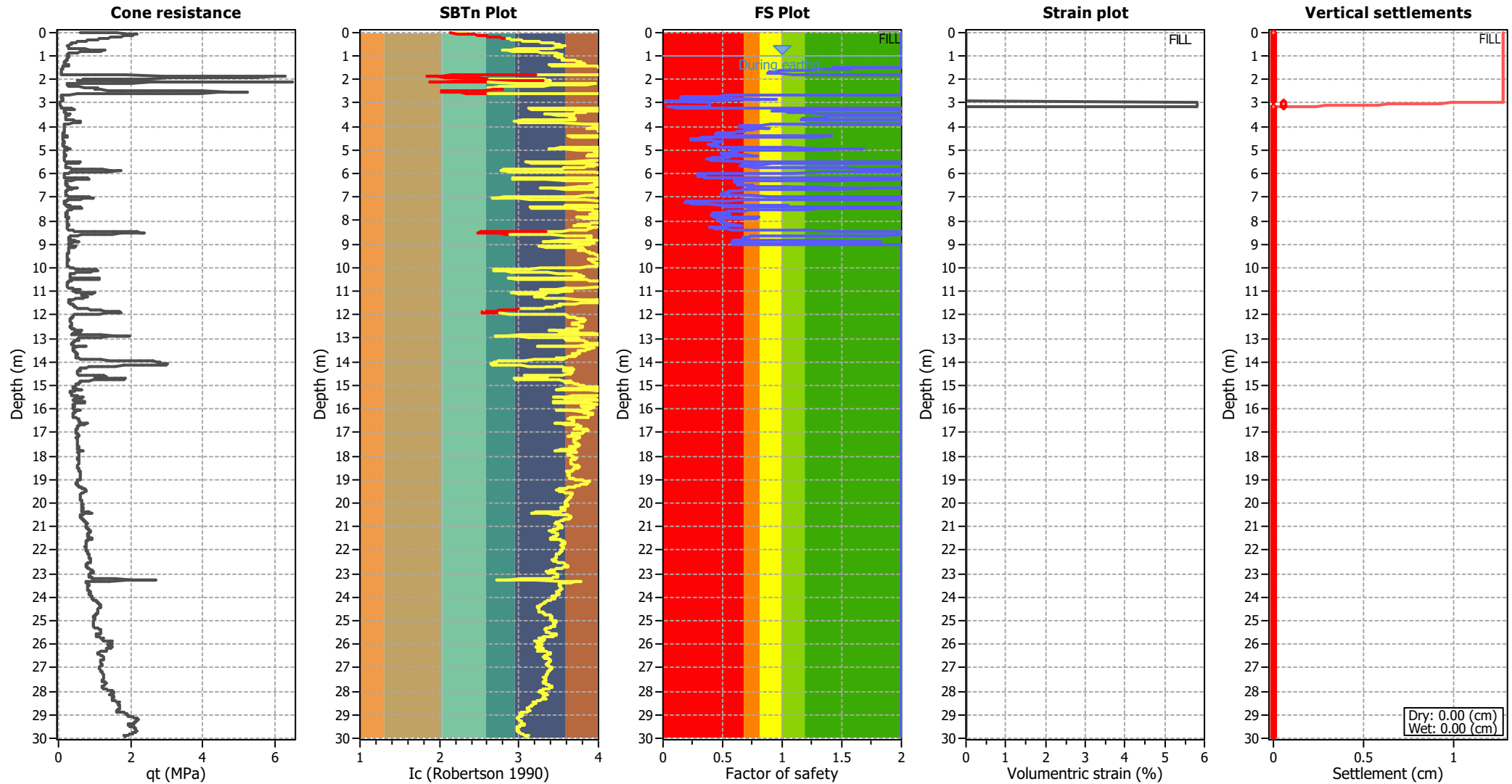
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

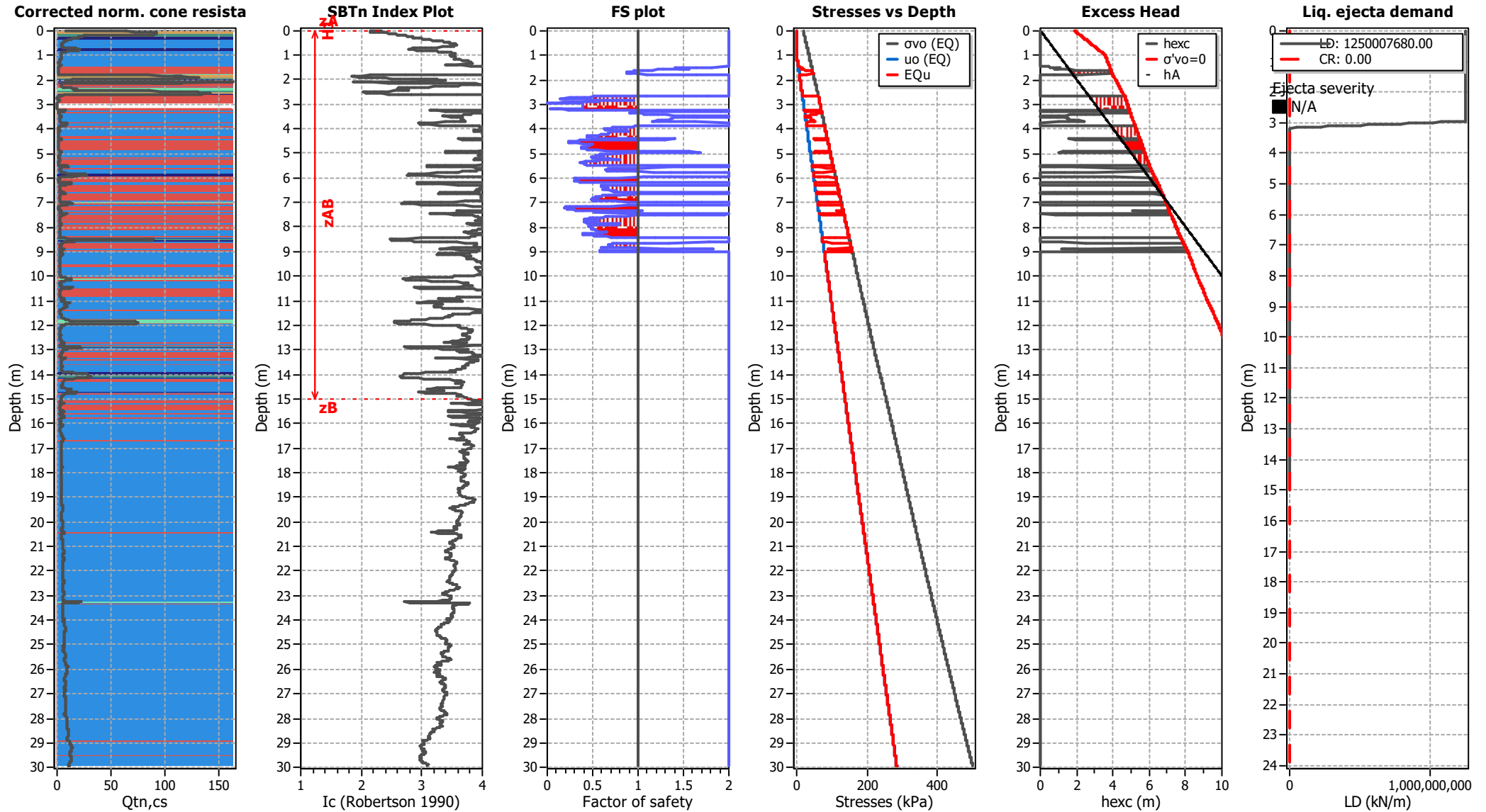
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

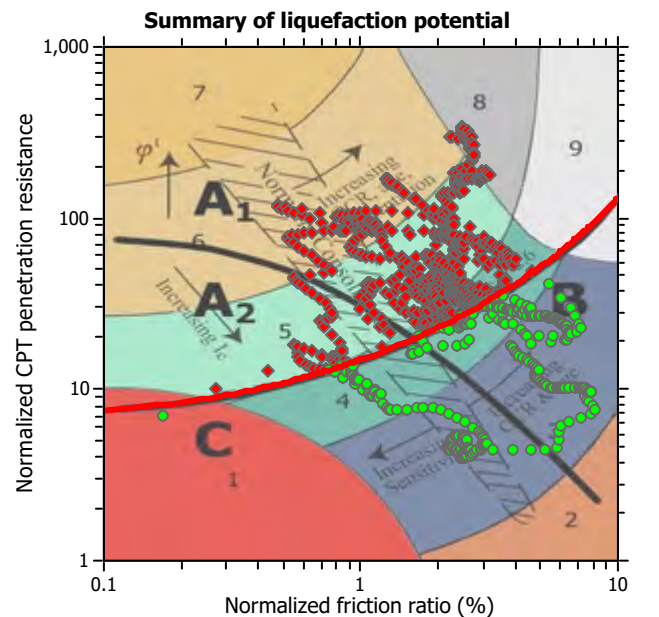
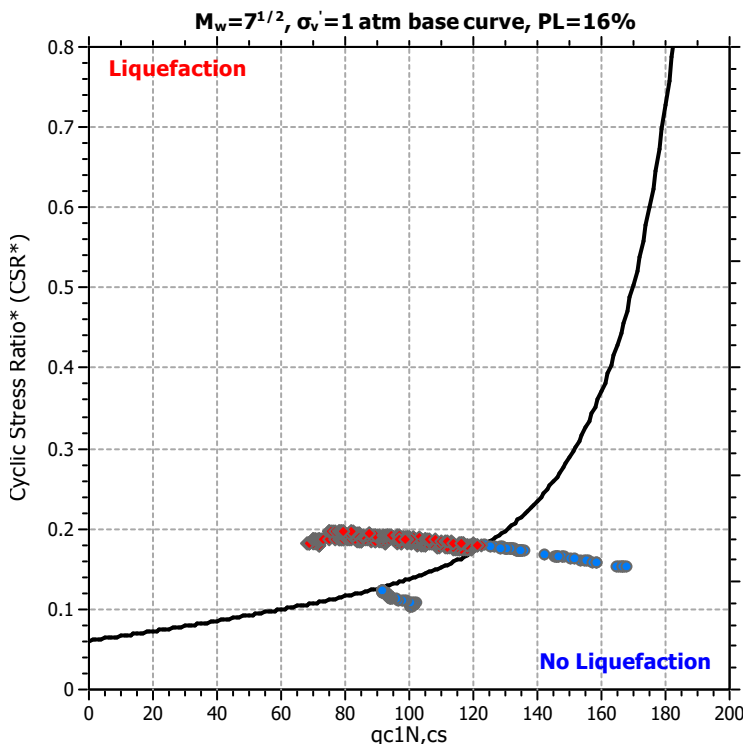
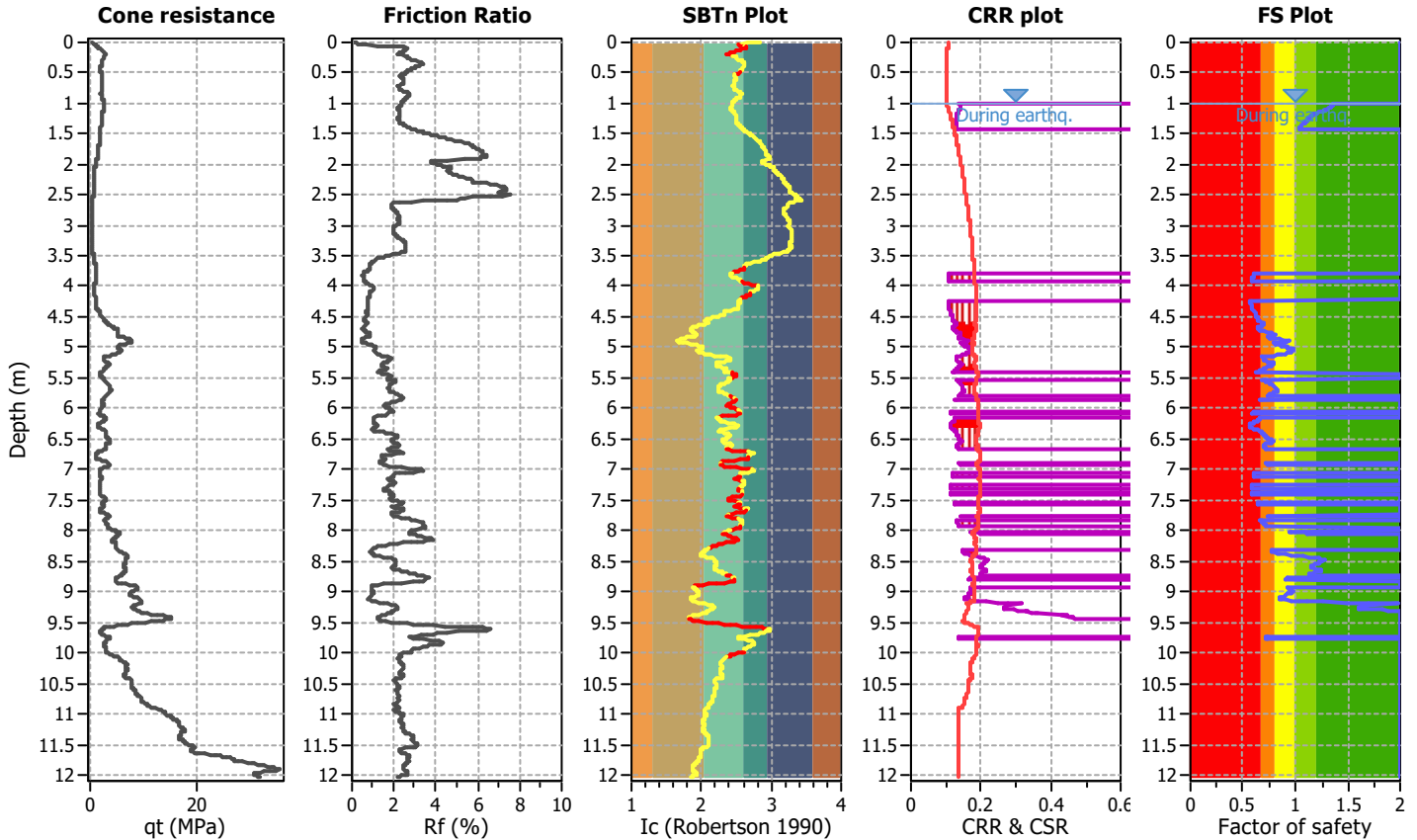
Project title : Sunfield Landholding

Location :

CPT file : CPT005

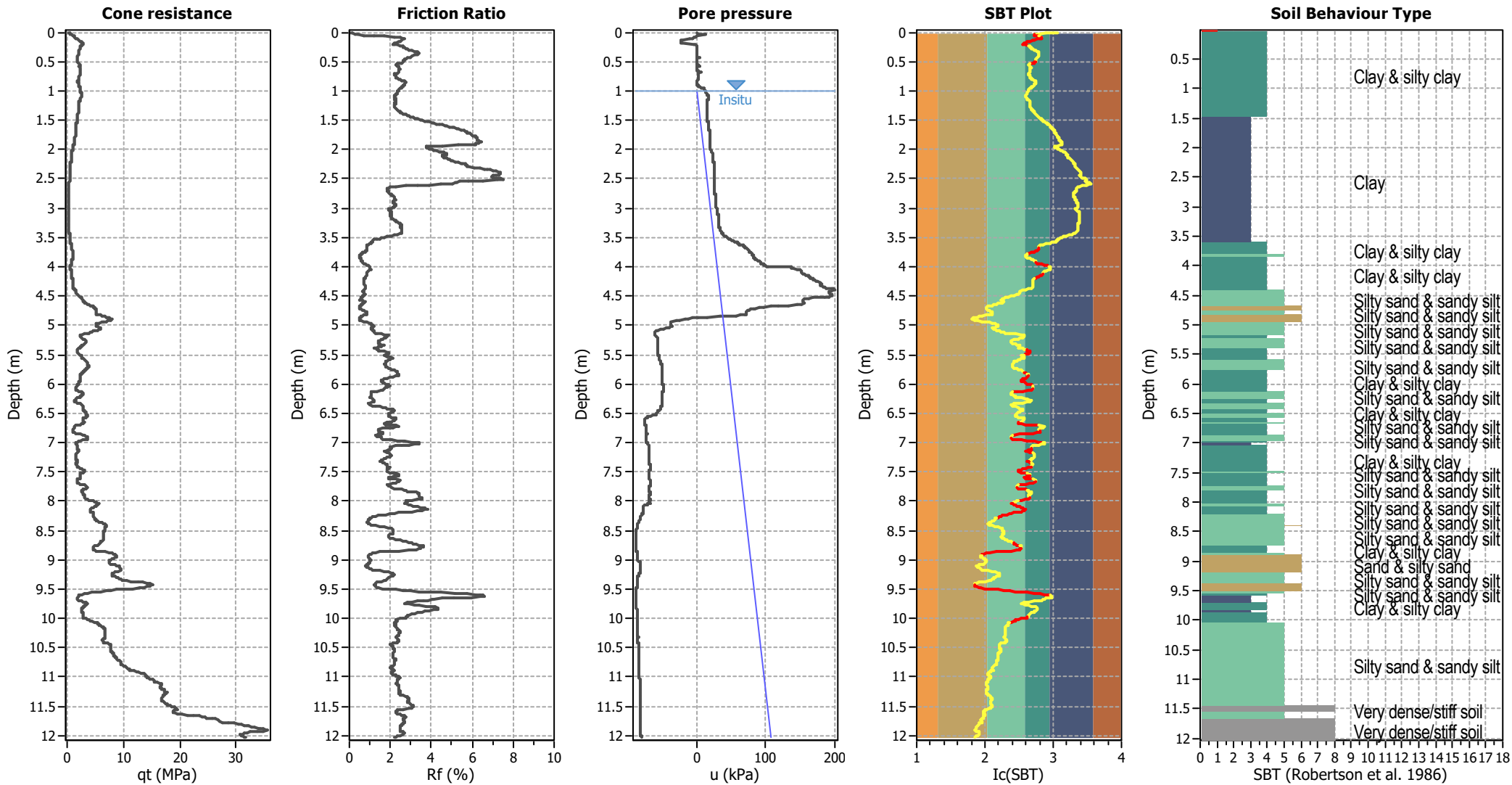
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

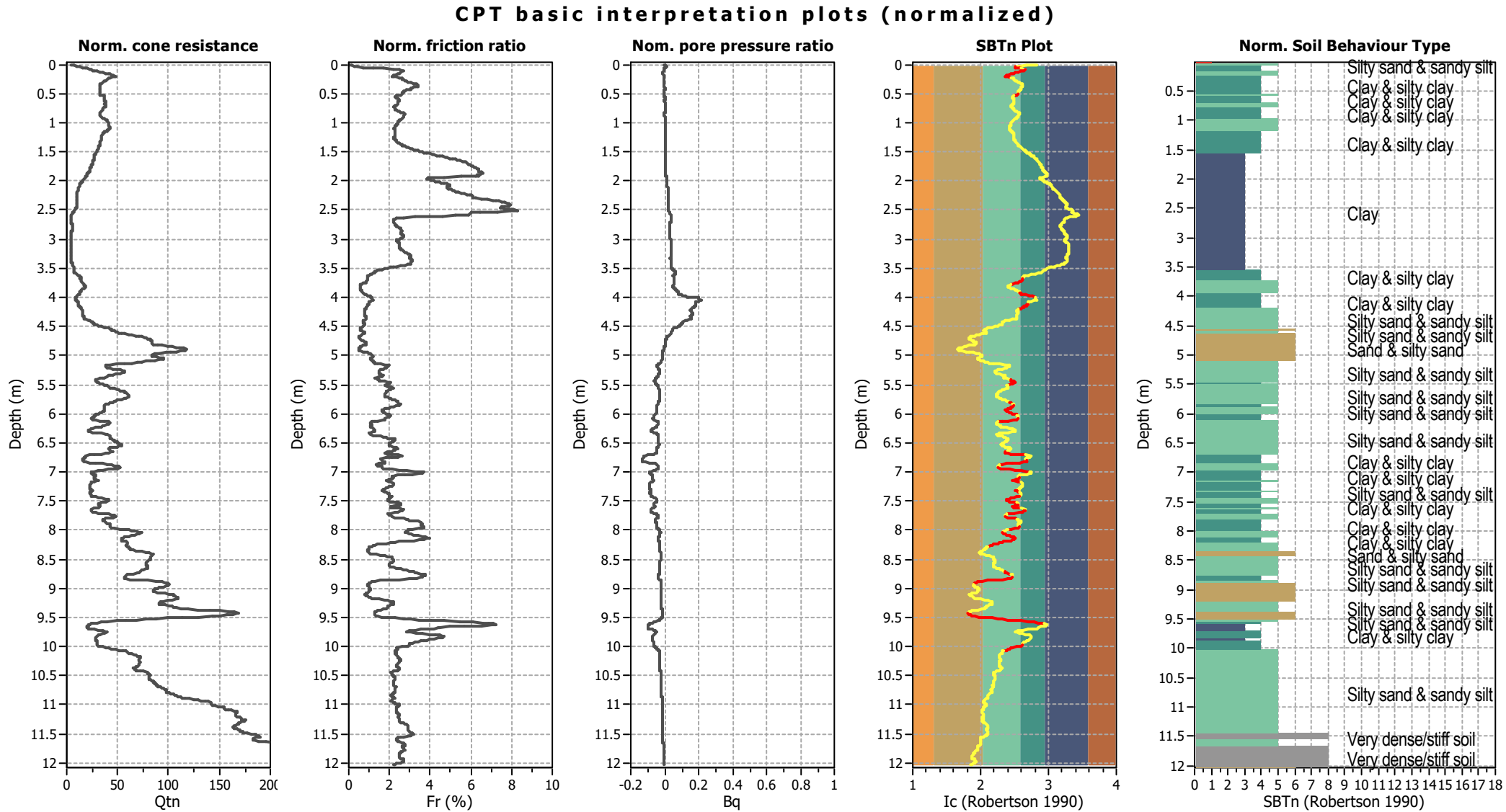


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

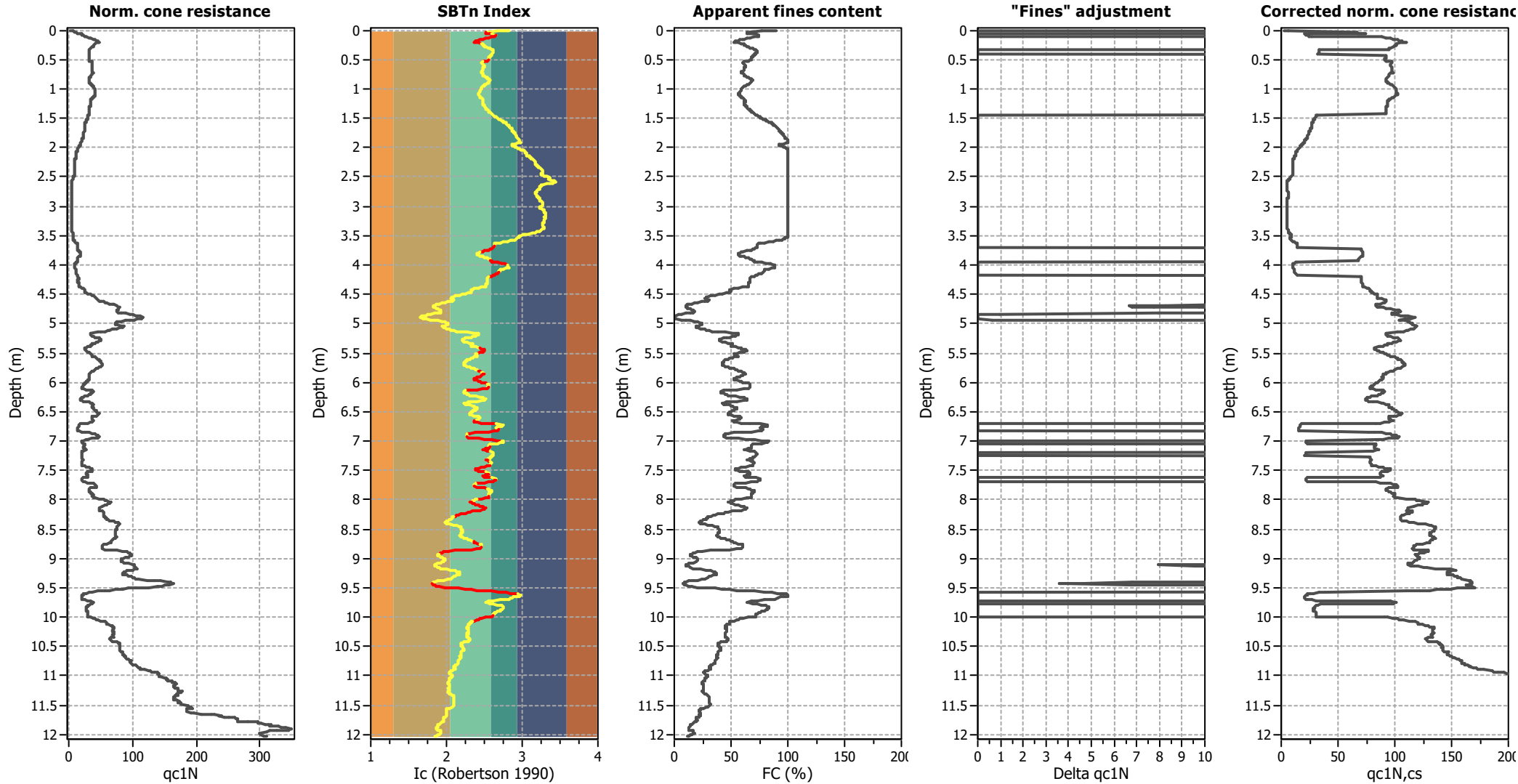


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

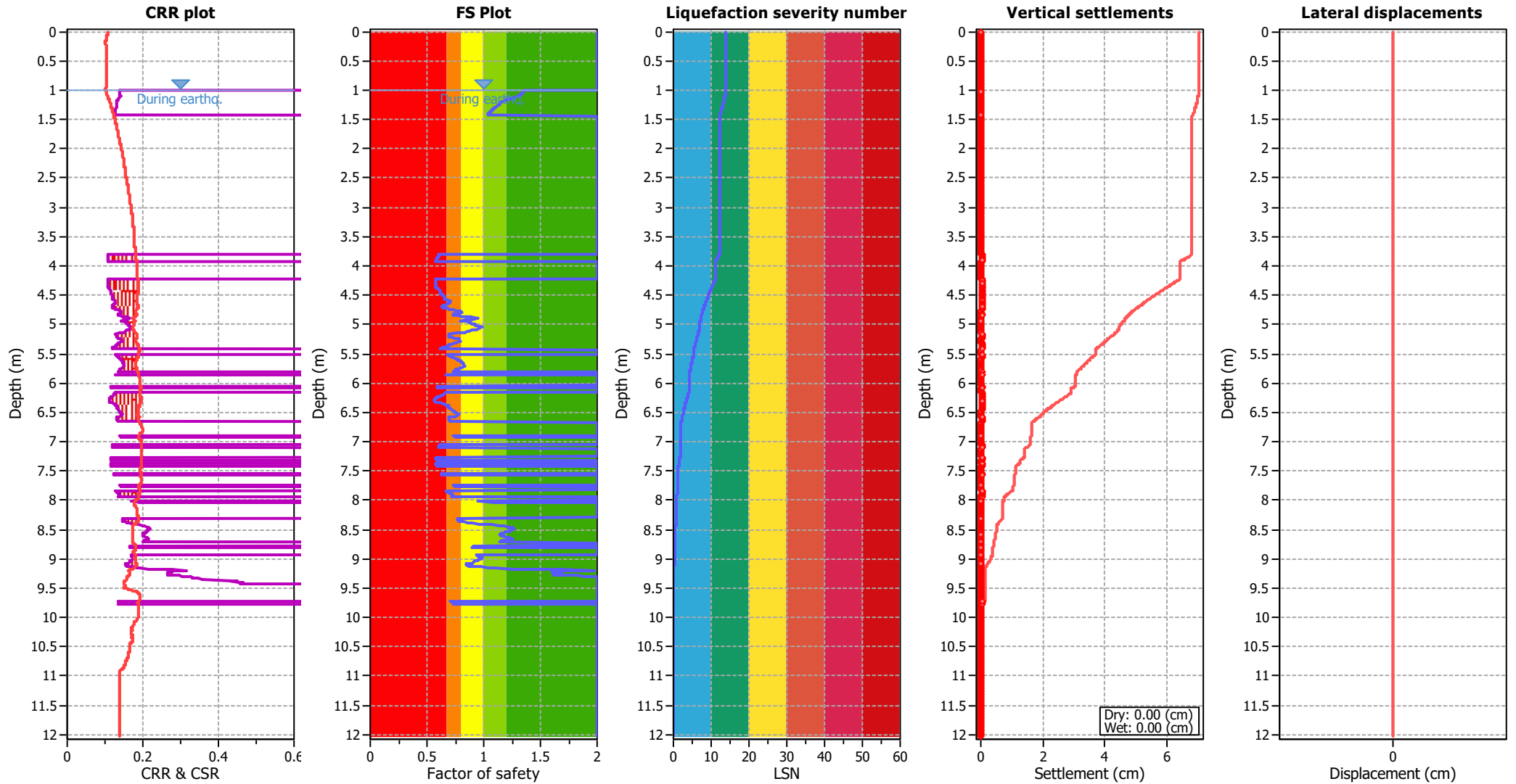
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

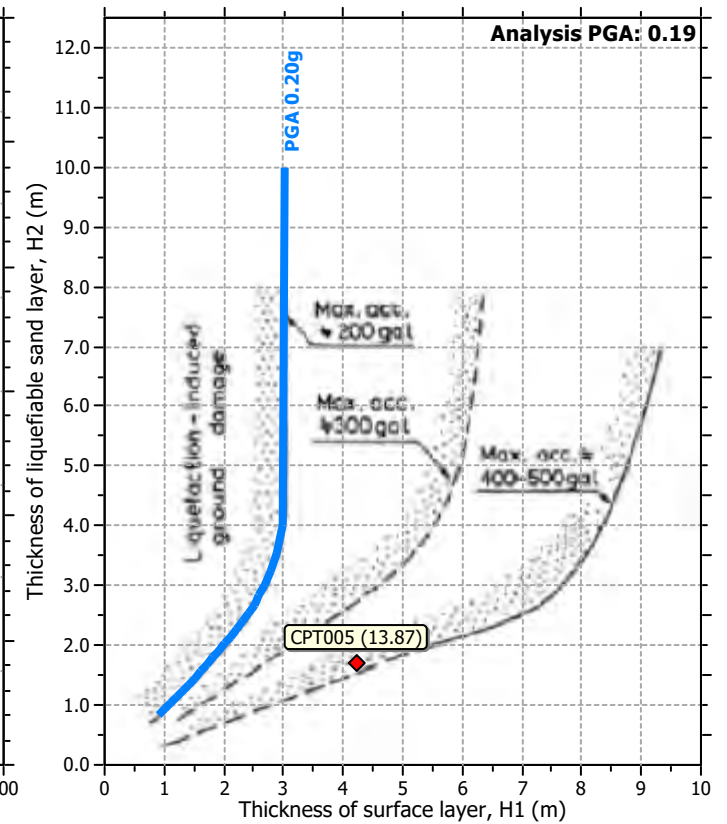
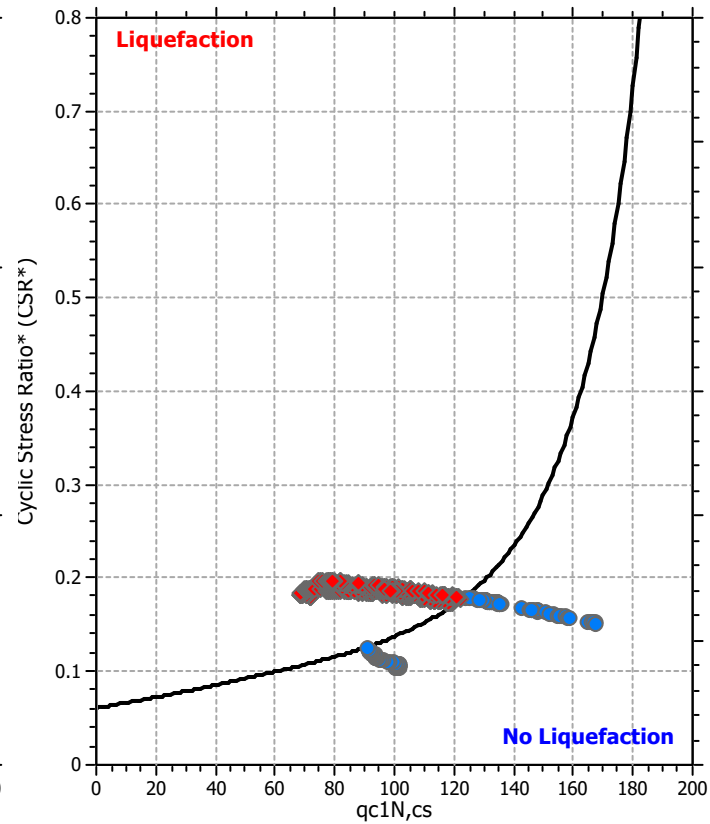
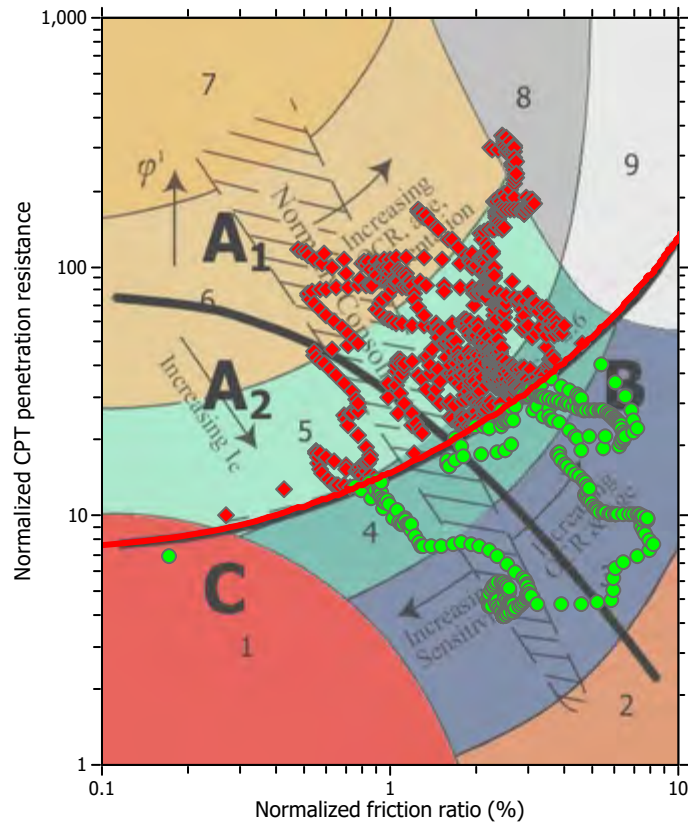
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

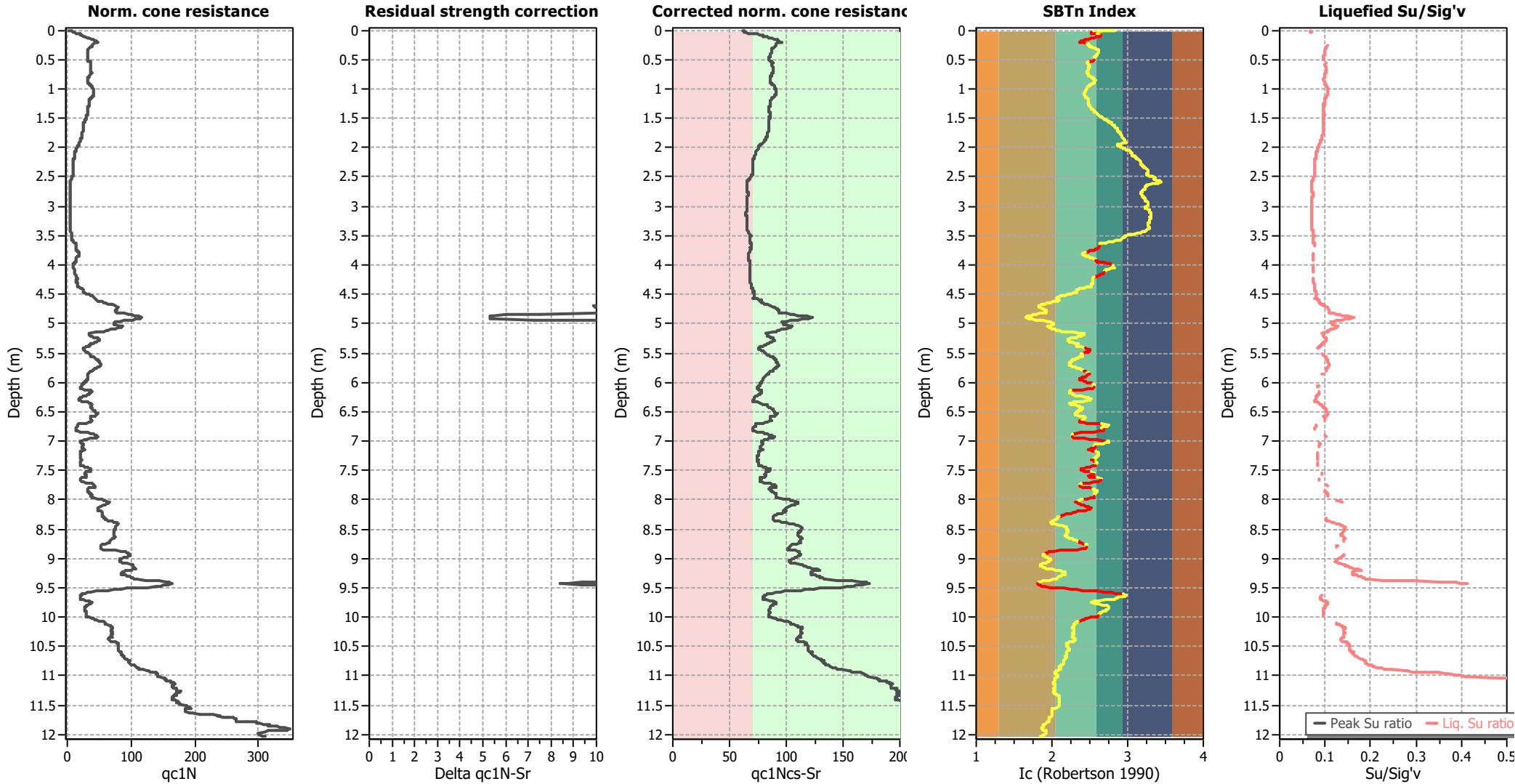
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

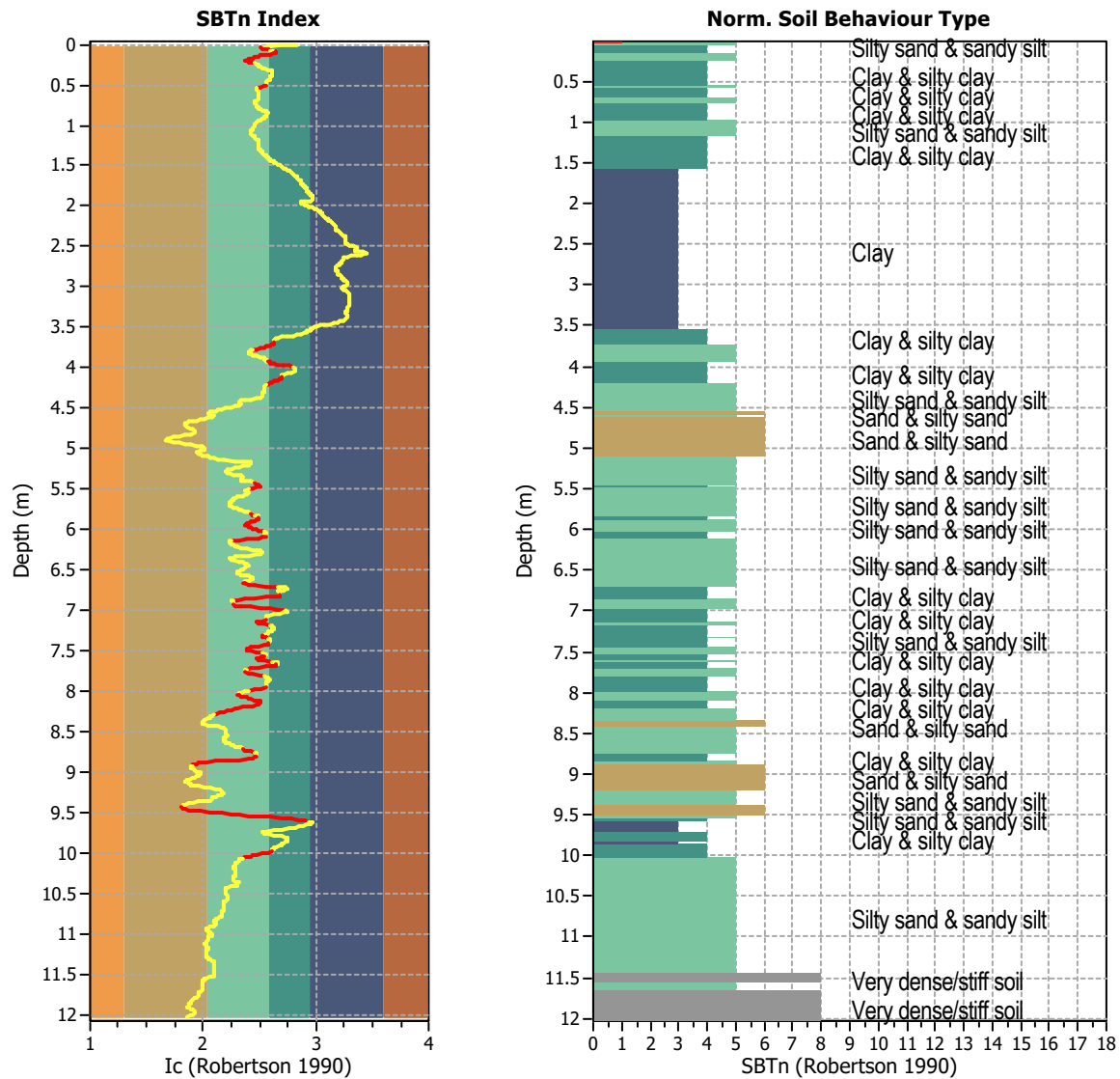
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



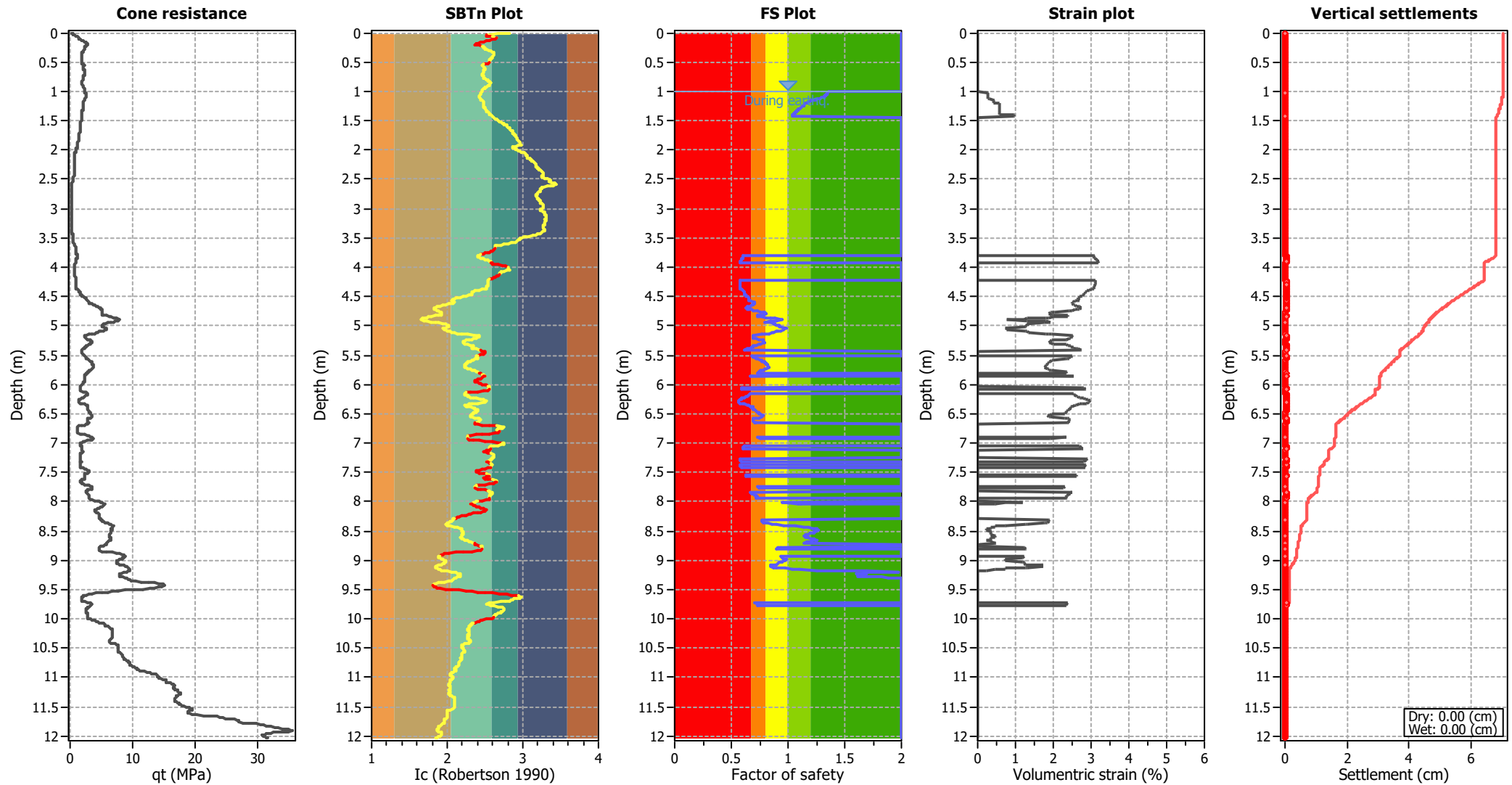
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1203
Total points excluded: 240
Exclusion percentage: 19.95%
Number of layers detected: 32

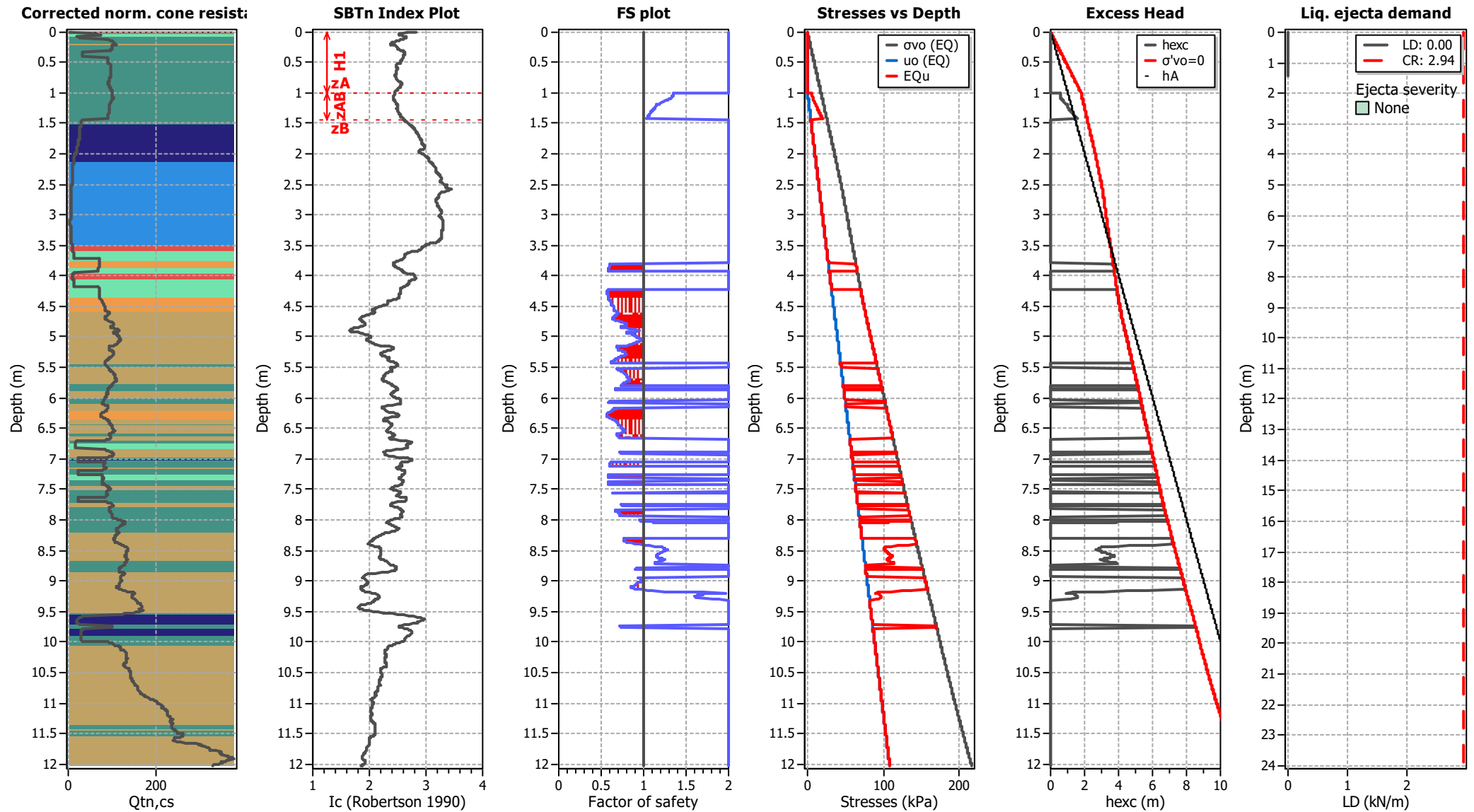
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

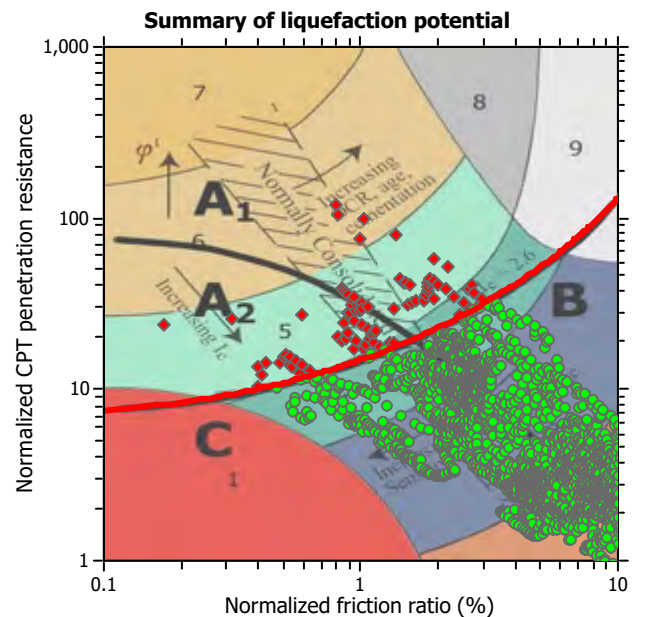
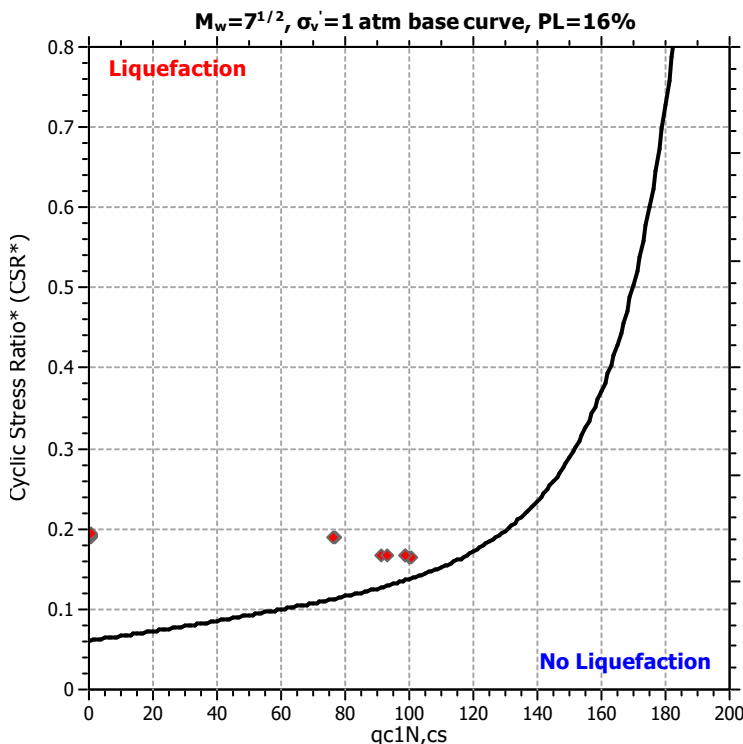
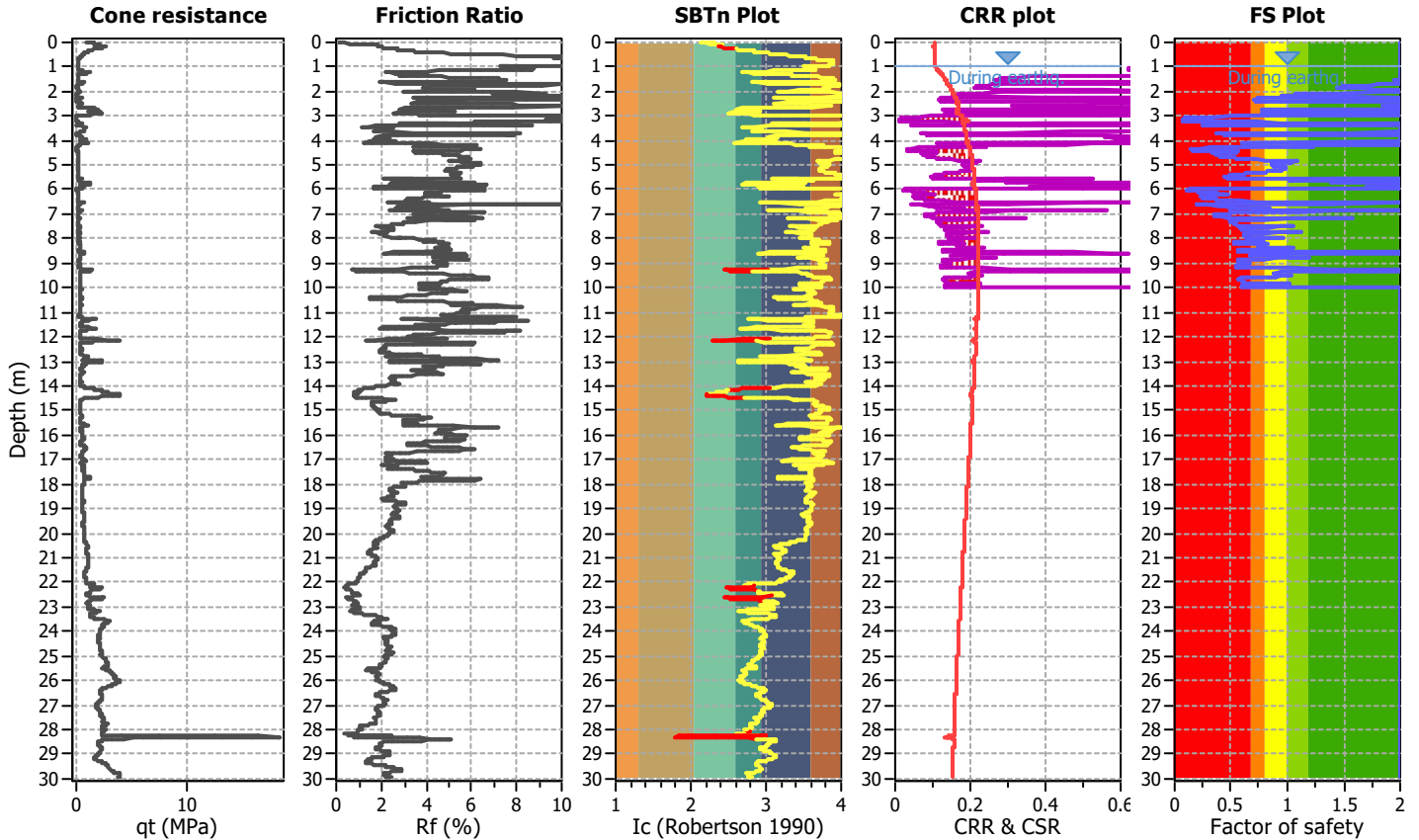
Project title : Sunfield Landholding

Location :

CPT file : CPT006

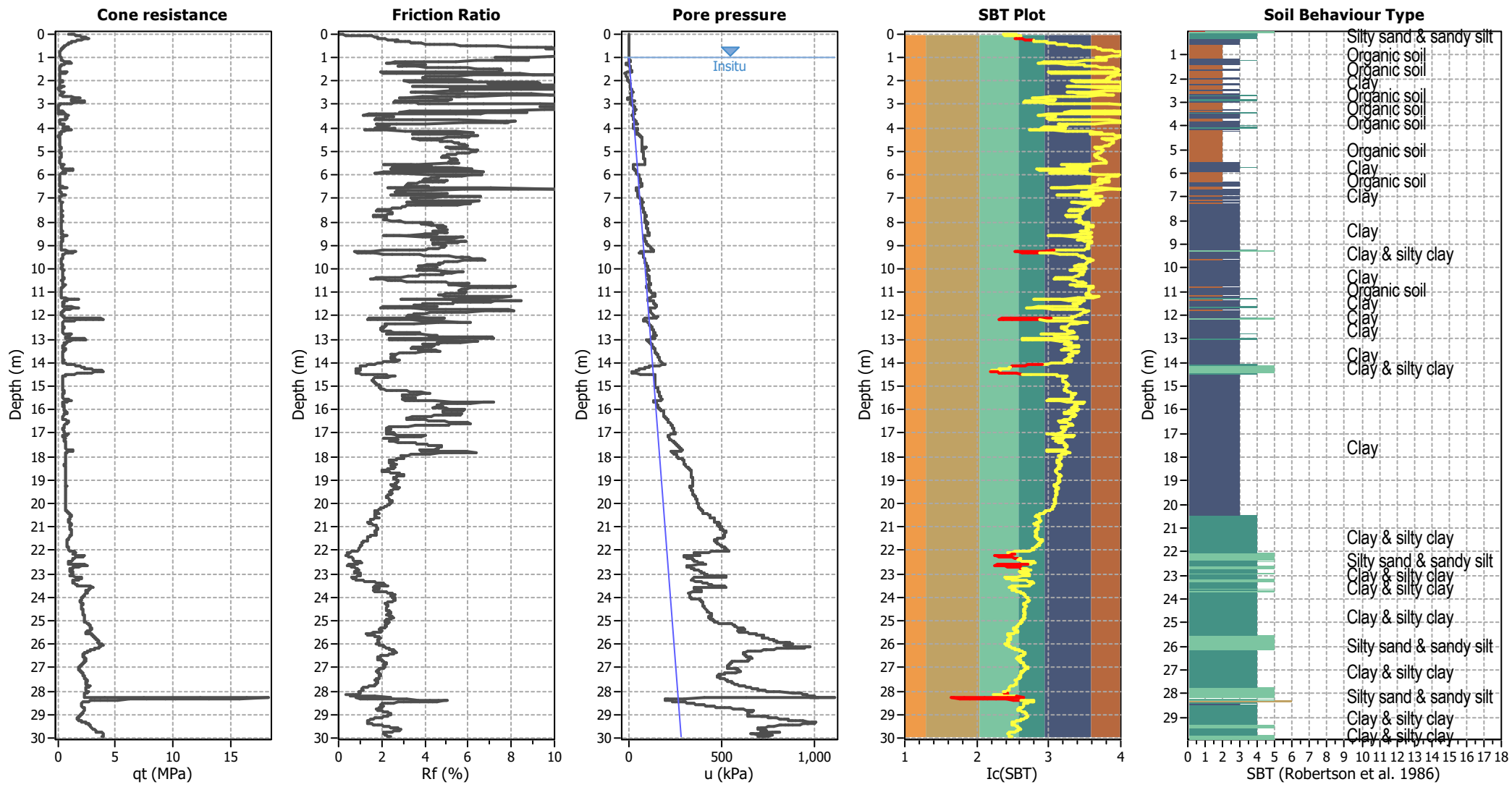
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

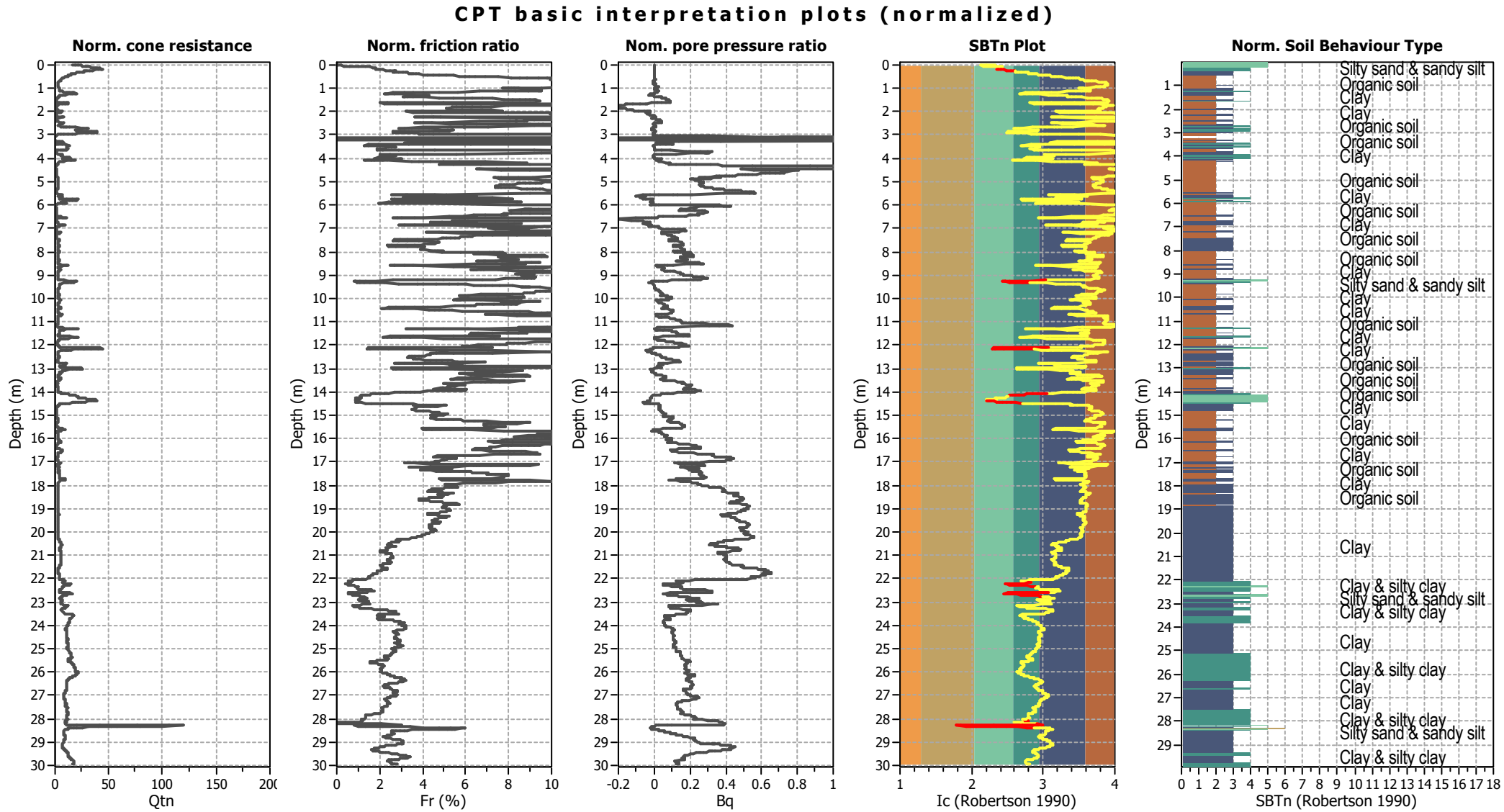
5. Silty sand to sandy silt

6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

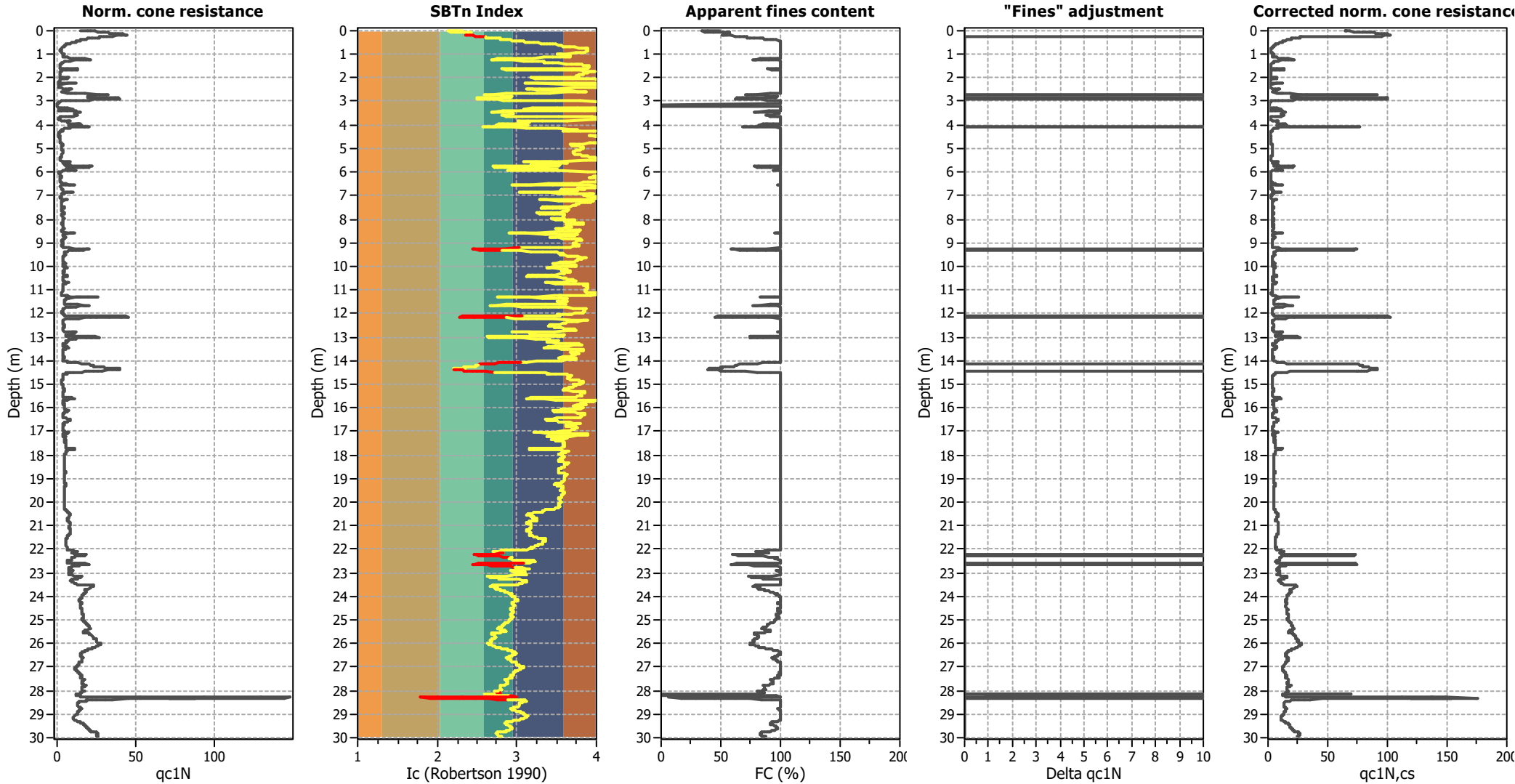
9. Very stiff fine grained



Input parameters and analysis data

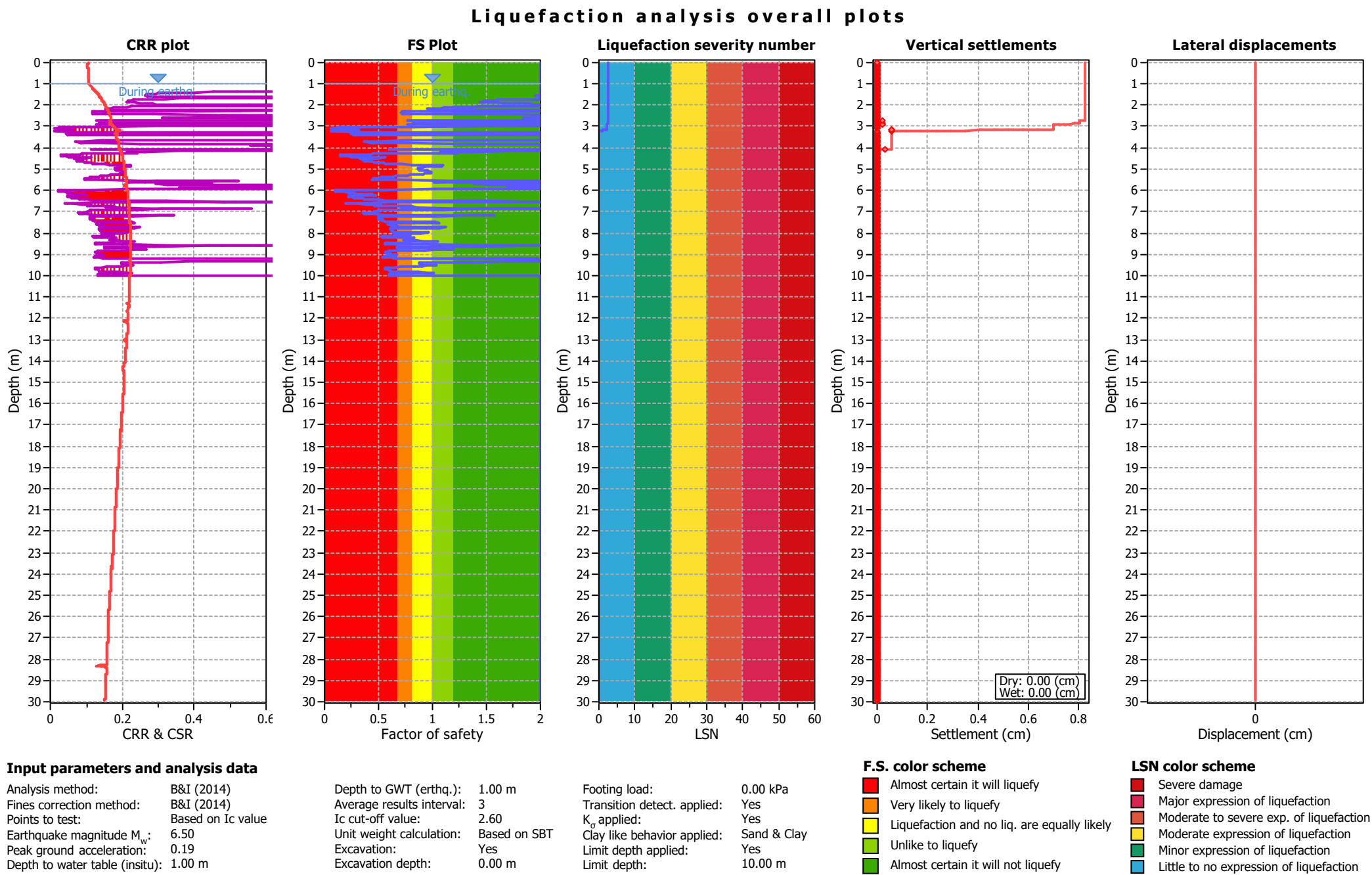
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots (intermediate results)

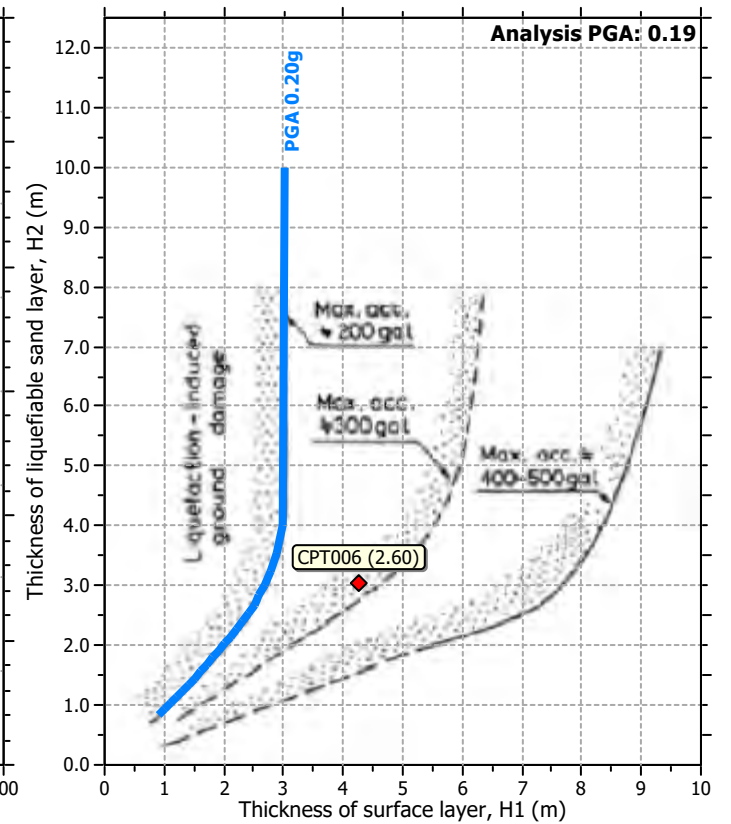
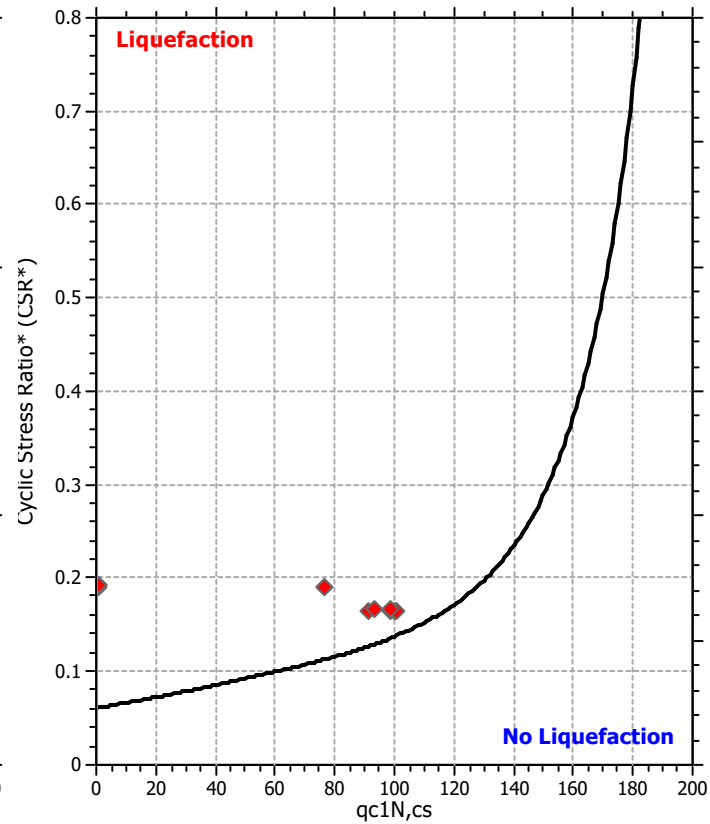
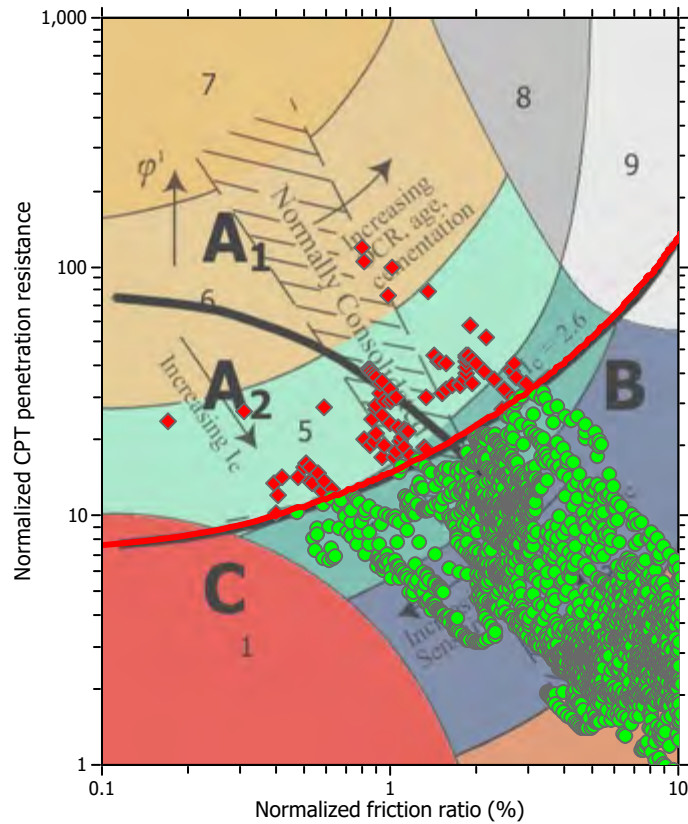


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

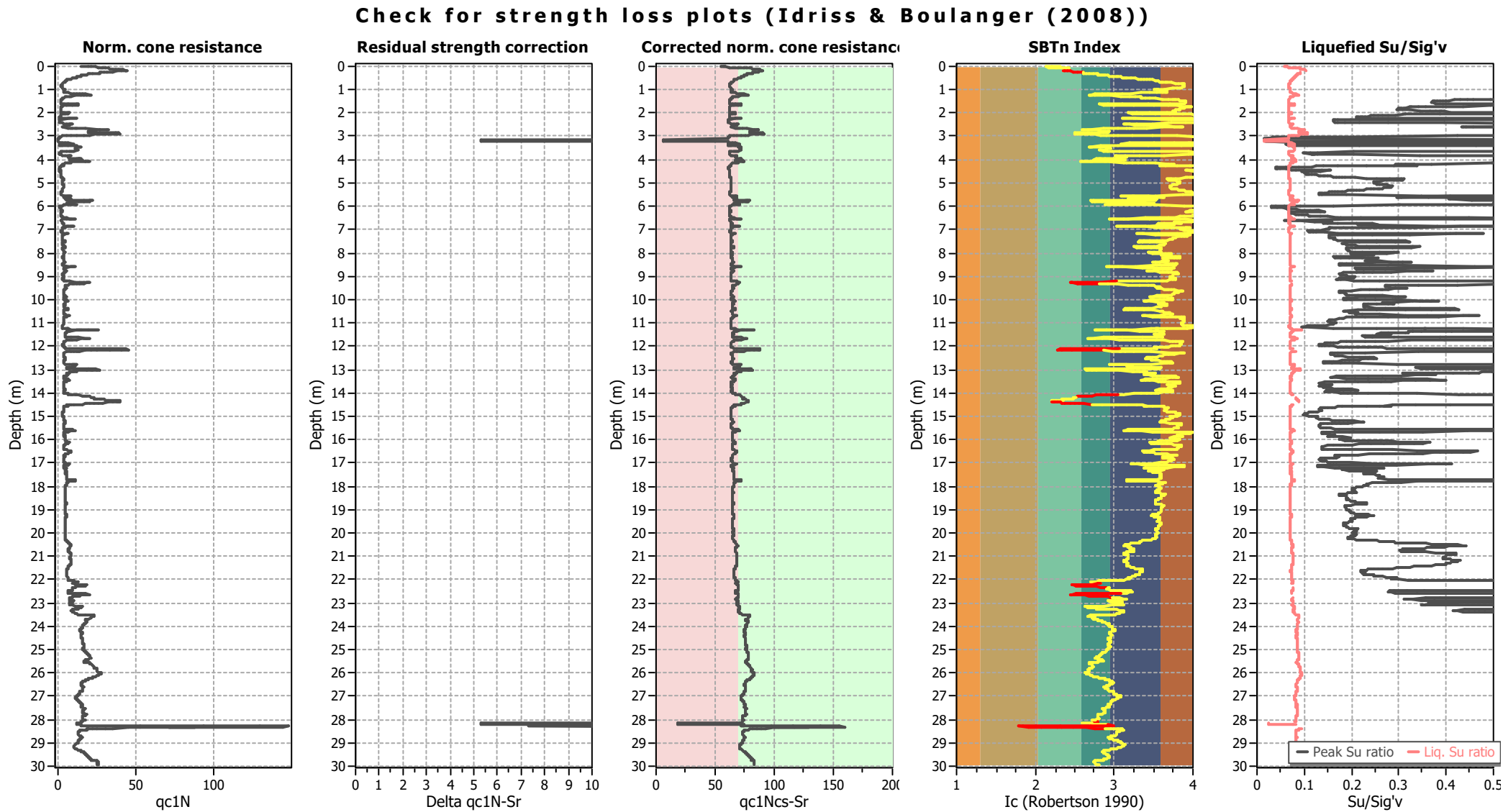


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _c applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

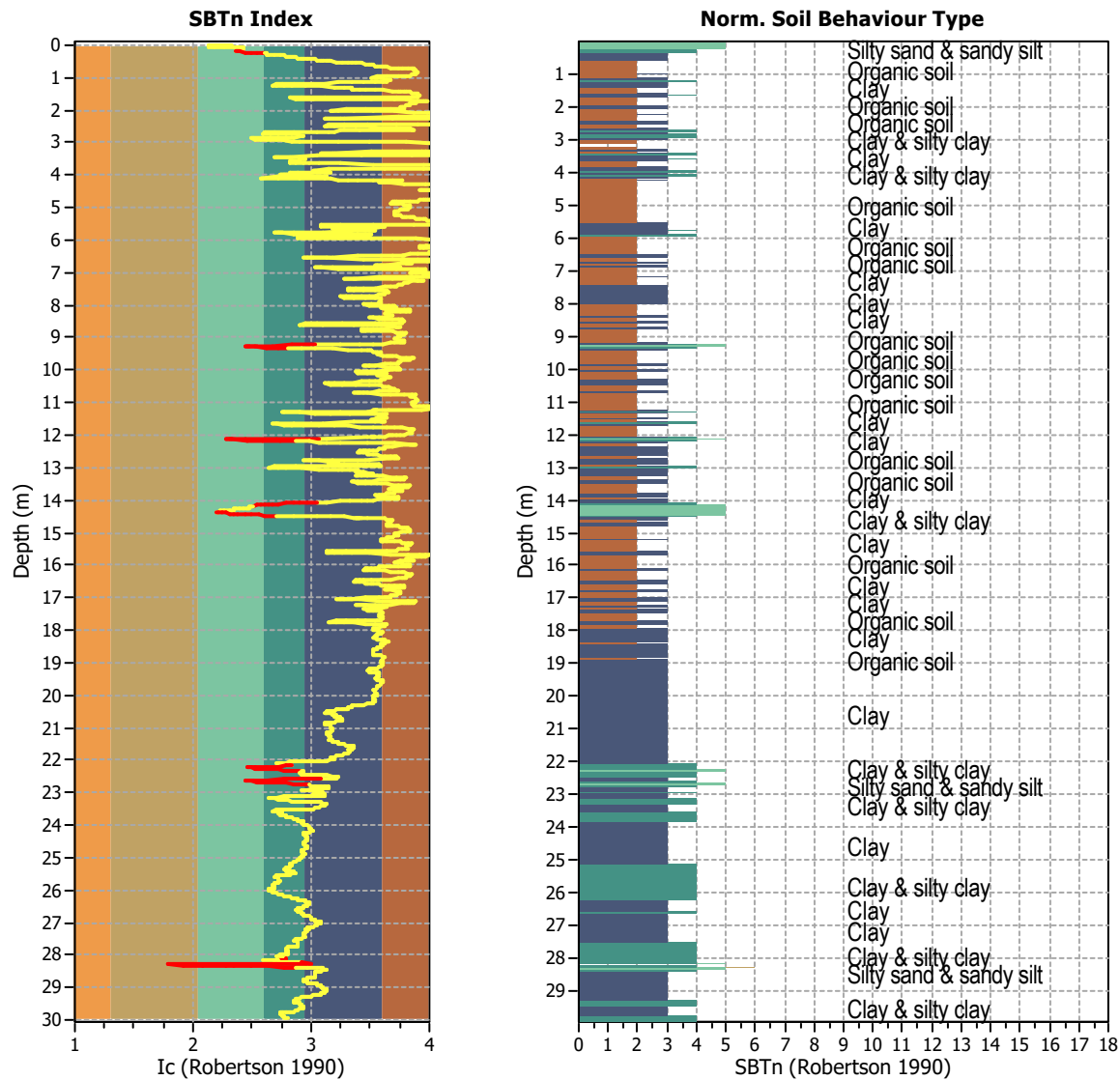
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties

I_c minimum check value:

1.70

I_c maximum check value:

3.00

I_c change ratio value:

0.0100

Minimum number of points in layer:

4

General statistics

Total points in CPT file:

2993

Total points excluded:

118

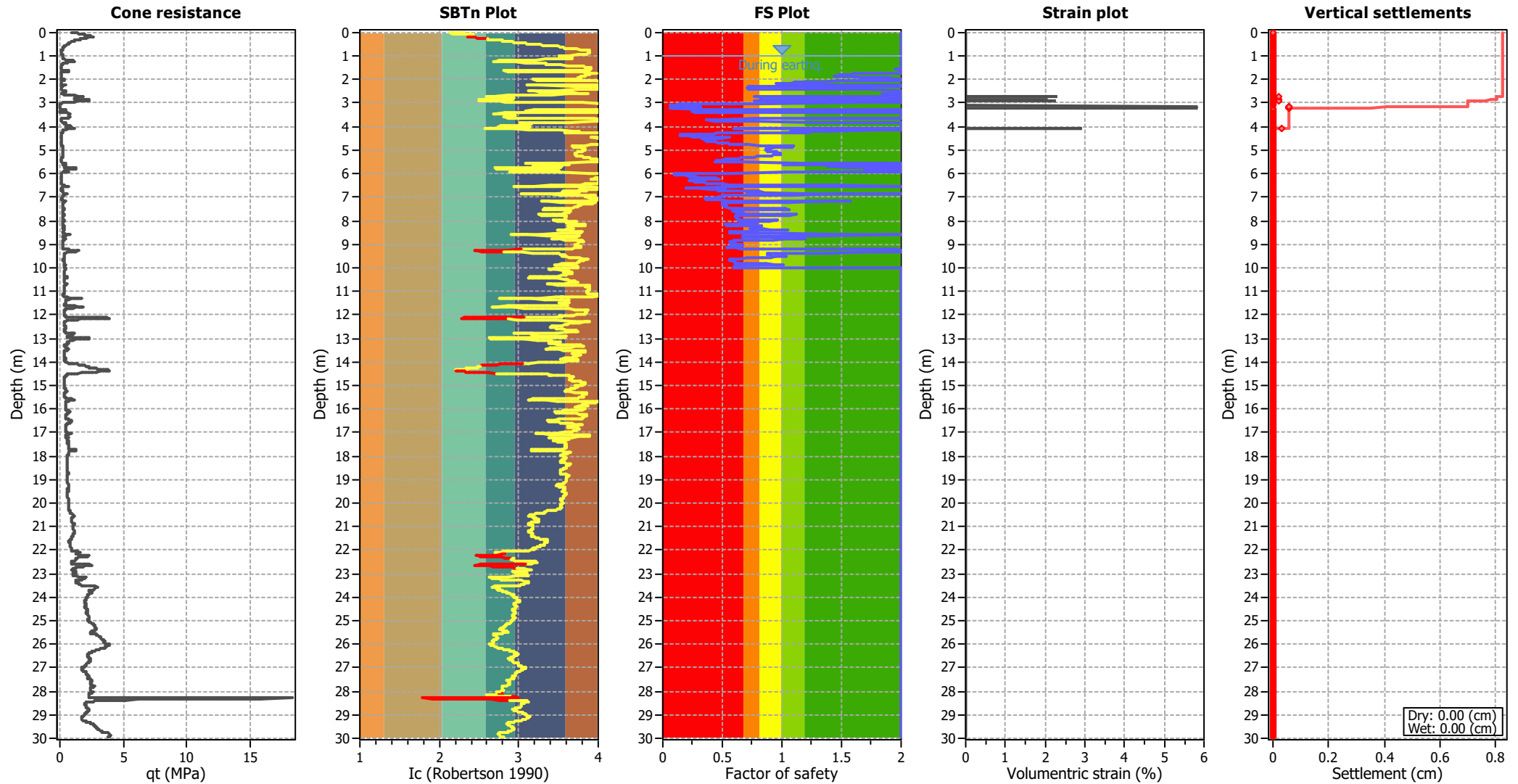
Exclusion percentage:

3.94%

Number of layers detected:

14

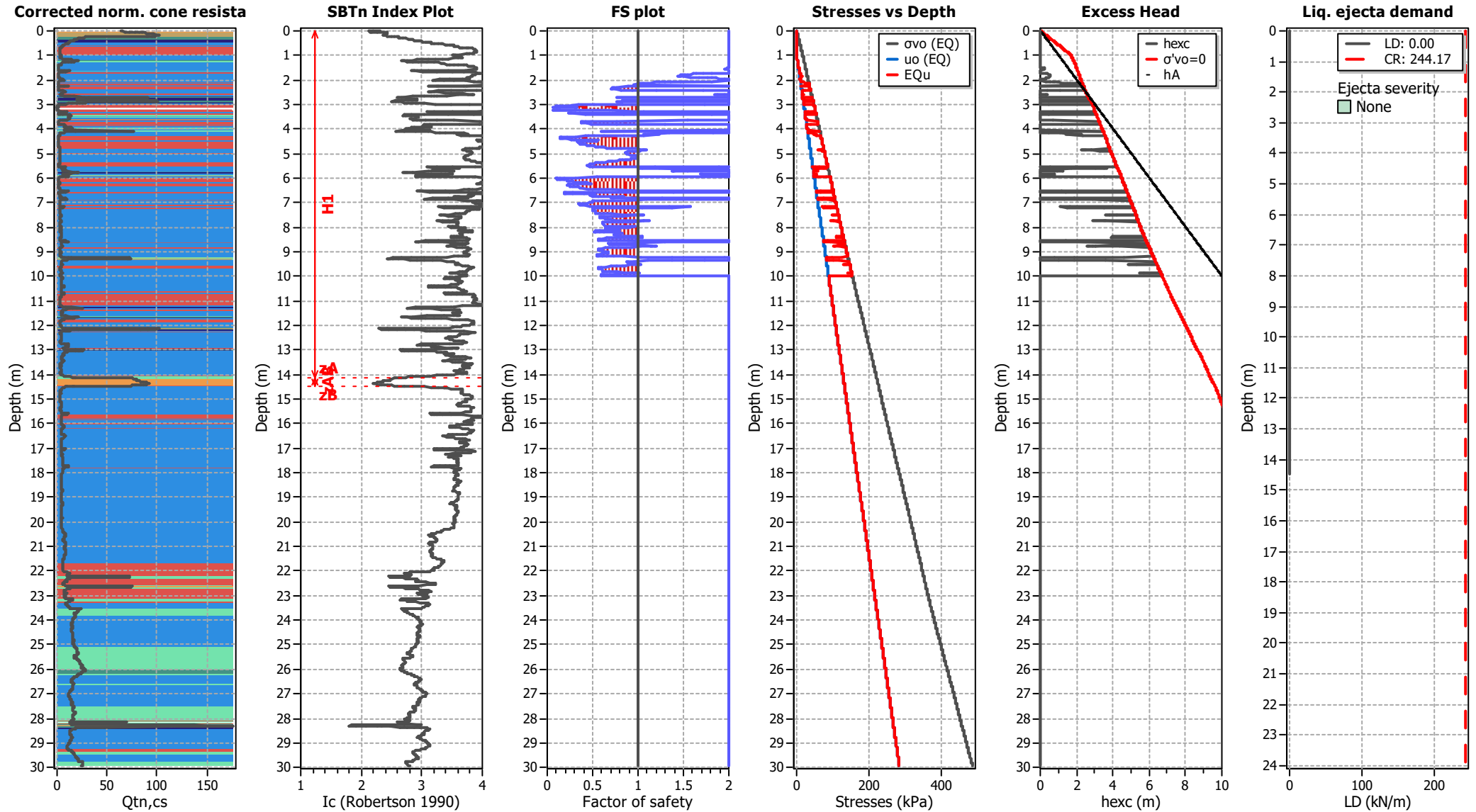
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

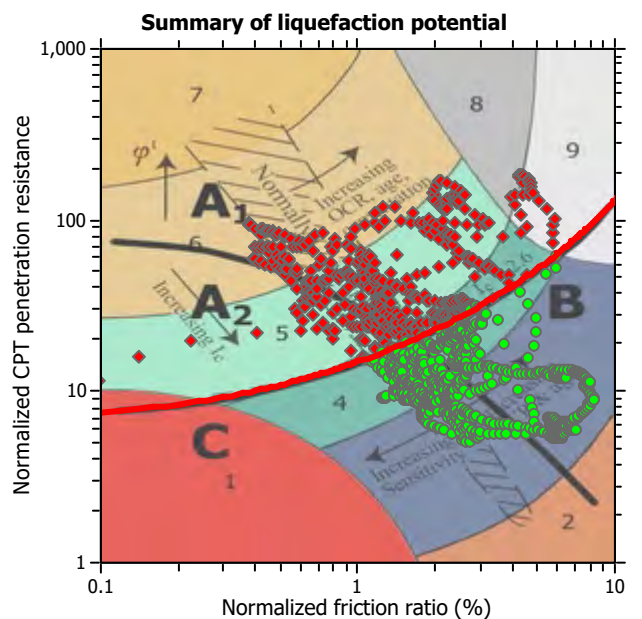
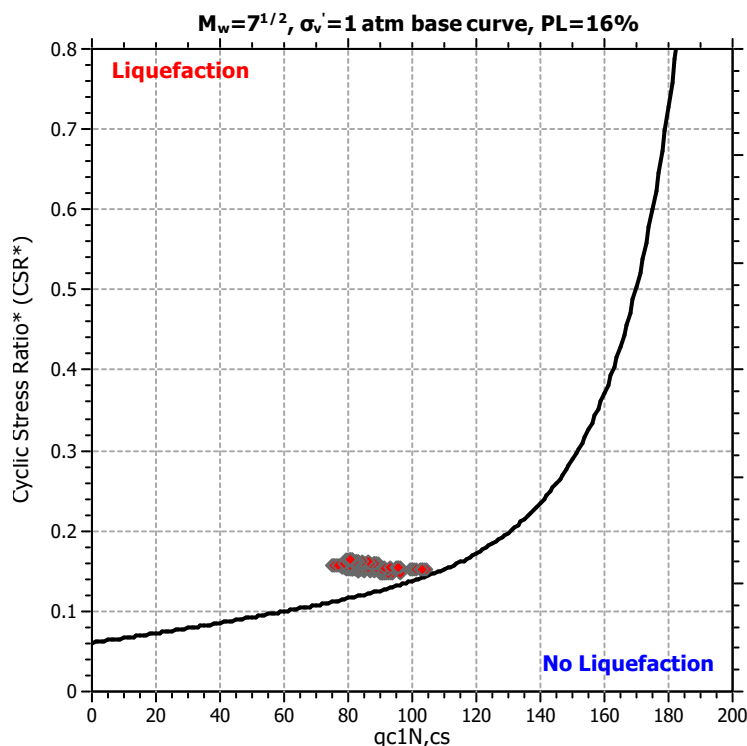
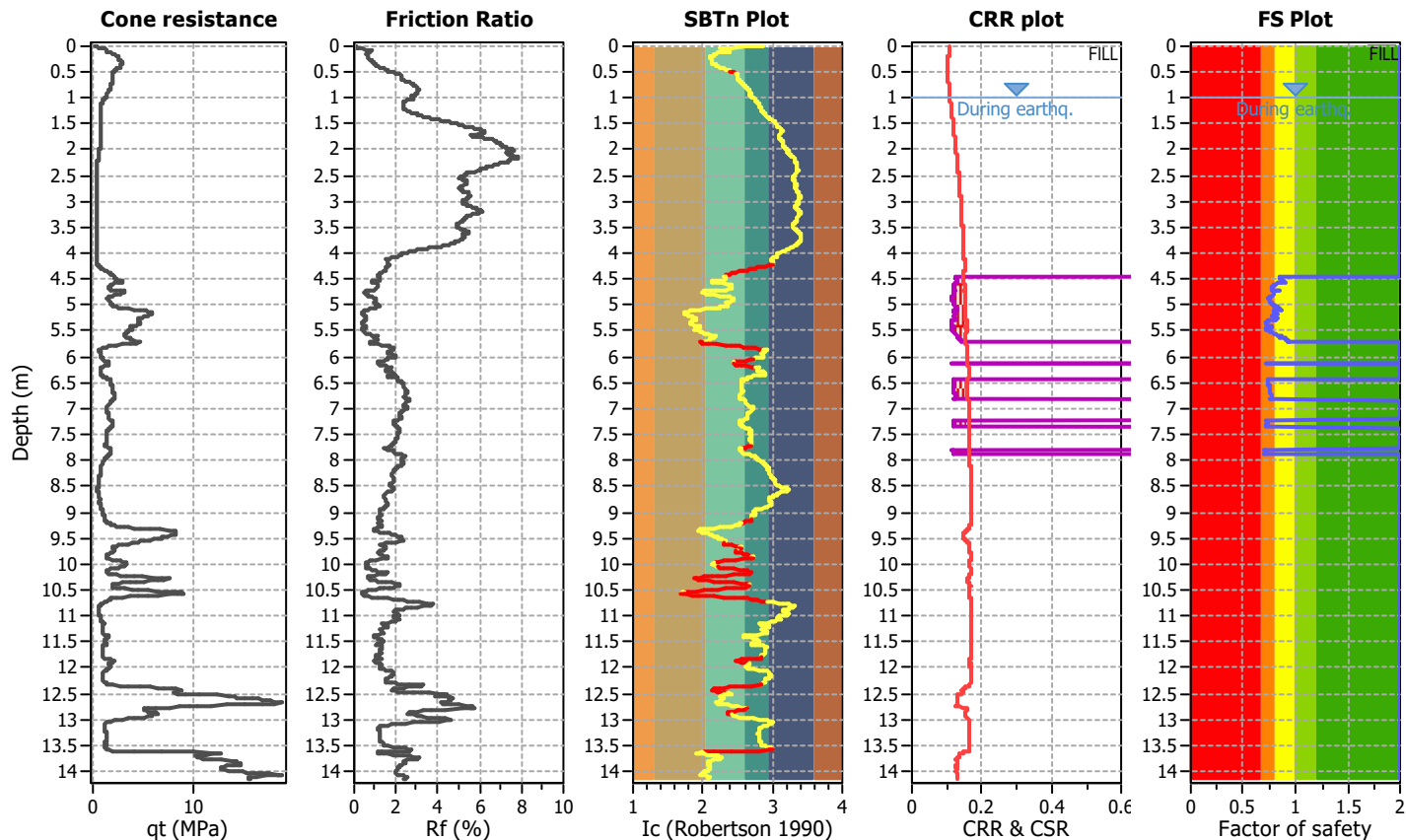
Project title : Sunfield Landholding

Location :

CPT file : CPT007

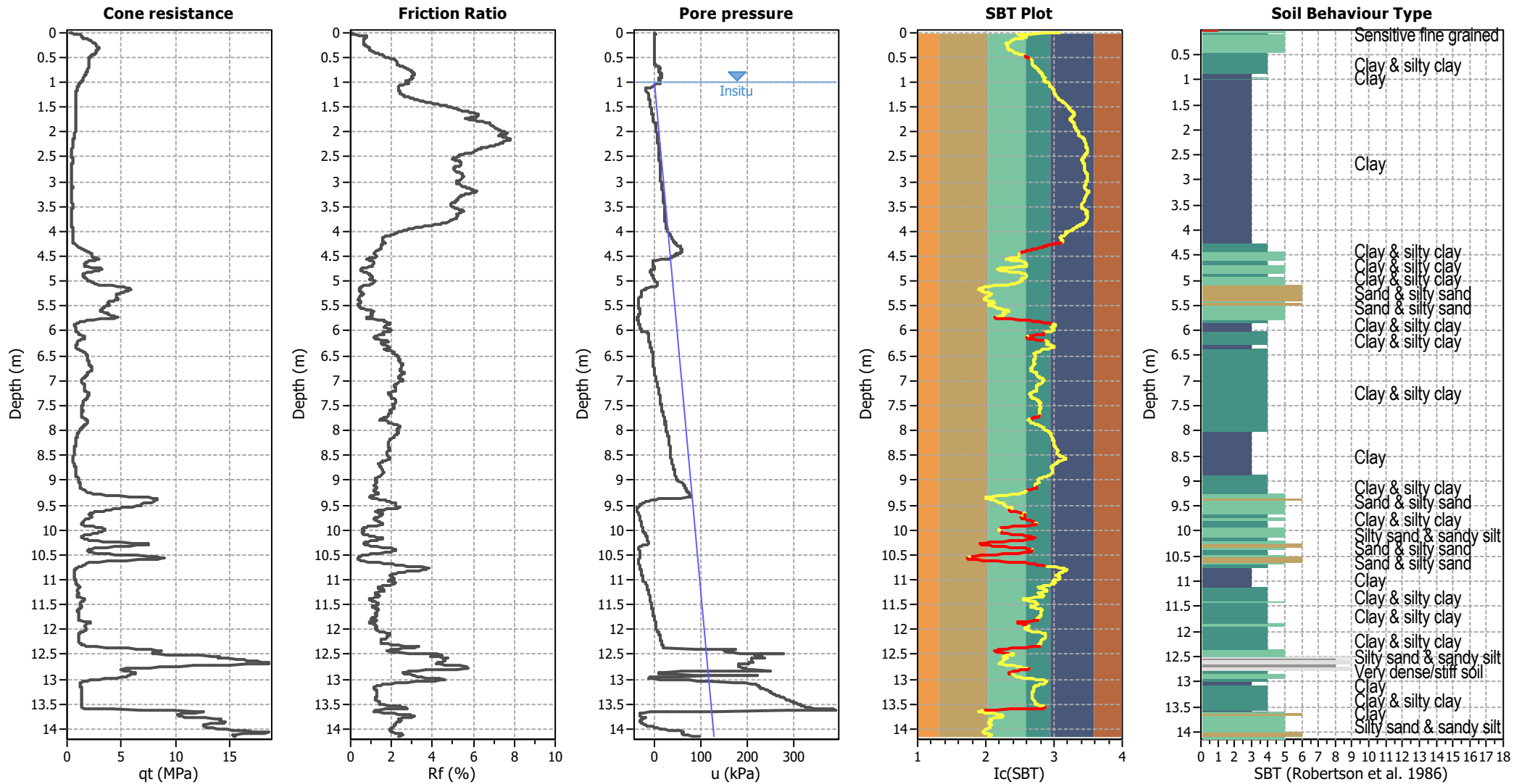
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

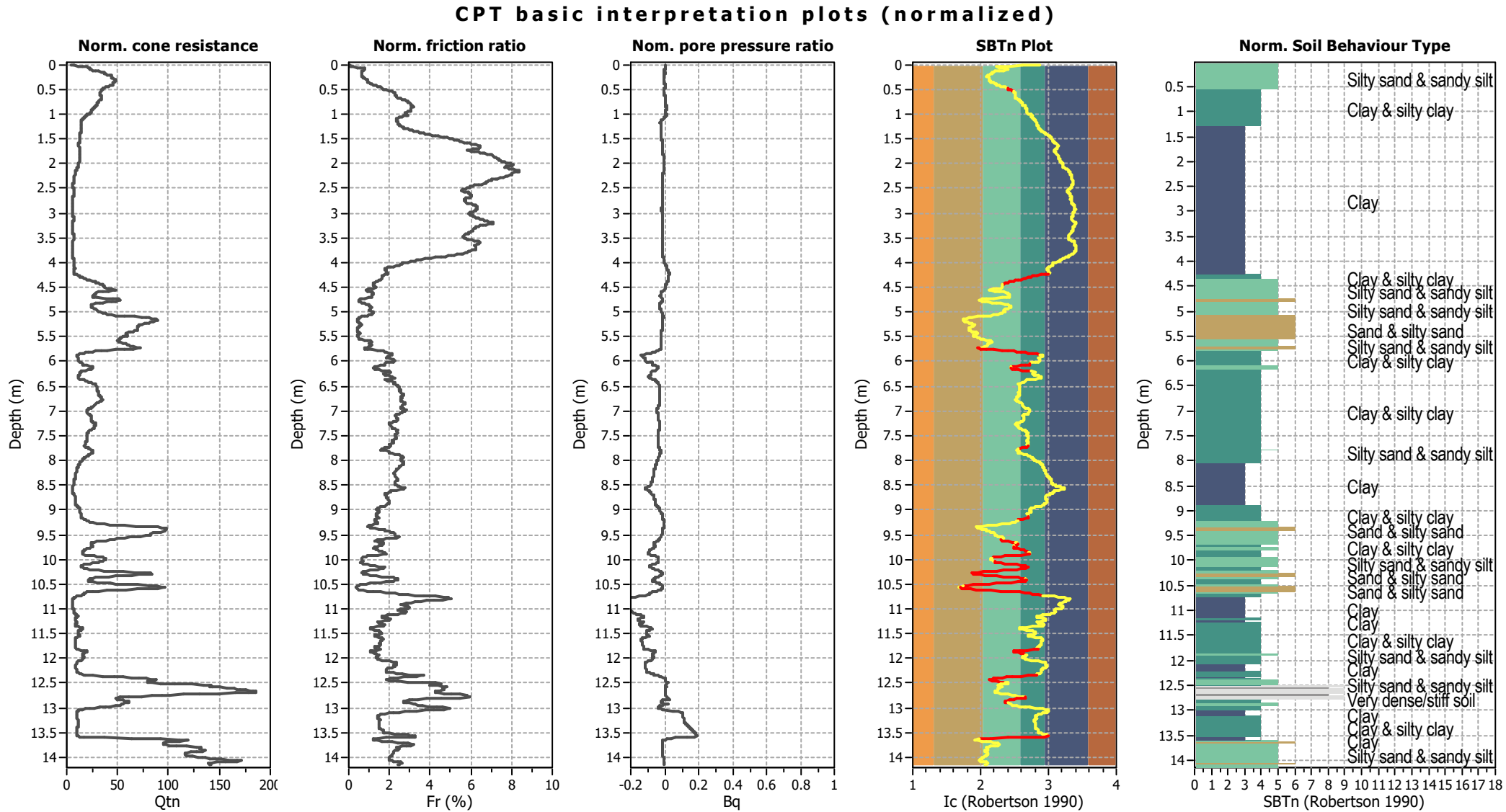


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

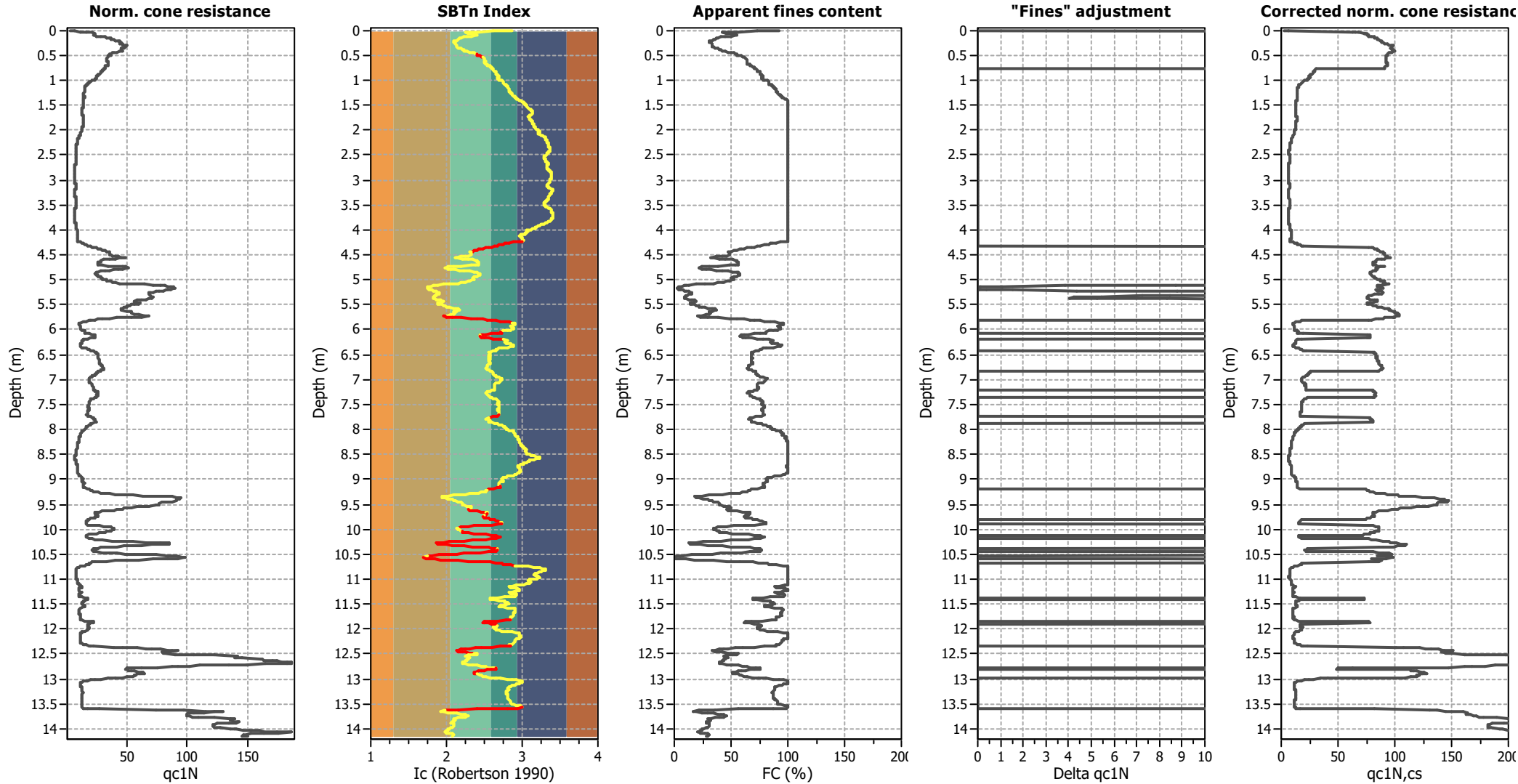


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

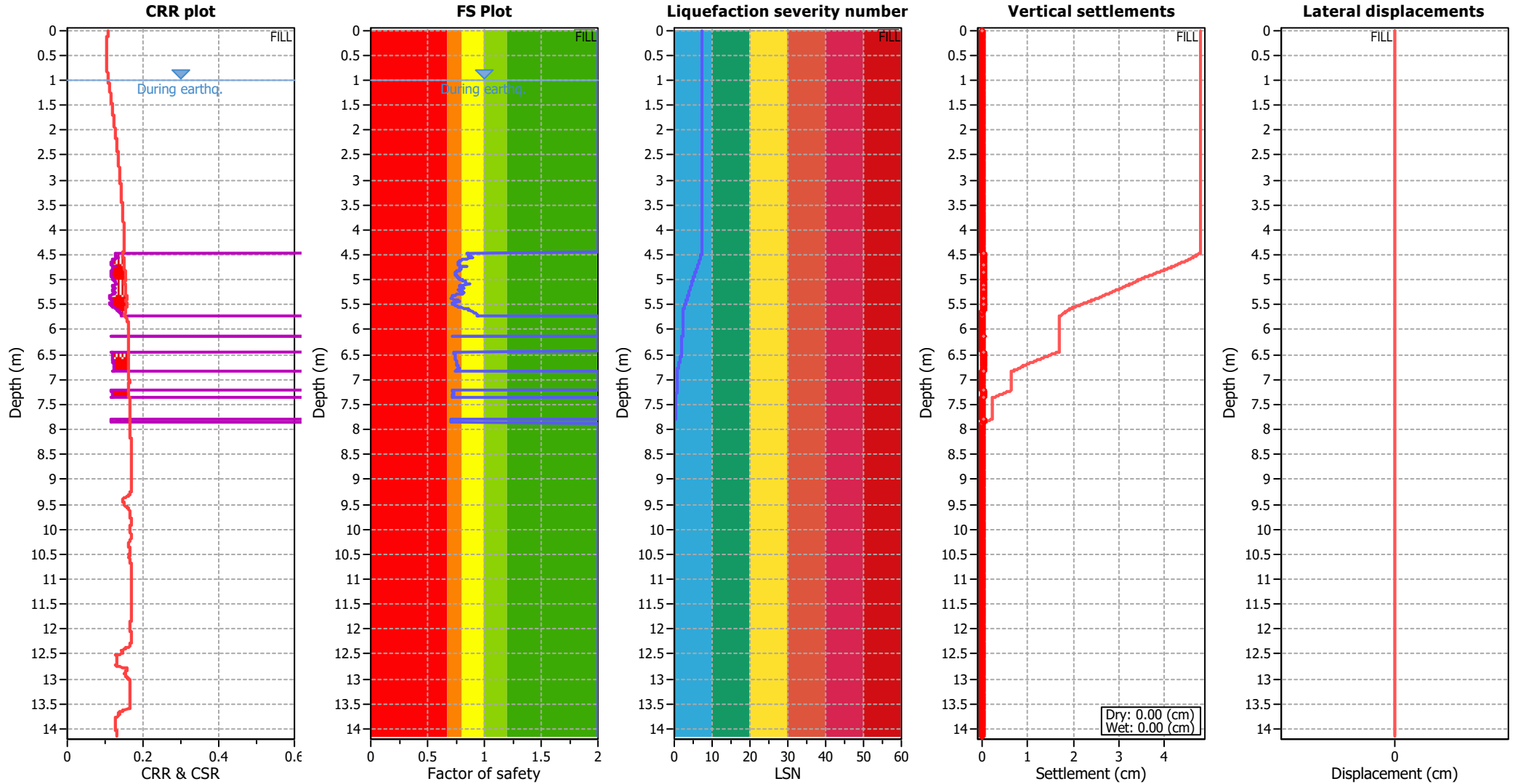
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

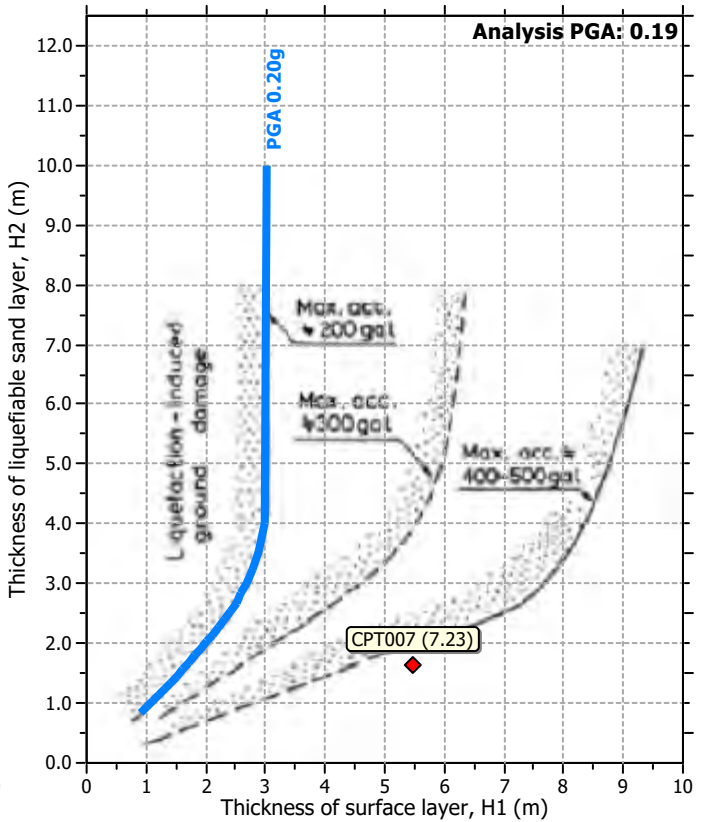
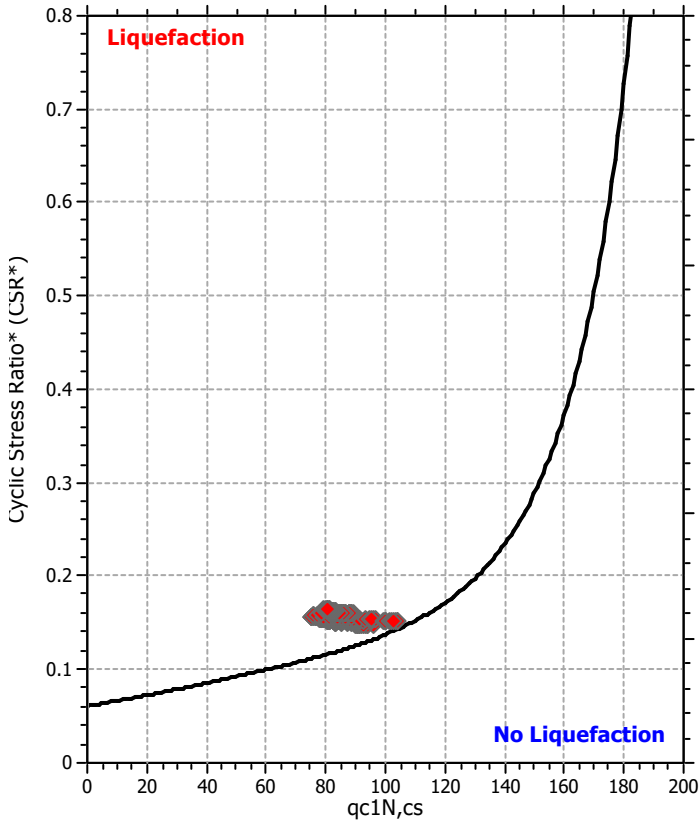
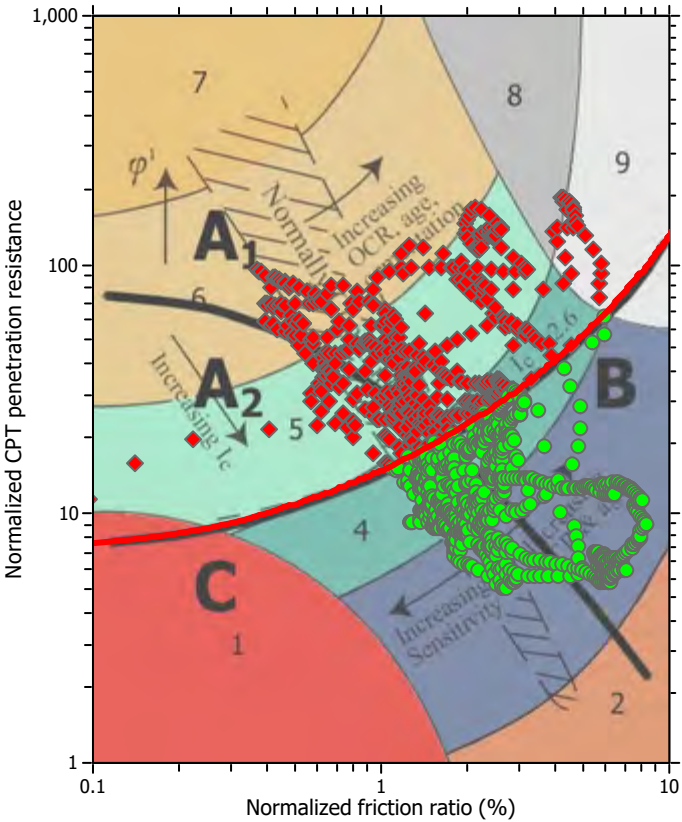
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

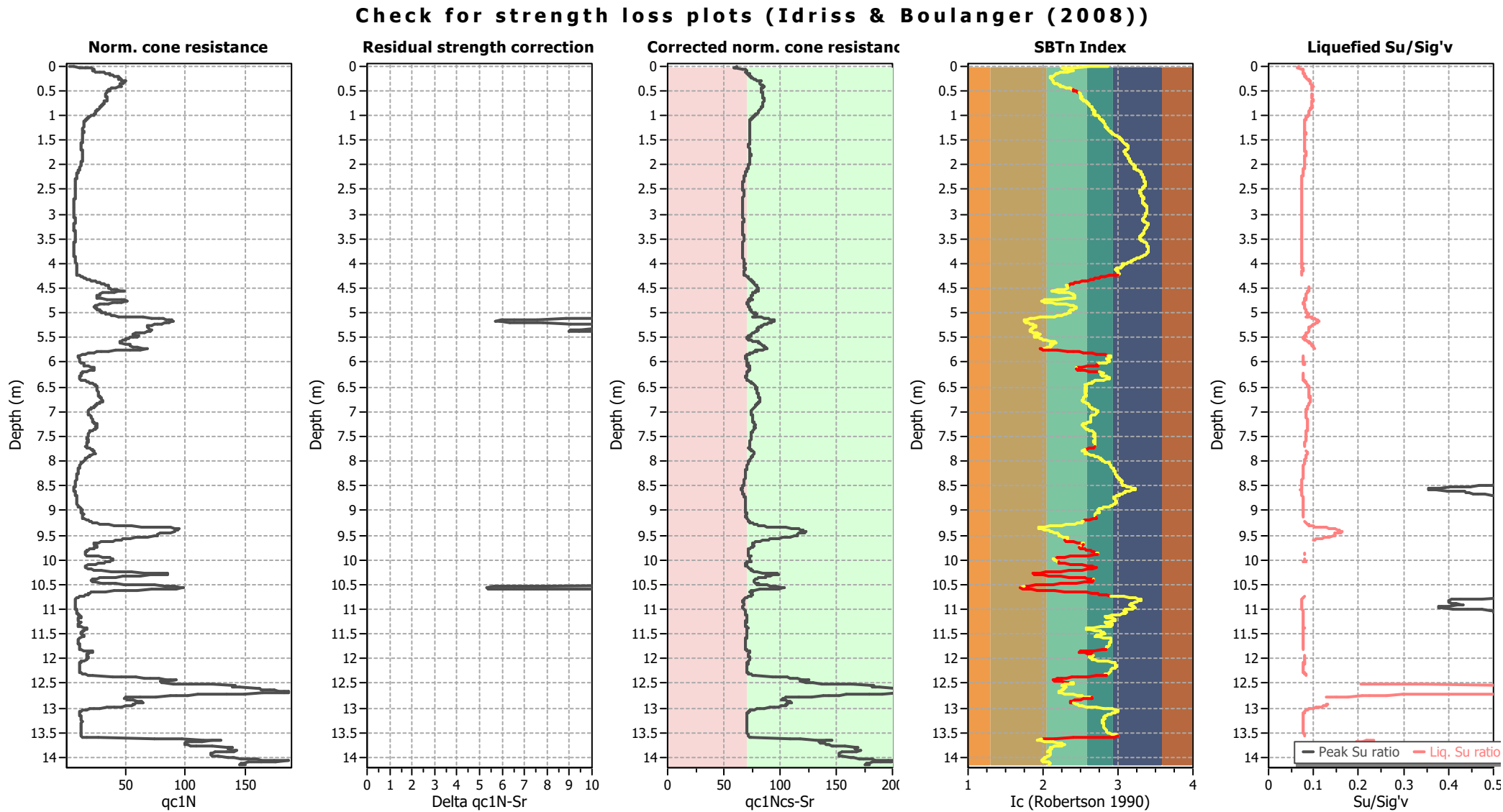
- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

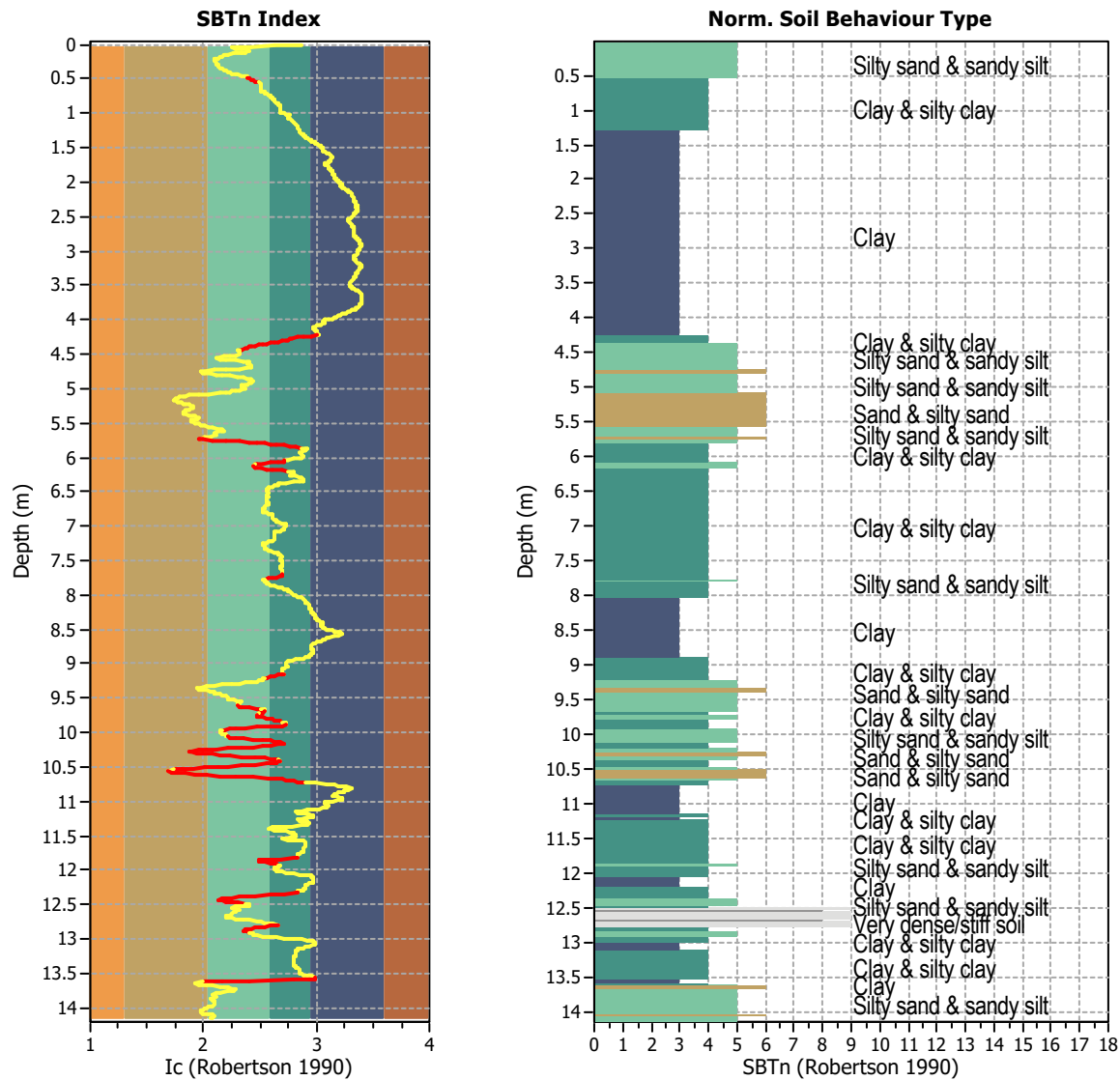
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



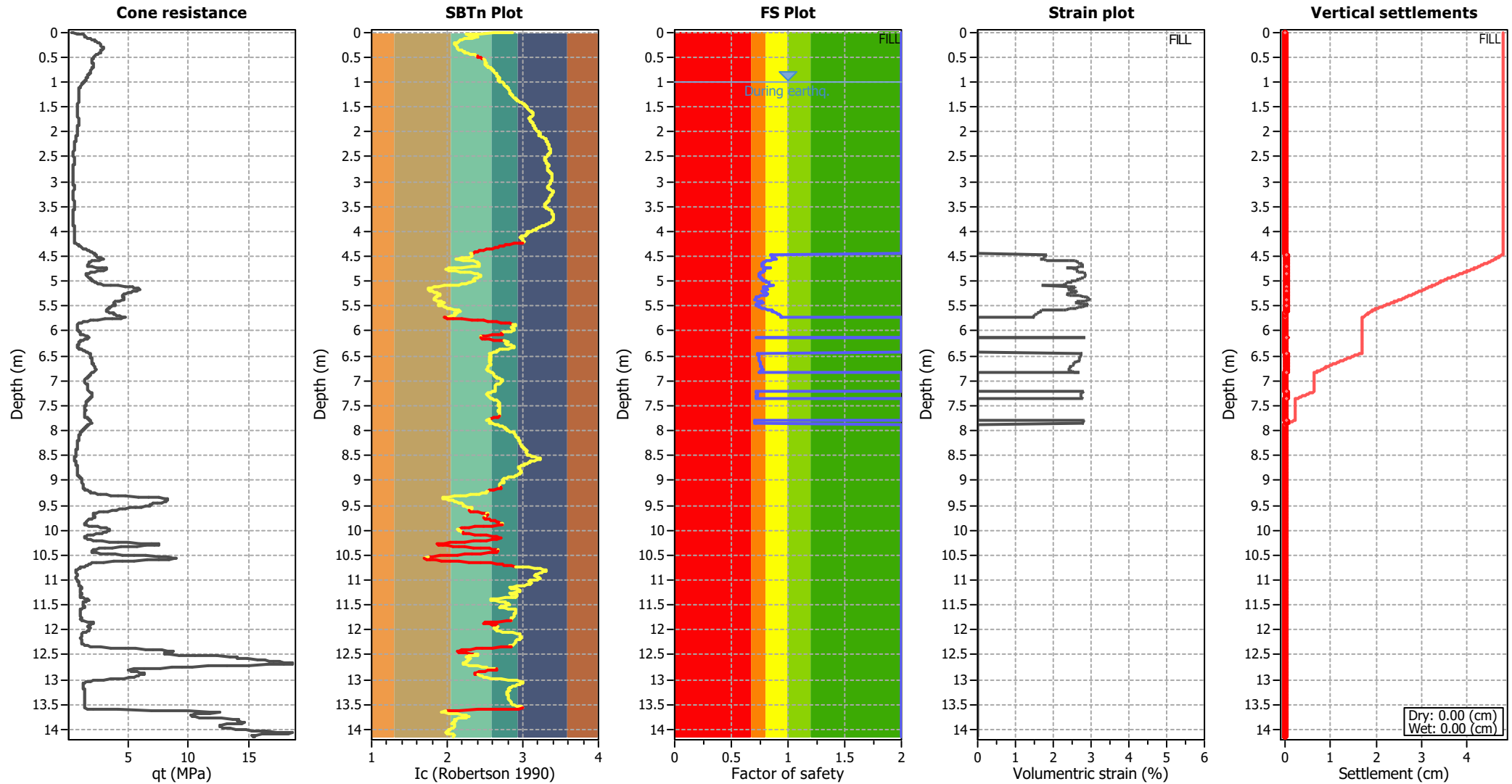
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1415
Total points excluded: 222
Exclusion percentage: 15.69%
Number of layers detected: 23

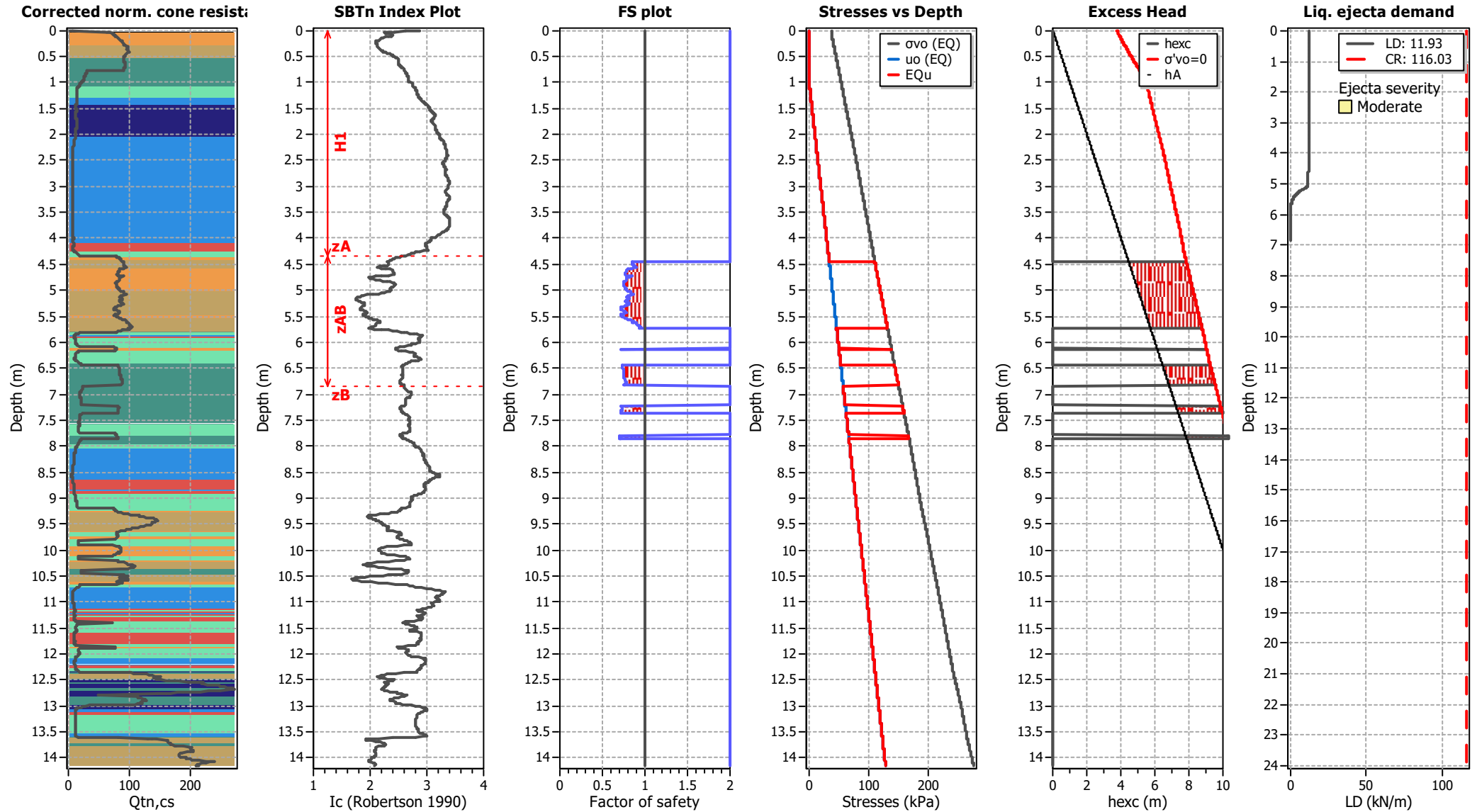
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

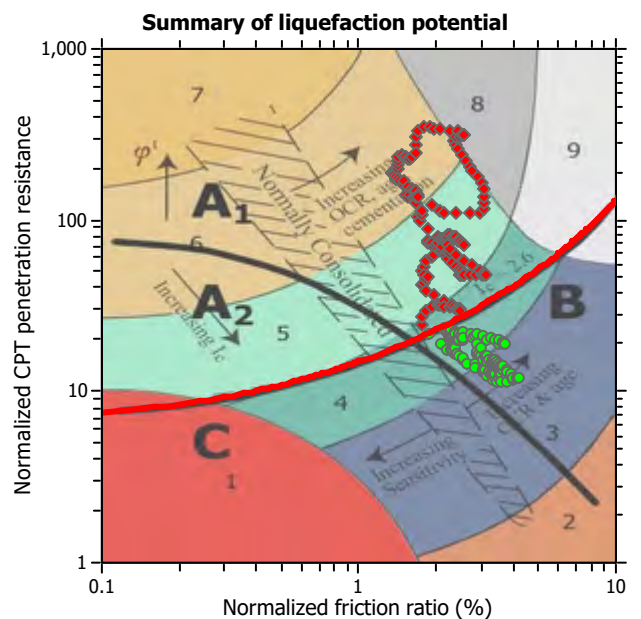
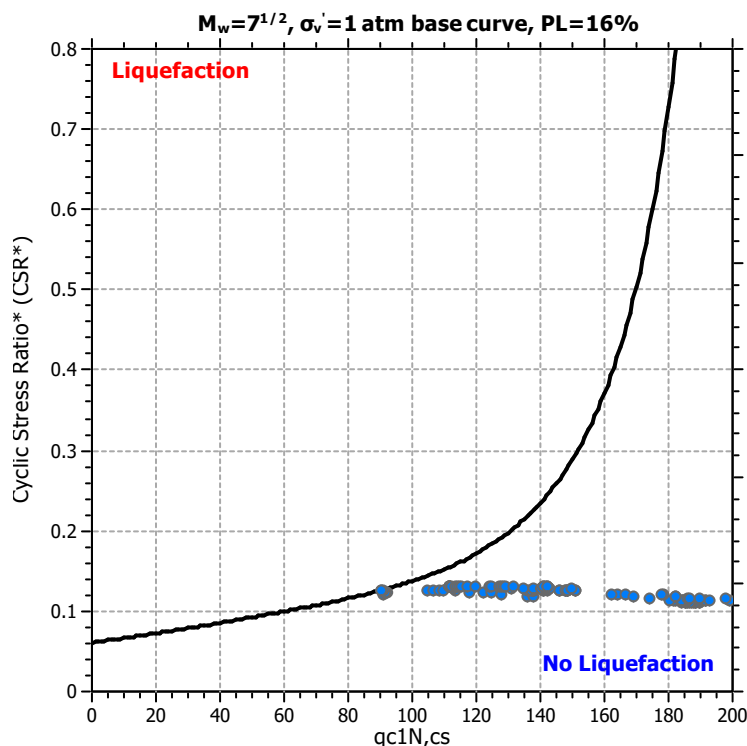
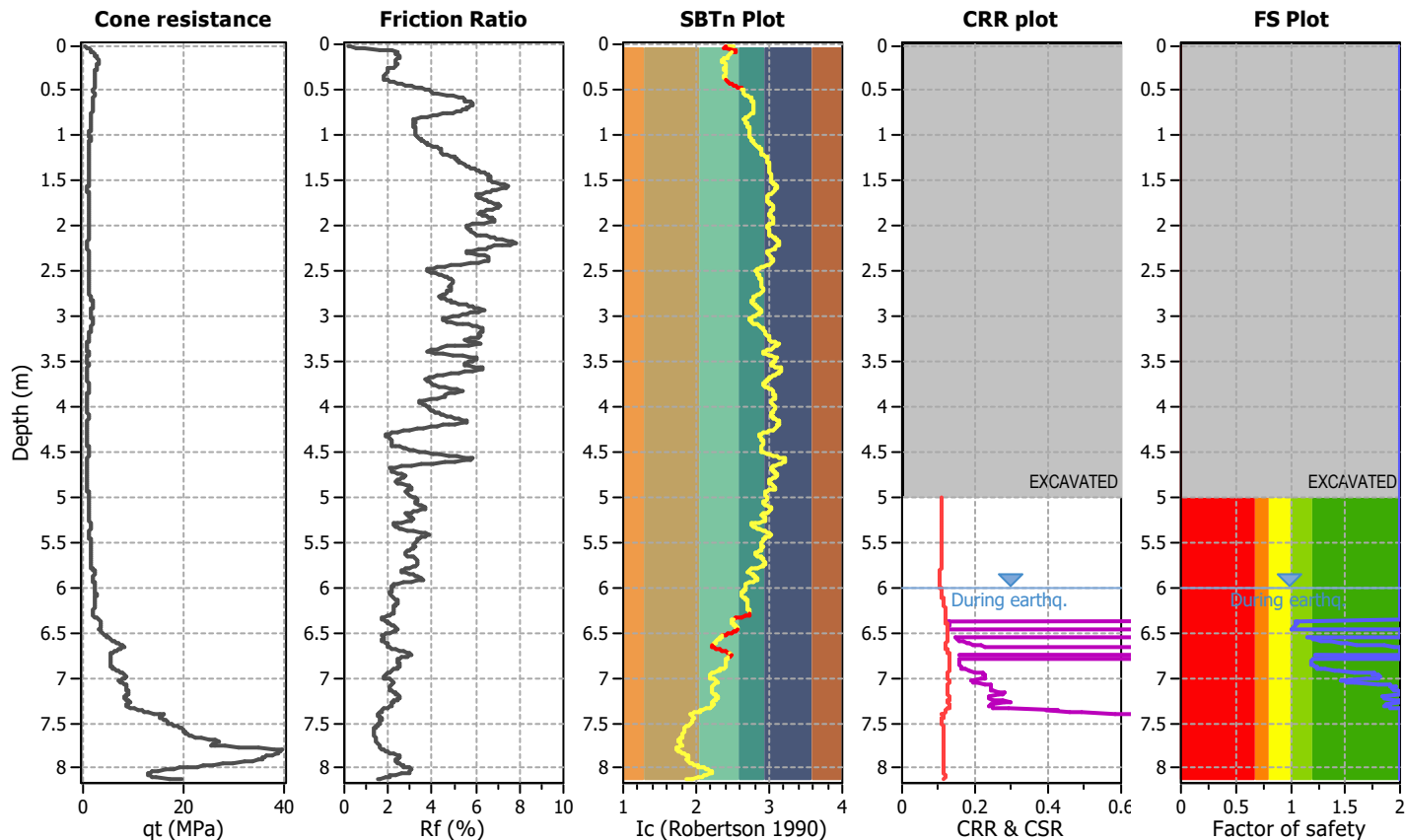
Project title : Sunfield Landholding

Location :

CPT file : CPT008

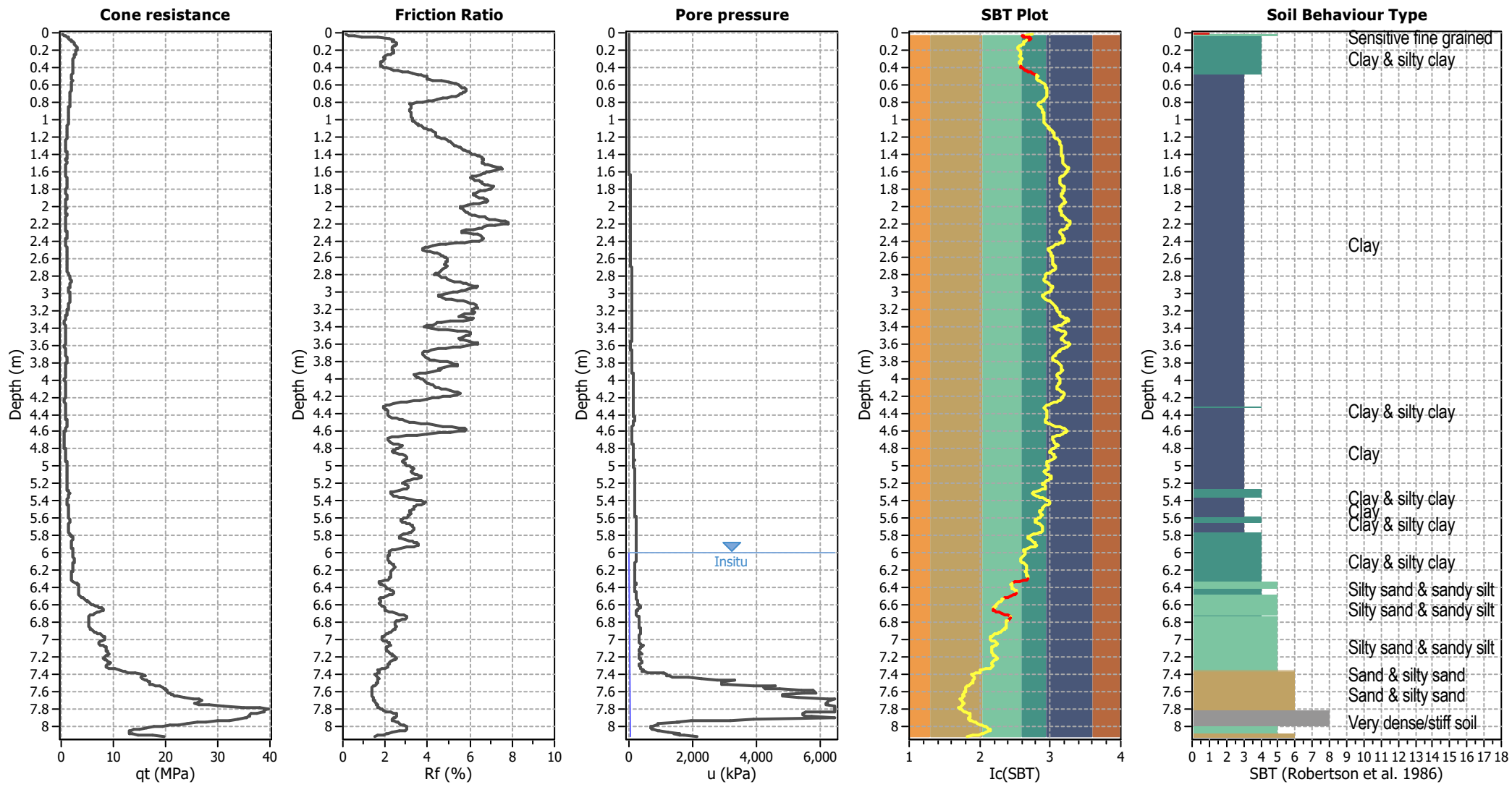
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	6.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	6.00 m	Excavation depth:	5.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



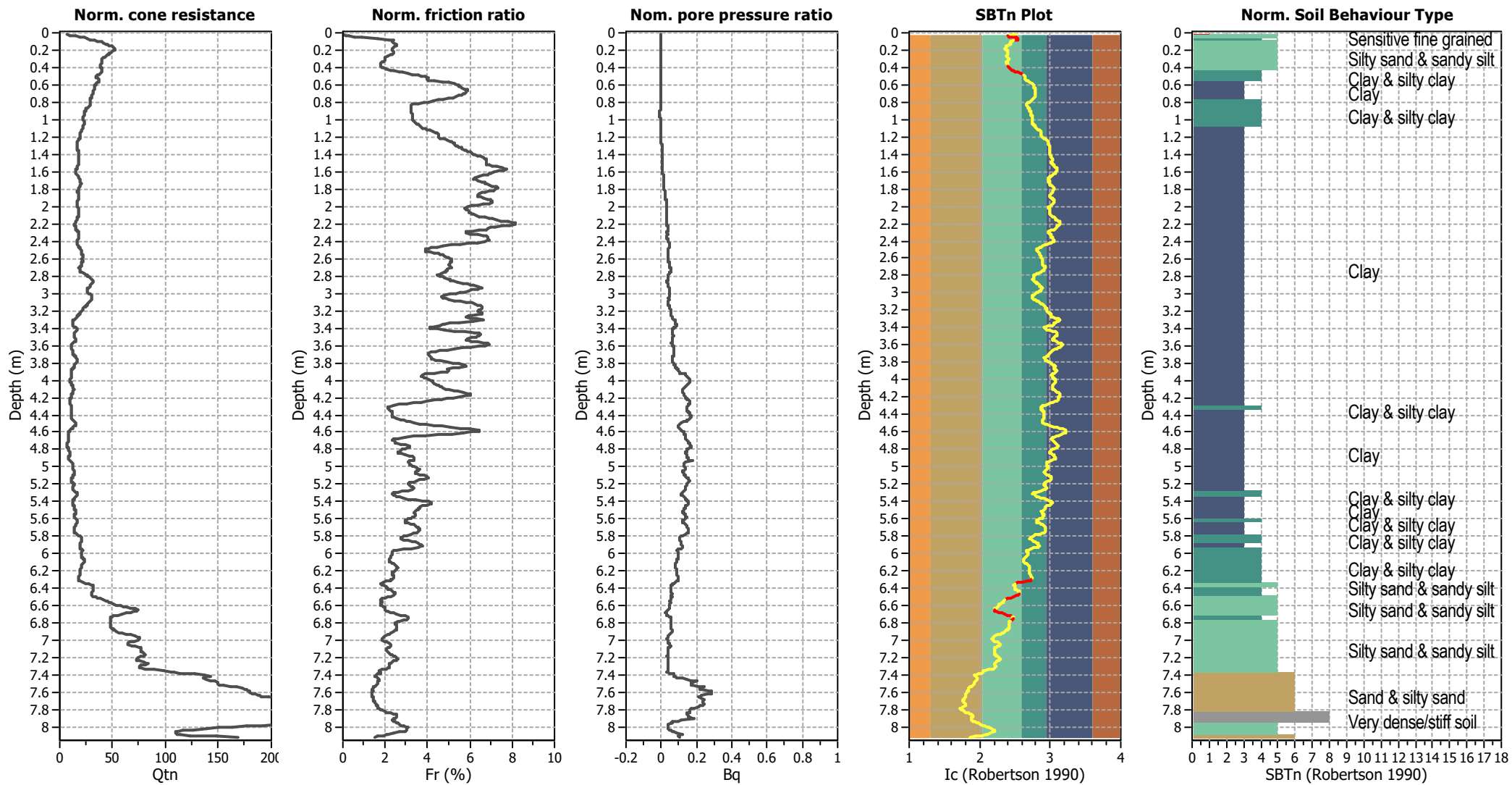
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.00 m	Excavation depth:	5.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)

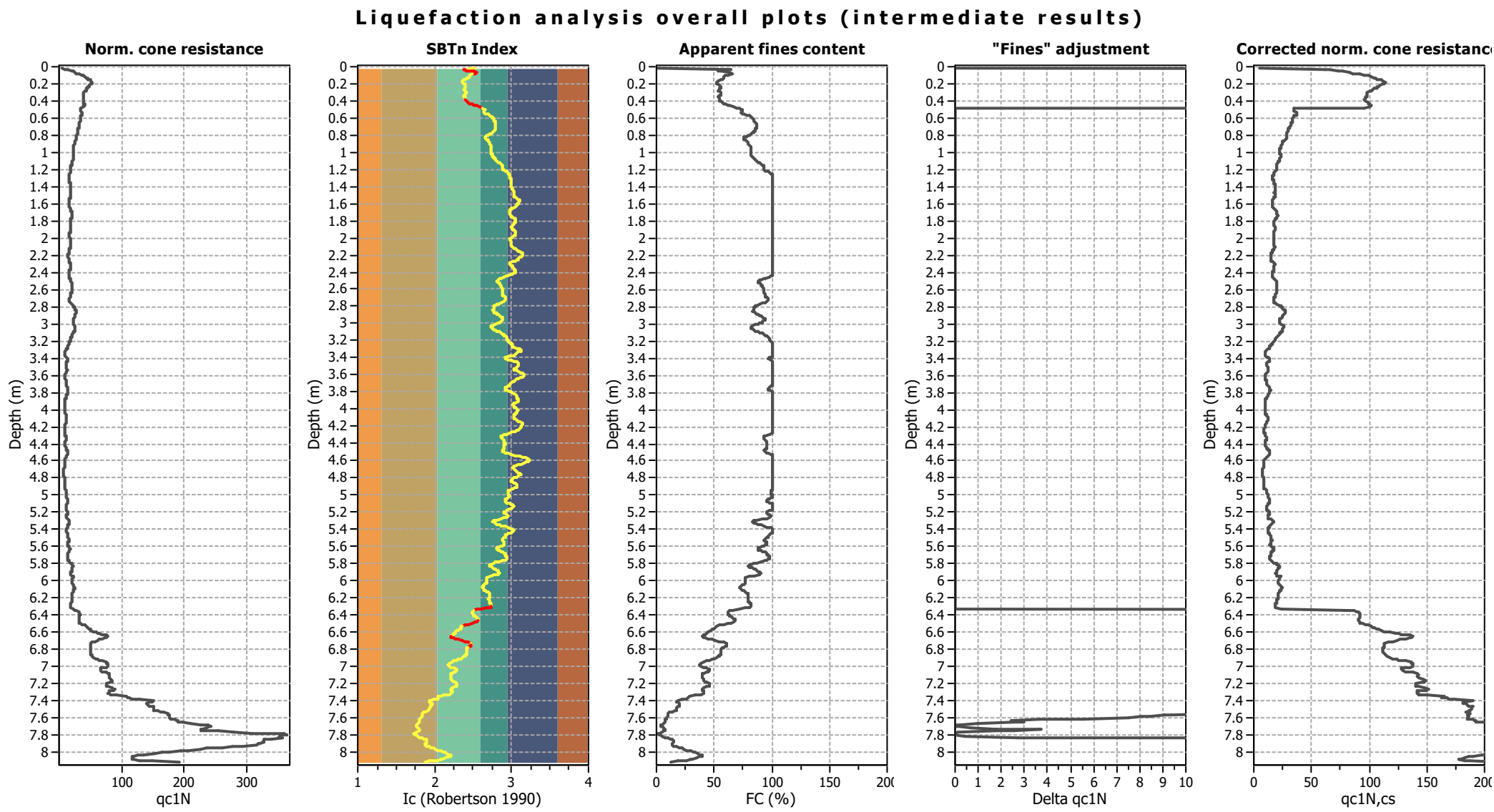


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.00 m	Excavation depth:	5.00 m	Limit depth:	10.00 m

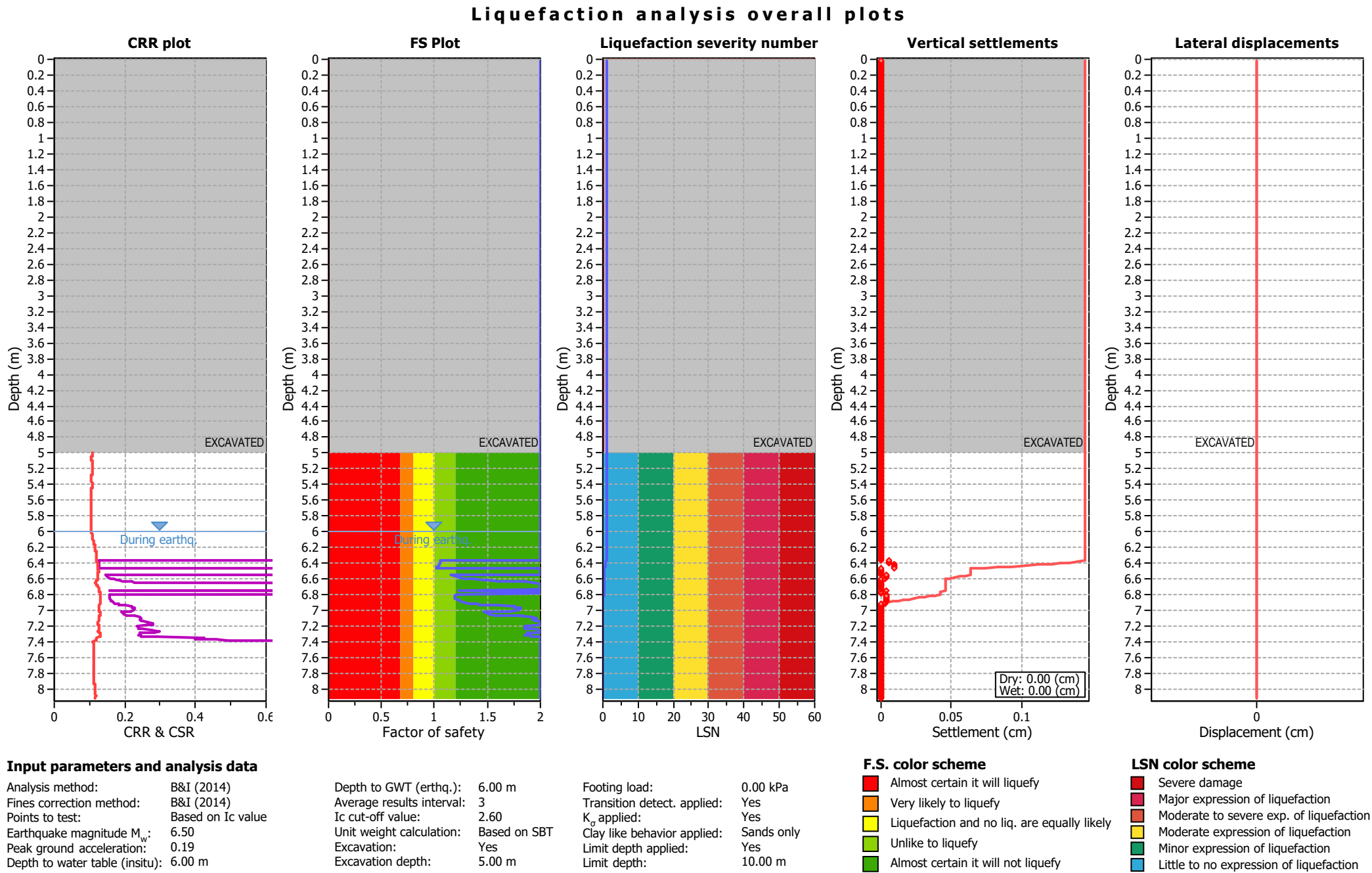
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

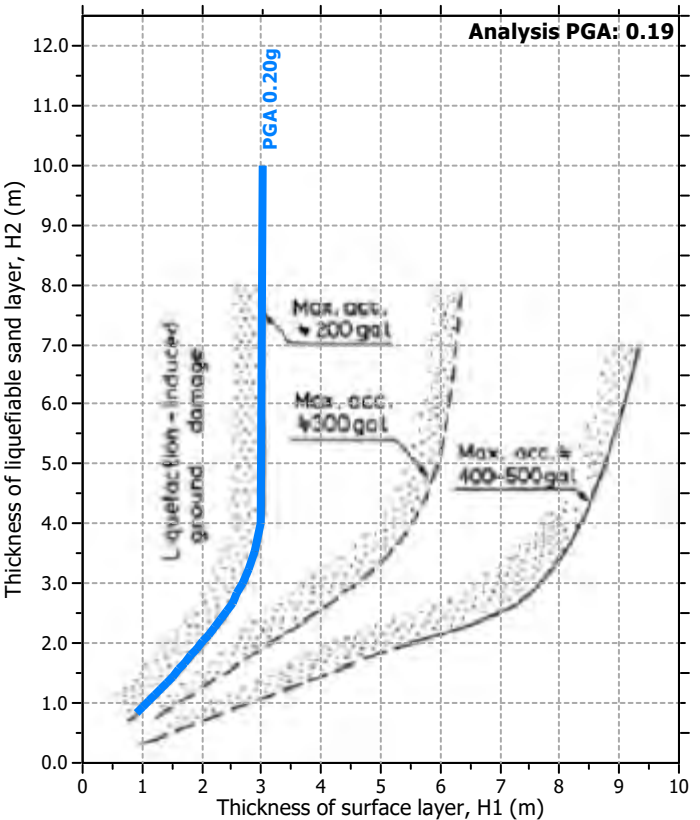
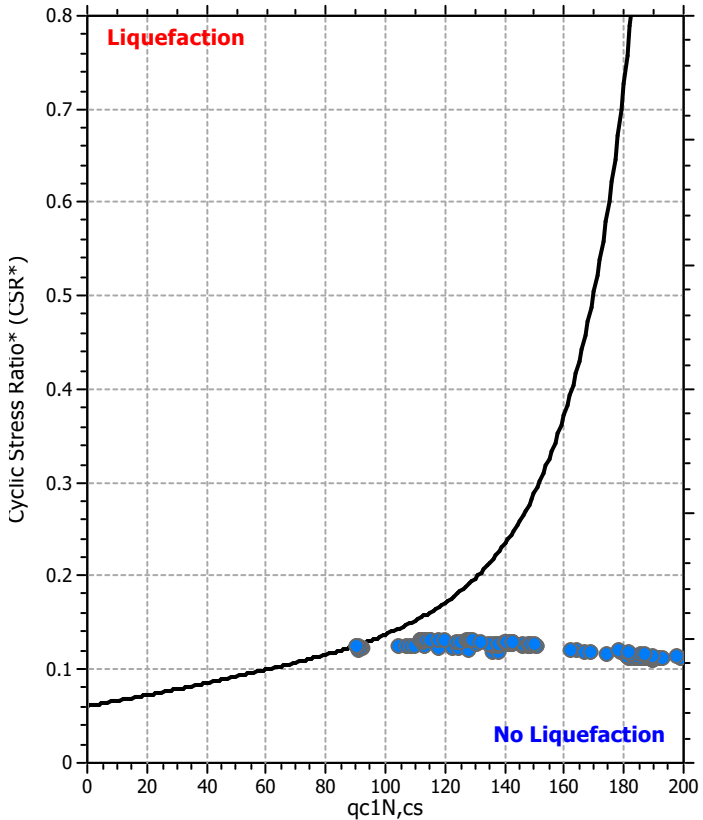
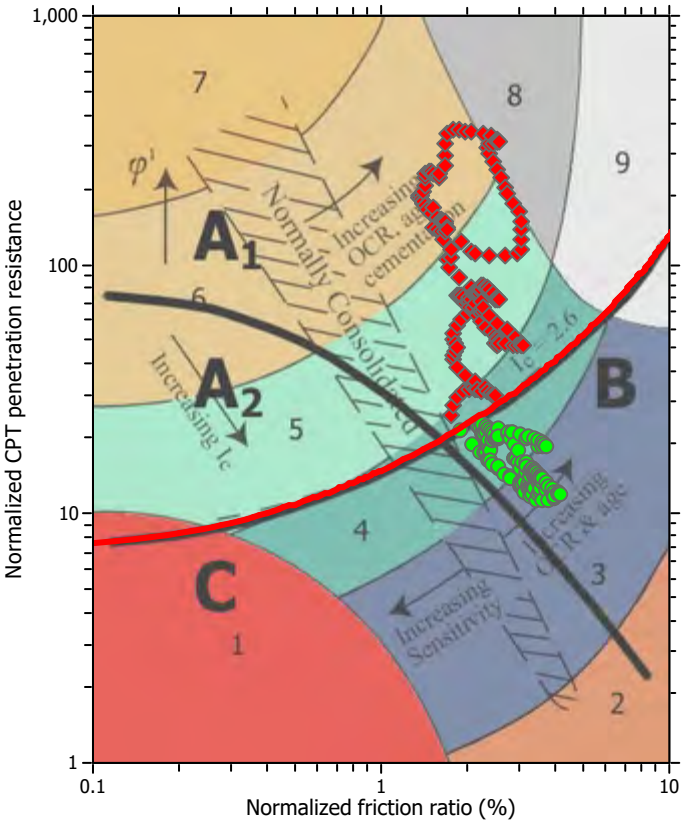


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
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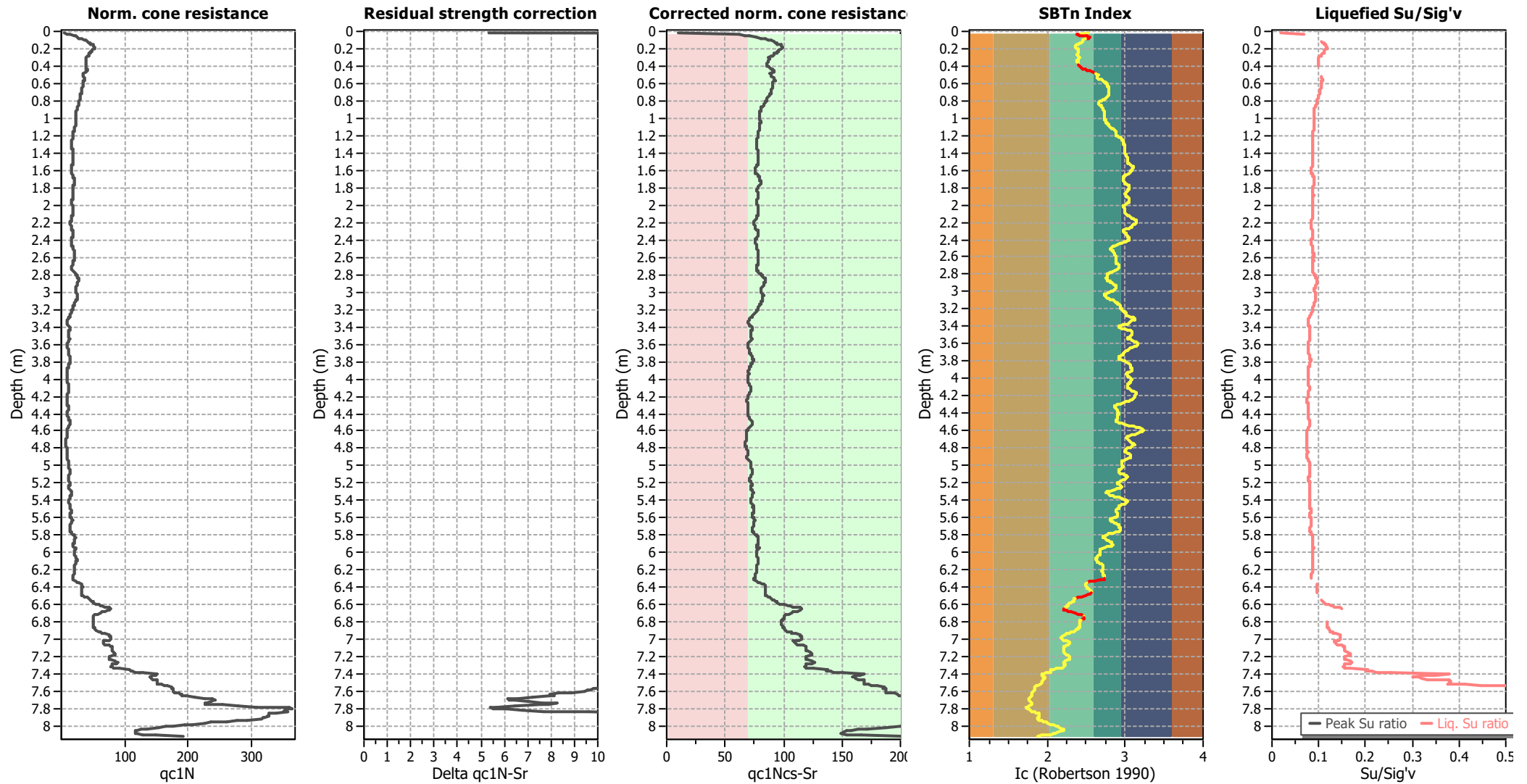
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.00 m	Excavation depth:	5.00 m	Limit depth:	10.00 m

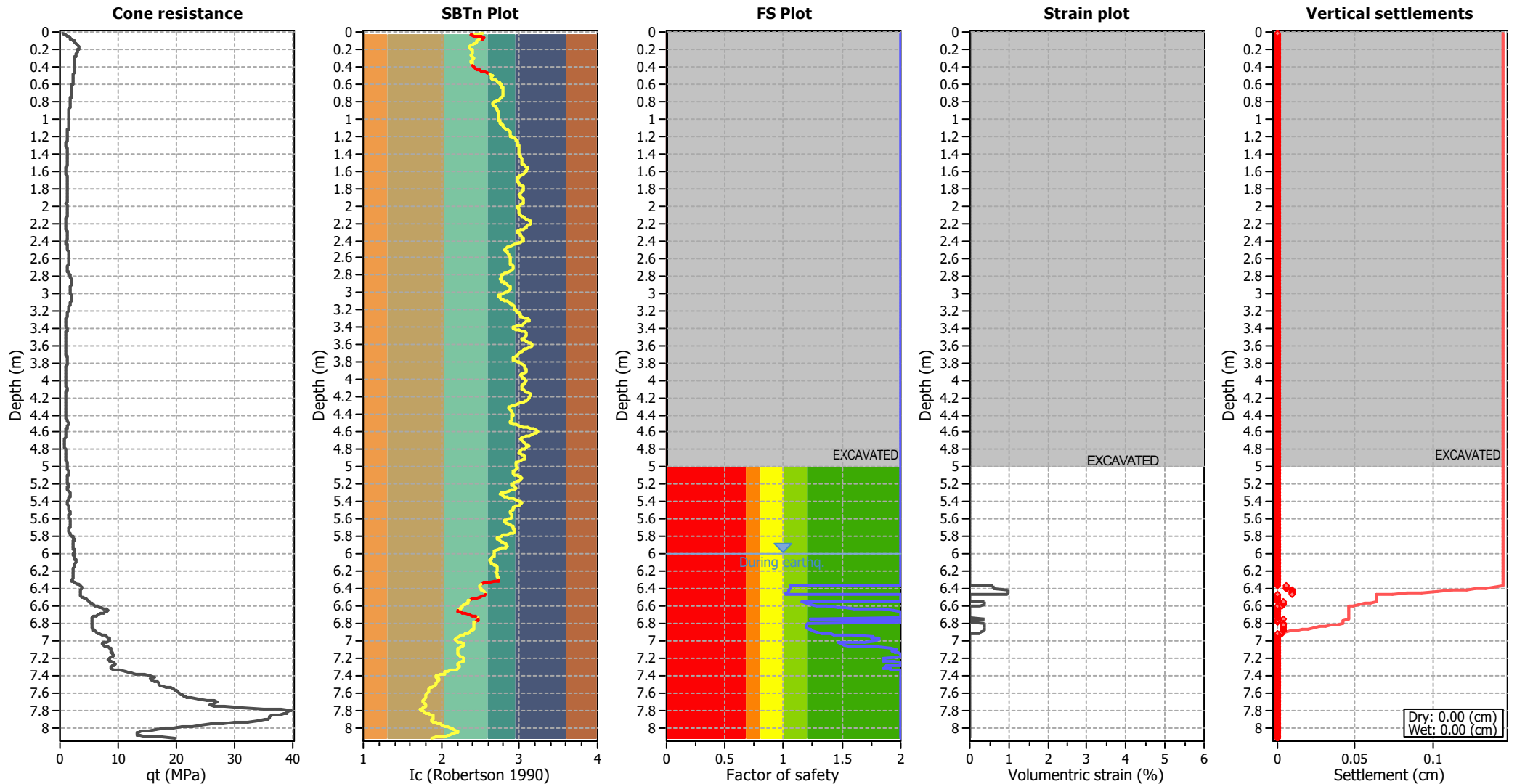
Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_g applied:	Yes
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Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.00 m	Excavation depth:	5.00 m	Limit depth:	10.00 m

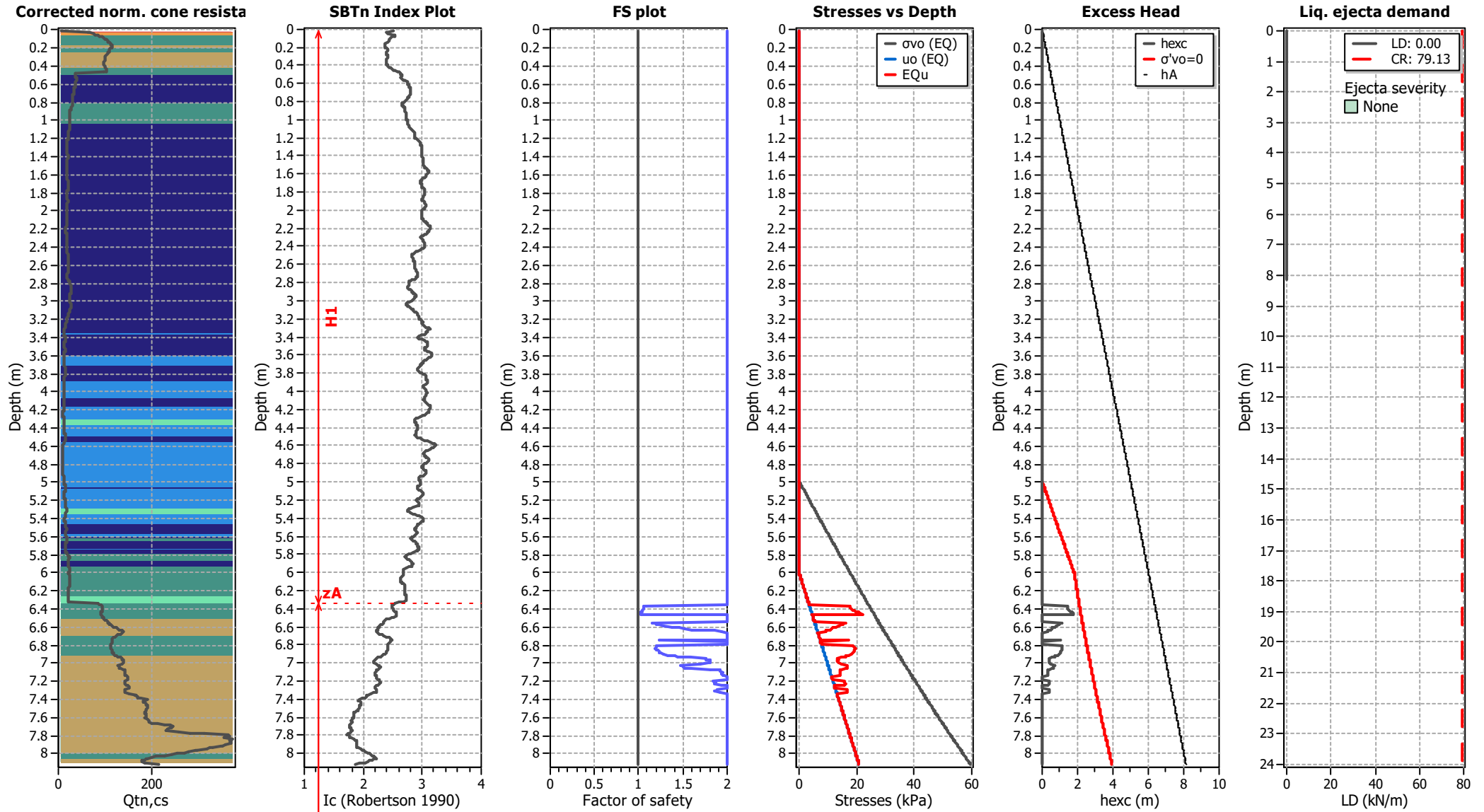
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

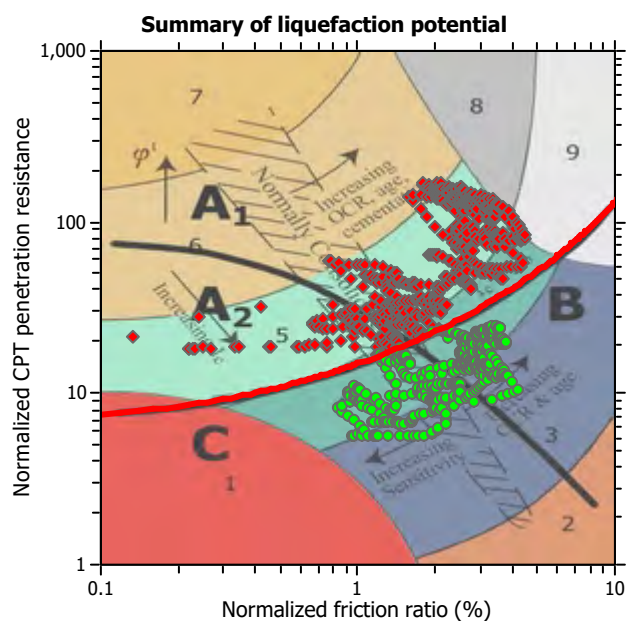
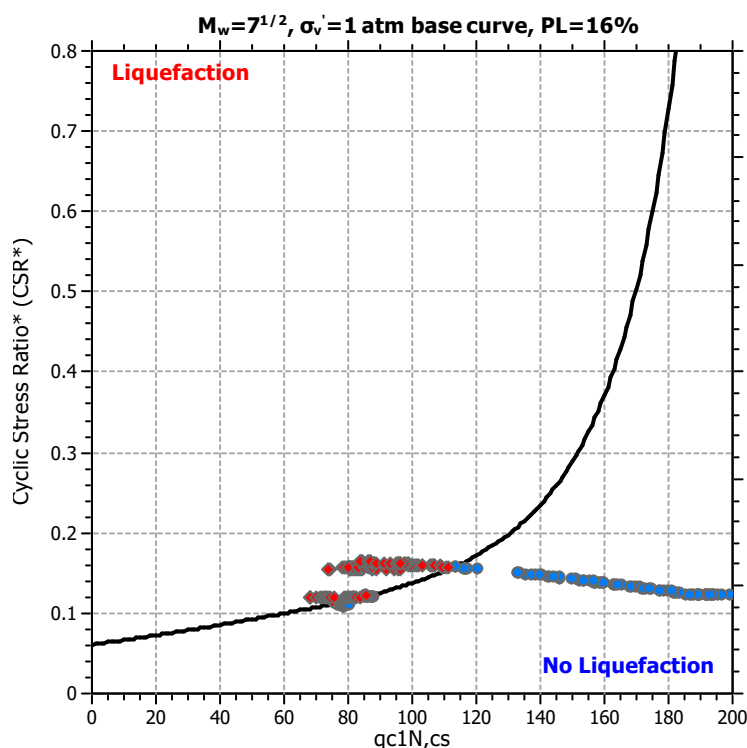
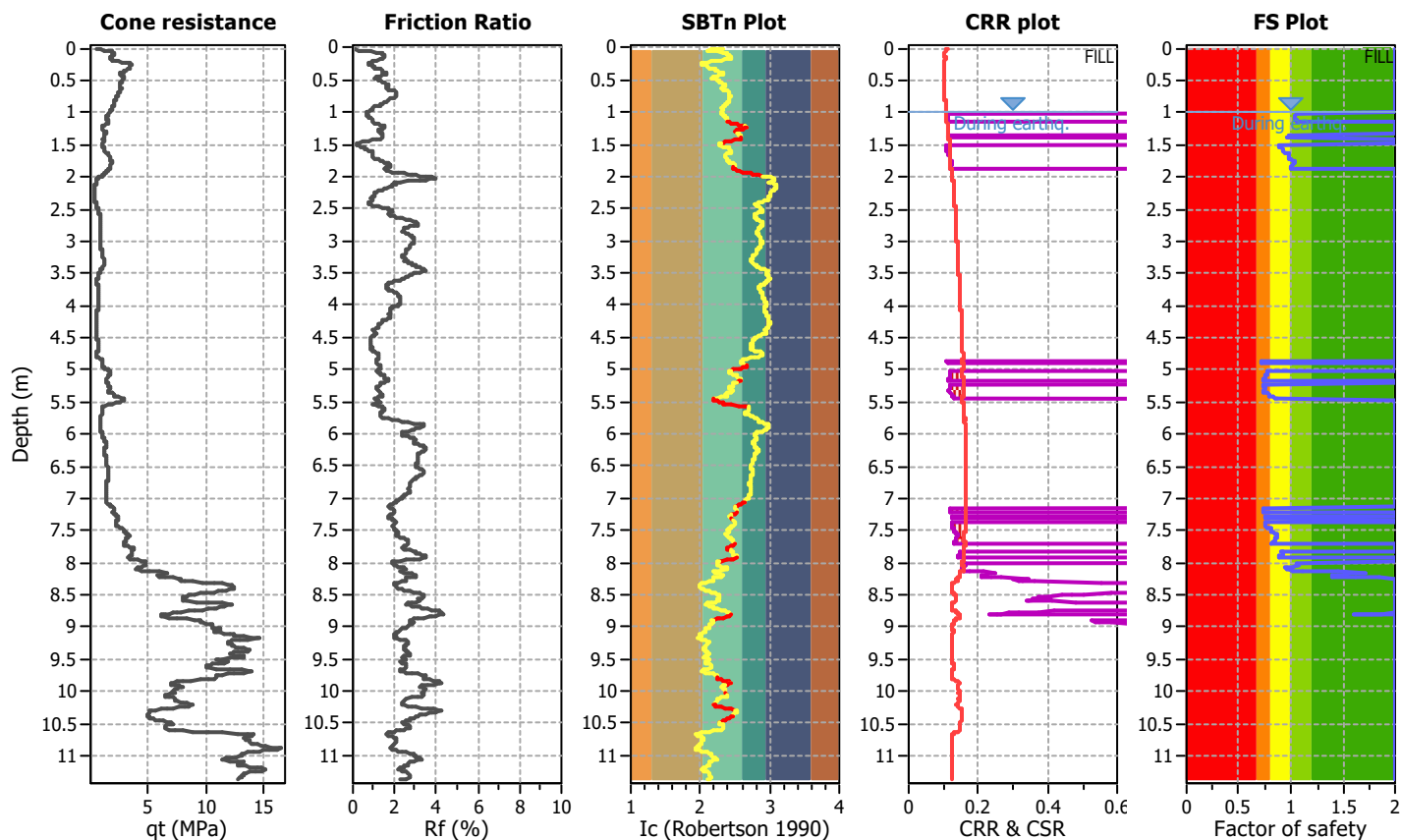
Project title : Sunfield Landholding

Location :

CPT file : CPT009A

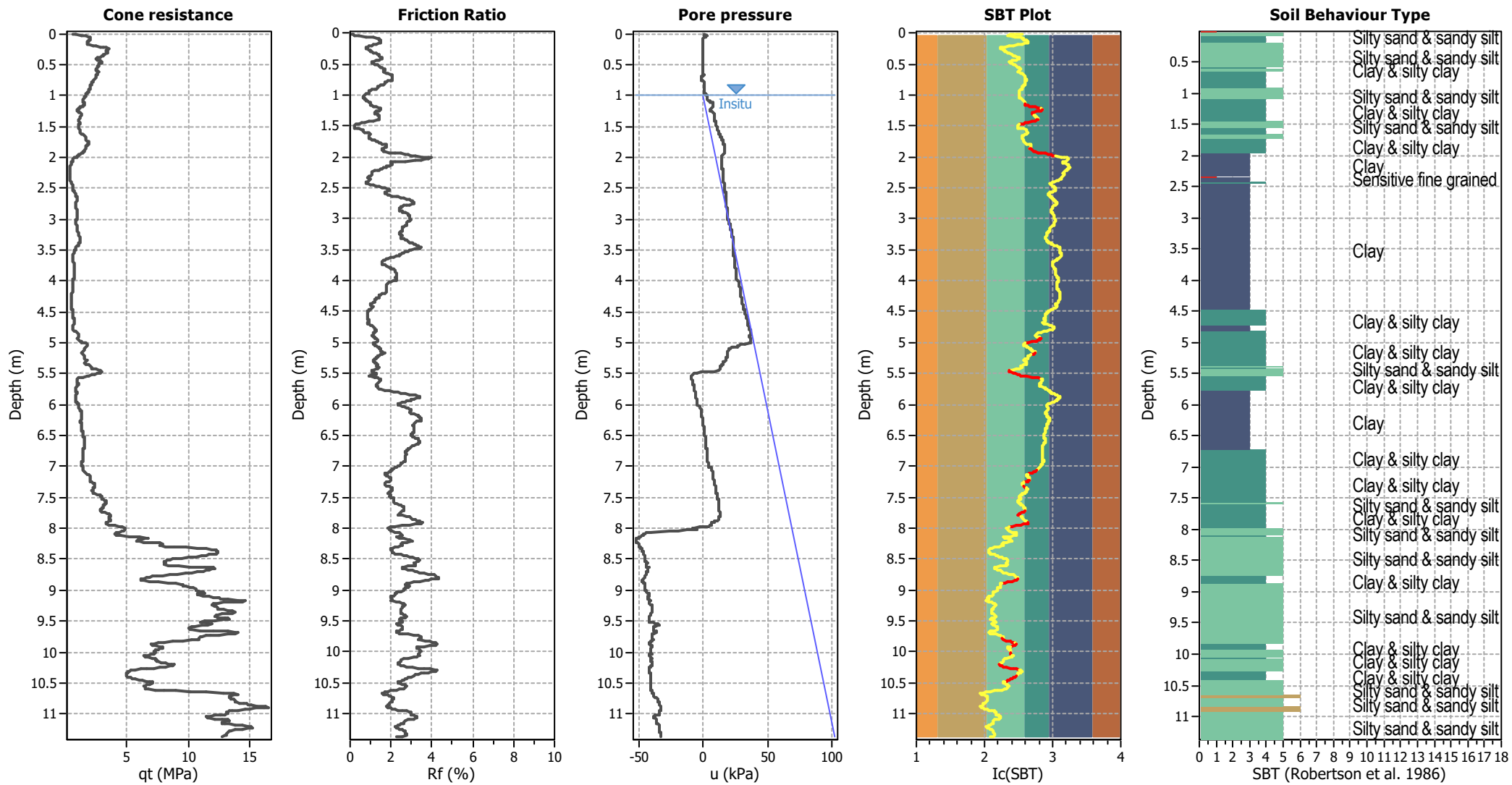
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

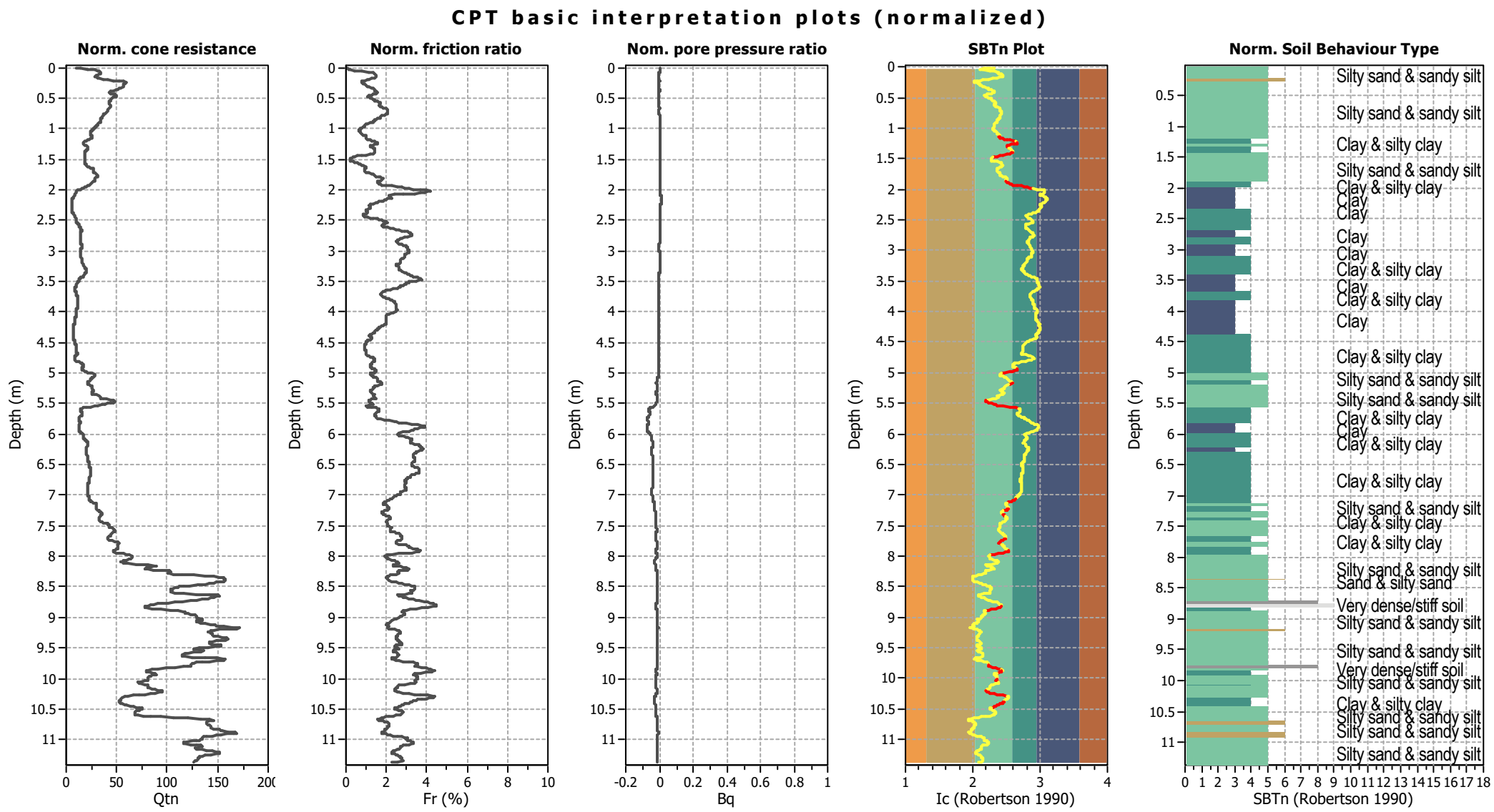


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

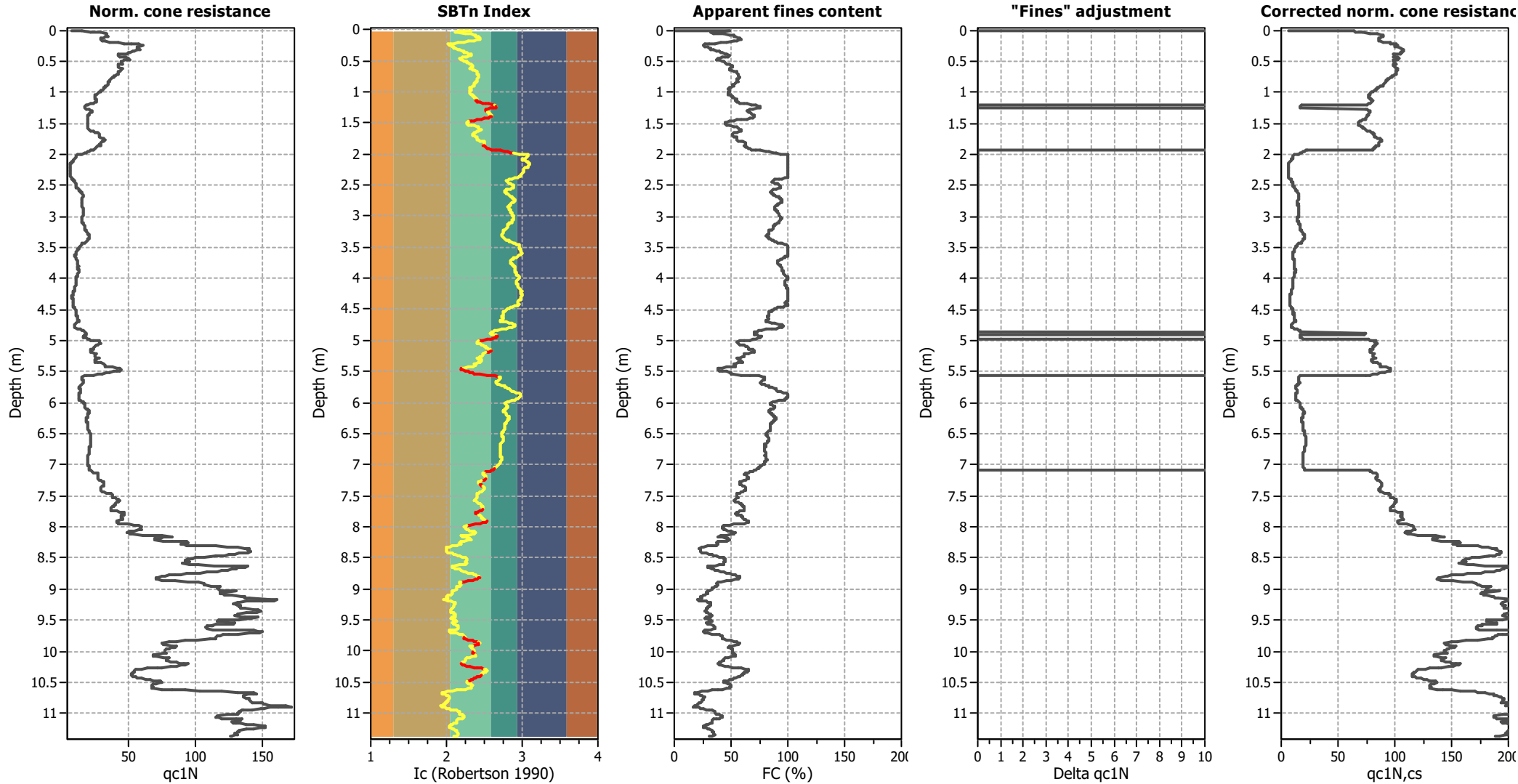
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

9. Very stiff fine grained

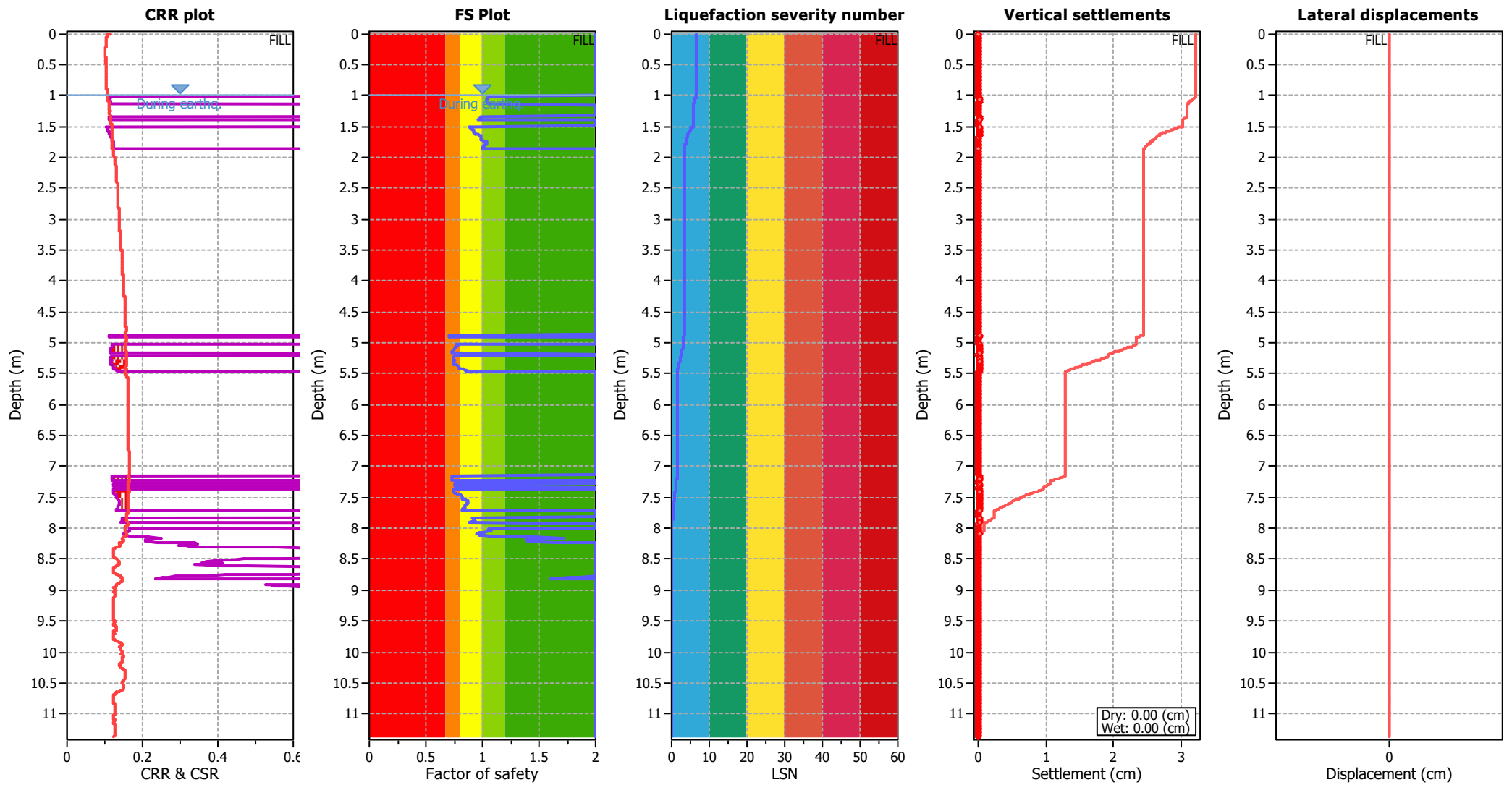
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

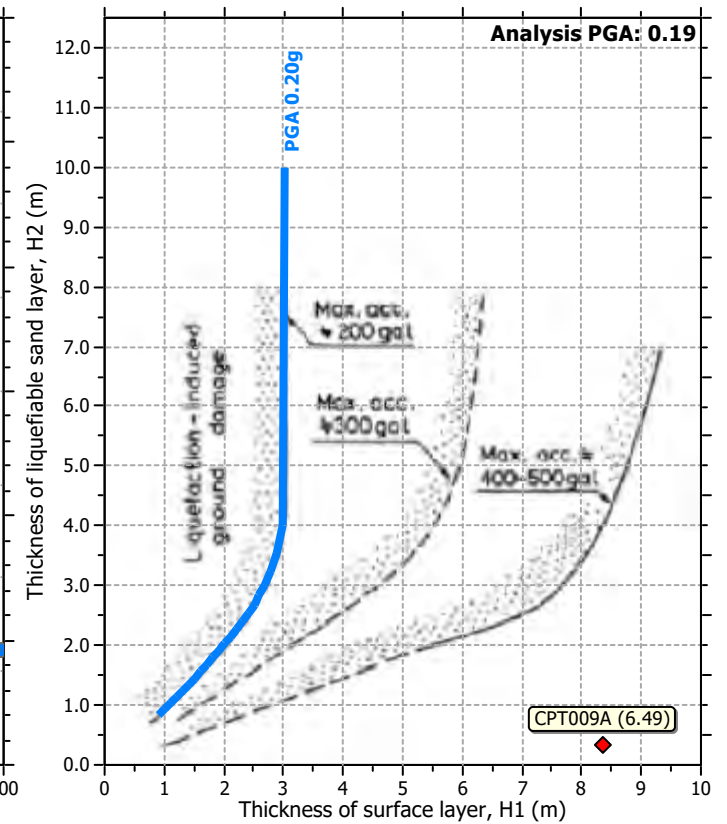
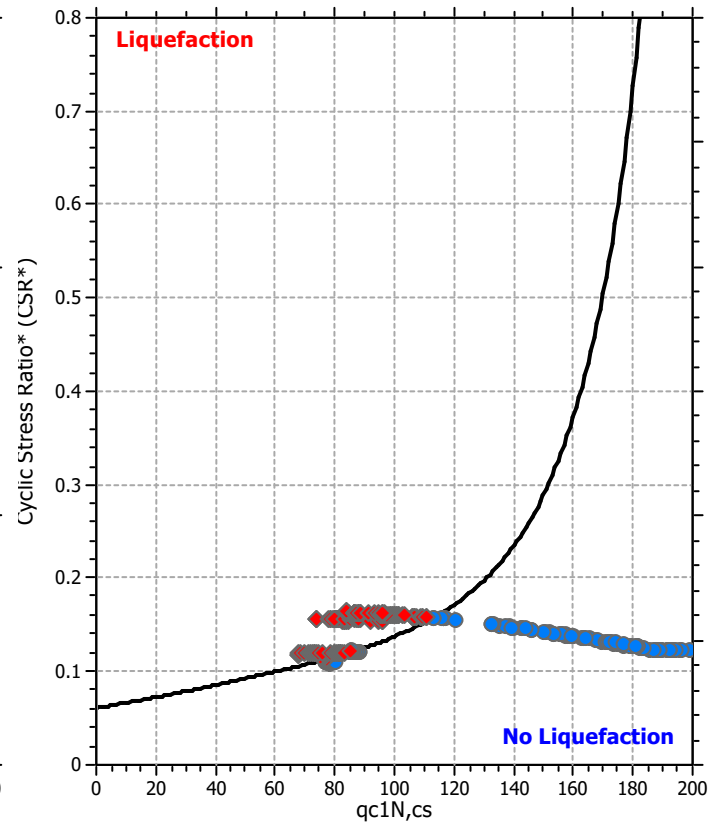
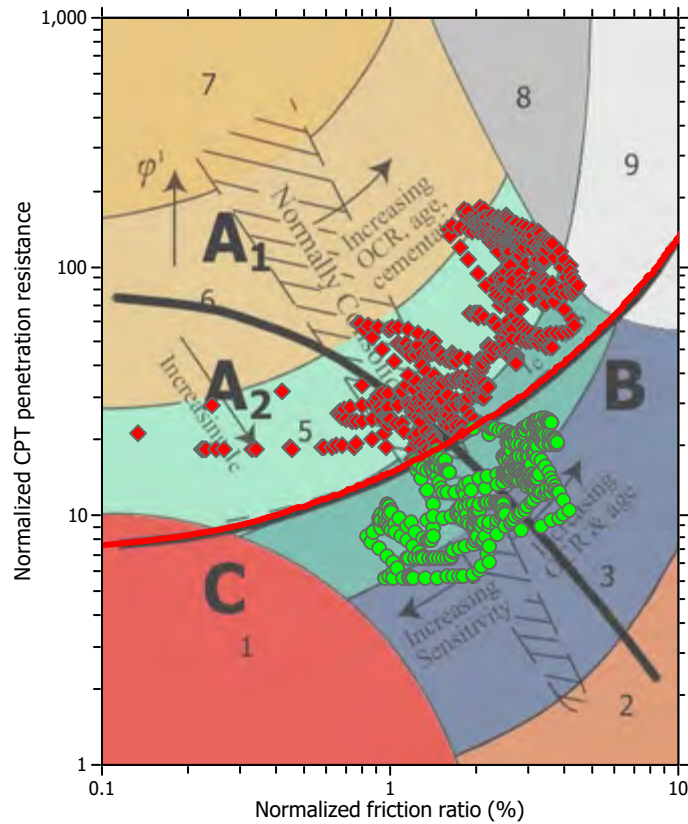
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

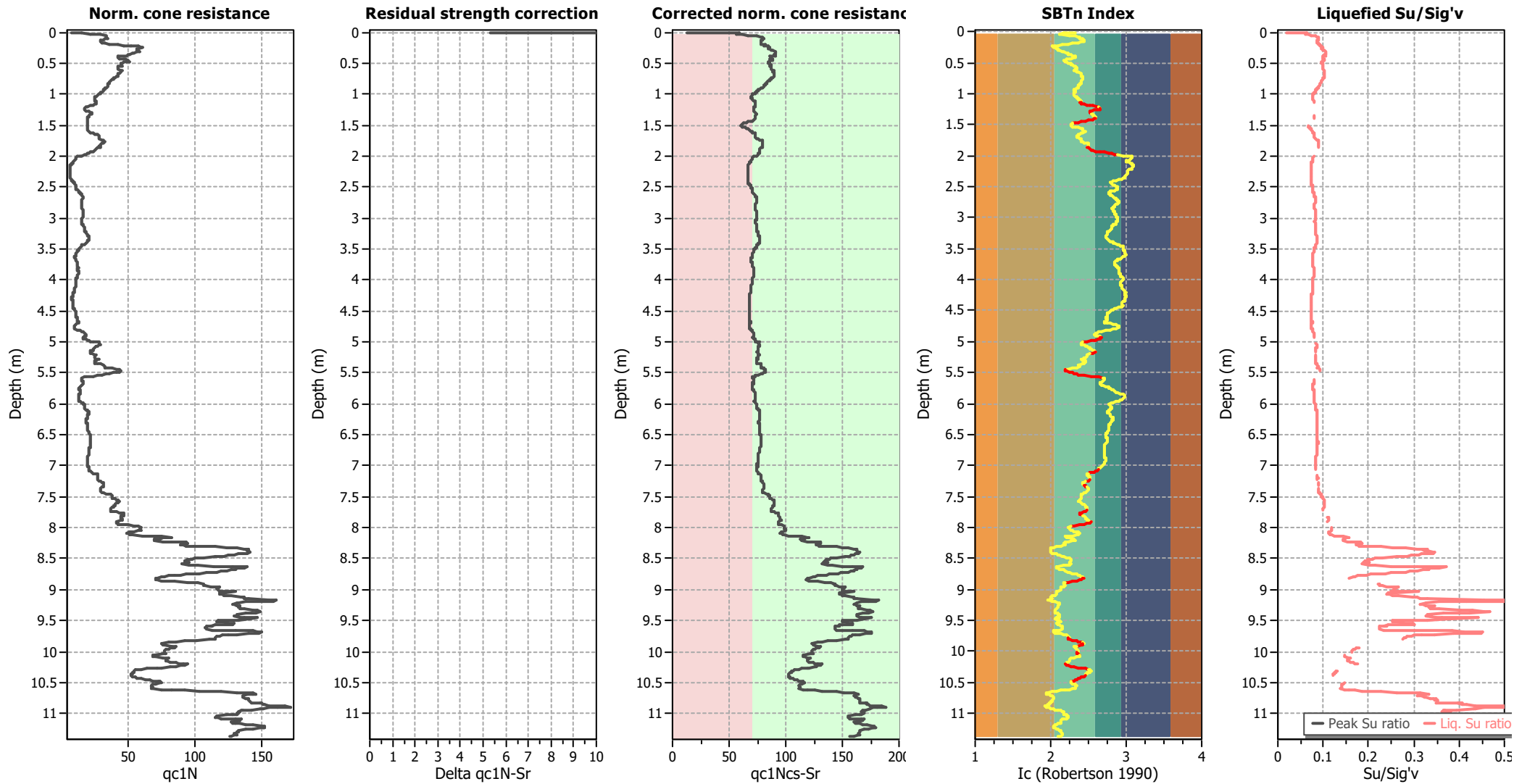
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

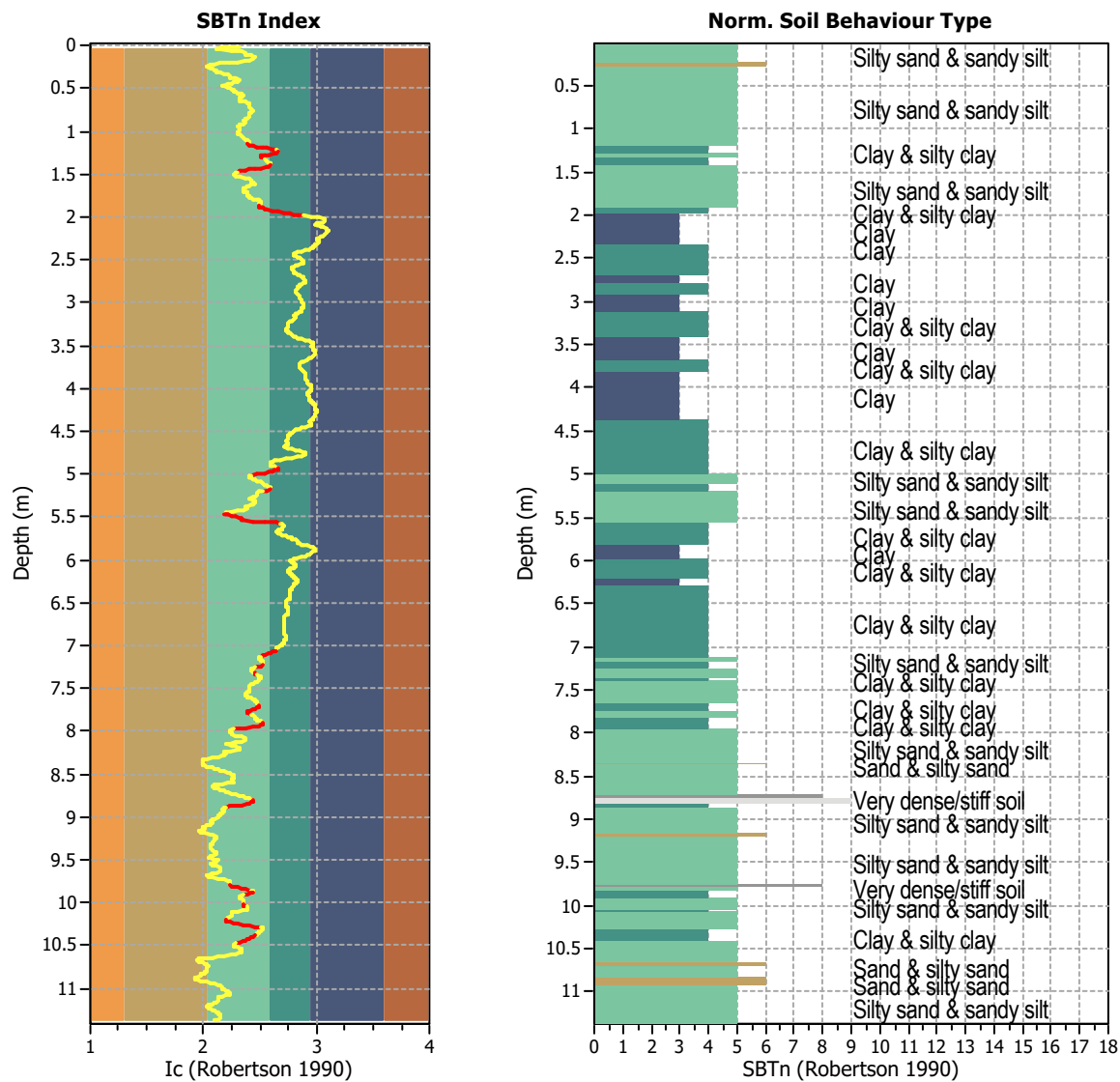
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



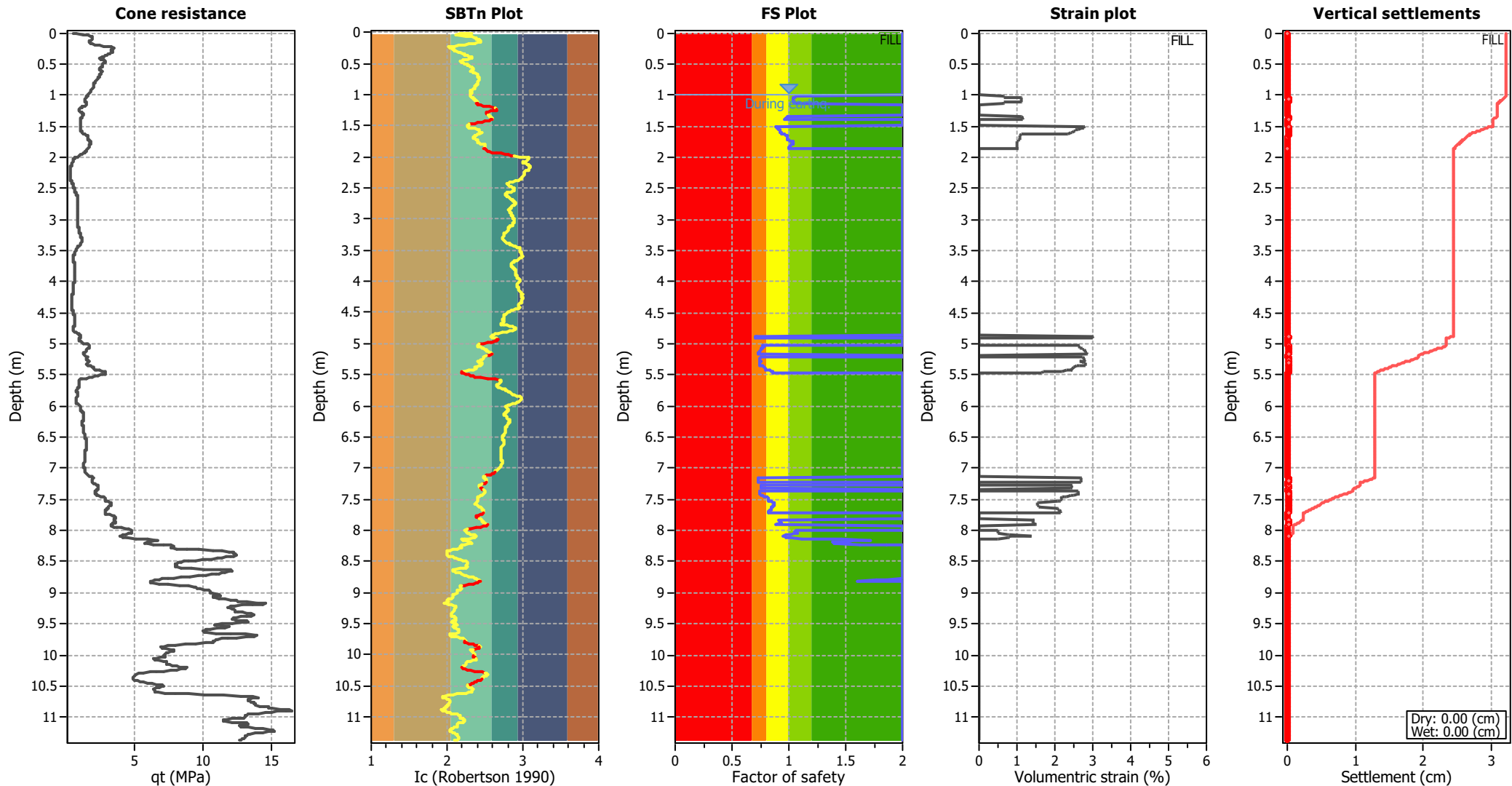
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1137
Total points excluded: 150
Exclusion percentage: 13.19%
Number of layers detected: 20

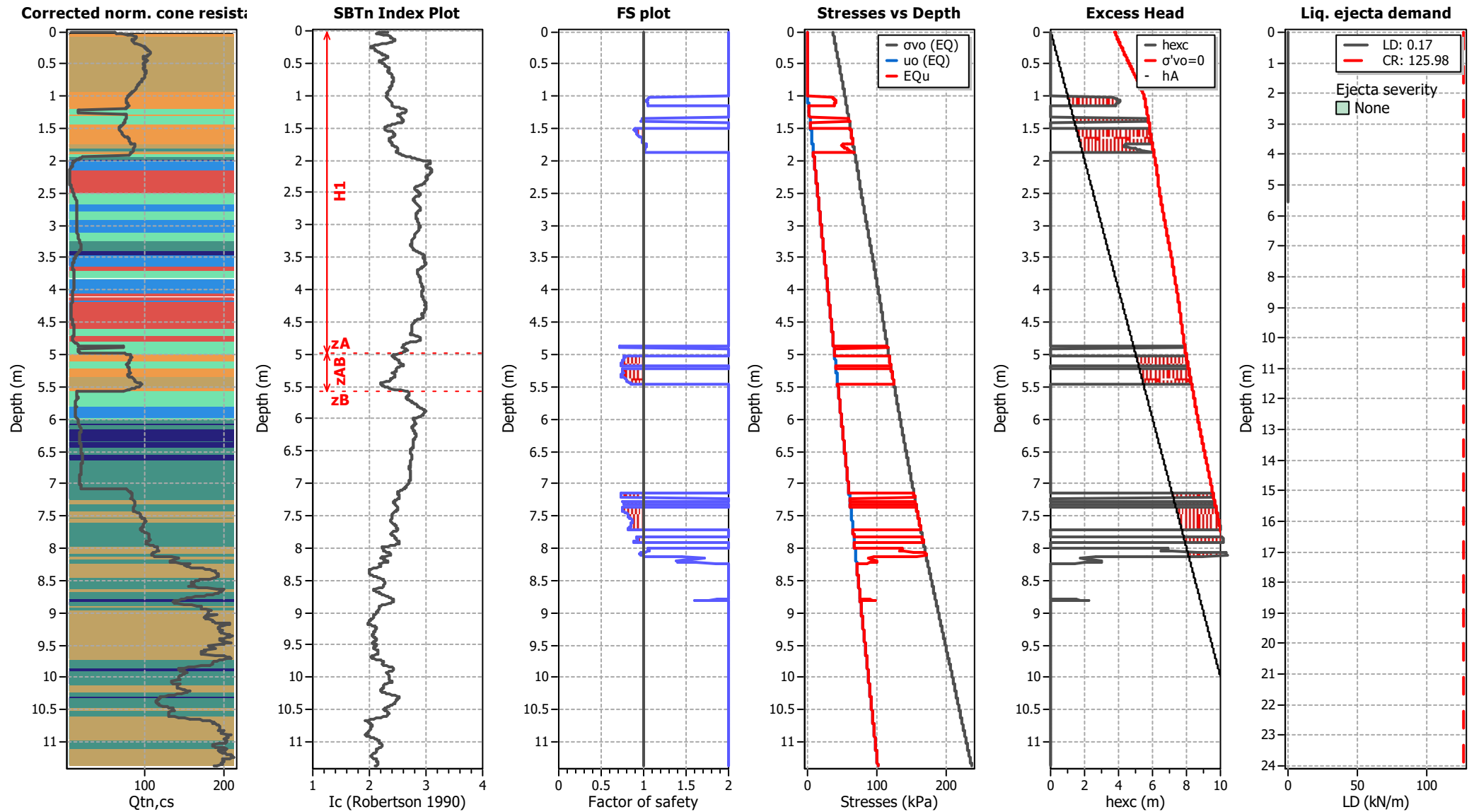
Estimation of post-earthquake settlements



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

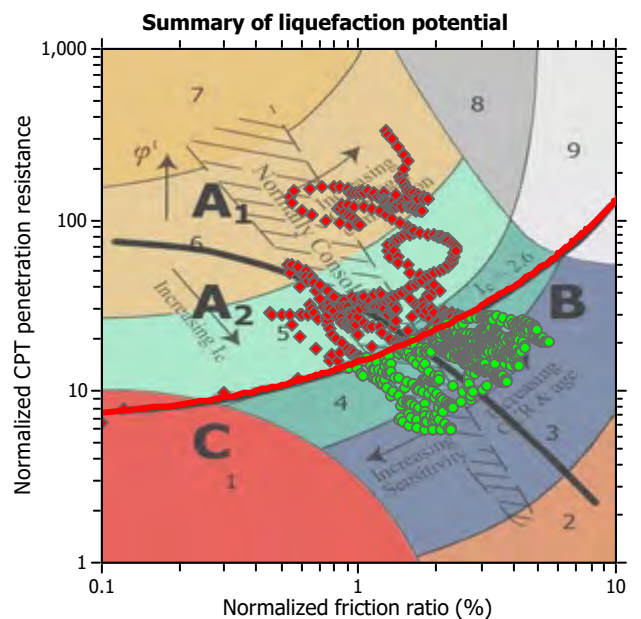
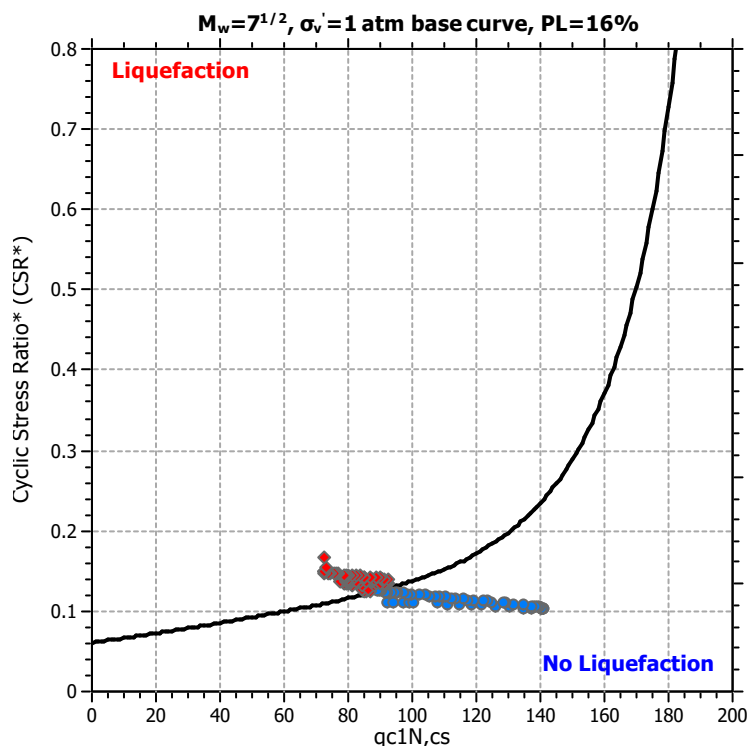
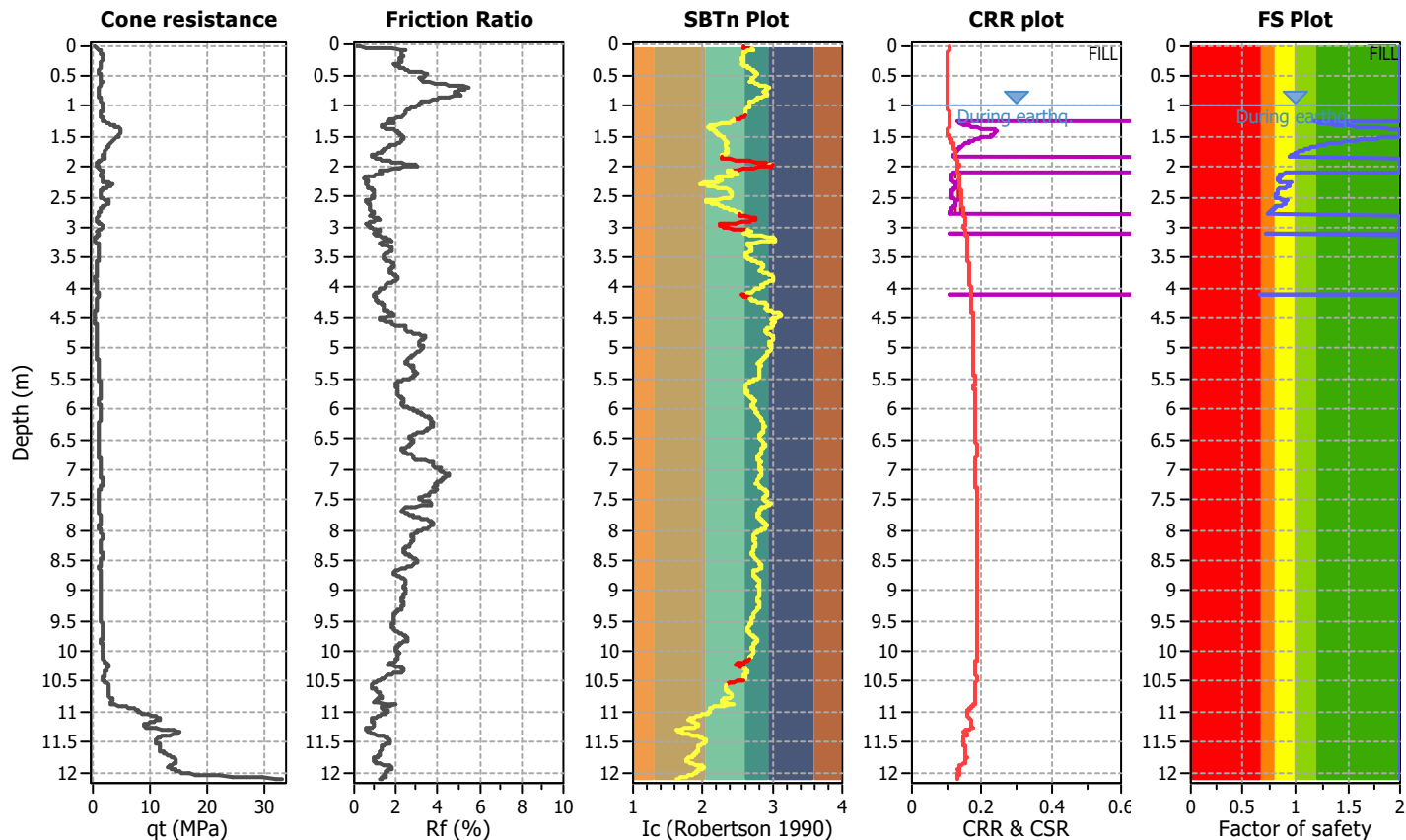
Project title : Sunfield Landholding

Location :

CPT file : CPT010

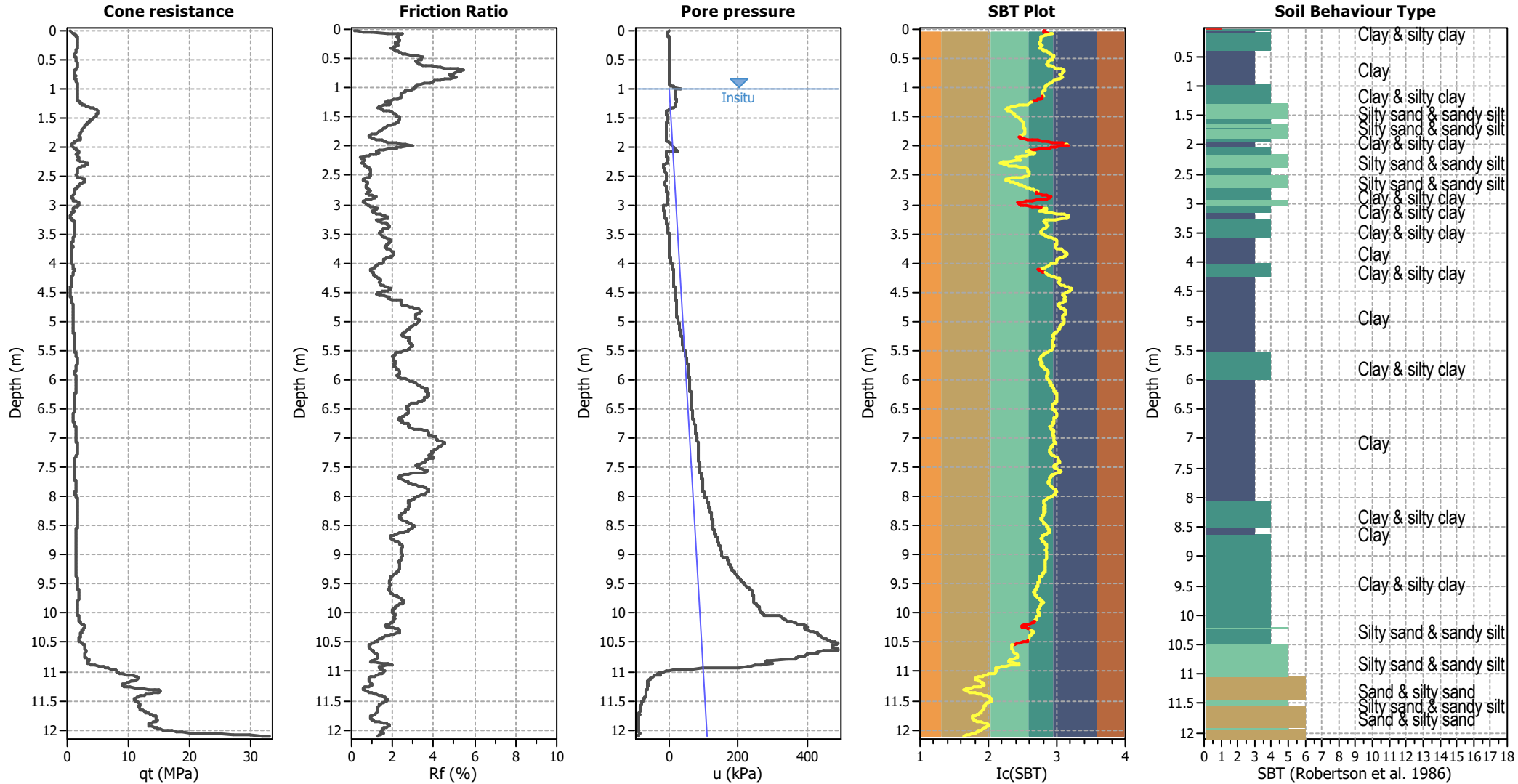
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	9.25 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
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CPT basic interpretation plots

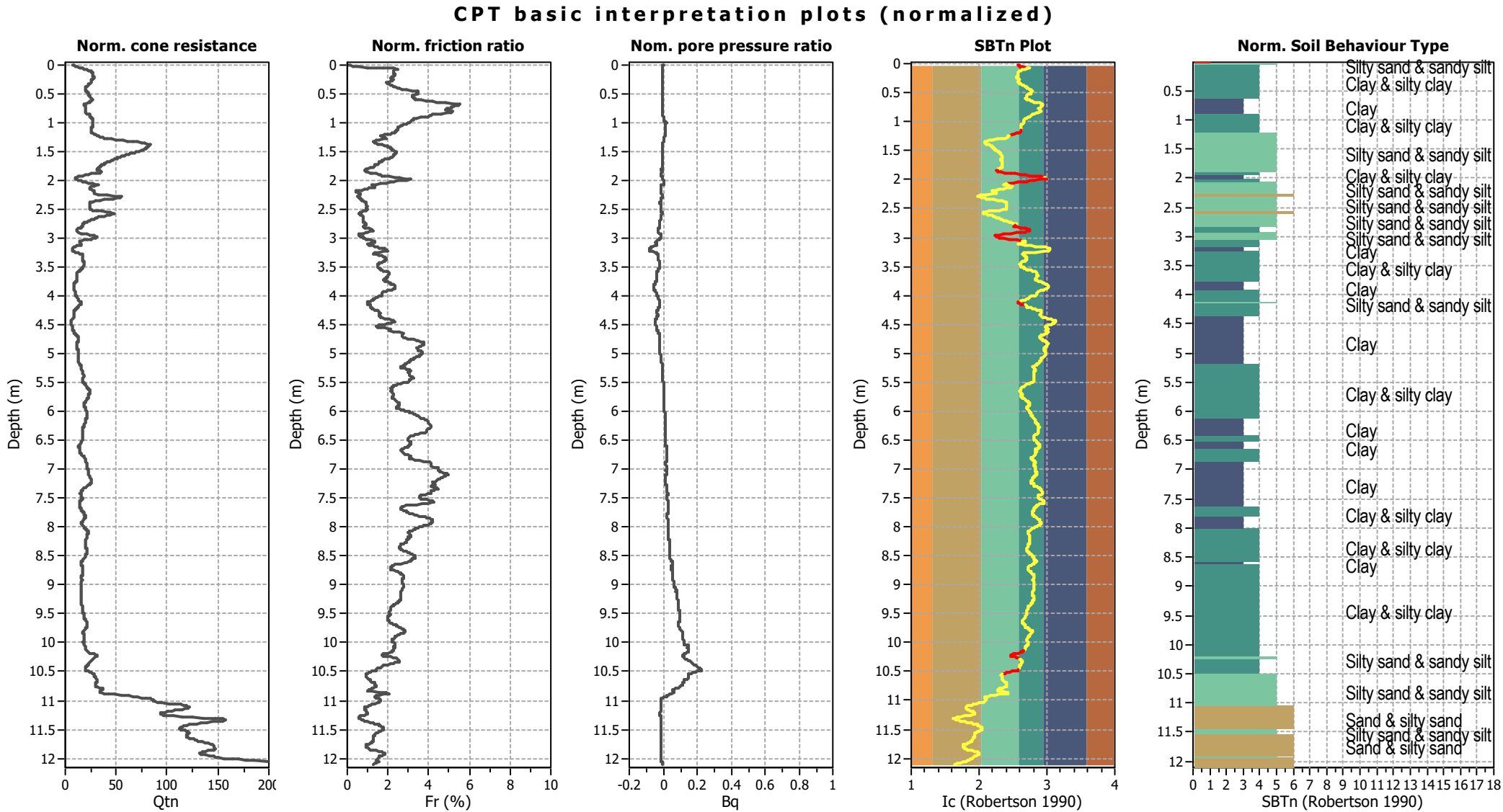


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Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
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Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
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SBT legend

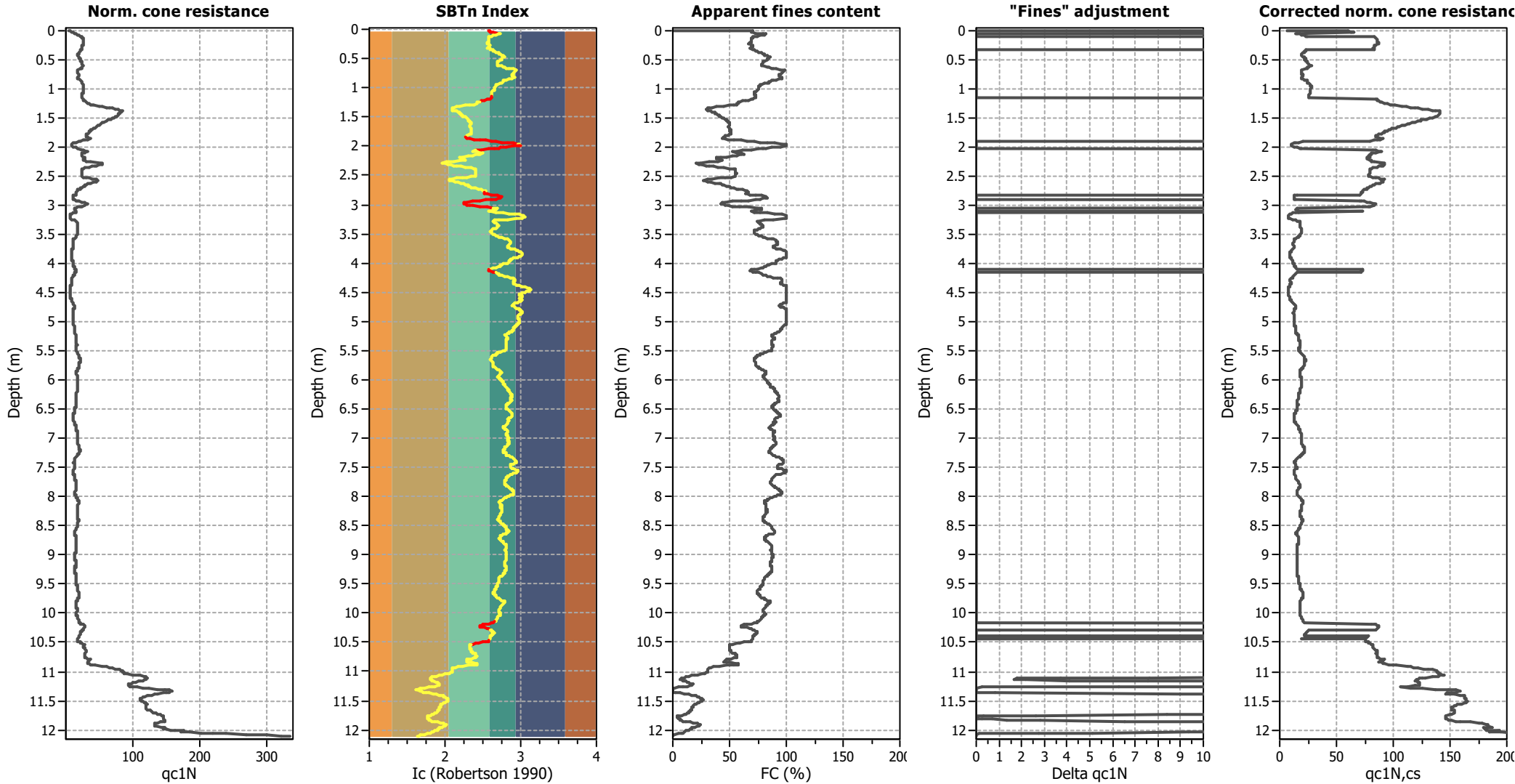
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Input parameters and analysis data

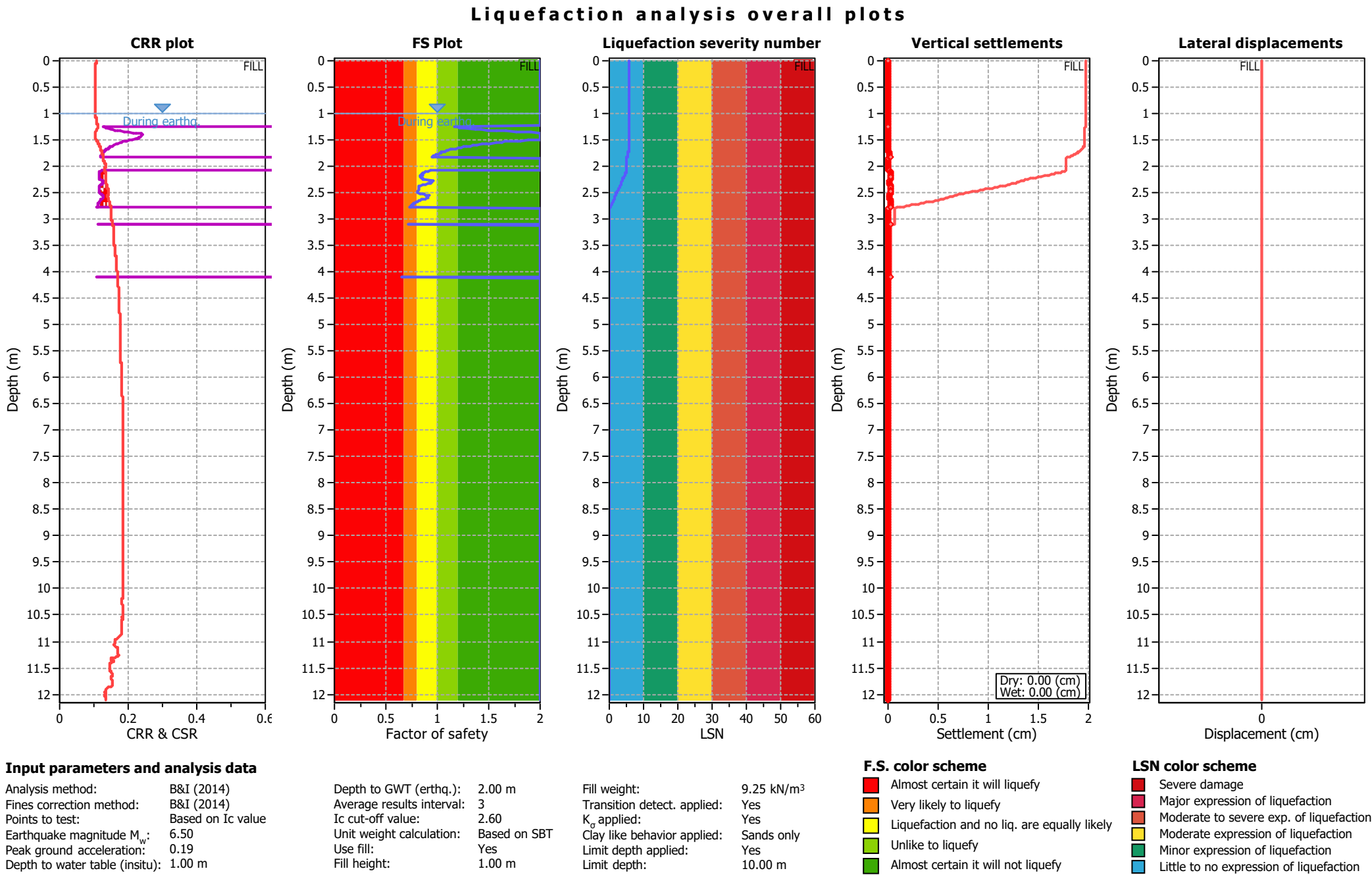
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
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Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots (intermediate results)

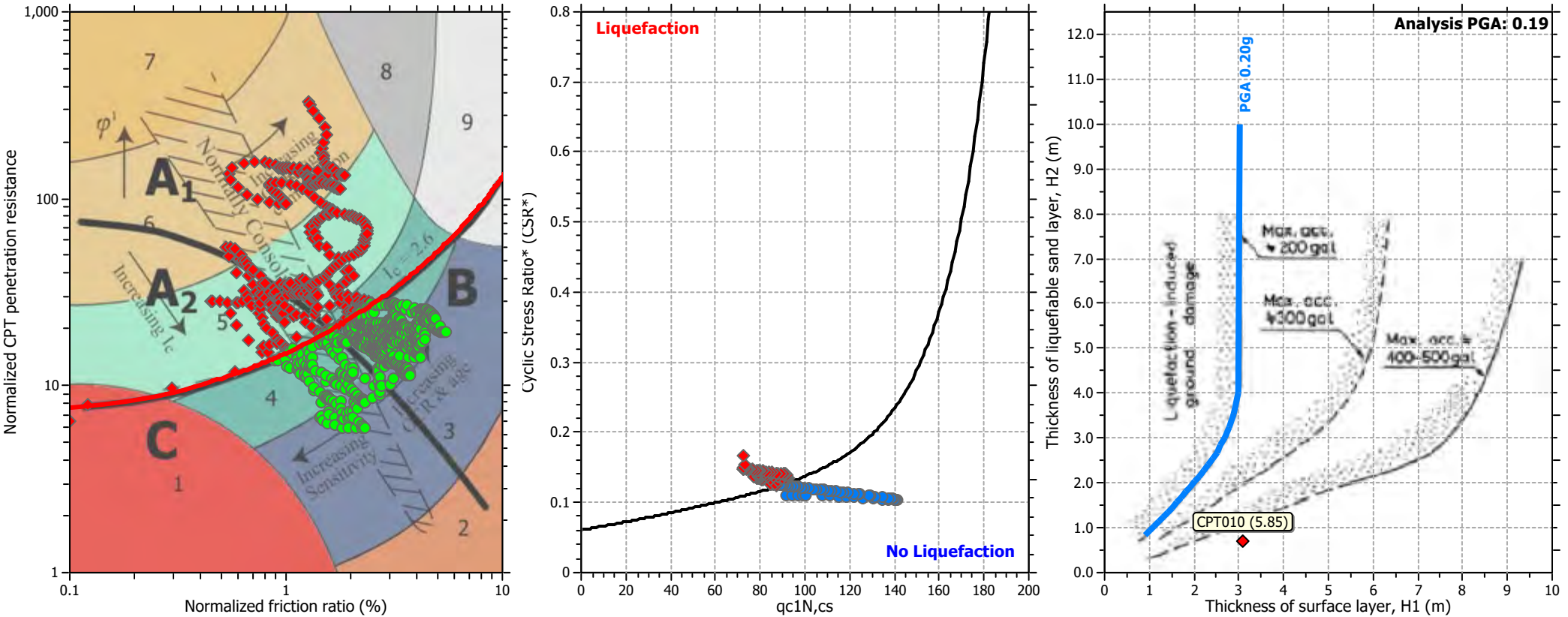


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
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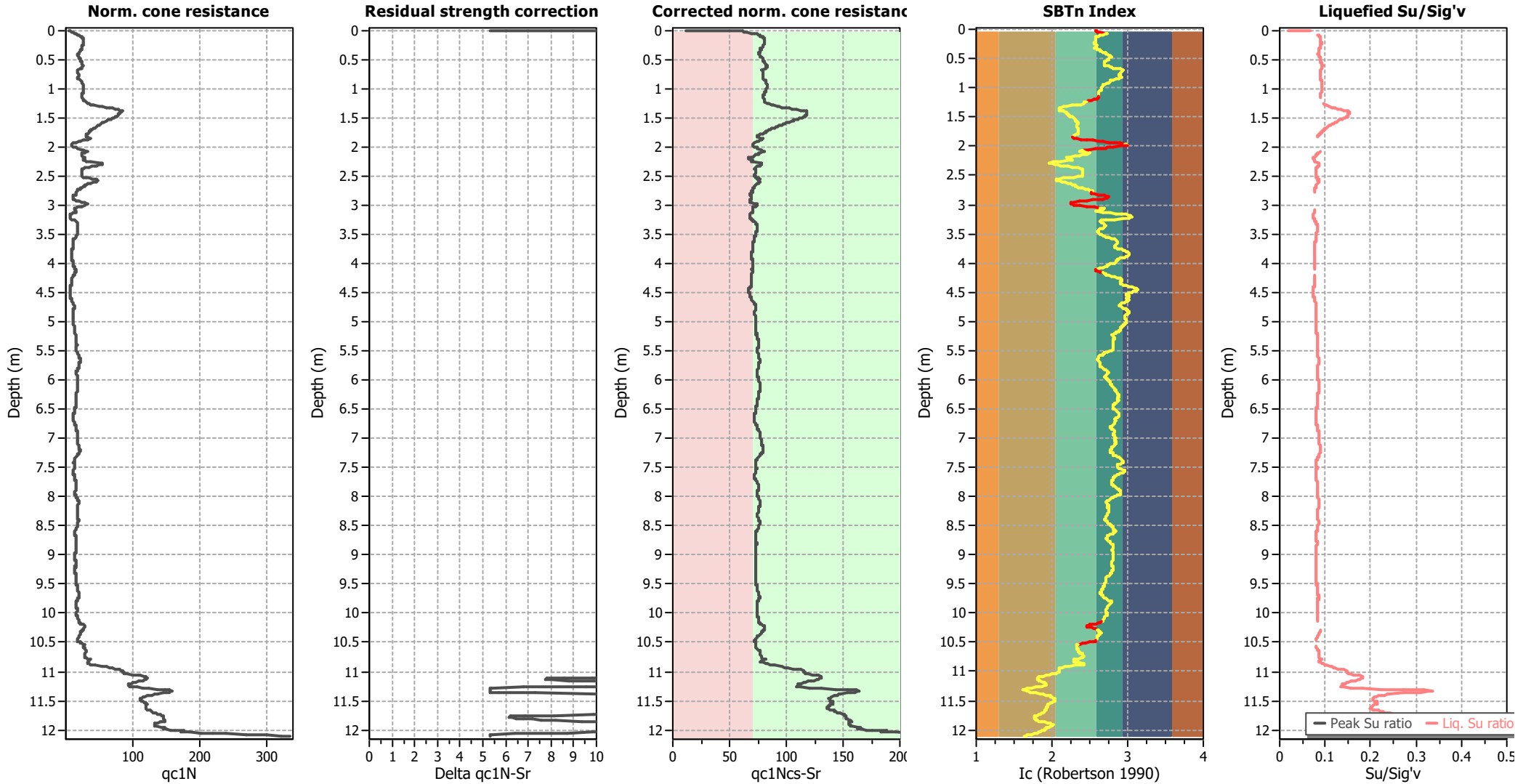
Liquefaction analysis summary plots



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Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
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Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

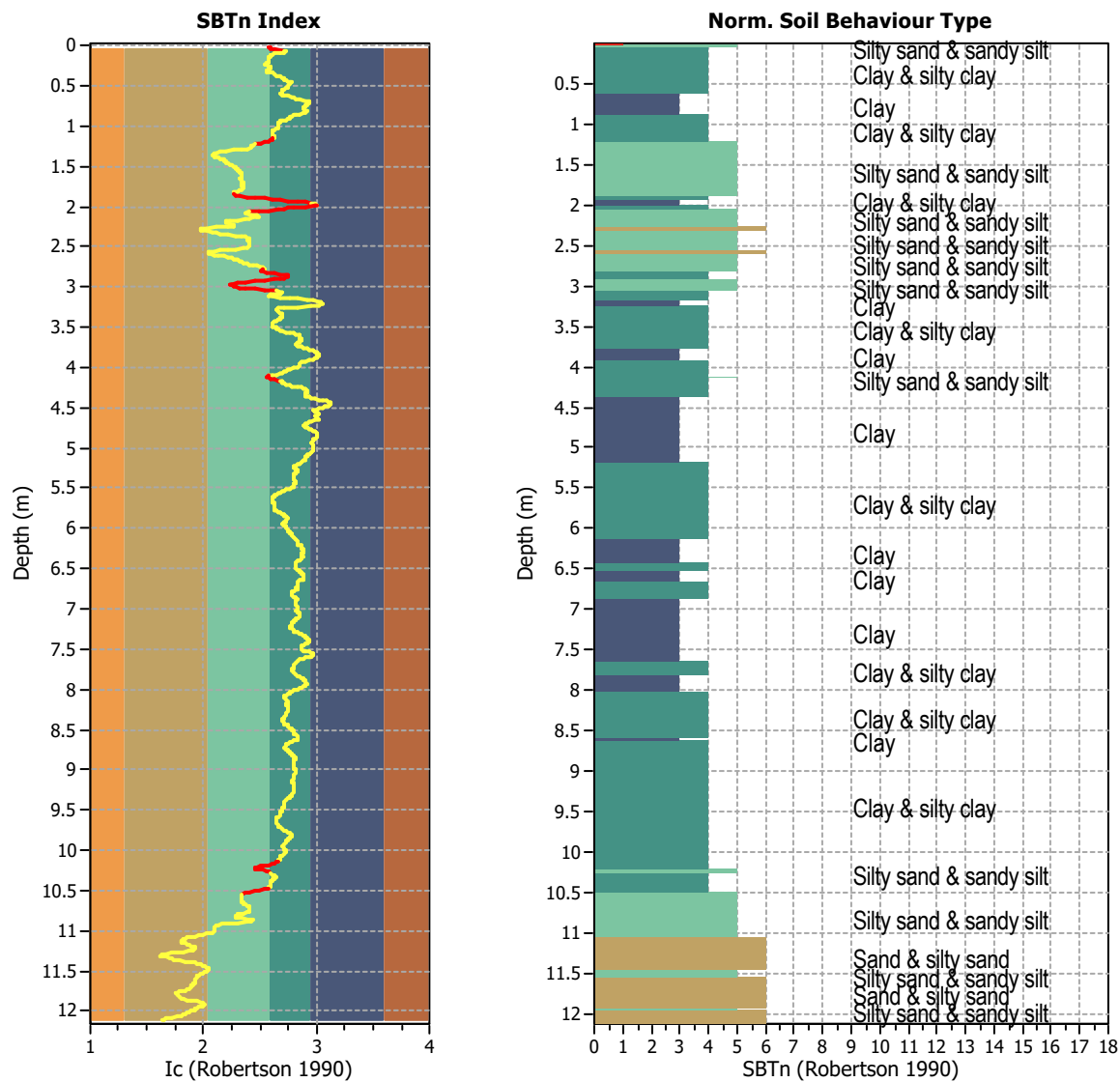
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

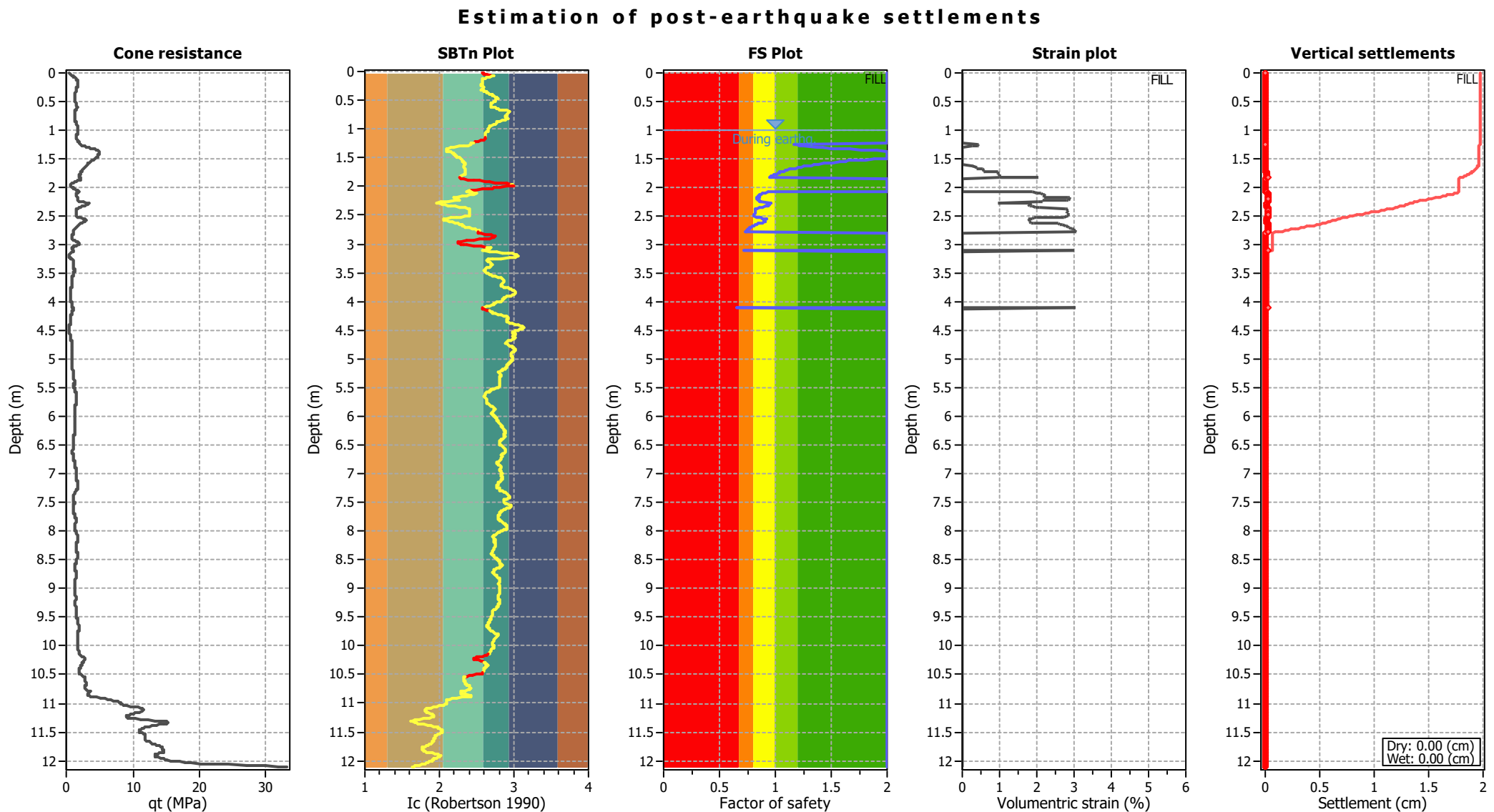


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

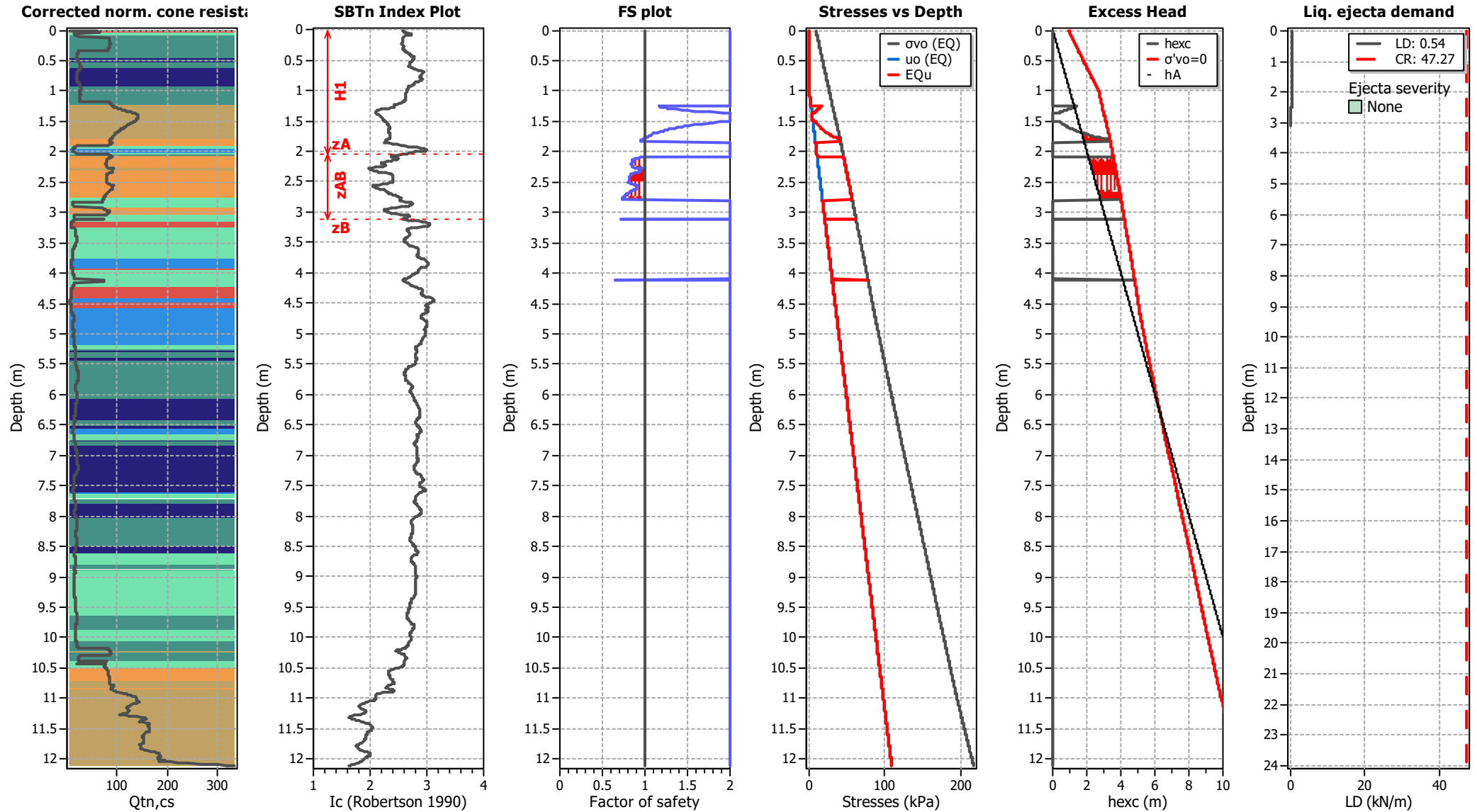
Total points in CPT file: 1211
Total points excluded: 94
Exclusion percentage: 7.76%
Number of layers detected: 11



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

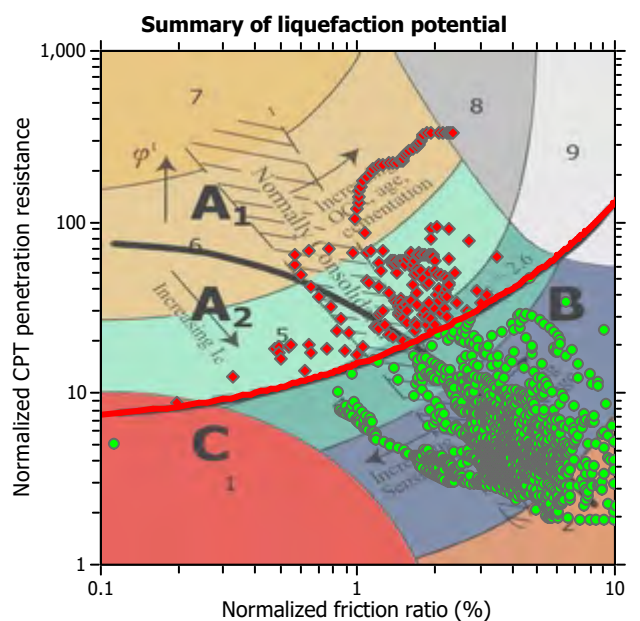
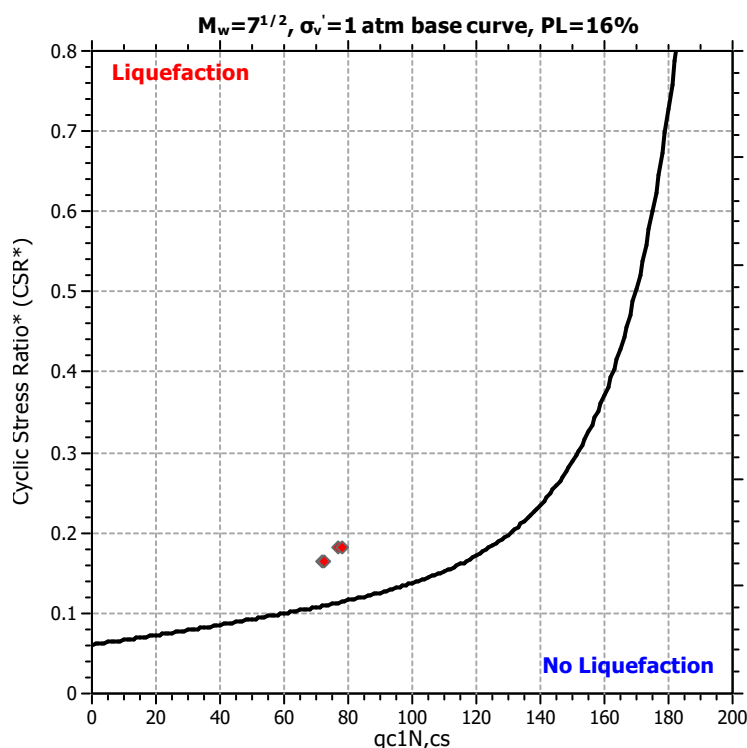
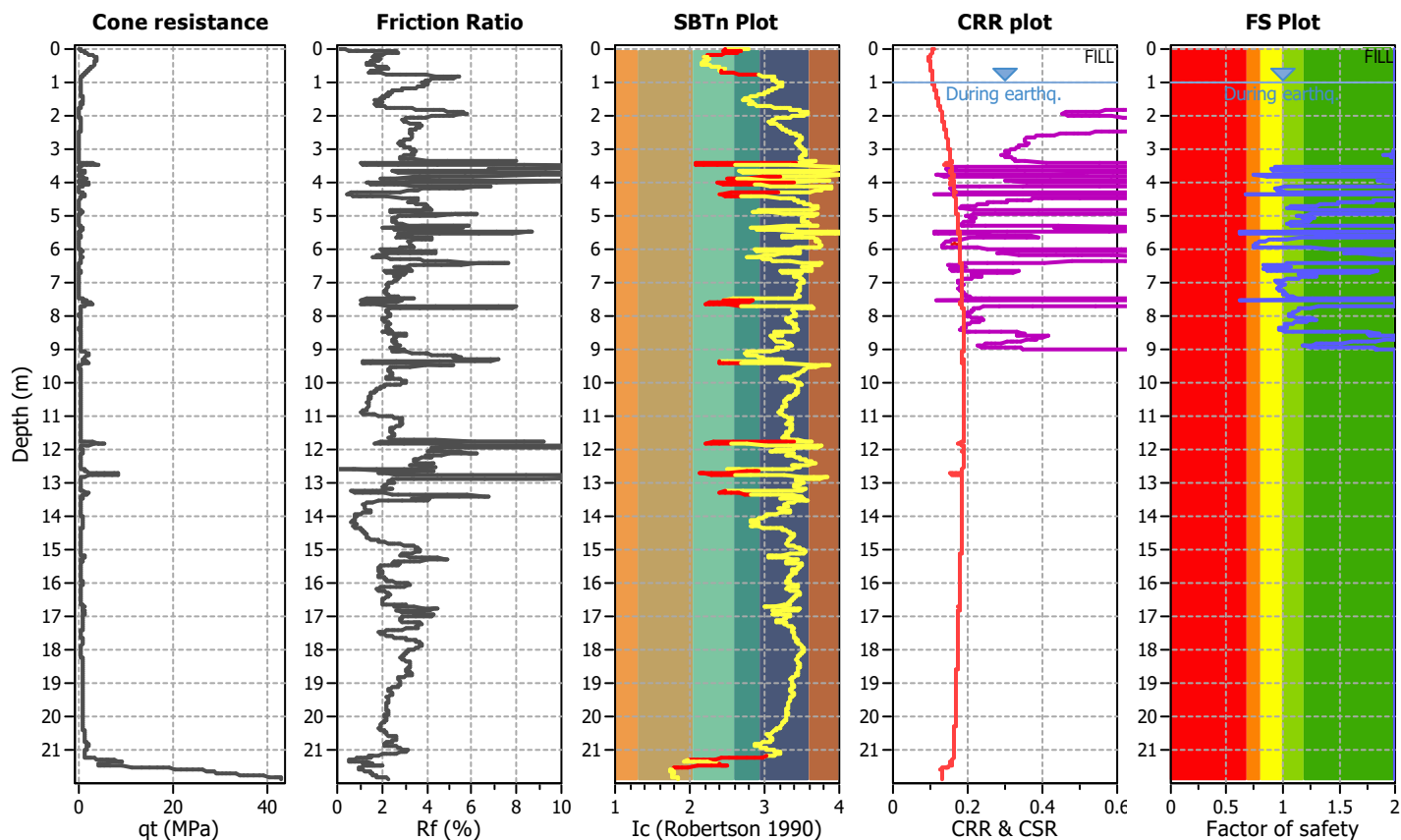
Project title : Sunfield Landholding

Location :

CPT file : CPT011

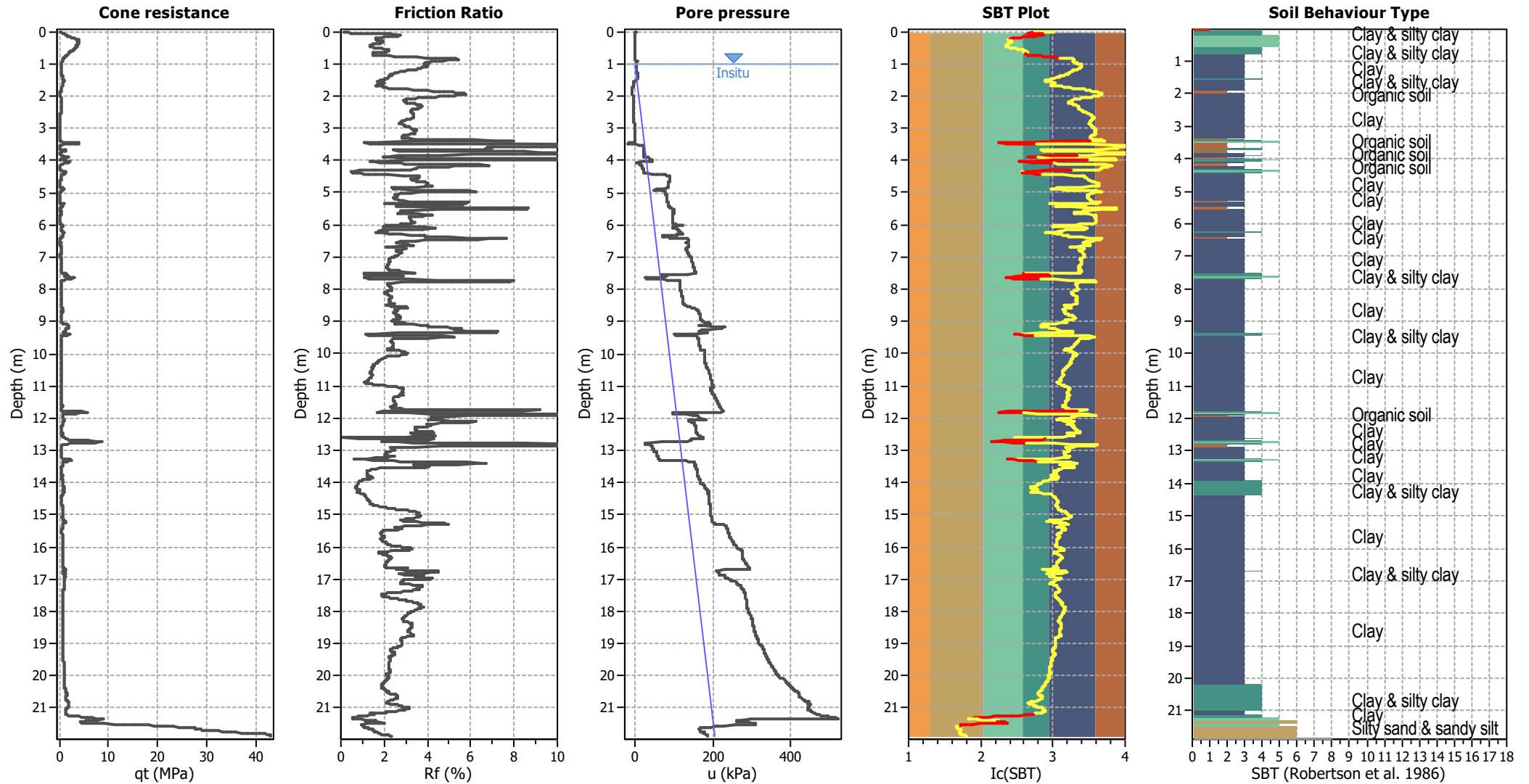
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

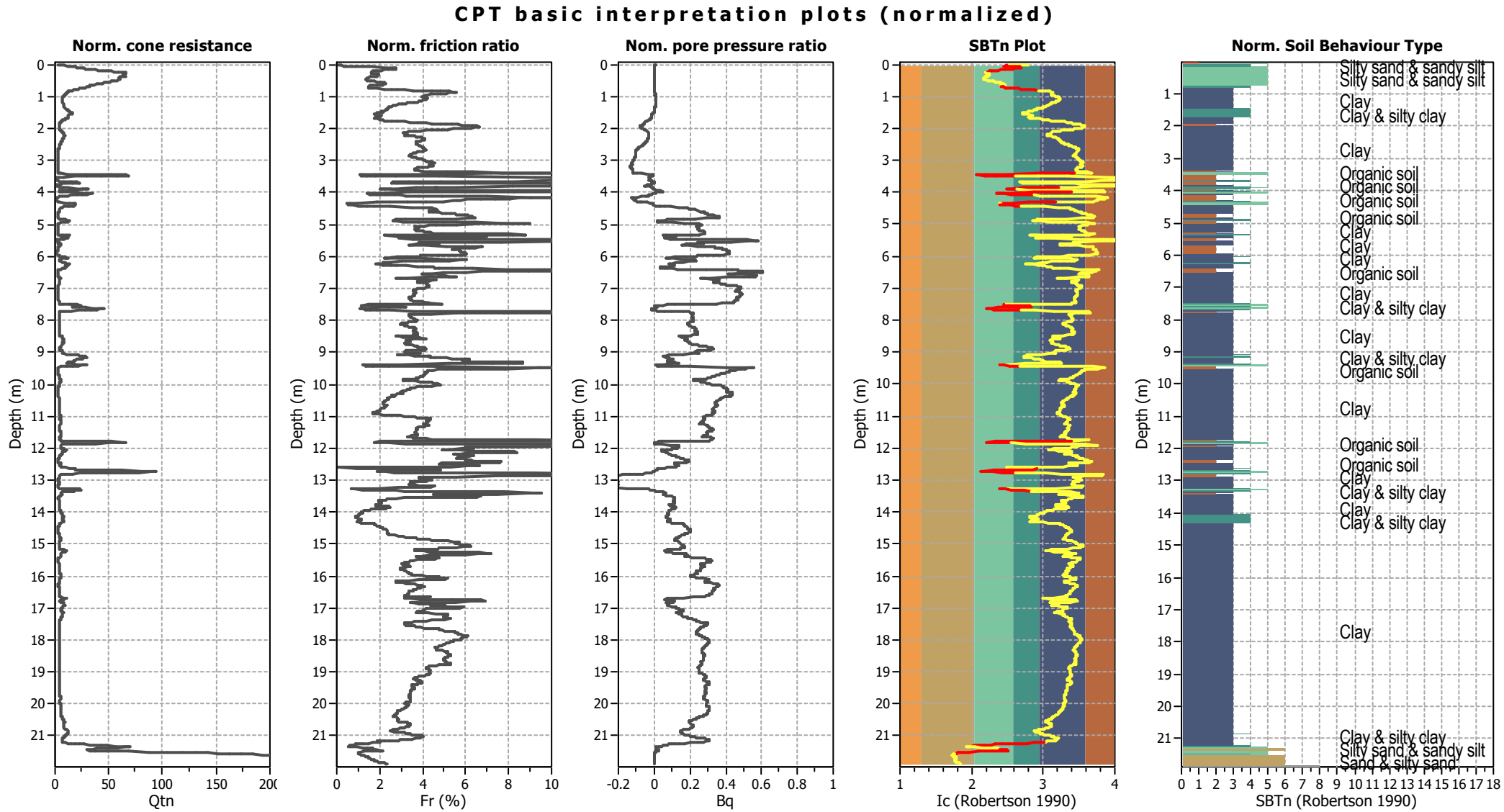


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

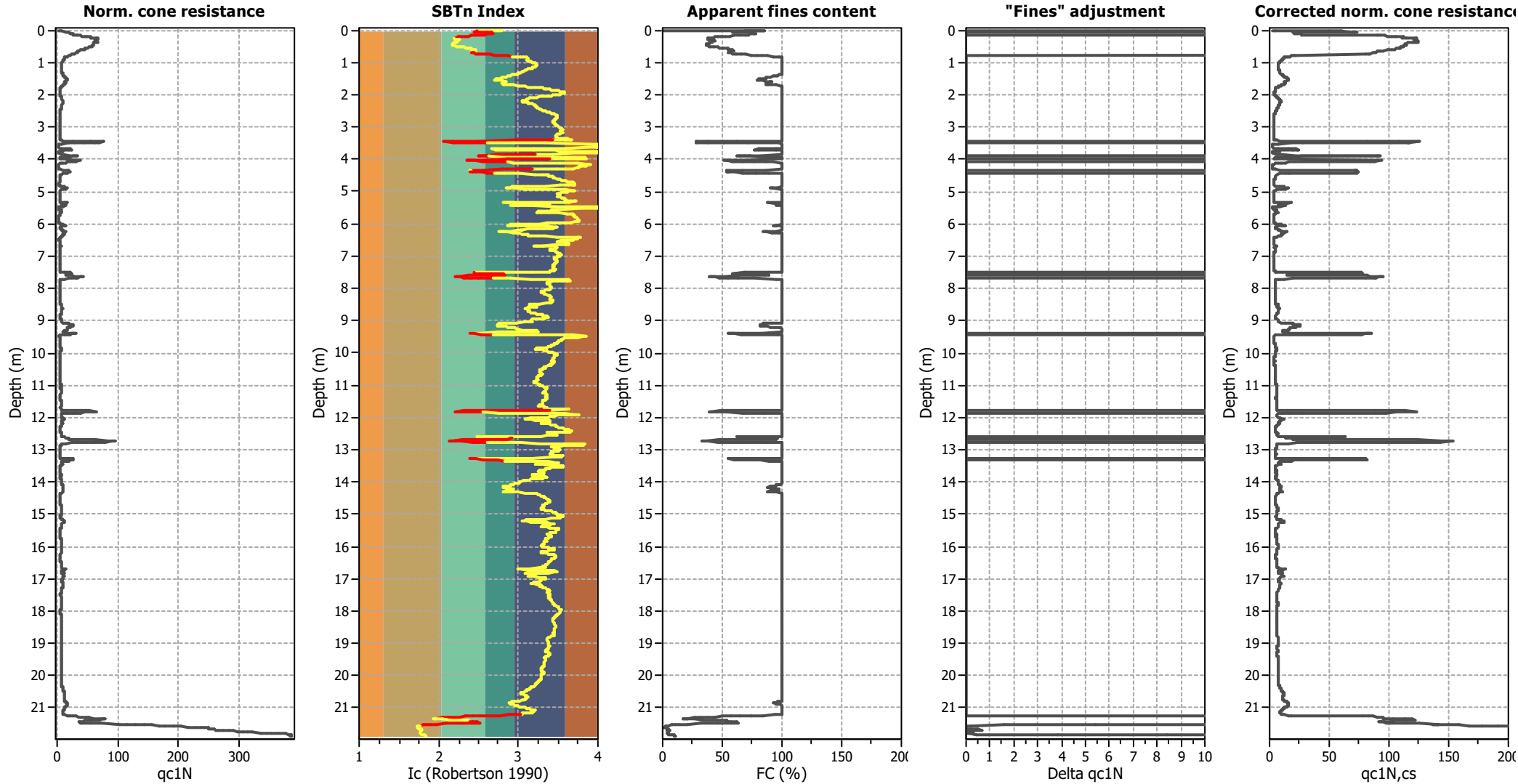
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

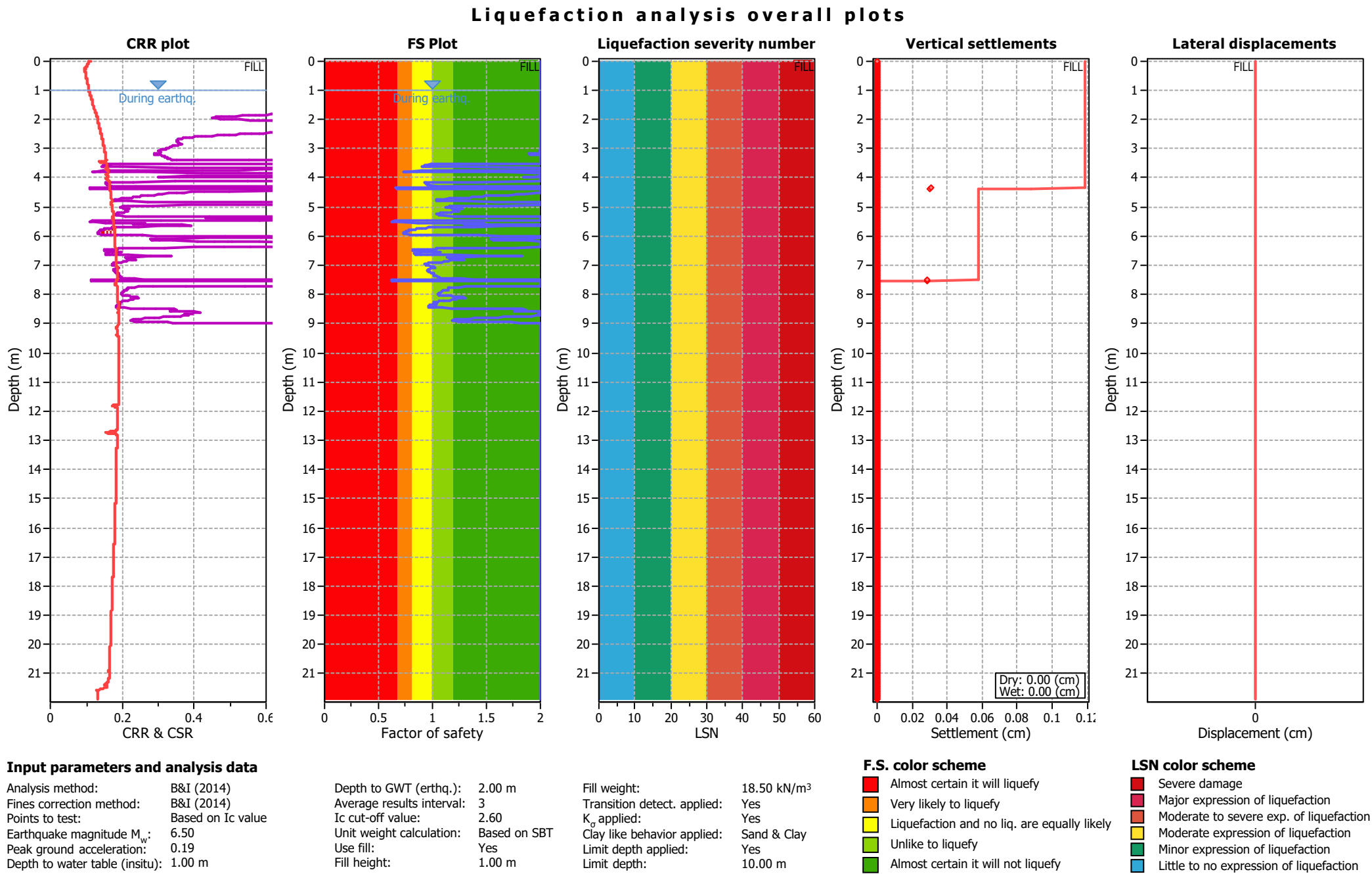
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

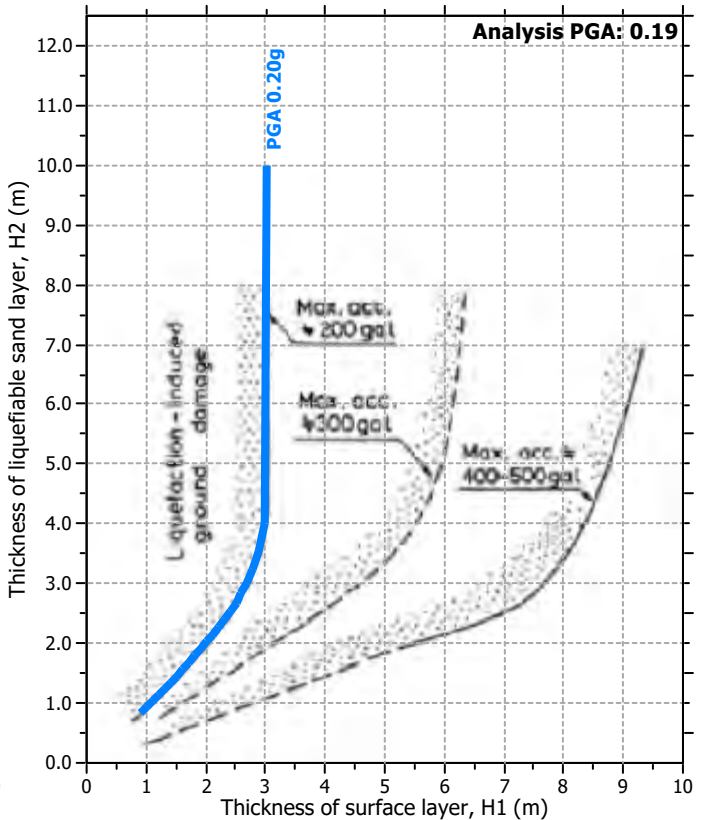
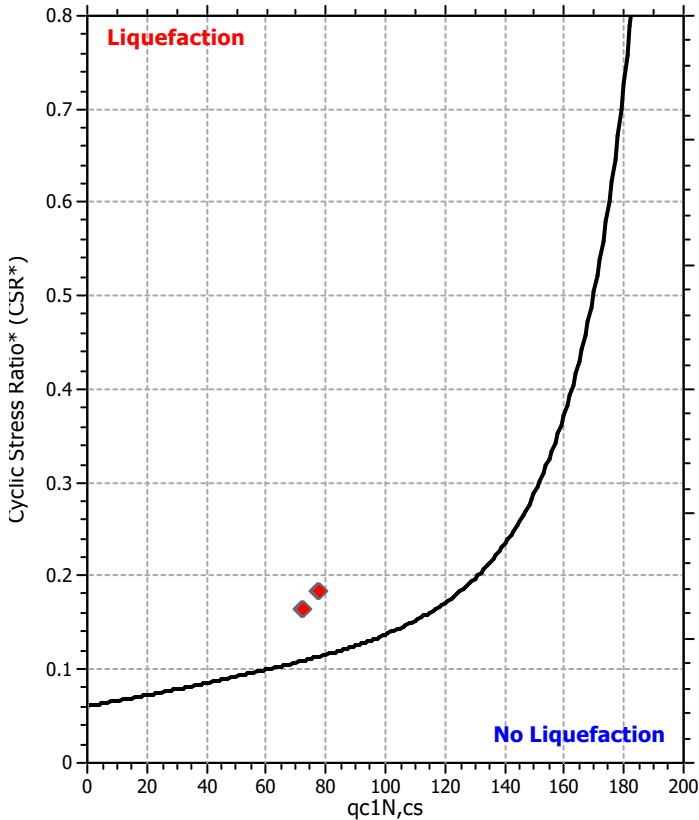
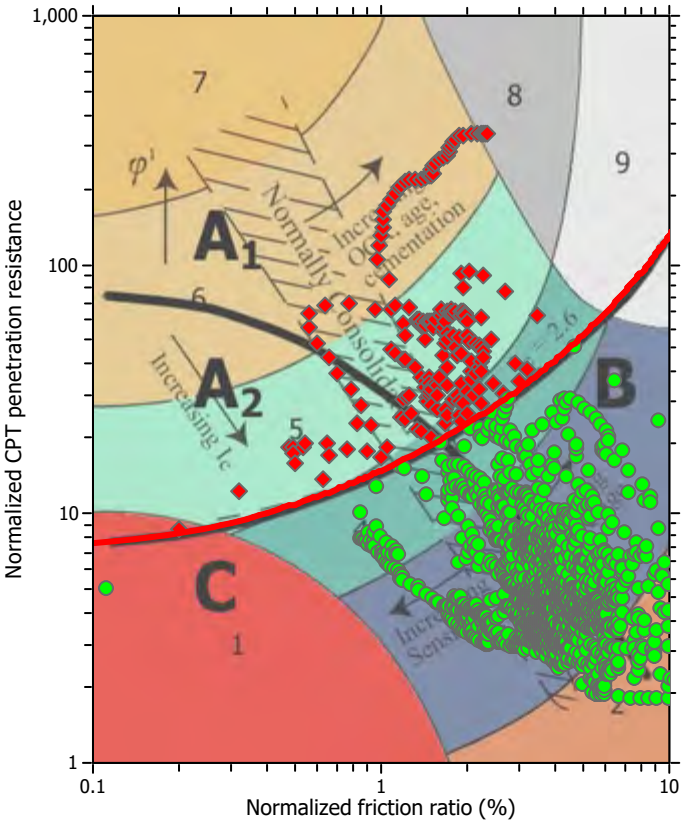


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



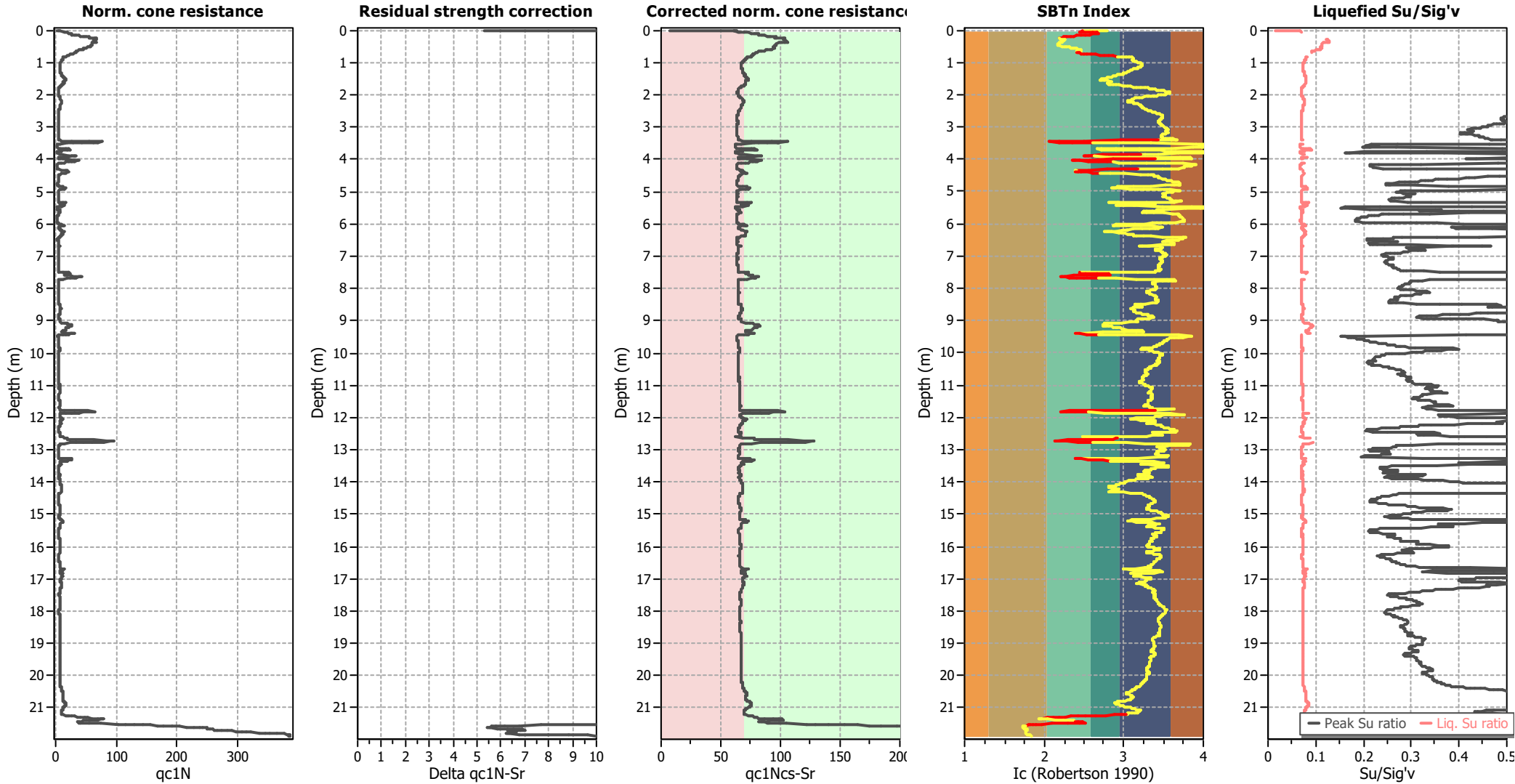
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

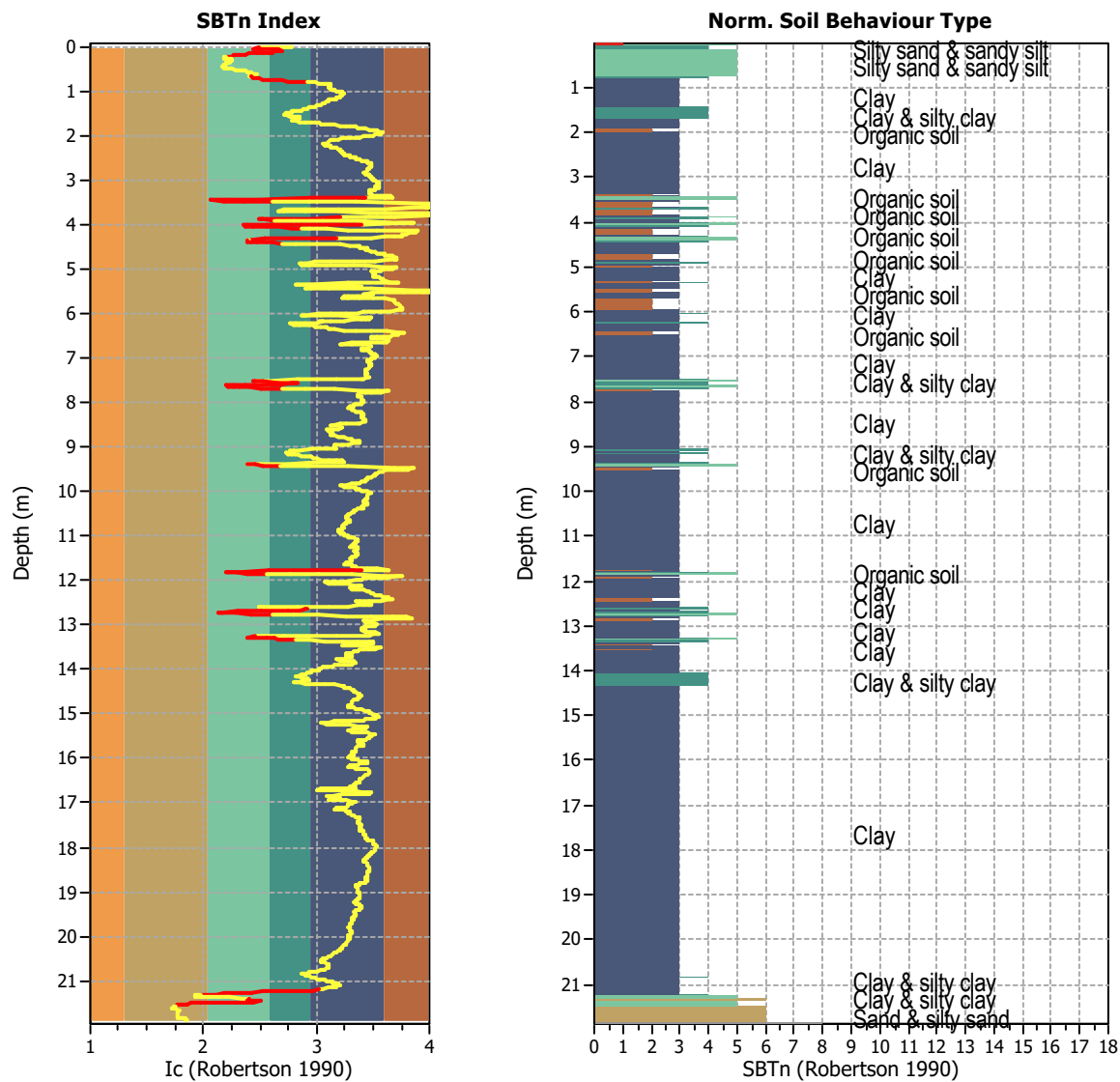
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



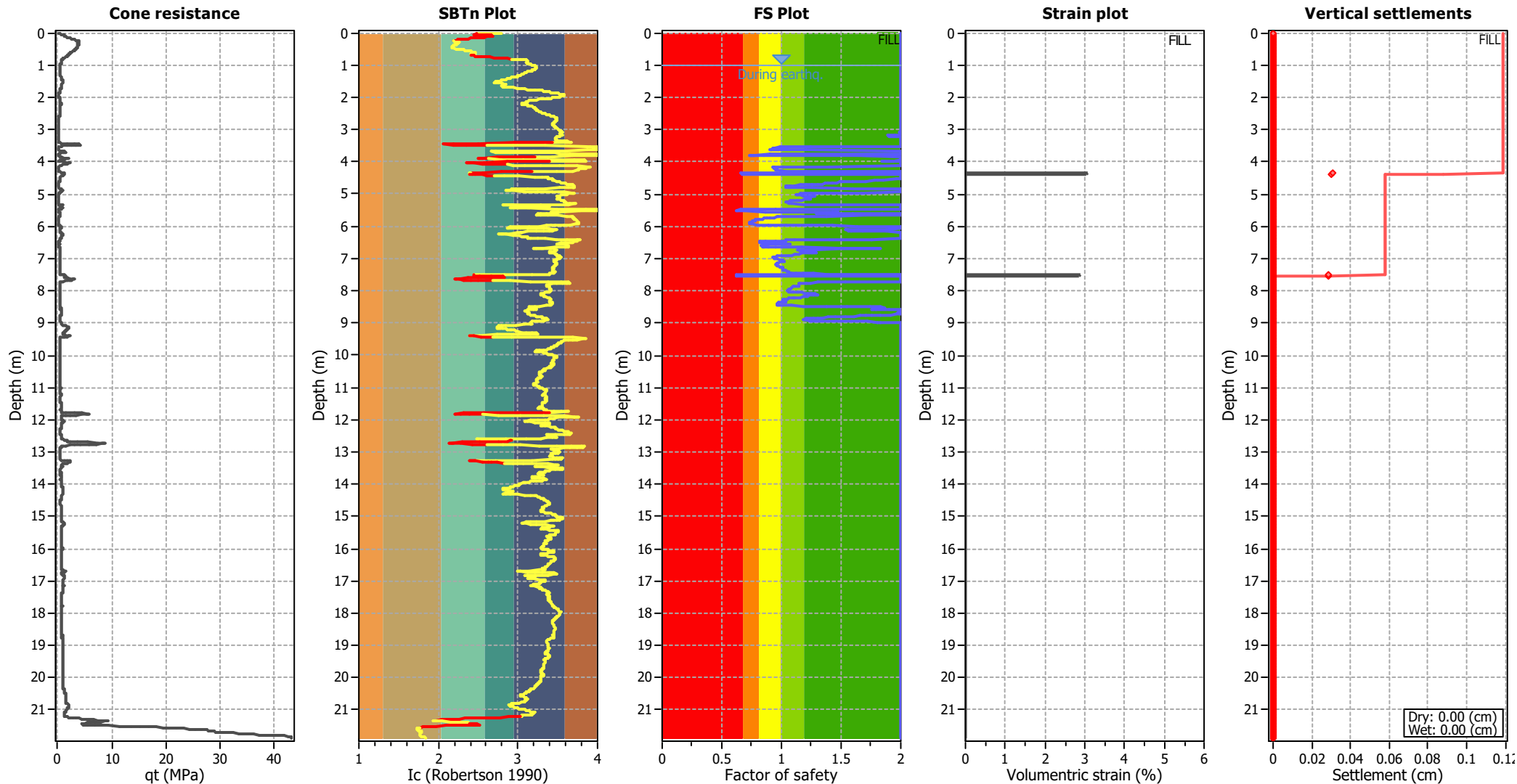
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 2188
Total points excluded: 161
Exclusion percentage: 7.36%
Number of layers detected: 23

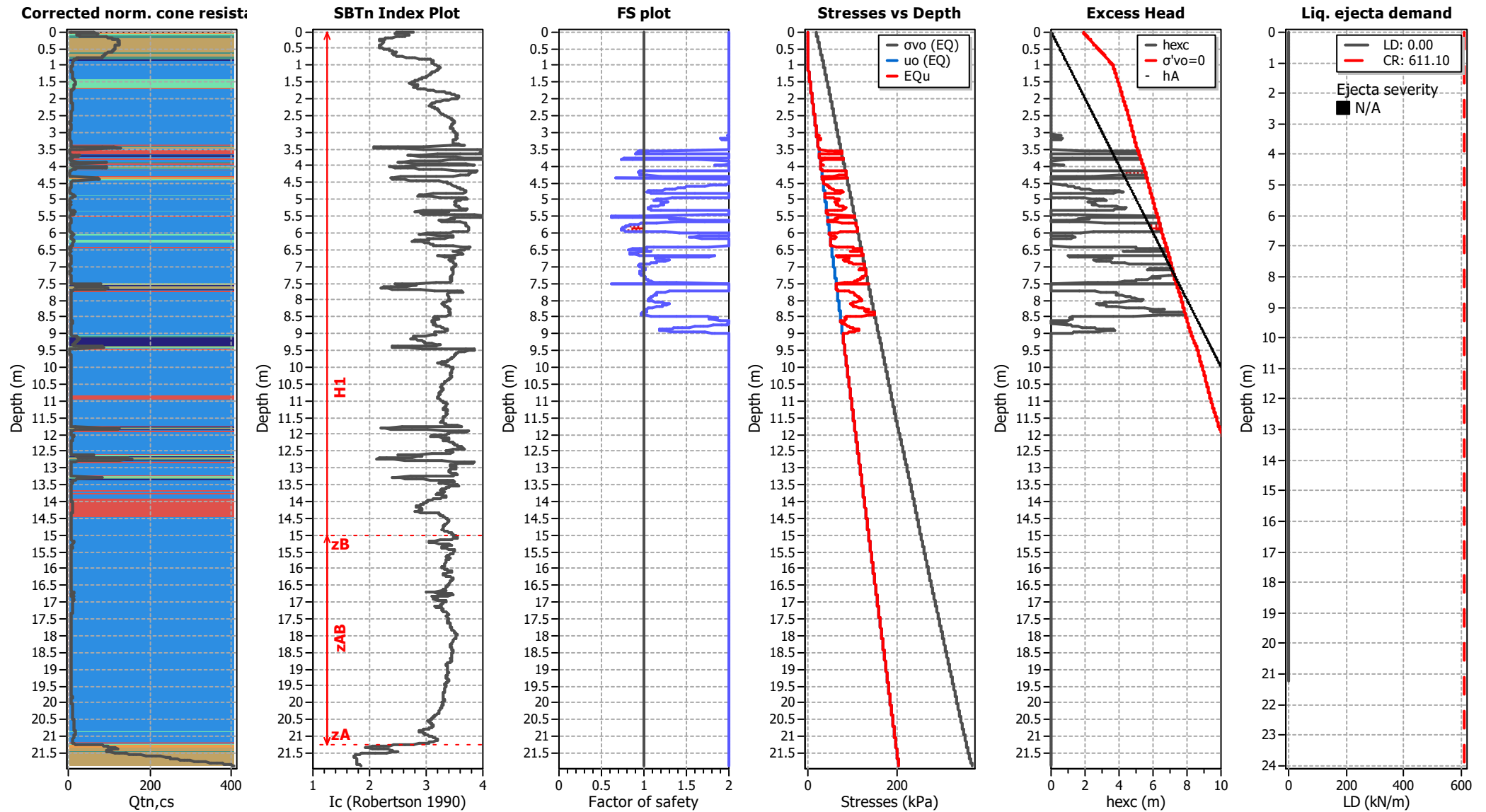
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

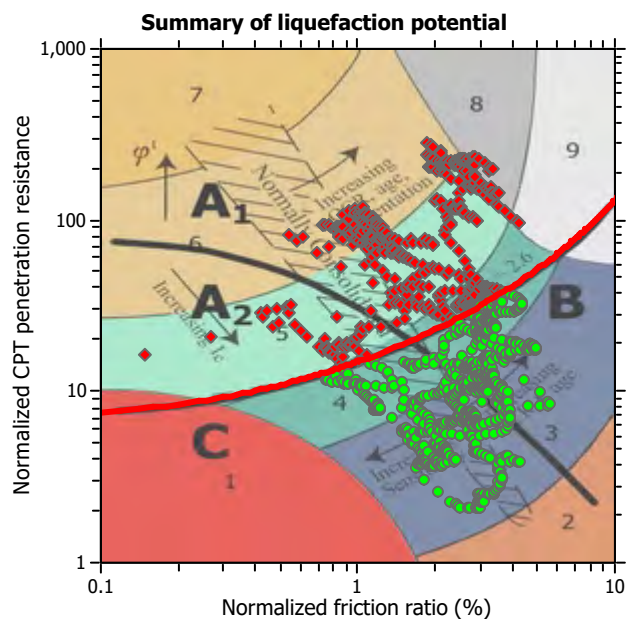
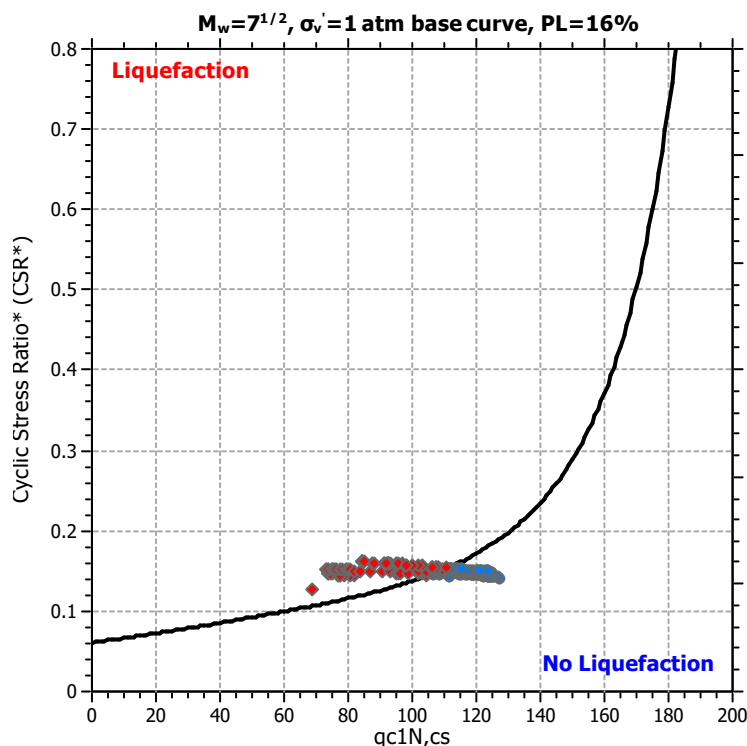
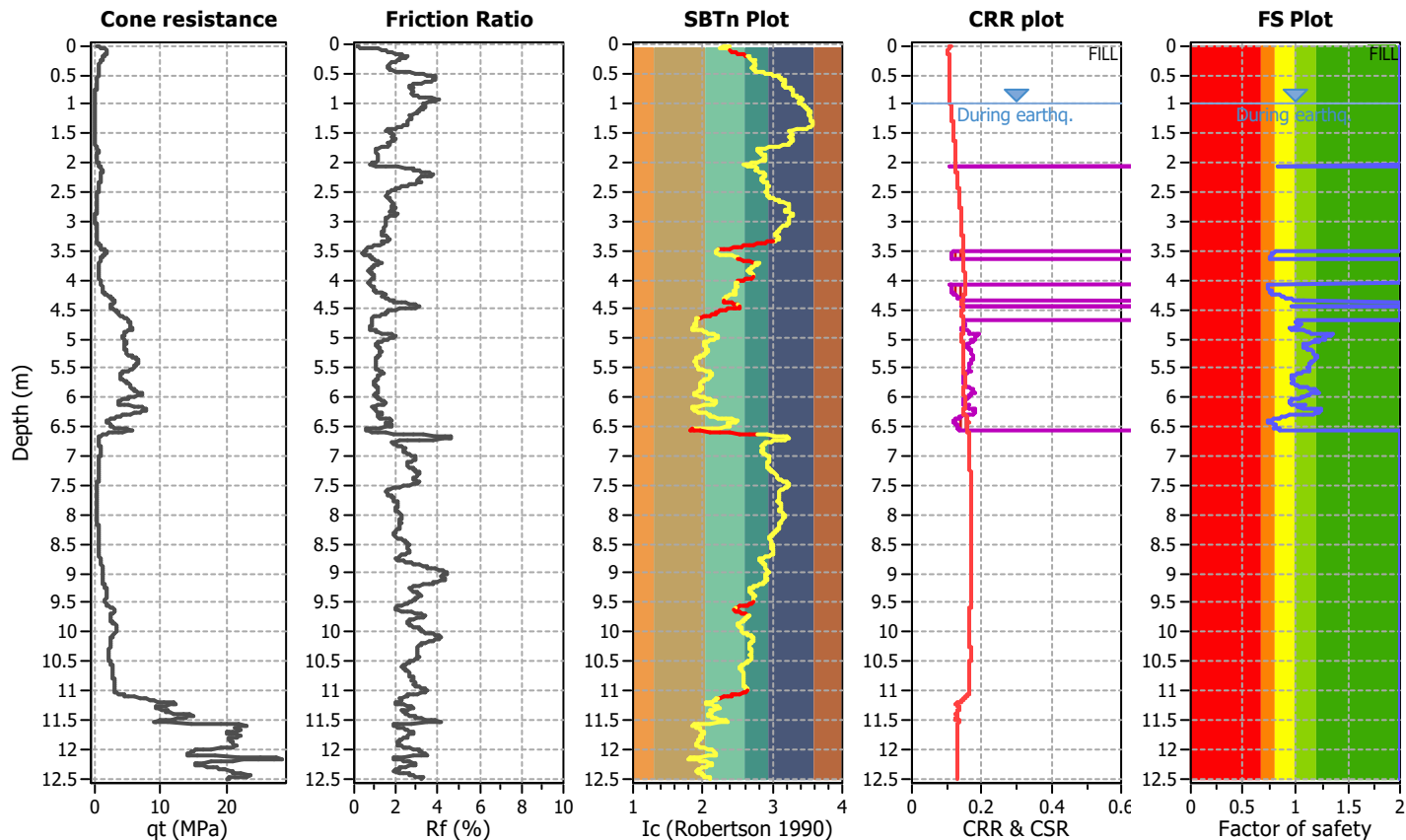
Project title : Sunfield Landholding

Location :

CPT file : CPT012

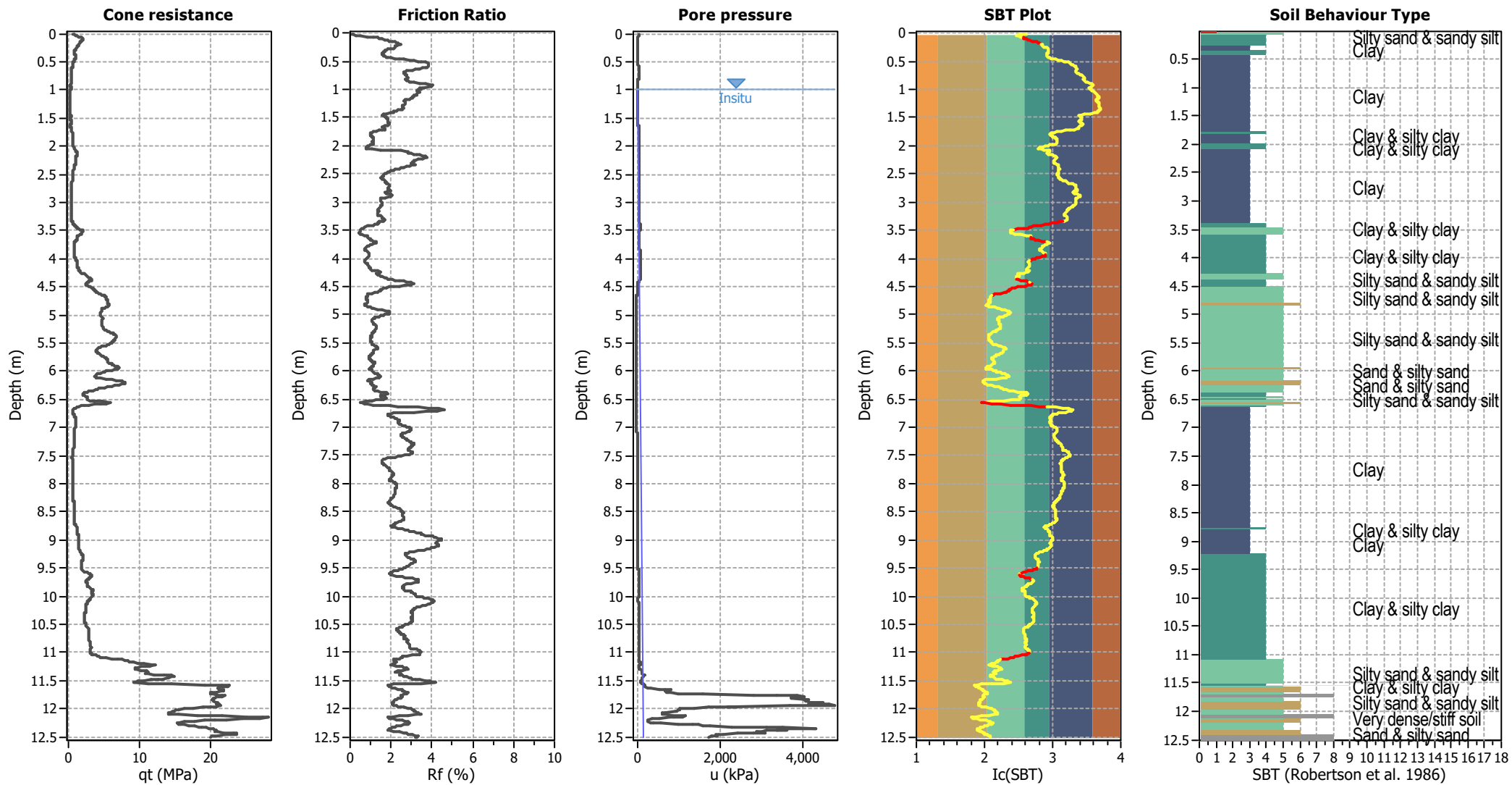
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

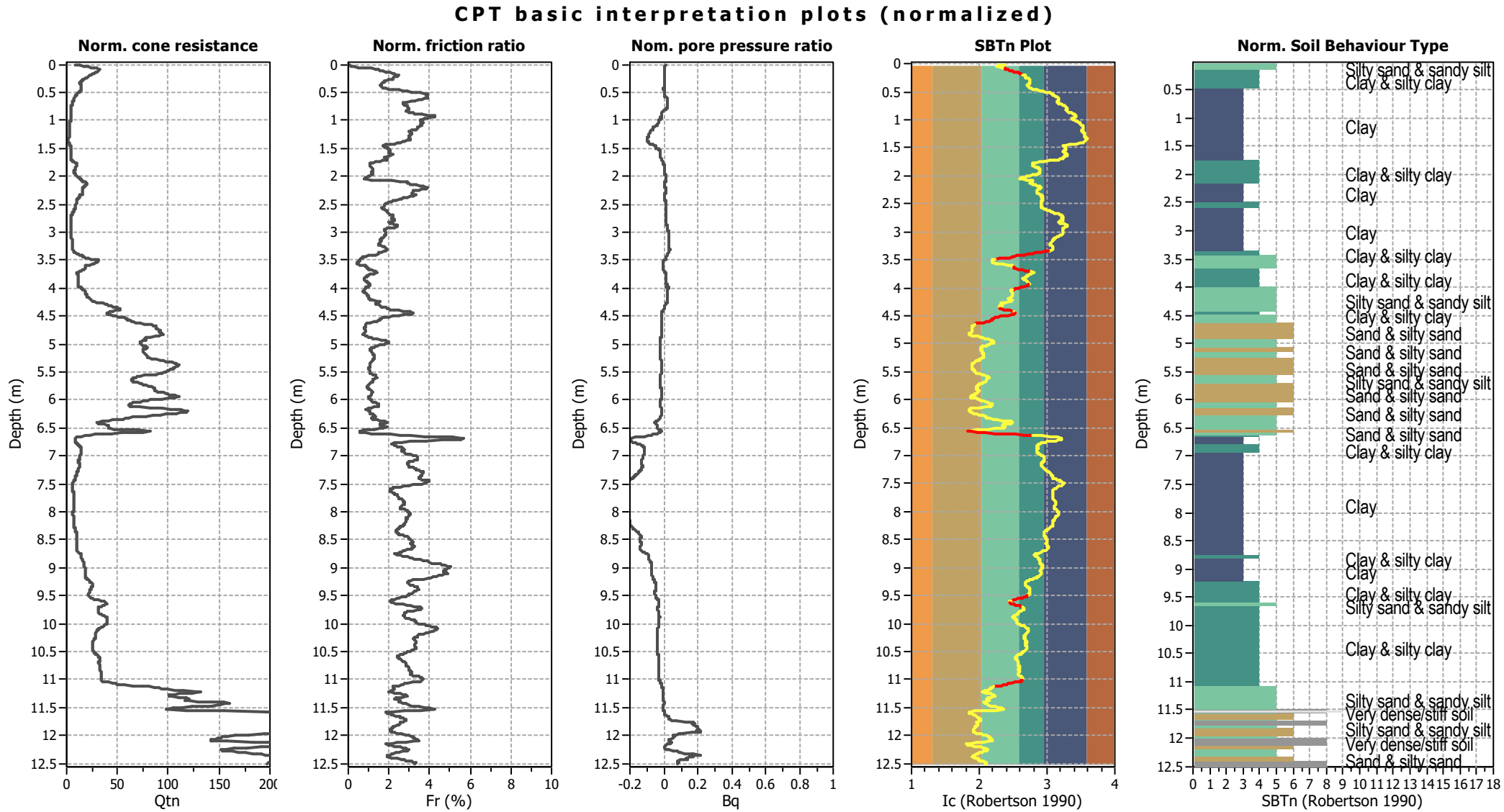


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

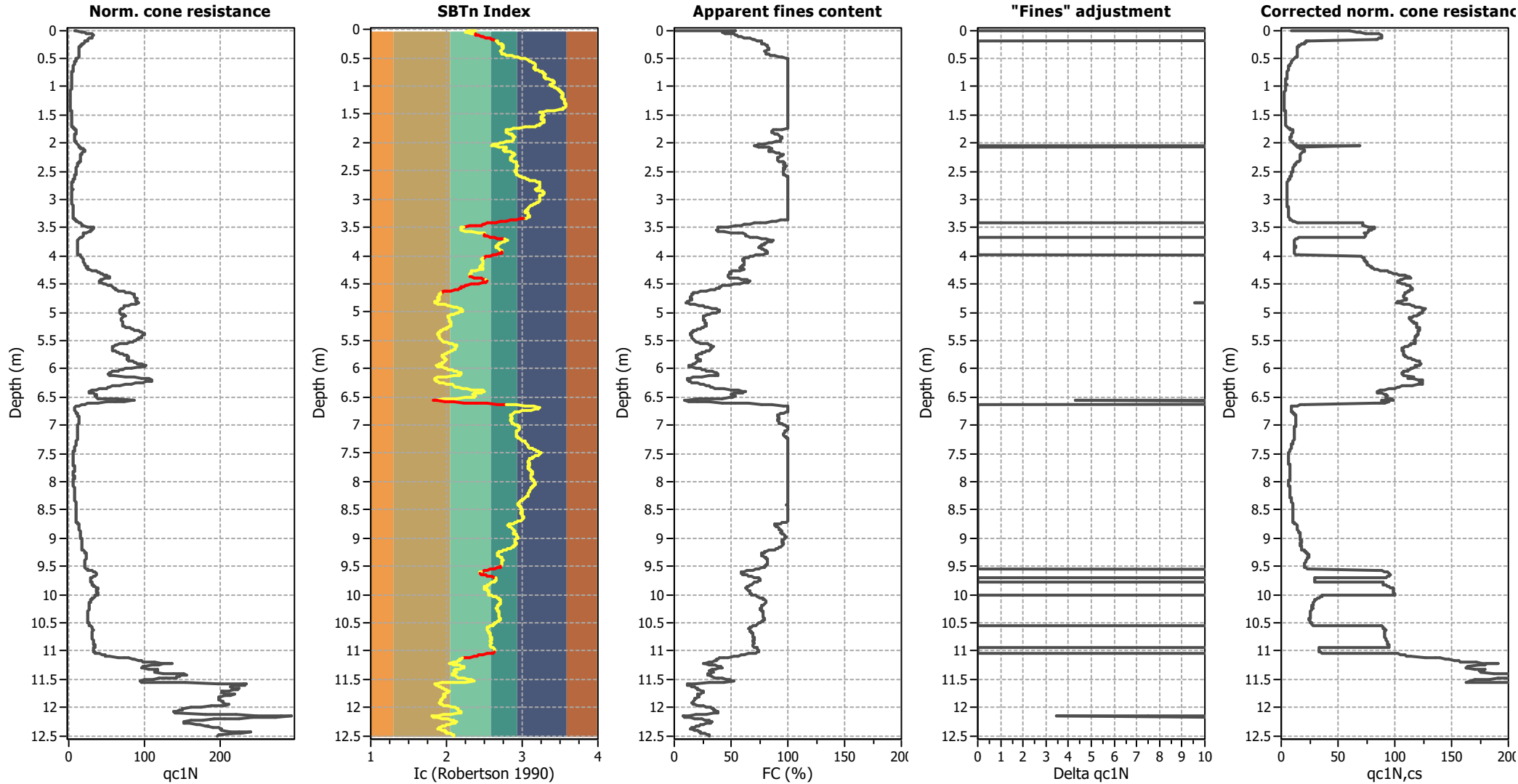


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

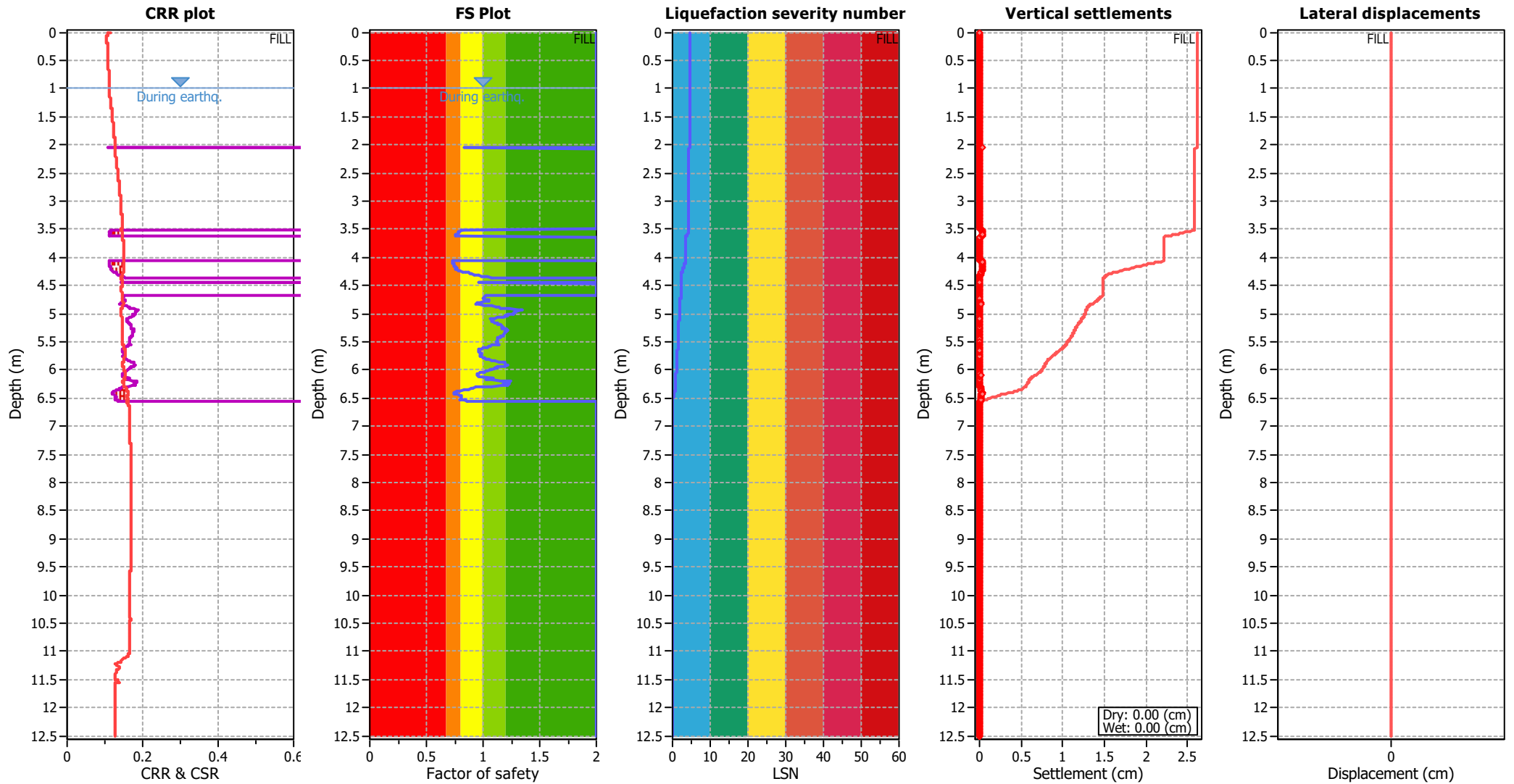
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

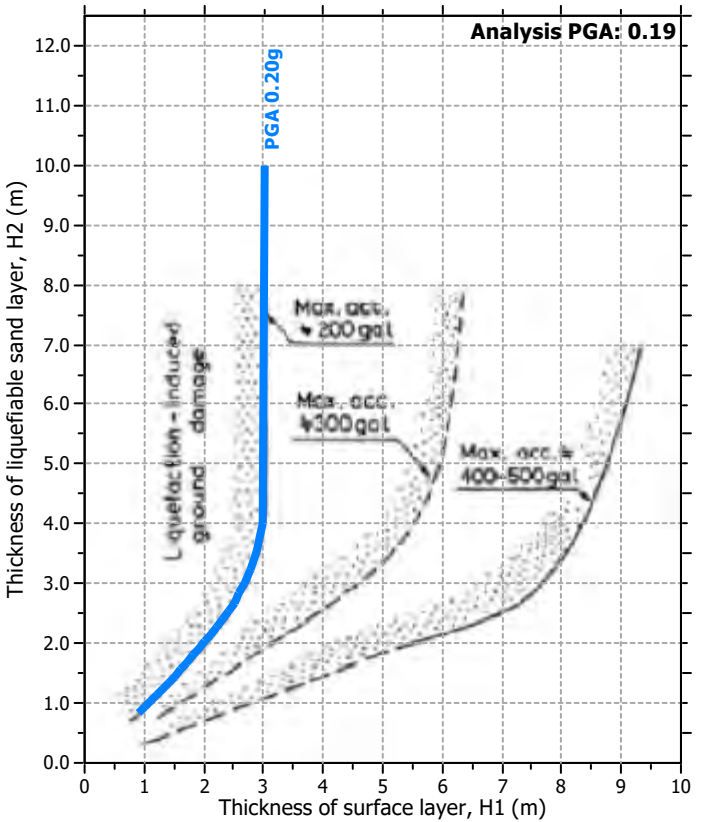
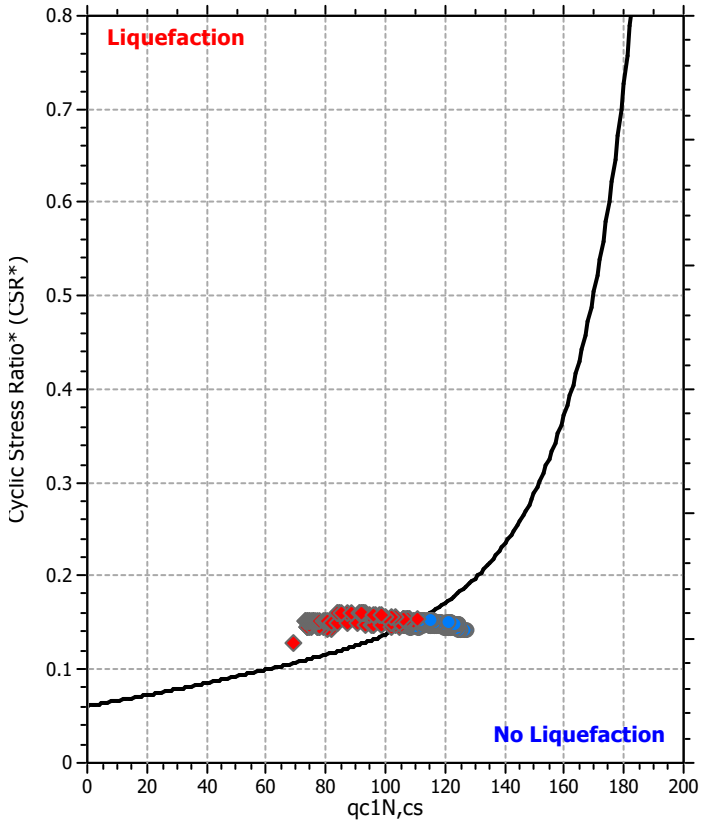
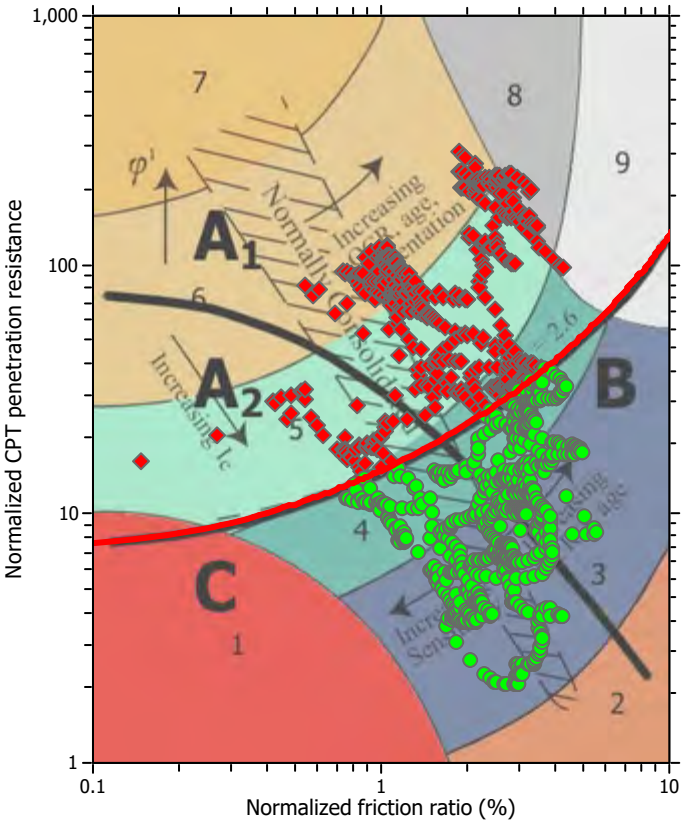
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

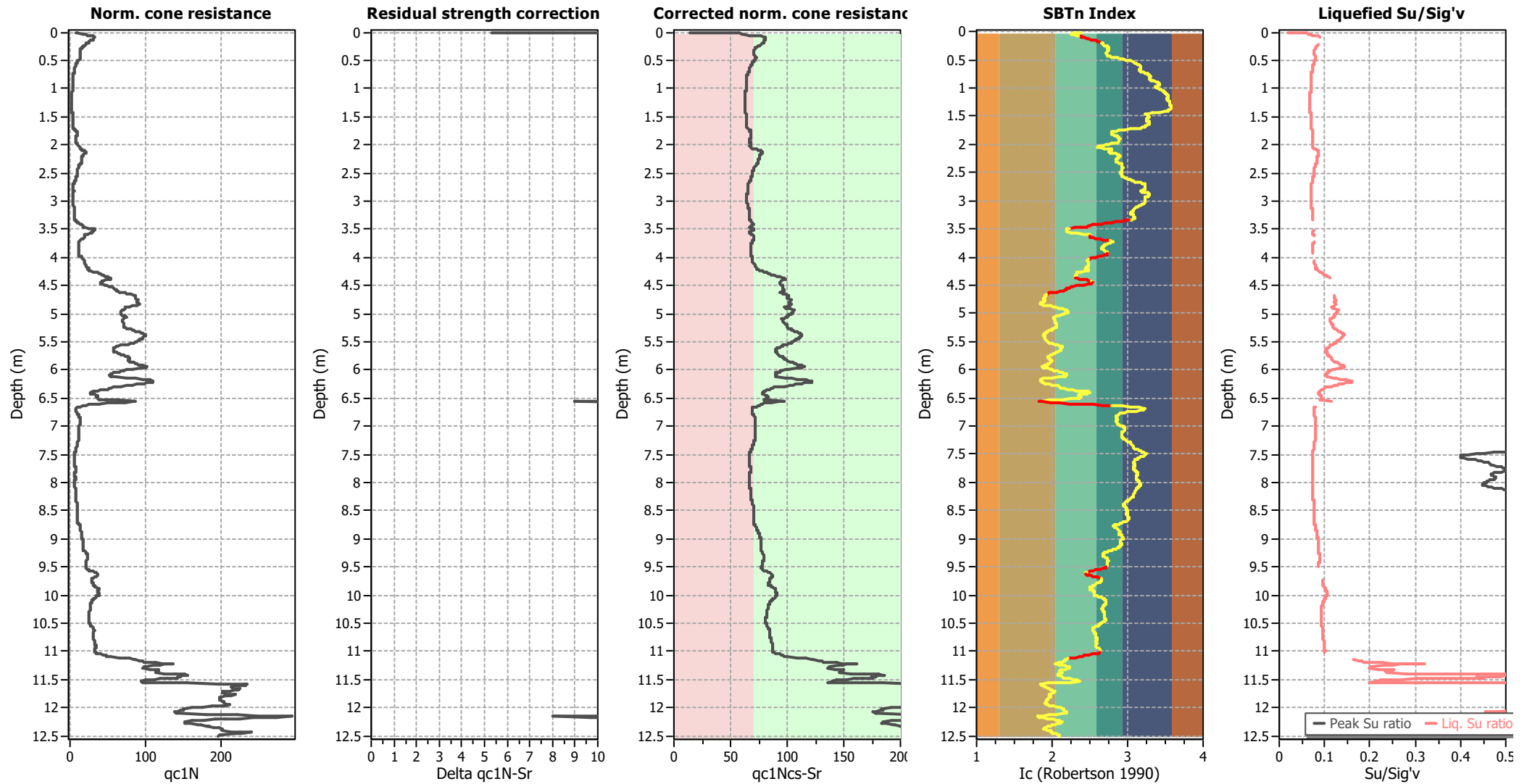
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

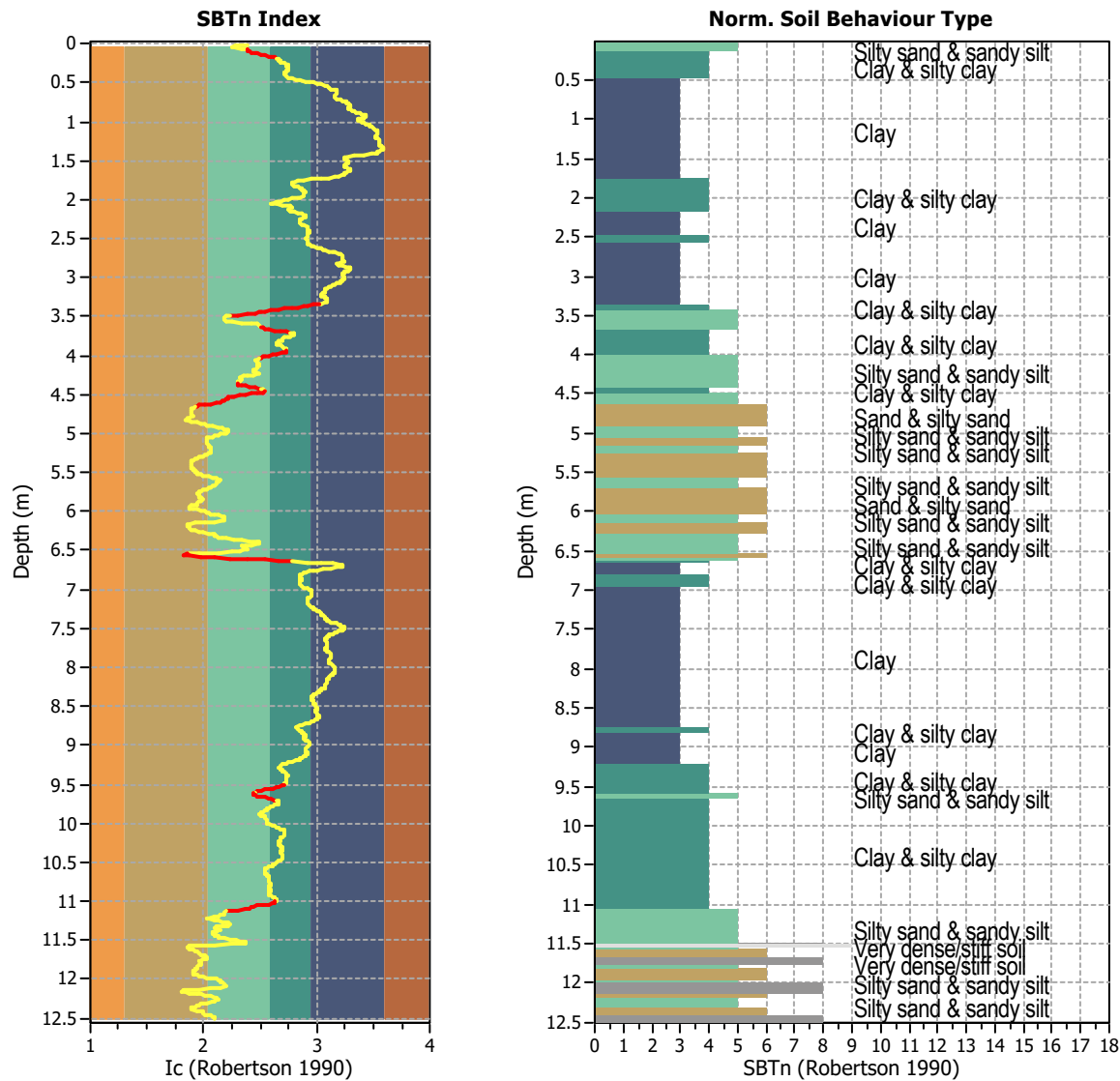
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



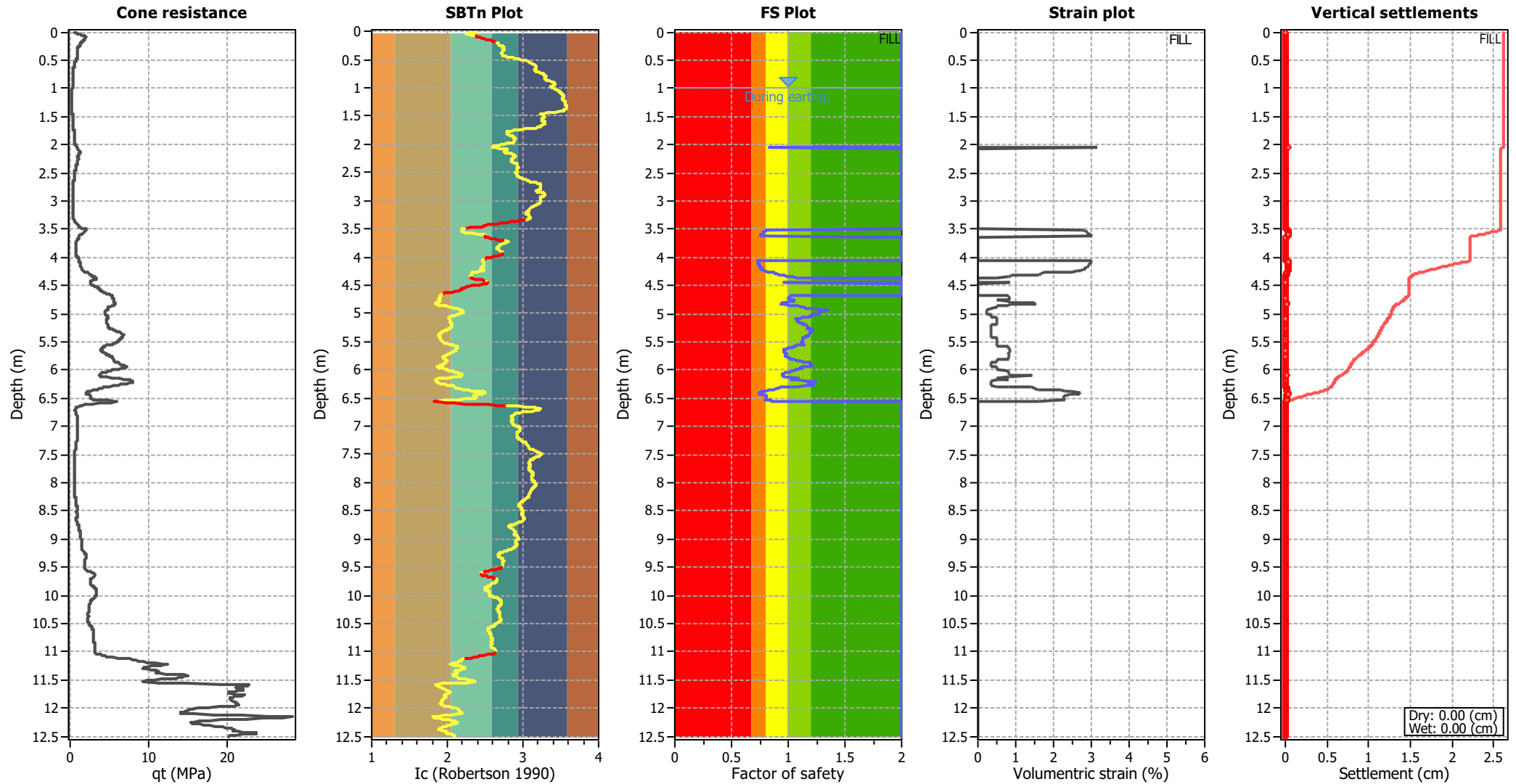
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1251
Total points excluded: 122
Exclusion percentage: 9.75%
Number of layers detected: 10

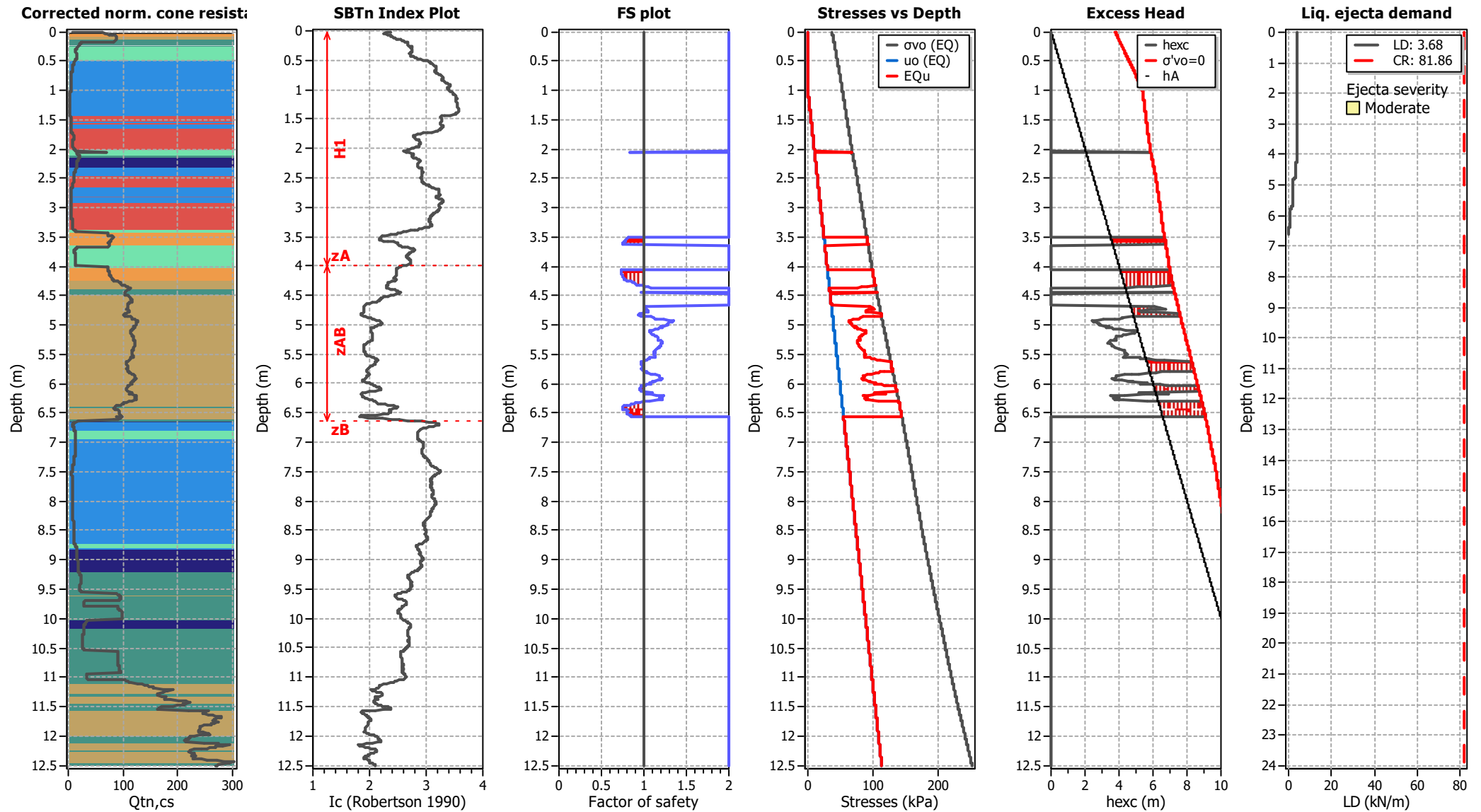
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

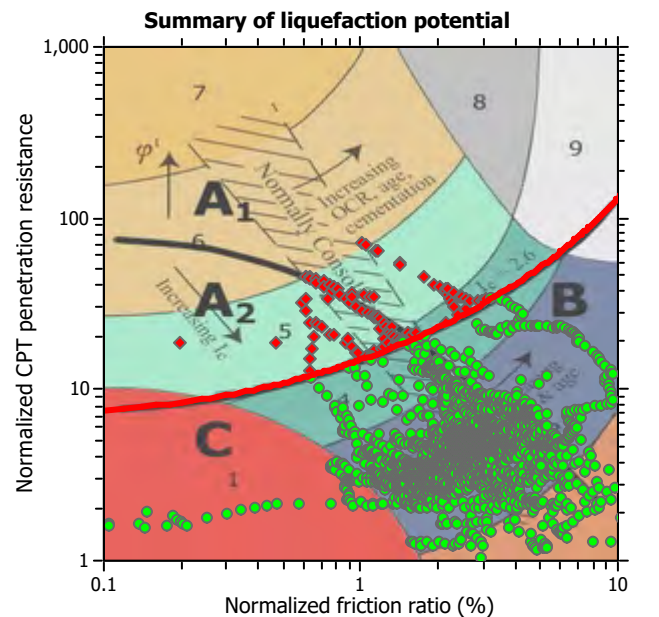
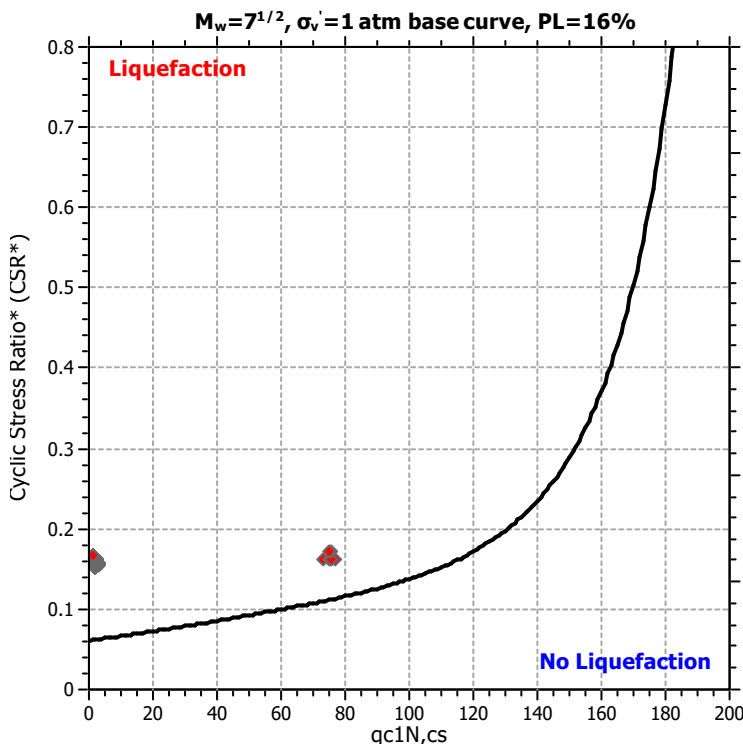
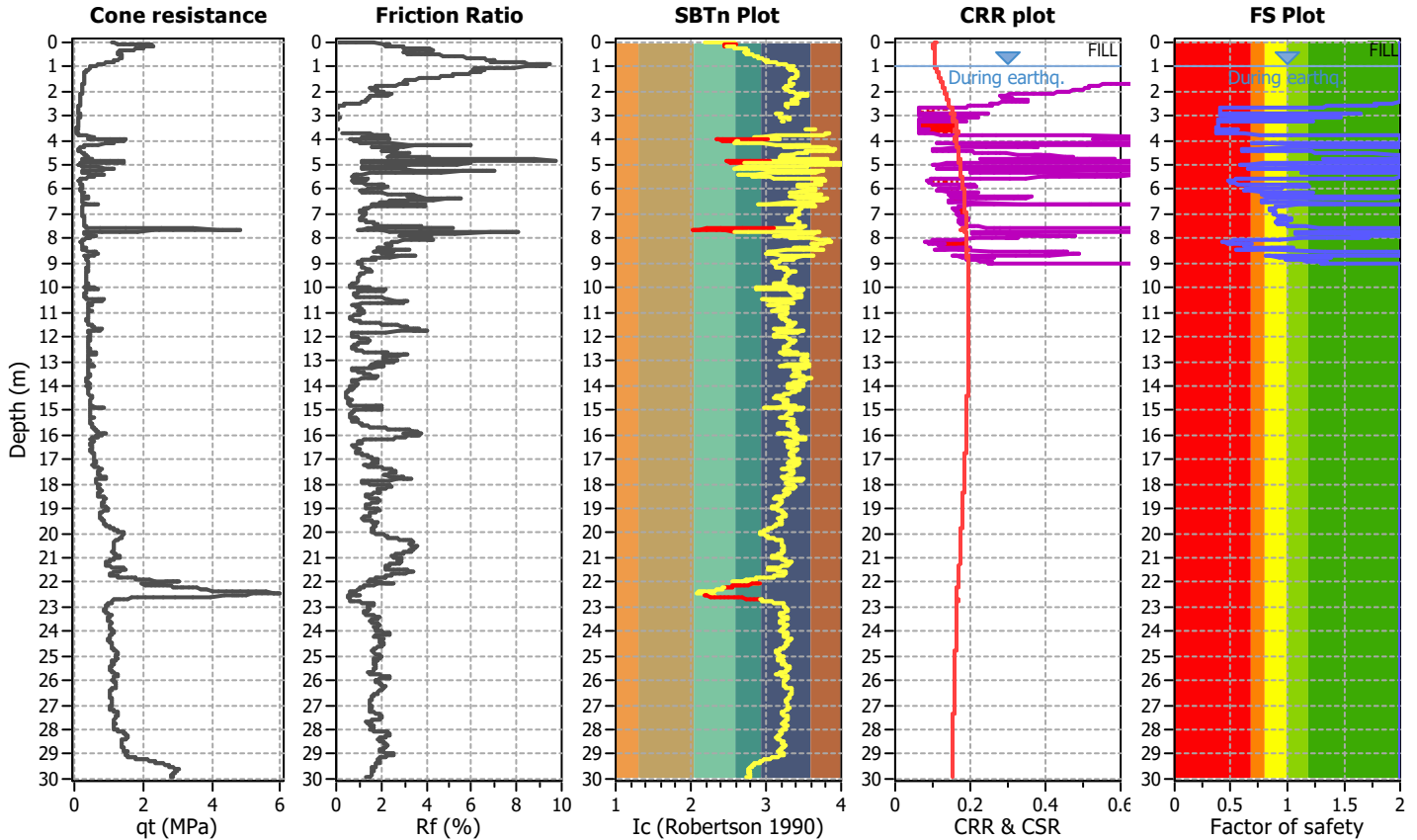
Project title : Sunfield Landholding

Location :

CPT file : CPT013A

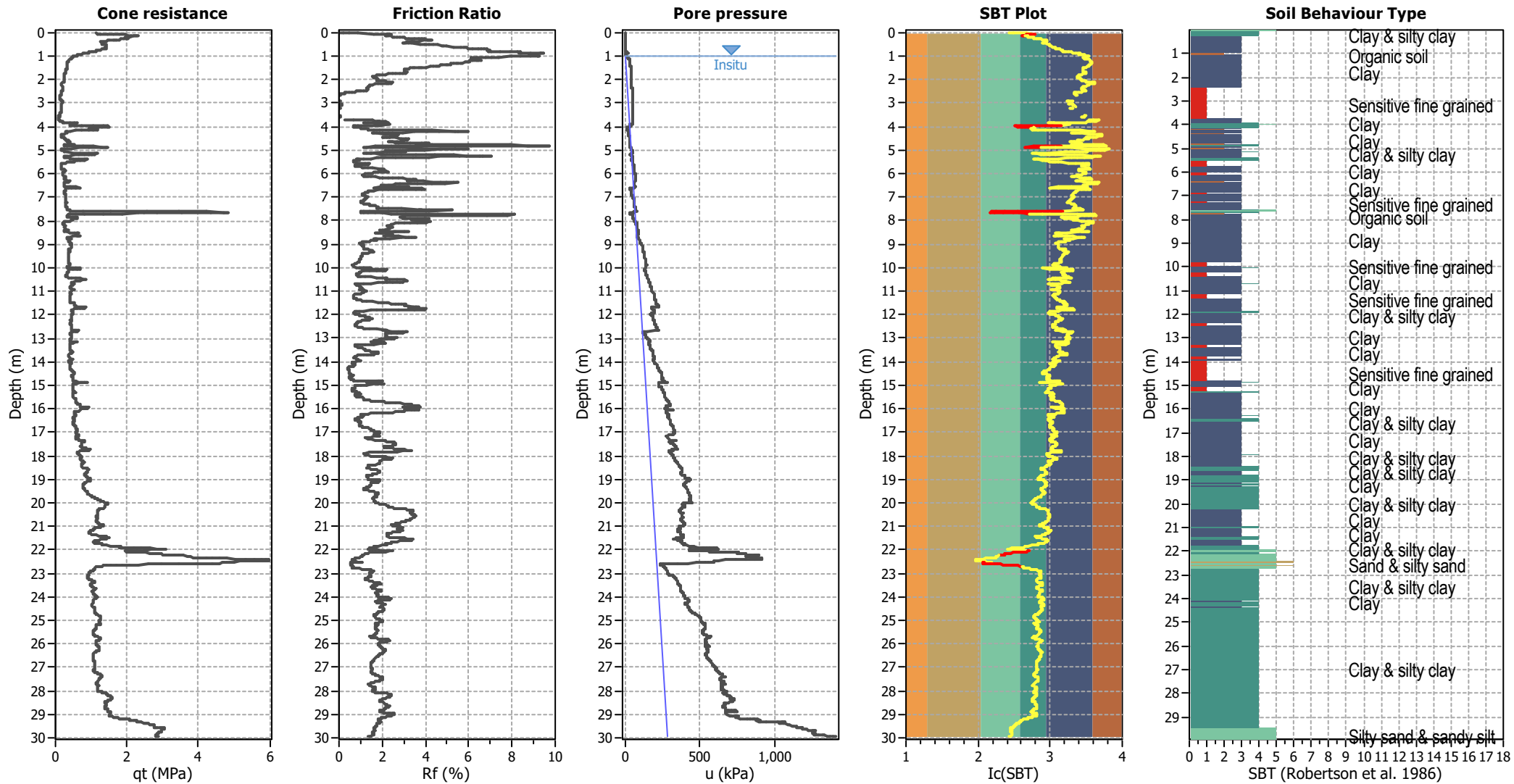
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



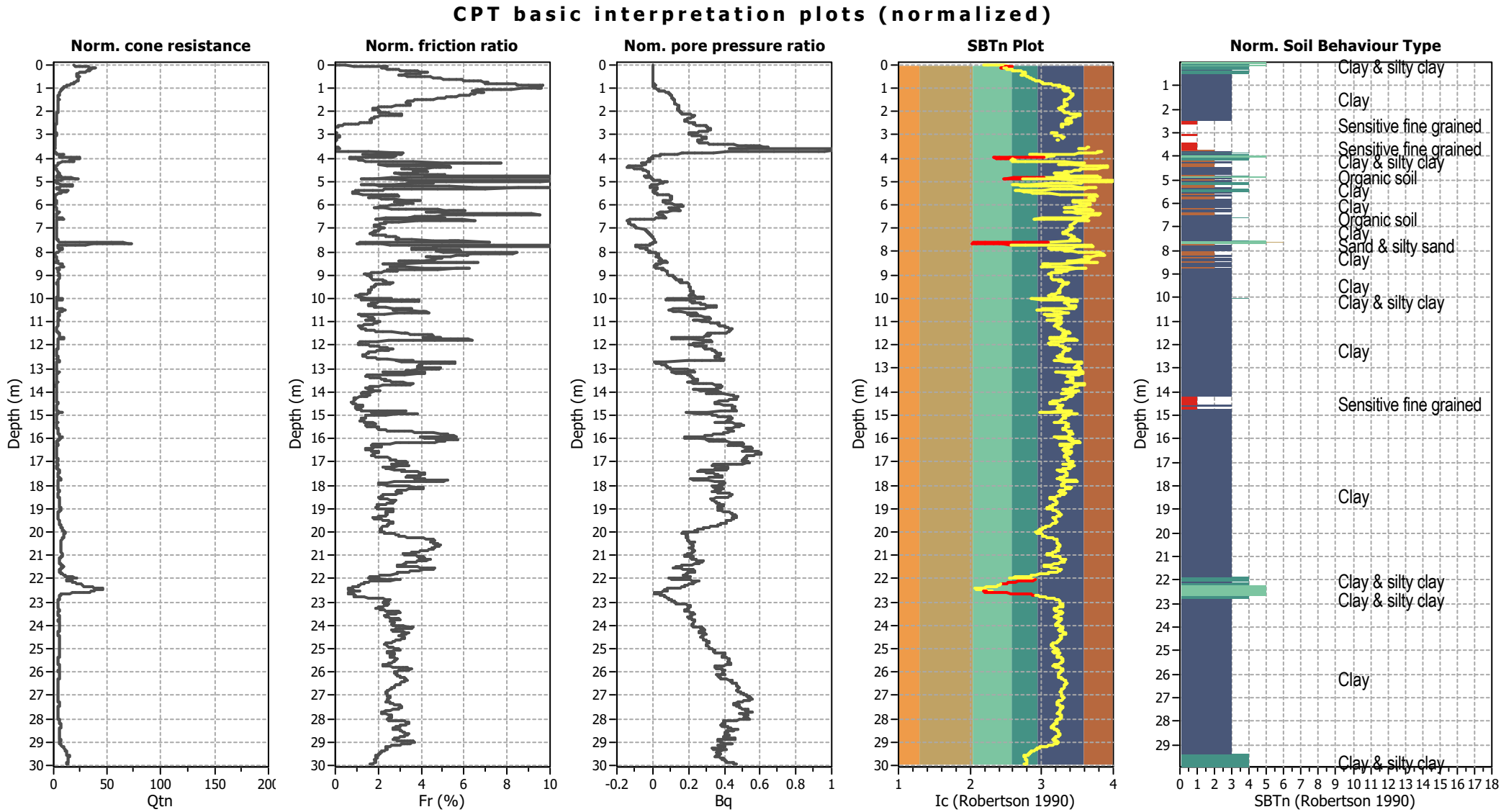
Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³	SBT legend		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes			
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes	1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay	2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes	3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m			



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

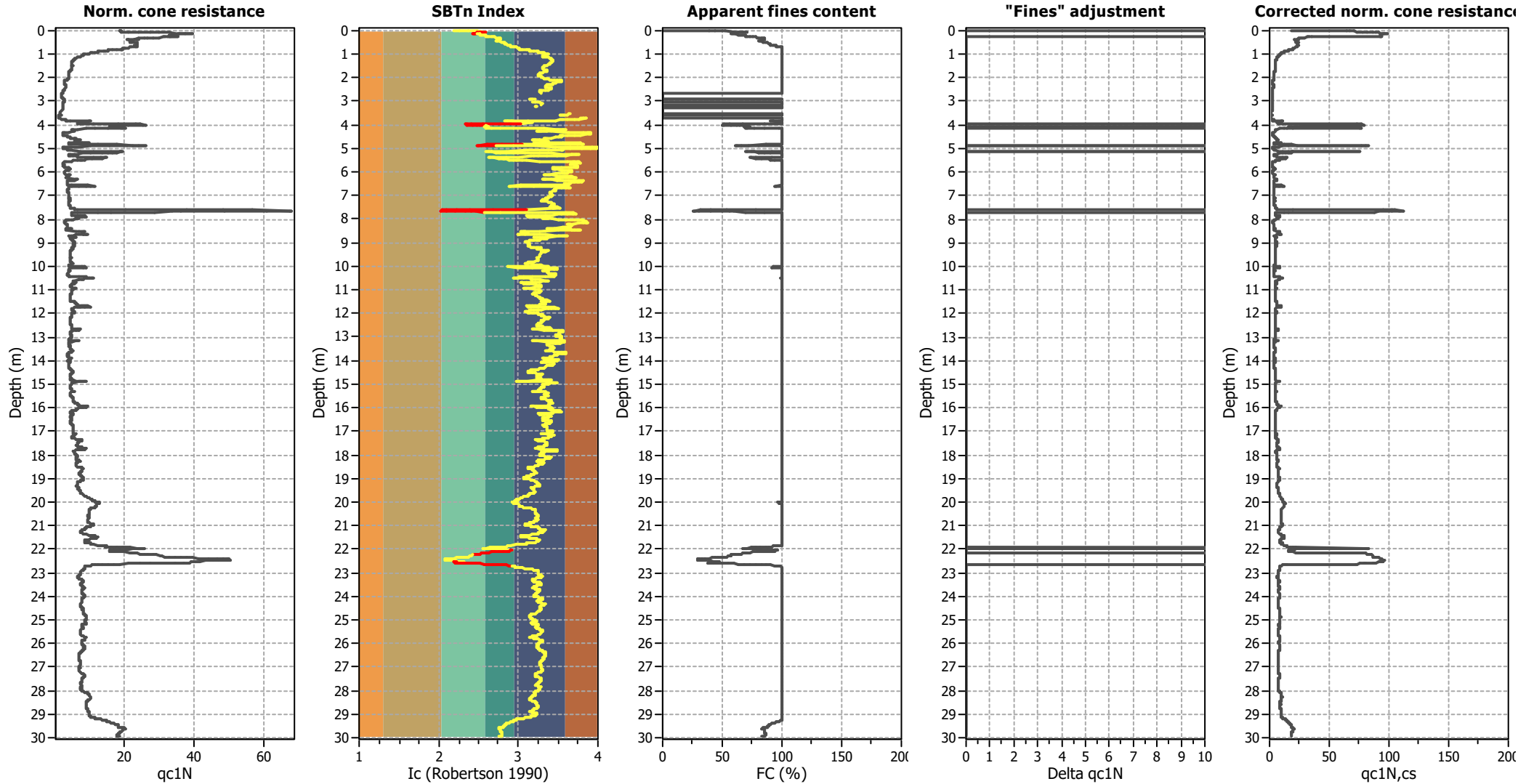
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

9. Very stiff fine grained

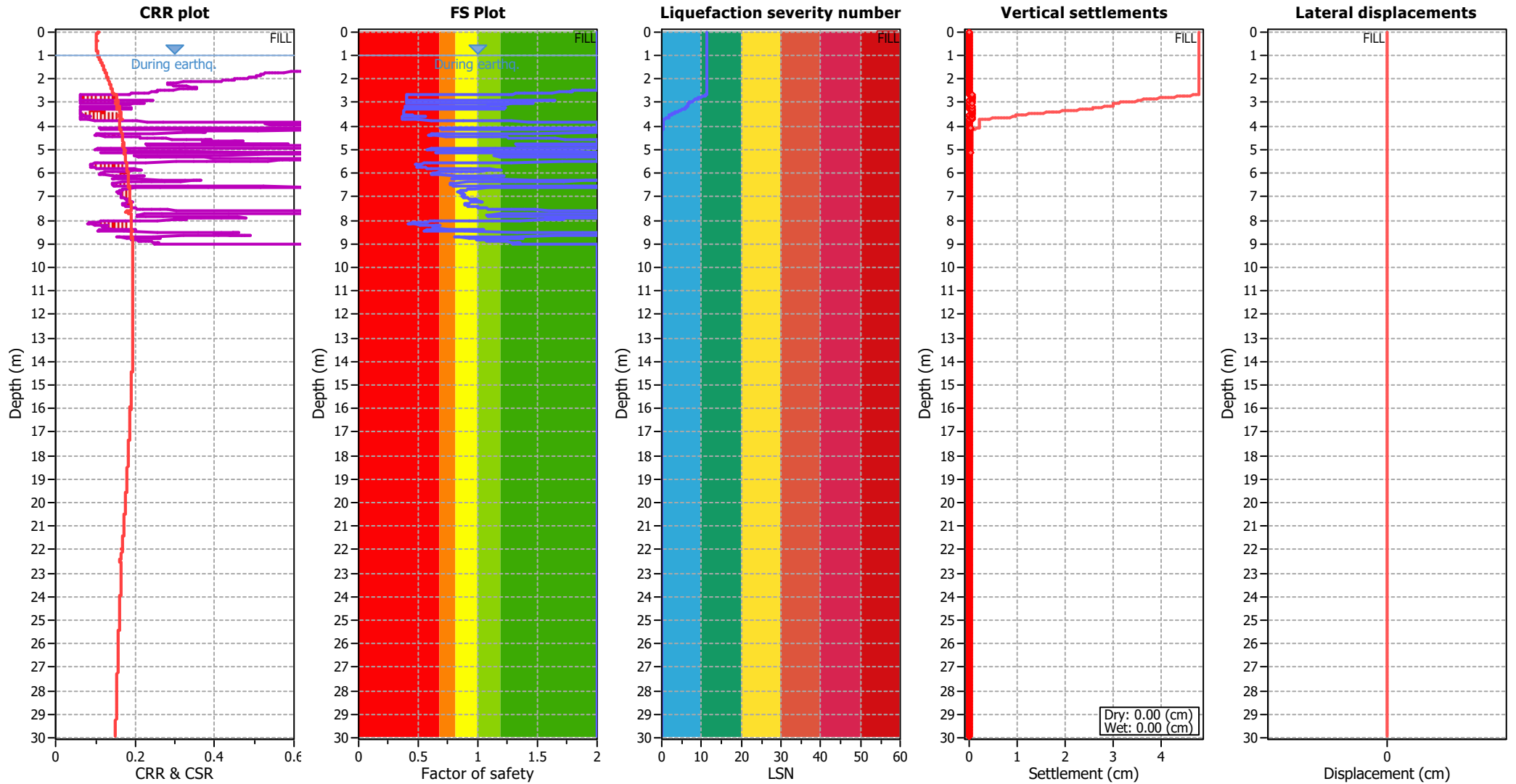
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

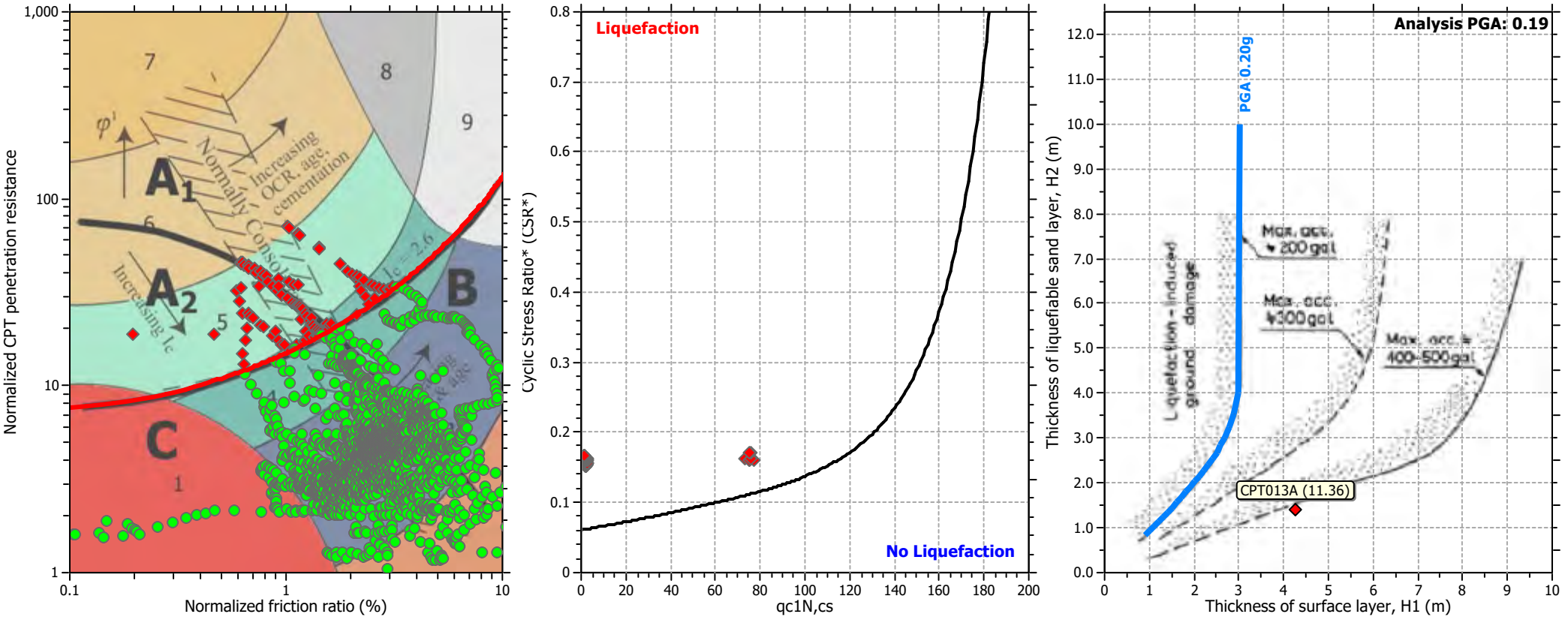
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

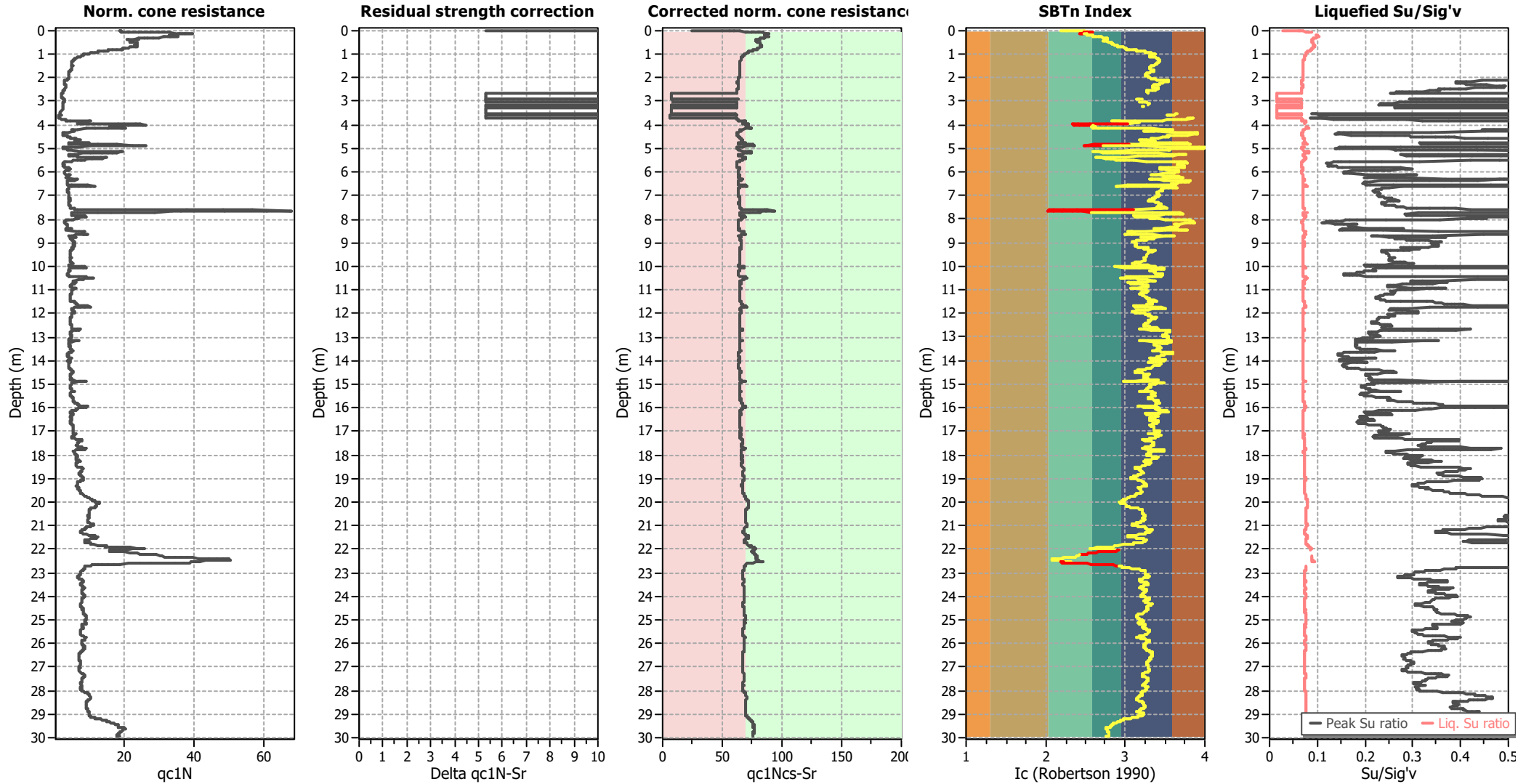
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

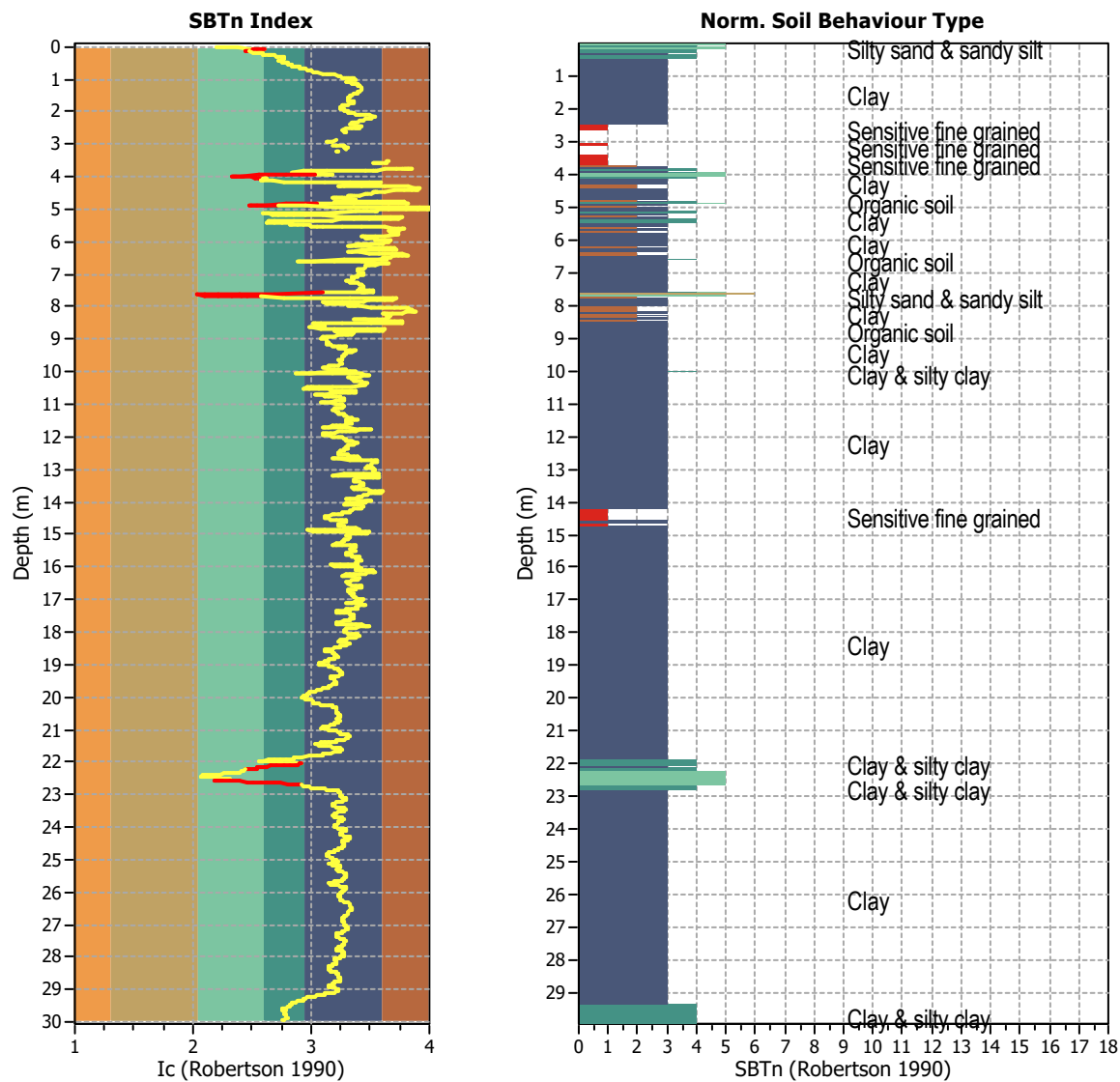
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



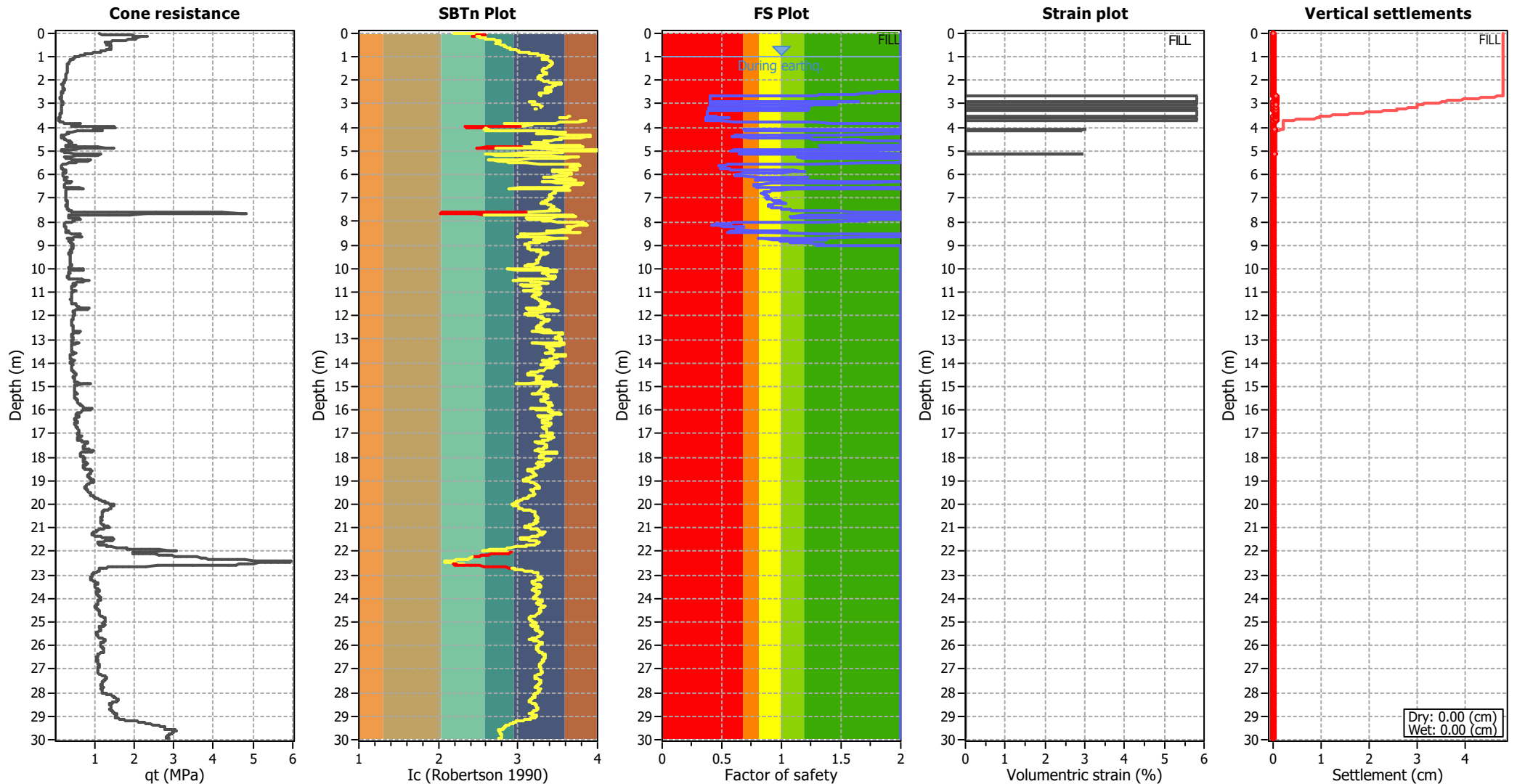
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 2993
Total points excluded: 84
Exclusion percentage: 2.81%
Number of layers detected: 10

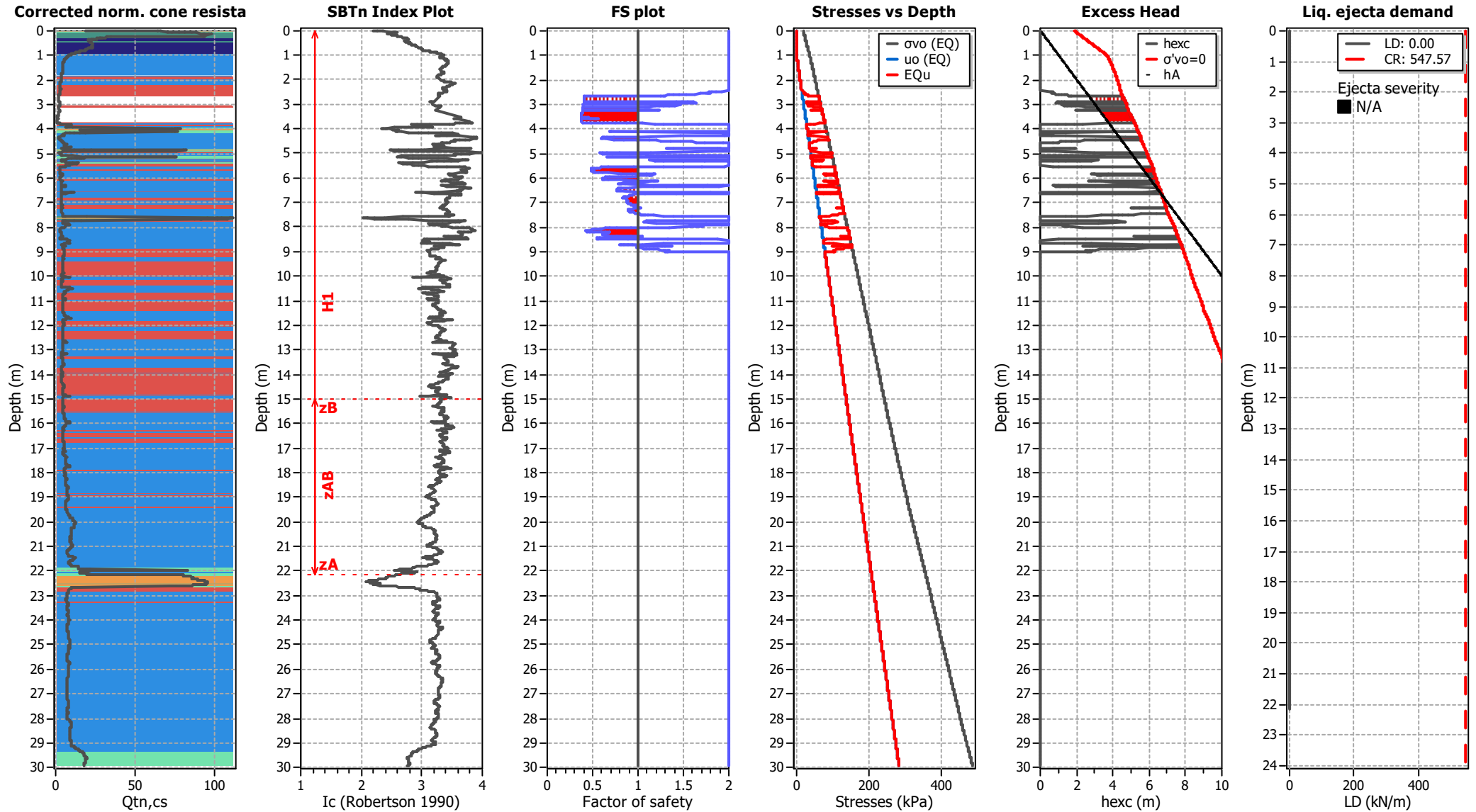
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

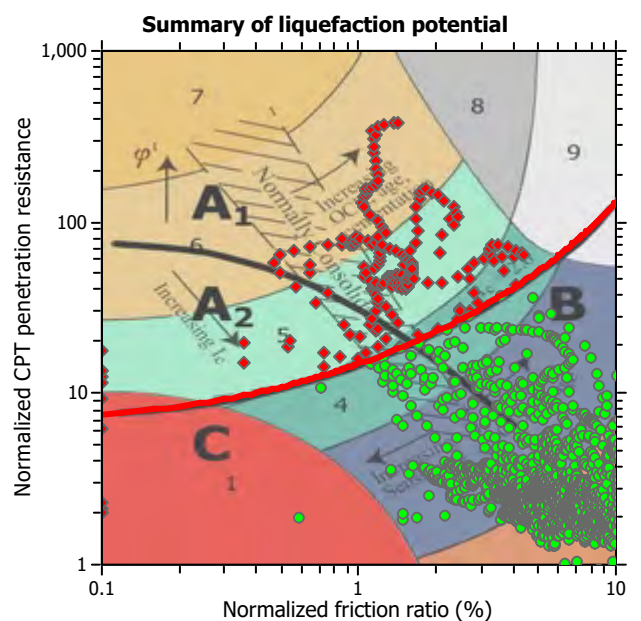
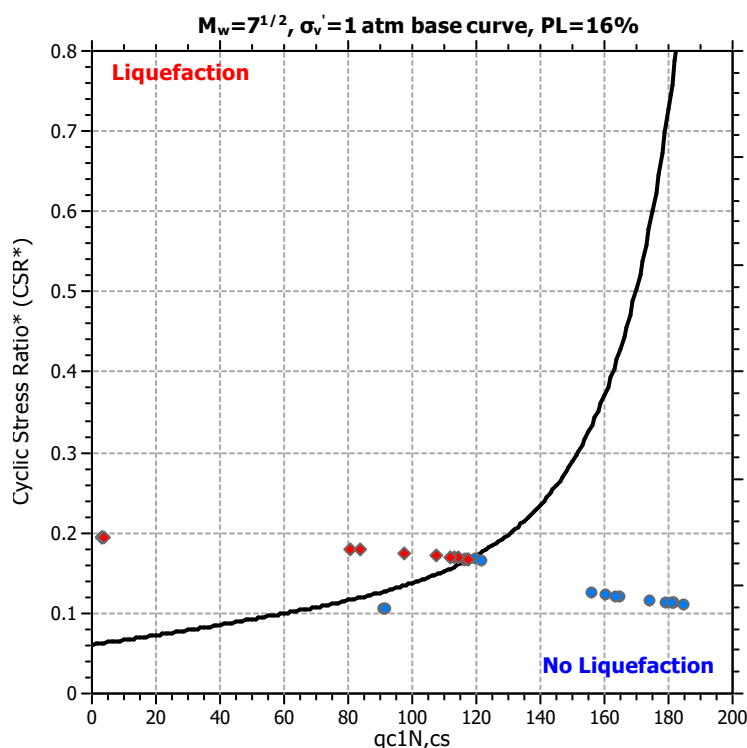
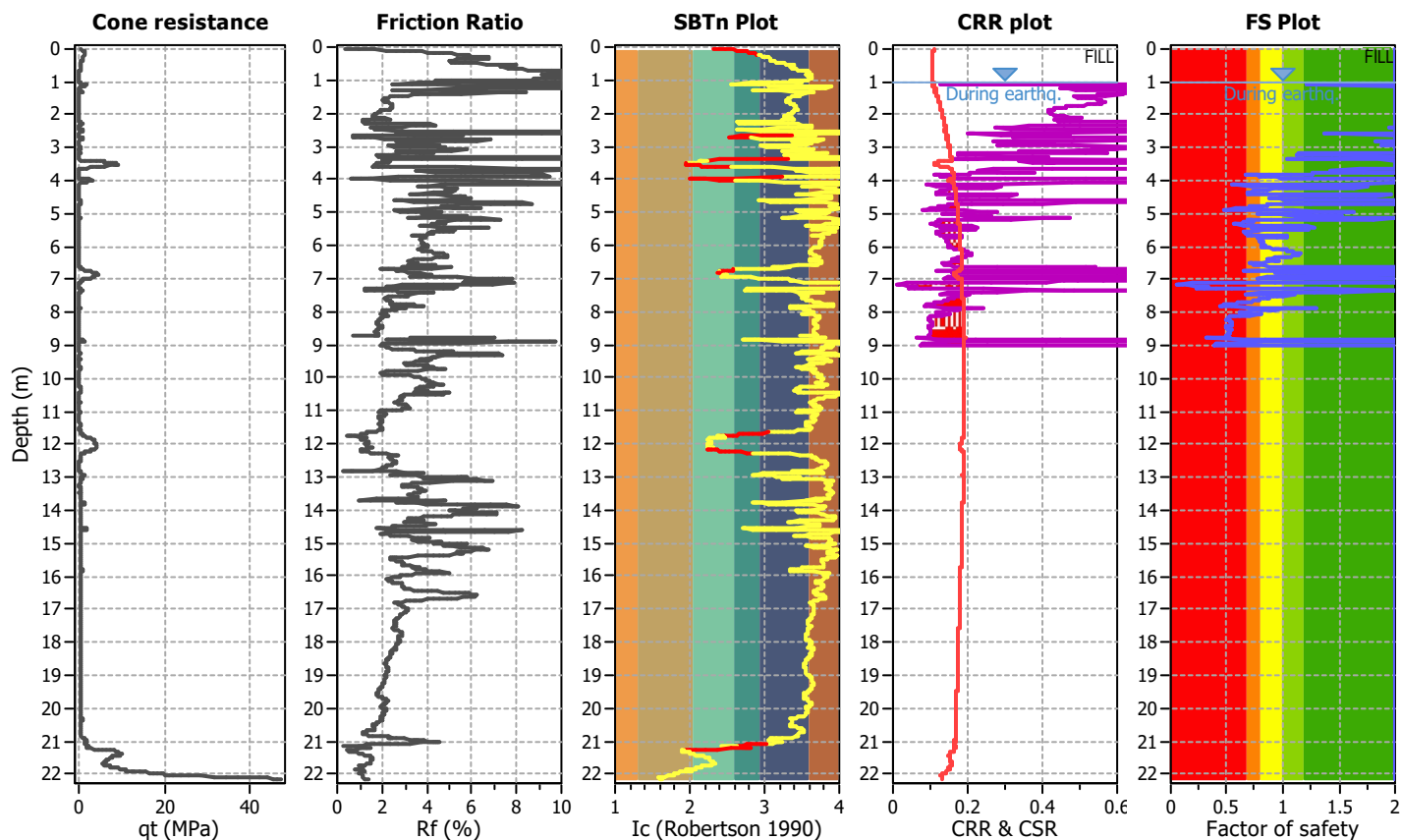
Project title : Sunfield Landholding

Location :

CPT file : CPT014

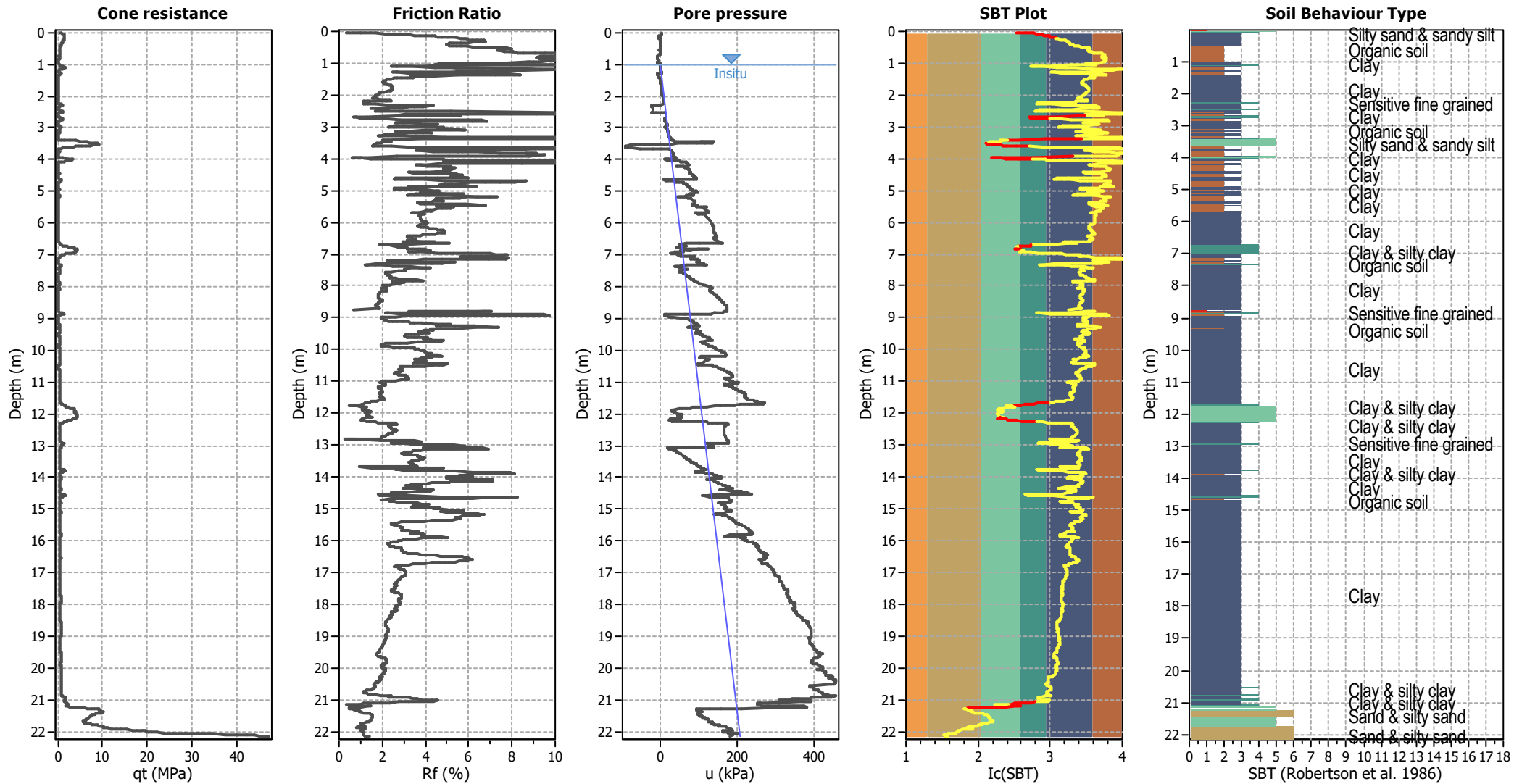
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

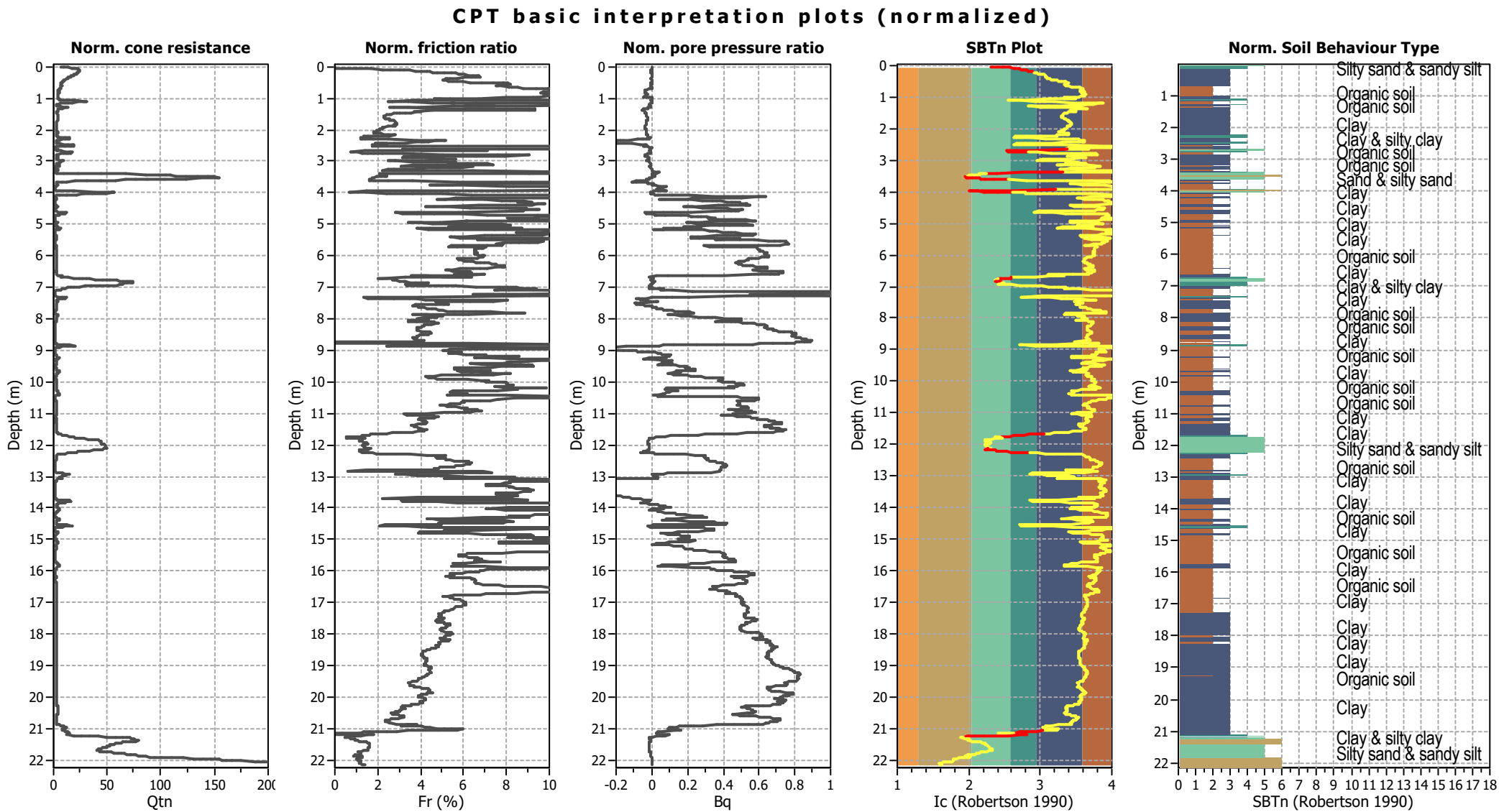


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



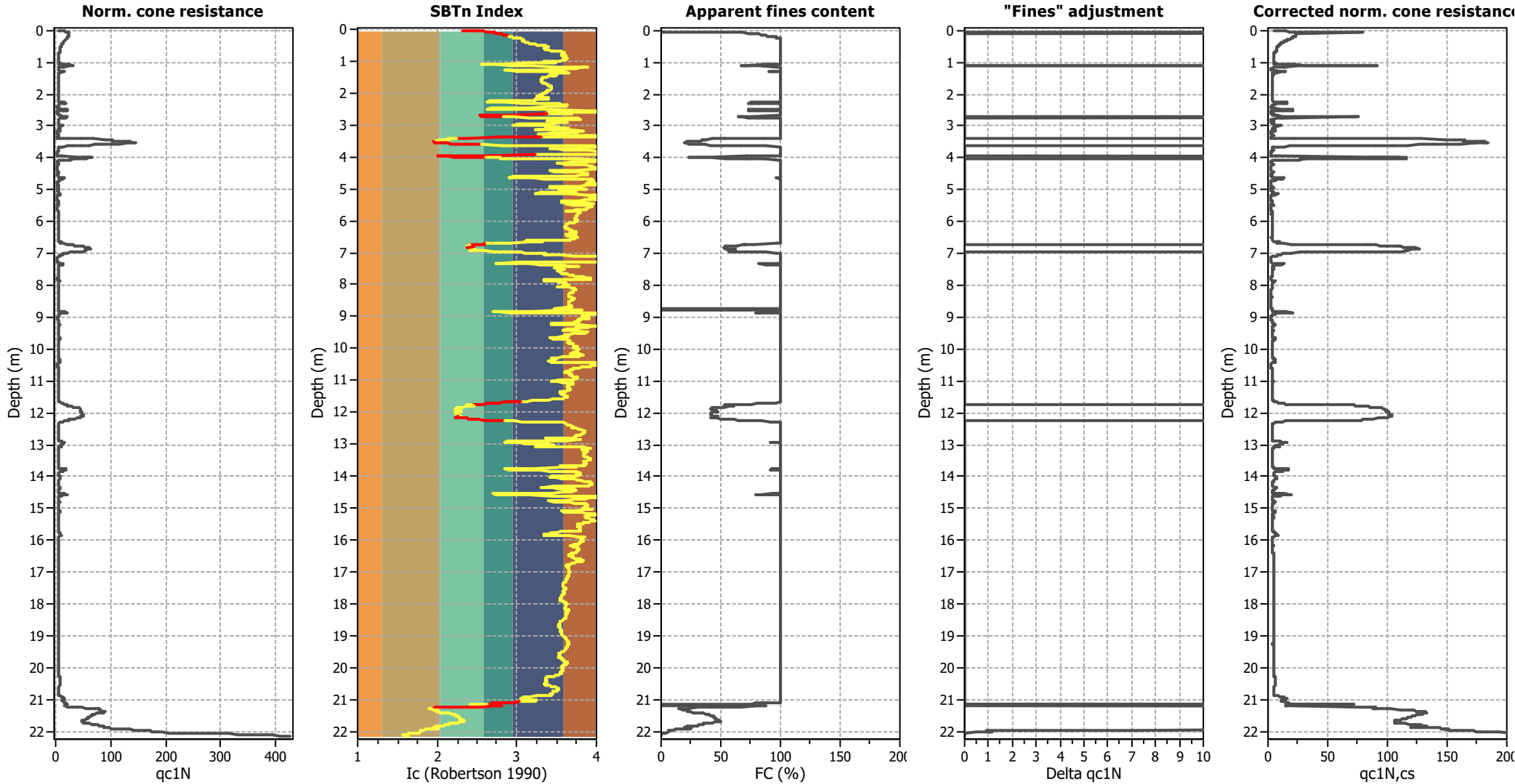
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

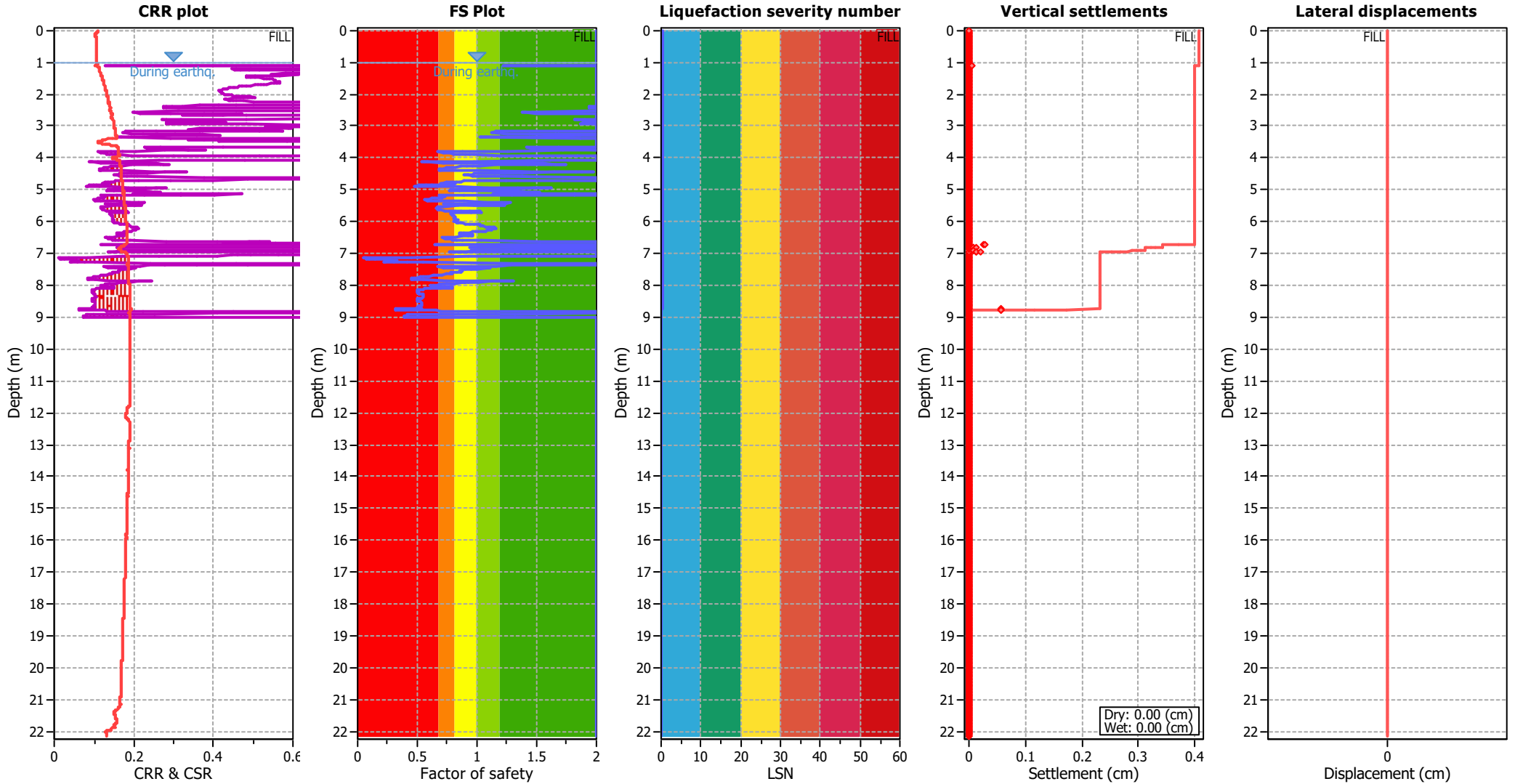
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

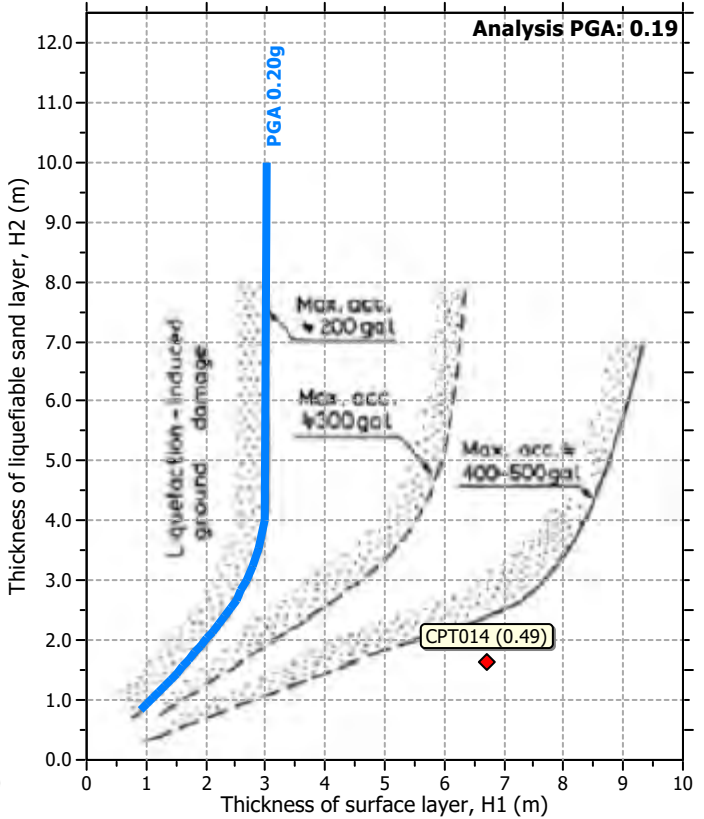
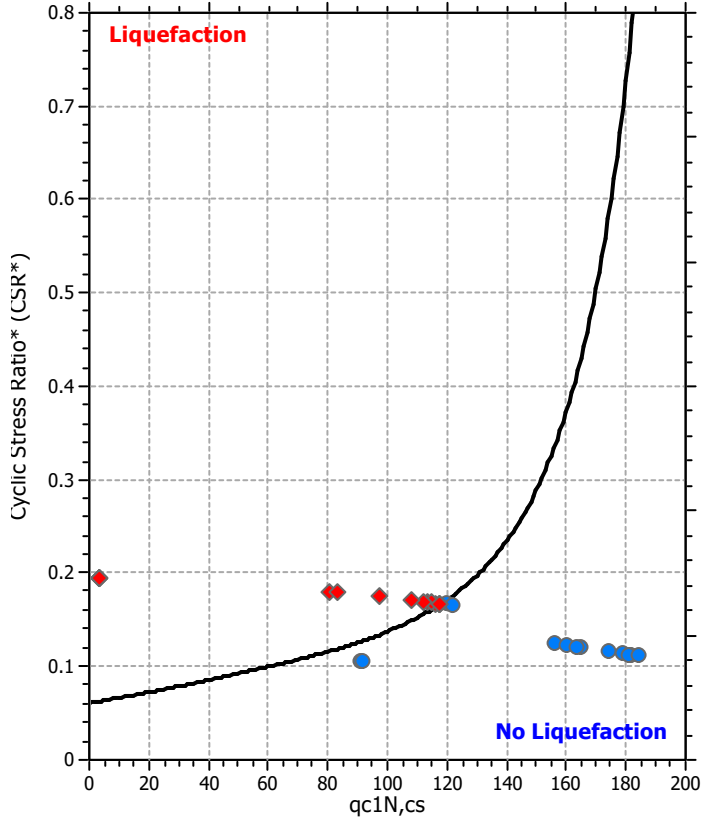
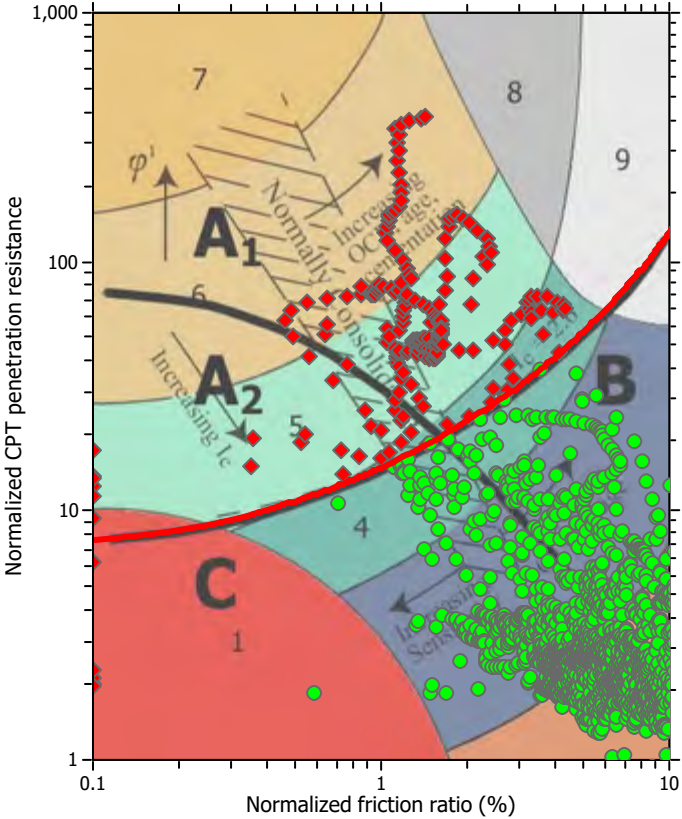
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Orange	Major expression of liquefaction
Yellow	Moderate to severe exp. of liquefaction
Green	Moderate expression of liquefaction
Dark Green	Minor expression of liquefaction
Blue	Little to no expression of liquefaction

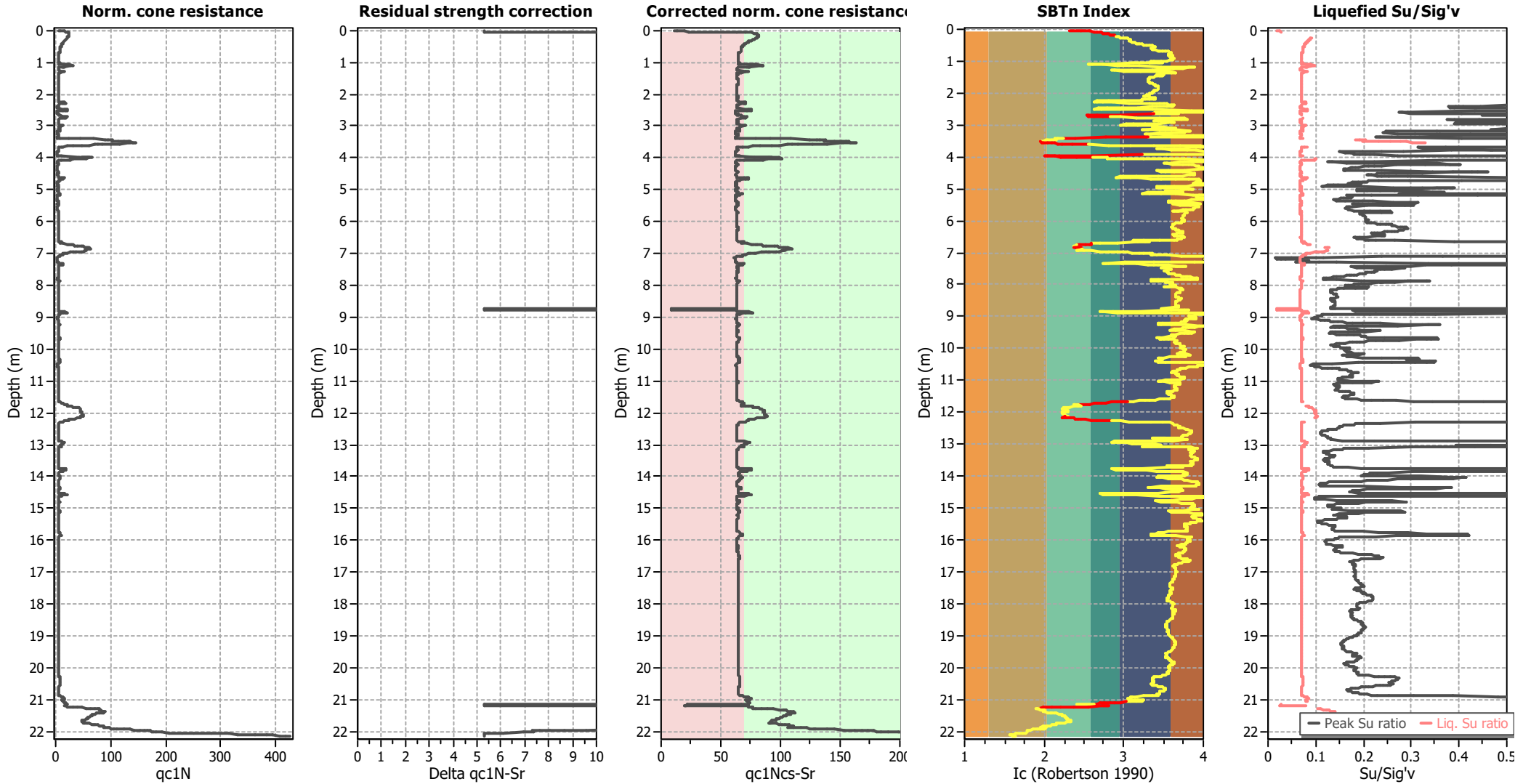
Liquefaction analysis summary plots



Input parameters and analysis data

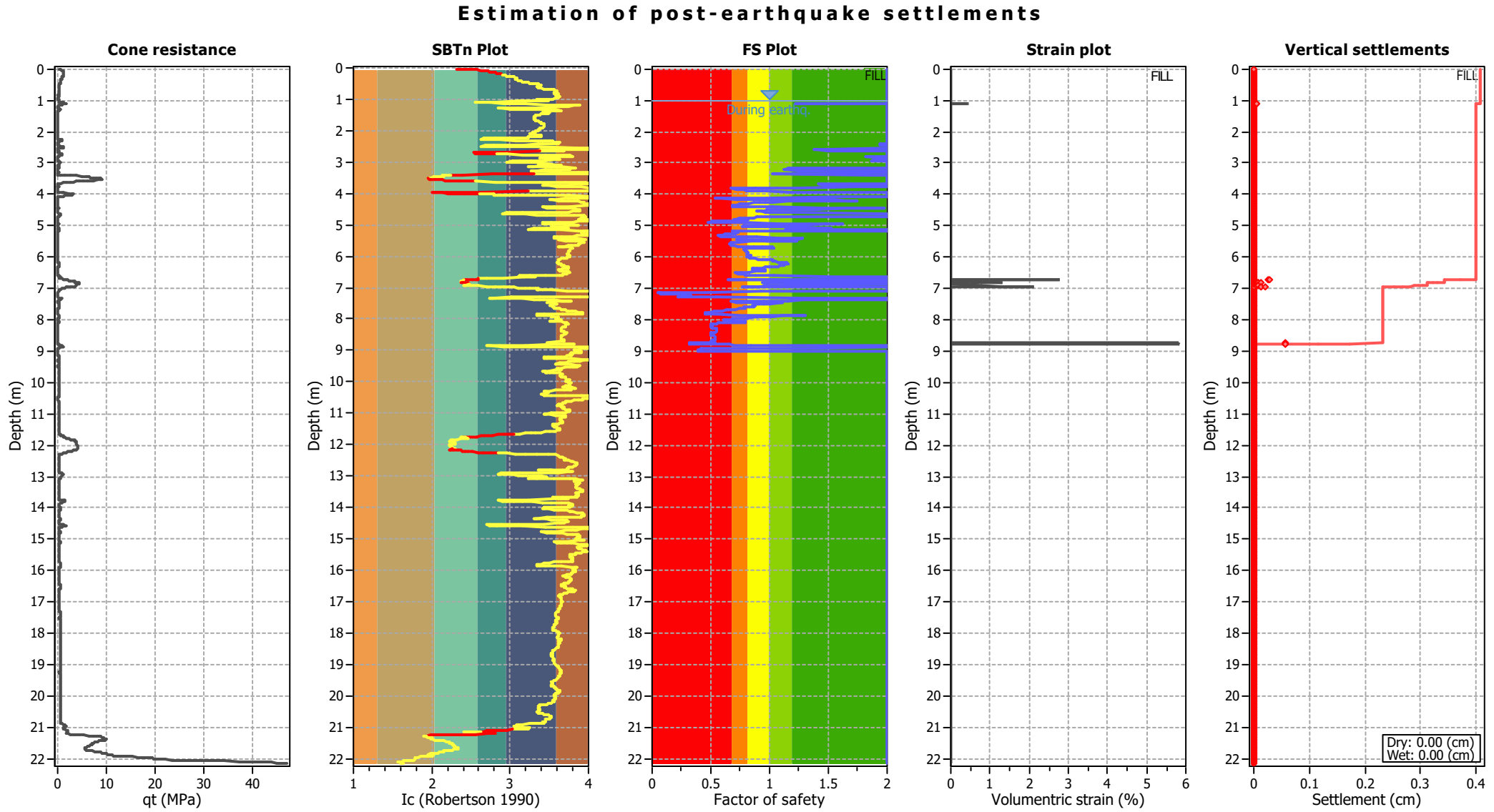
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

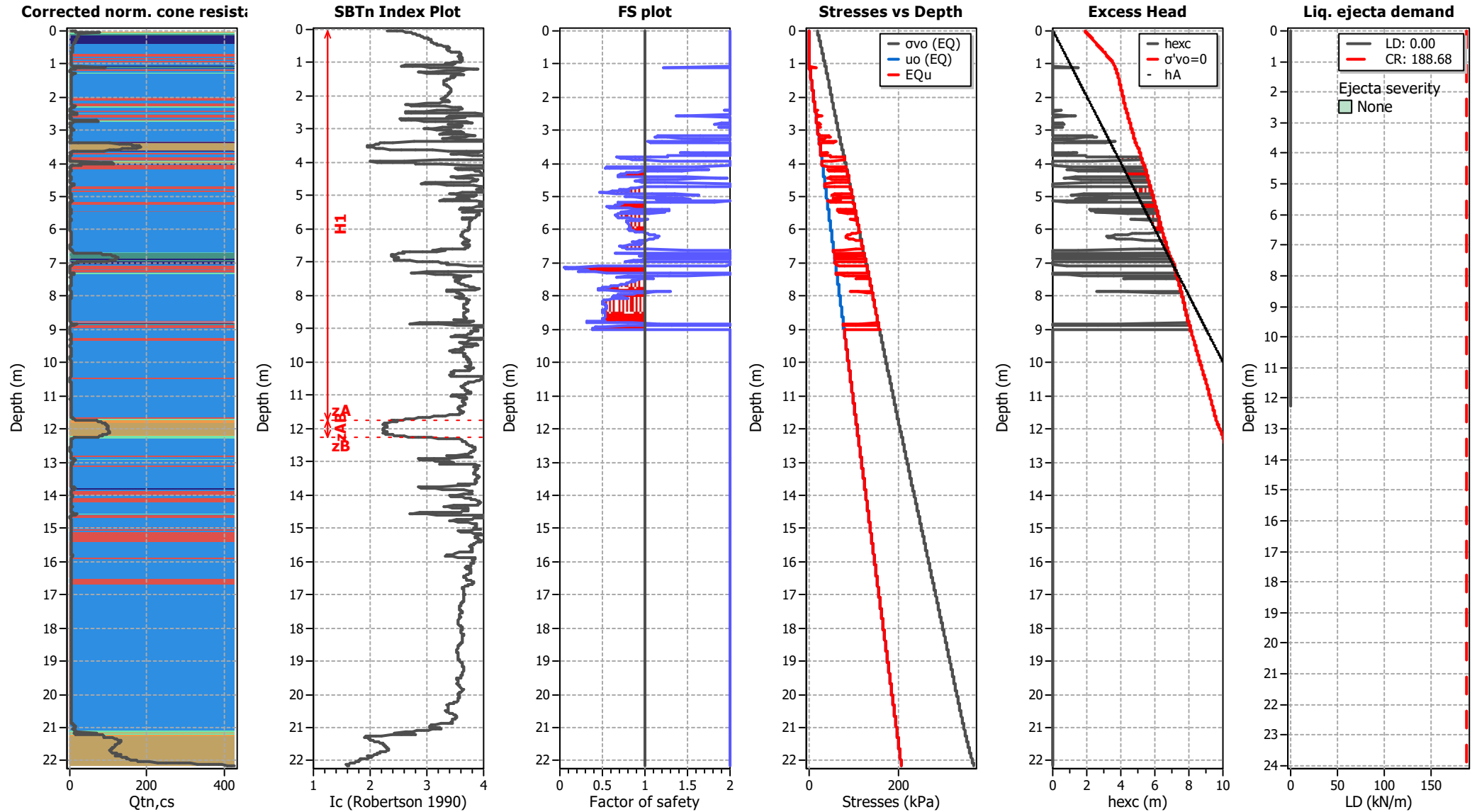
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

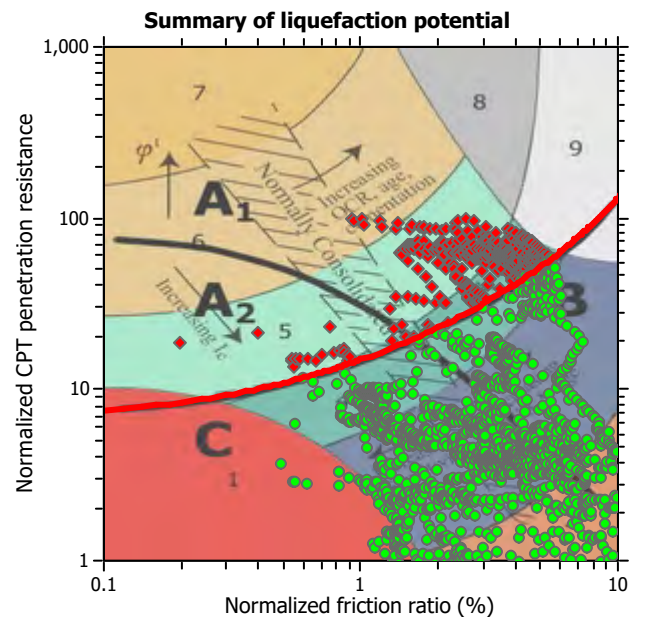
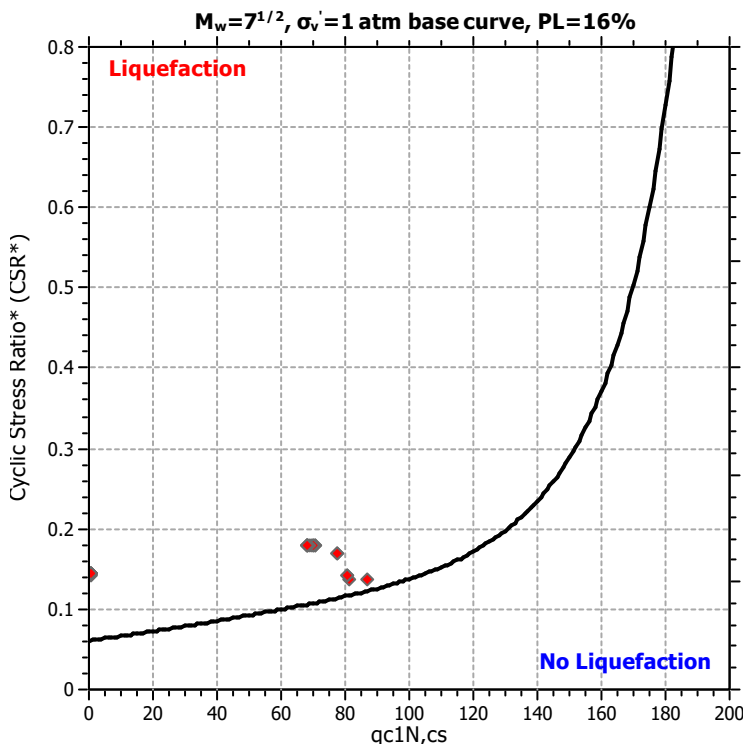
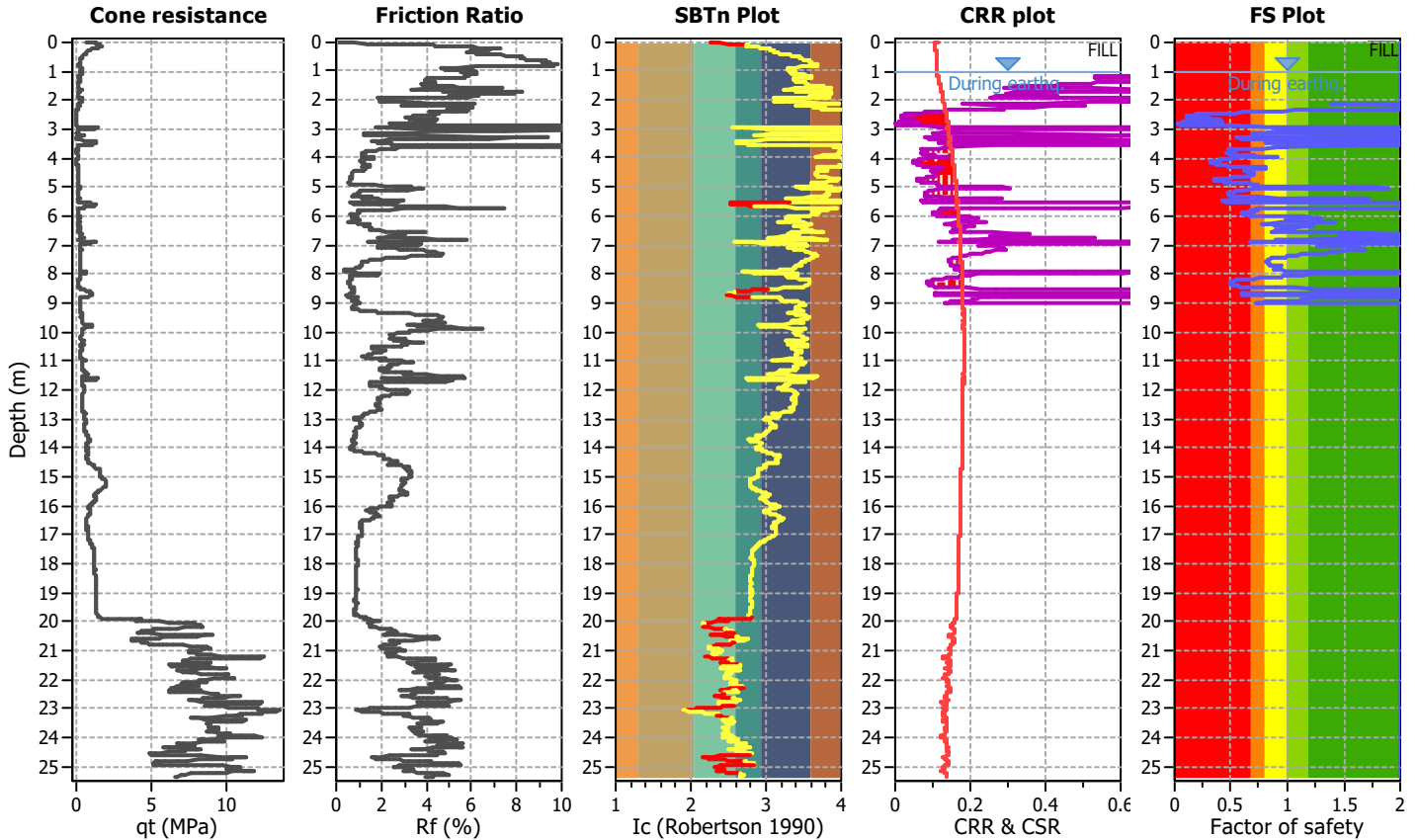
Project title : Sunfield Landholding

Location :

CPT file : CPT015

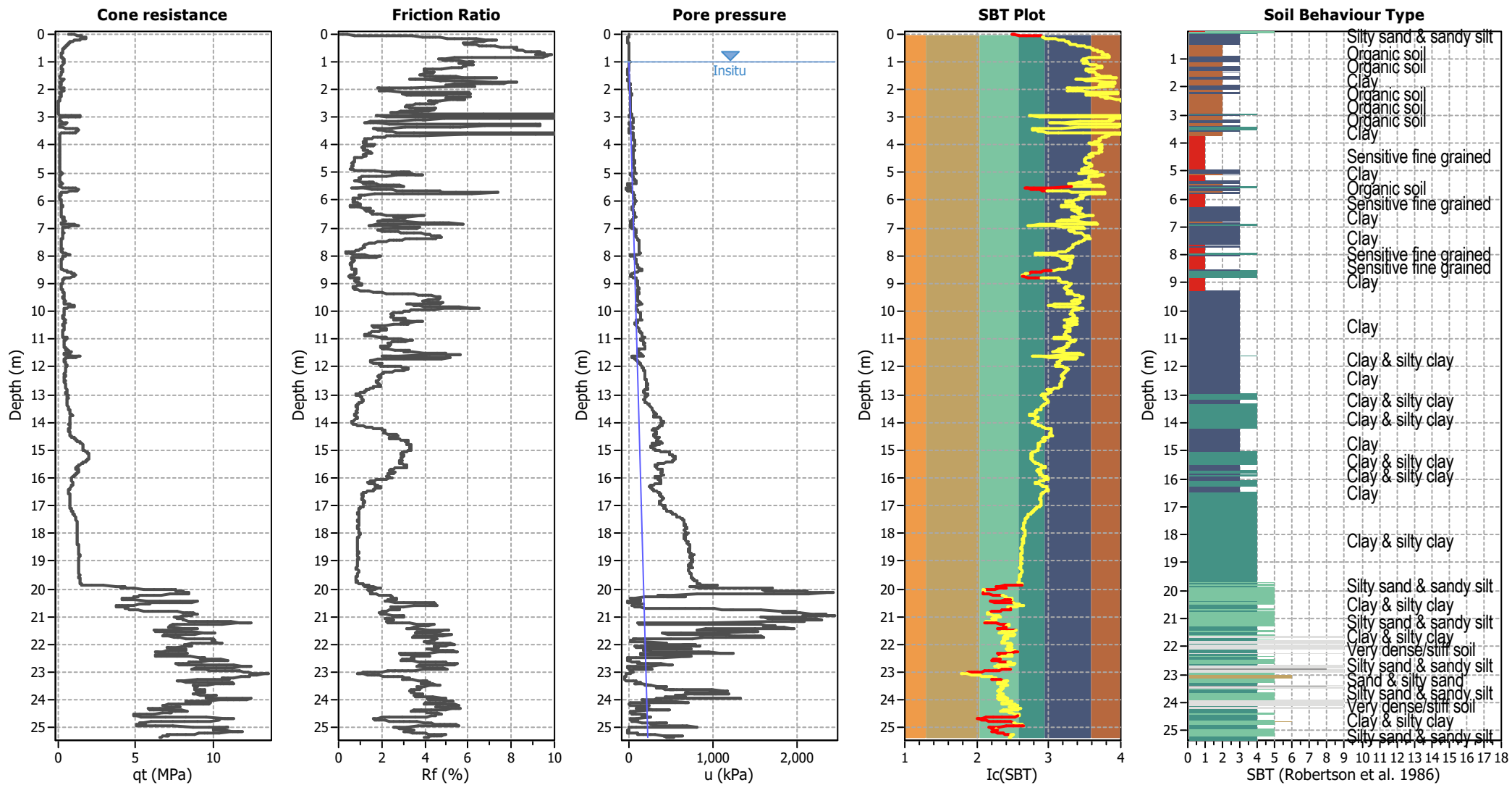
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

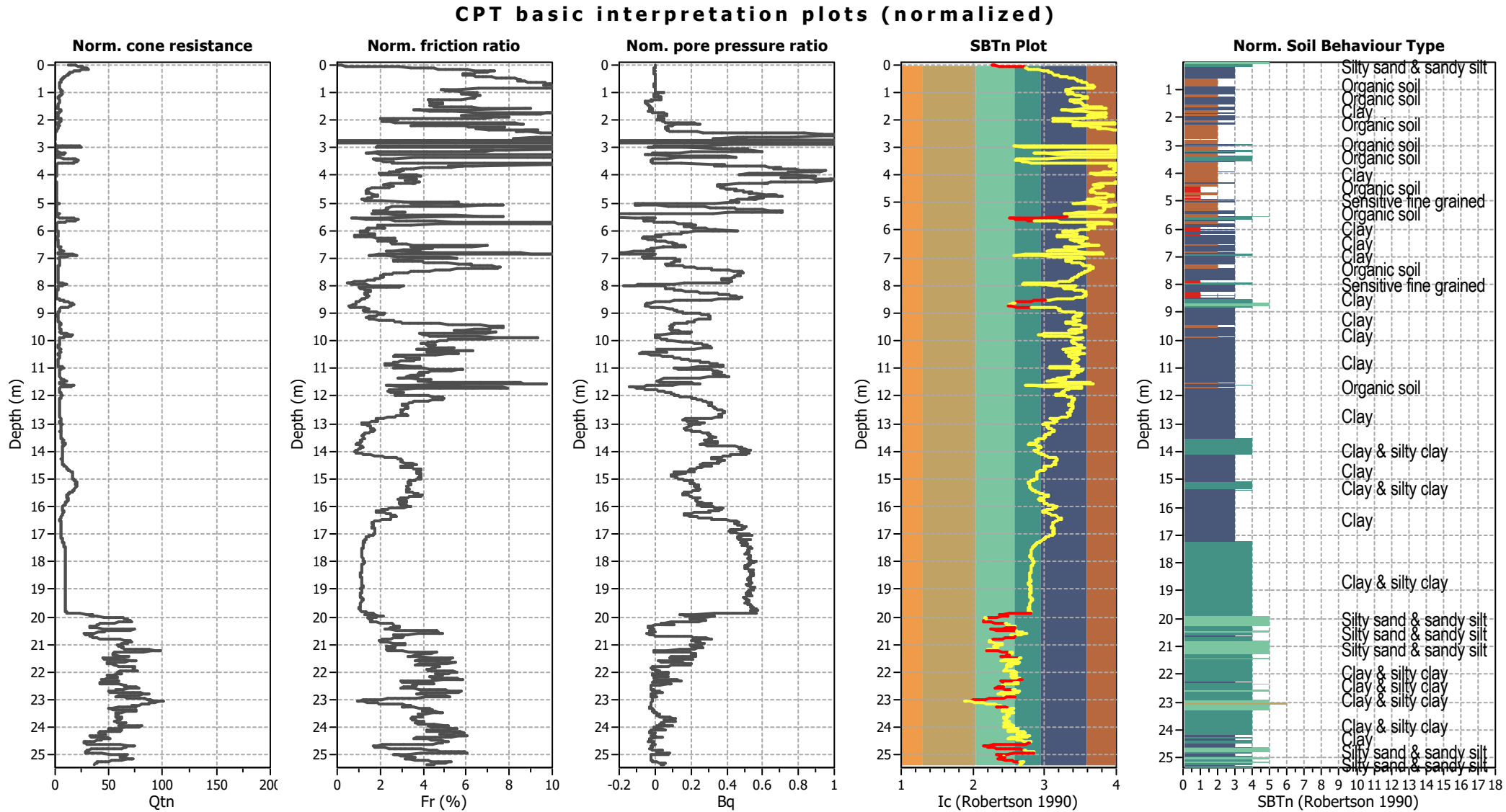


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



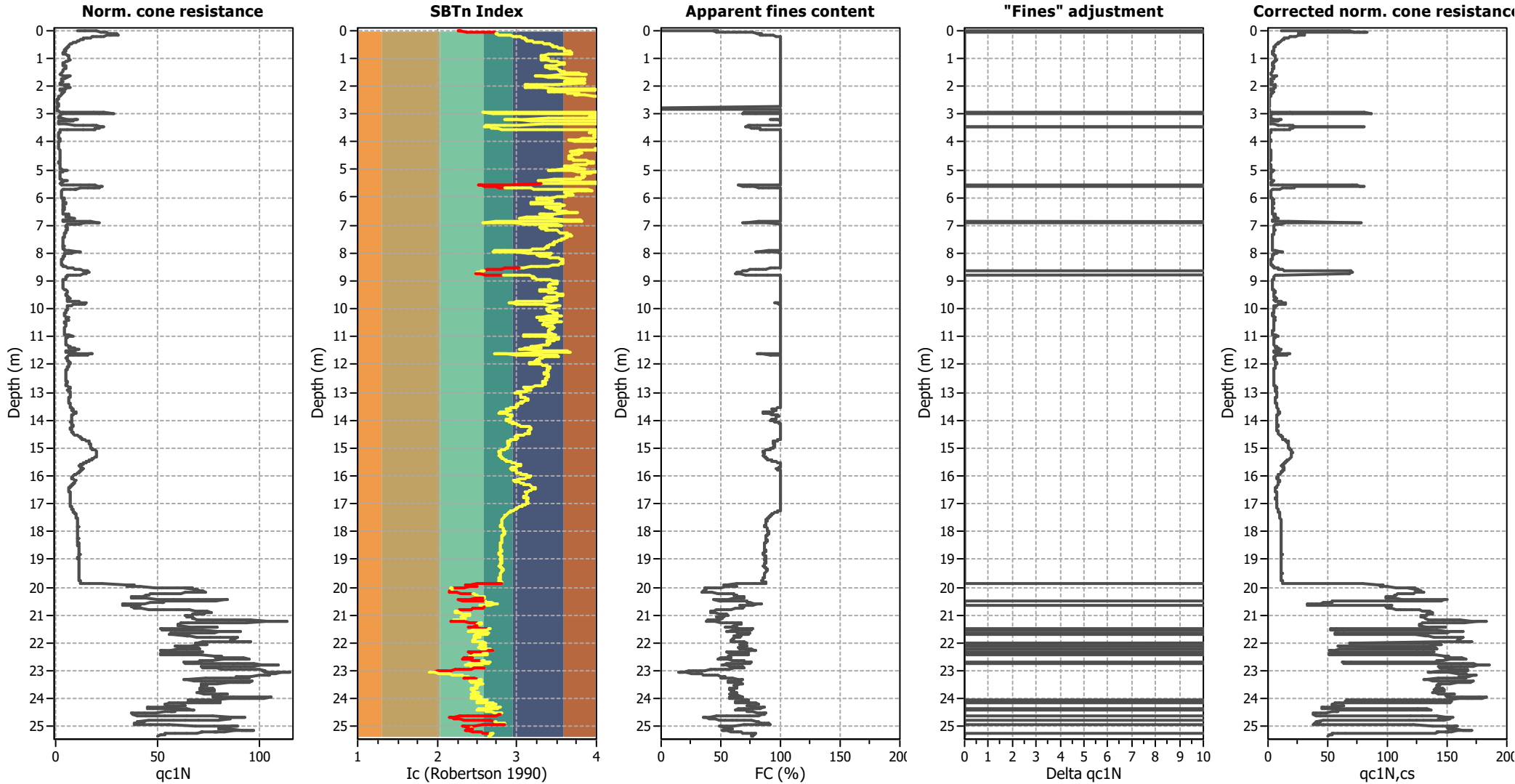
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

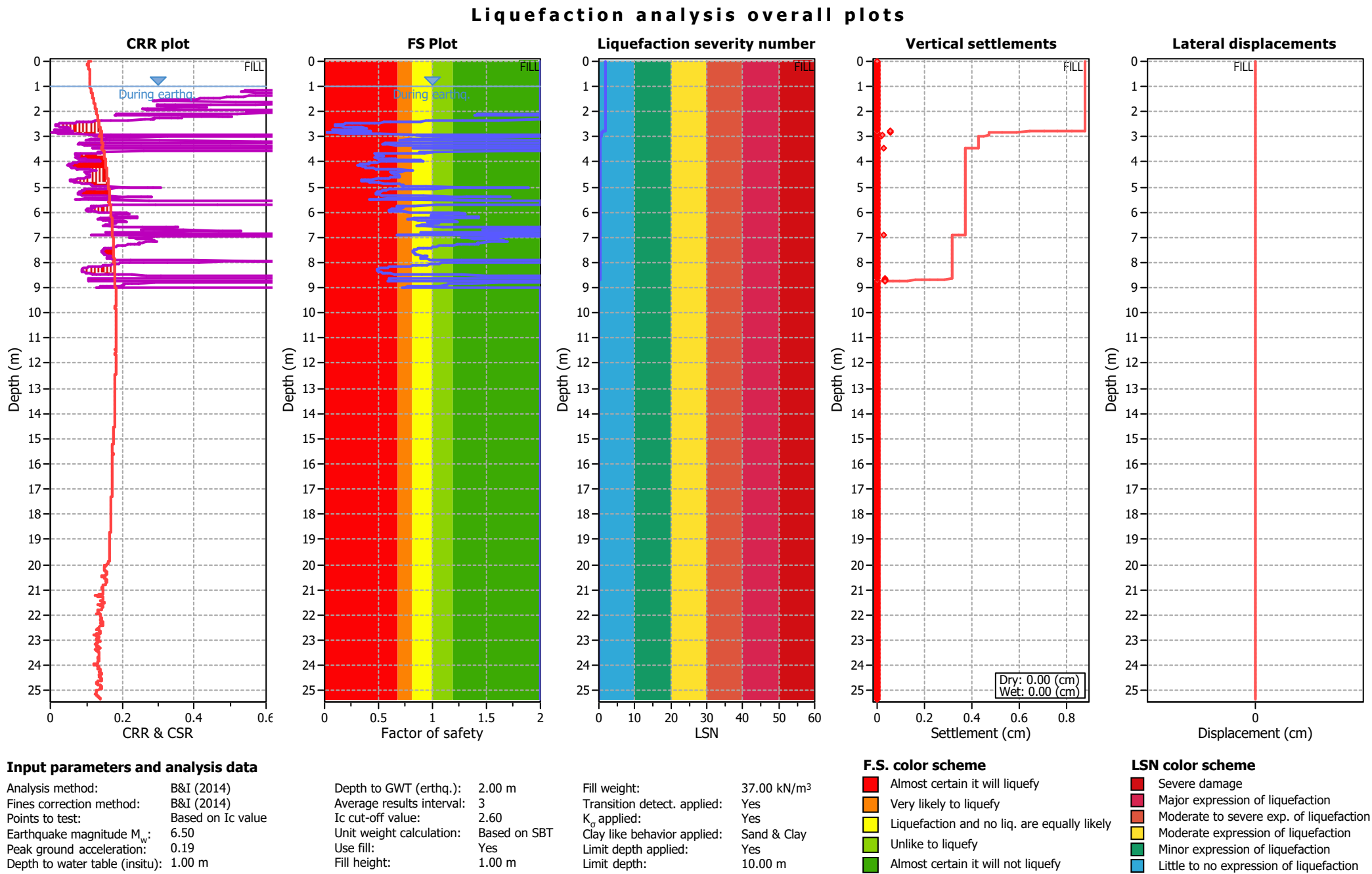
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

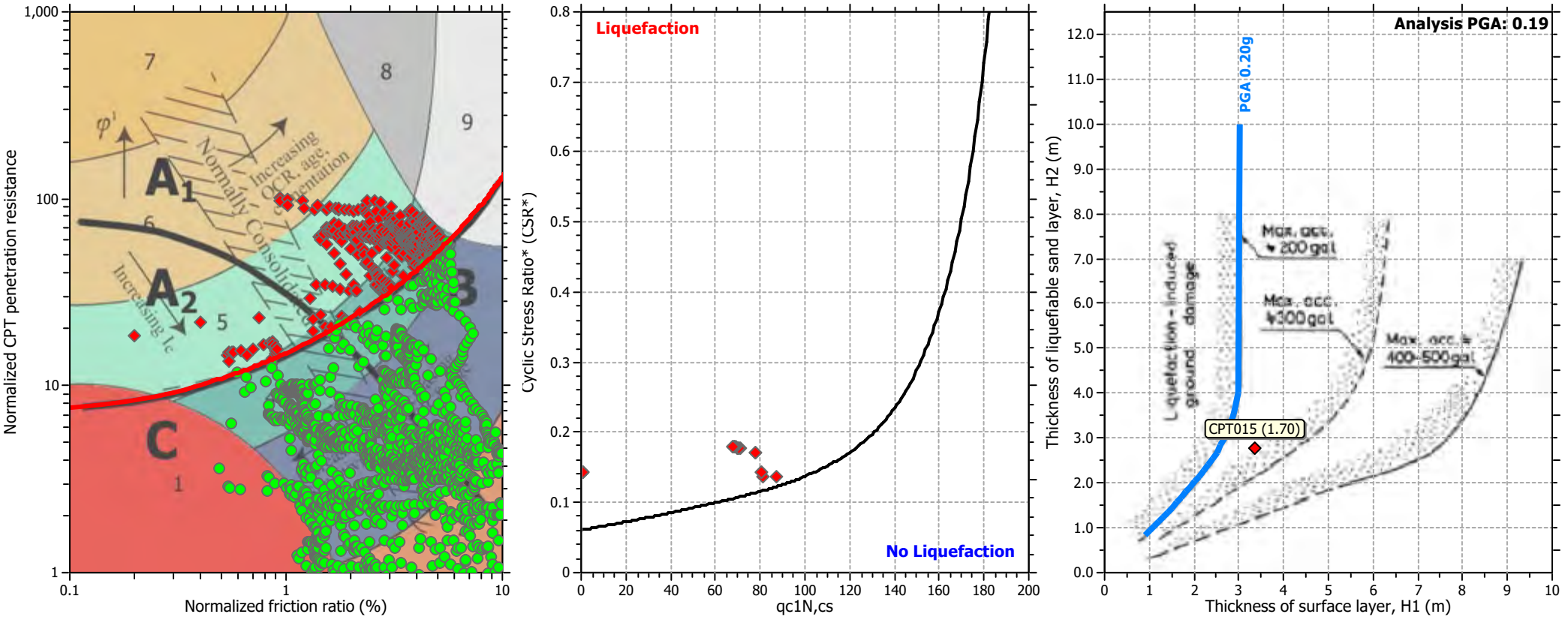


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



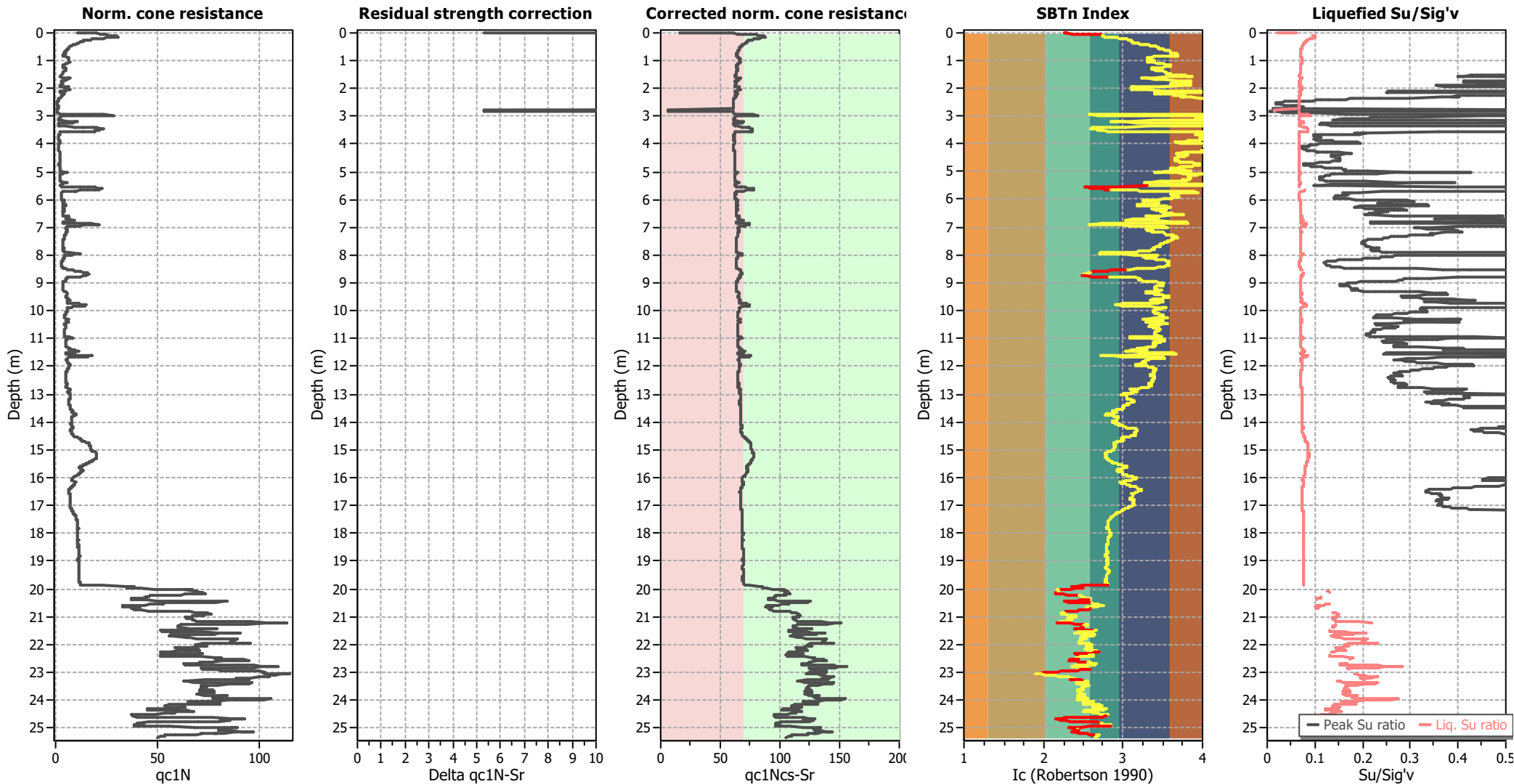
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

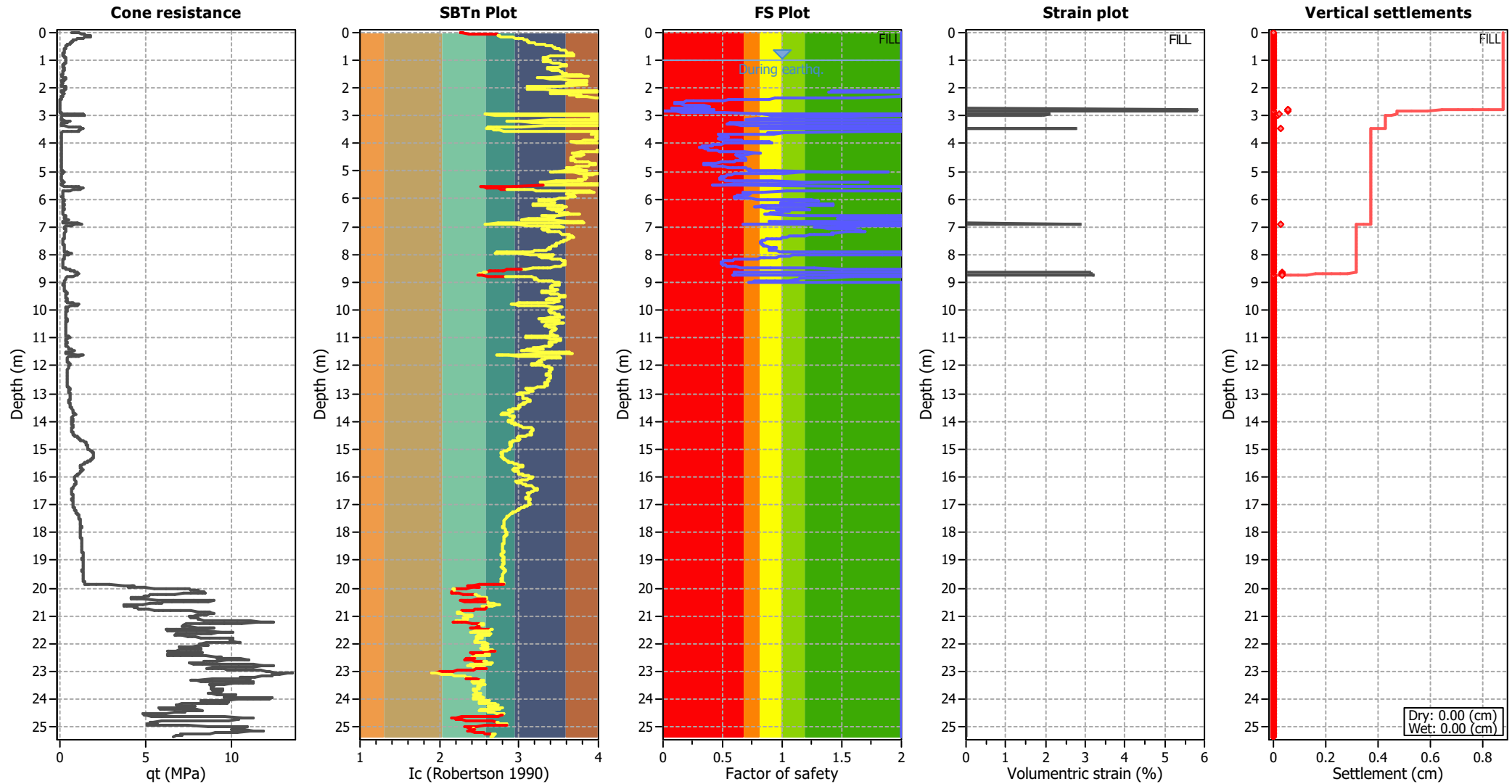
Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

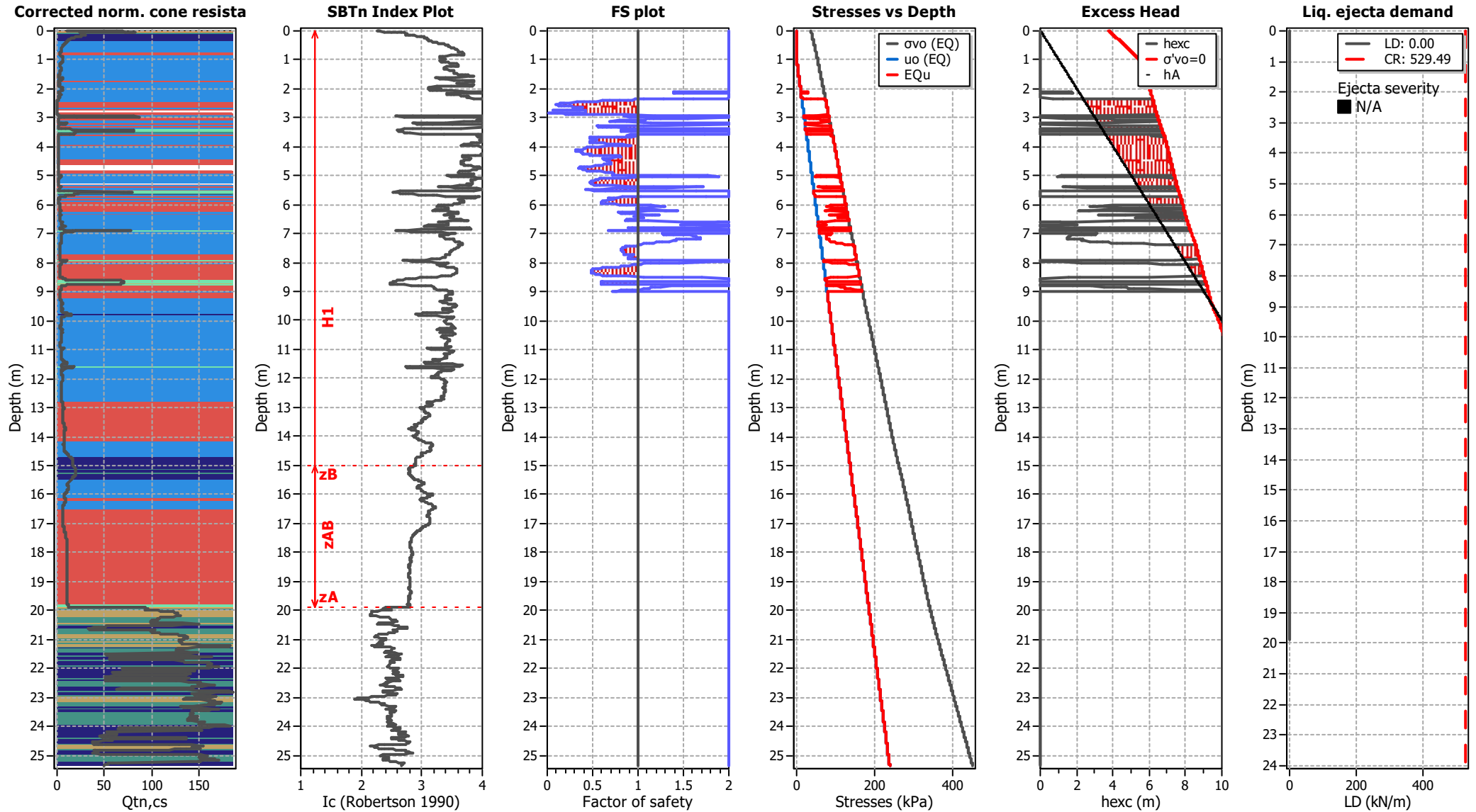
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

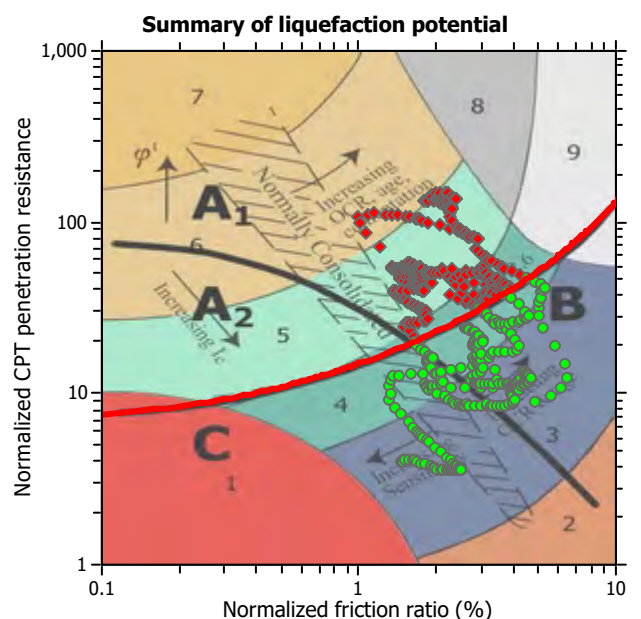
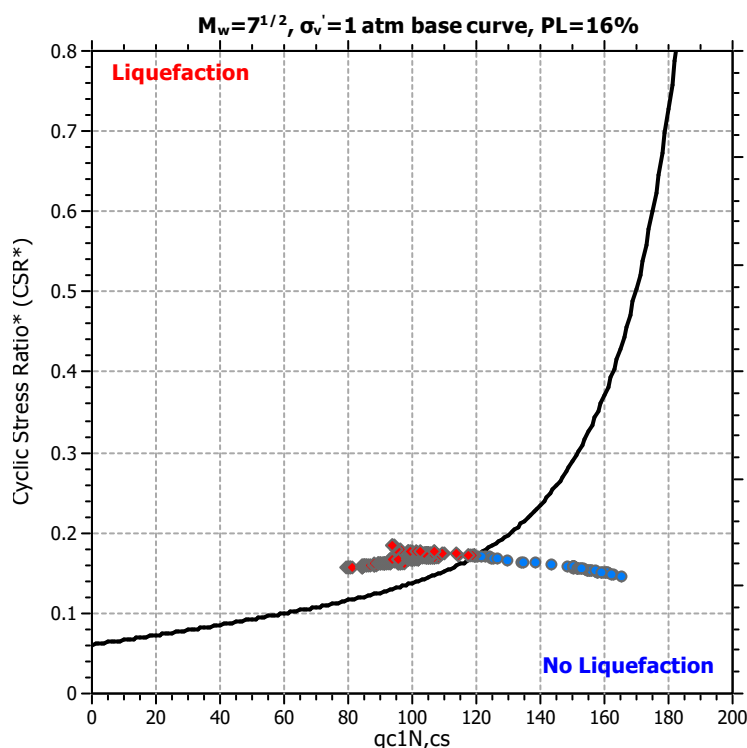
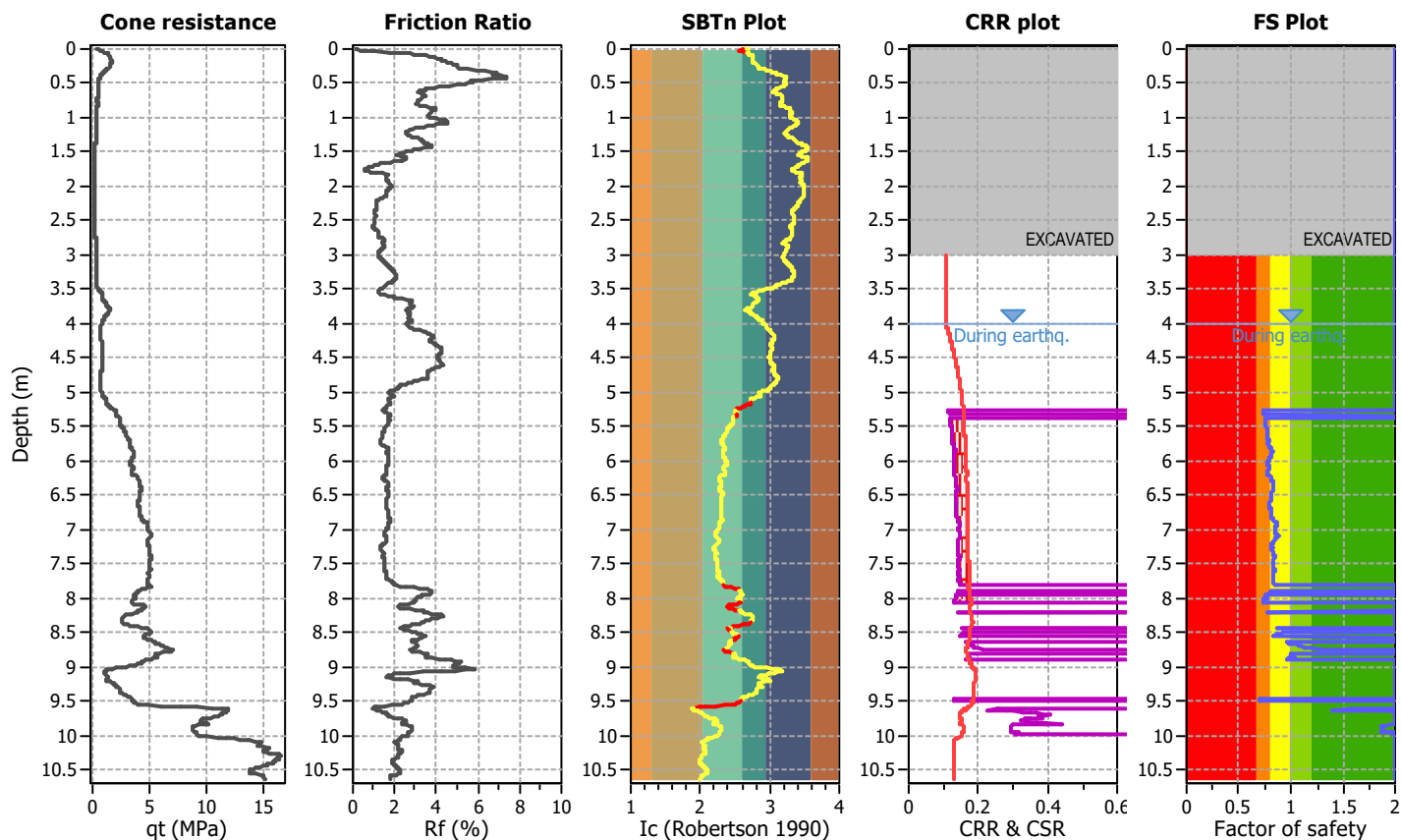
Project title : Sunfield Landholding

Location :

CPT file : CPT016

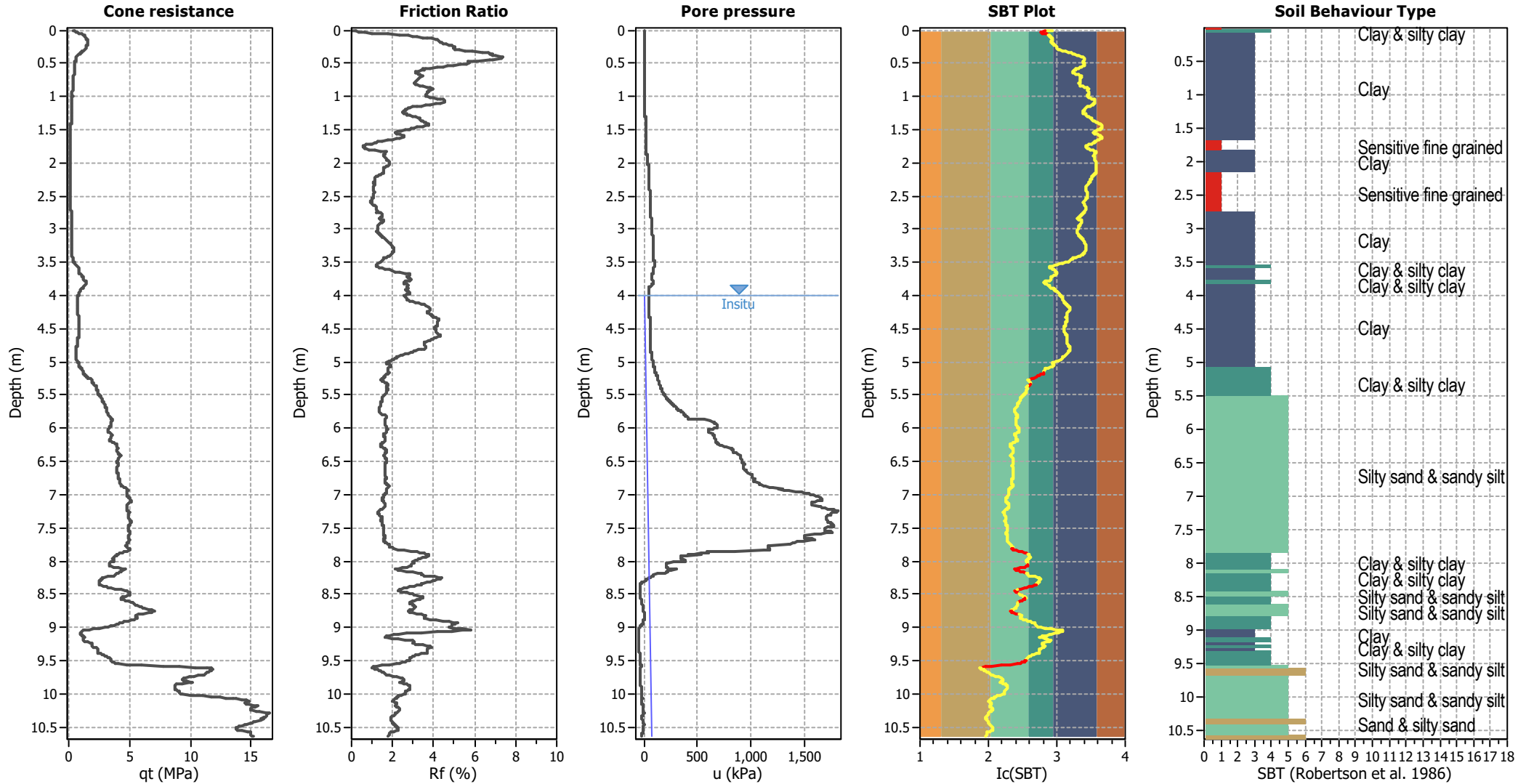
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

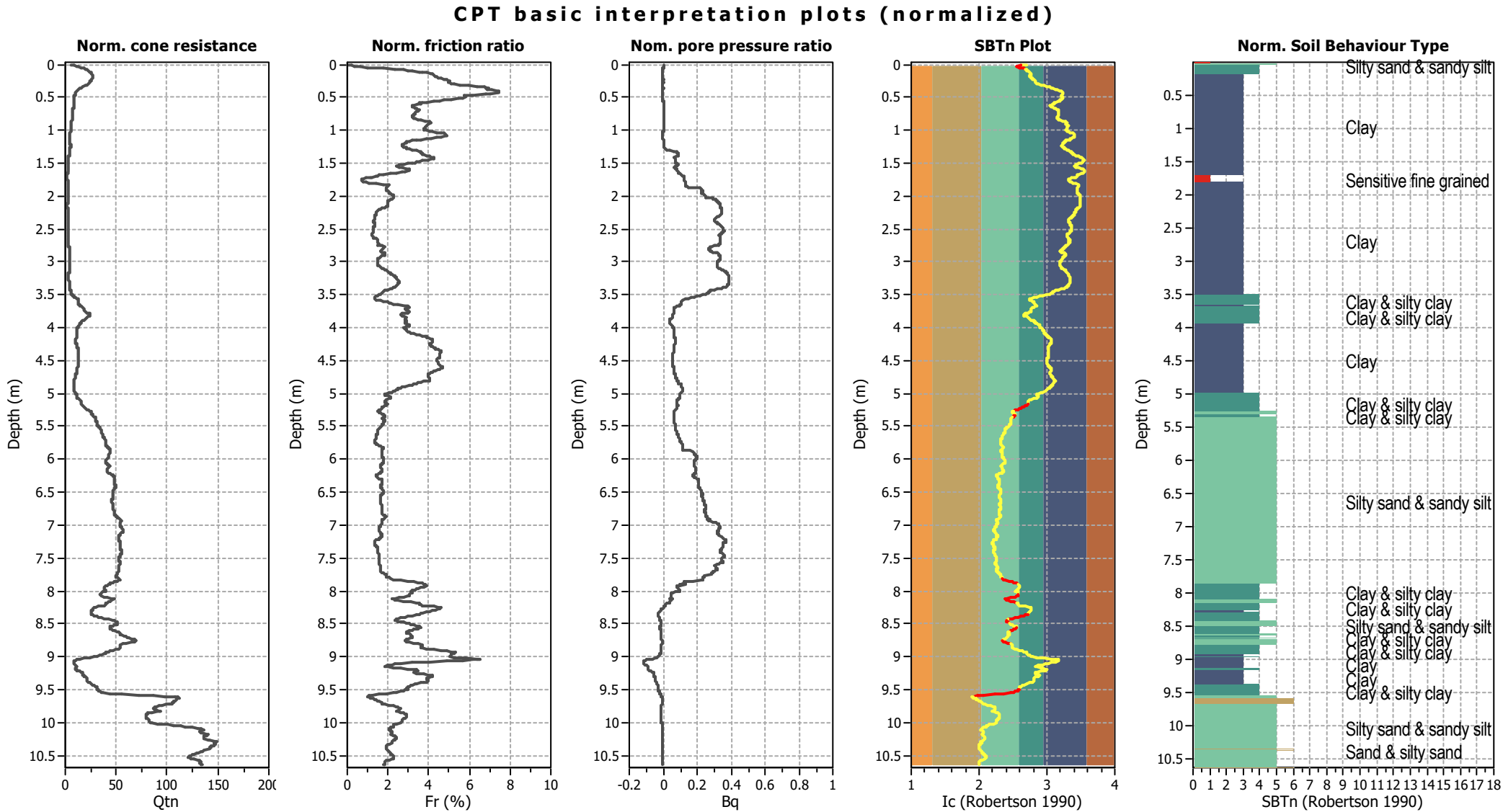


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

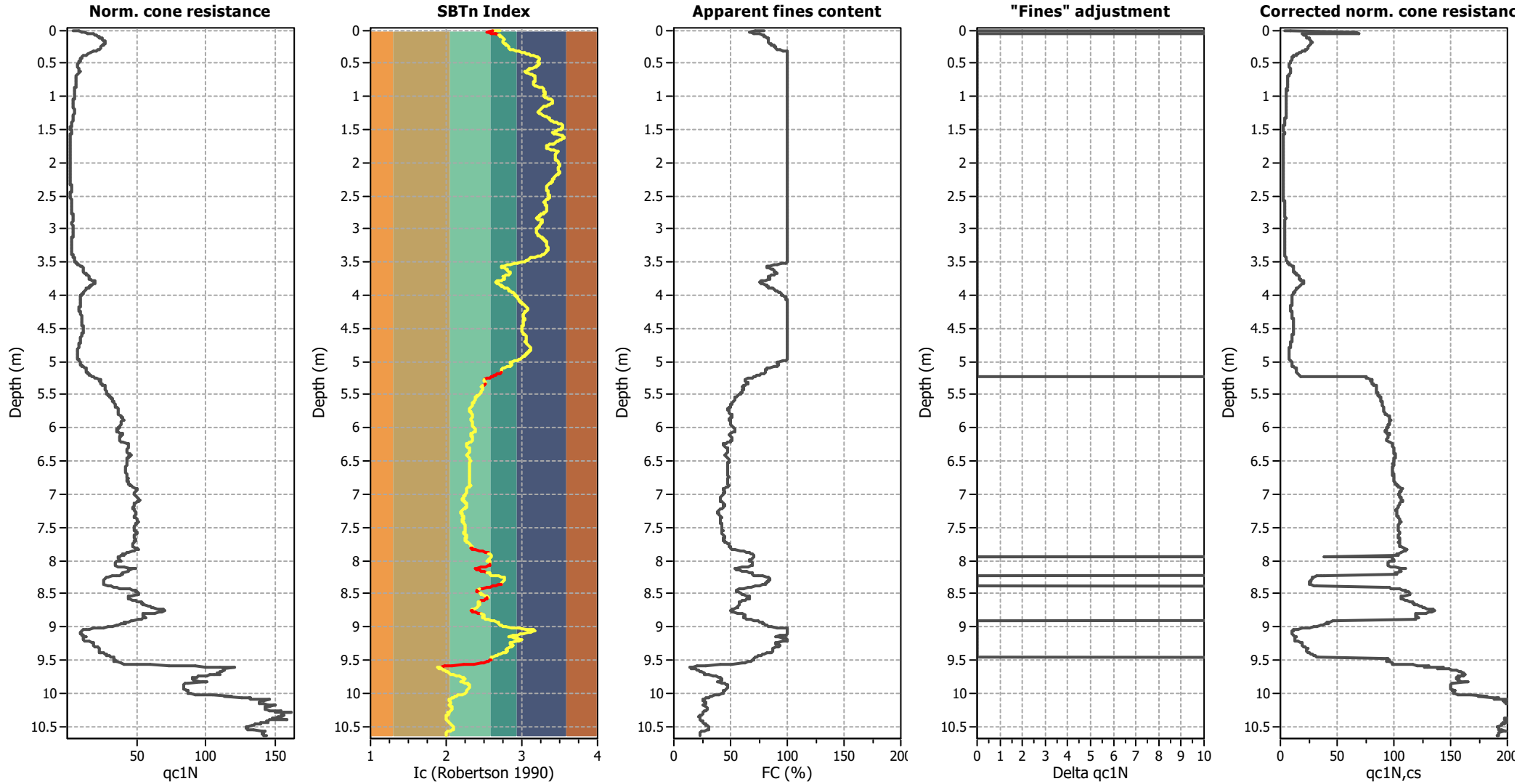


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

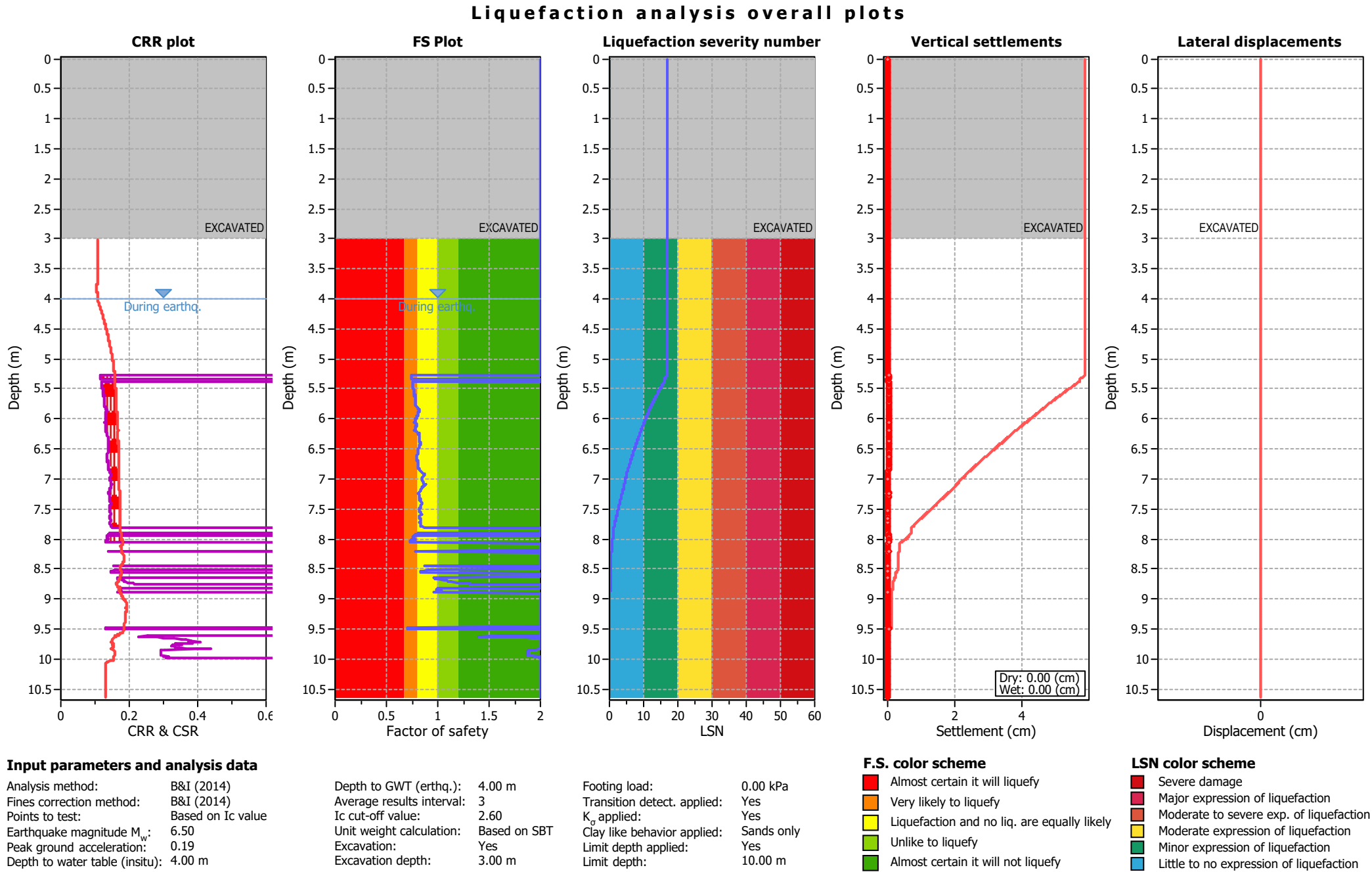
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

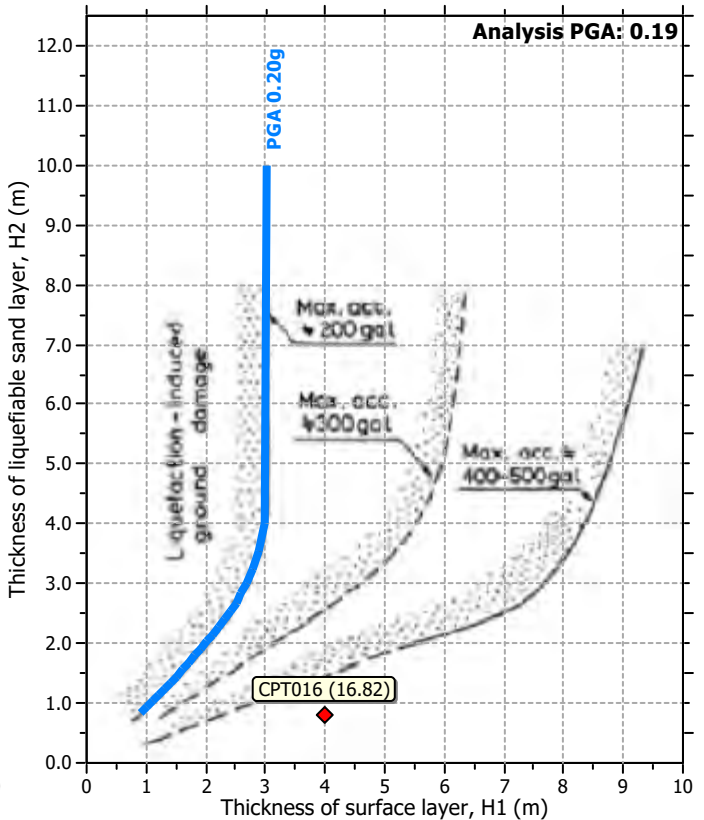
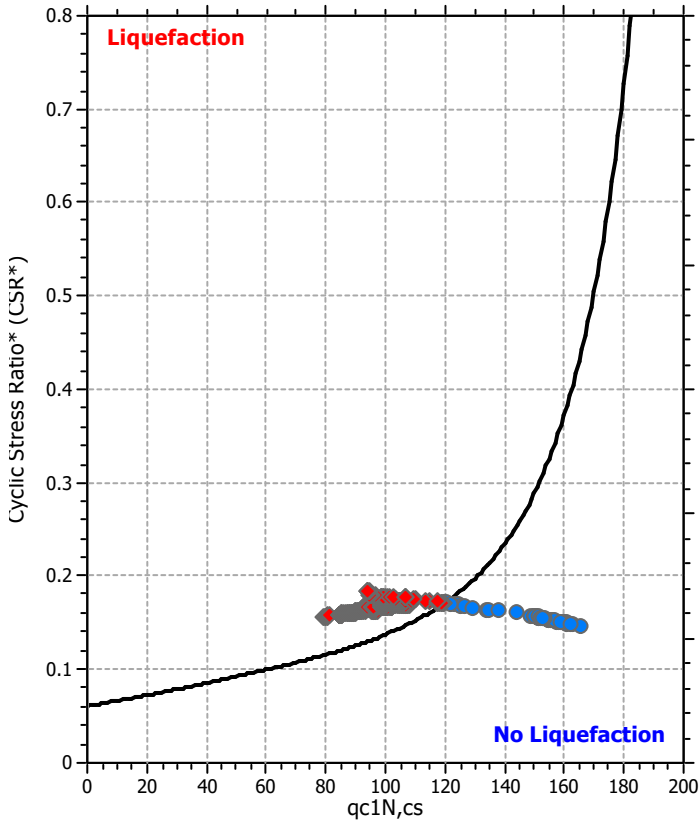
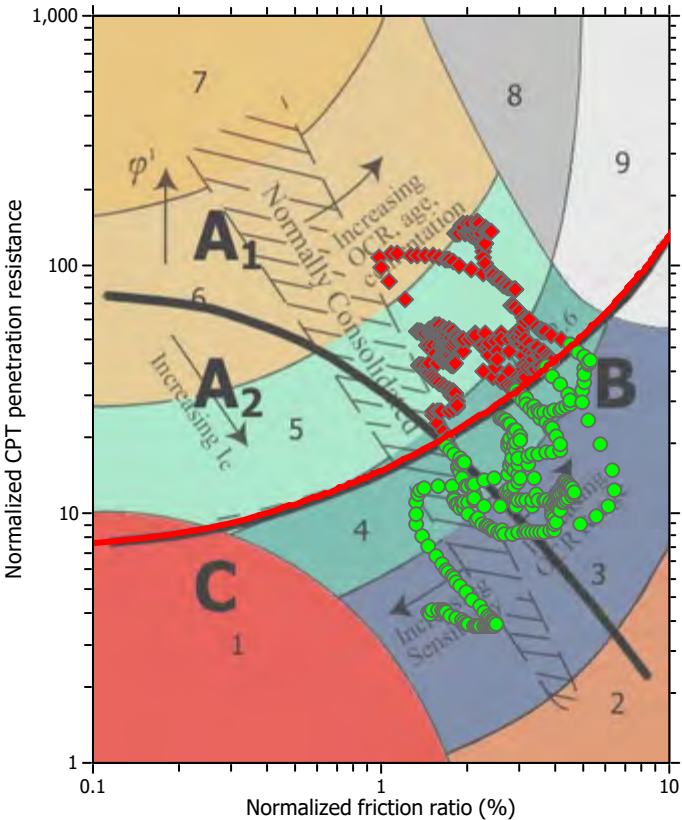


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



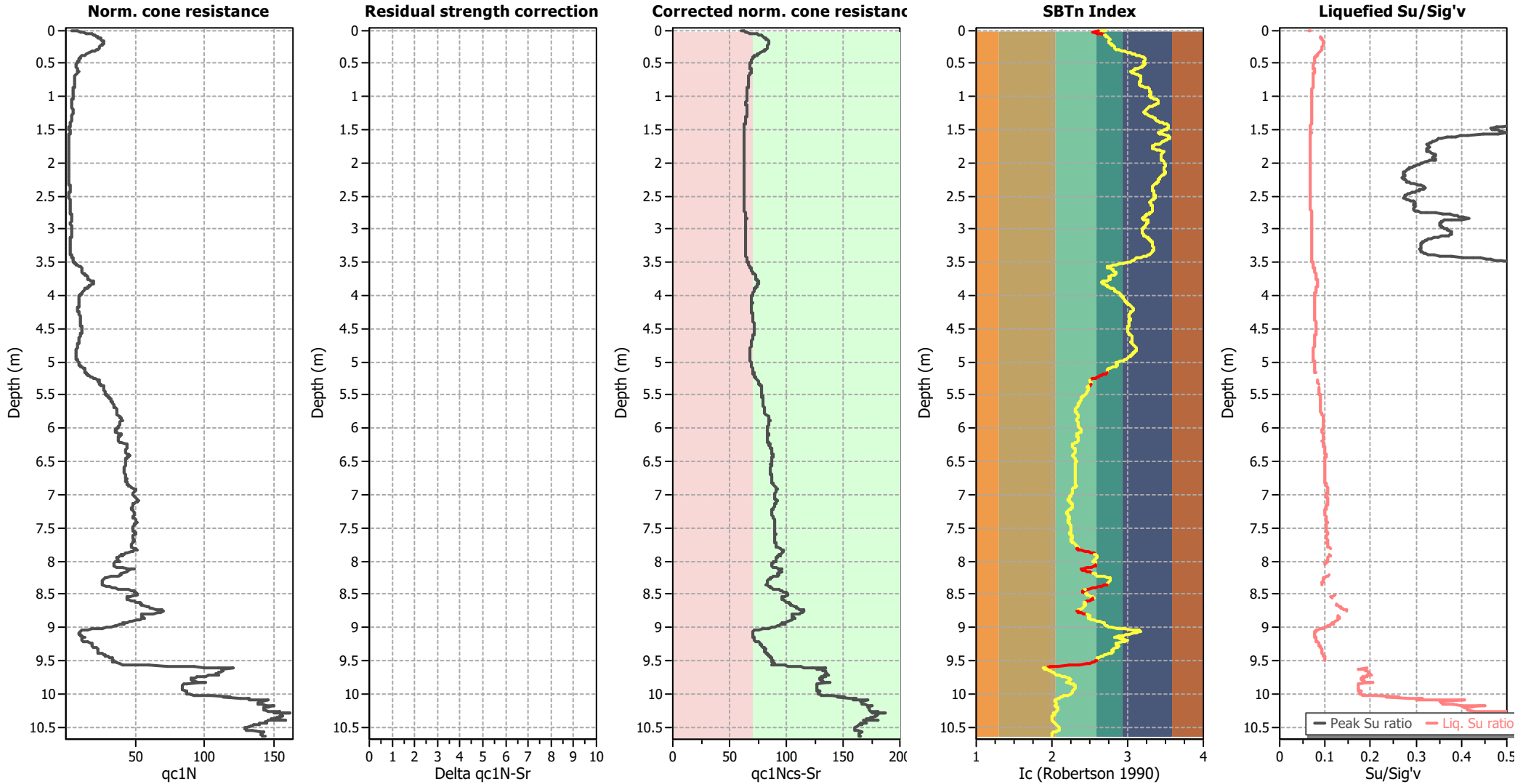
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

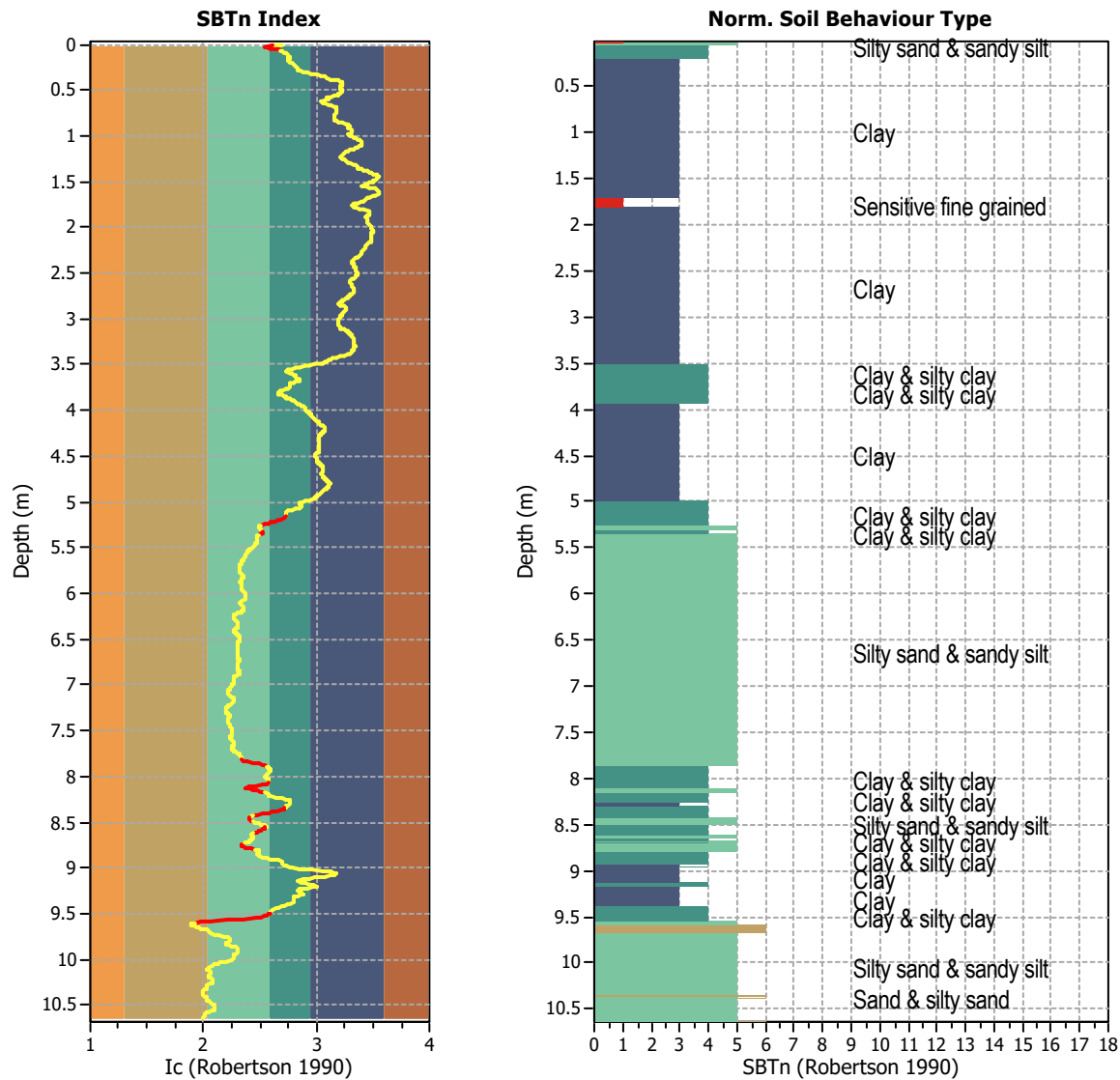
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

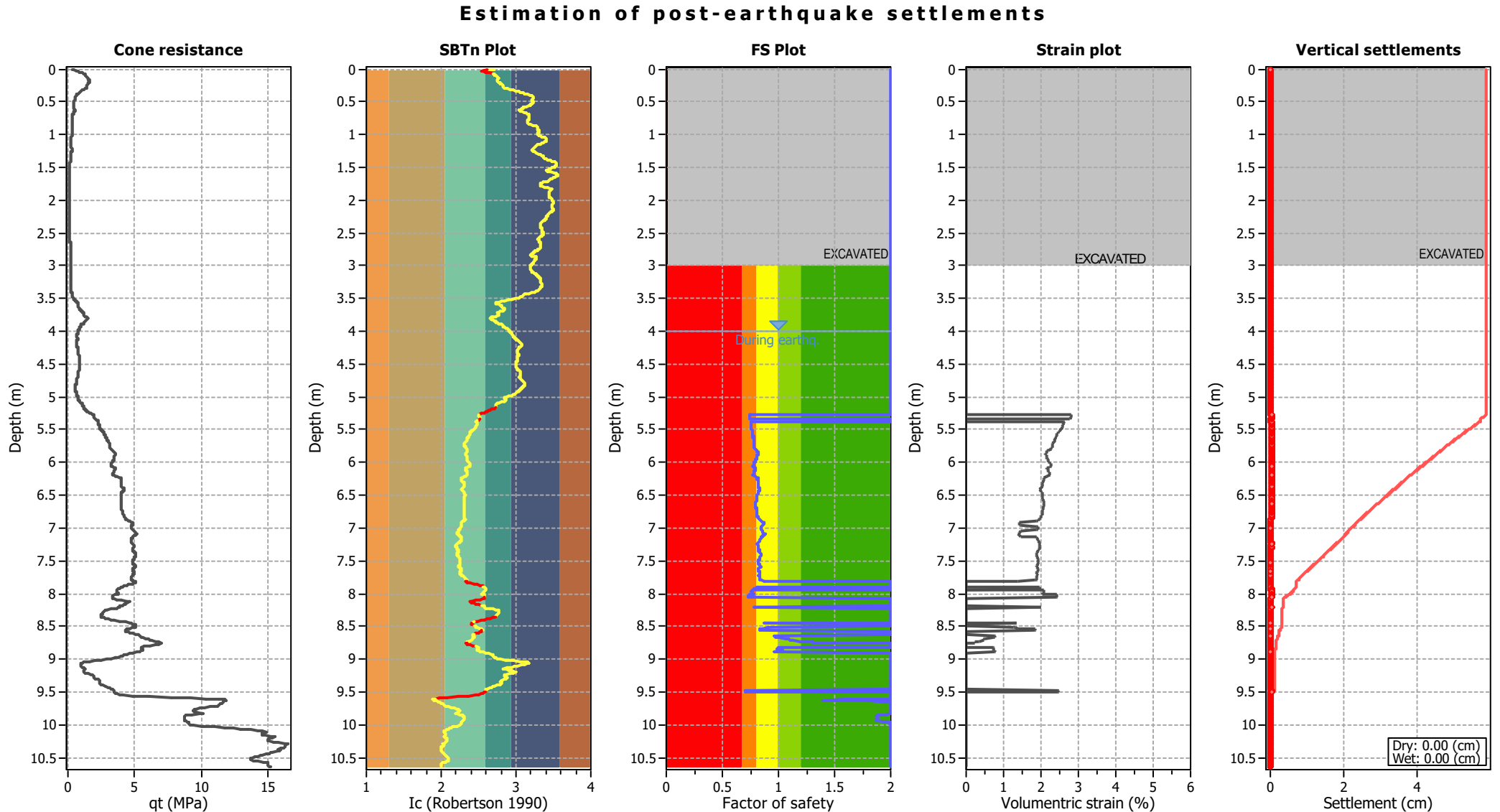


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

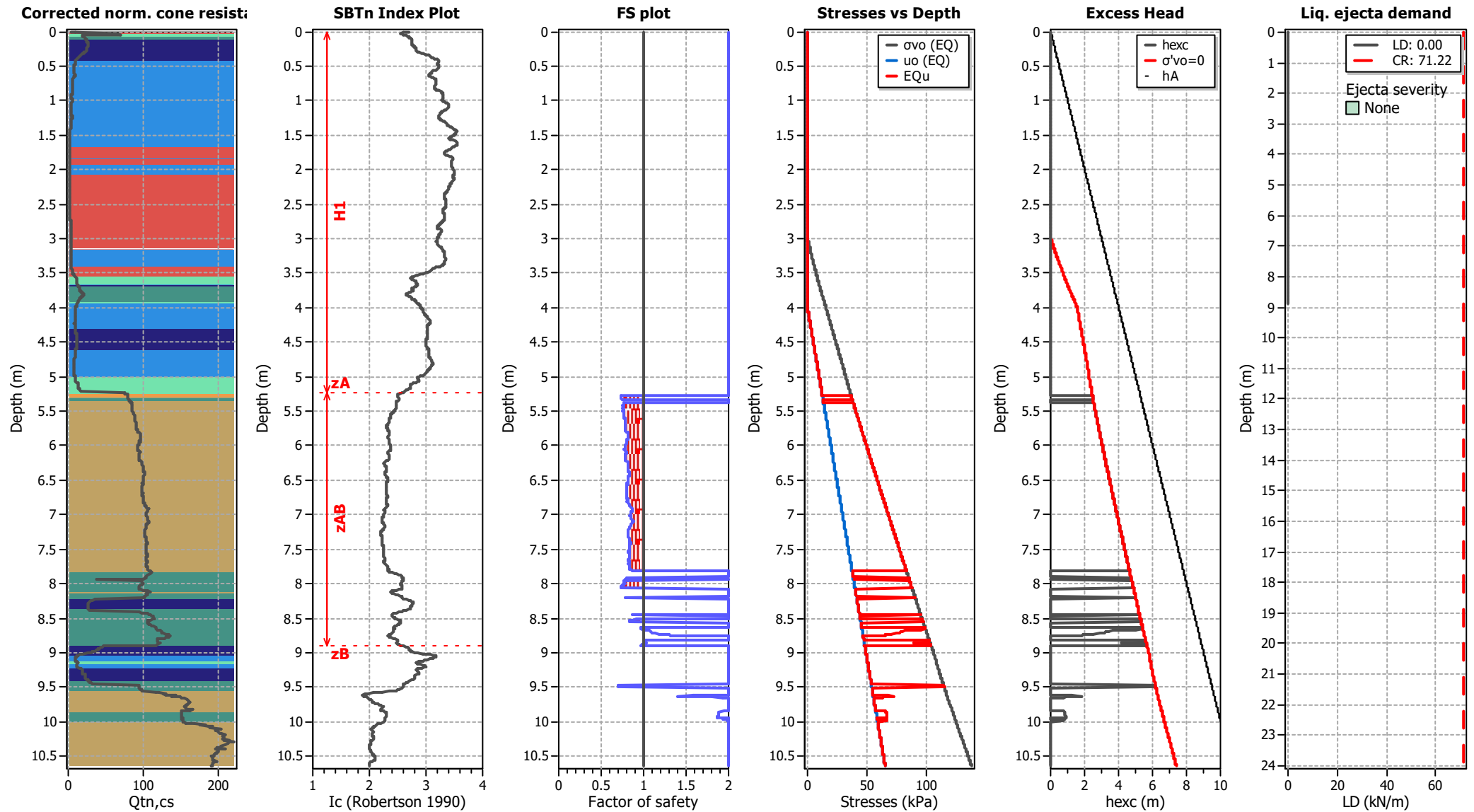
Total points in CPT file: 1064
Total points excluded: 81
Exclusion percentage: 7.61%
Number of layers detected: 11



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

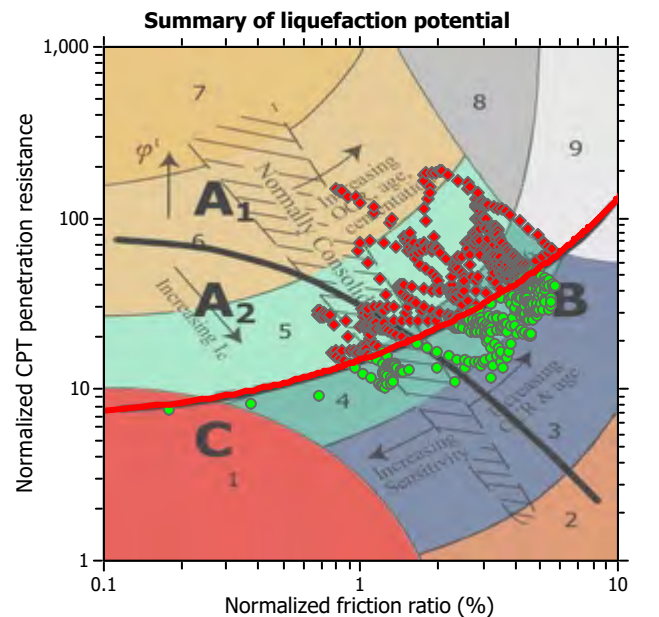
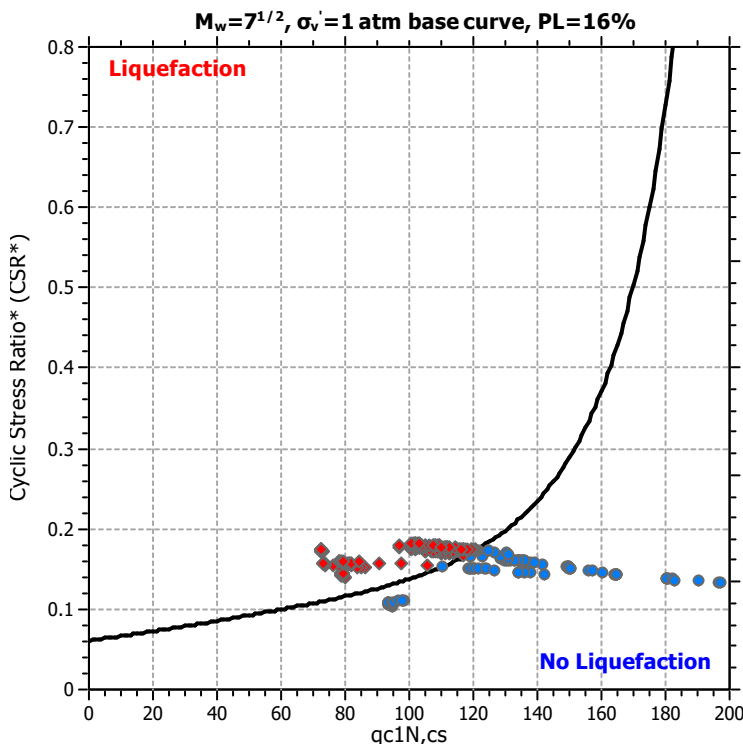
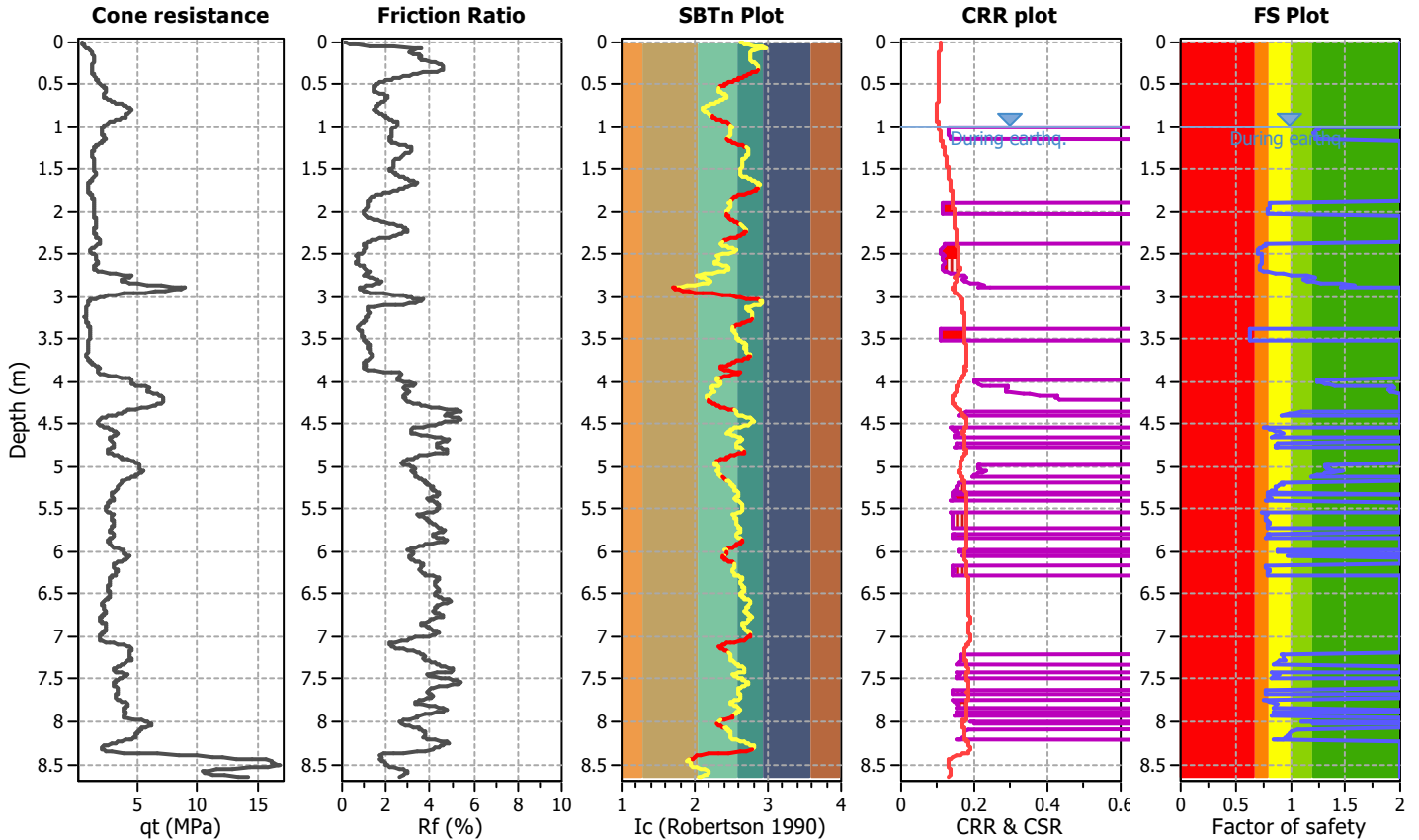
Project title : Sunfield Landholding

Location :

CPT file : CPT017

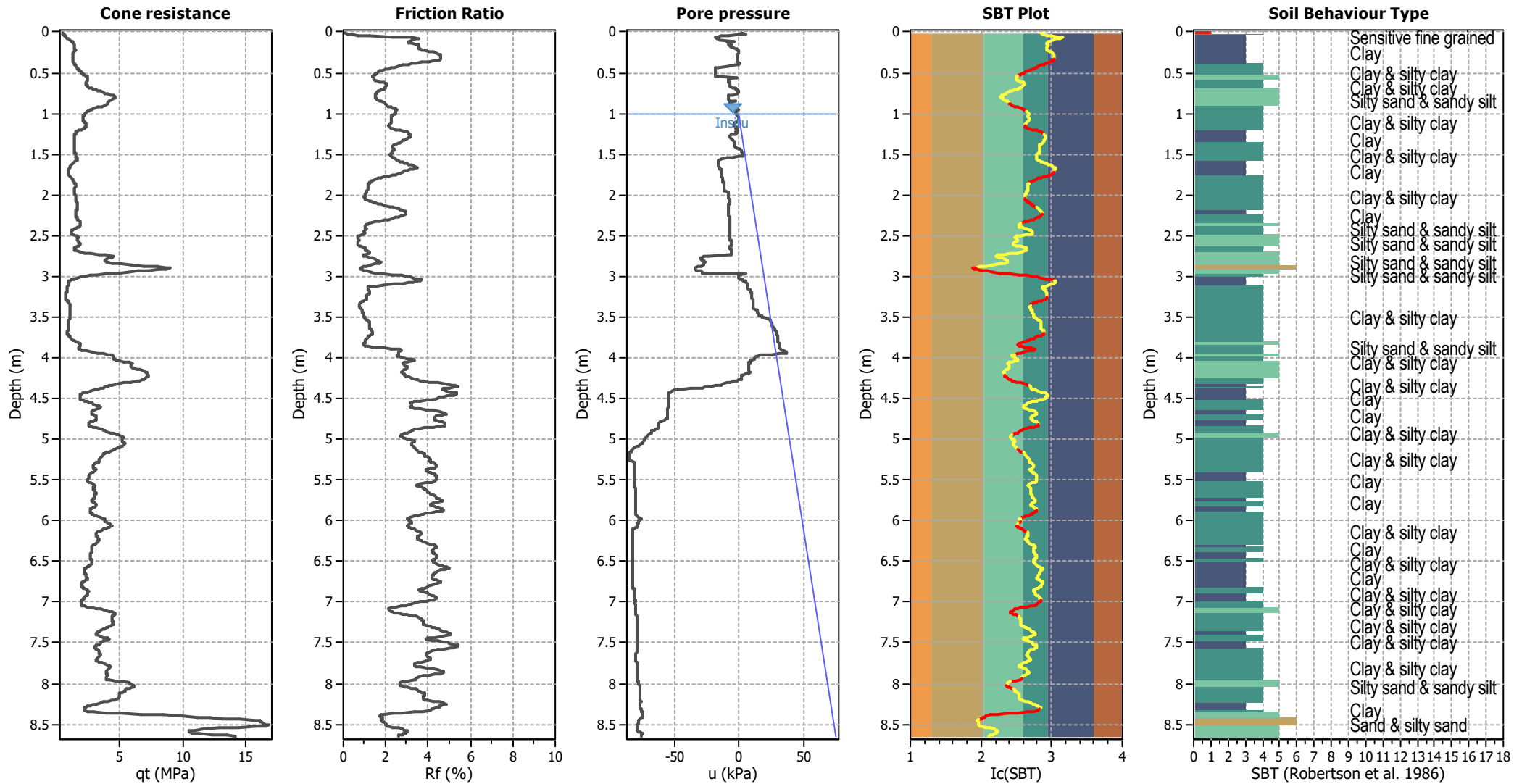
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

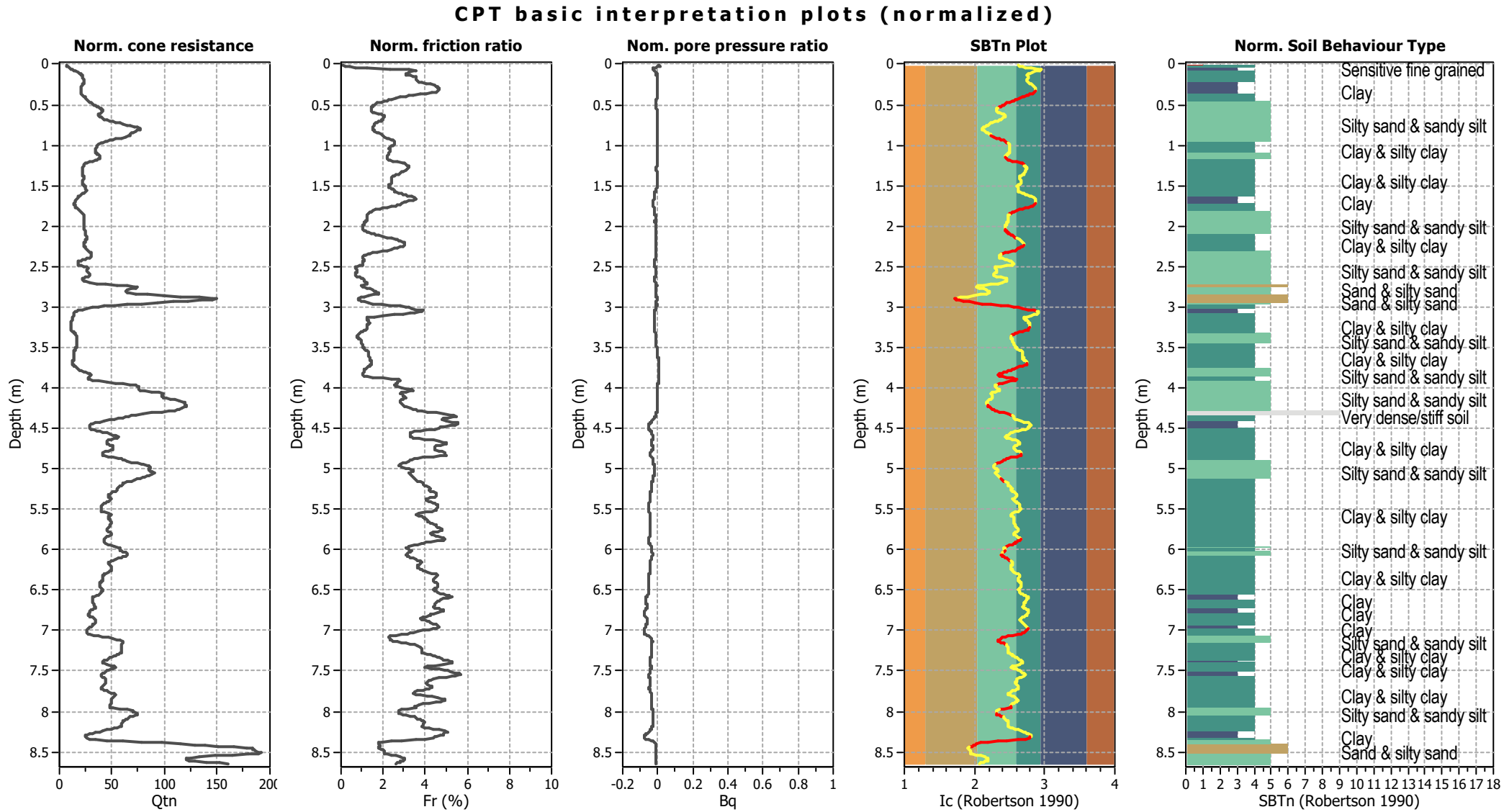


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



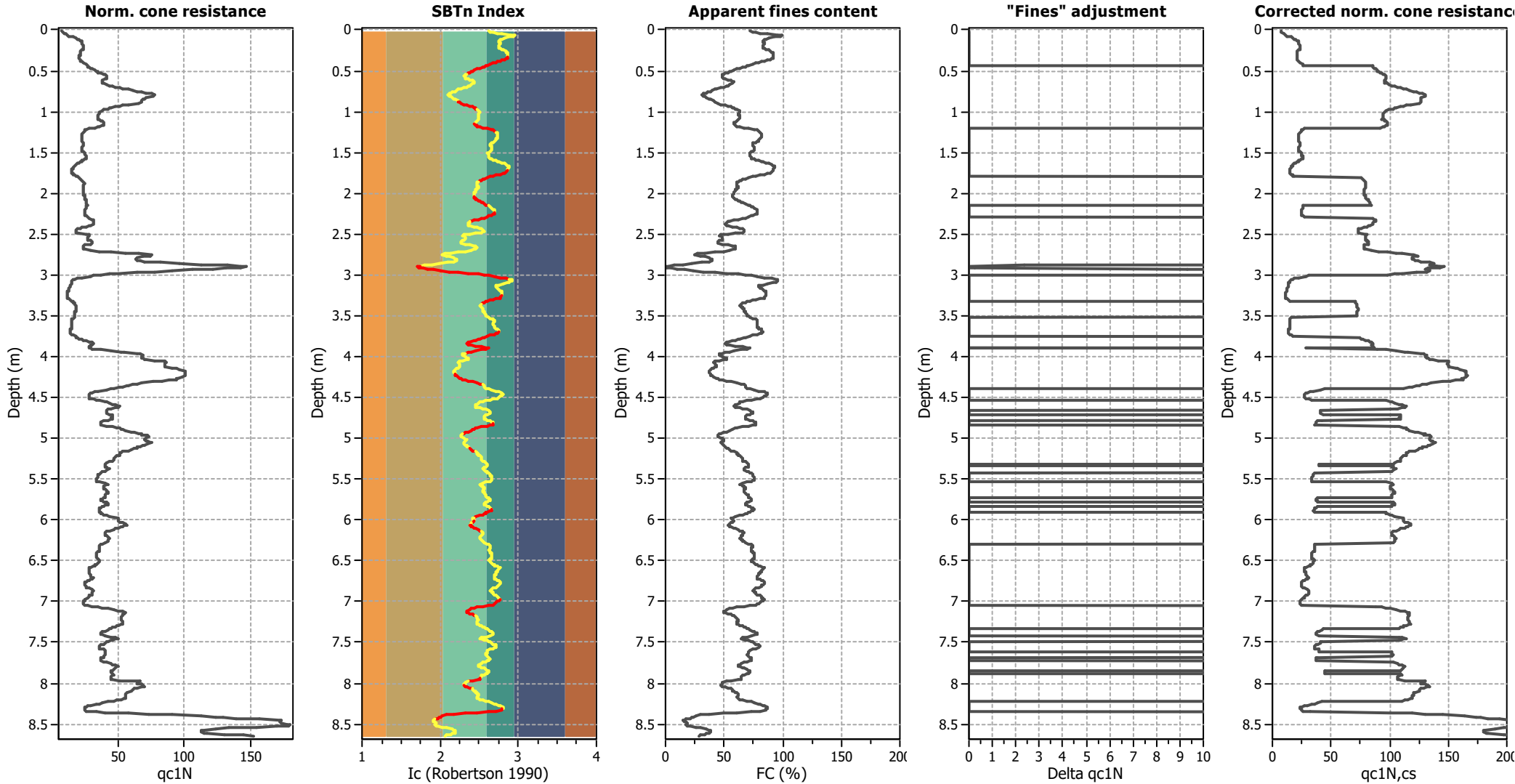
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

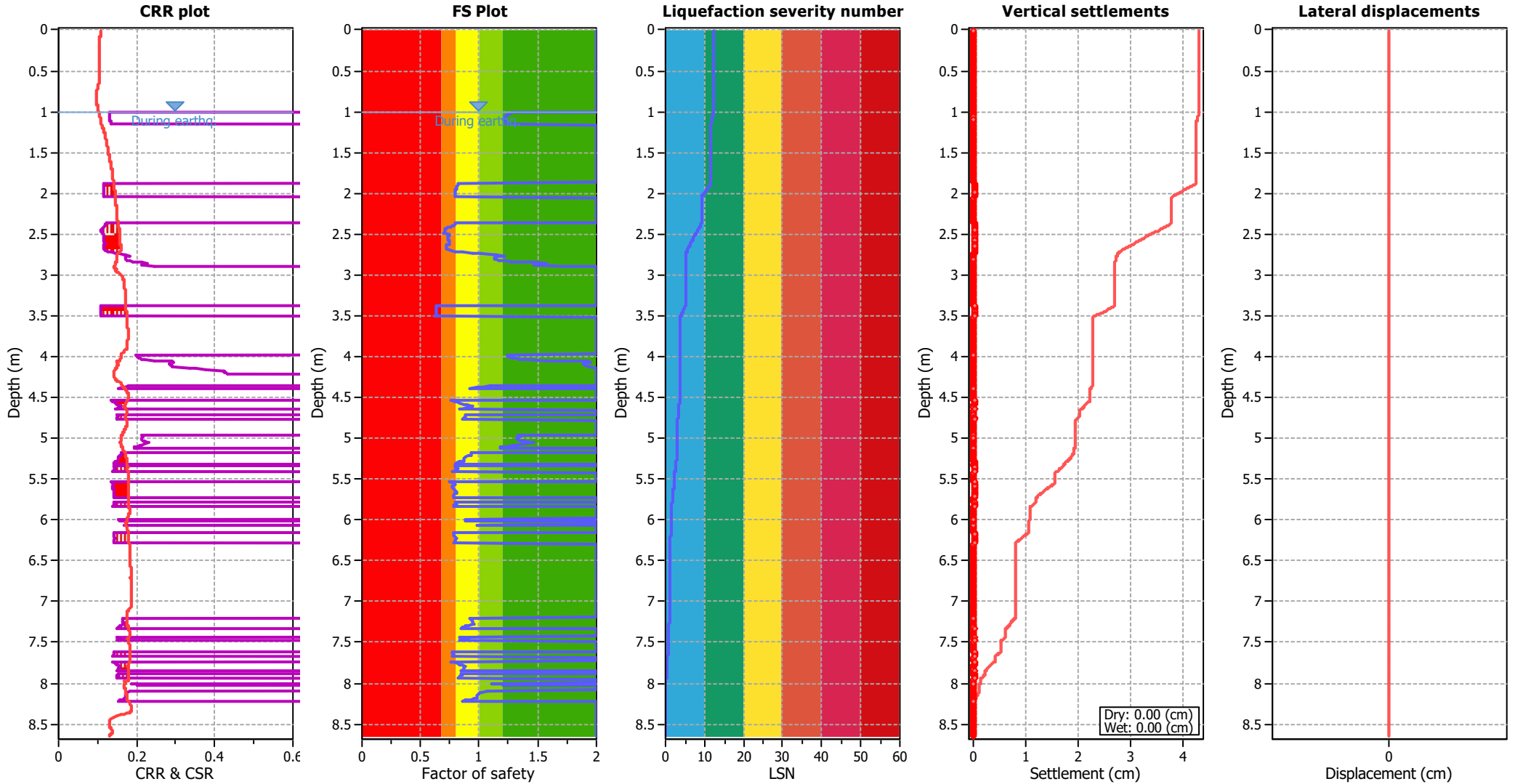
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

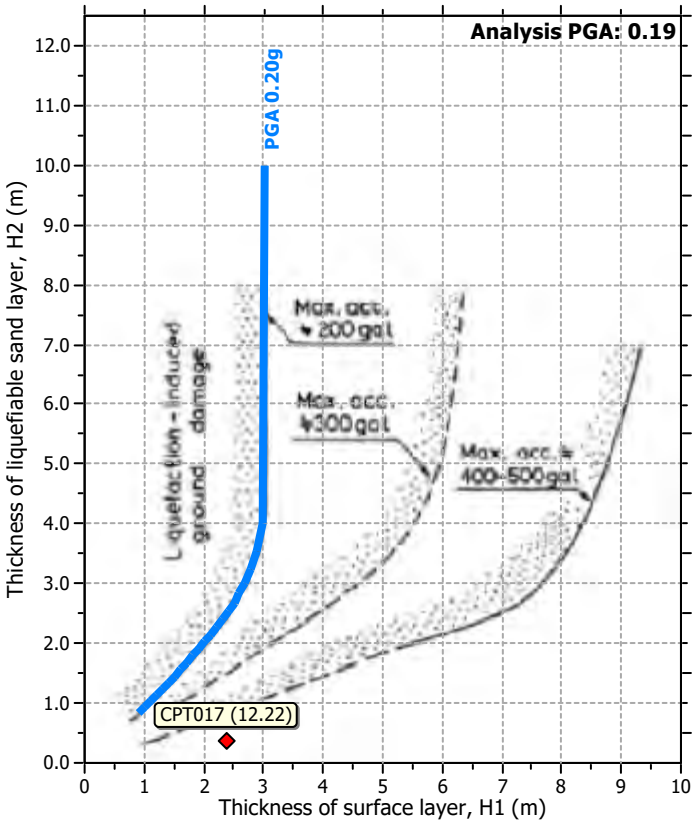
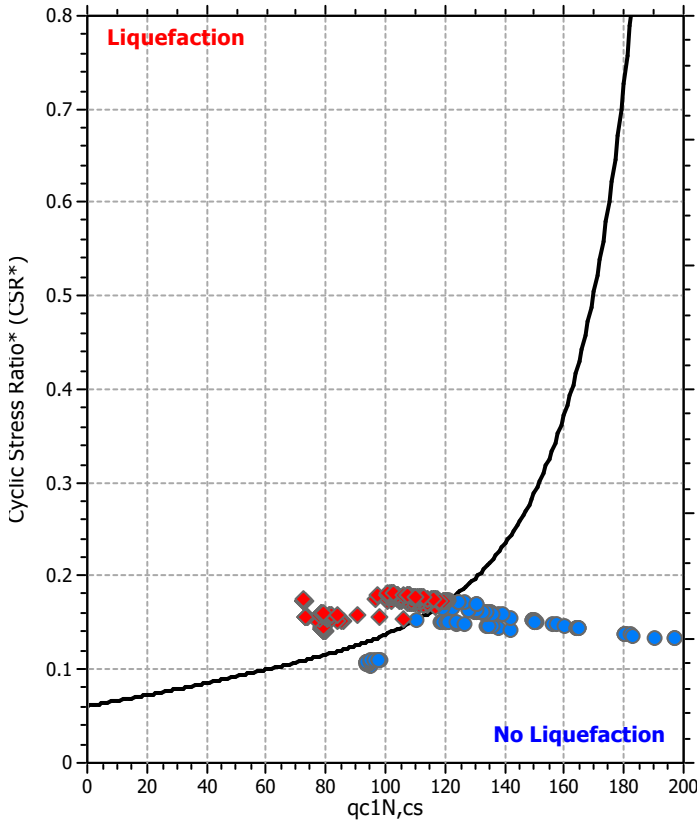
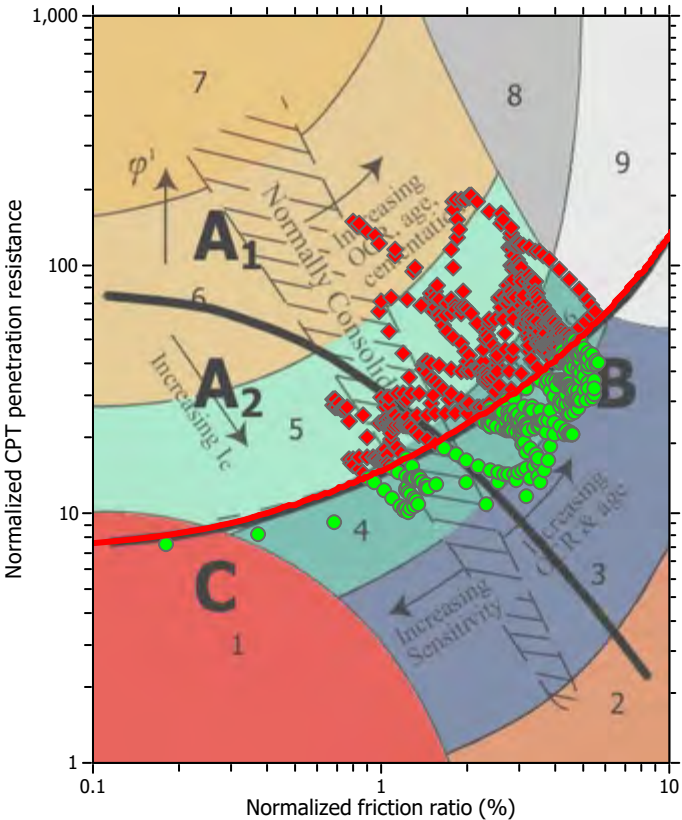
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

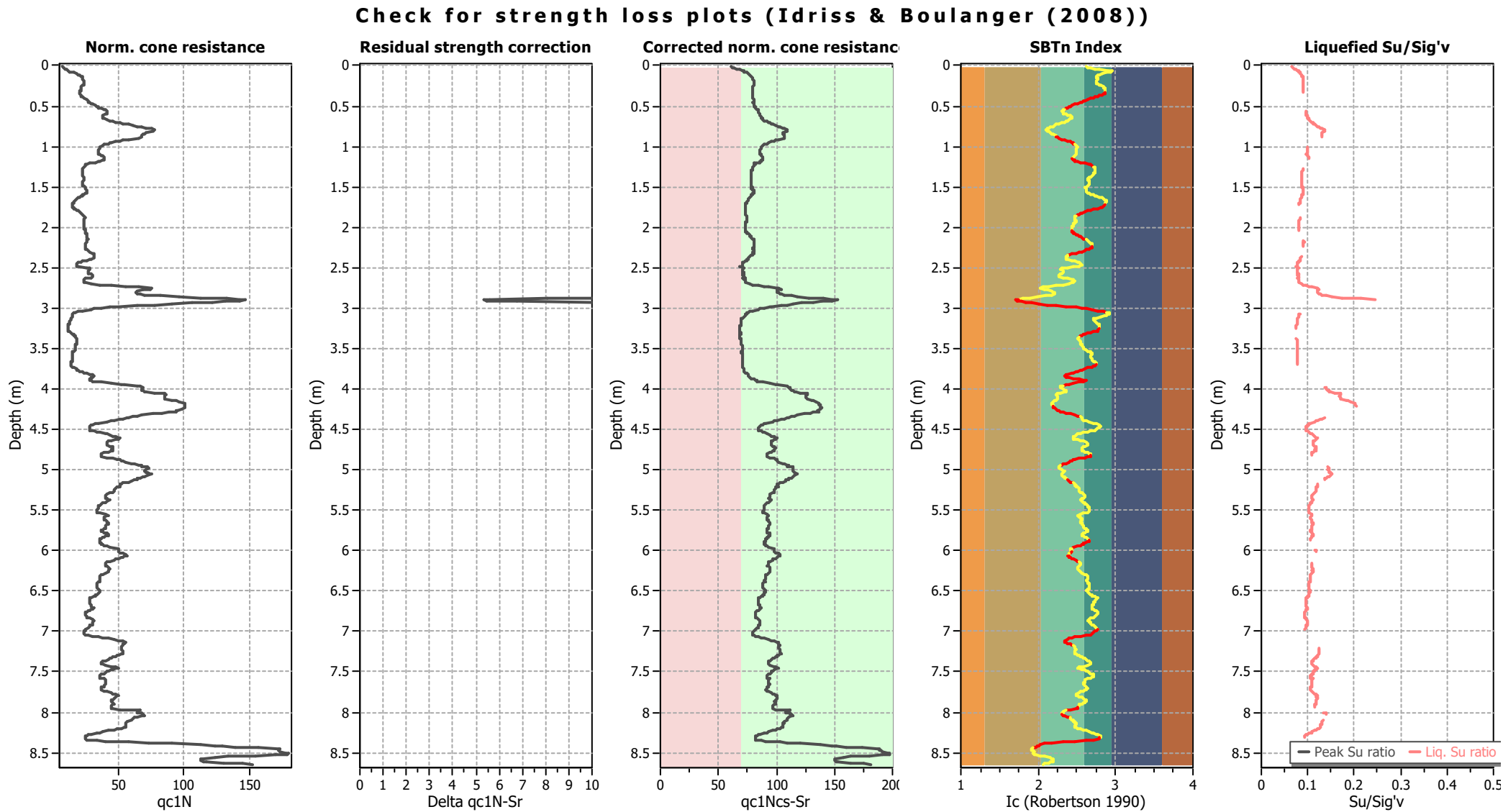
Red	Severe damage
Orange	Major expression of liquefaction
Yellow	Moderate to severe exp. of liquefaction
Green	Moderate expression of liquefaction
Dark Green	Minor expression of liquefaction
Blue	Little to no expression of liquefaction

Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

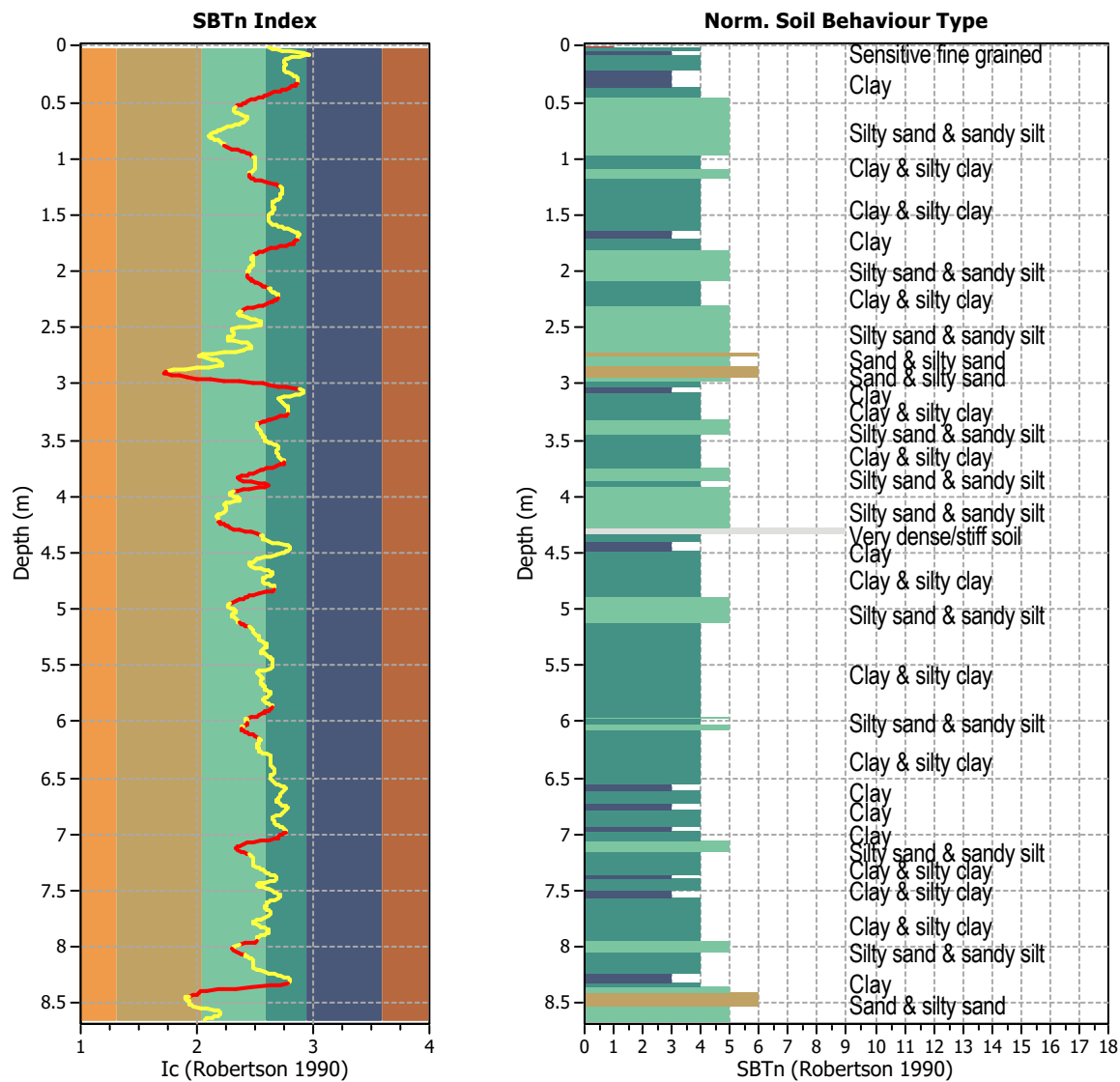
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



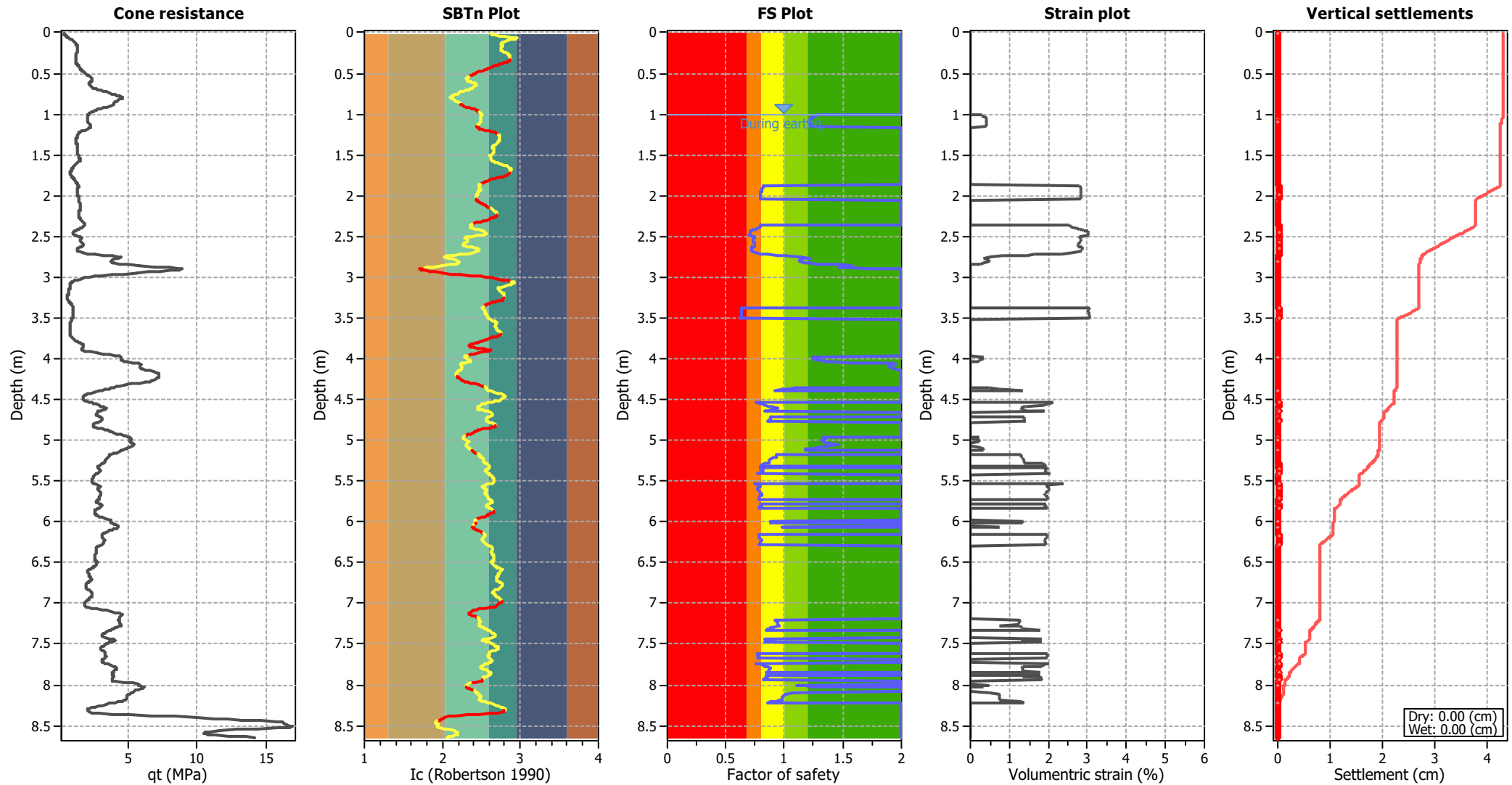
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 865
Total points excluded: 241
Exclusion percentage: 27.86%
Number of layers detected: 22

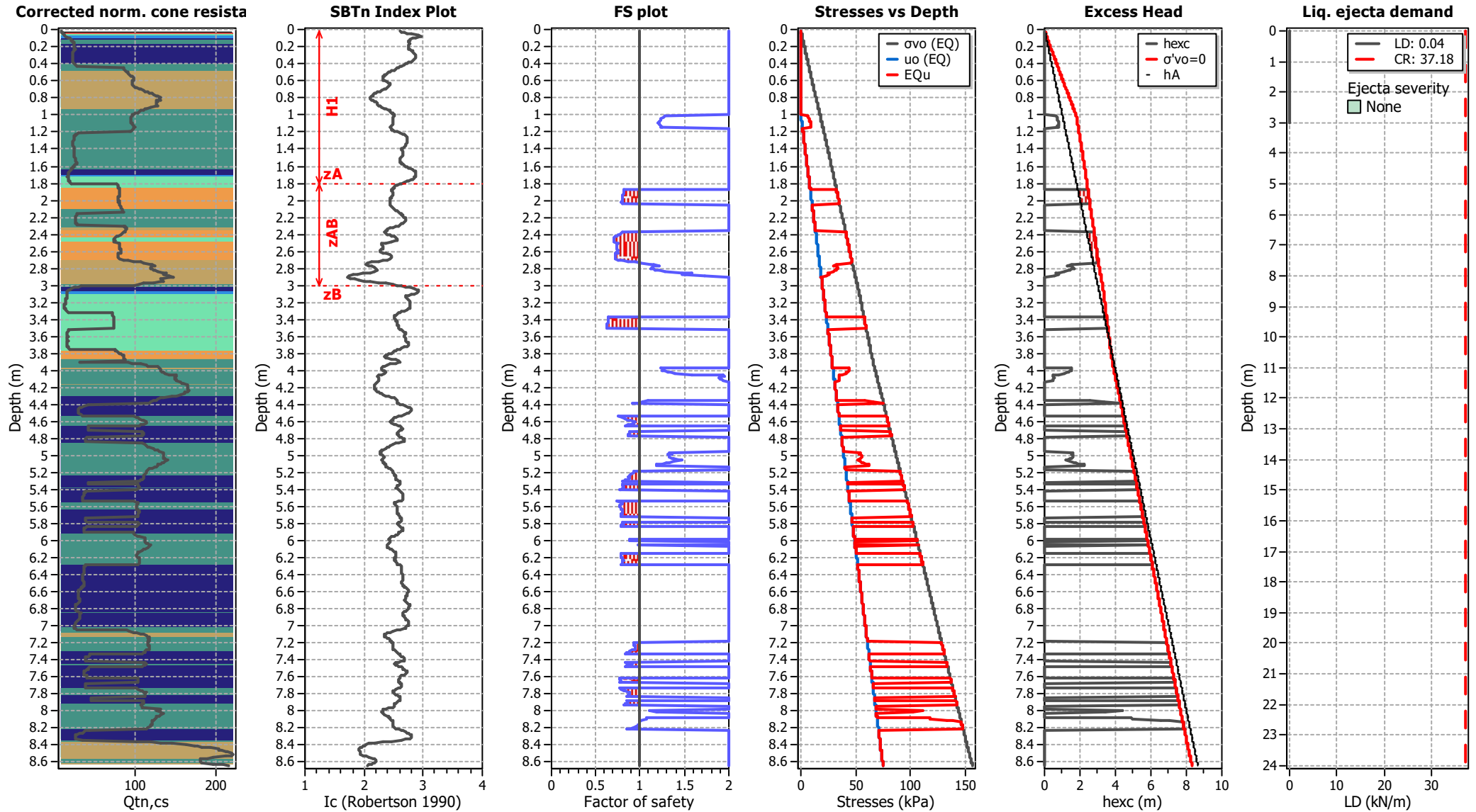
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

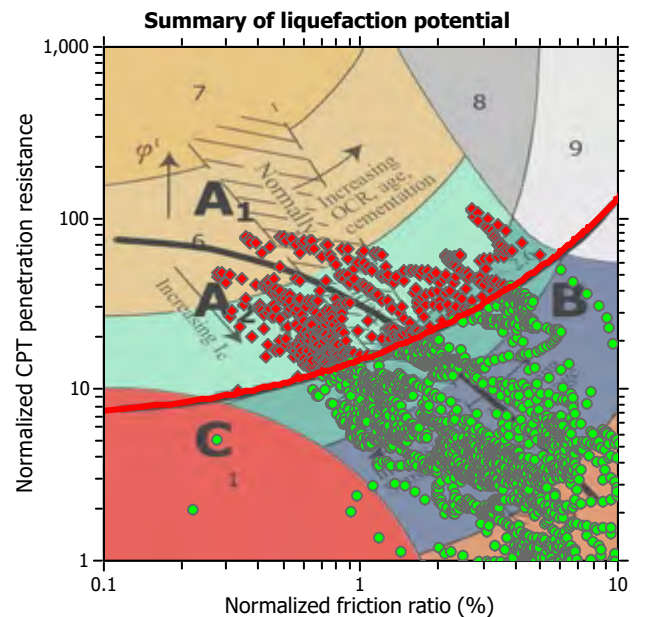
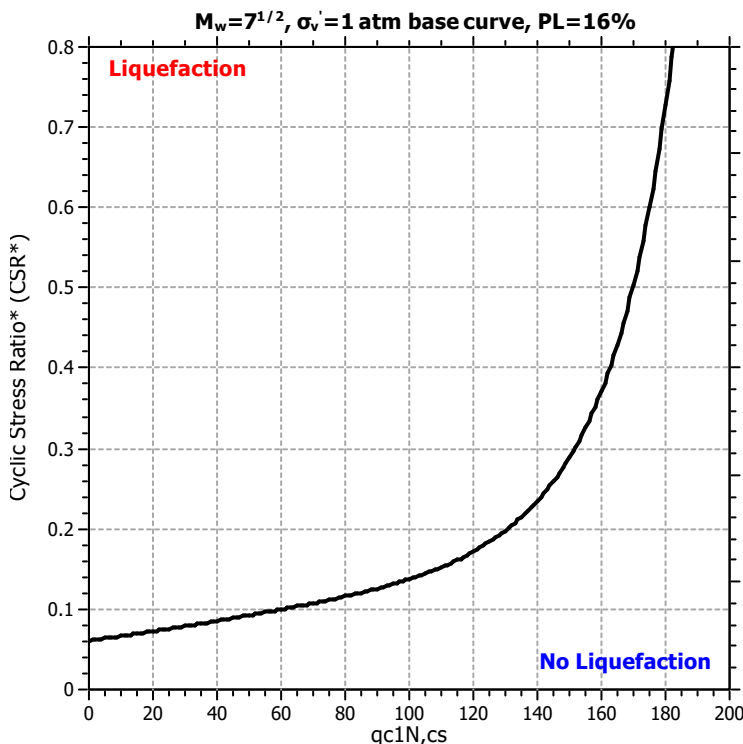
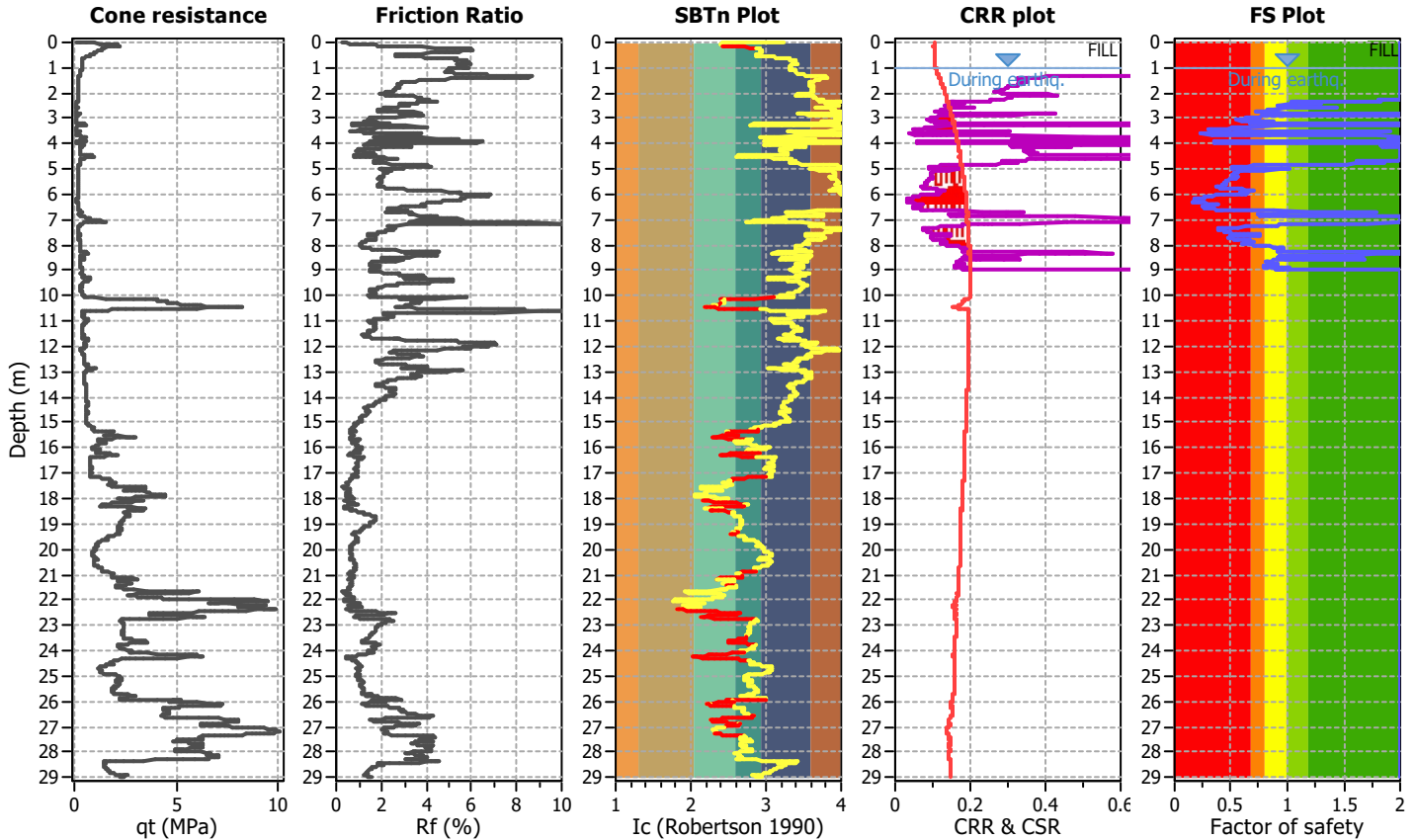
Project title : Sunfield Landholding

Location :

CPT file : CPT018

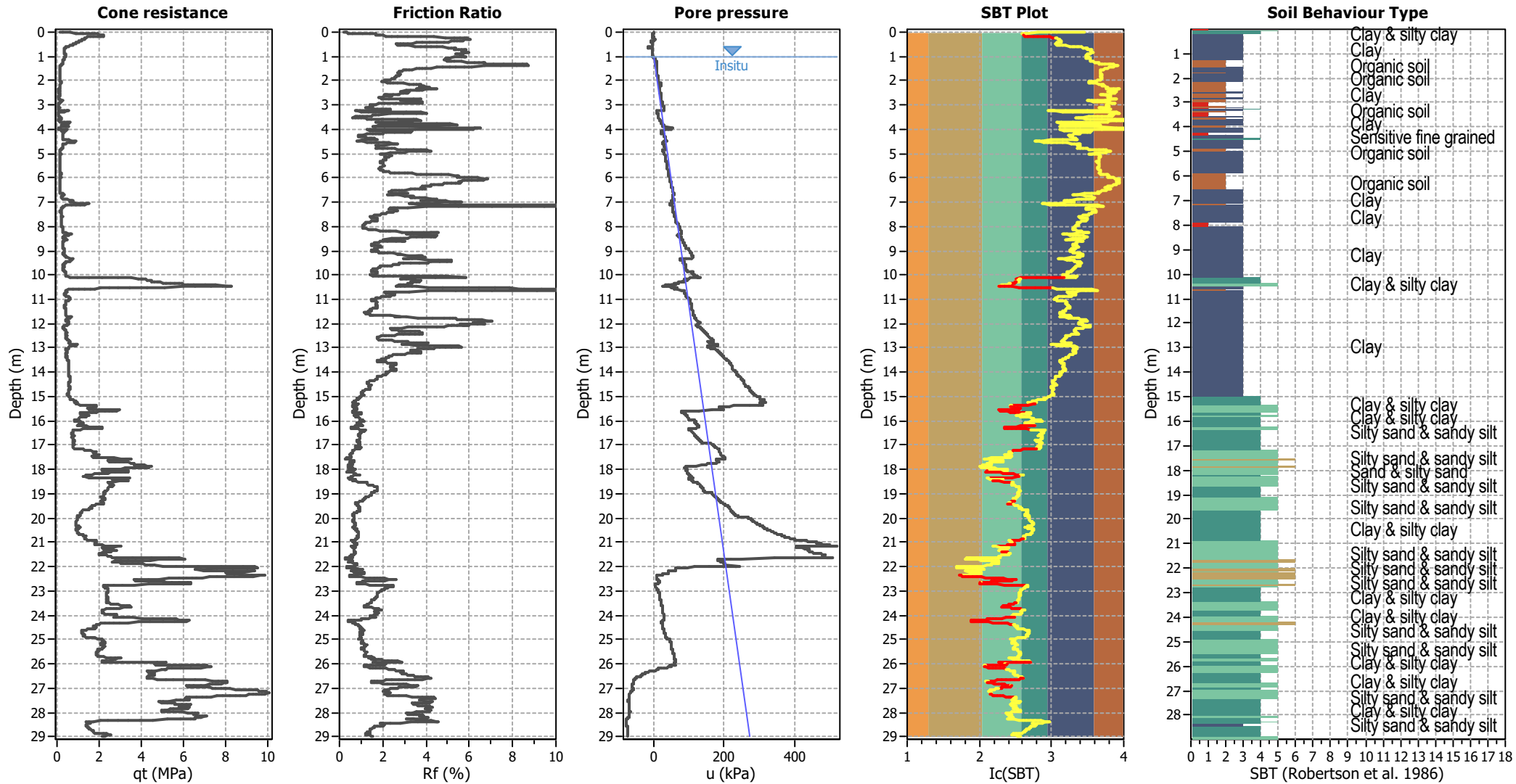
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



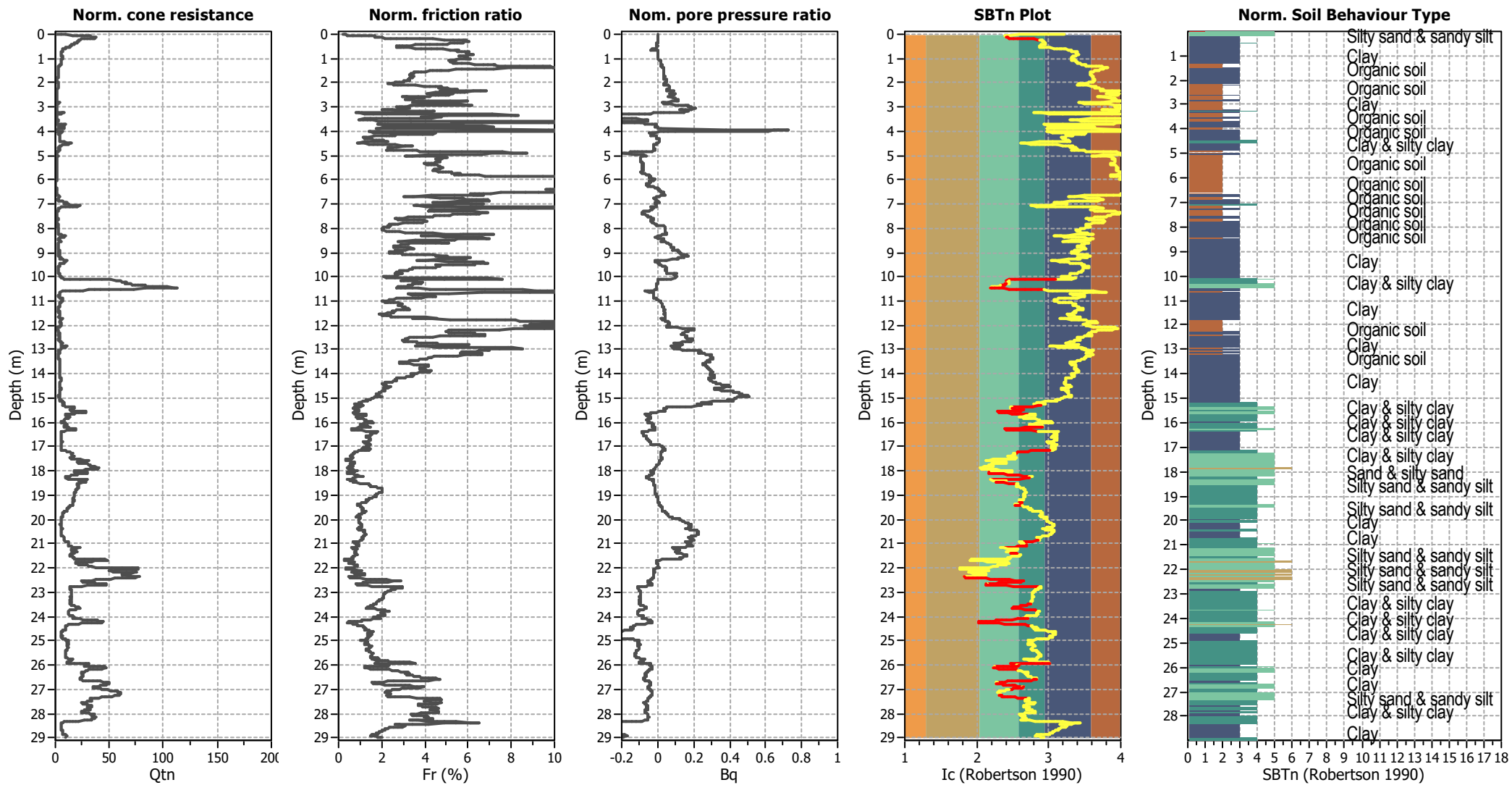
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

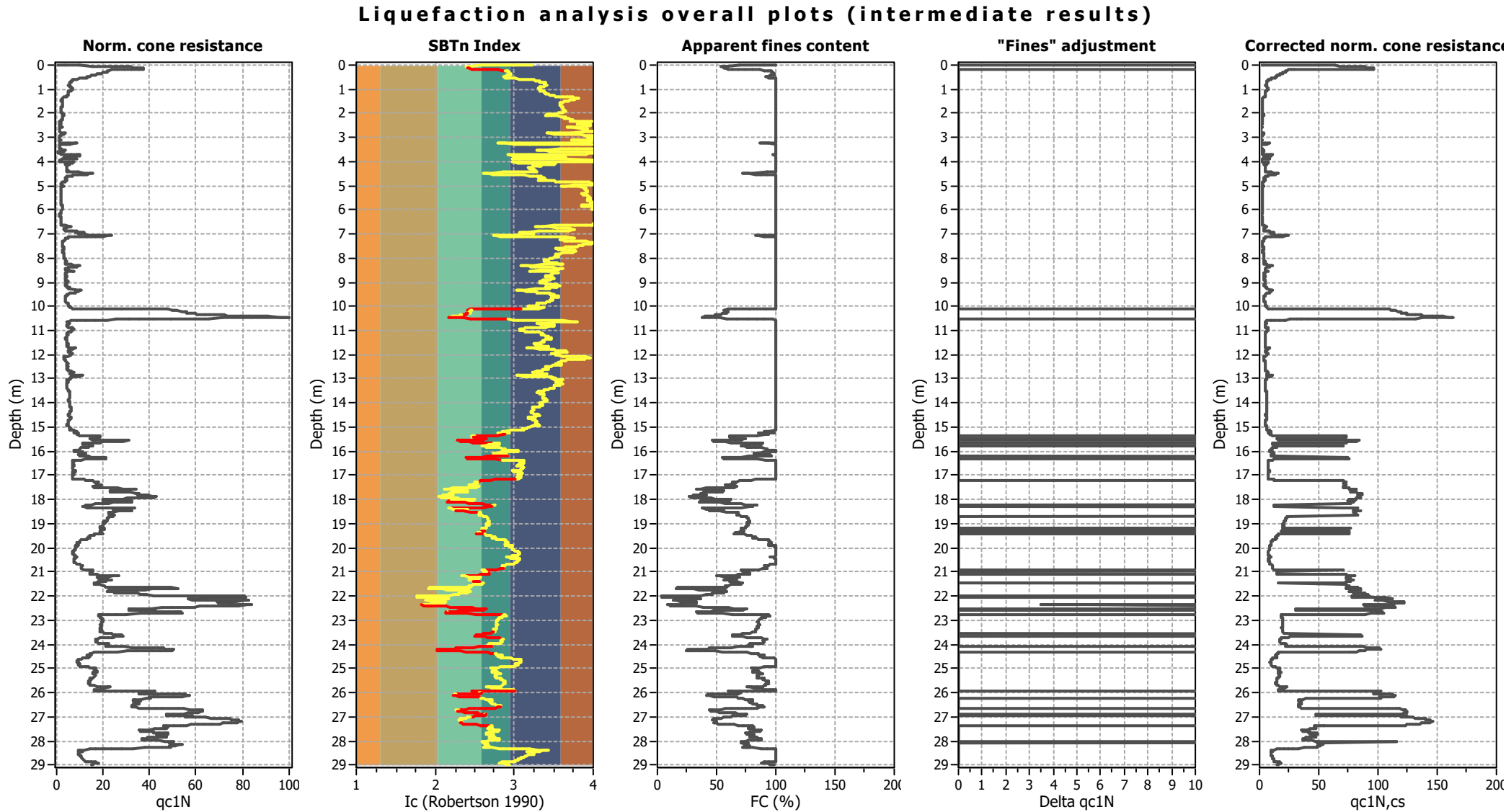
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



Input parameters and analysis data

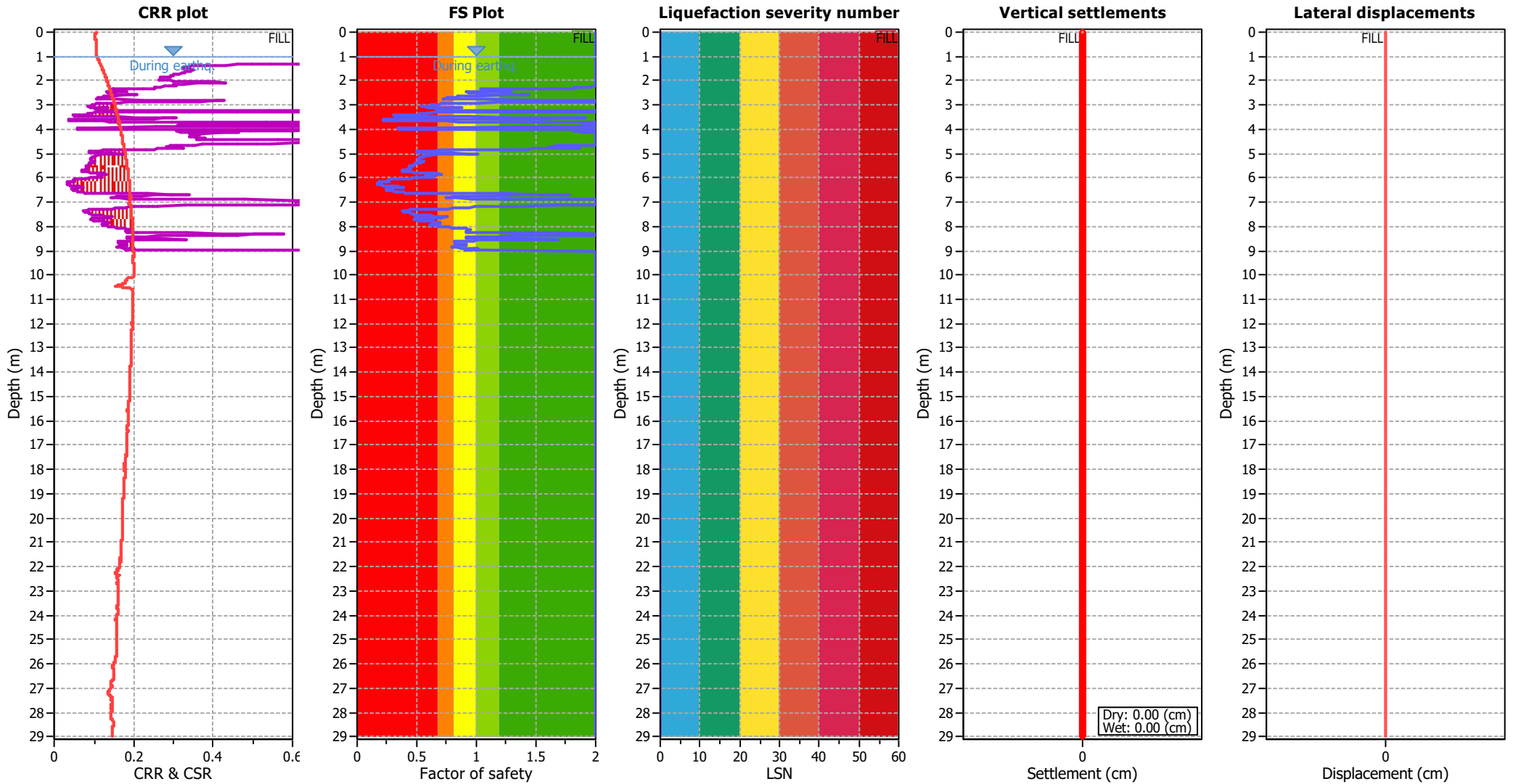
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³	SBTn legend <table><tr><td></td><td>1. Sensitive fine grained</td><td></td><td>4. Clayey silt to silty</td><td></td><td>7. Gravely sand to sand</td></tr><tr><td></td><td>2. Organic material</td><td></td><td>5. Silty sand to sandy silt</td><td></td><td>8. Very stiff sand to</td></tr><tr><td></td><td>3. Clay to silty clay</td><td></td><td>6. Clean sand to silty sand</td><td></td><td>9. Very stiff fine grained</td></tr></table>		1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand		2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to		3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained
	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand																			
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to																			
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained																			
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes																			
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _p applied:	Yes																			
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay																			
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes																			
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m																			



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

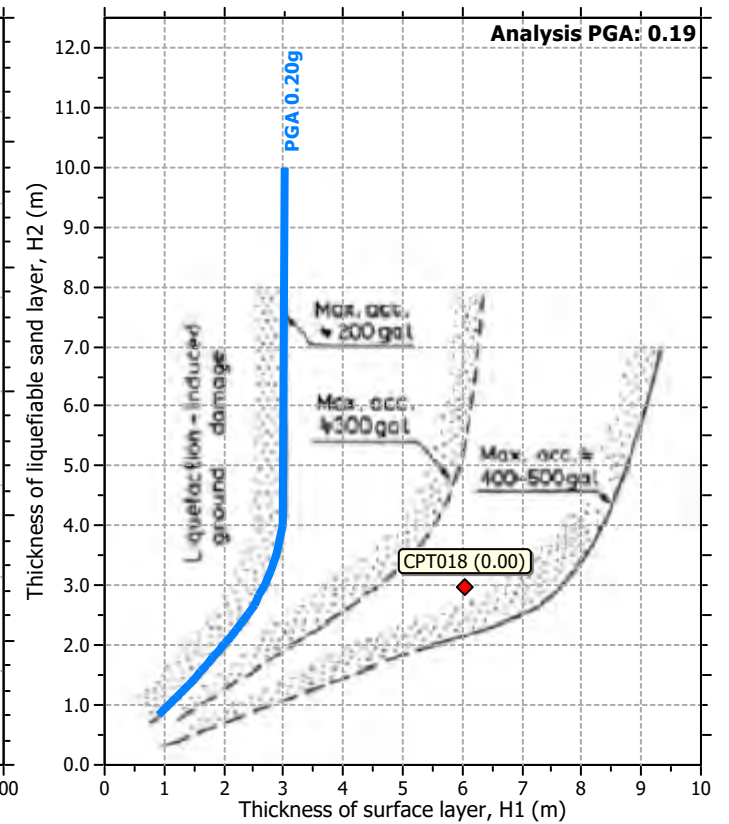
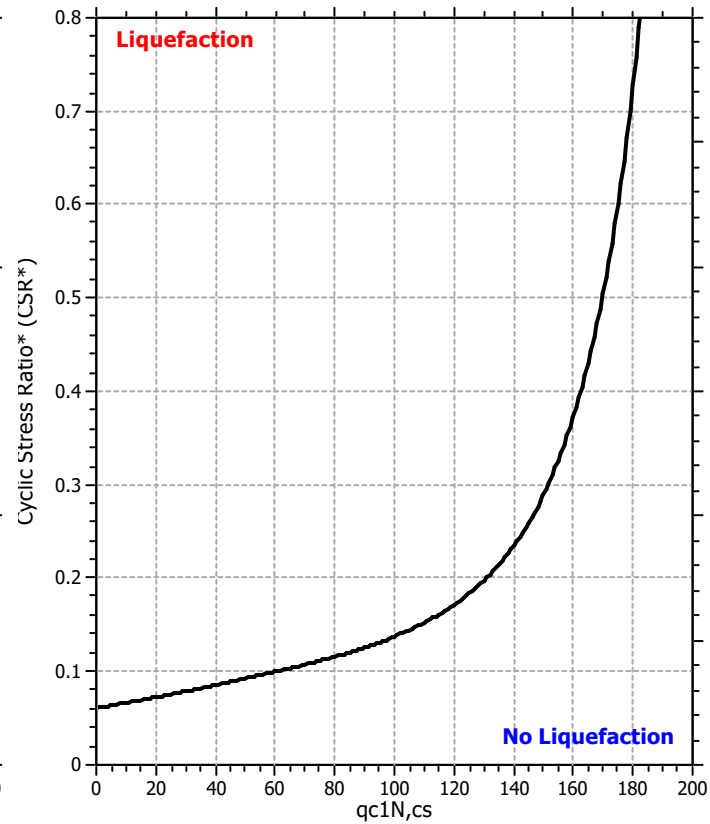
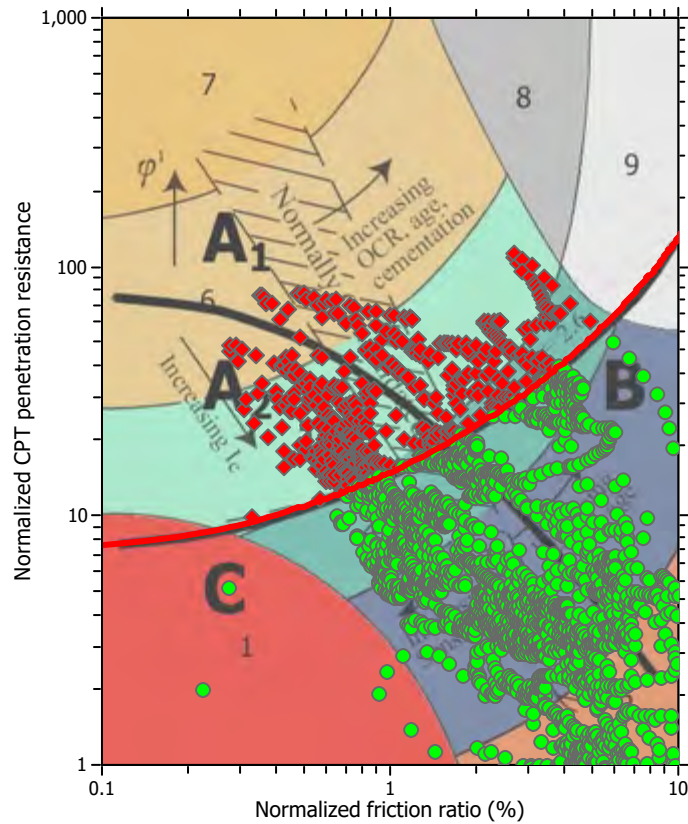
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

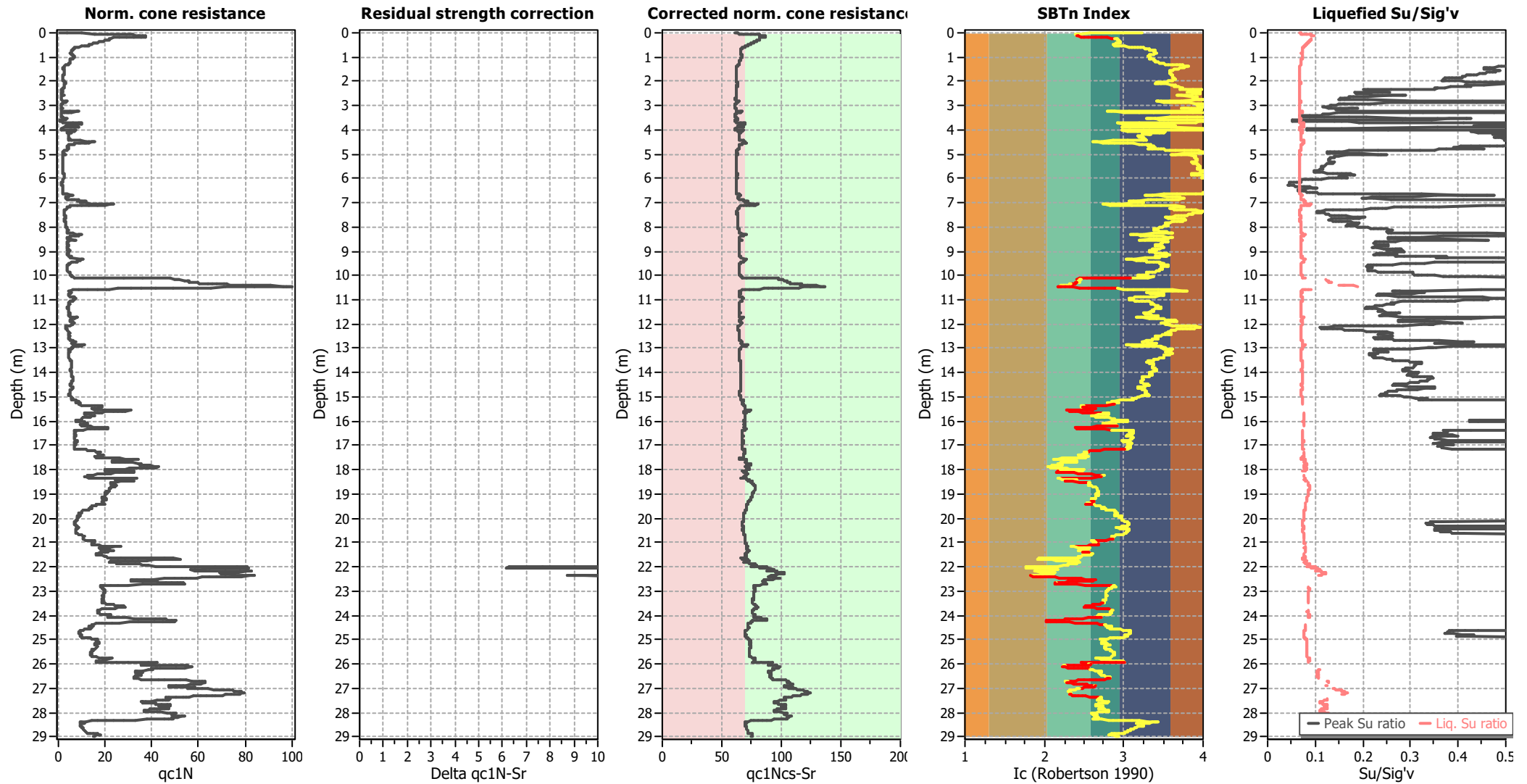
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

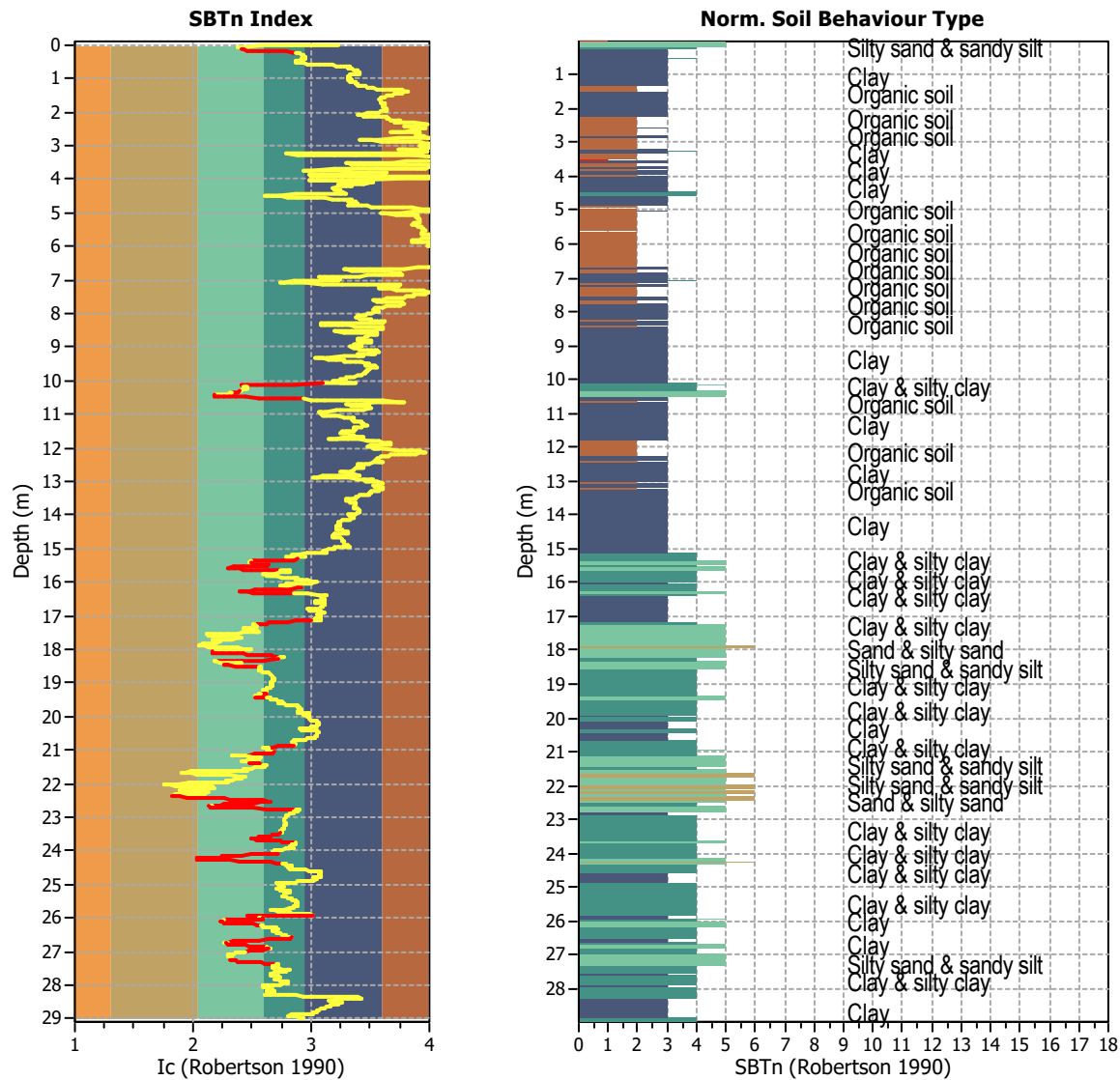
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



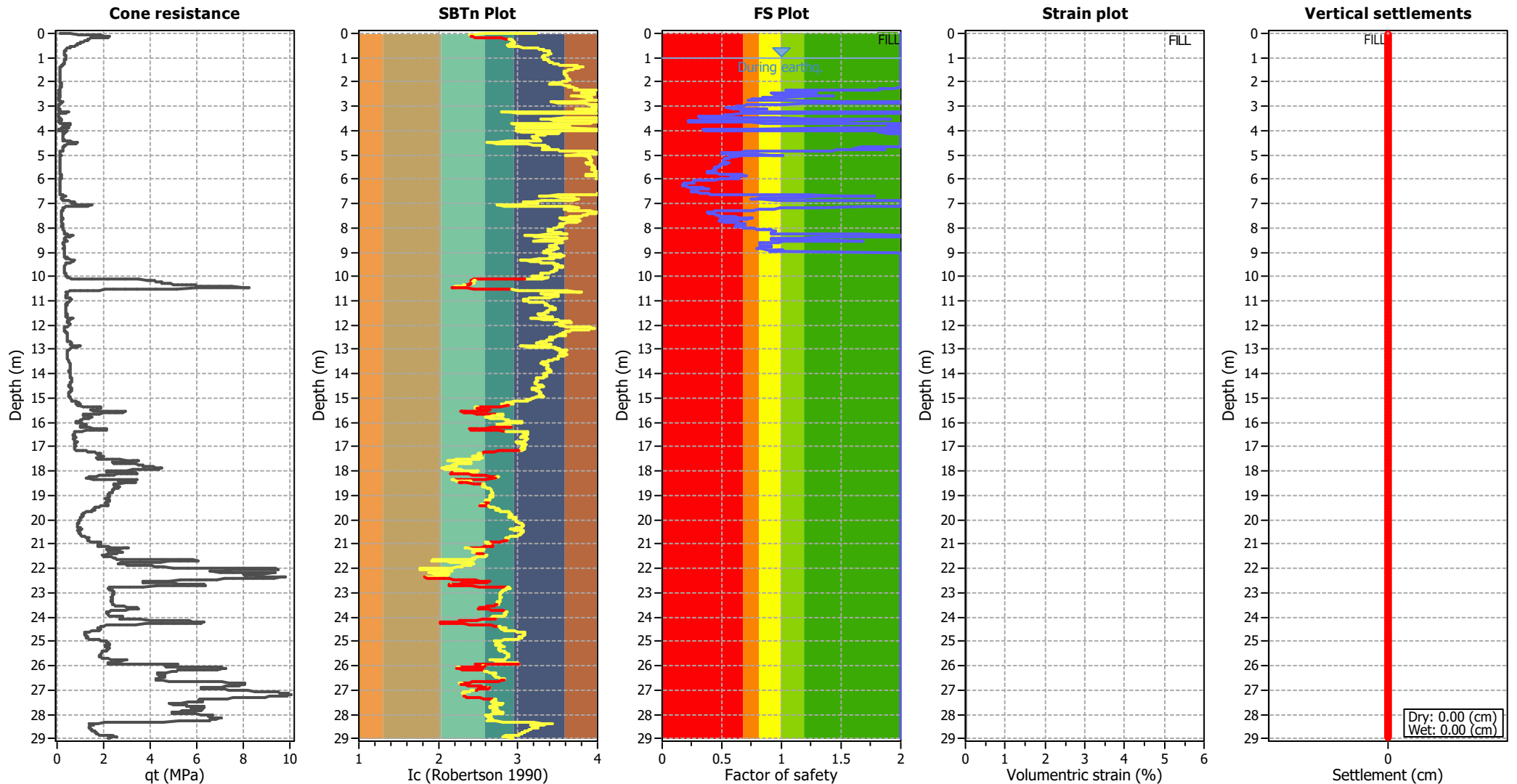
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 2898
Total points excluded: 351
Exclusion percentage: 12.11%
Number of layers detected: 35

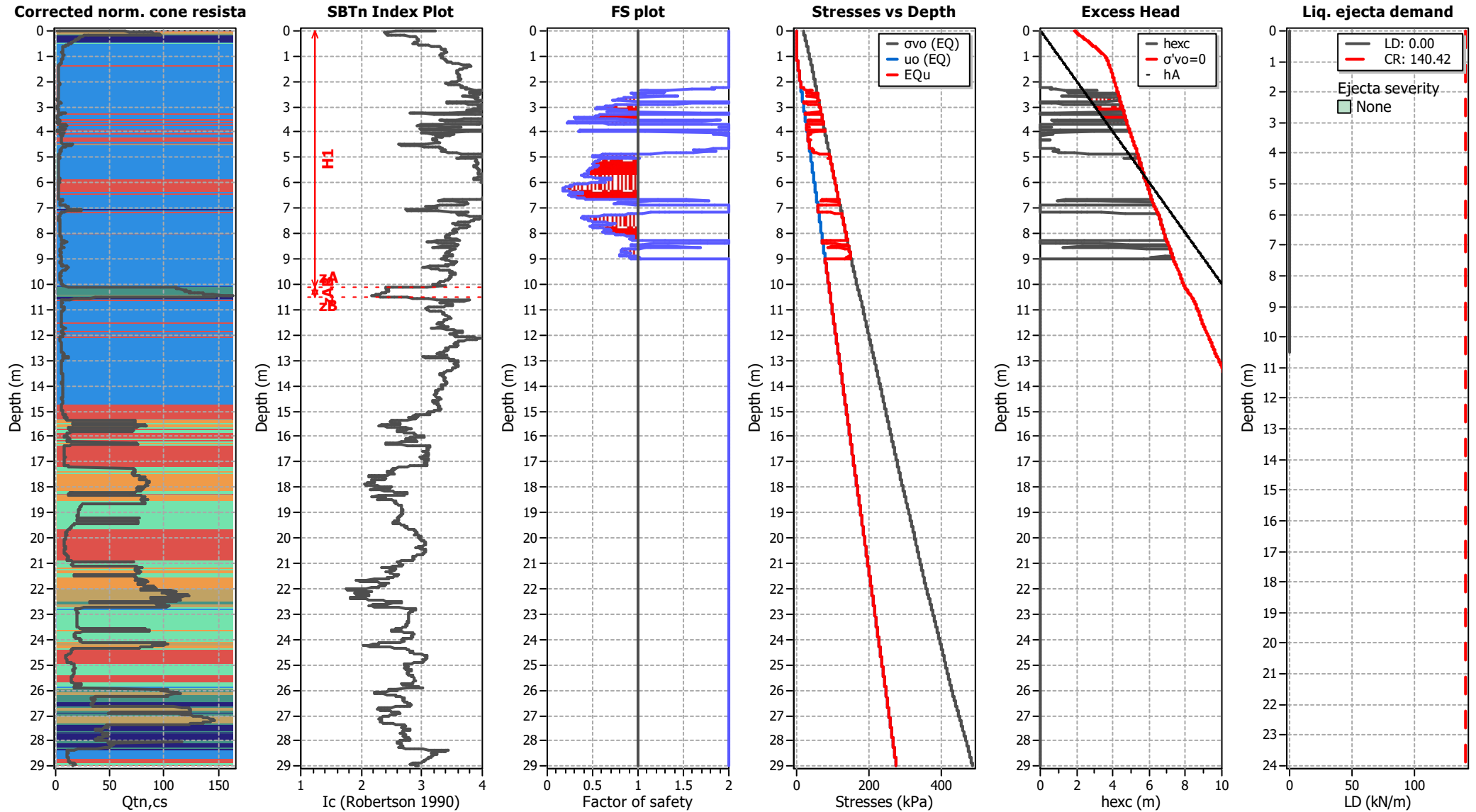
Estimation of post-earthquake settlements



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

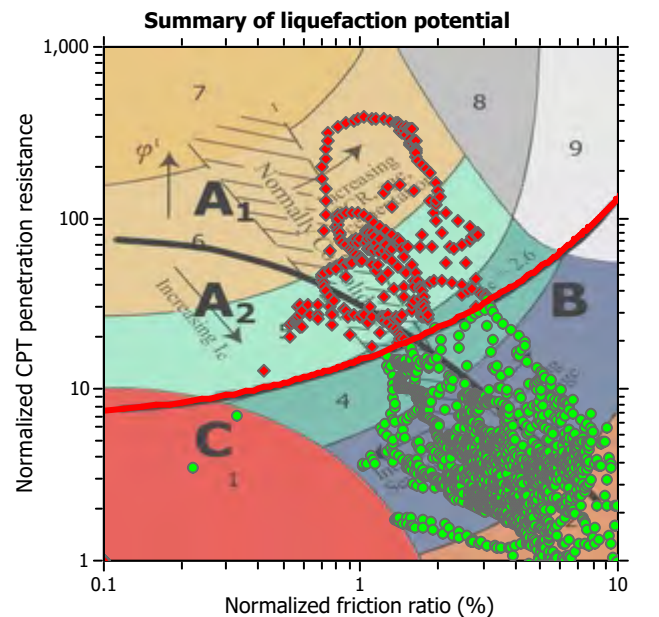
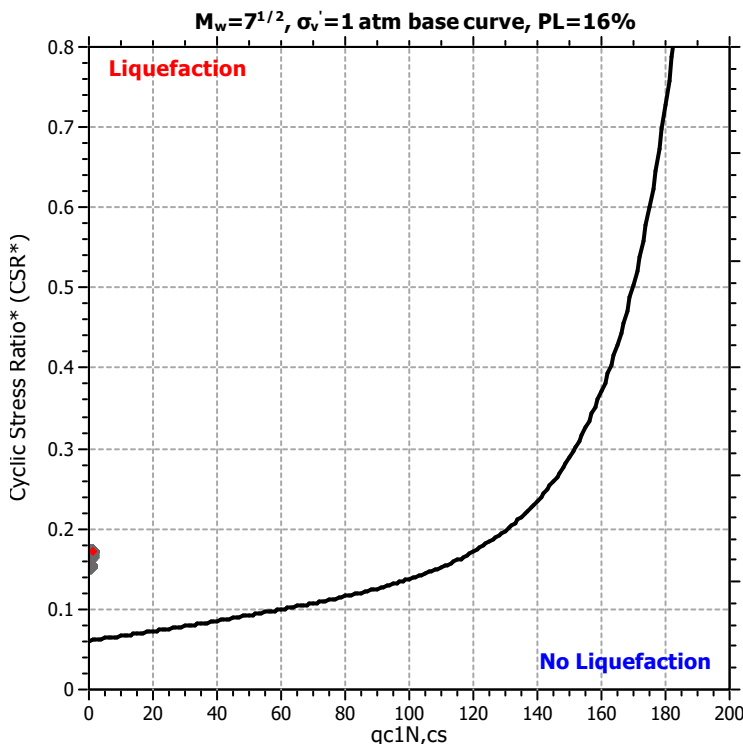
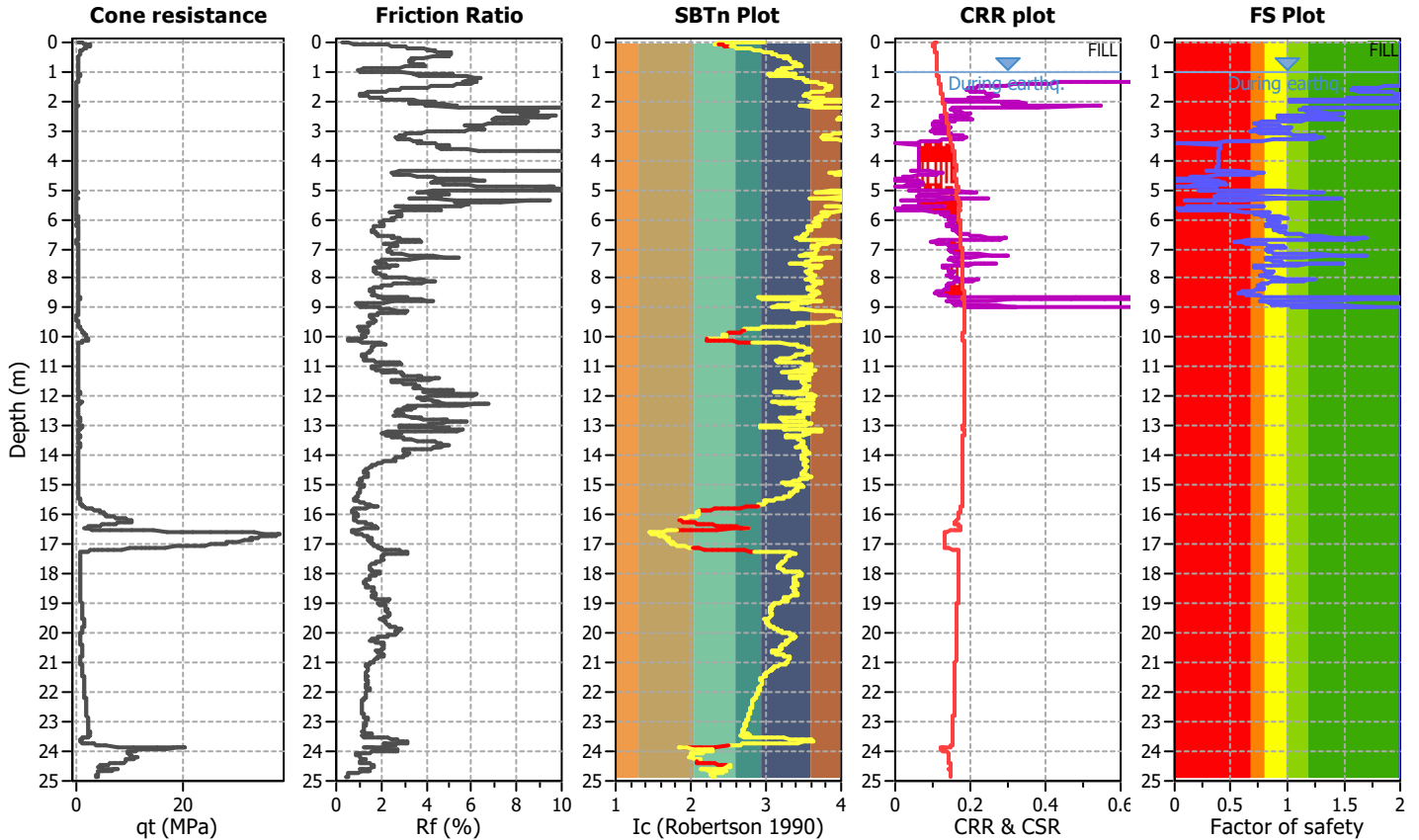
Project title : Sunfield Landholding

Location :

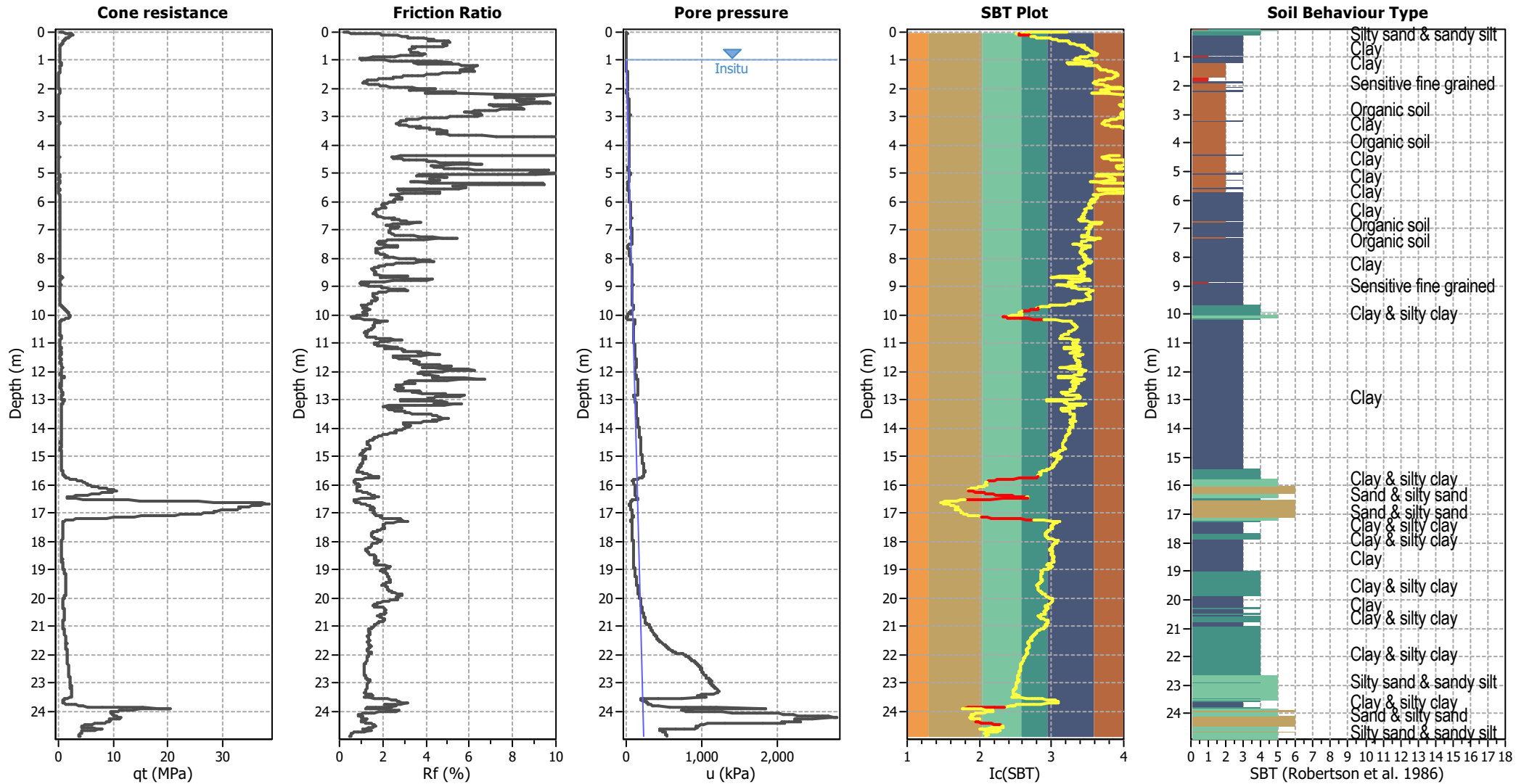
CPT file : CPT019A

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

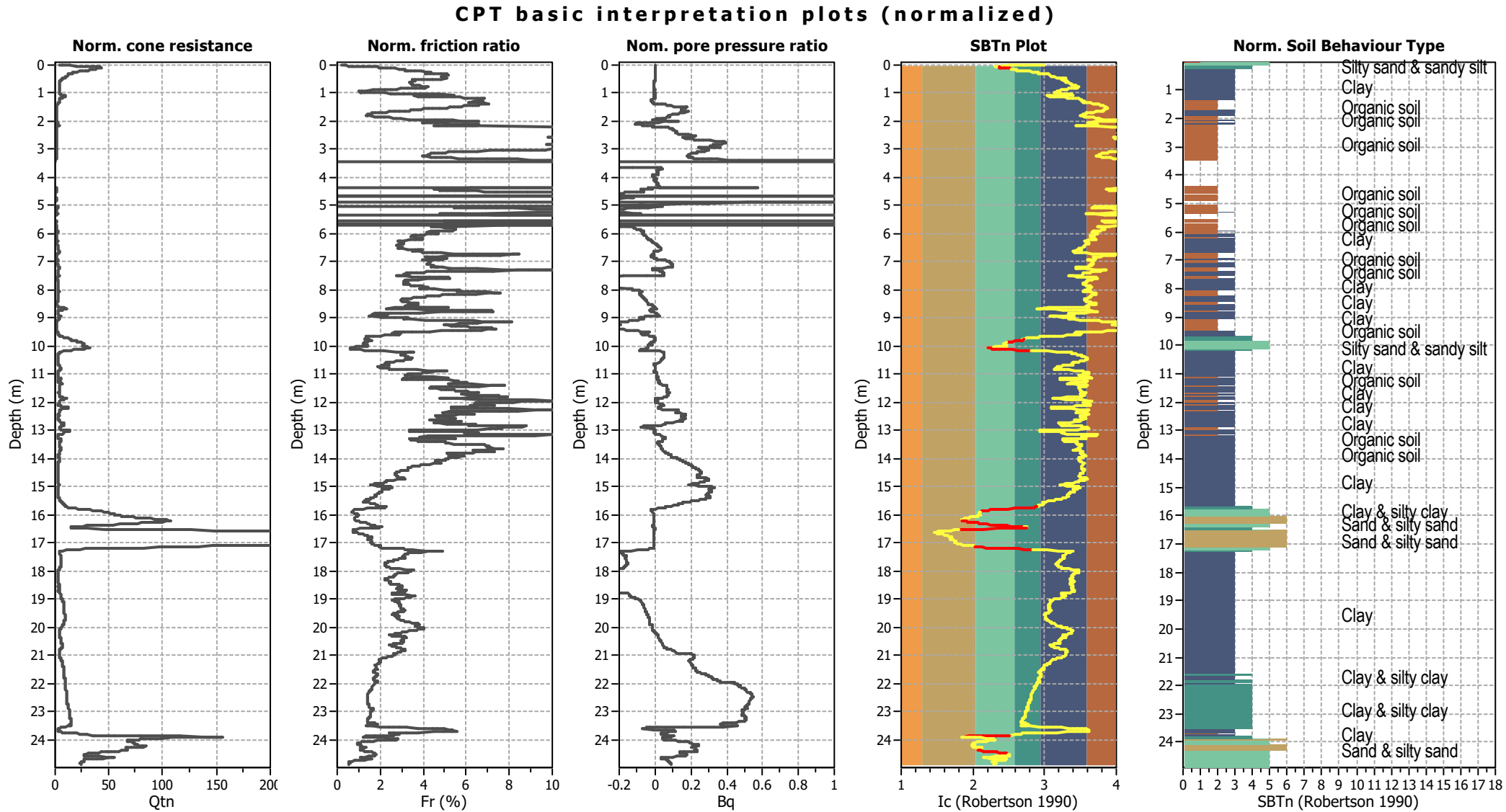


Input parameters and analysis data

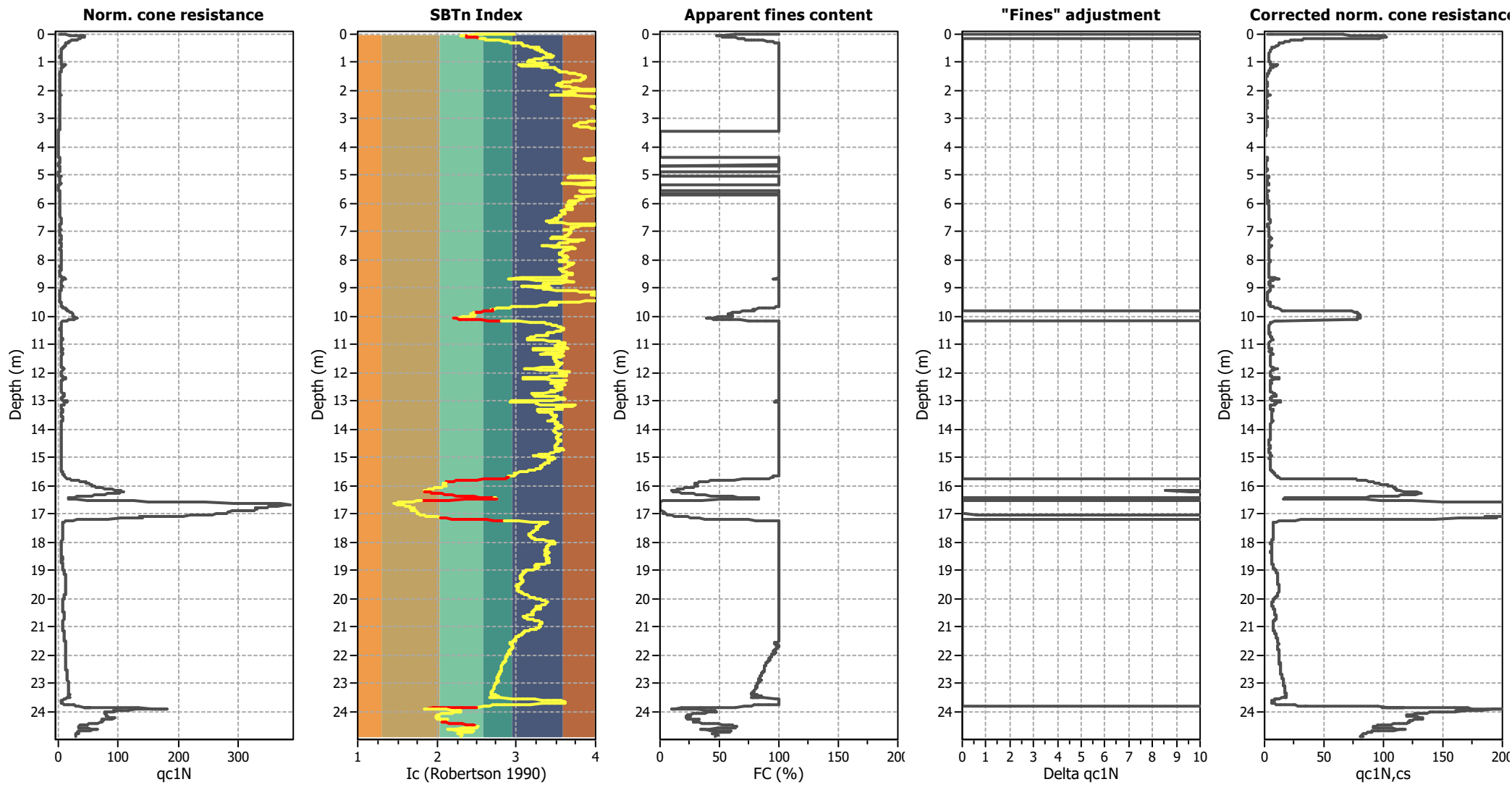
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



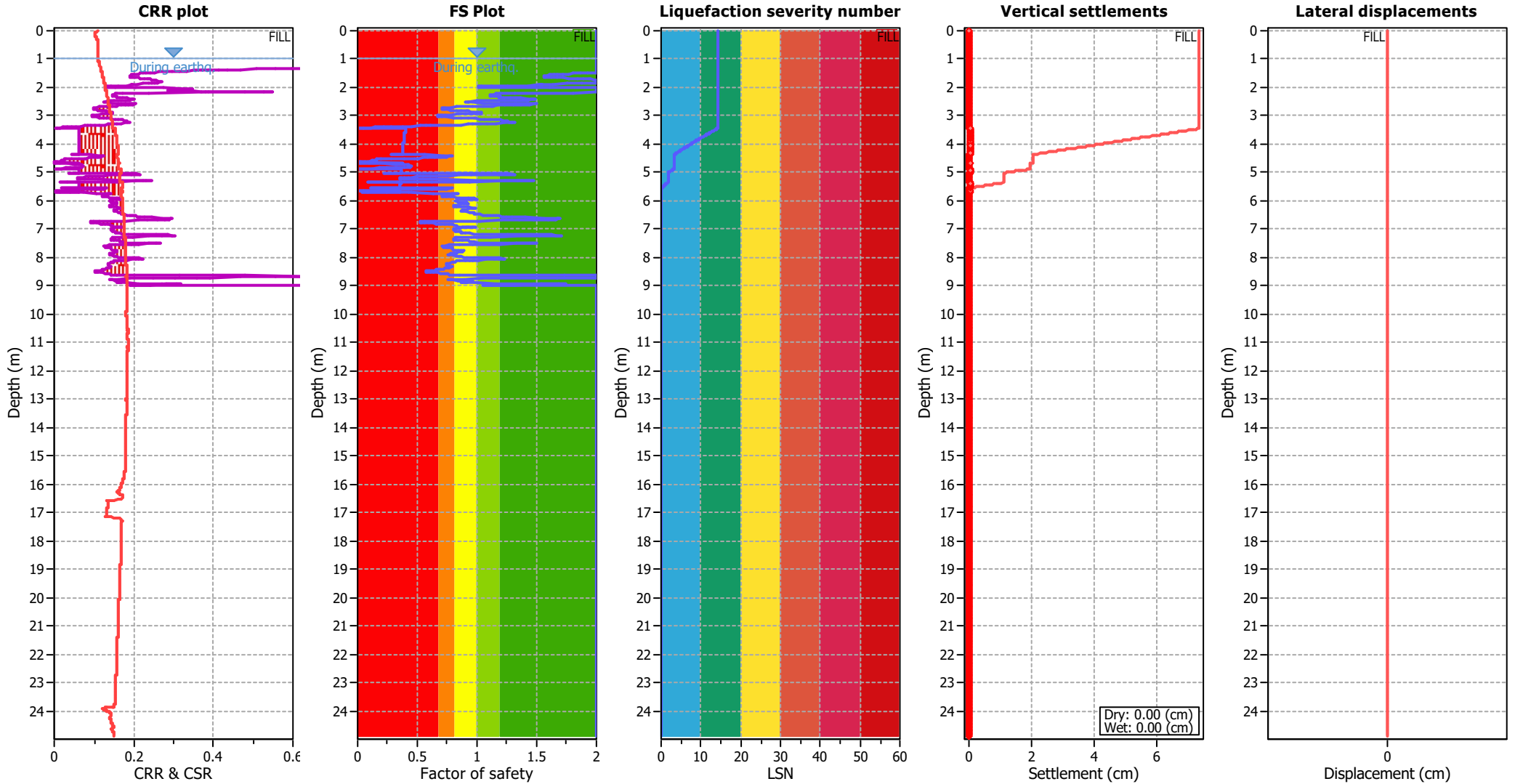
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

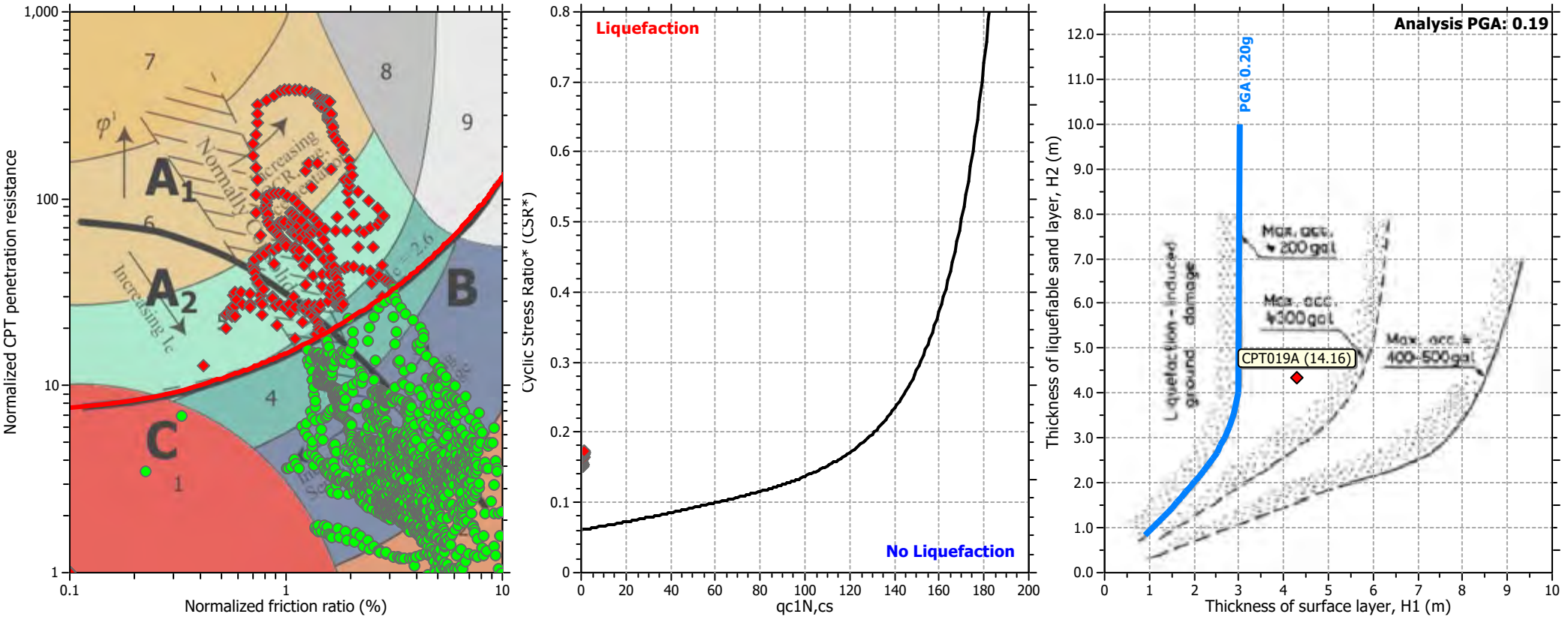
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Orange	Major expression of liquefaction
Yellow	Moderate to severe exp. of liquefaction
Green	Moderate expression of liquefaction
Dark Green	Minor expression of liquefaction
Blue	Little to no expression of liquefaction

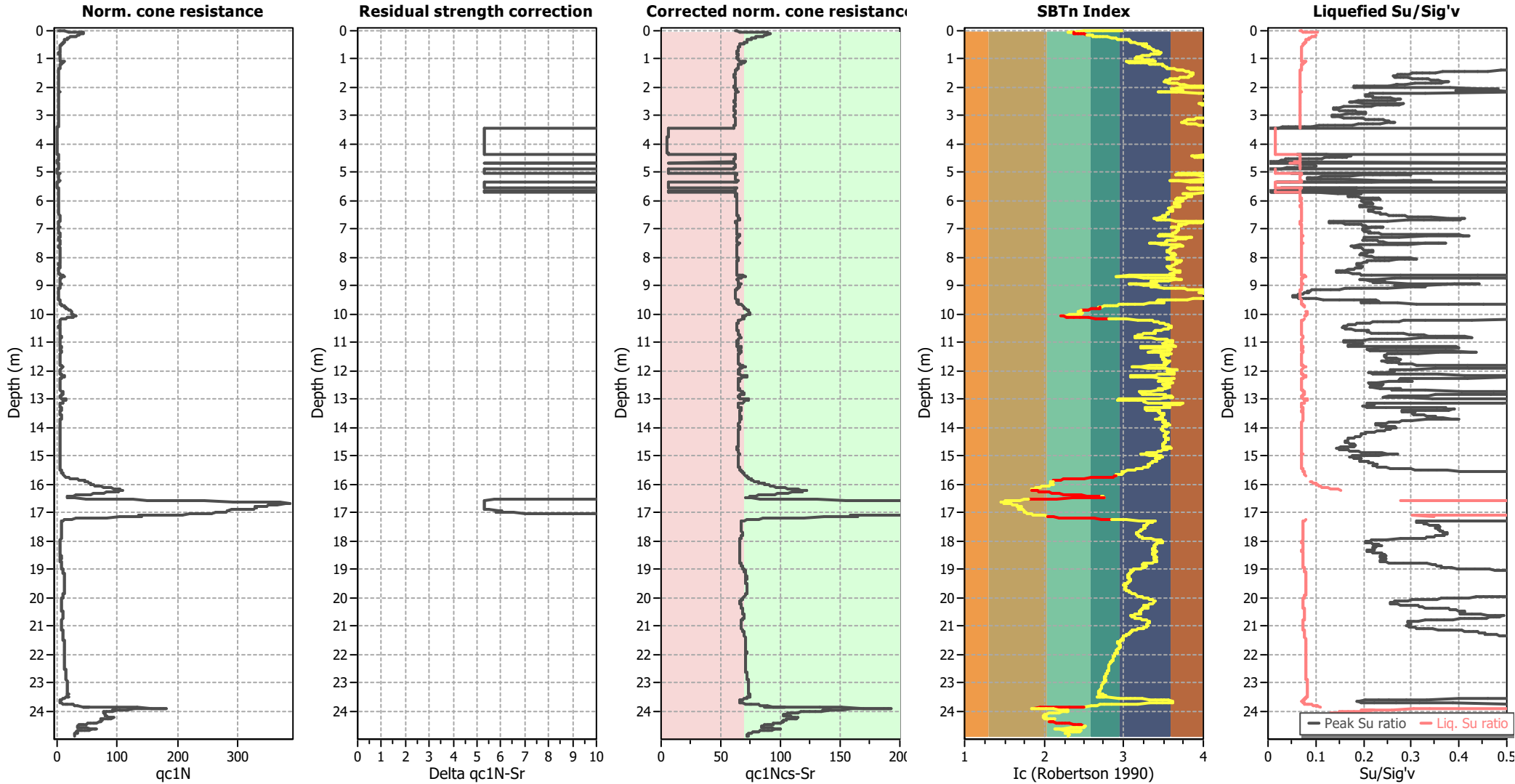
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

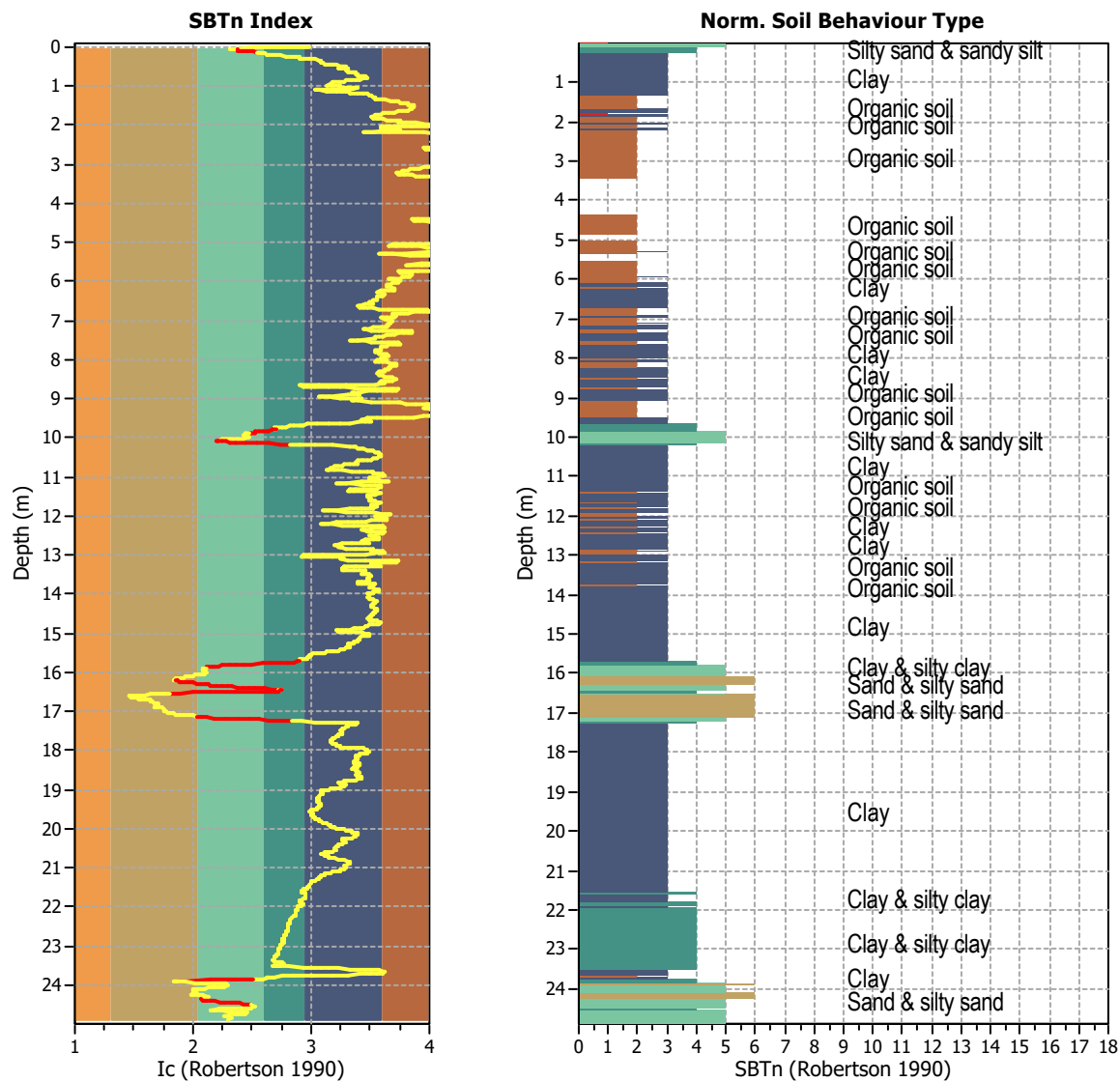
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



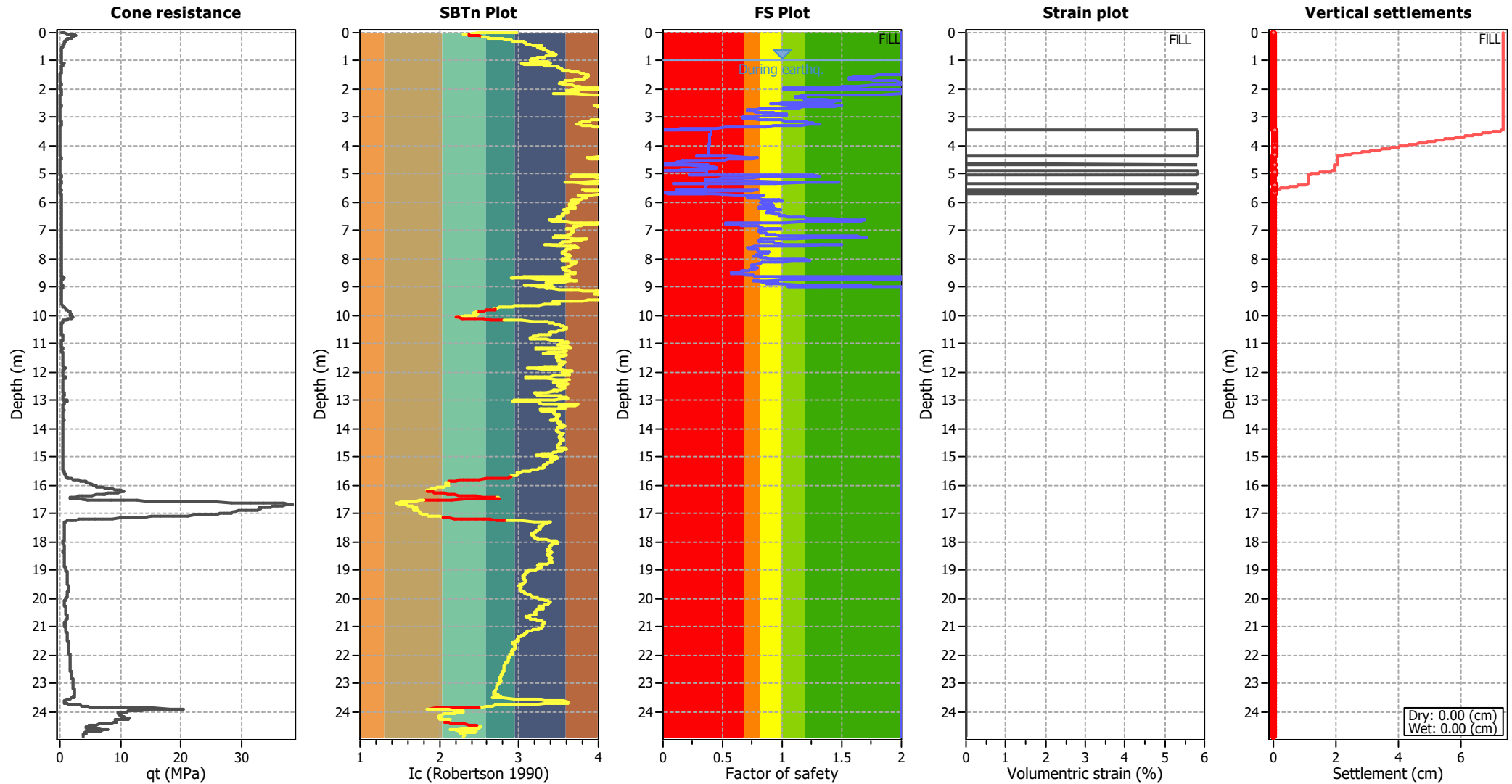
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 2489
Total points excluded: 118
Exclusion percentage: 4.74%
Number of layers detected: 9

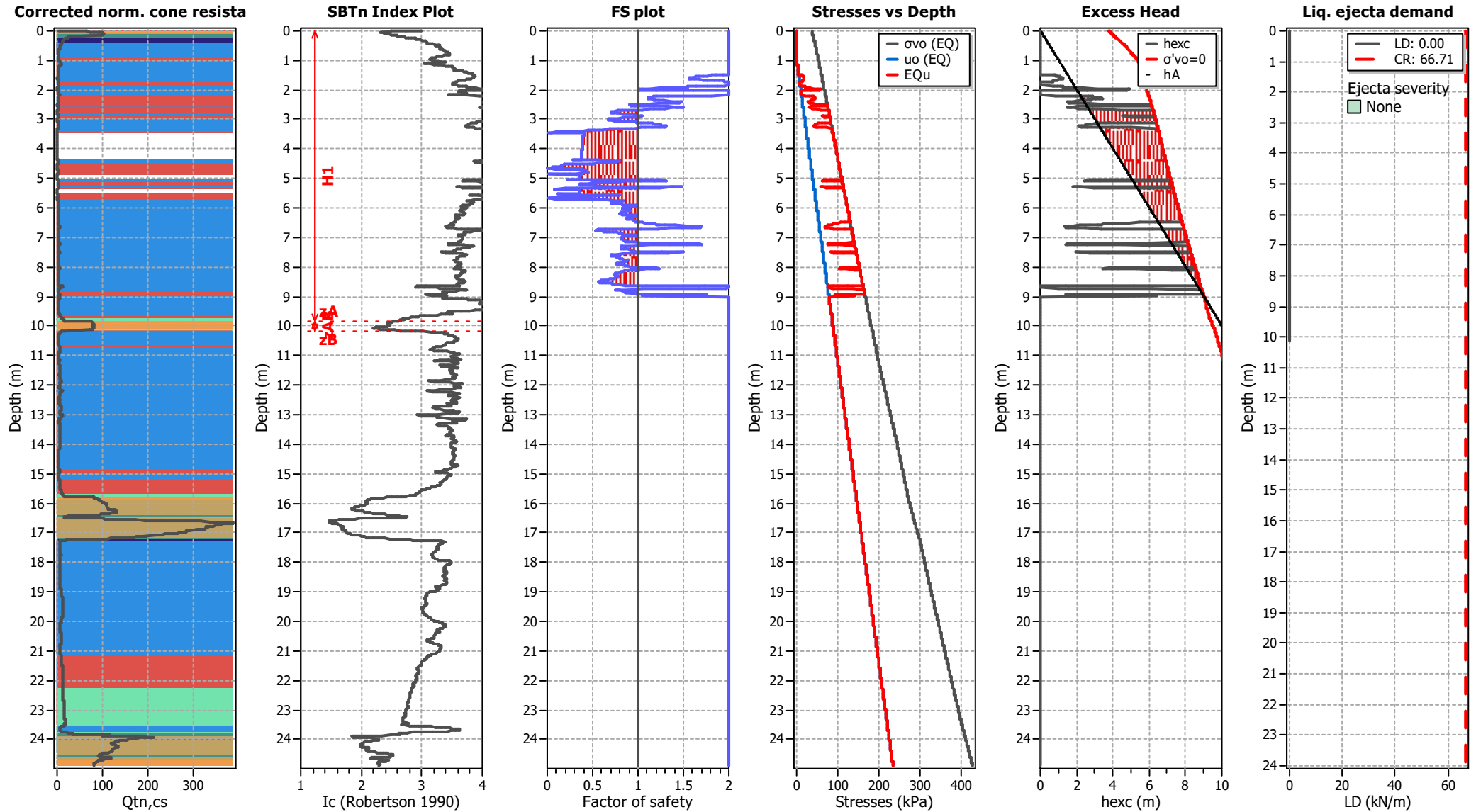
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

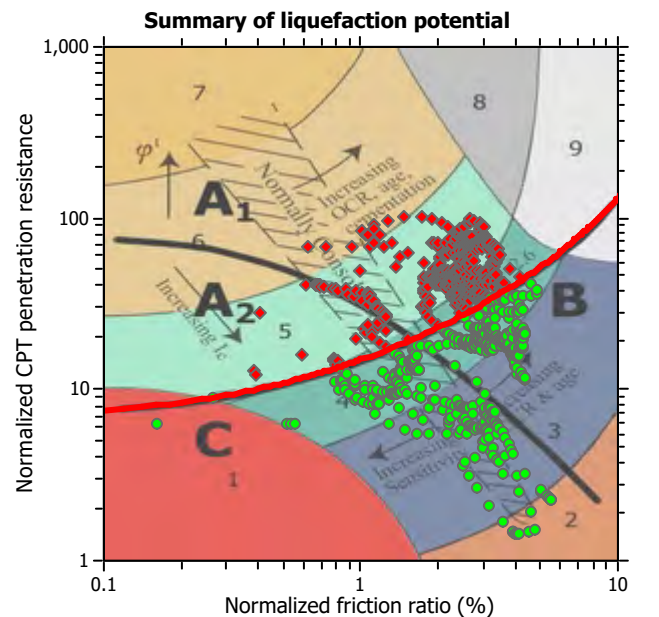
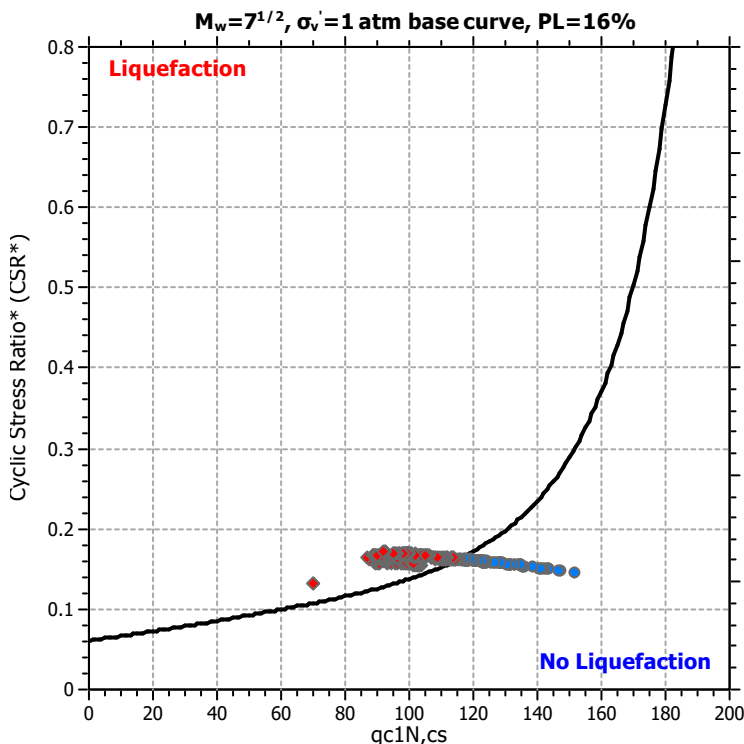
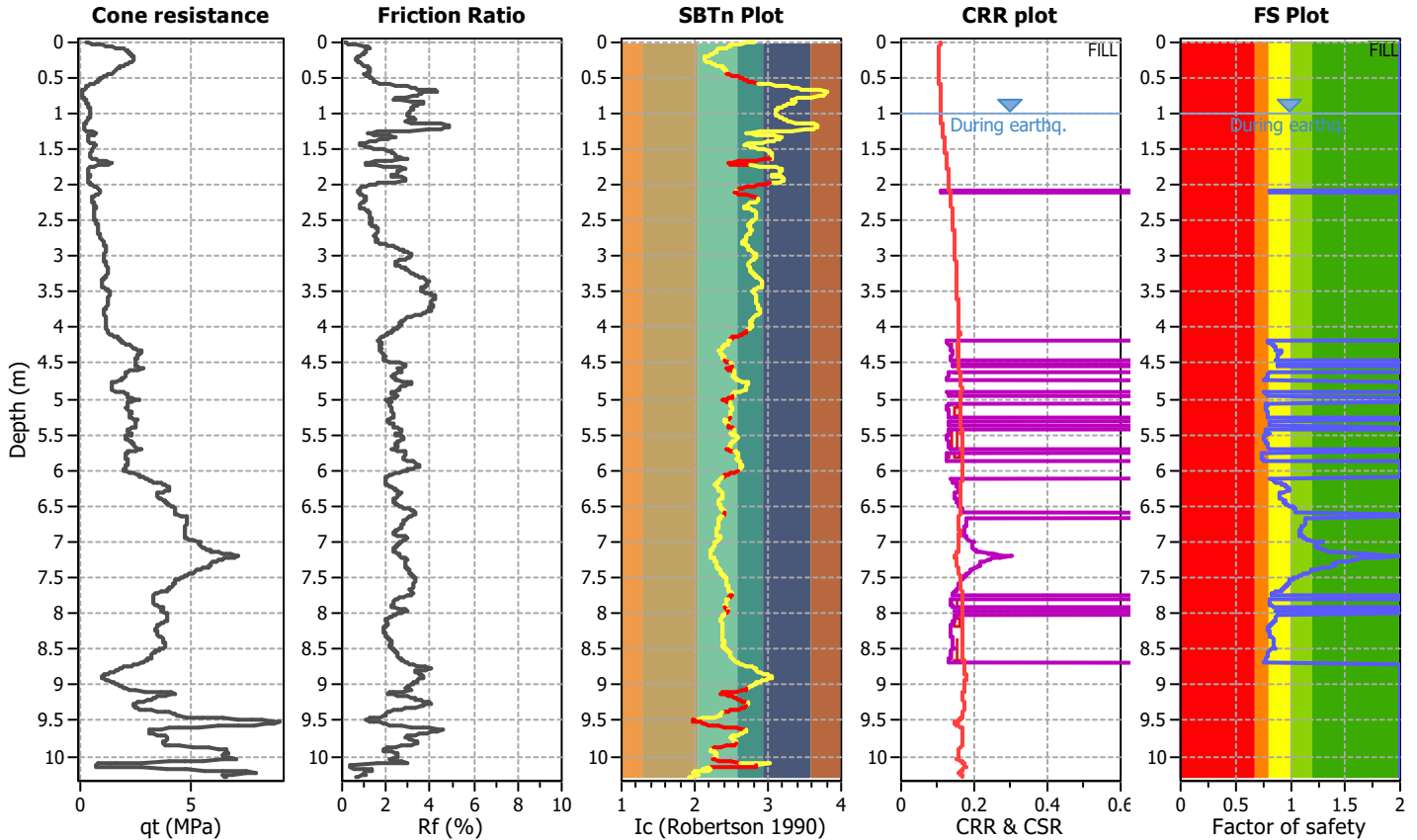
Project title : Sunfield Landholding

Location :

CPT file : CPT020

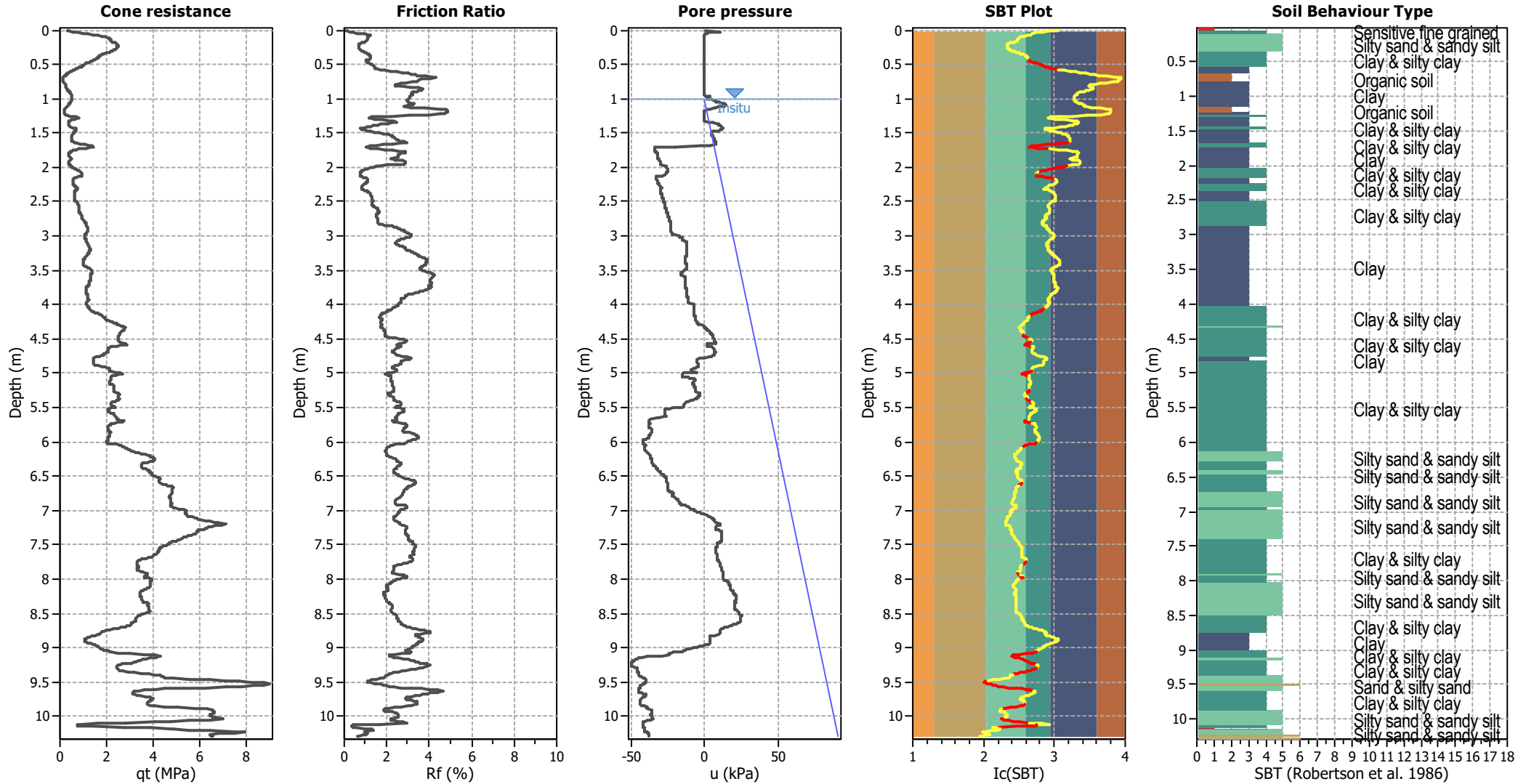
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

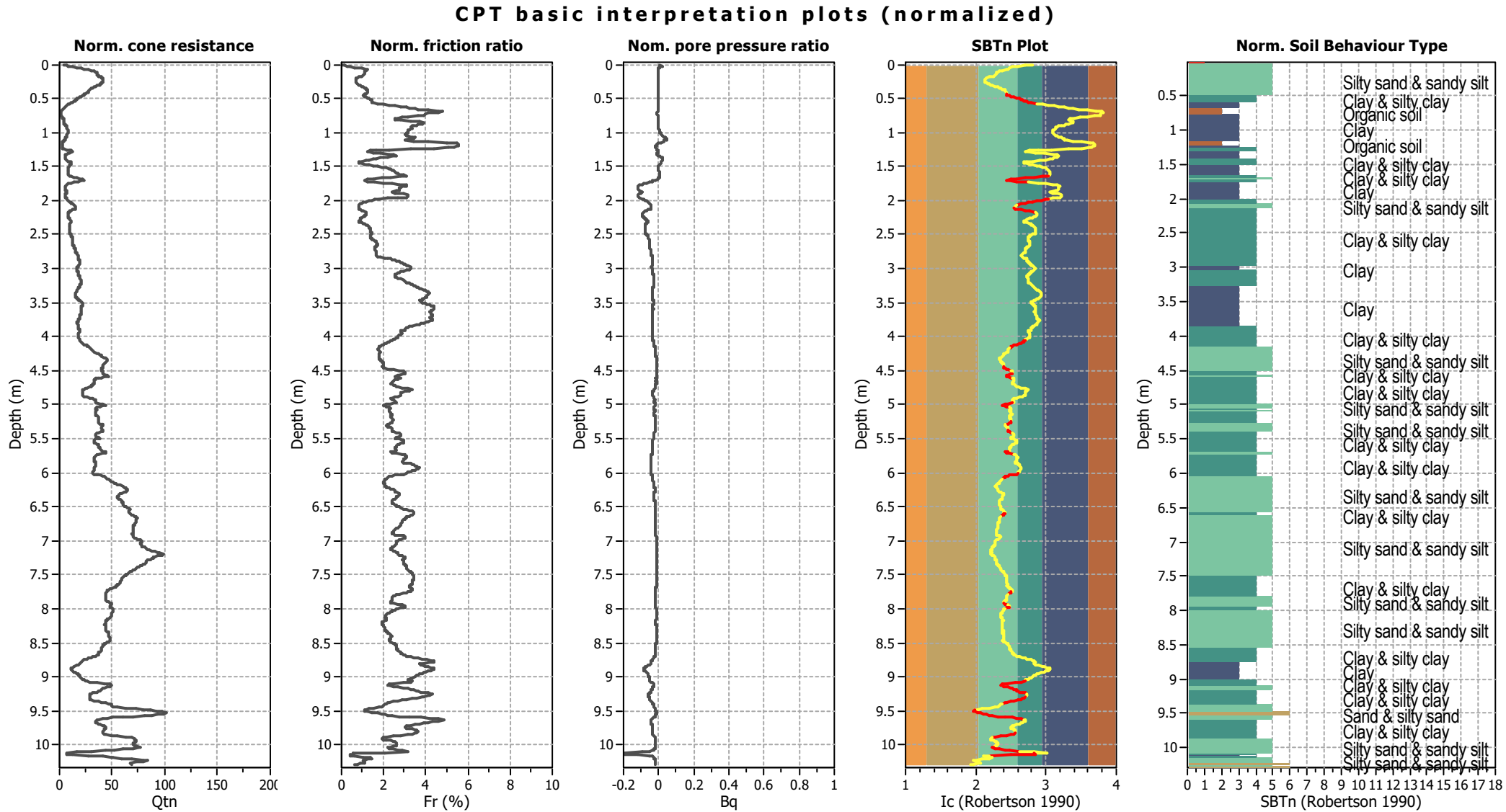


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

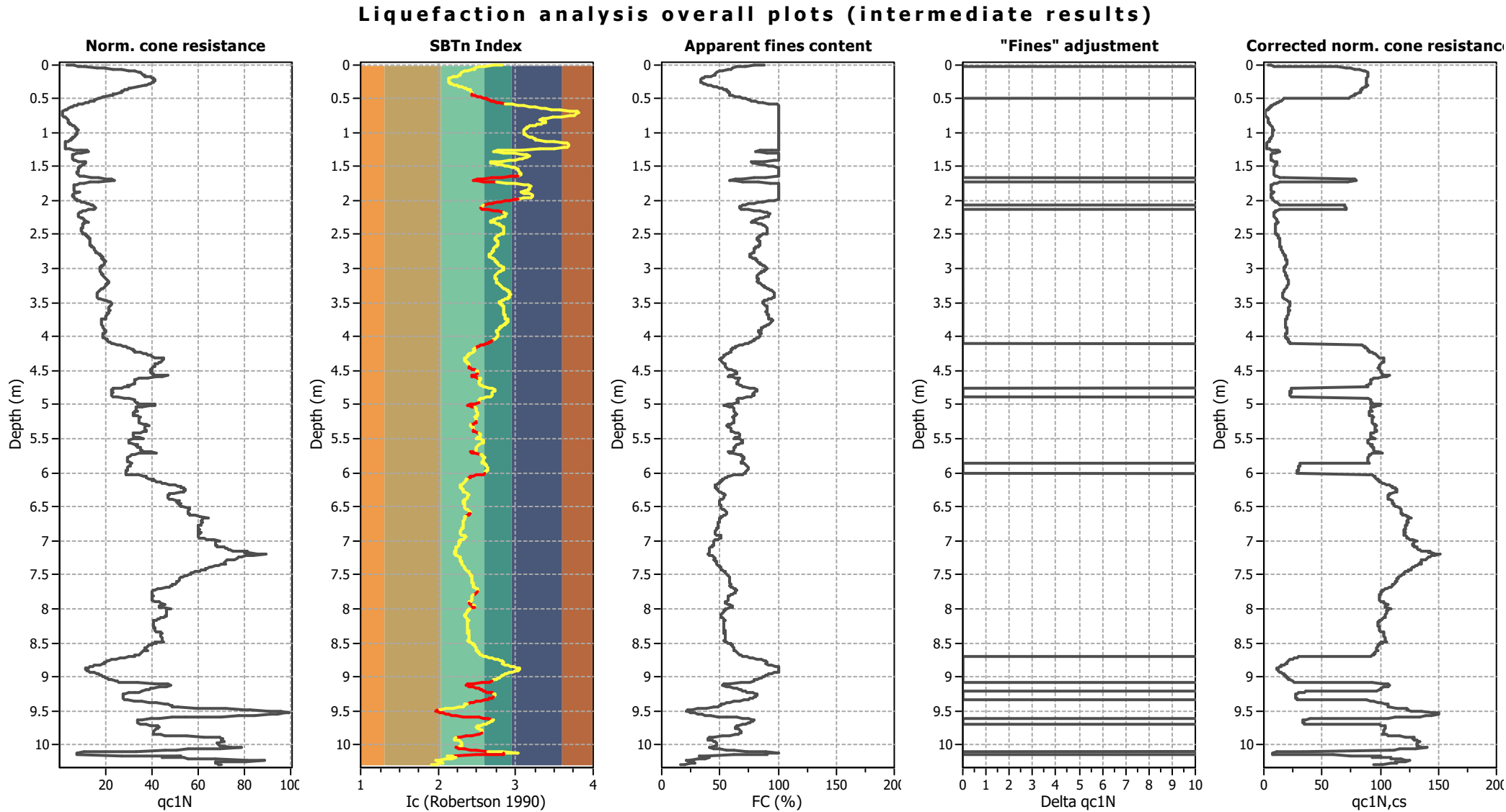
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

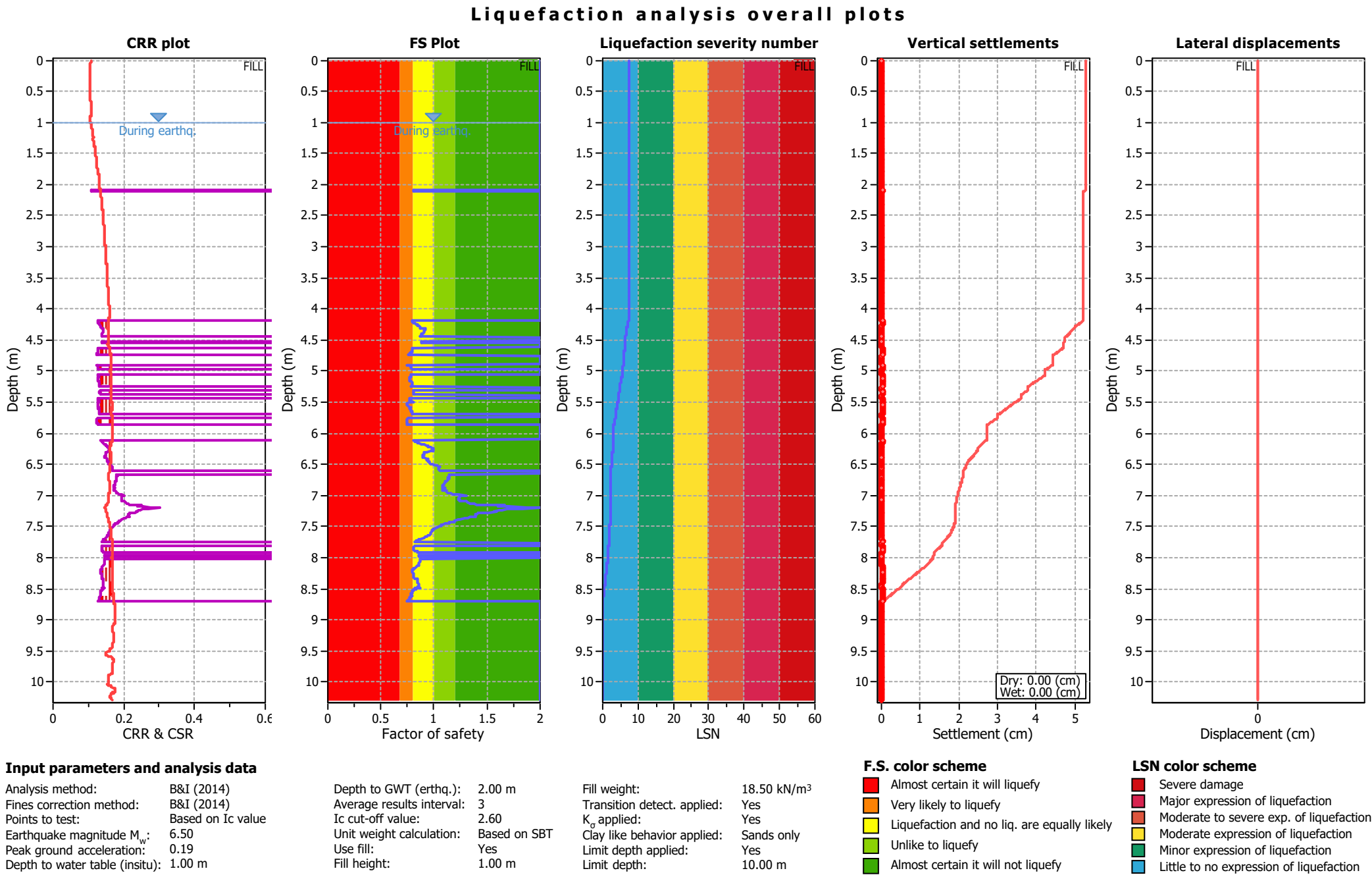
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

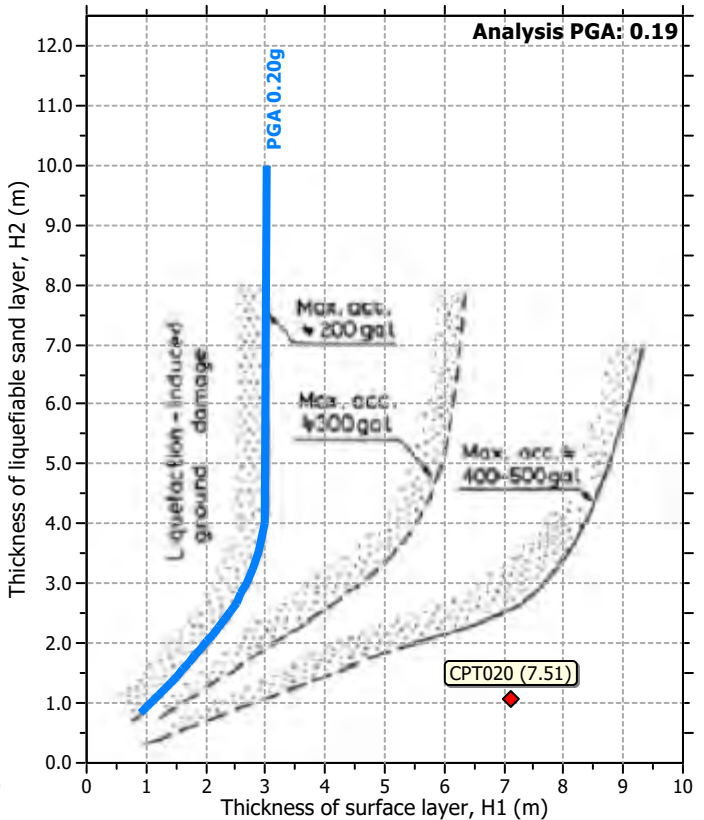
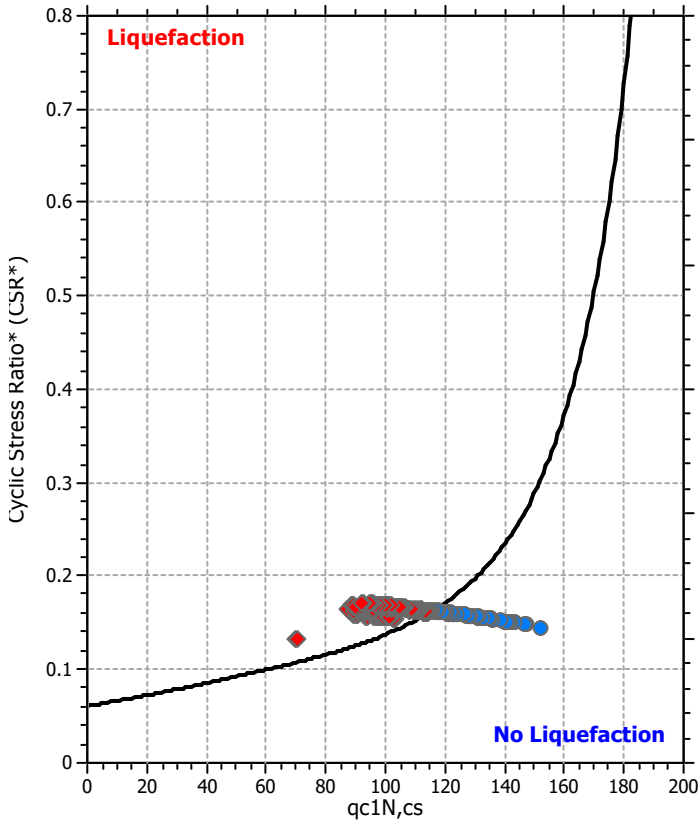
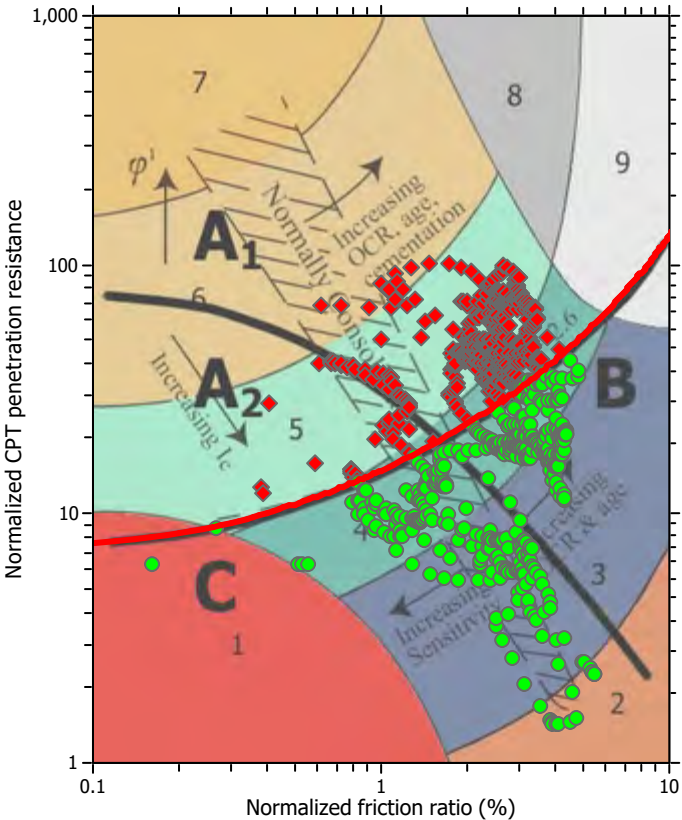


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

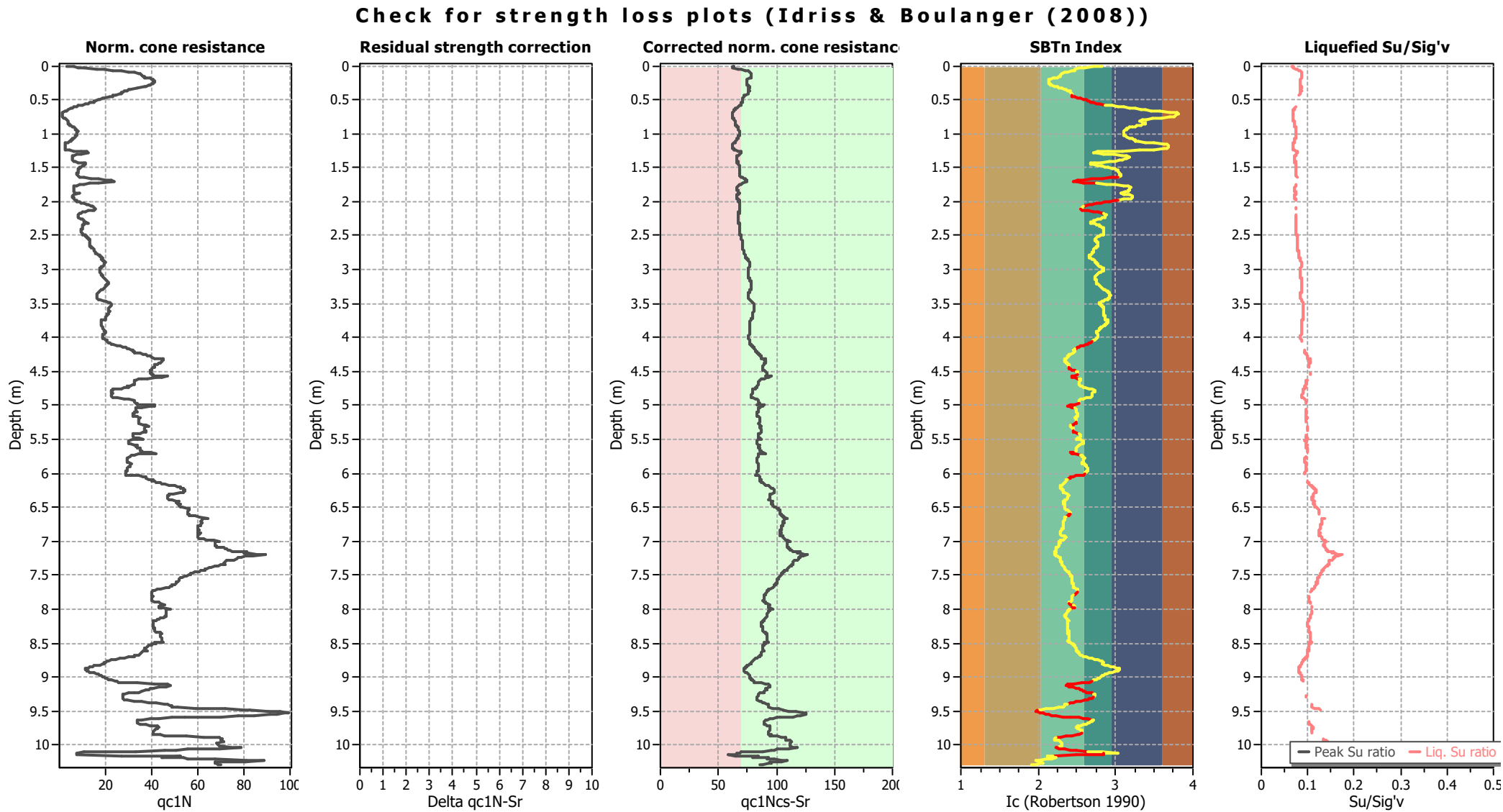


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

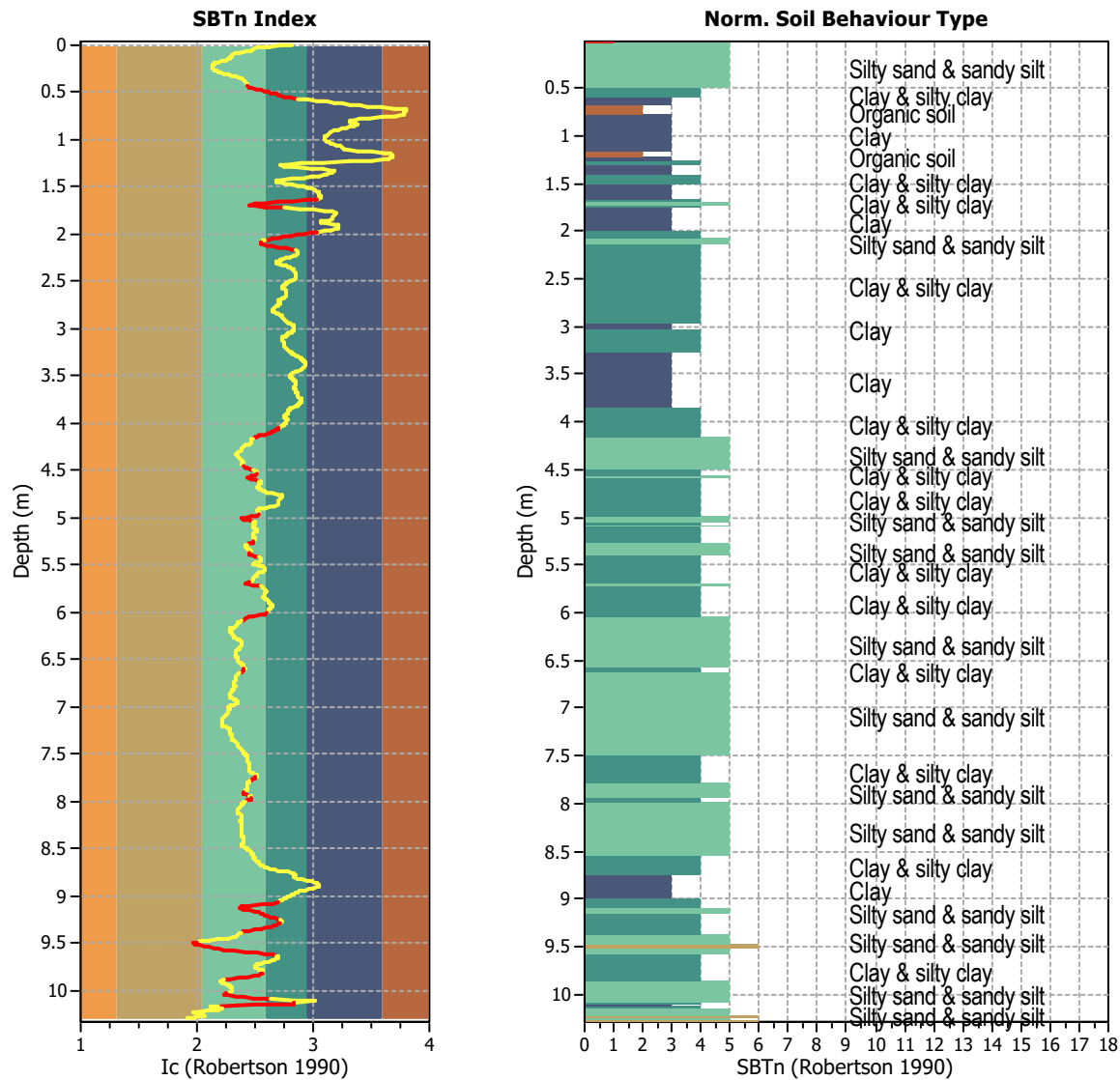
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



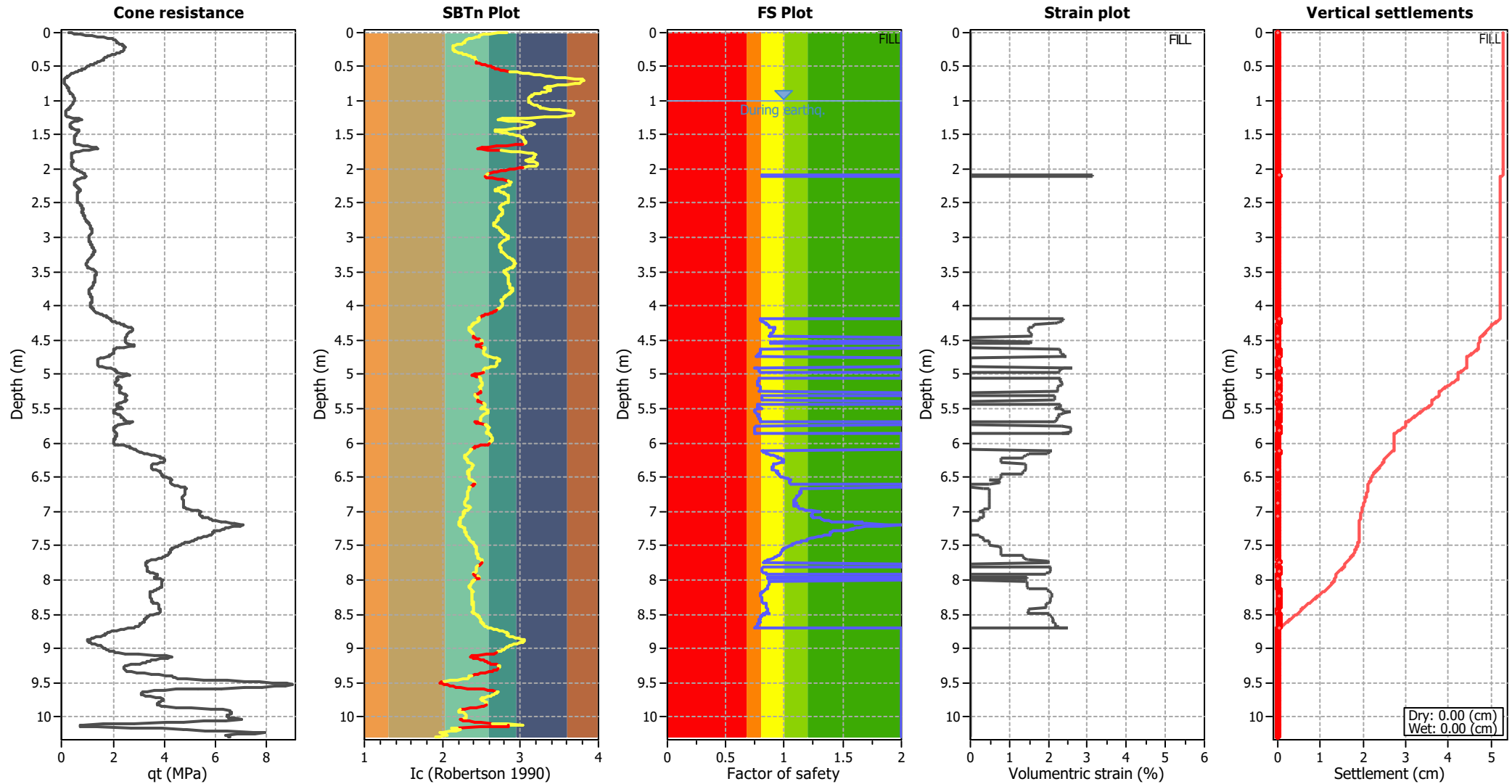
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1029
Total points excluded: 190
Exclusion percentage: 18.46%
Number of layers detected: 26

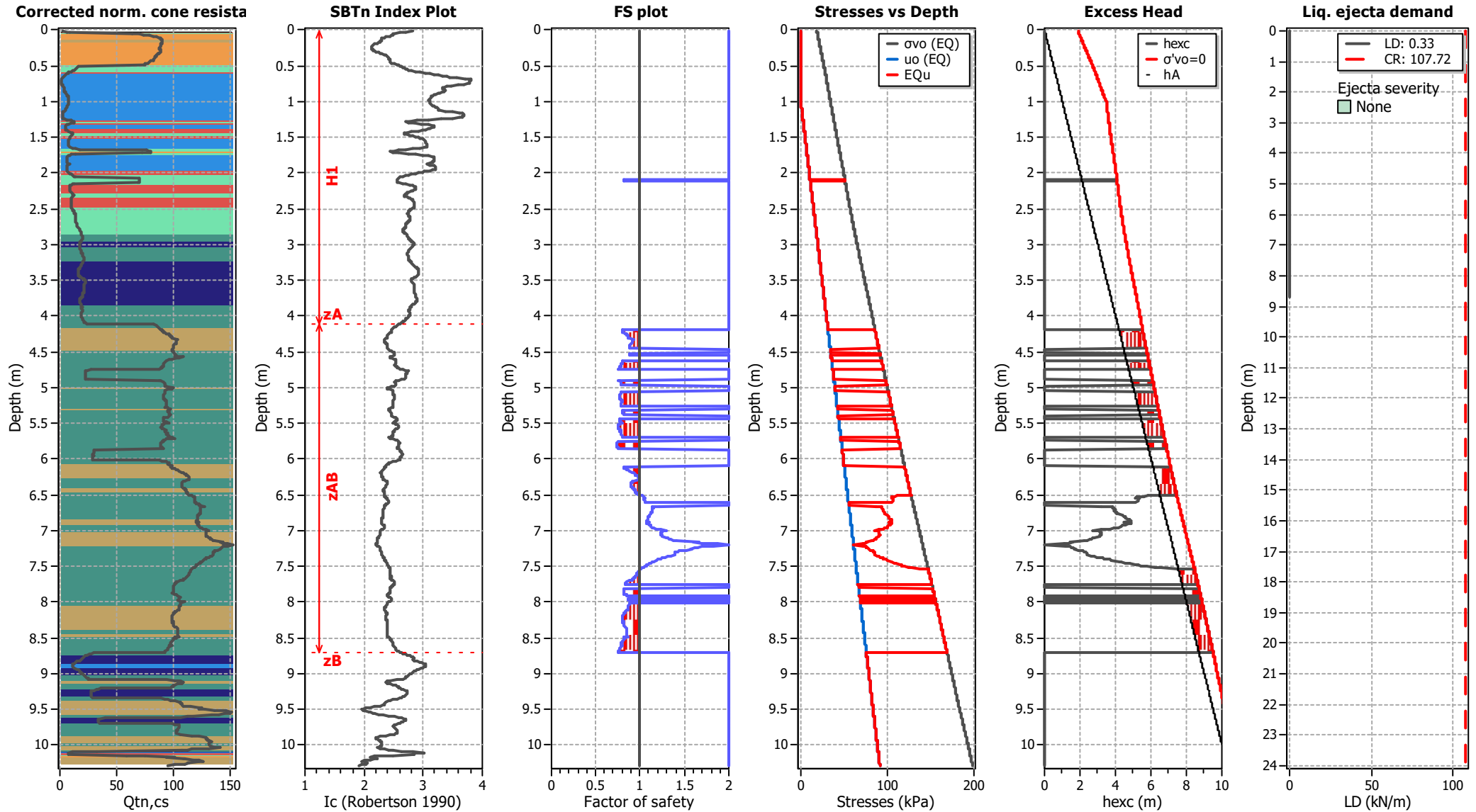
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

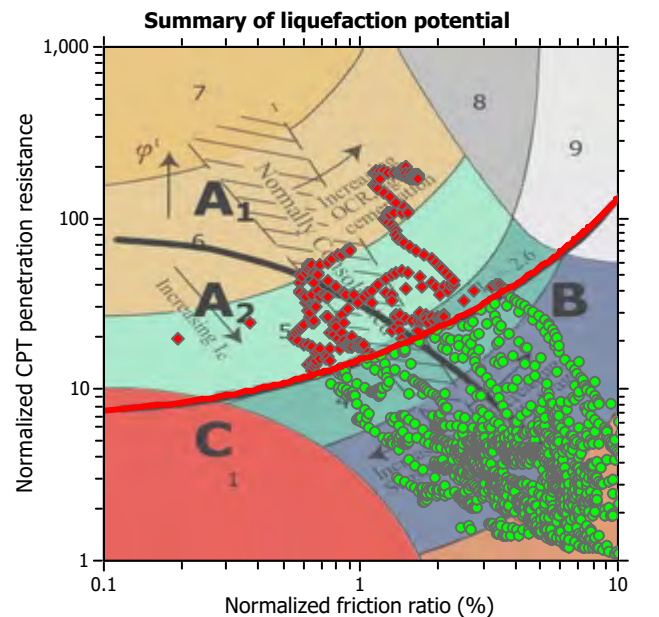
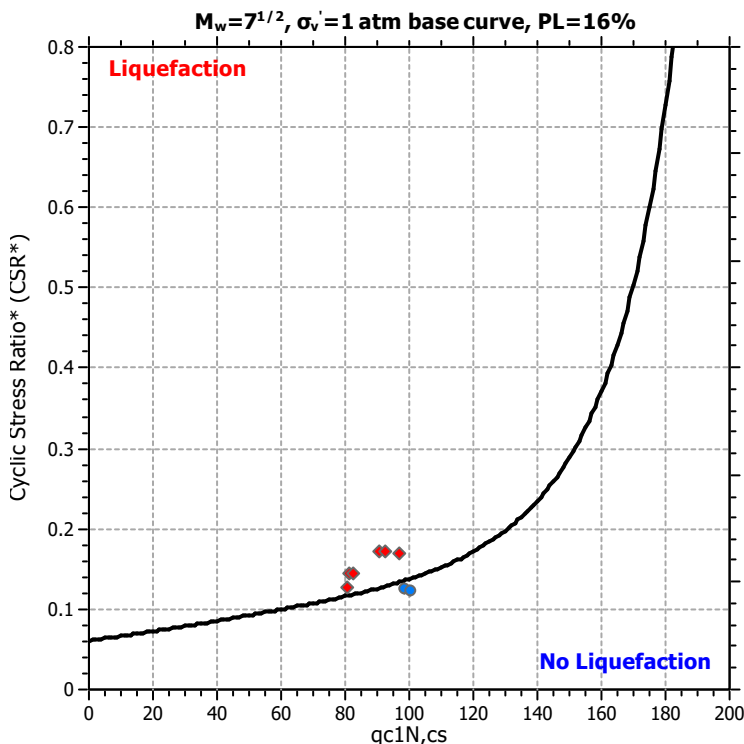
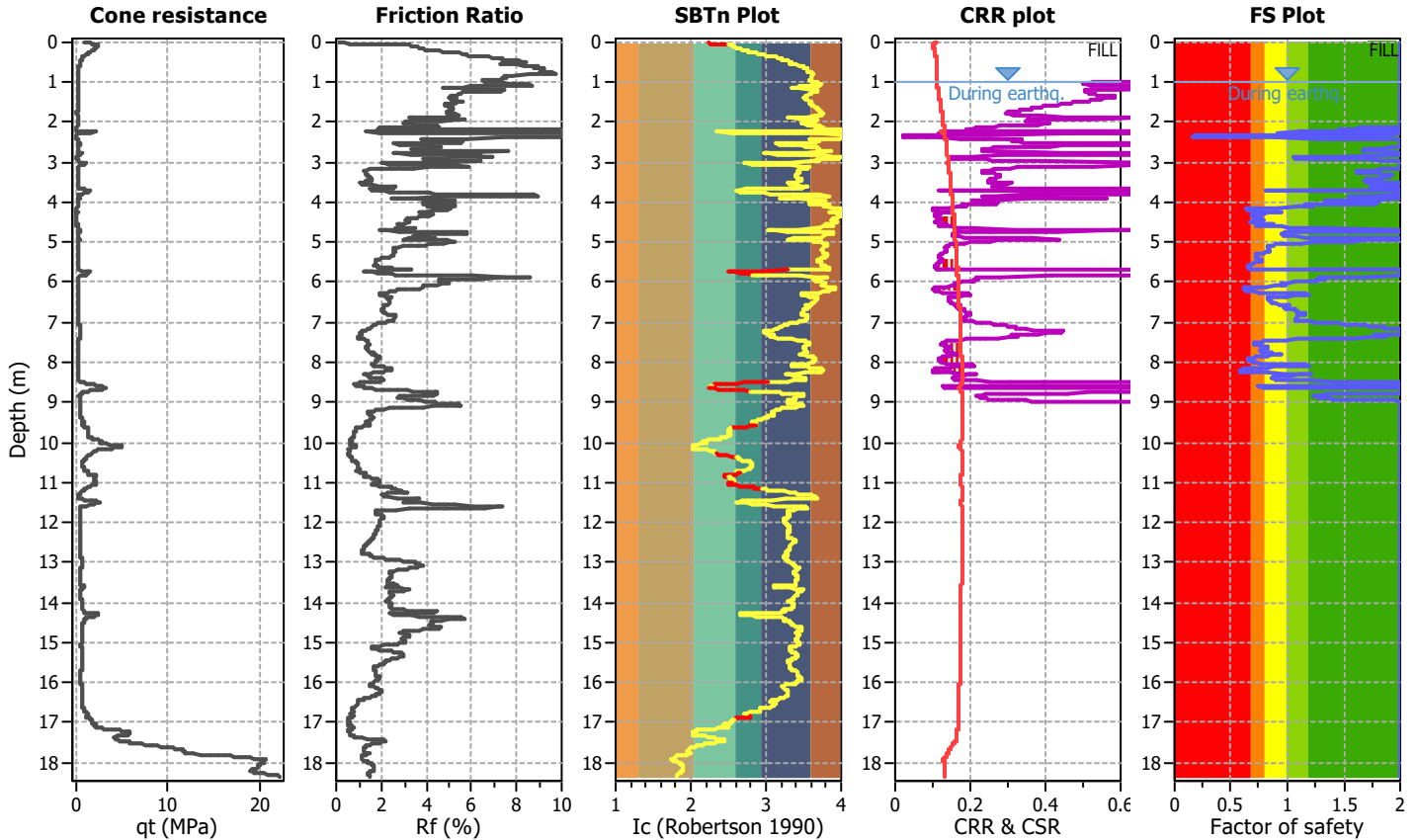
Project title : Sunfield Landholding

Location :

CPT file : CPT021A

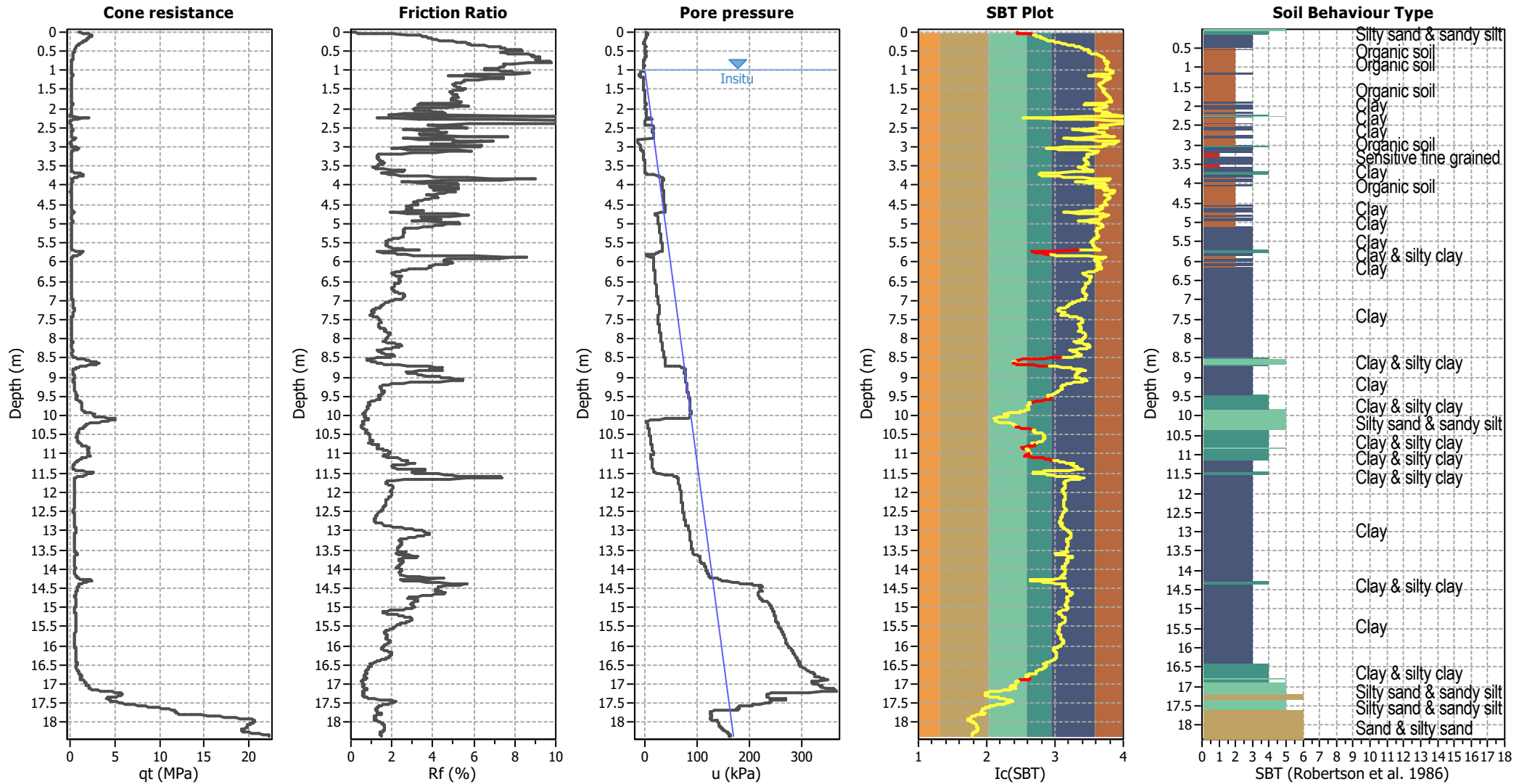
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

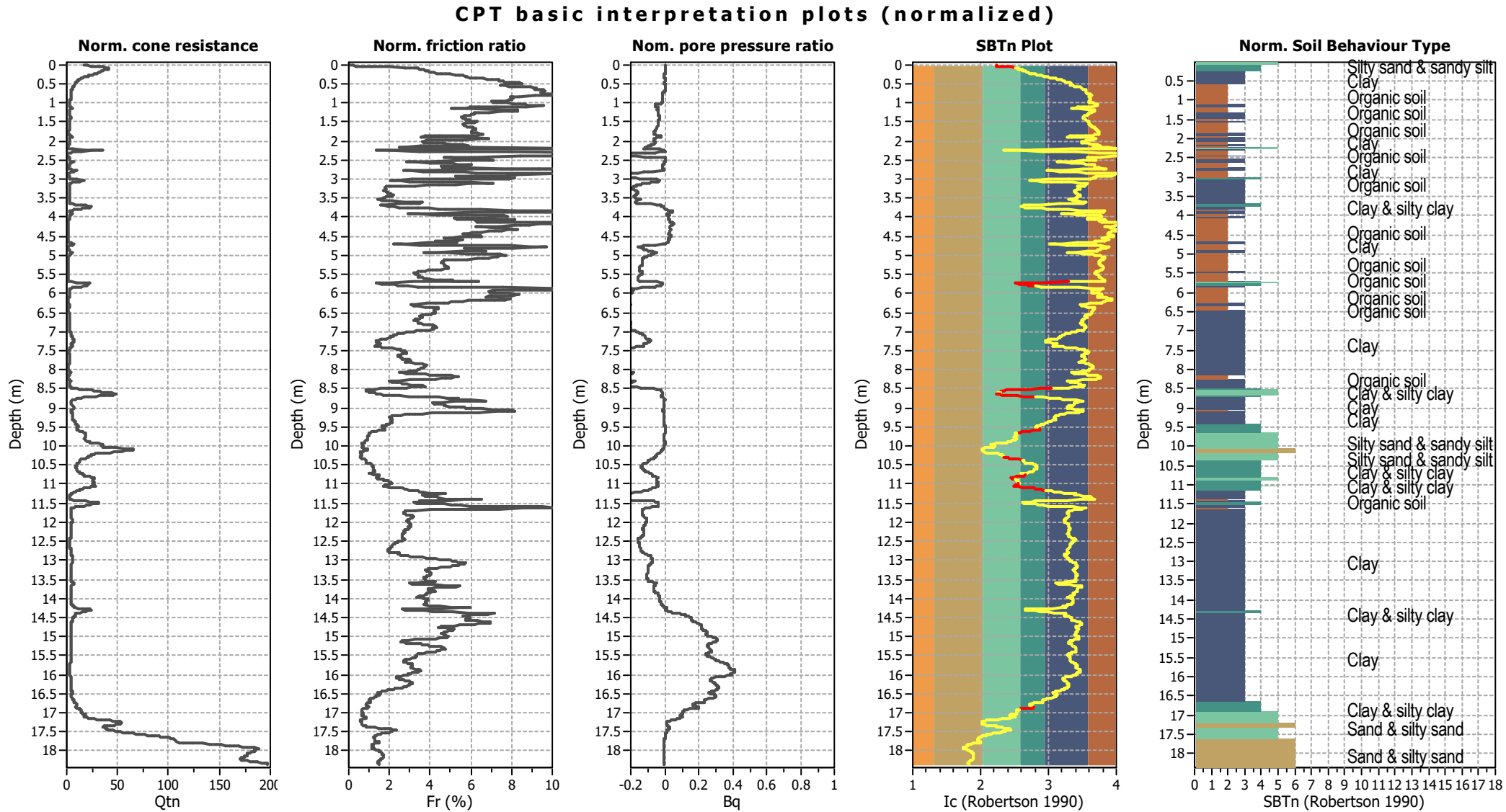


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

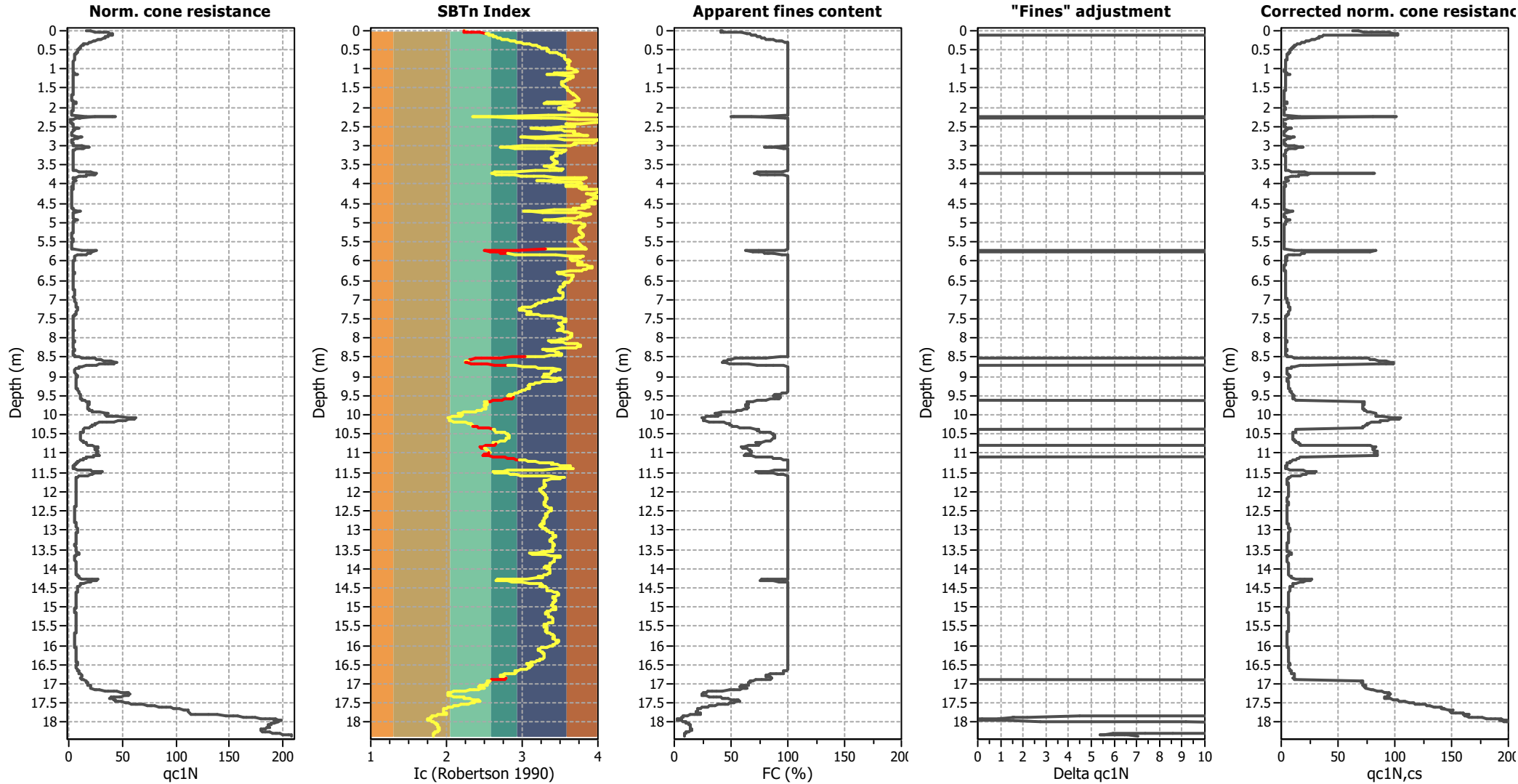
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

9. Very stiff fine grained

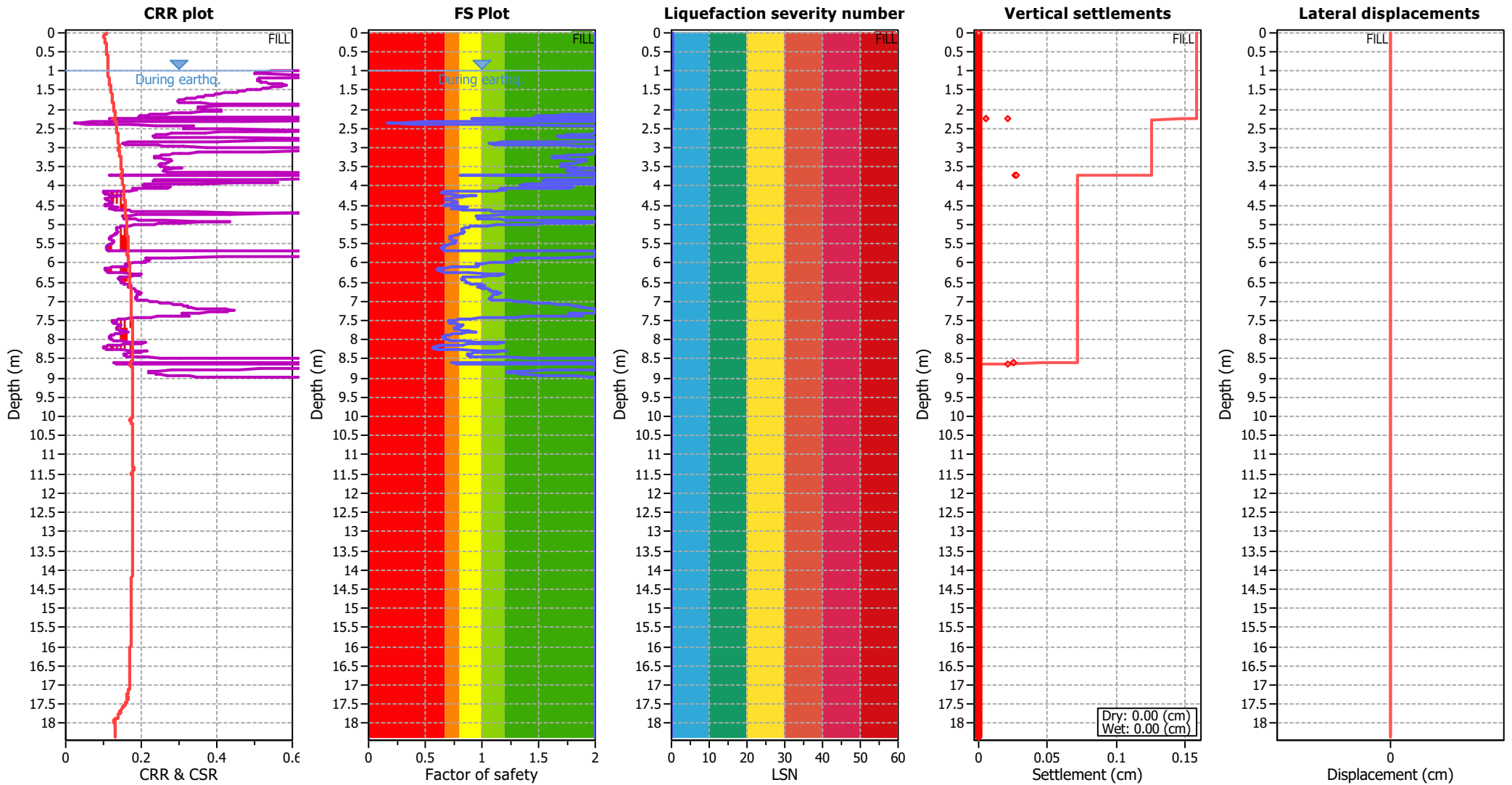
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

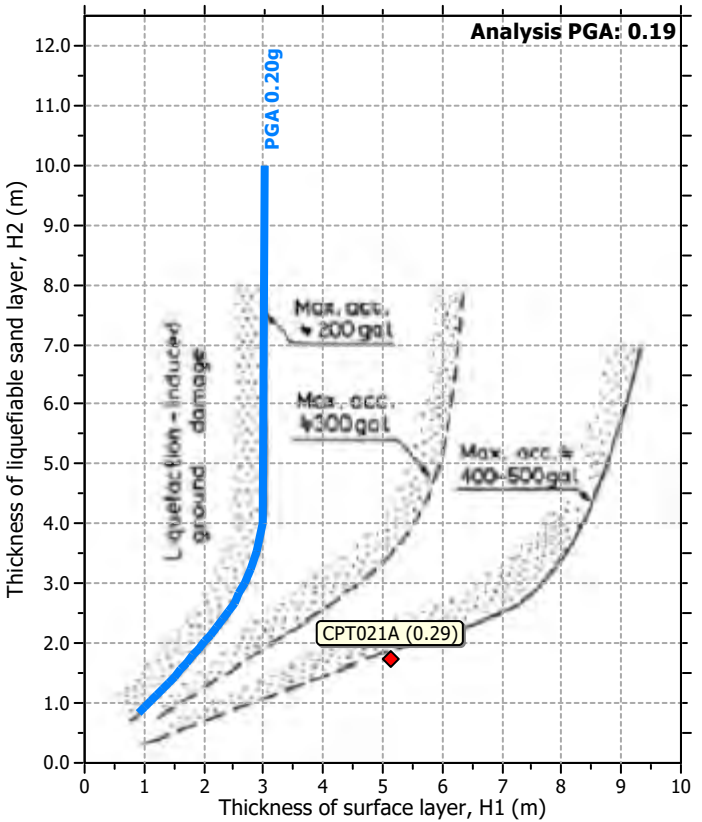
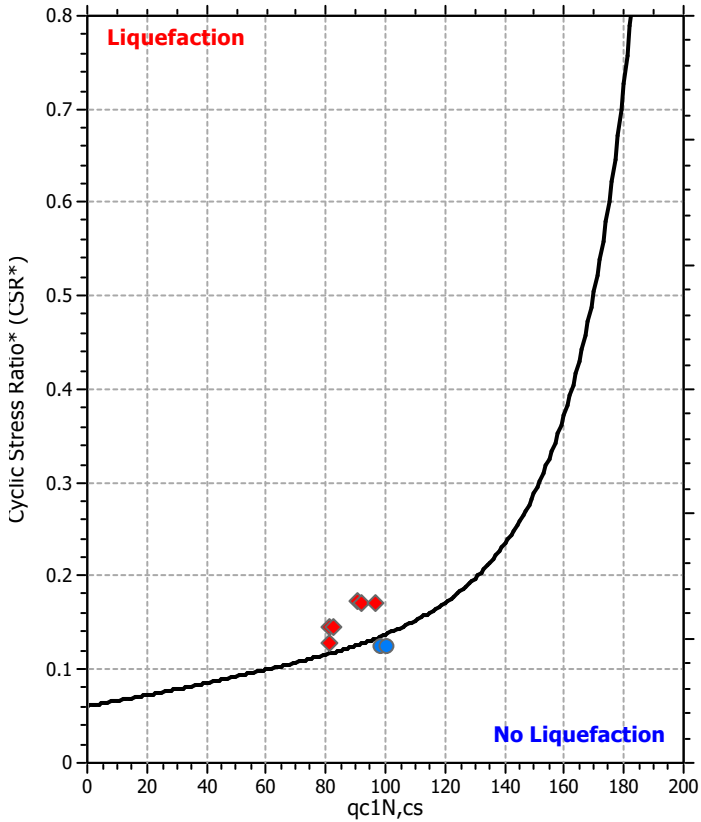
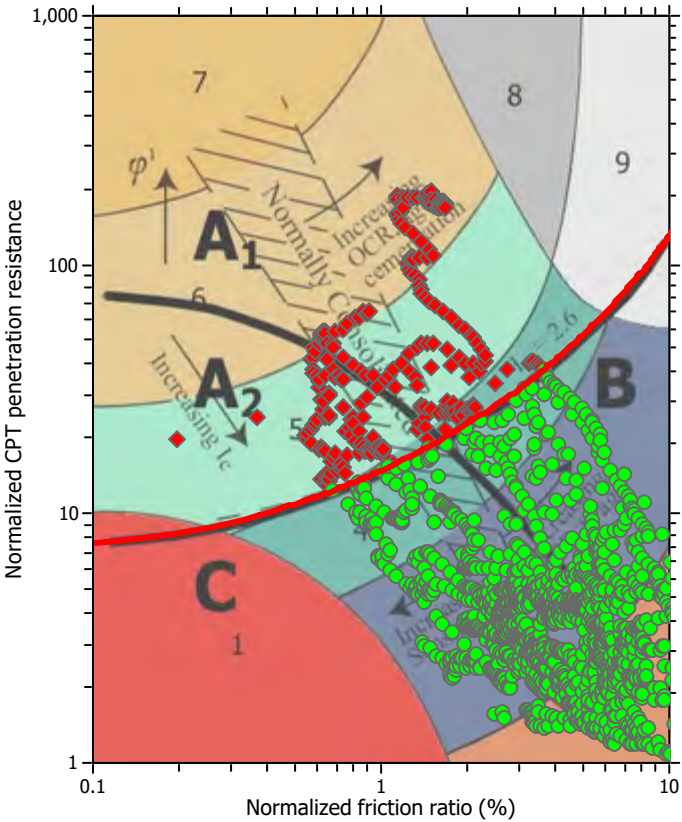
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

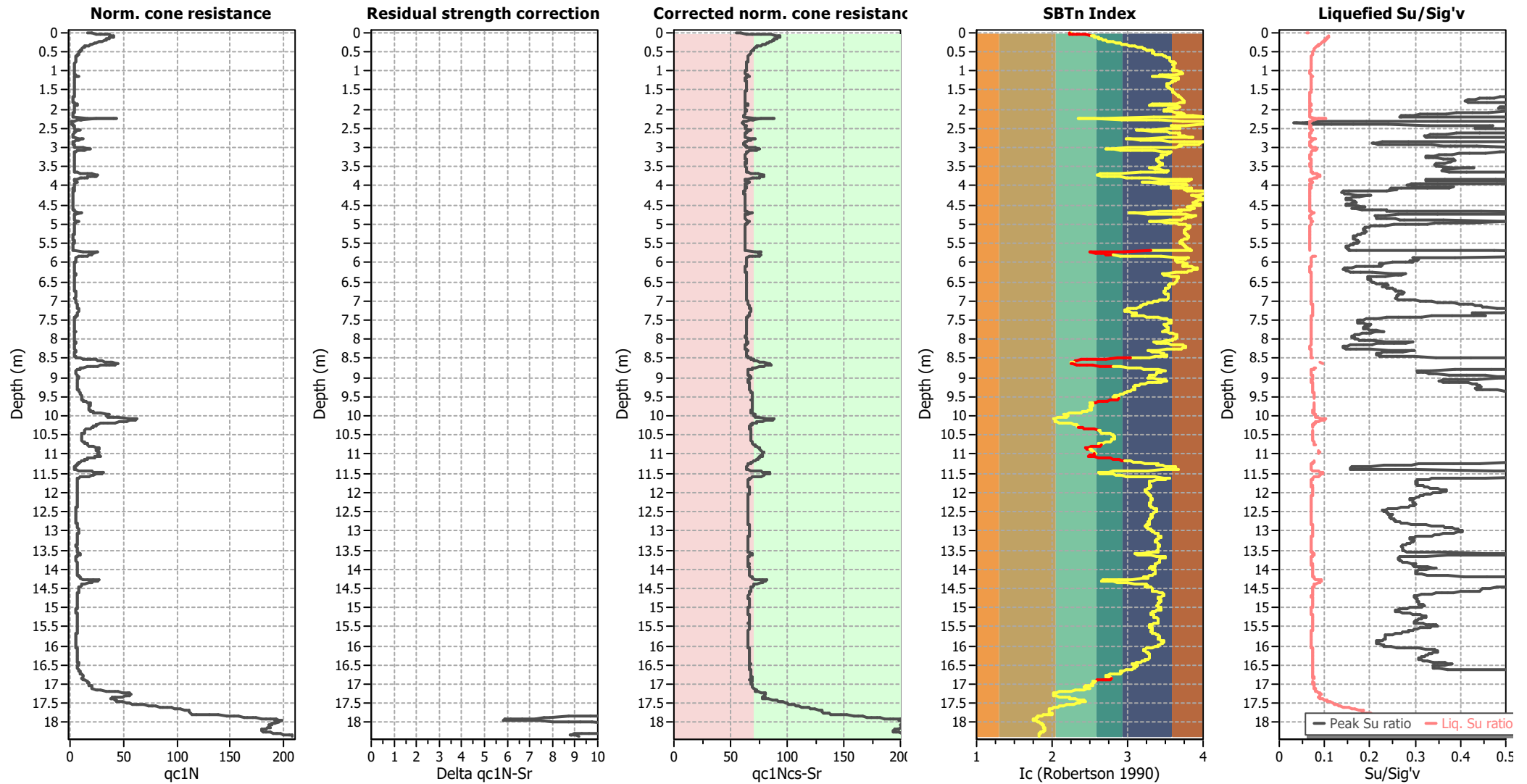
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

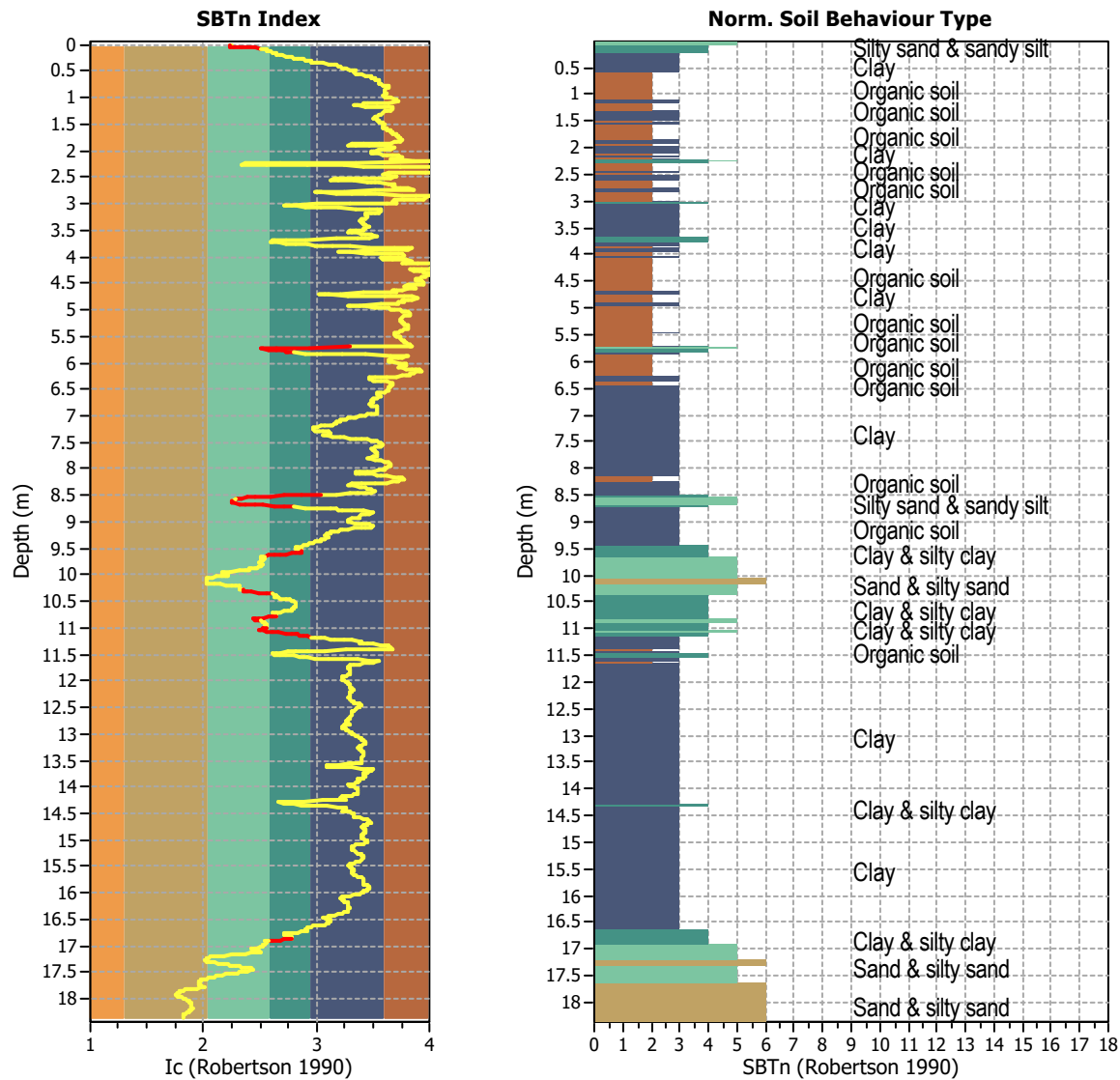
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

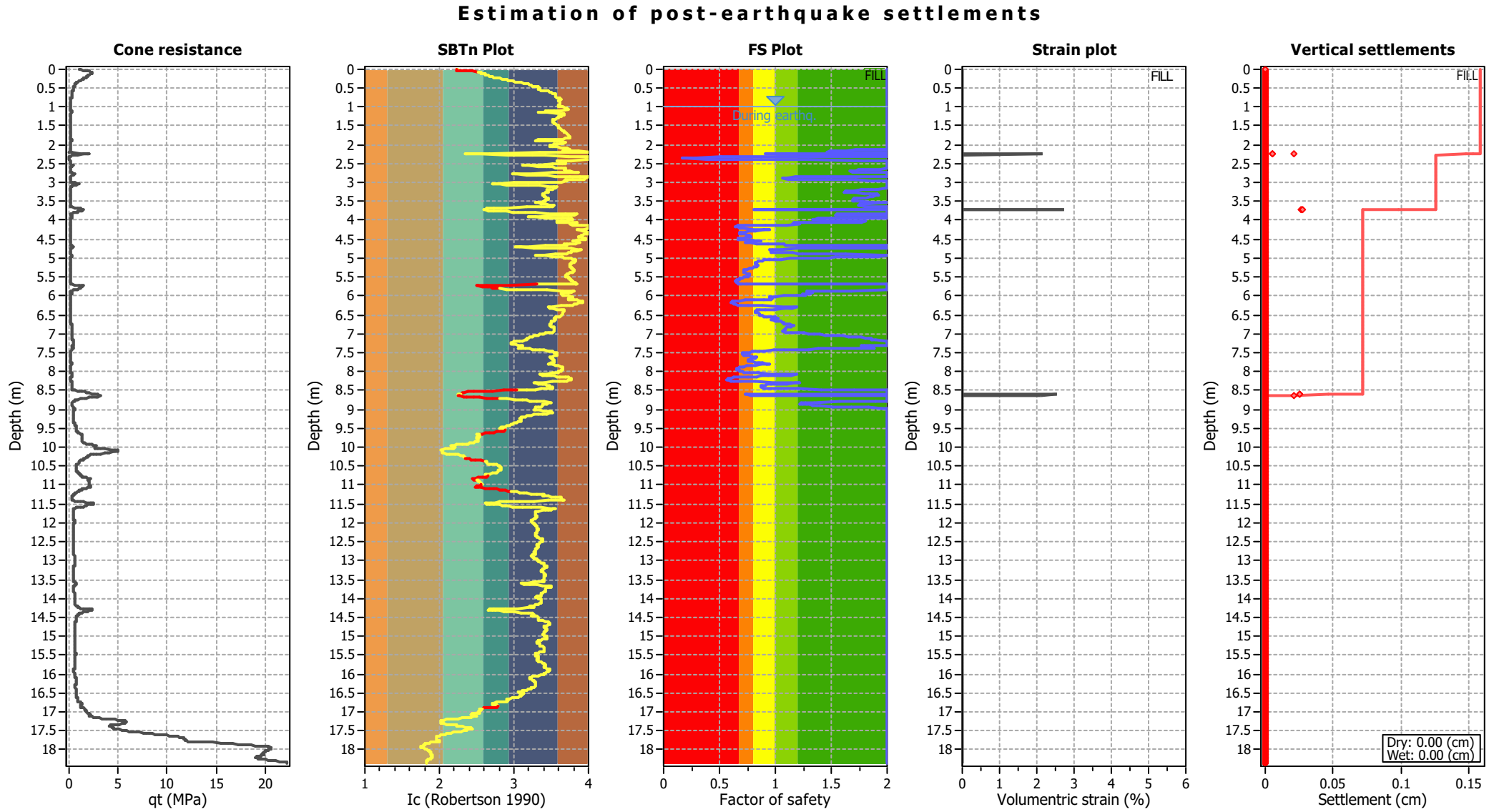


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

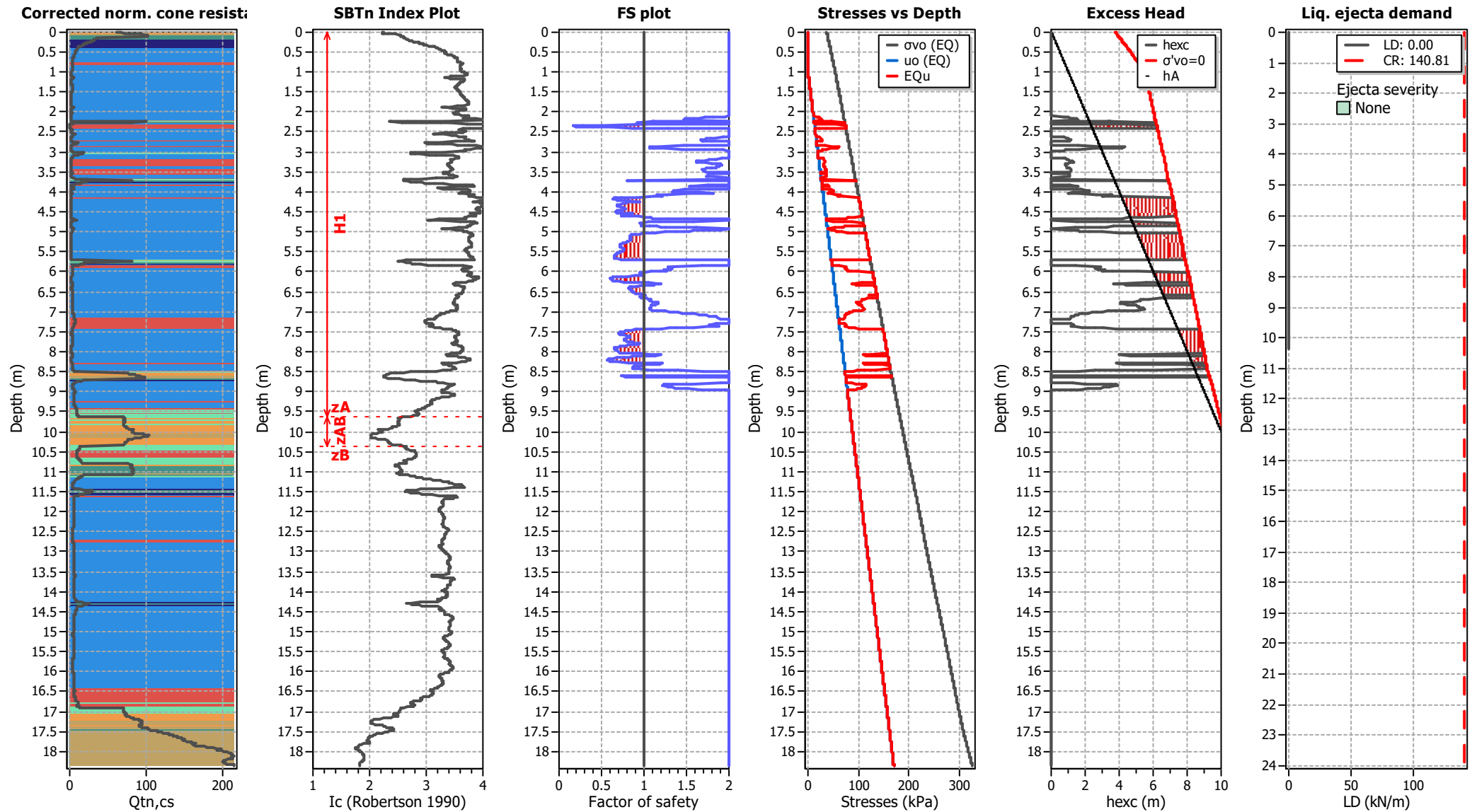
Total points in CPT file: 1836
Total points excluded: 95
Exclusion percentage: 5.17%
Number of layers detected: 12



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

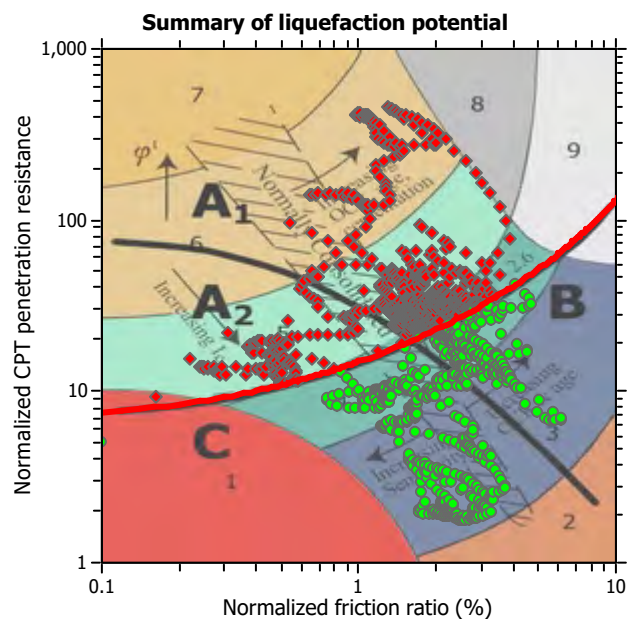
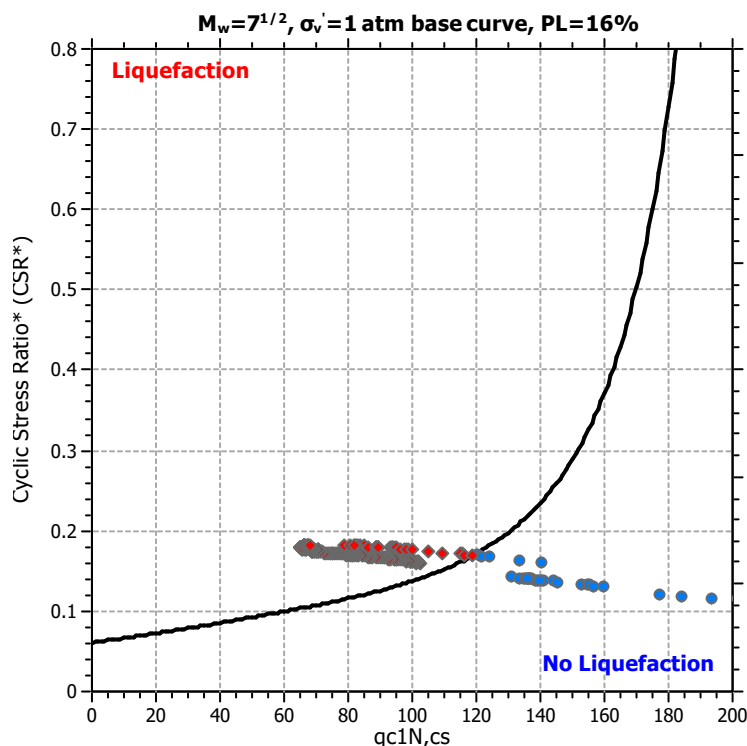
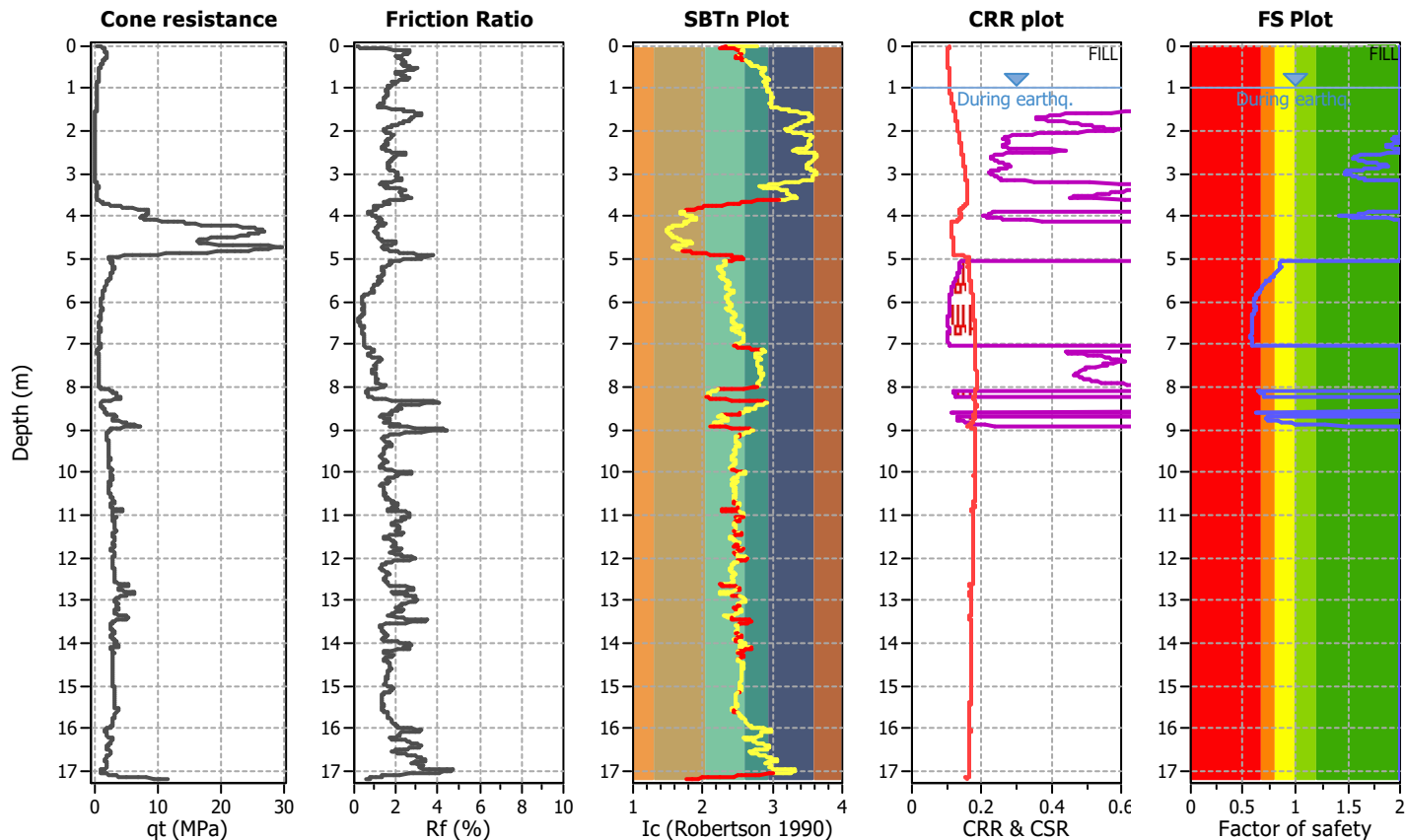
Project title : Sunfield Landholding

Location :

CPT file : CPT022

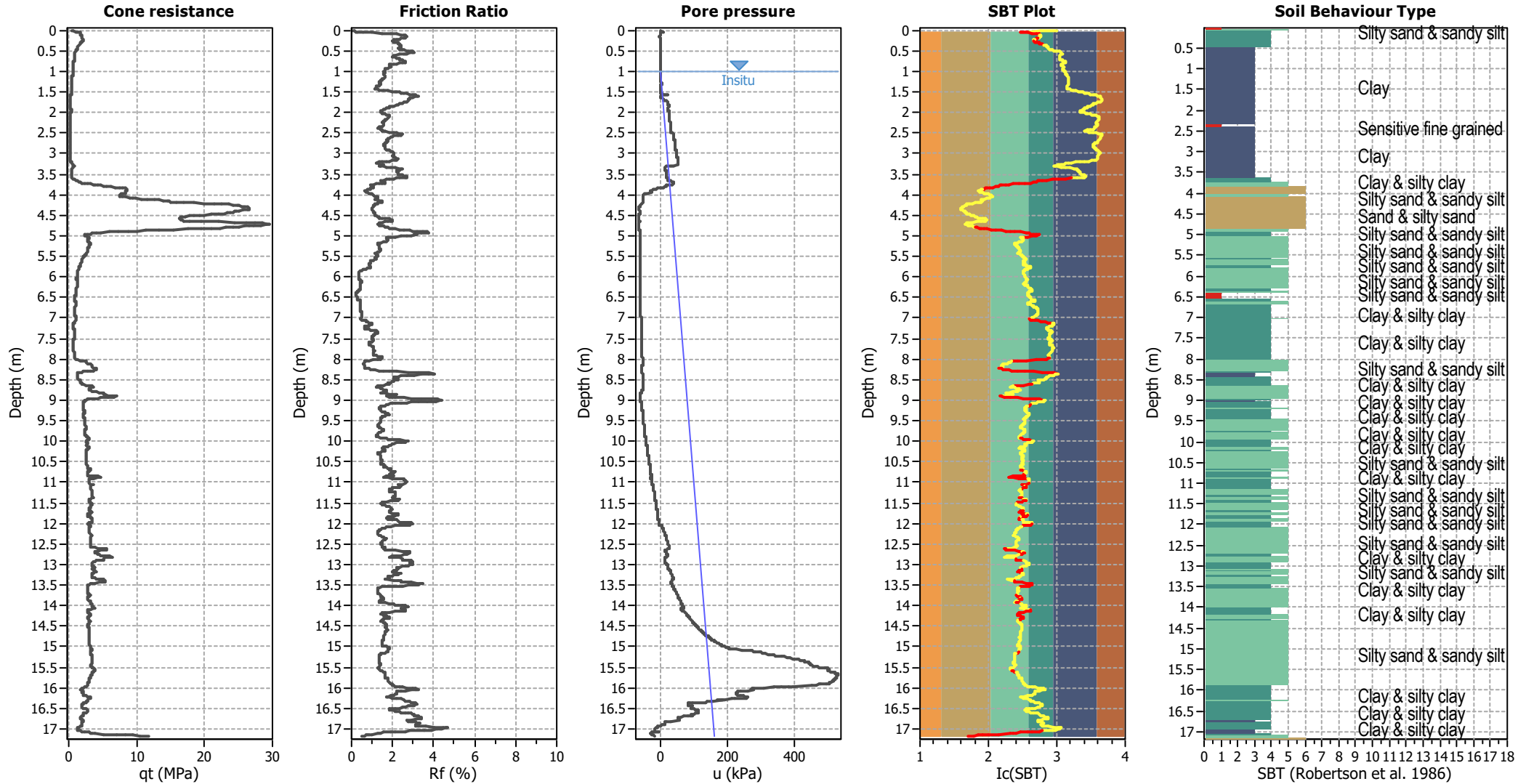
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



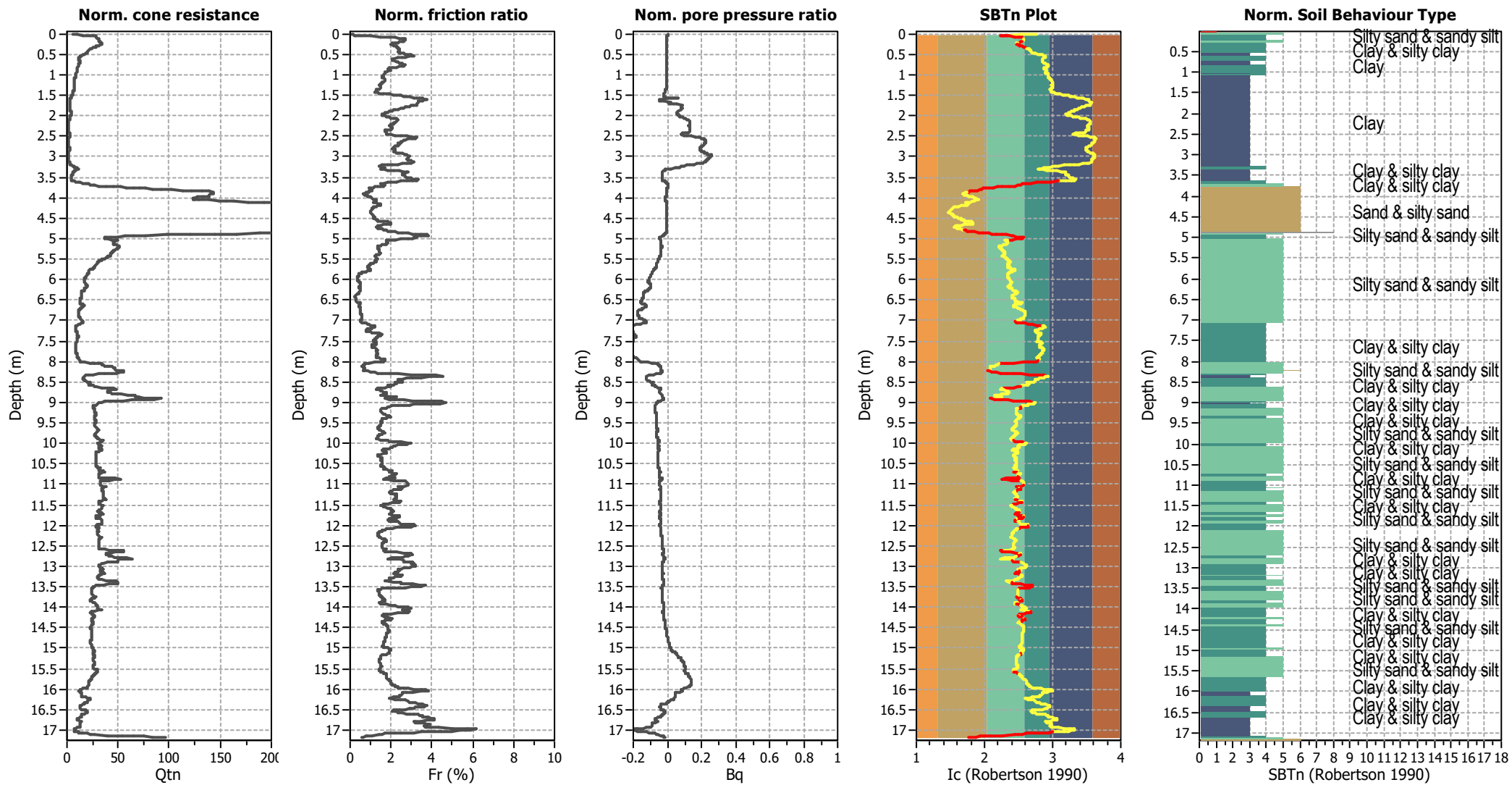
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



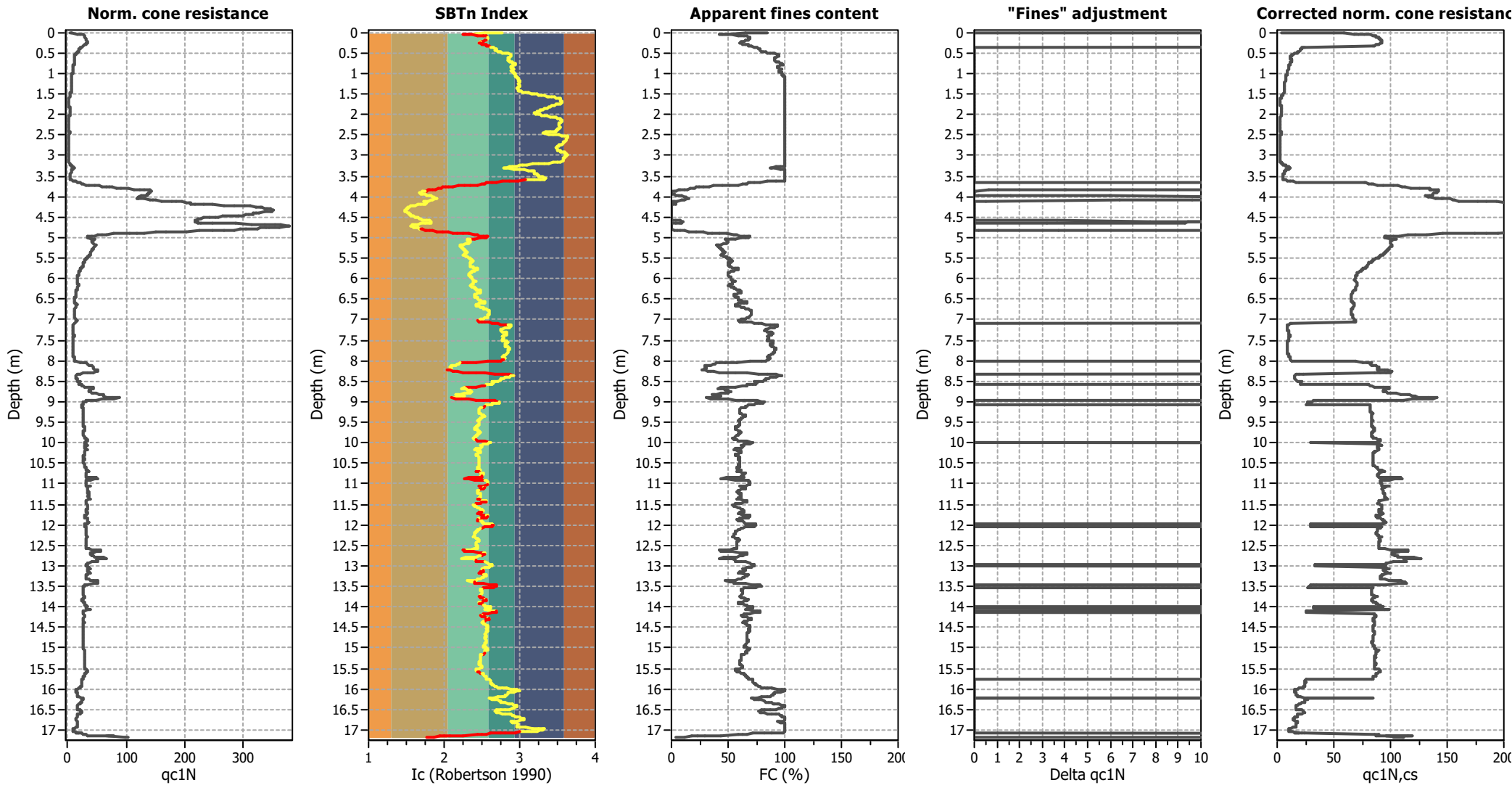
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

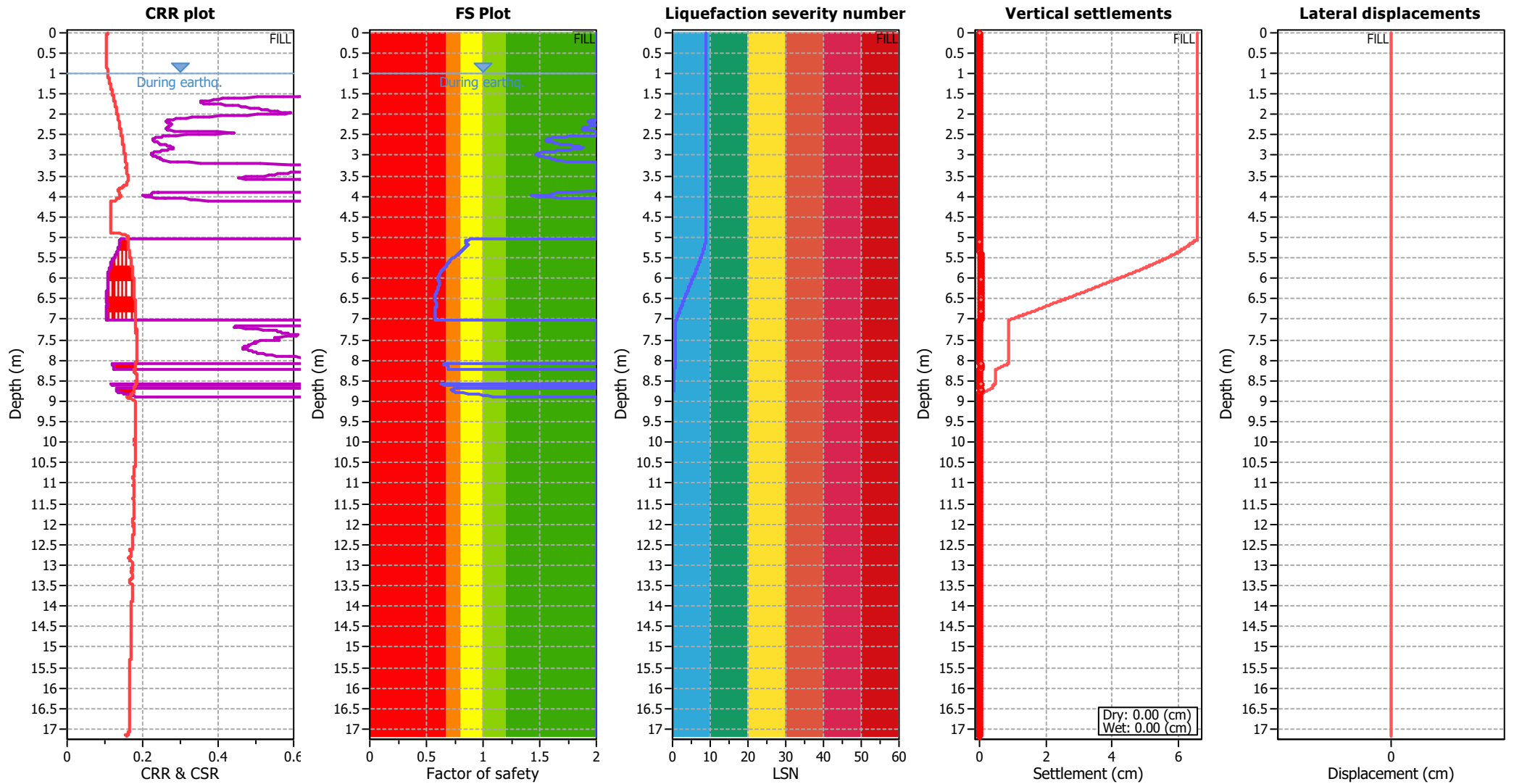
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

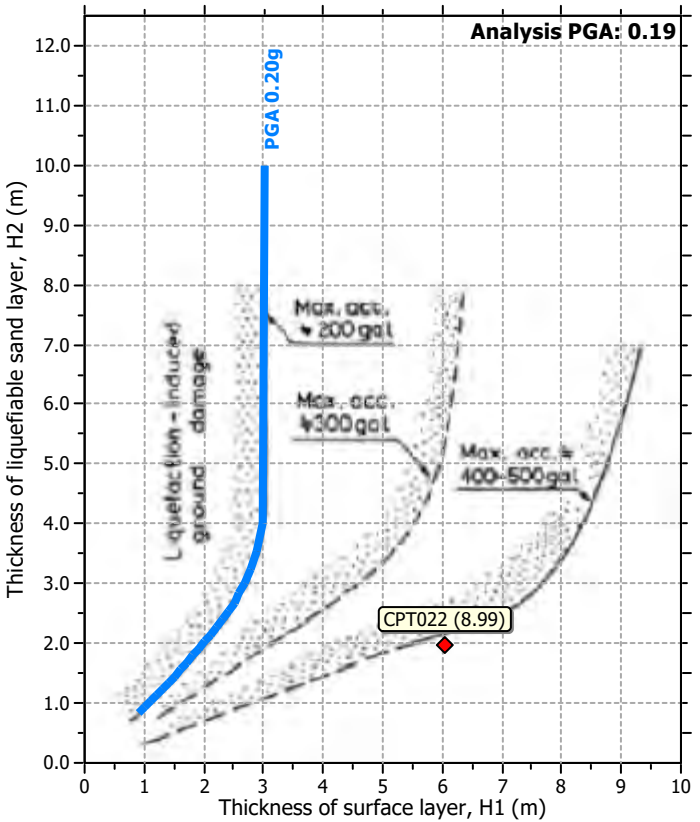
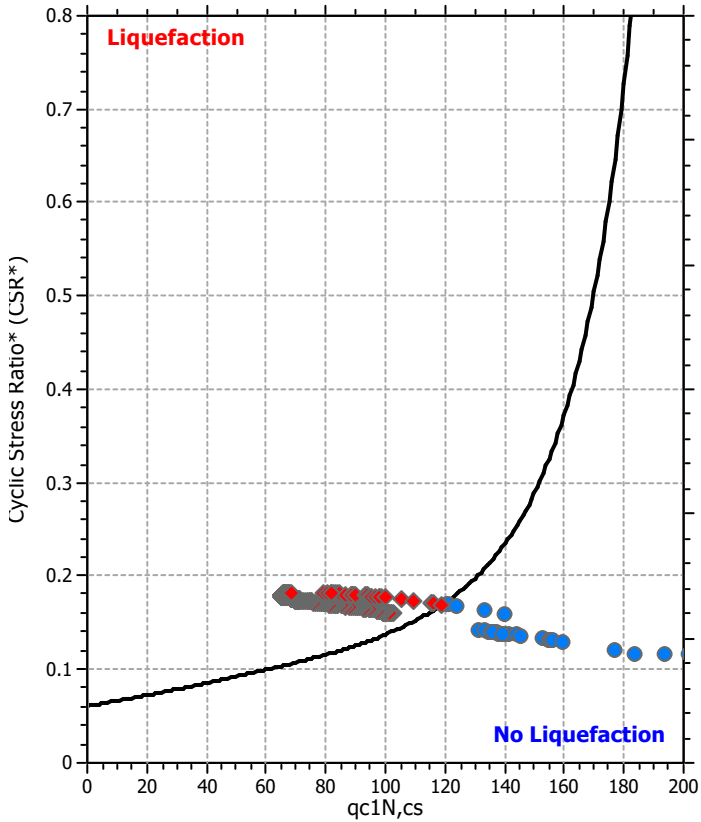
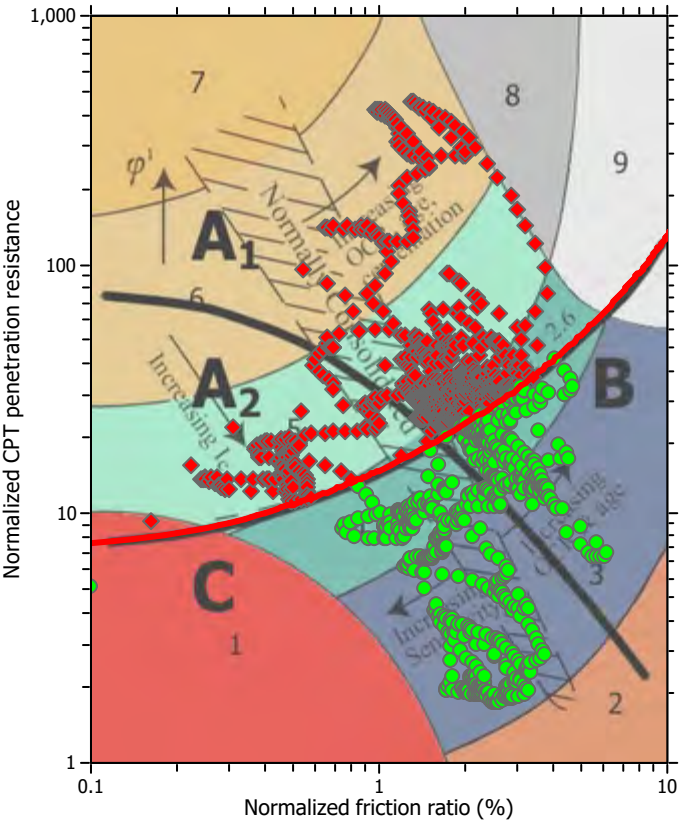
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

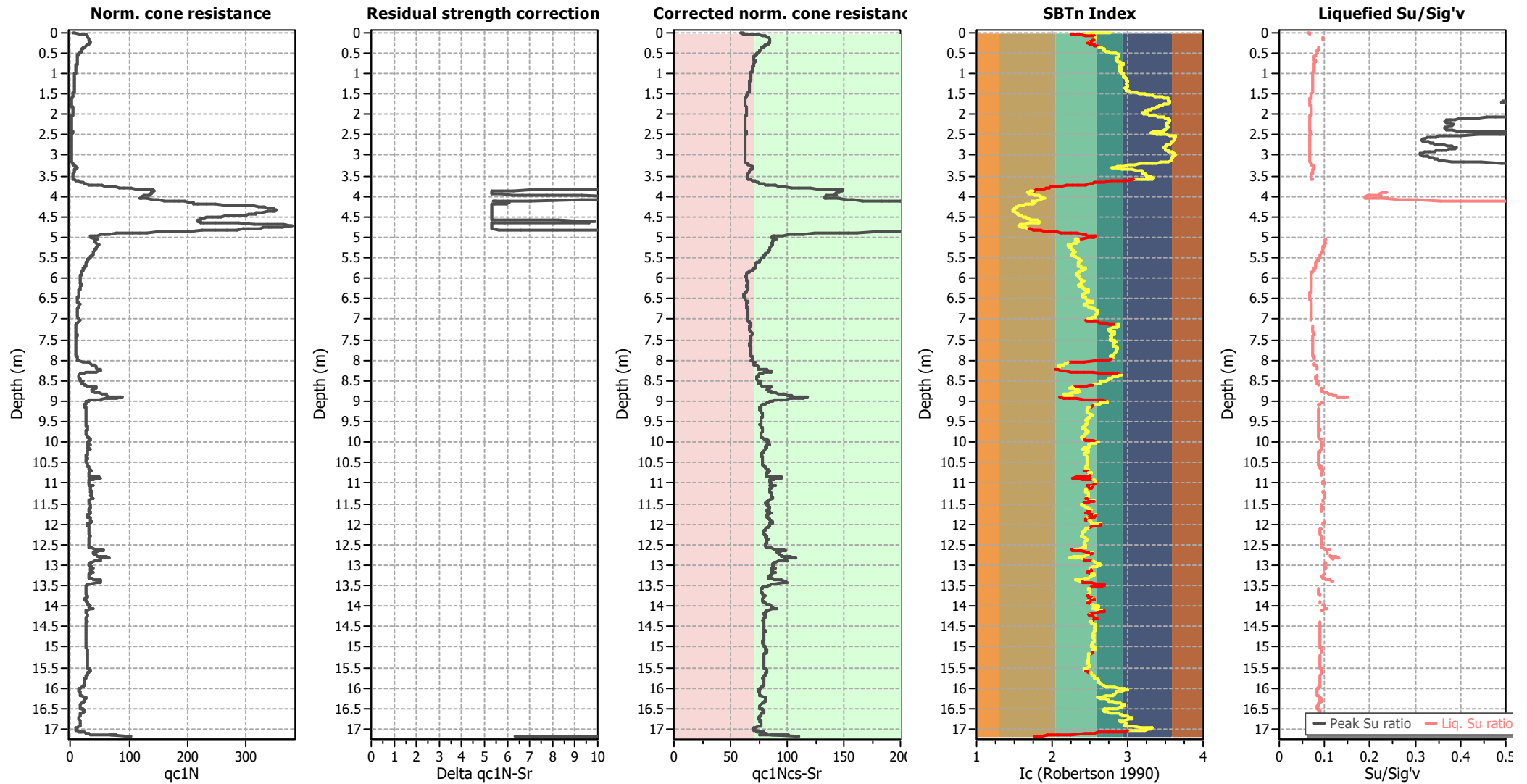
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

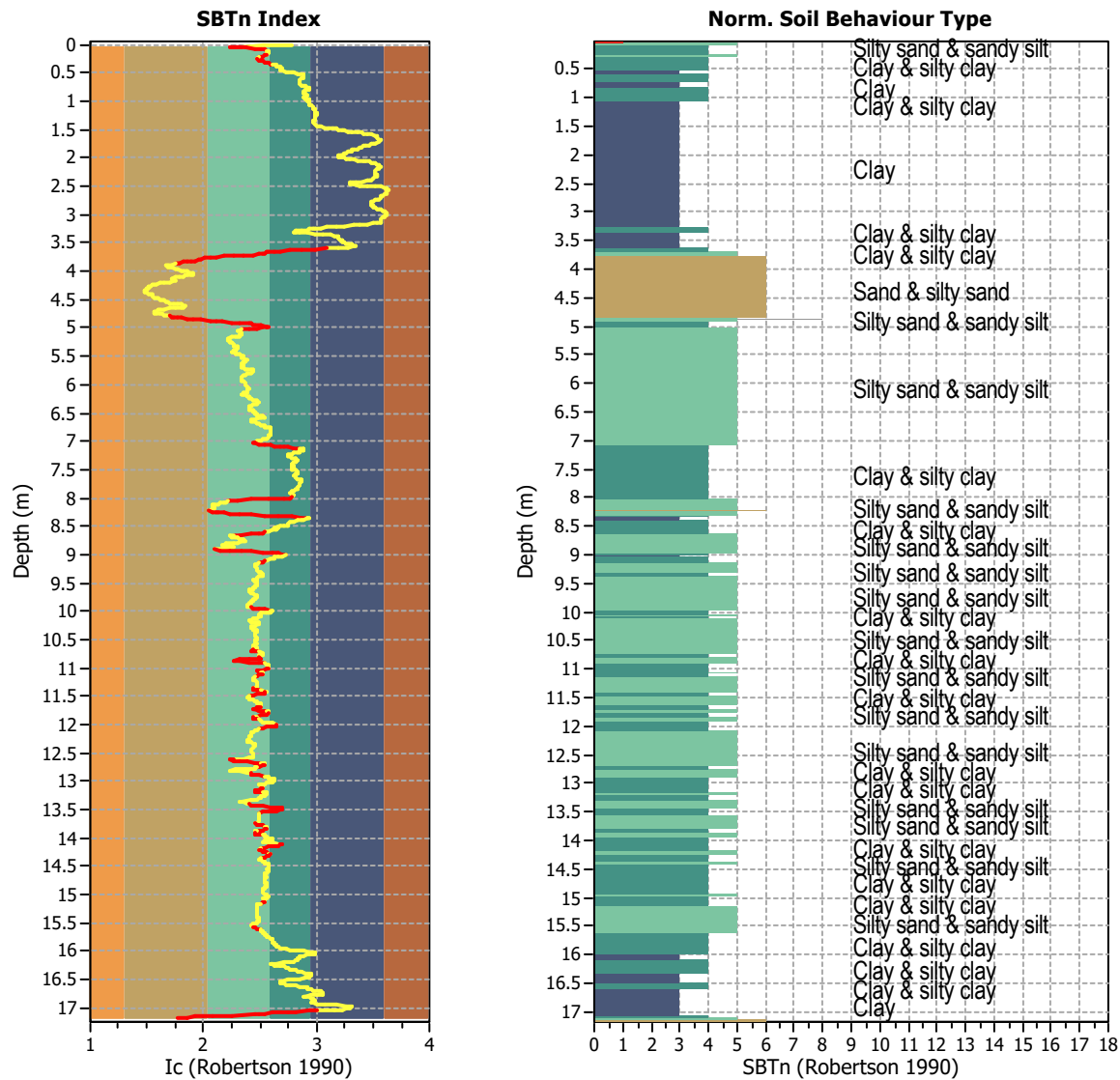
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



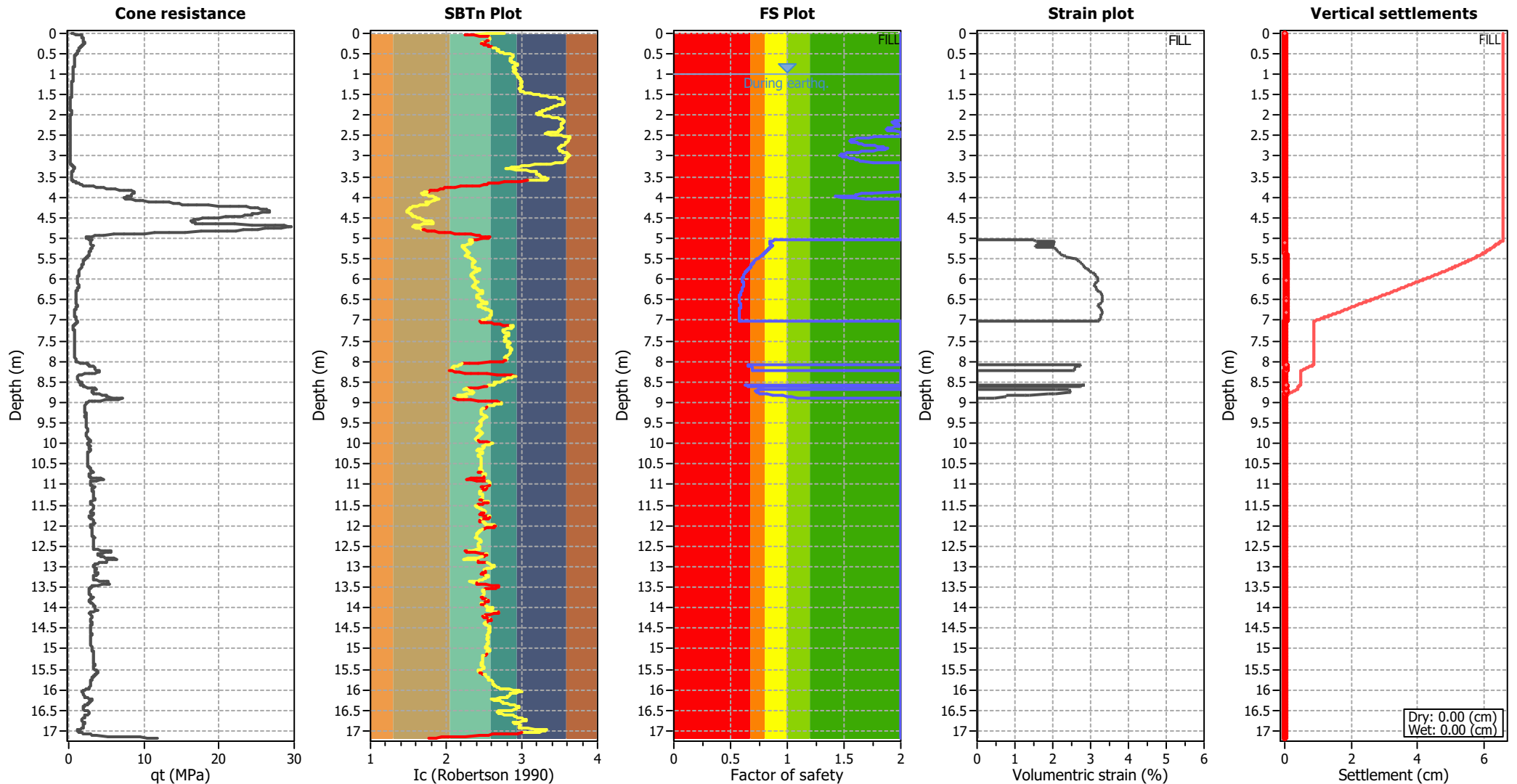
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1718
Total points excluded: 319
Exclusion percentage: 18.57%
Number of layers detected: 42

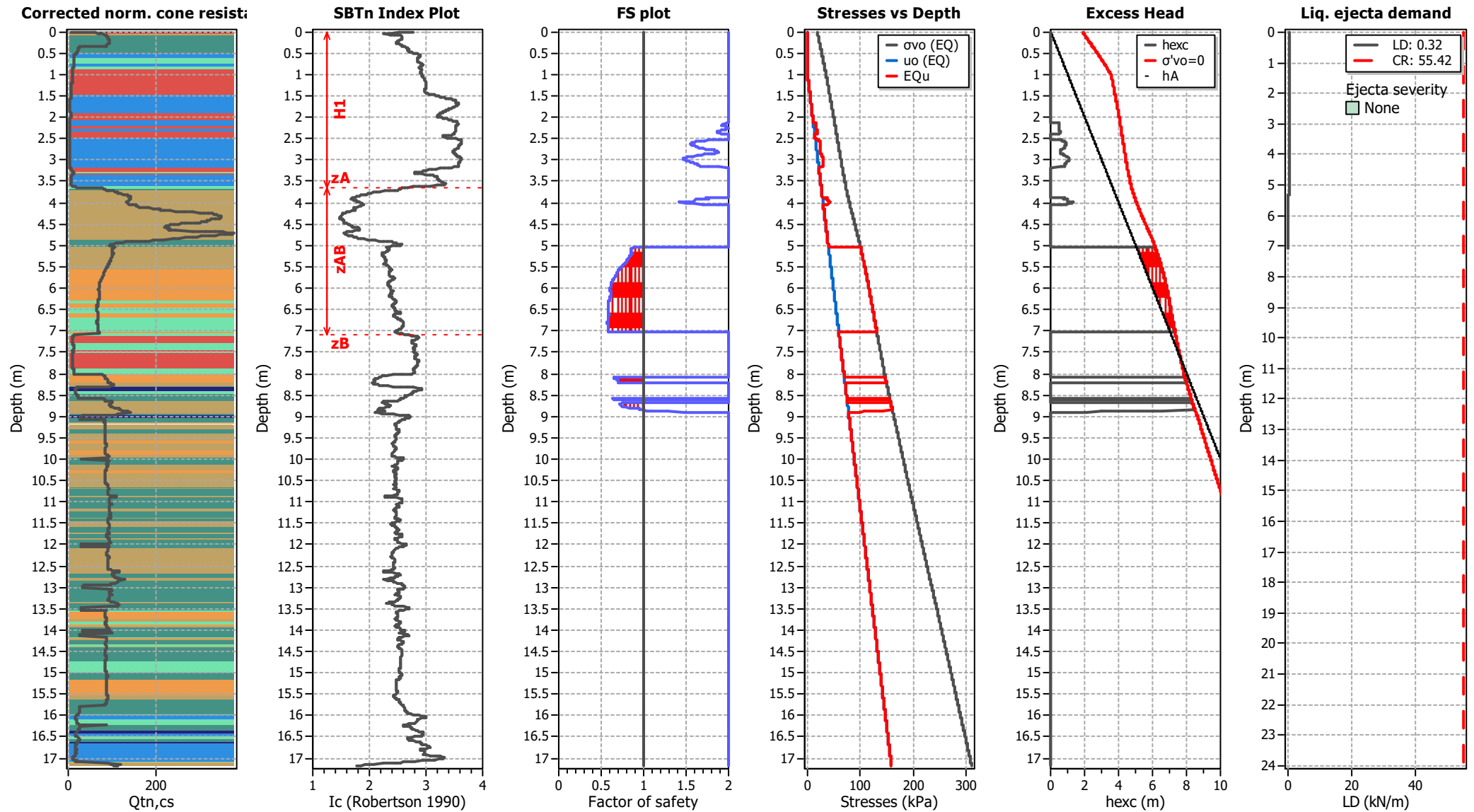
Estimation of post-earthquake settlements



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

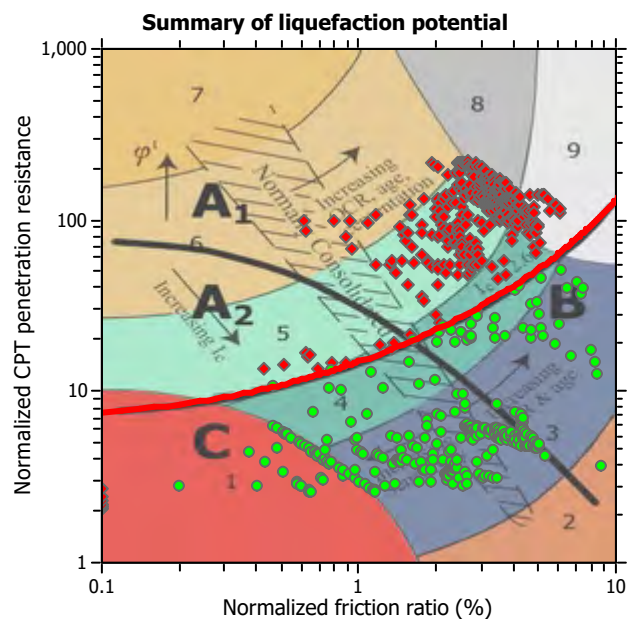
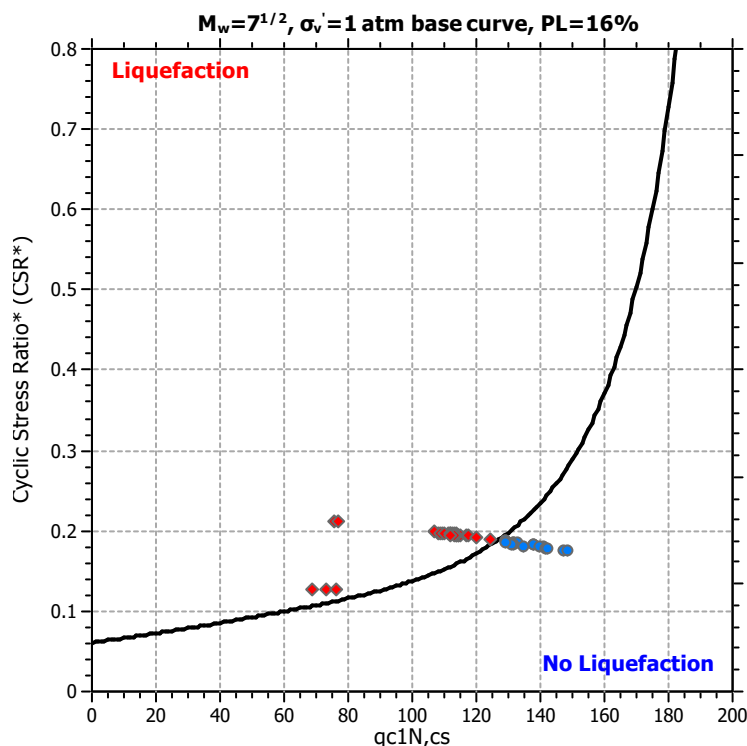
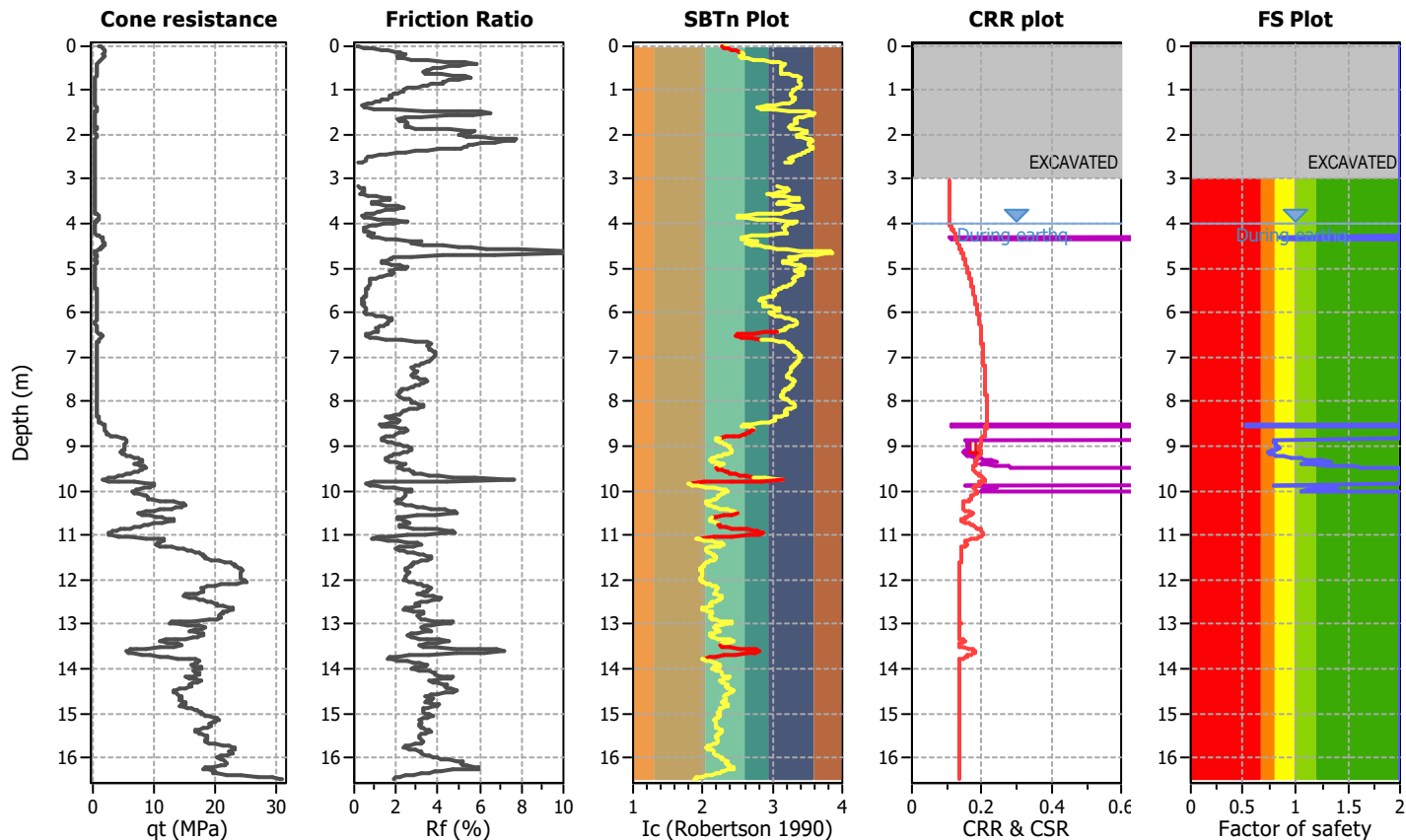
Project title : Sunfield Landholding

Location :

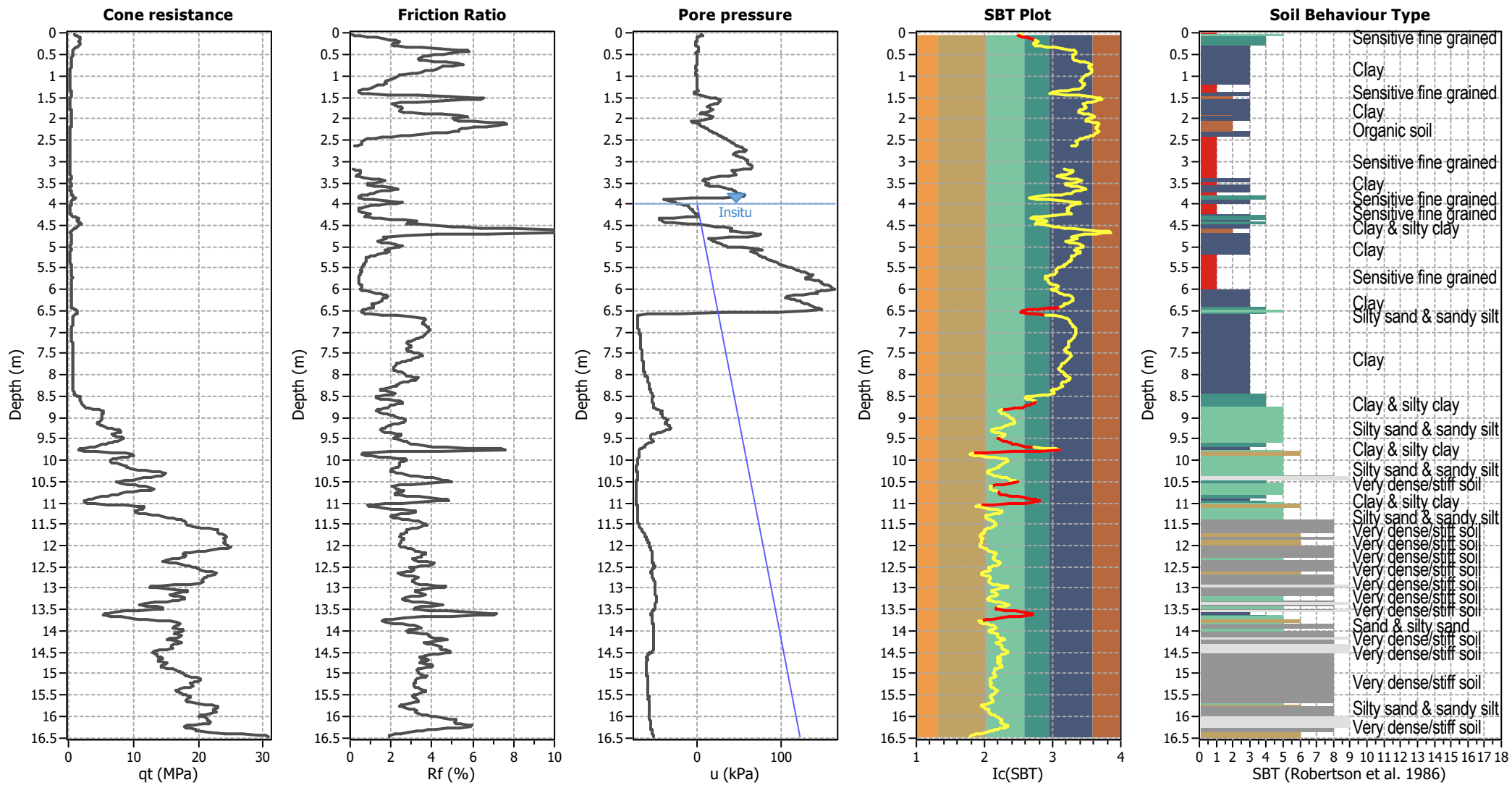
CPT file : CPT101

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

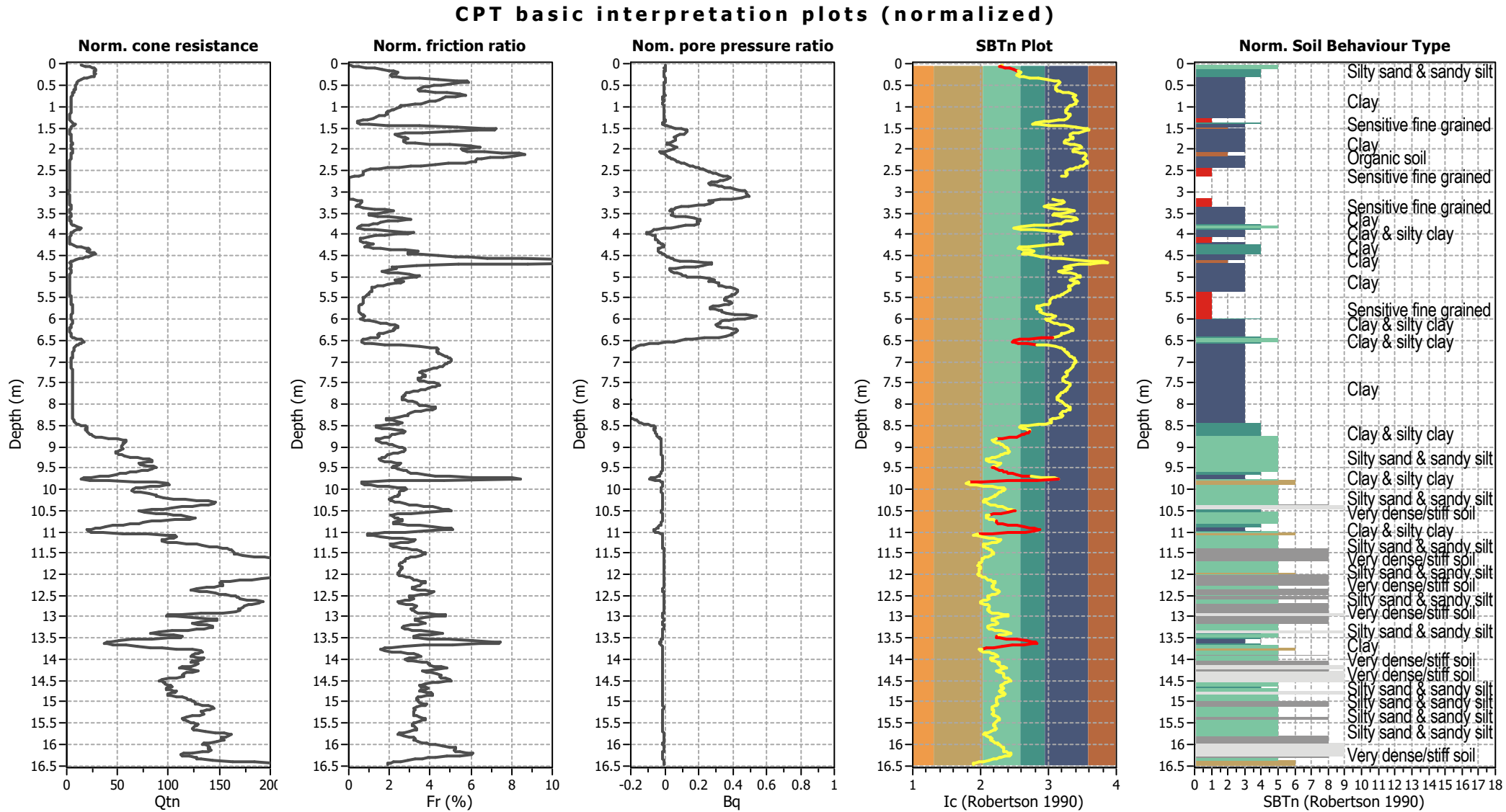


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

SBT legend

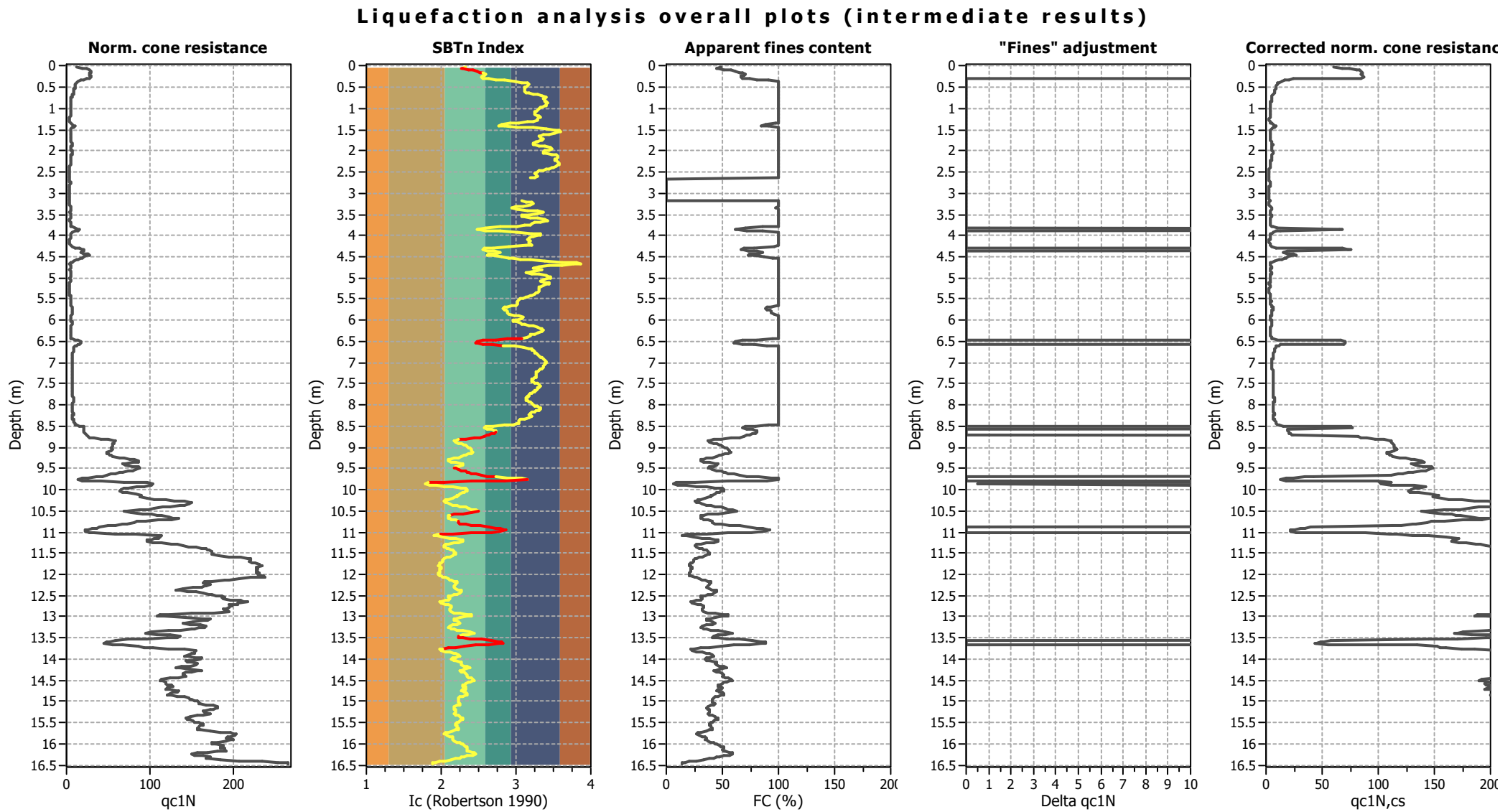
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

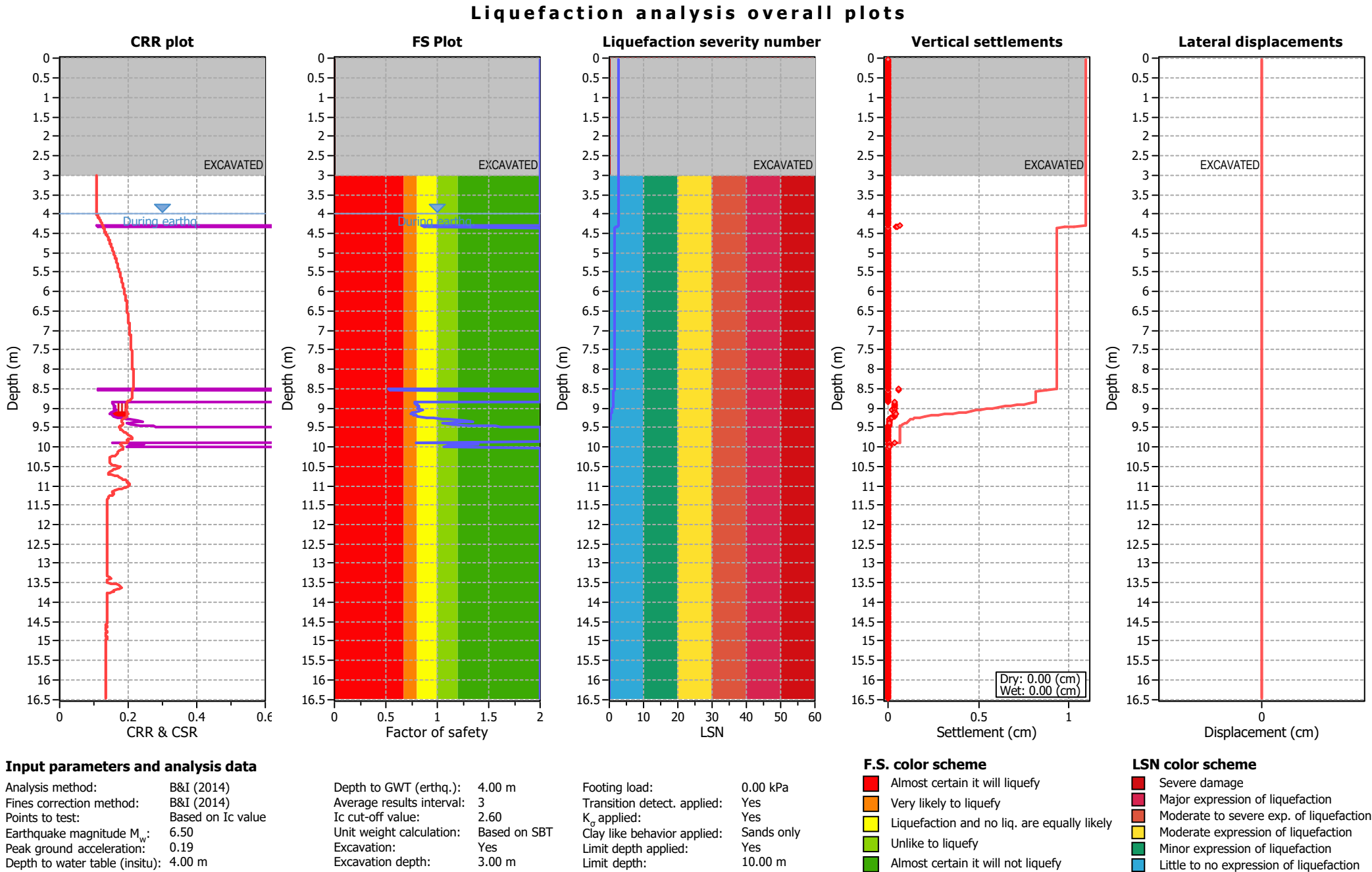
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

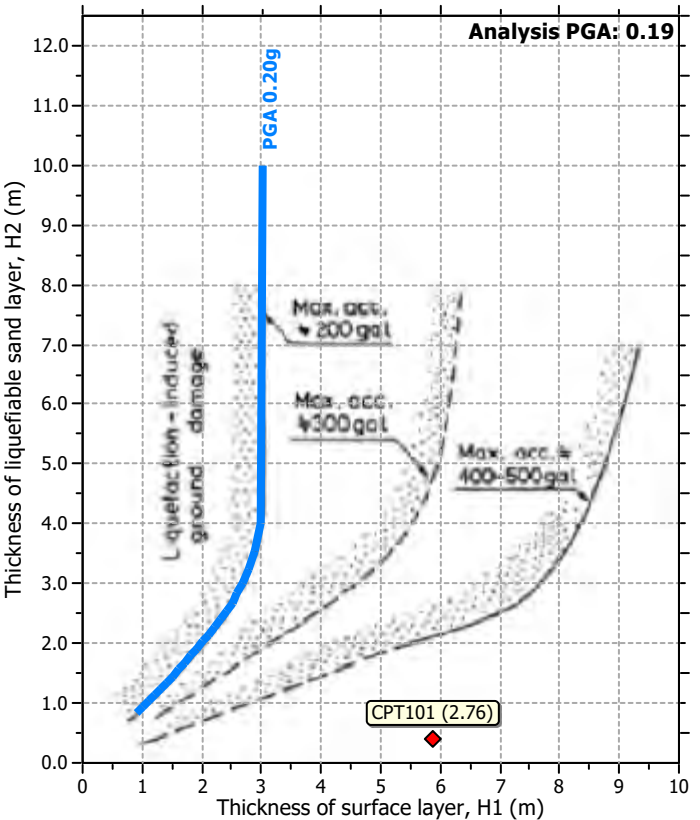
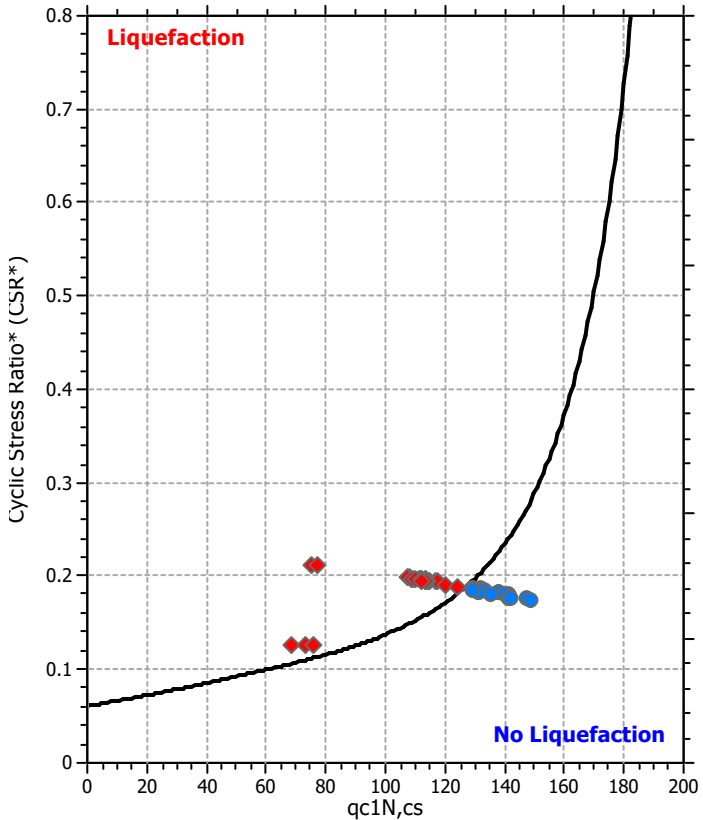
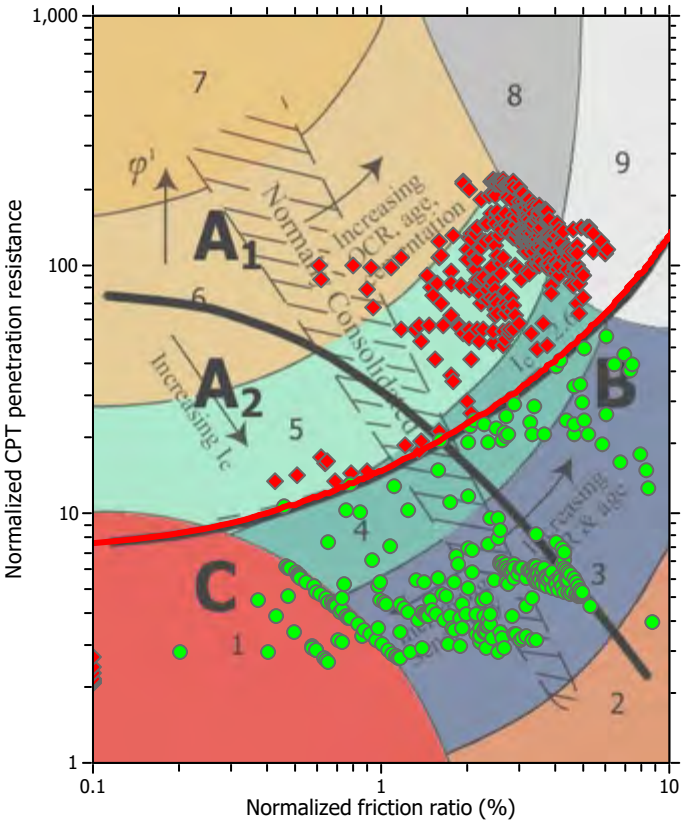


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



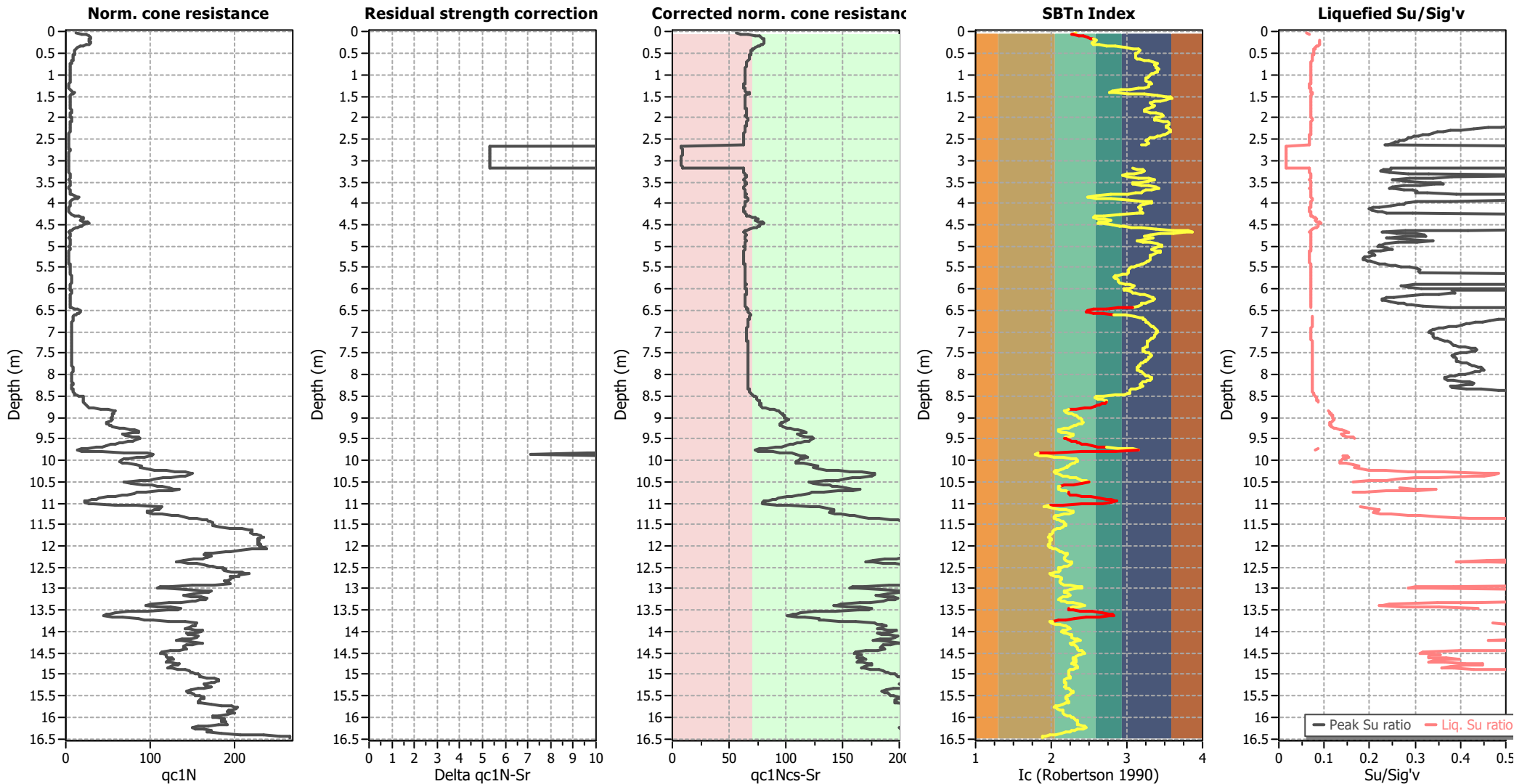
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

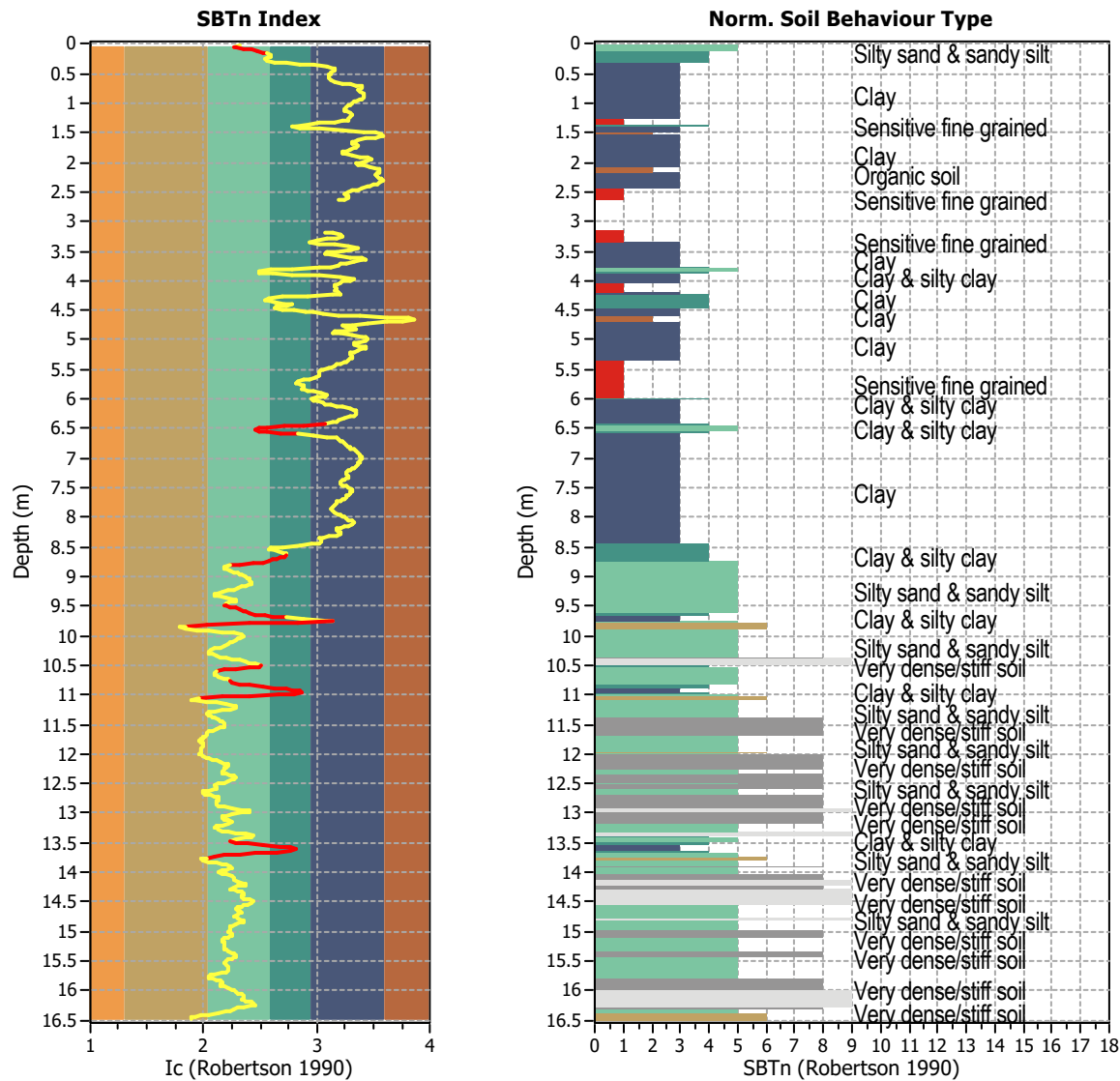
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



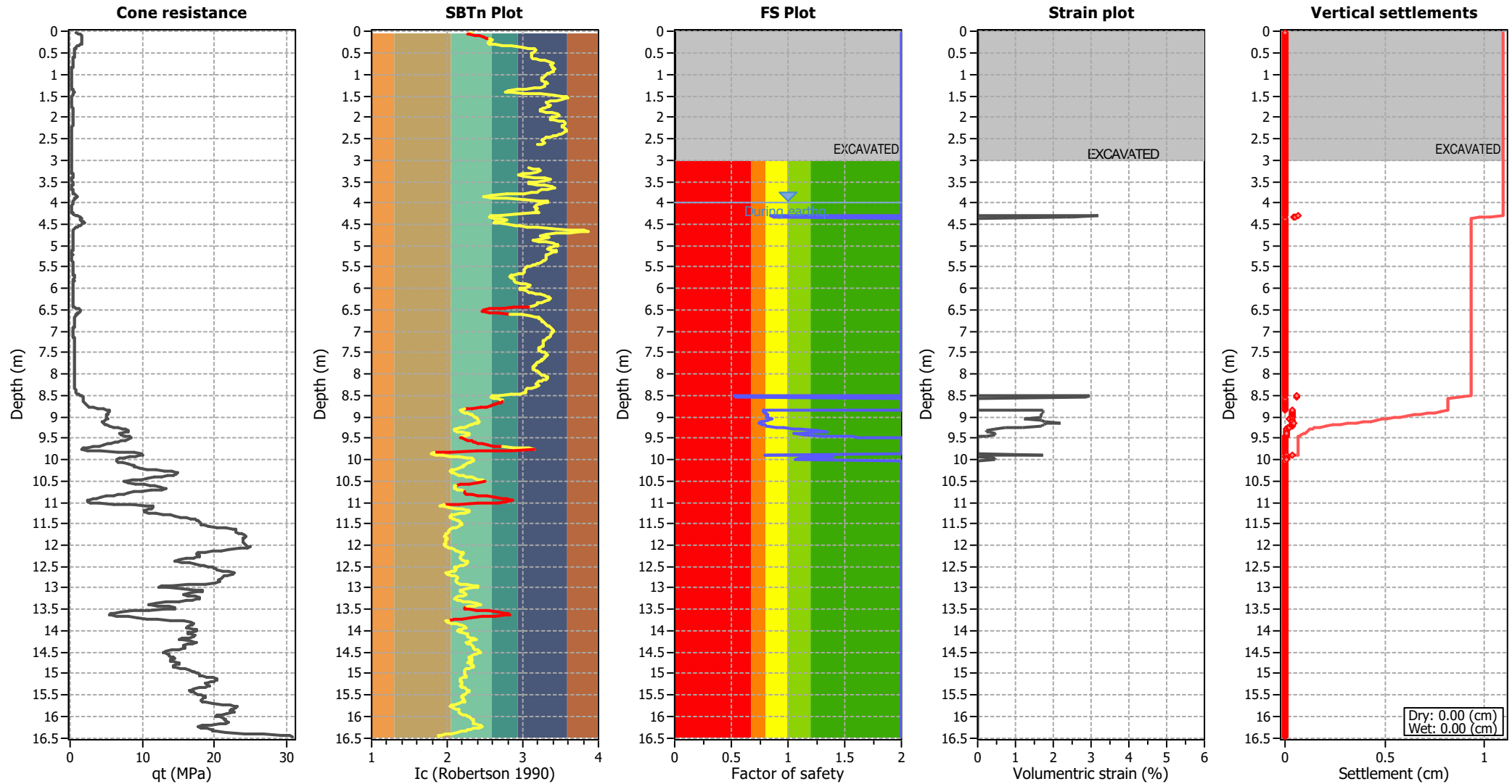
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 824
Total points excluded: 83
Exclusion percentage: 10.07%
Number of layers detected: 11

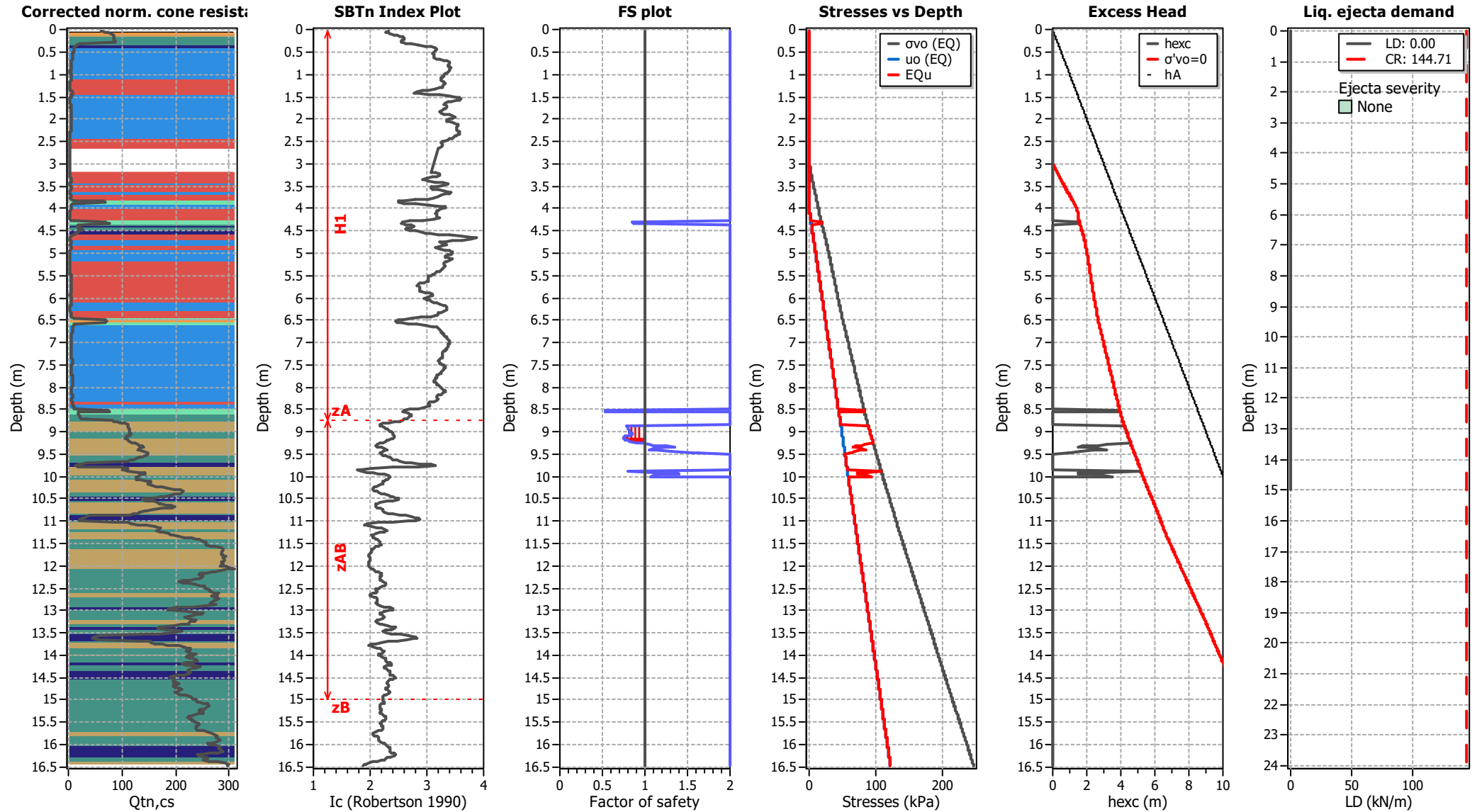
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

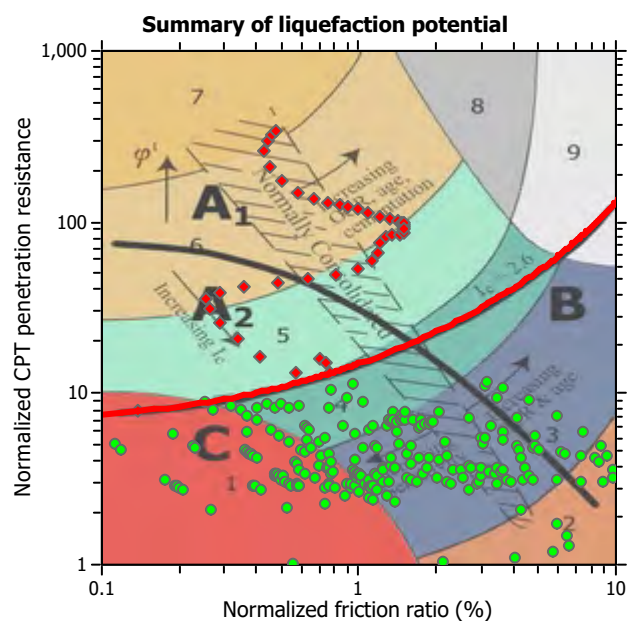
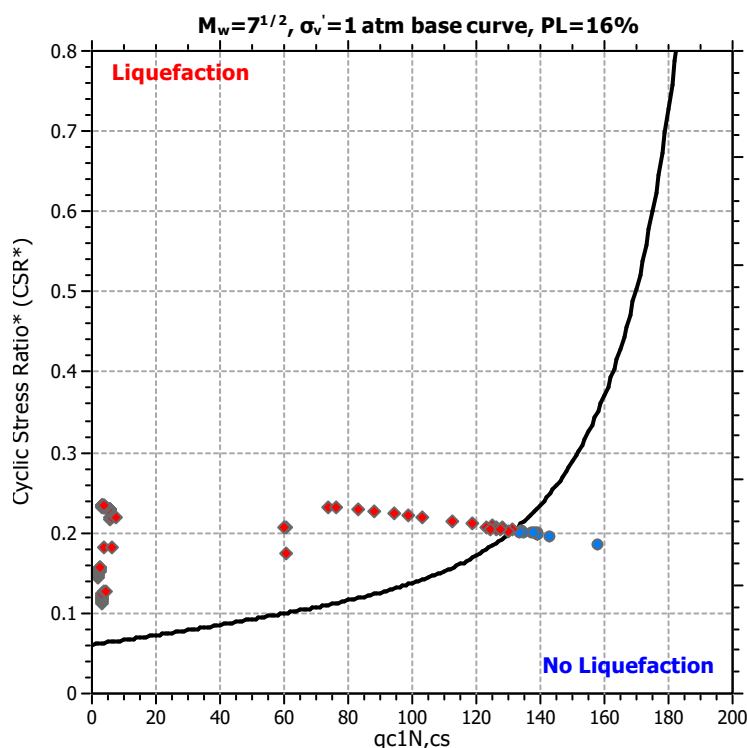
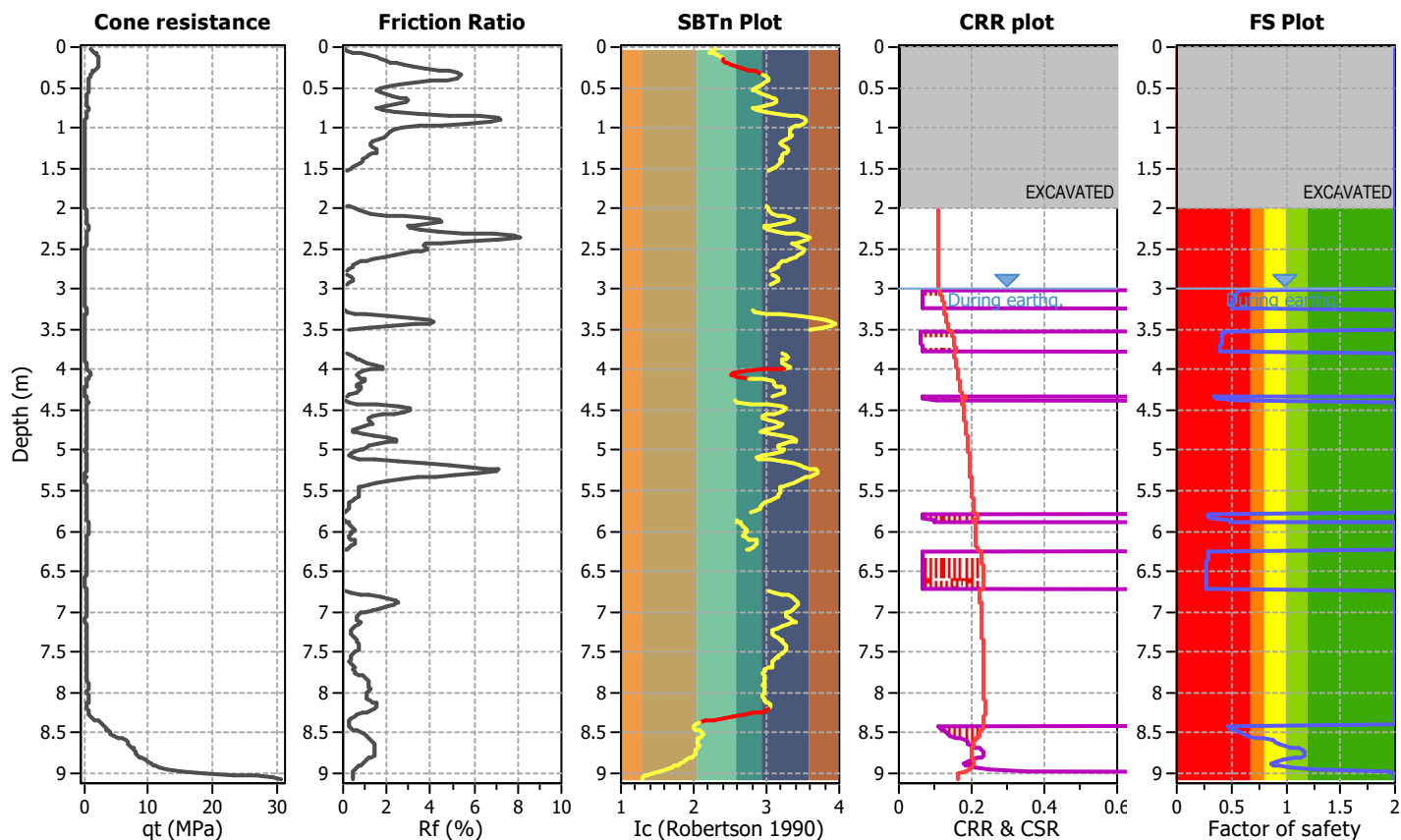
Project title : Sunfield Landholding

Location :

CPT file : CPT102

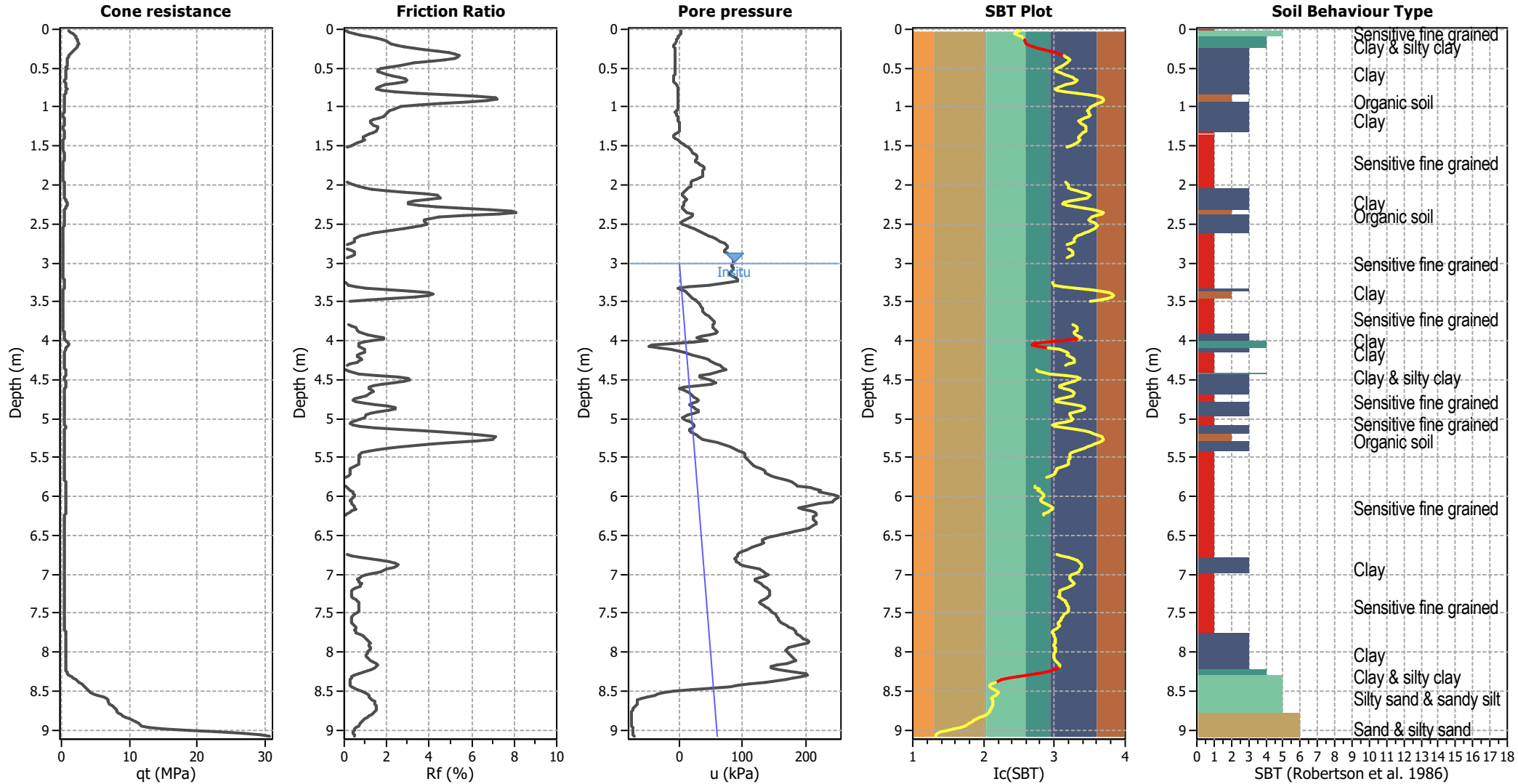
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	3.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	3.00 m	Excavation depth:	2.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

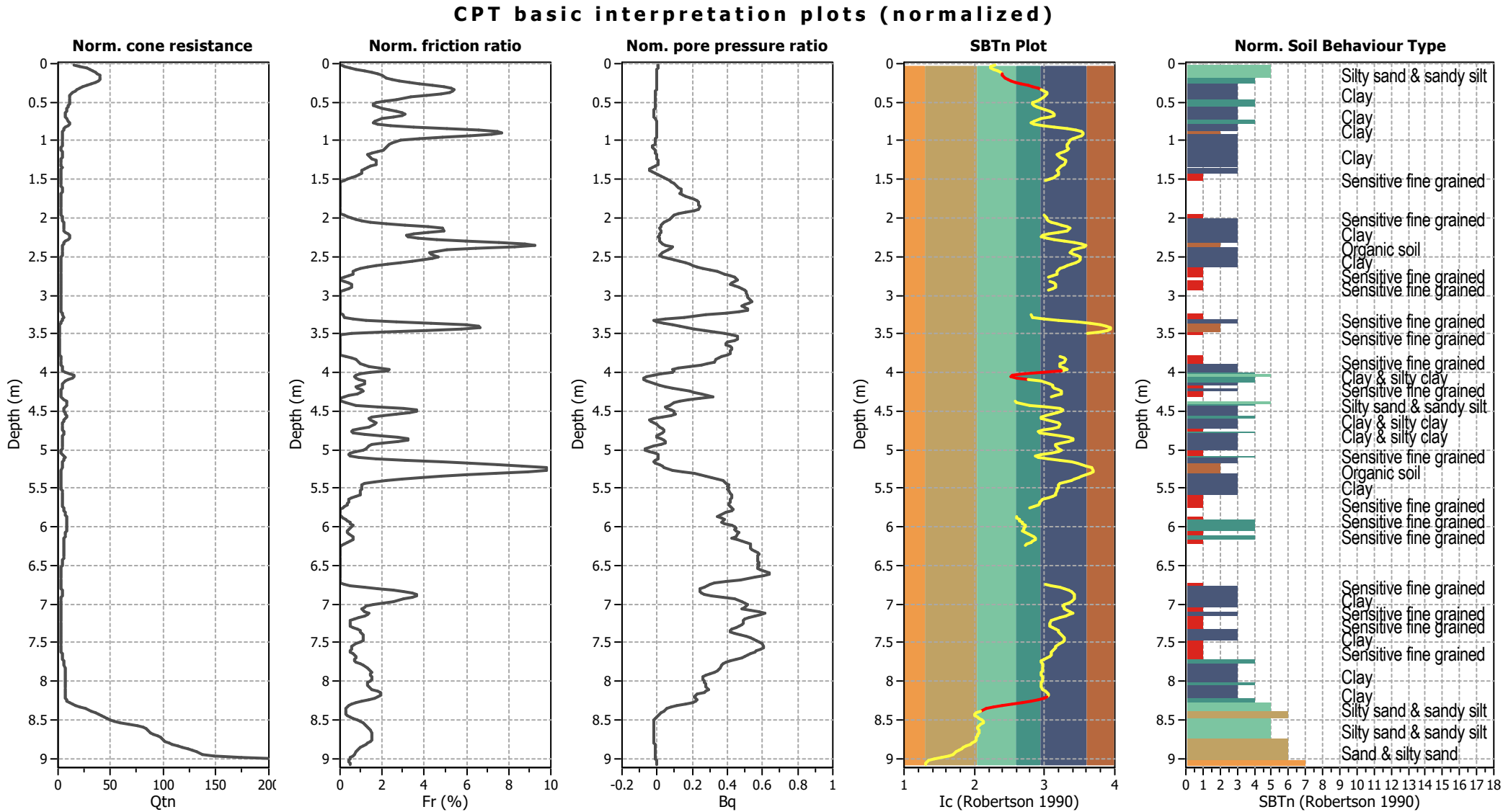


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

SBT legend

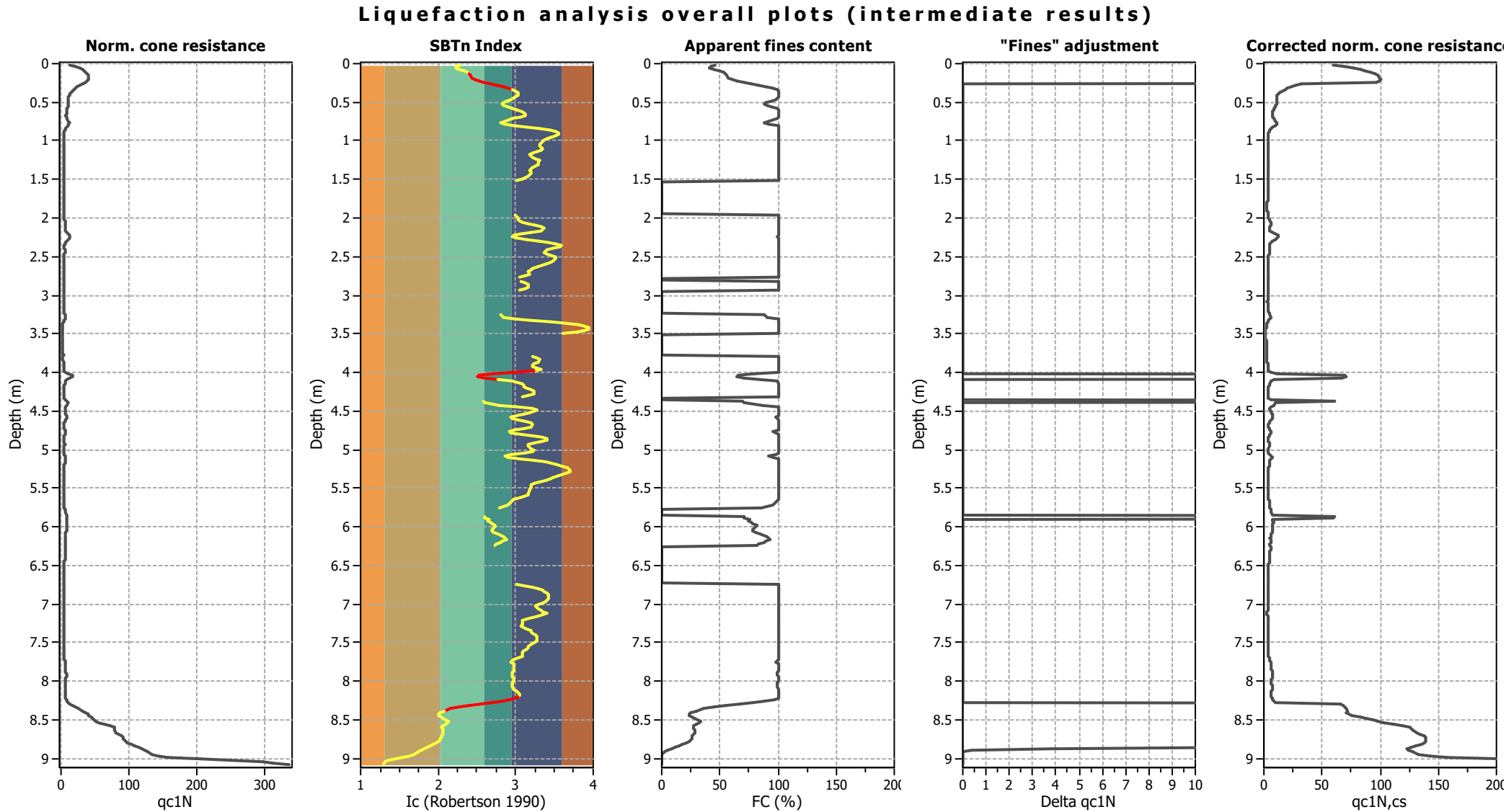
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

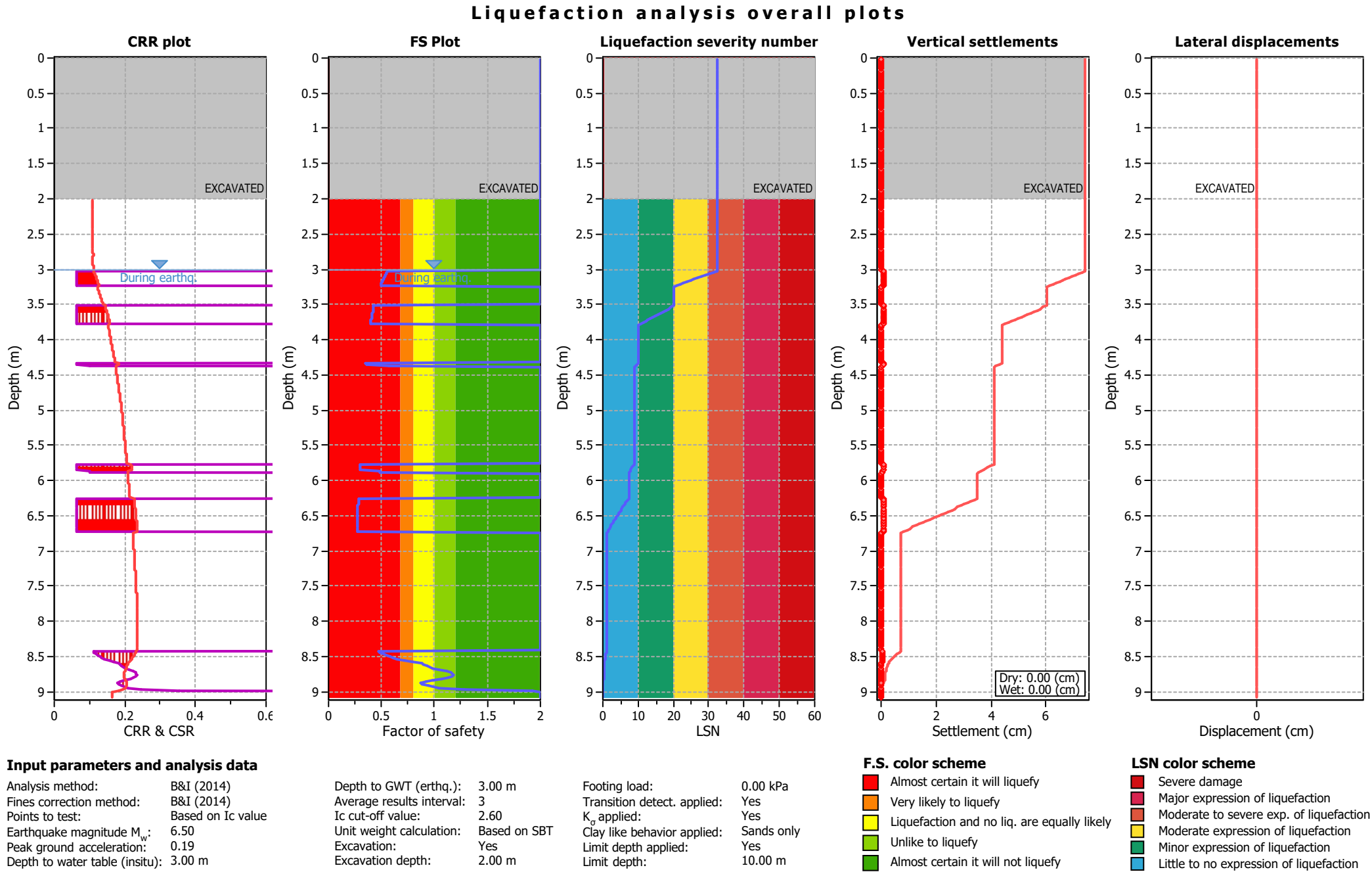
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

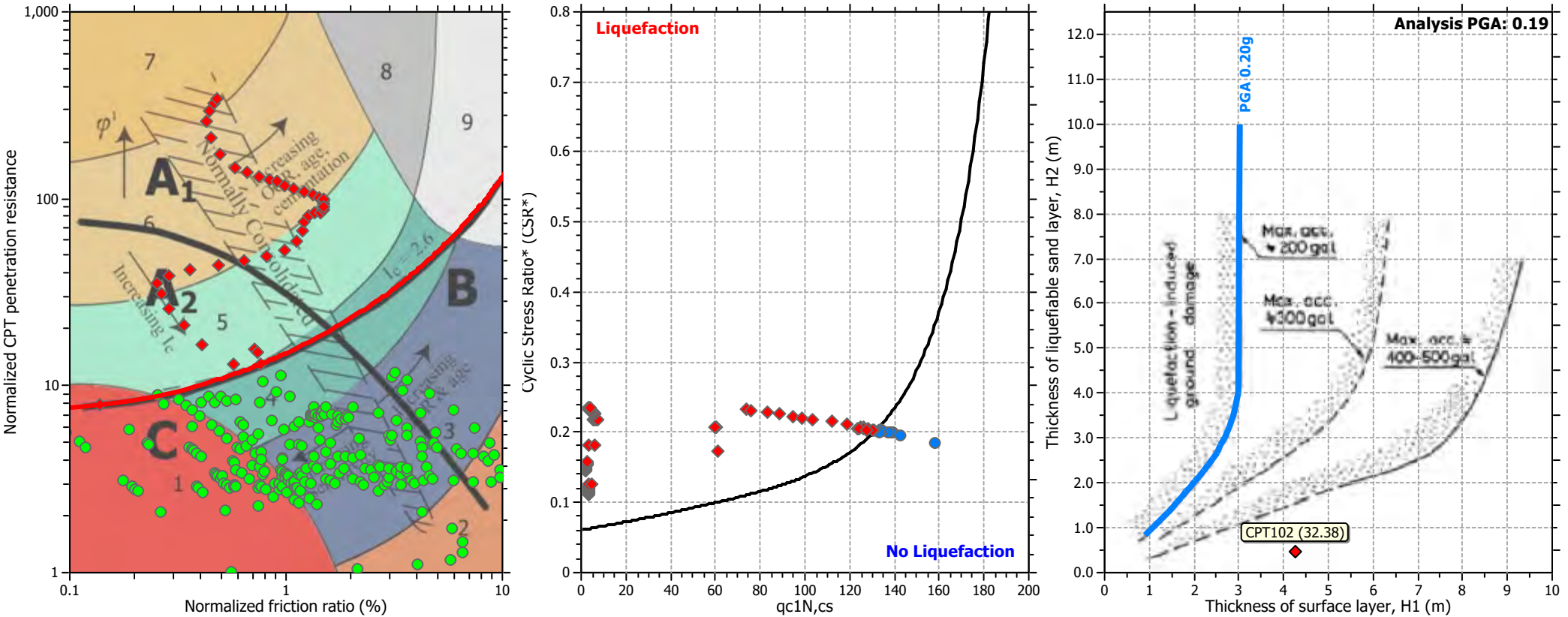


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

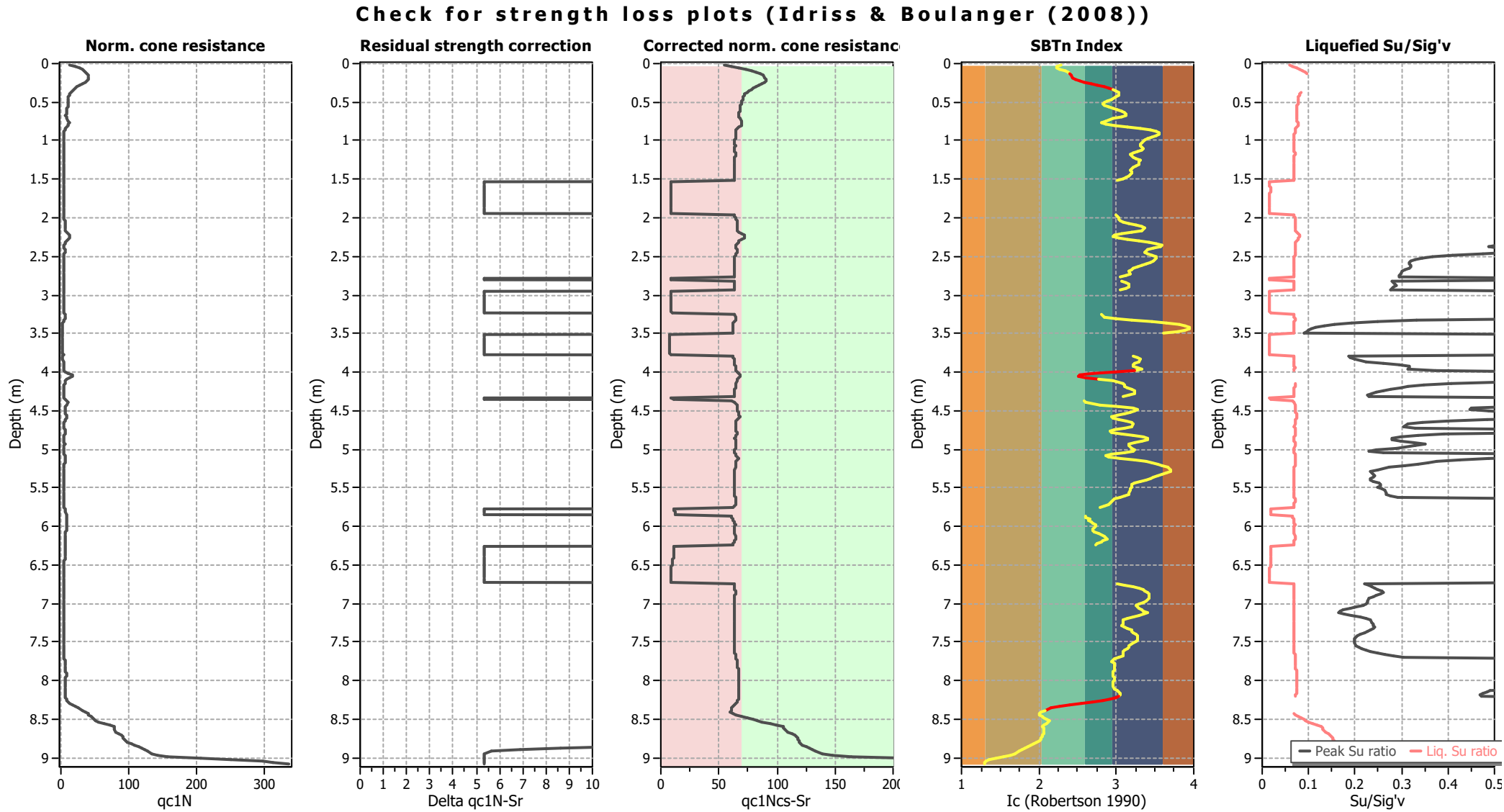


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

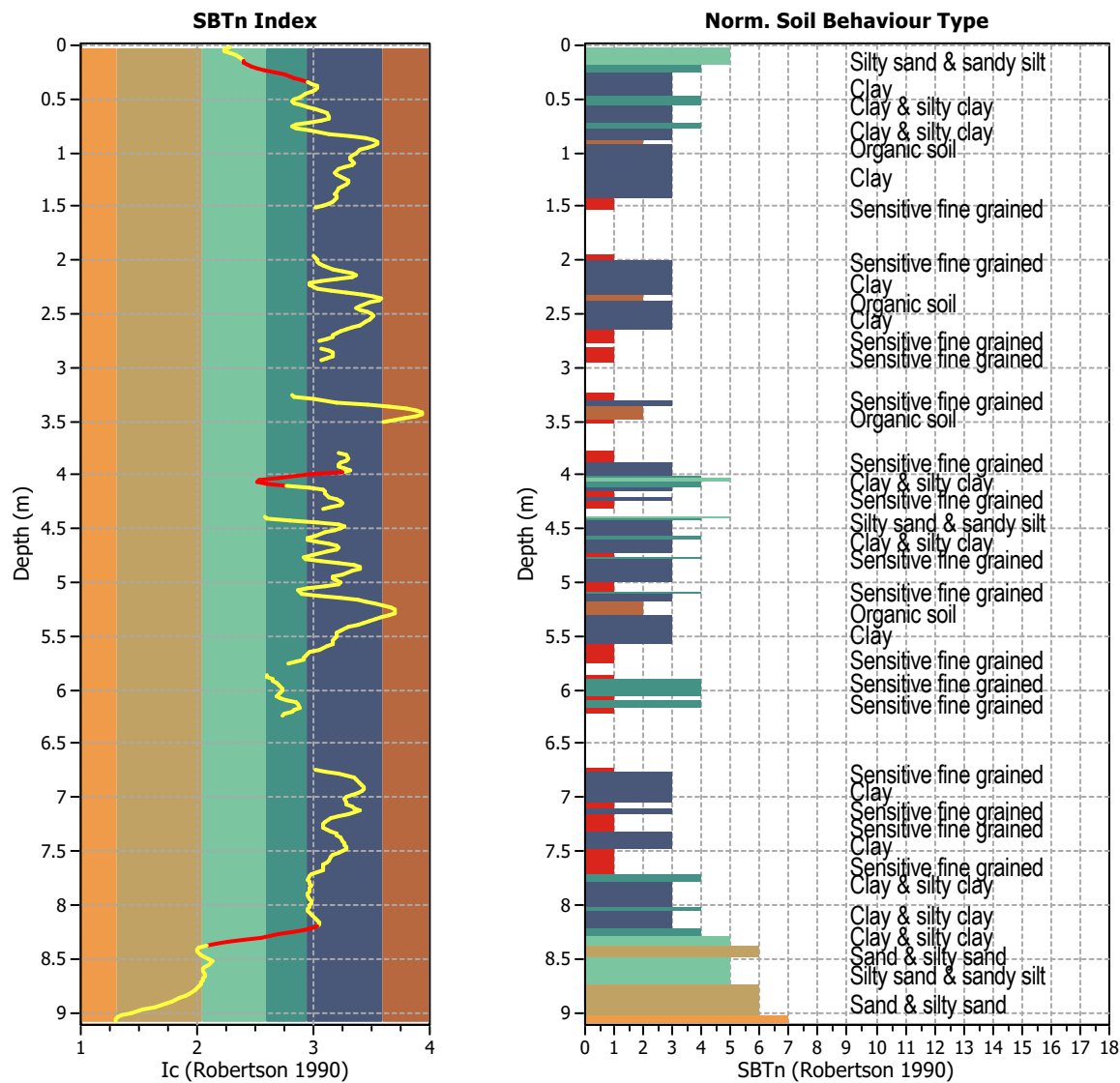
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

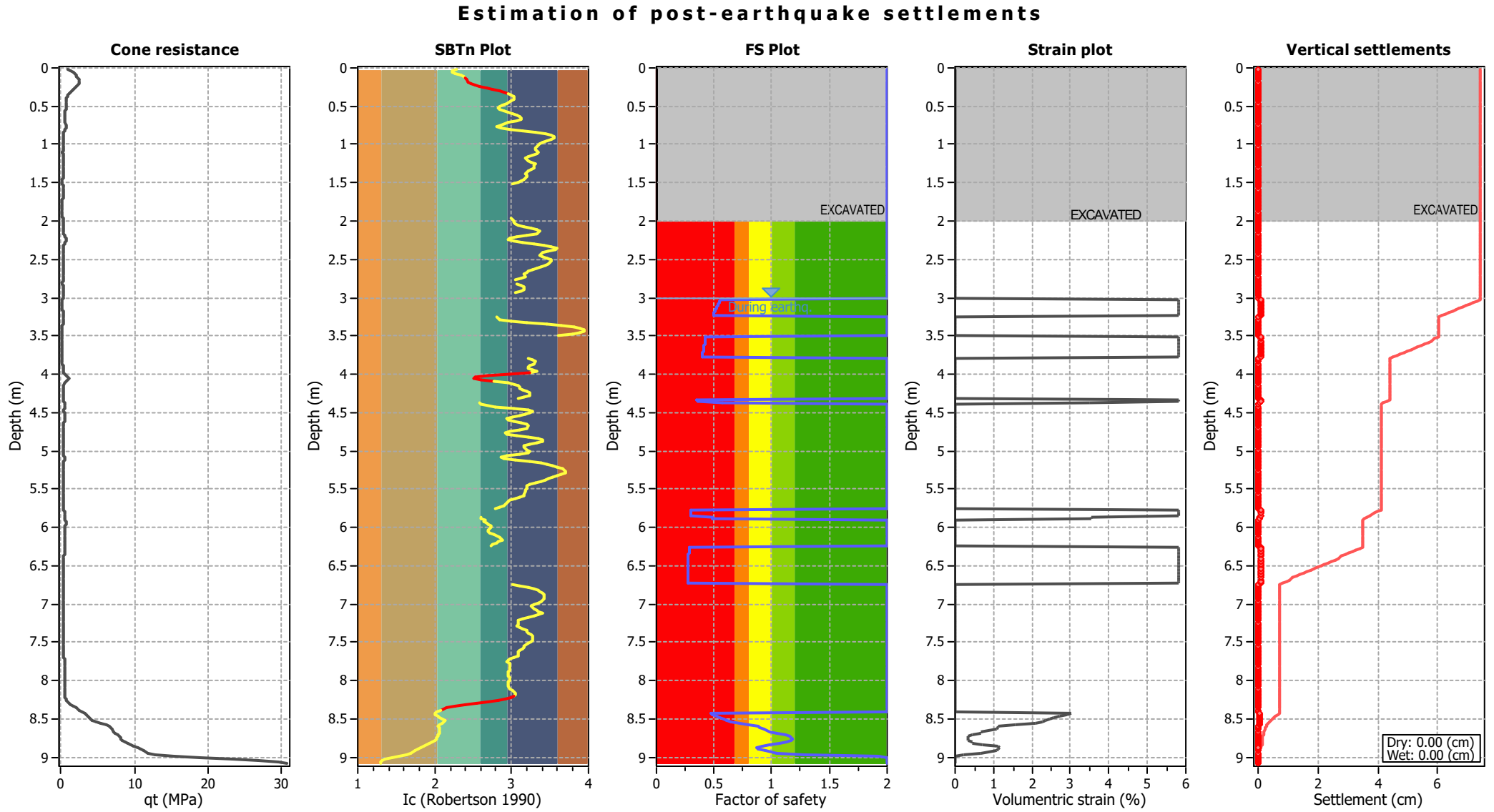


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

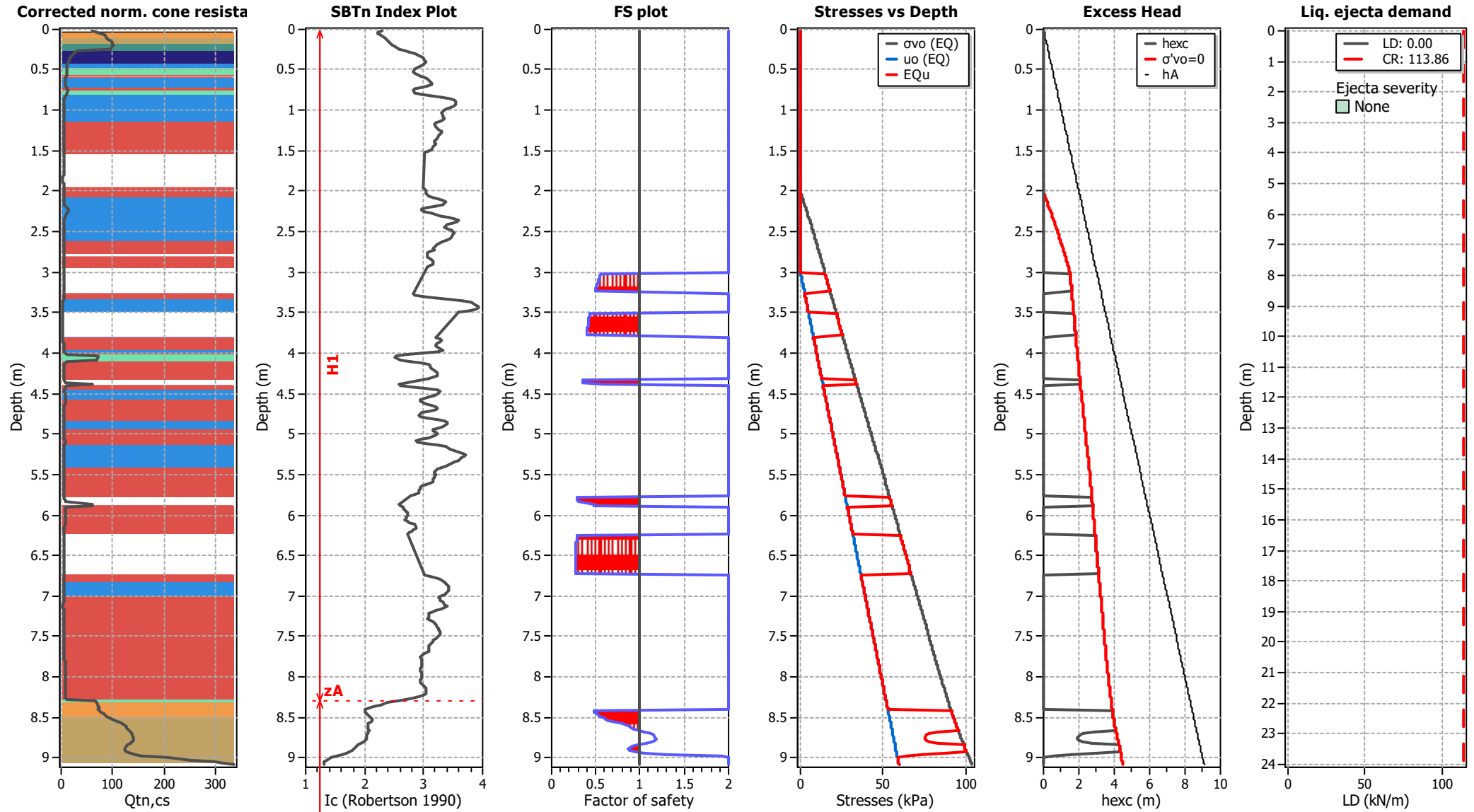
Total points in CPT file: 454
Total points excluded: 29
Exclusion percentage: 6.39%
Number of layers detected: 4



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

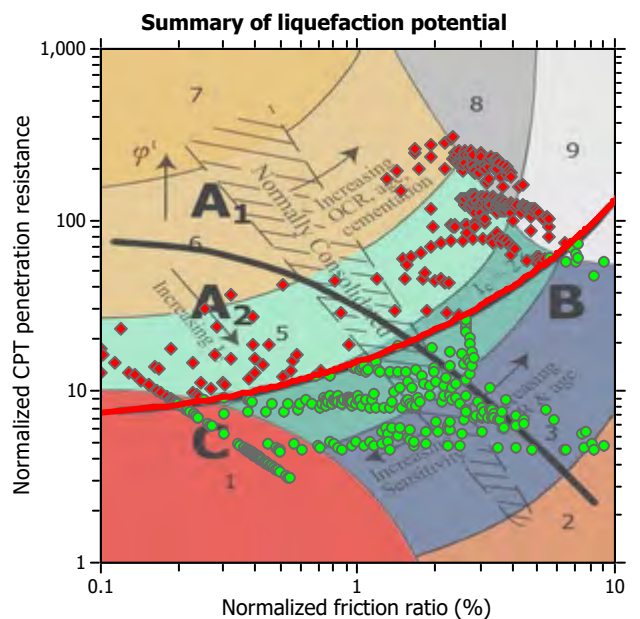
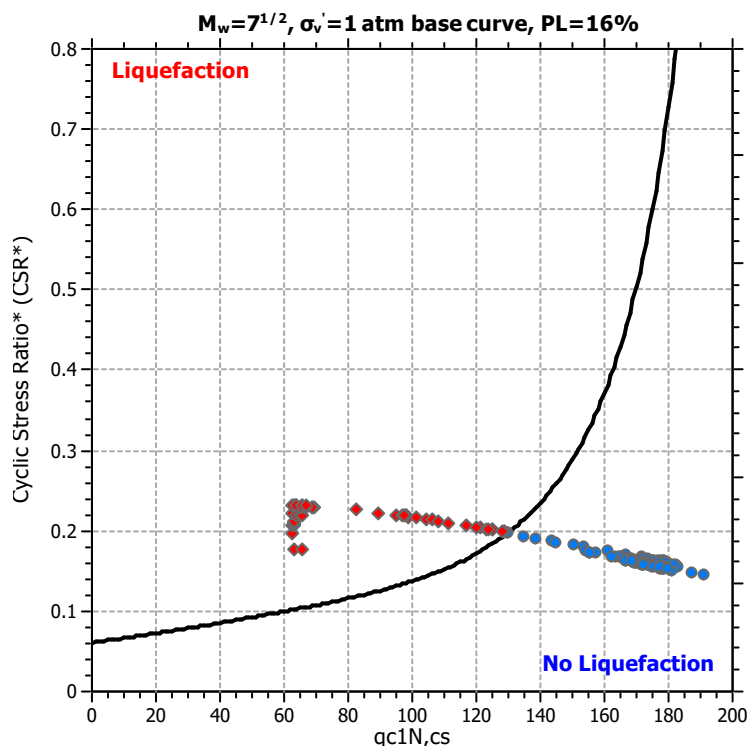
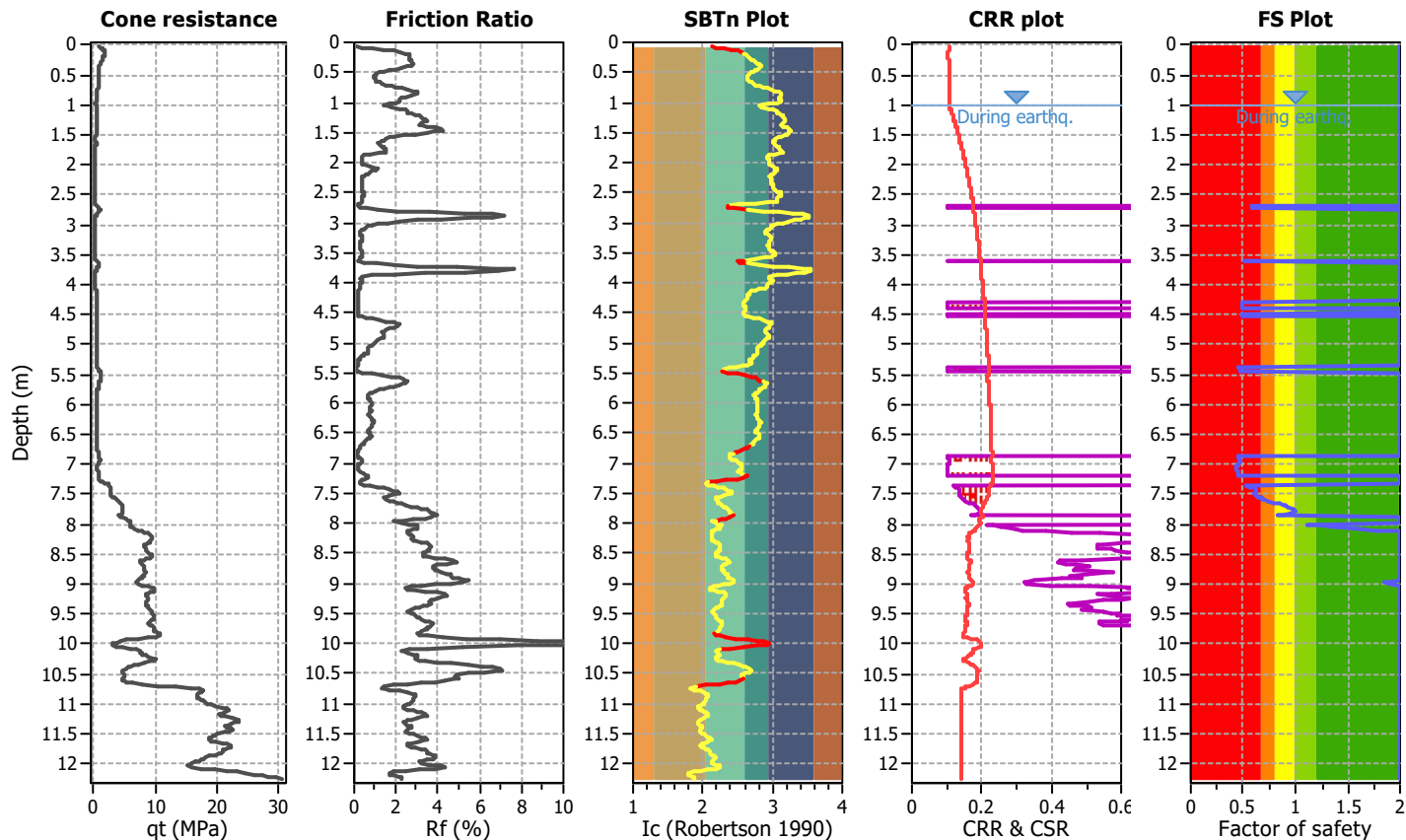
Project title : Sunfield Landholding

Location :

CPT file : CPT106

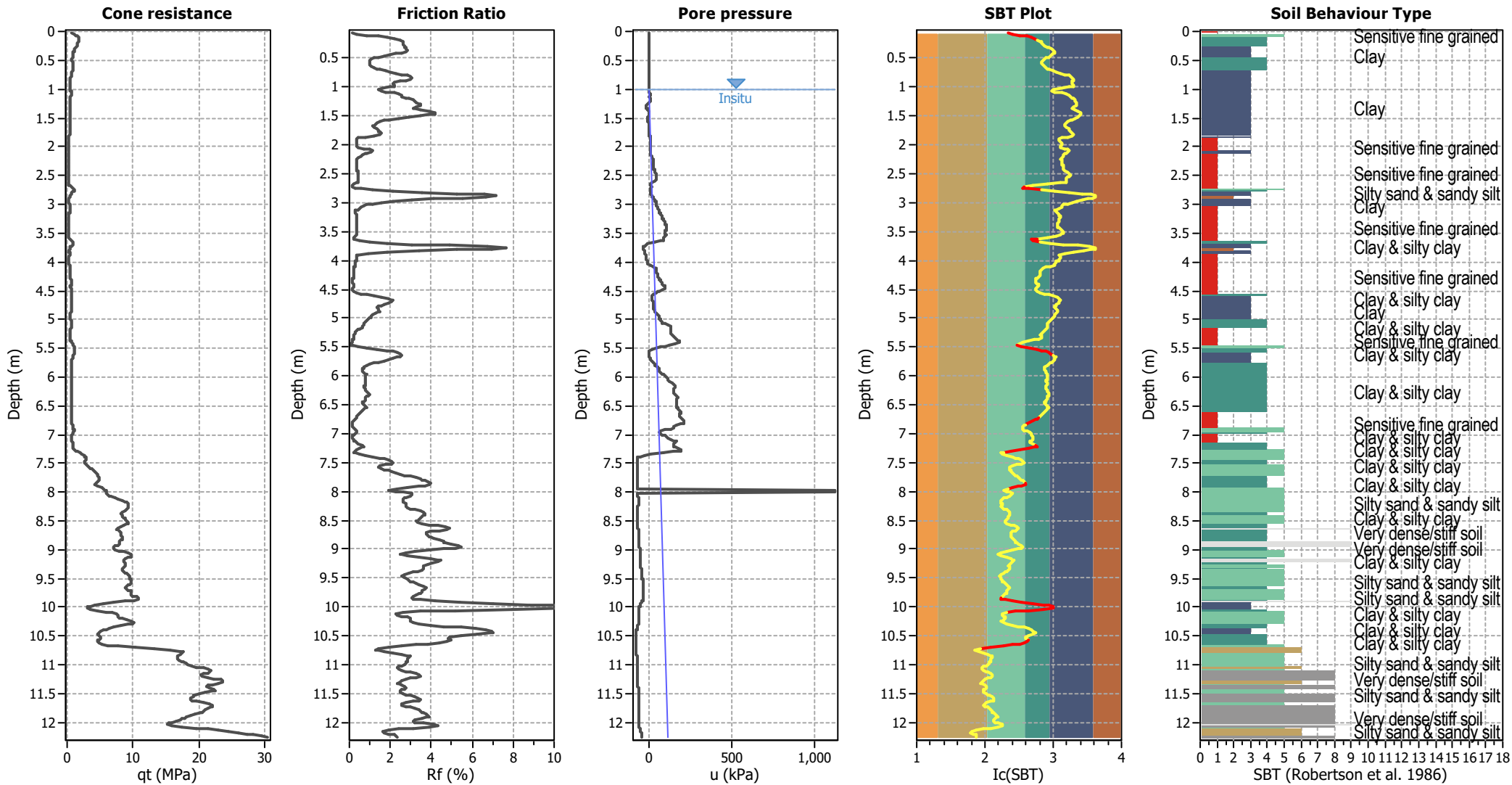
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

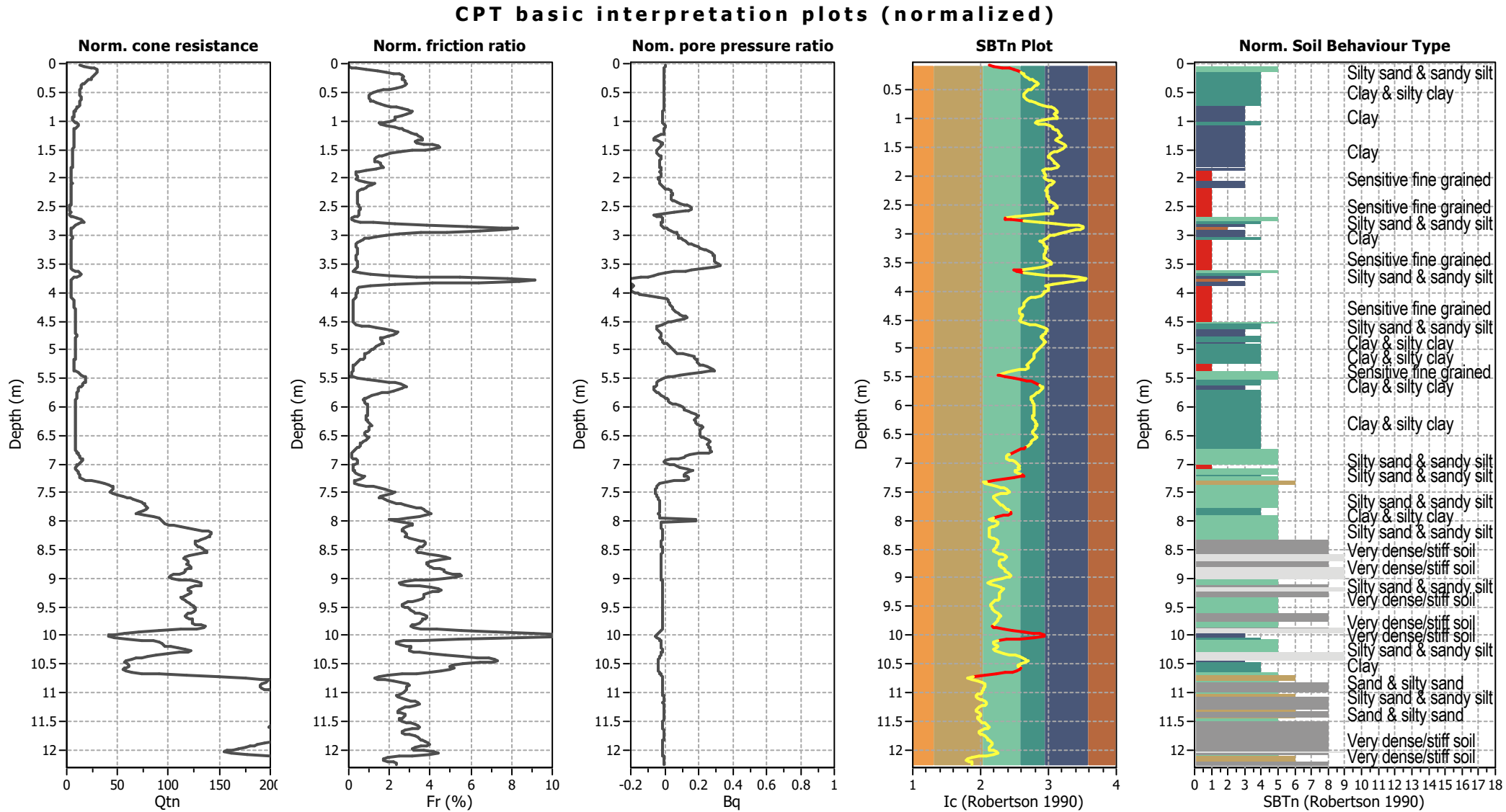


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

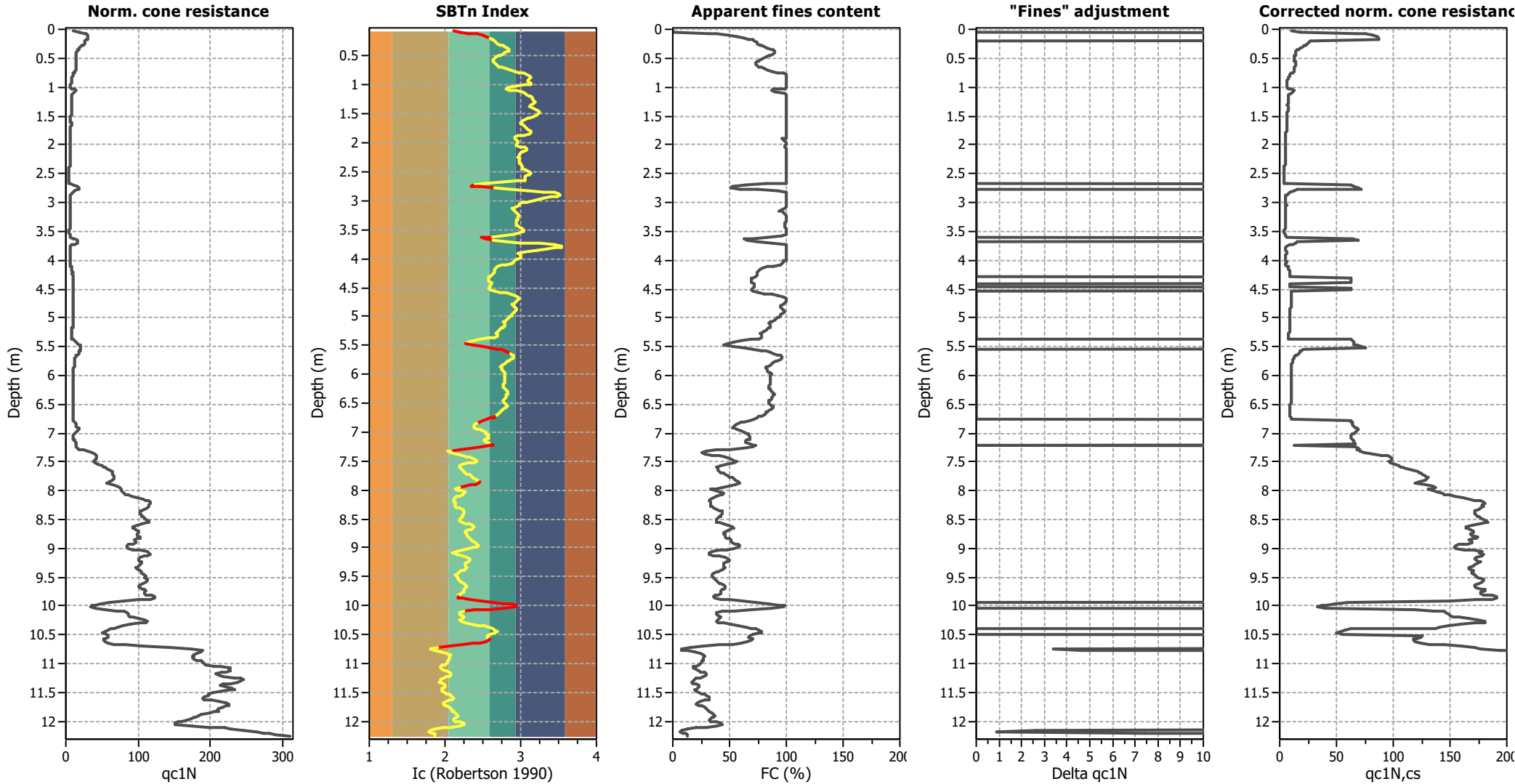


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

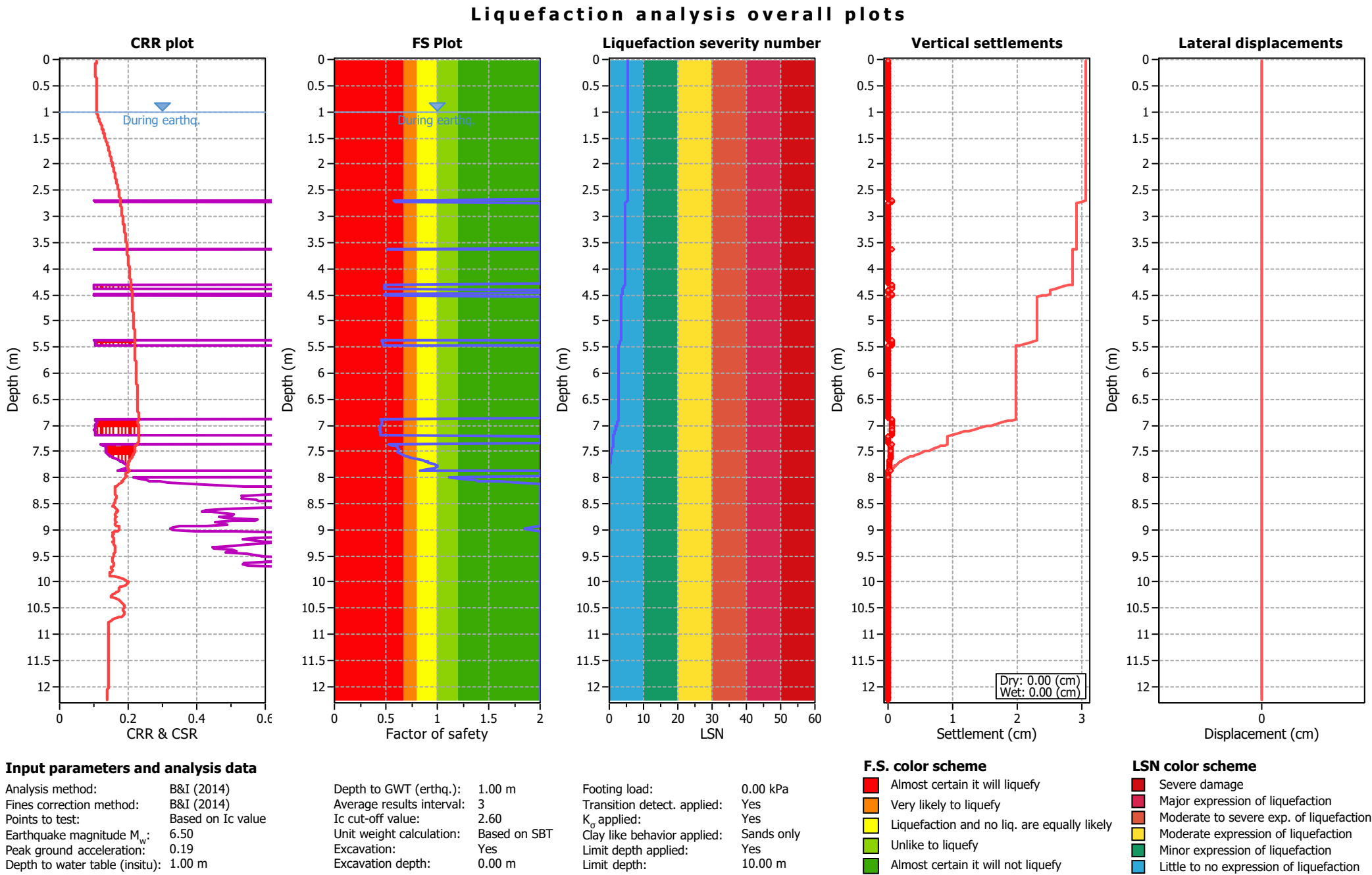
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

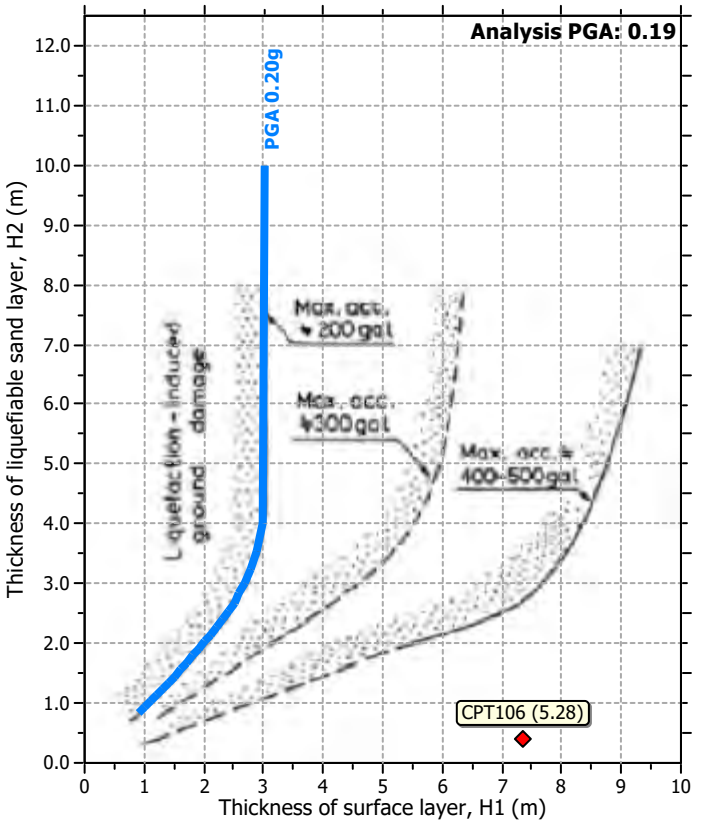
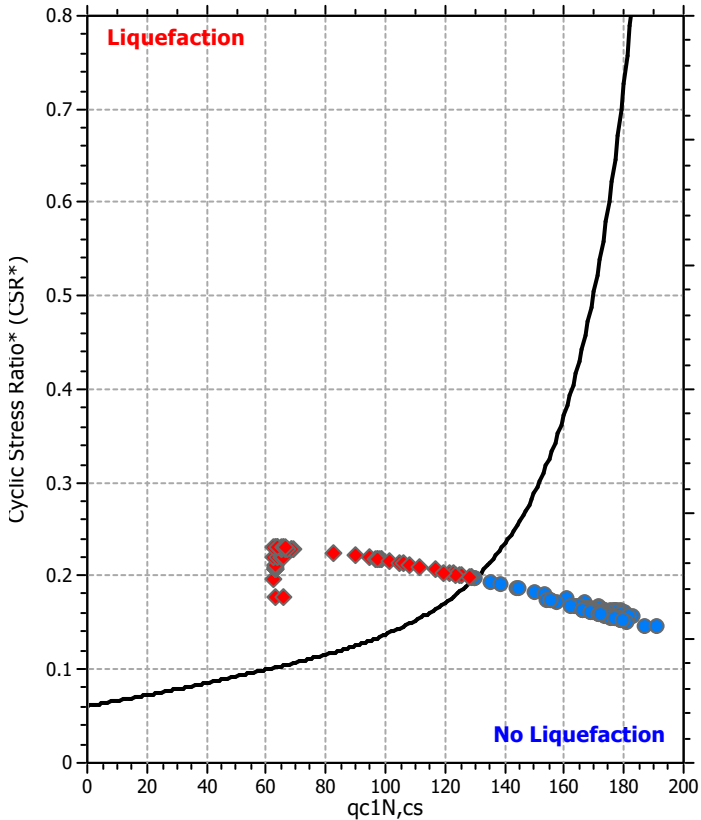
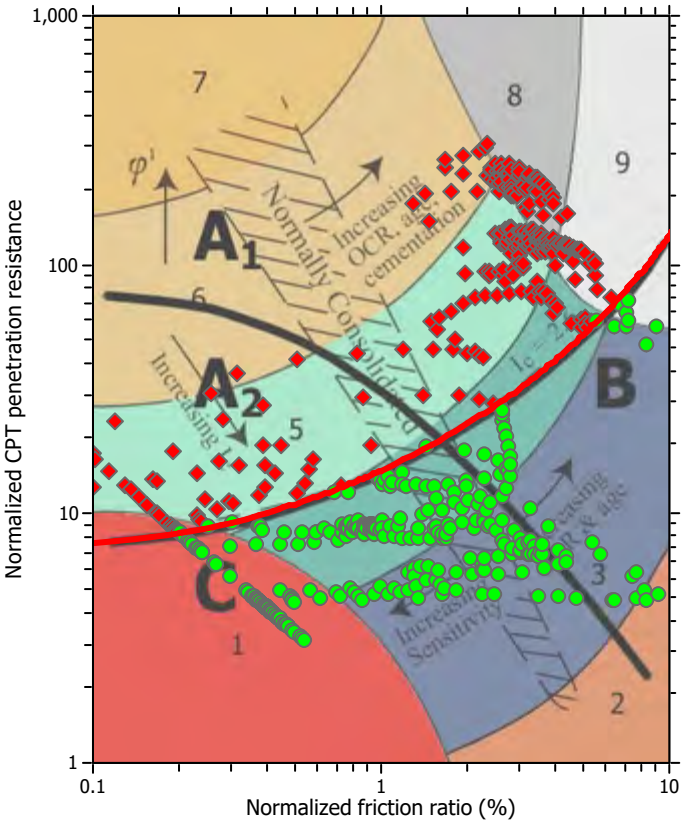


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



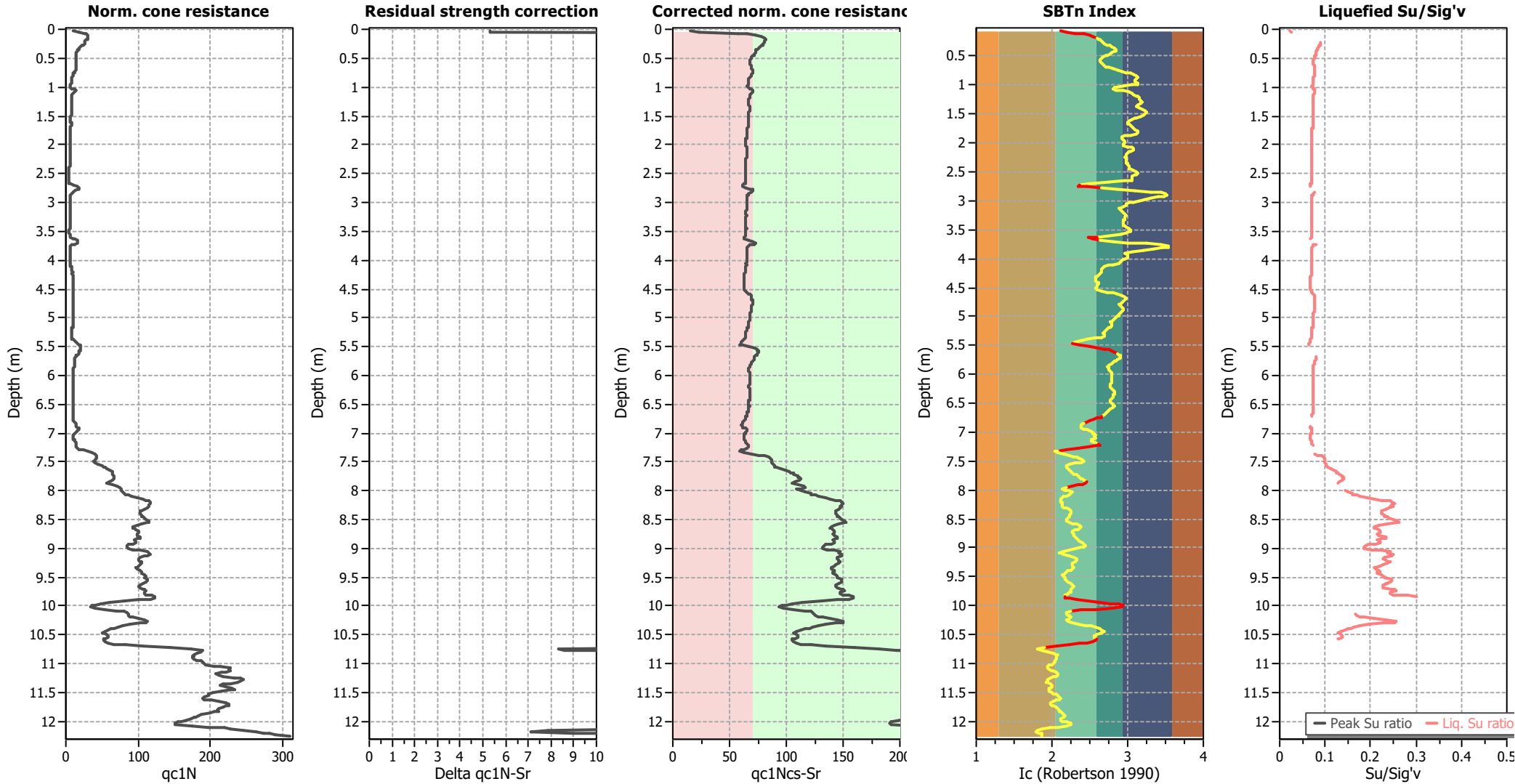
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

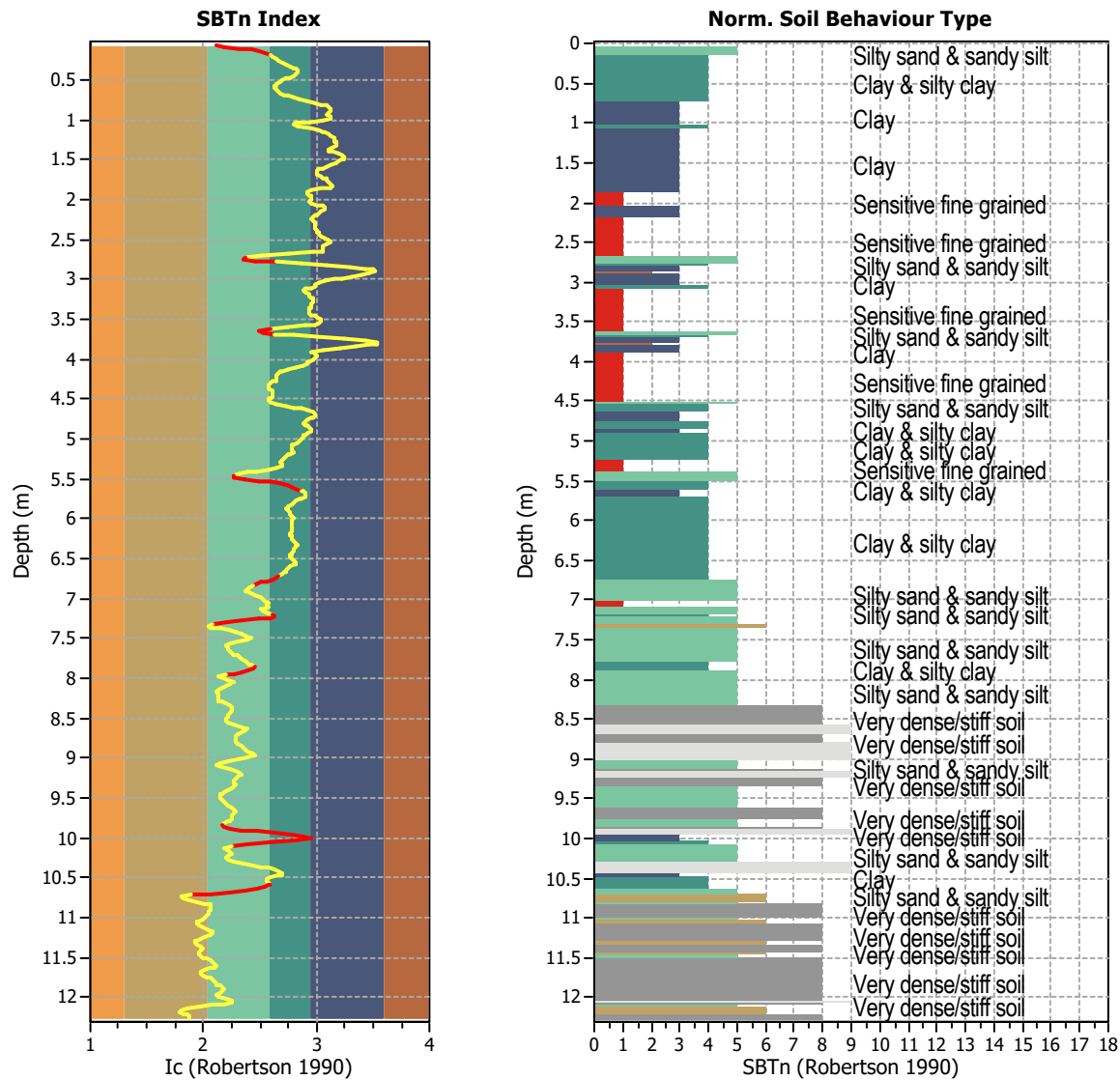
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

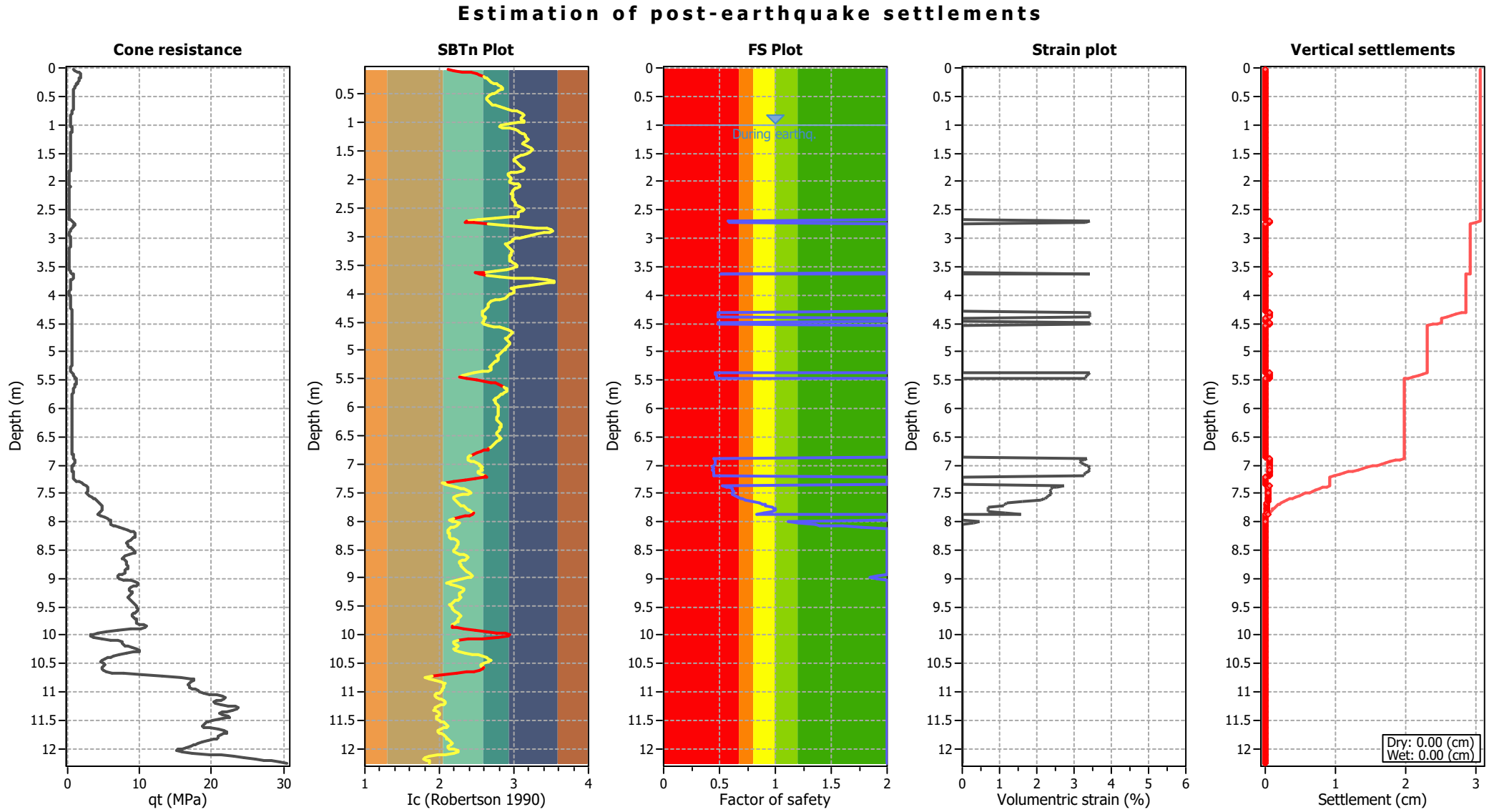


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

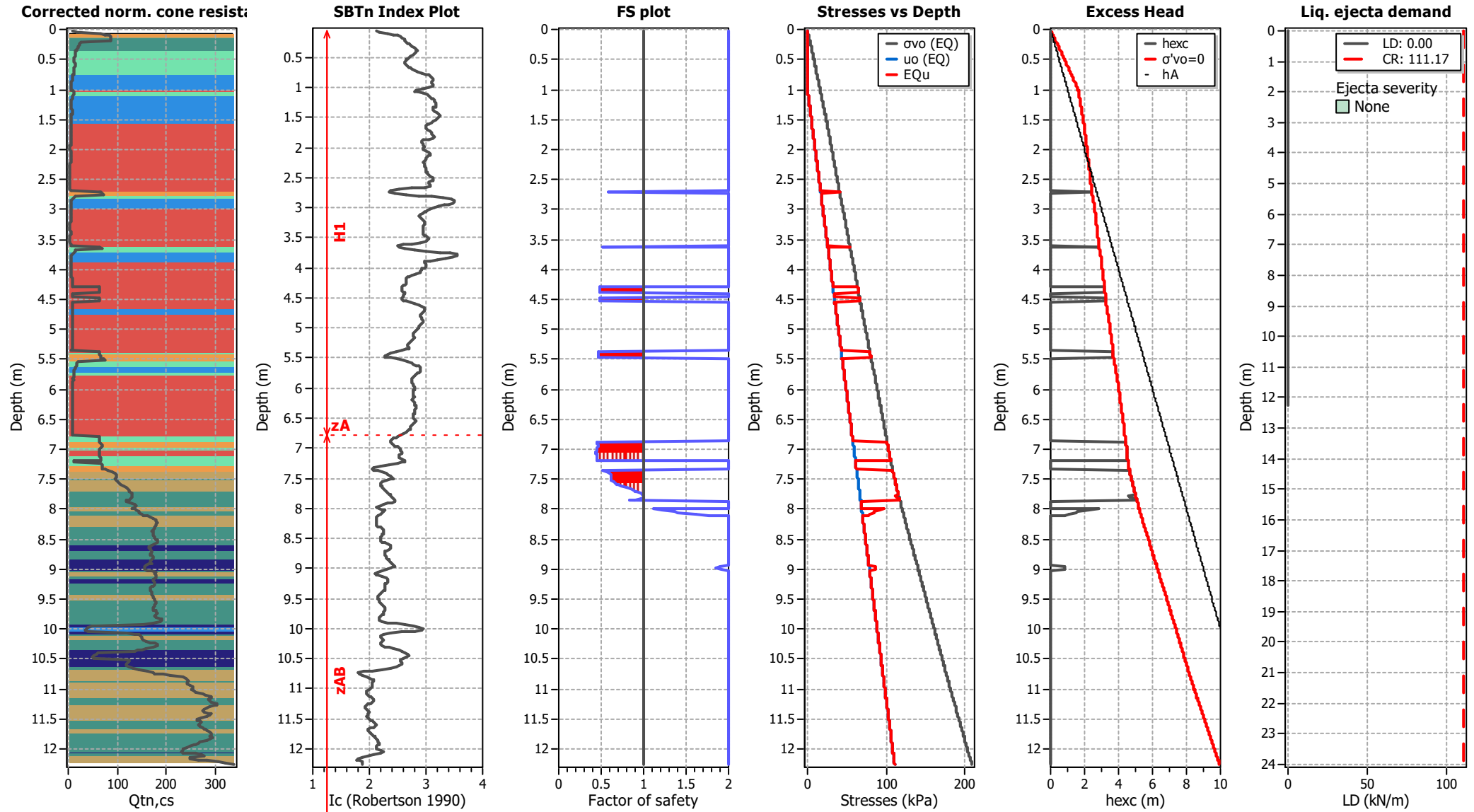
Total points in CPT file: 613
Total points excluded: 68
Exclusion percentage: 11.09%
Number of layers detected: 10



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

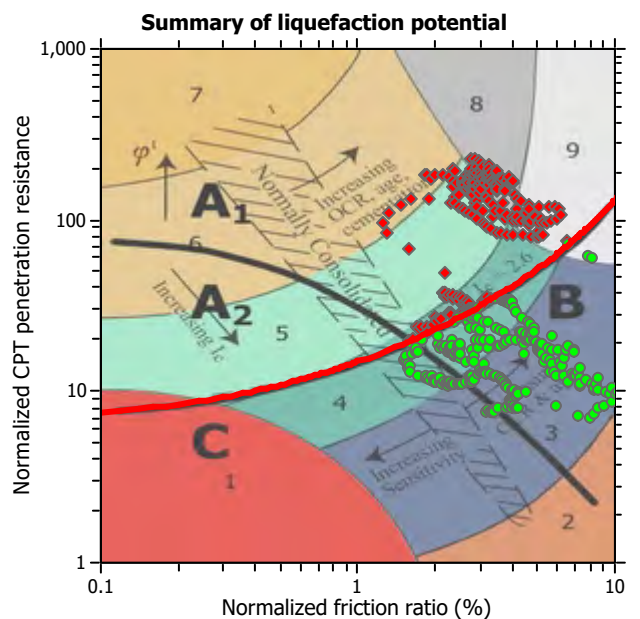
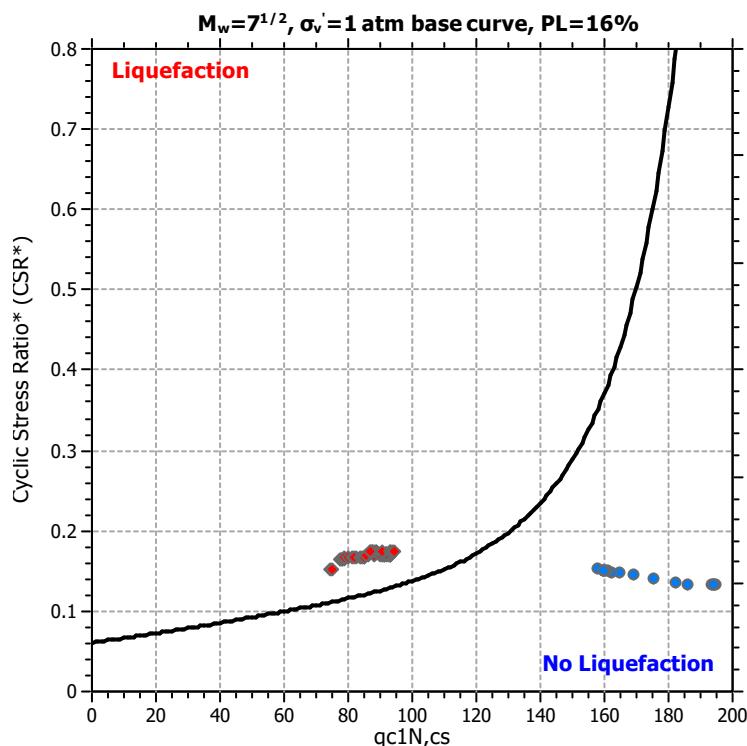
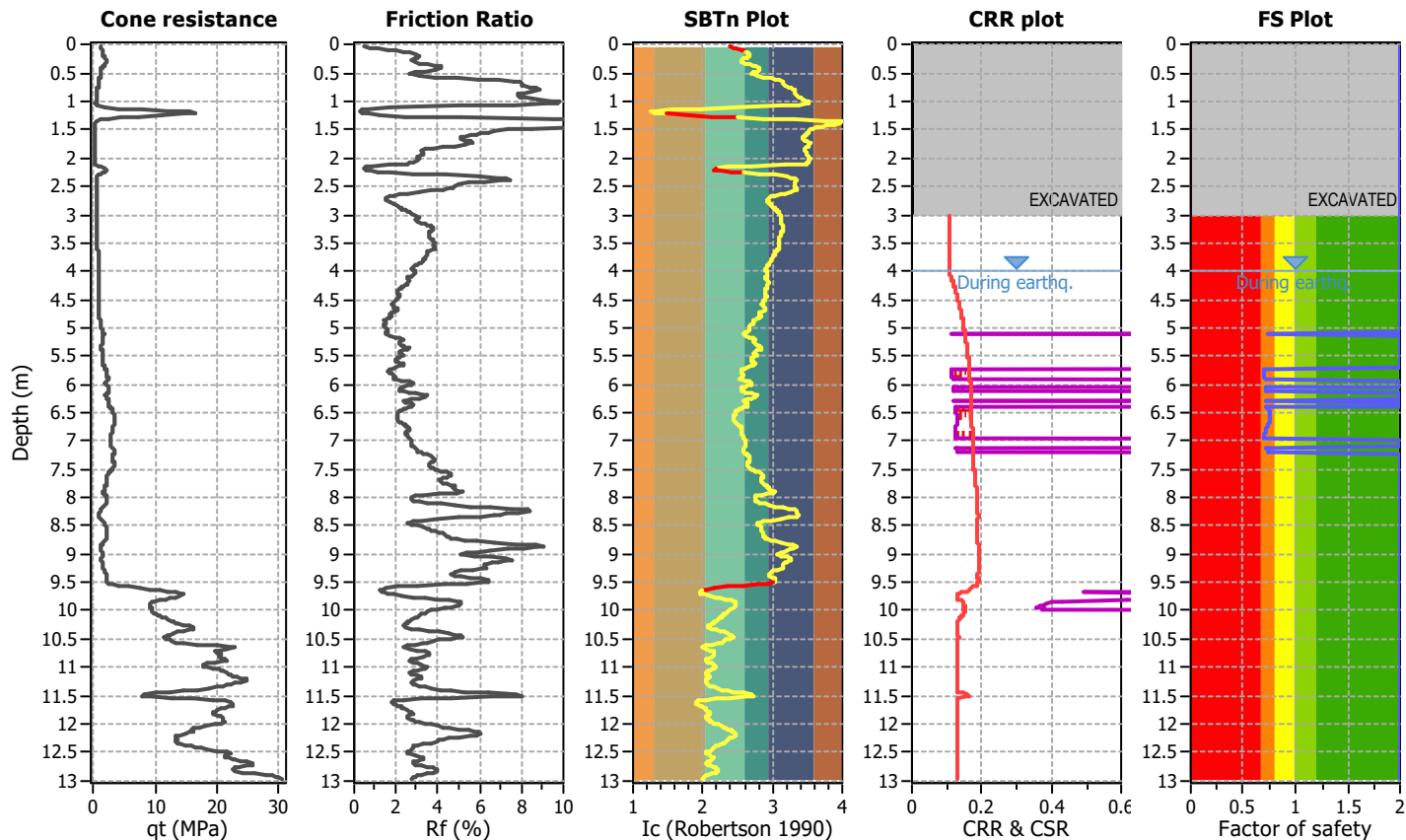
Project title : Sunfield Landholding

Location :

CPT file : CPT107

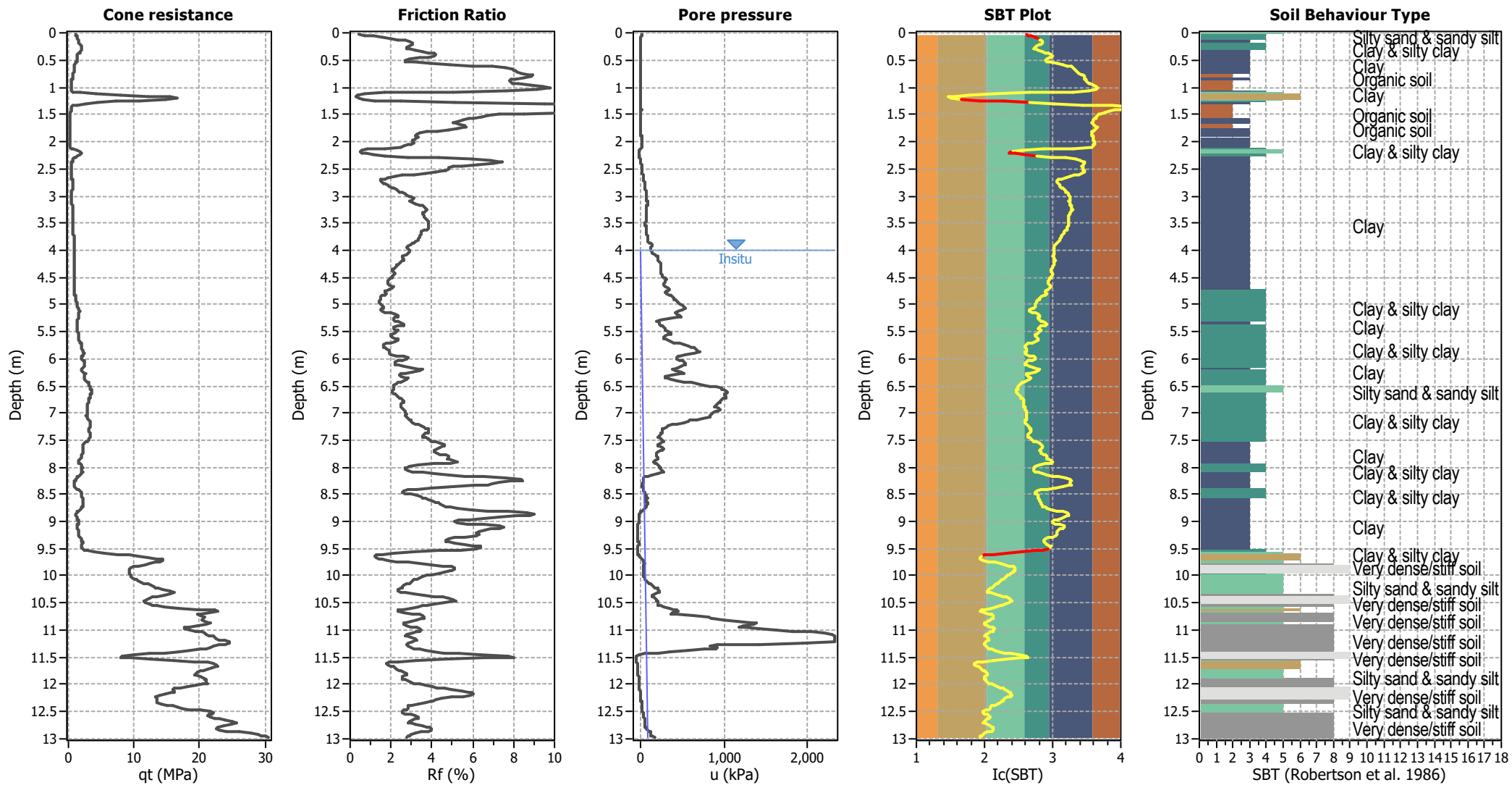
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



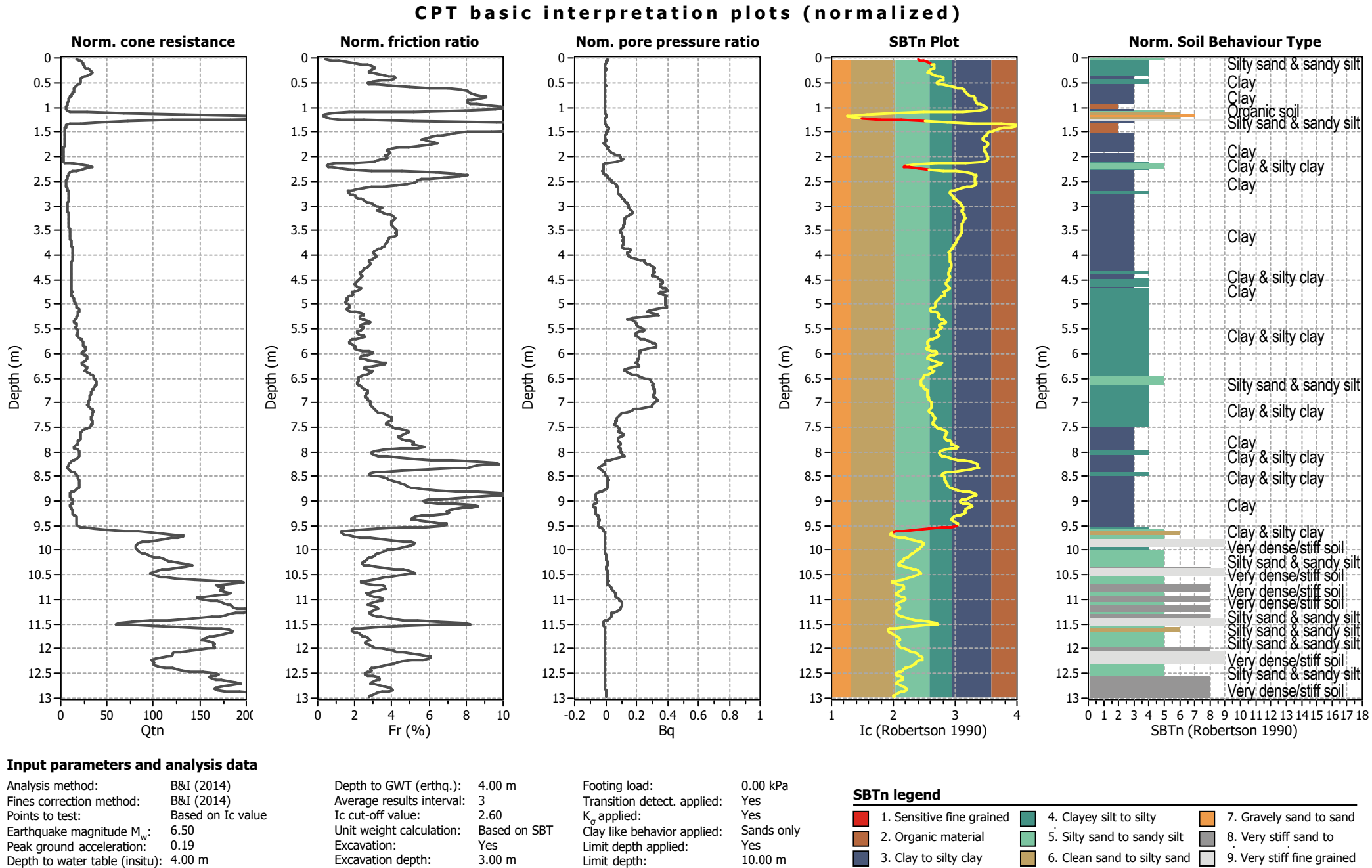
Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

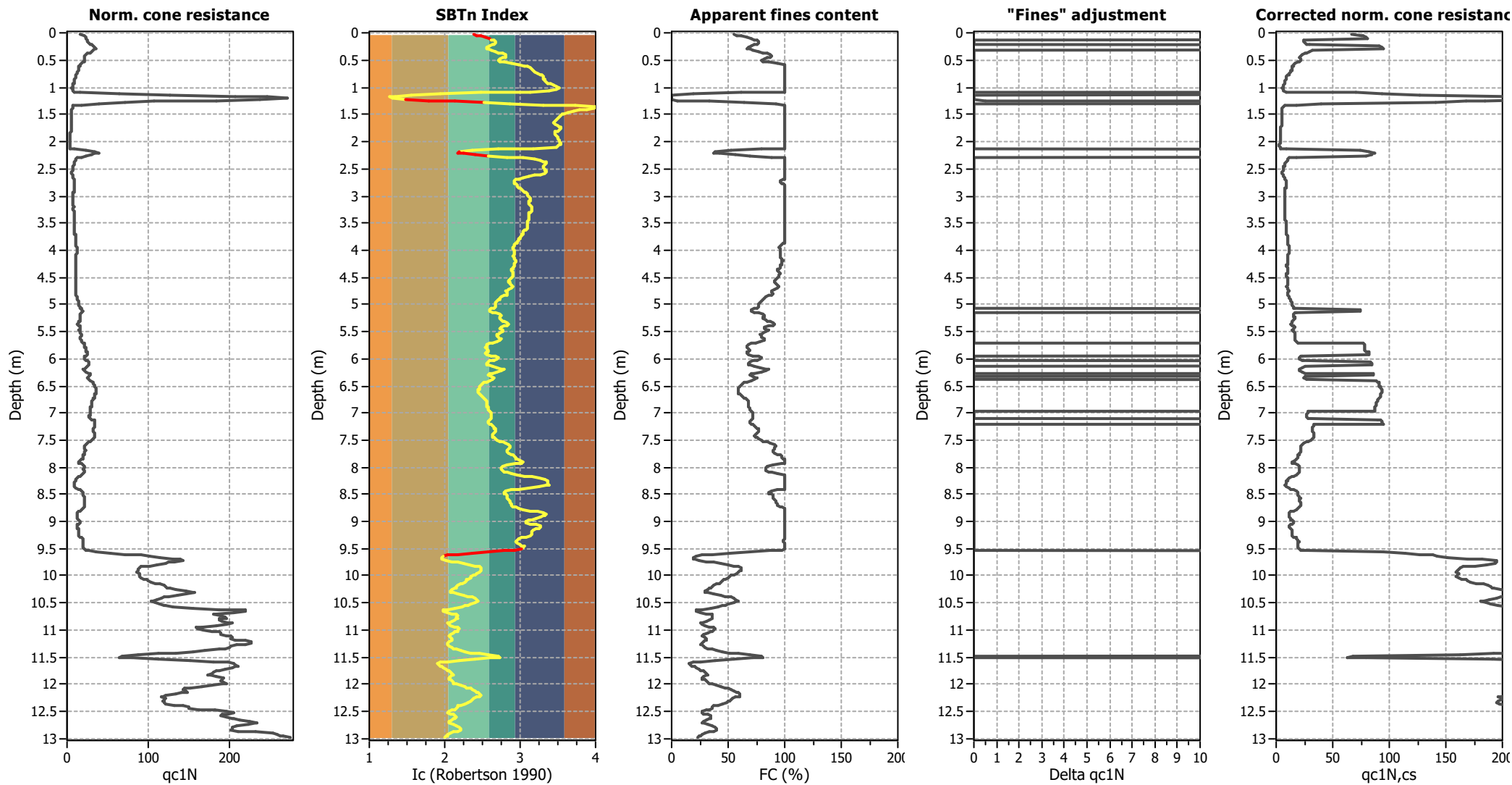


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

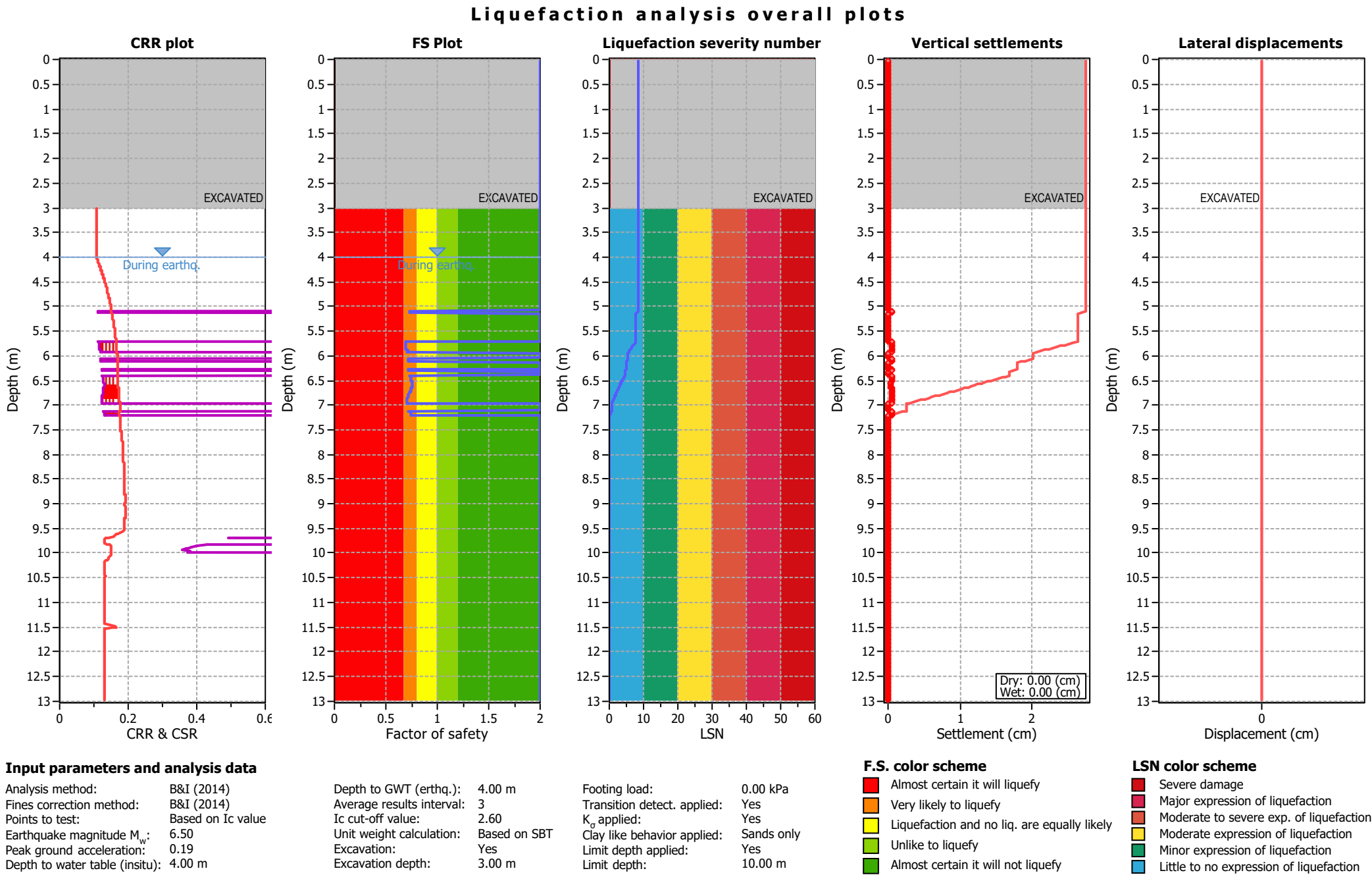


Liquefaction analysis overall plots (intermediate results)

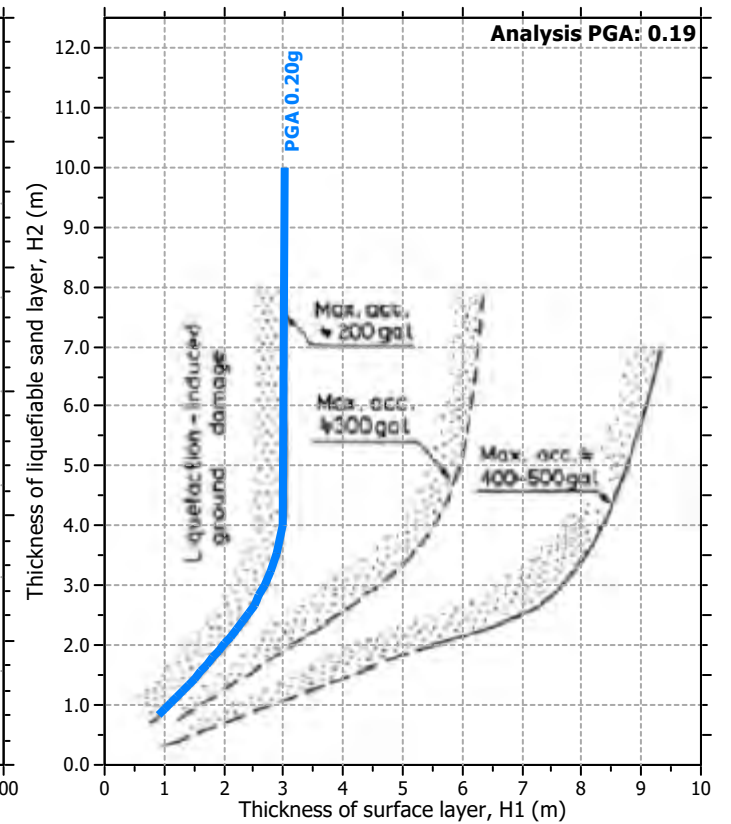
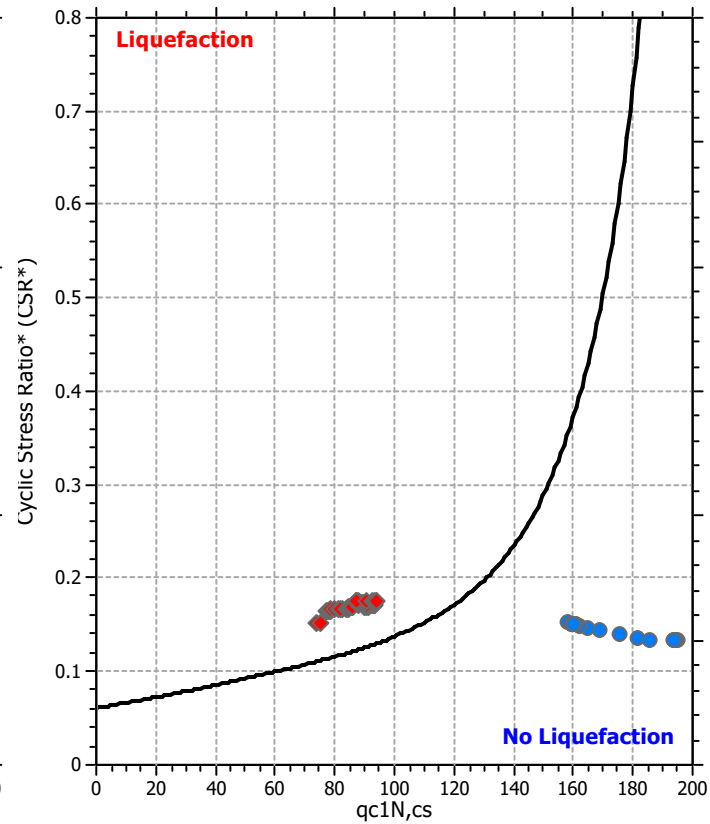
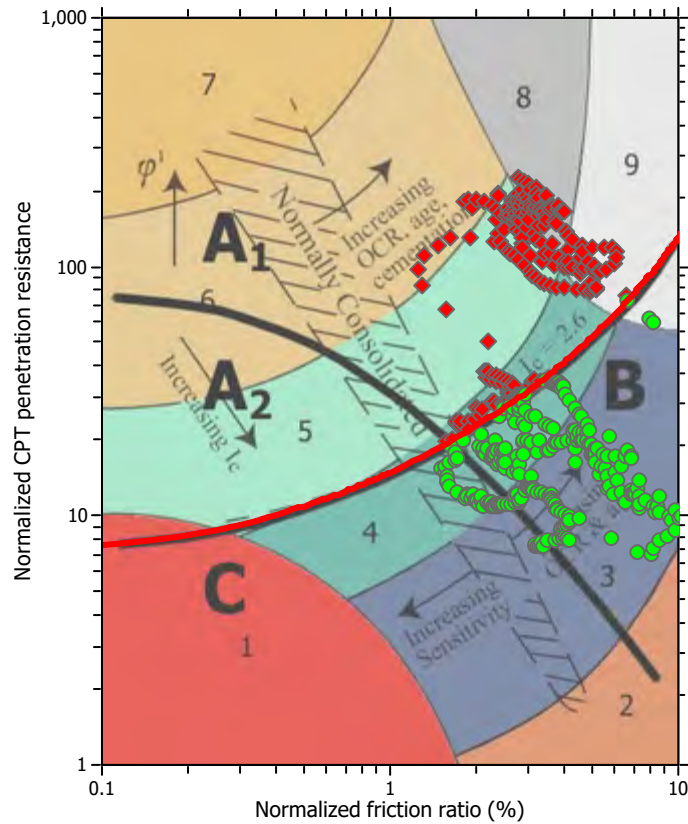


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



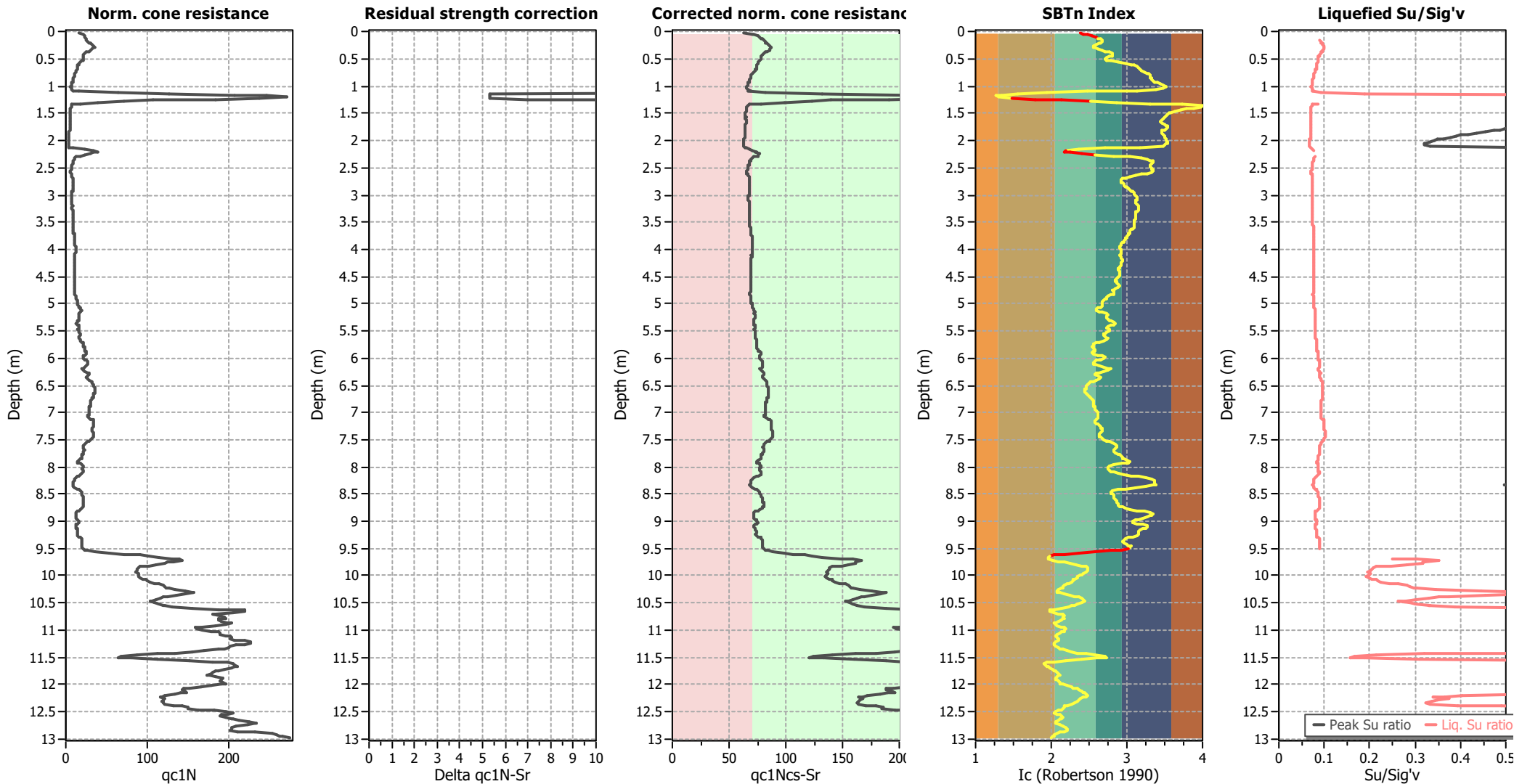
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

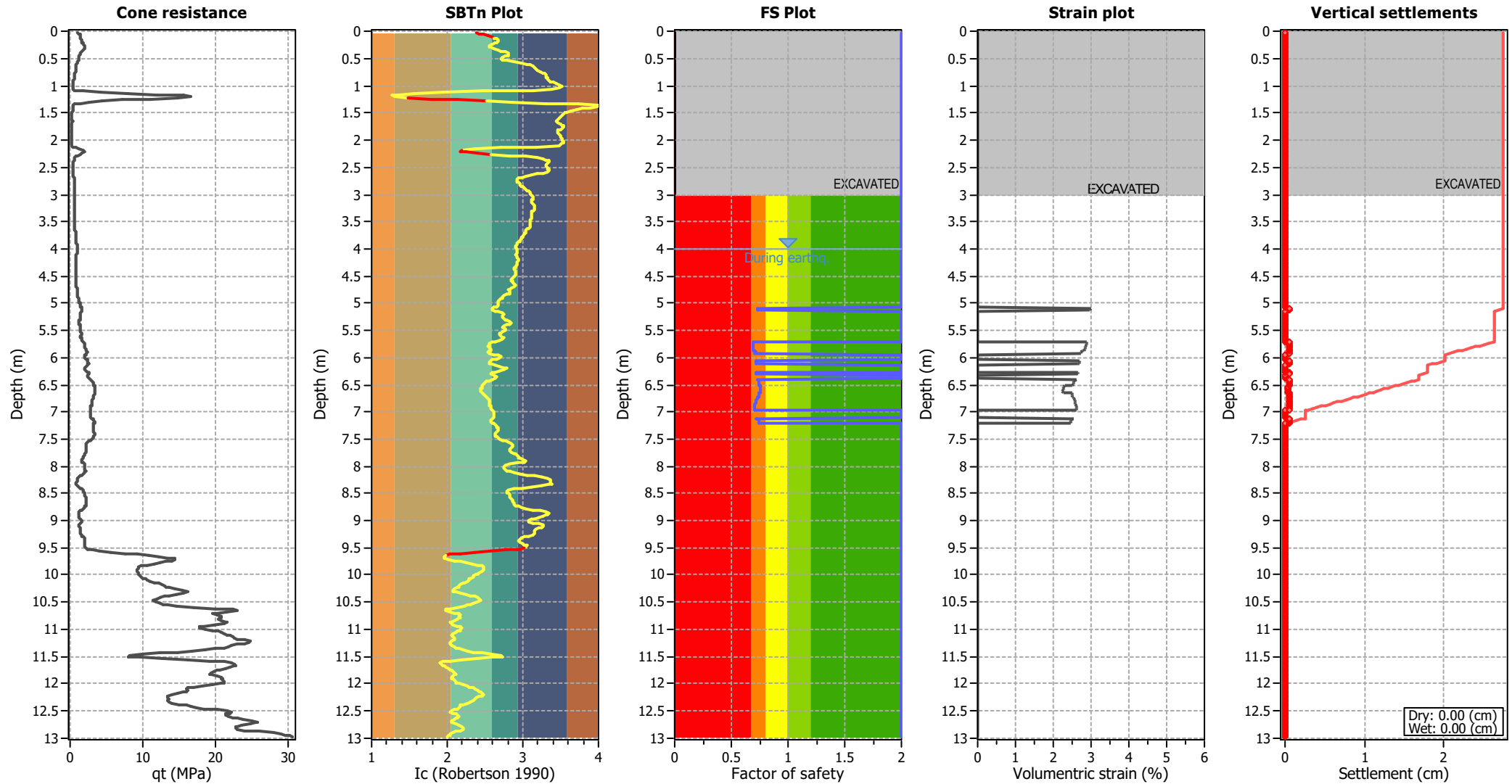
Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

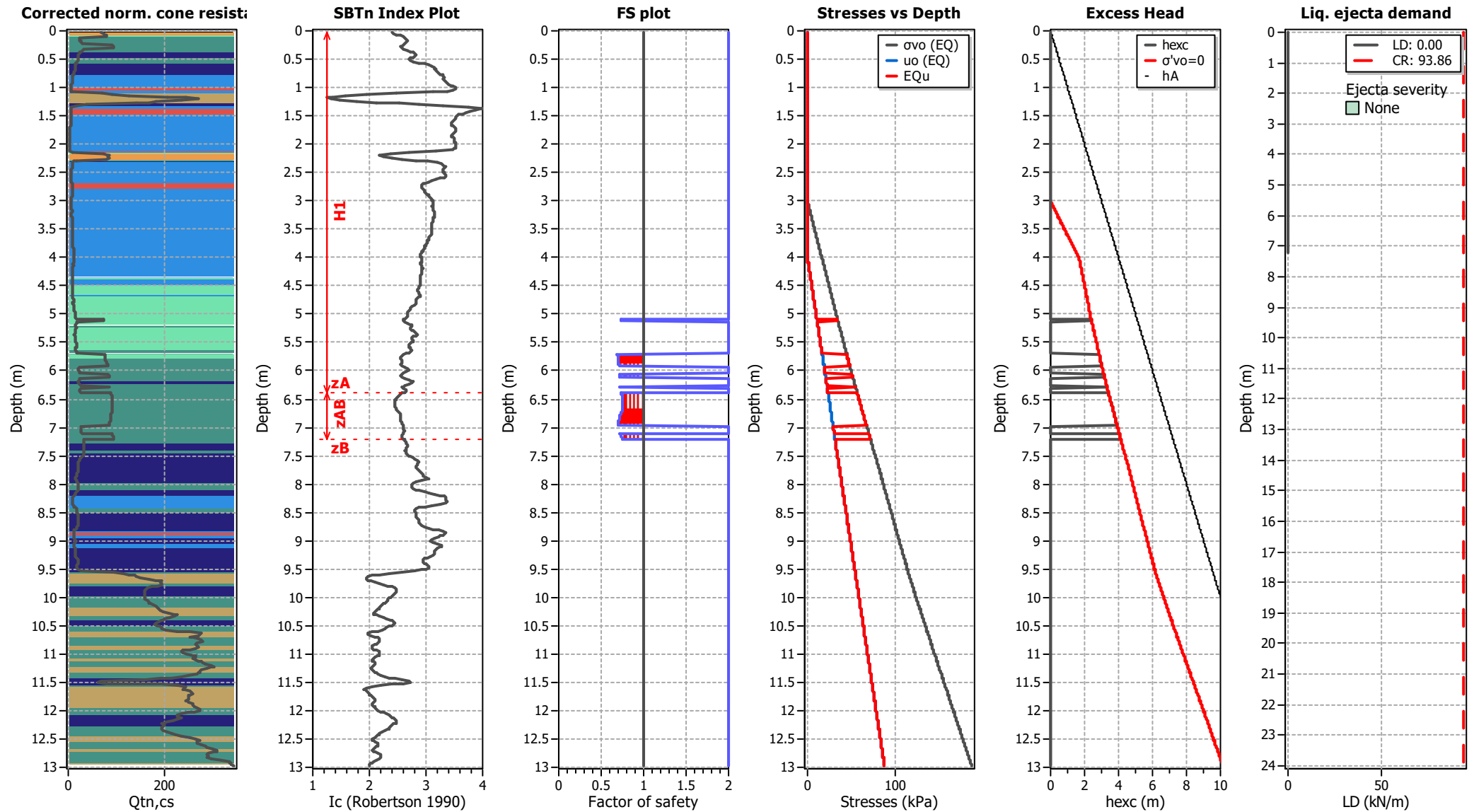
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

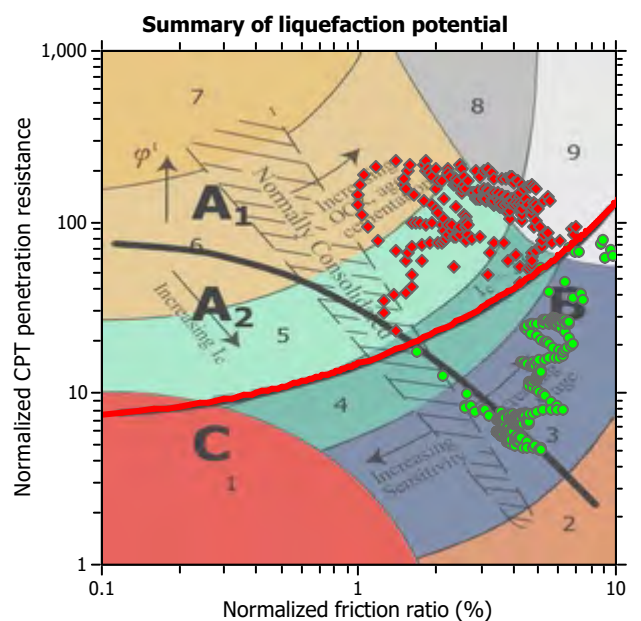
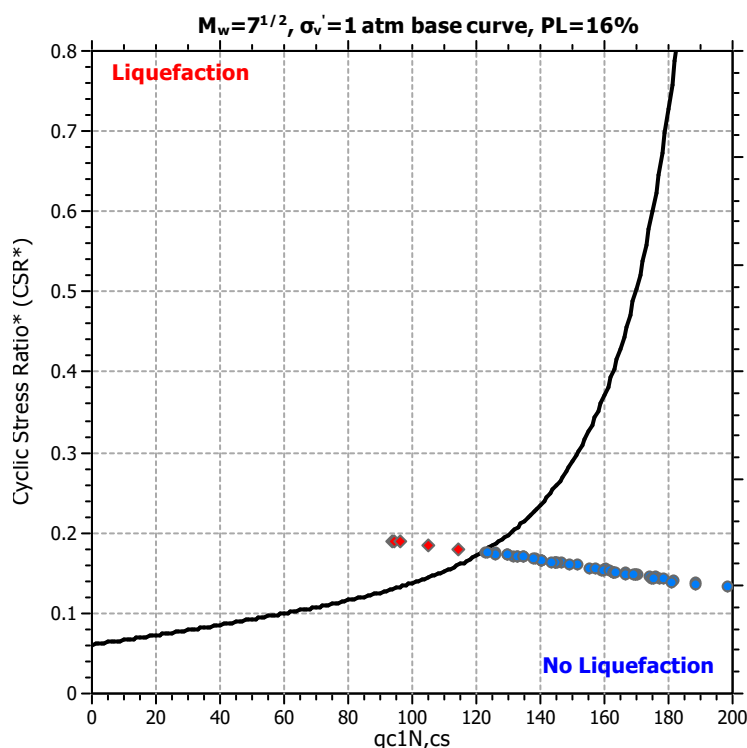
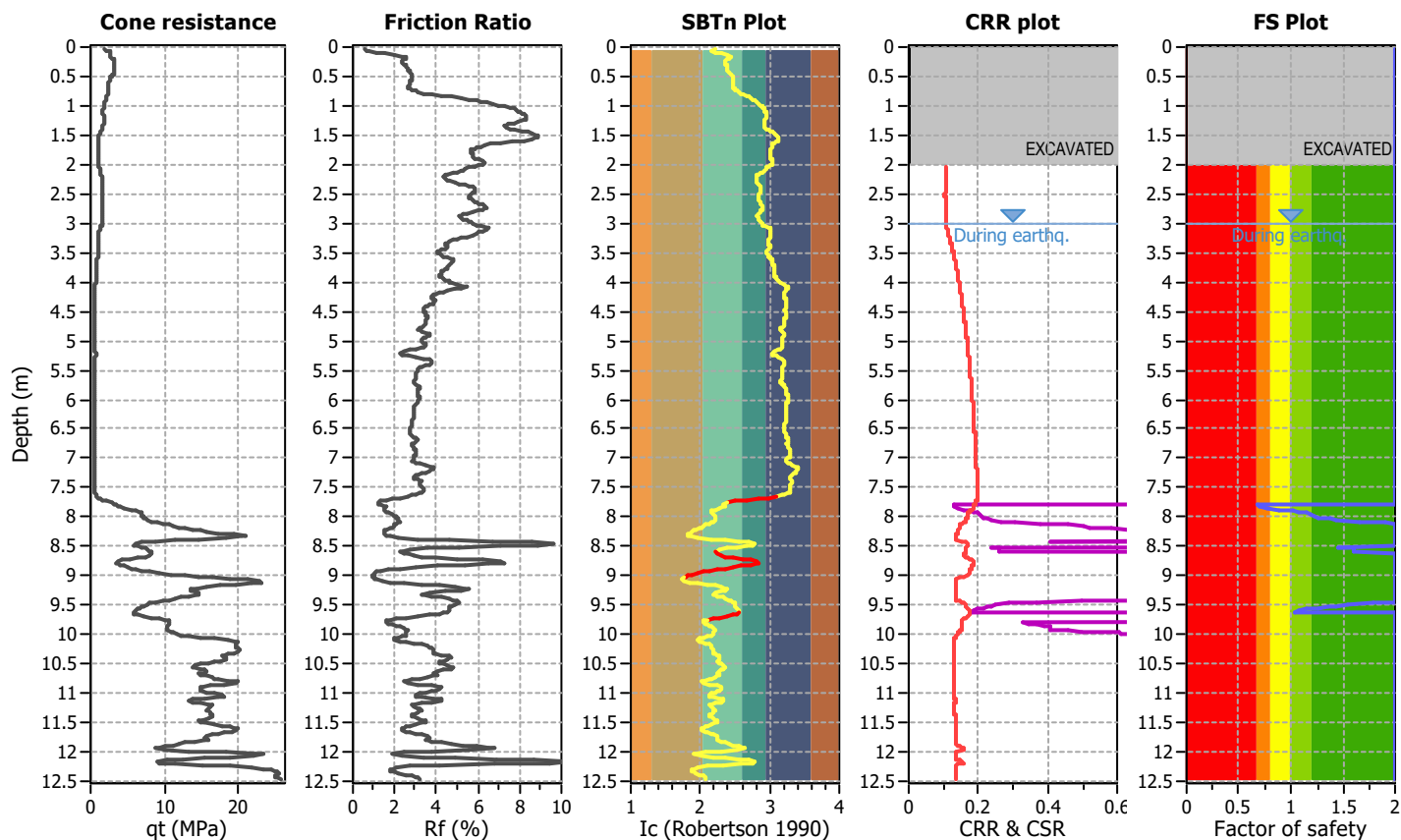
Project title : Sunfield Landholding

Location :

CPT file : CPT108

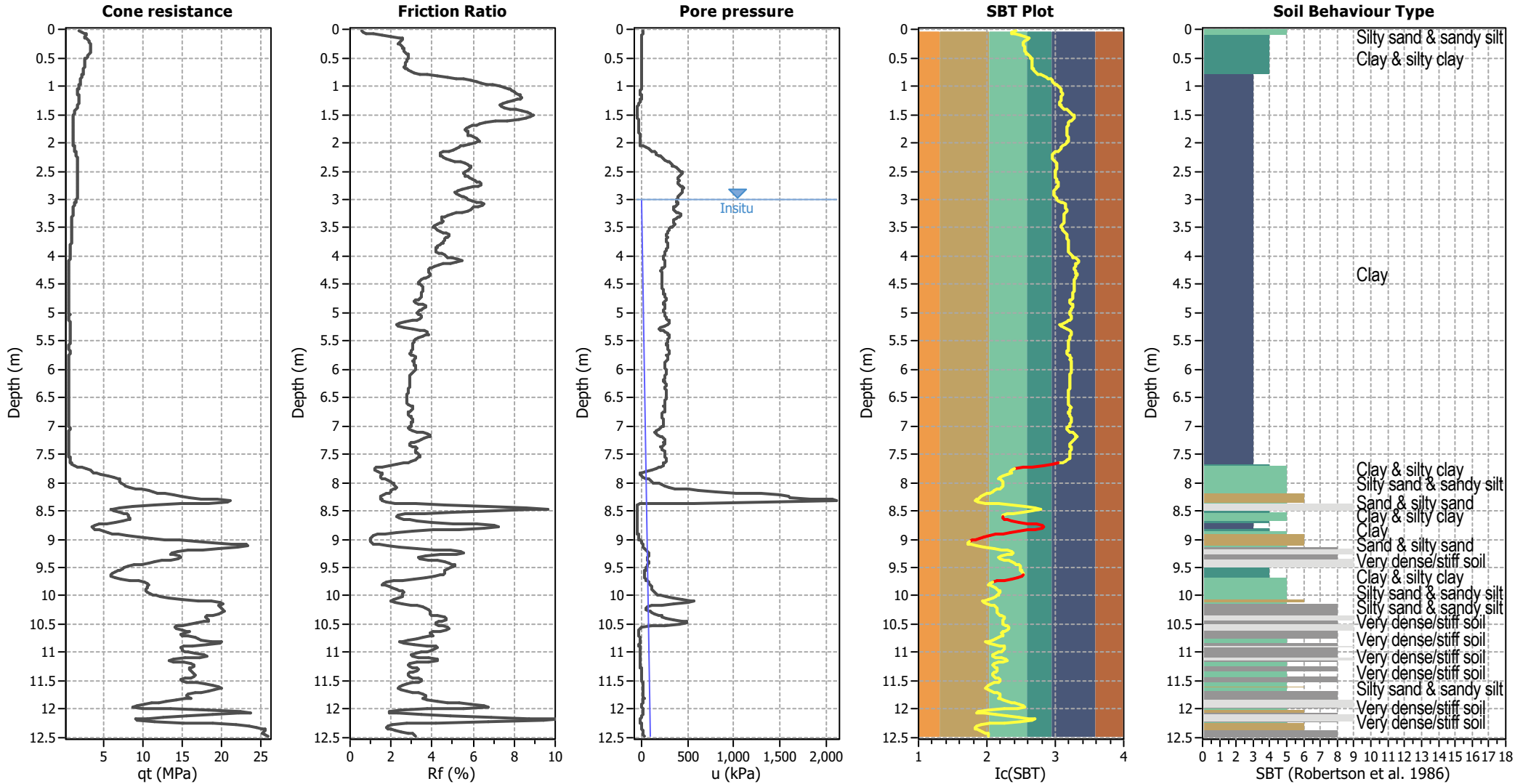
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	3.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	3.00 m	Excavation depth:	2.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

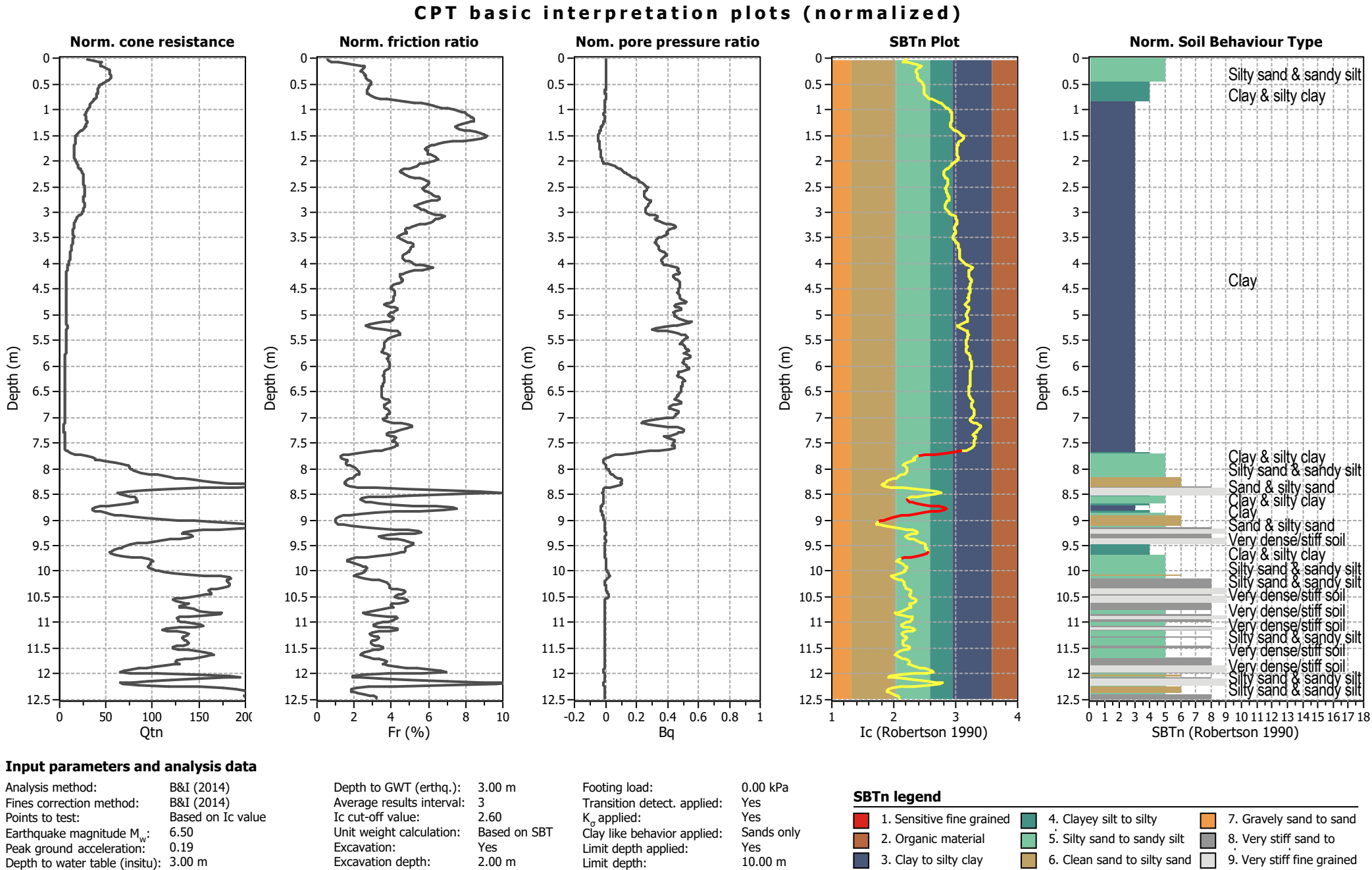


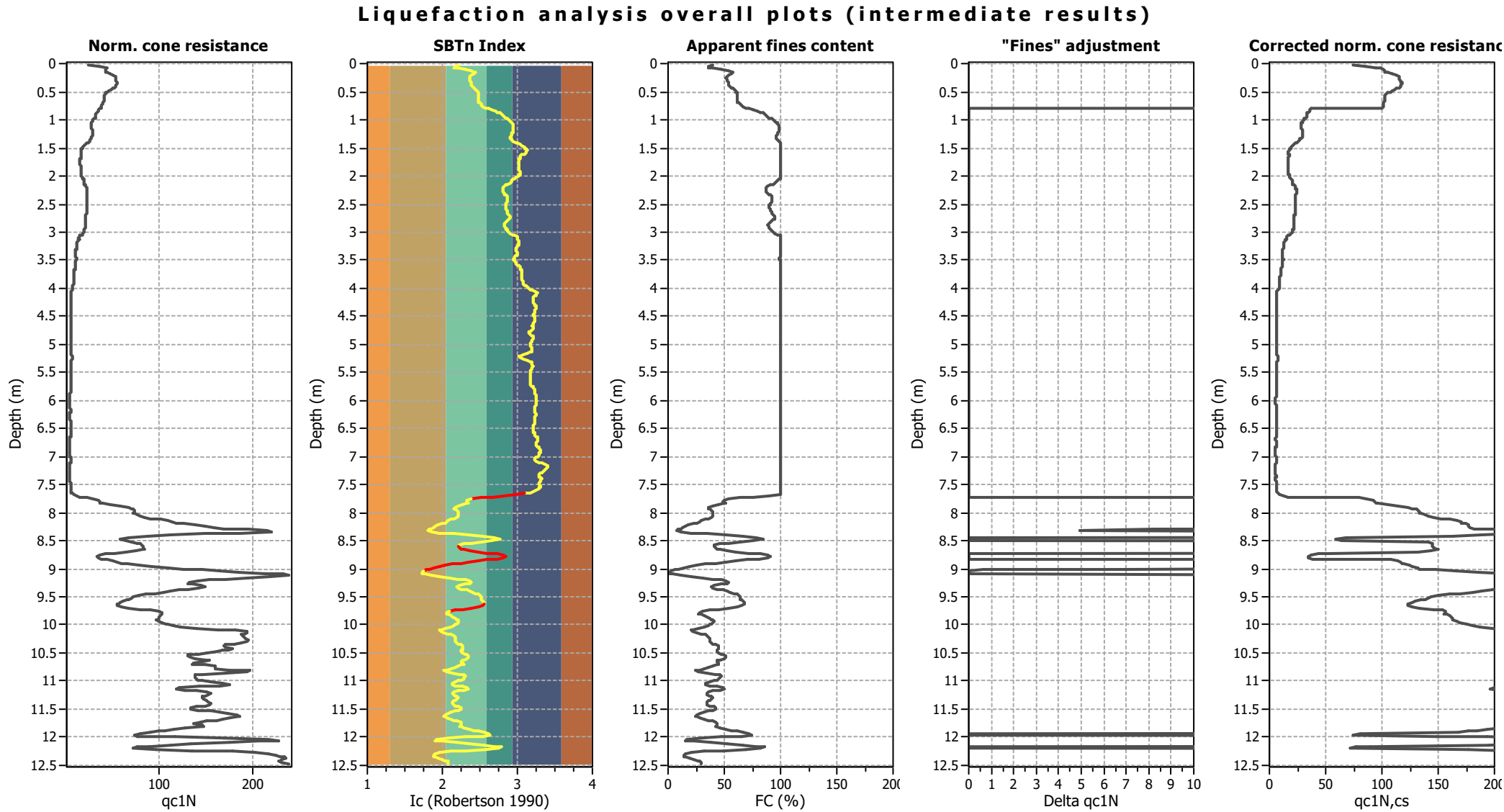
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

SBT legend

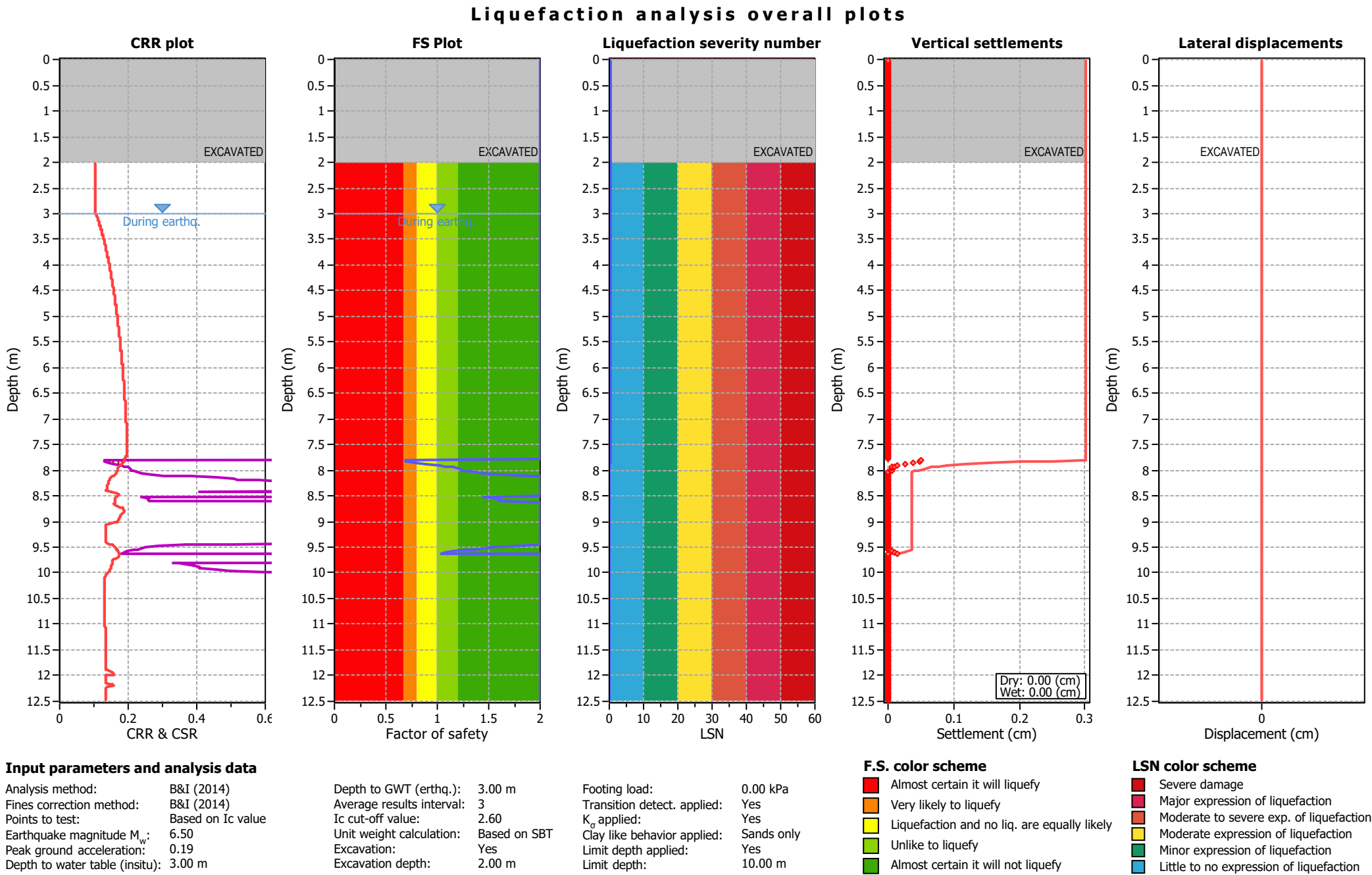
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



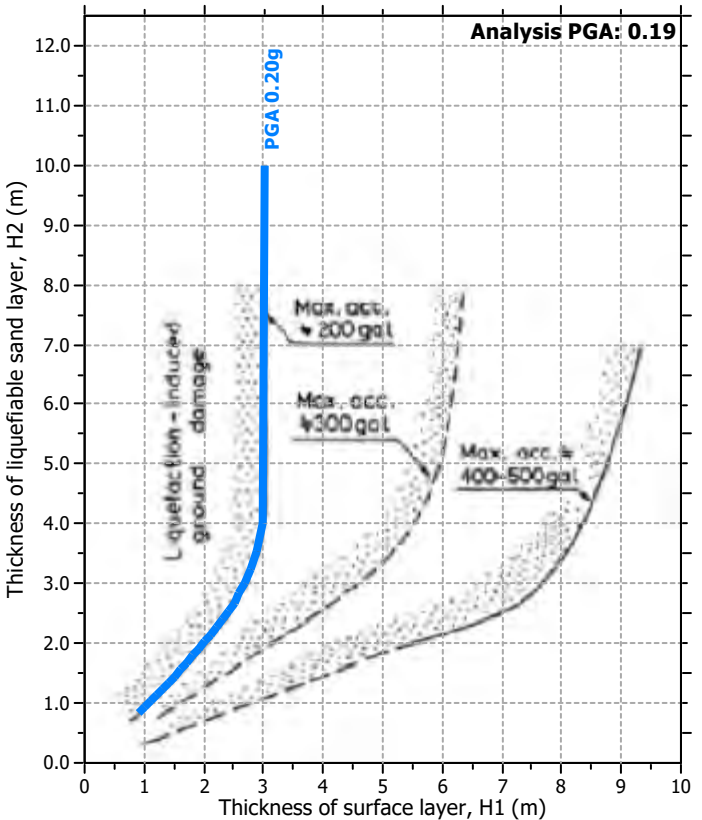
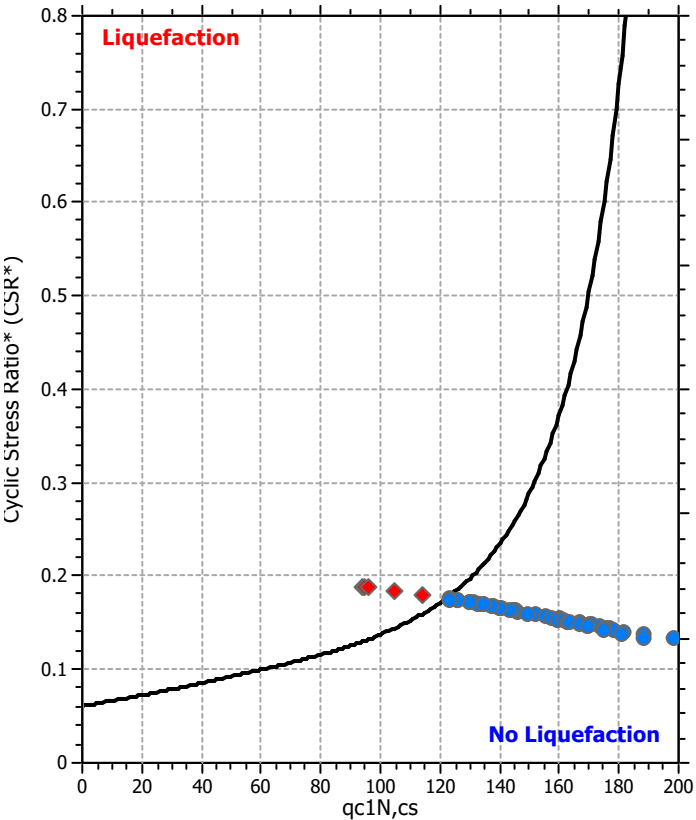
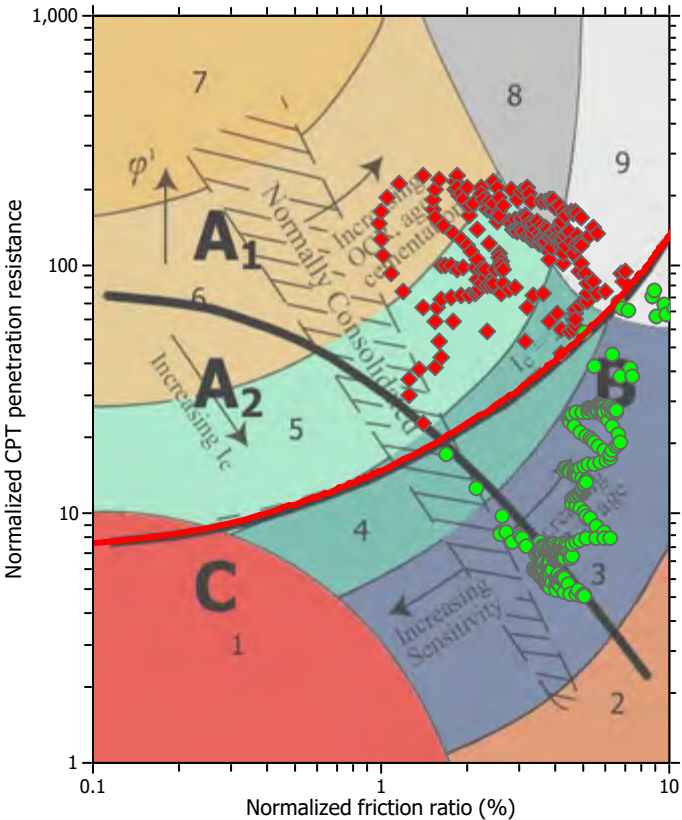


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

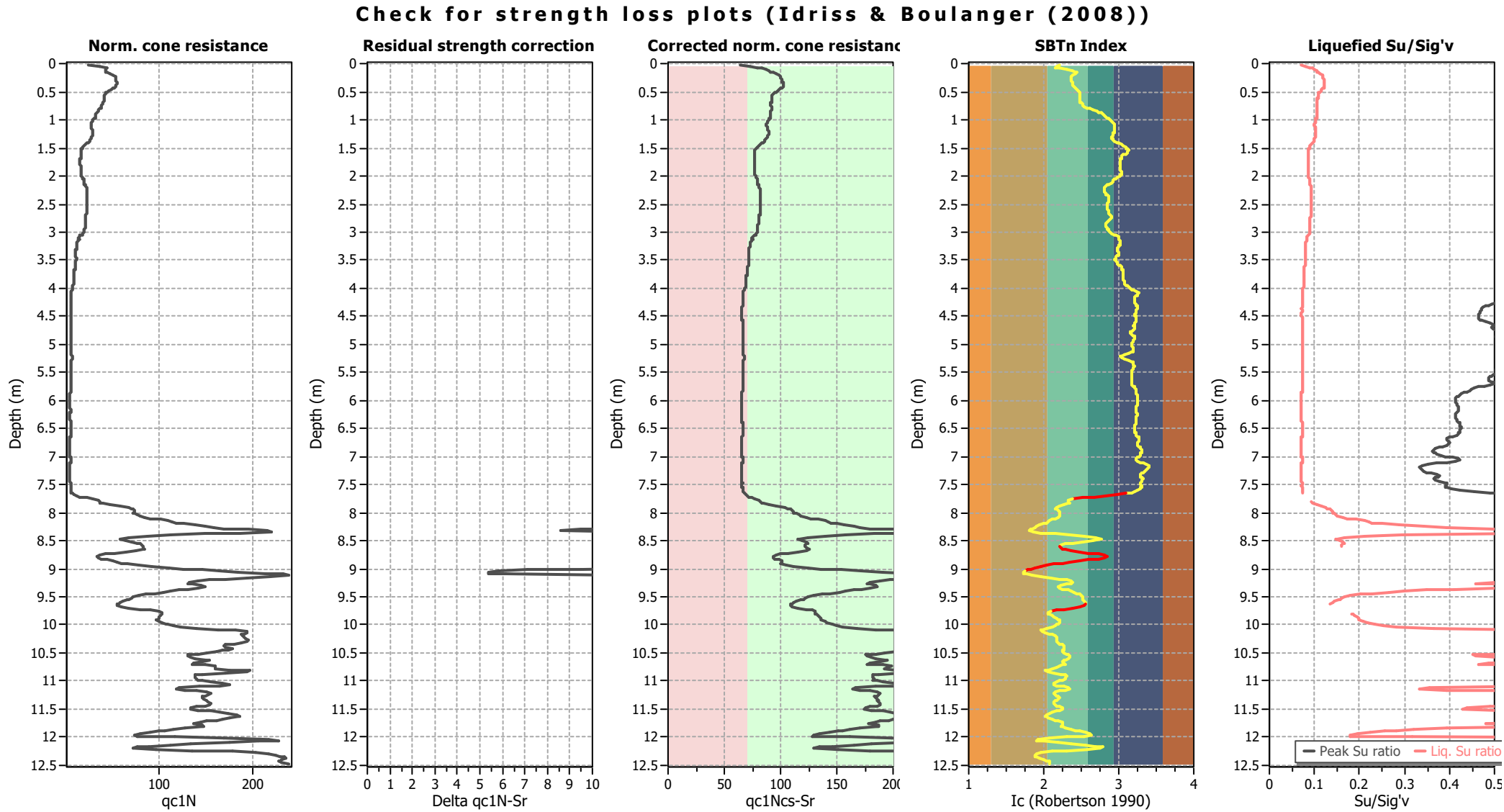


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

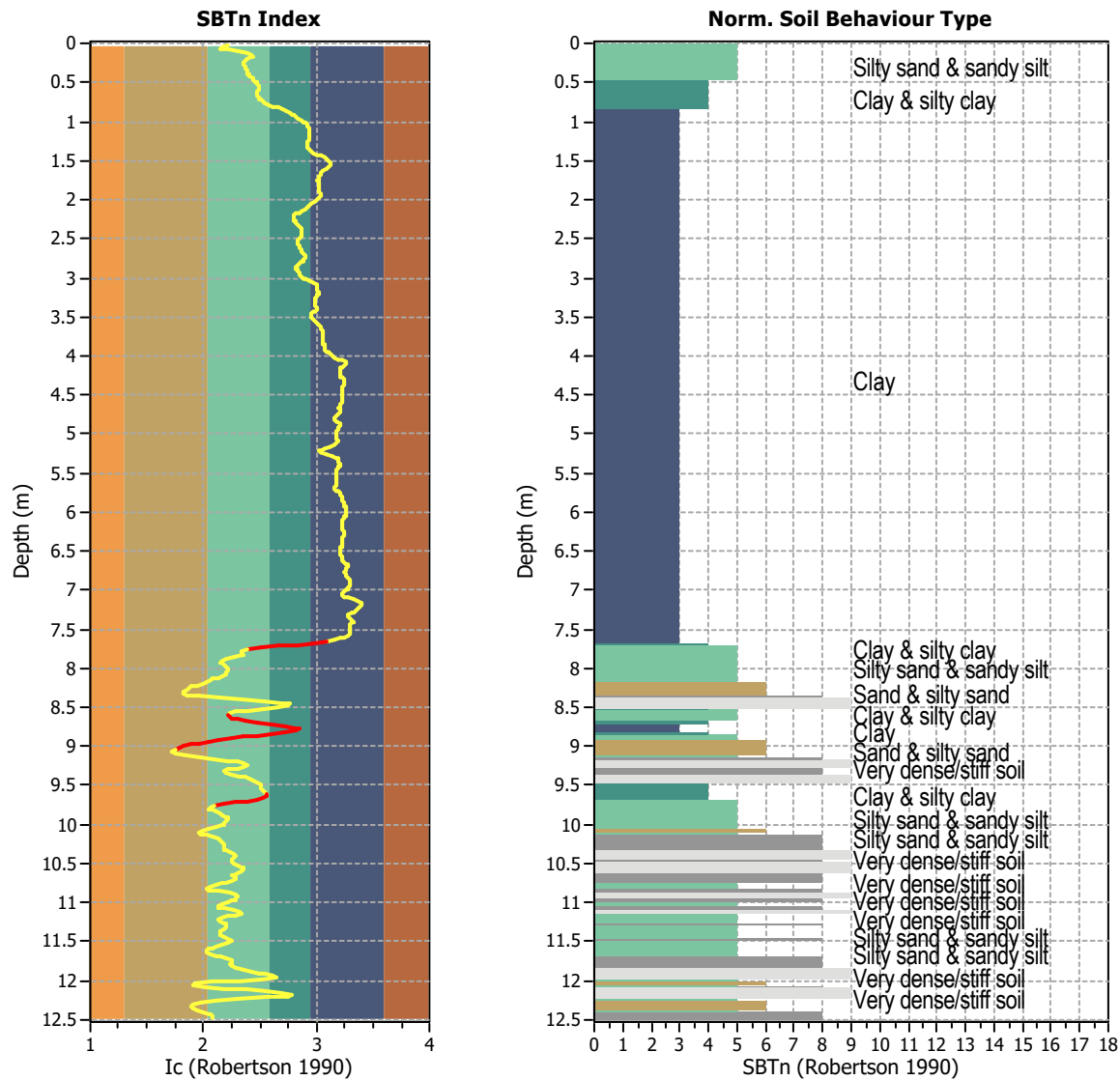
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

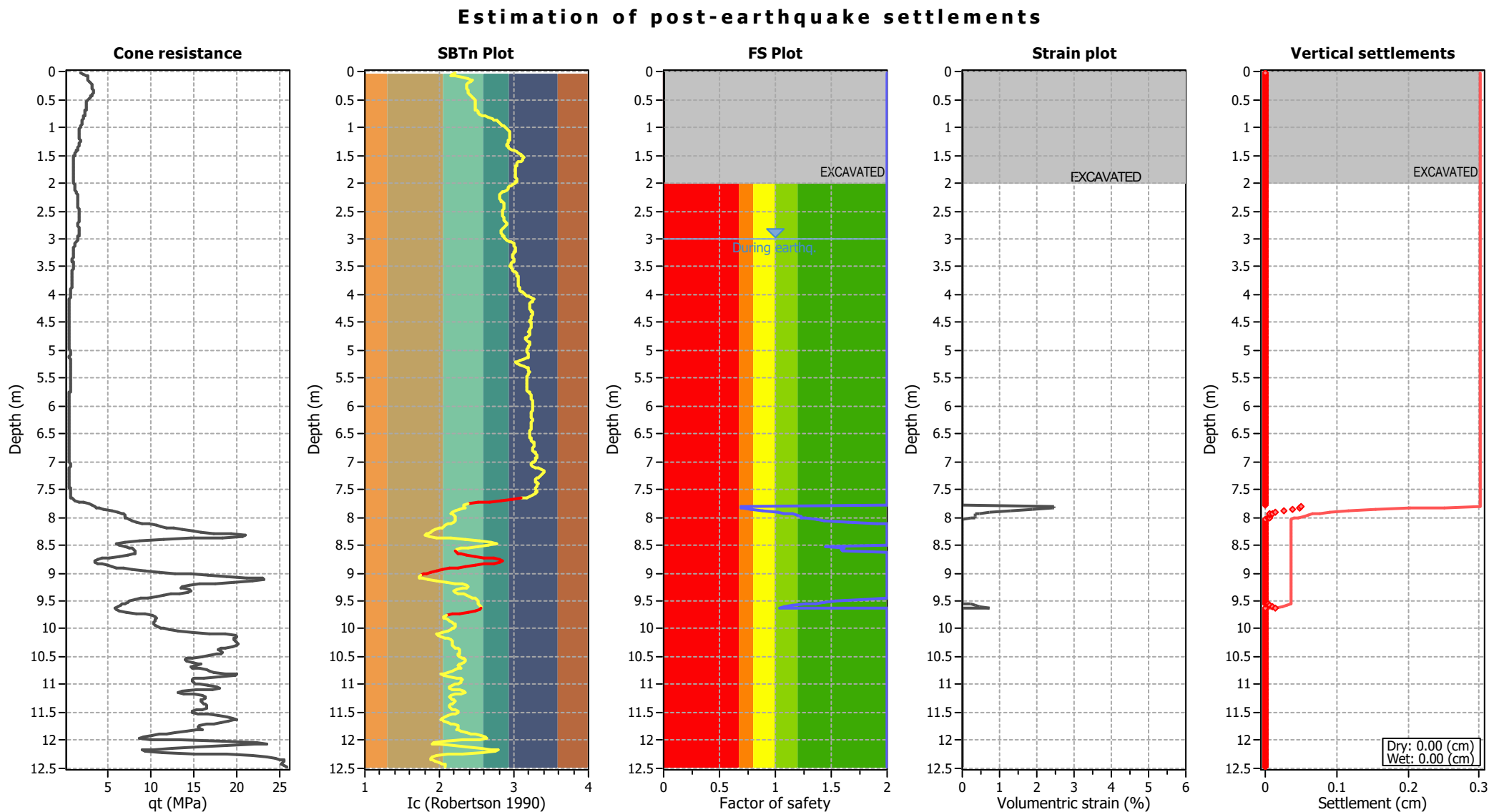


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

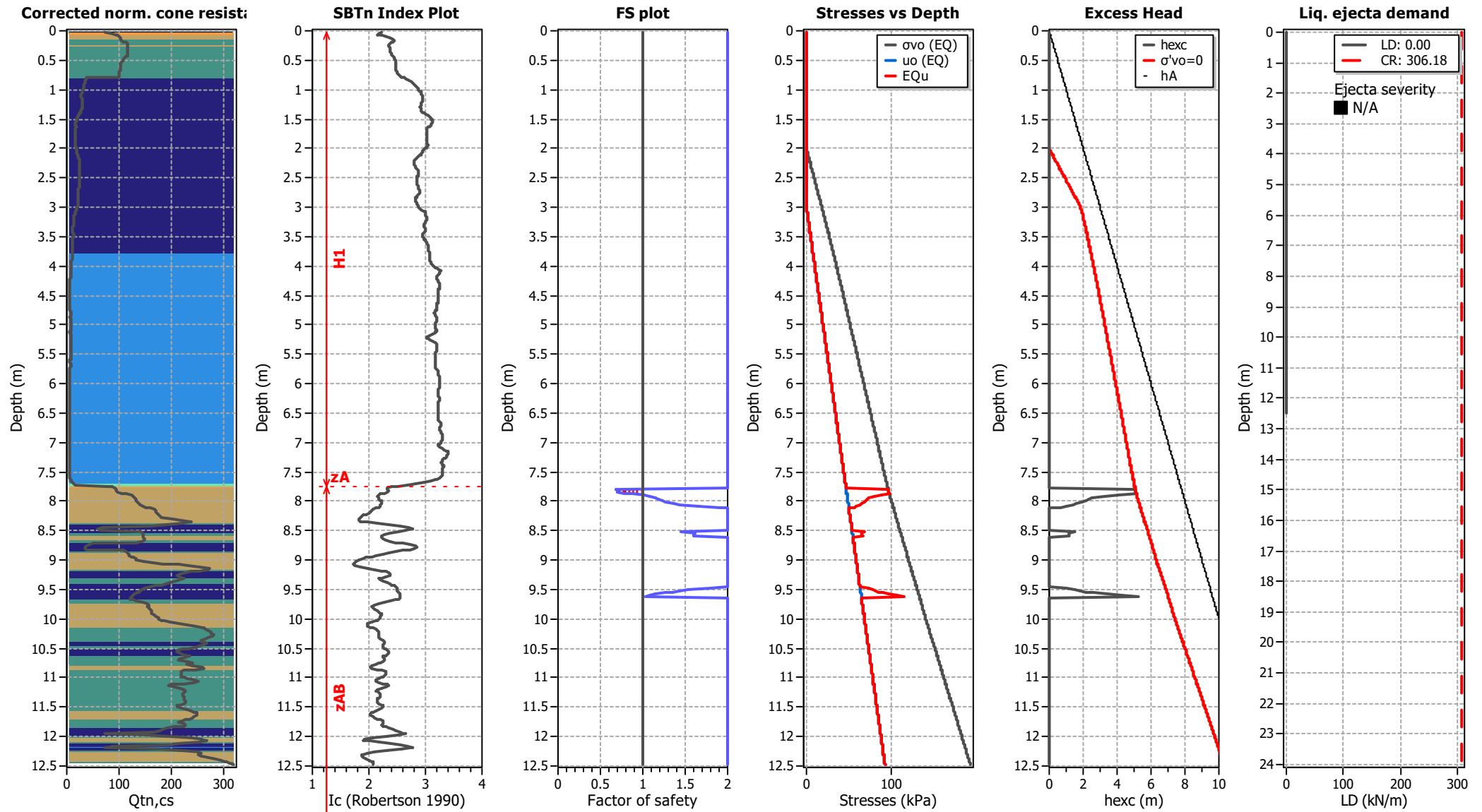
Total points in CPT file: 624
Total points excluded: 38
Exclusion percentage: 6.09%
Number of layers detected: 4



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

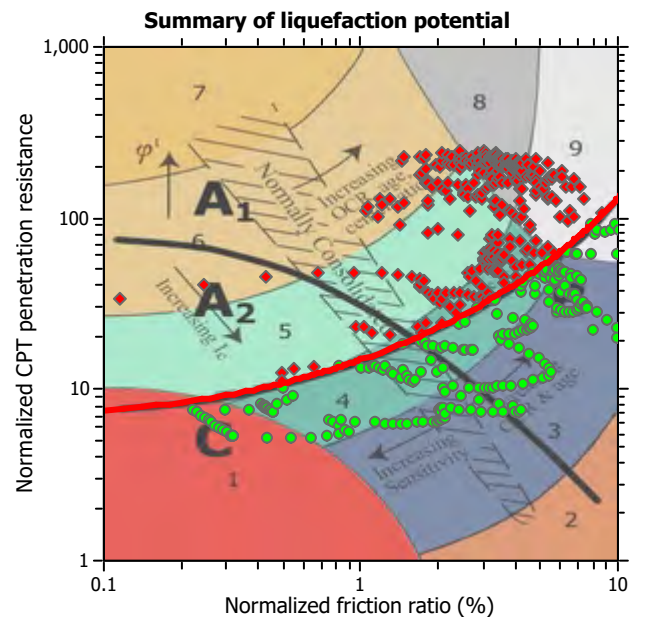
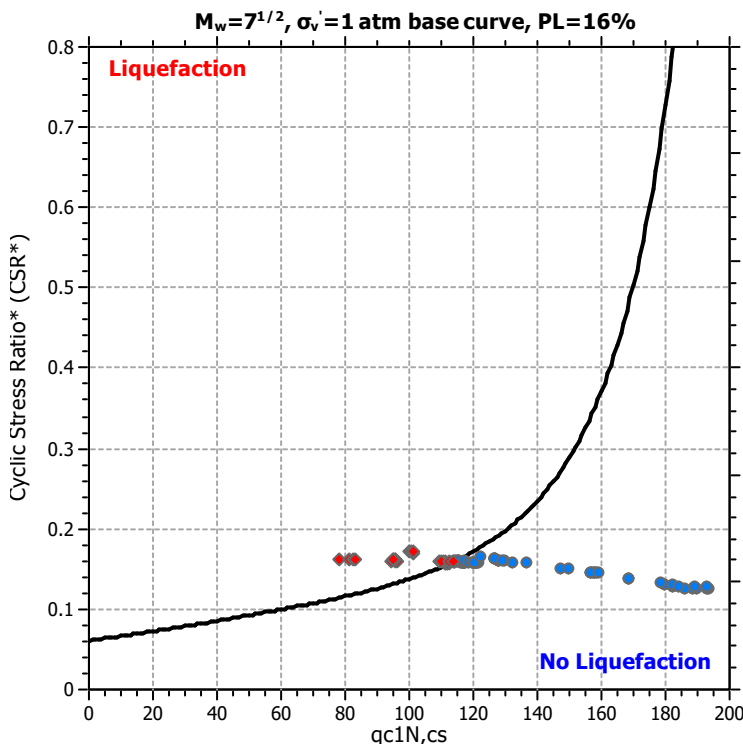
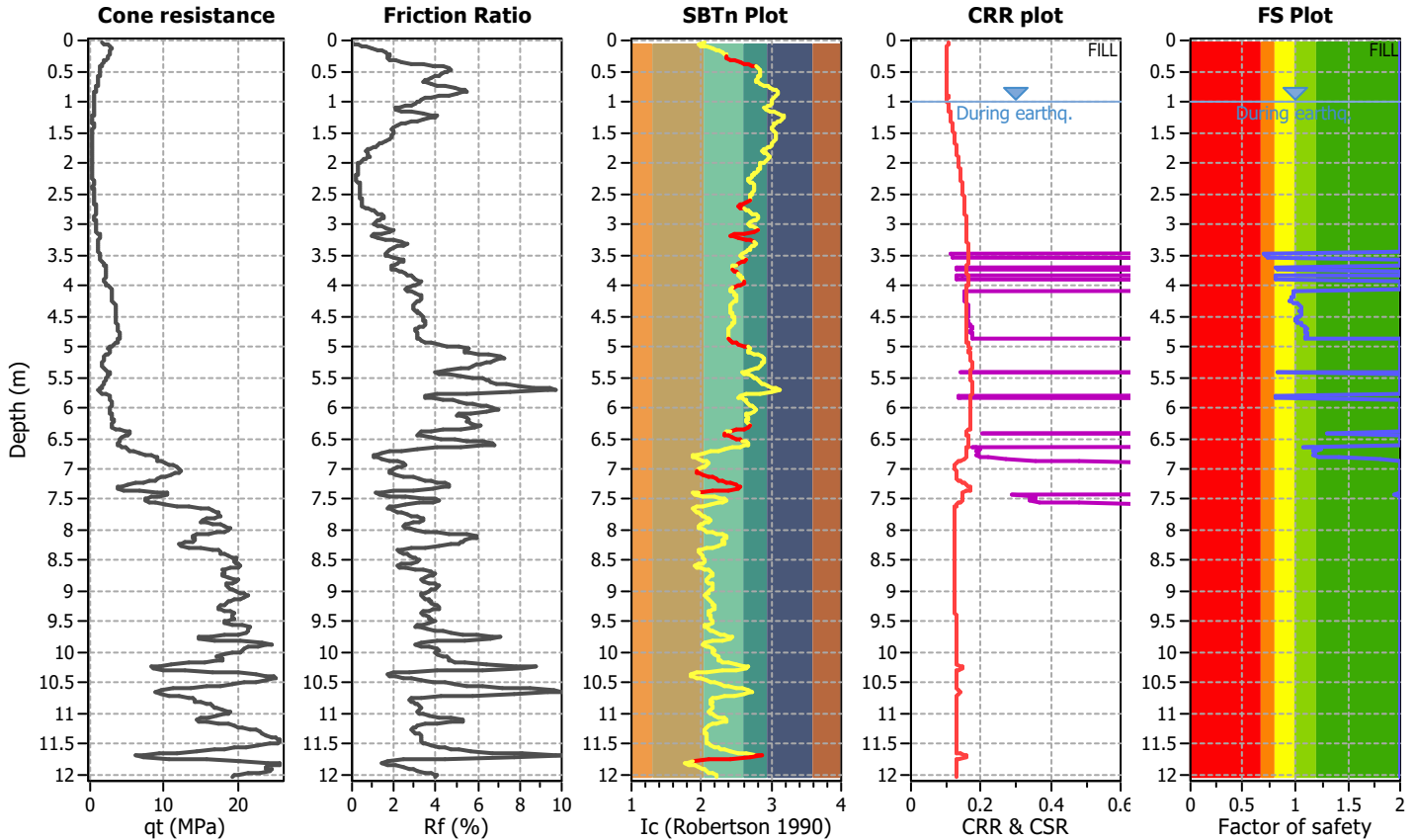
Project title : Sunfield Landholding

Location :

CPT file : CPT110

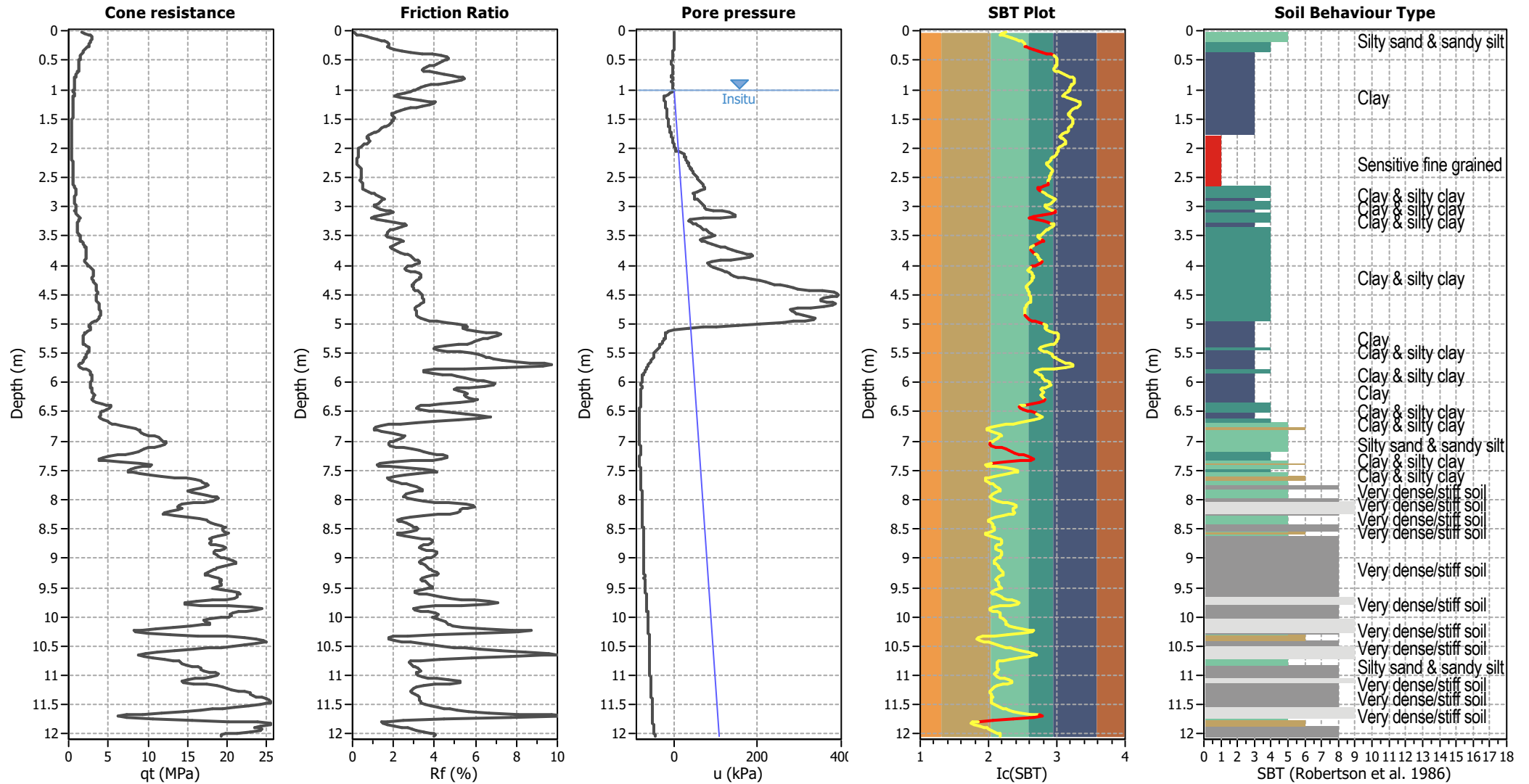
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	9.25 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



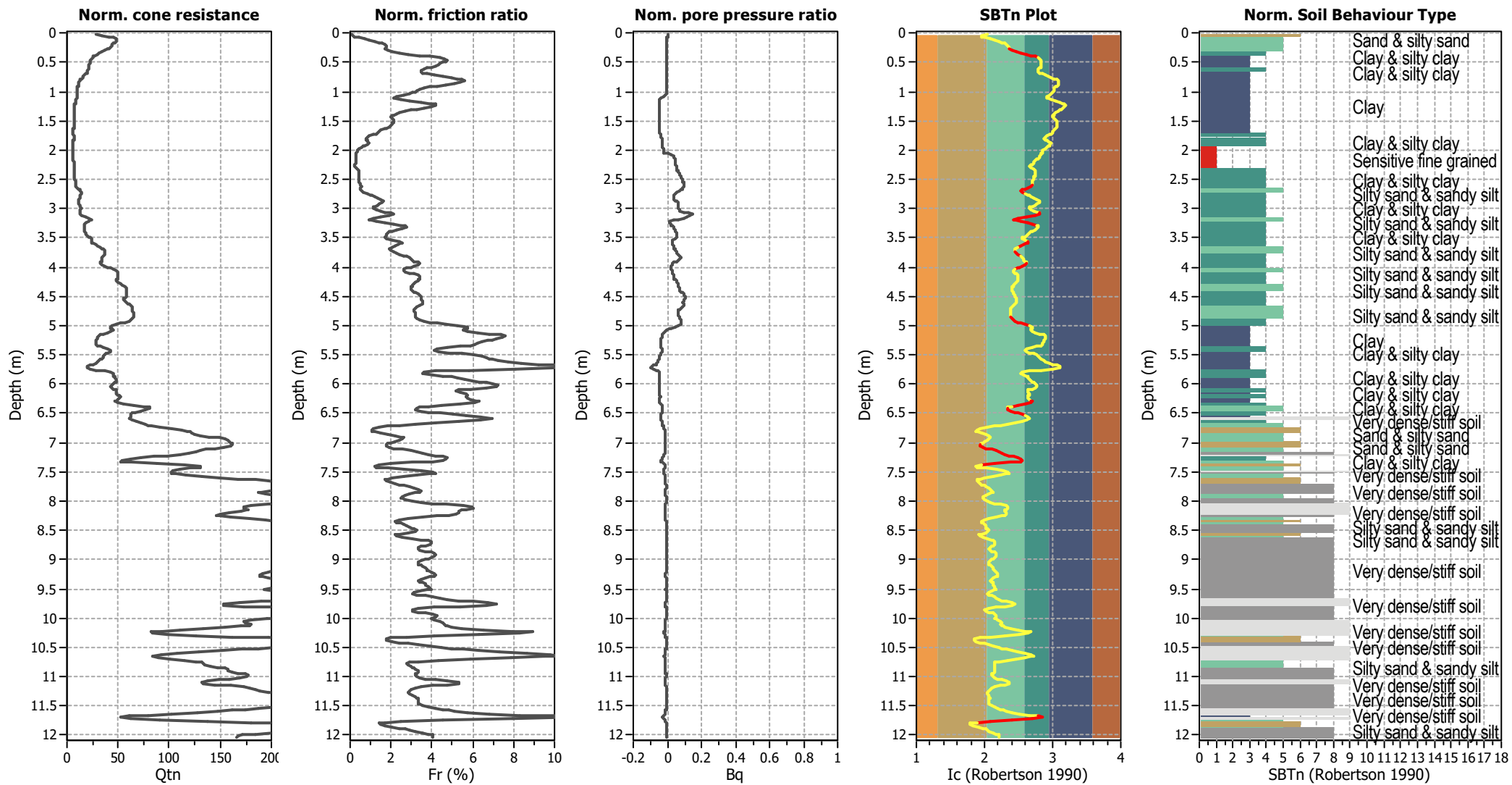
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _a applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained

CPT basic interpretation plots (normalized)



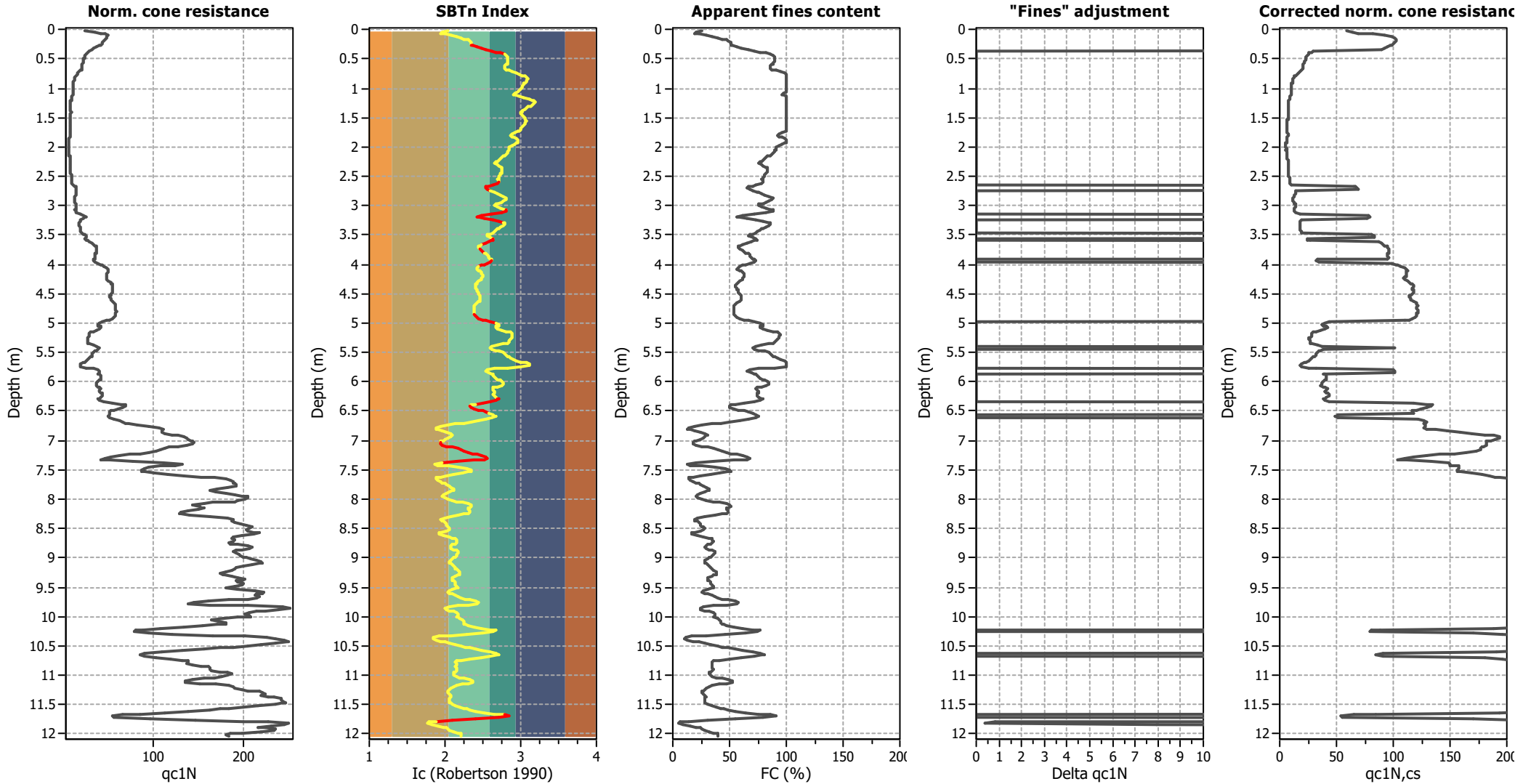
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

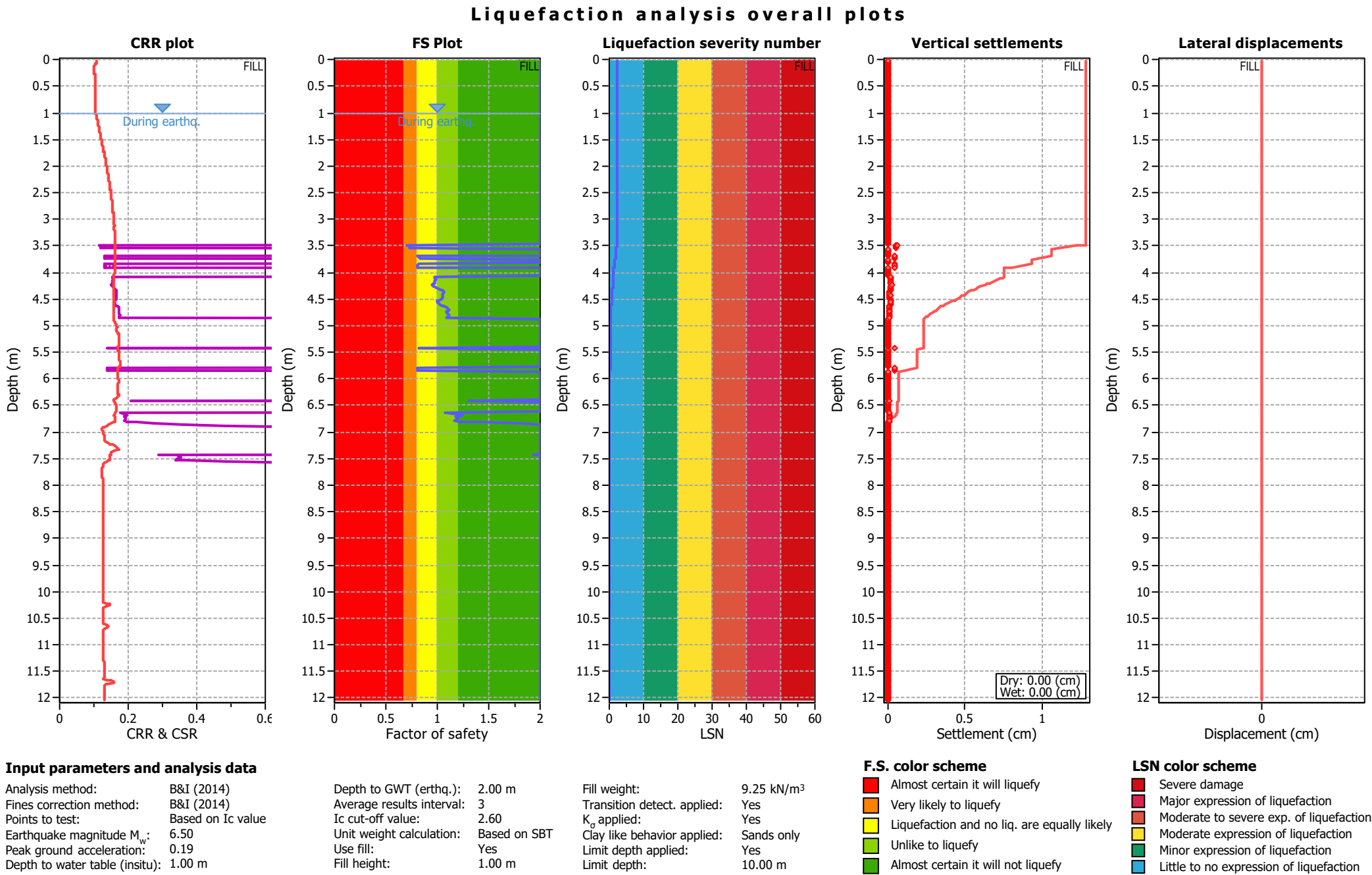
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

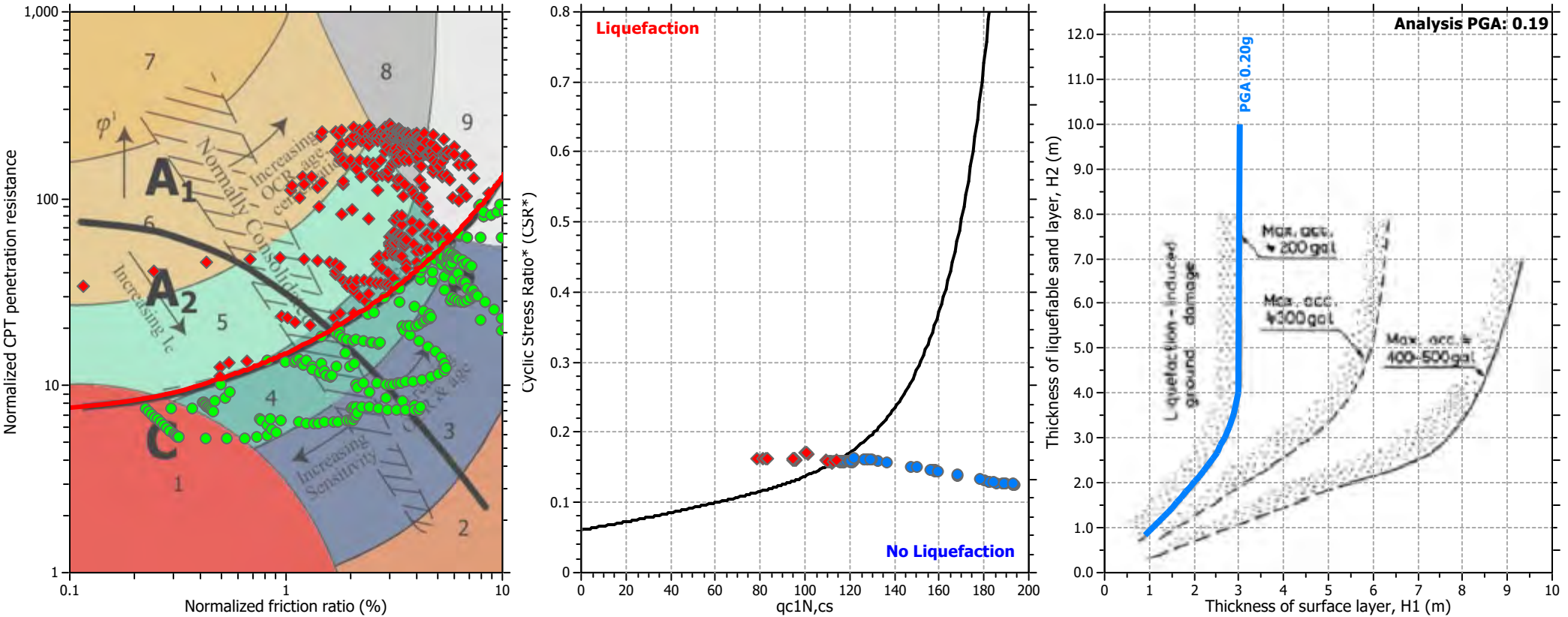


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



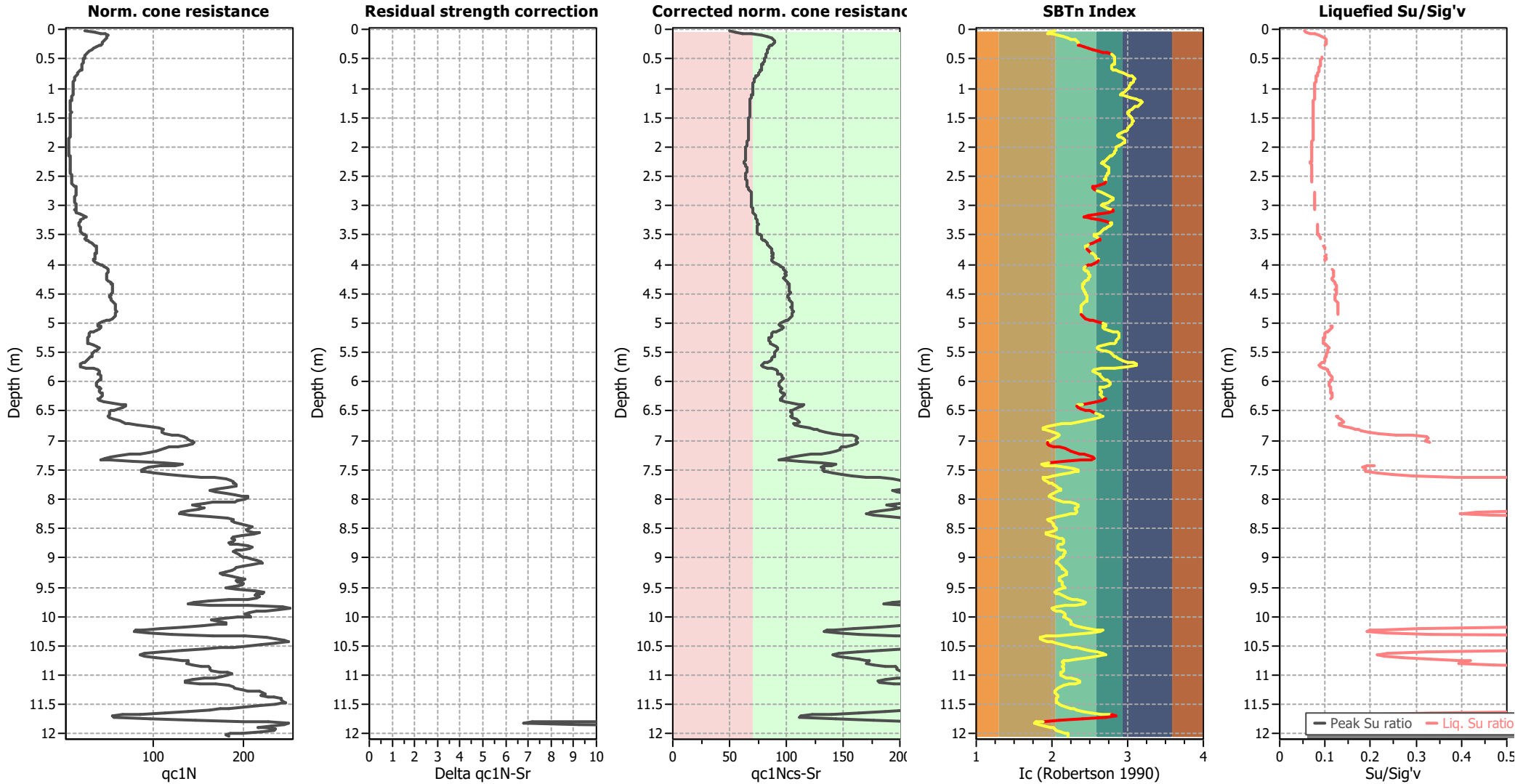
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

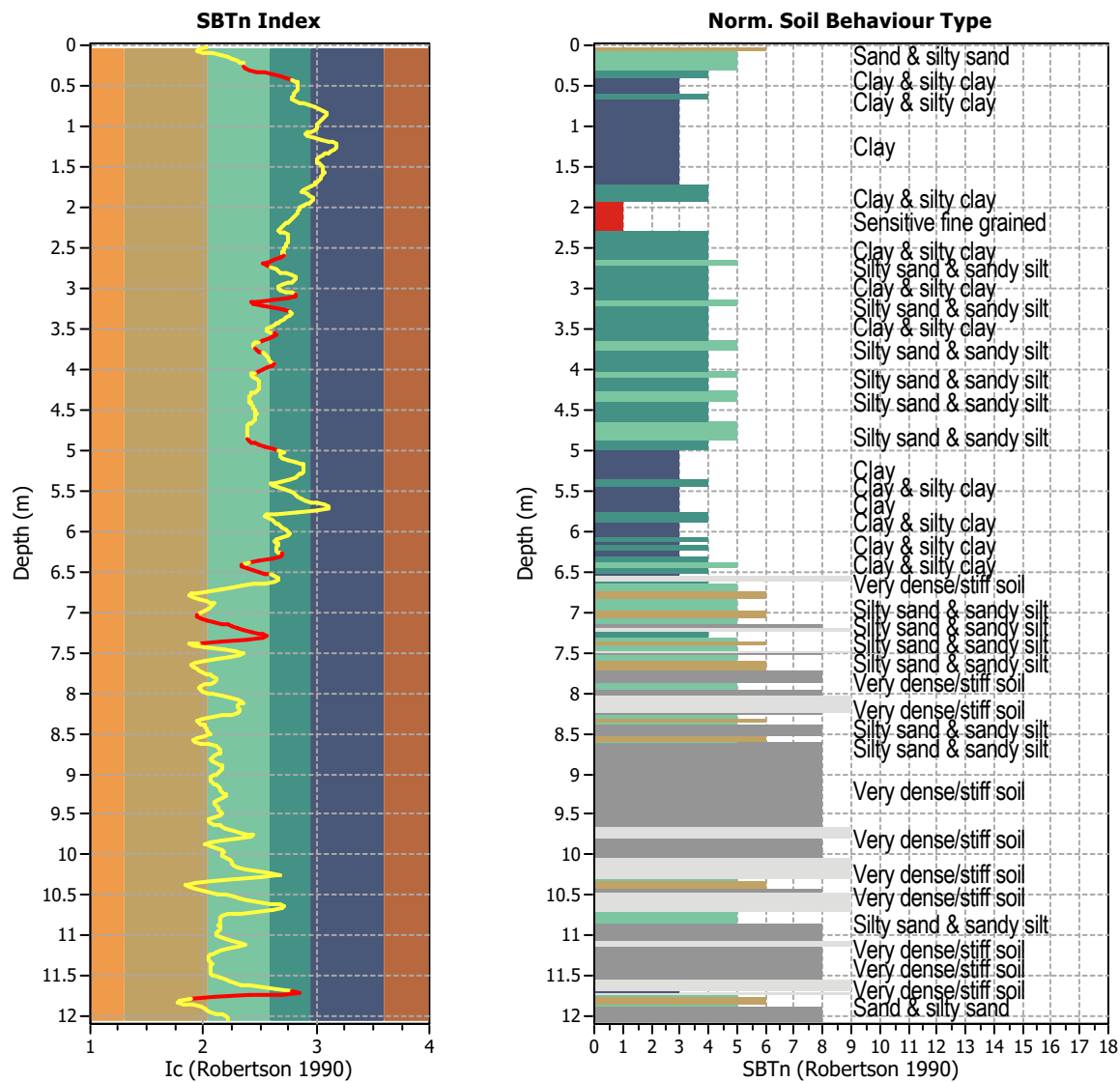
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

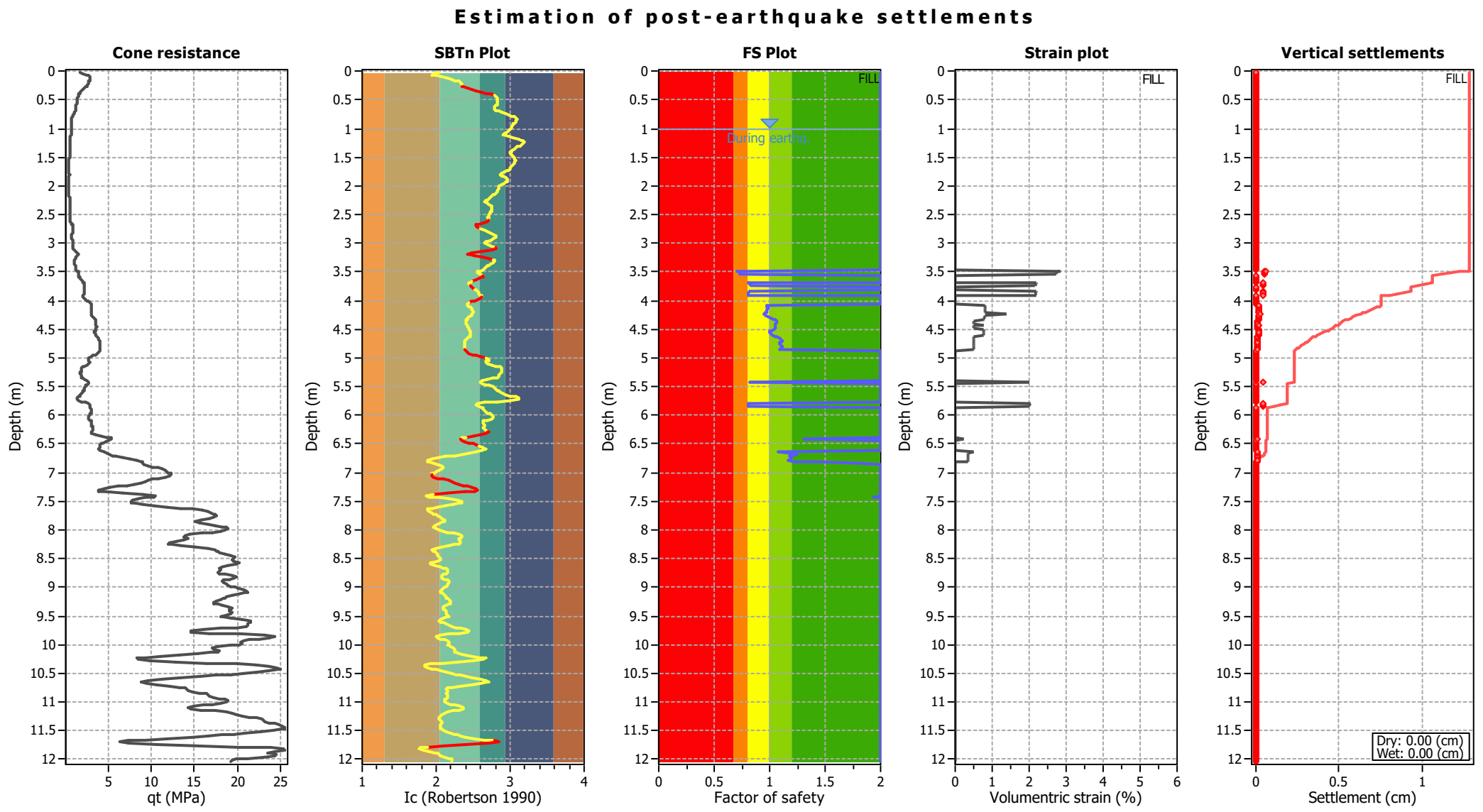


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

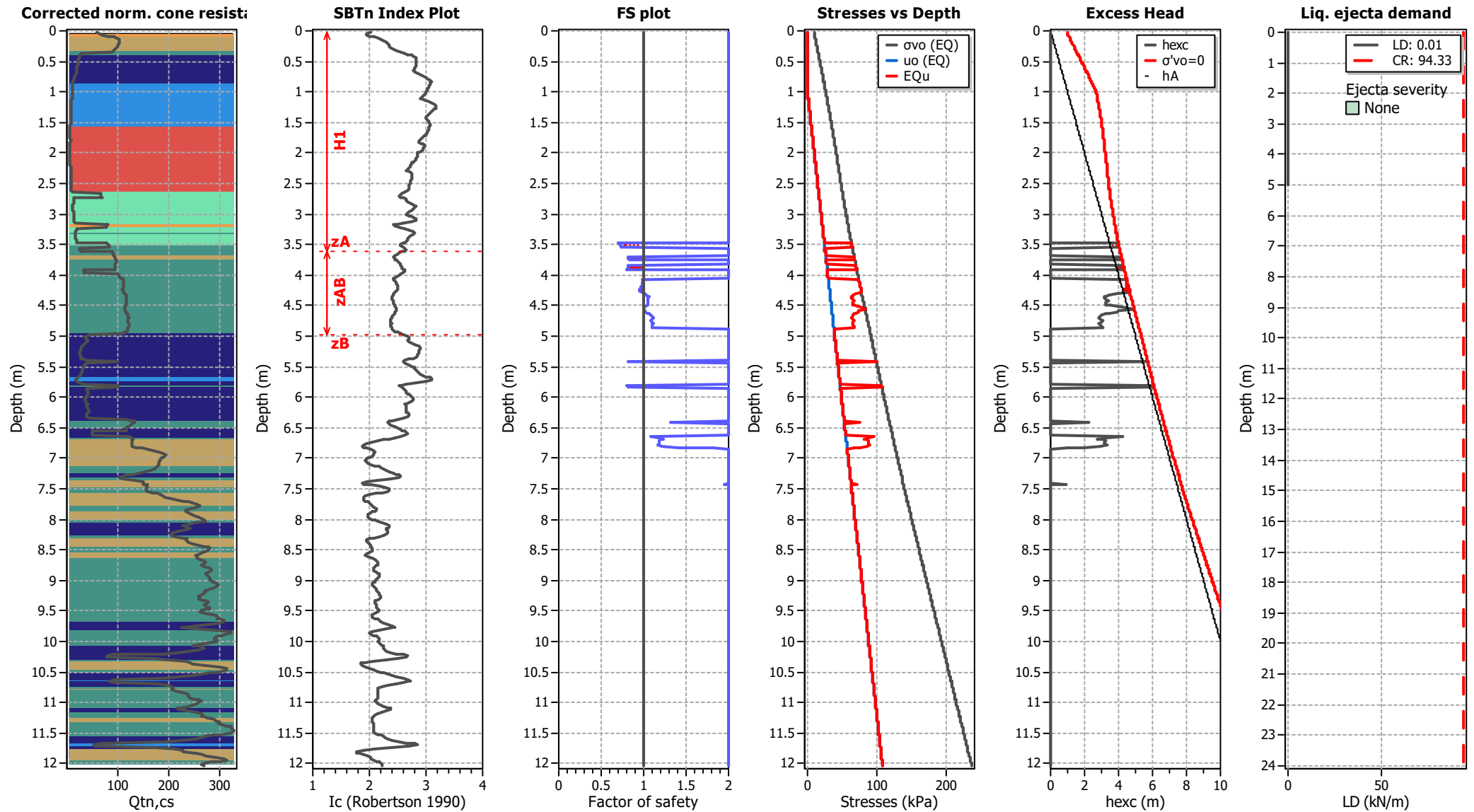
Total points in CPT file: 602
Total points excluded: 91
Exclusion percentage: 15.12%
Number of layers detected: 14



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

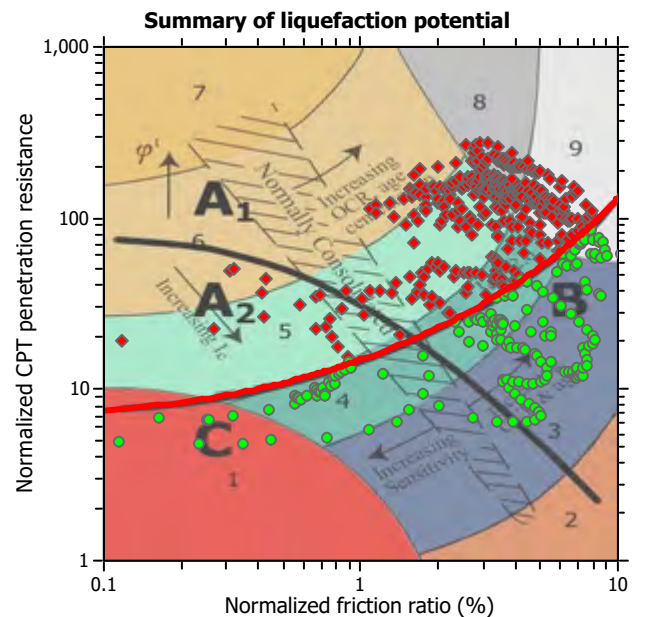
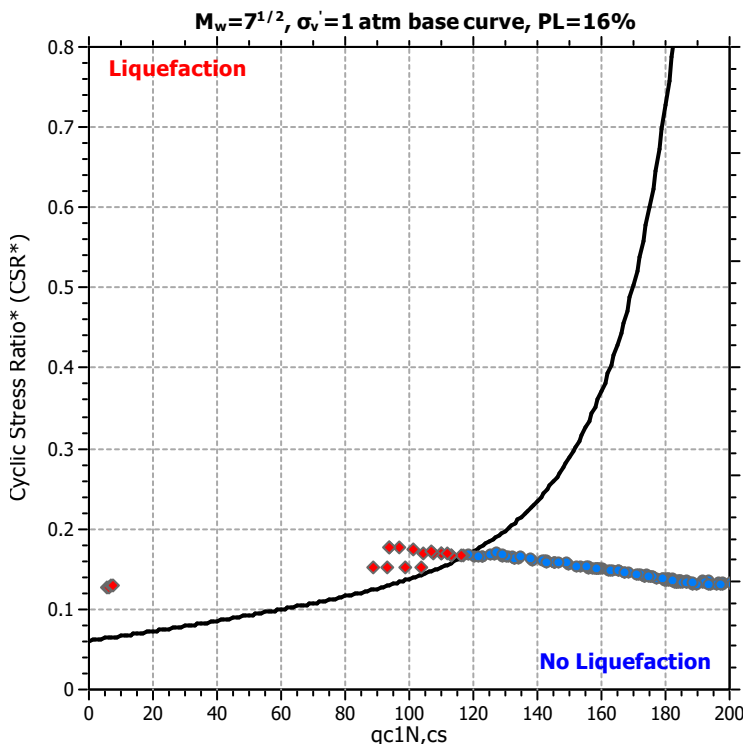
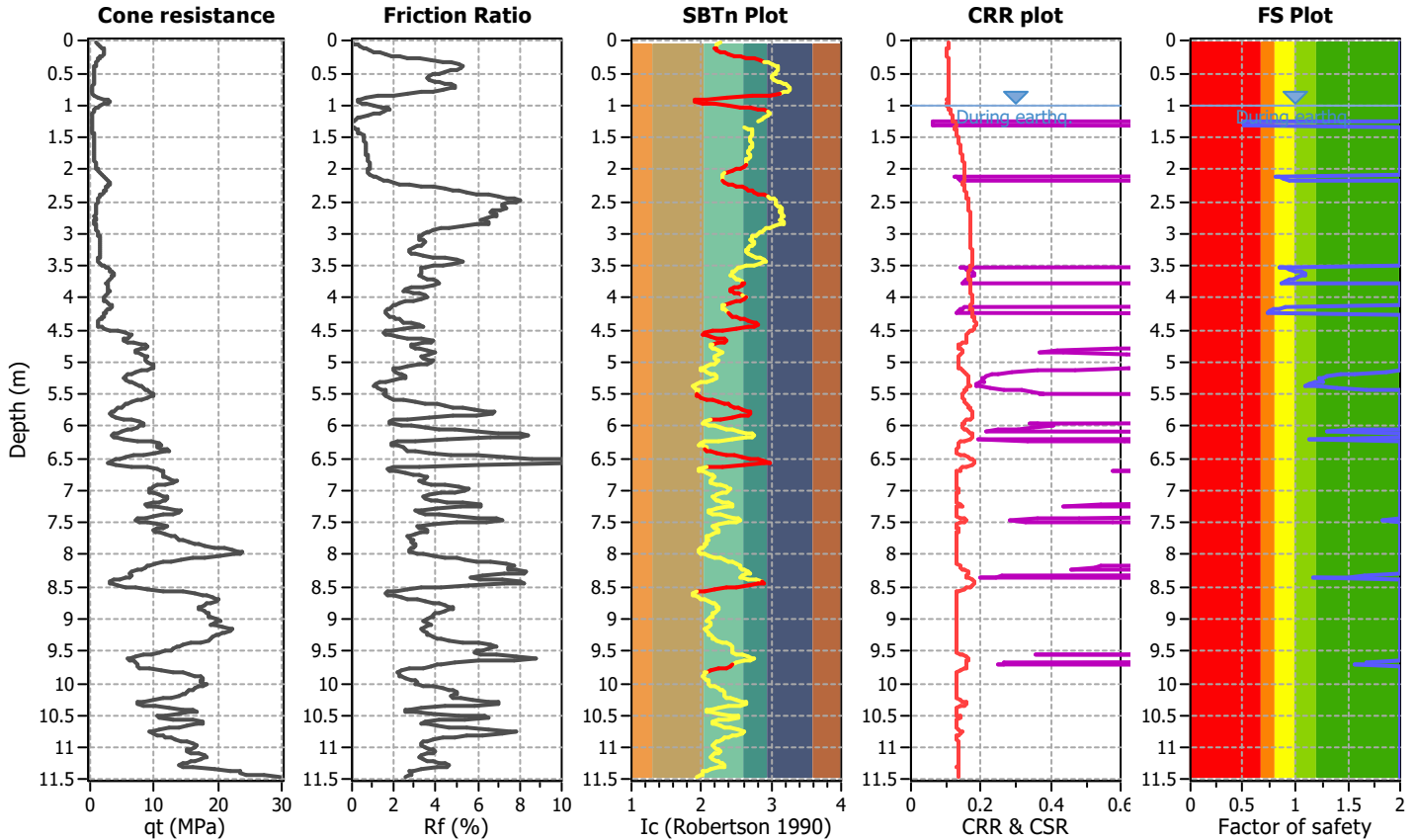
Project title : Sunfield Landholding

Location :

CPT file : CPT111

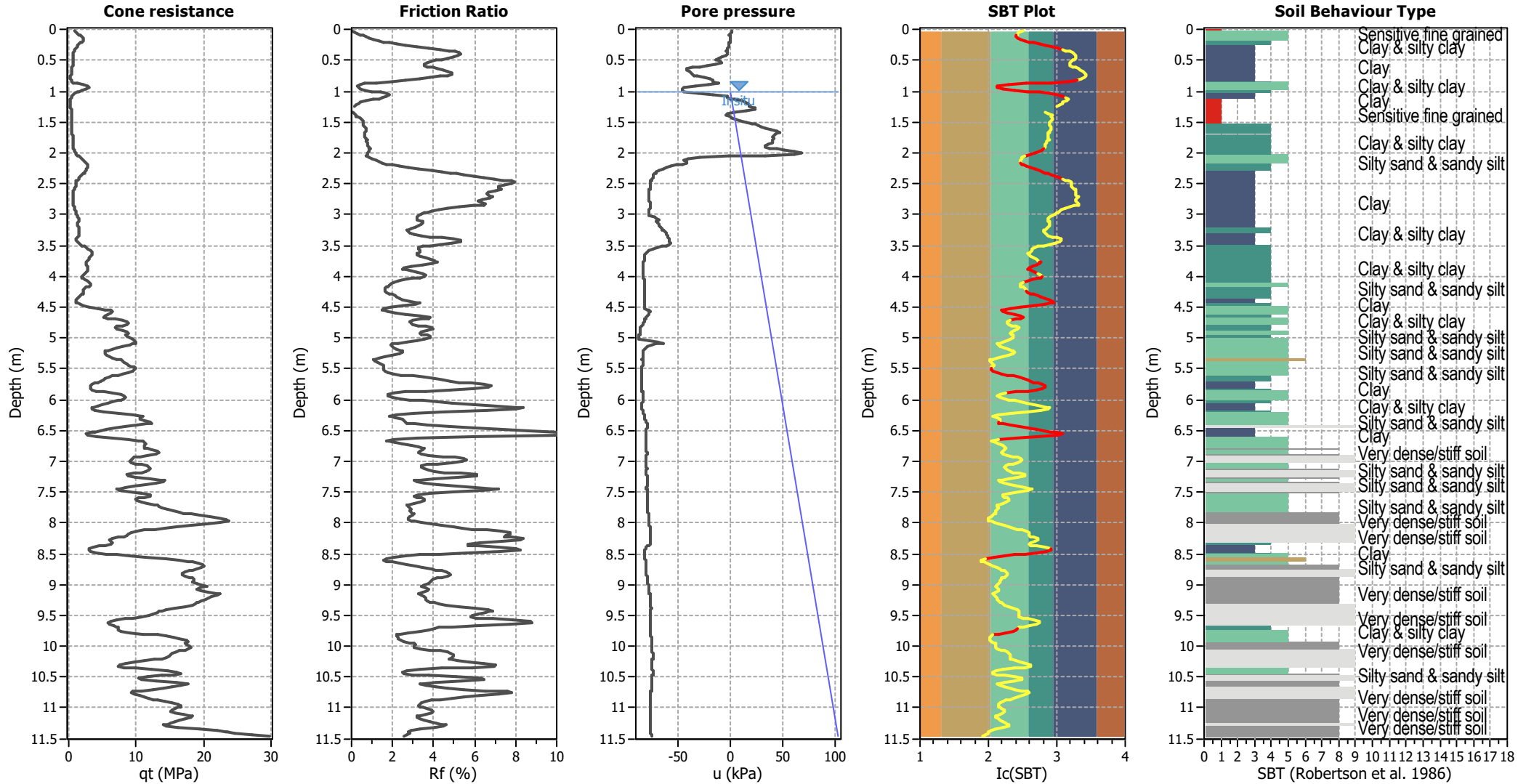
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

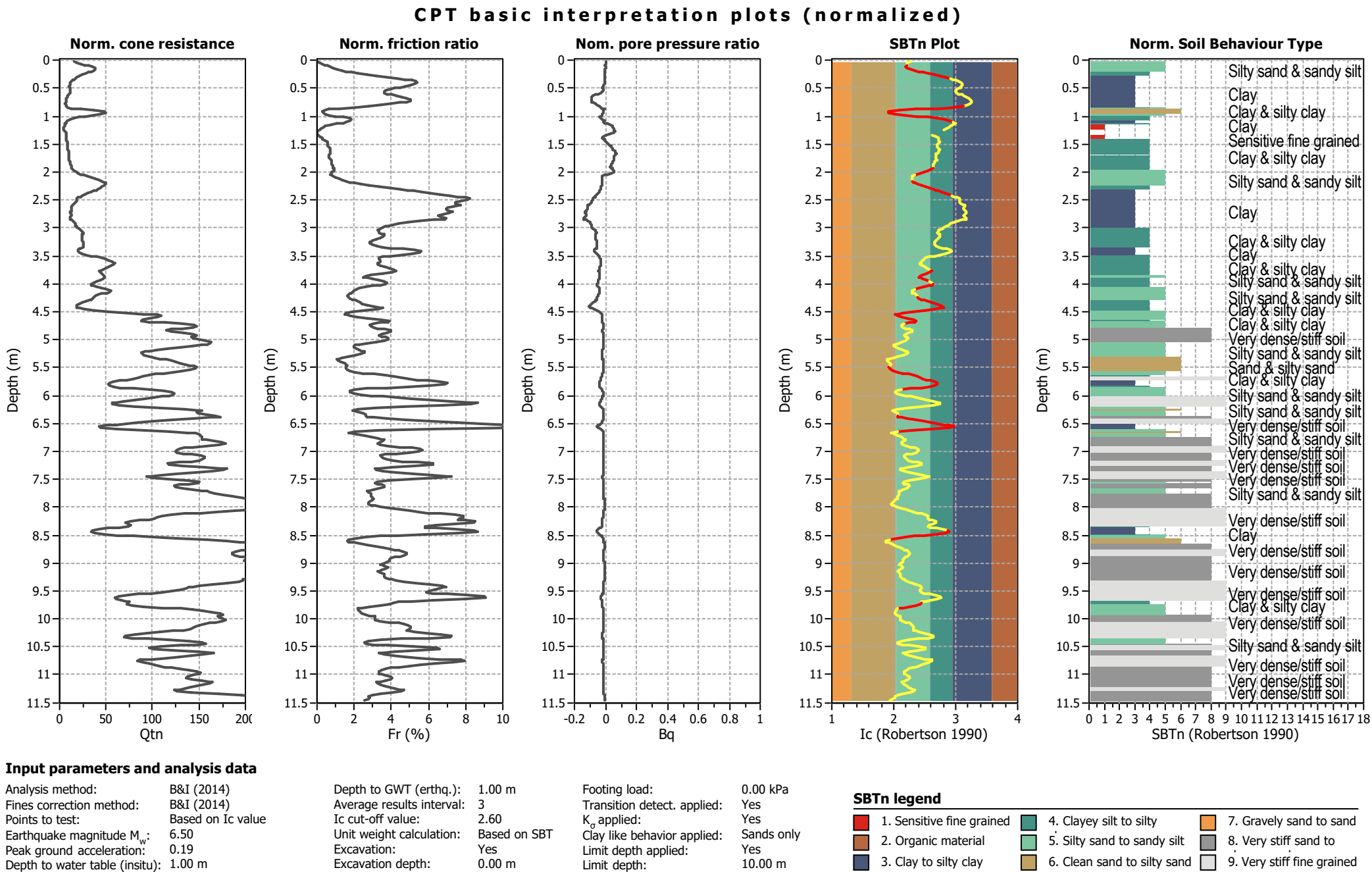


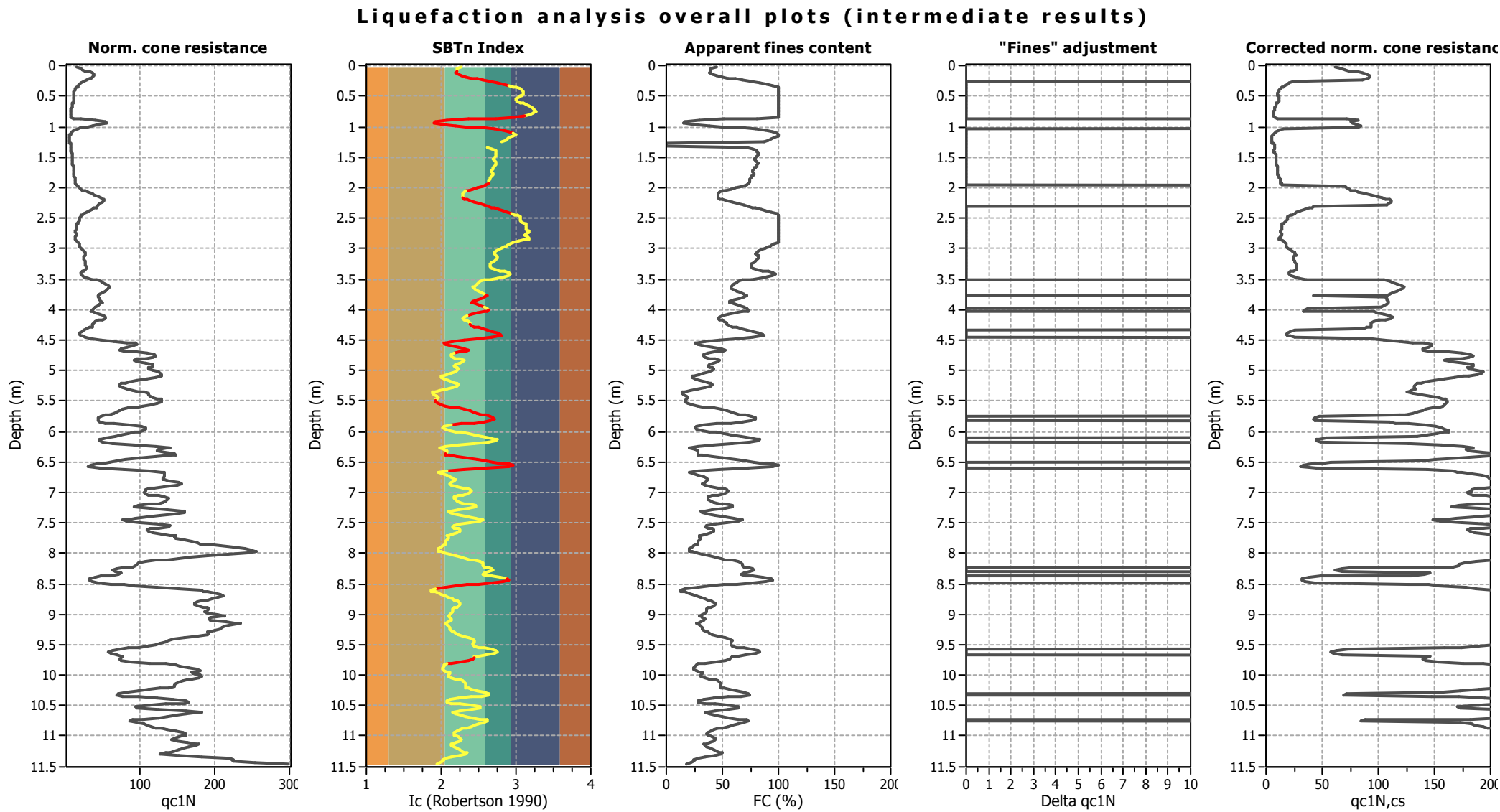
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

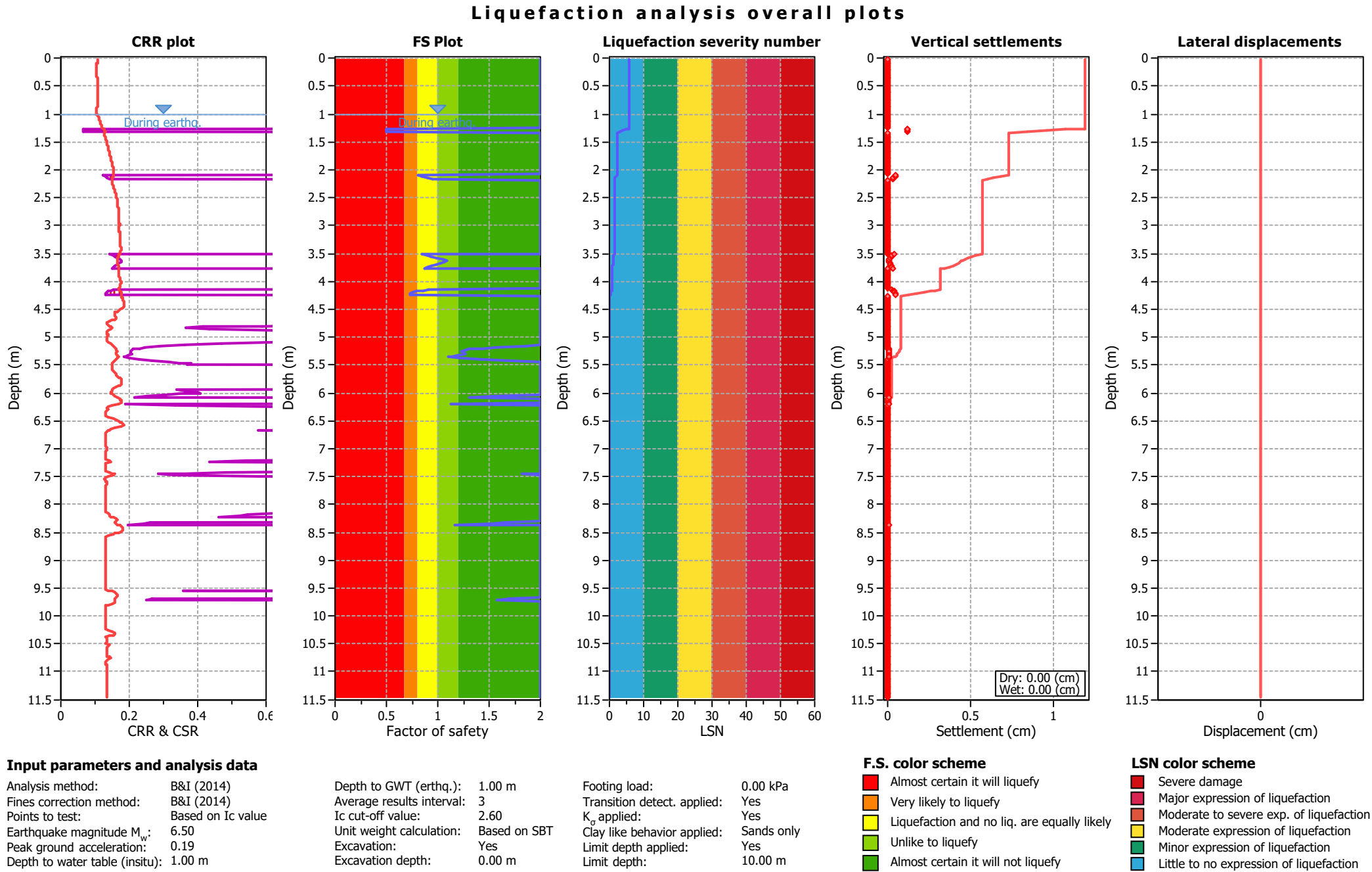
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



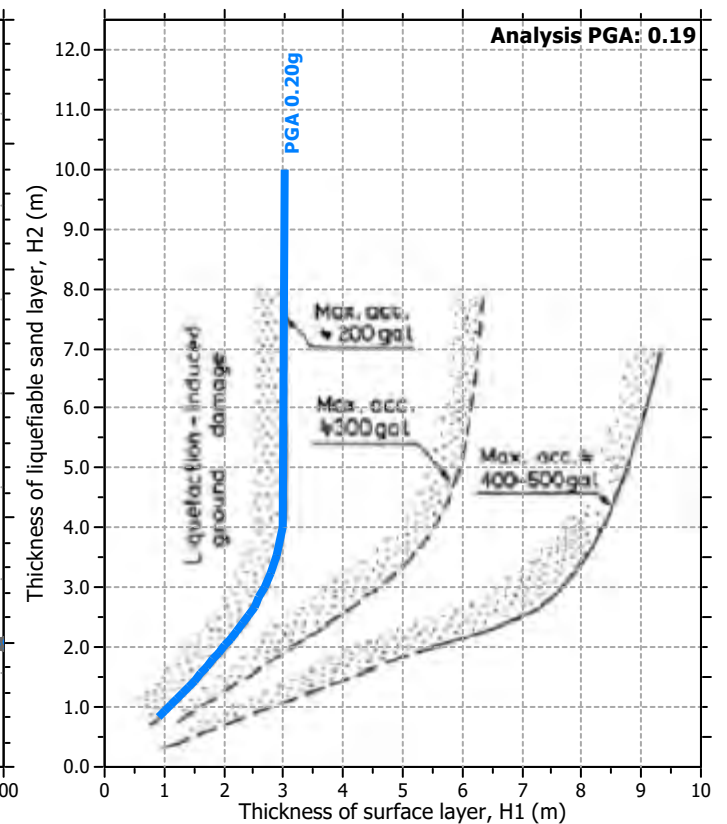
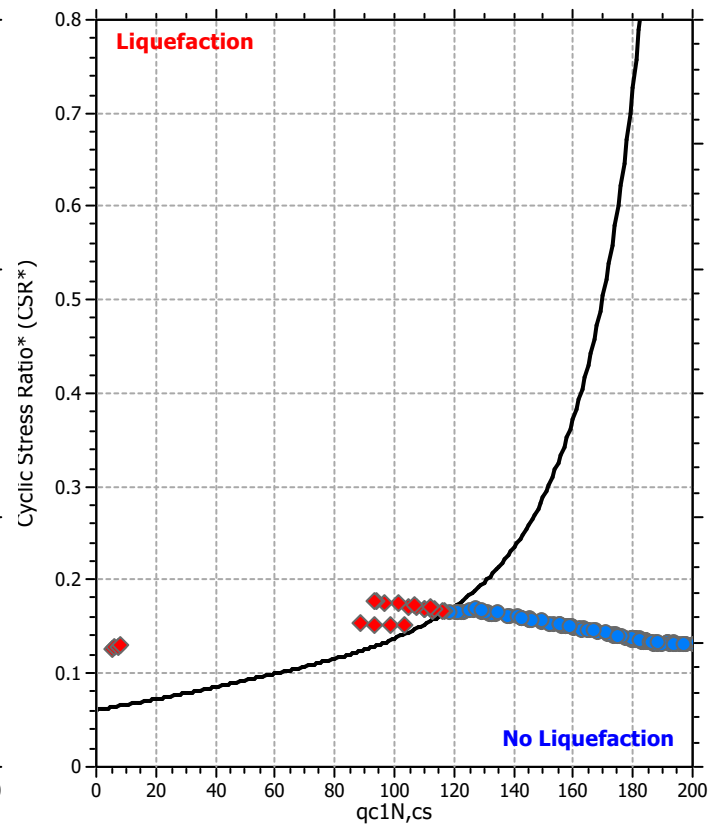
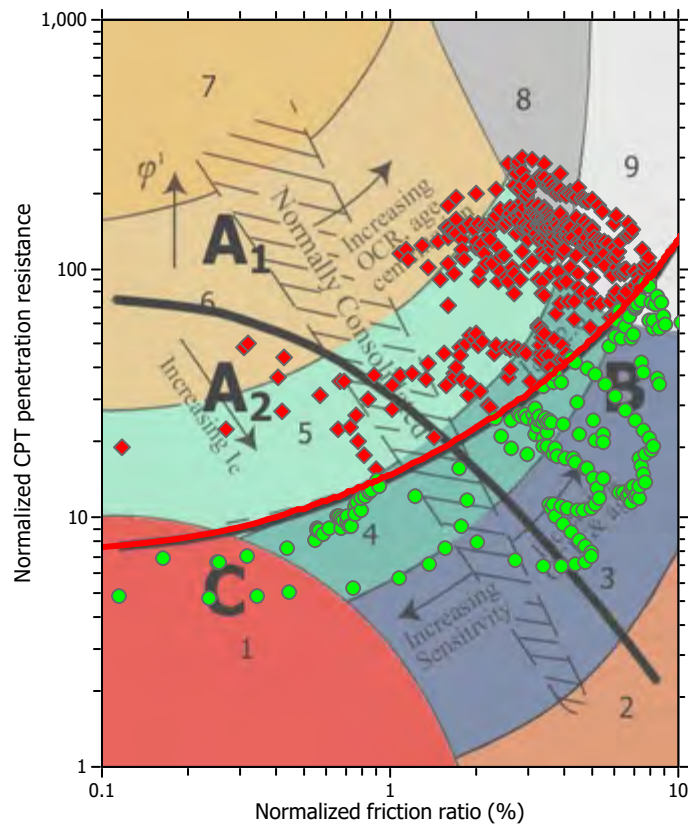


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



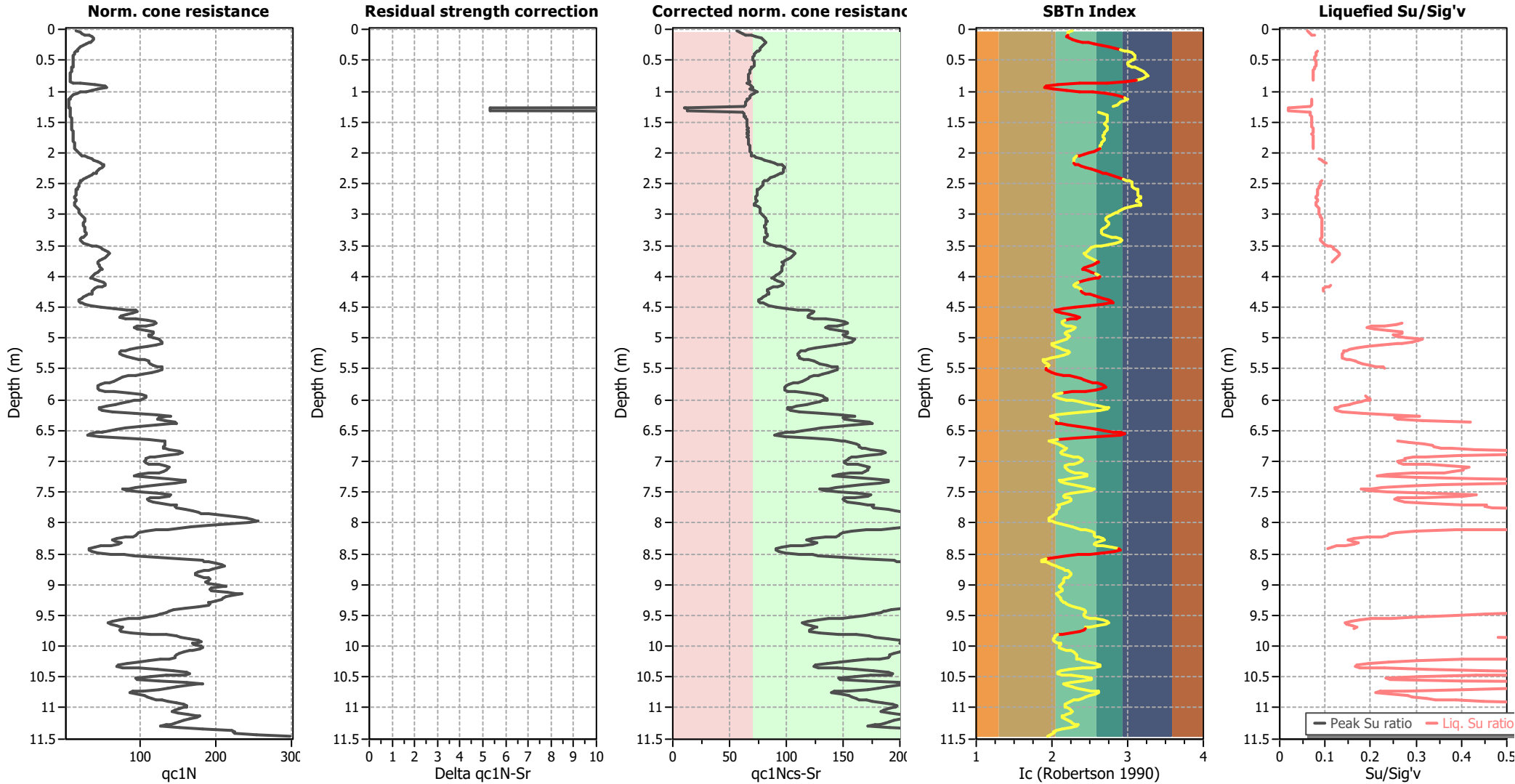
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

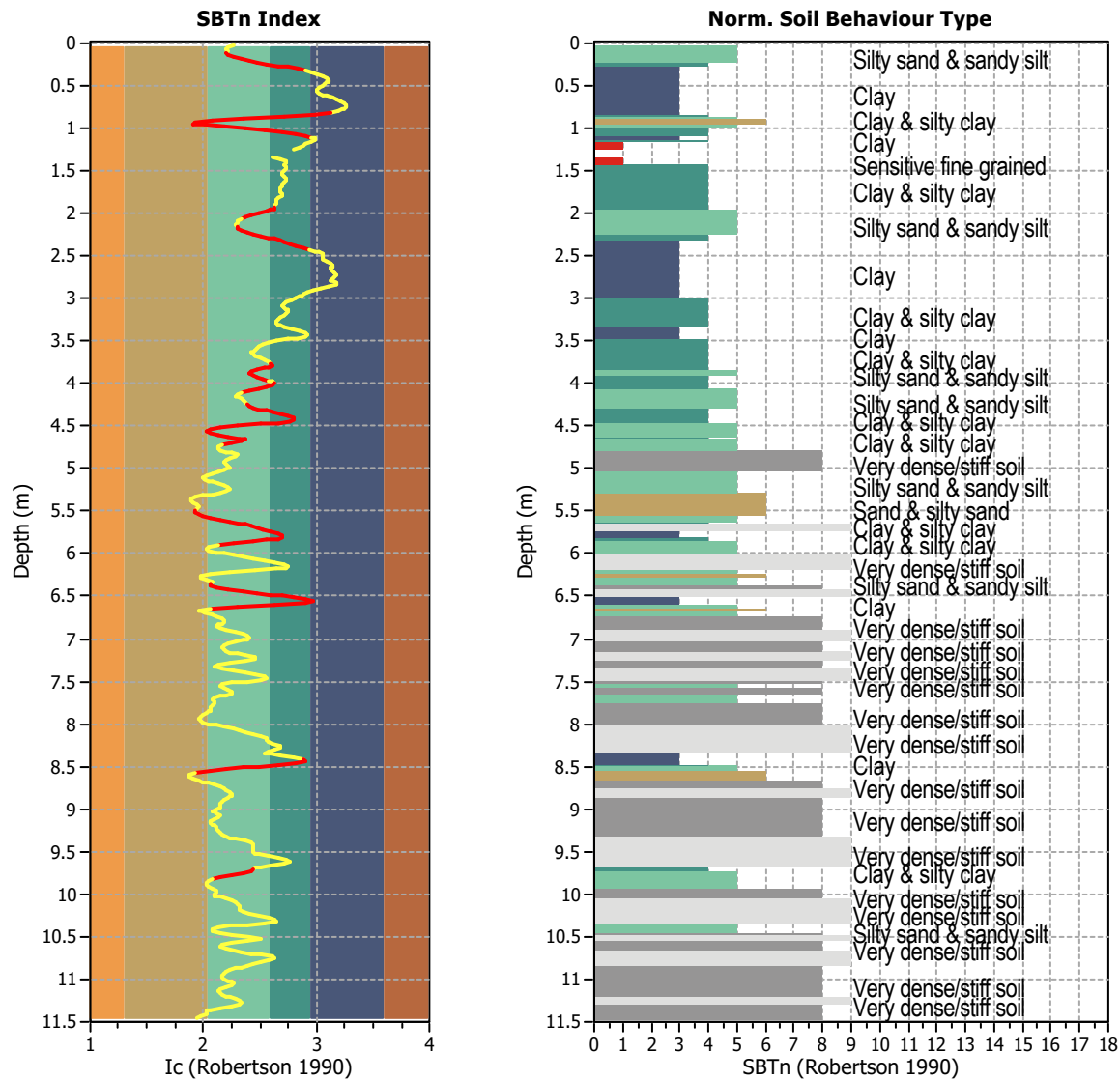
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

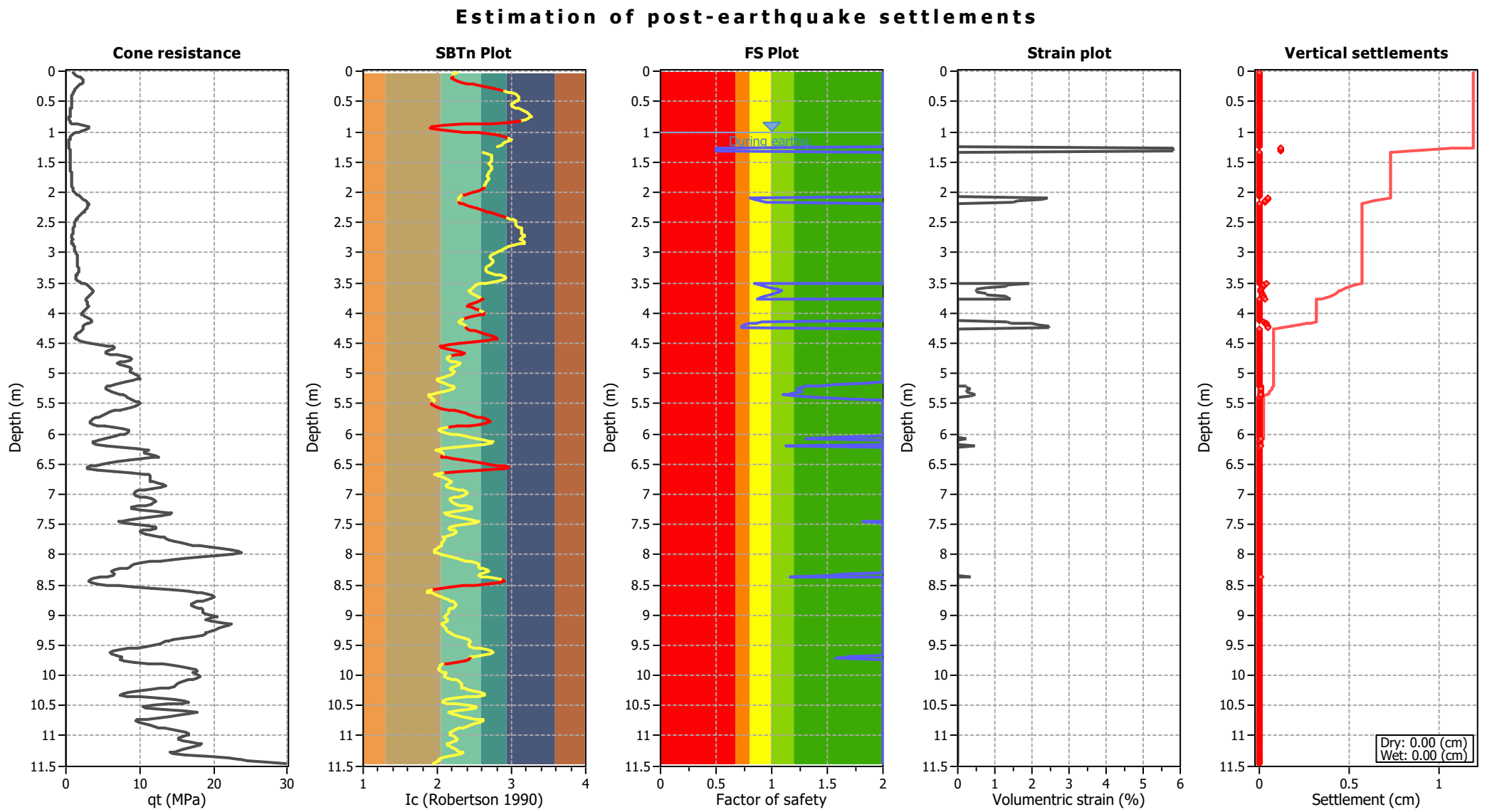


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

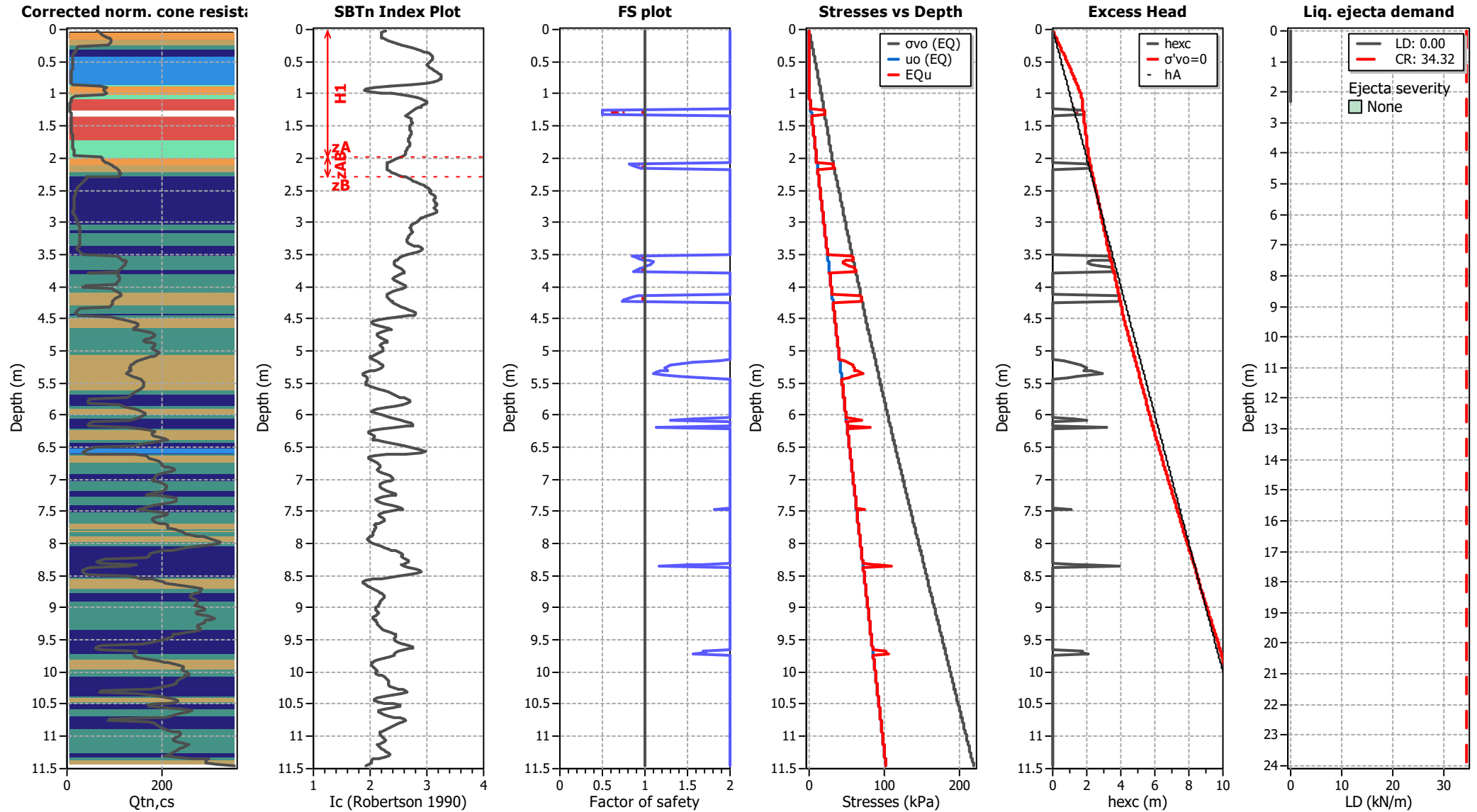
Total points in CPT file: 573
Total points excluded: 145
Exclusion percentage: 25.31%
Number of layers detected: 18



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

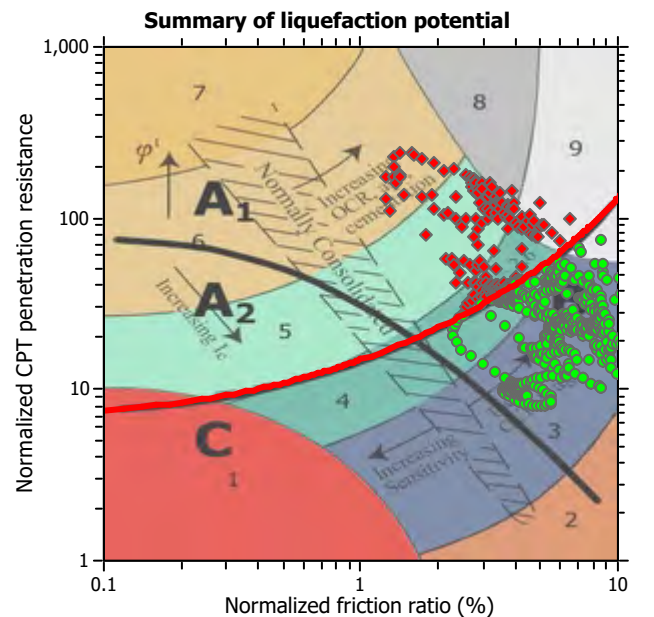
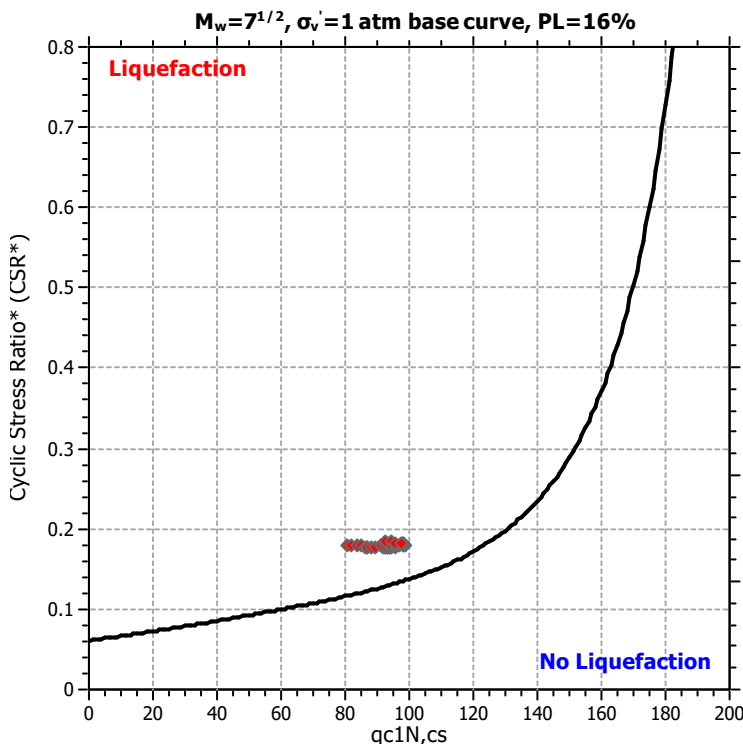
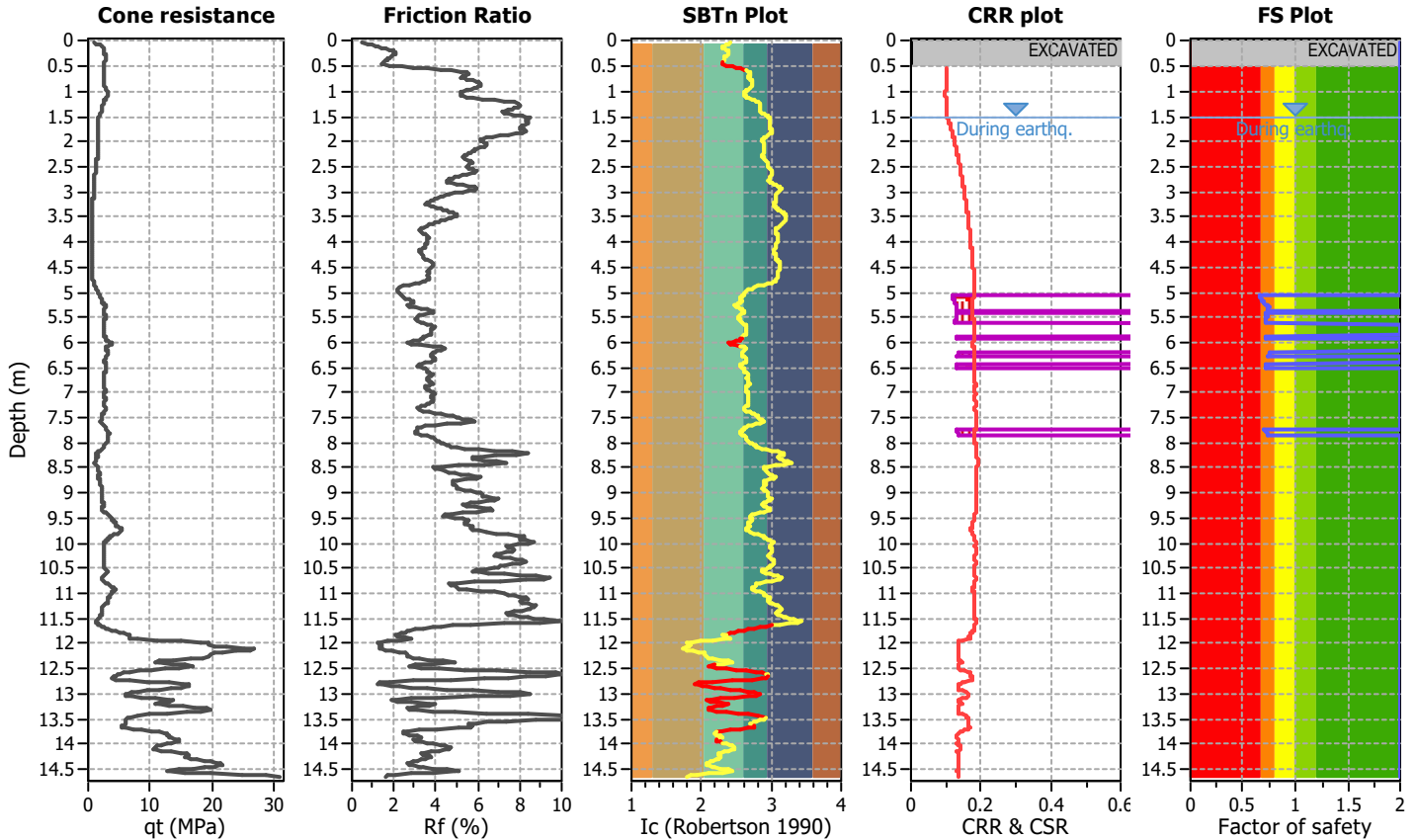
Project title : Sunfield Landholding

Location :

CPT file : CPT112

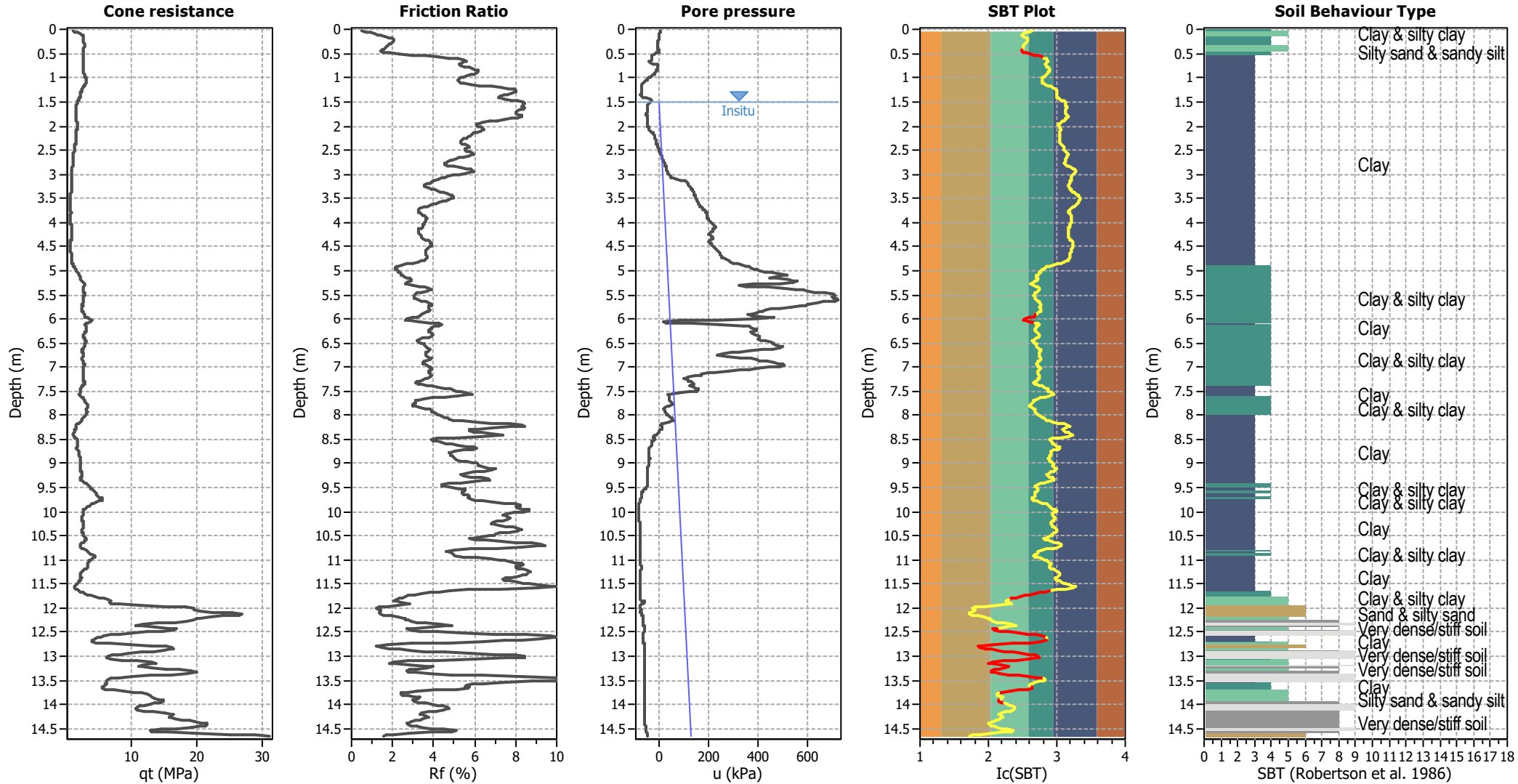
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.50 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.50 m	Excavation depth:	0.50 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

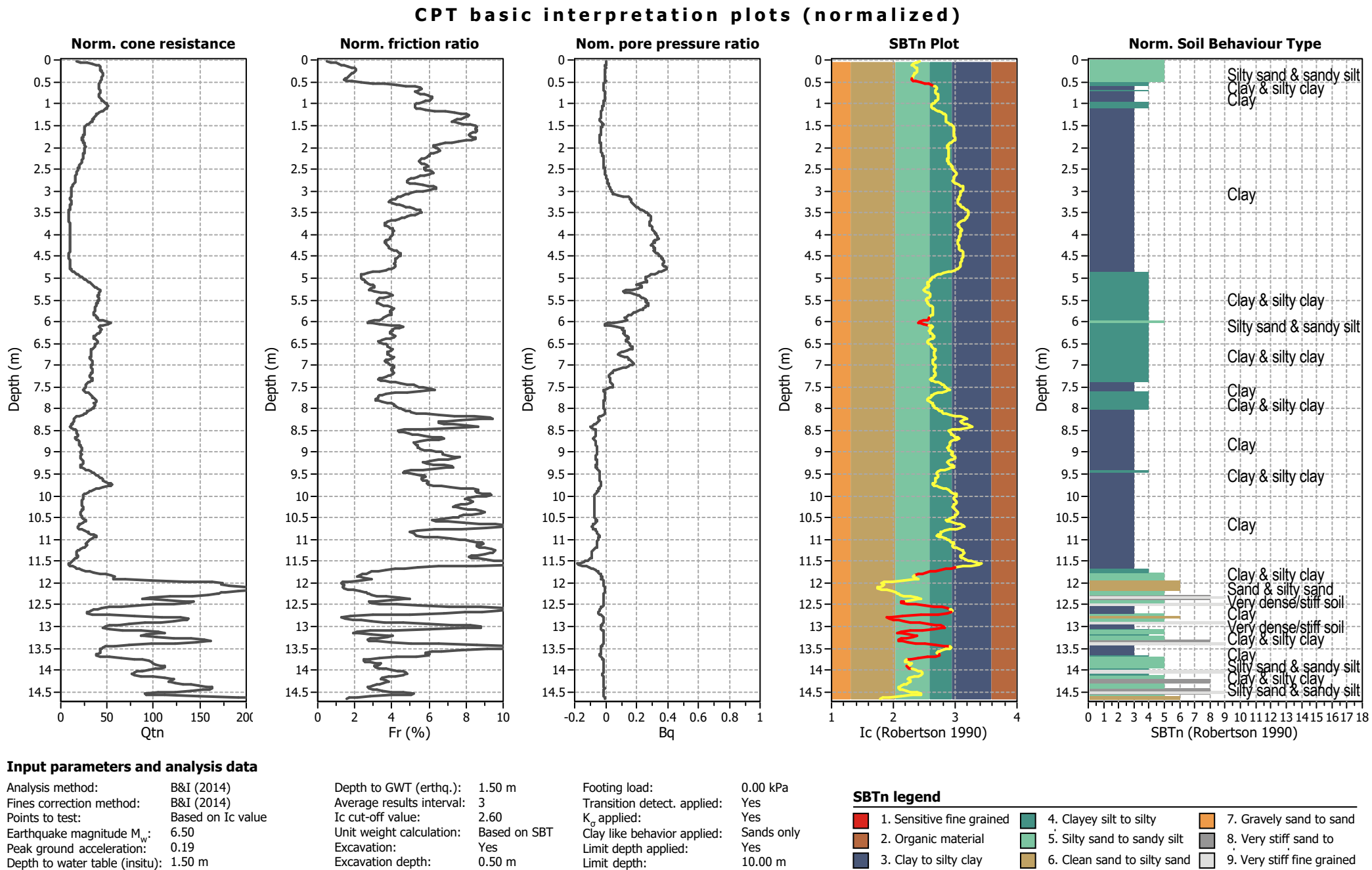


Input parameters and analysis data

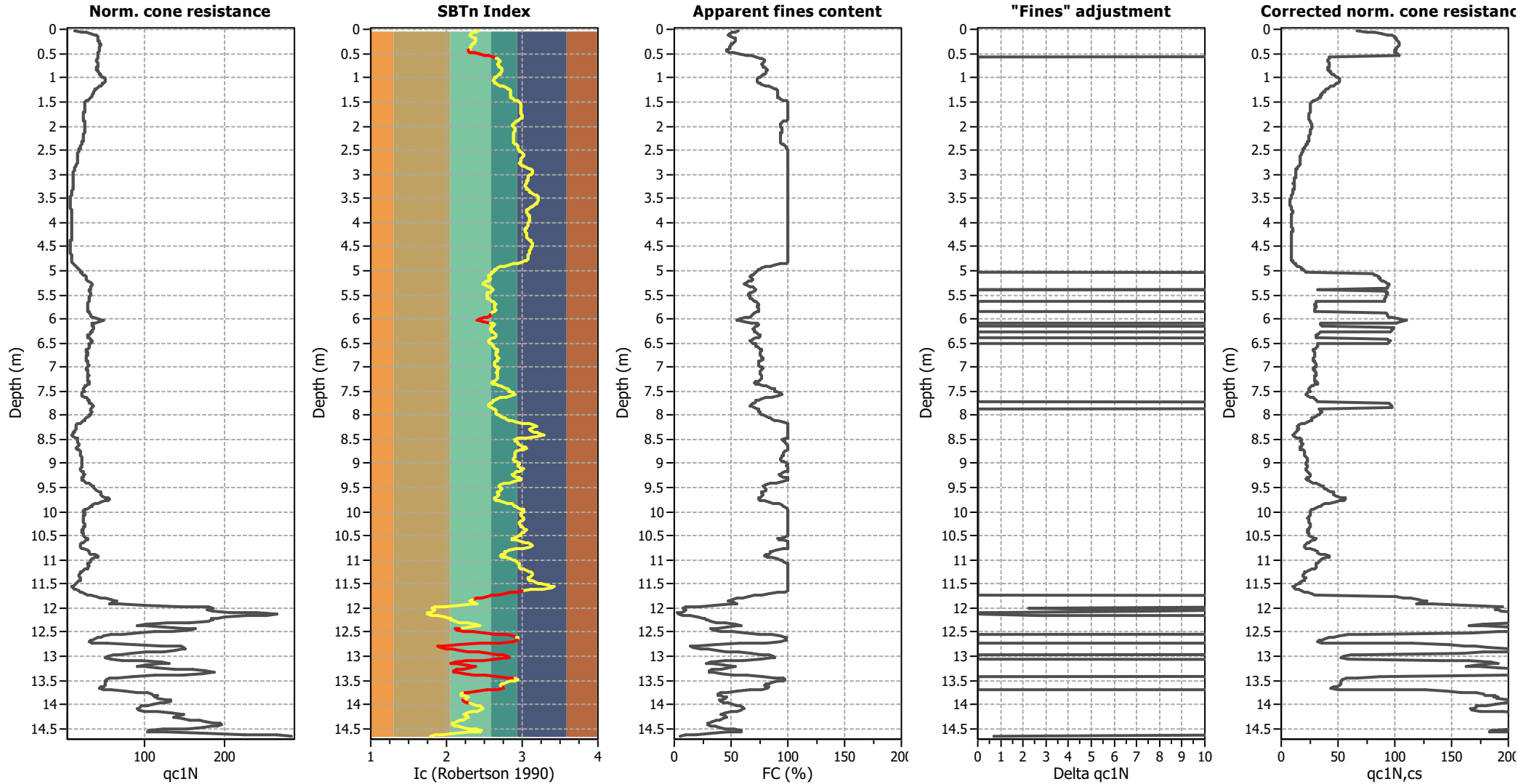
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

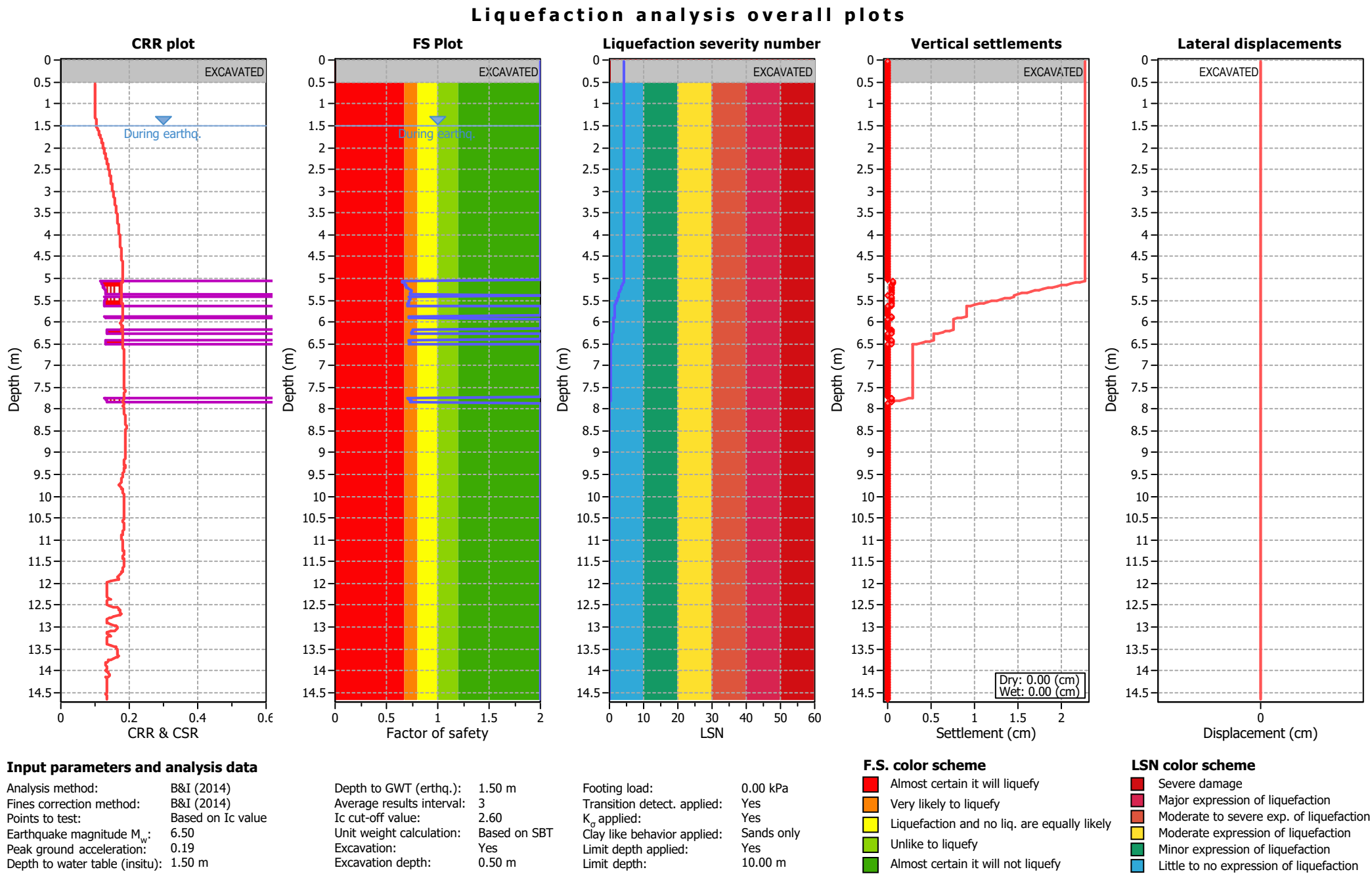


Liquefaction analysis overall plots (intermediate results)

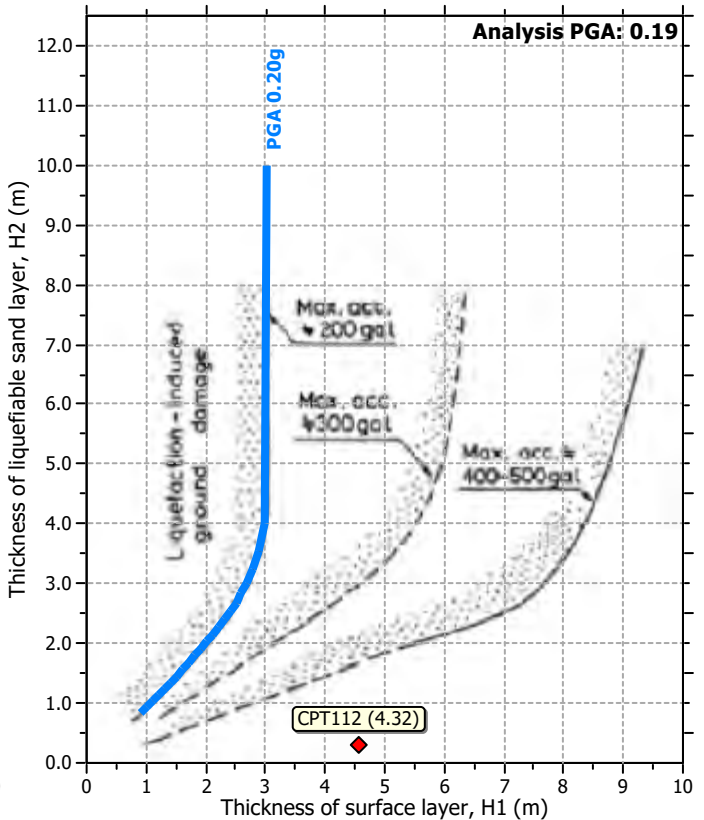
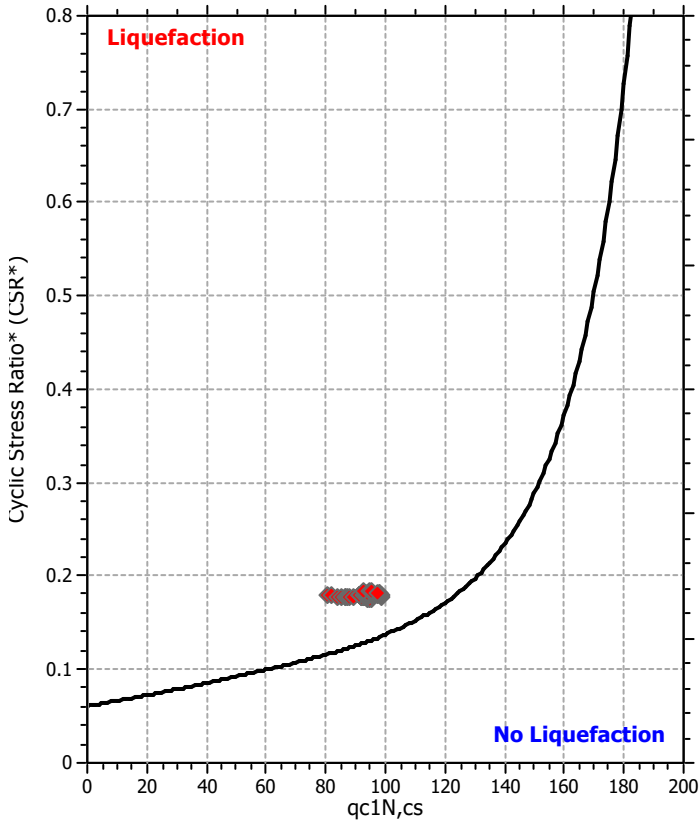
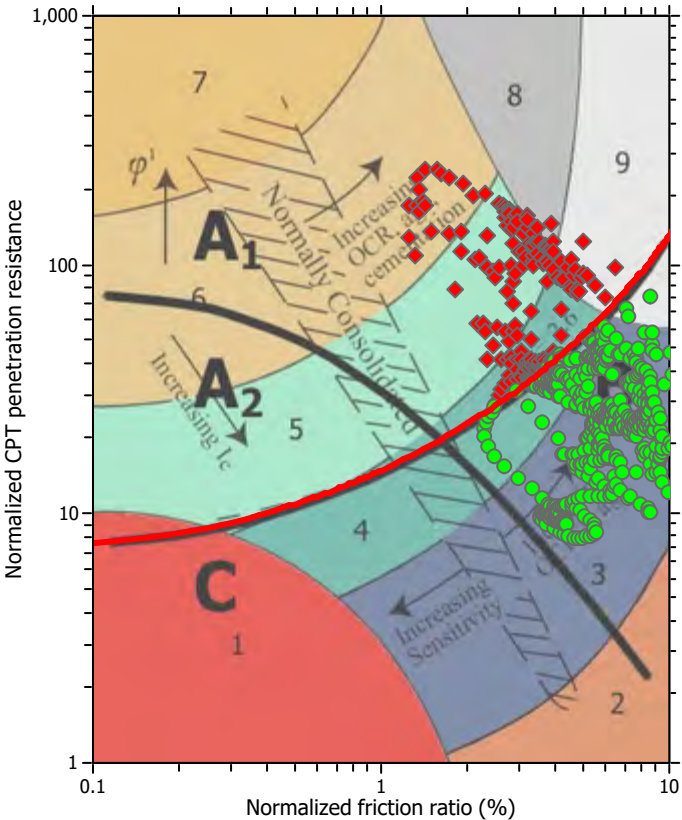


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m



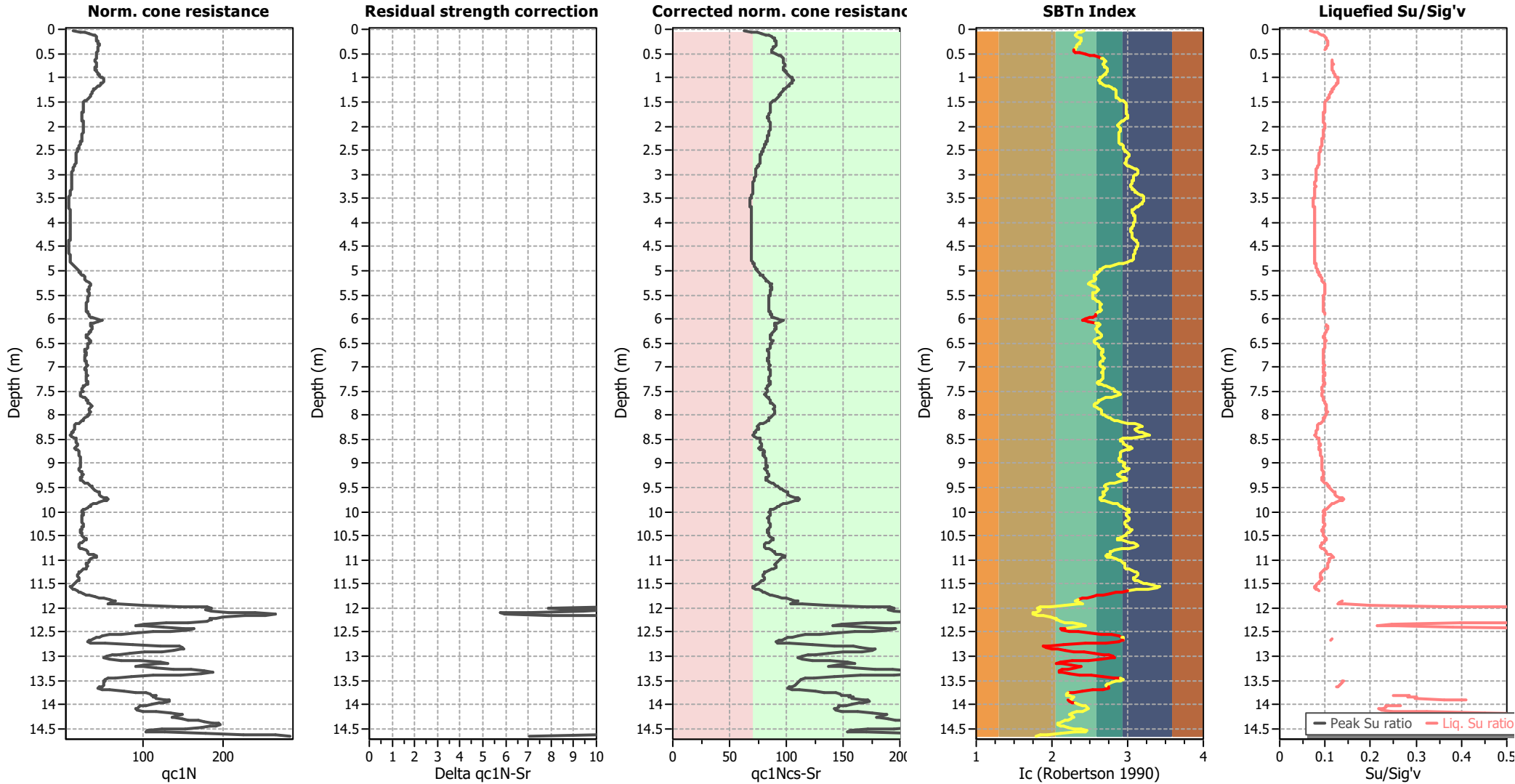
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

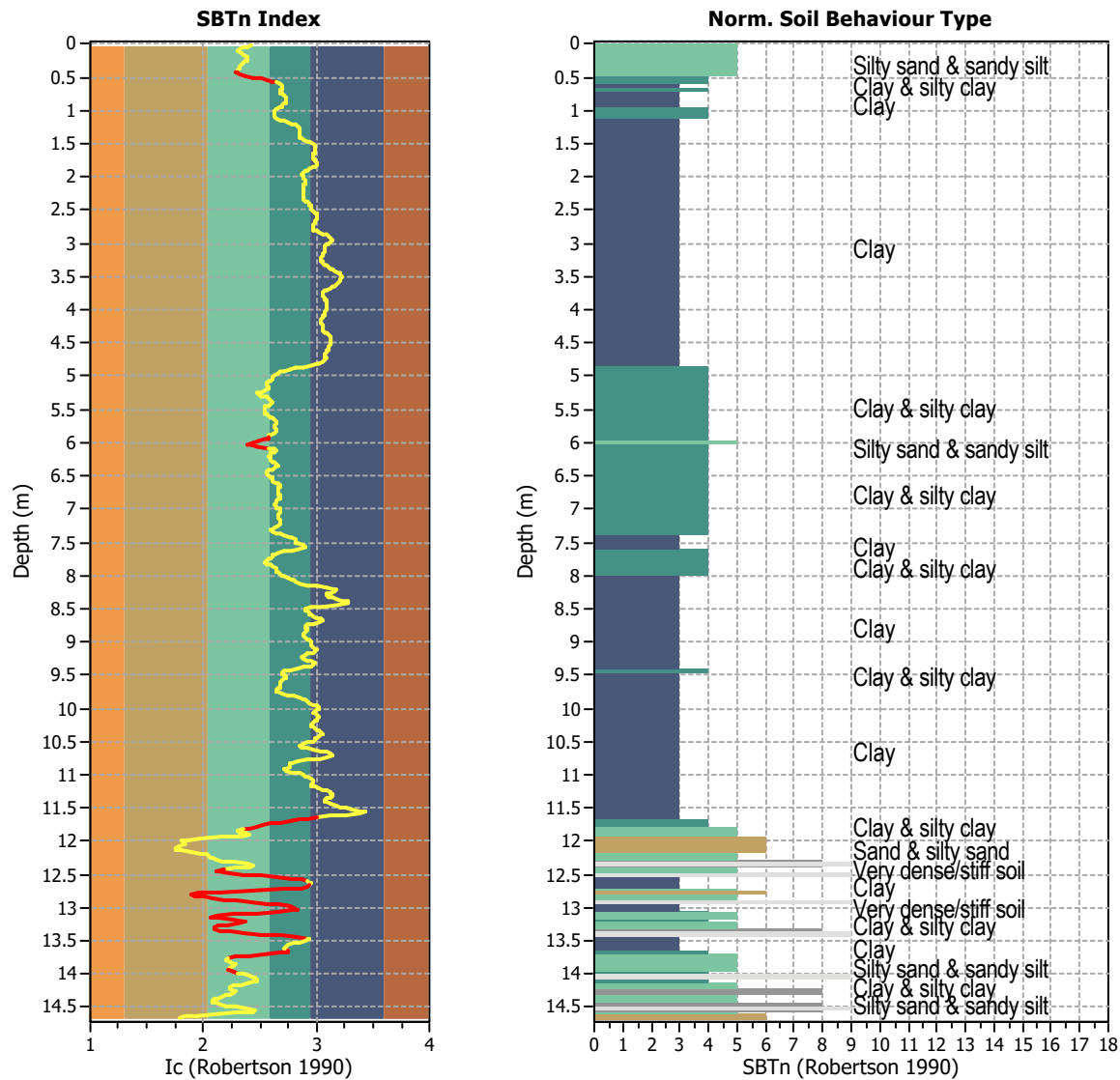
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

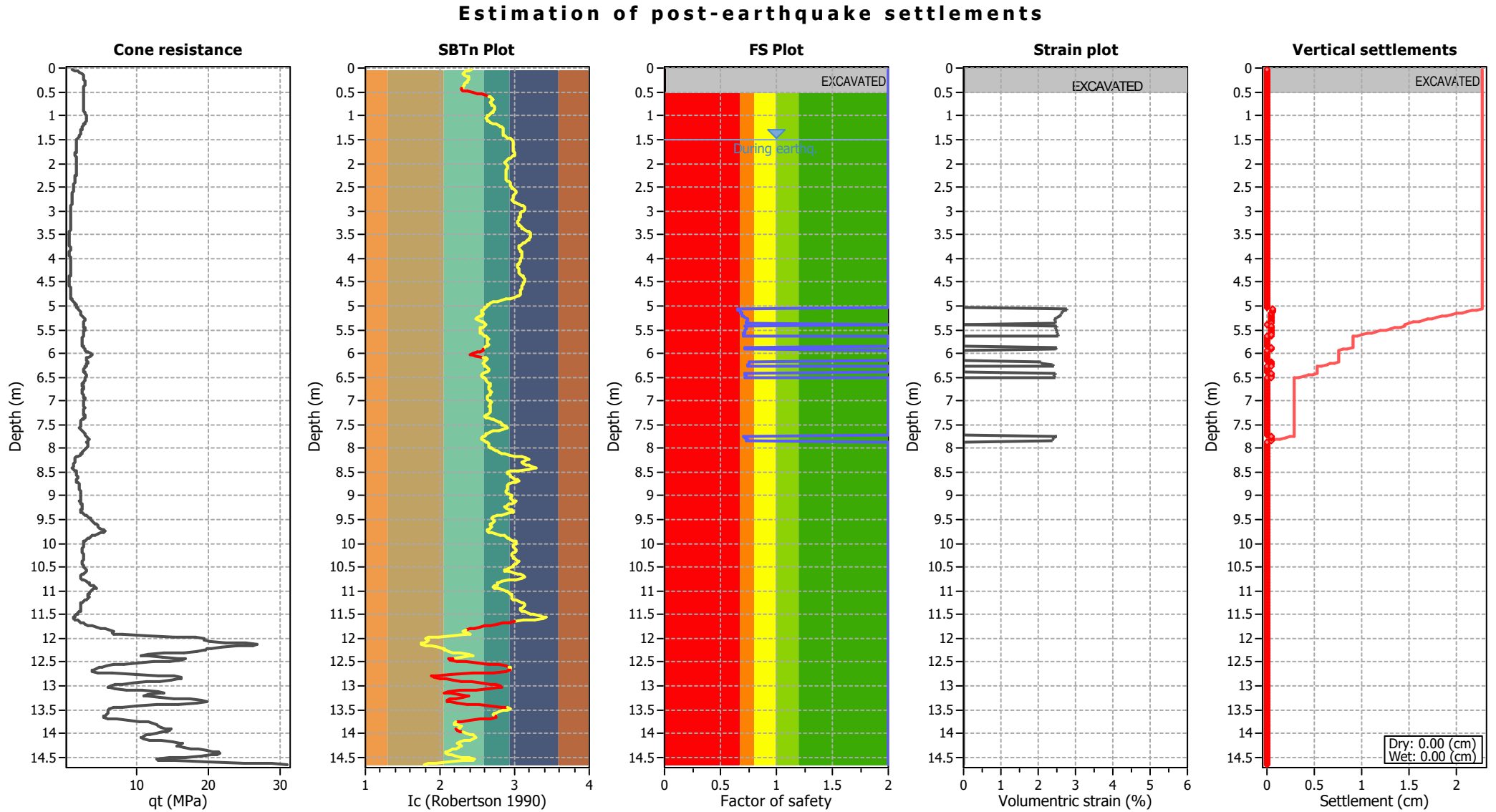


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

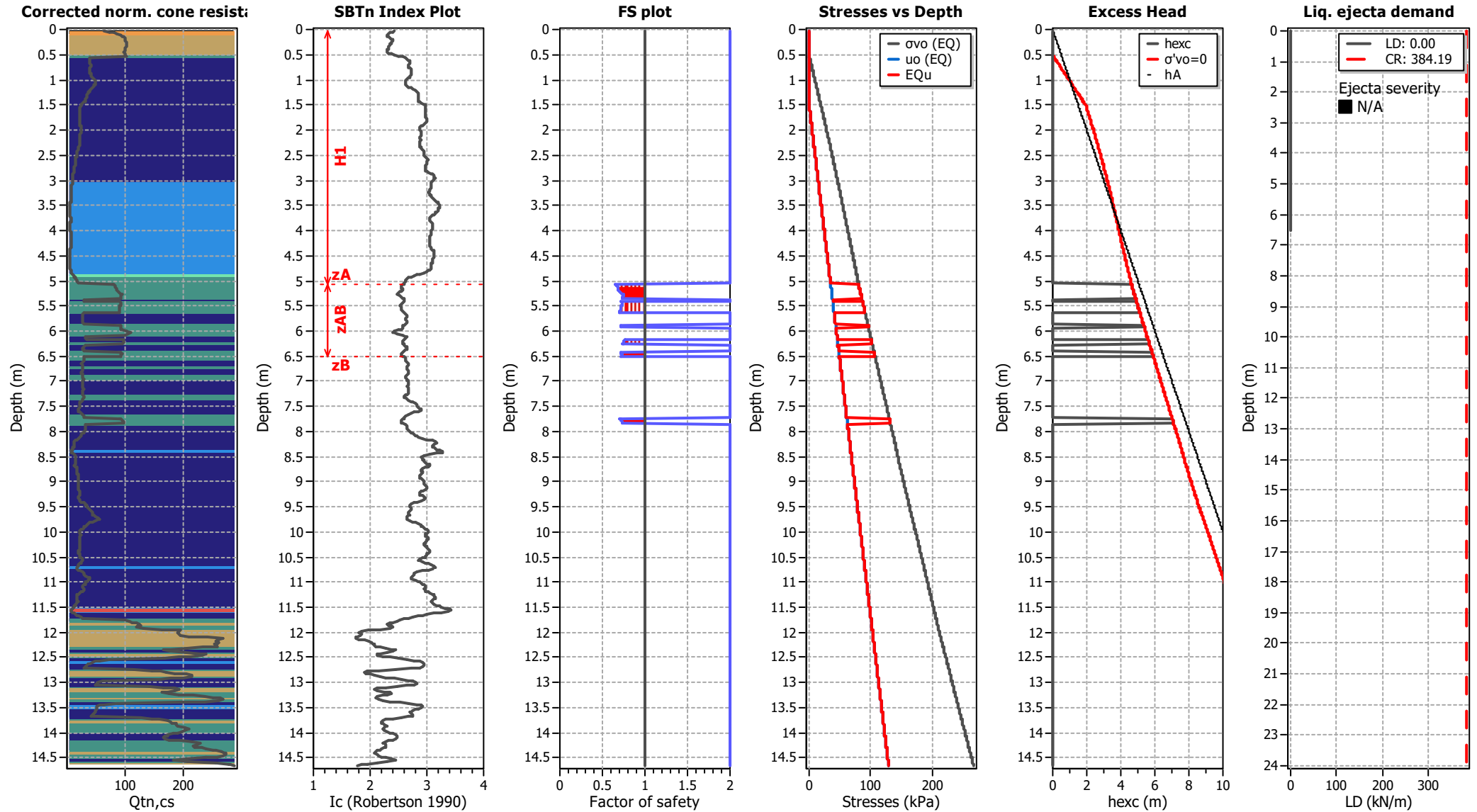
Total points in CPT file: 733
Total points excluded: 93
Exclusion percentage: 12.69%
Number of layers detected: 13



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

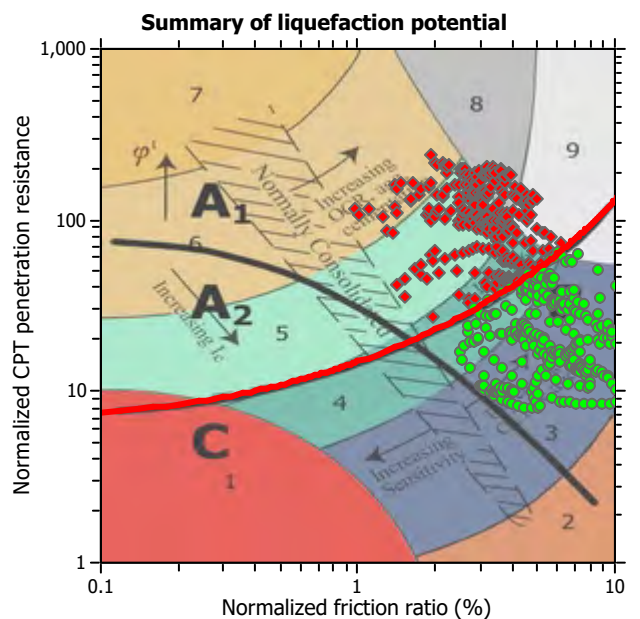
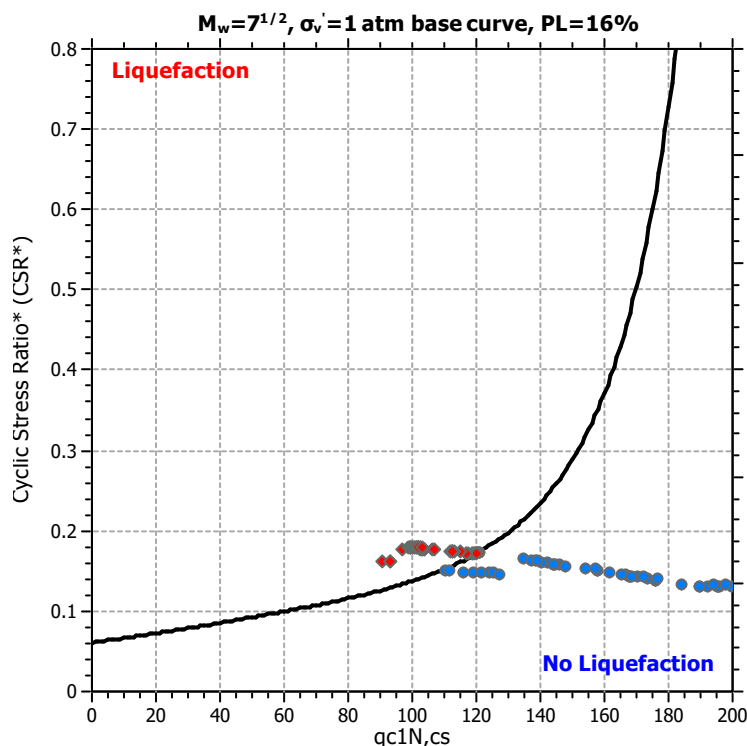
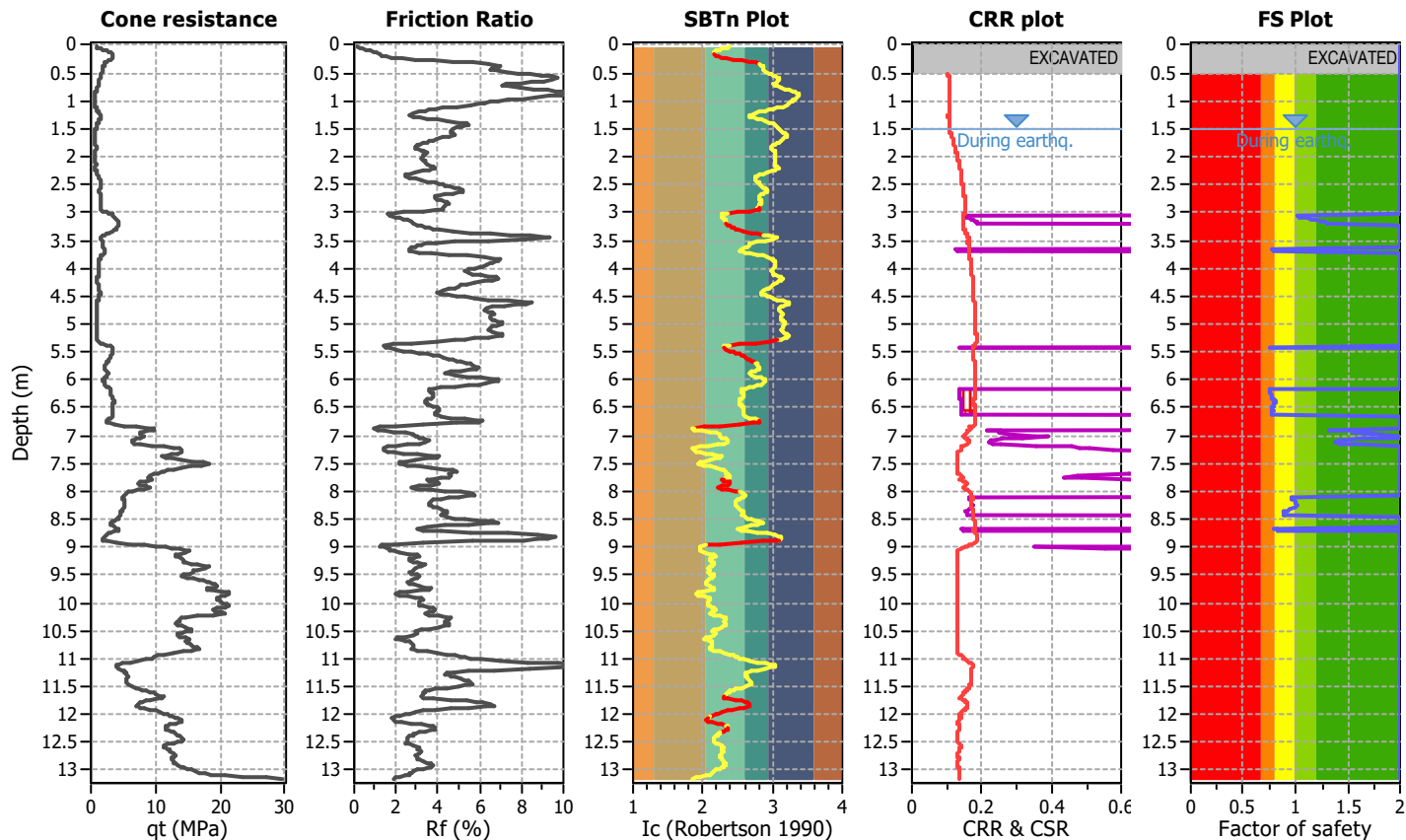
Project title : Sunfield Landholding

Location :

CPT file : CPT113

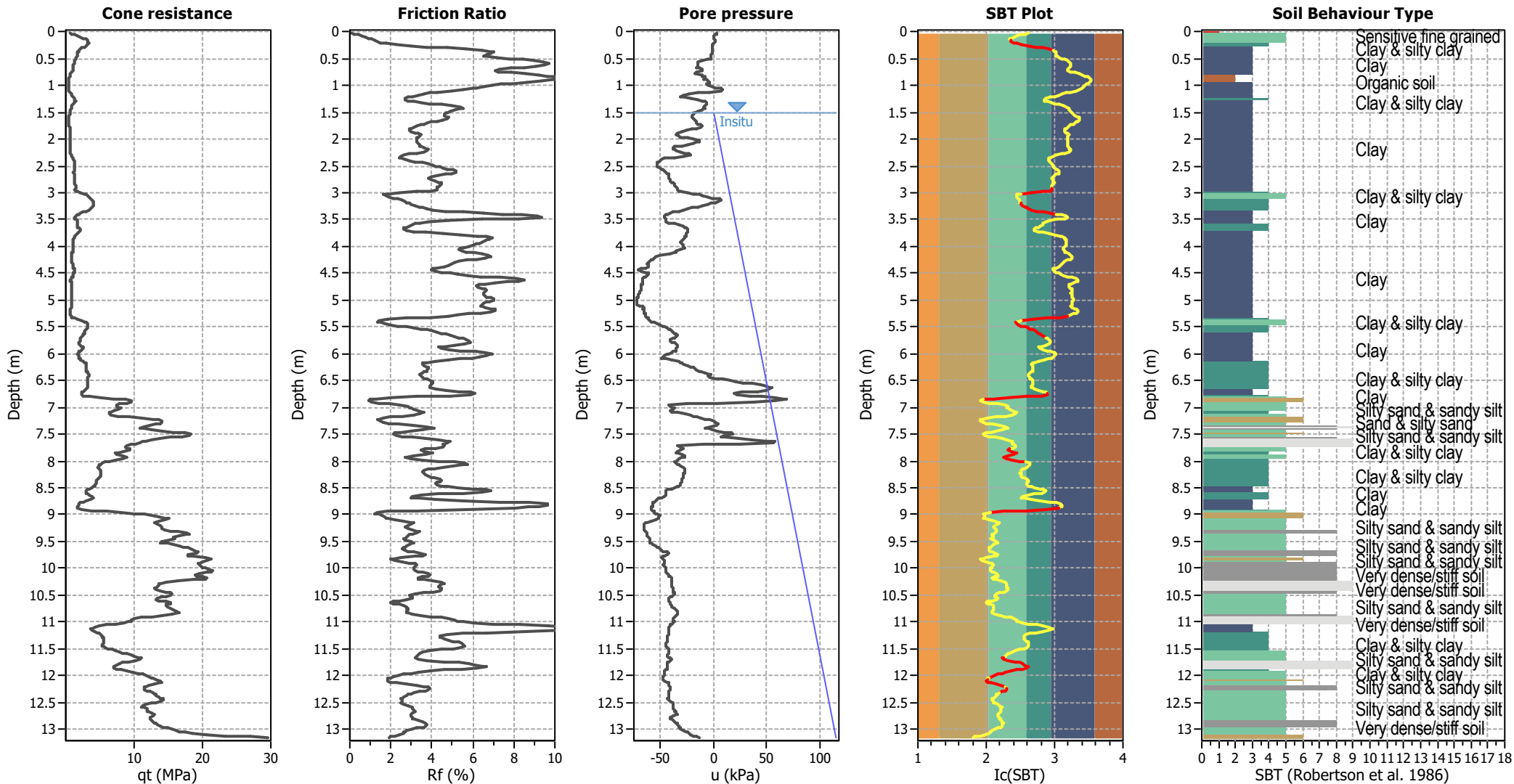
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.50 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.50 m	Excavation depth:	0.50 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

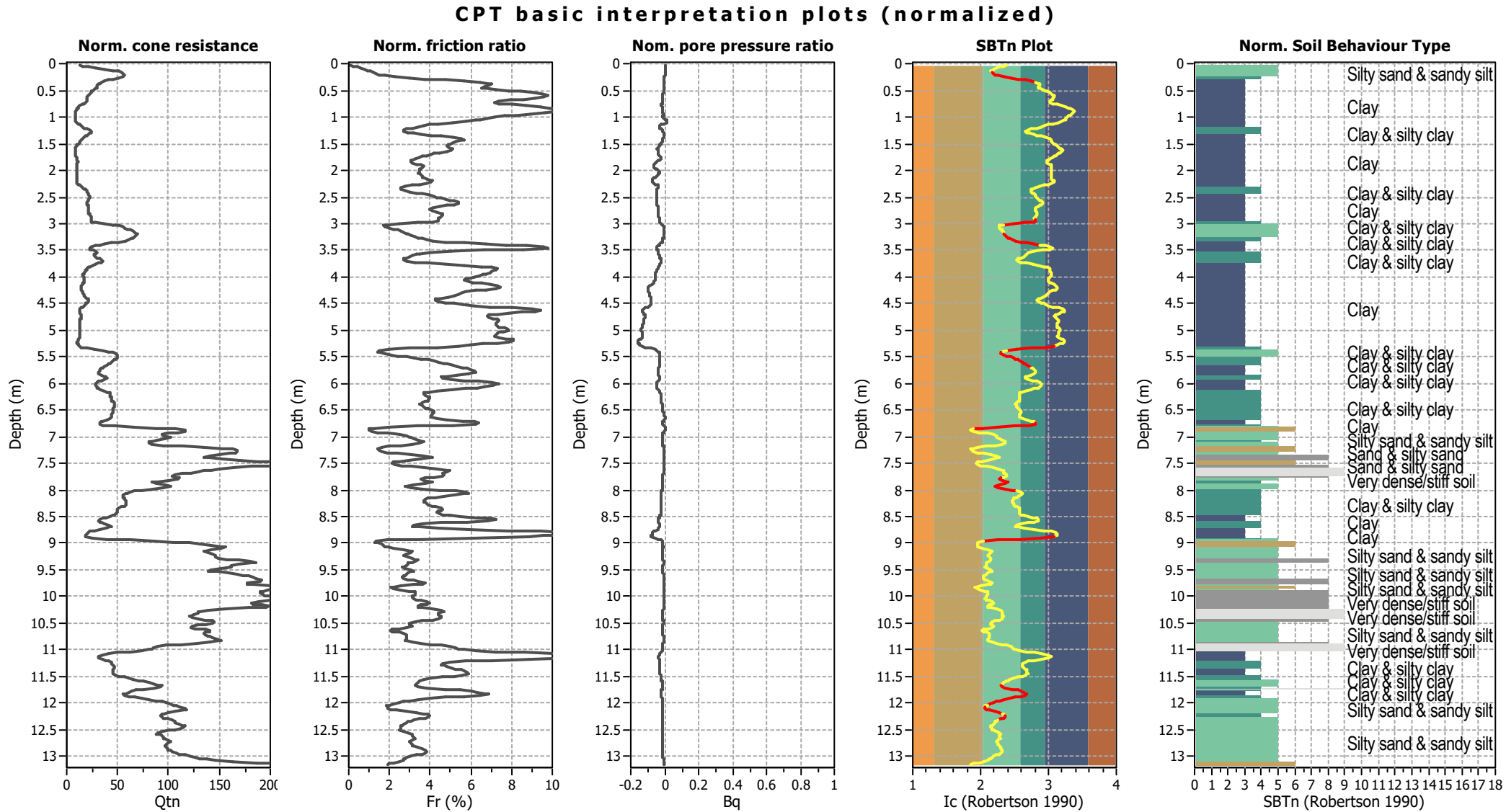


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

SBT legend

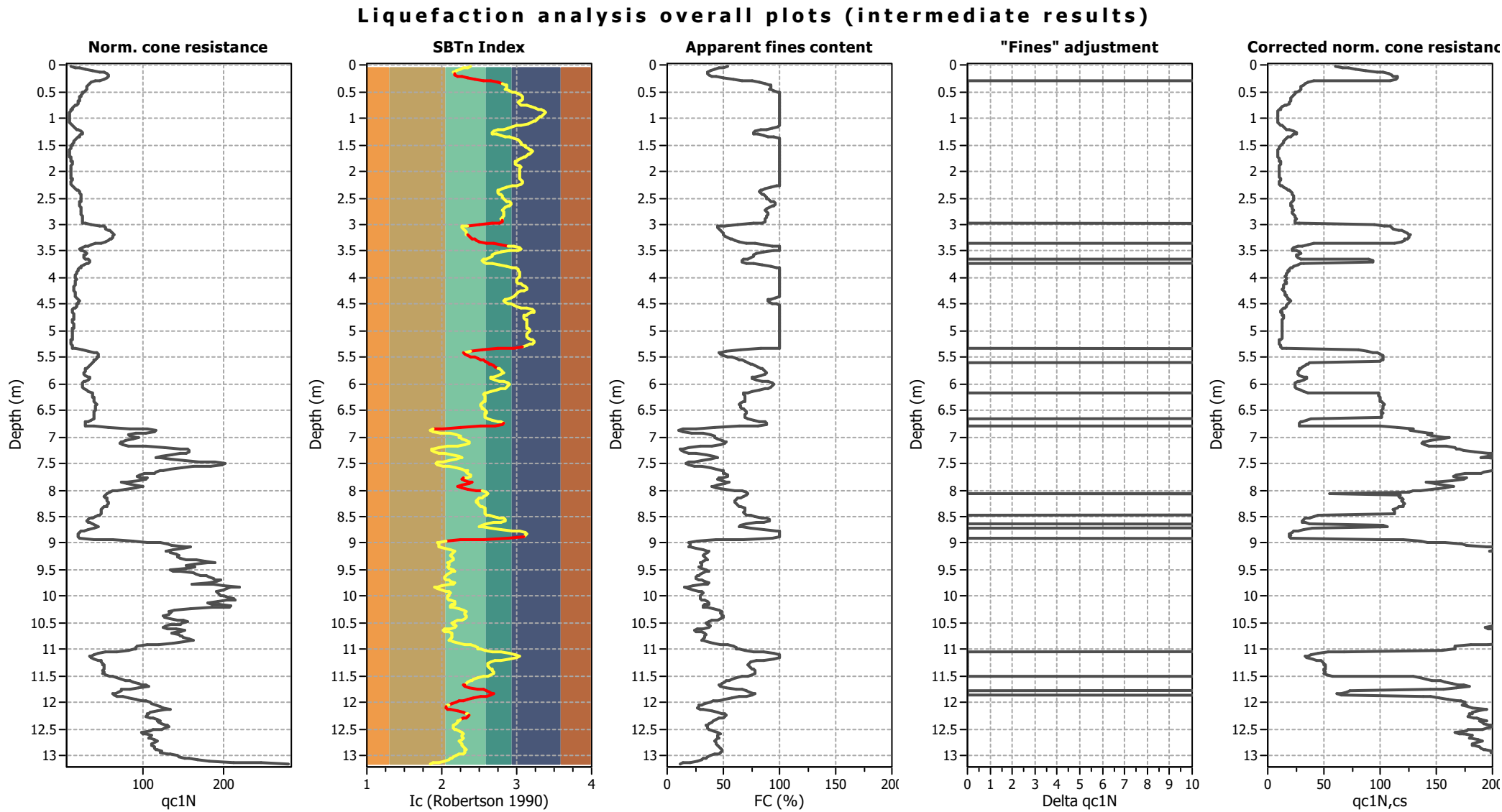
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

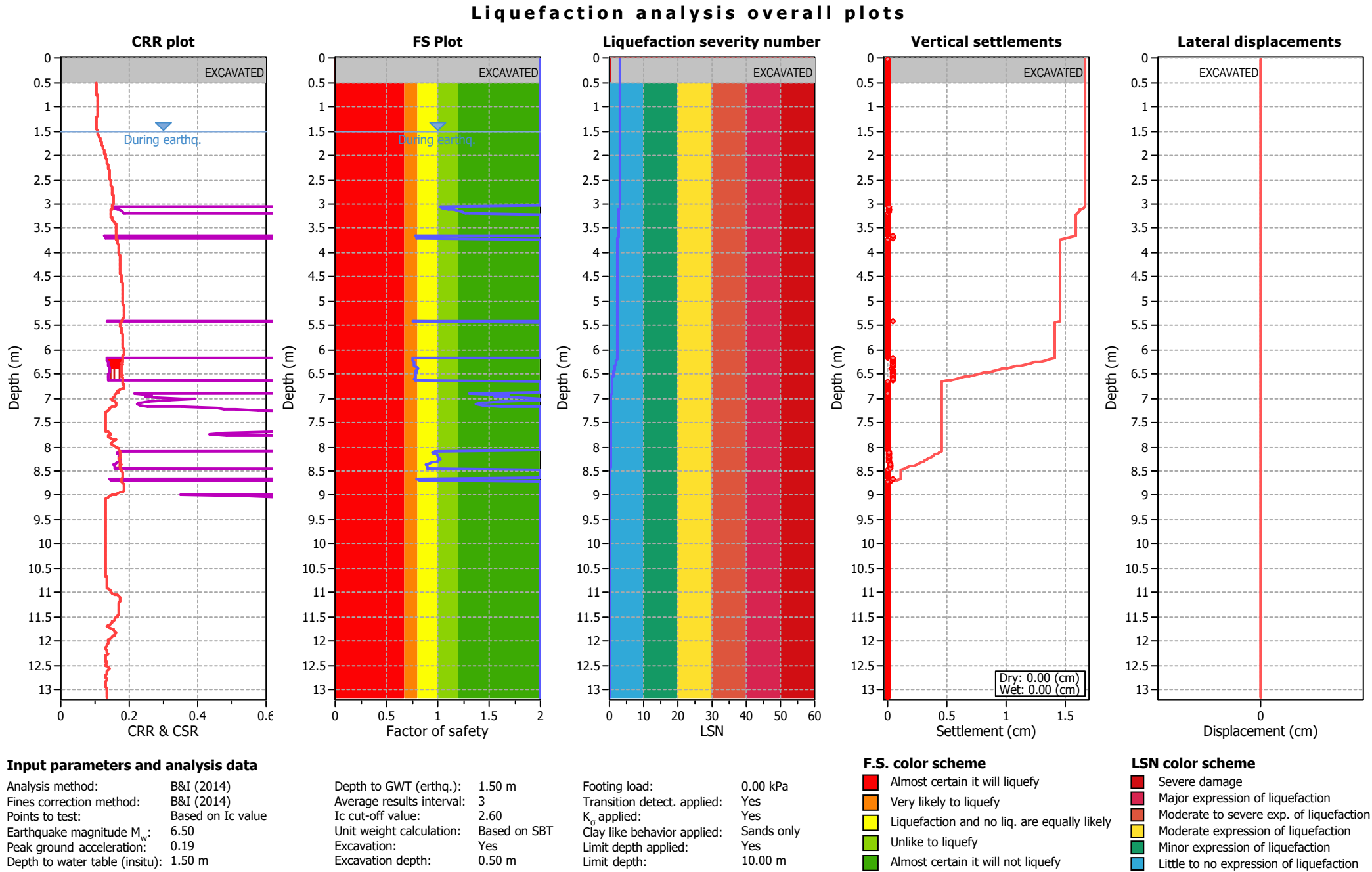
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

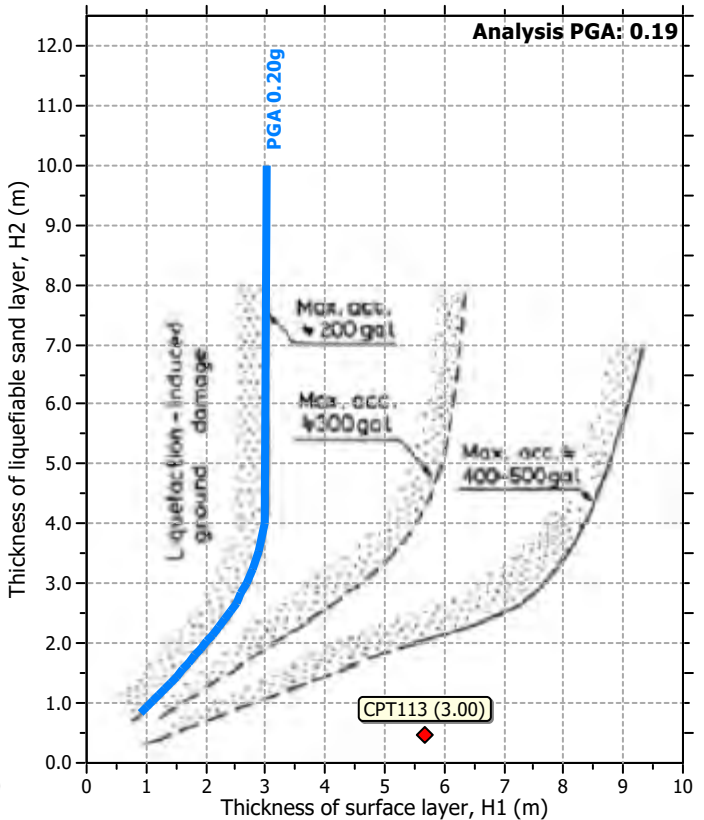
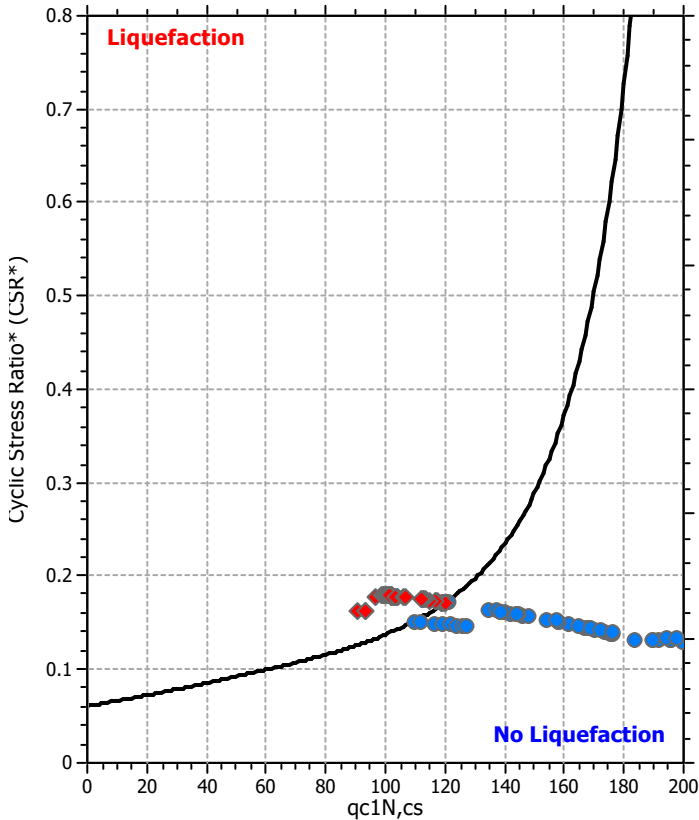
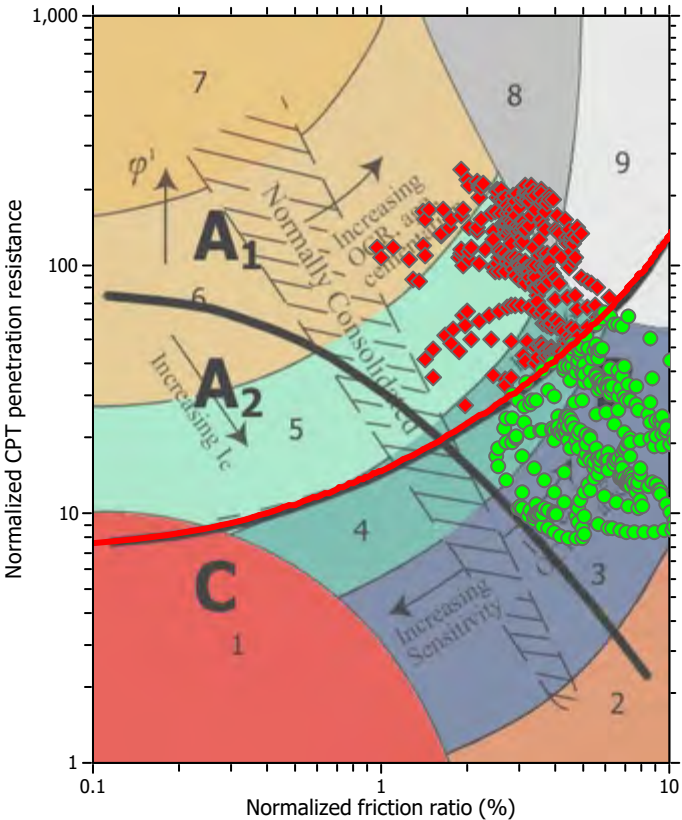


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m



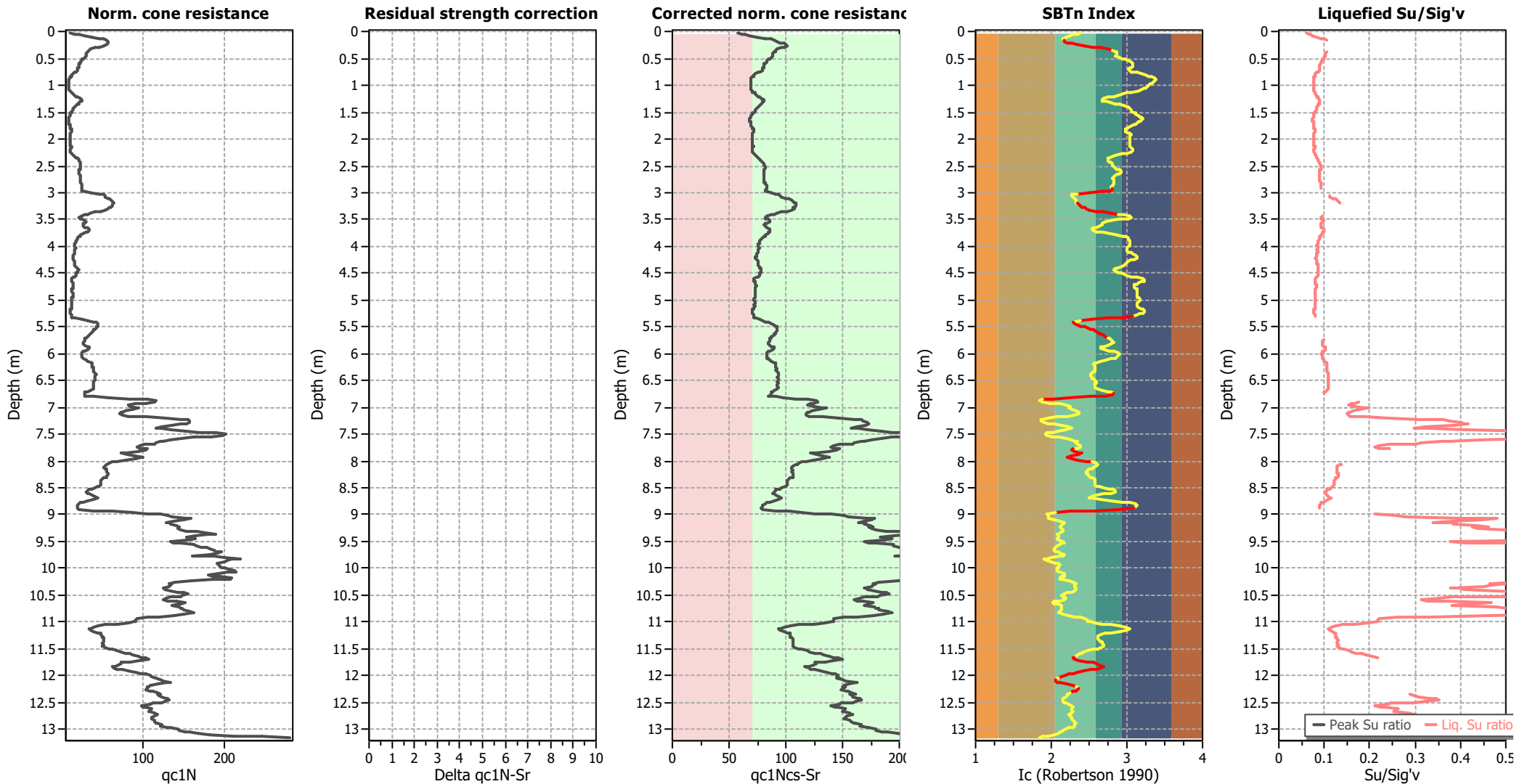
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

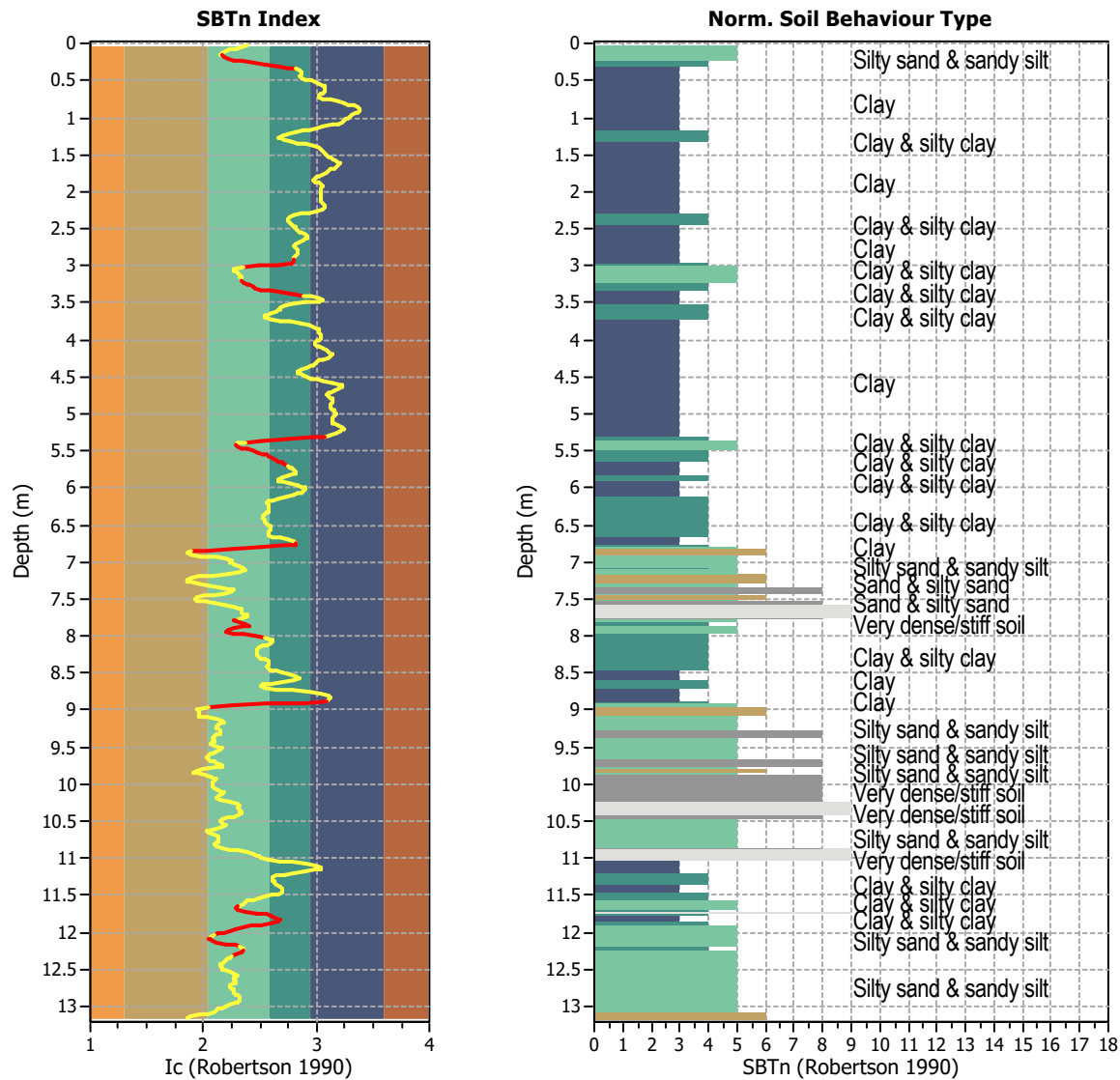
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties

I_c minimum check value:1.70

I_c maximum check value:3.00

I_c change ratio value:0.0100

Minimum number of points in layer:4

General statistics

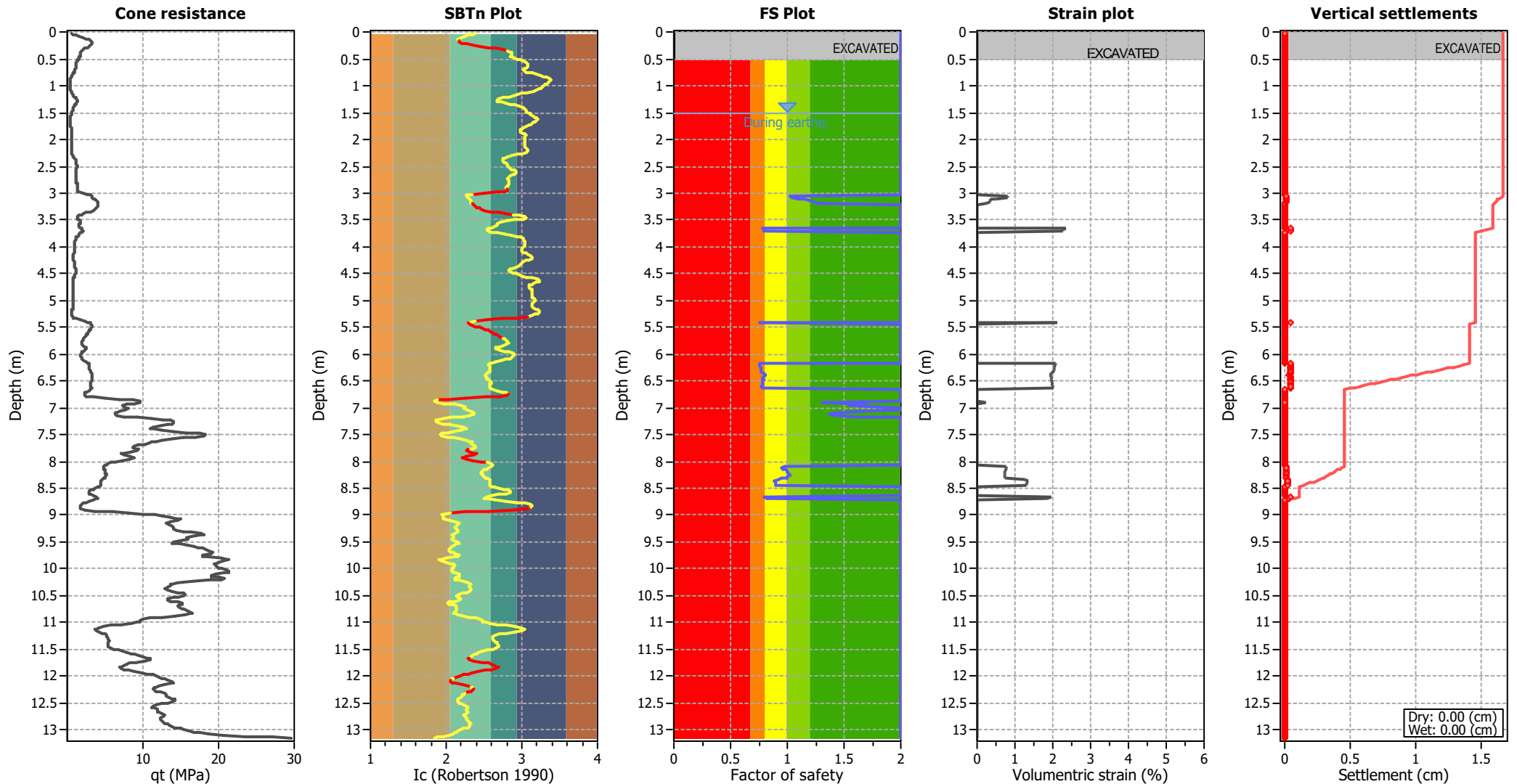
Total points in CPT file:658

Total points excluded:105

Exclusion percentage:15.96%

Number of layers detected:14

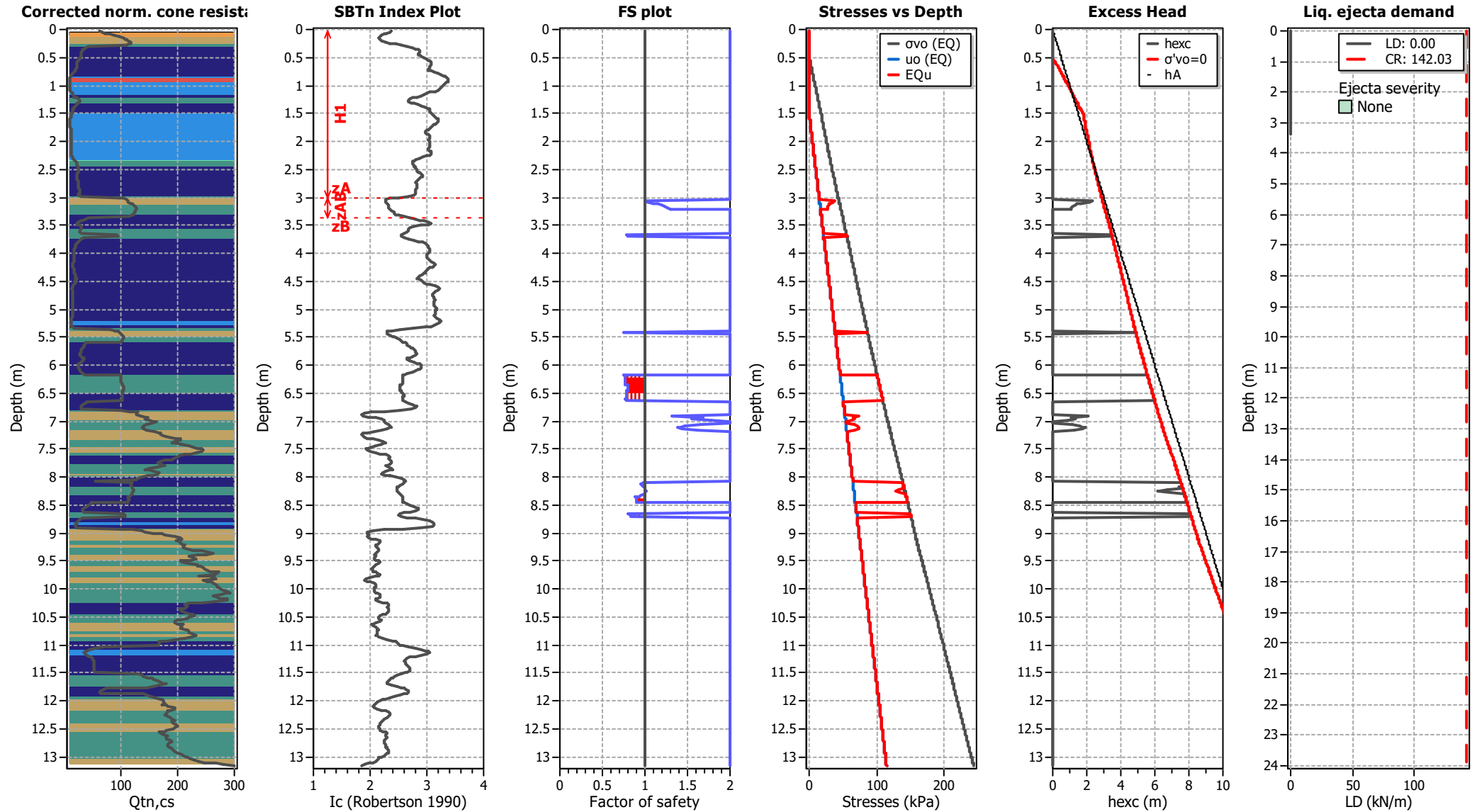
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

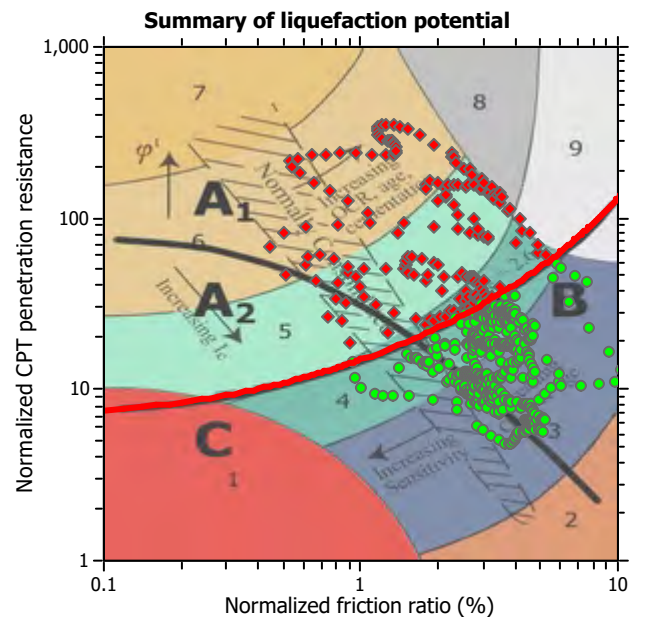
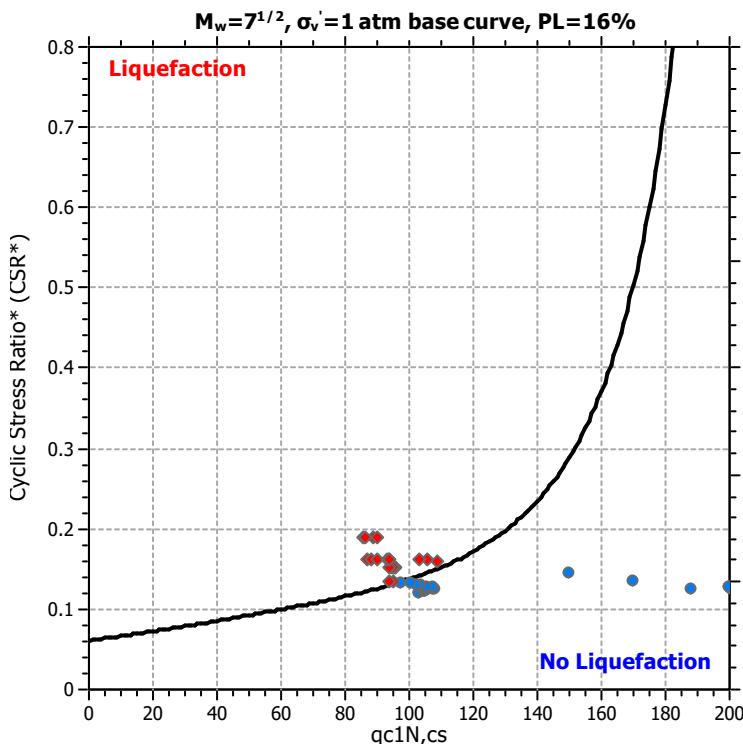
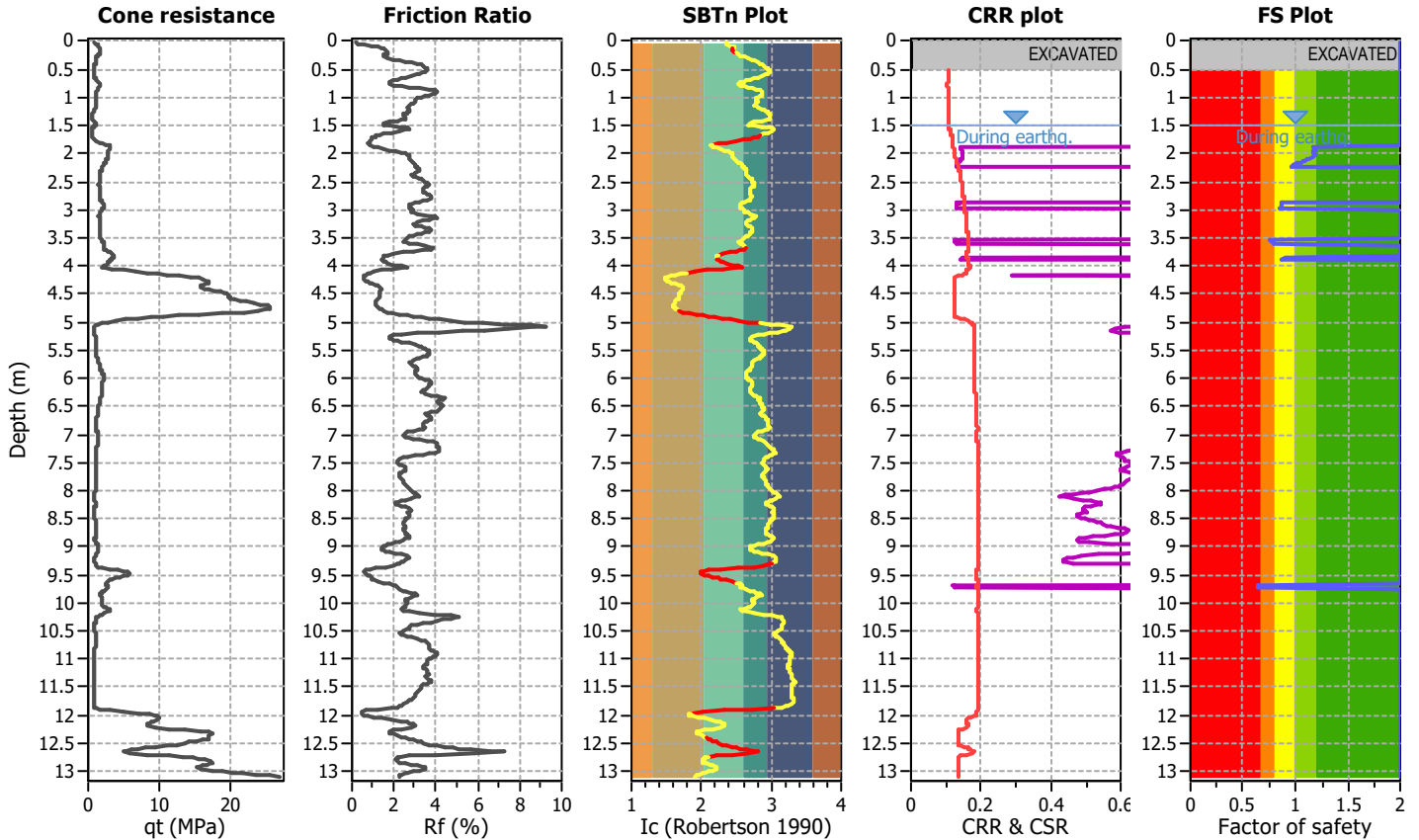
Project title : Sunfield Landholding

Location :

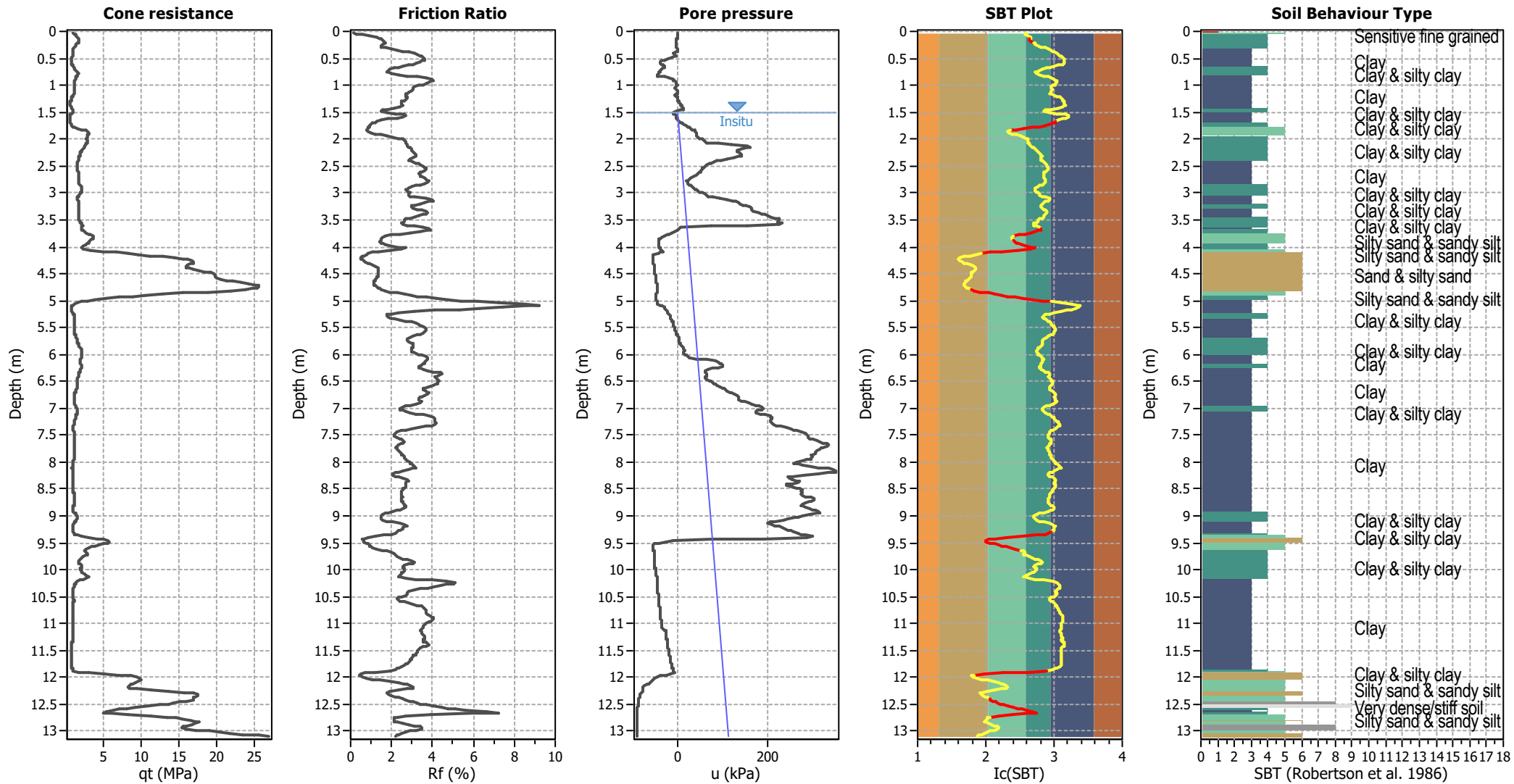
CPT file : CPT115

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.50 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.50 m	Excavation depth:	0.50 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

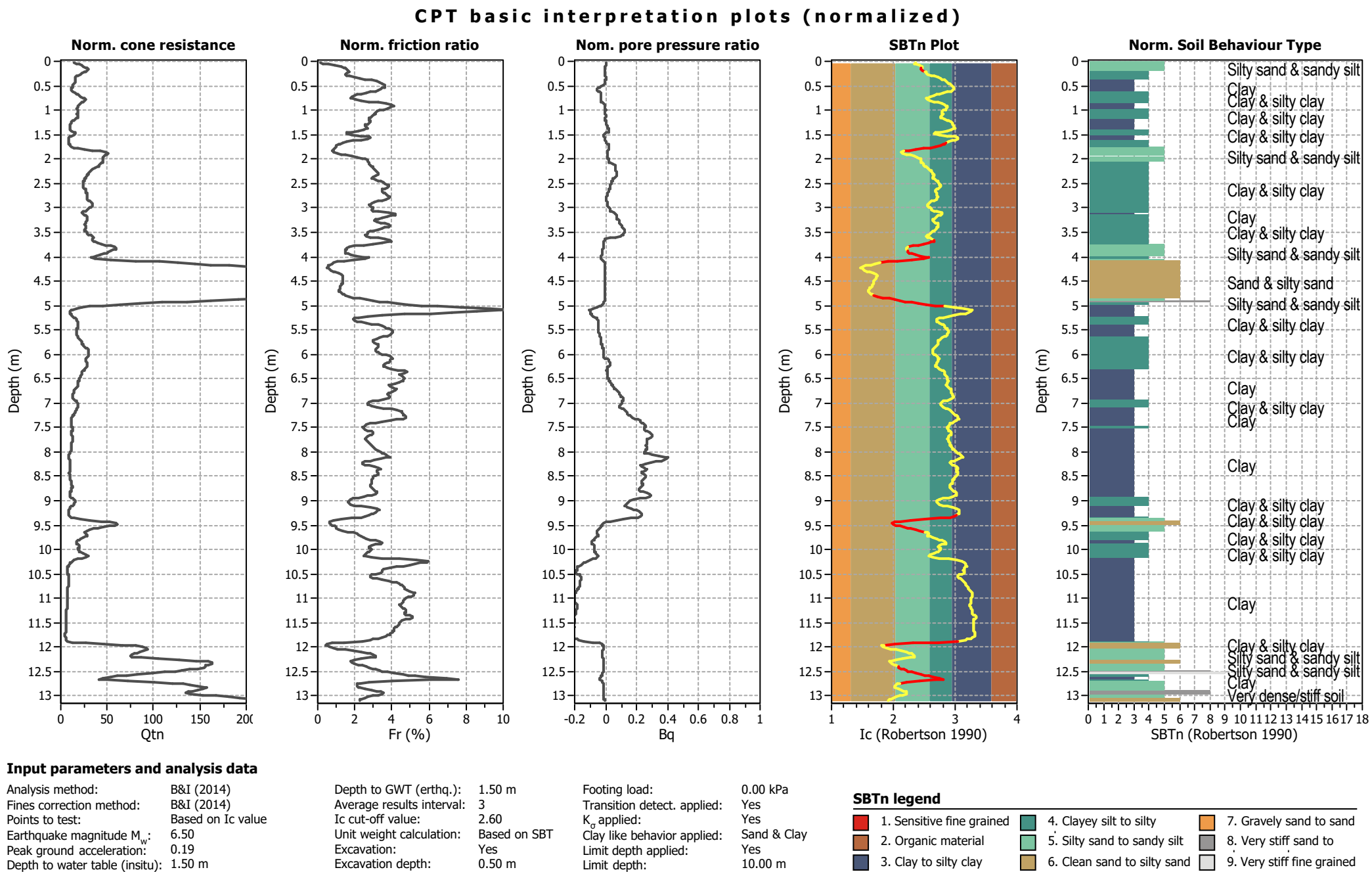


Input parameters and analysis data

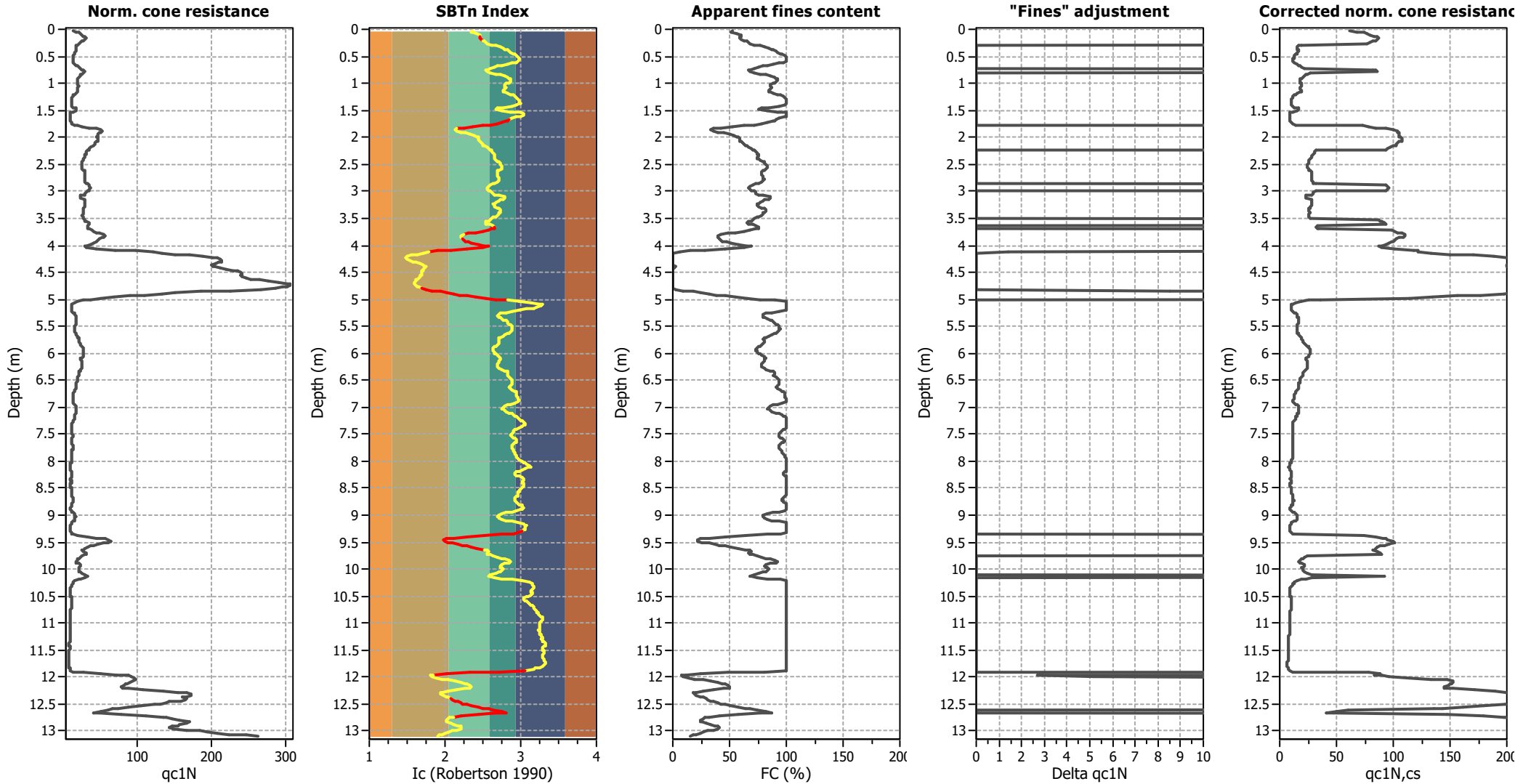
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

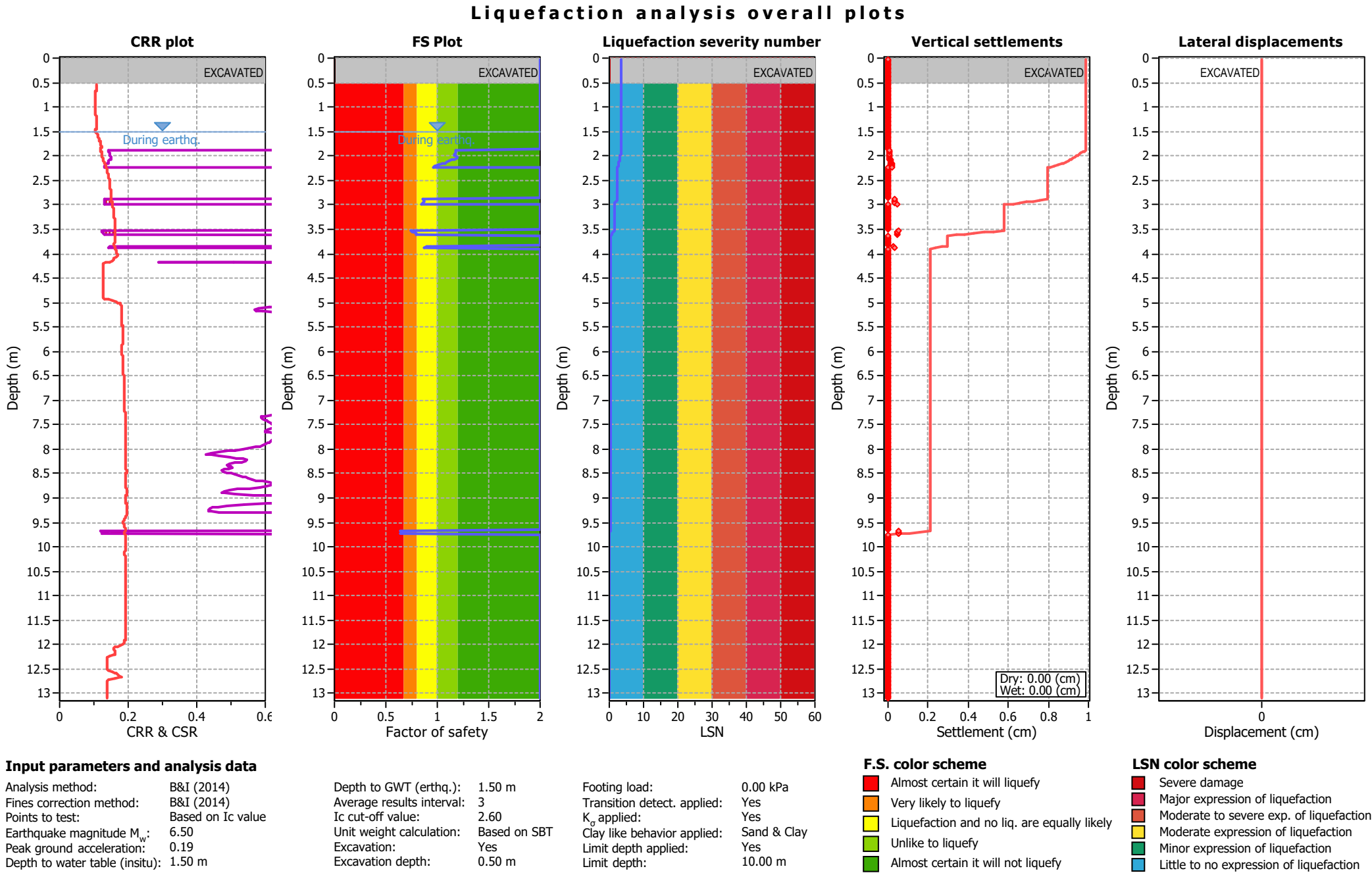


Liquefaction analysis overall plots (intermediate results)

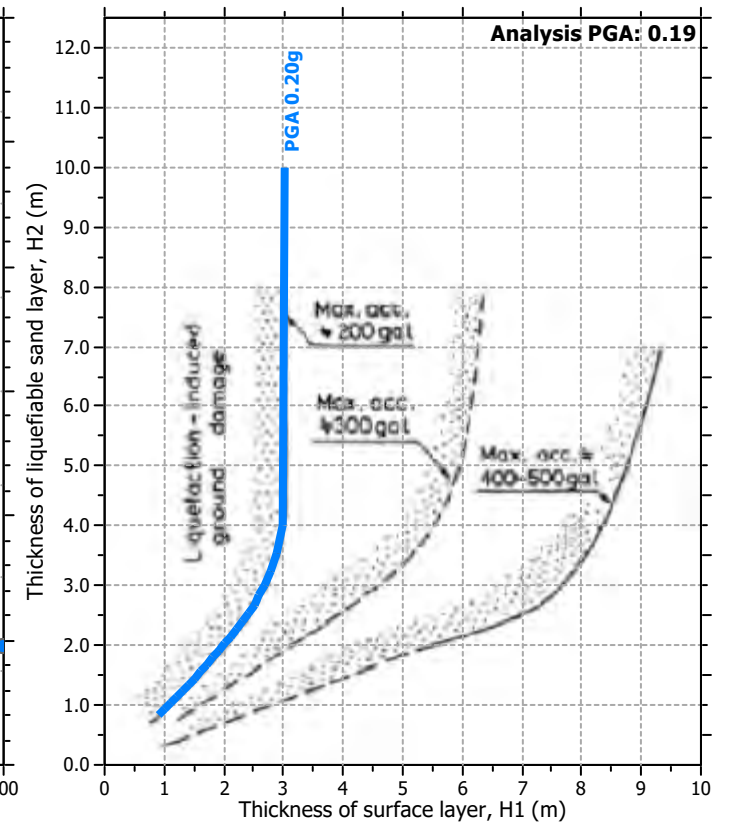
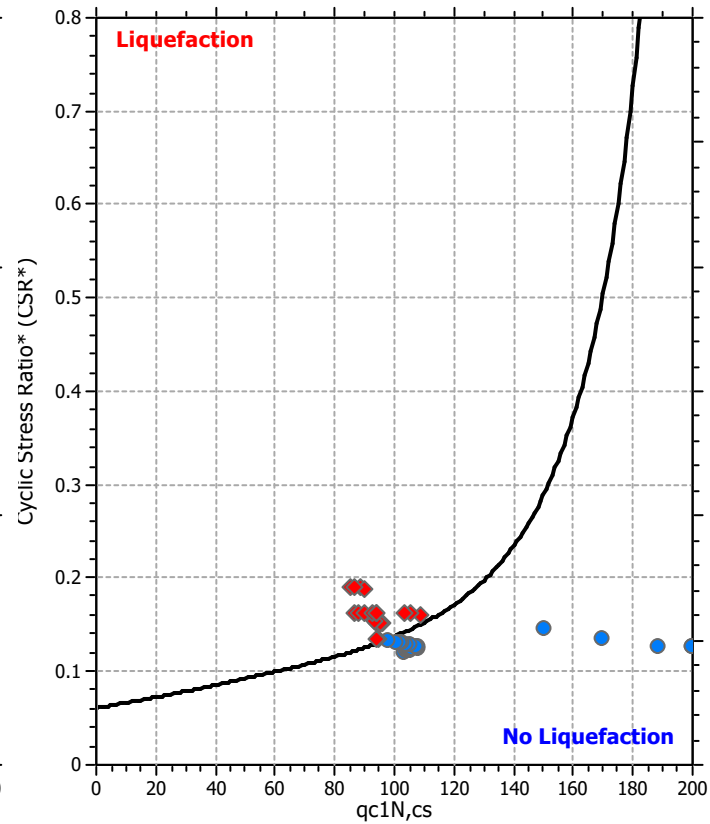
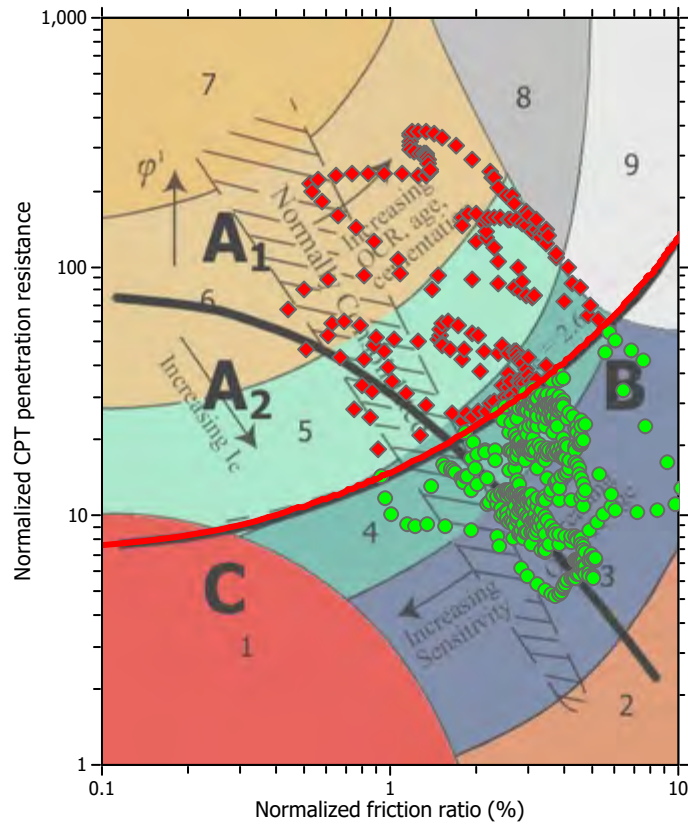


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m



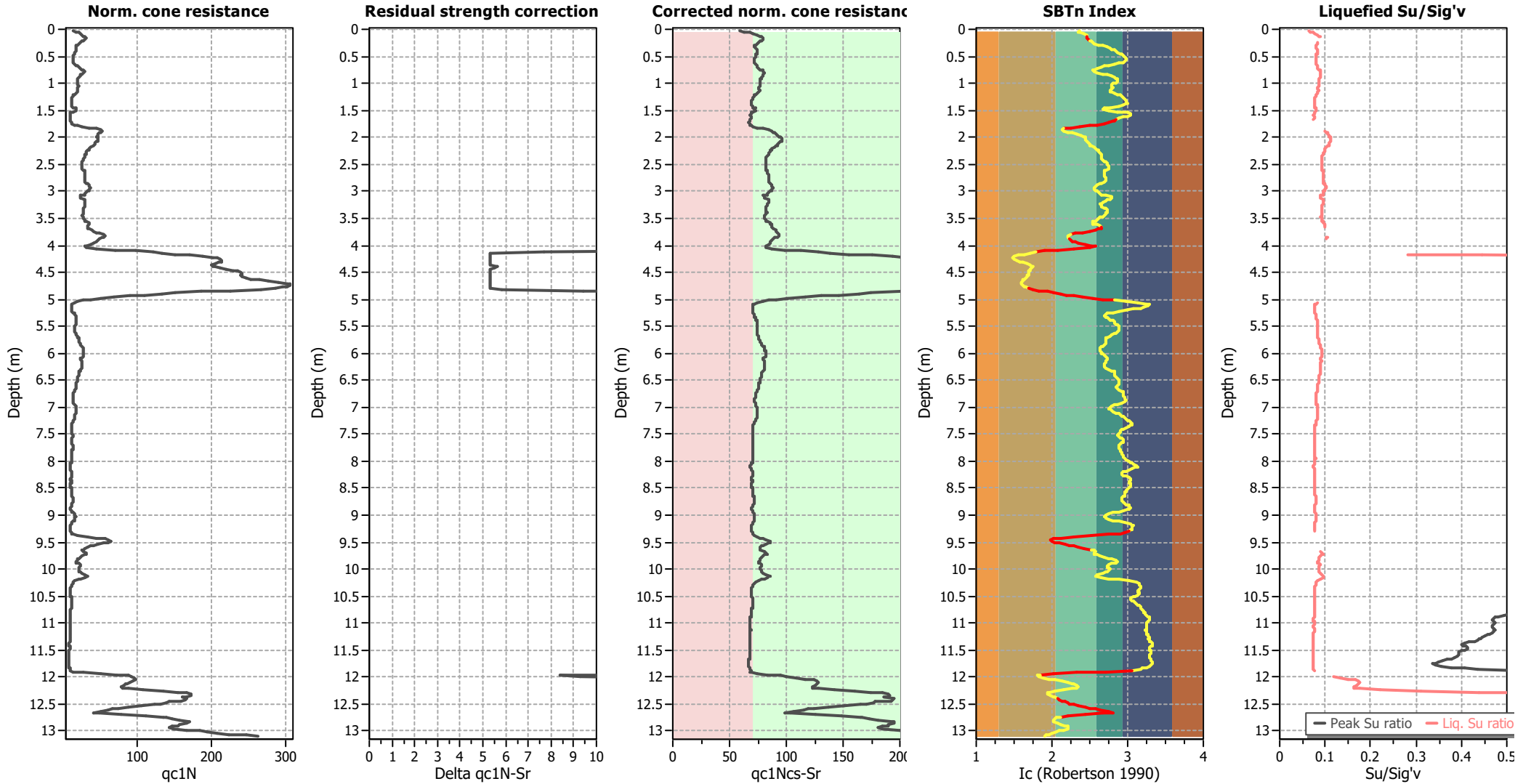
Liquefaction analysis summary plots



Input parameters and analysis data

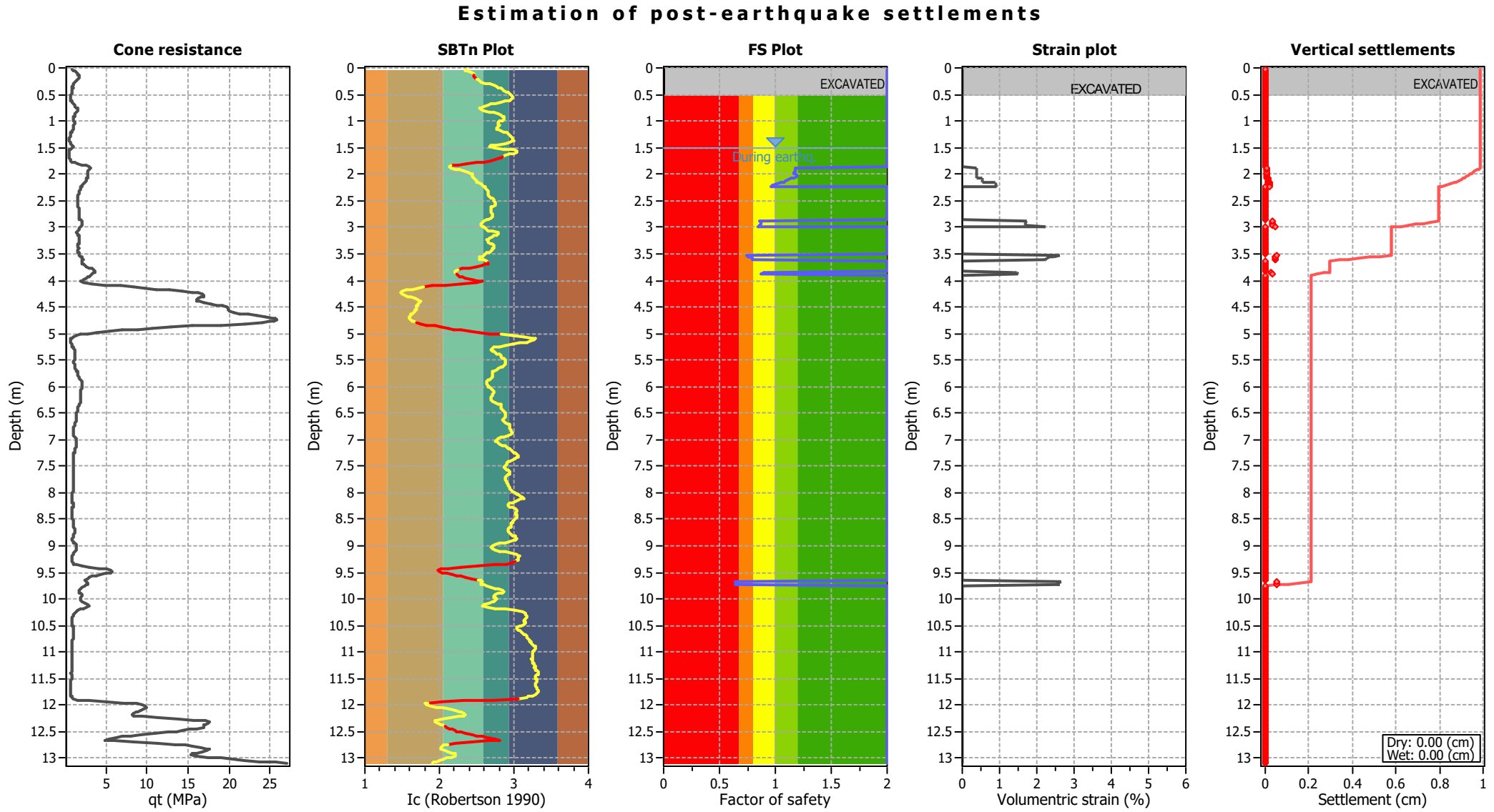
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _c applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

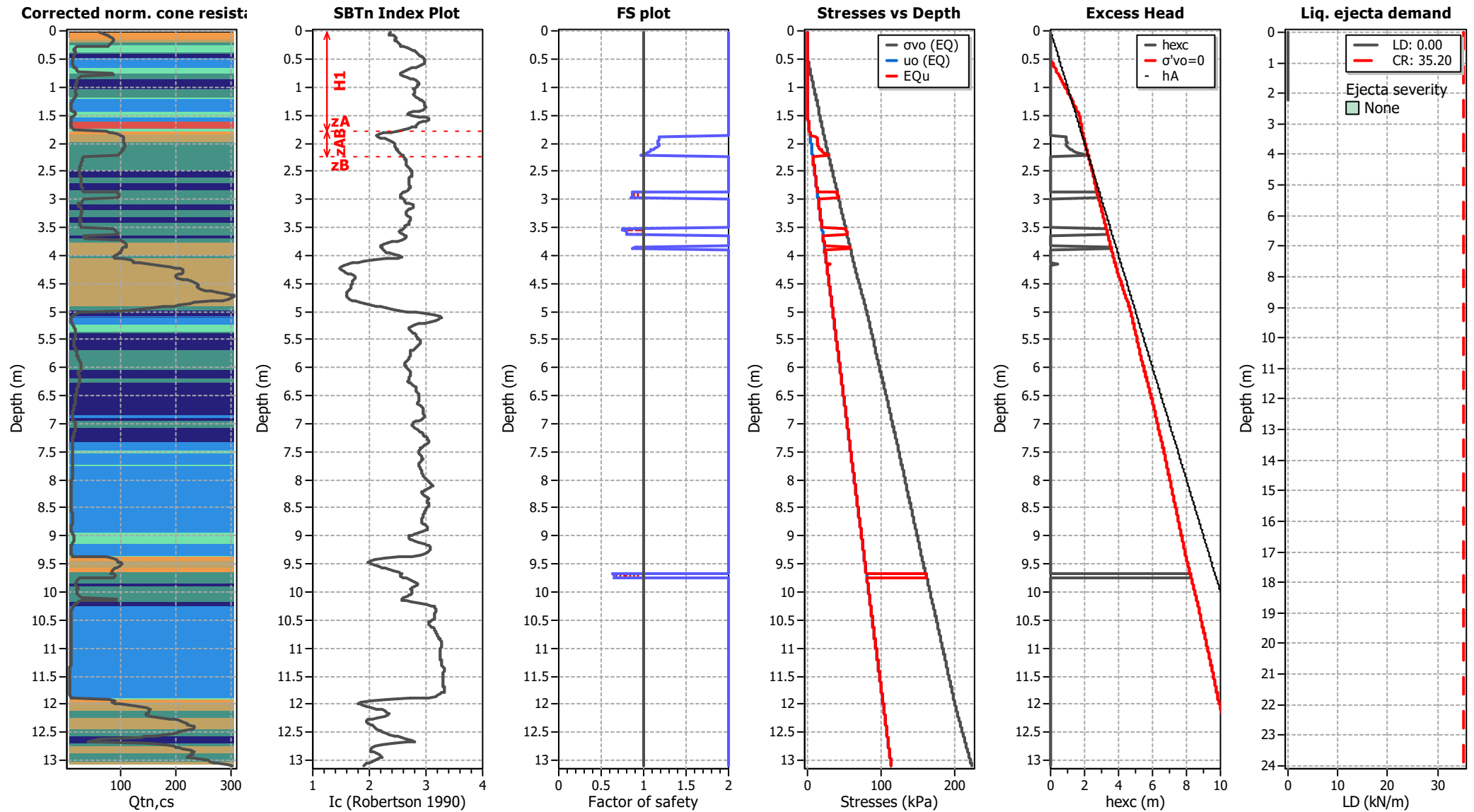
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.50 m	Excavation depth:	0.50 m	Limit depth:	10.00 m



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

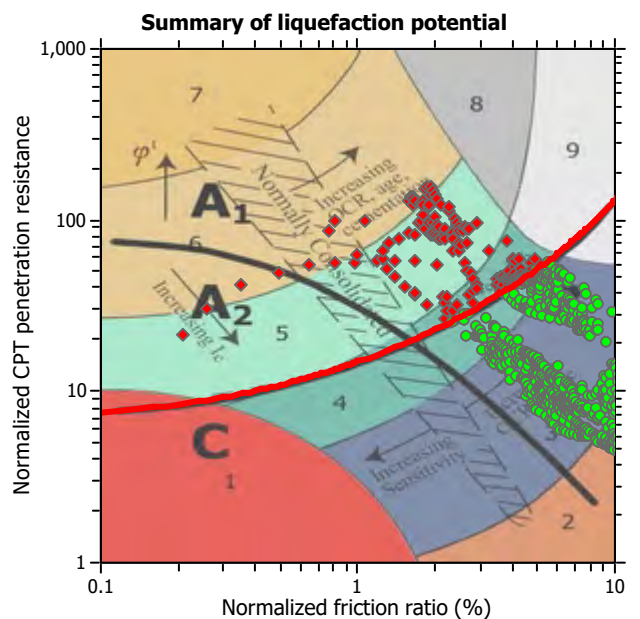
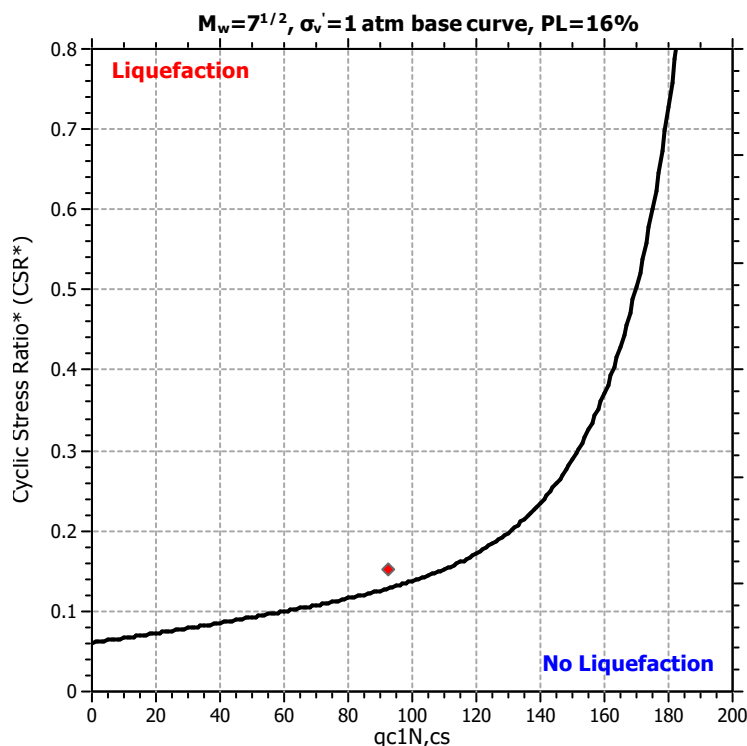
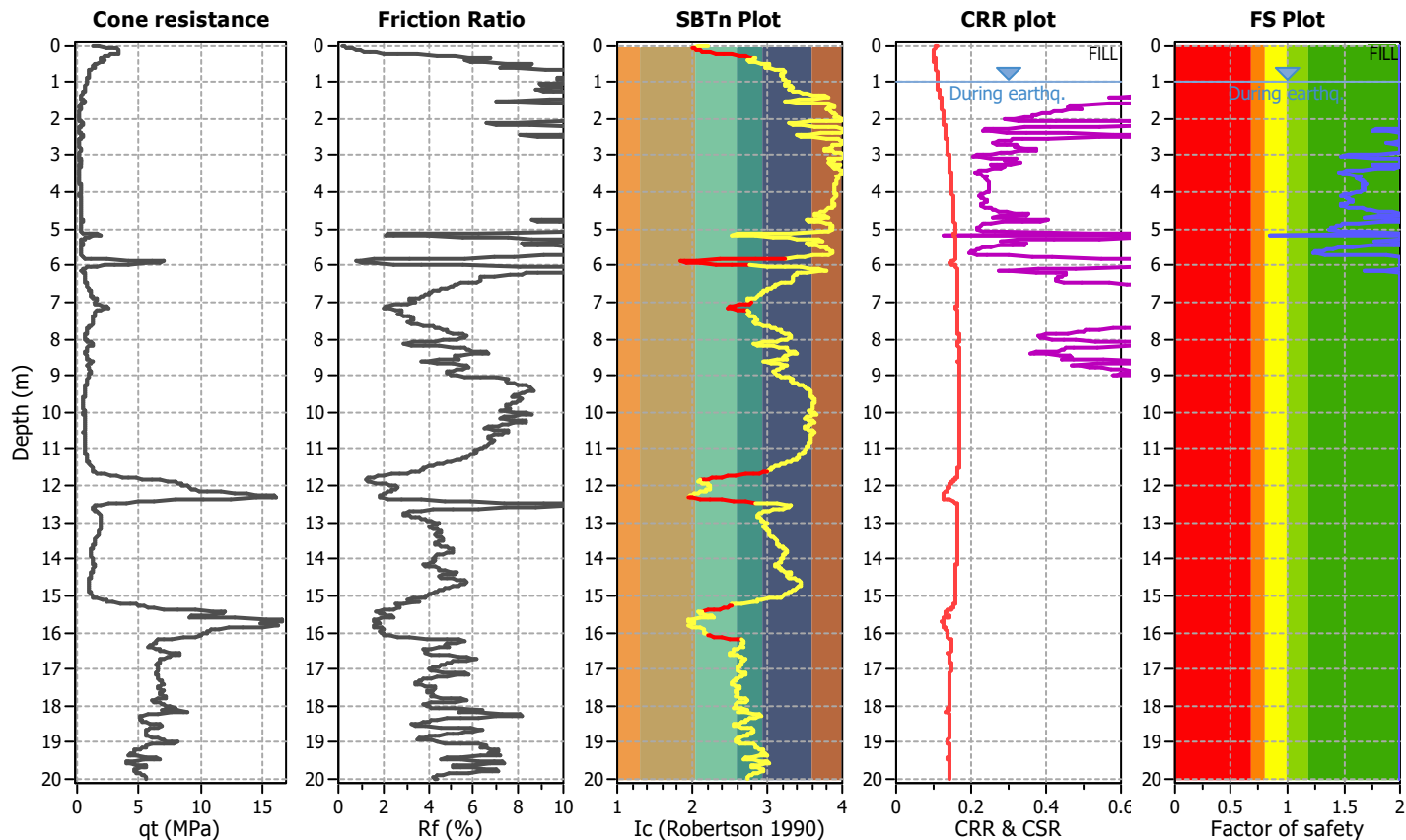
Project title : Sunfield Landholding

Location :

CPT file : CPT116

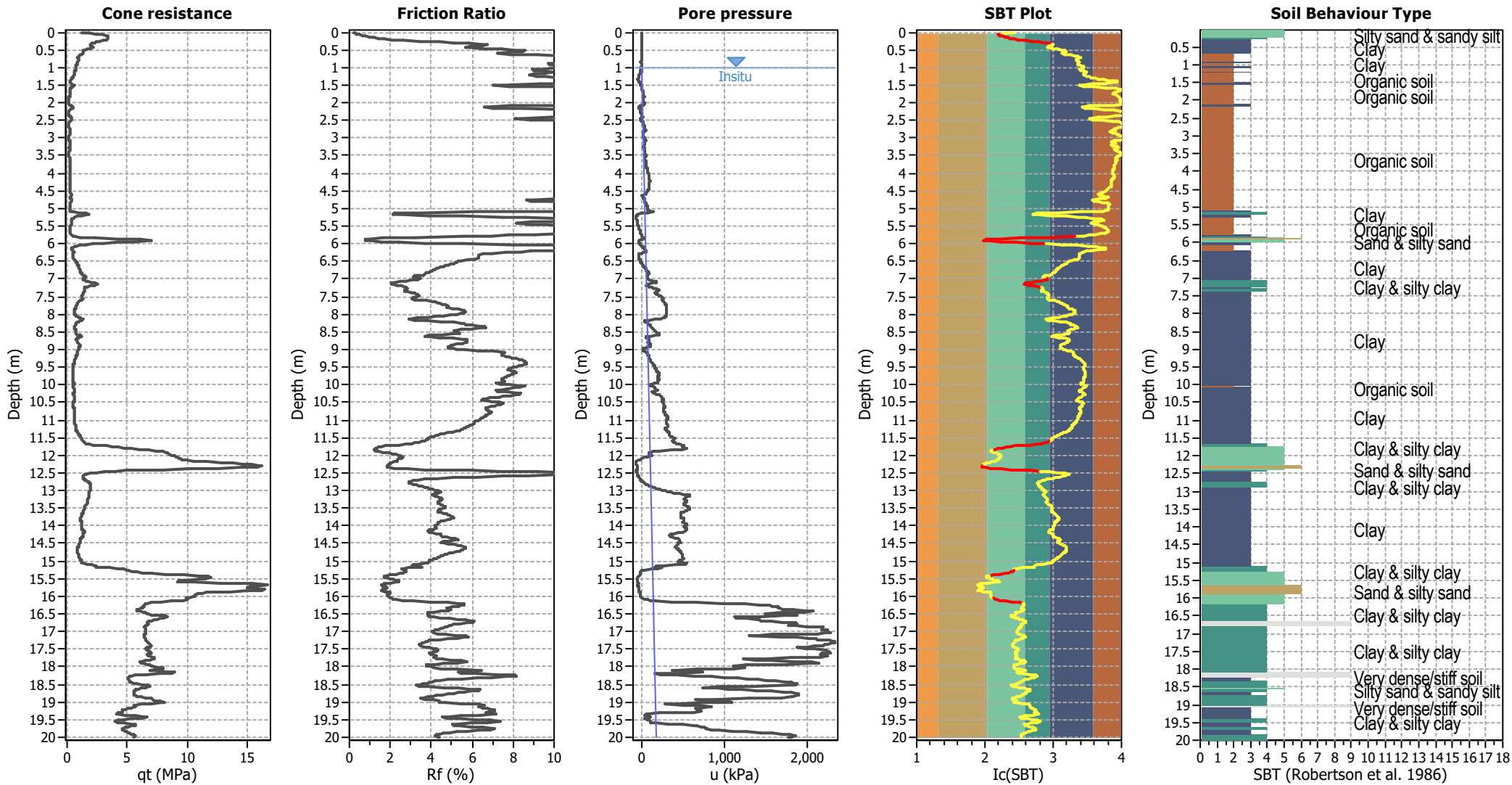
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

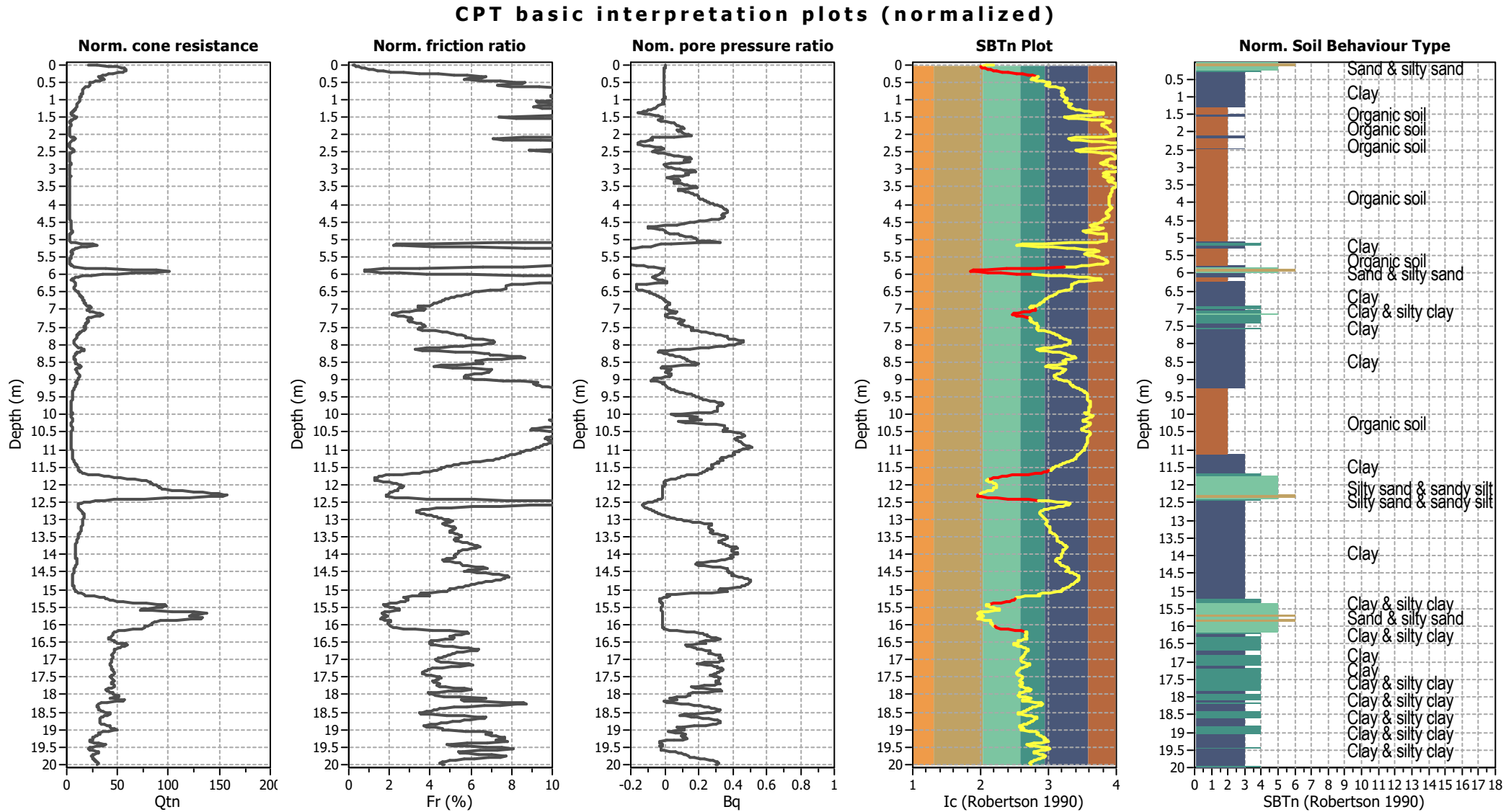


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

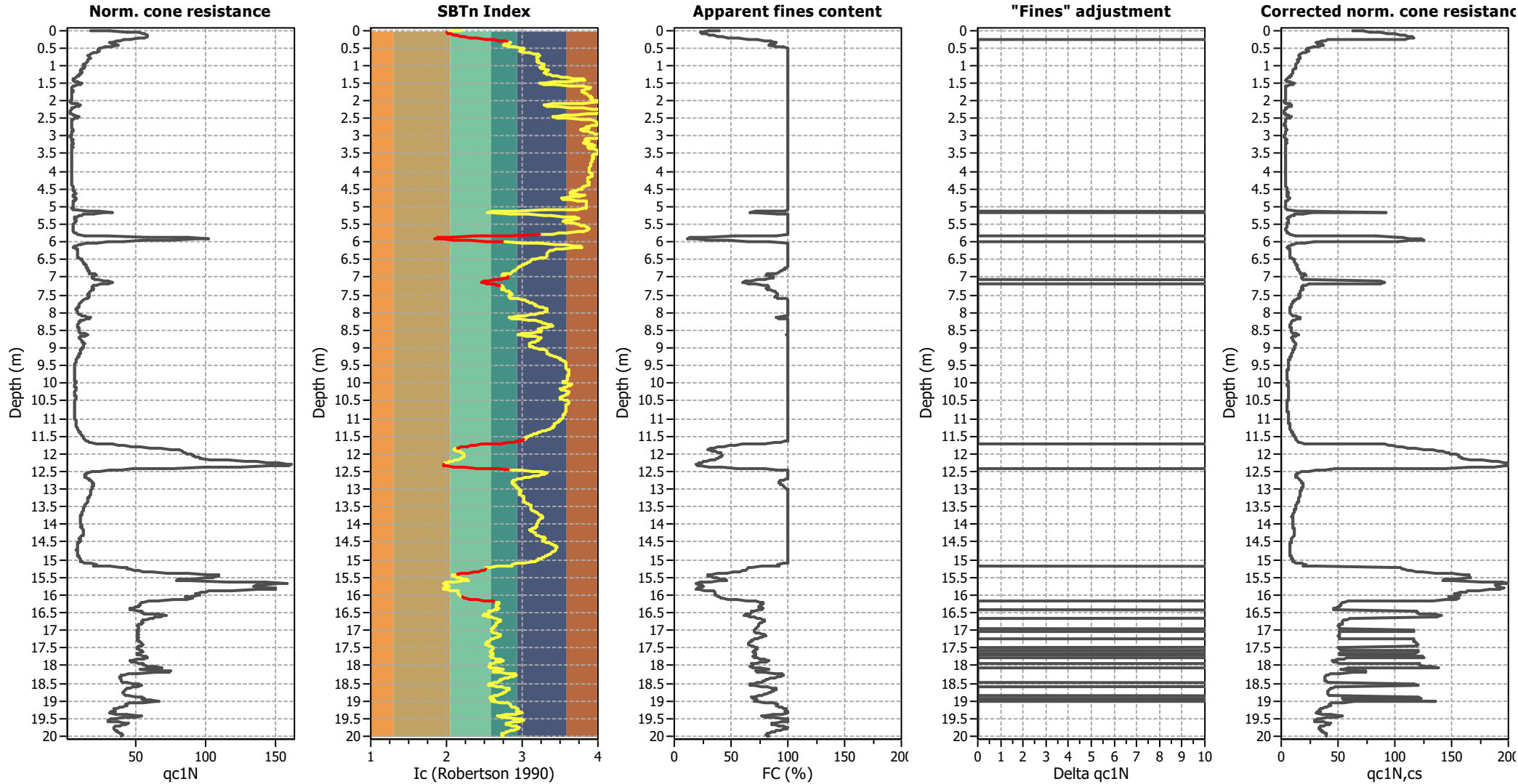
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

9. Very stiff fine grained

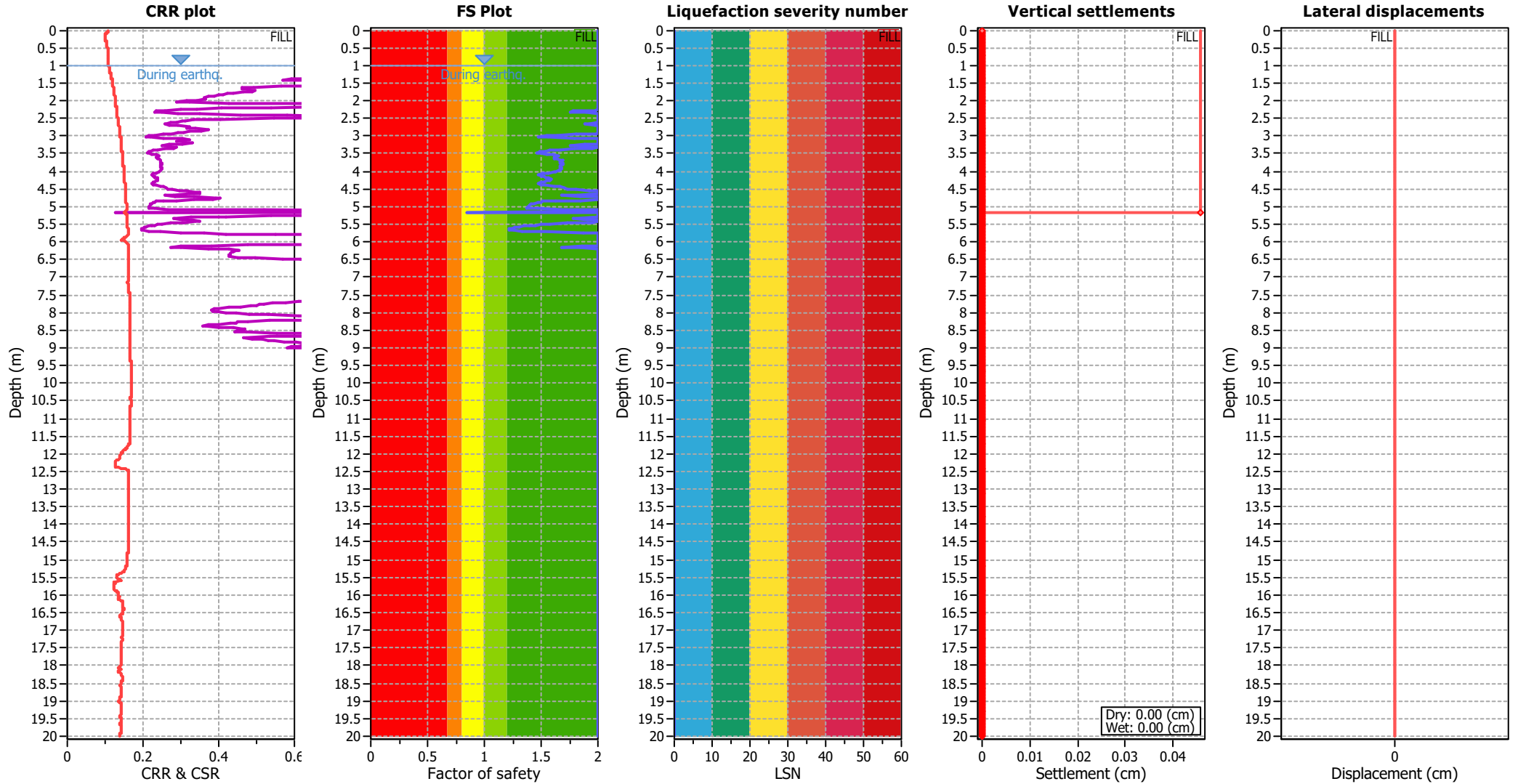
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

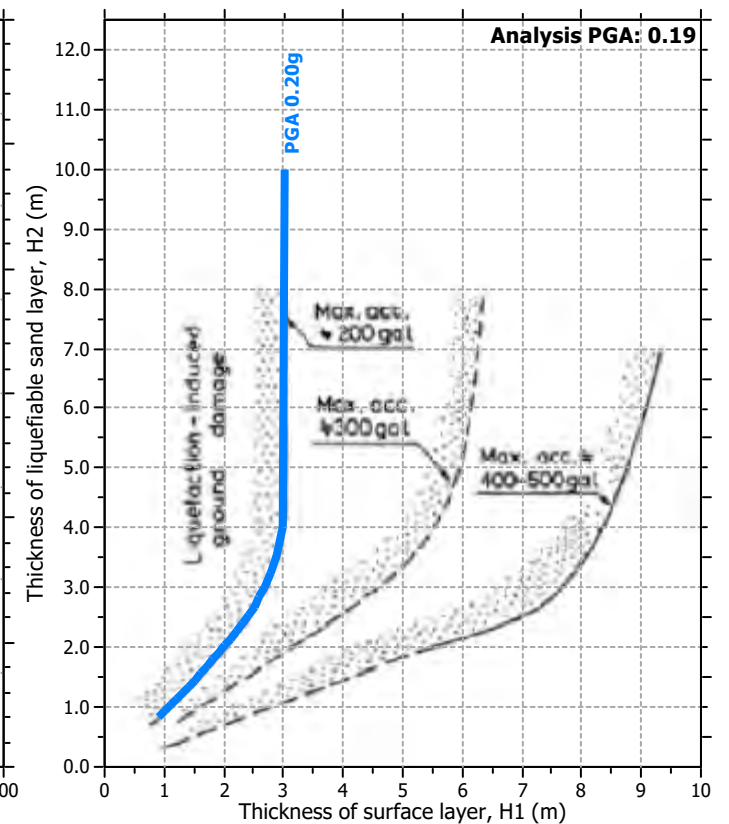
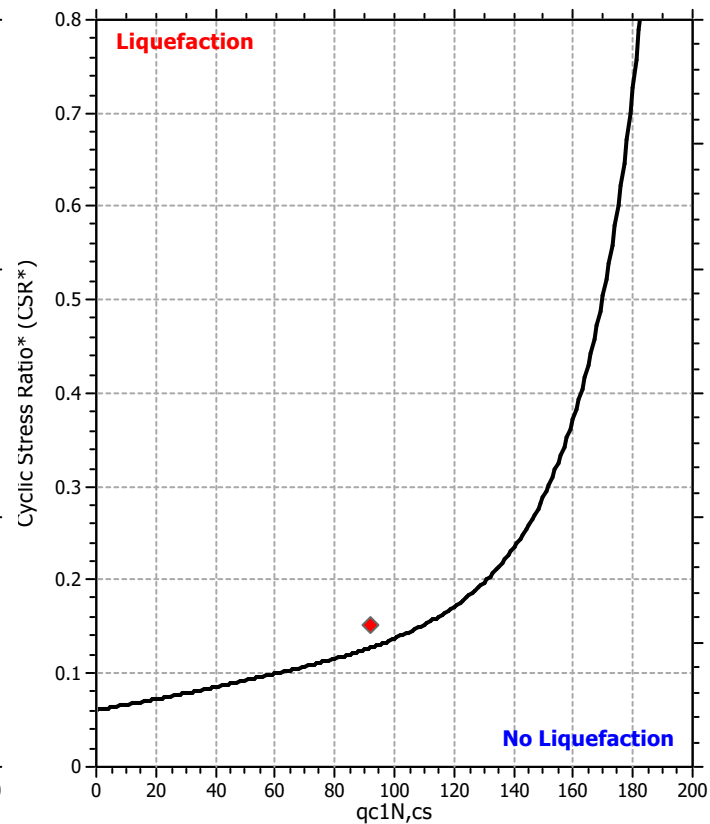
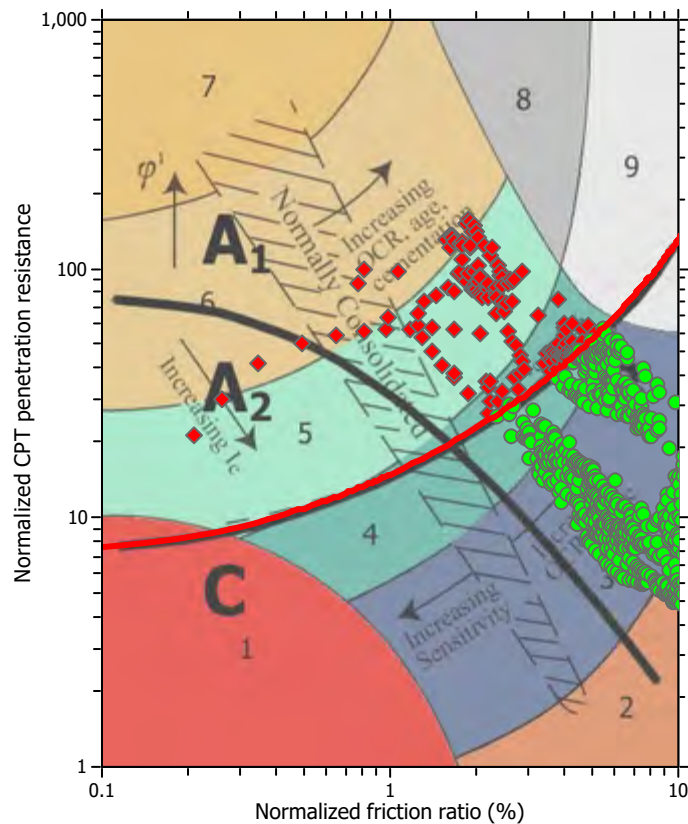
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Green	Minor expression of liquefaction
Blue	Little to no expression of liquefaction

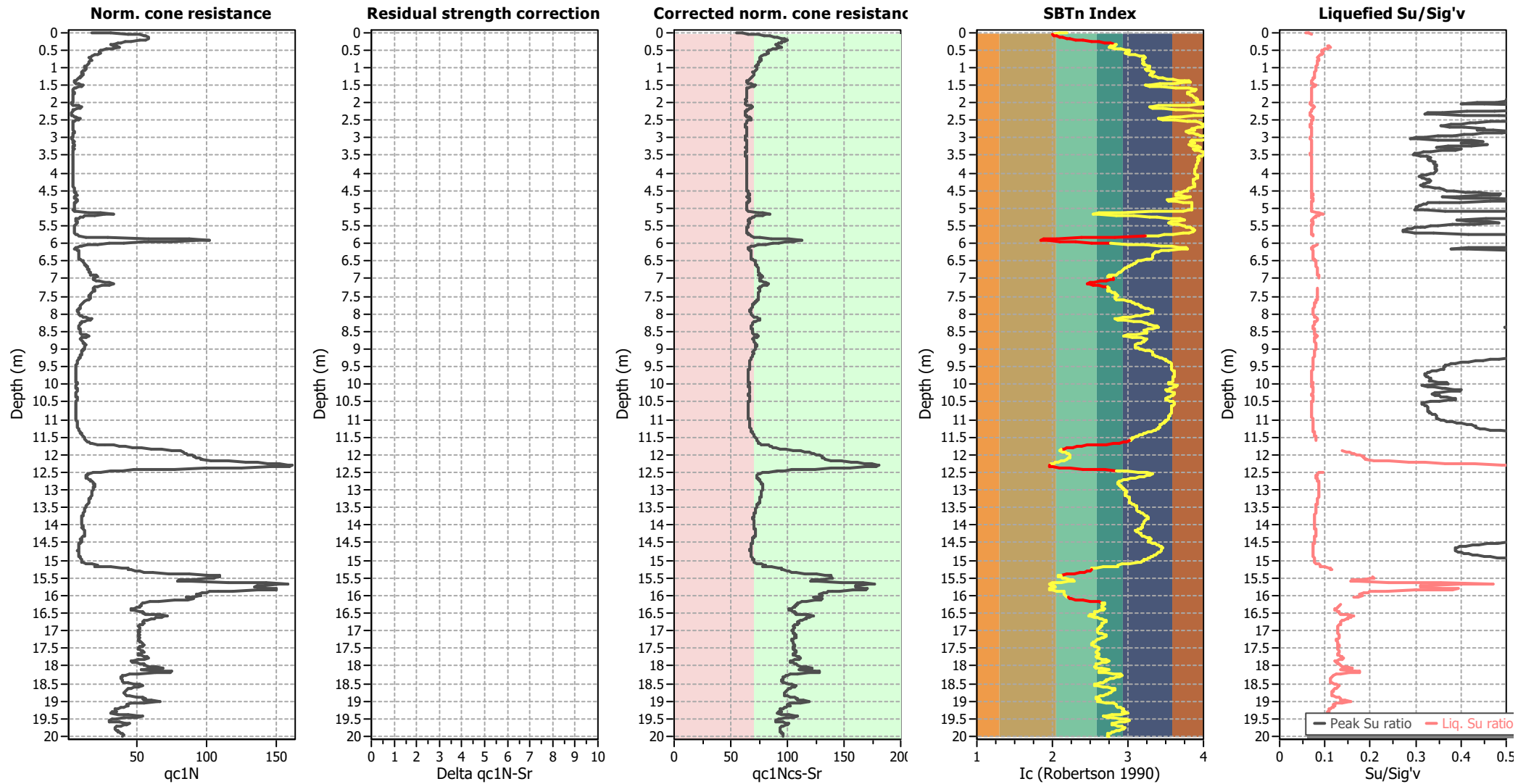
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

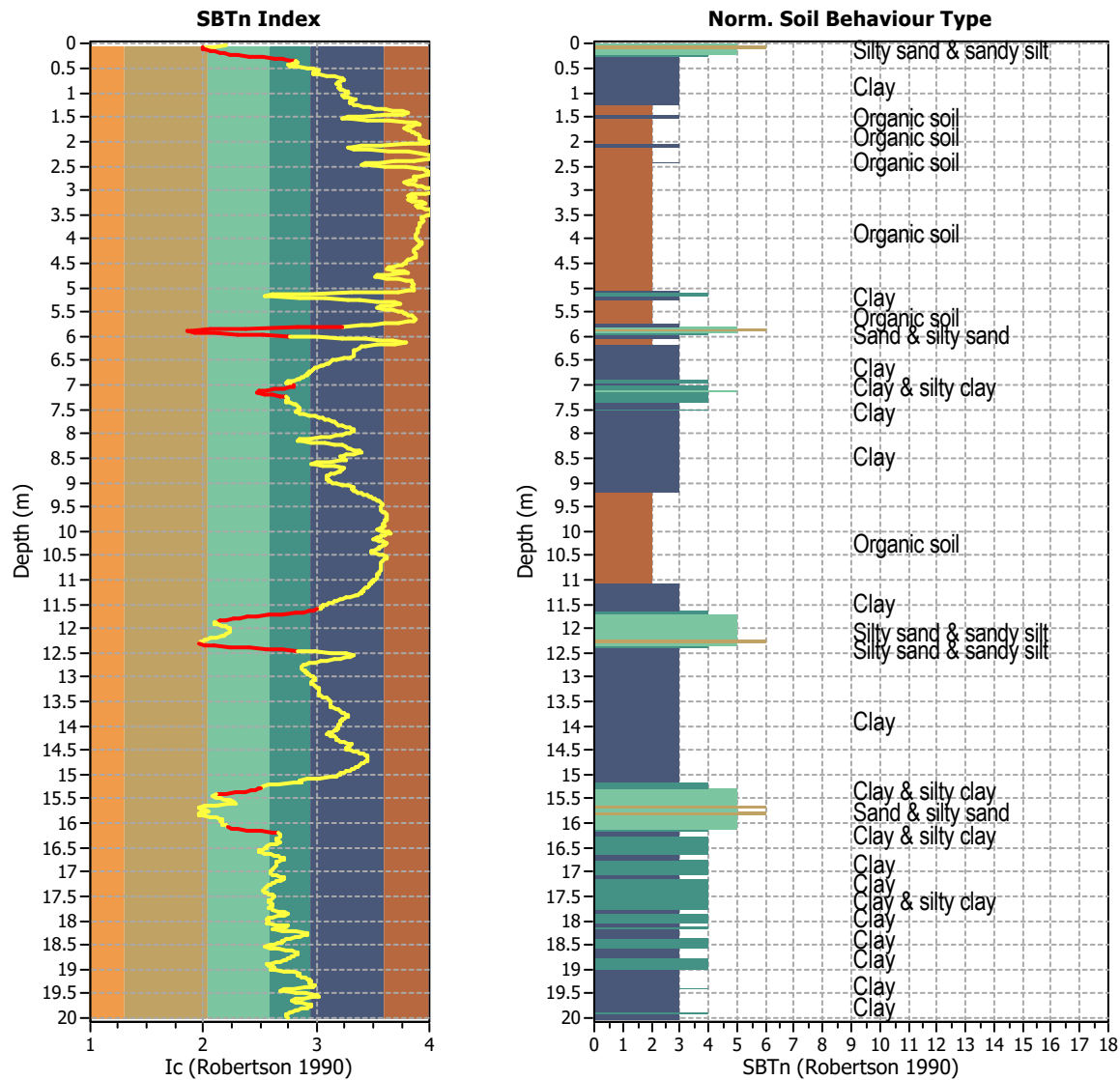
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



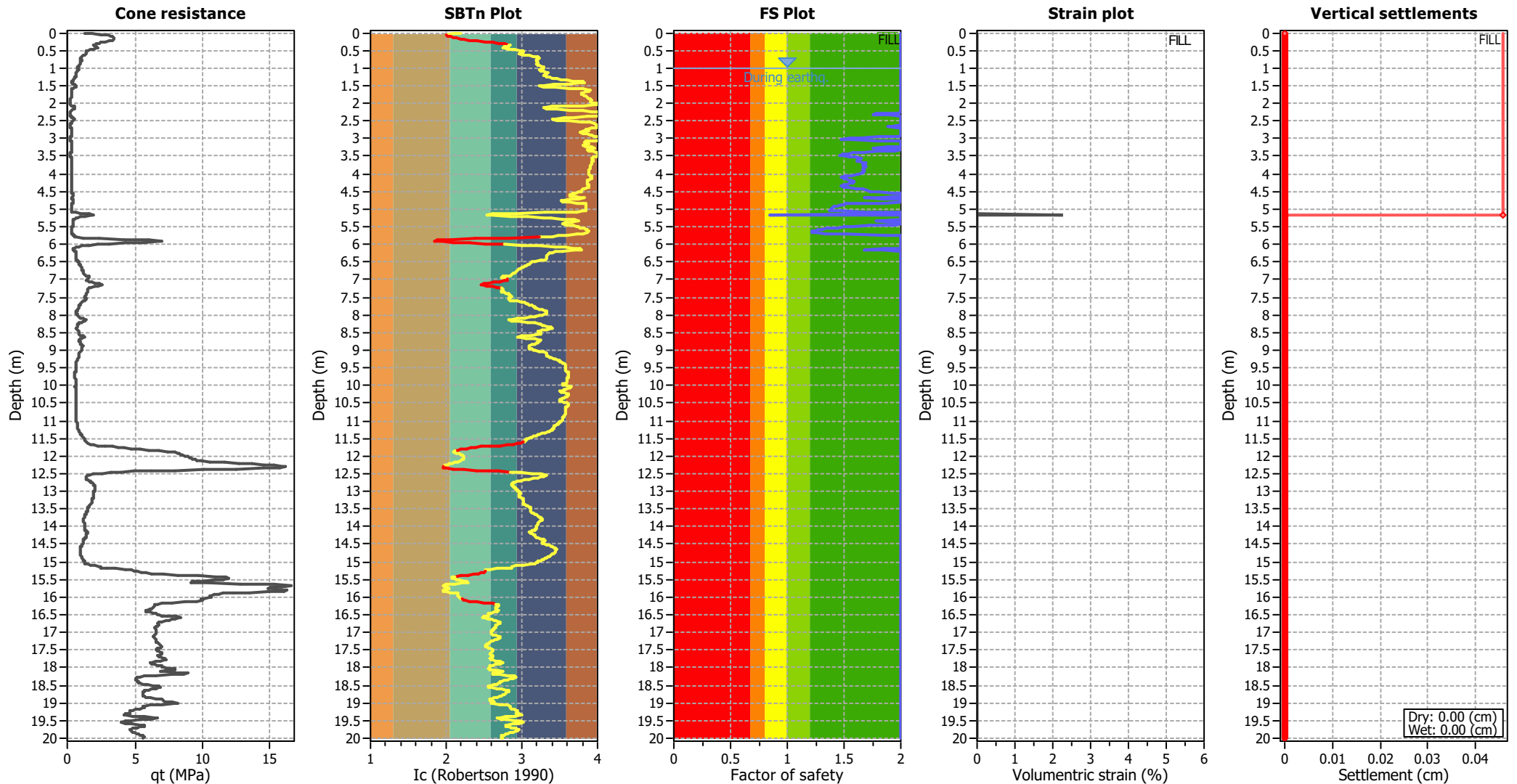
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1000
Total points excluded: 79
Exclusion percentage: 7.90%
Number of layers detected: 9

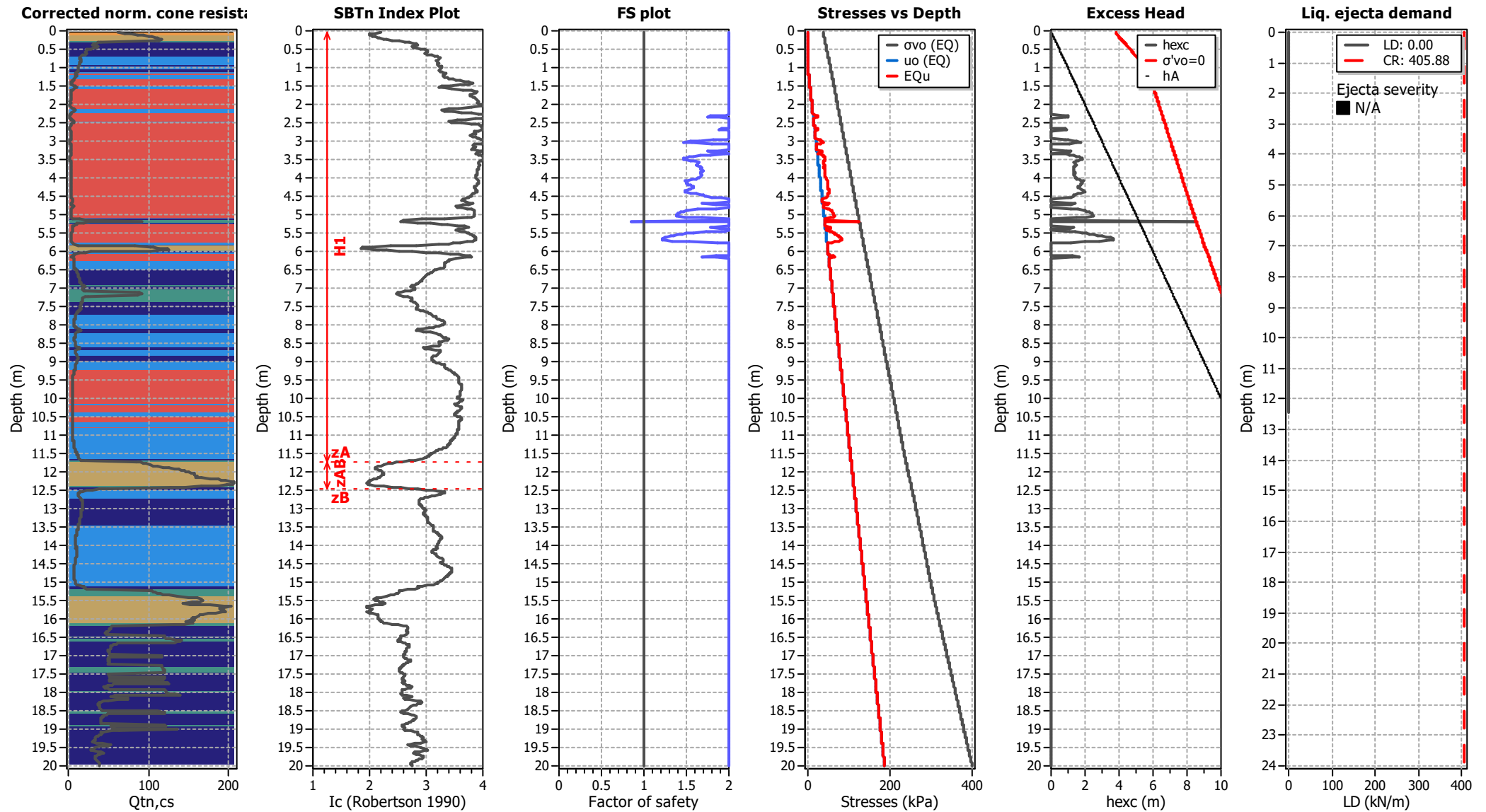
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

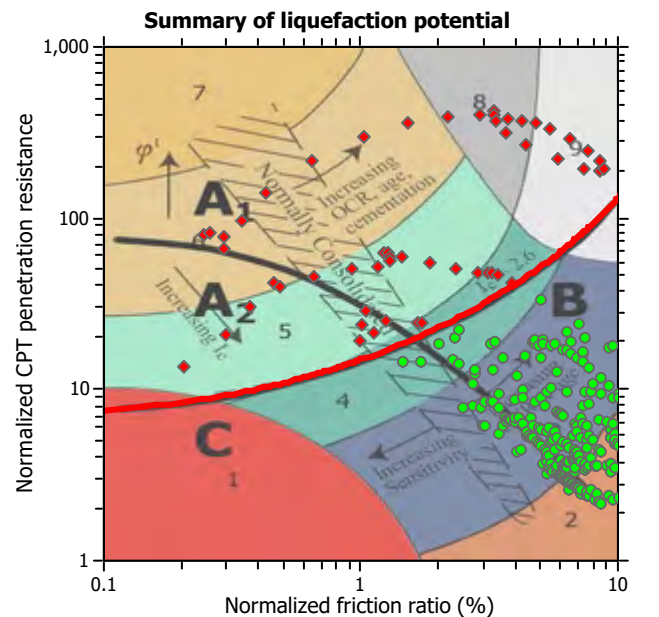
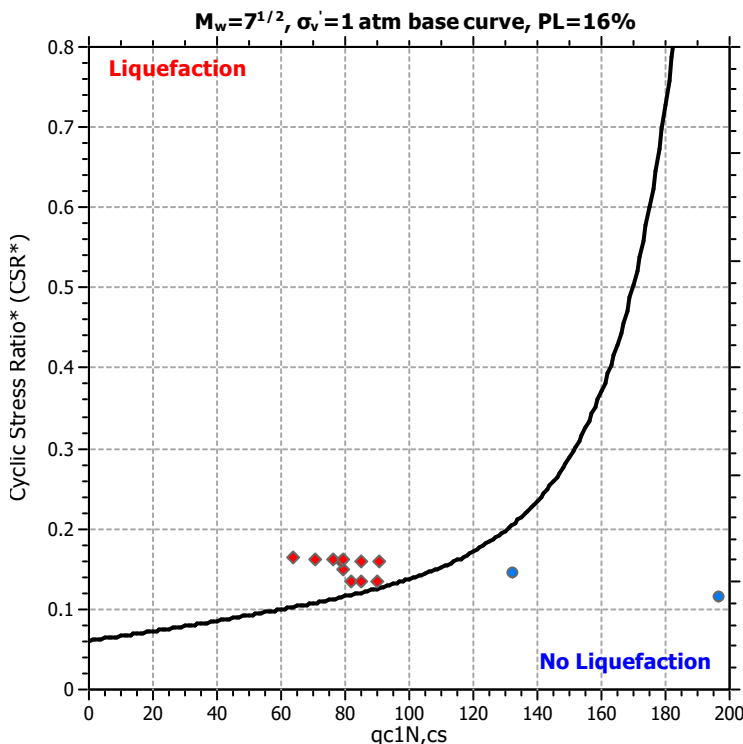
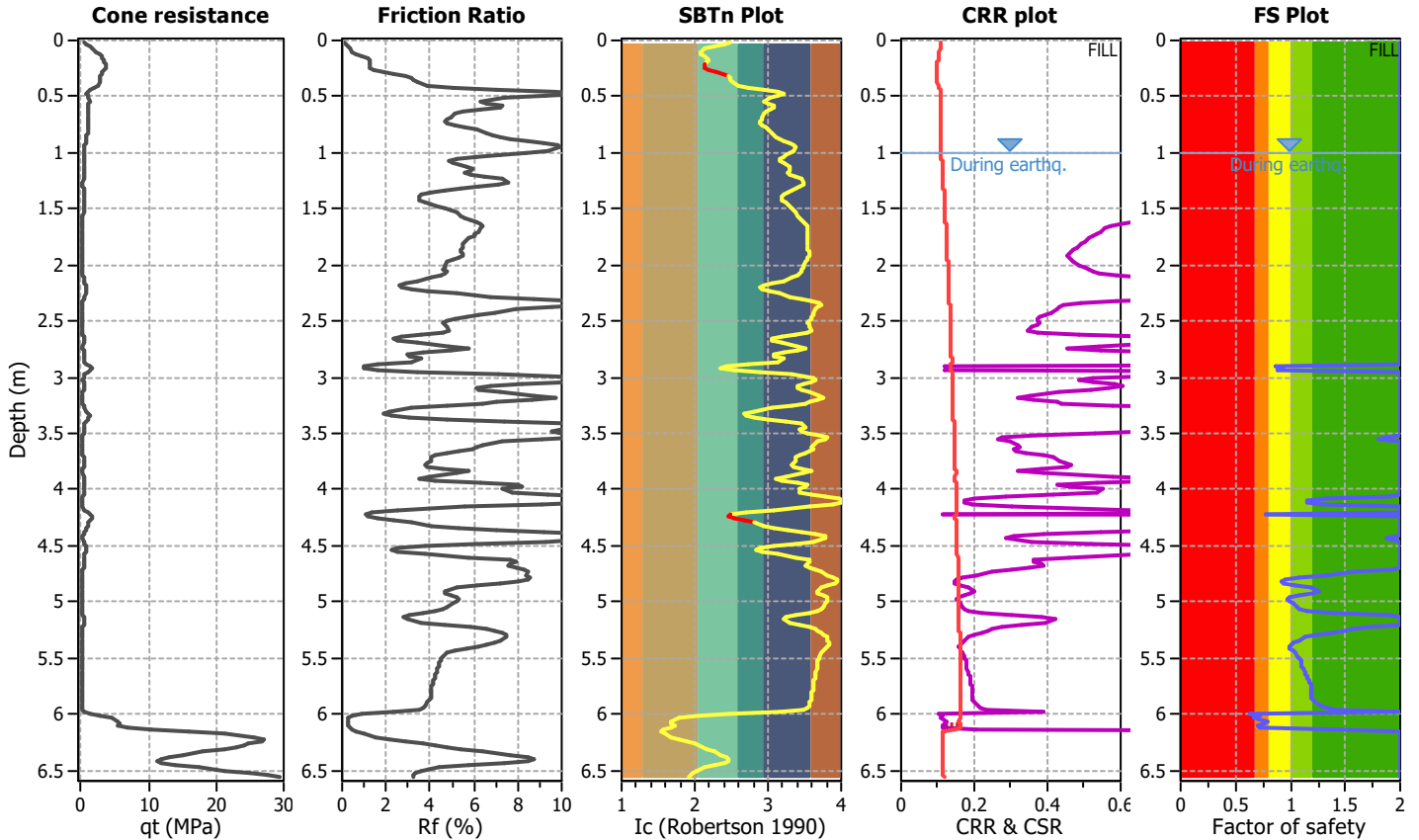
Project title : Sunfield Landholding

Location :

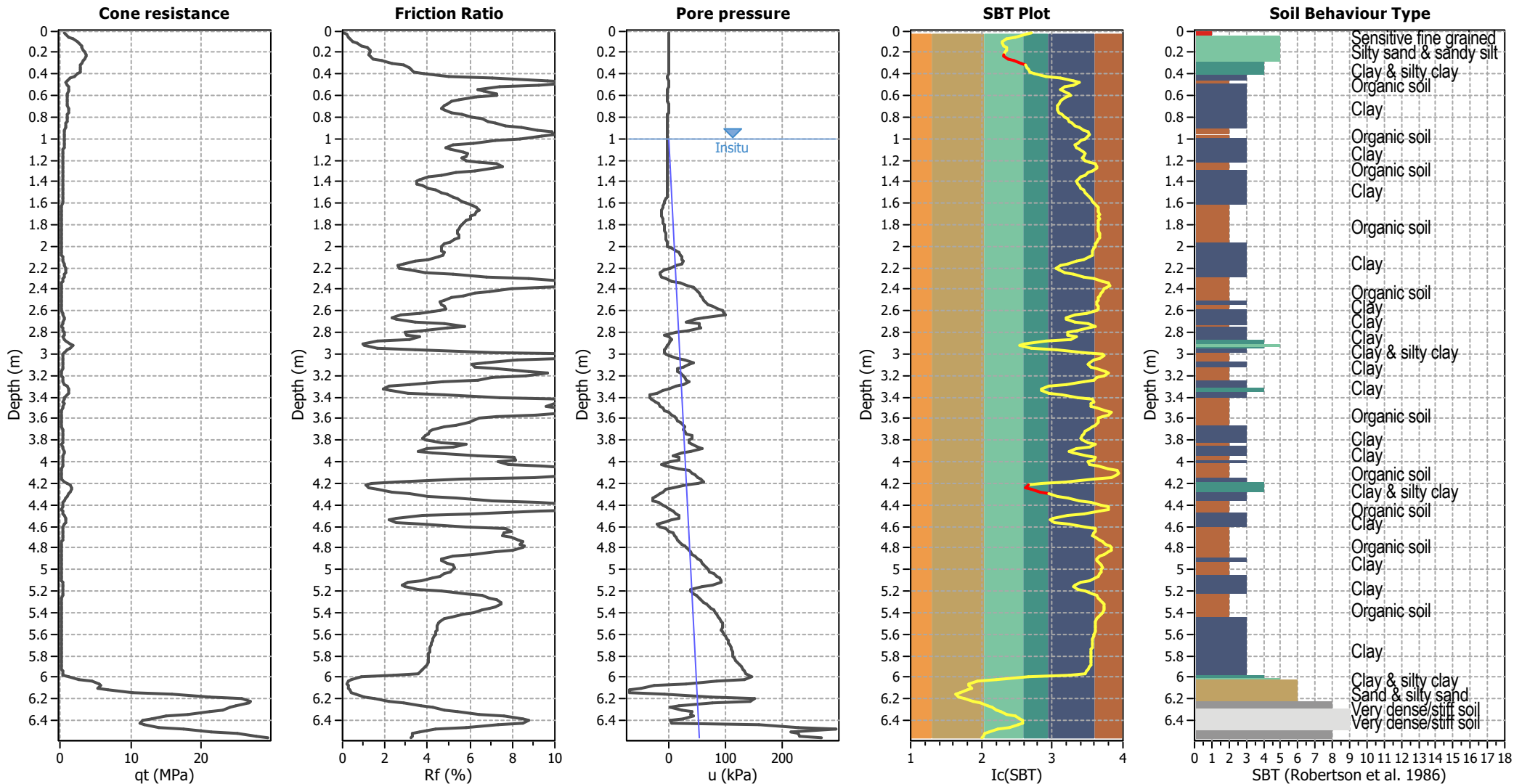
CPT file : CPT118

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

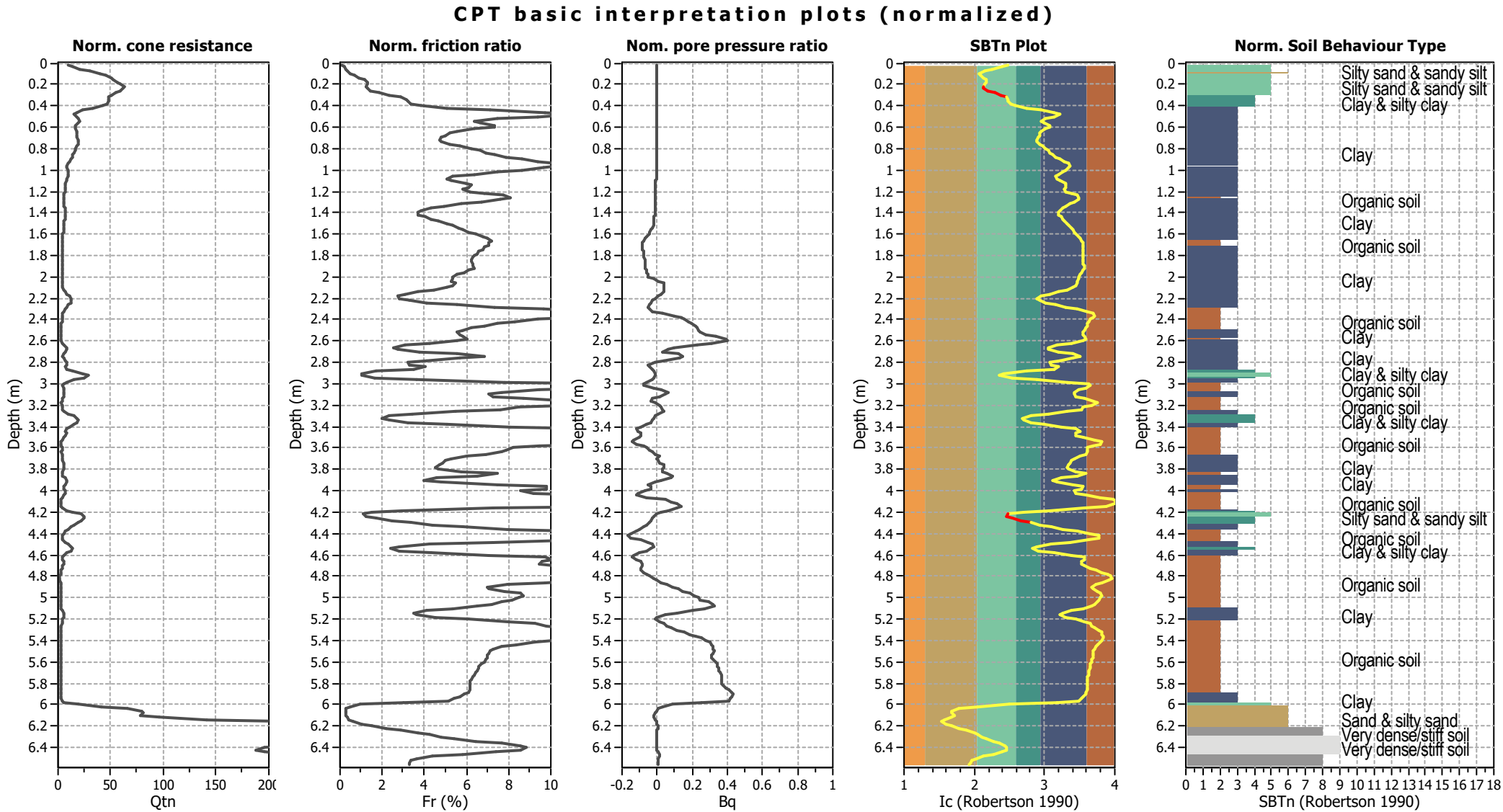


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

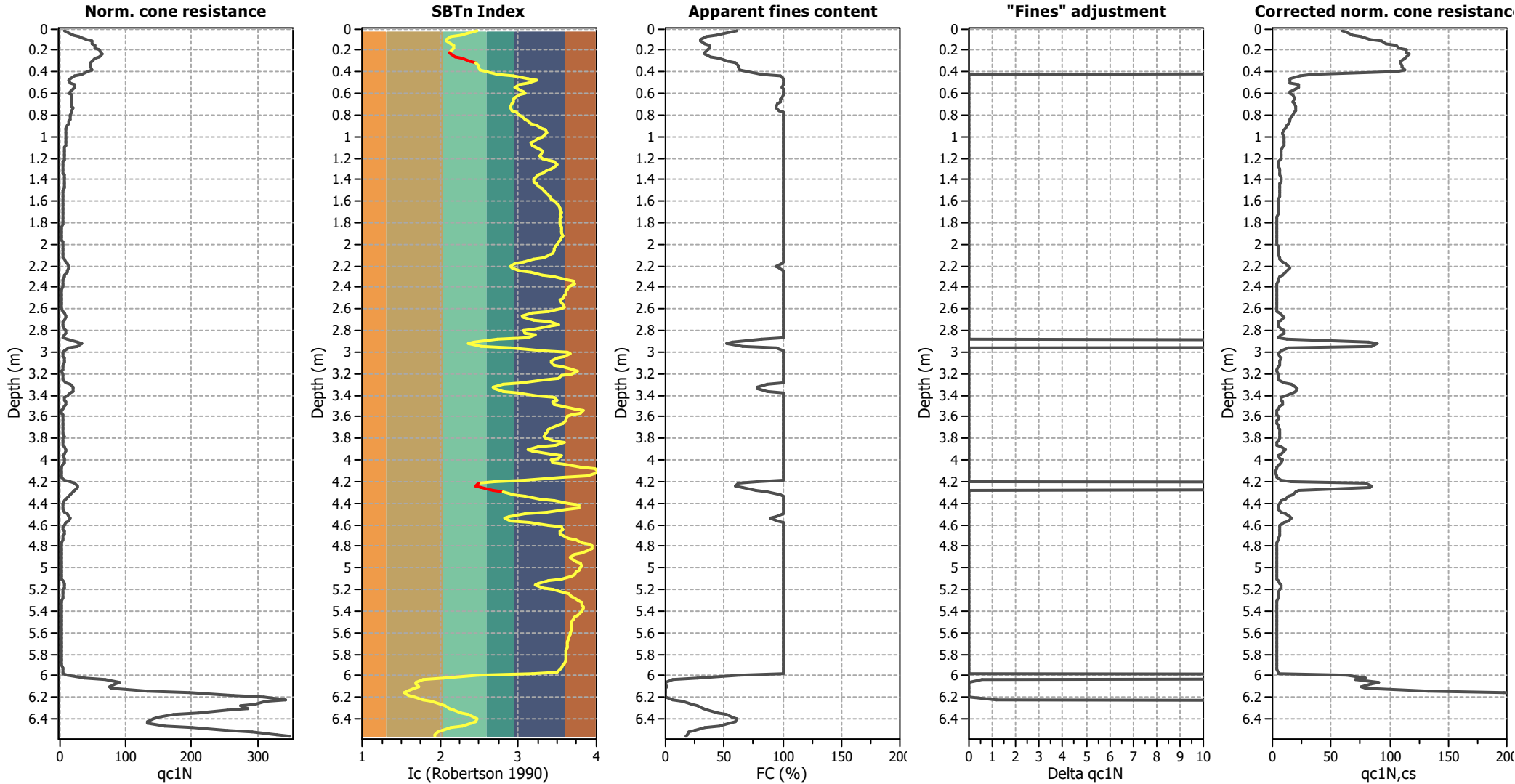
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

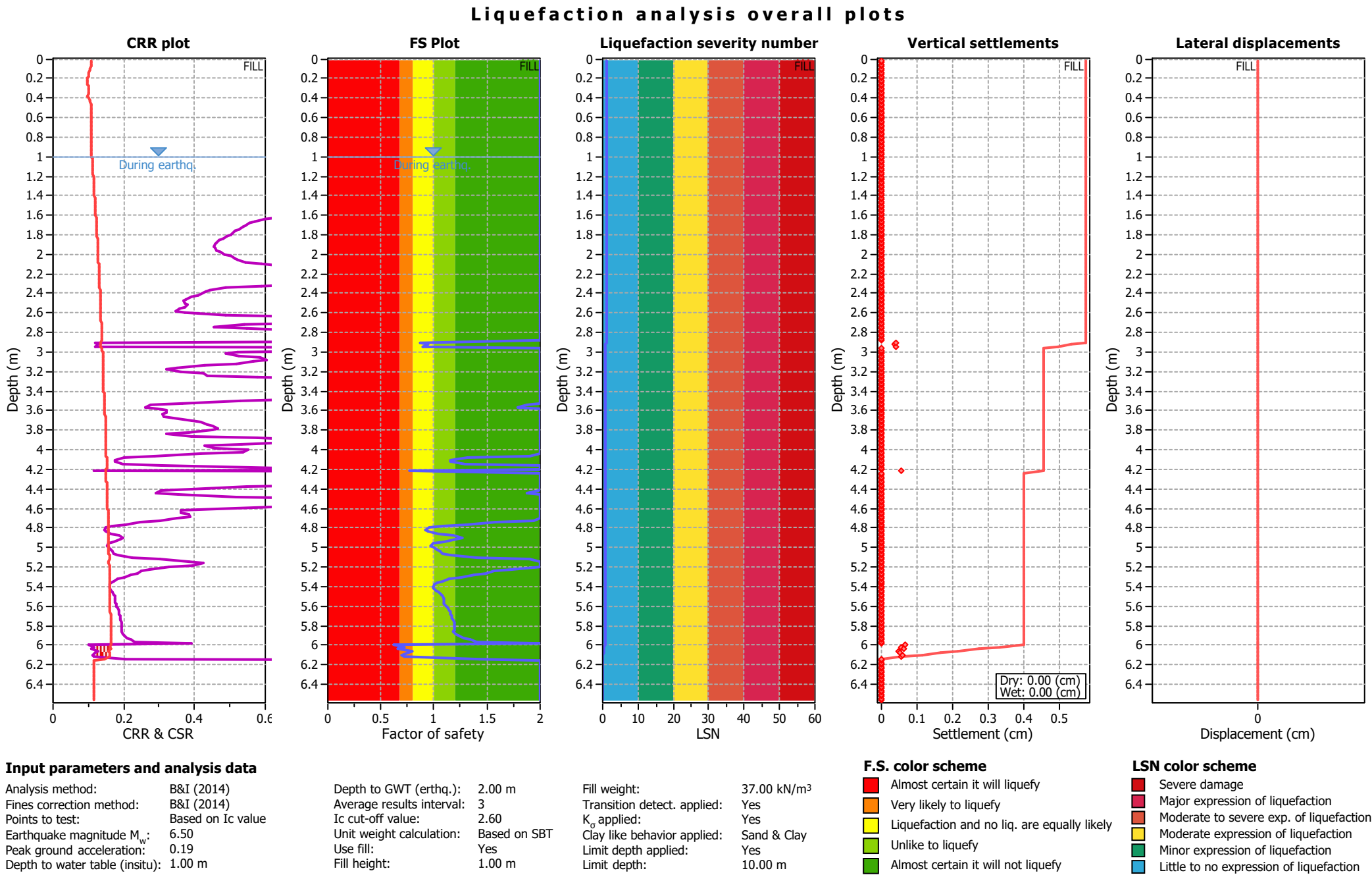
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

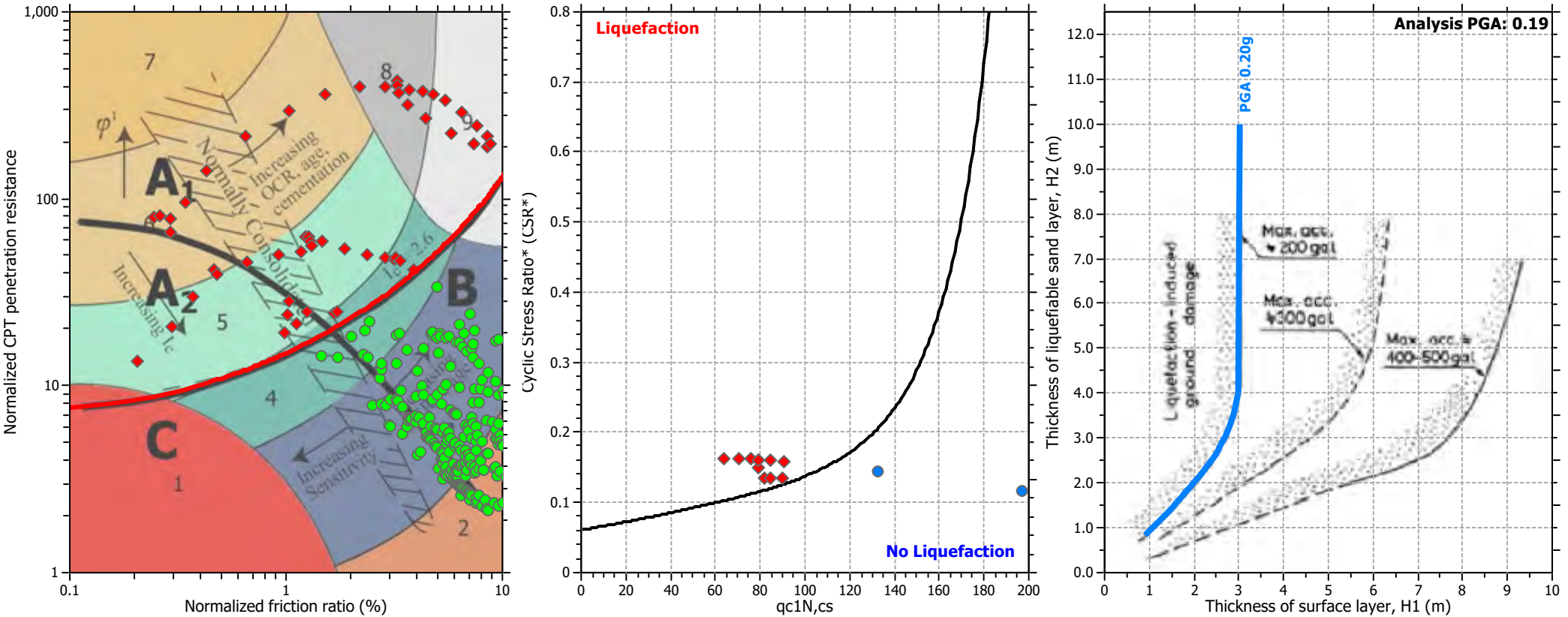


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{σ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

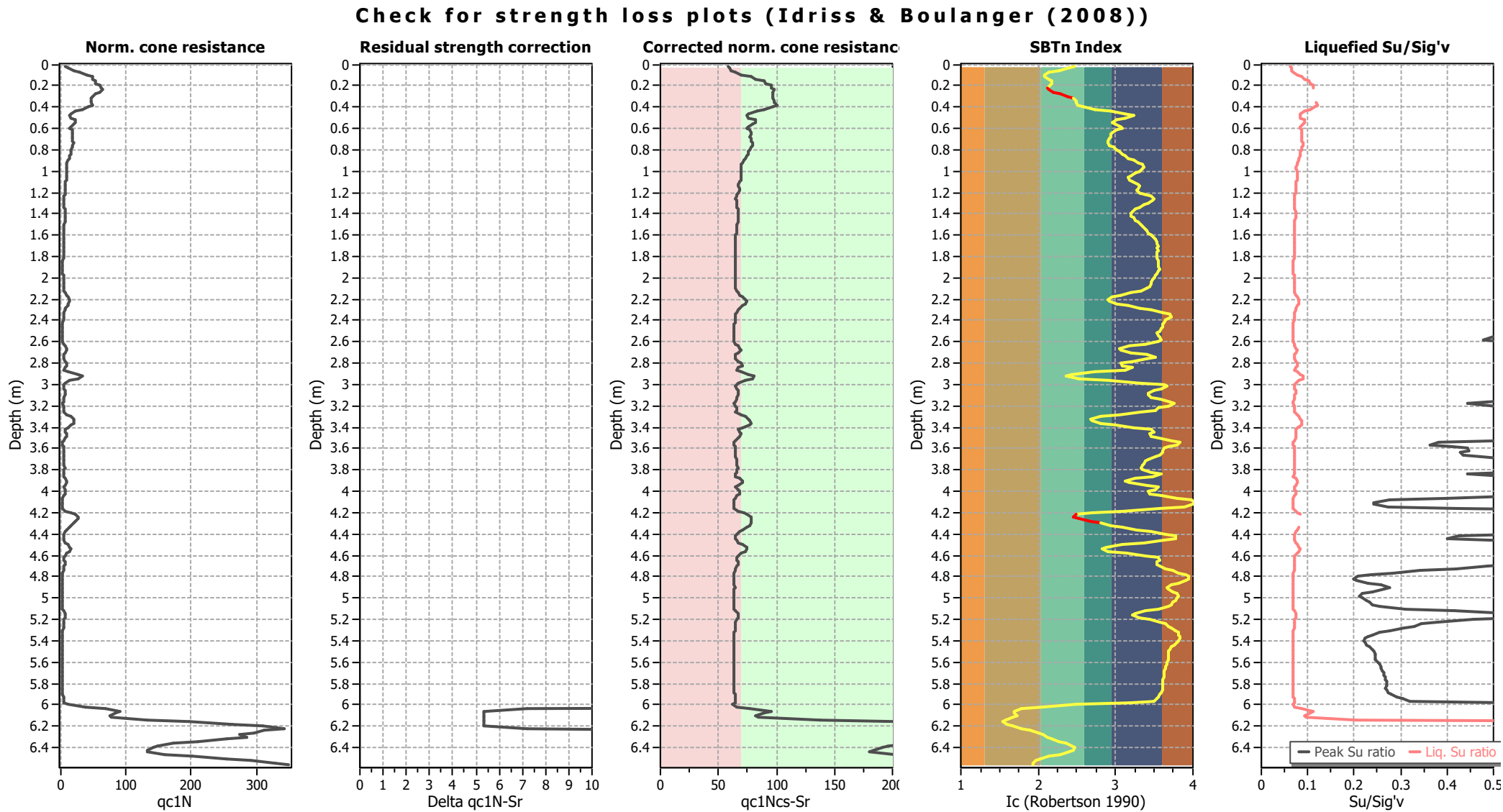


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

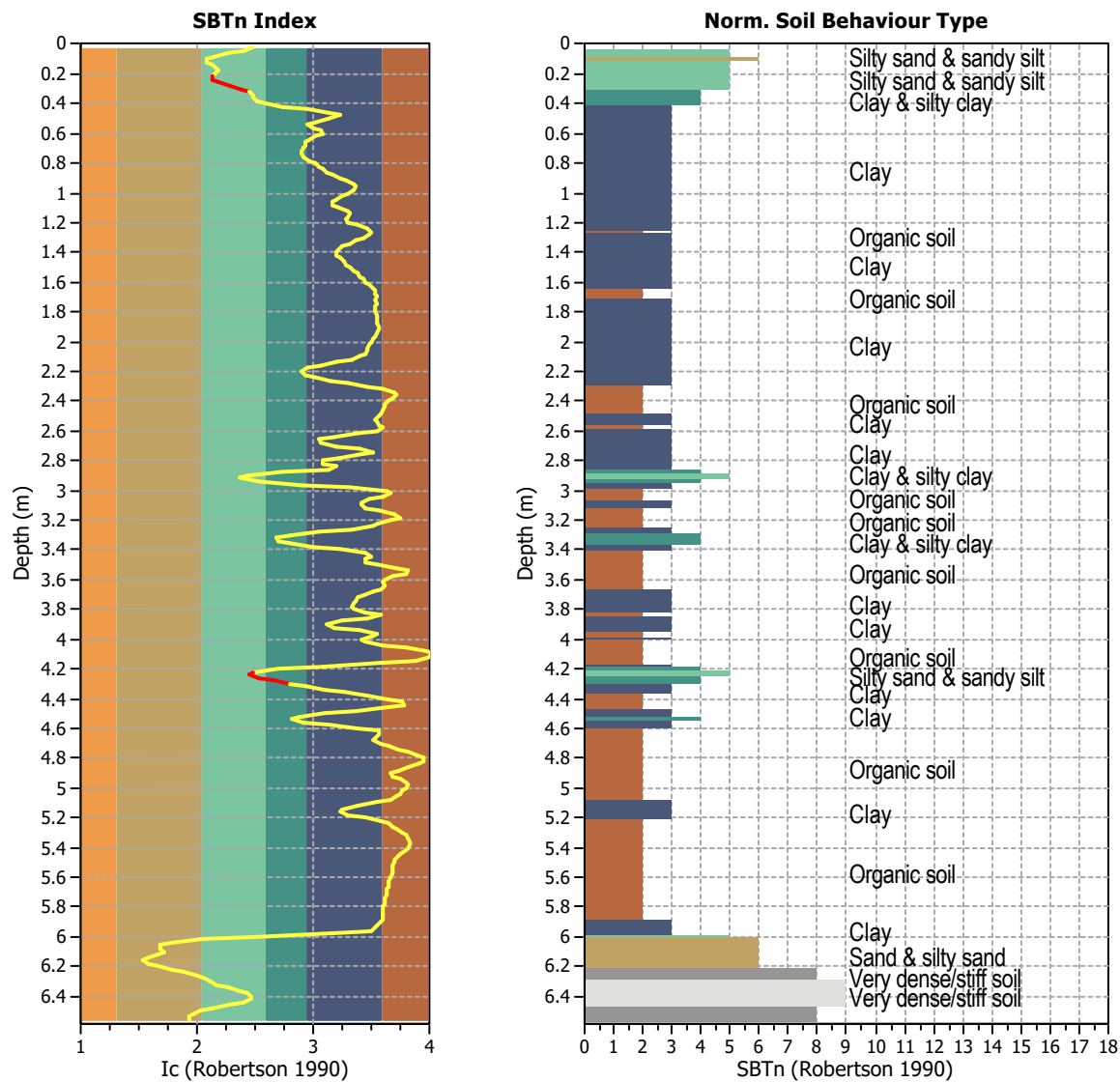
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

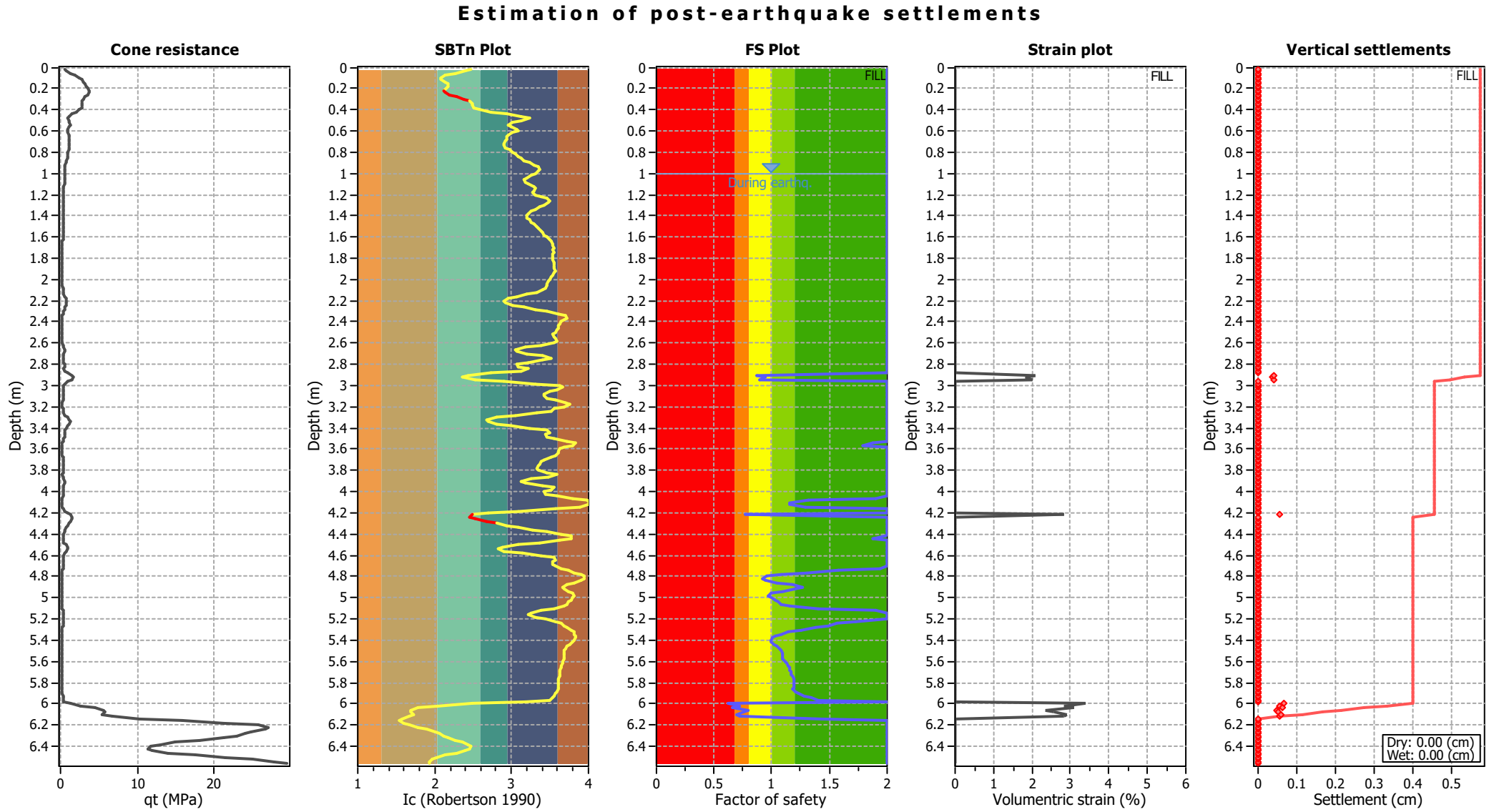


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

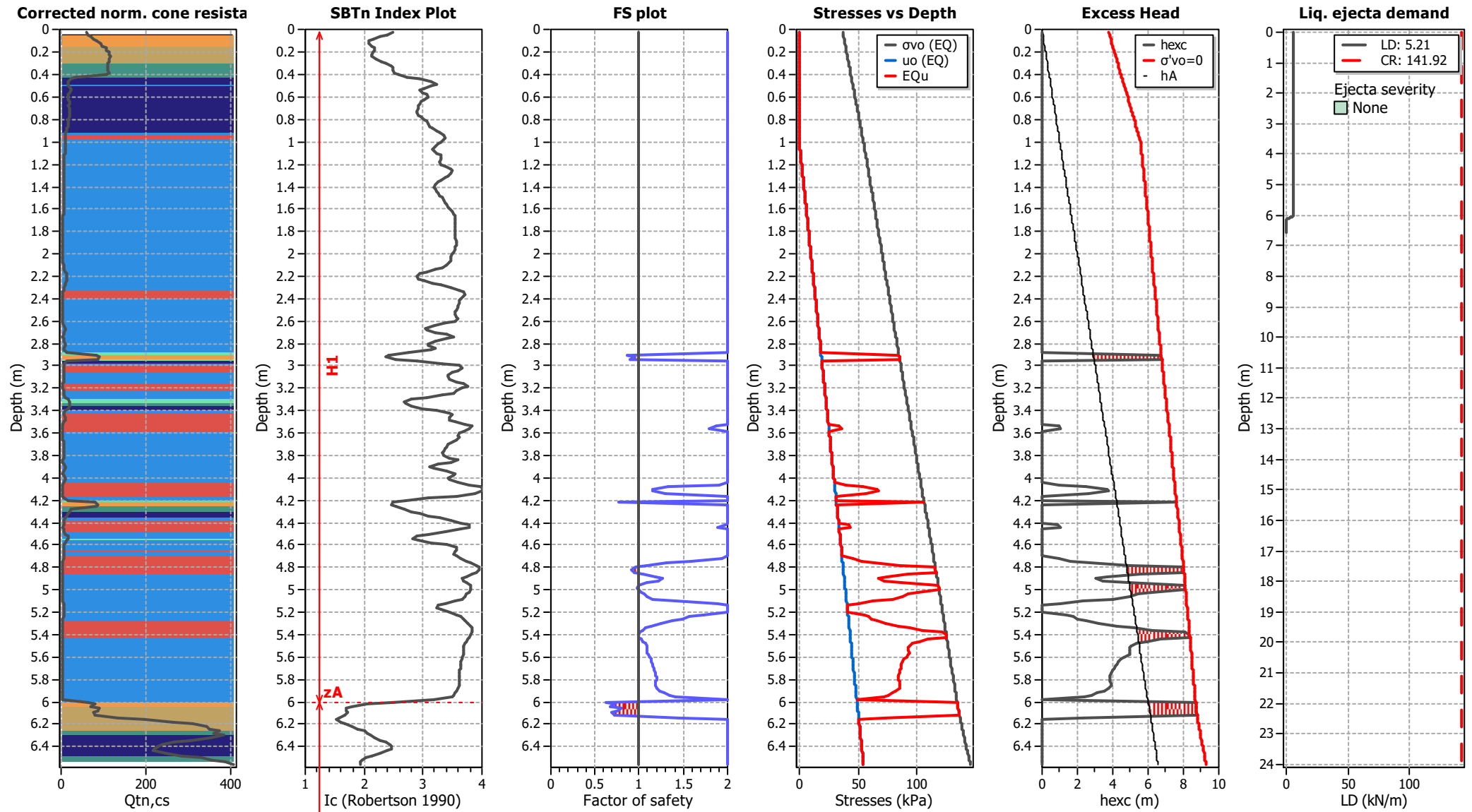
Total points in CPT file: 328
Total points excluded: 11
Exclusion percentage: 3.35%
Number of layers detected: 2



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

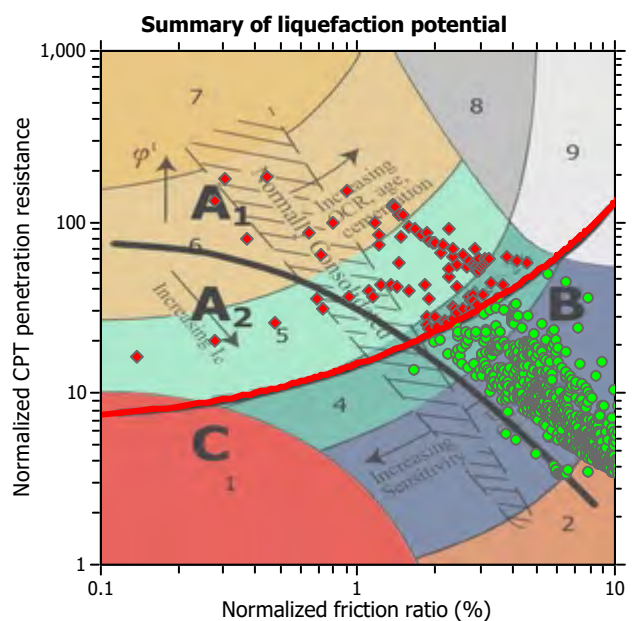
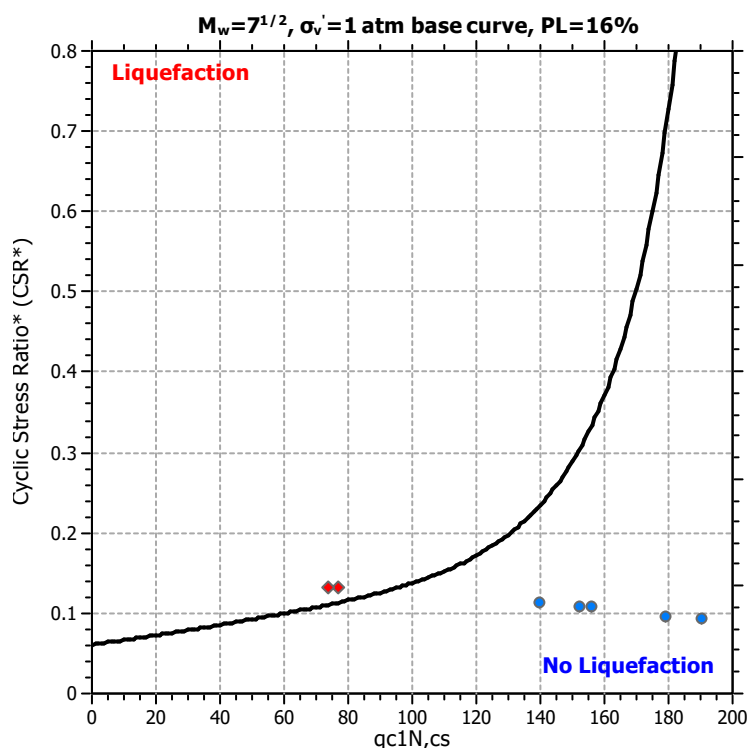
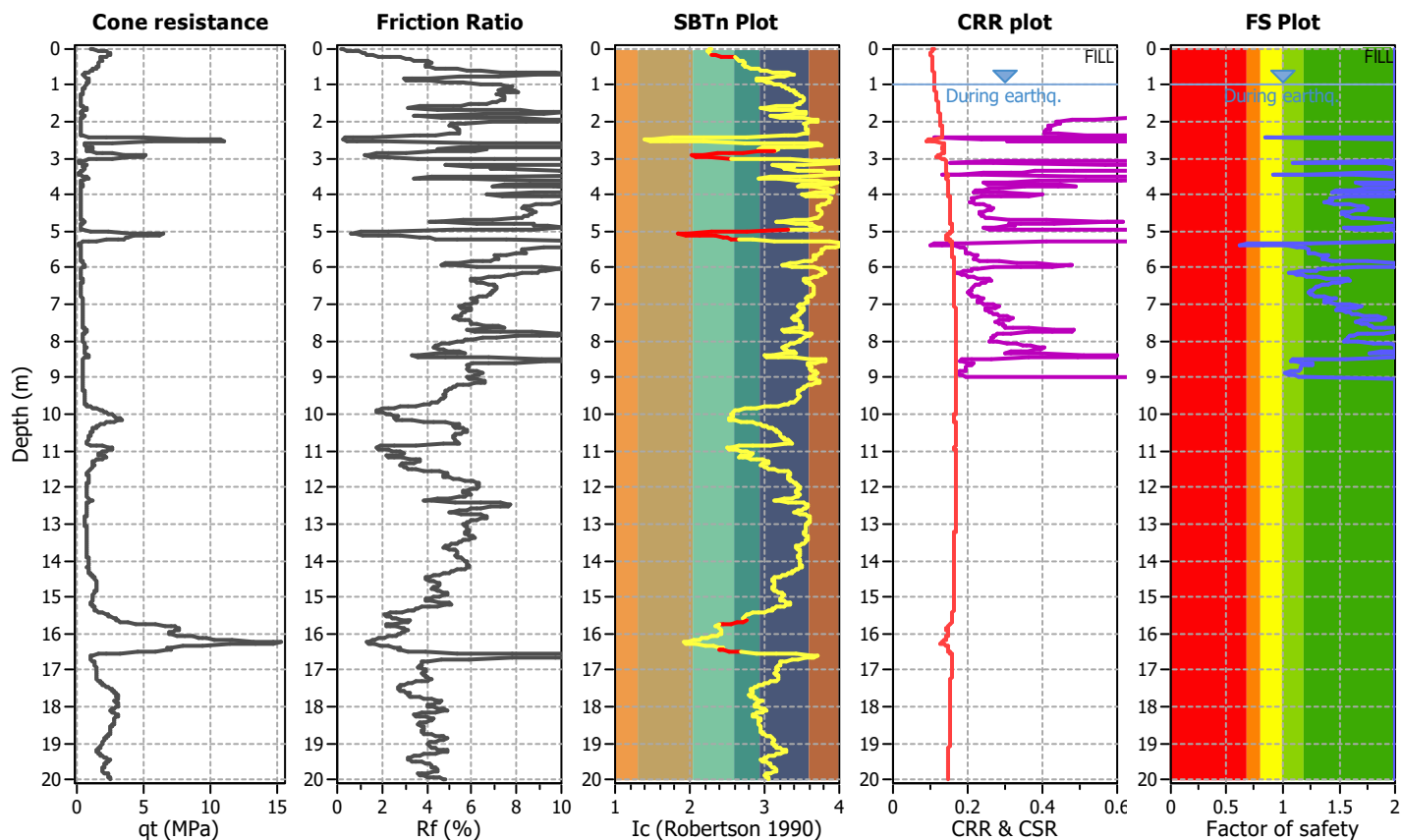
Project title : Sunfield Landholding

Location :

CPT file : CPT119

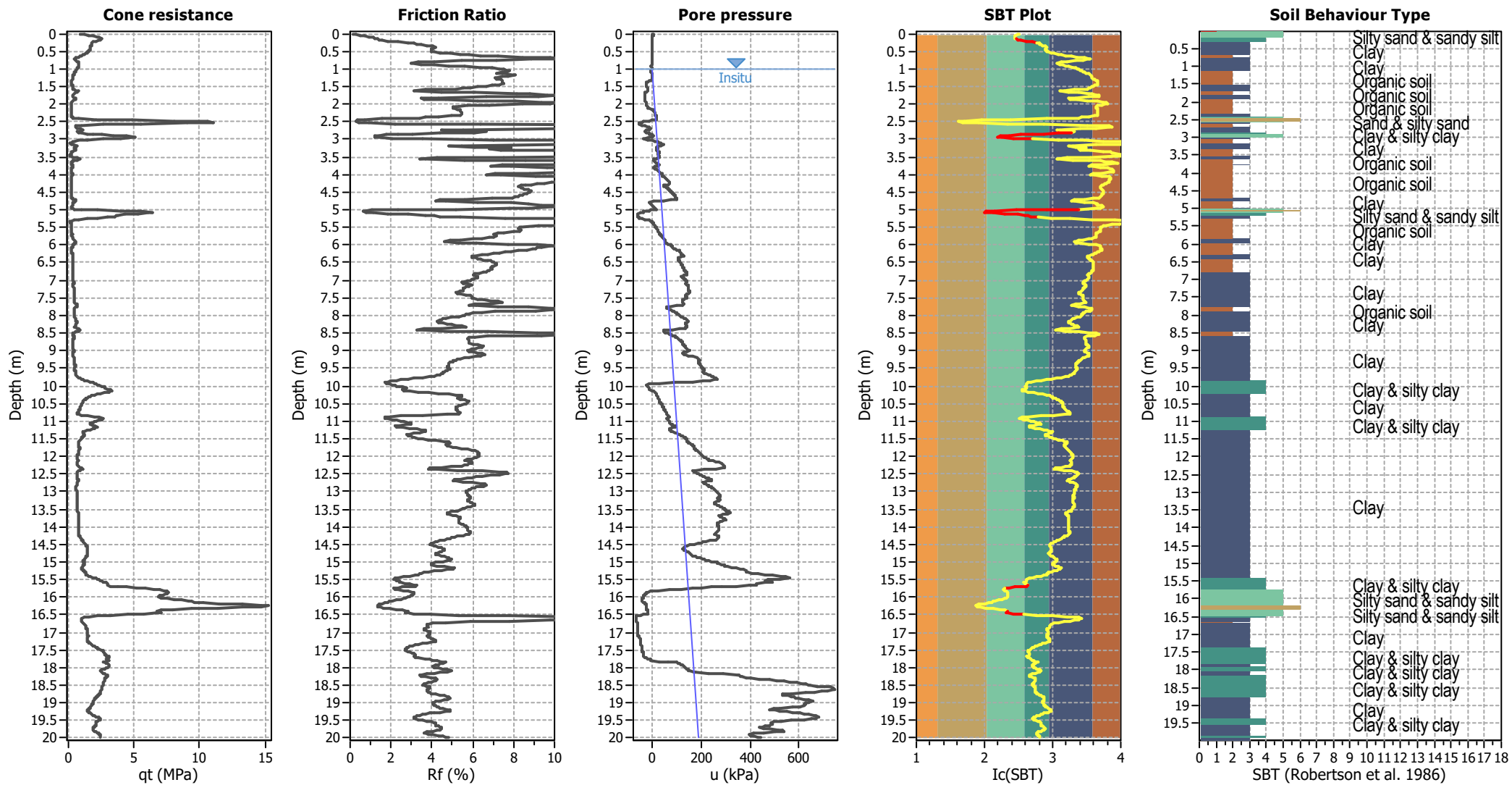
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



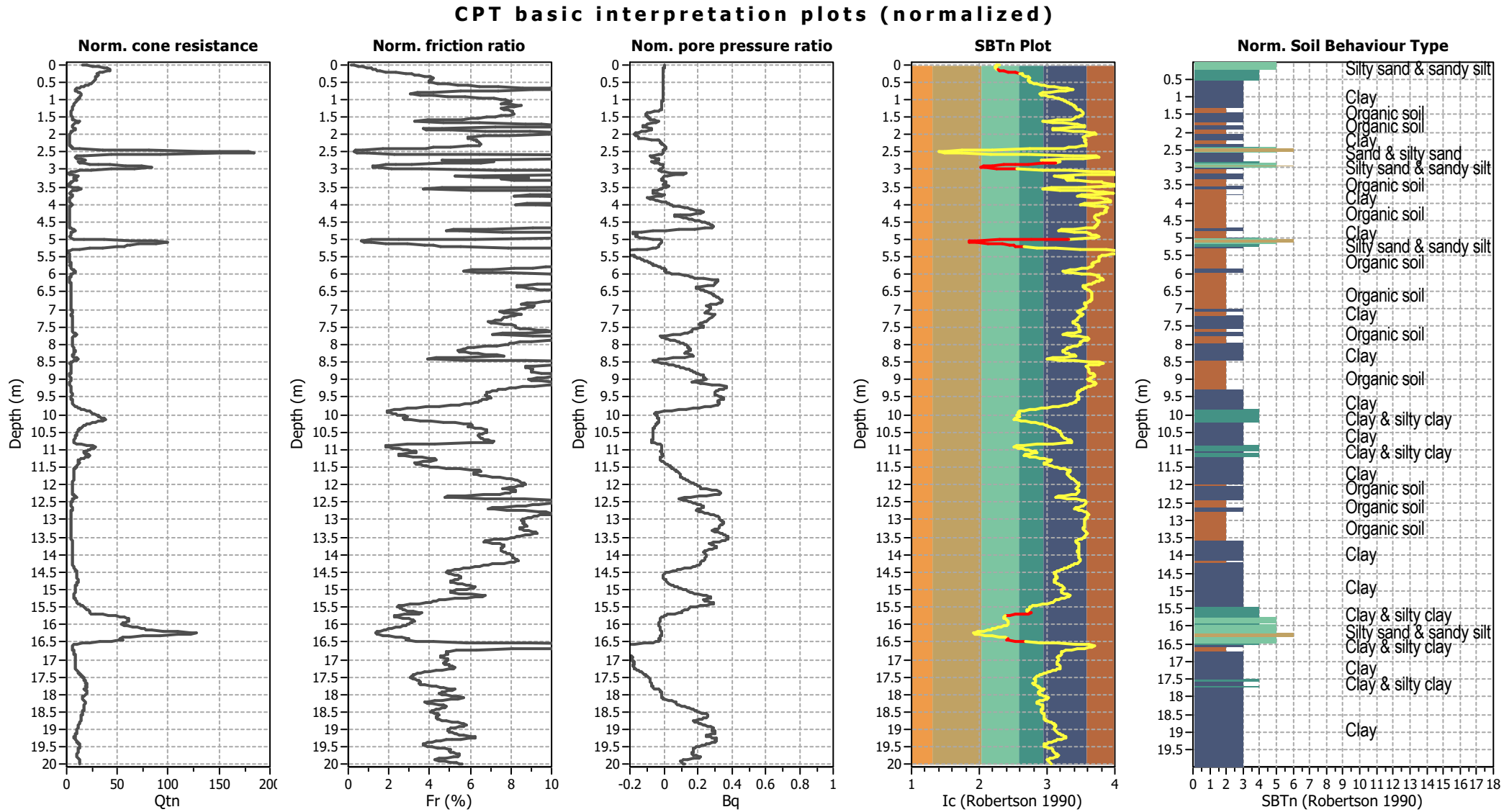
Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³	SBT legend 1. Sensitive fine grained 2. Organic material 3. Clay to silty clay 4. Clayey silt to silty 5. Silty sand to sandy silt 6. Clean sand to silty sand 7. Gravely sand to sand 8. Very stiff sand to 9. Very stiff fine grained
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes	
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes	
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay	
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes	
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m	



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

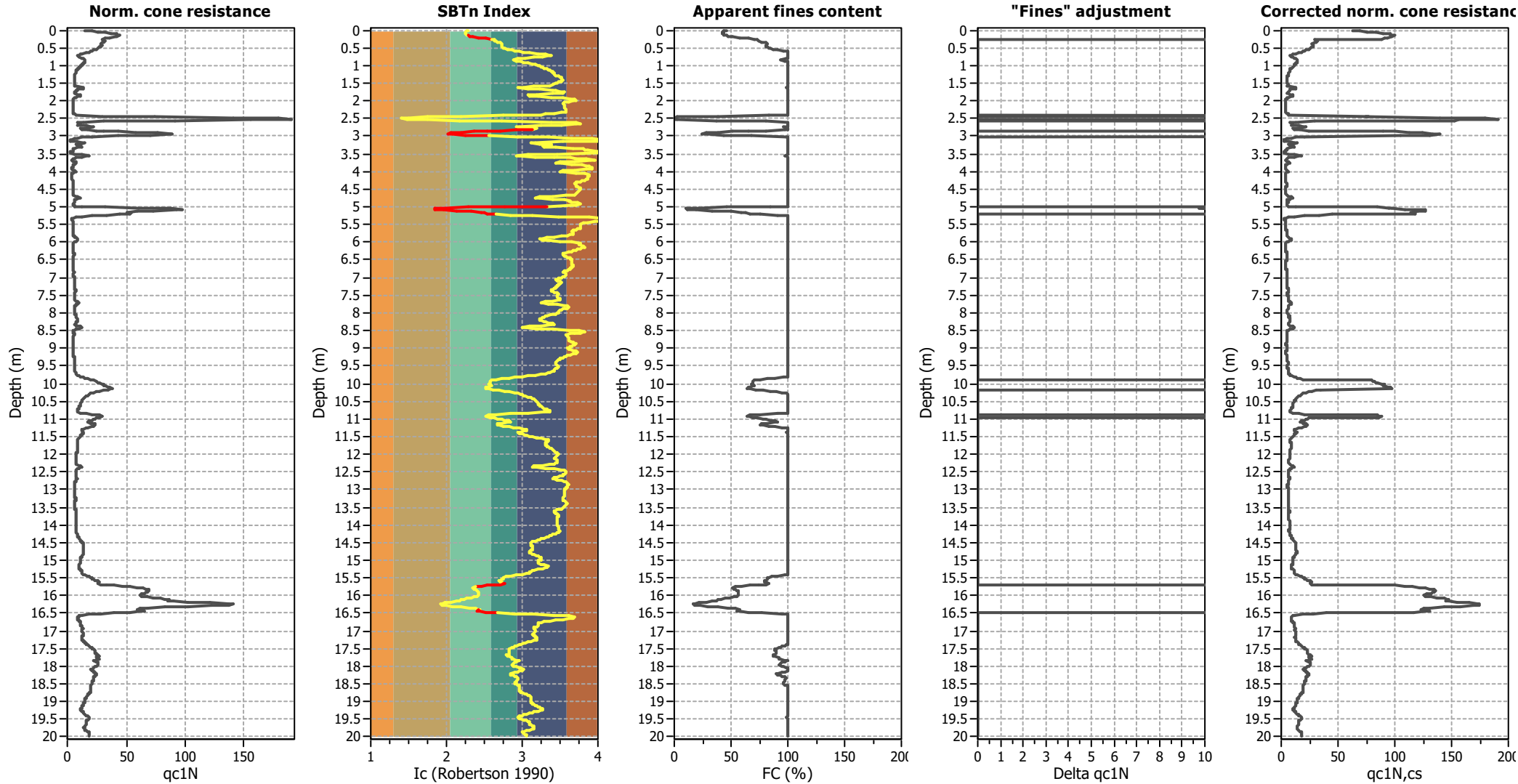
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

9. Very stiff fine grained

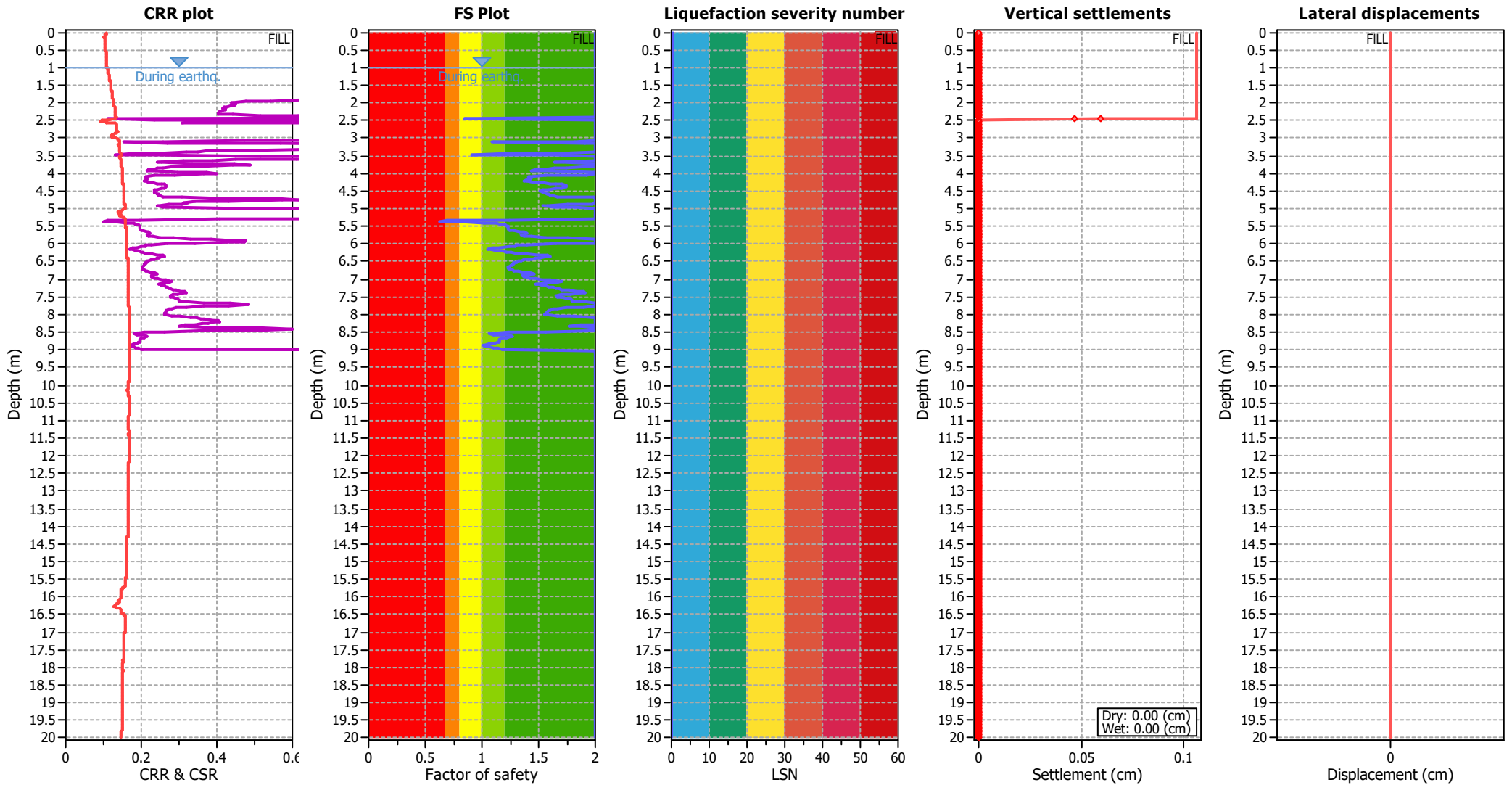
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

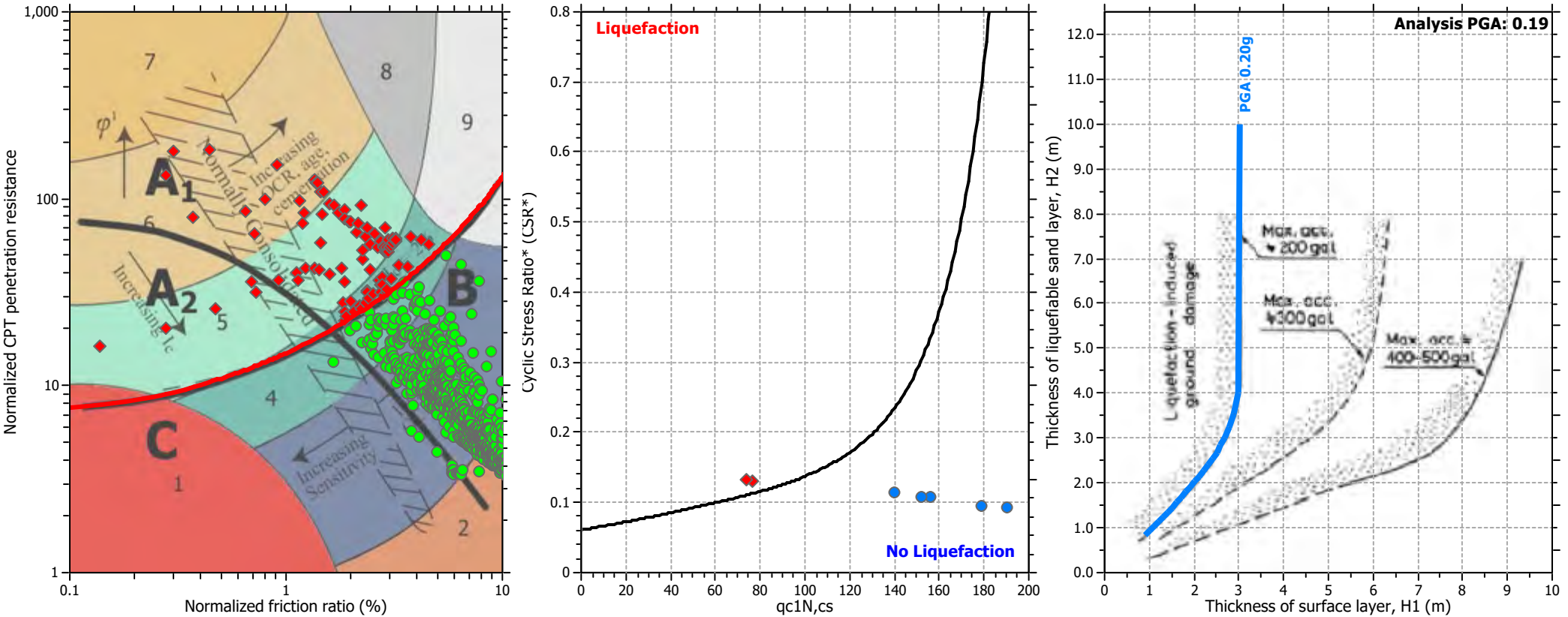
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

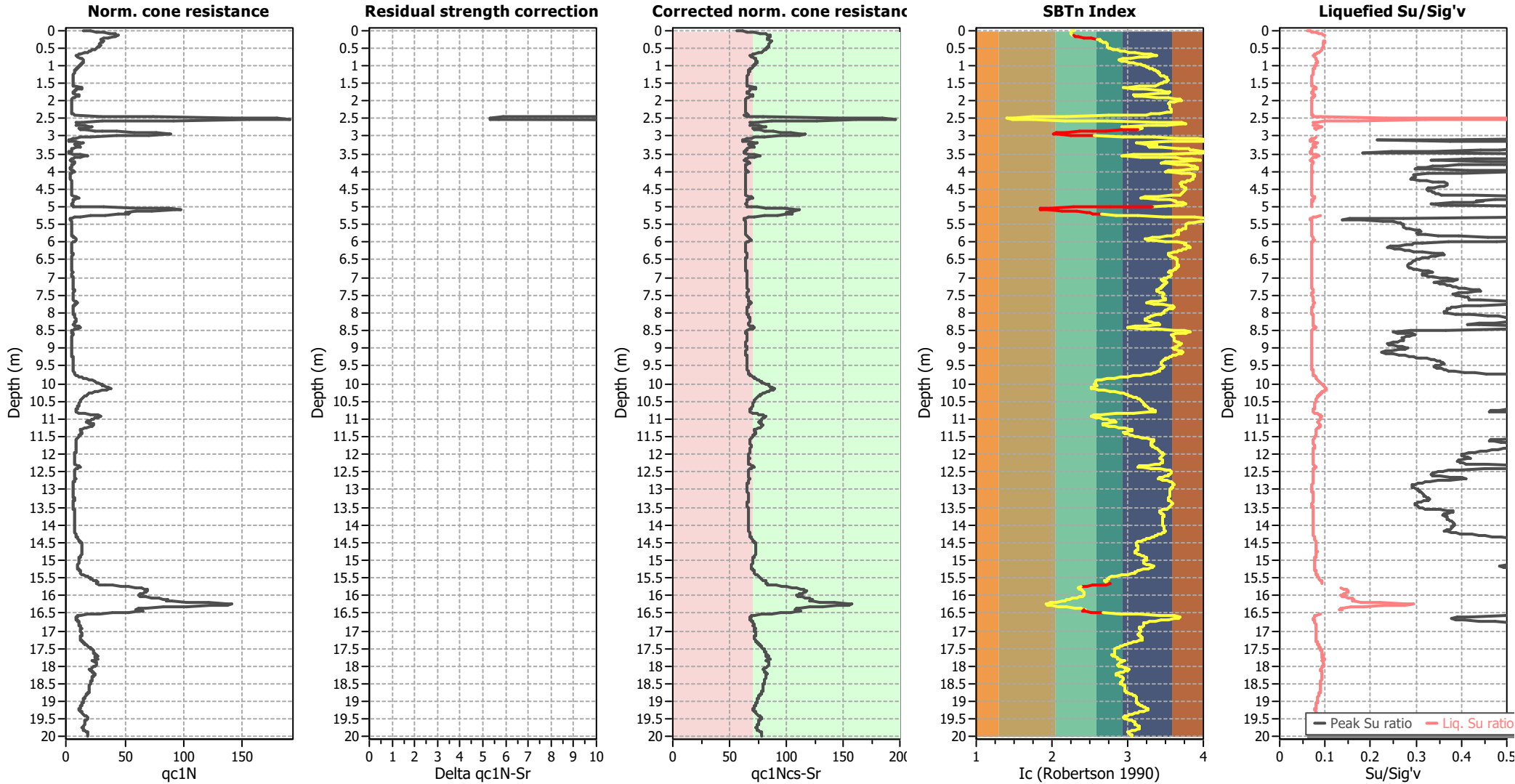
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

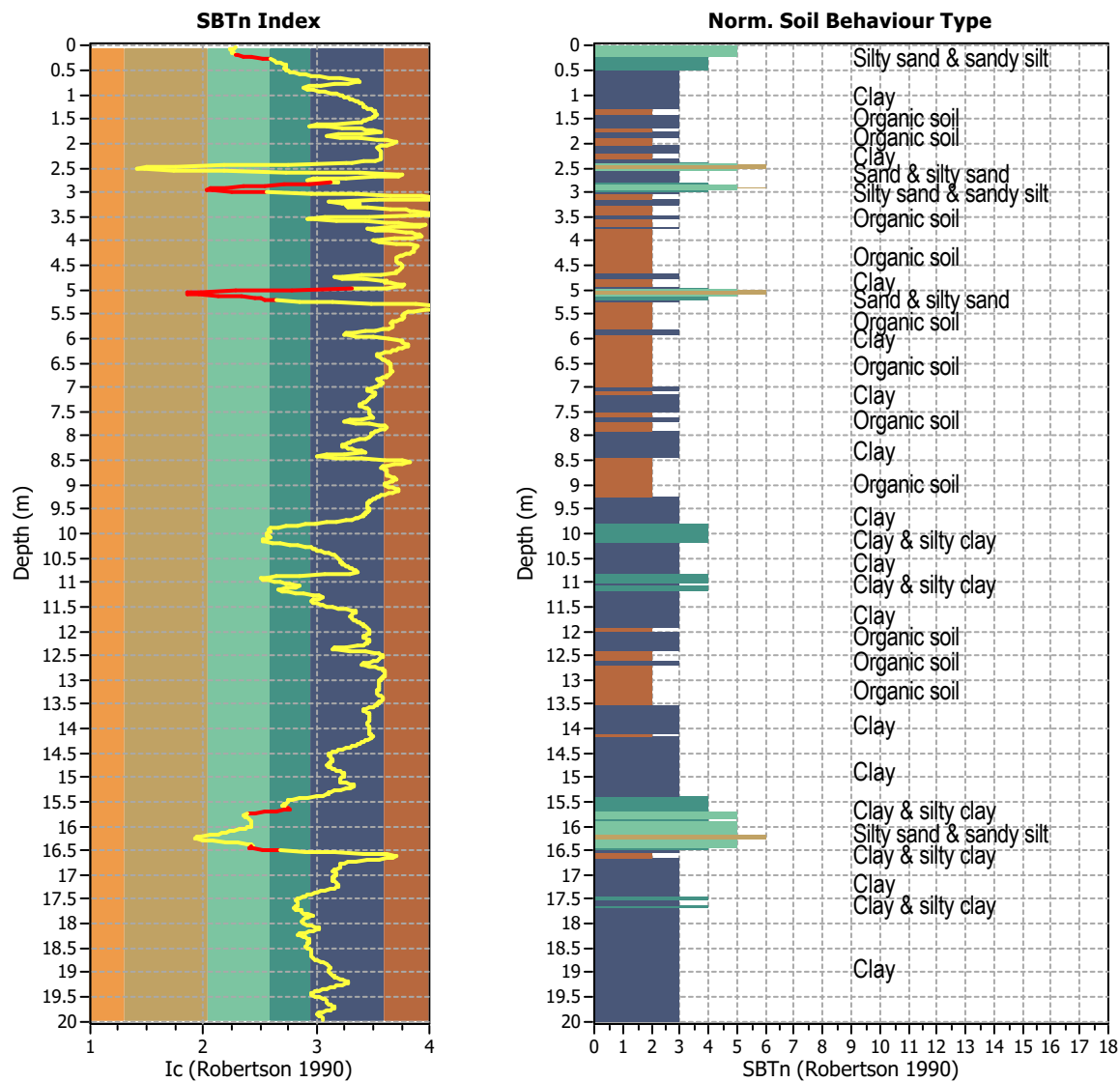
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



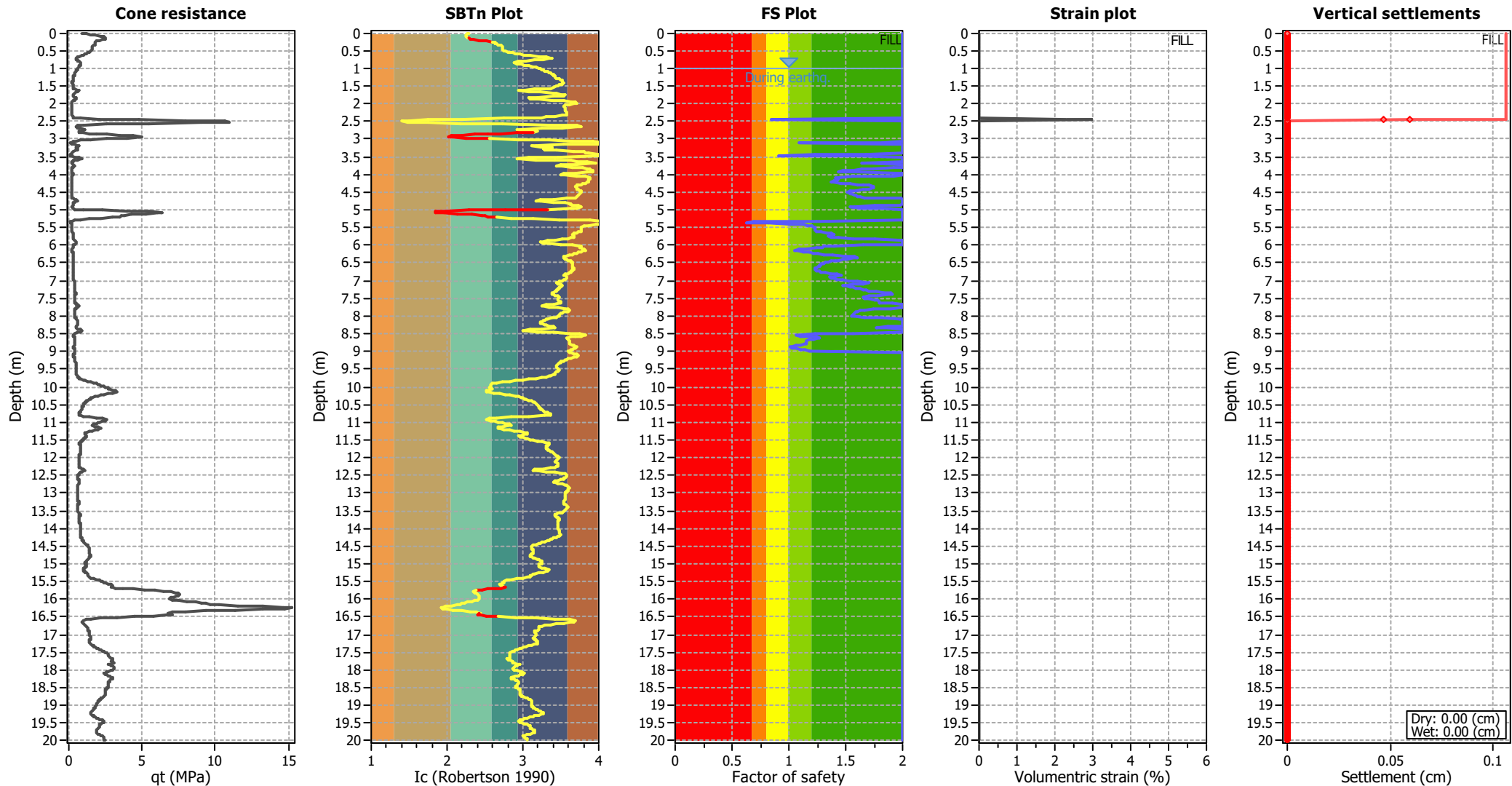
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 999
Total points excluded: 43
Exclusion percentage: 4.30%
Number of layers detected: 7

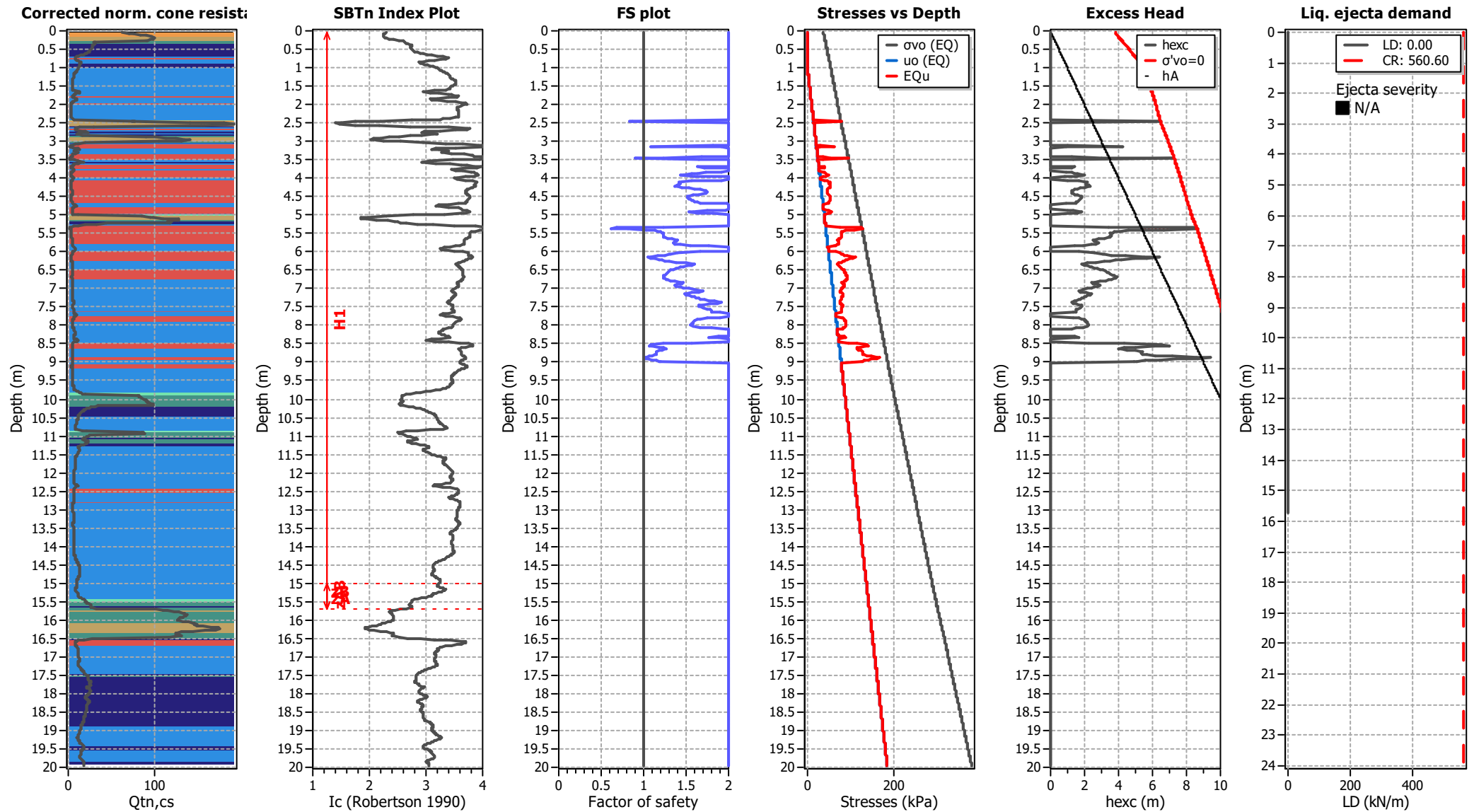
Estimation of post-earthquake settlements



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

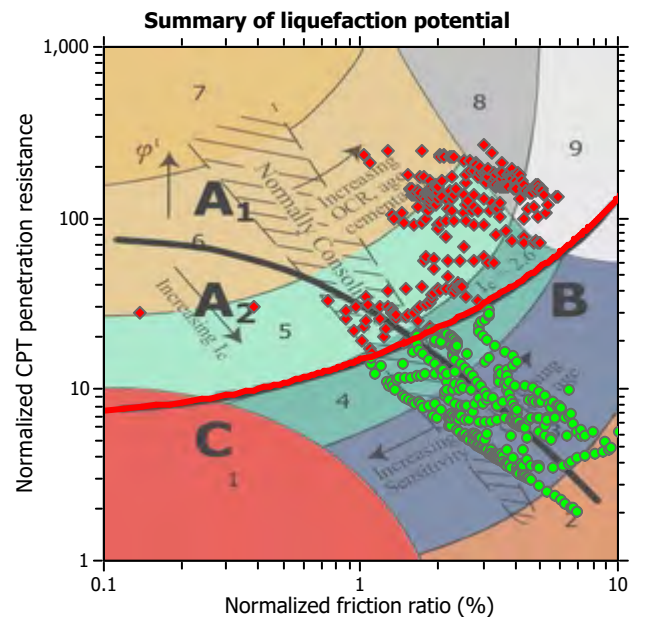
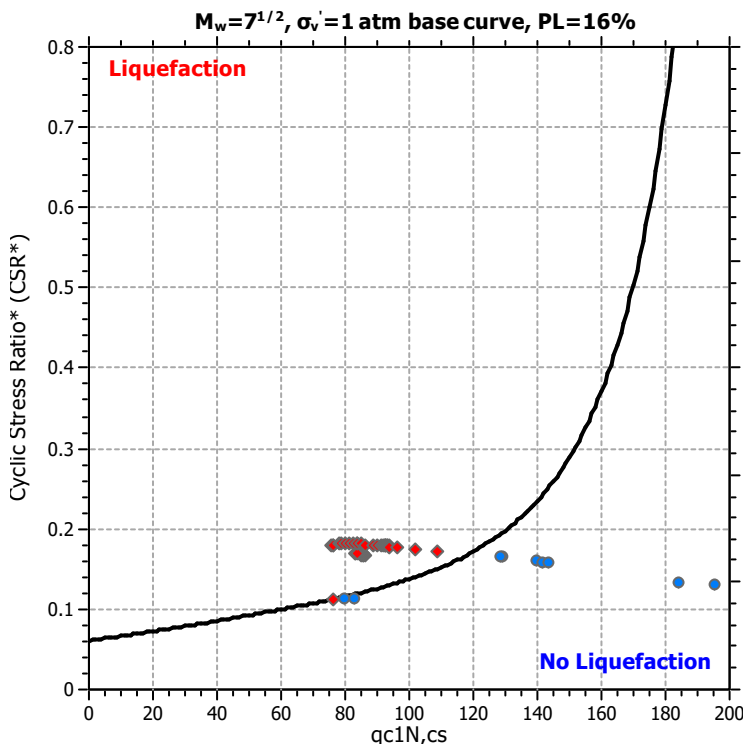
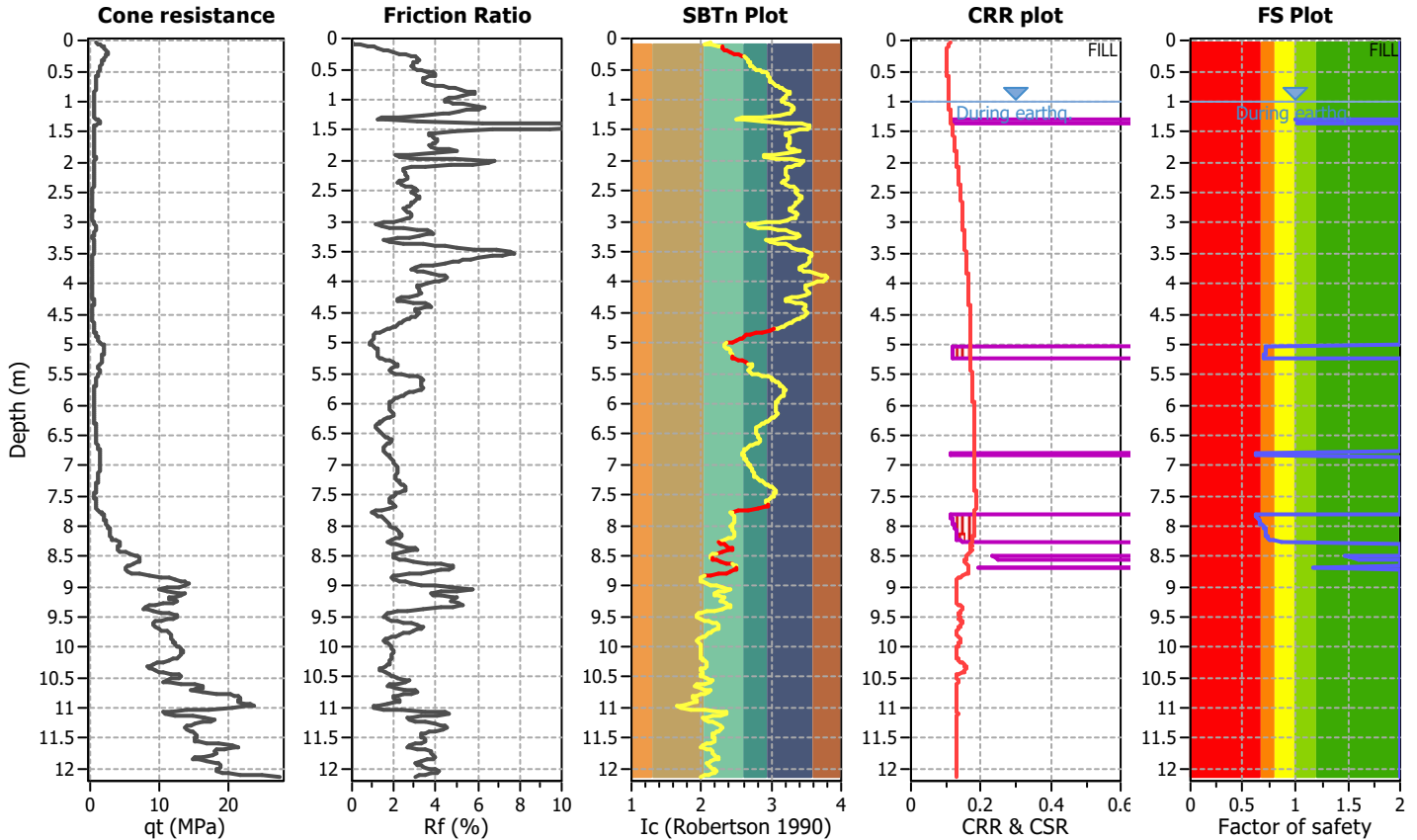
Project title : Sunfield Landholding

Location :

CPT file : CPT120

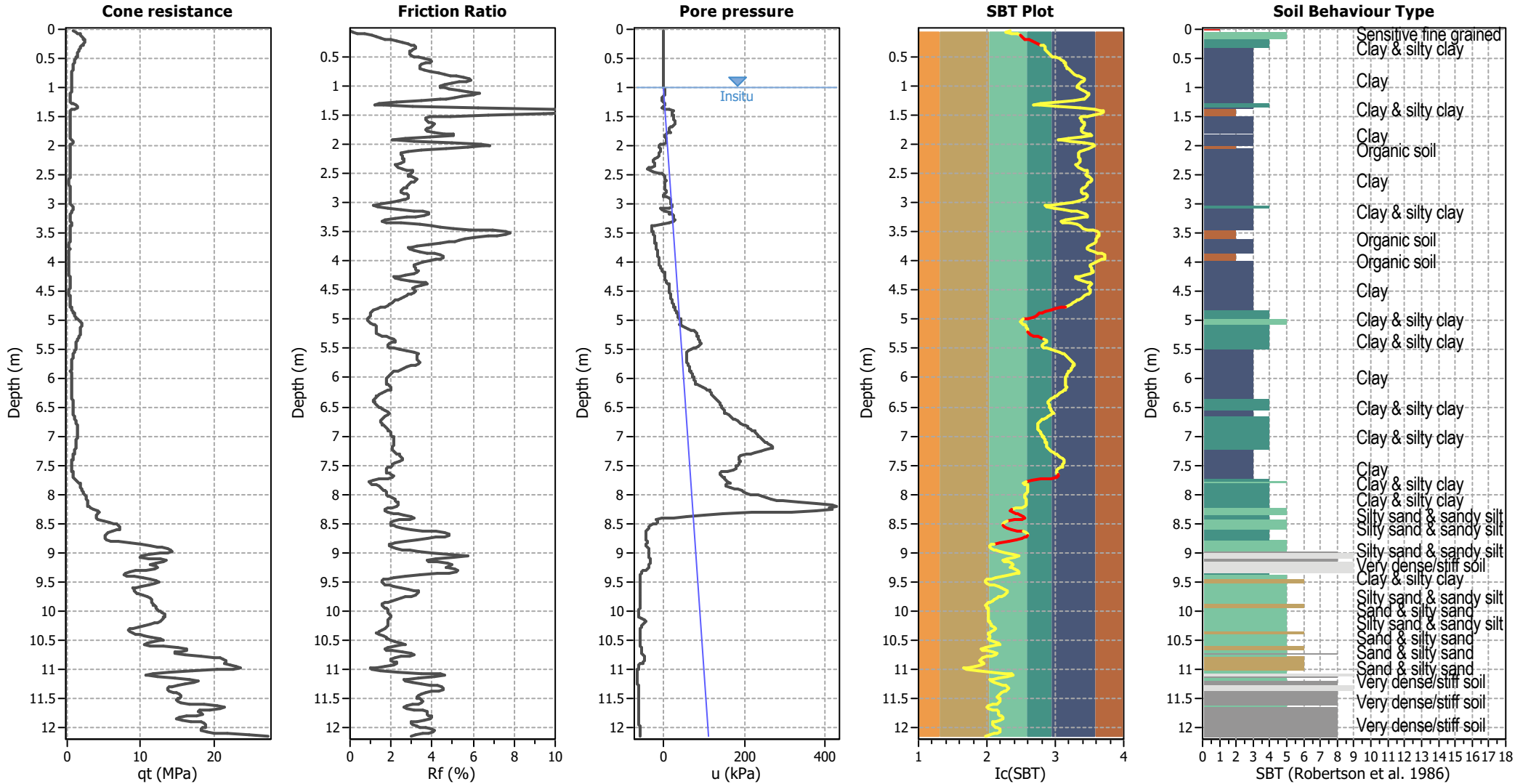
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

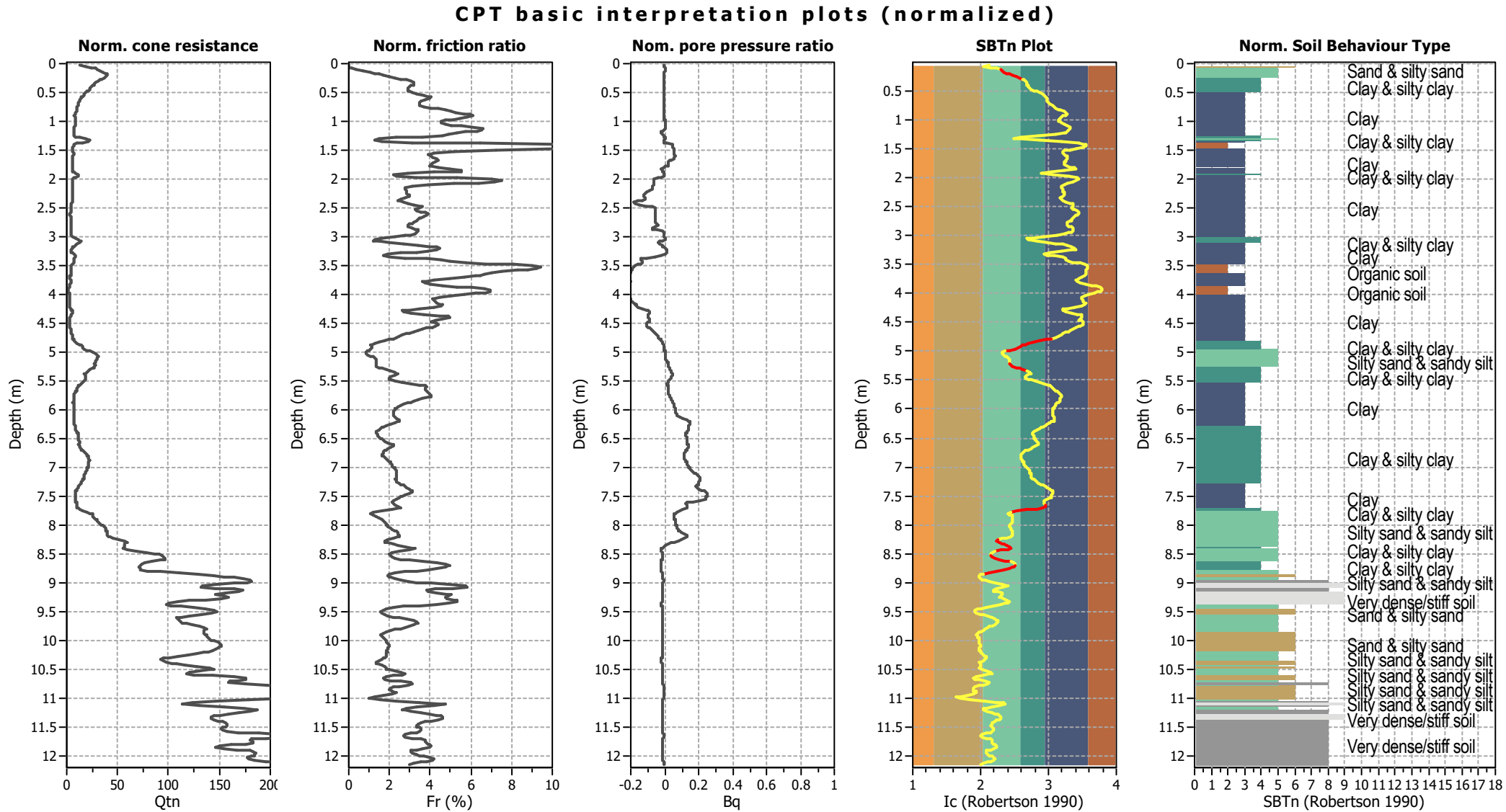


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

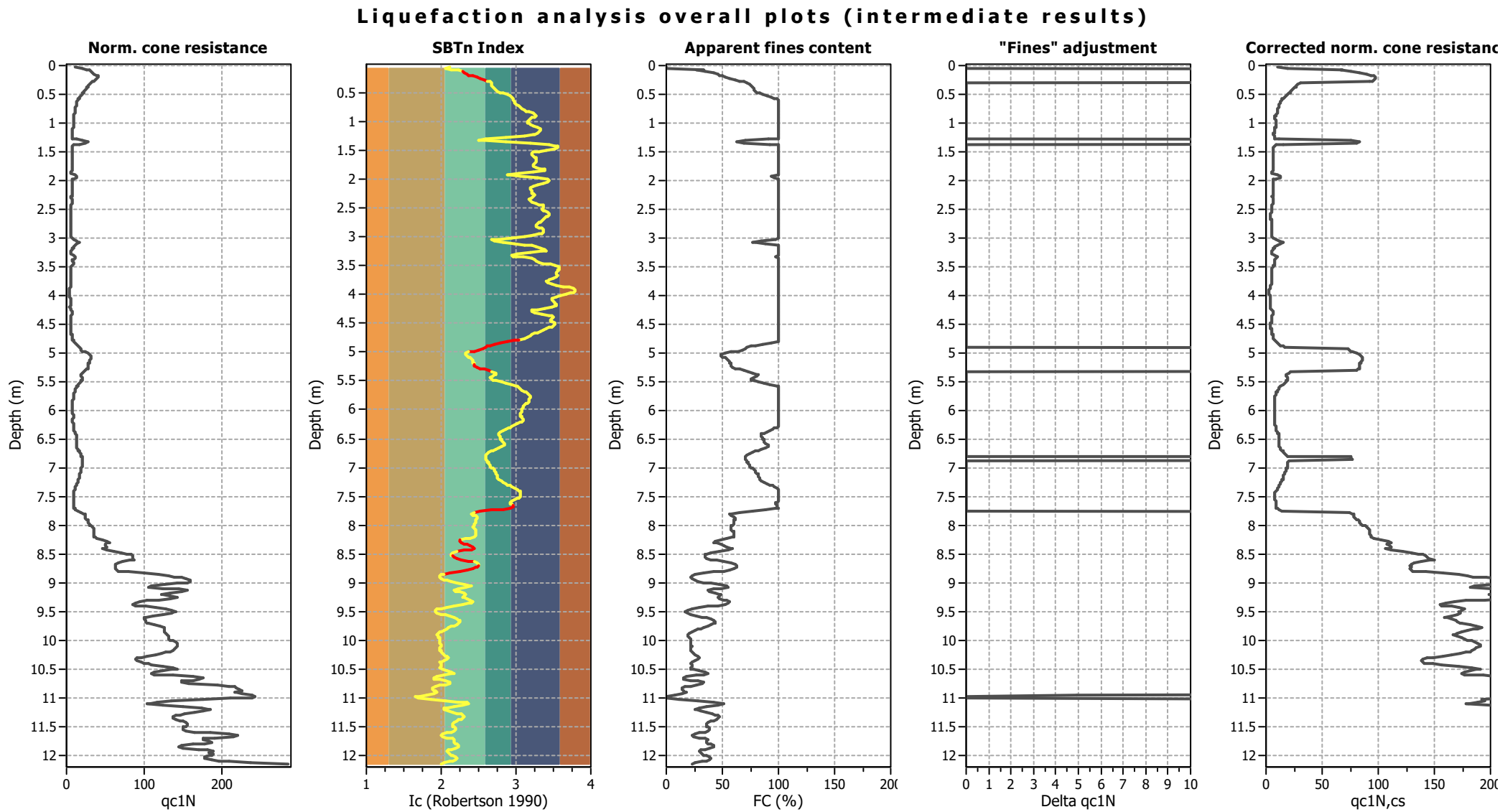
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



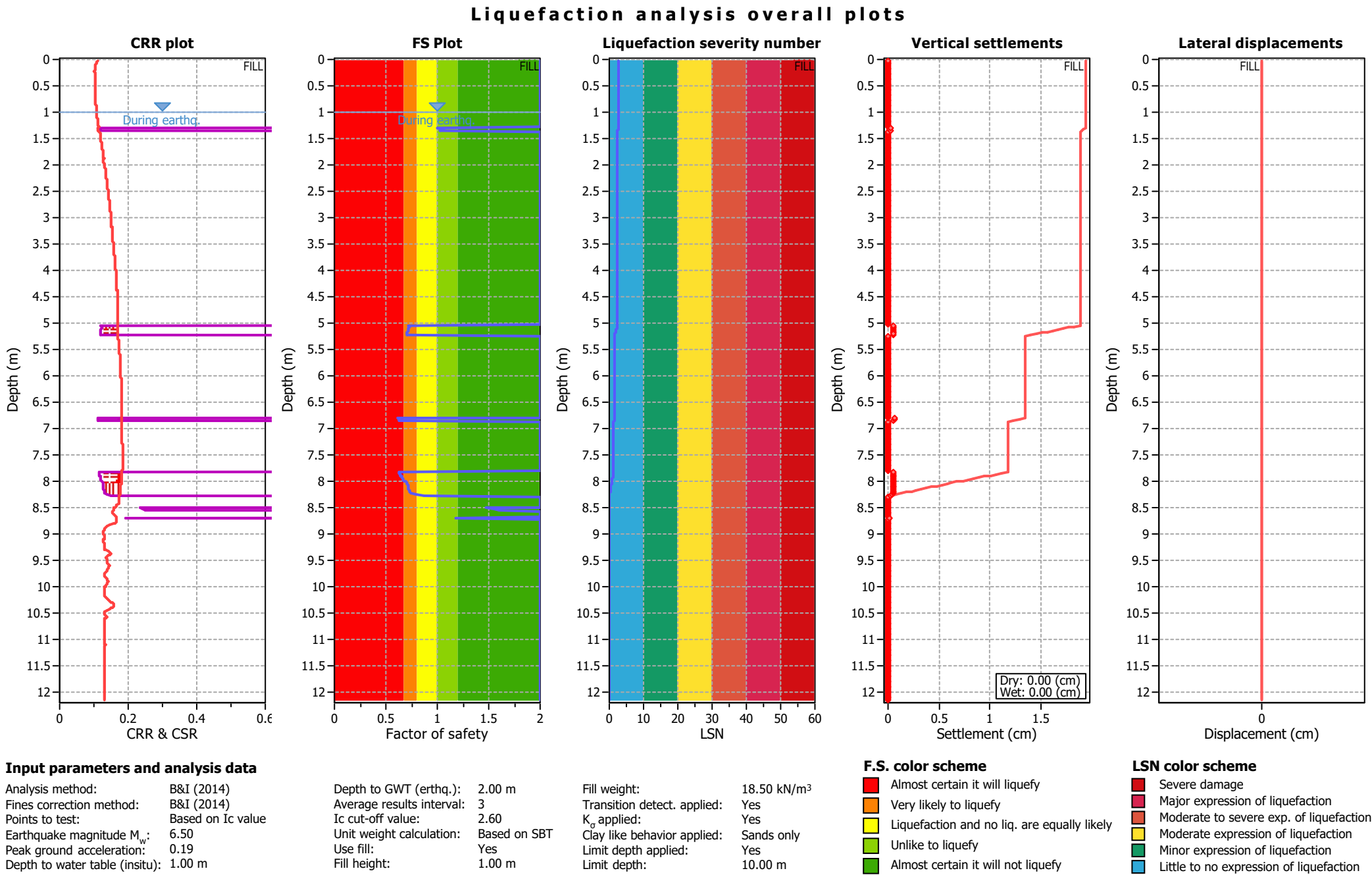
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³	SBTn legend		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes			
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes	1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only	2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes	3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m			

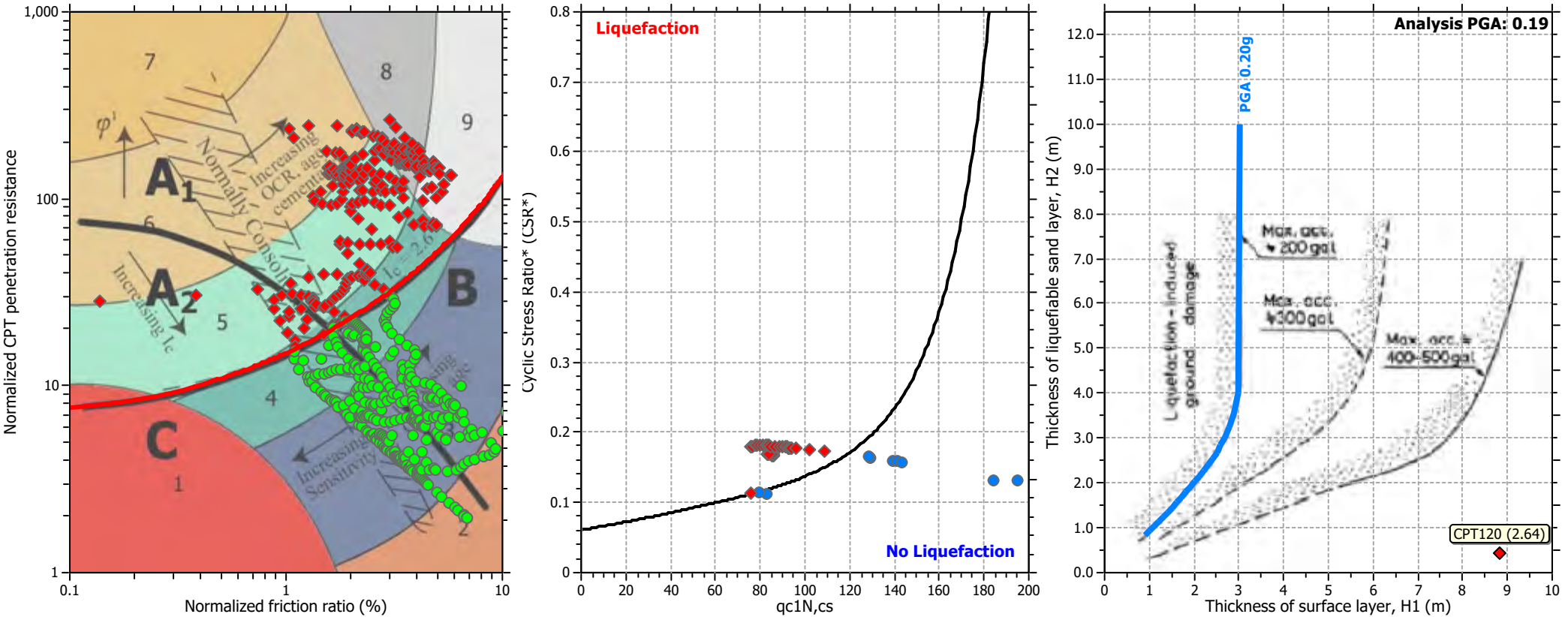


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



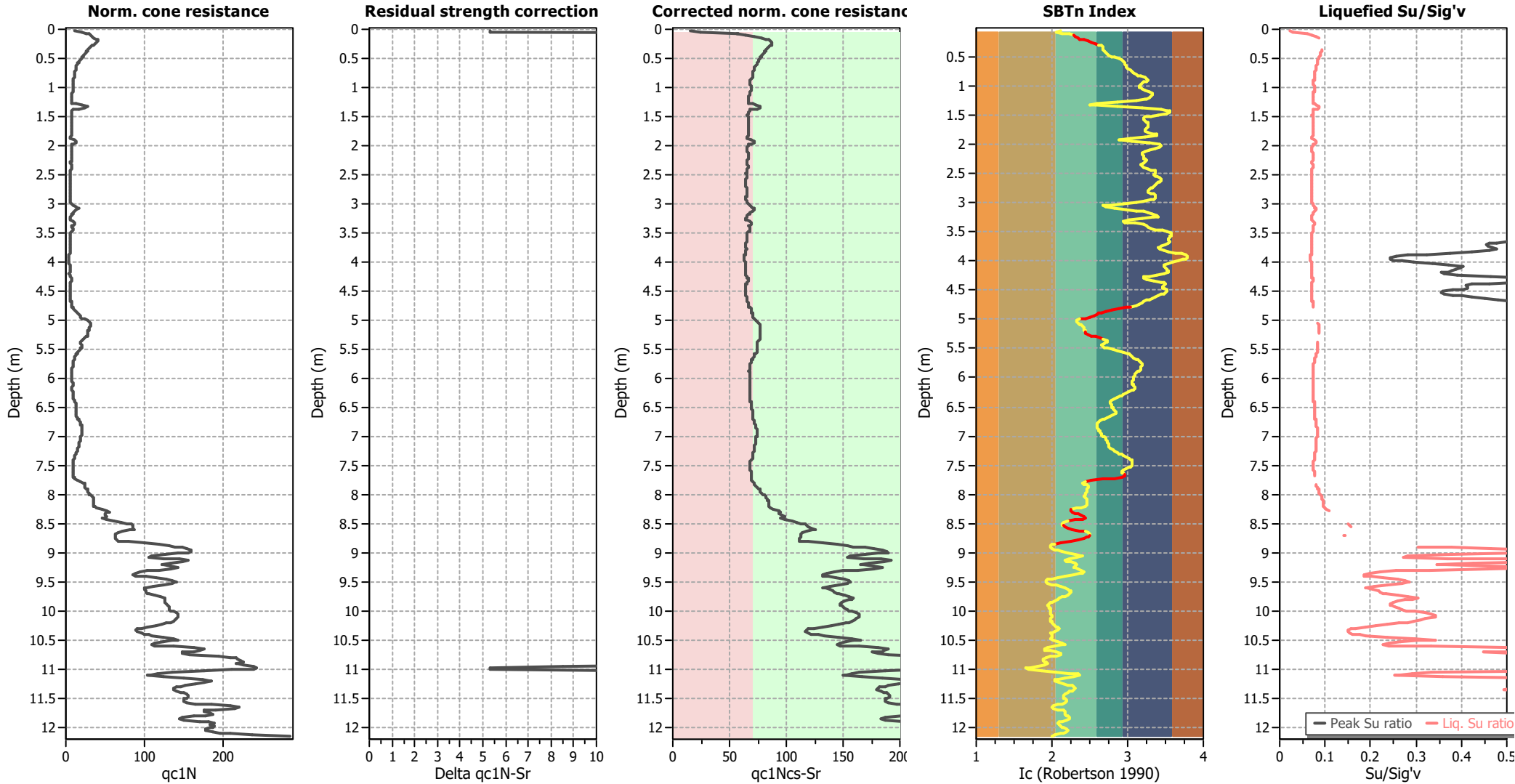
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

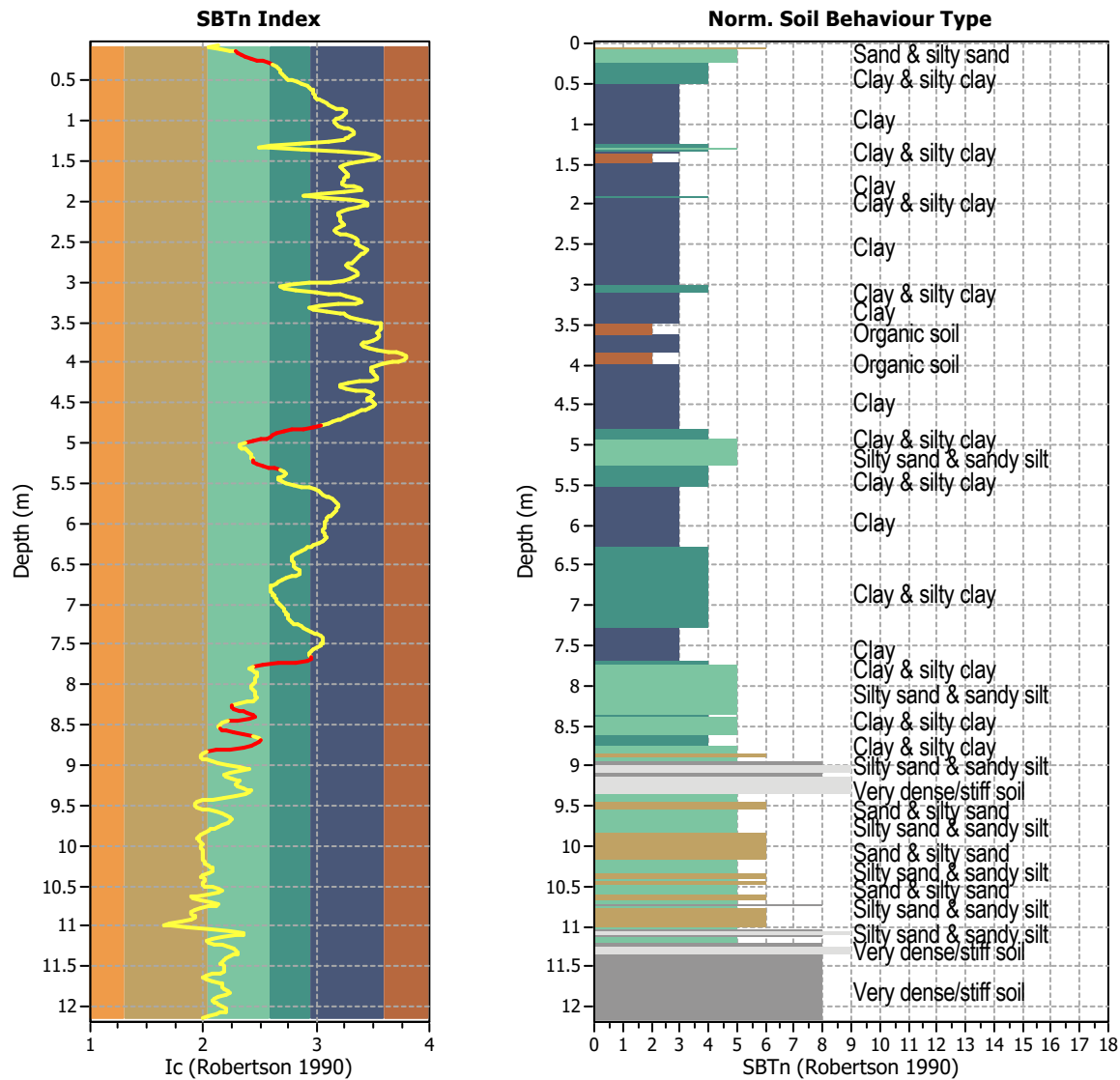
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



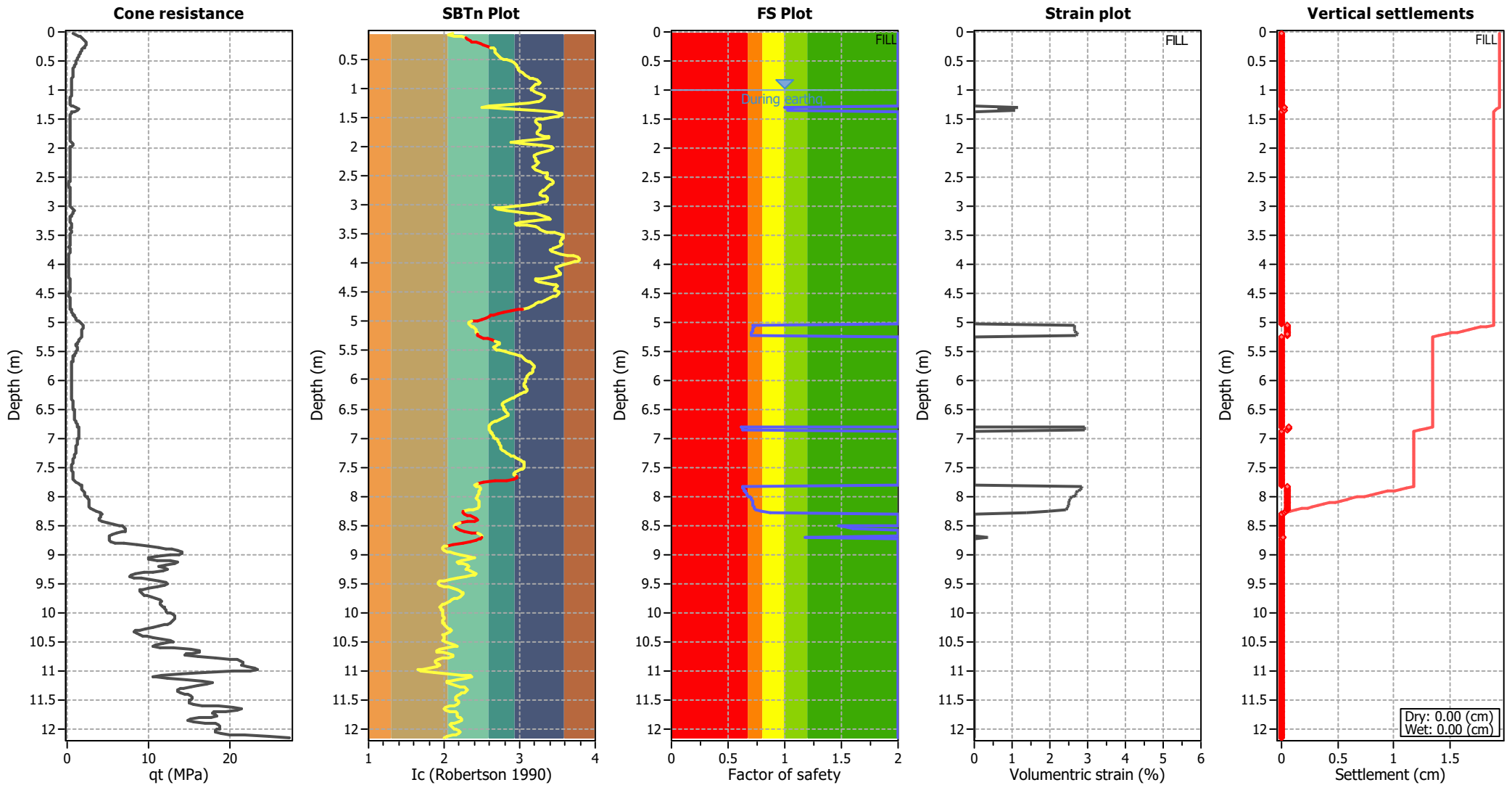
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 607
Total points excluded: 60
Exclusion percentage: 9.88%
Number of layers detected: 8

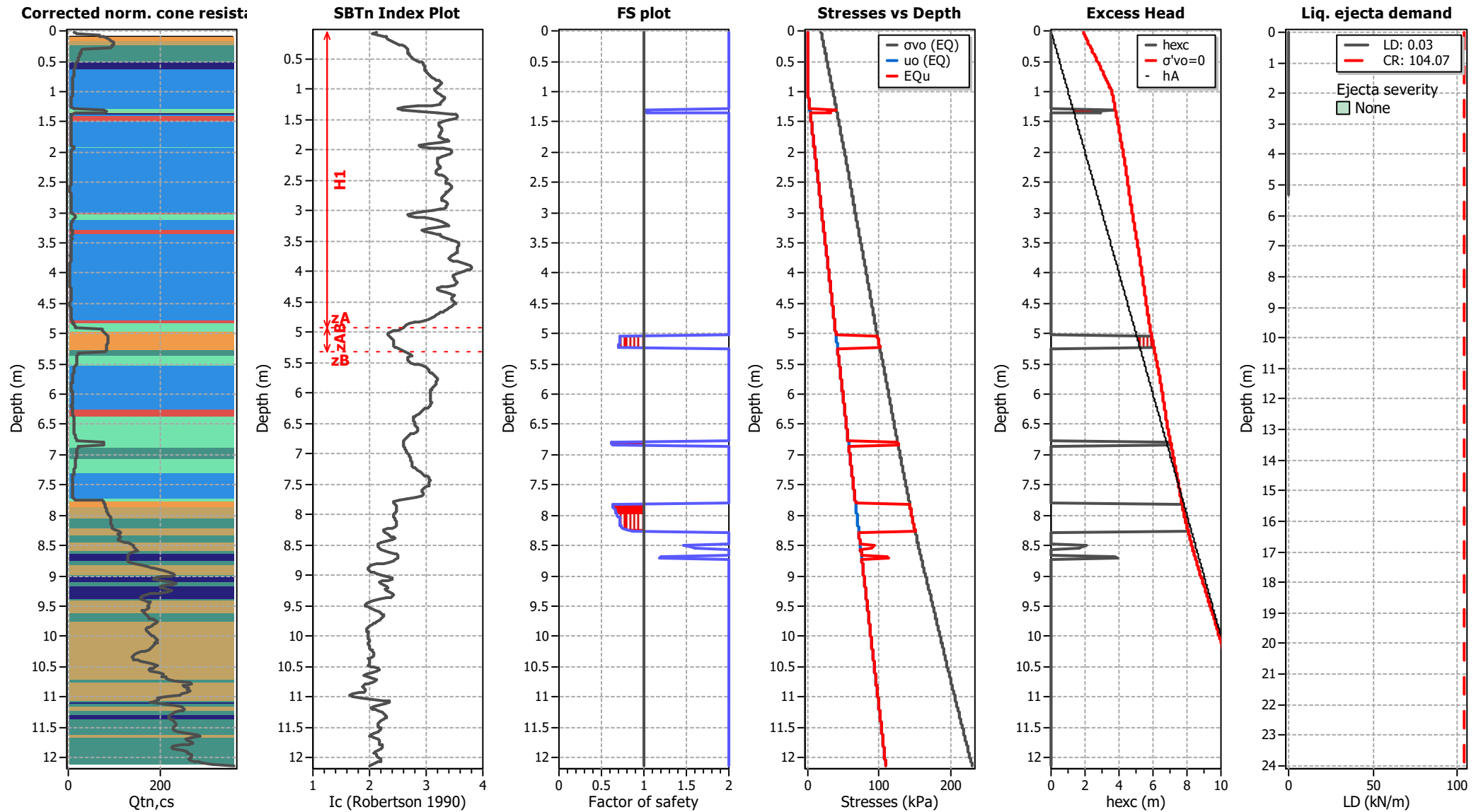
Estimation of post-earthquake settlements



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

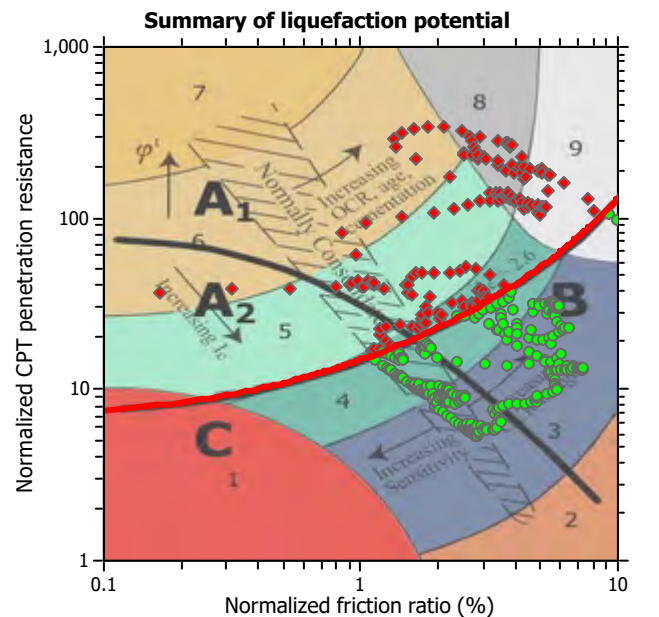
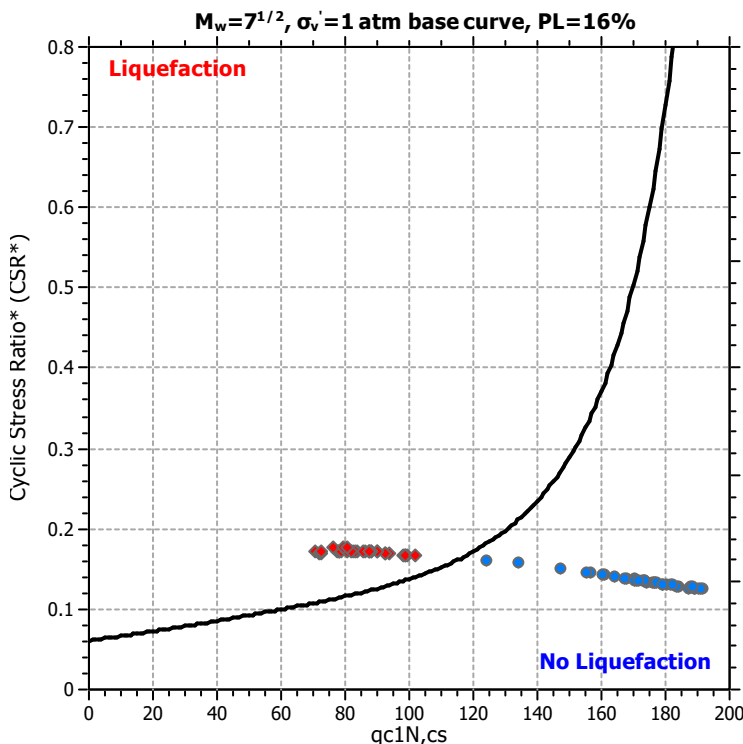
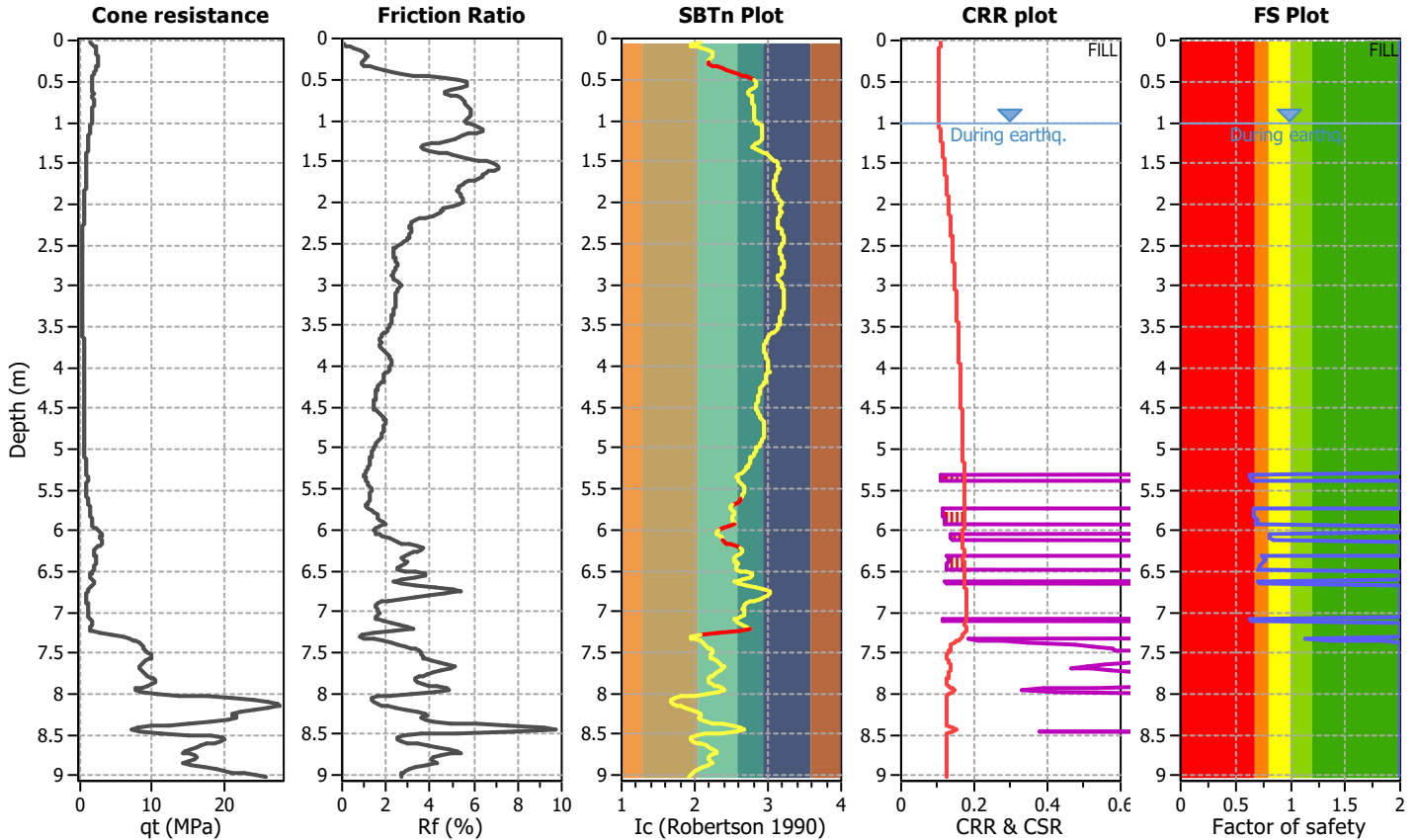
Project title : Sunfield Landholding

Location :

CPT file : CPT121

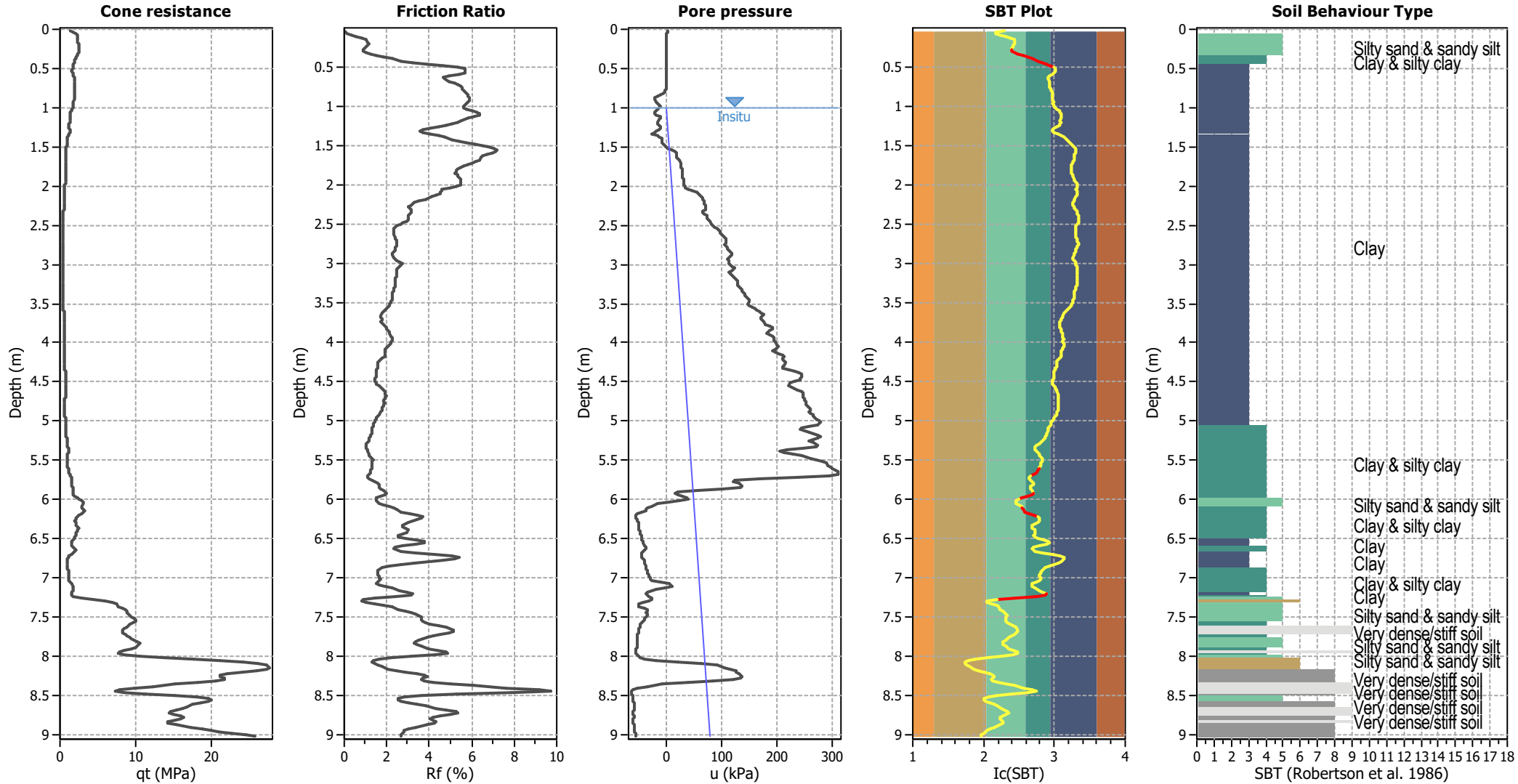
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
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CPT basic interpretation plots

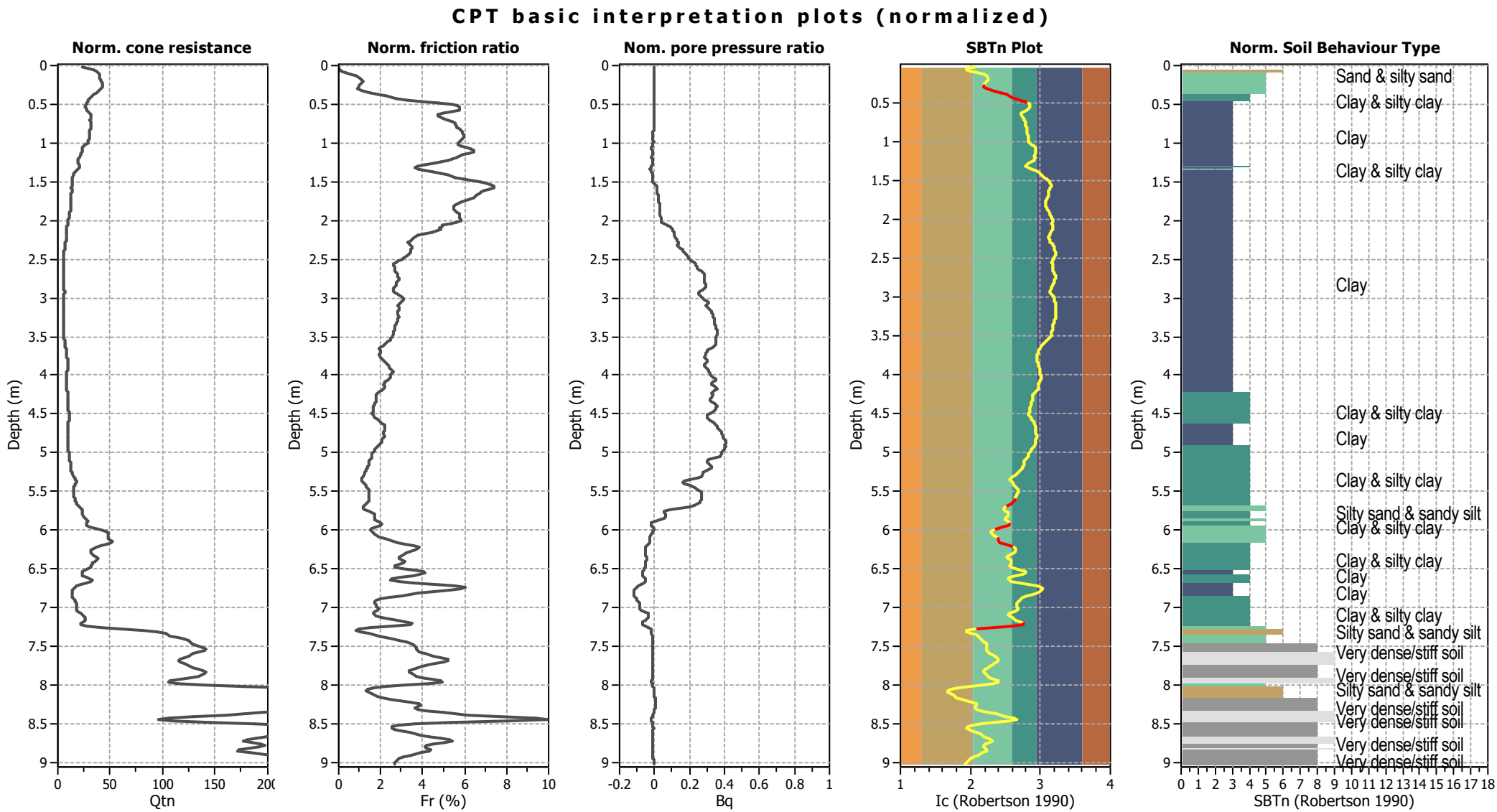


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



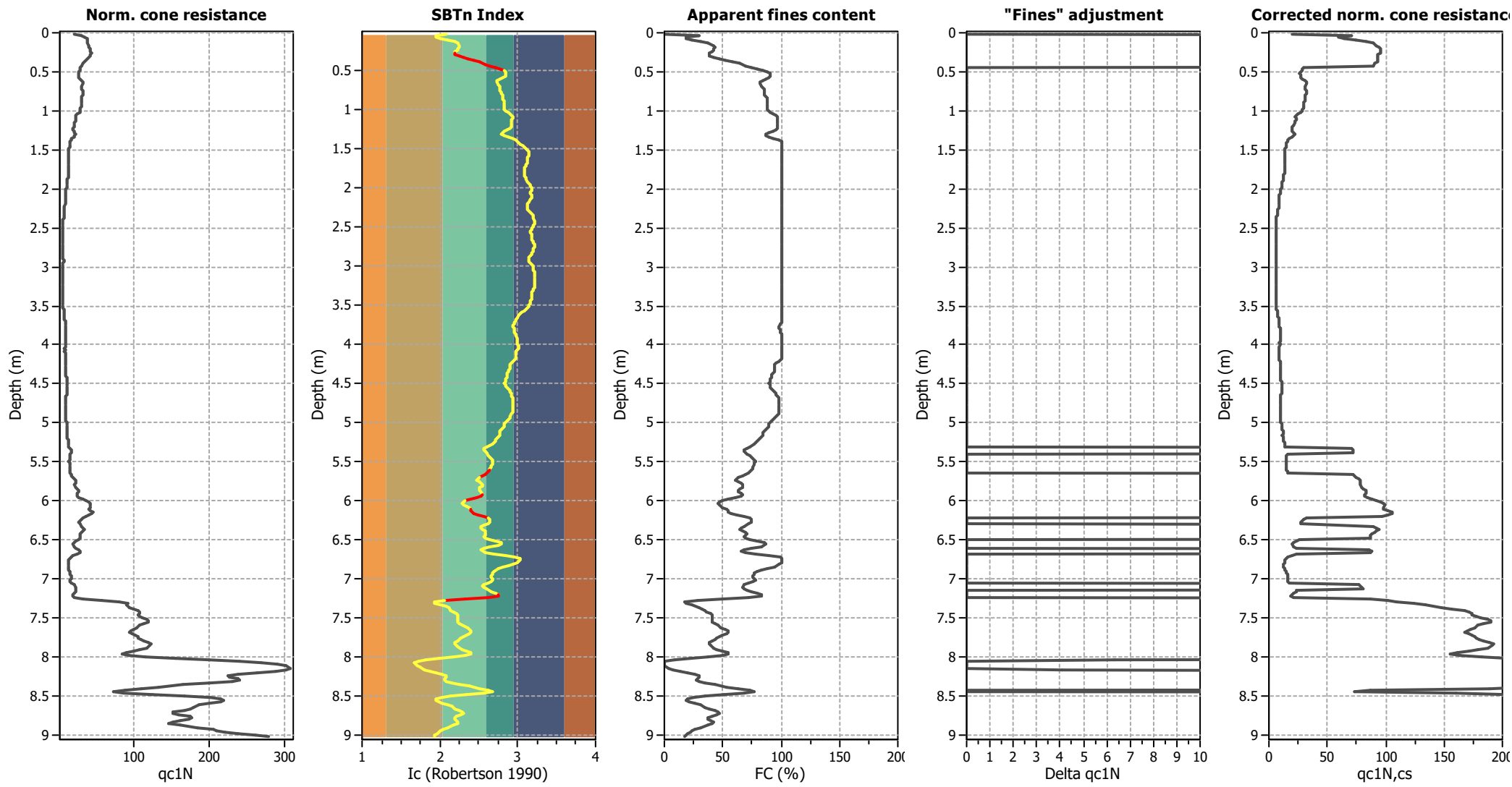
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

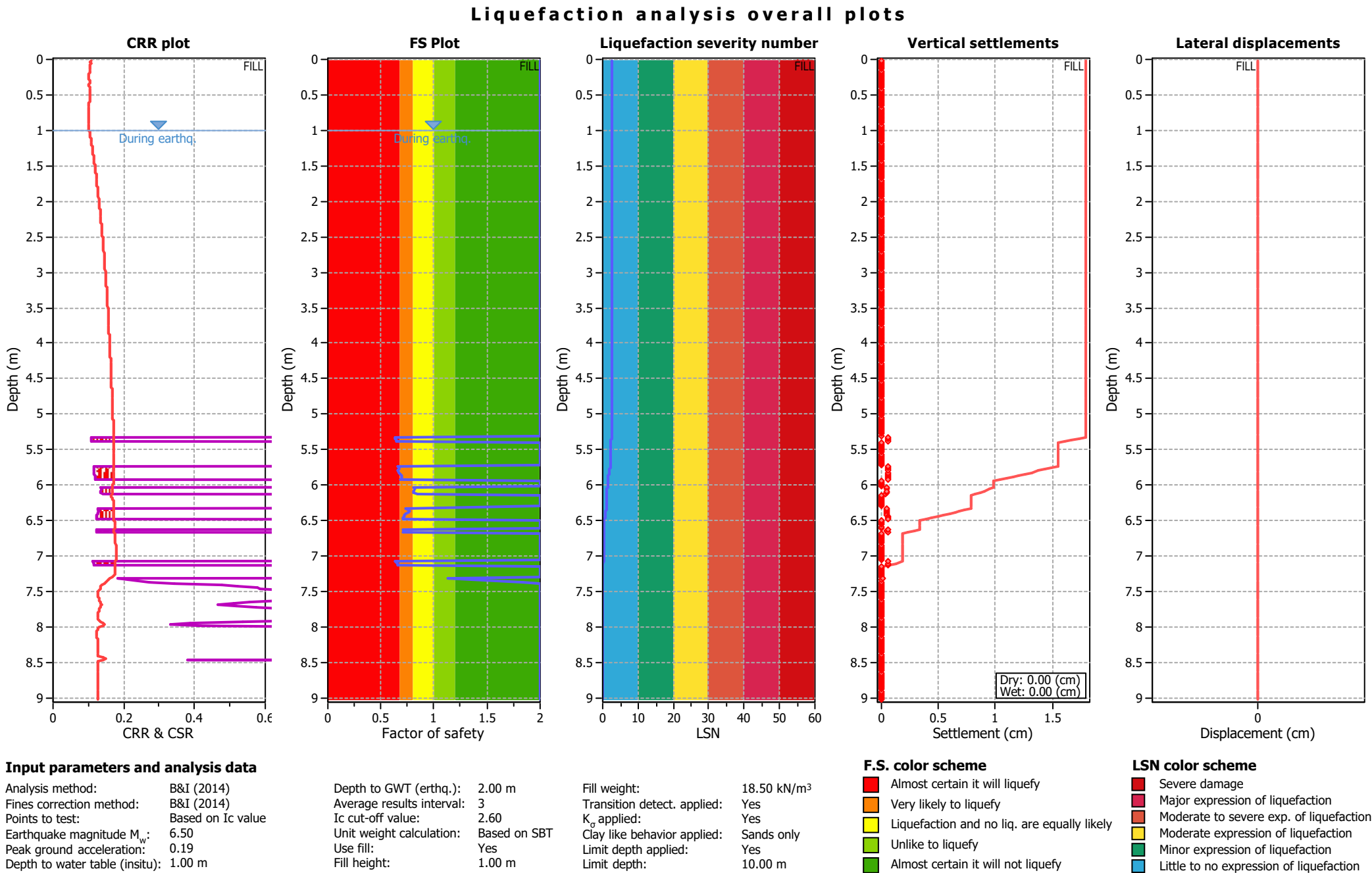
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

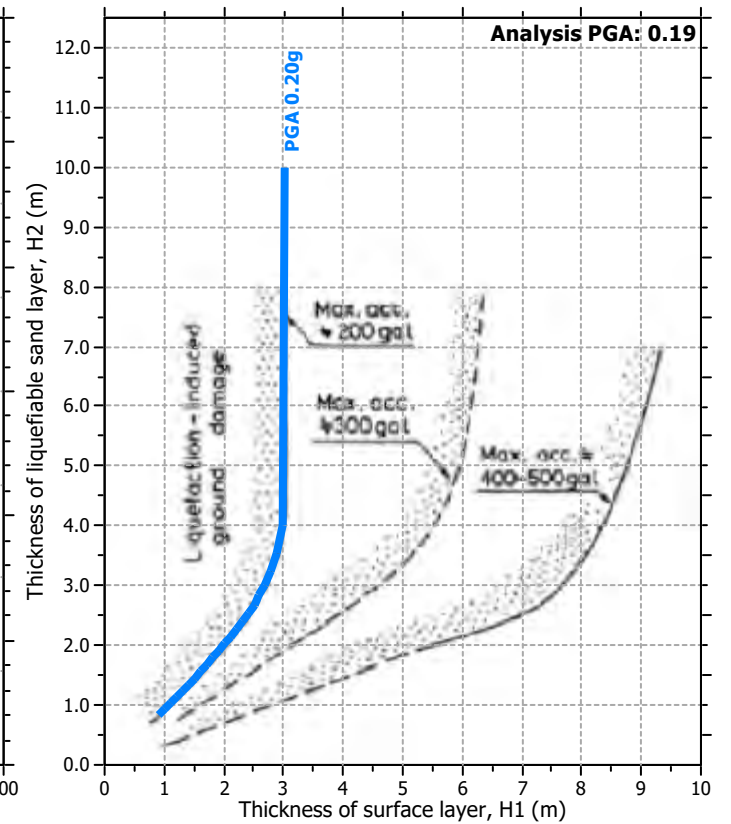
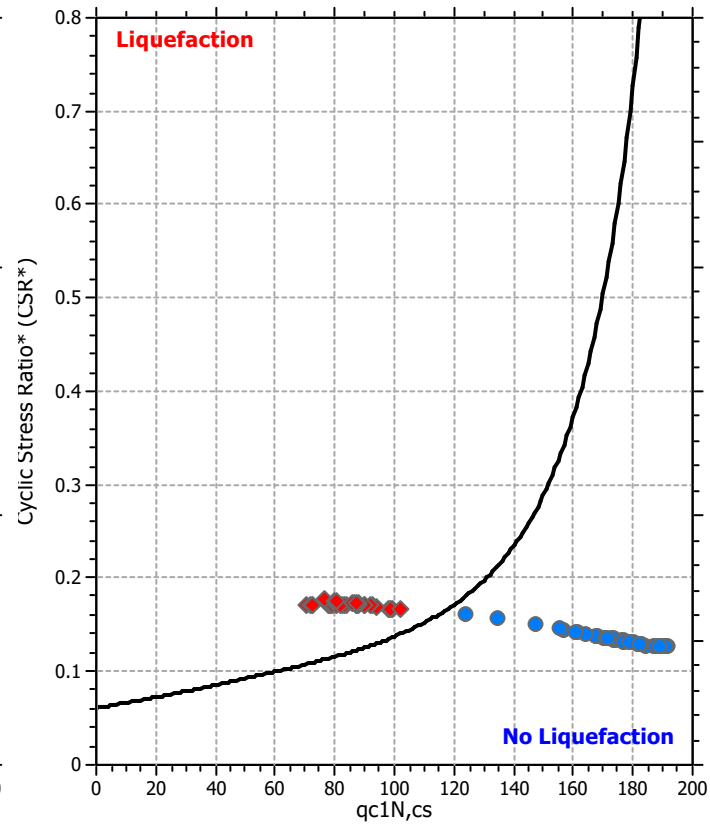
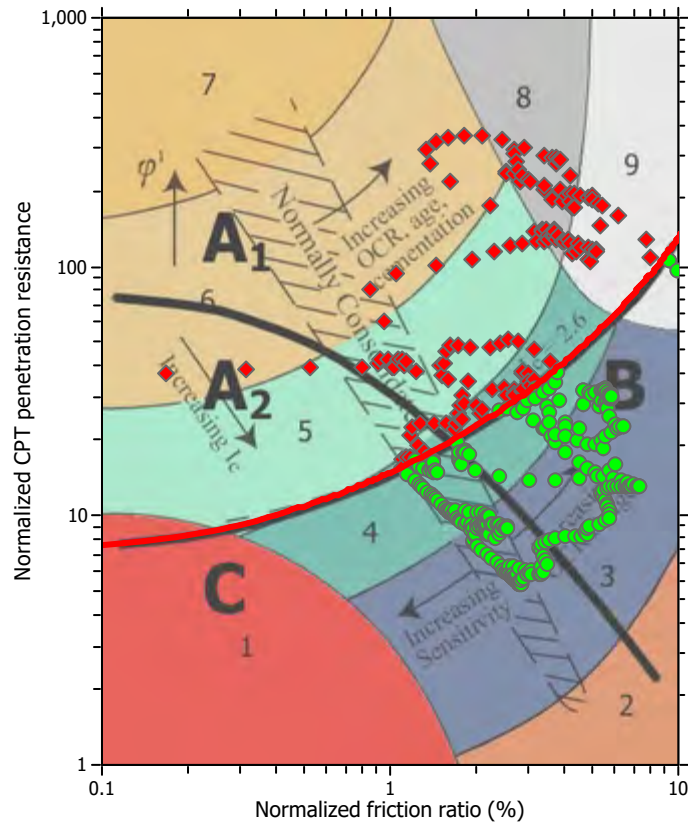


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _σ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



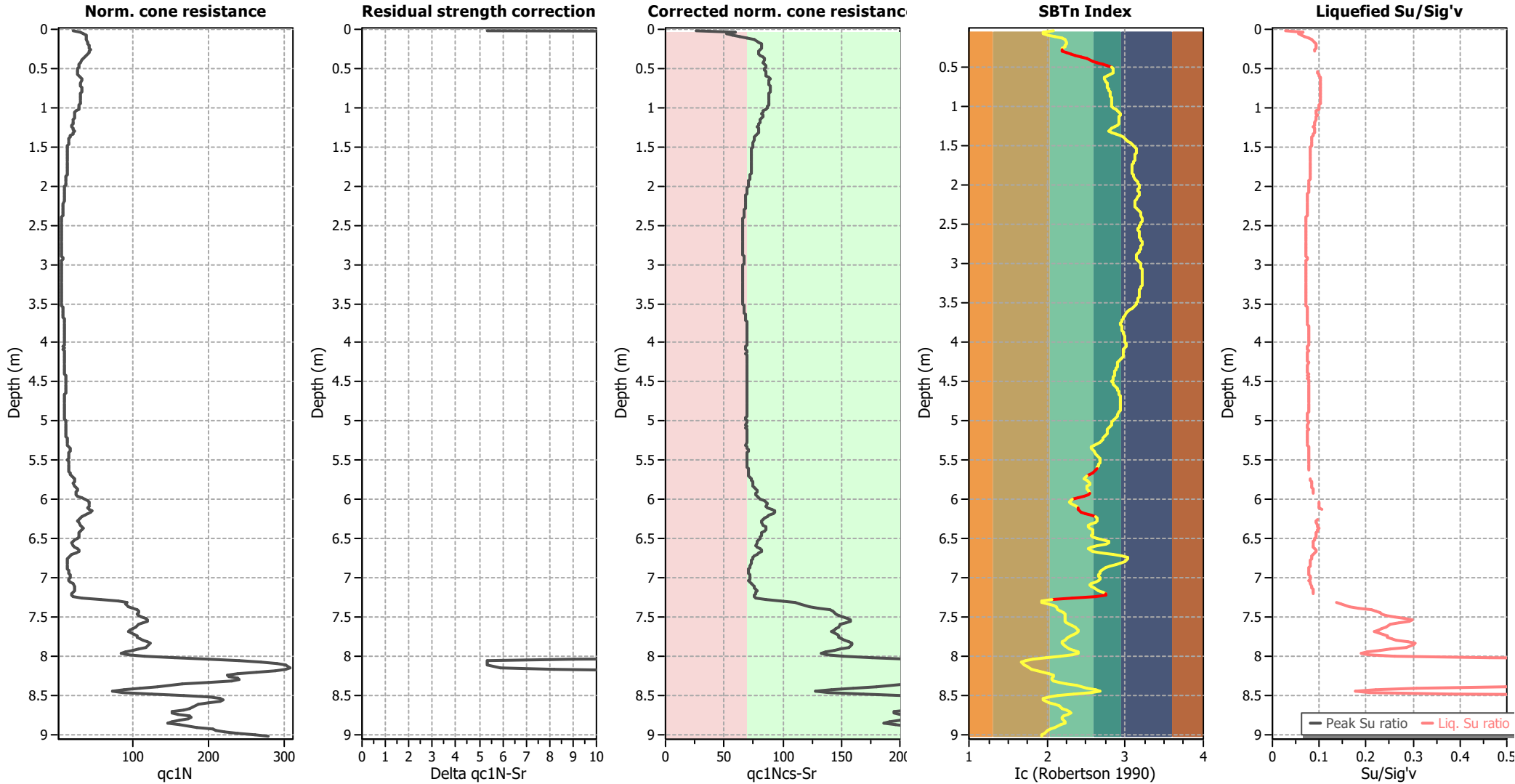
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

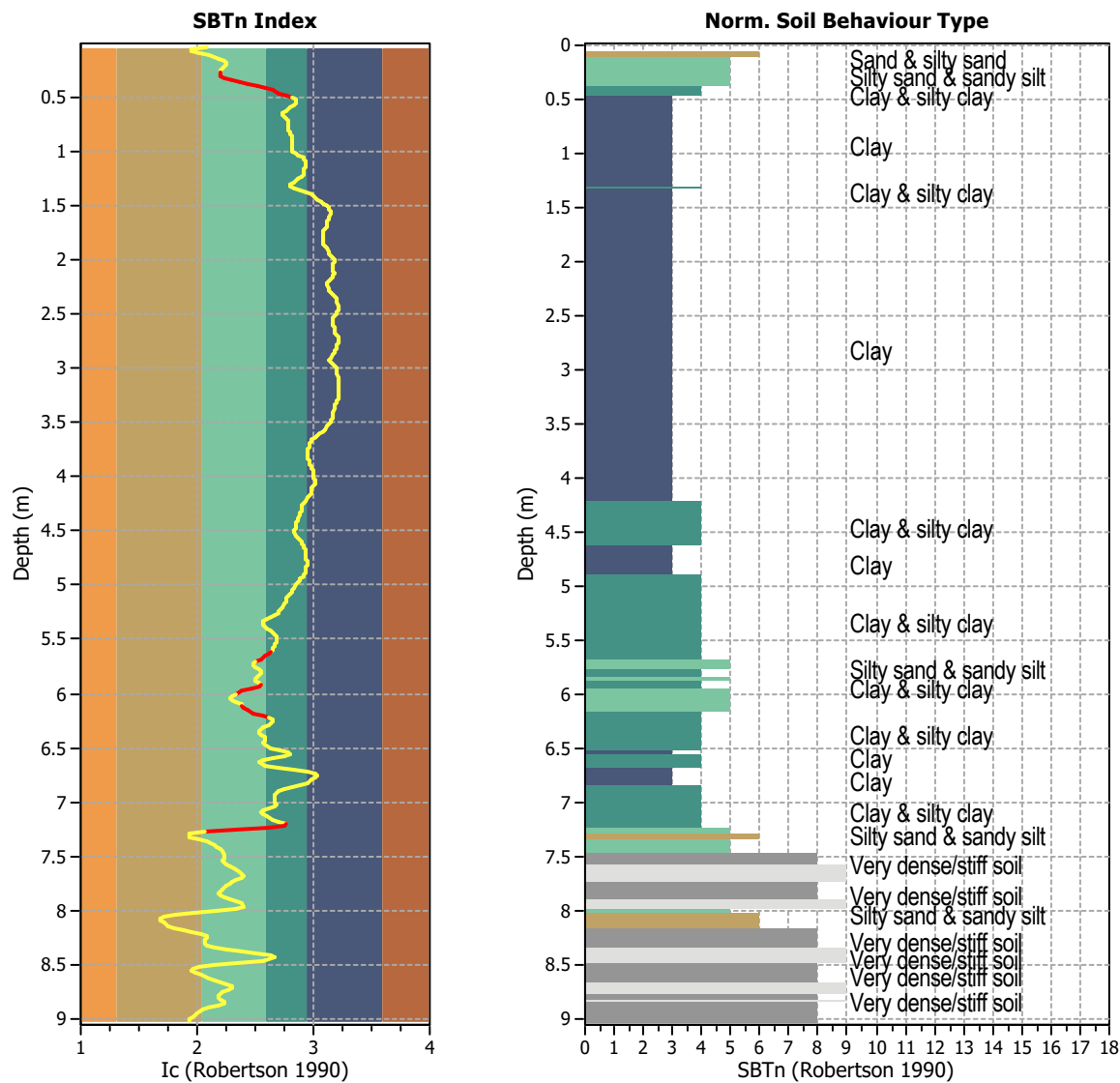
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

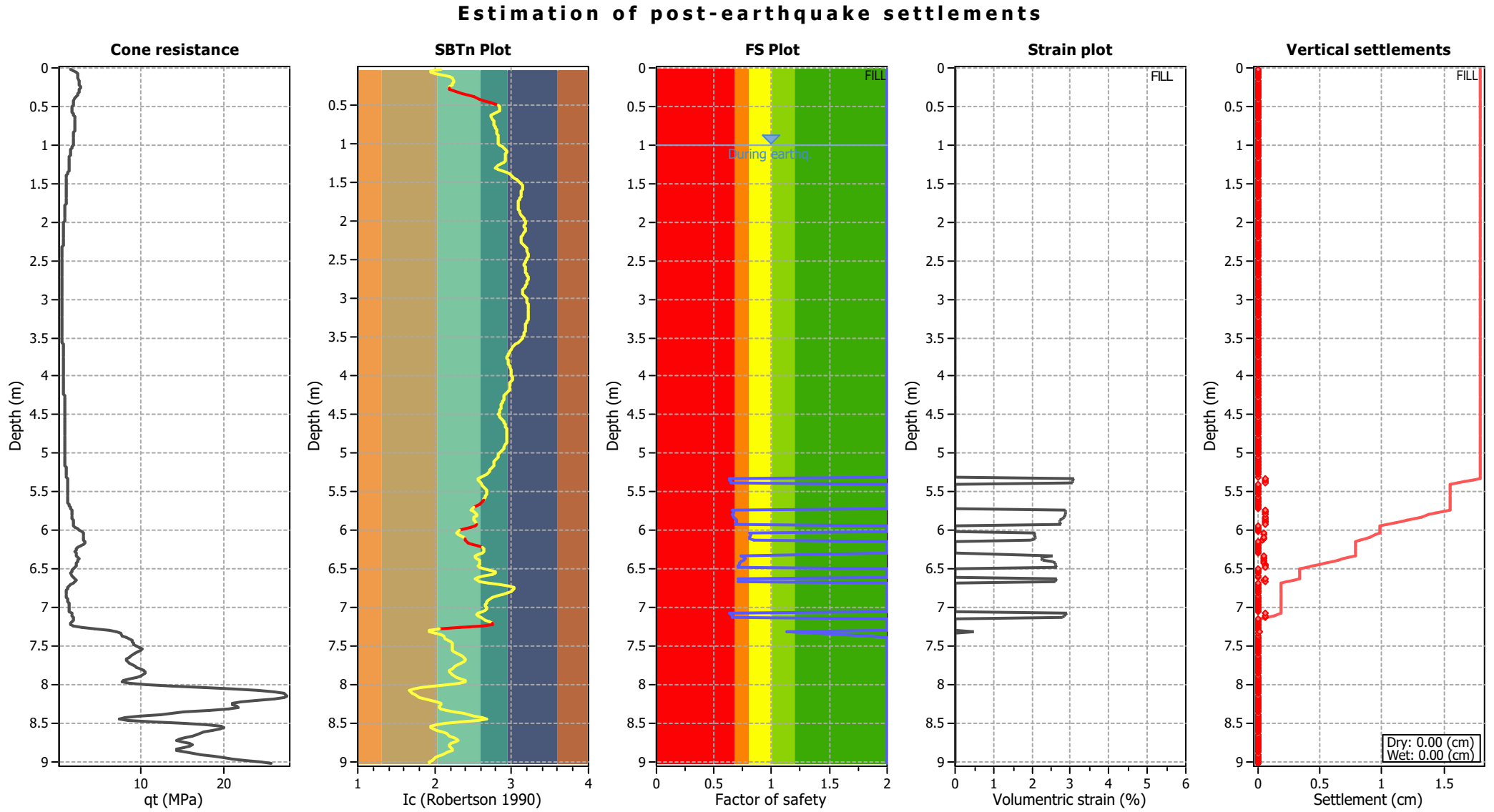


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

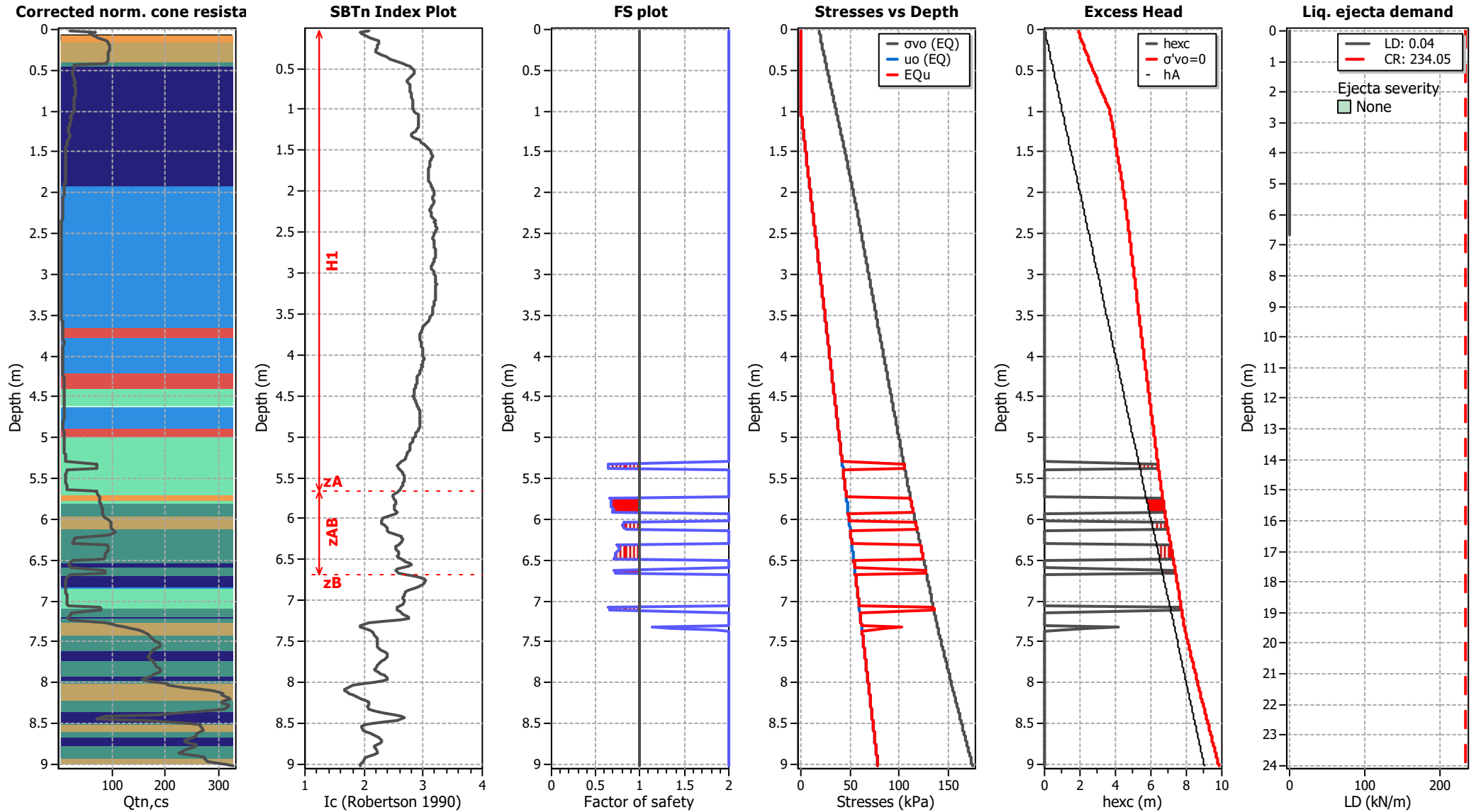
Total points in CPT file: 451
Total points excluded: 33
Exclusion percentage: 7.32%
Number of layers detected: 5



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

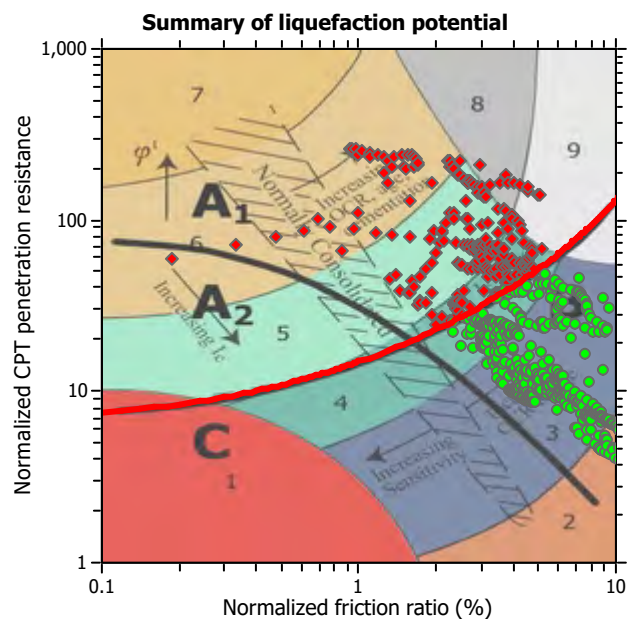
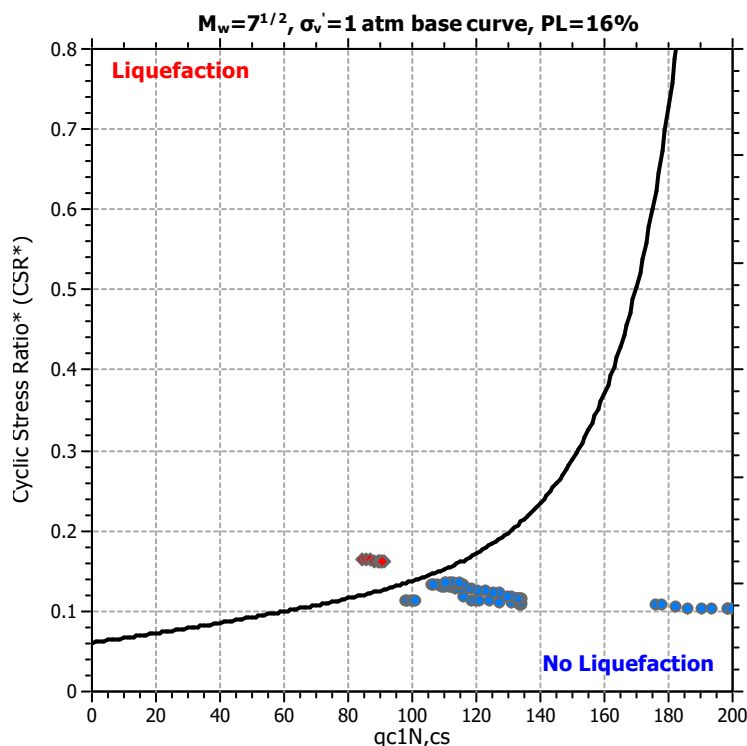
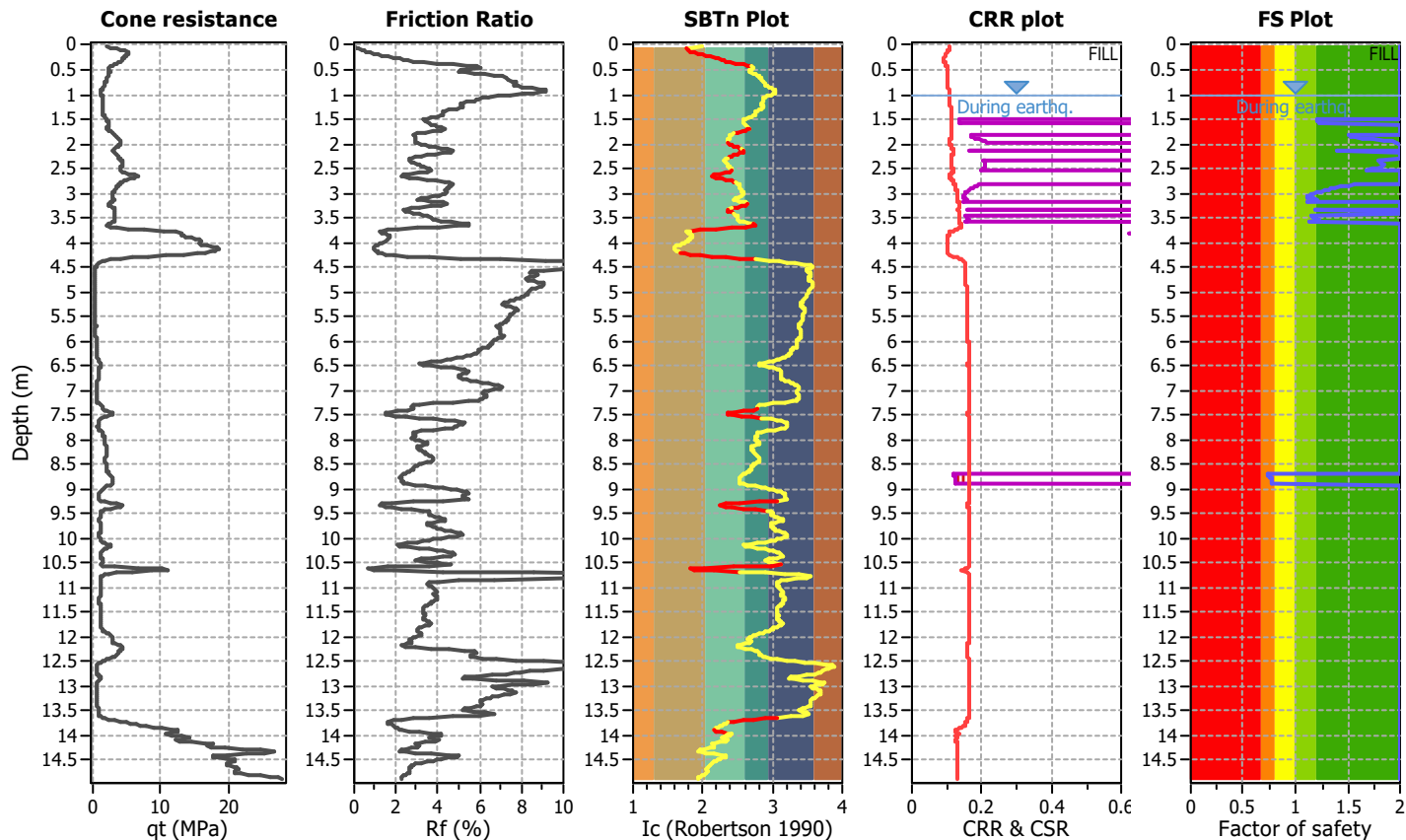
Project title : Sunfield Landholding

Location :

CPT file : CPT122

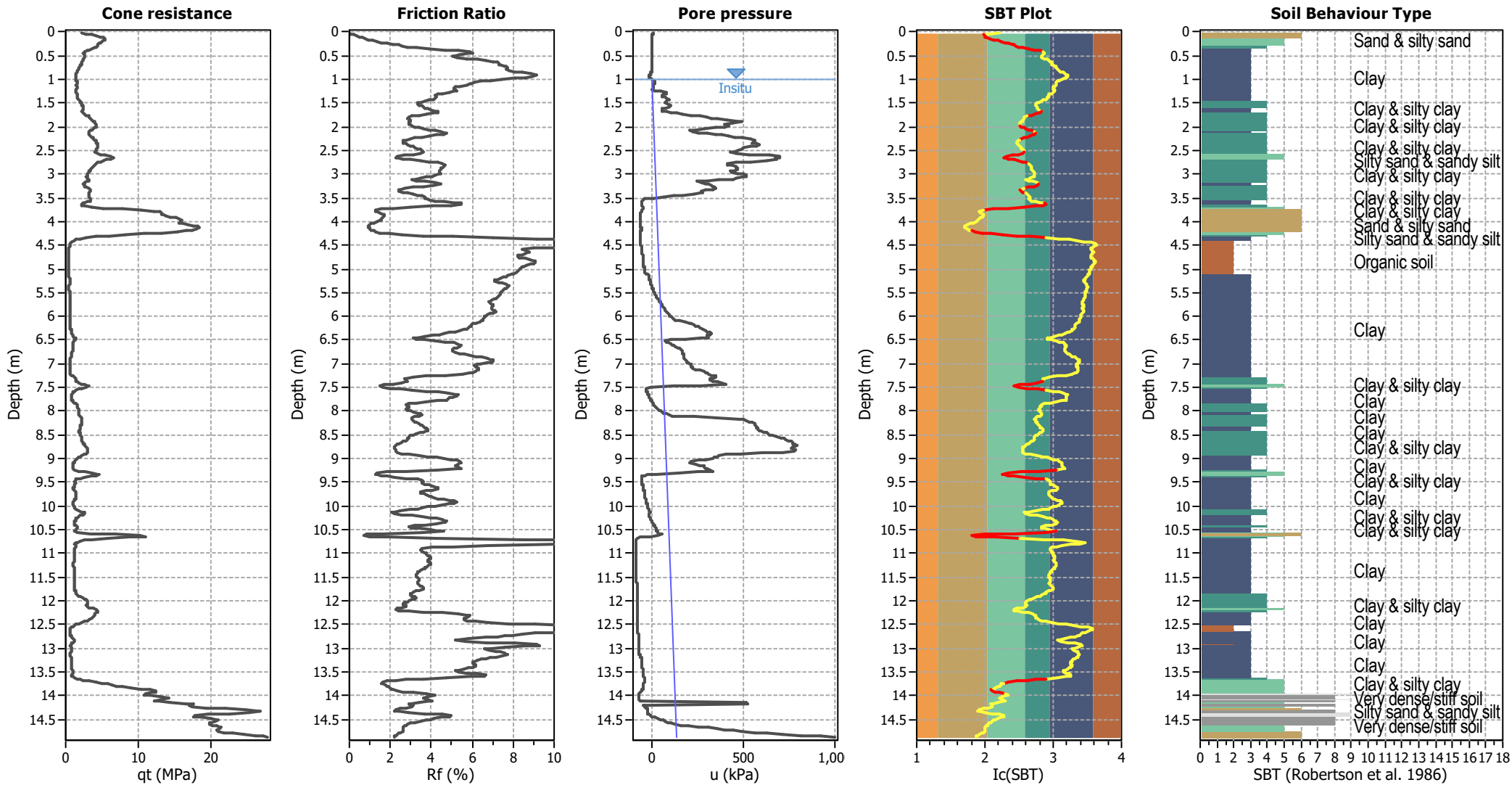
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	27.75 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

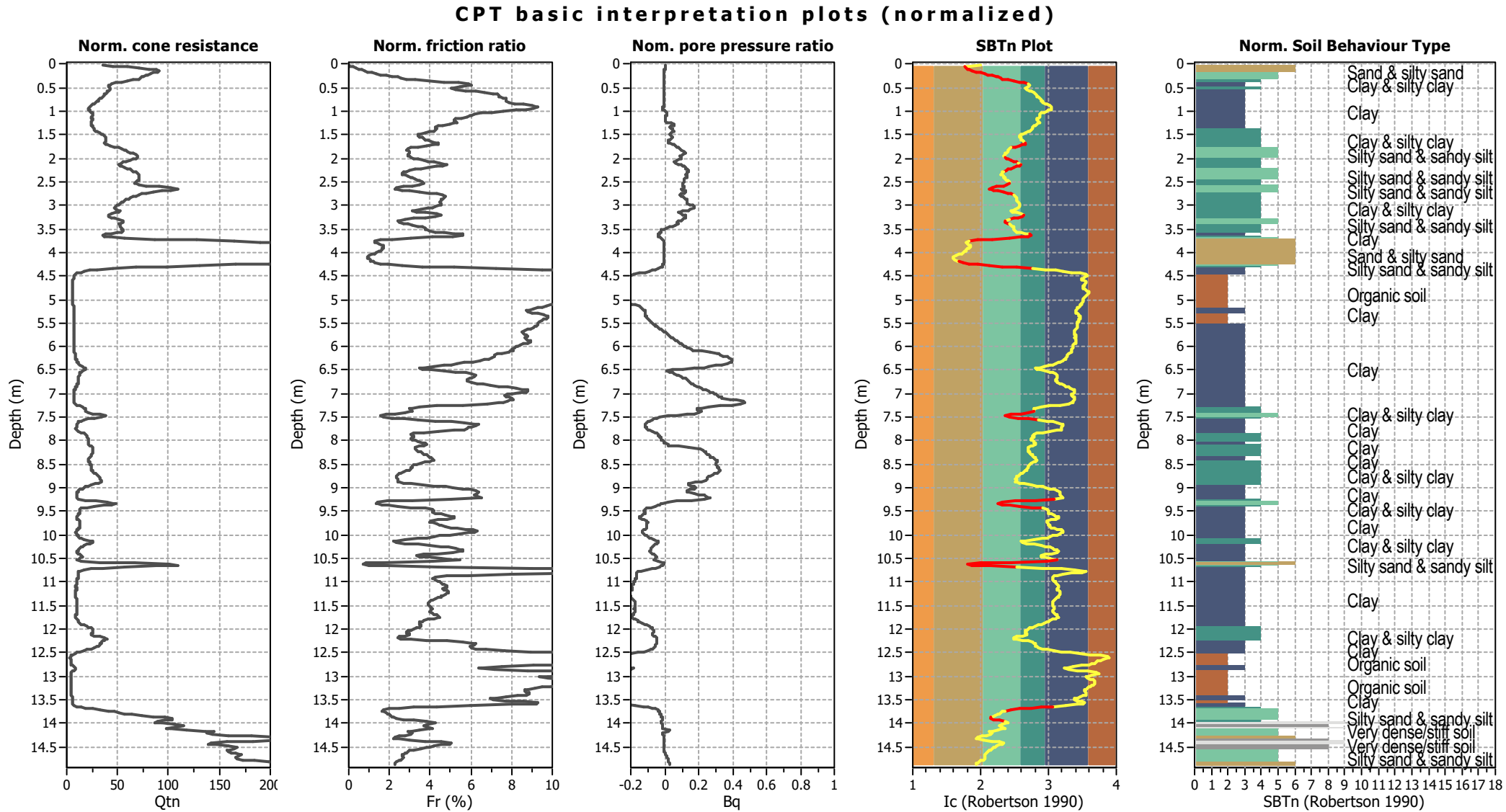


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

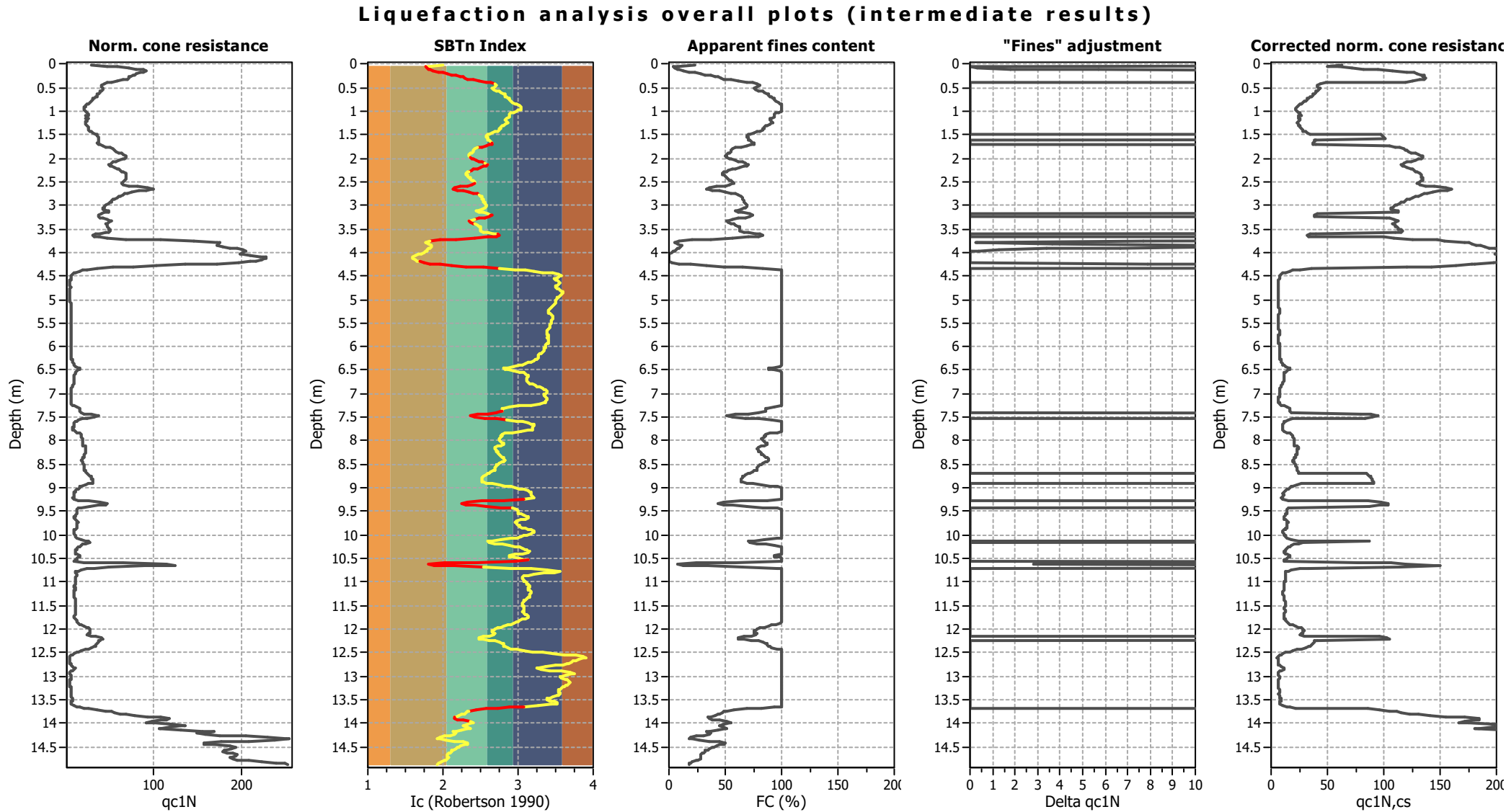


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

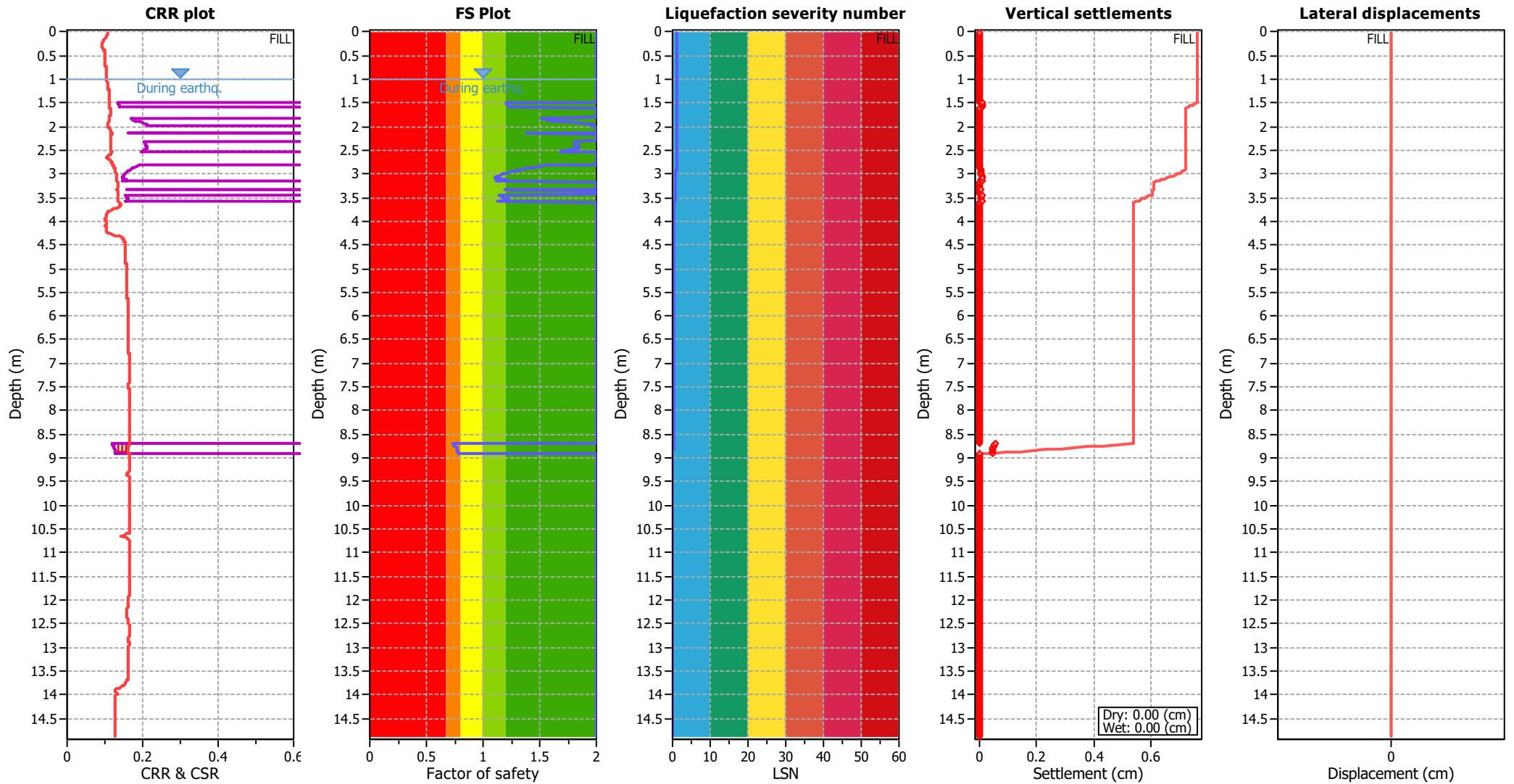
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

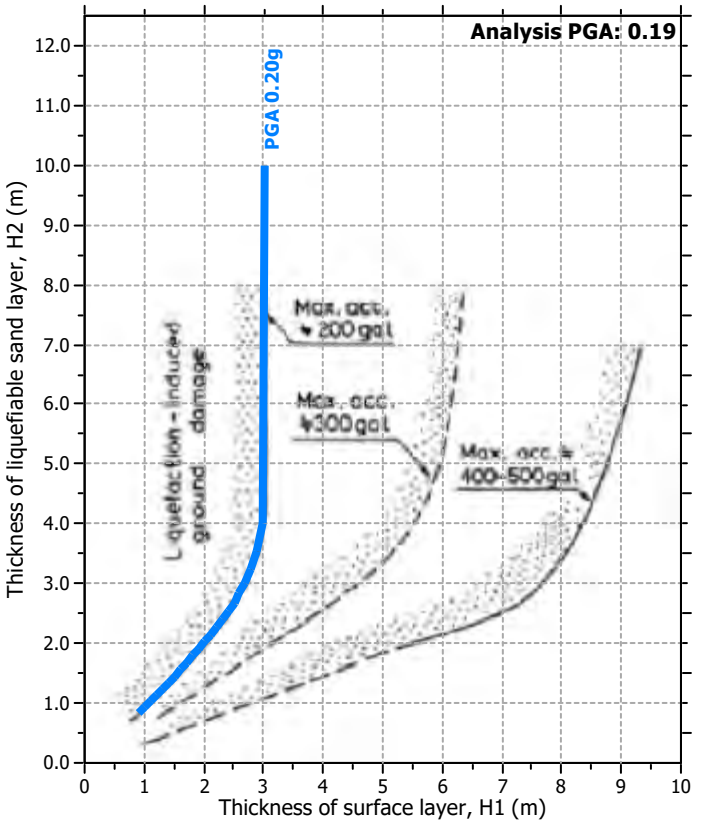
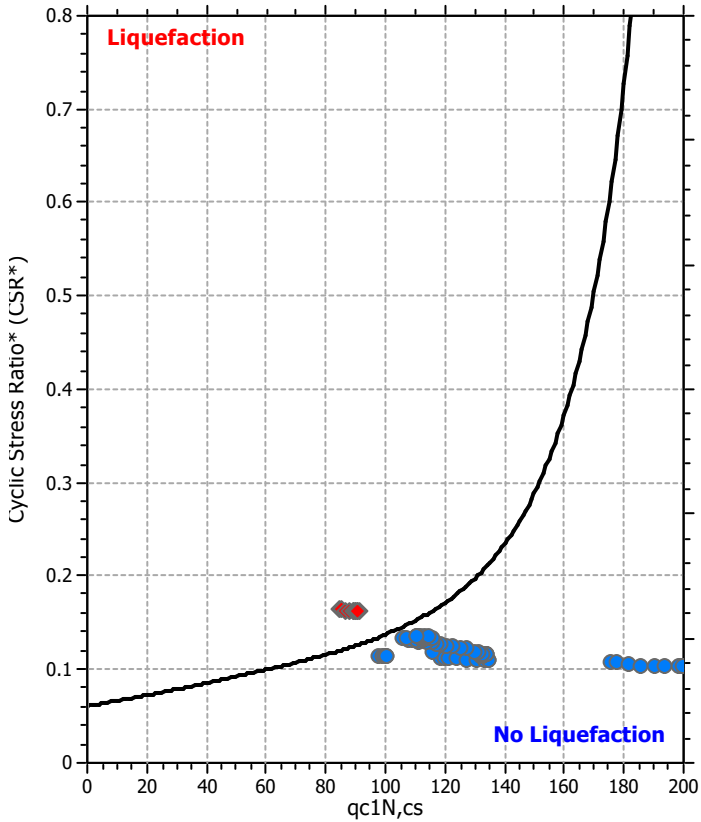
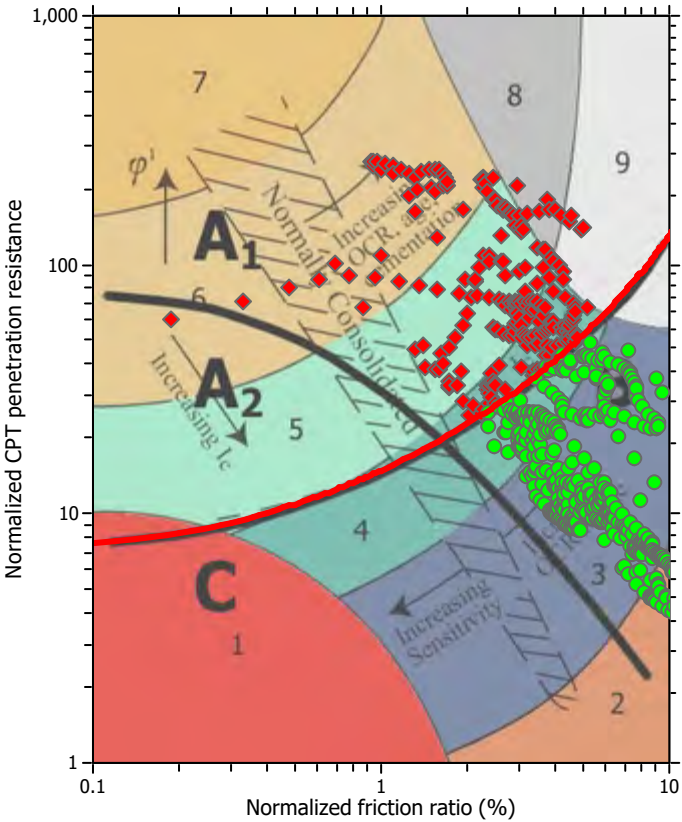
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

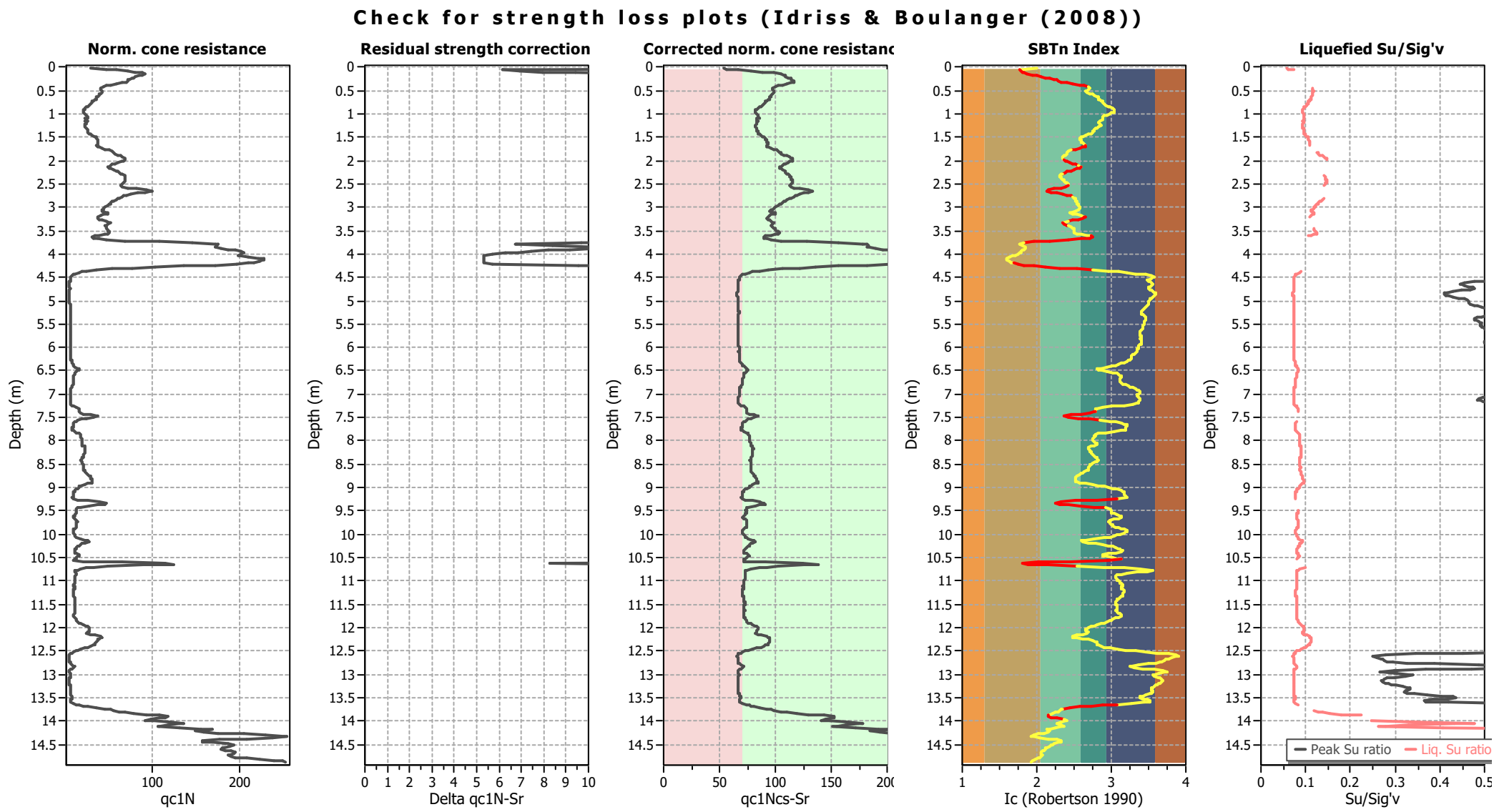
- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

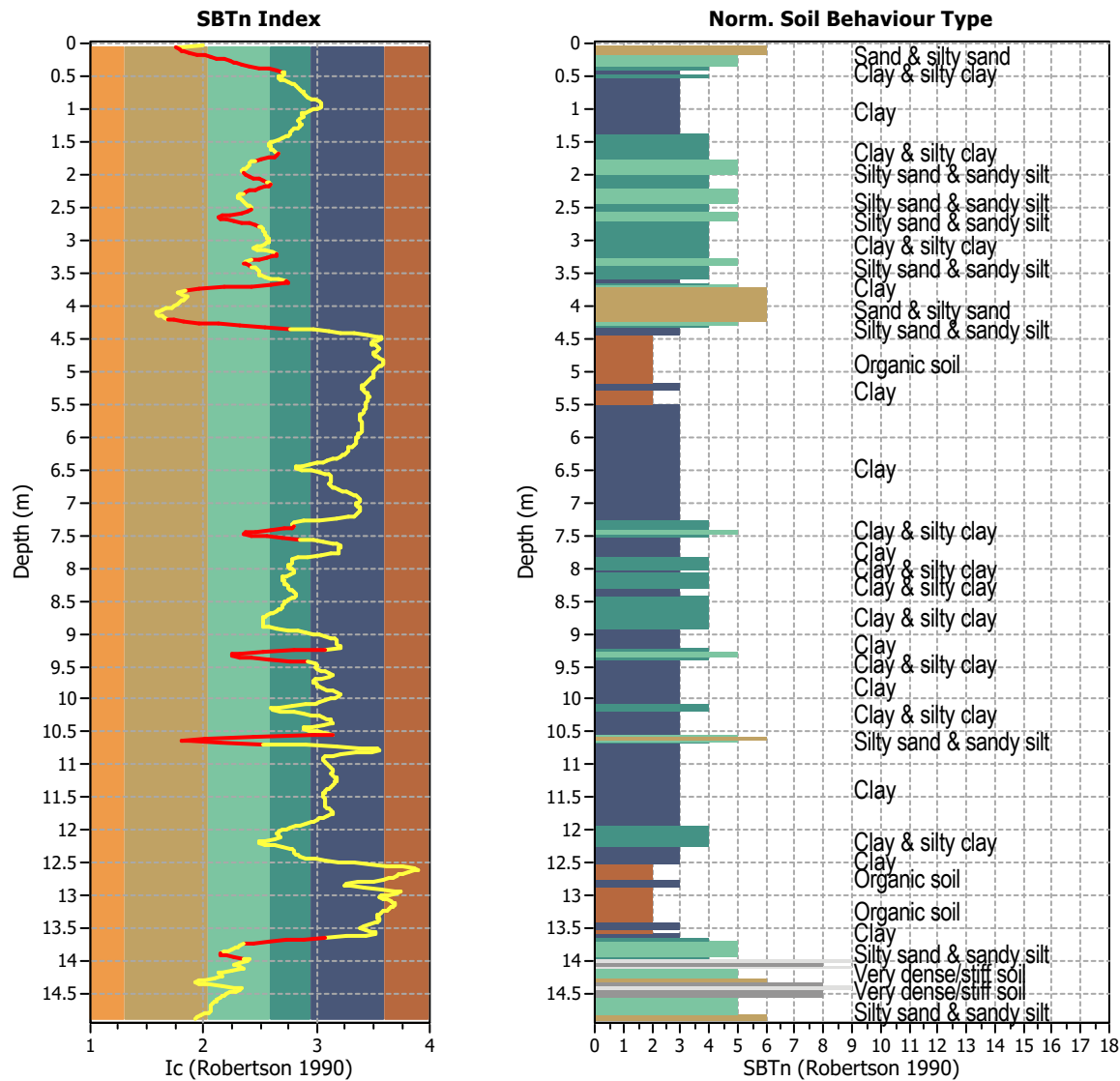
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



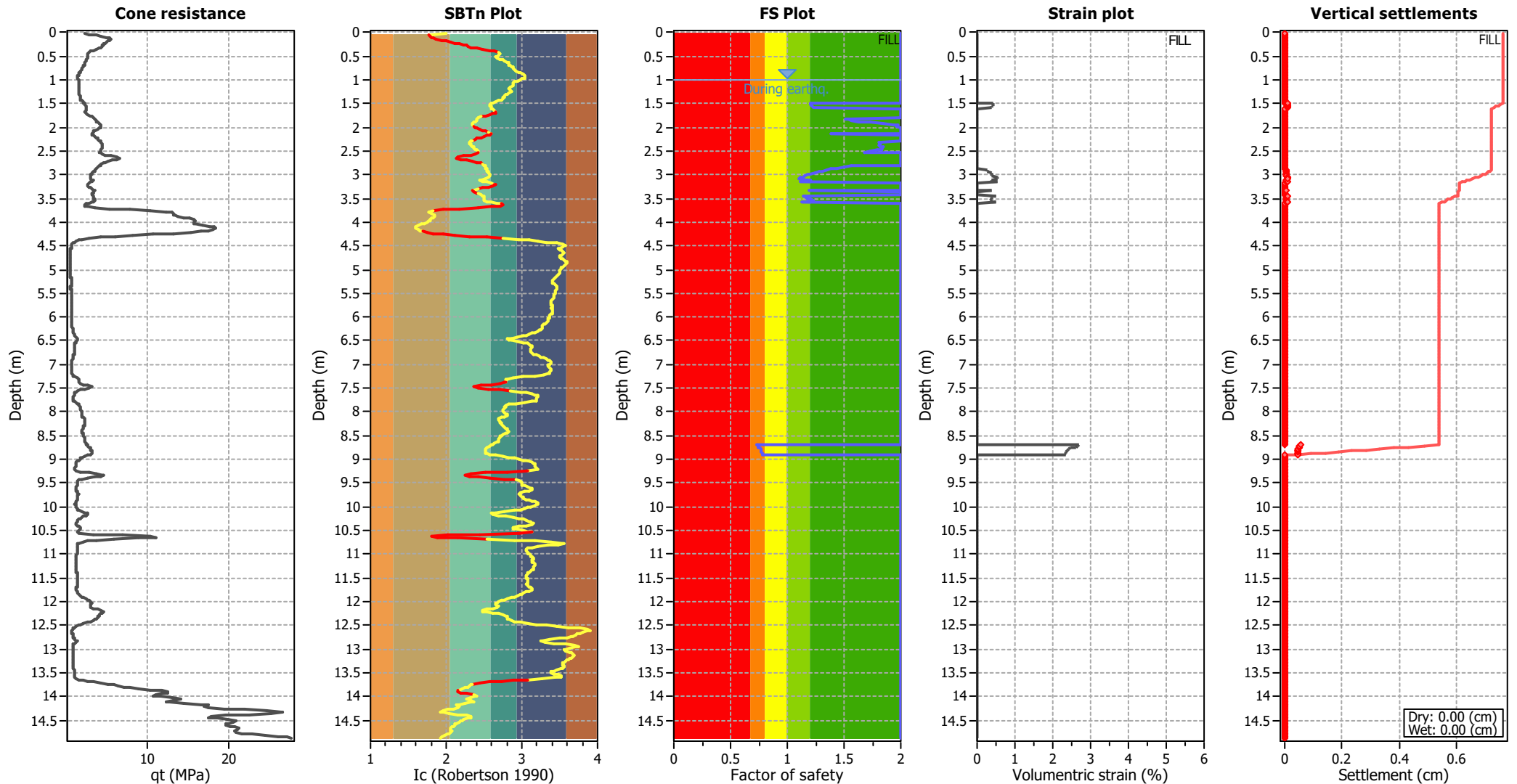
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 744
Total points excluded: 122
Exclusion percentage: 16.40%
Number of layers detected: 18

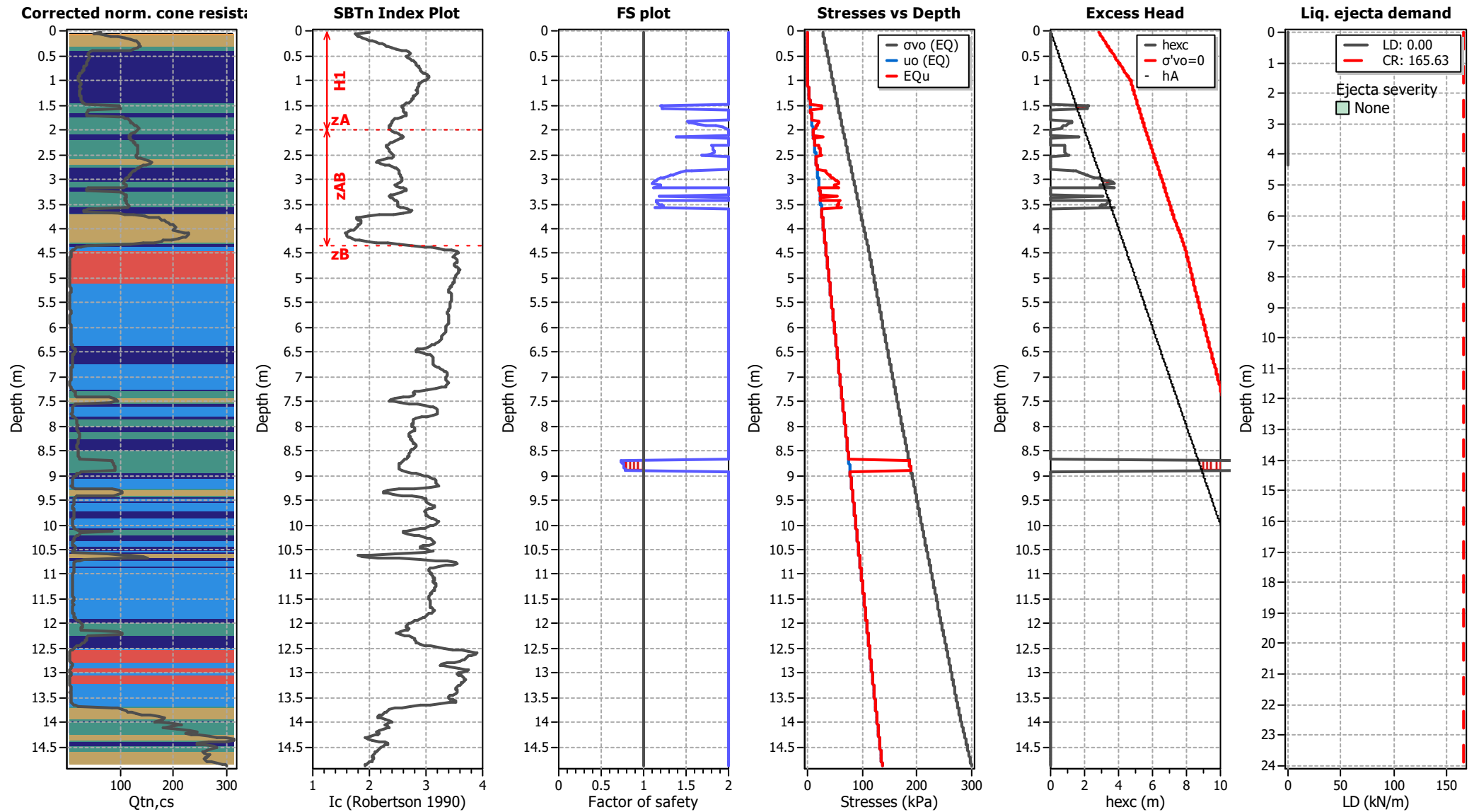
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

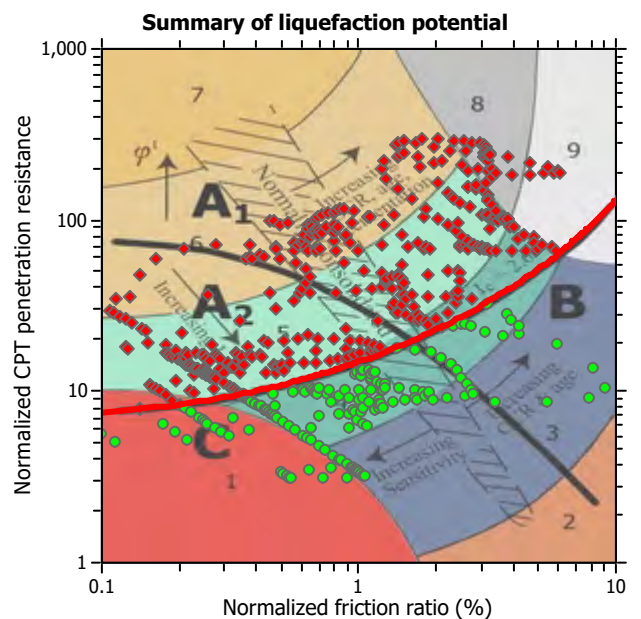
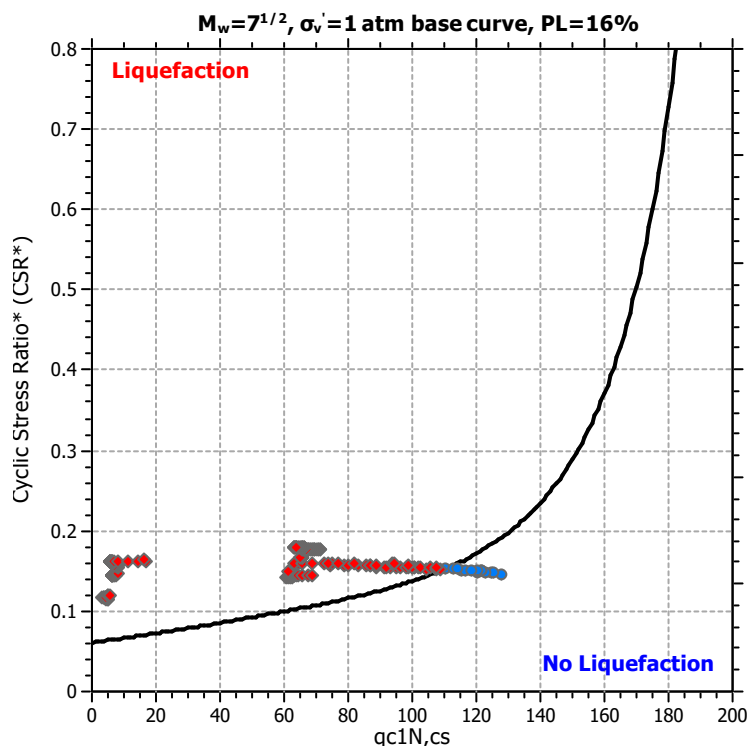
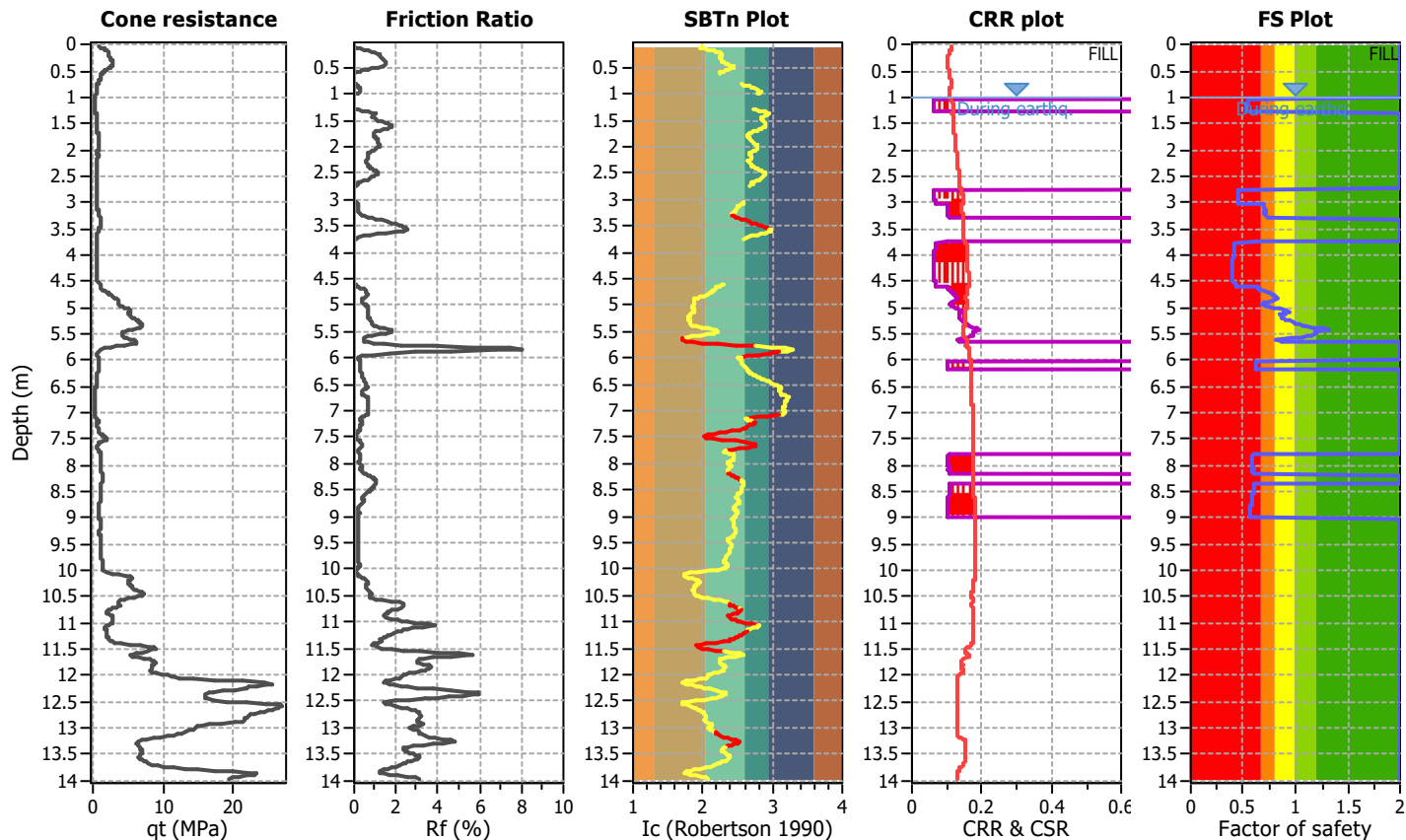
Project title : Sunfield Landholding

Location :

CPT file : CPT123

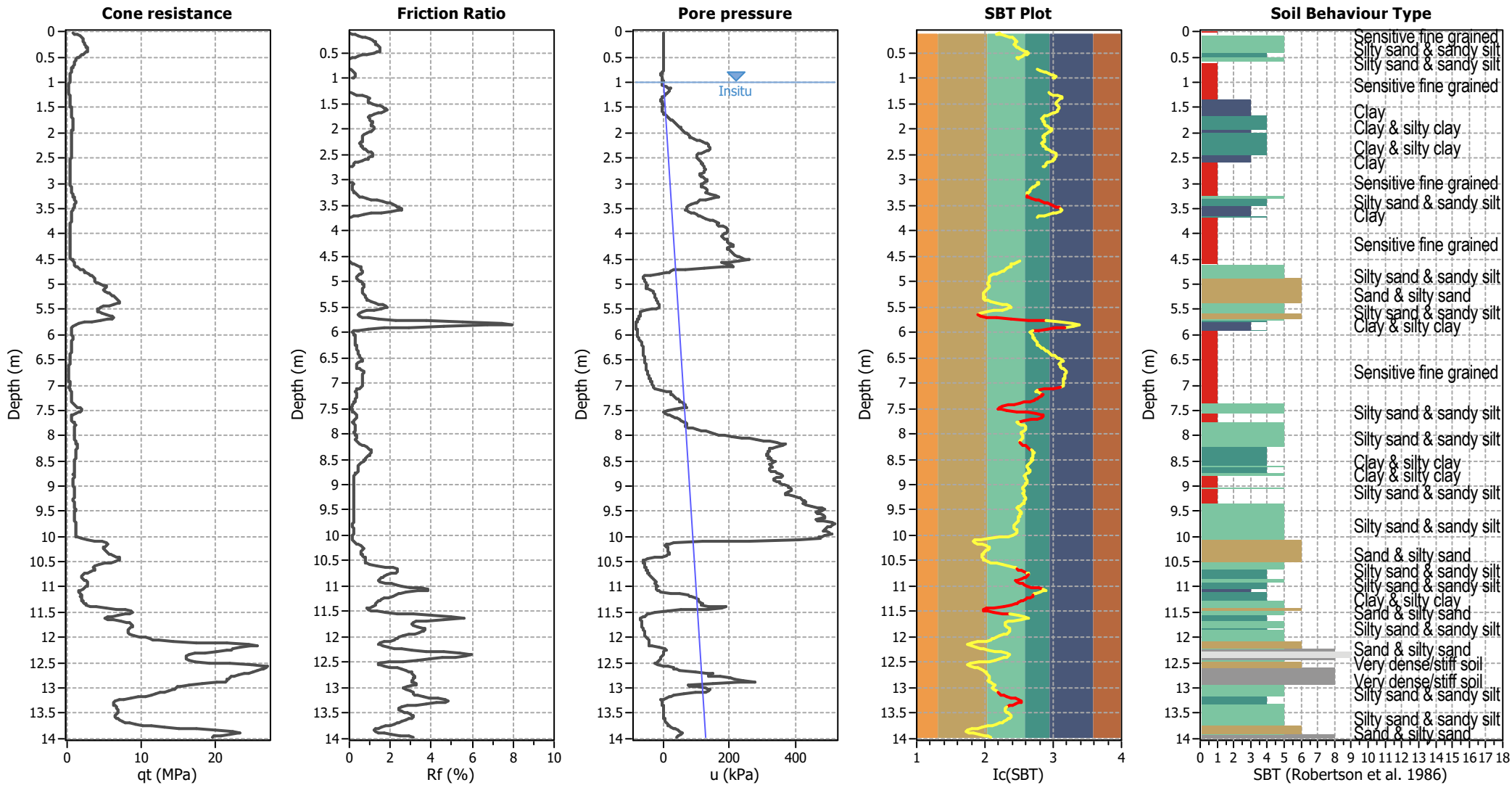
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

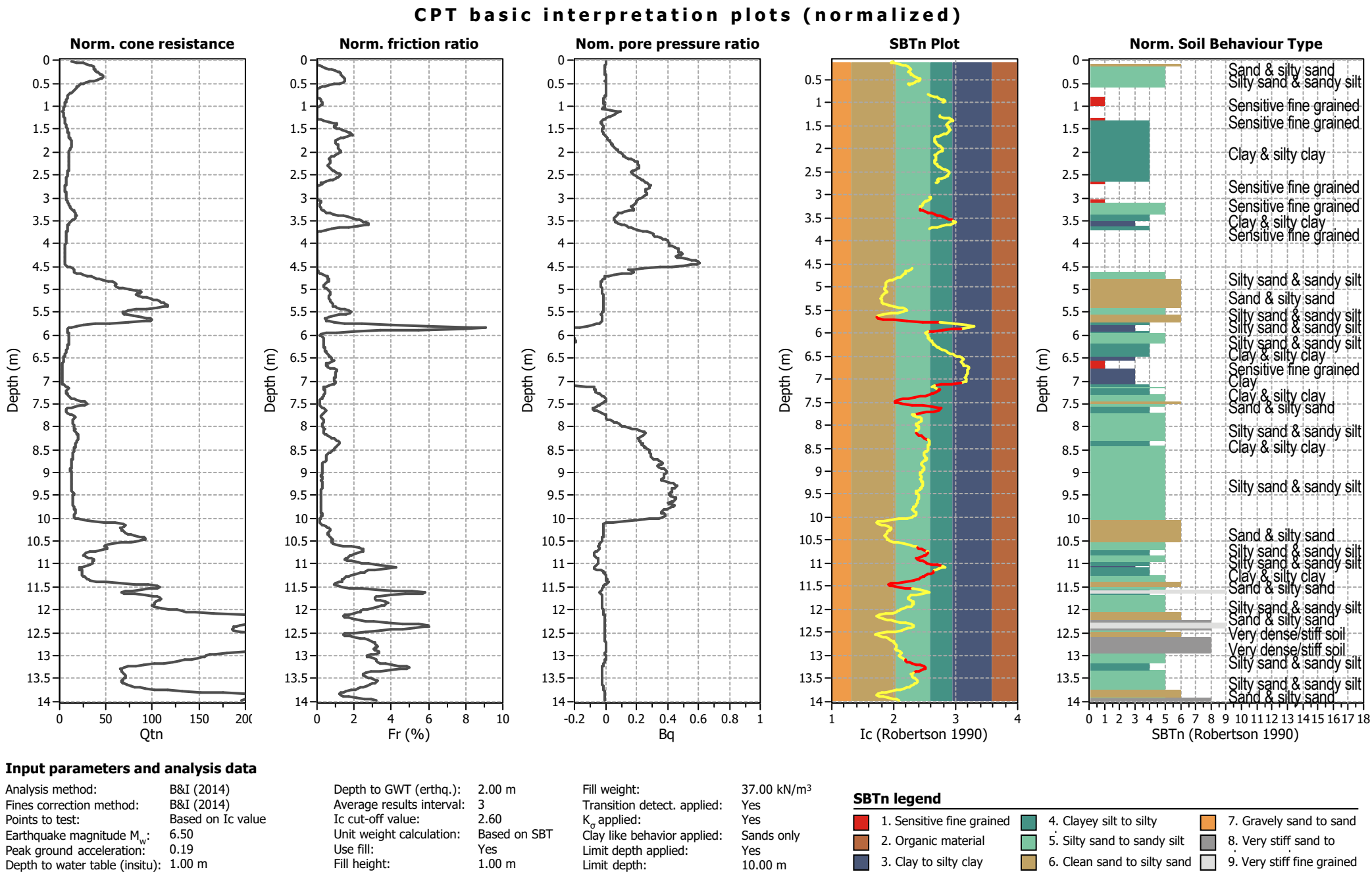


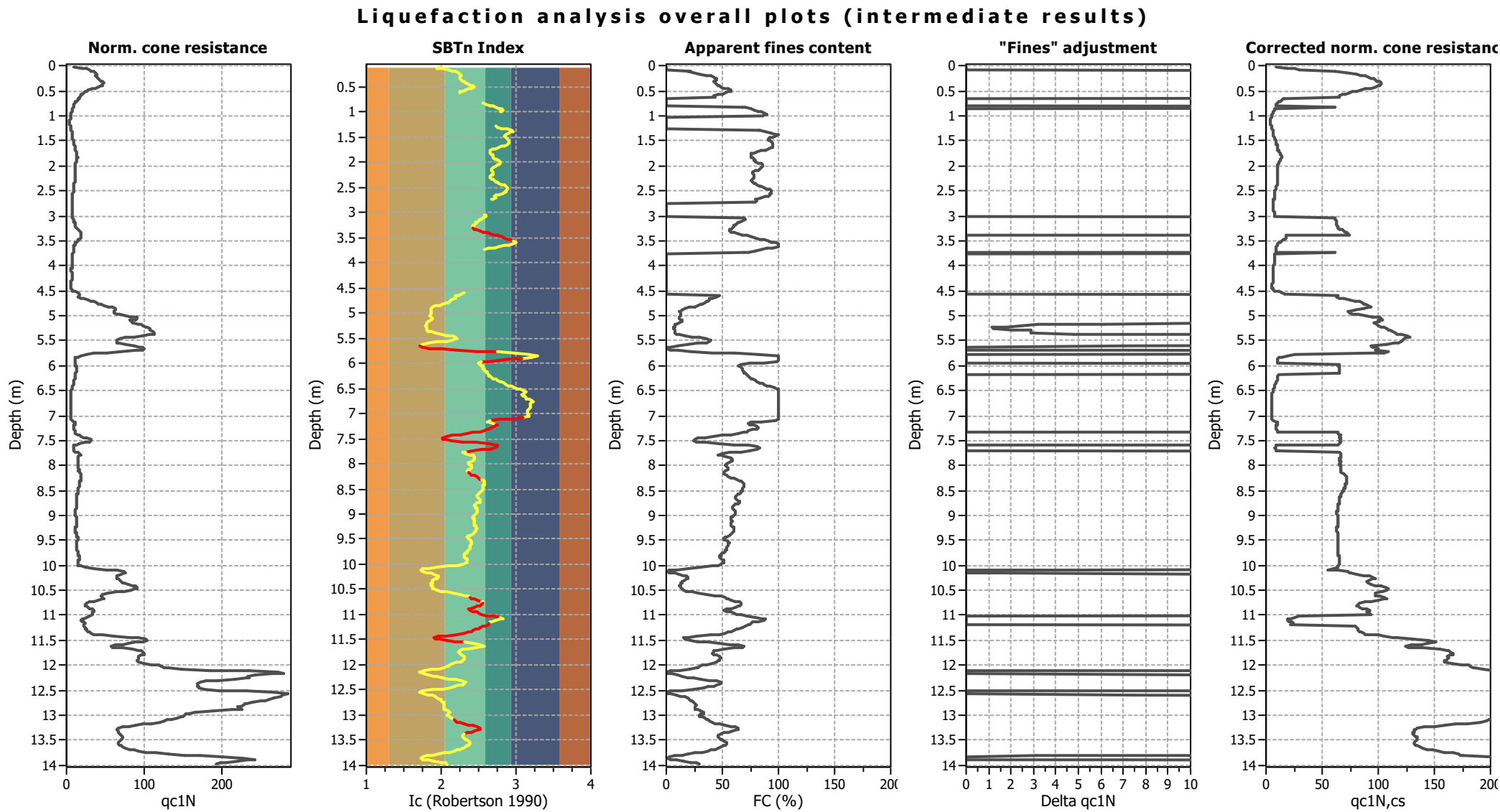
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

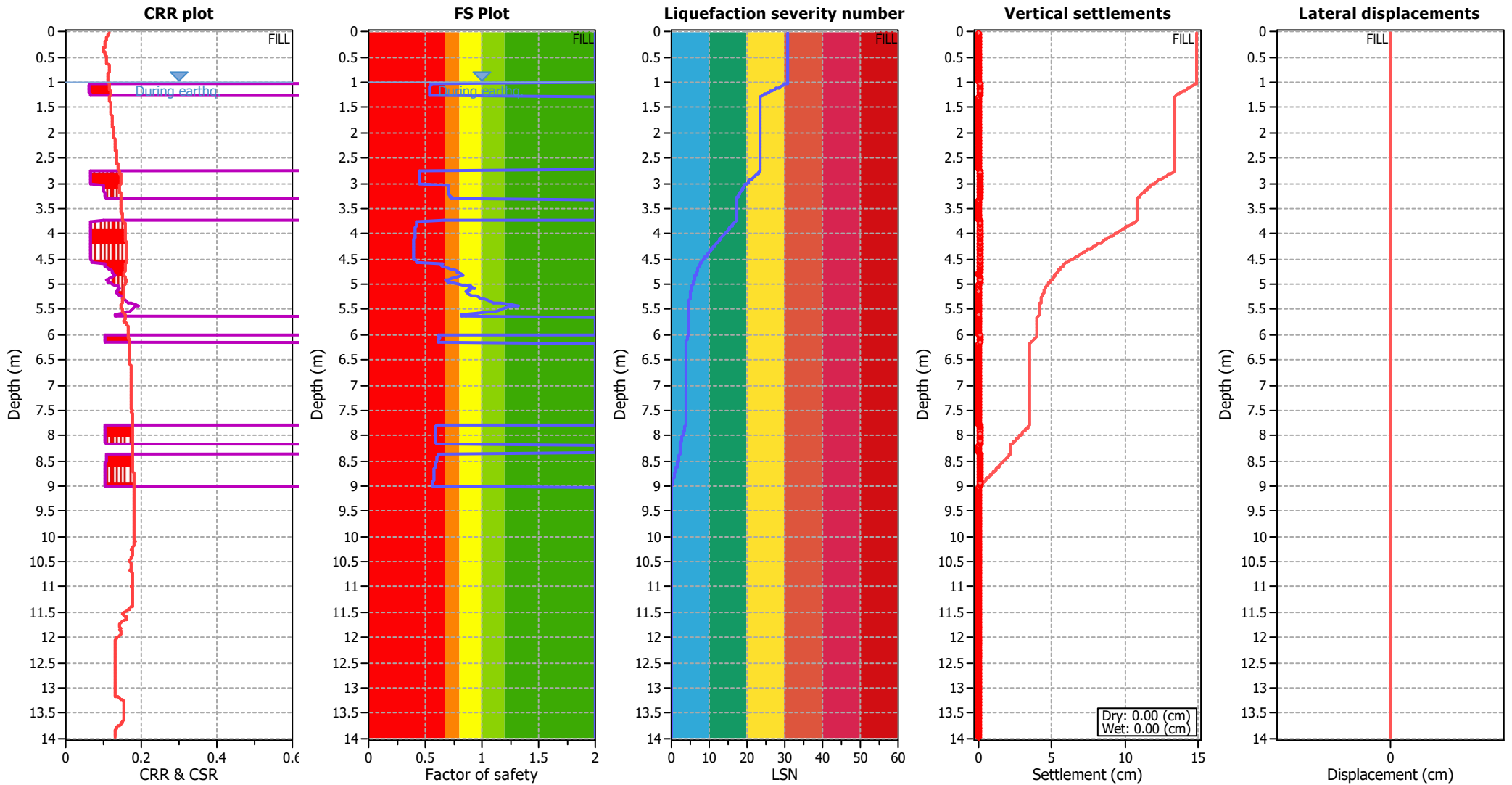




Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

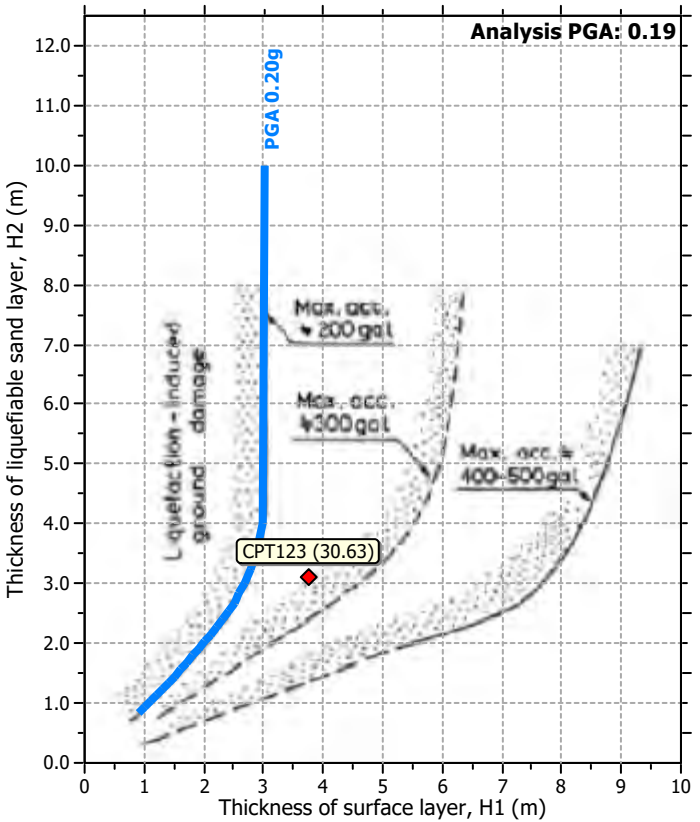
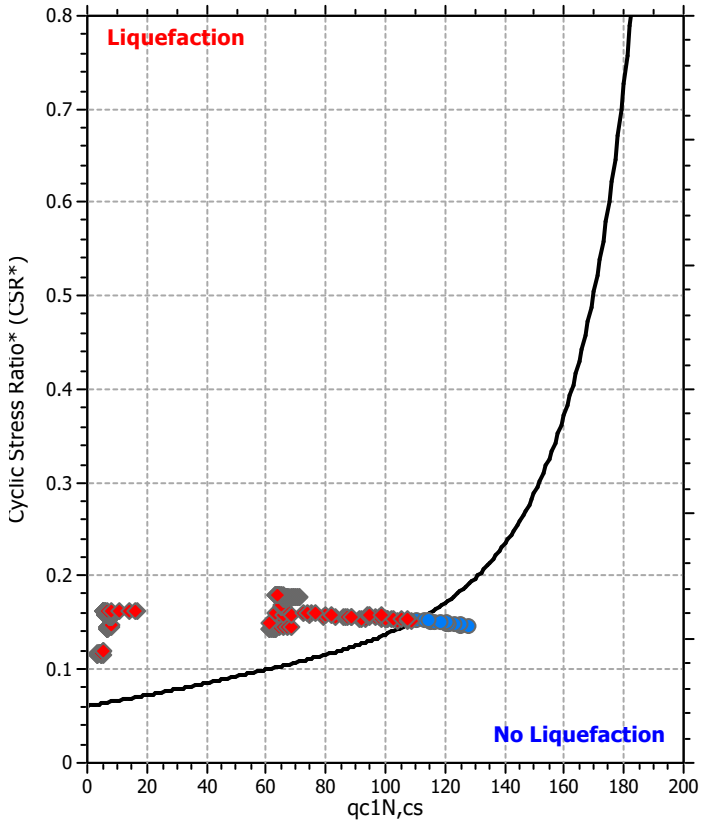
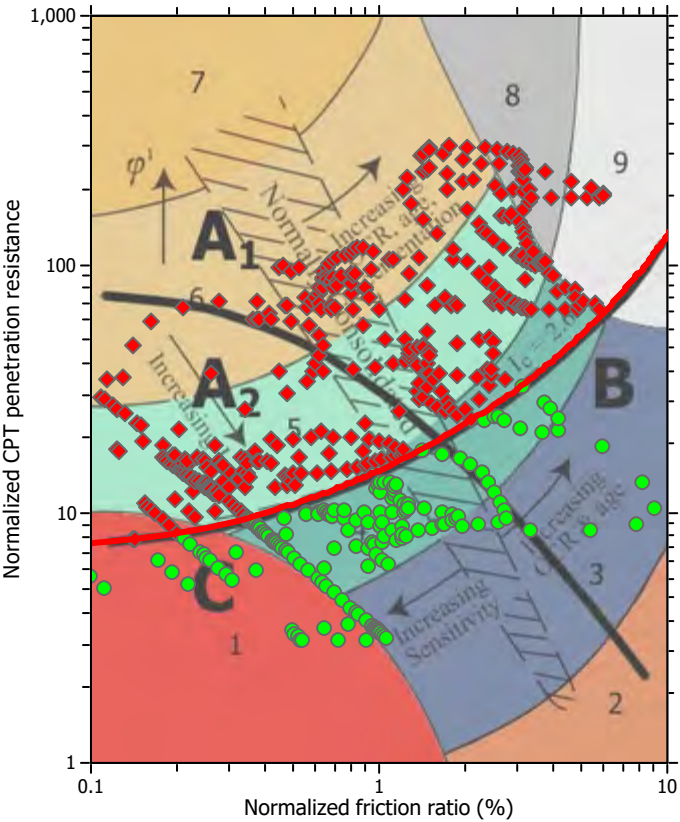
F.S. color scheme

Almost certain it will liquefy
Very likely to liquefy
Liquefaction and no liq. are equally likely
Unlike to liquefy
Almost certain it will not liquefy

LSN color scheme

Severe damage
Major expression of liquefaction
Moderate to severe exp. of liquefaction
Moderate expression of liquefaction
Minor expression of liquefaction
Little to no expression of liquefaction

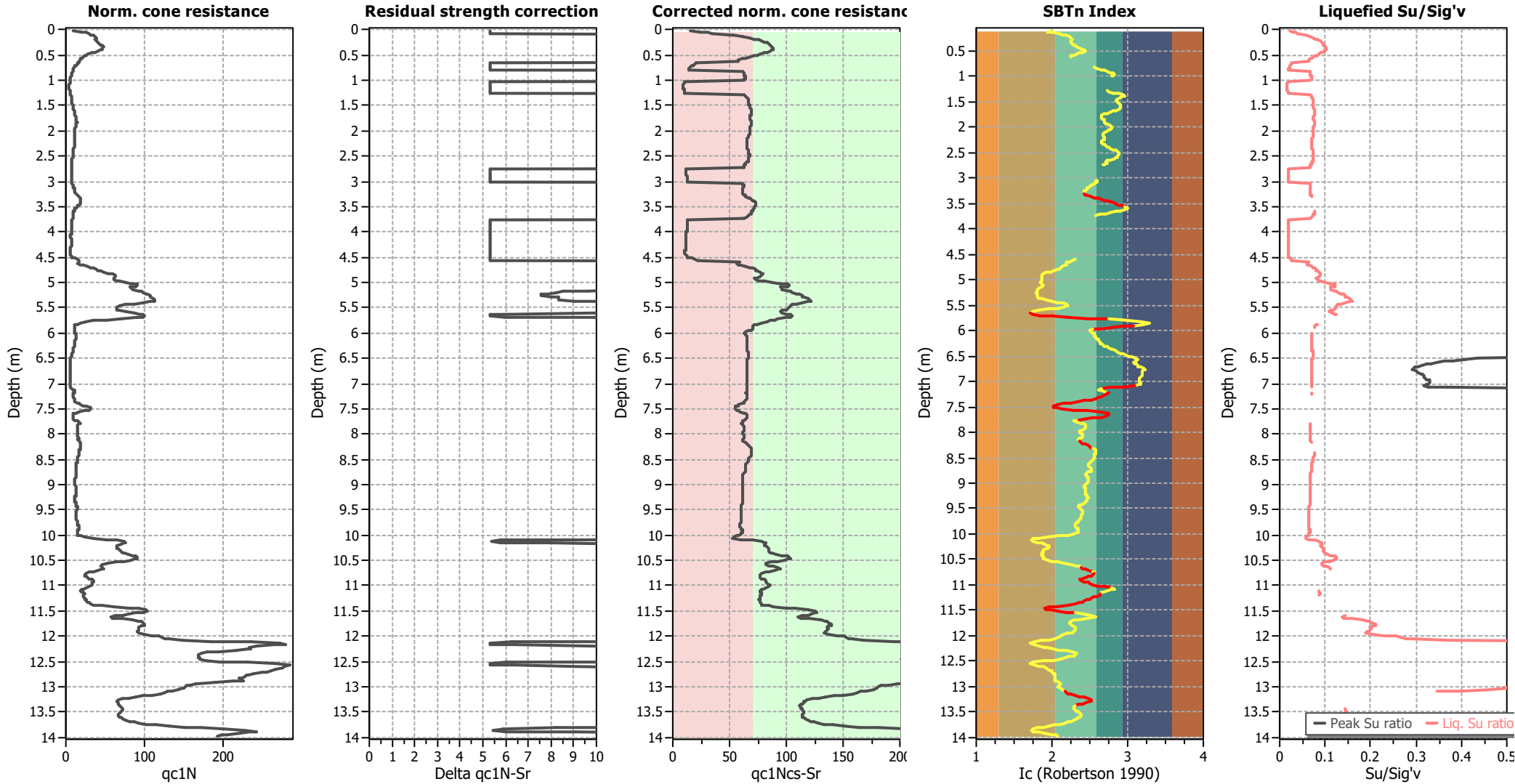
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

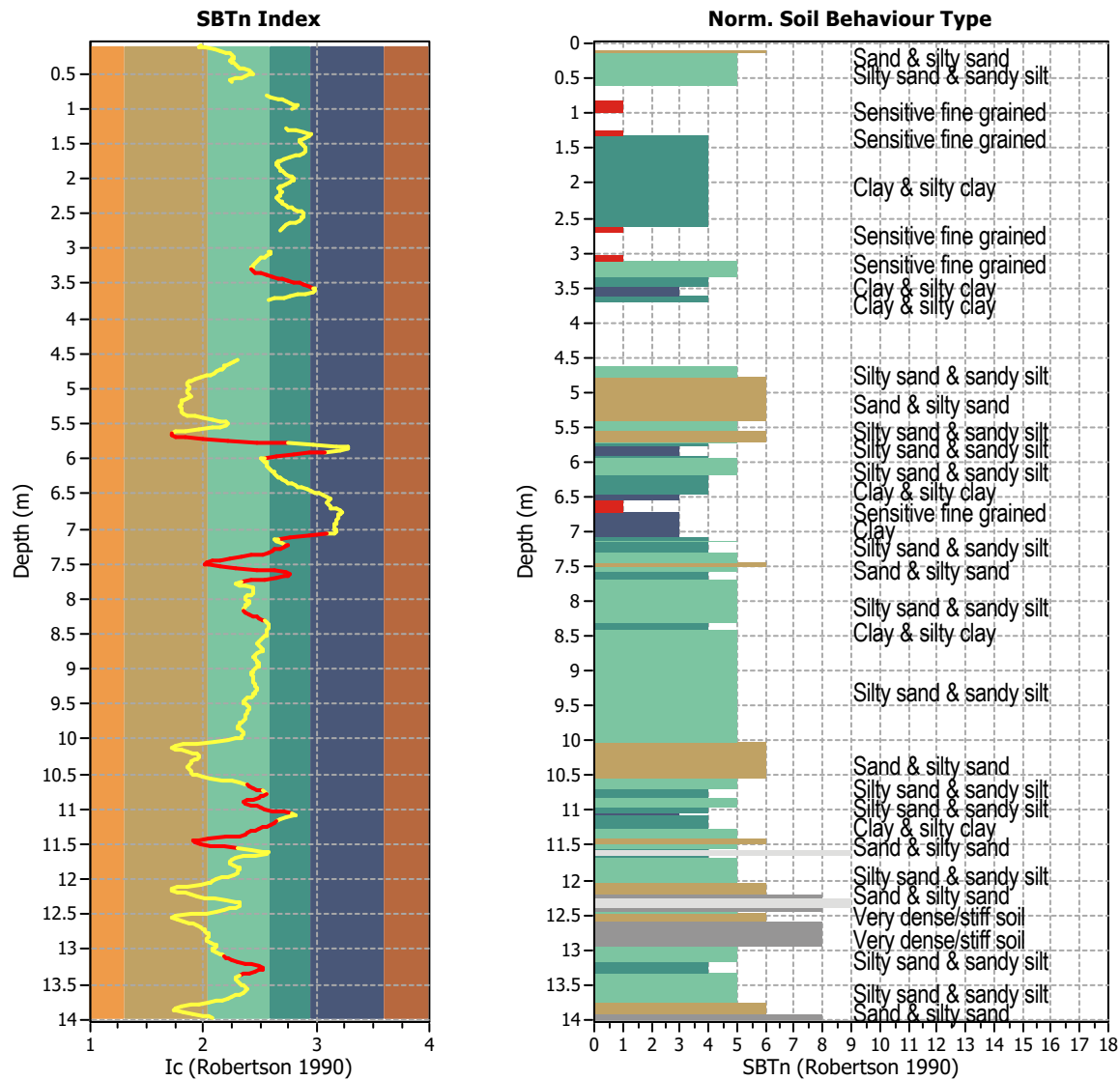
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

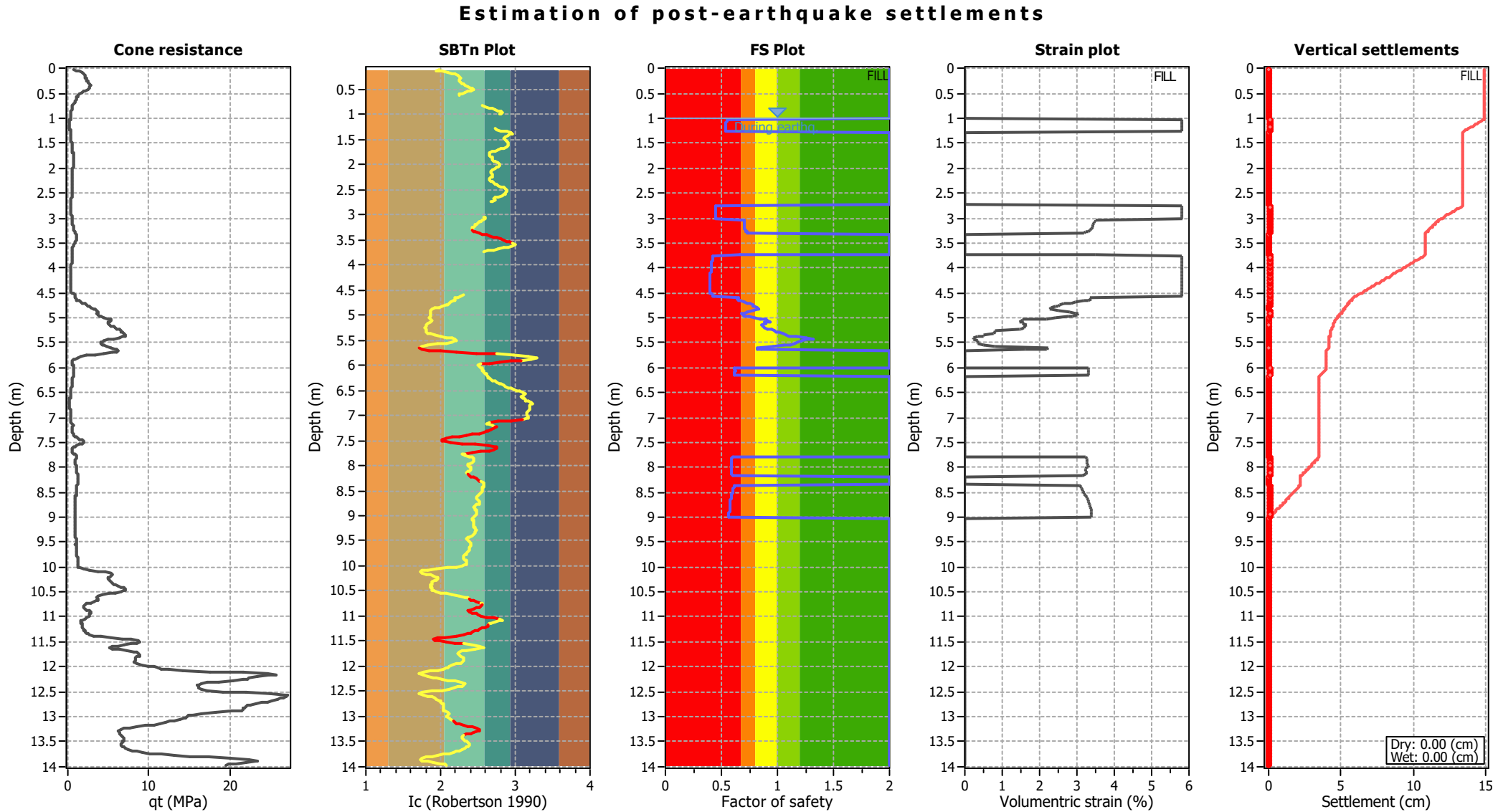


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

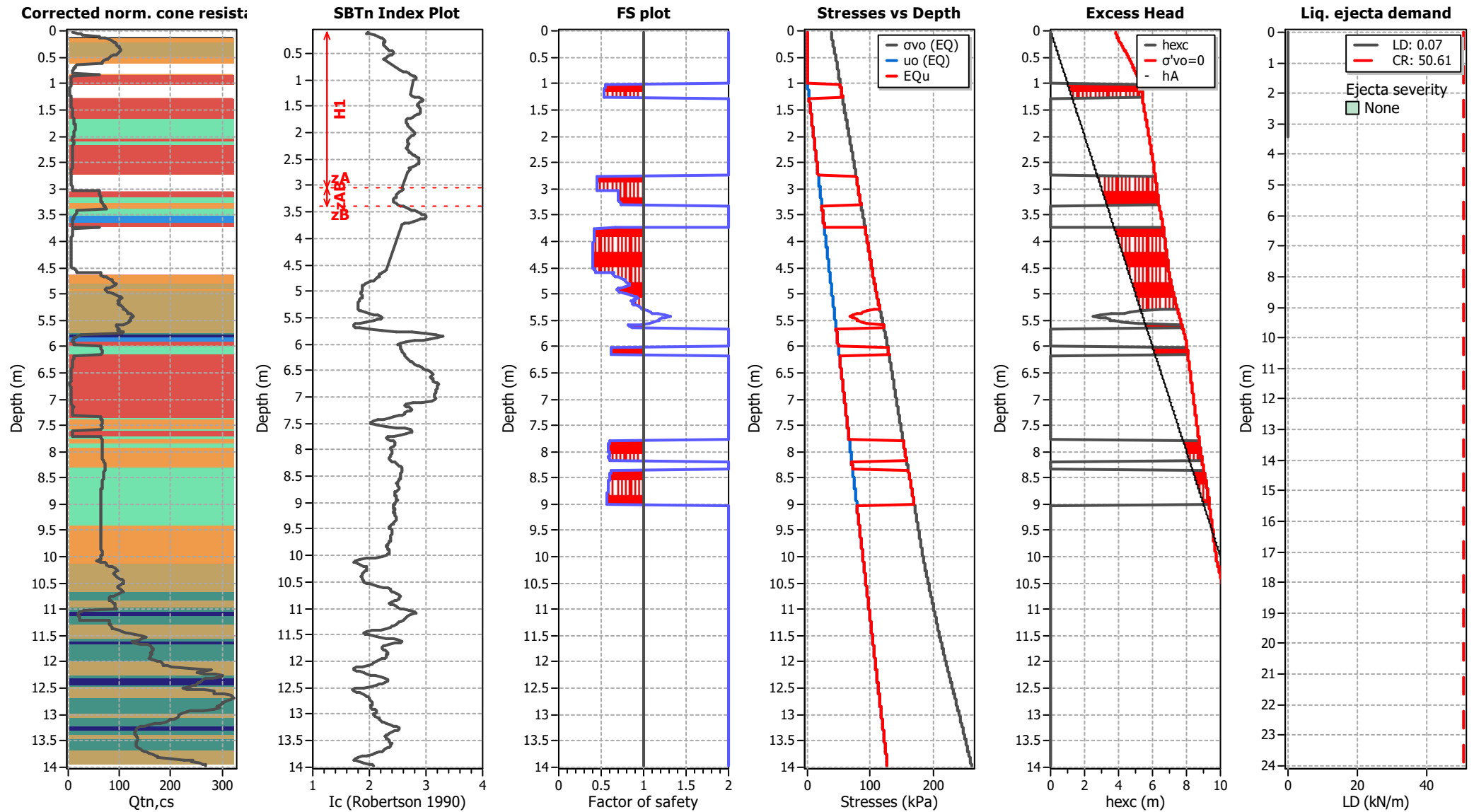
Total points in CPT file: 699
Total points excluded: 122
Exclusion percentage: 17.45%
Number of layers detected: 15



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

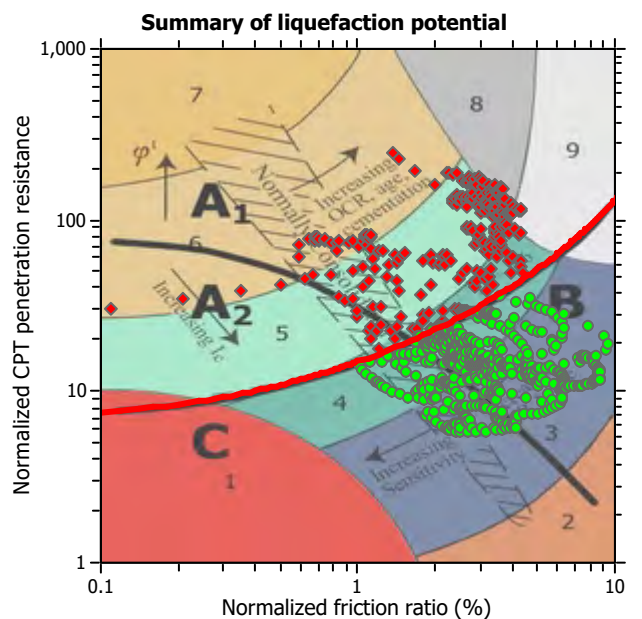
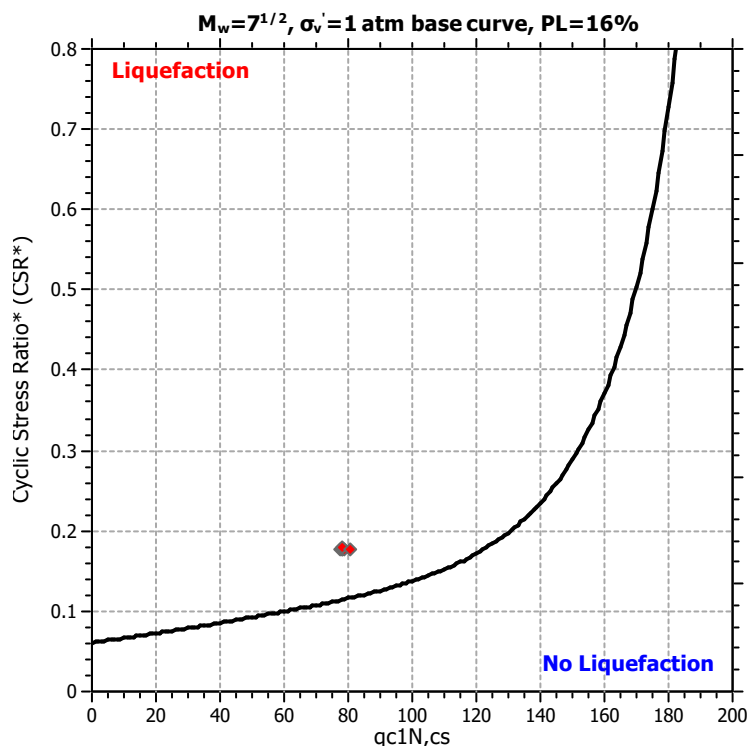
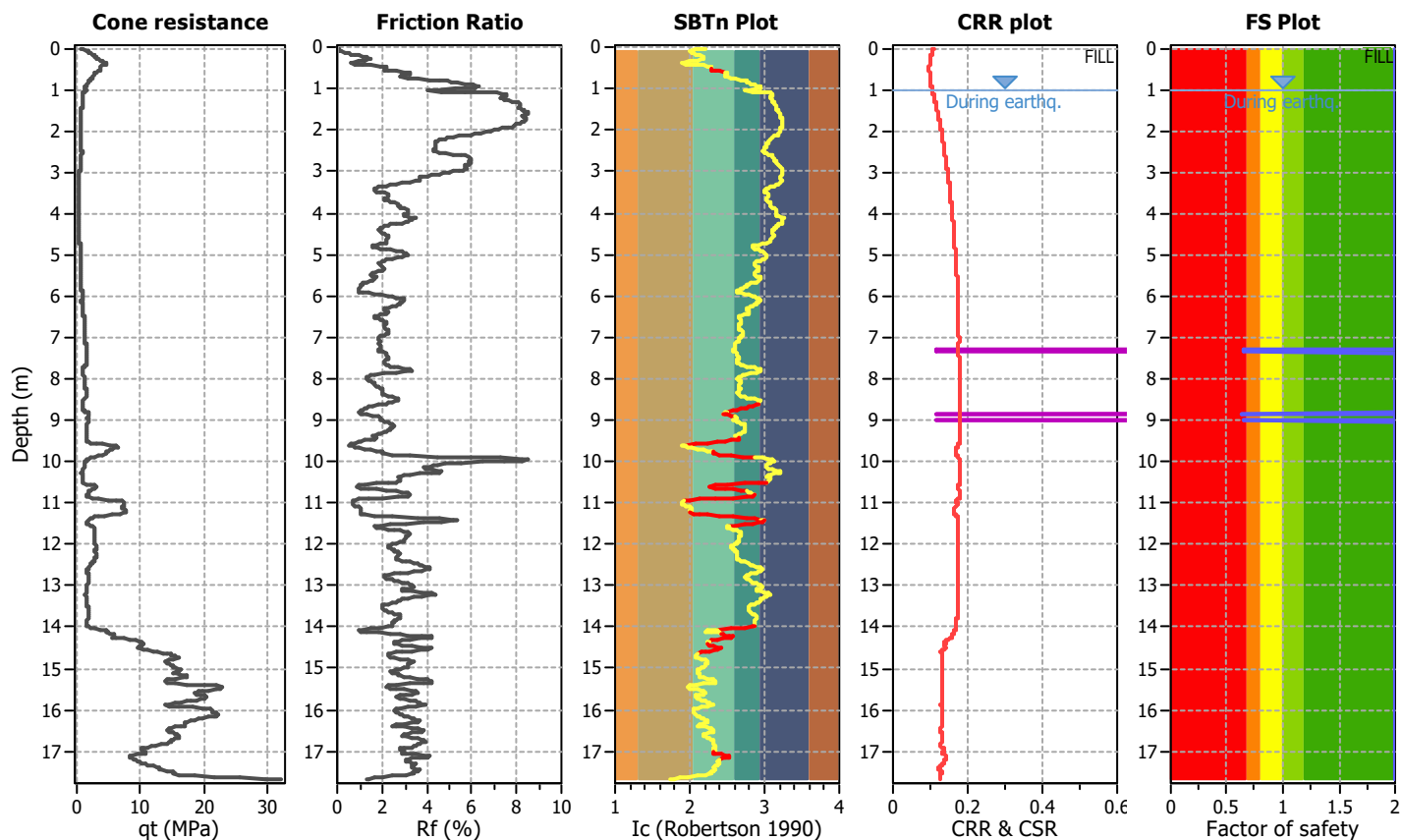
Project title : Sunfield Landholding

Location :

CPT file : CPT124

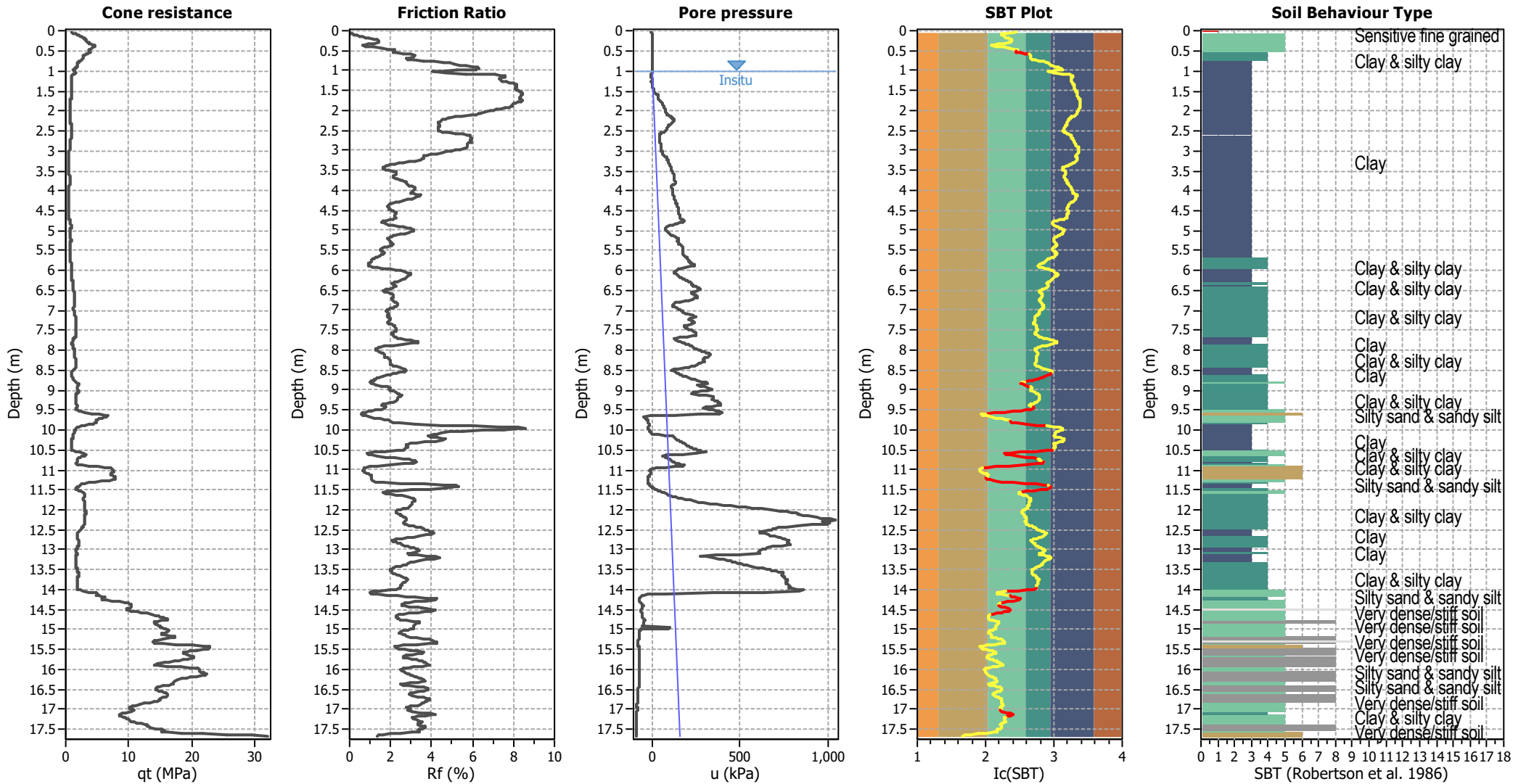
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

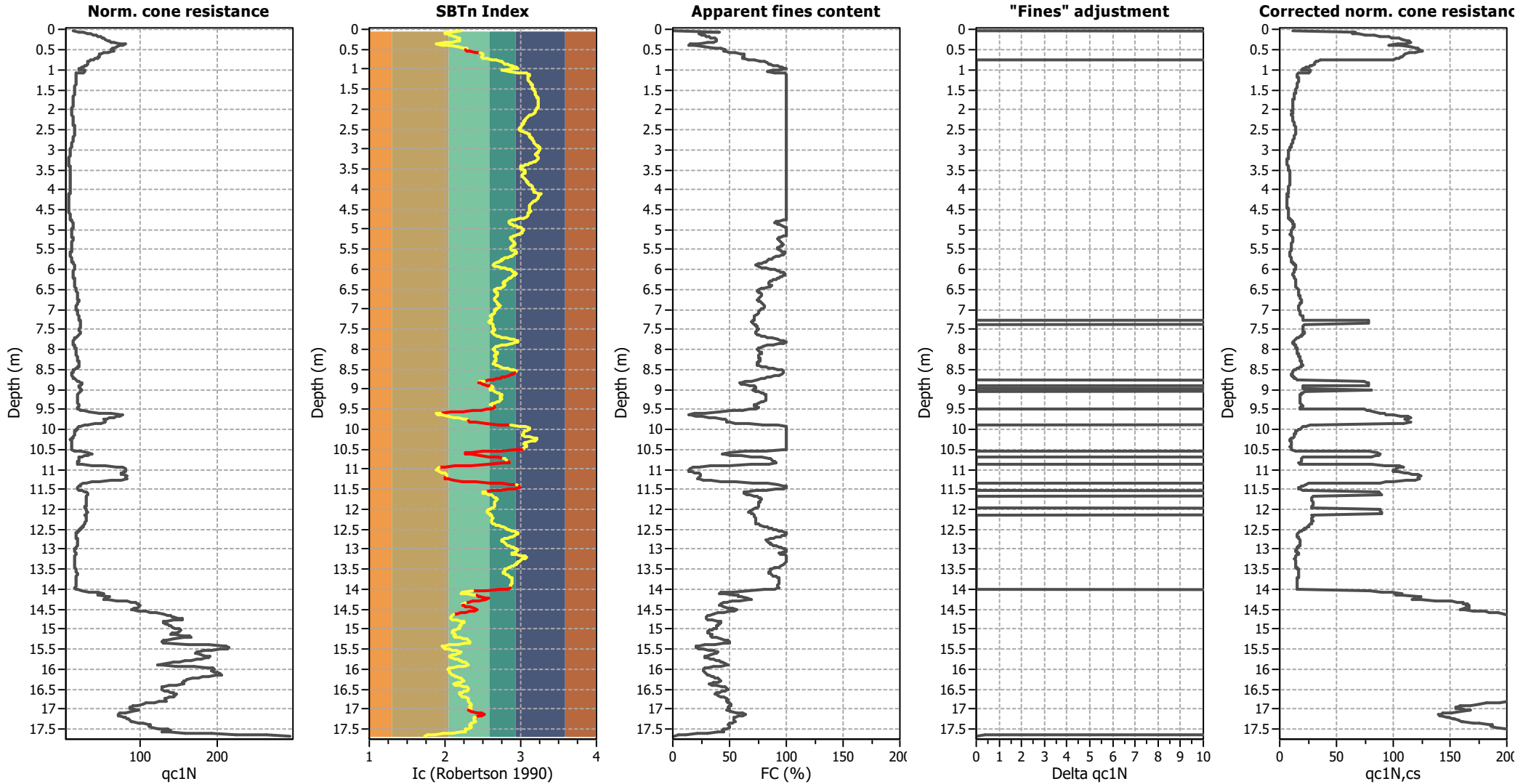
The figure displays five vertical plots showing geotechnical data versus depth (0 to 17.5 m).

- Norm. cone resistance (Qtn):** The y-axis is Depth (m) from 0 to 17.5. The x-axis is Qtn from 0 to 200. The curve shows resistance values generally between 50 and 100, with a significant peak around 15.5 m depth reaching approximately 180.
- Norm. friction ratio (Fr (%)):** The y-axis is Depth (m) from 0 to 17.5. The x-axis is Fr (%) from 0 to 10. The curve shows friction ratio values generally between 1% and 4%, with a peak around 10 m depth reaching approximately 9%.
- Nom. pore pressure ratio (Bq):** The y-axis is Depth (m) from 0 to 17.5. The x-axis is Bq from -0.2 to 1. The curve shows pore pressure ratio values generally between 0 and 0.4, with a peak around 10 m depth reaching approximately 0.4.
- SBTn Plot:** The y-axis is Depth (m) from 0 to 17.5. The x-axis is Ic (Robertson 1990) from 1 to 4. The plot shows a yellow line representing the SBTn value, which fluctuates between approximately 1.5 and 3.5. A red line is also visible, likely representing the friction ratio.
- Norm. Soil Behaviour Type (SBTn (Robertson 1990)):** The y-axis is Depth (m) from 0 to 17.5. The x-axis is SBTn (Robertson 1990) from 0 to 18. The plot shows a series of horizontal bars representing the soil behavior type at different depths. The types include Sand & silty sand, Silty sand & sandy silt, Clay, Clay & silty clay, and Very dense/stiff soil.

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained

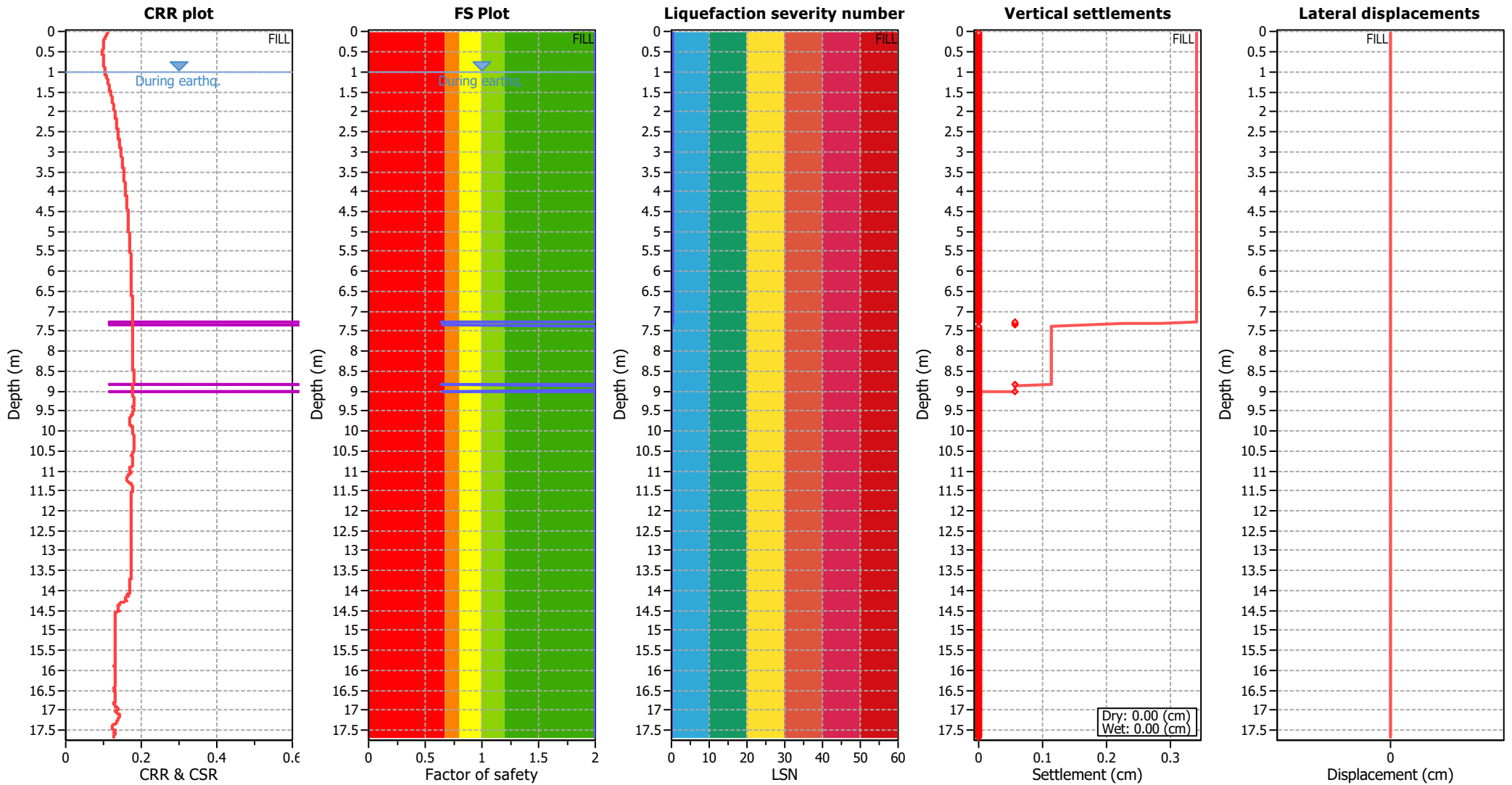
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

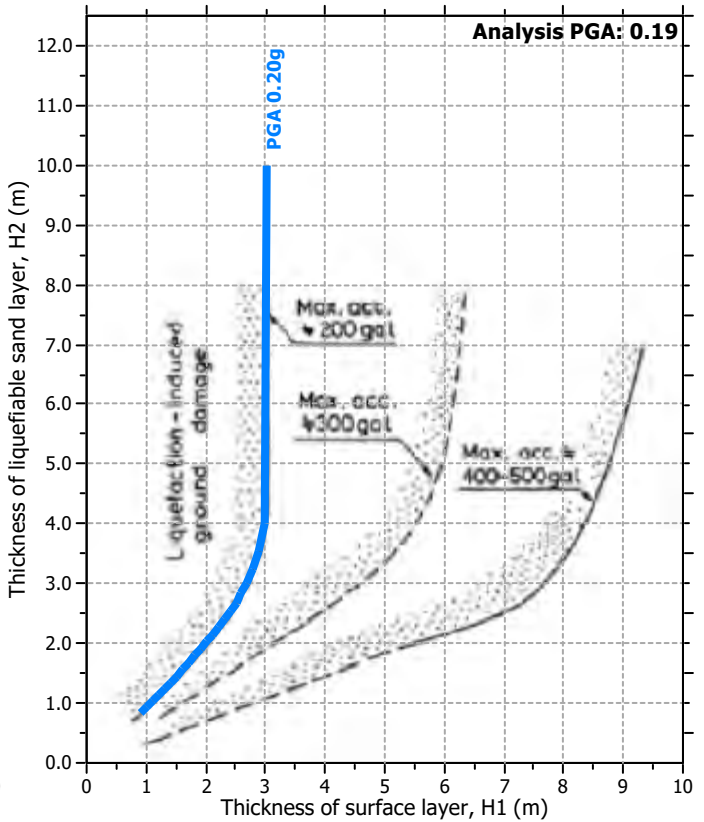
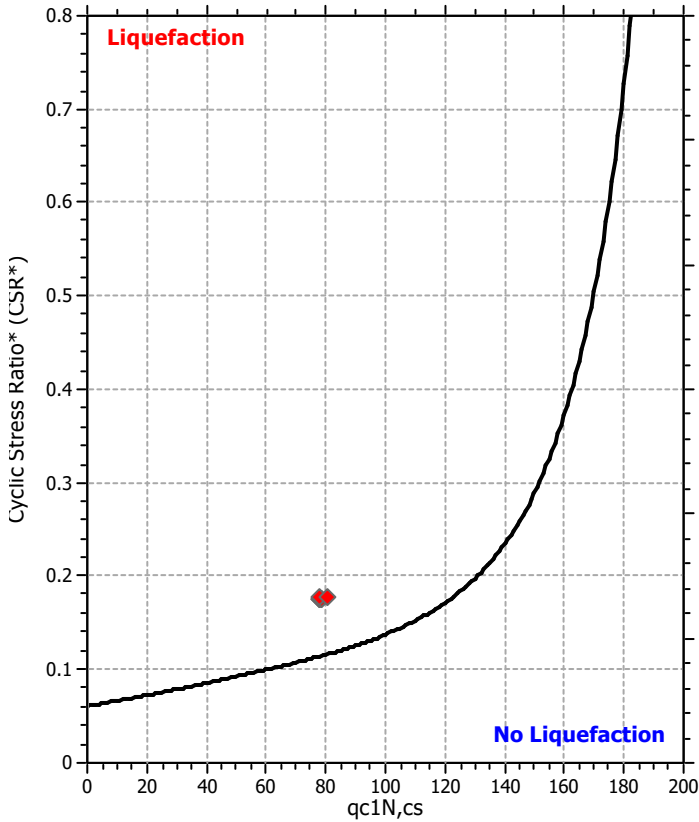
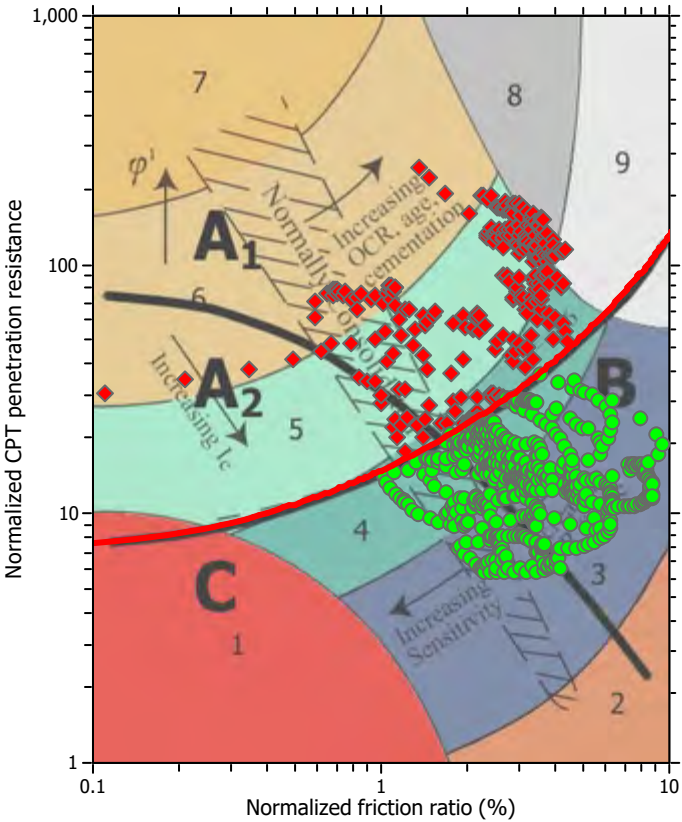
Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

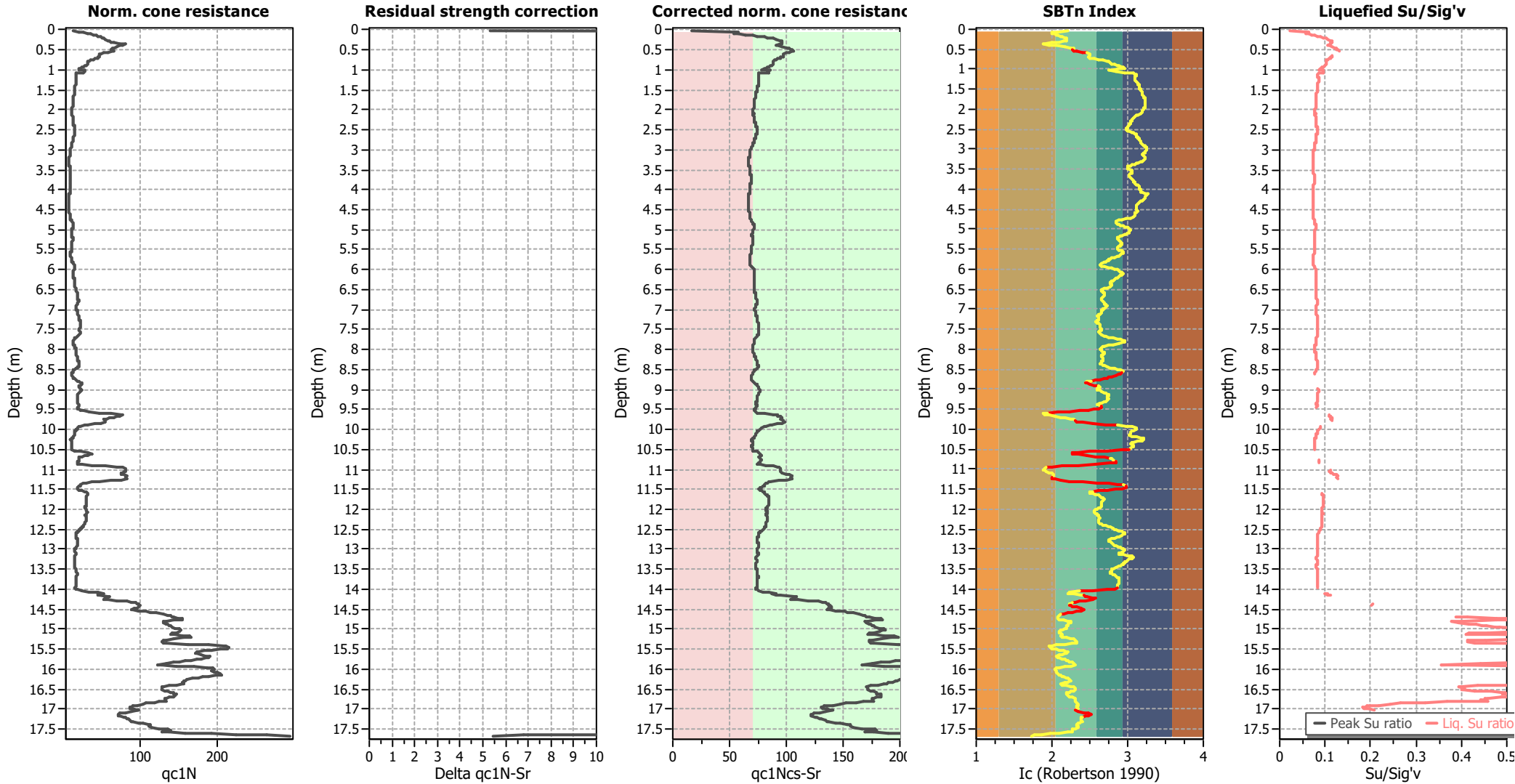
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

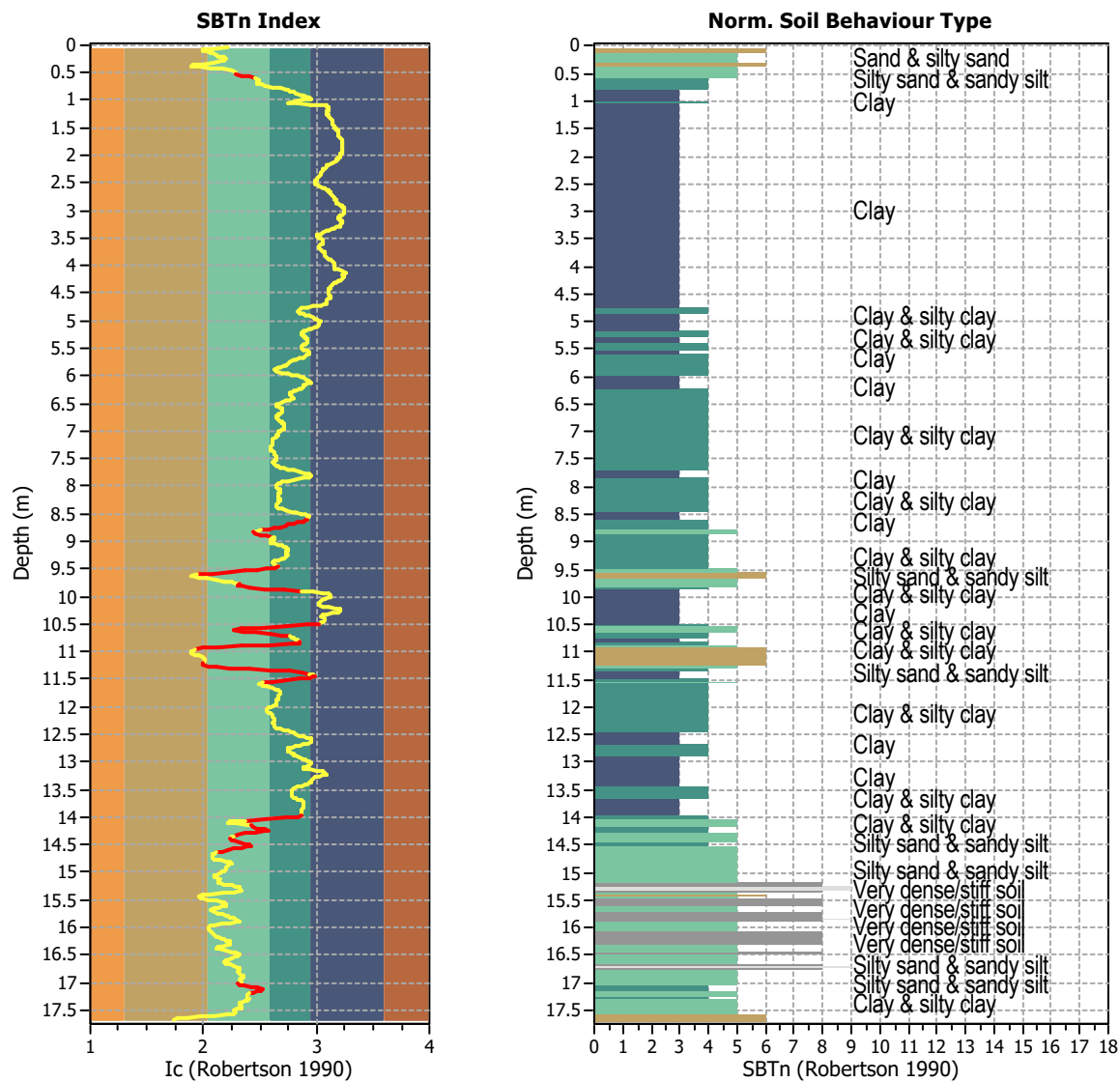
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



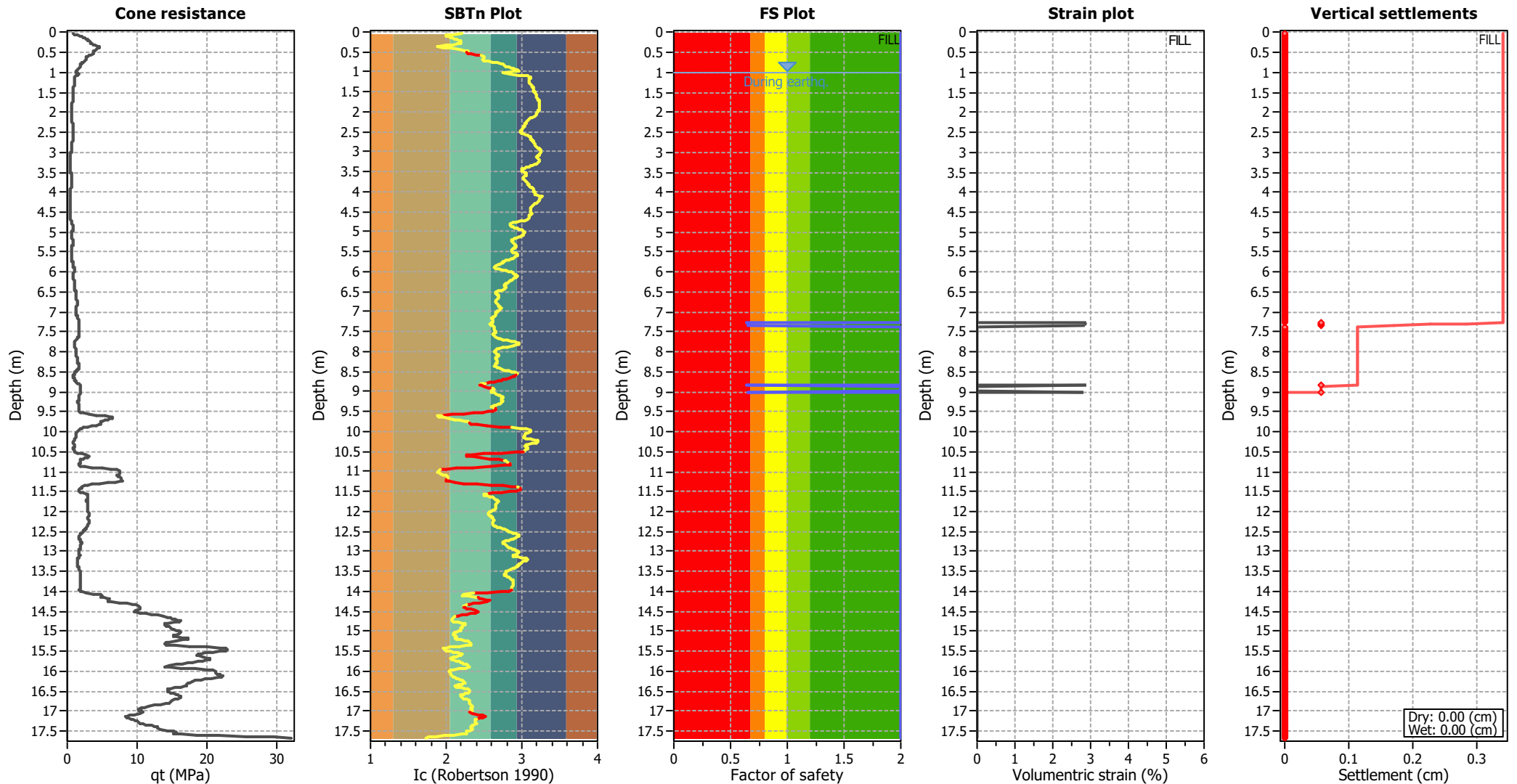
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 884
Total points excluded: 114
Exclusion percentage: 12.90%
Number of layers detected: 17

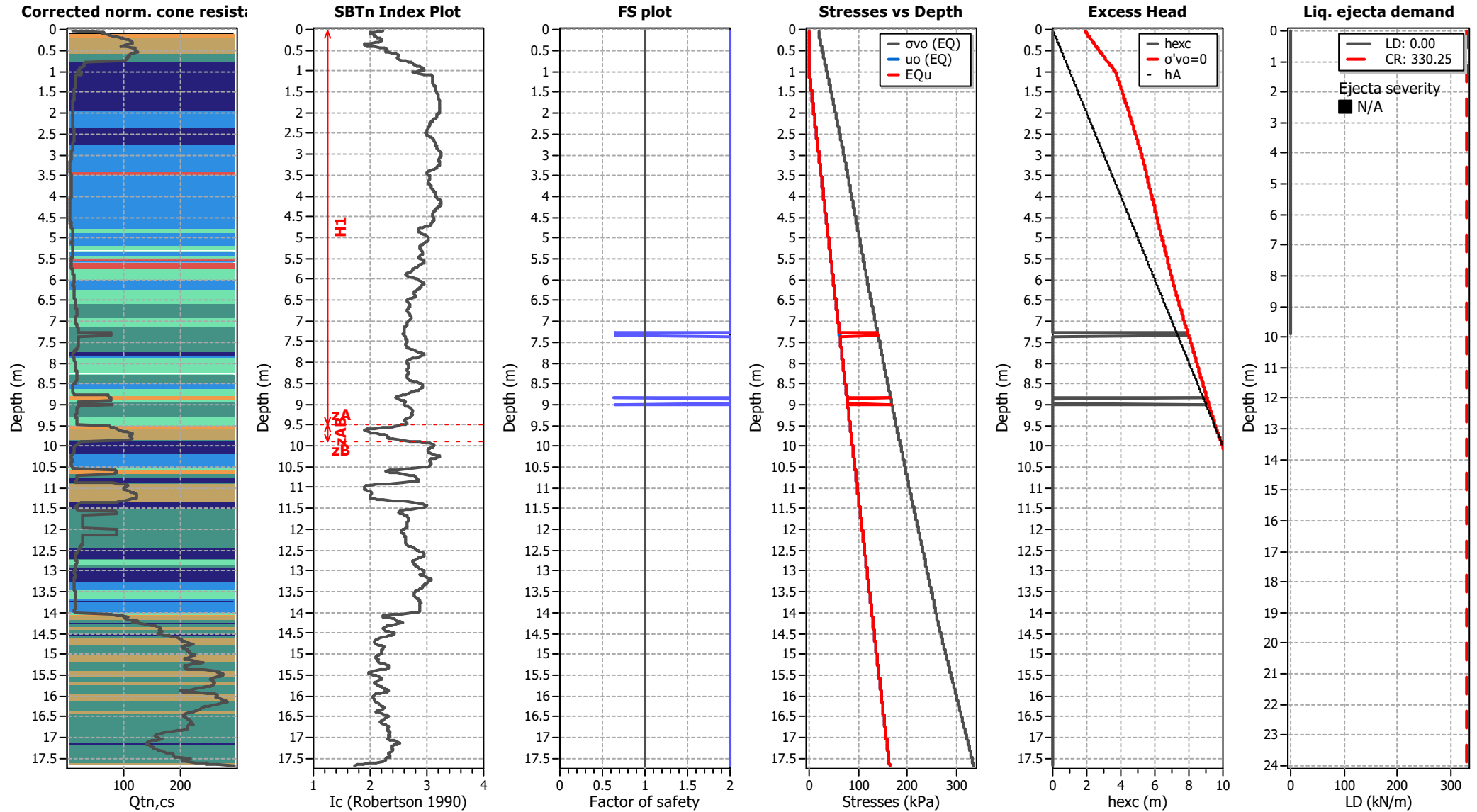
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

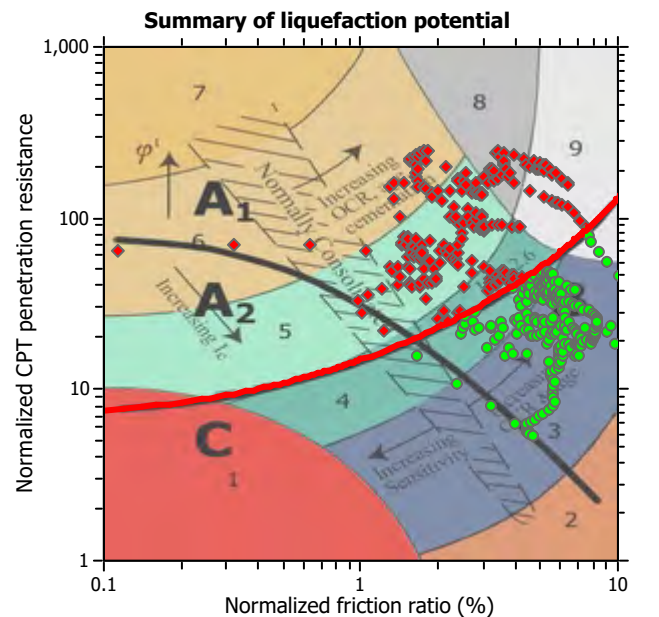
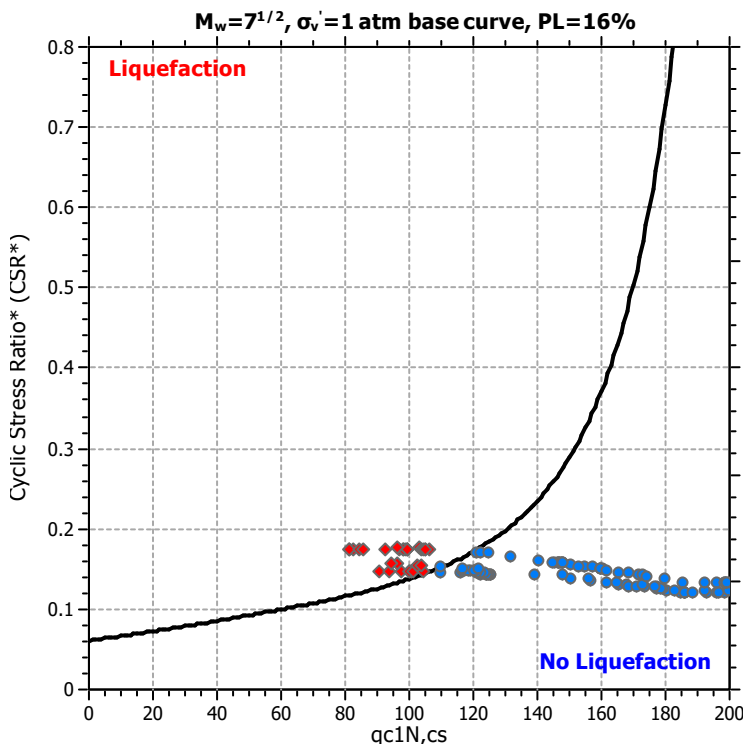
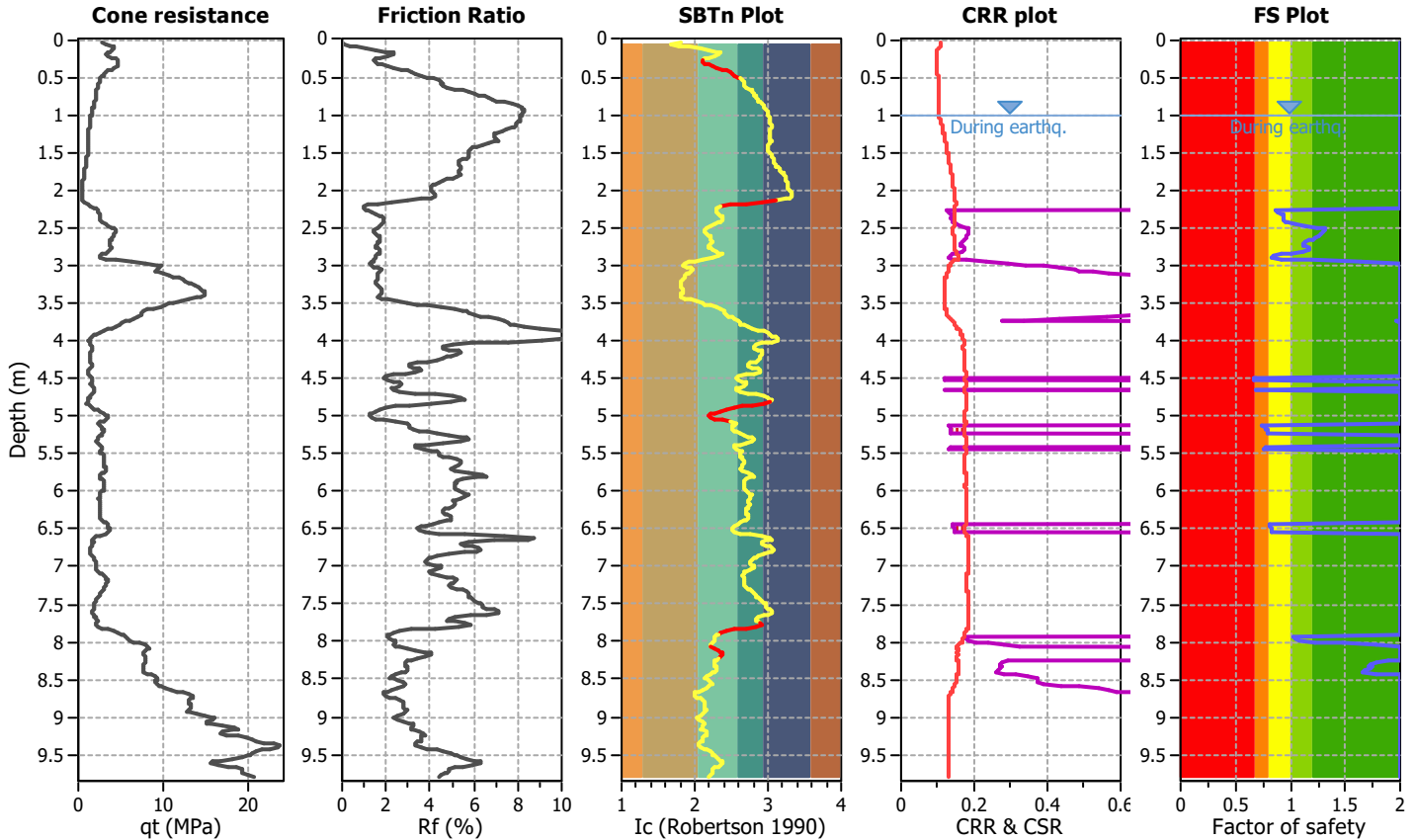
Project title : Sunfield Landholding

Location :

CPT file : CPT125

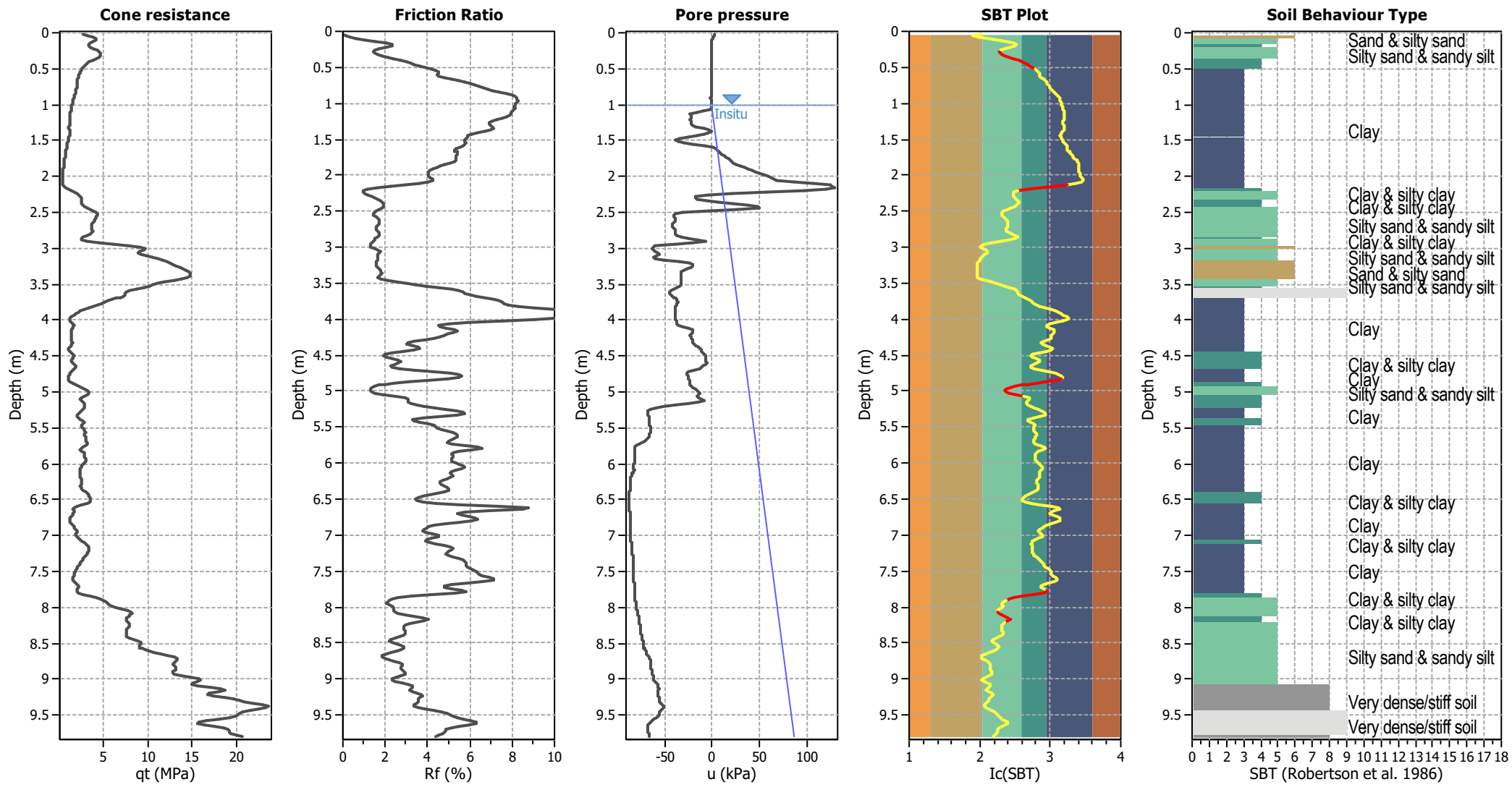
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

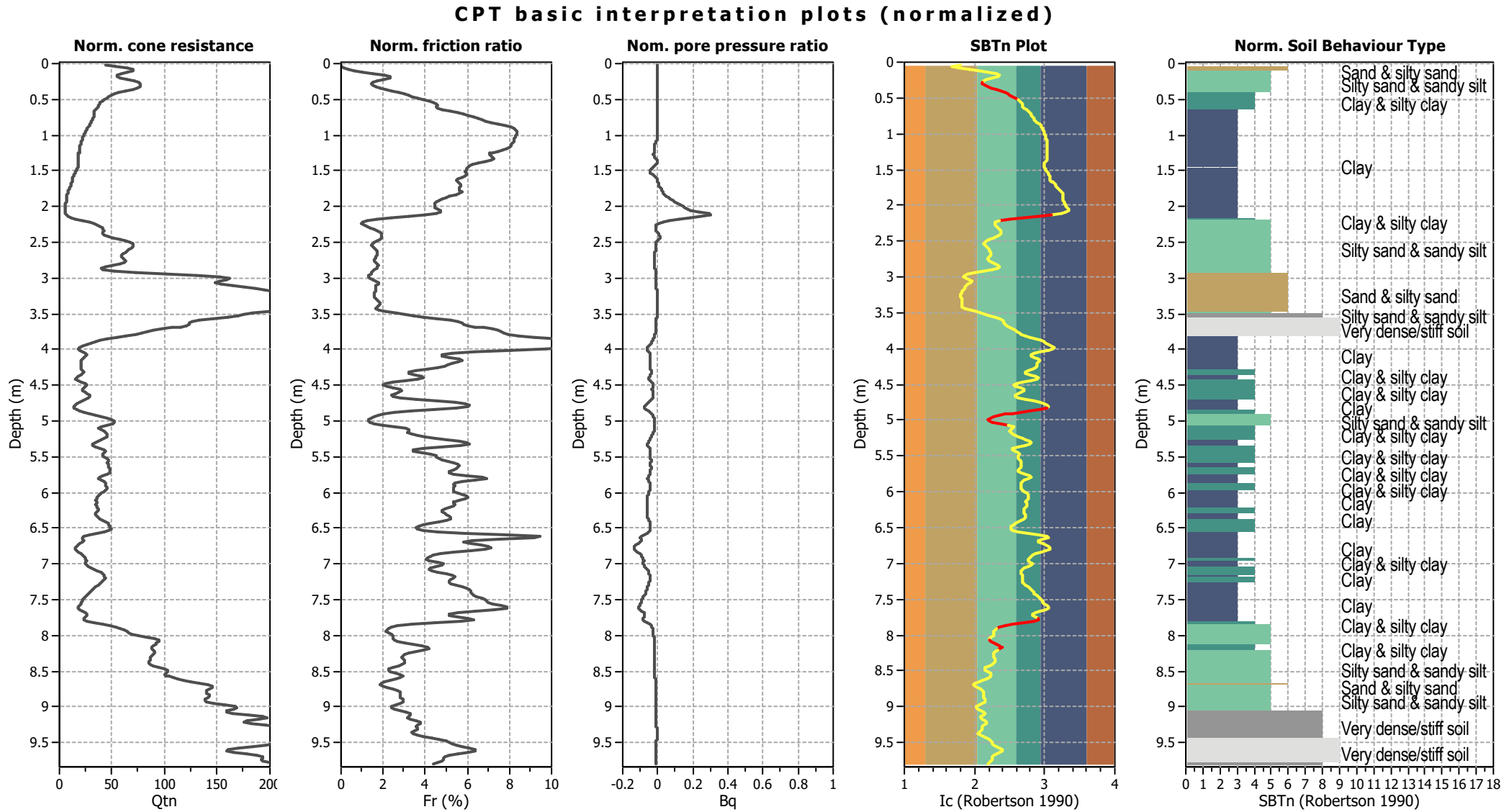
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

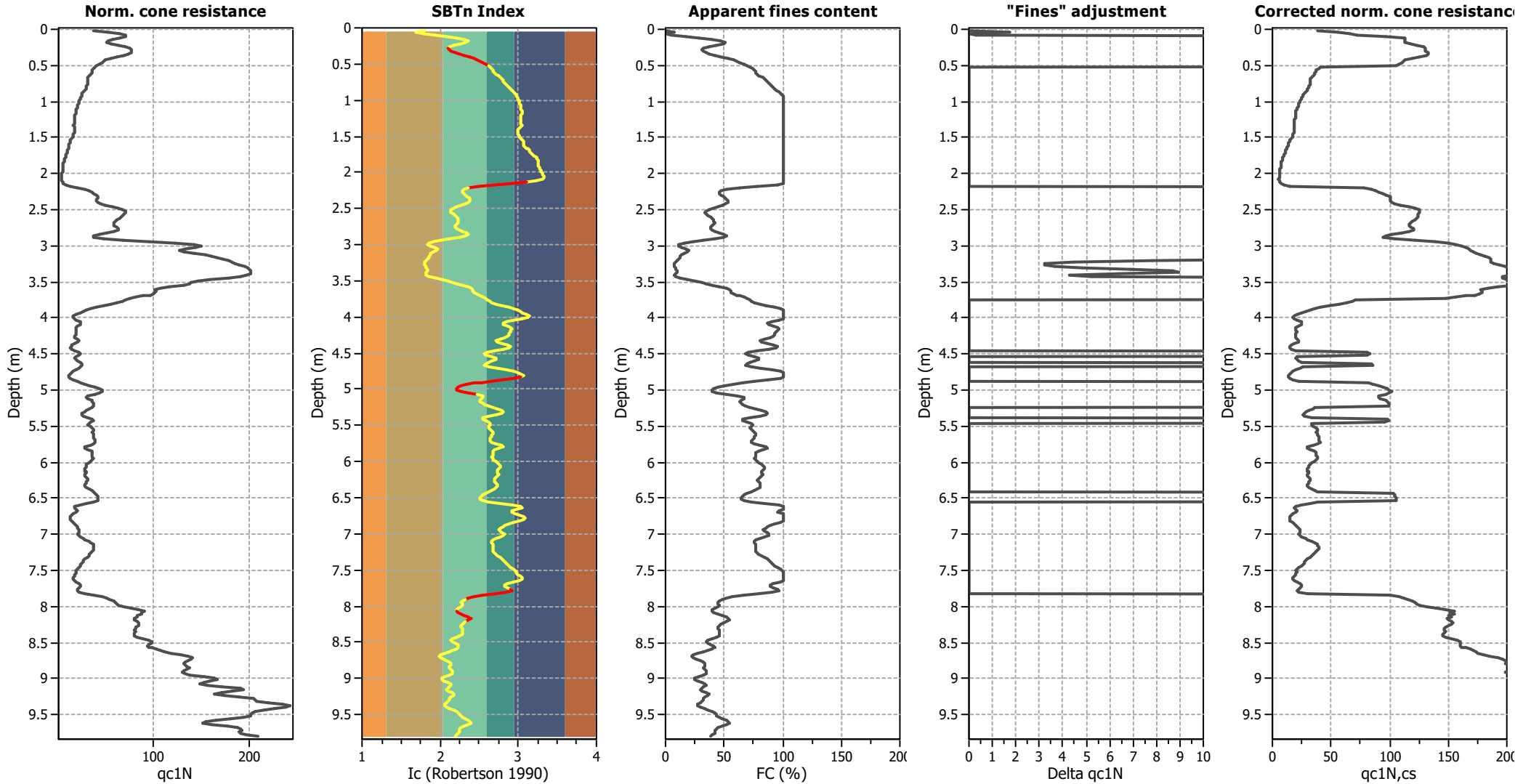
SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

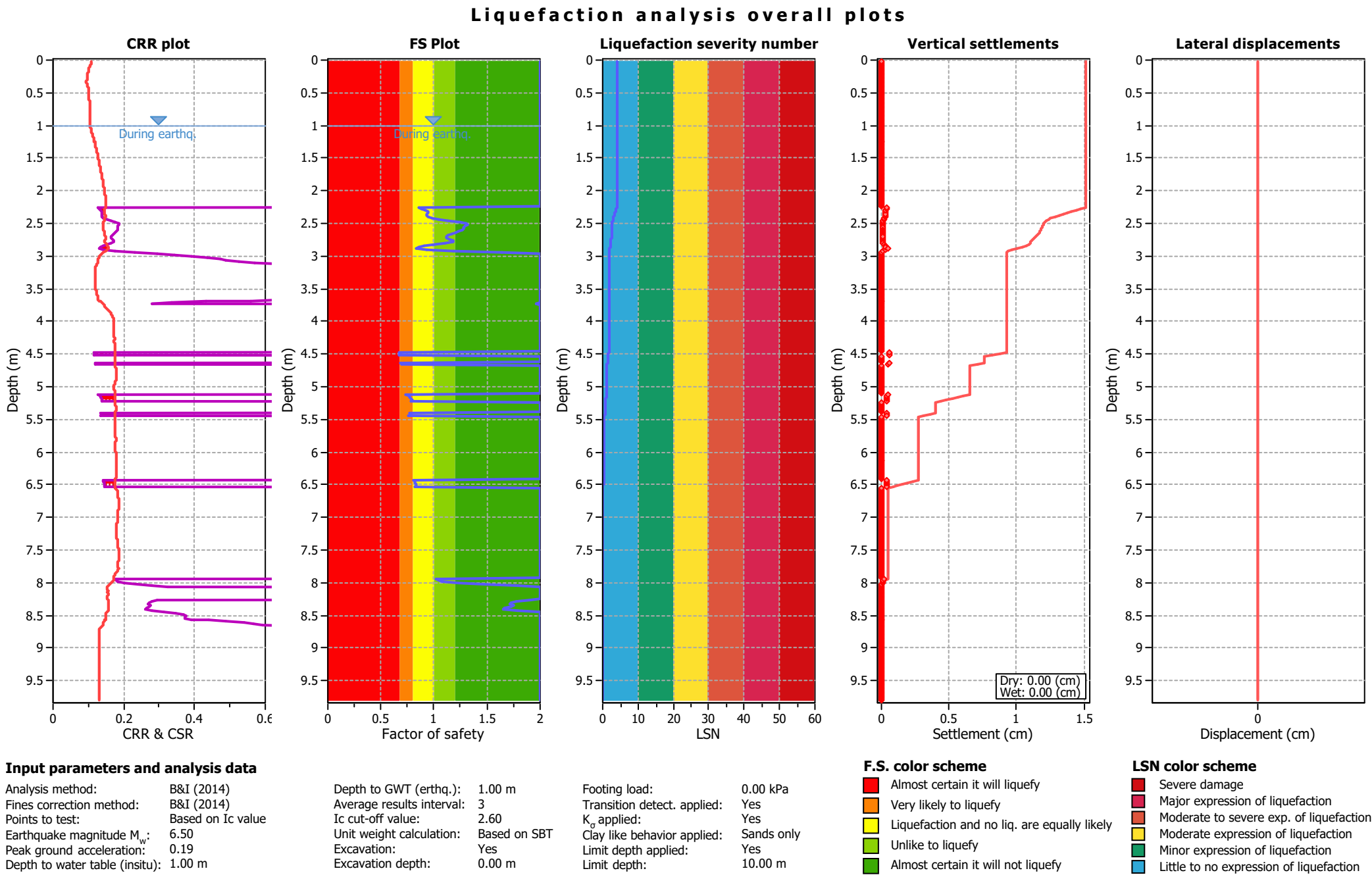
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots (intermediate results)

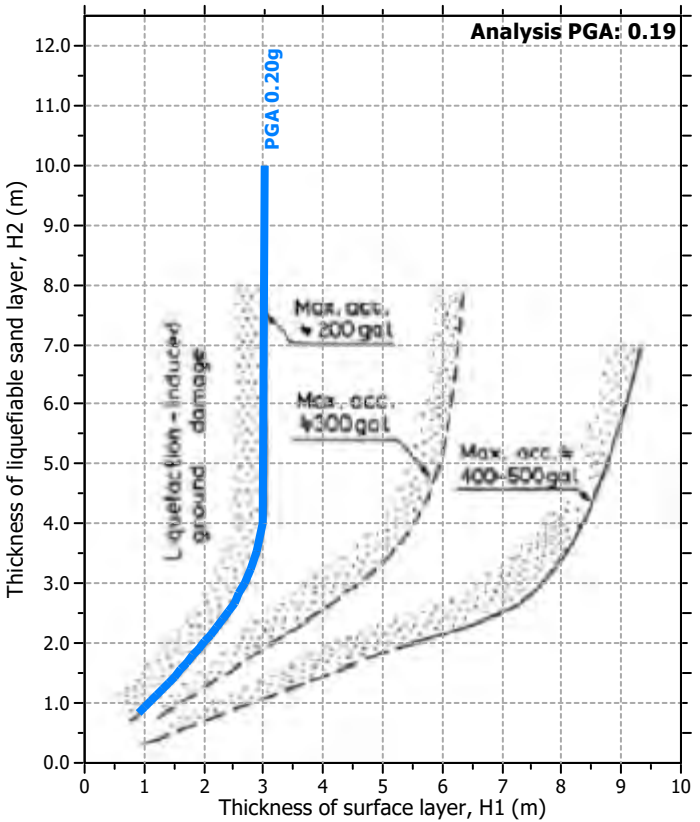
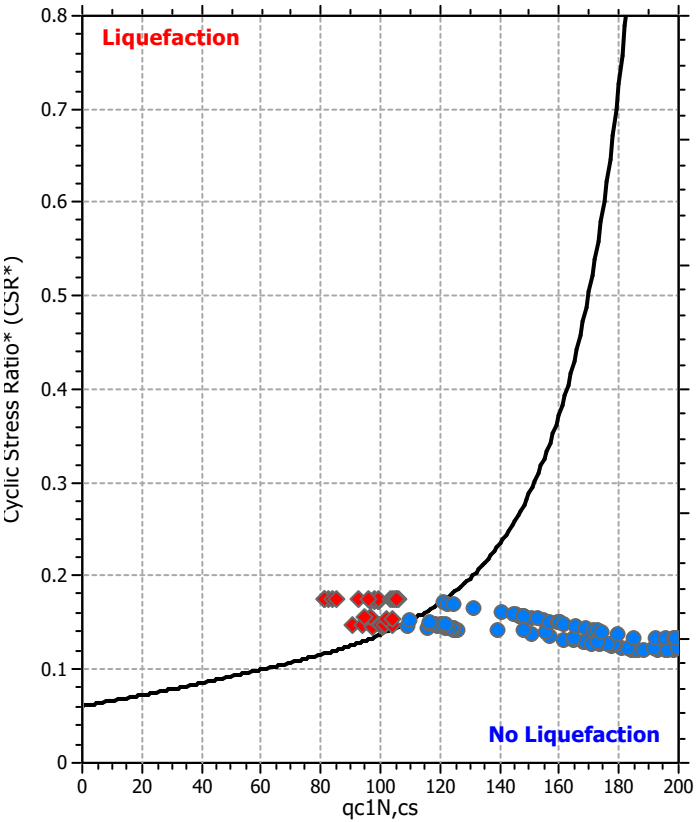
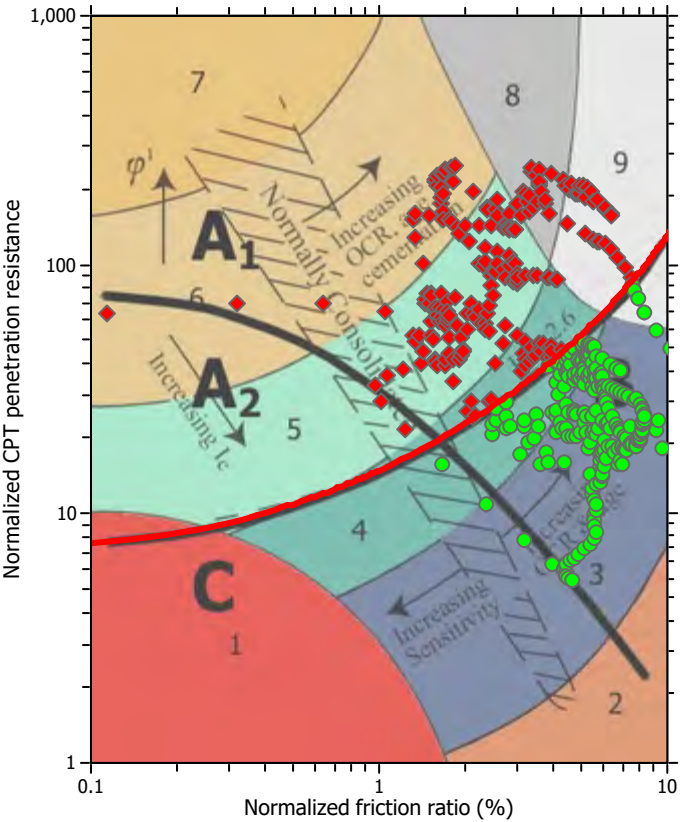


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

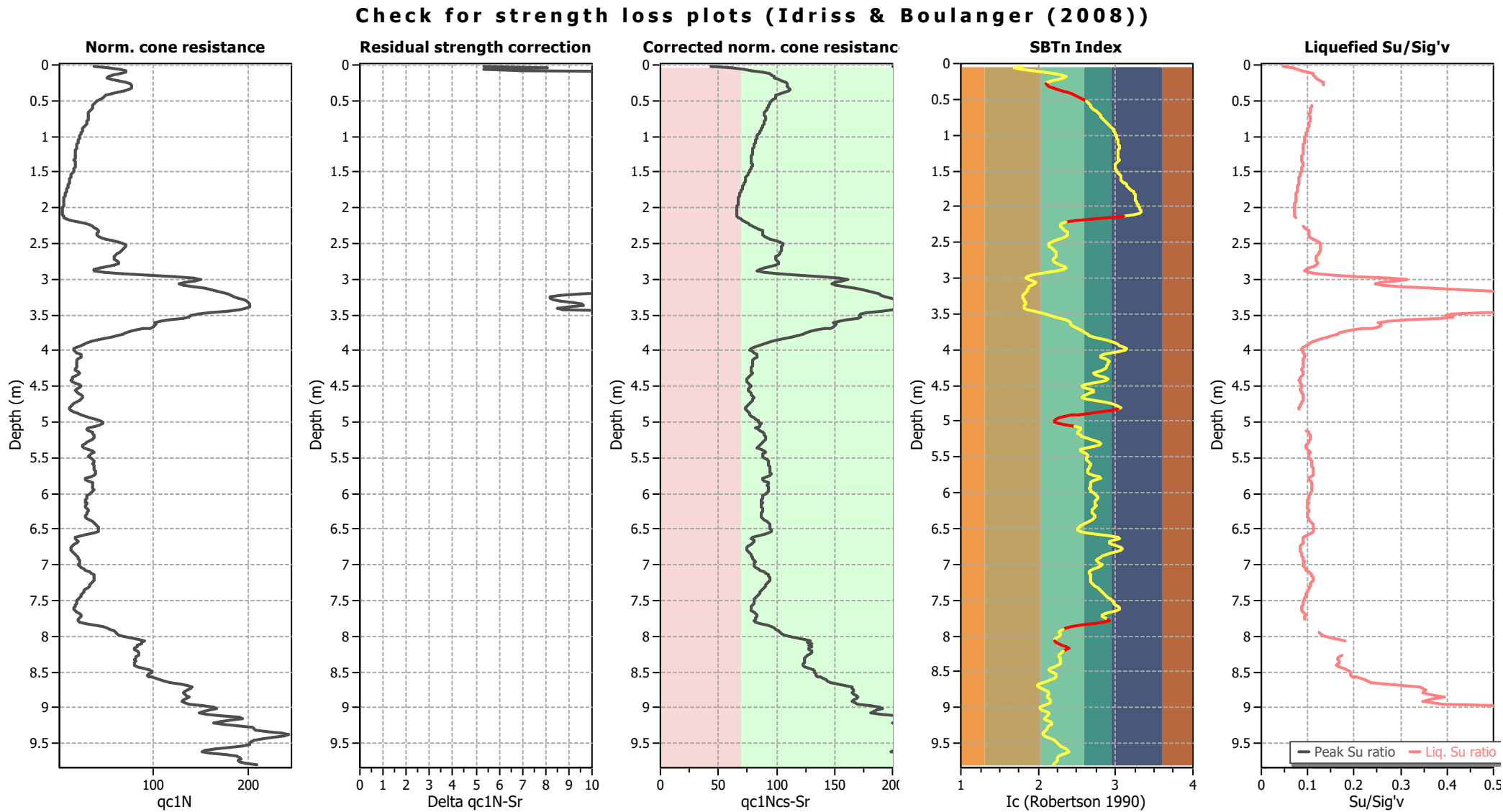


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

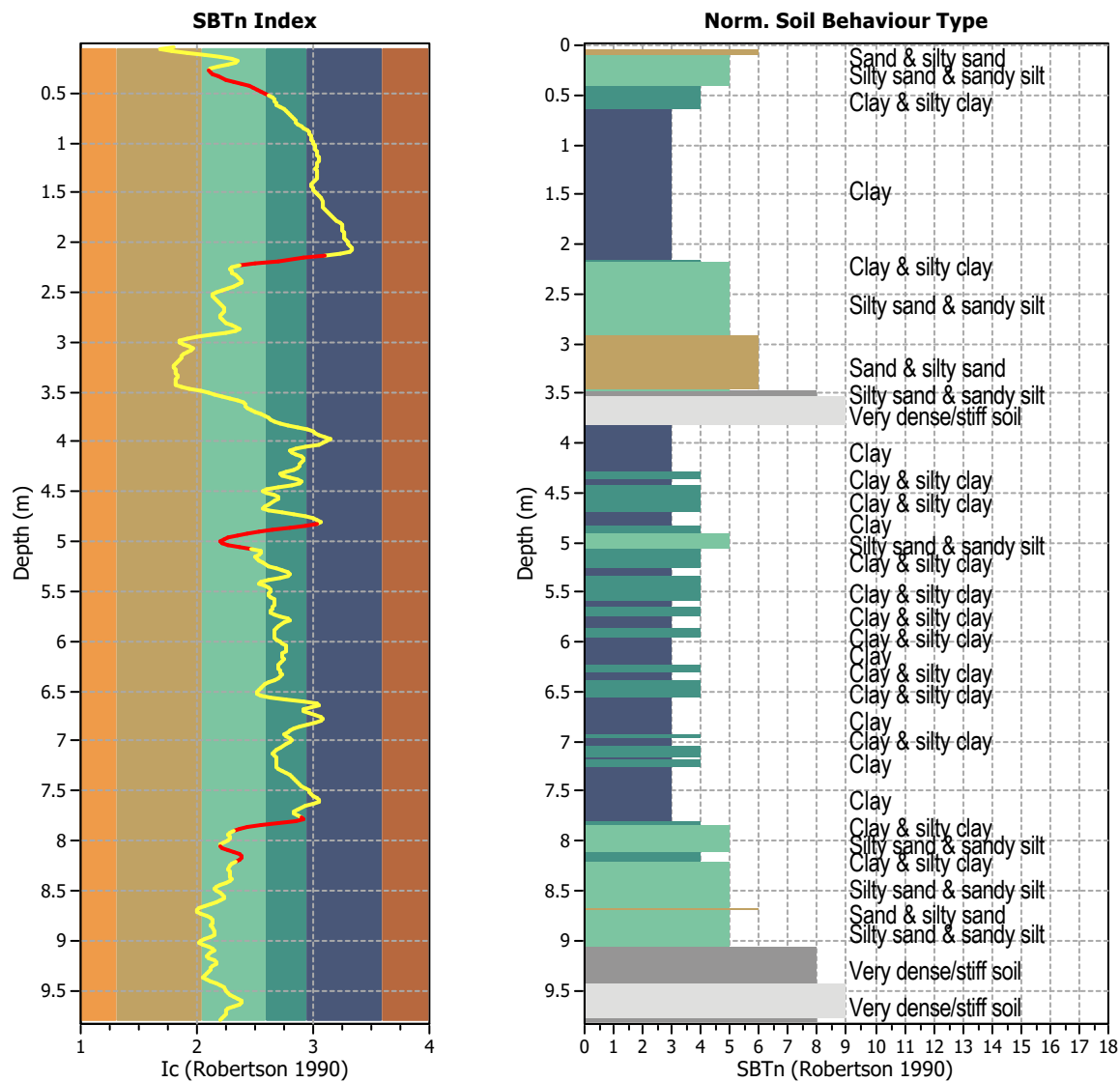
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



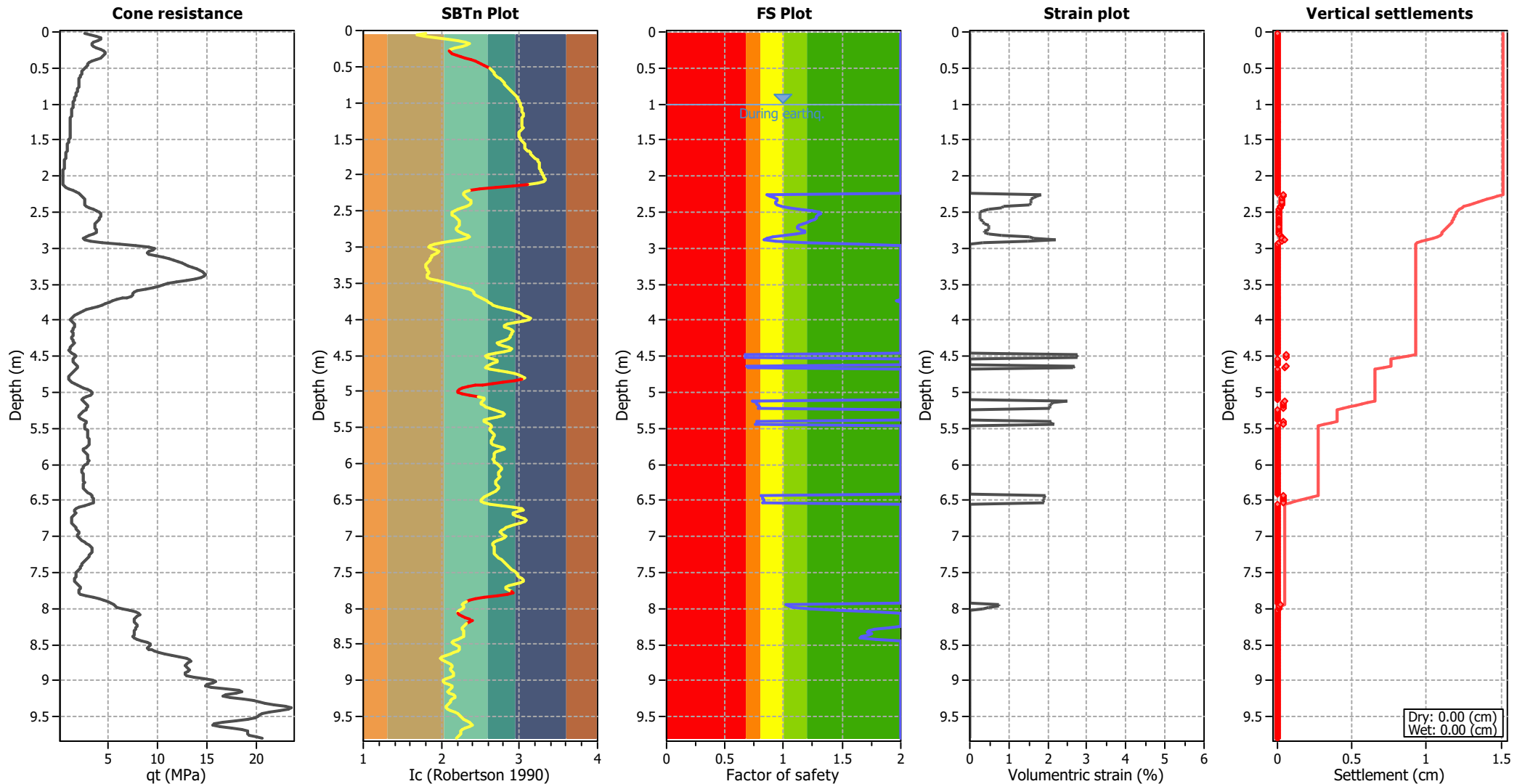
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 490
Total points excluded: 49
Exclusion percentage: 10.00%
Number of layers detected: 7

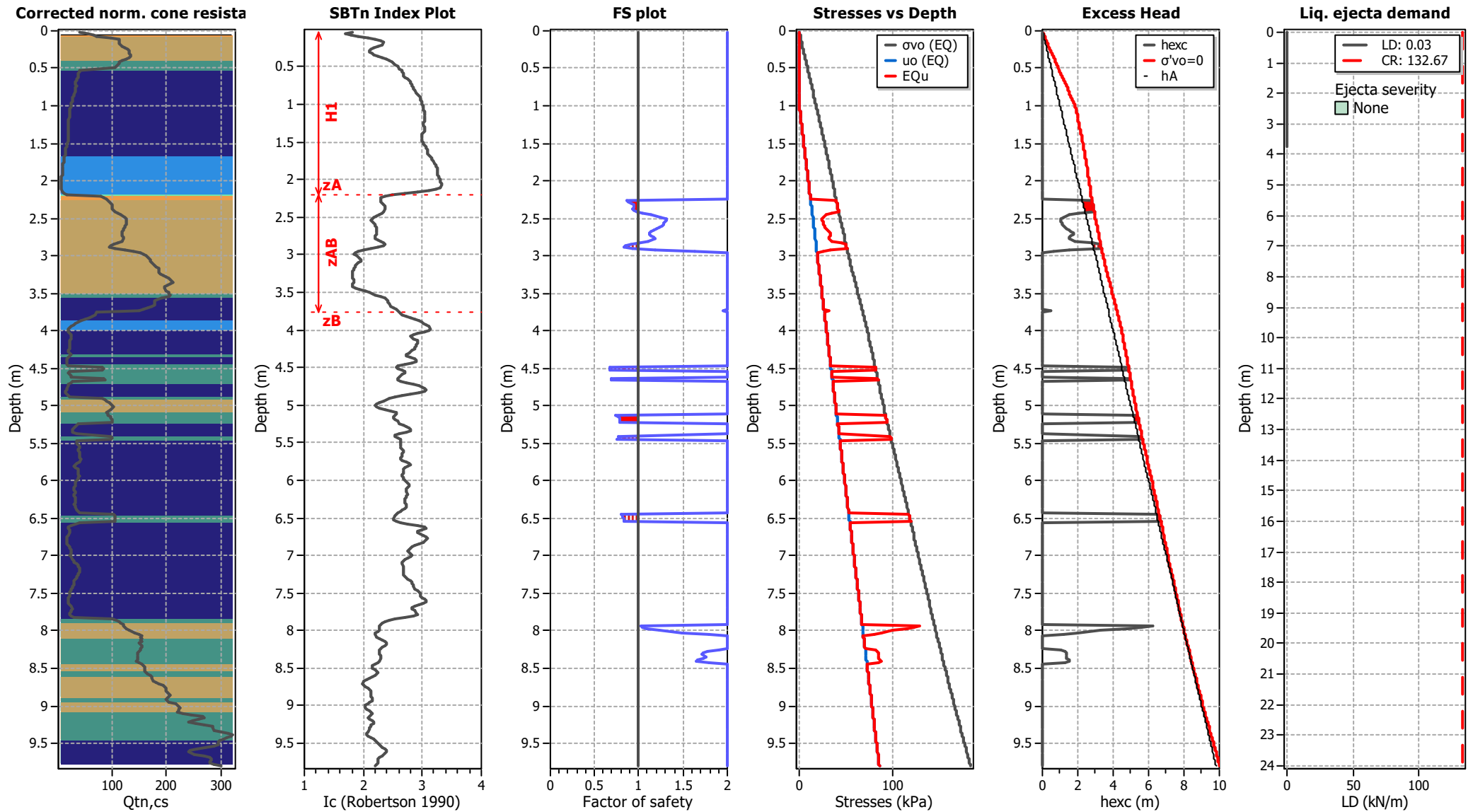
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

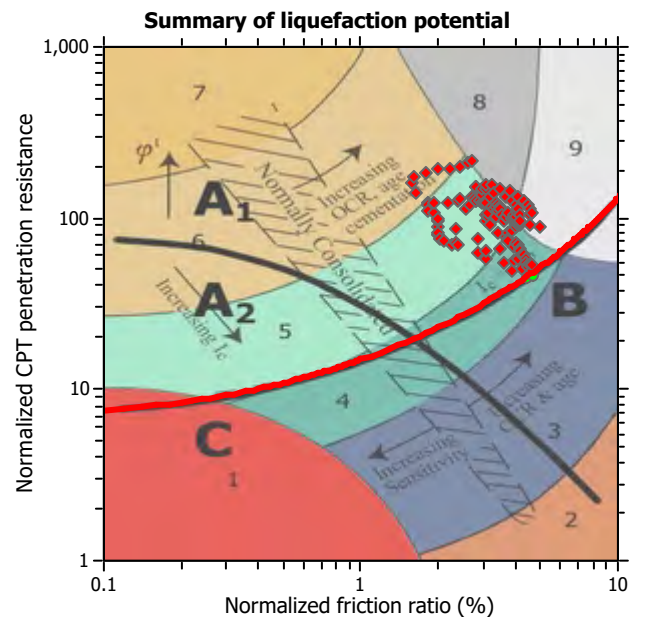
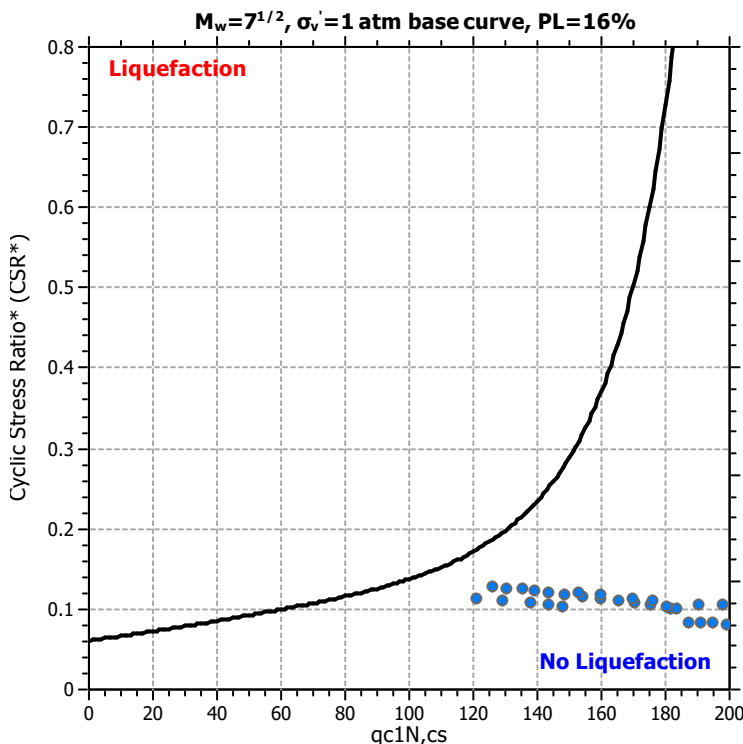
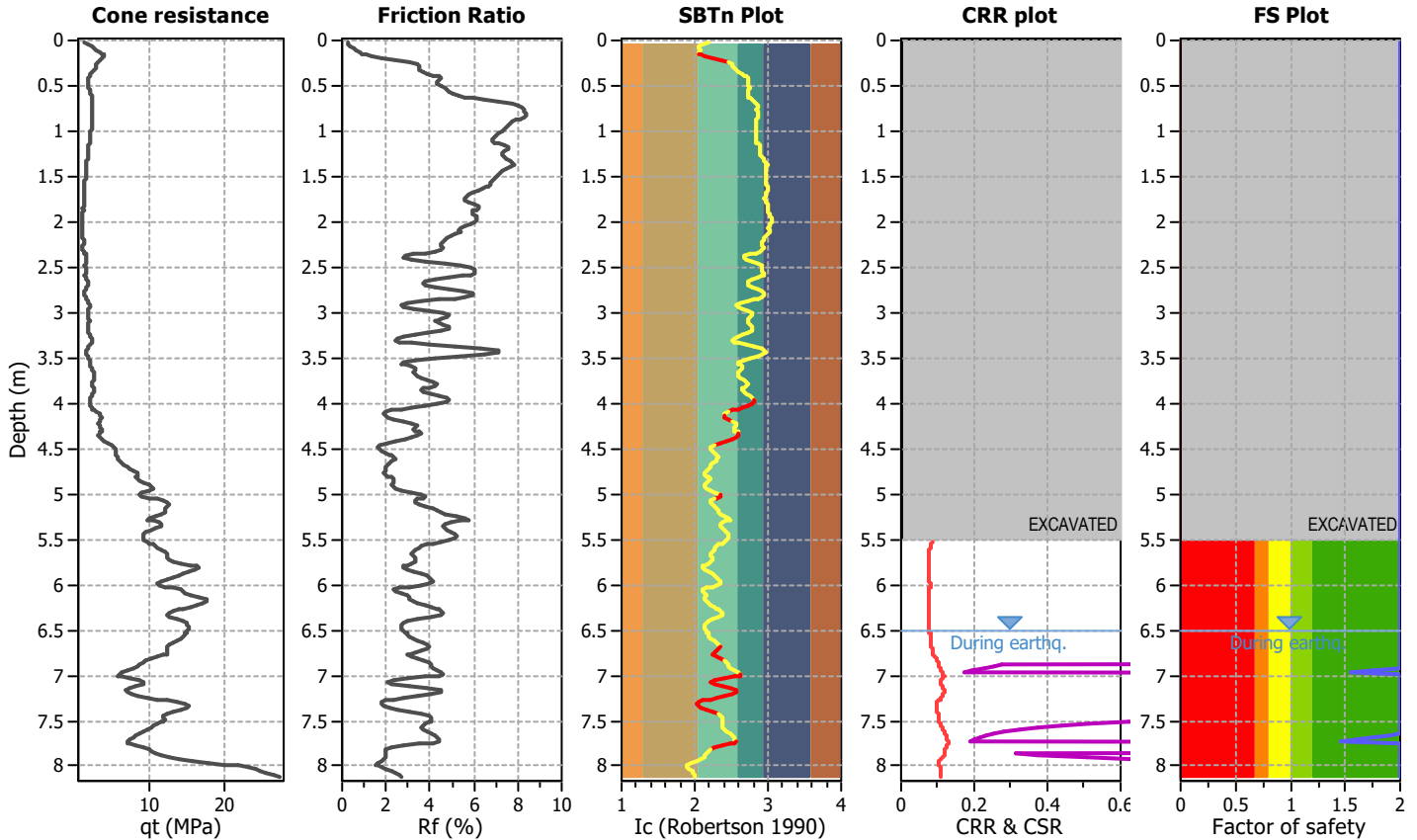
Project title : Sunfield Landholding

Location :

CPT file : CPT126

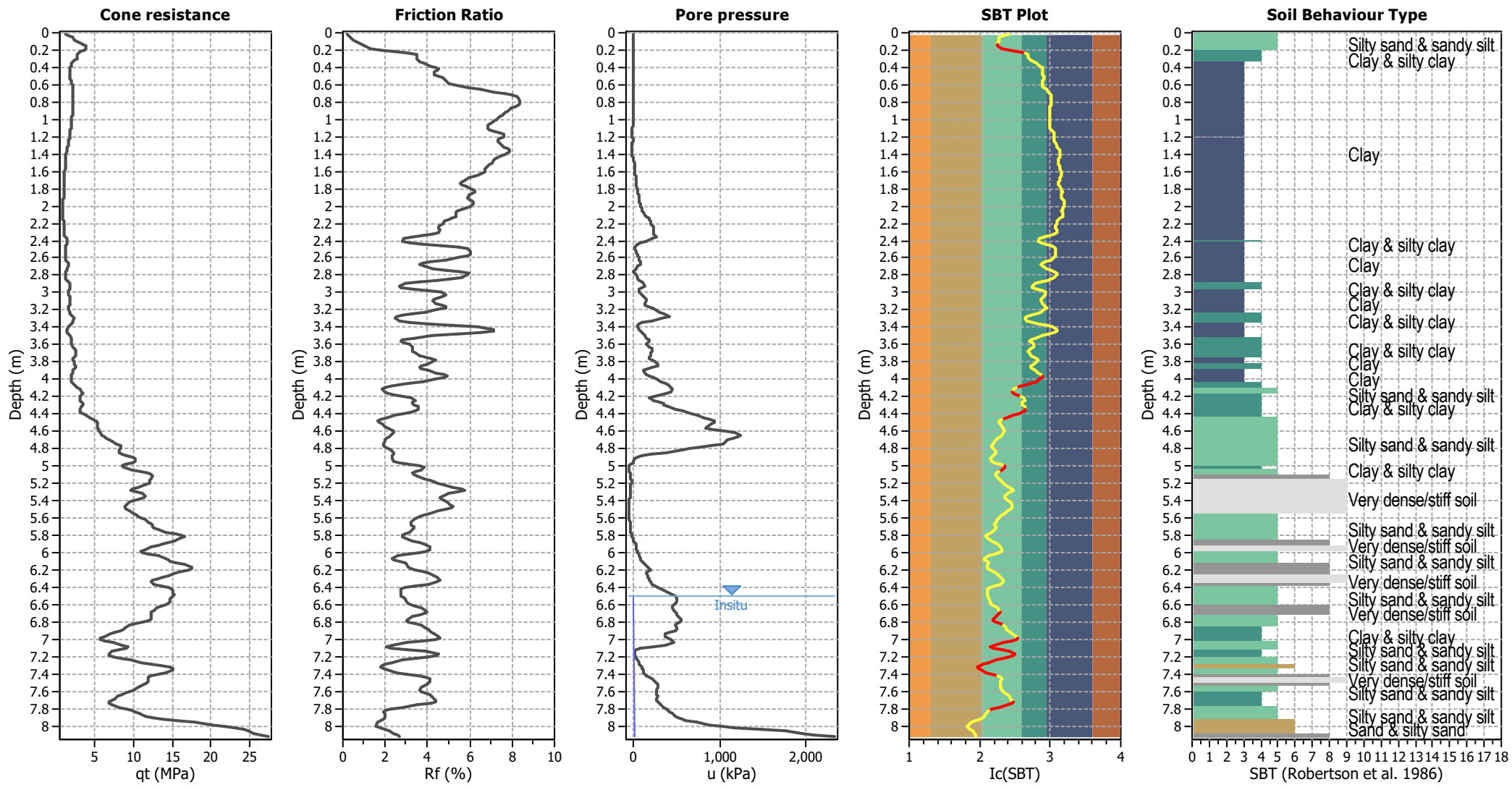
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	6.50 m	Excavation:	Yes	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	6.50 m	Excavation depth:	5.50 m	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth:	10.00 m
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

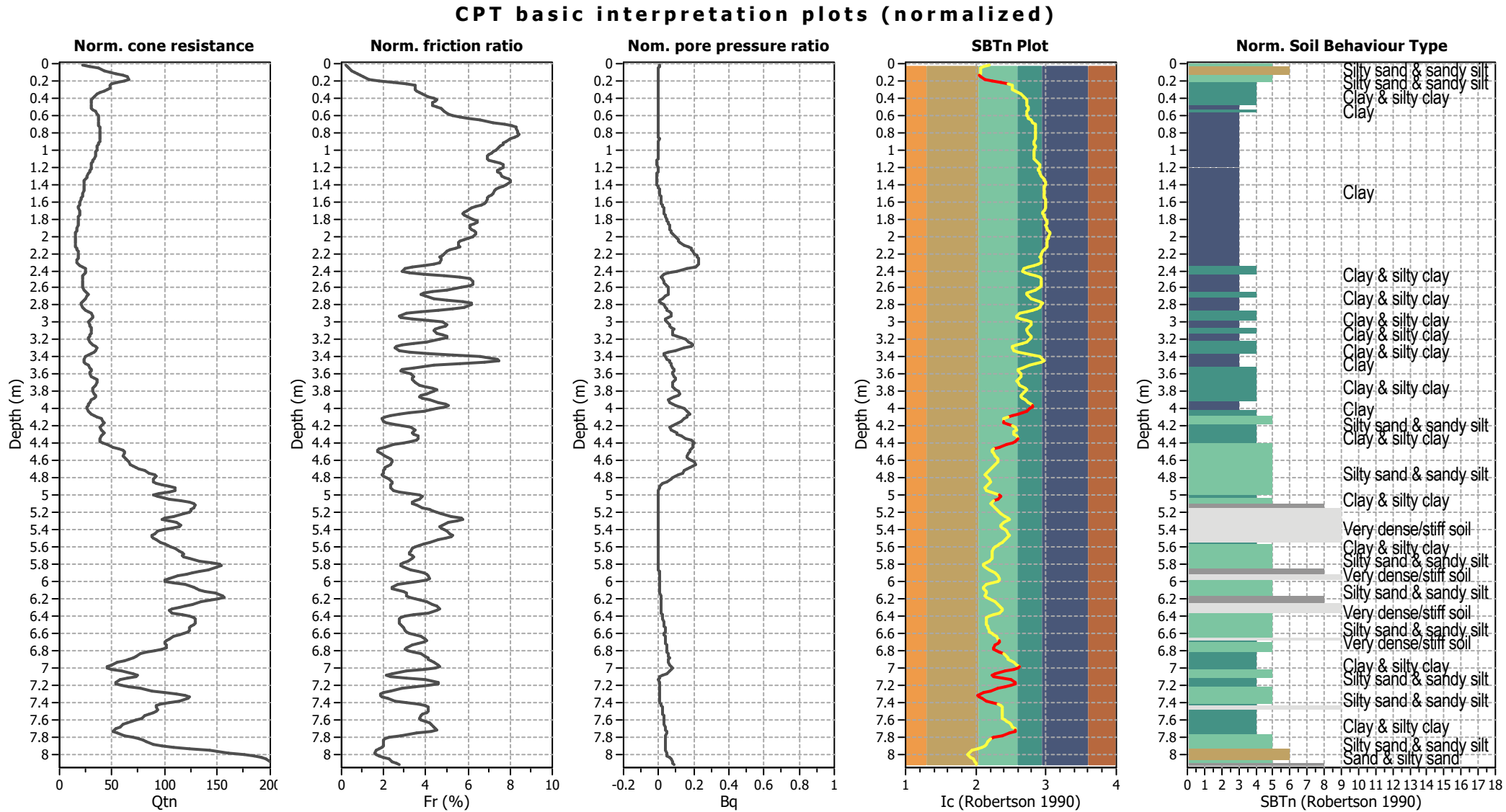


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.50 m	Excavation depth:	5.50 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

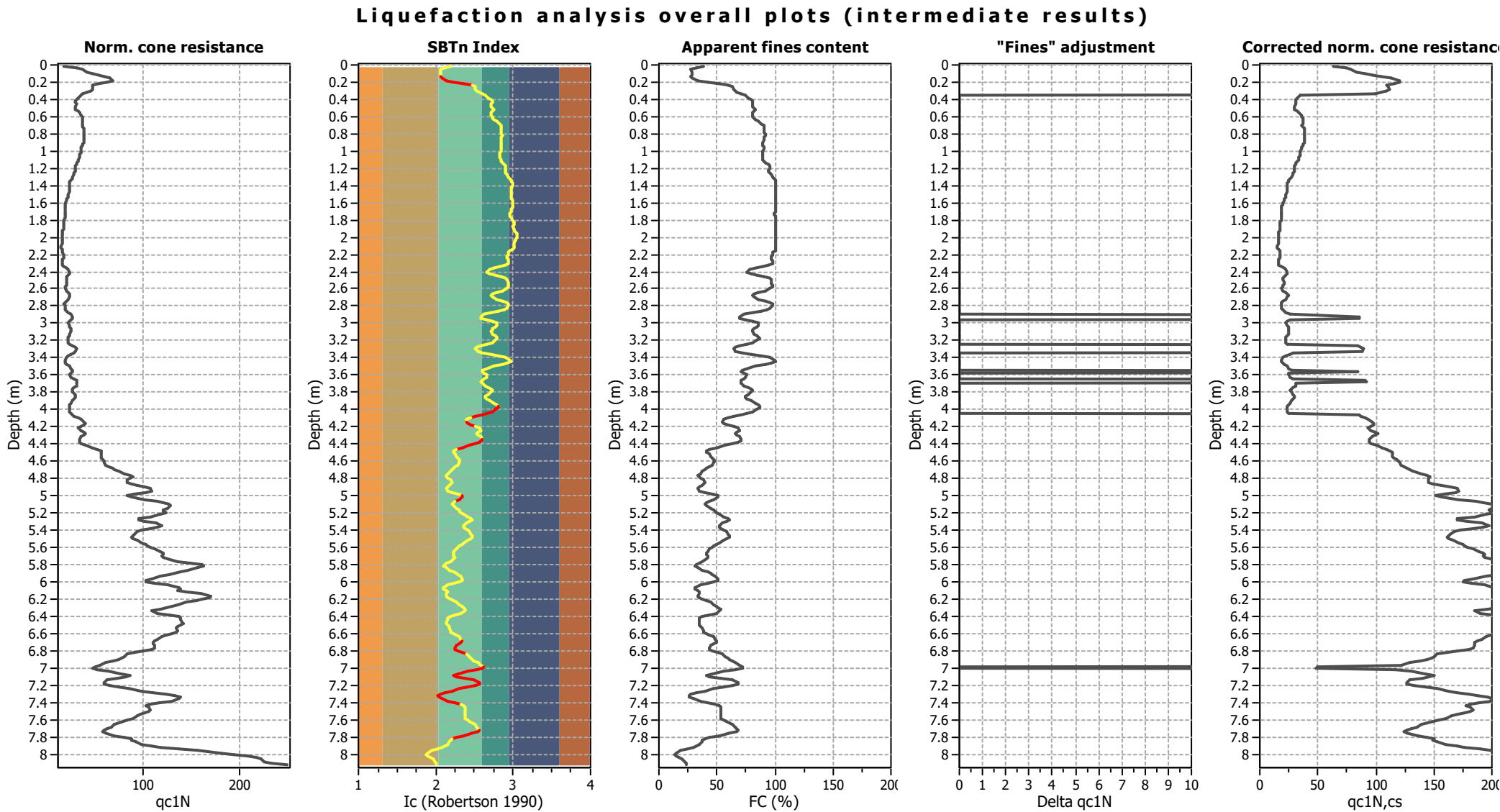


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.50 m	Excavation depth:	5.50 m	Limit depth:	10.00 m

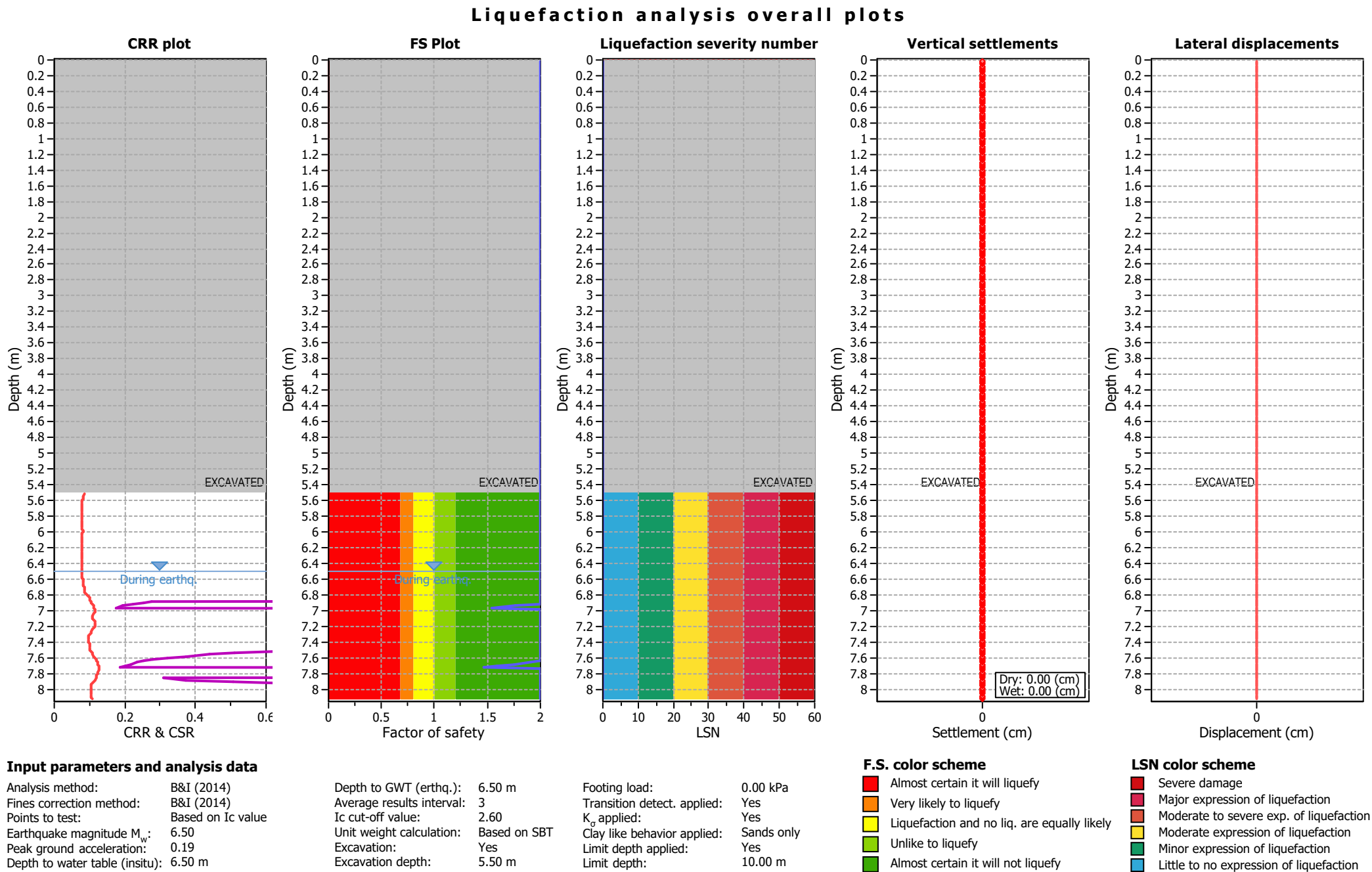
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

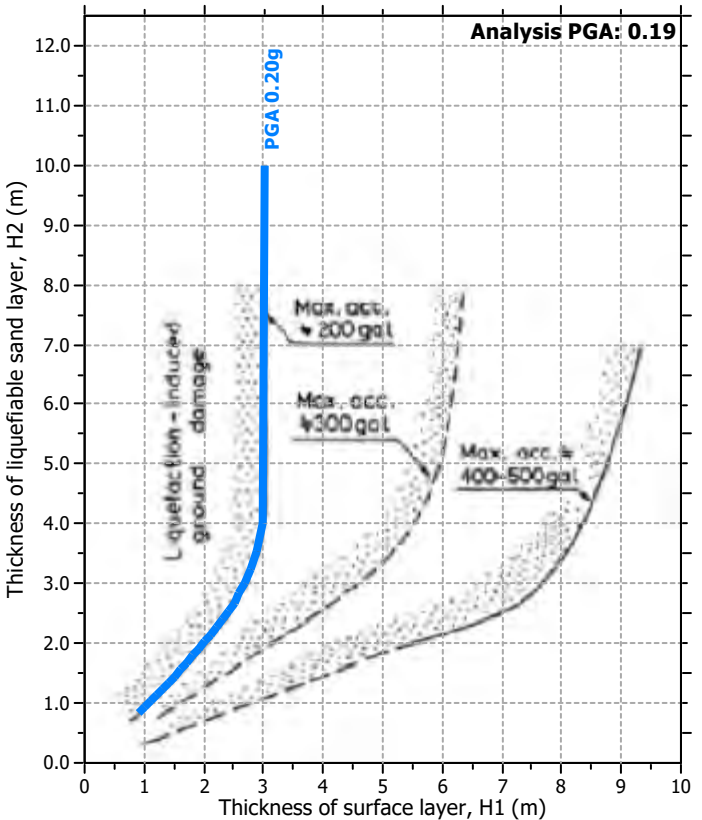
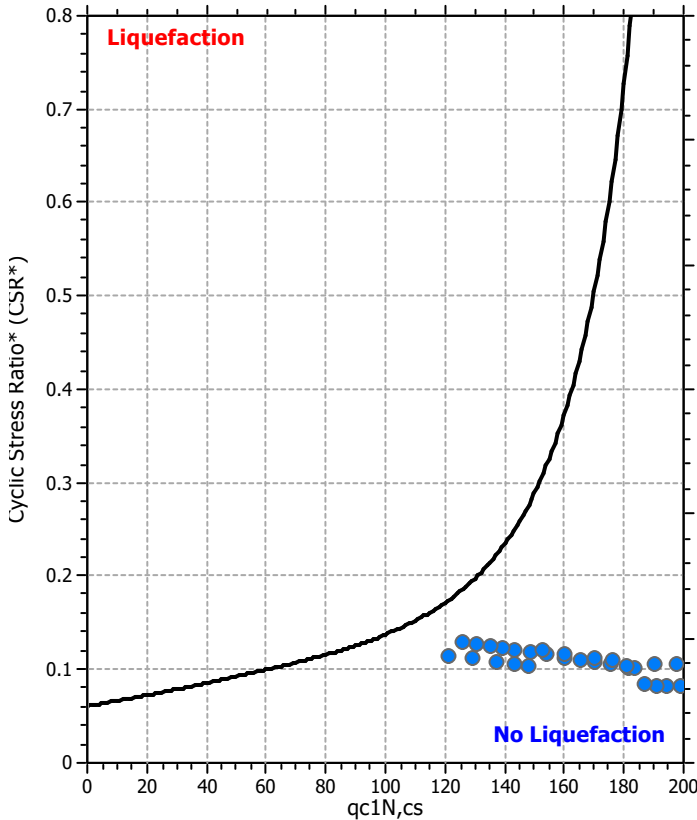
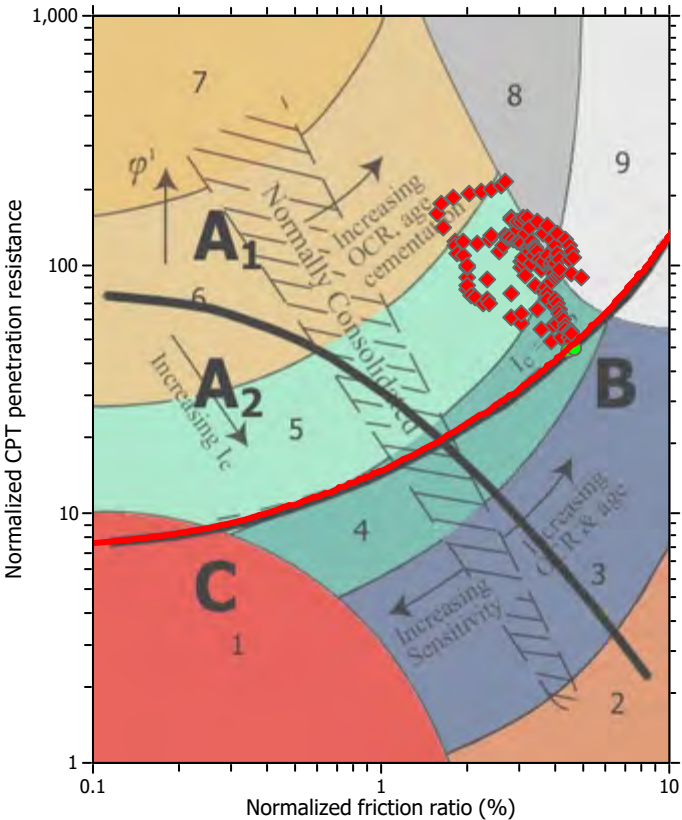


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.50 m	Excavation depth:	5.50 m	Limit depth:	10.00 m



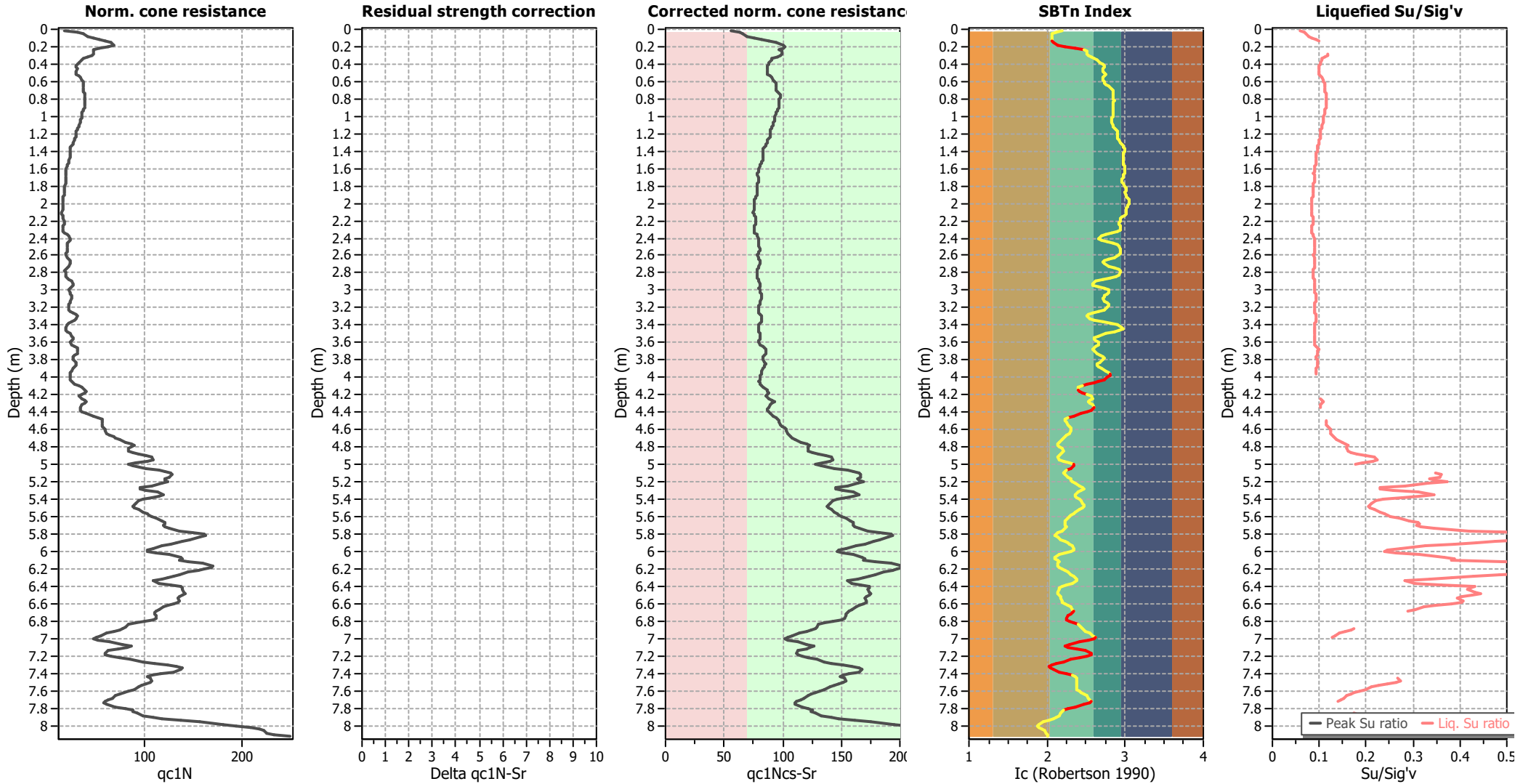
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.50 m	Excavation depth:	5.50 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.50 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.50 m	Excavation depth:	5.50 m	Limit depth:	10.00 m

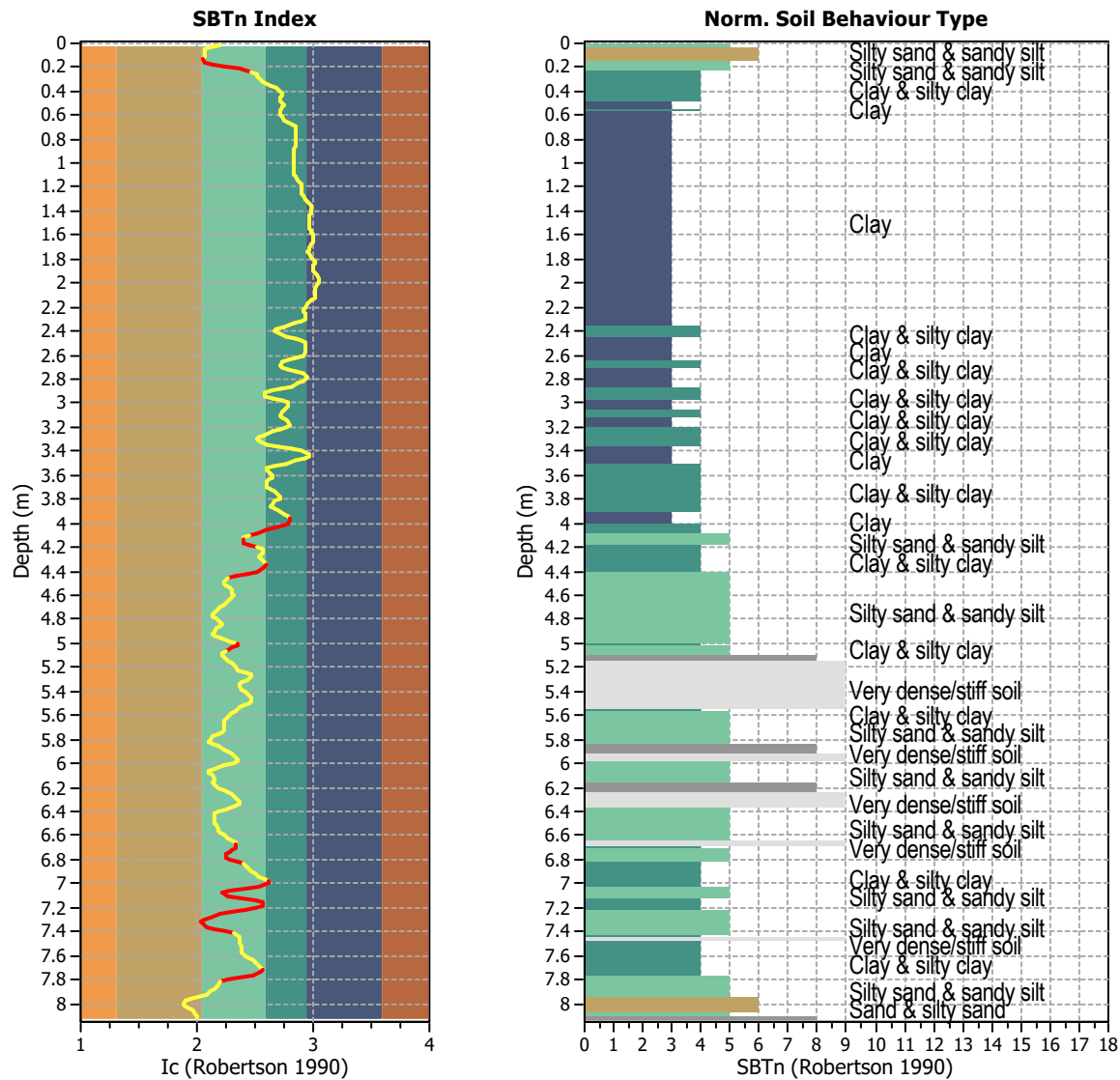
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

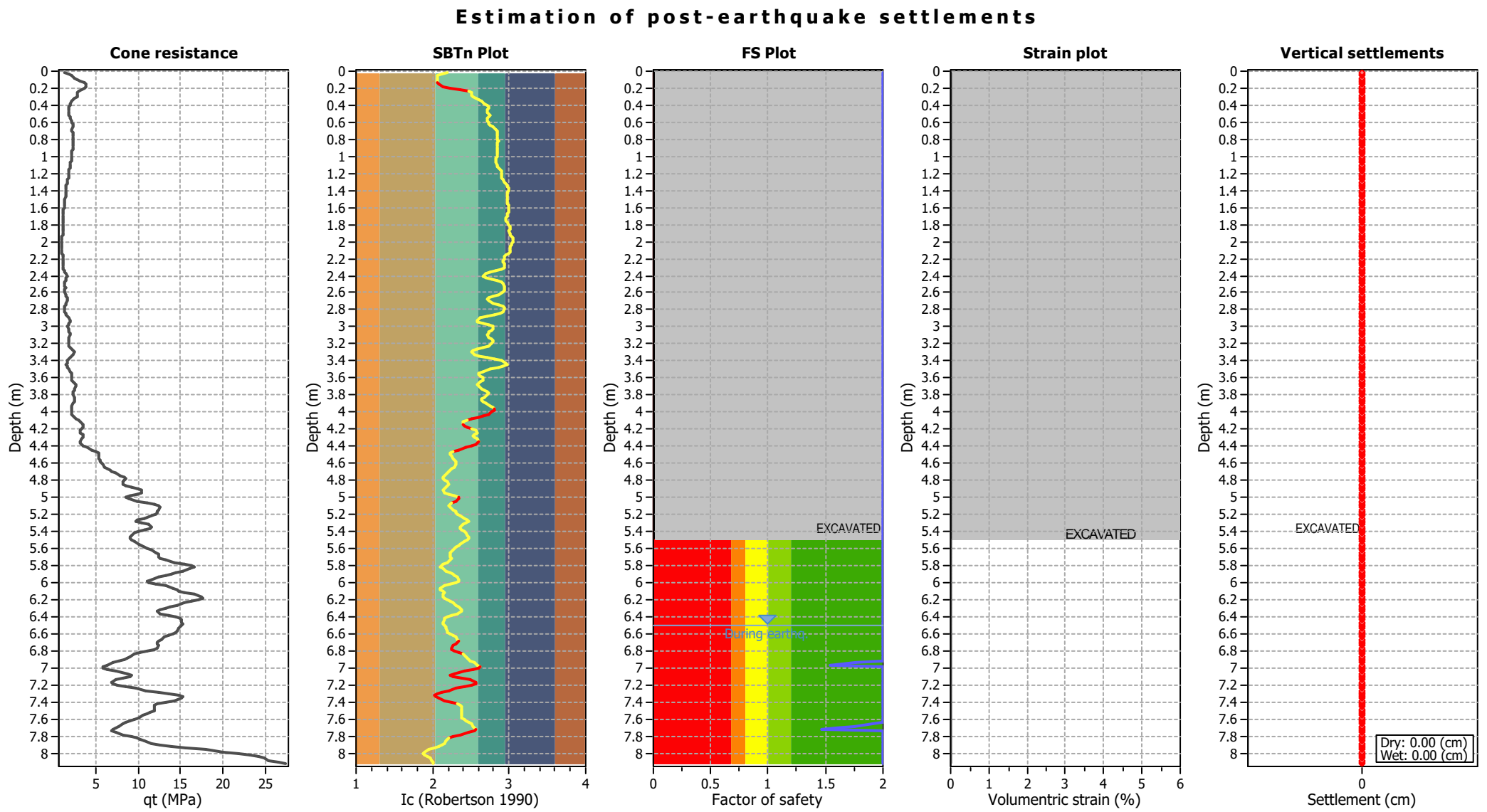


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

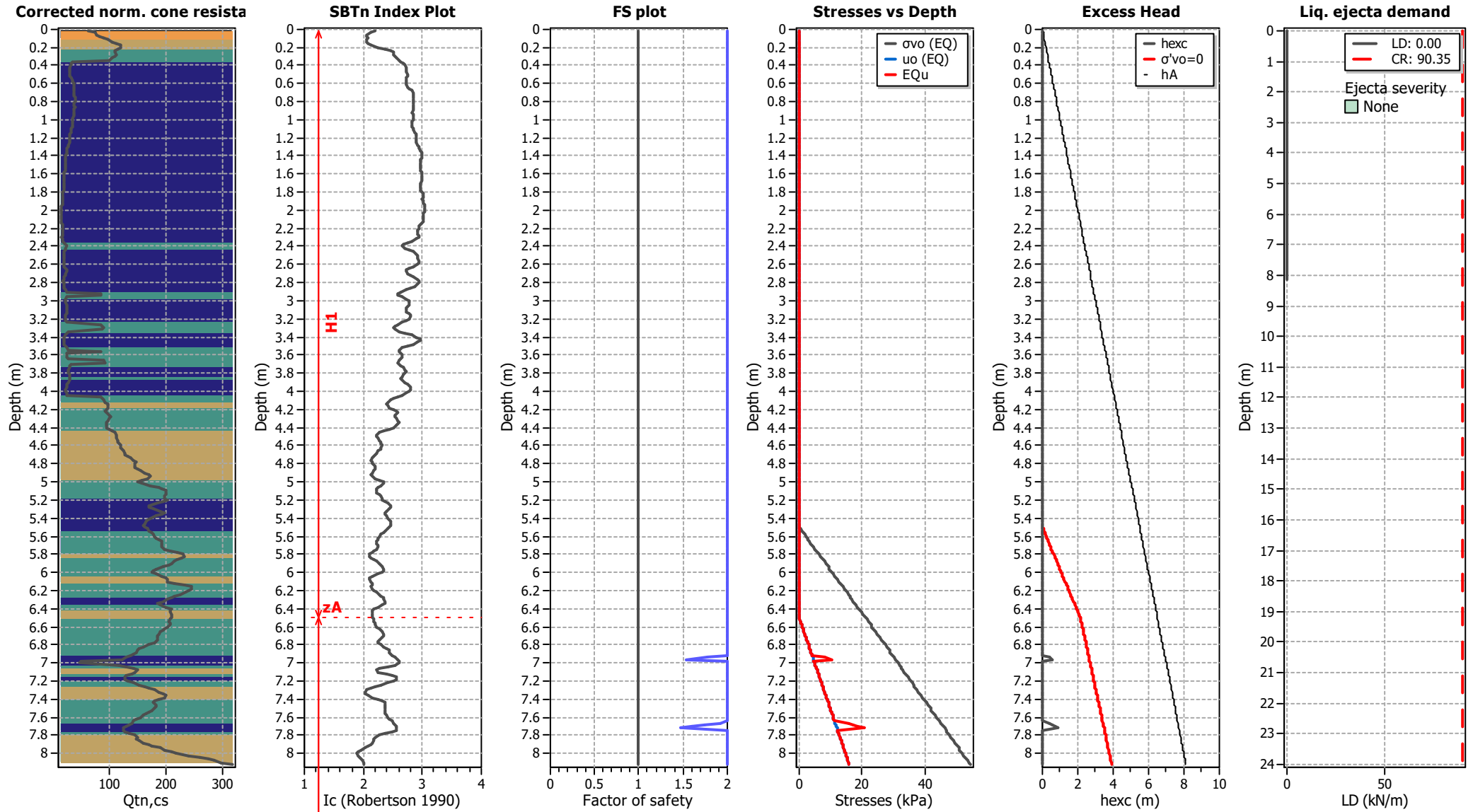
Total points in CPT file: 406
Total points excluded: 68
Exclusion percentage: 16.75%
Number of layers detected: 12



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

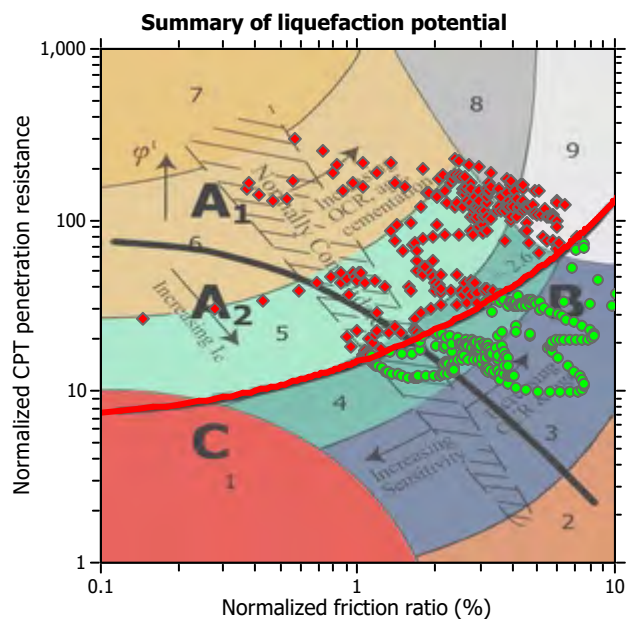
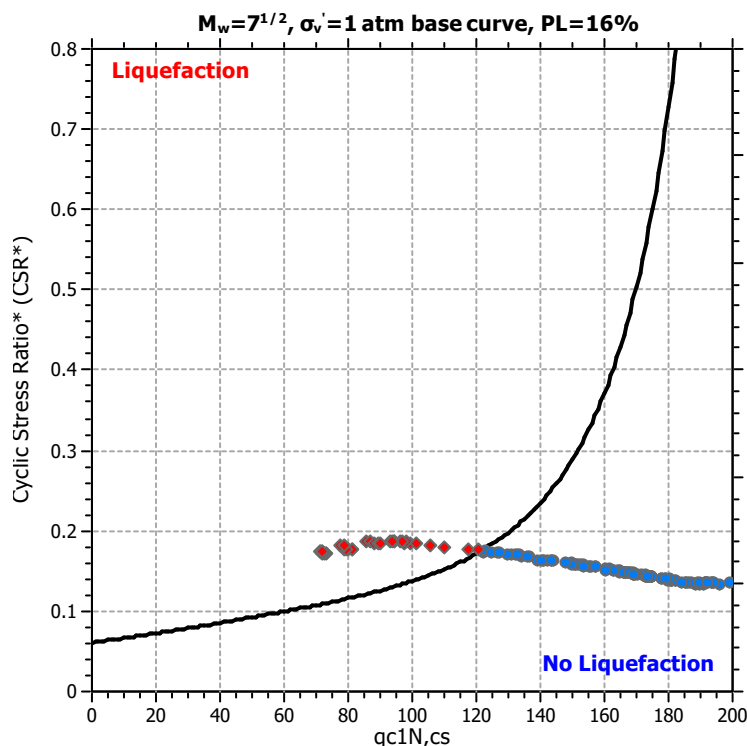
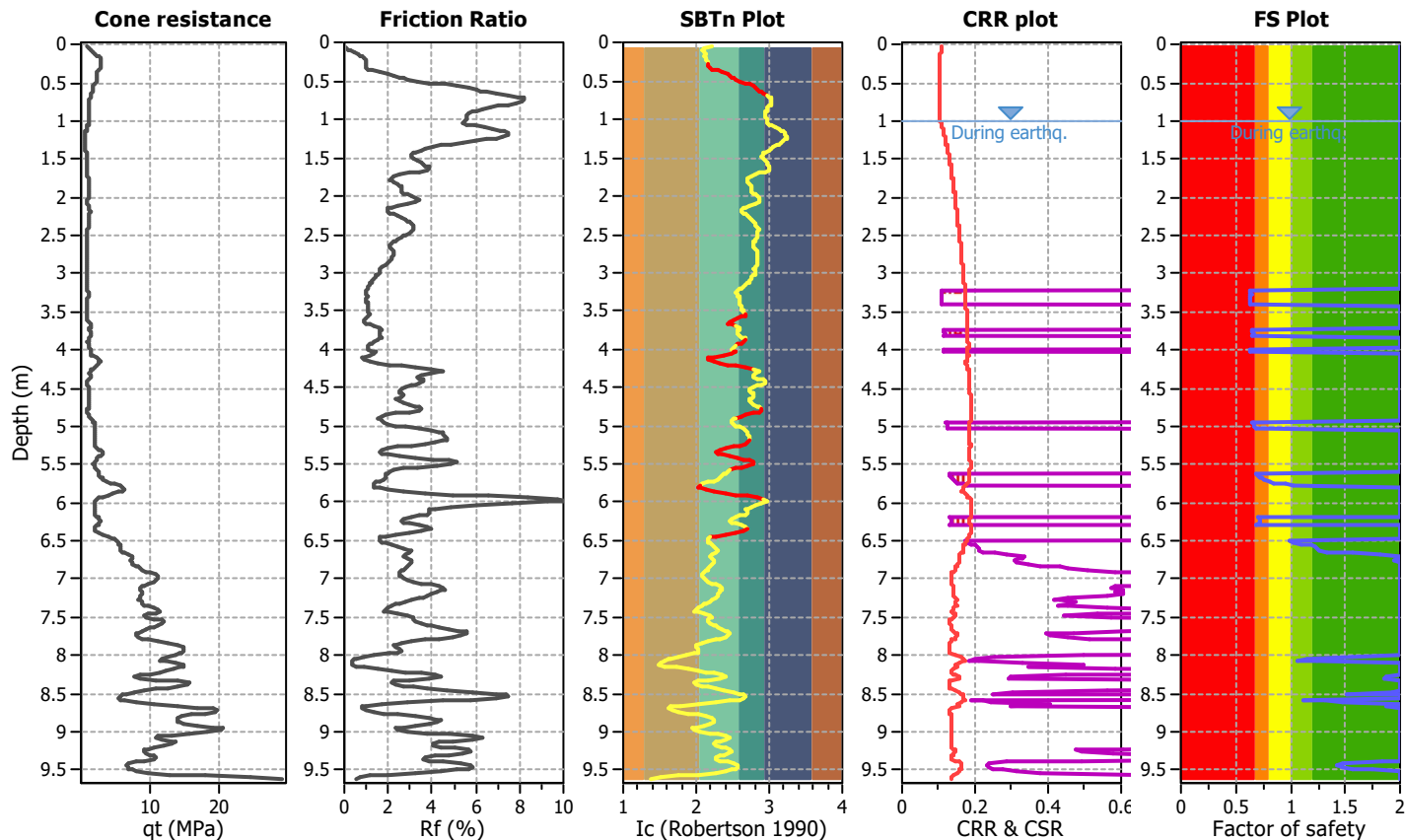
Project title : Sunfield Landholding

Location :

CPT file : CPT127

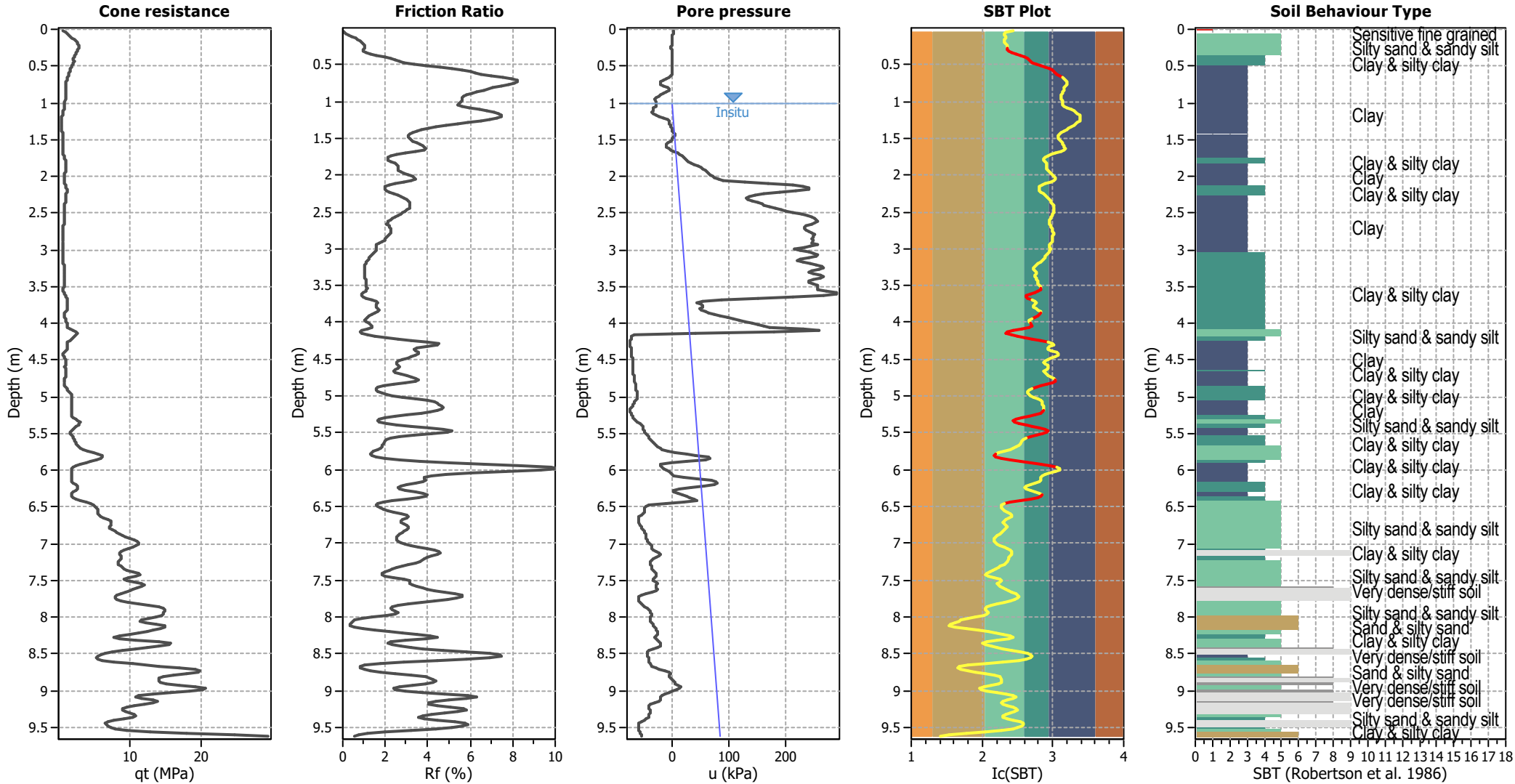
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

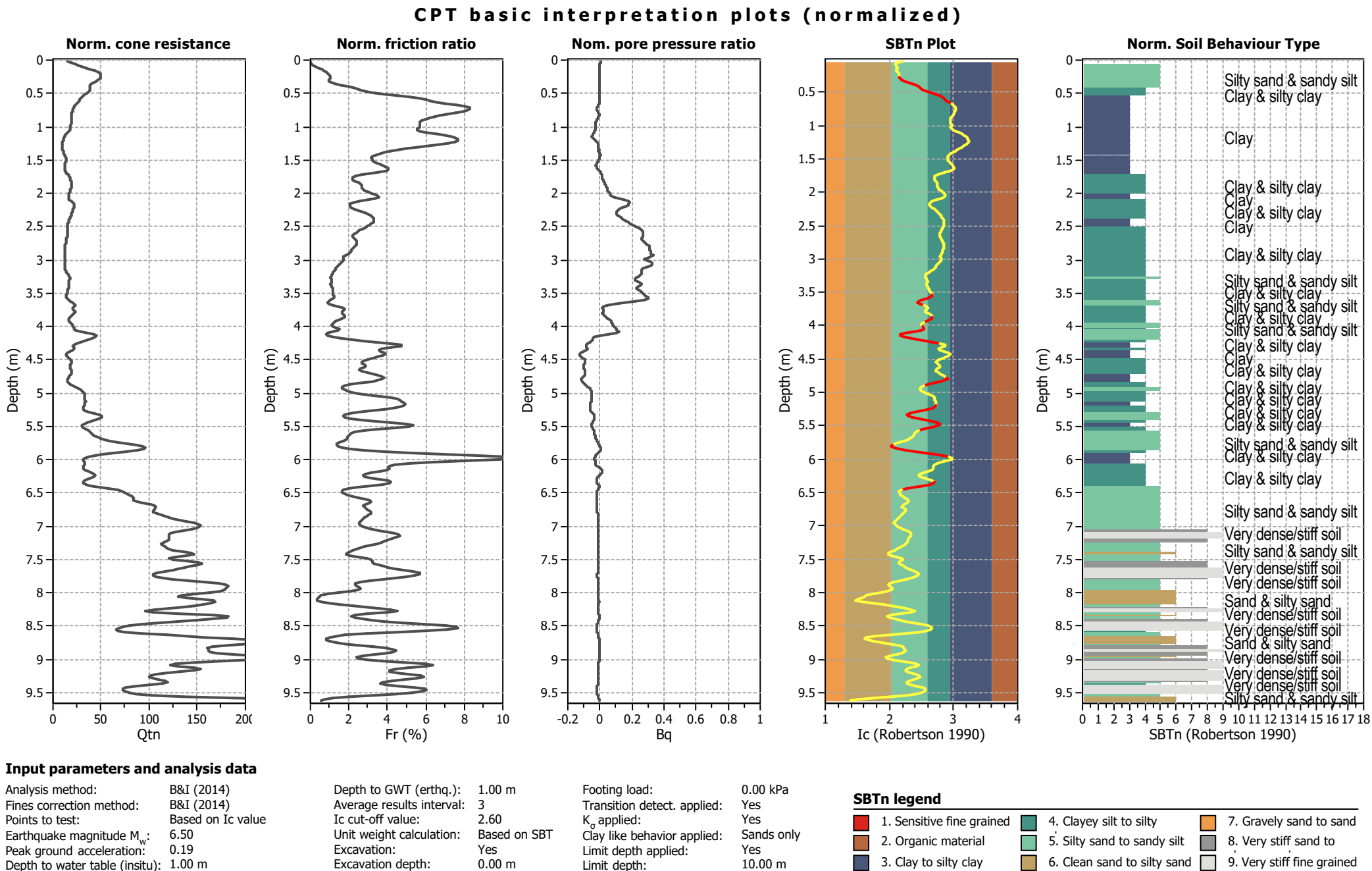


Input parameters and analysis data

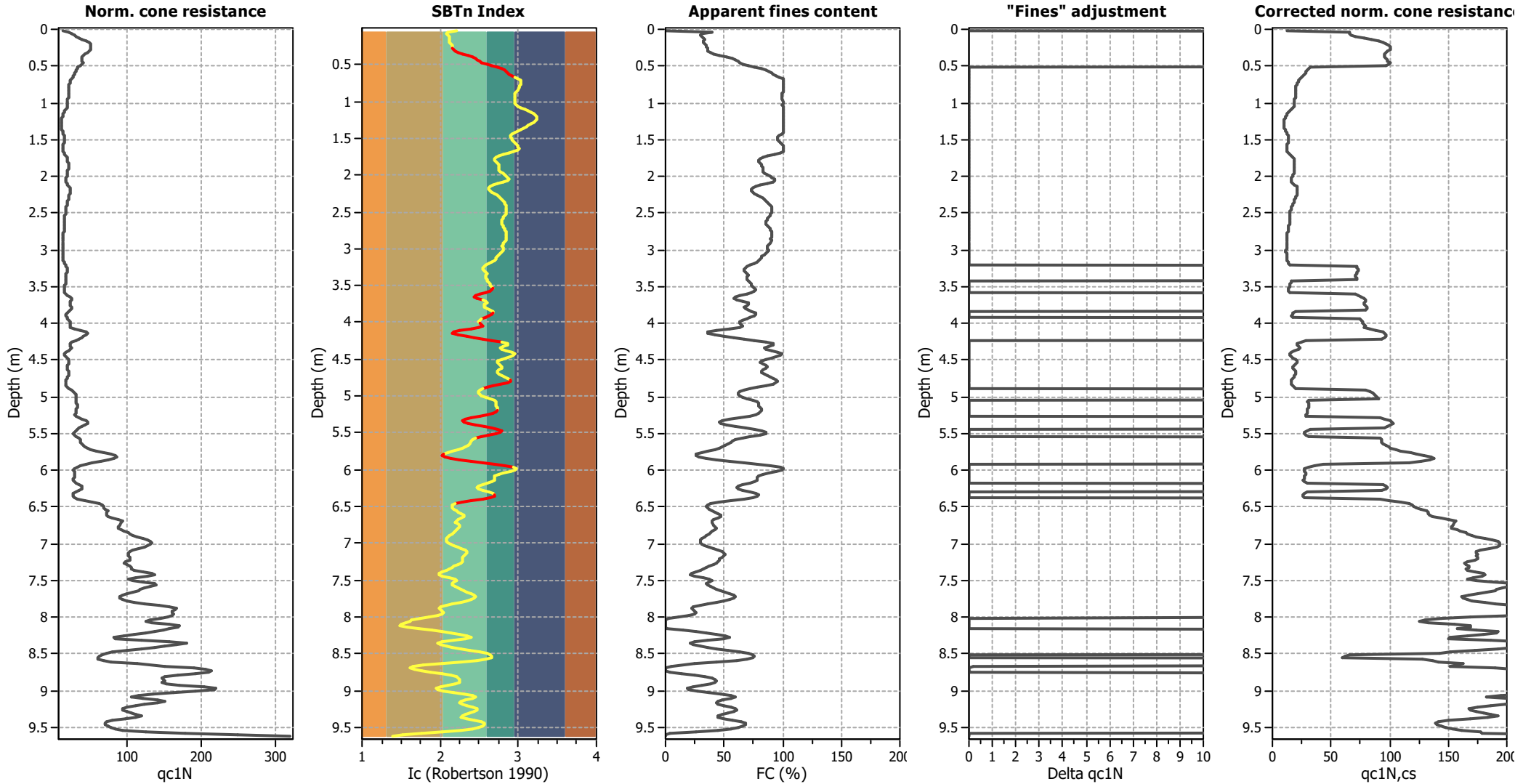
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

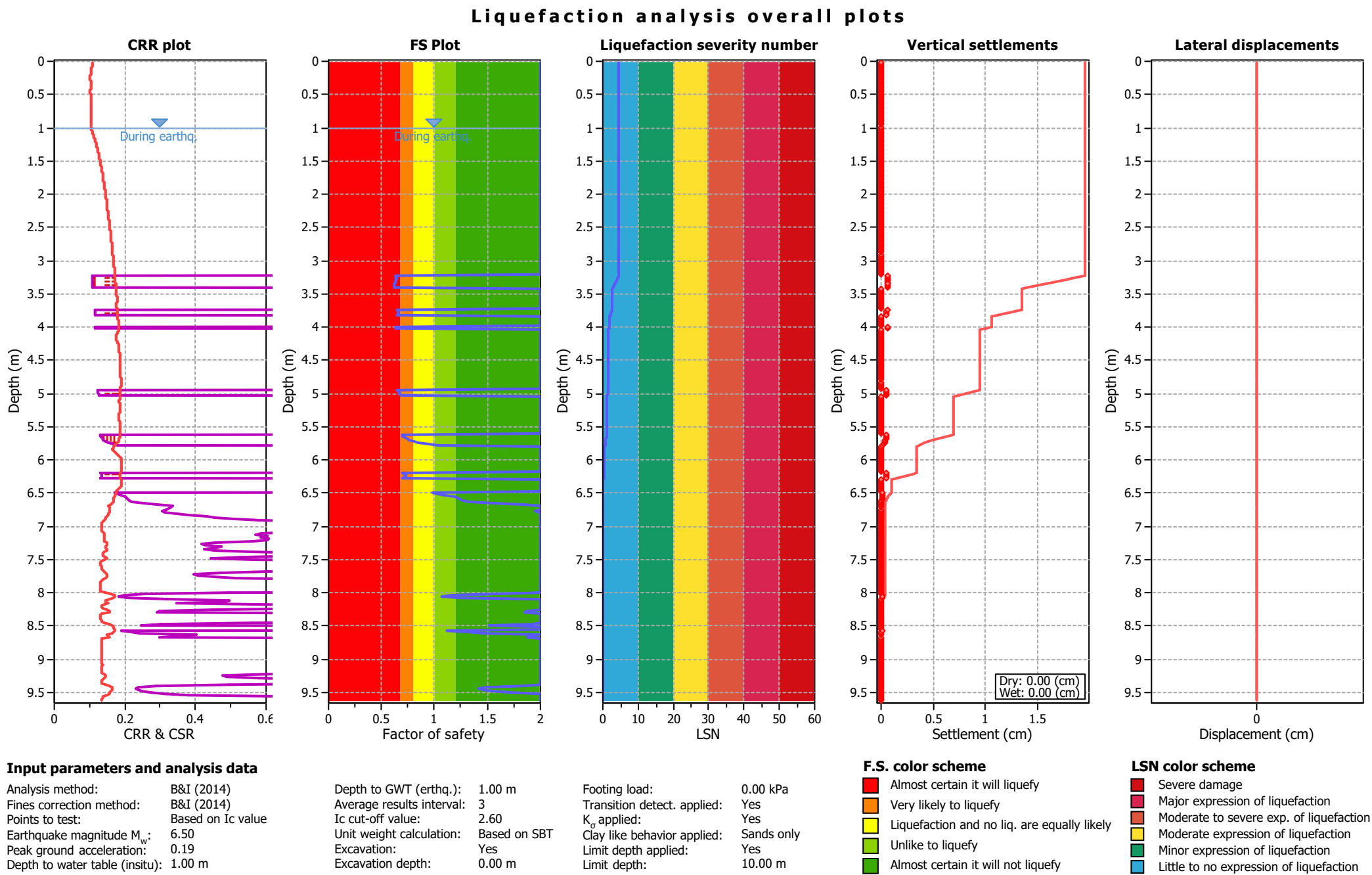


Liquefaction analysis overall plots (intermediate results)

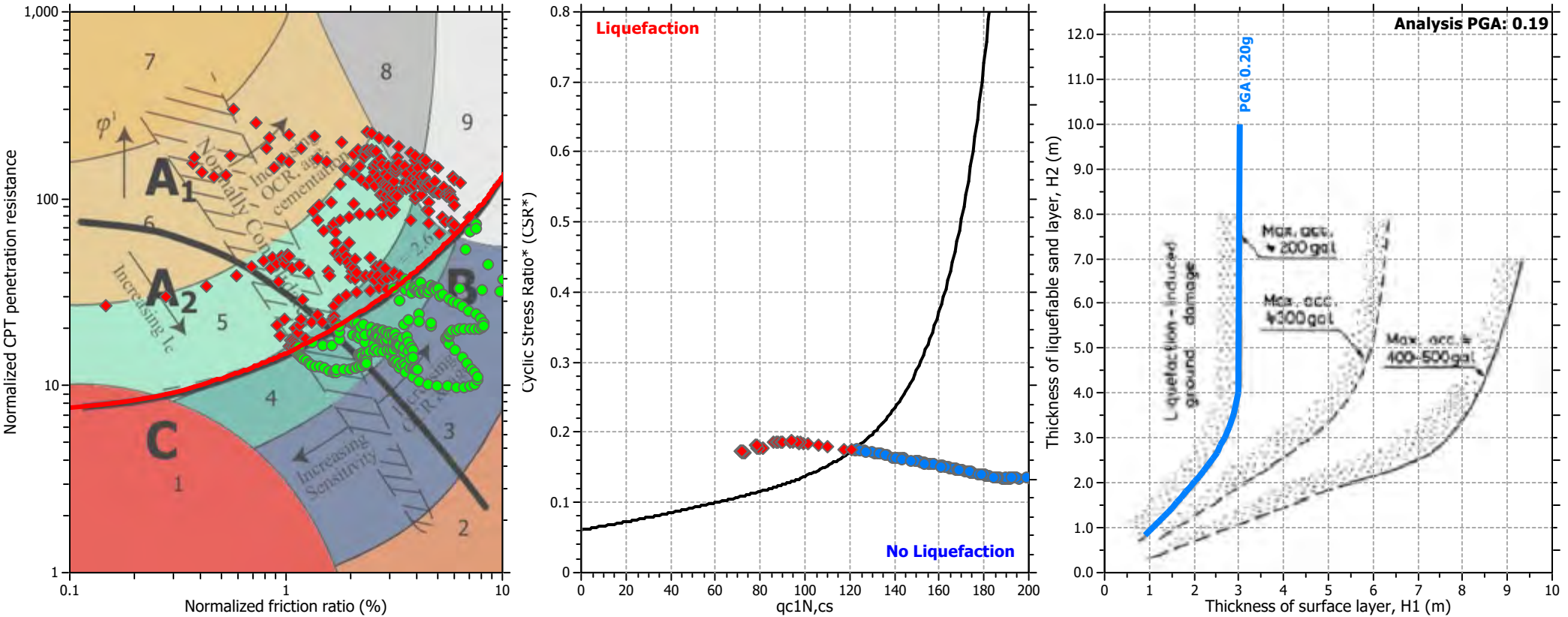


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



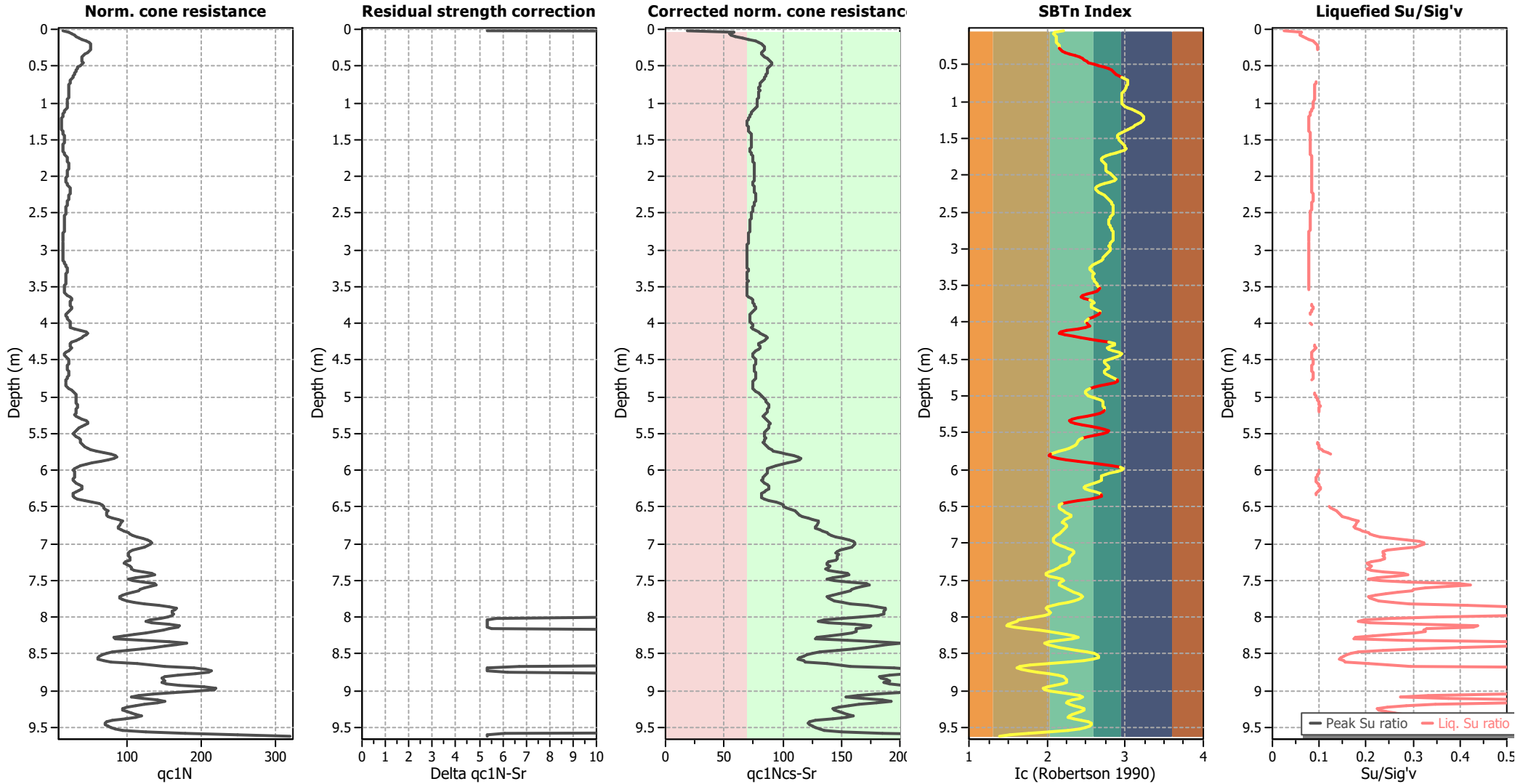
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

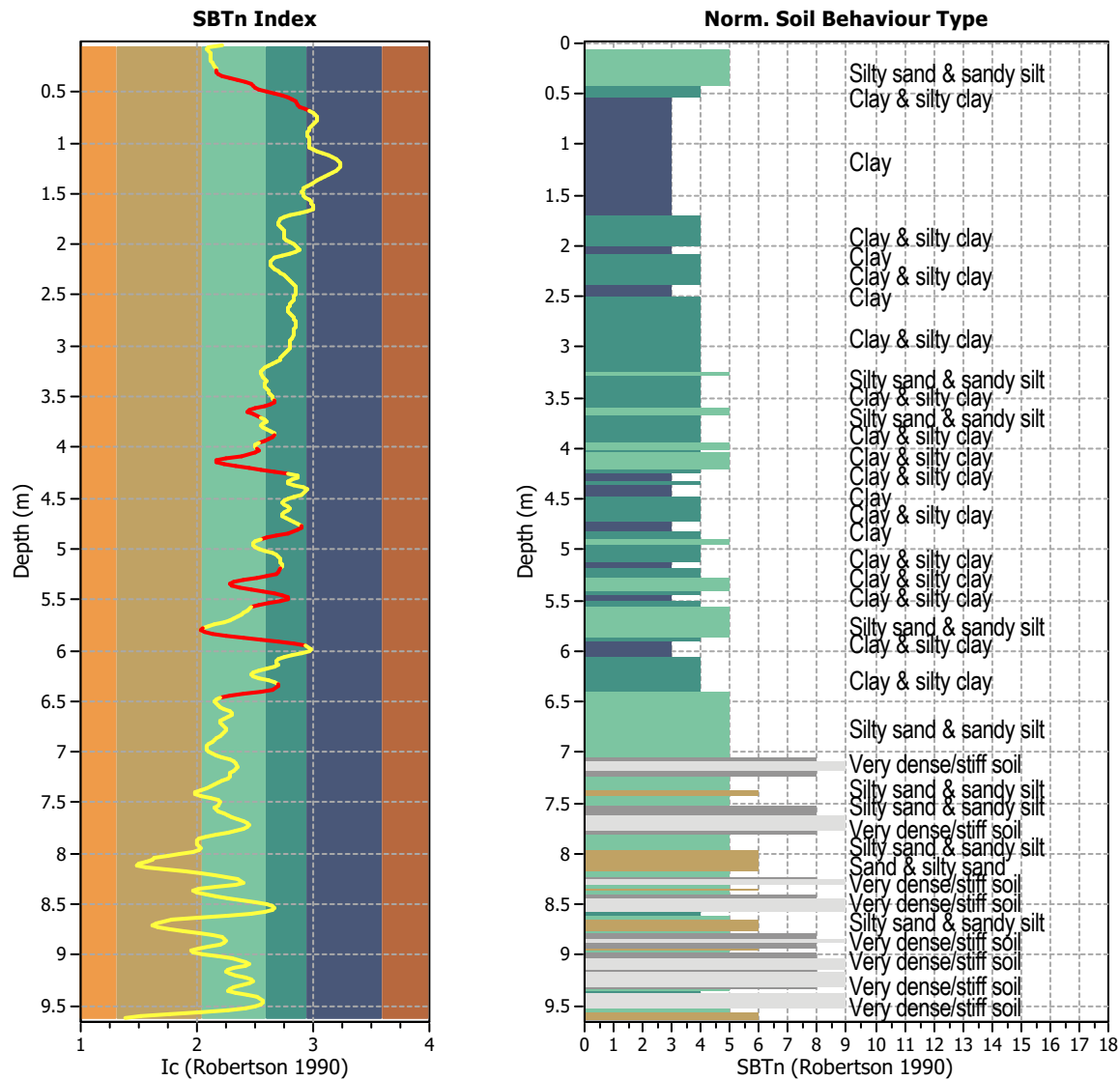
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

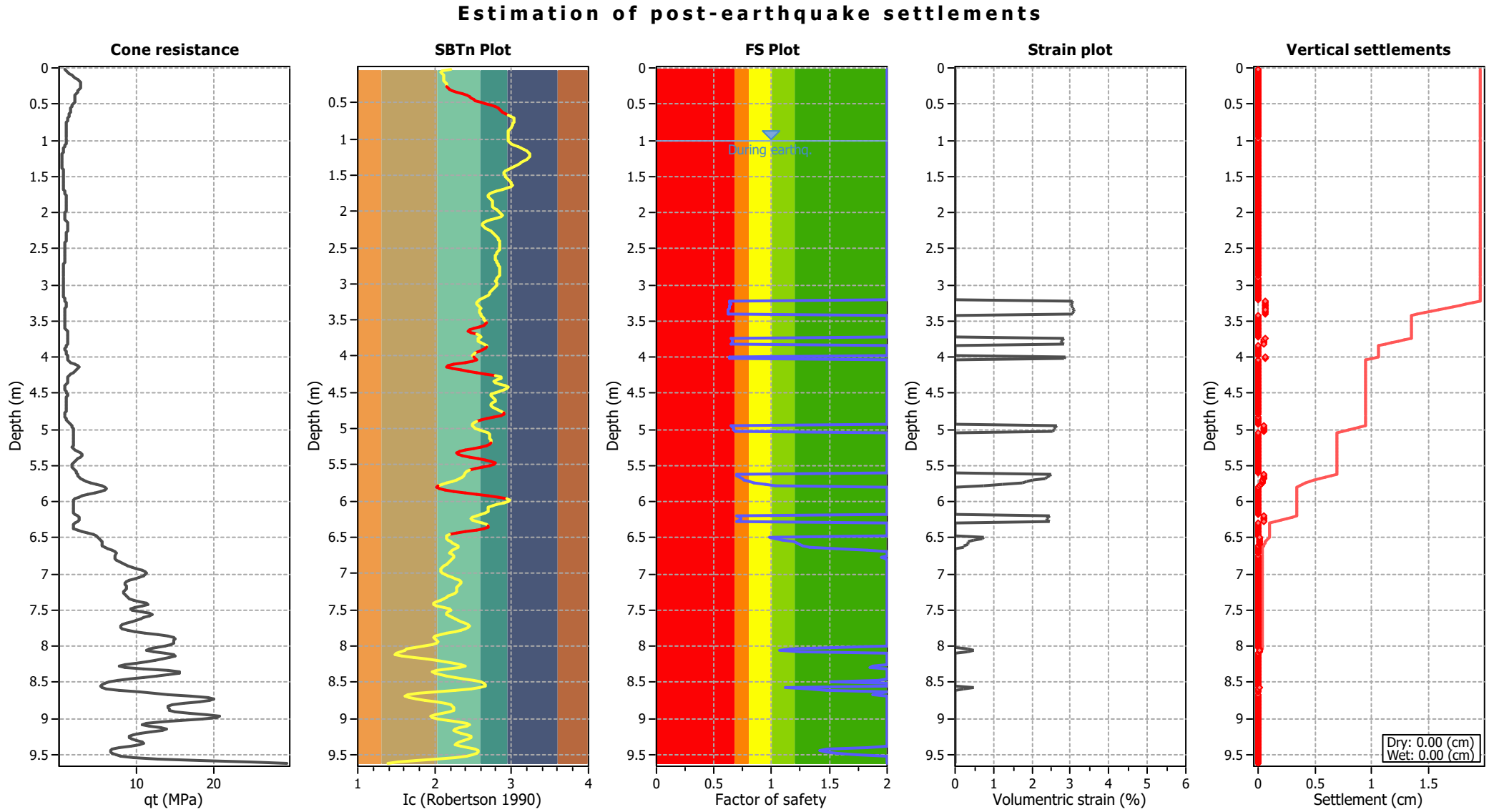


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

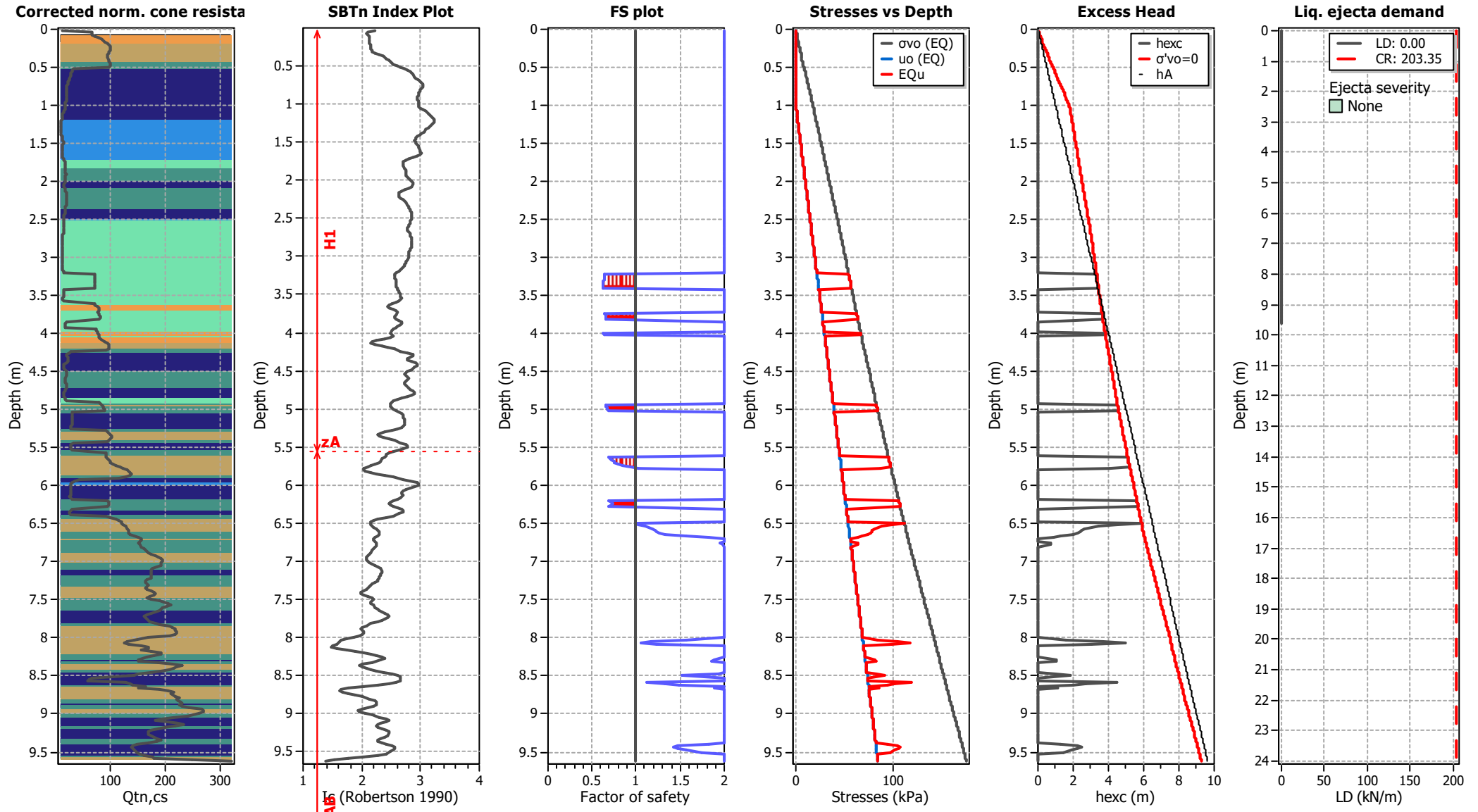
Total points in CPT file: 481
Total points excluded: 92
Exclusion percentage: 19.13%
Number of layers detected: 12



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

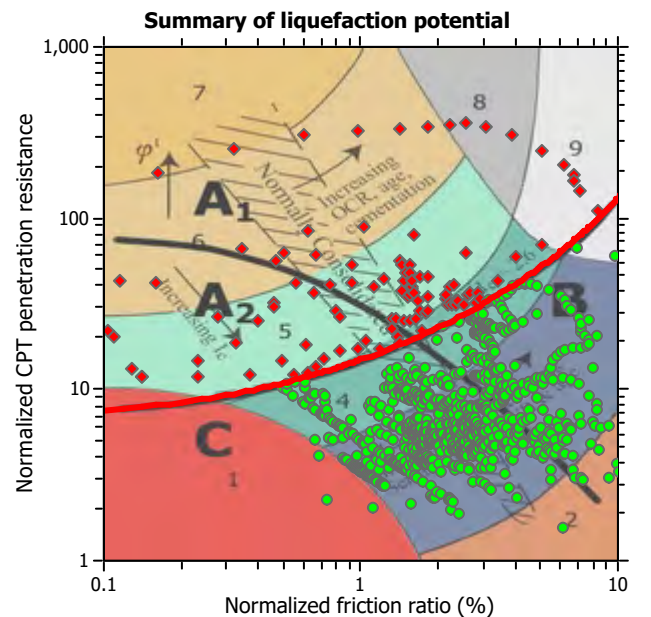
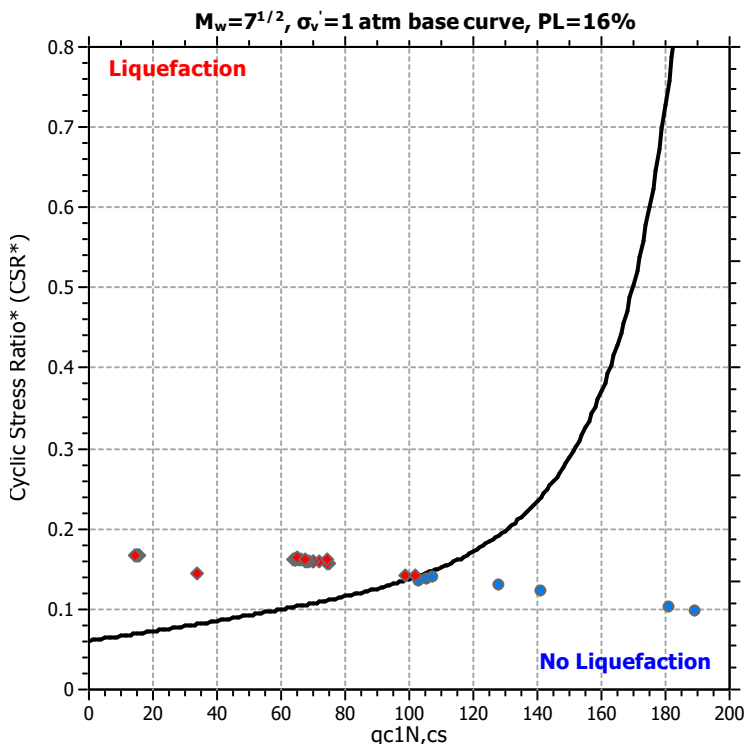
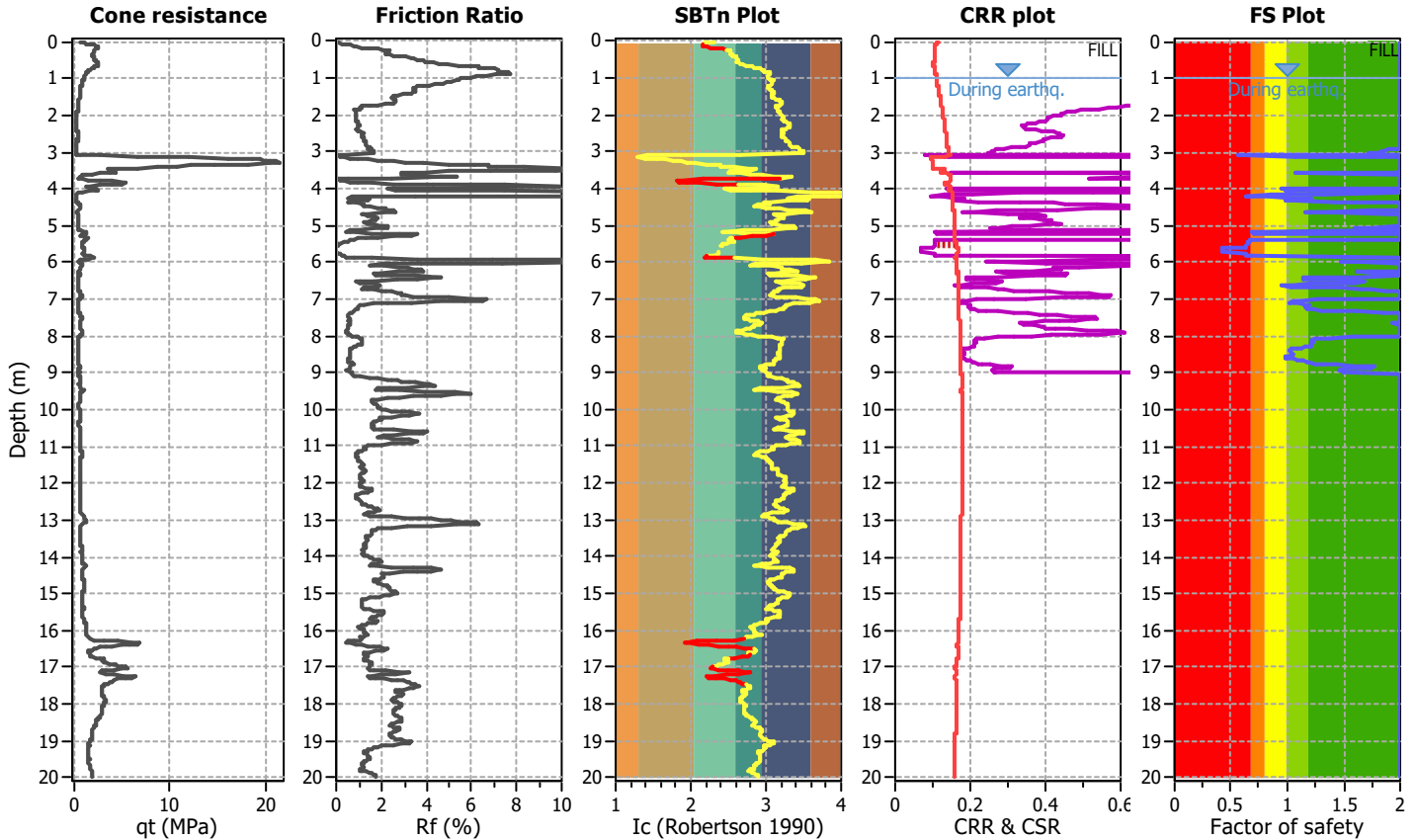
Project title : Sunfield Landholding

Location :

CPT file : CPT130

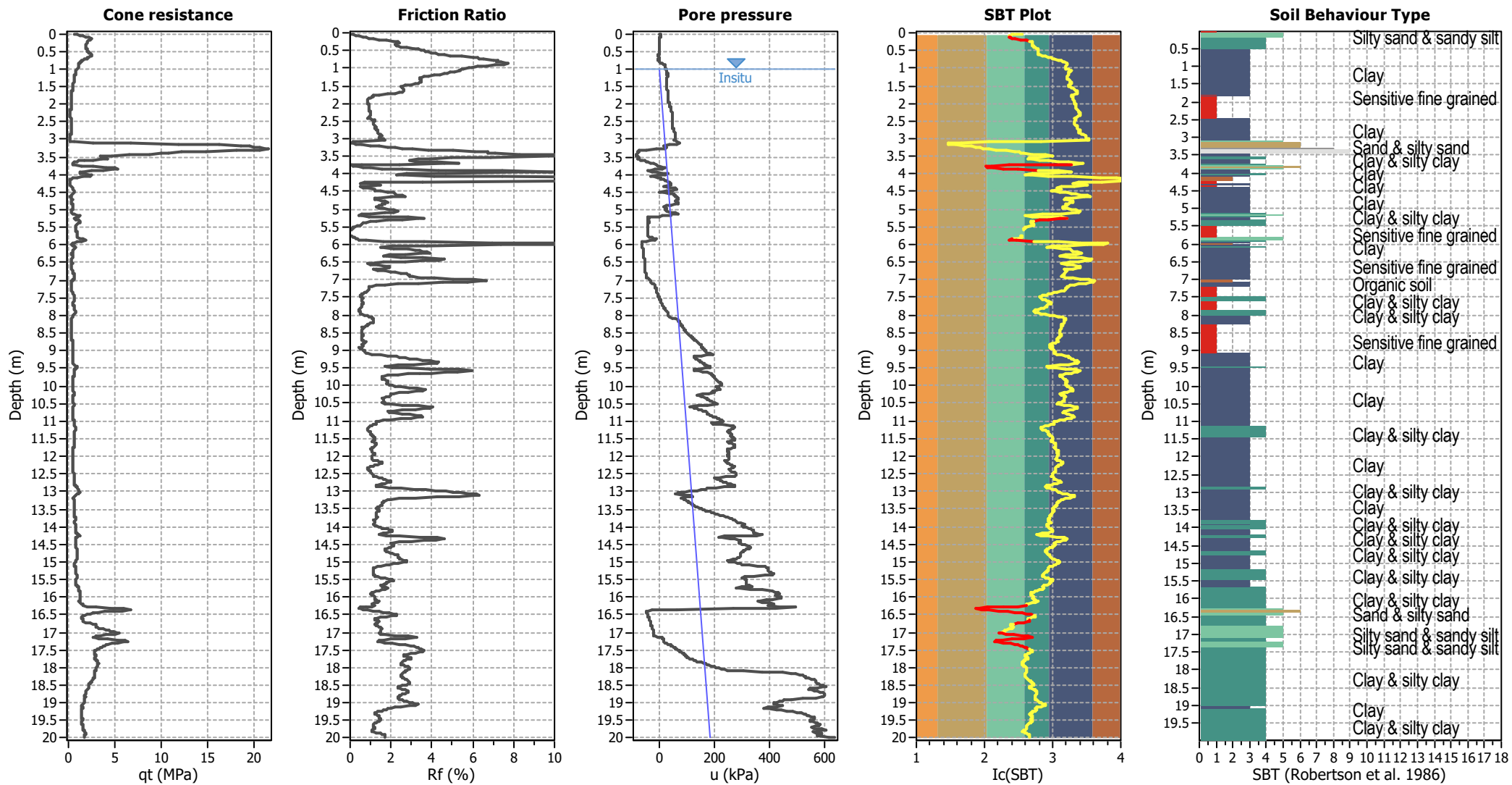
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

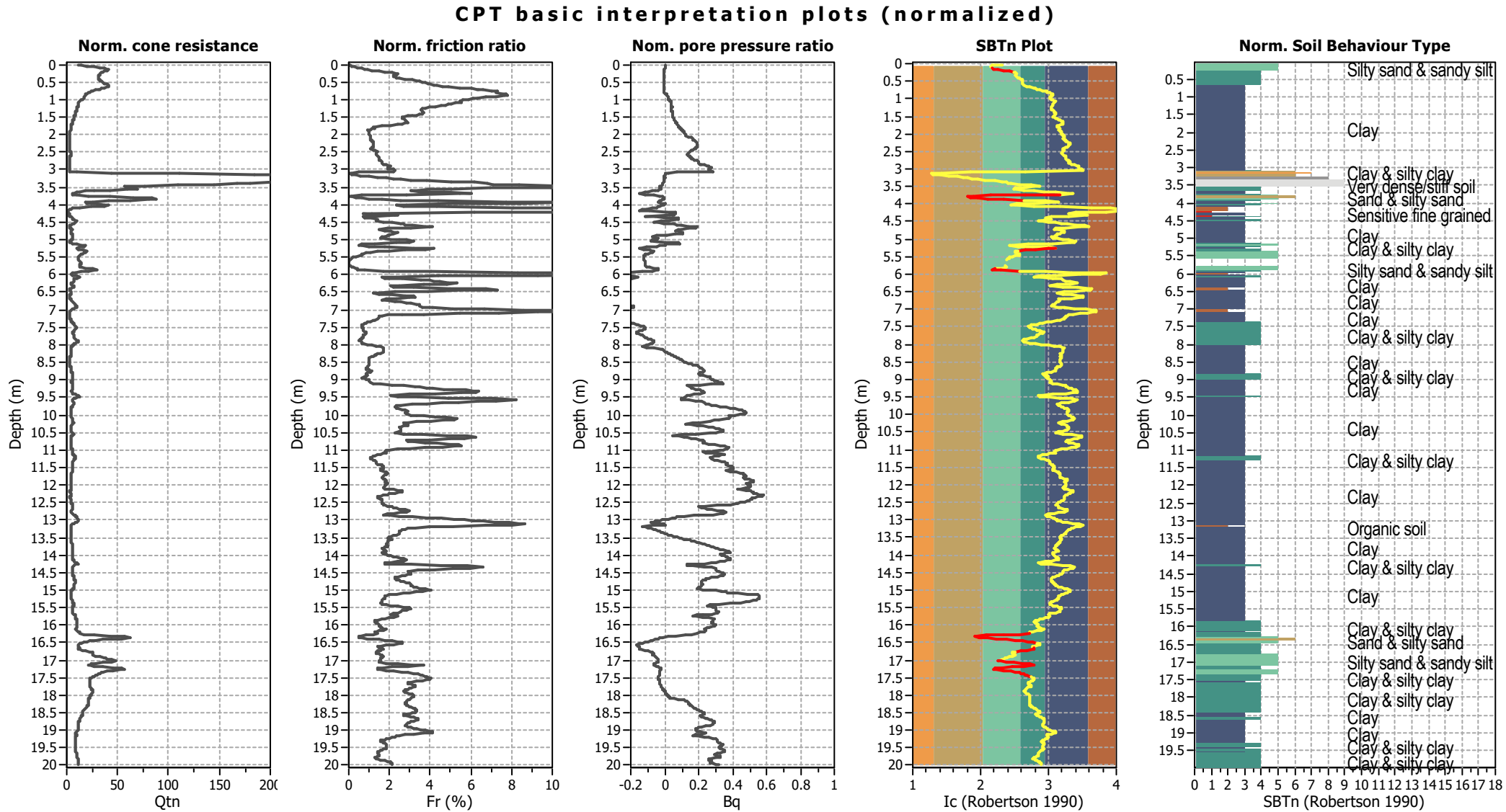


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



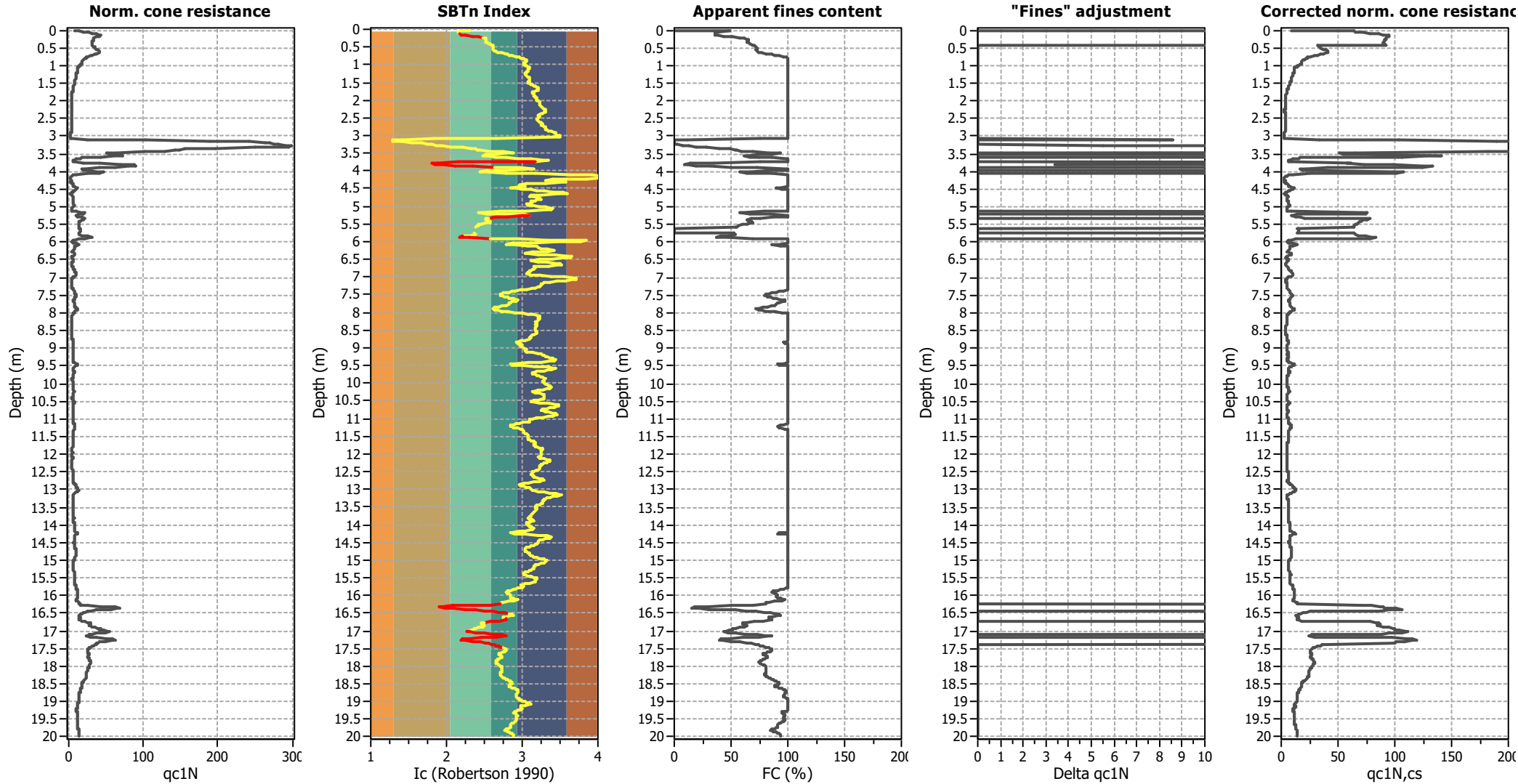
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

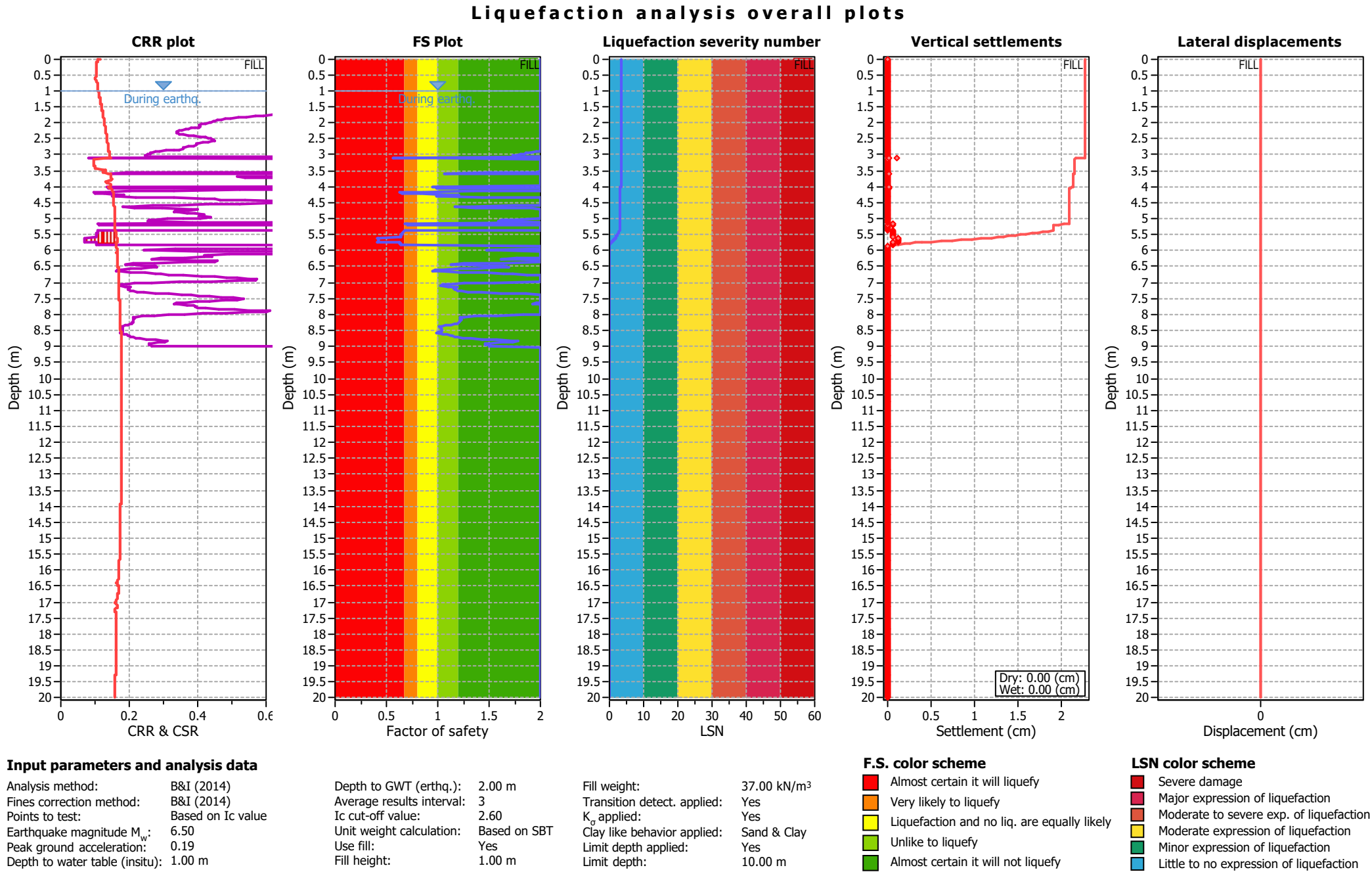
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

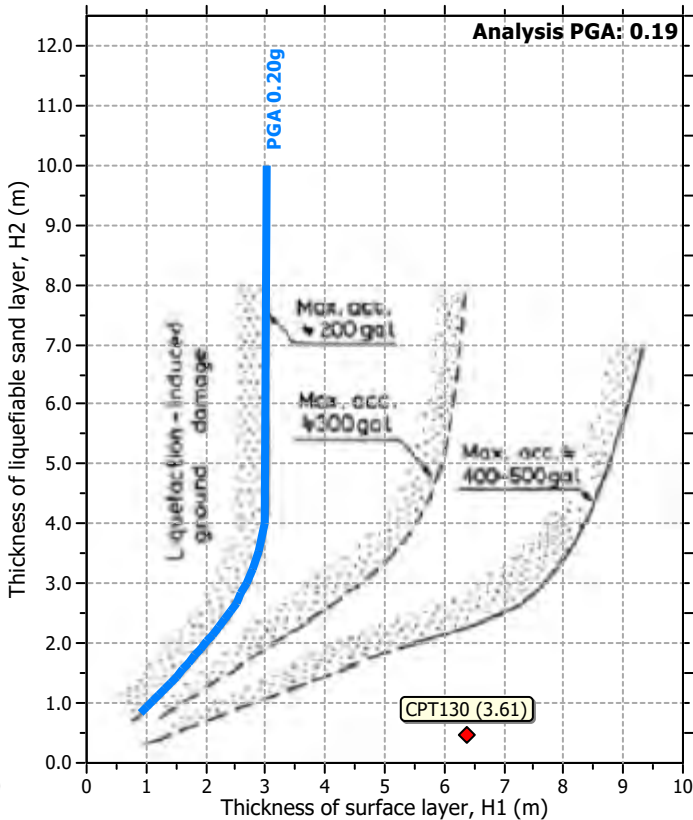
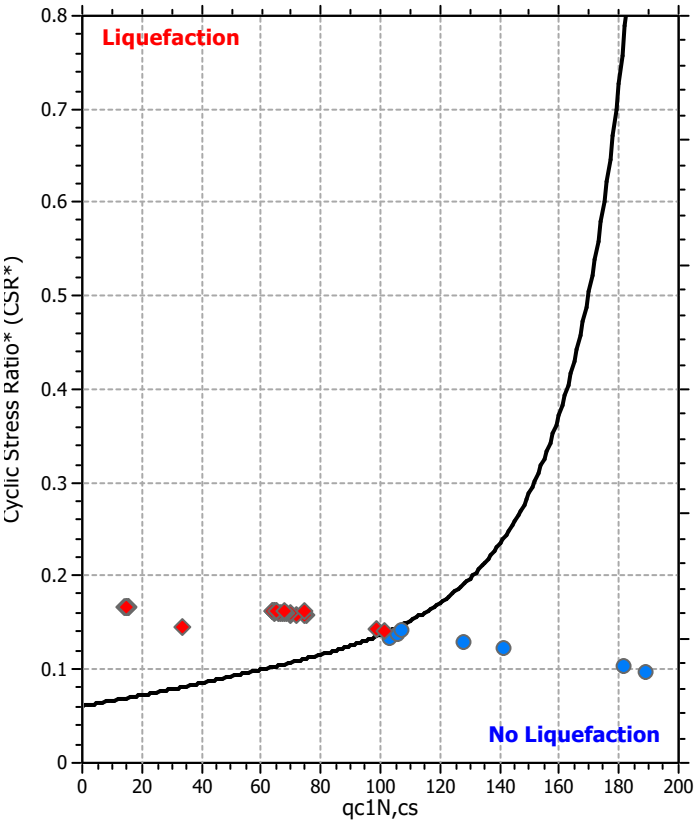
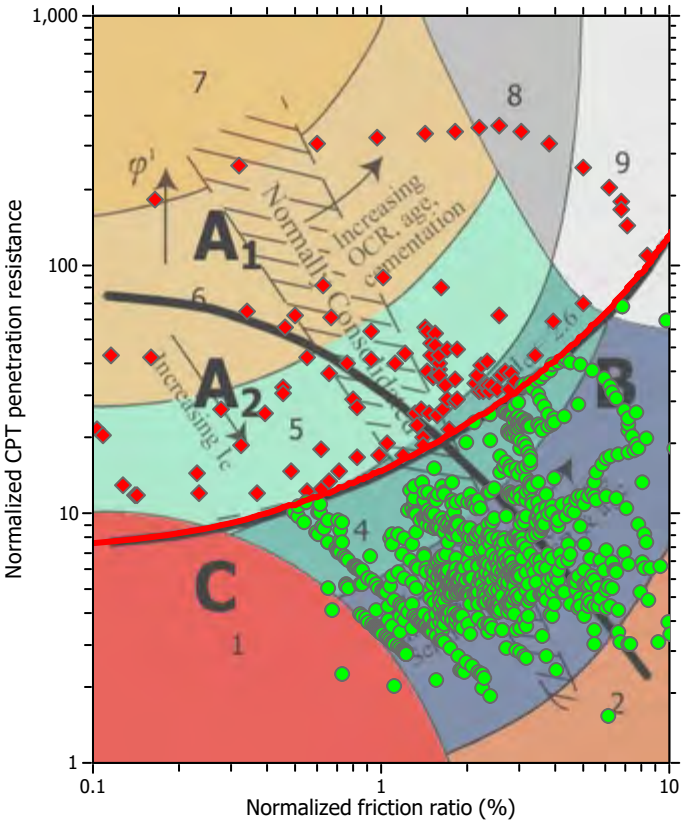


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



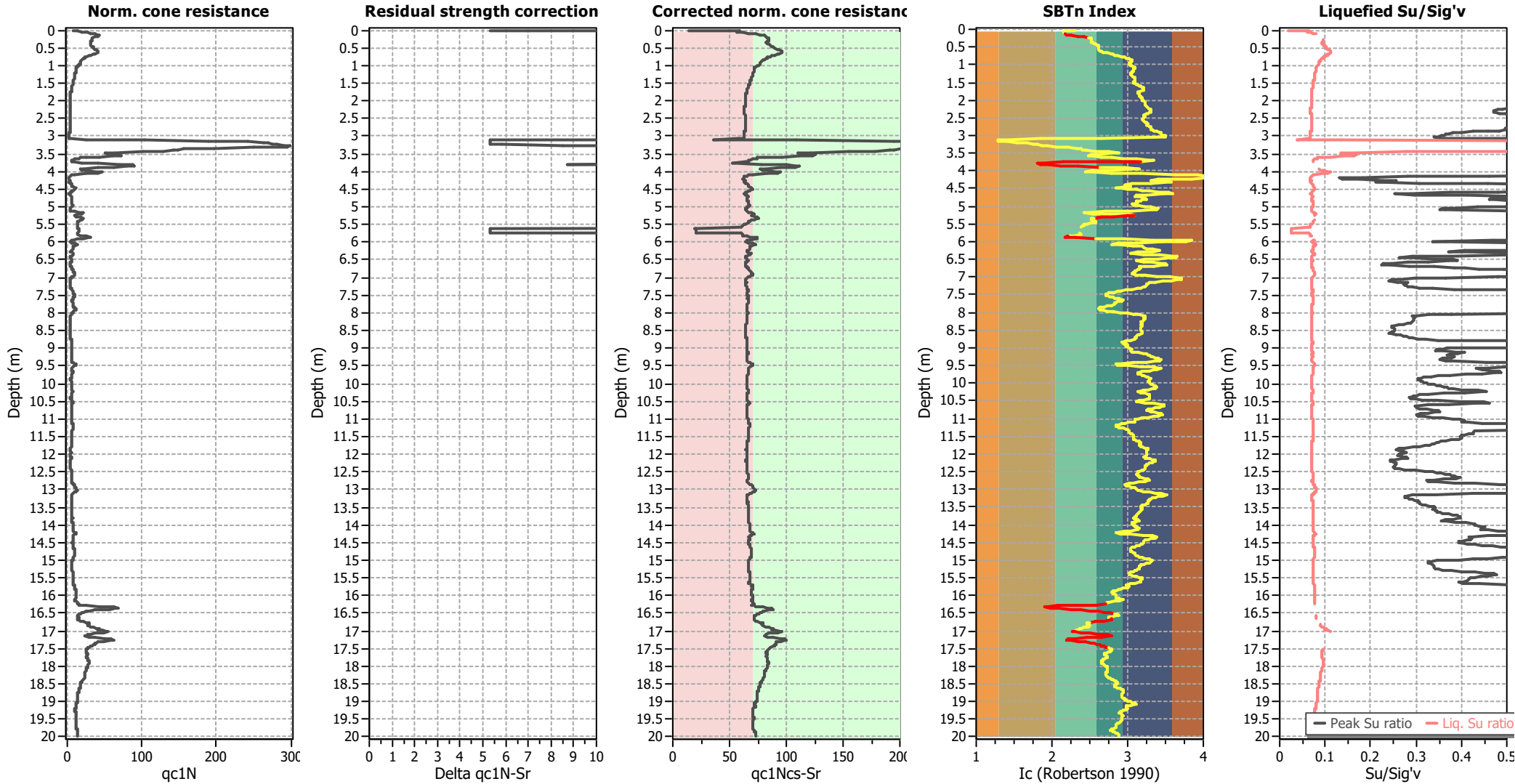
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

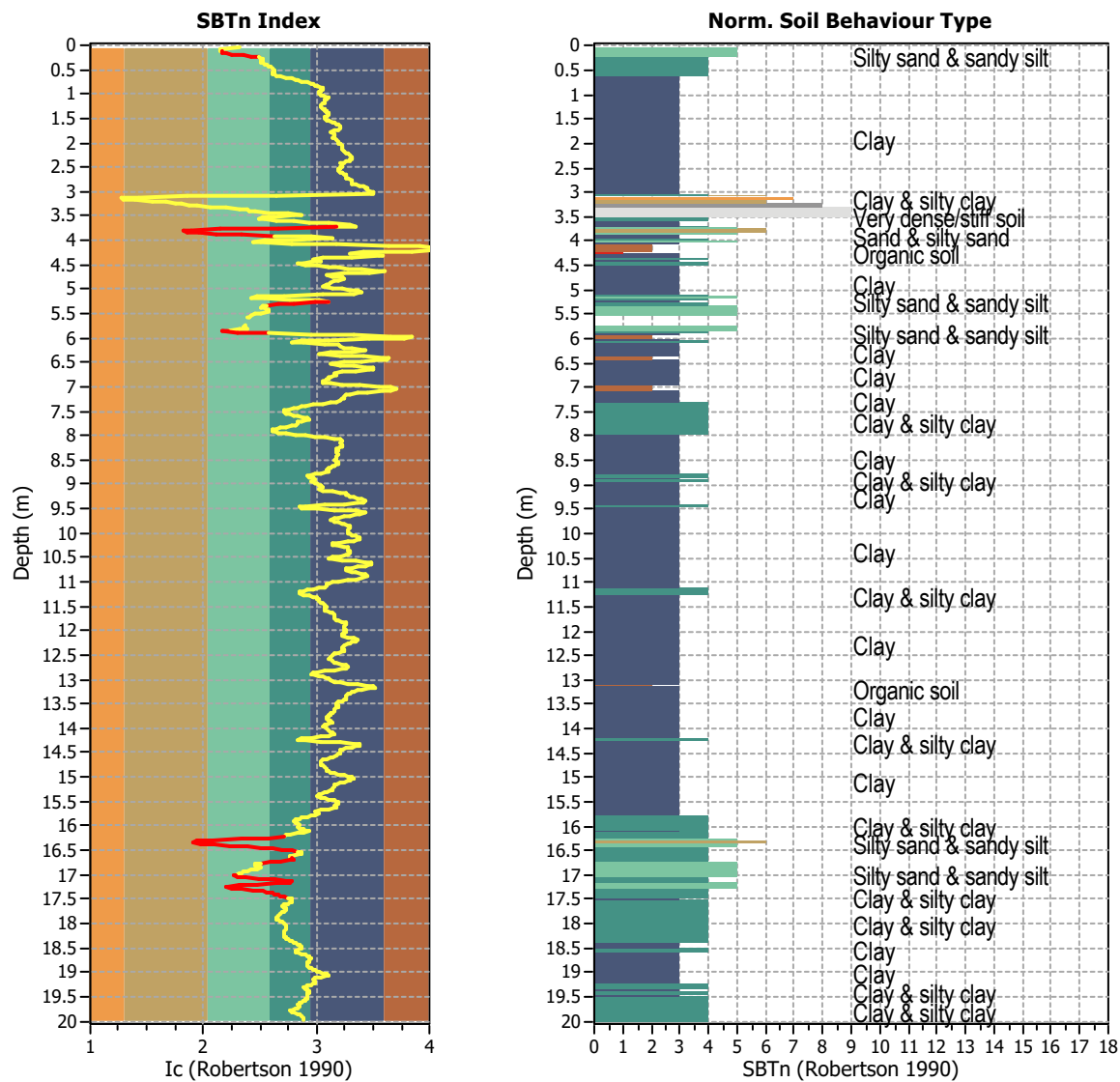
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



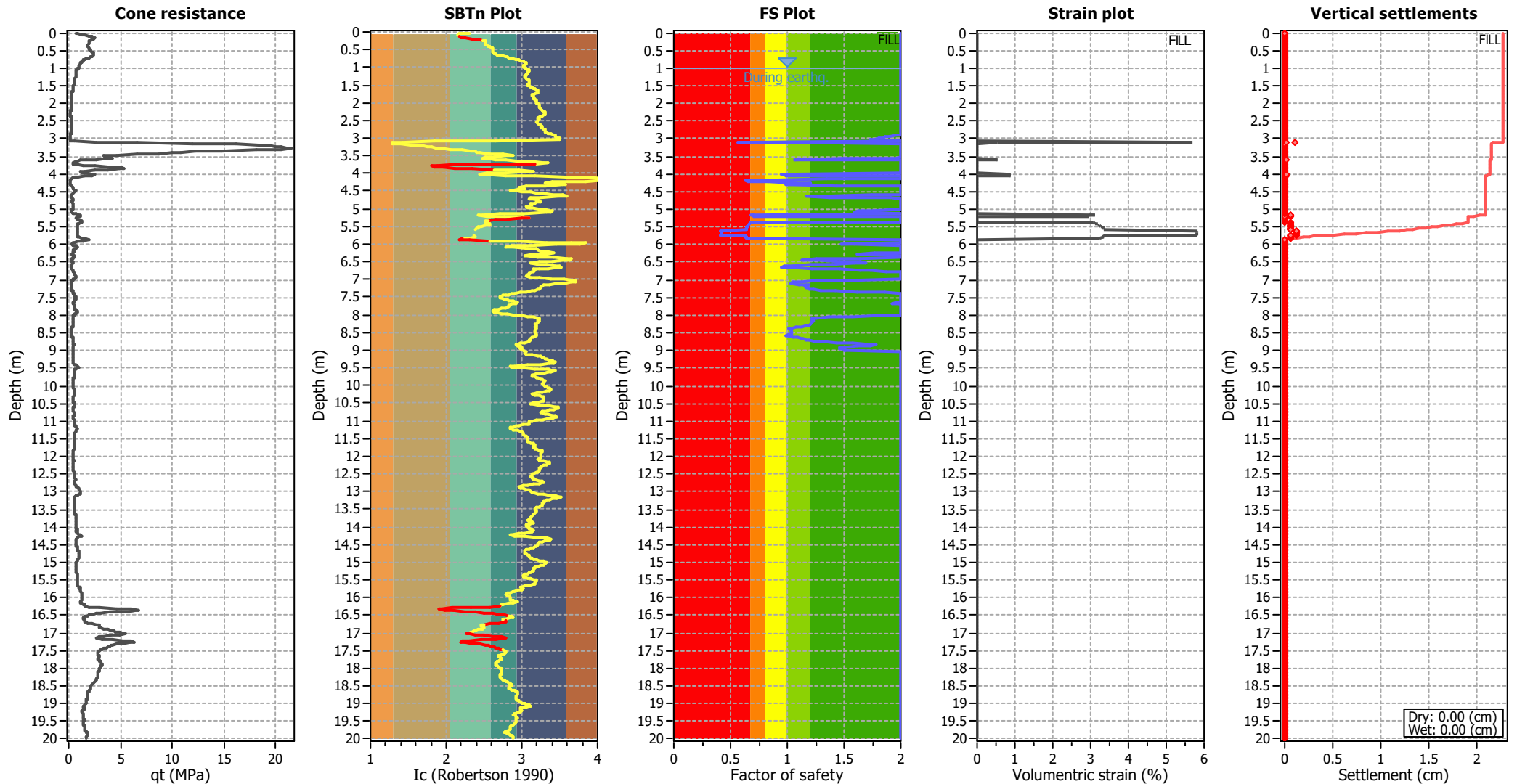
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 999
Total points excluded: 76
Exclusion percentage: 7.61%
Number of layers detected: 11

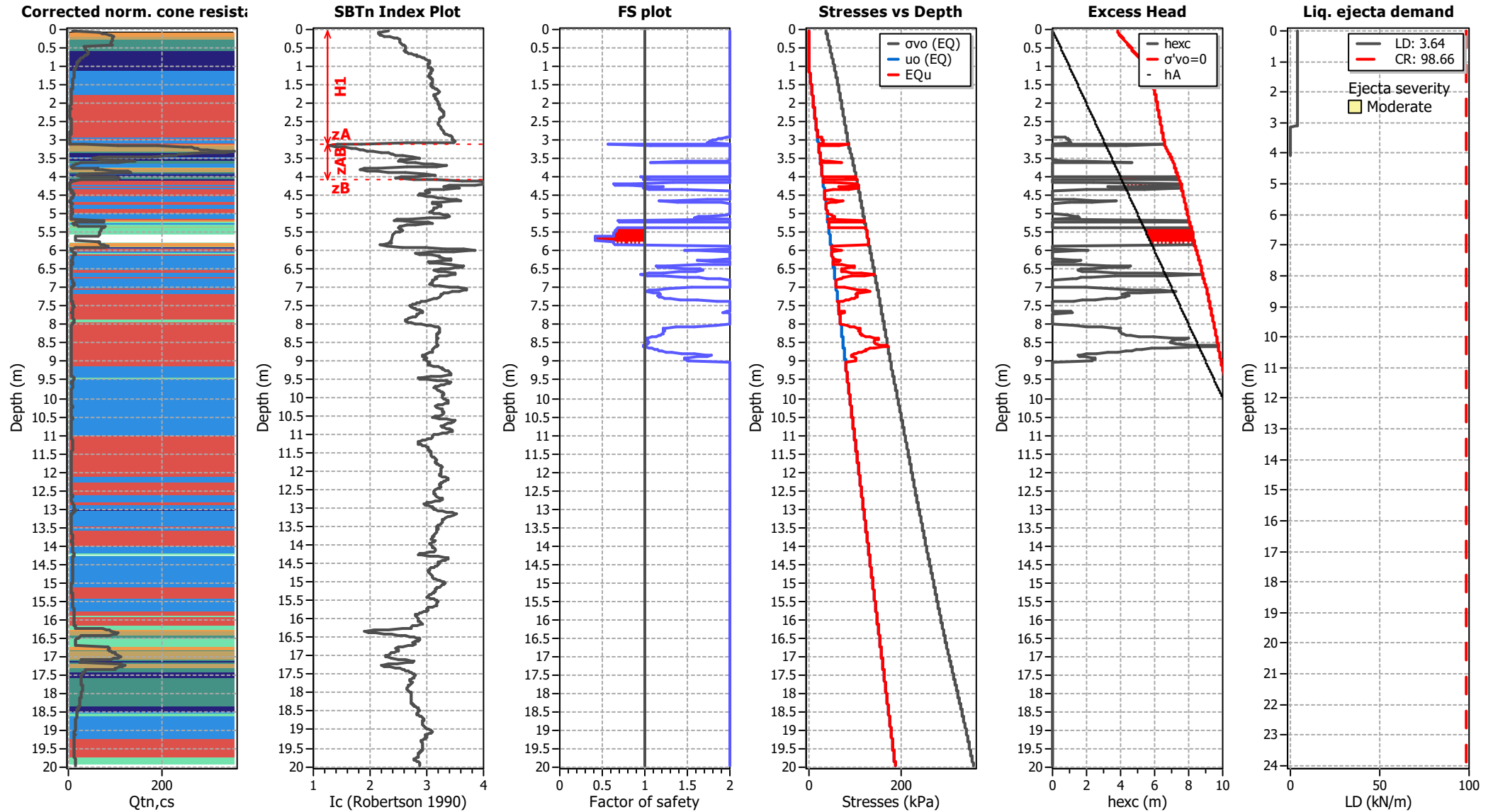
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

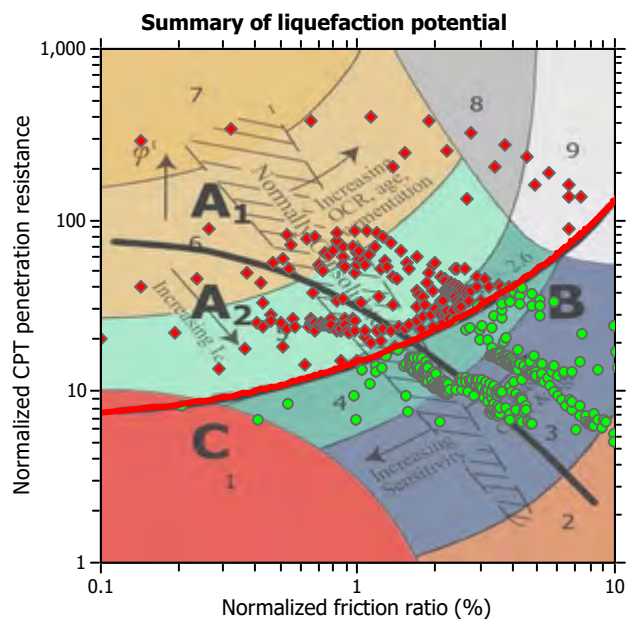
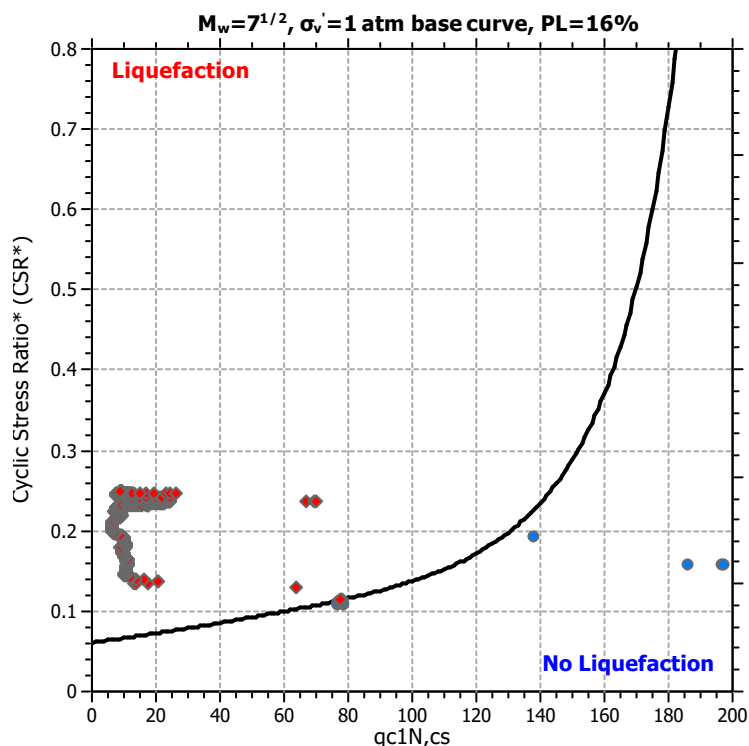
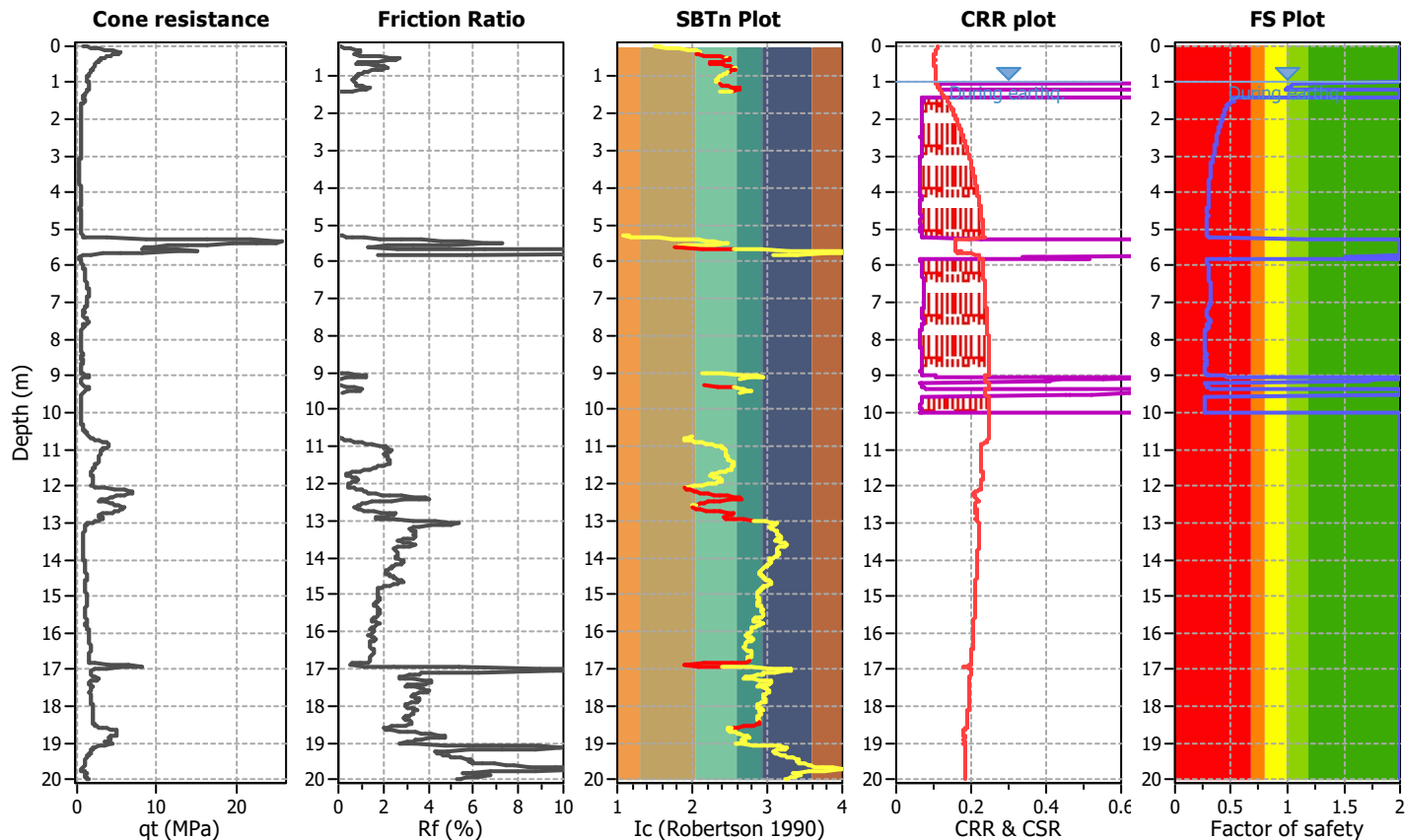
Project title : Sunfield Landholding

Location :

CPT file : CPT131

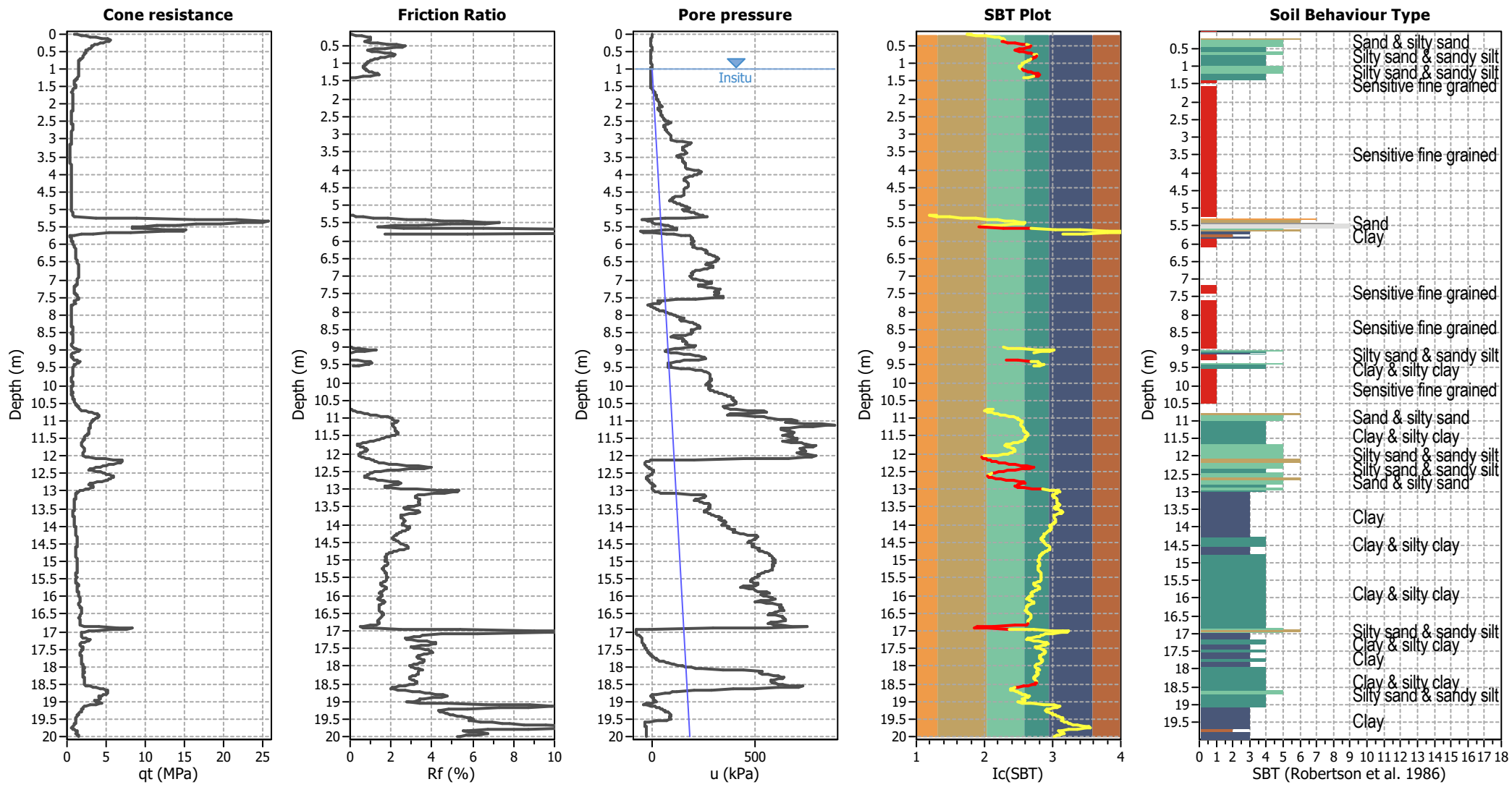
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



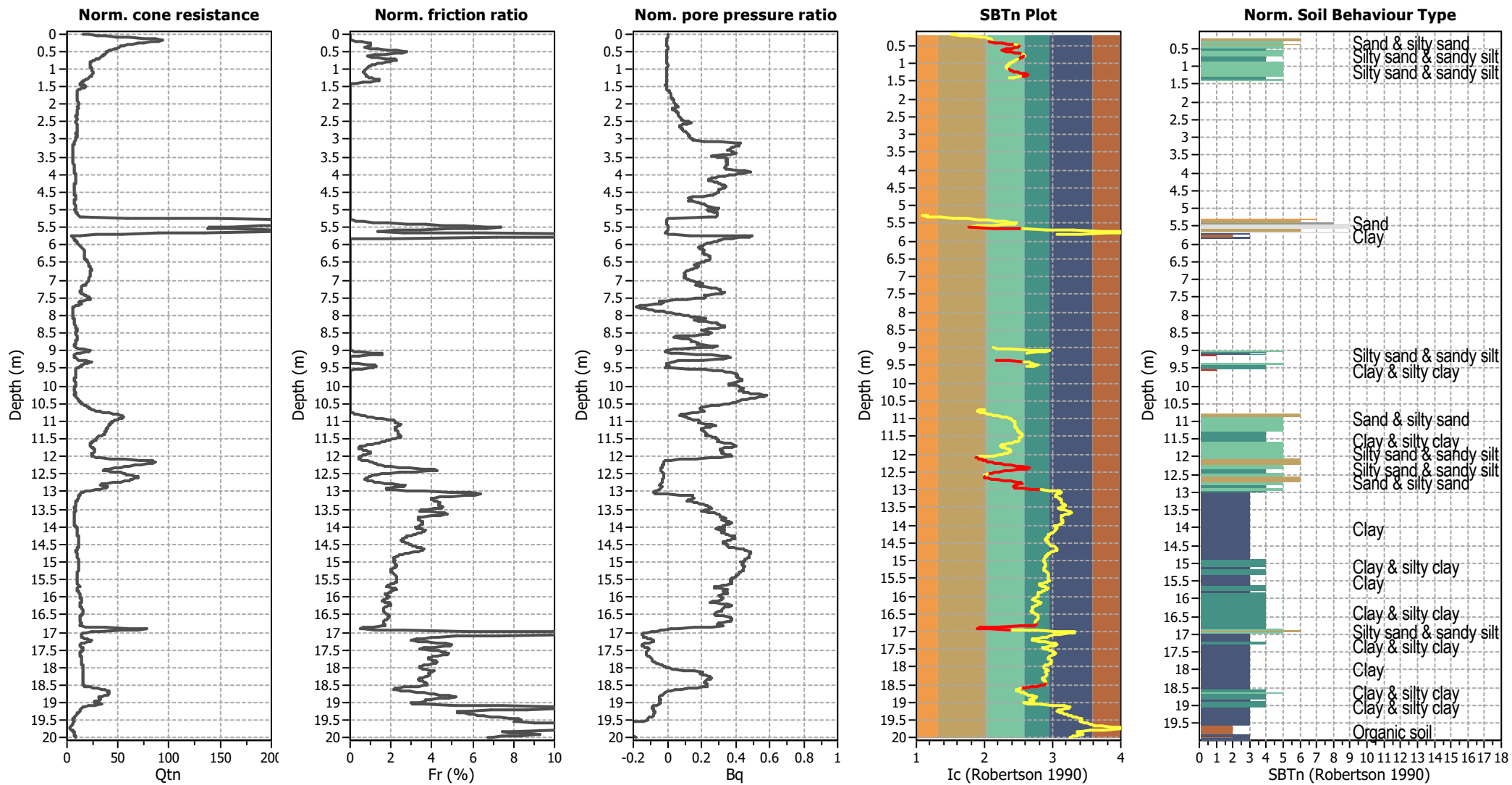
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



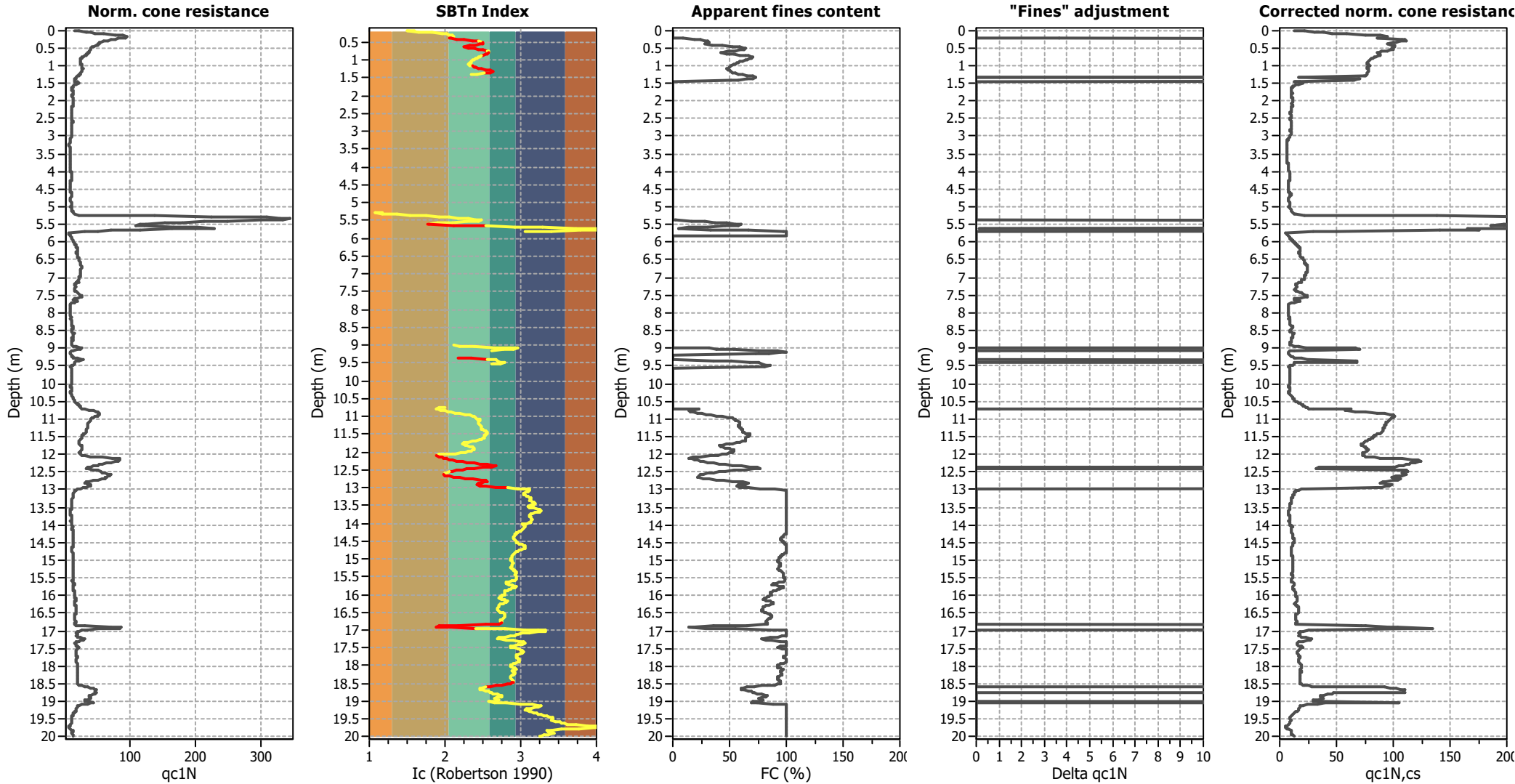
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

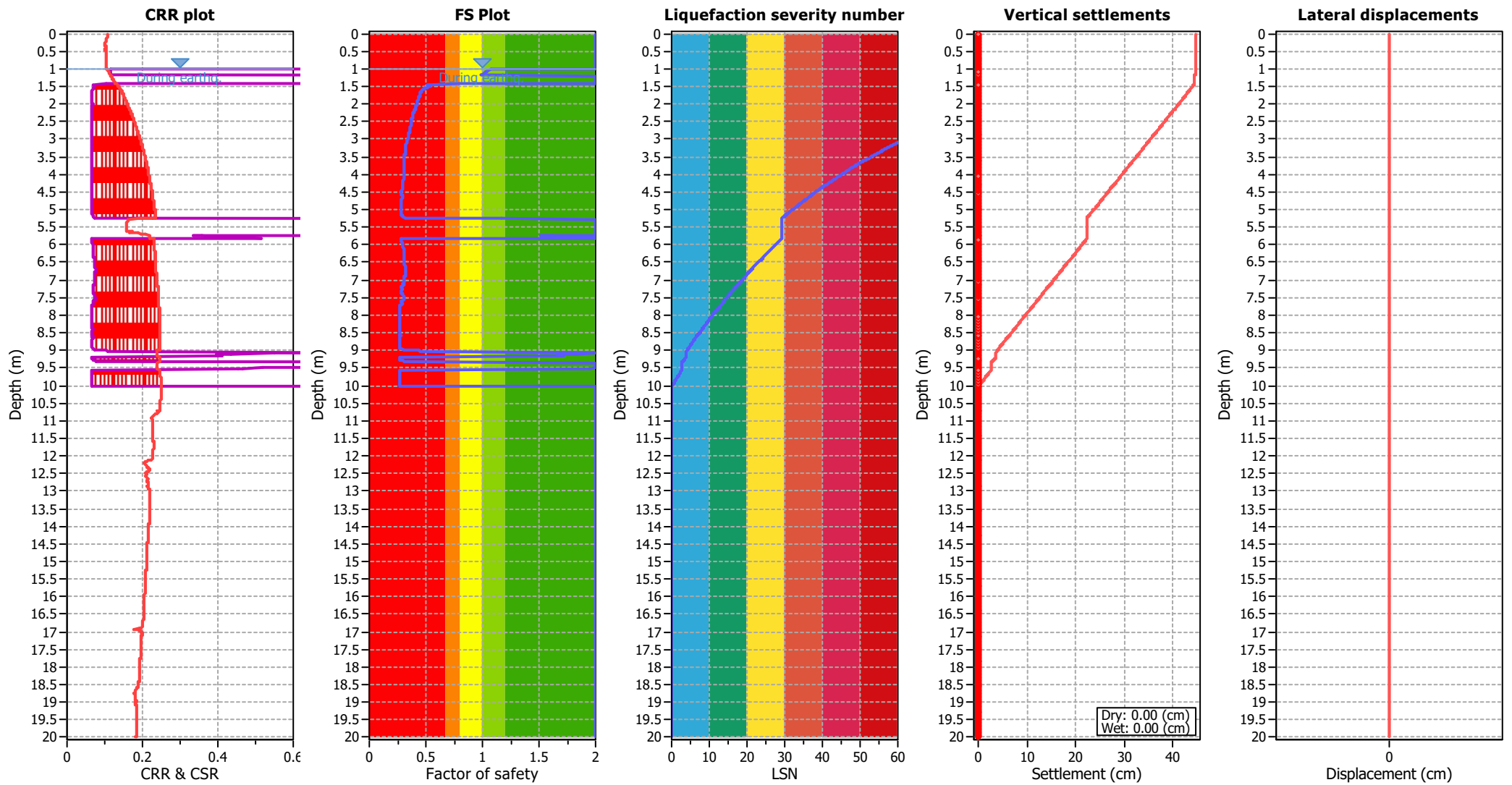
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

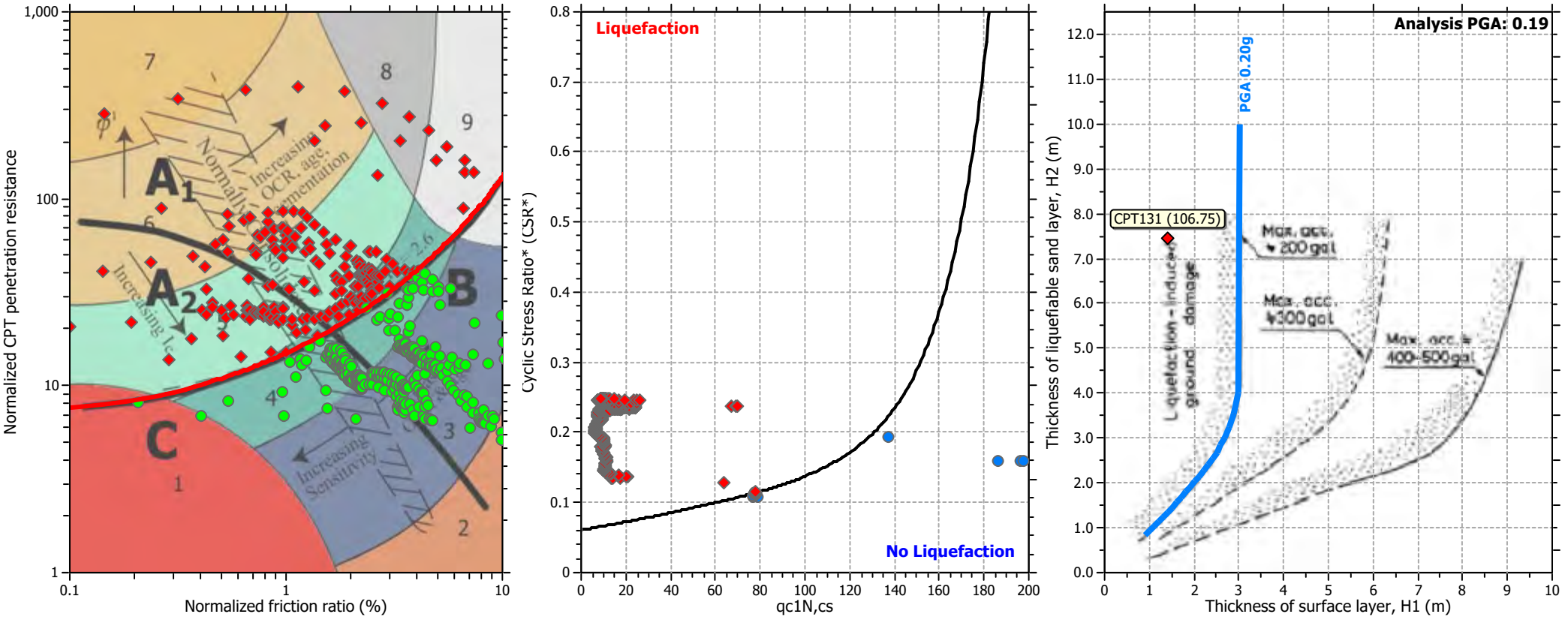
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

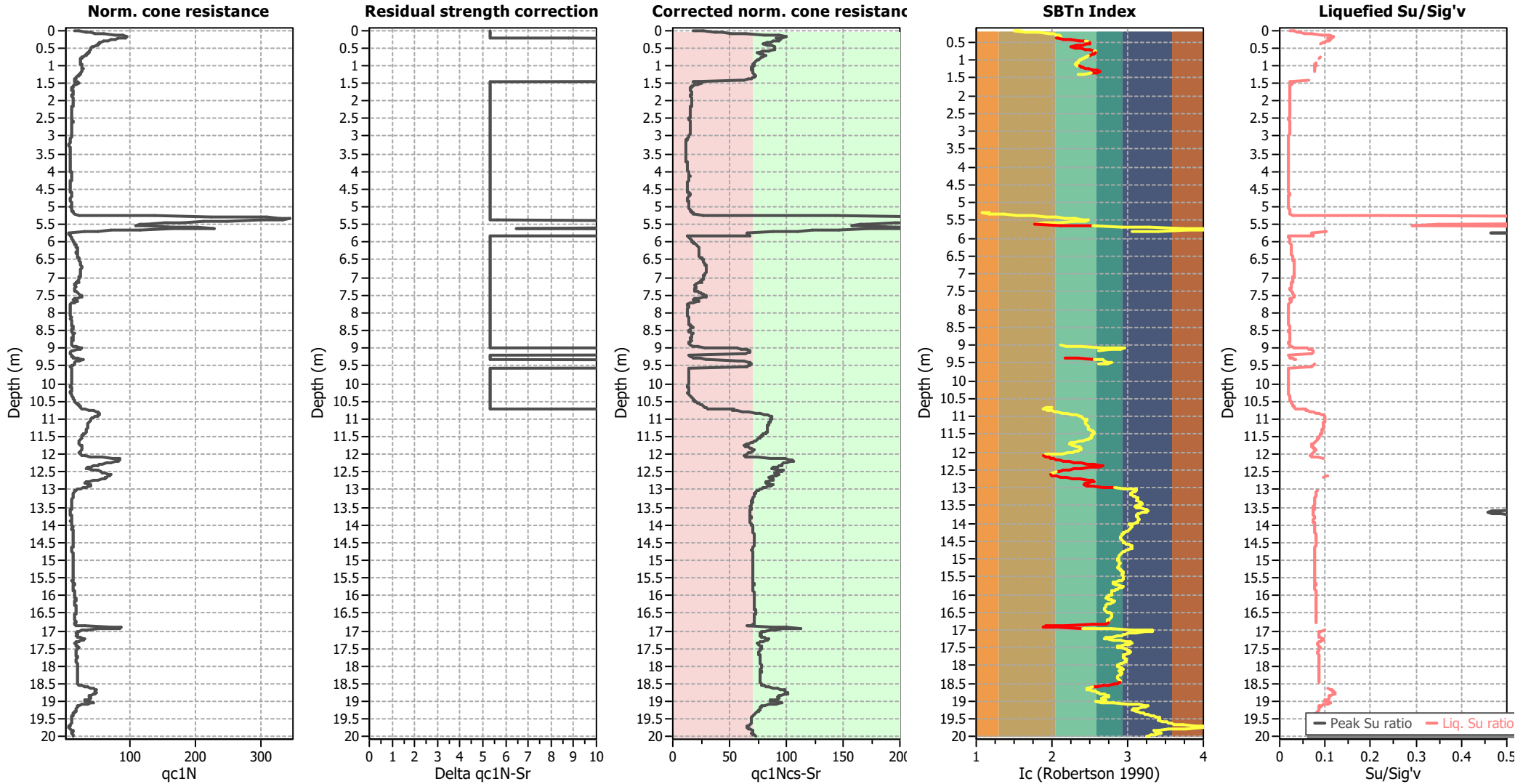
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

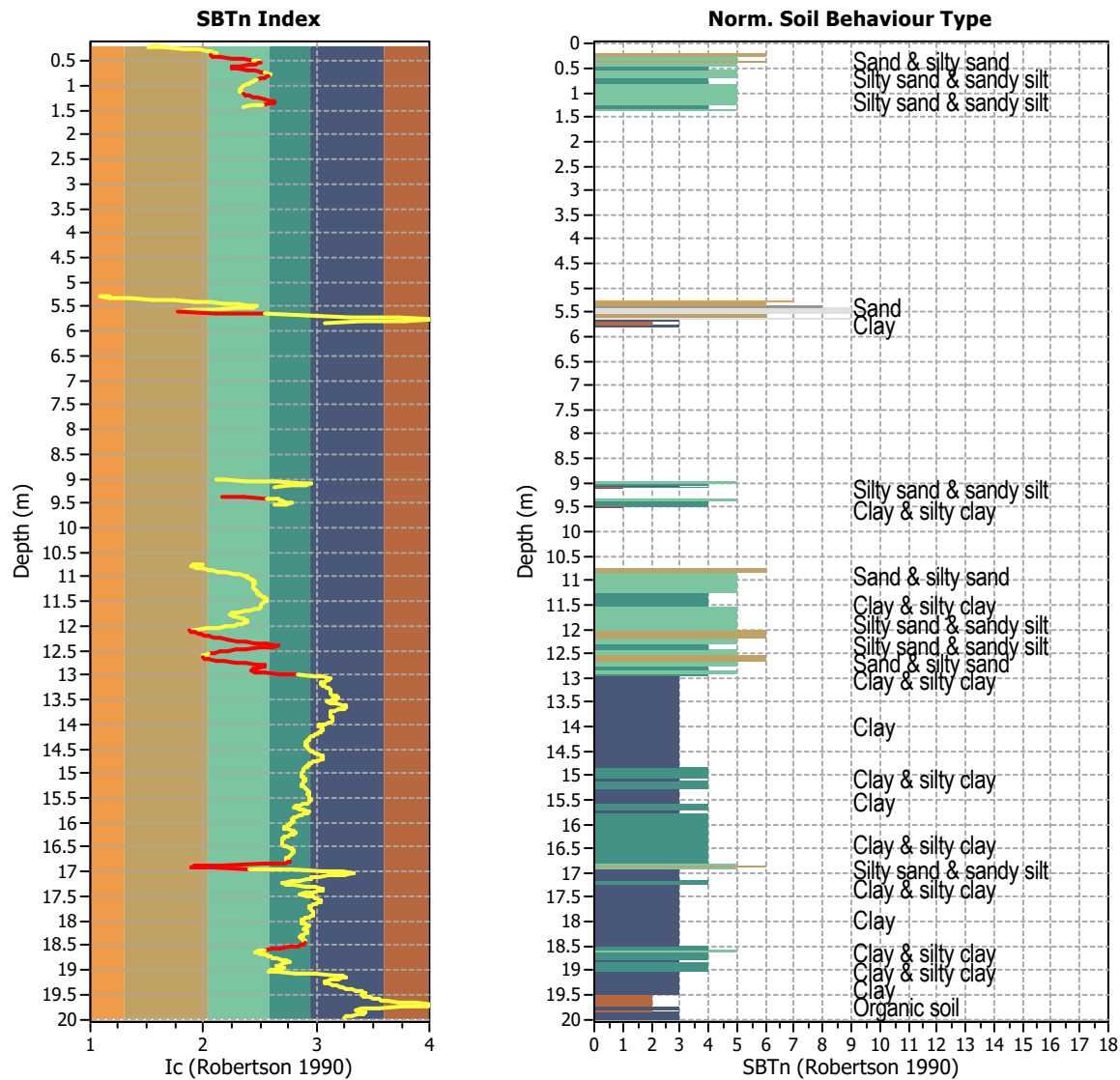
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



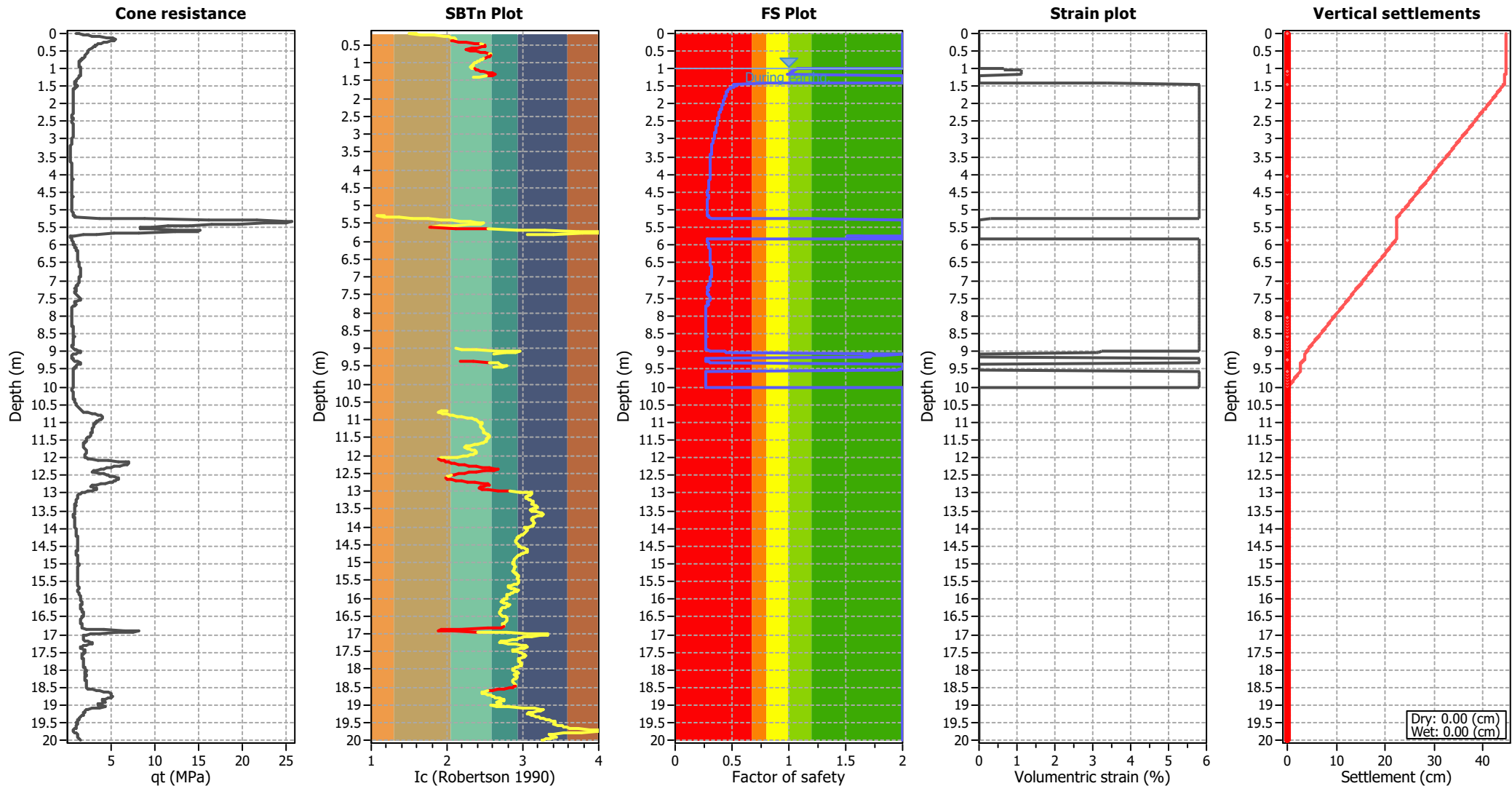
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 999
Total points excluded: 104
Exclusion percentage: 10.41%
Number of layers detected: 16

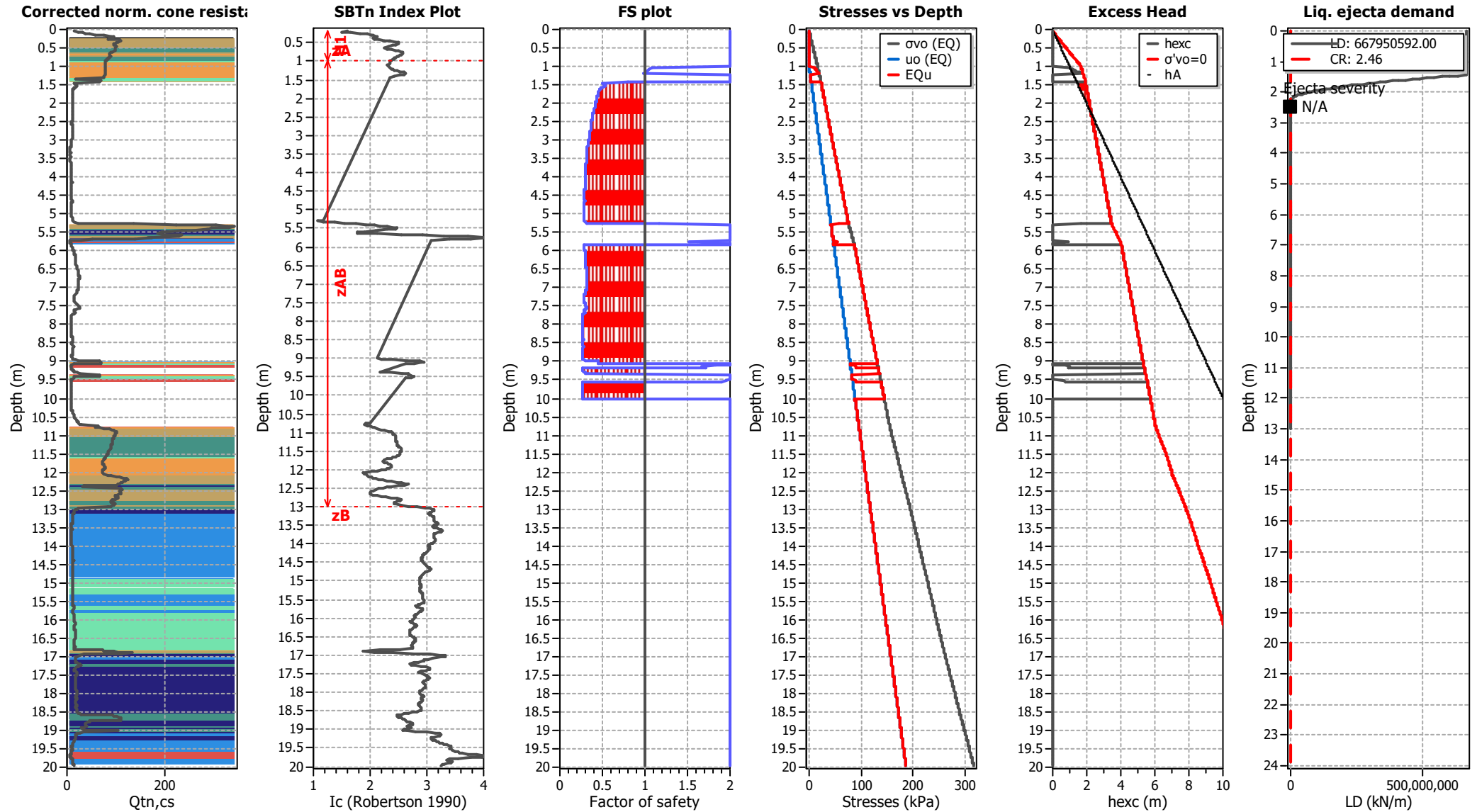
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

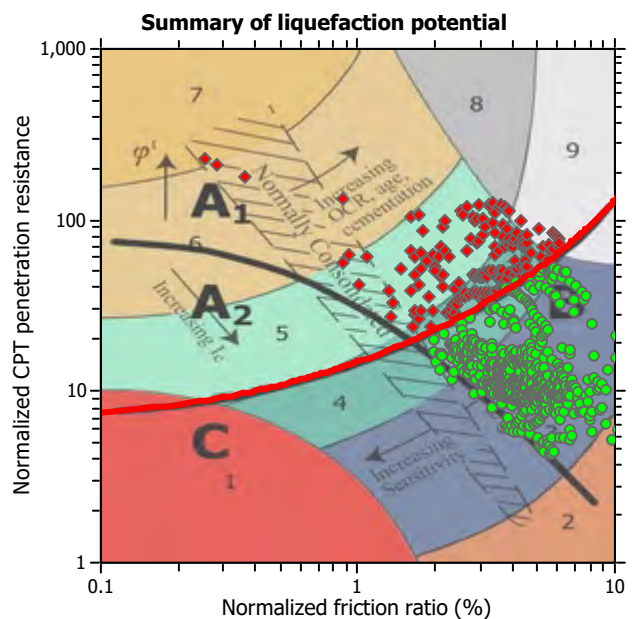
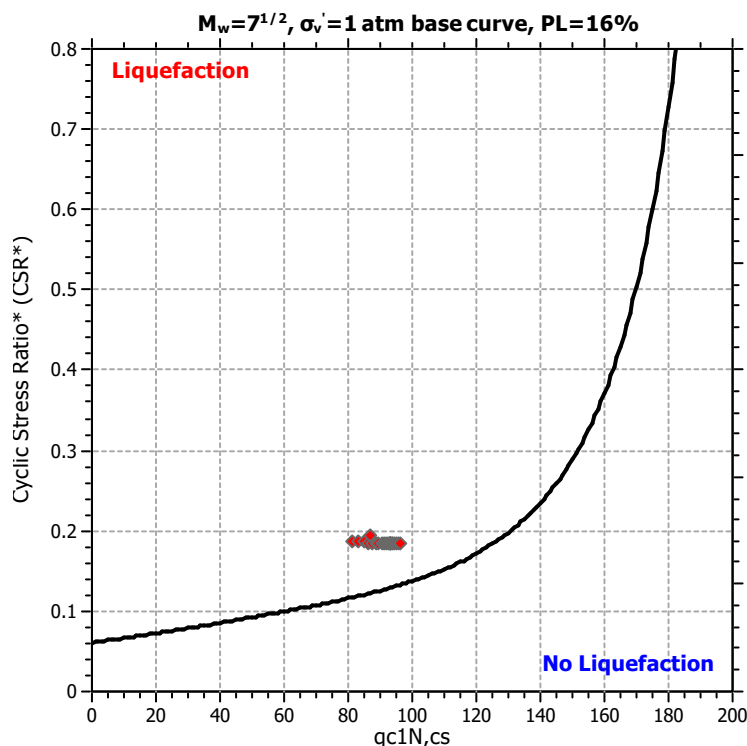
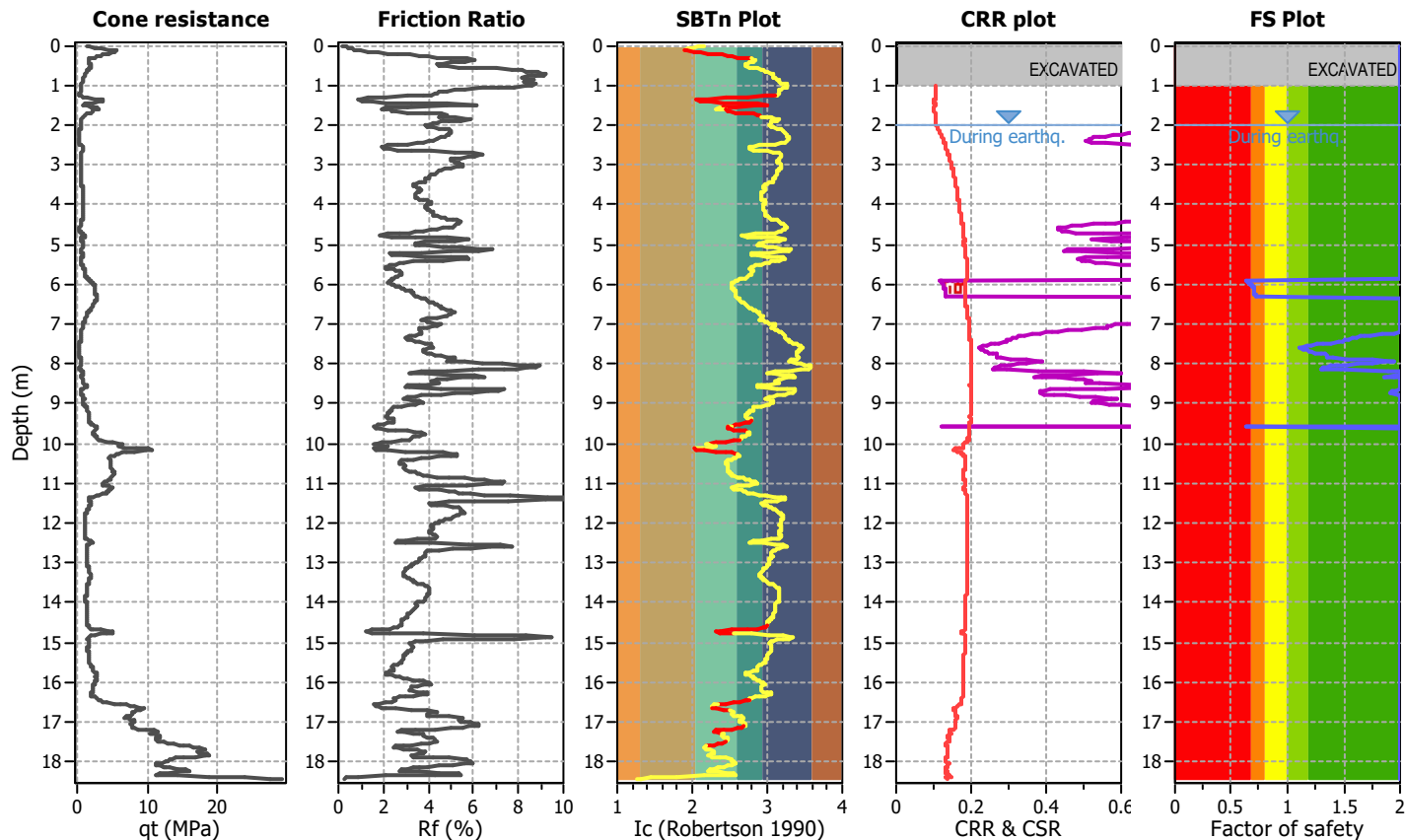
Project title : Sunfield Landholding

Location :

CPT file : CPT132

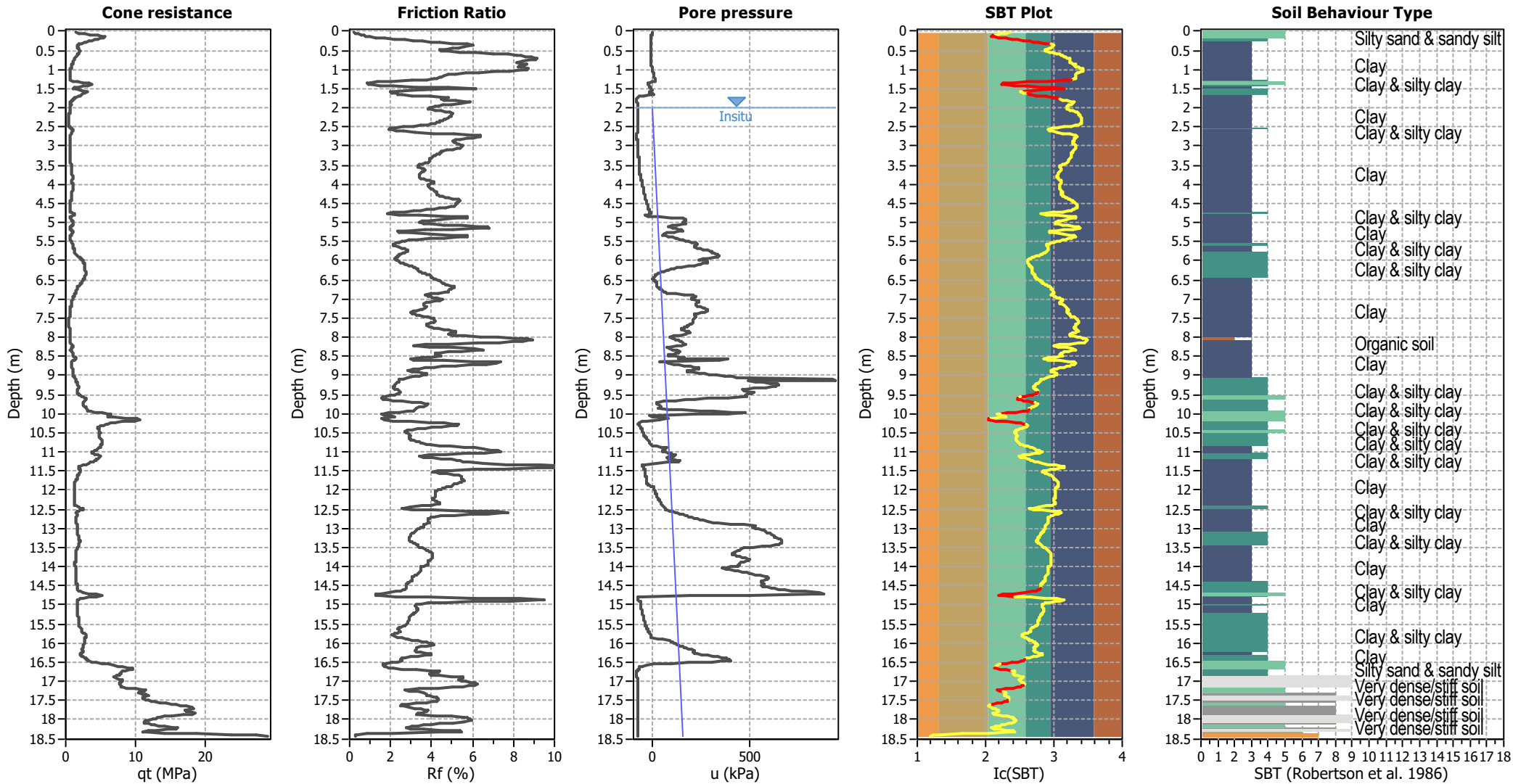
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	2.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Excavation depth:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

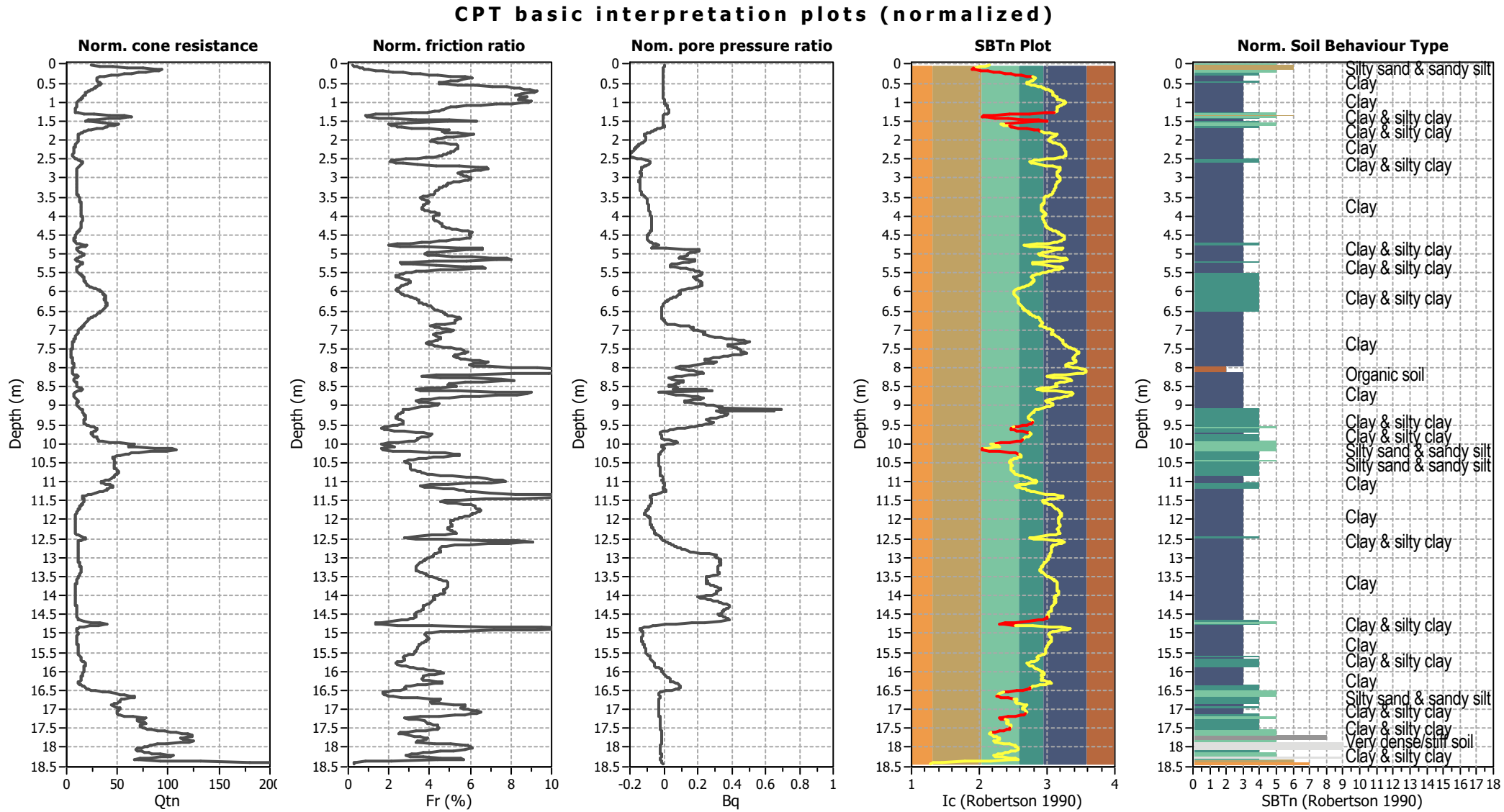


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

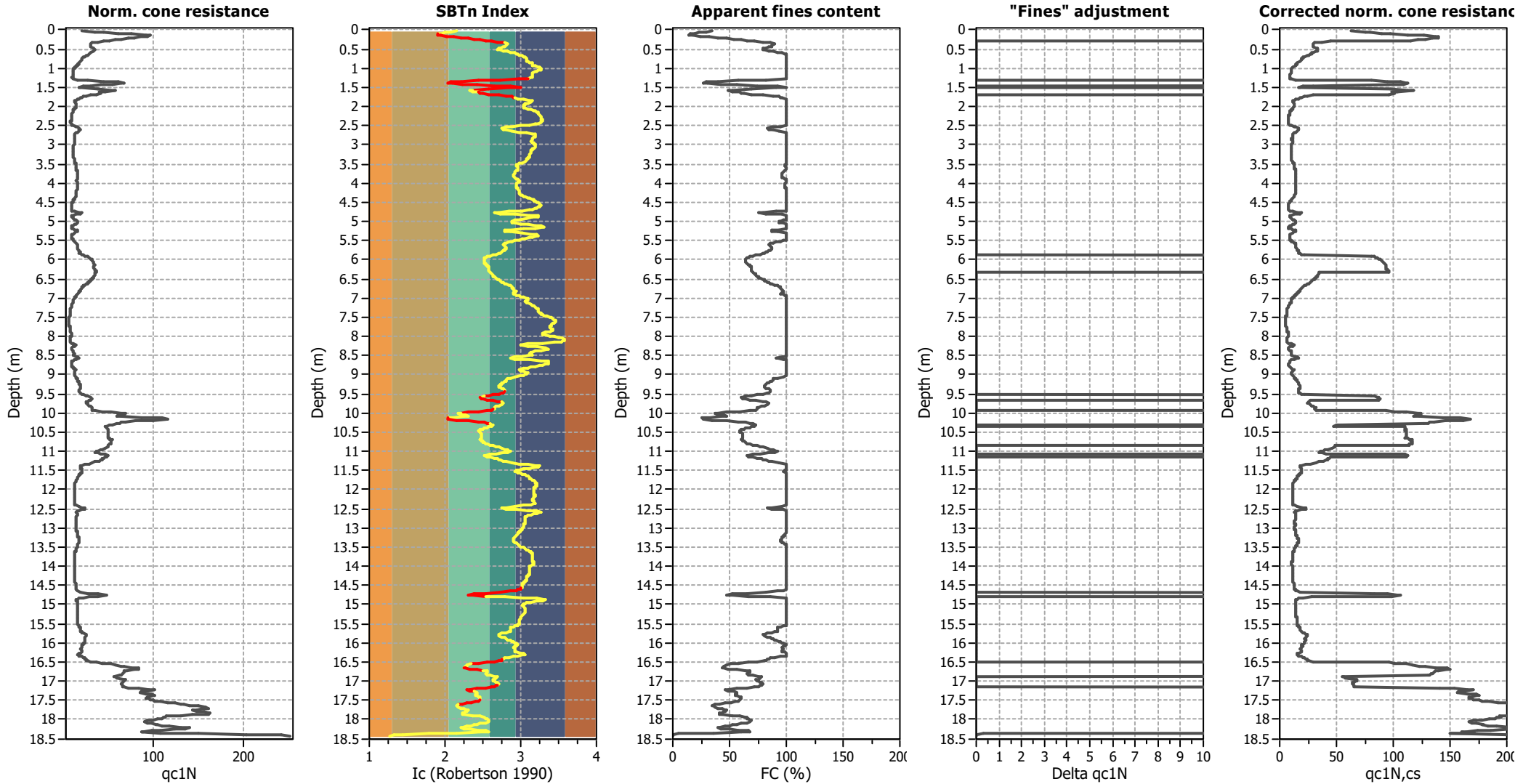
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

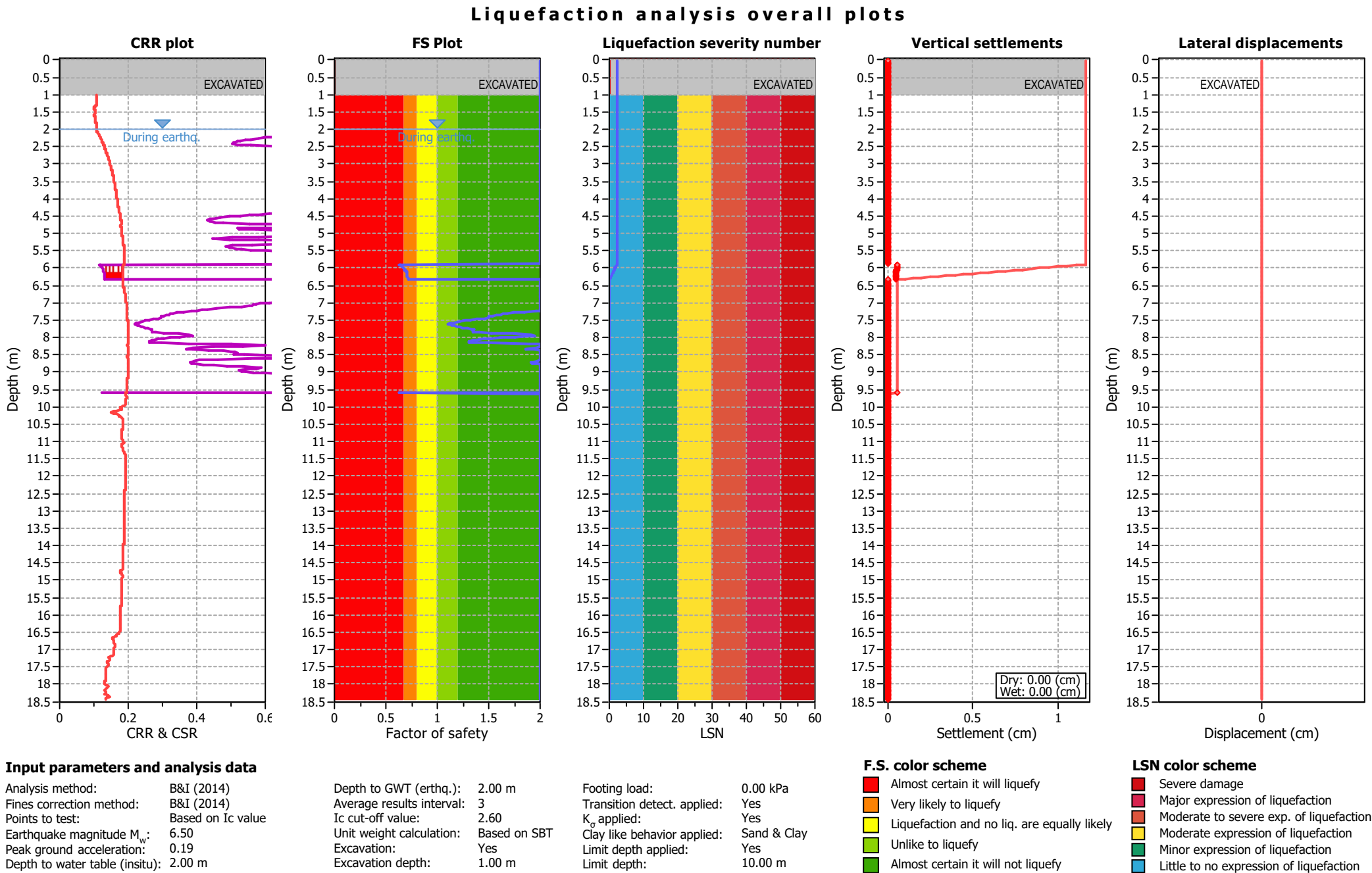
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

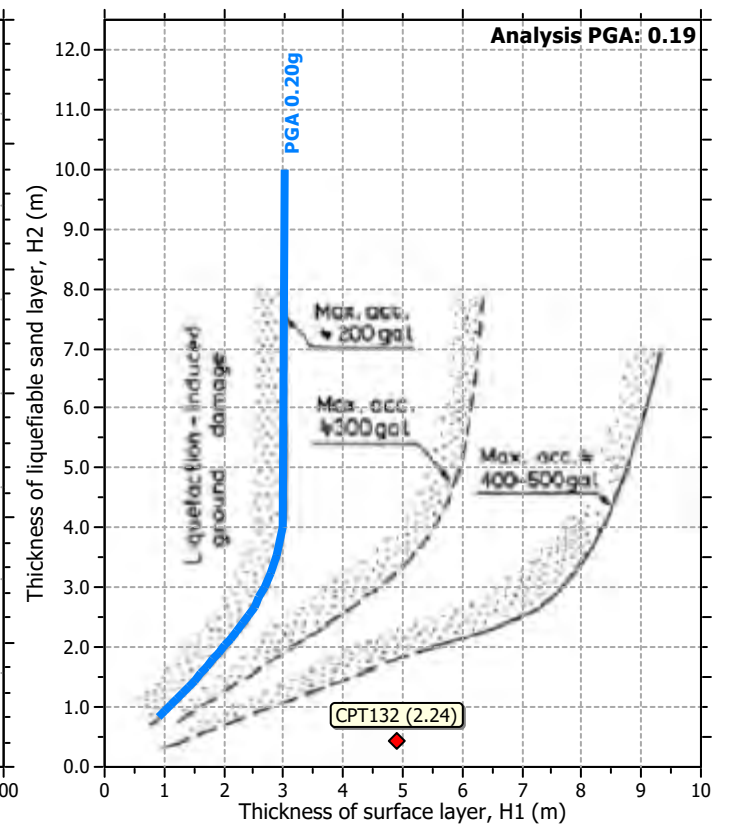
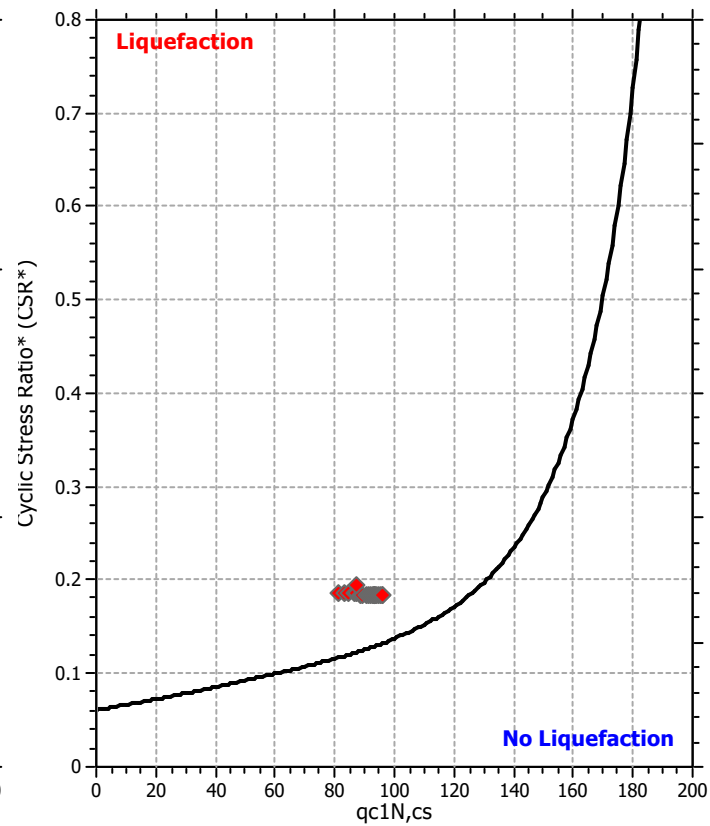
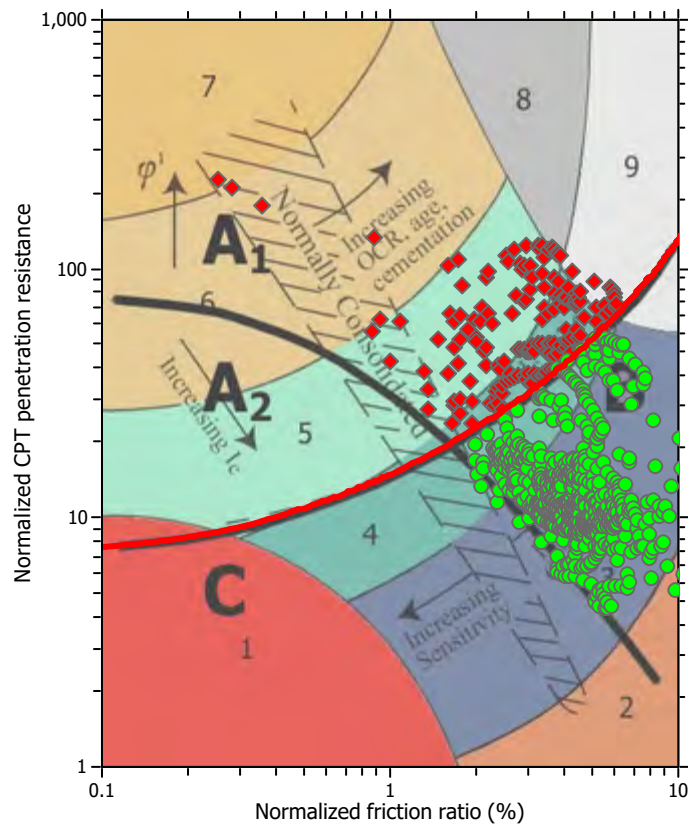


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m



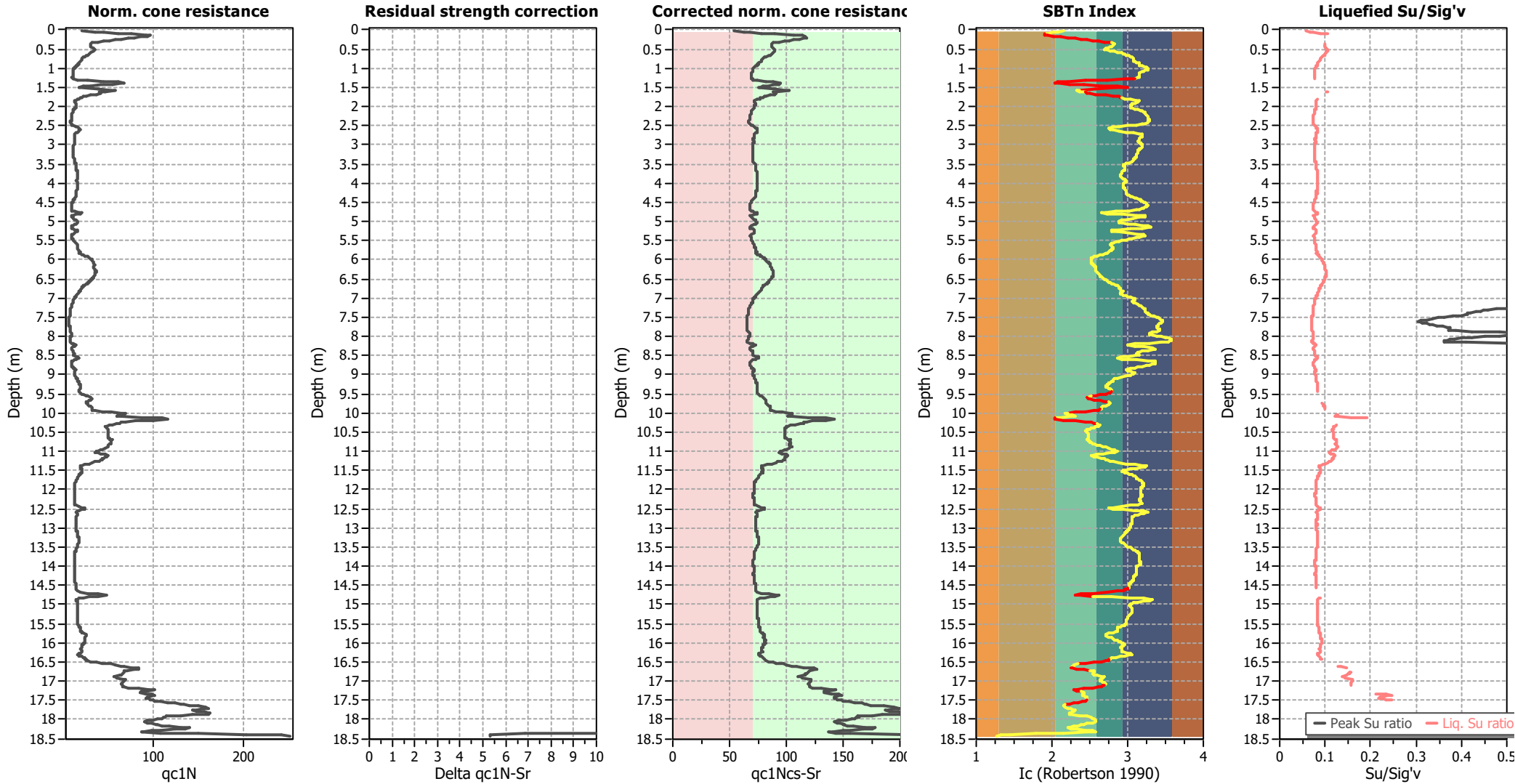
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _c applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

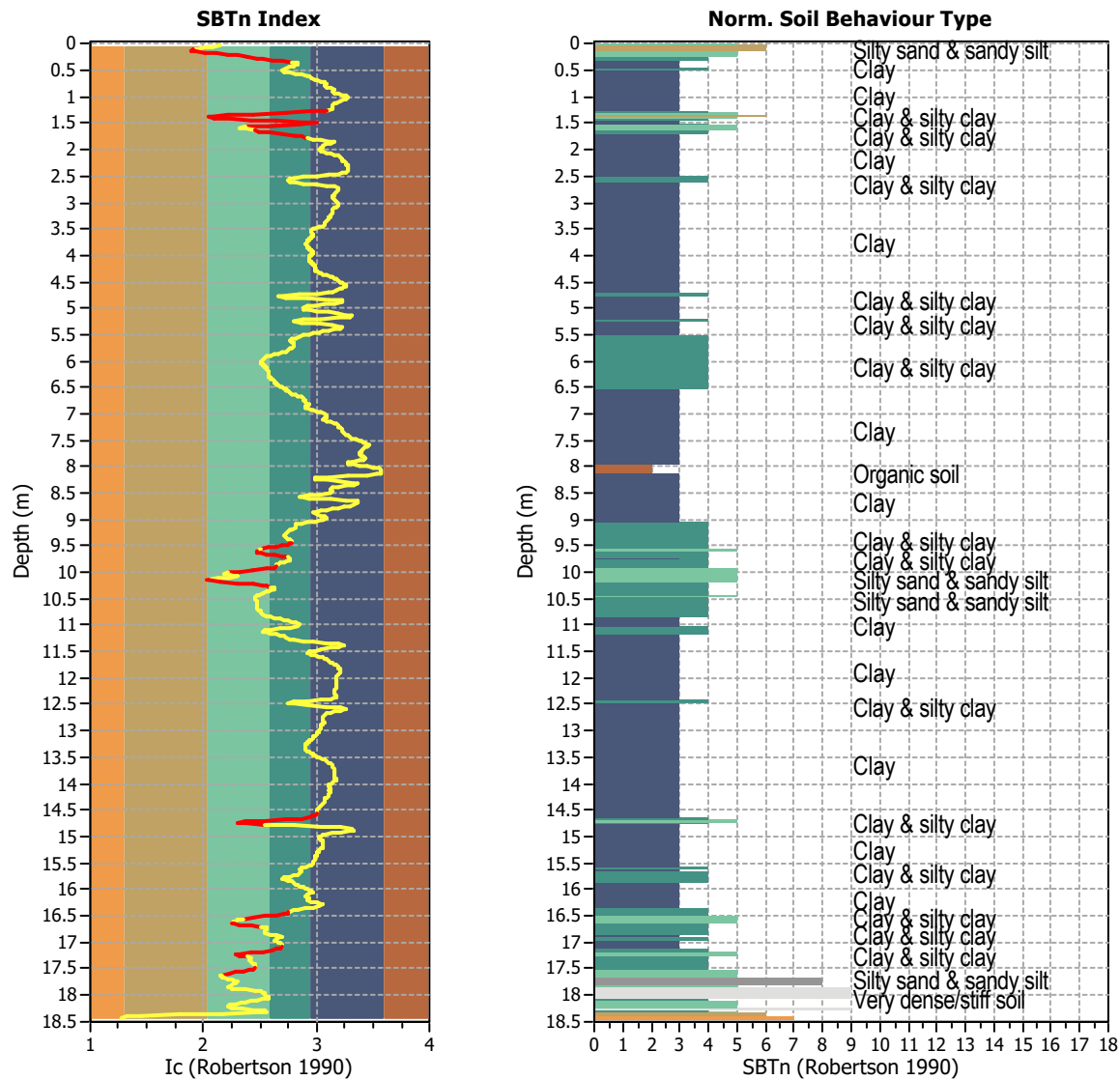
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

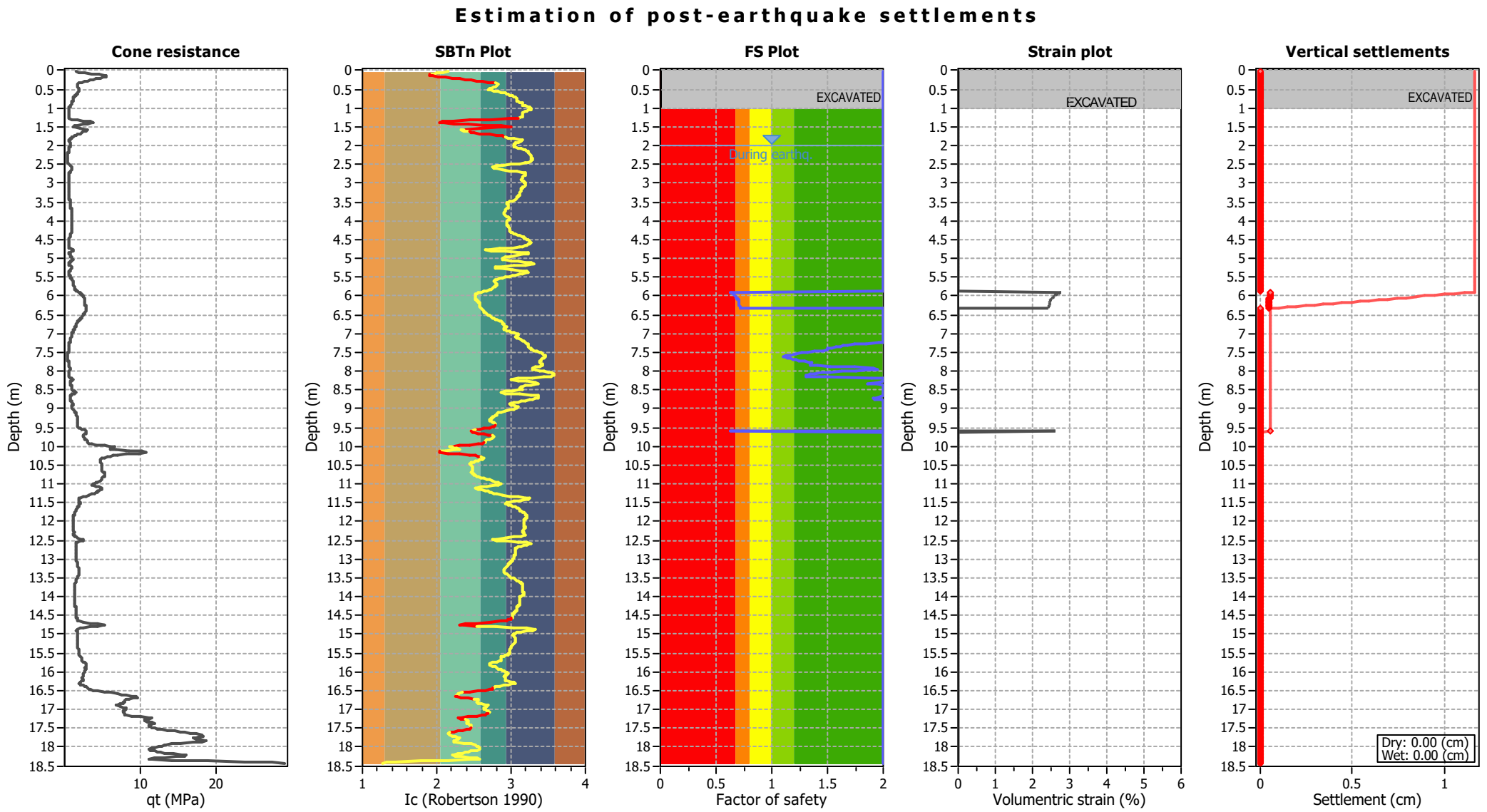


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

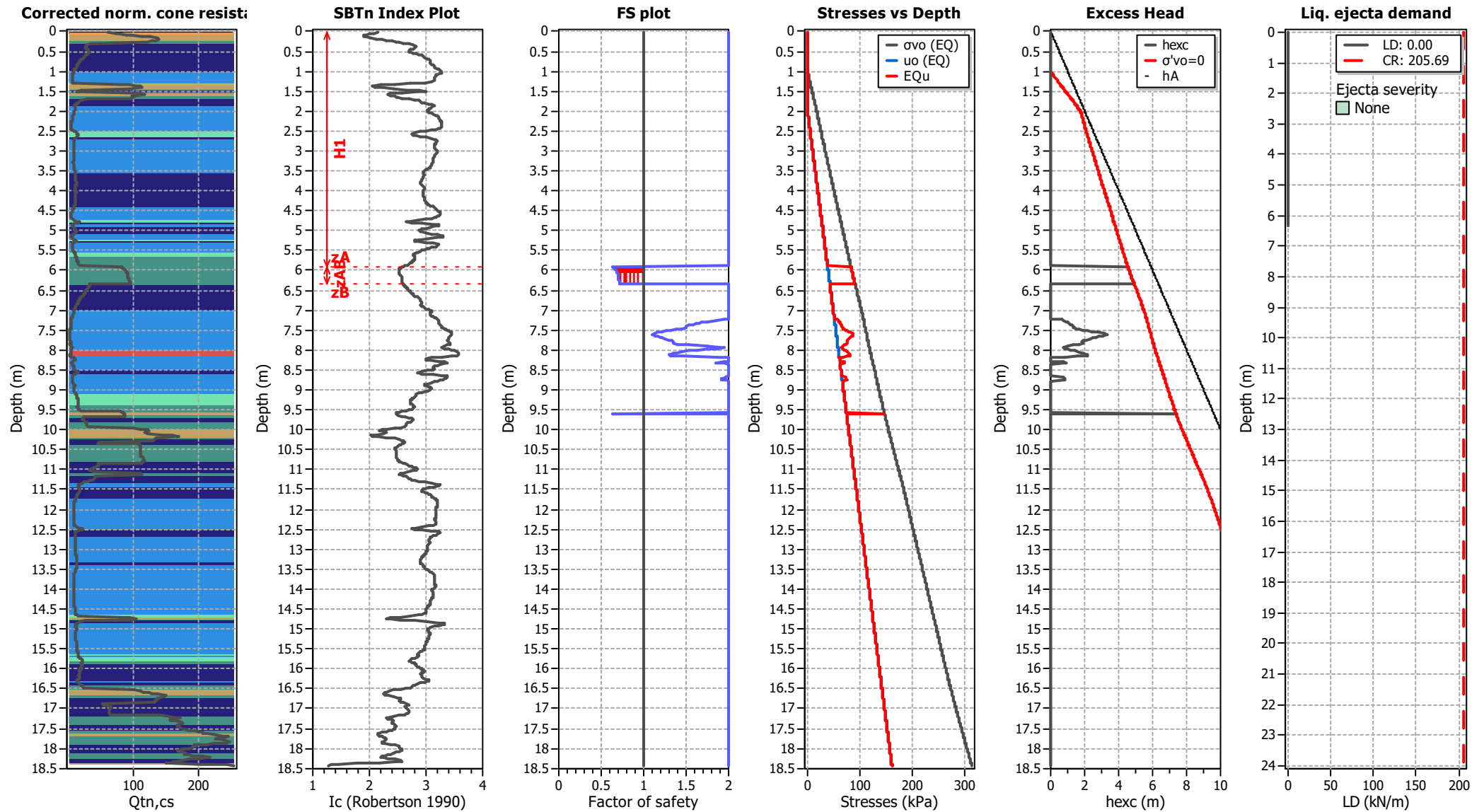
Total points in CPT file: 922
Total points excluded: 110
Exclusion percentage: 11.93%
Number of layers detected: 16



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

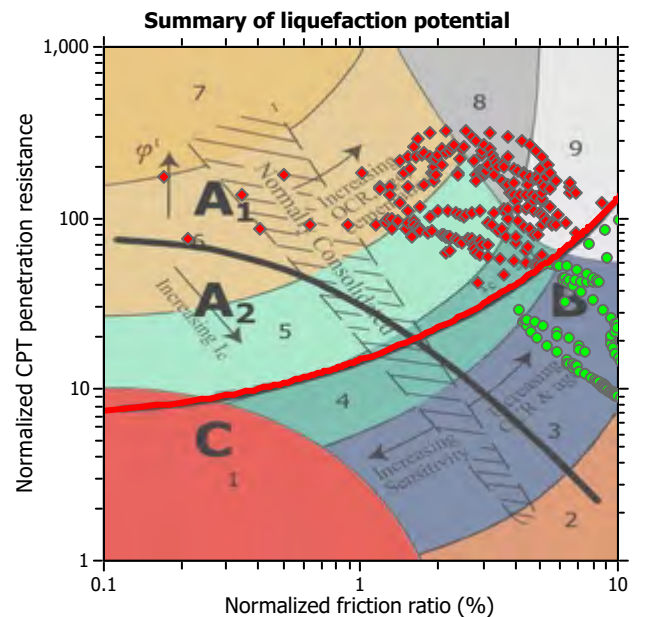
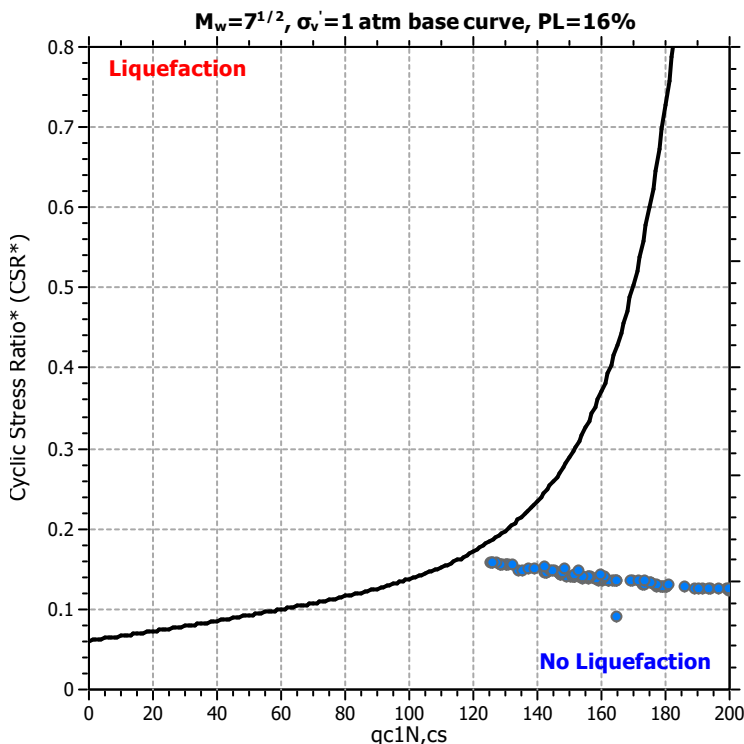
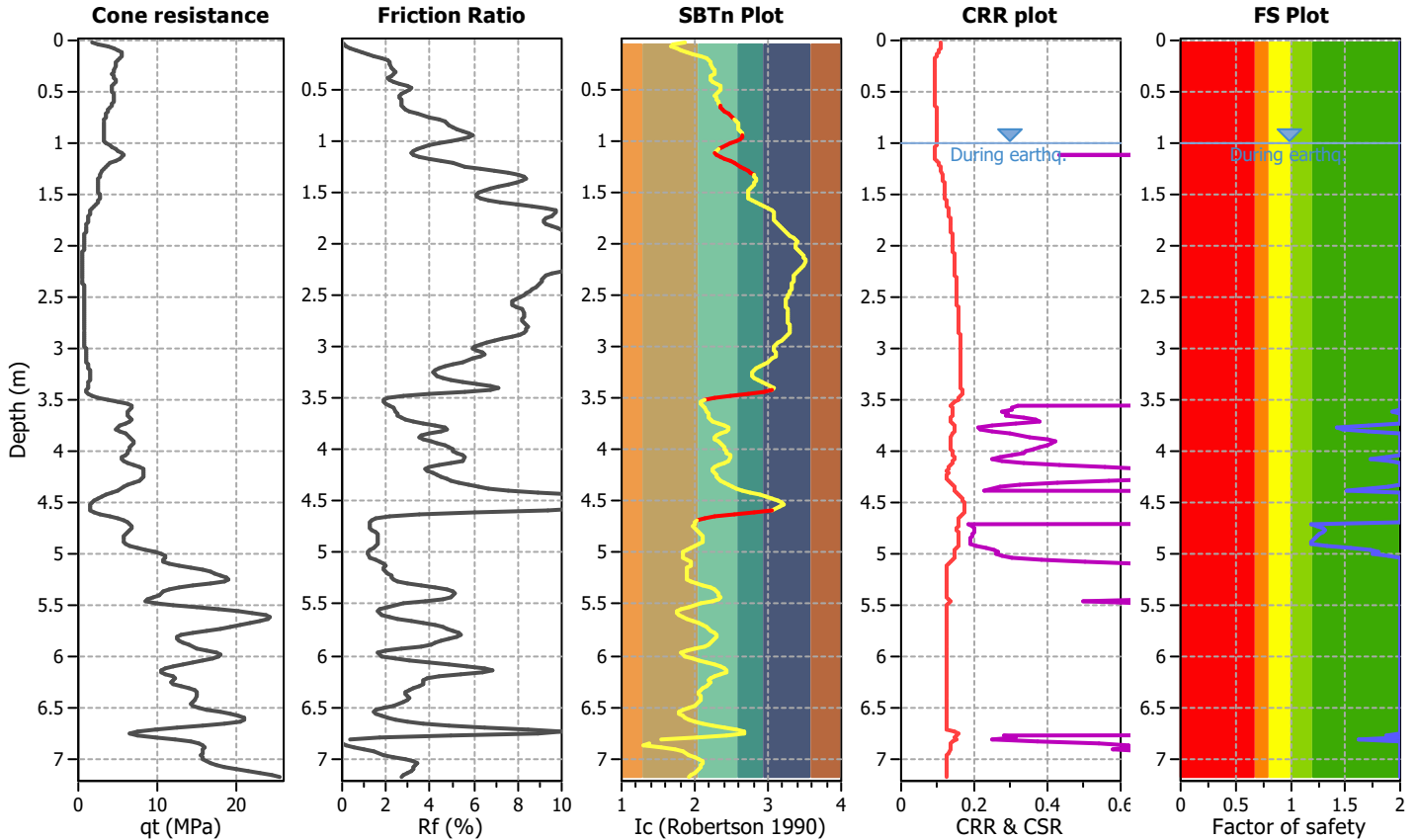
Project title : Sunfield Landholding

Location :

CPT file : CPT133

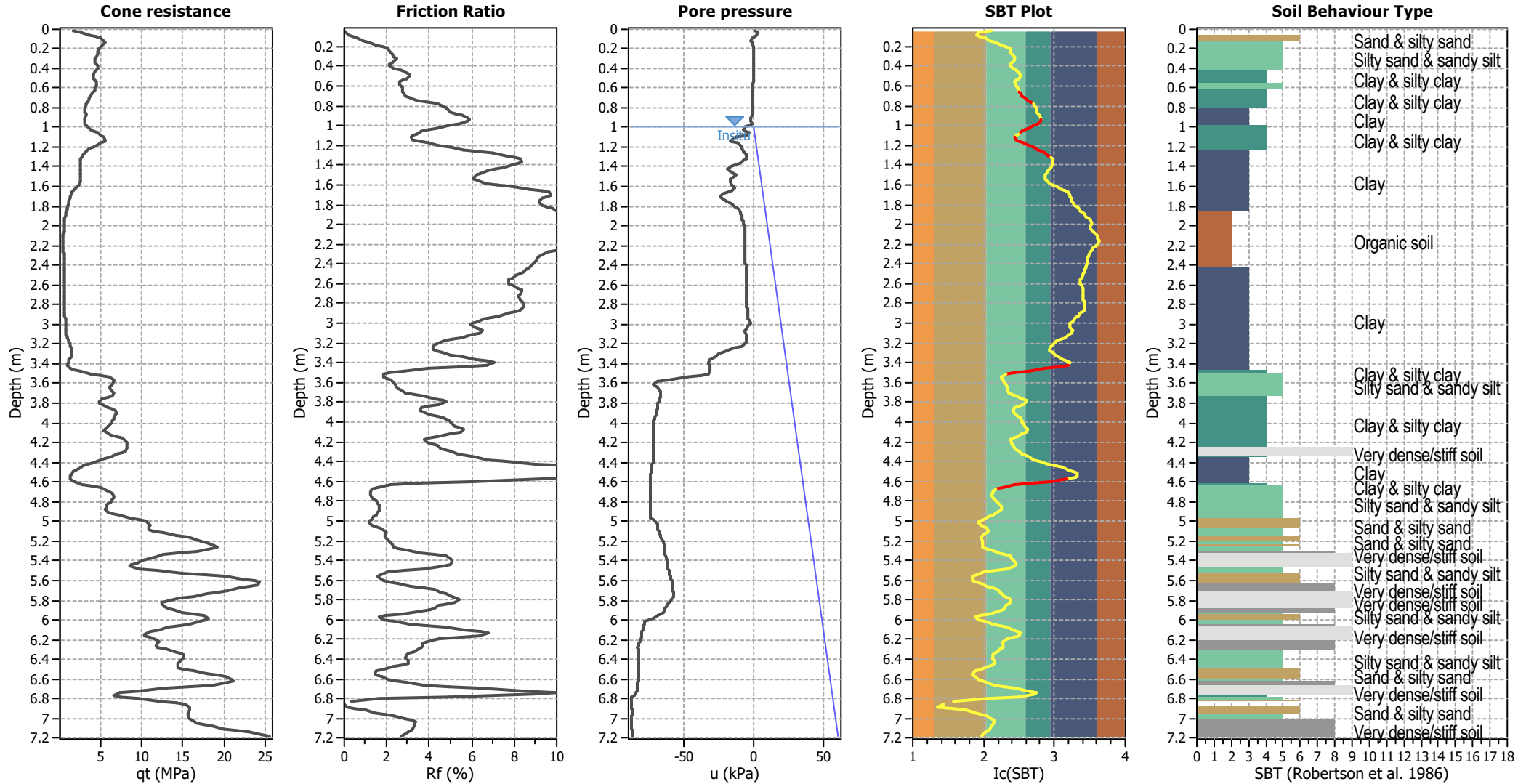
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

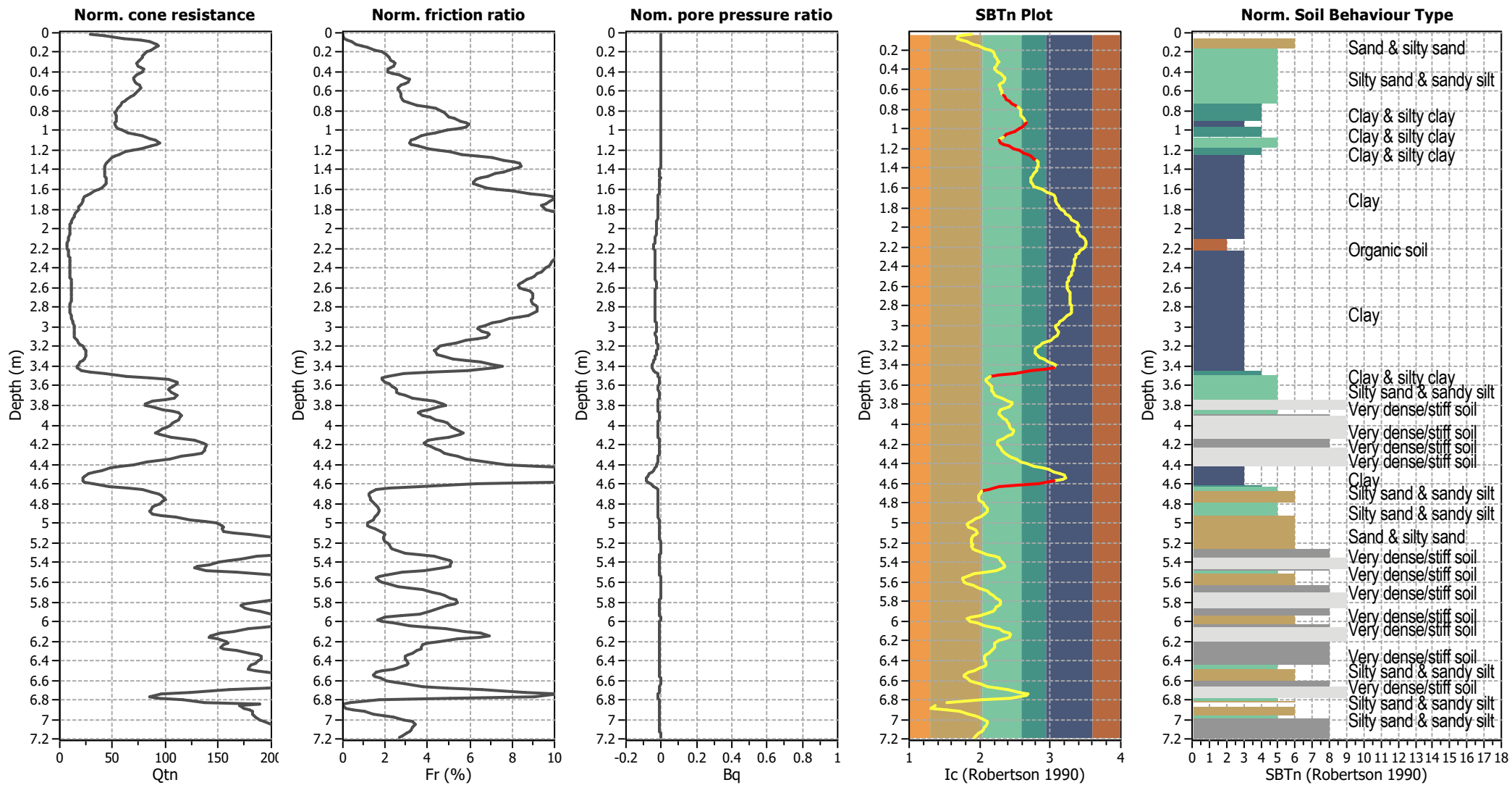
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

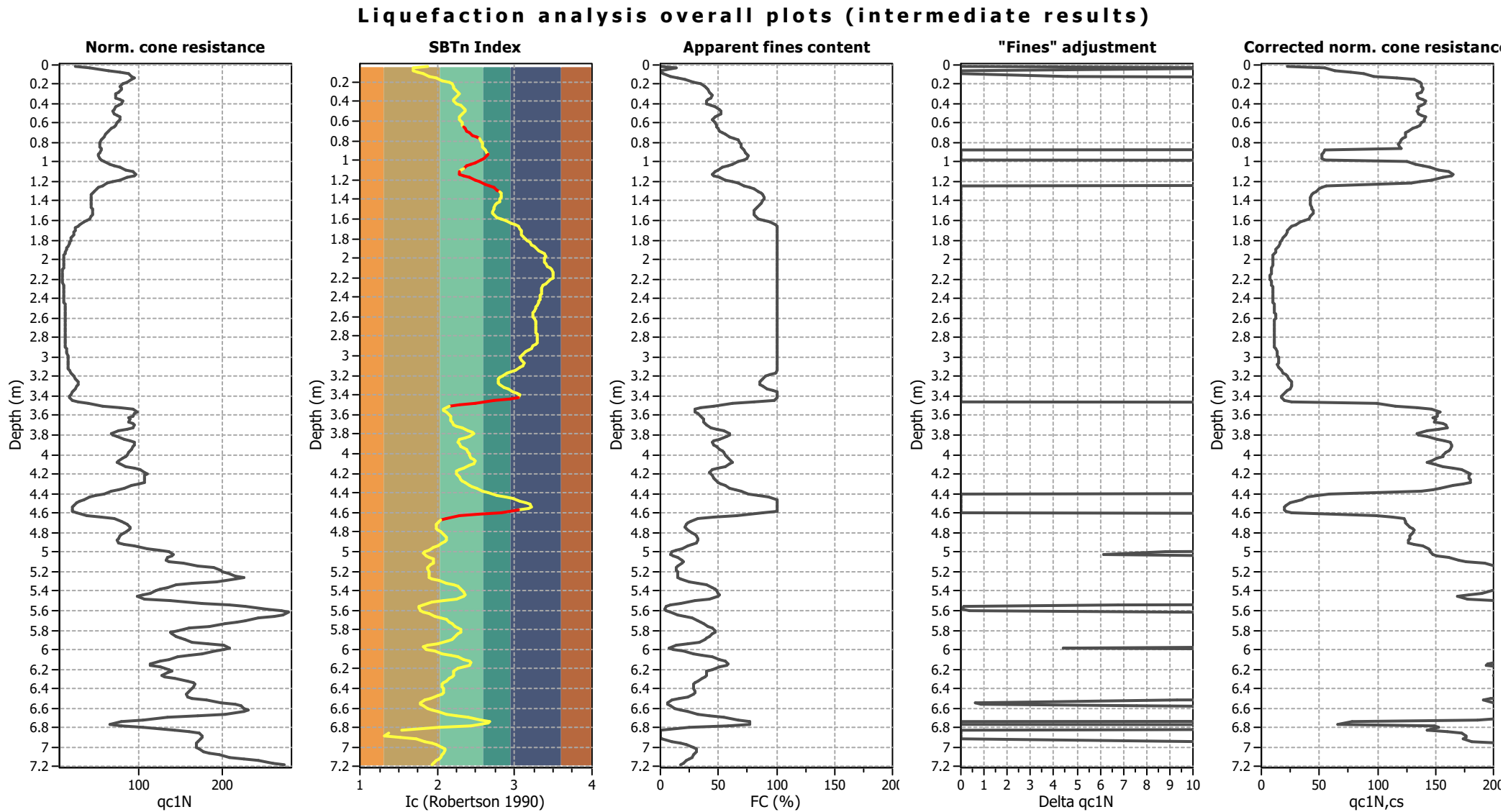
CPT basic interpretation plots (normalized)



Input parameters and analysis data

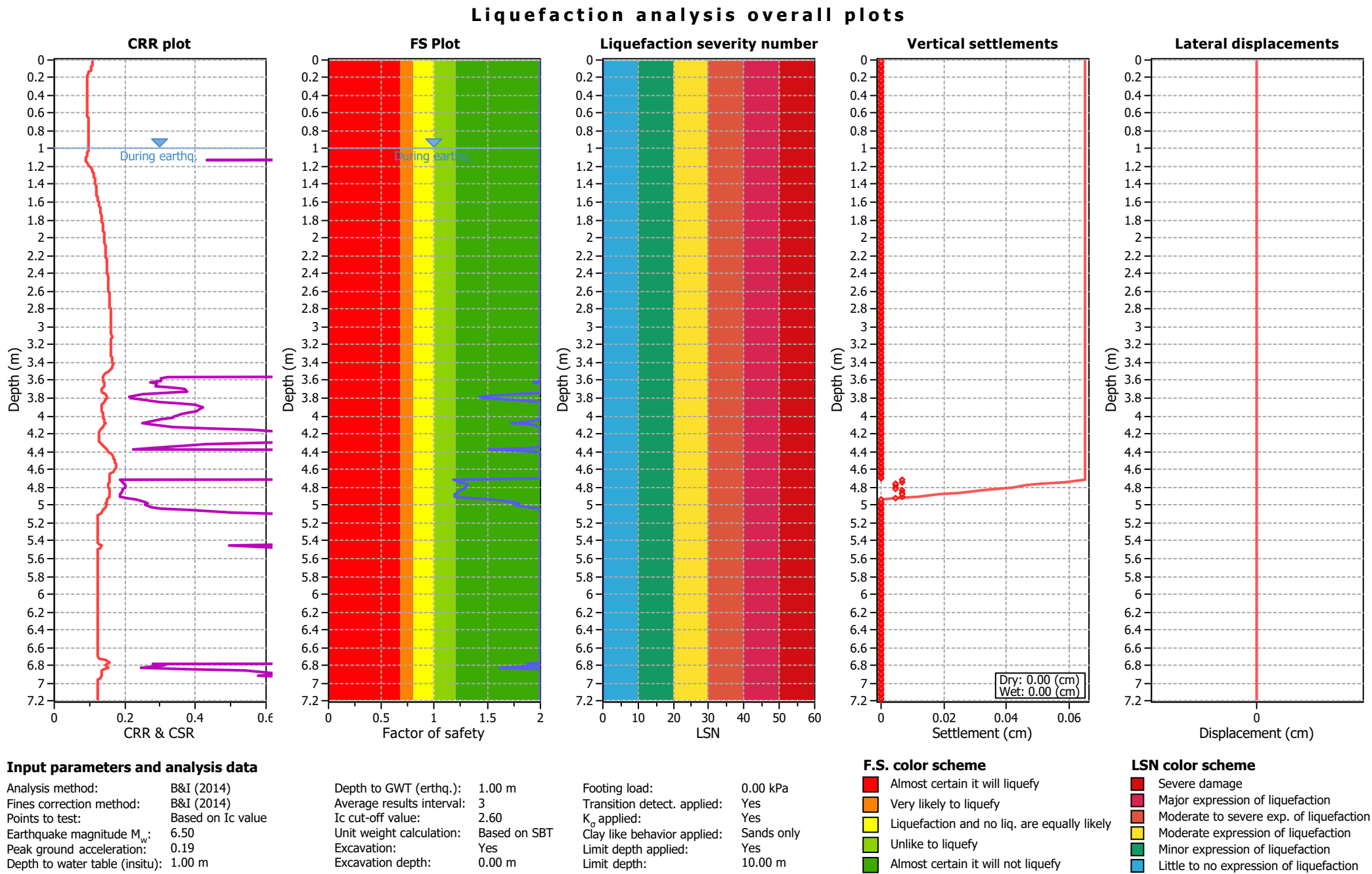
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

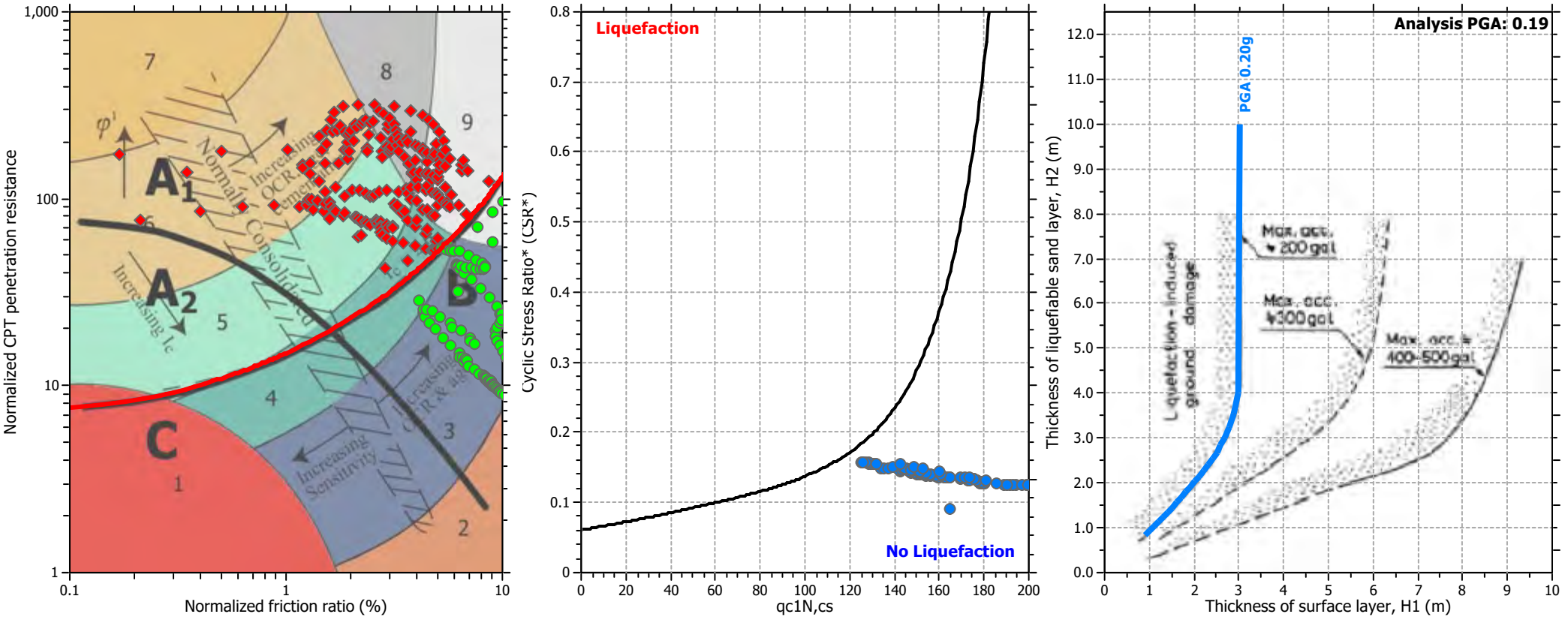


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

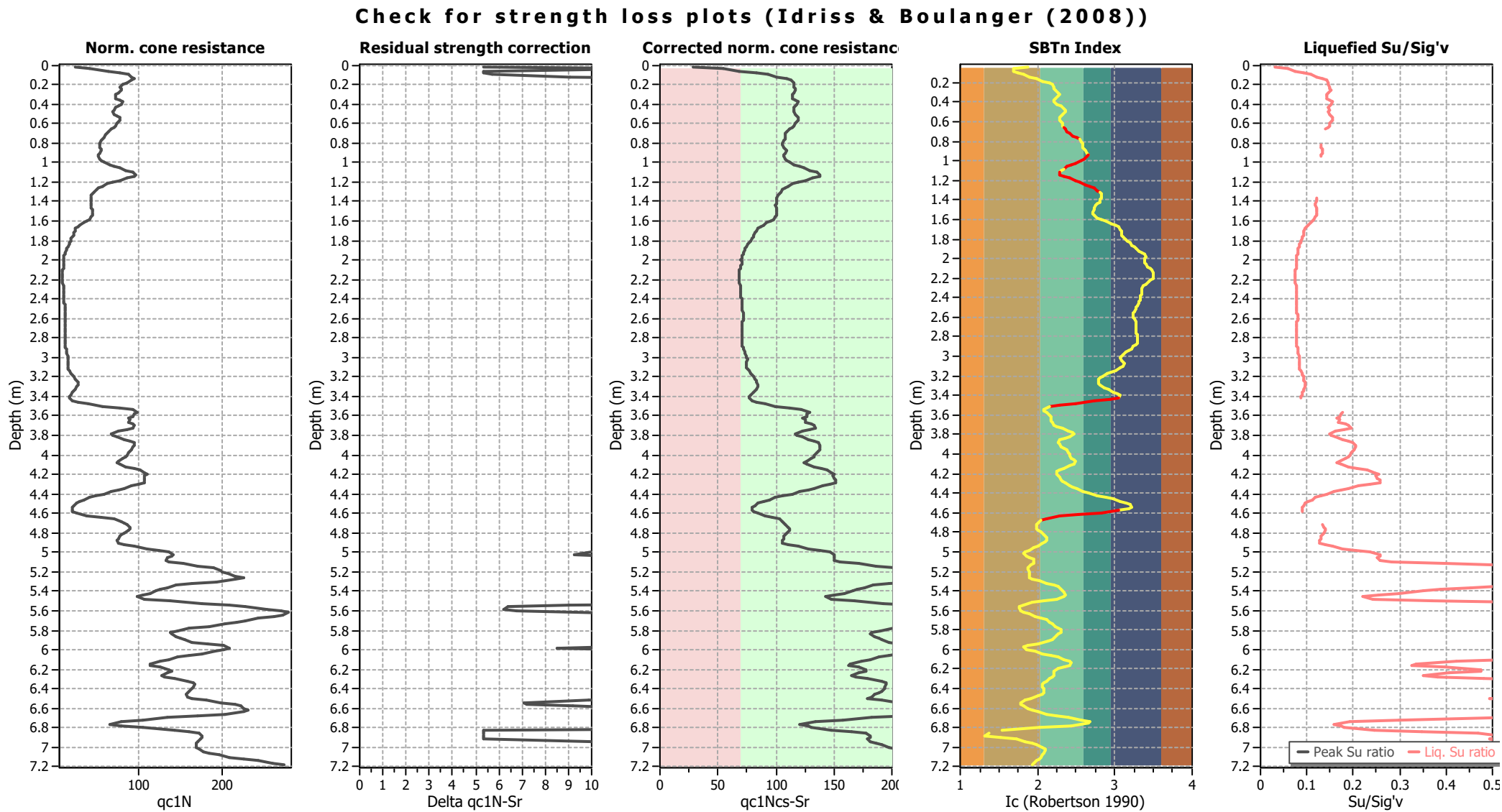


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

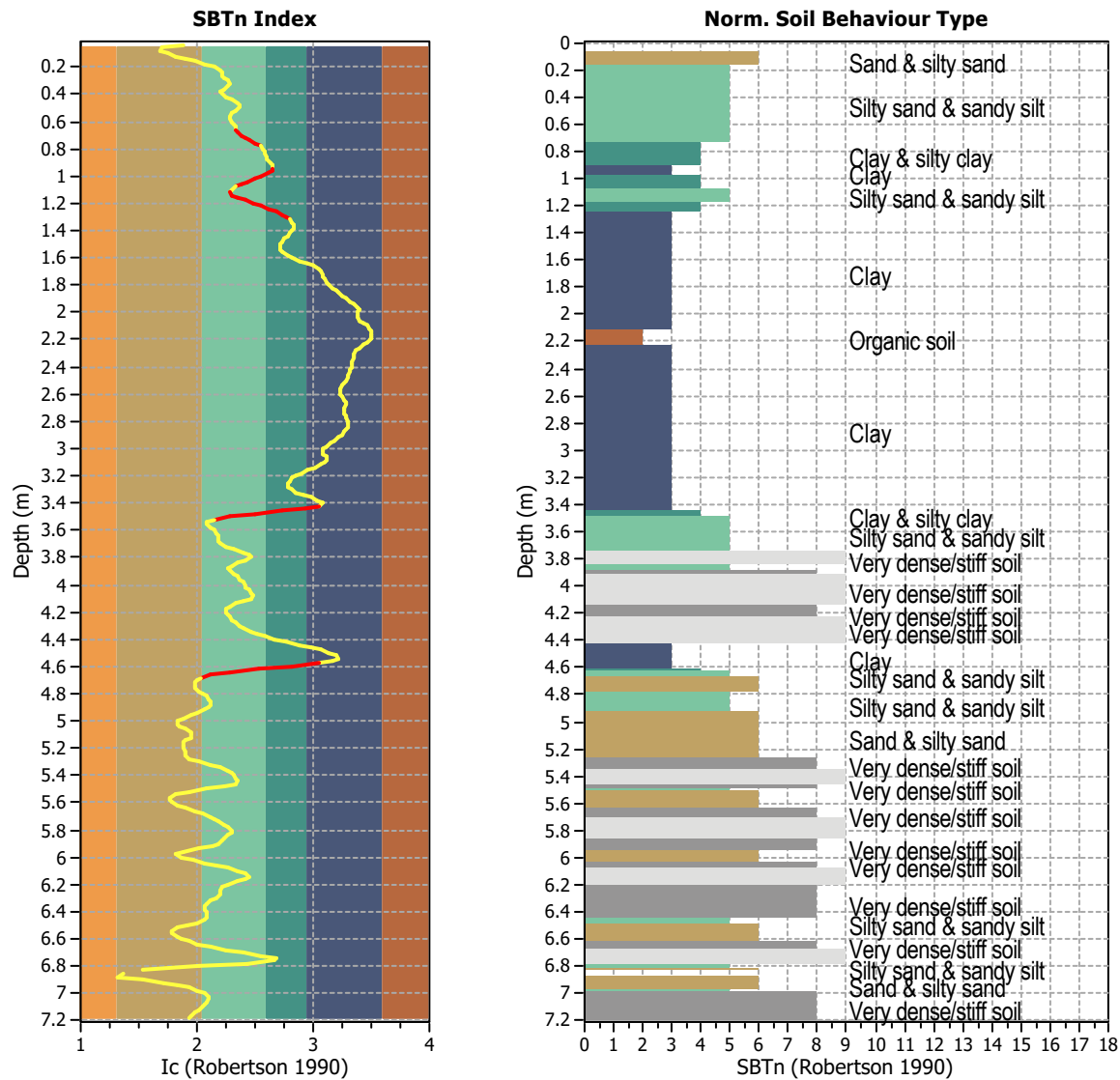
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

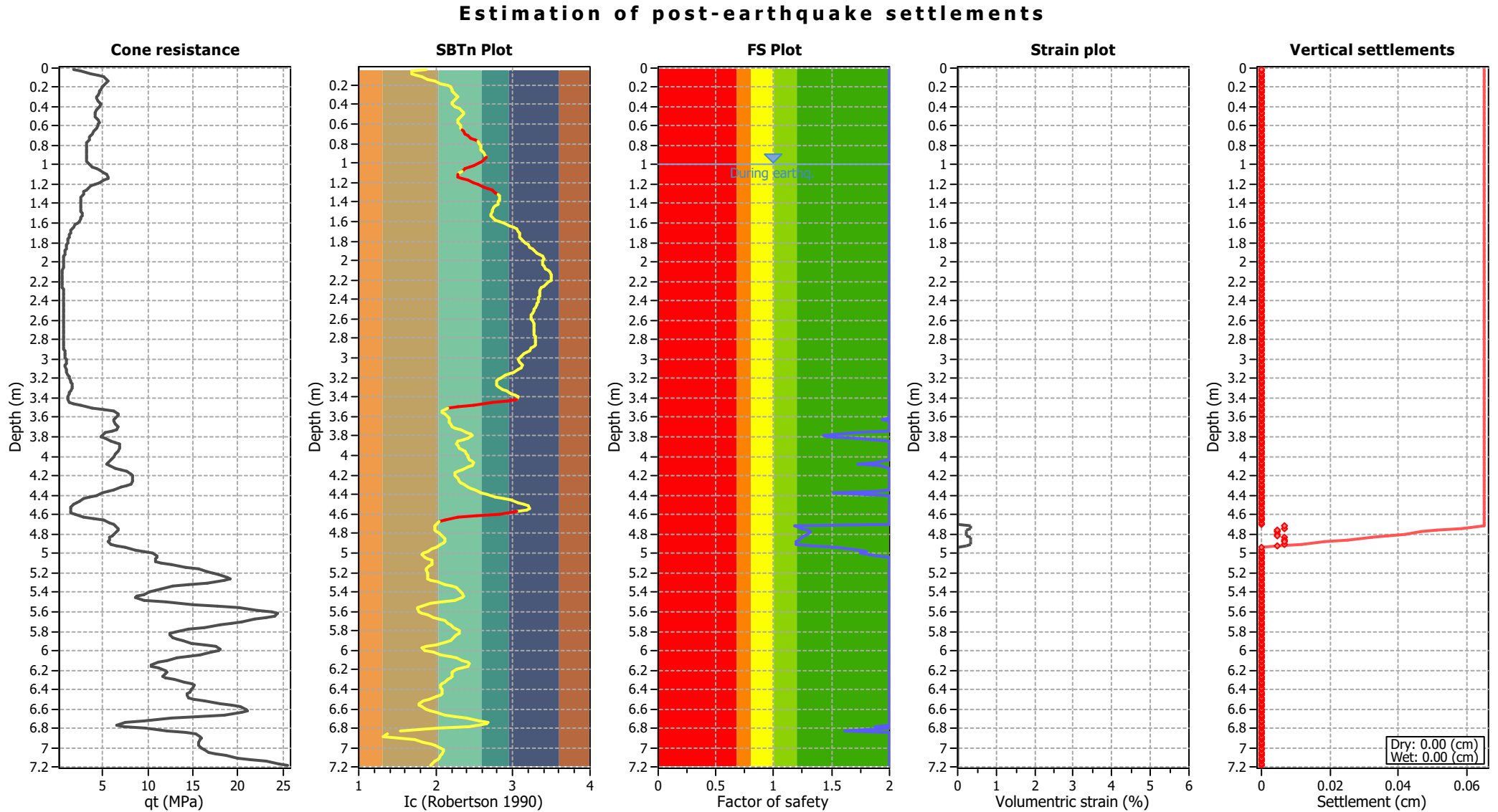


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

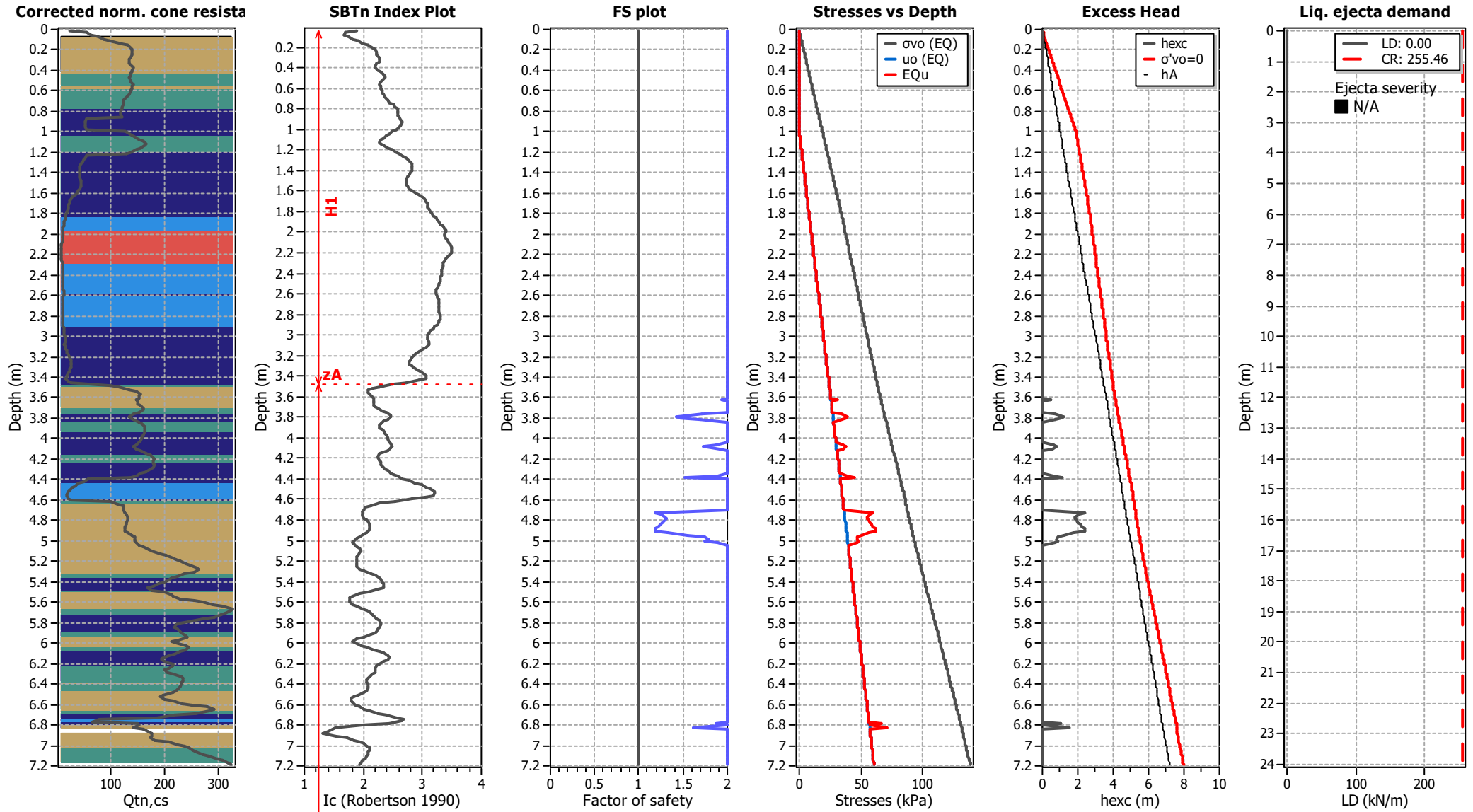
Total points in CPT file: 359
Total points excluded: 38
Exclusion percentage: 10.58%
Number of layers detected: 5



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

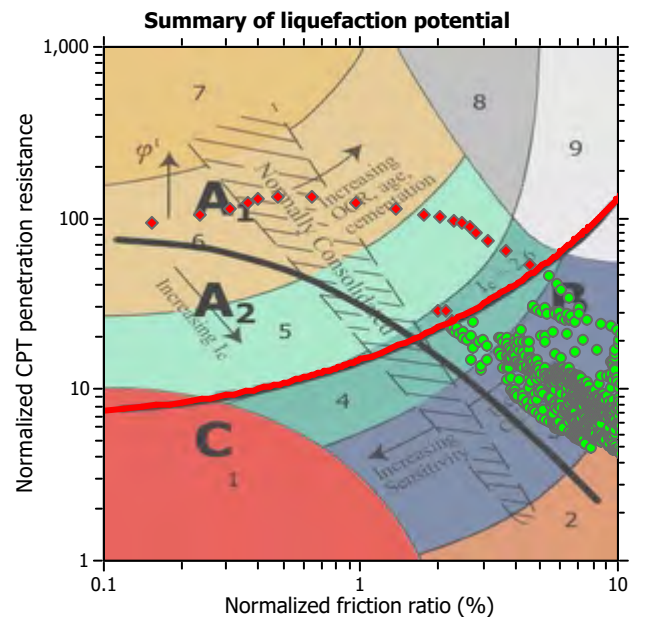
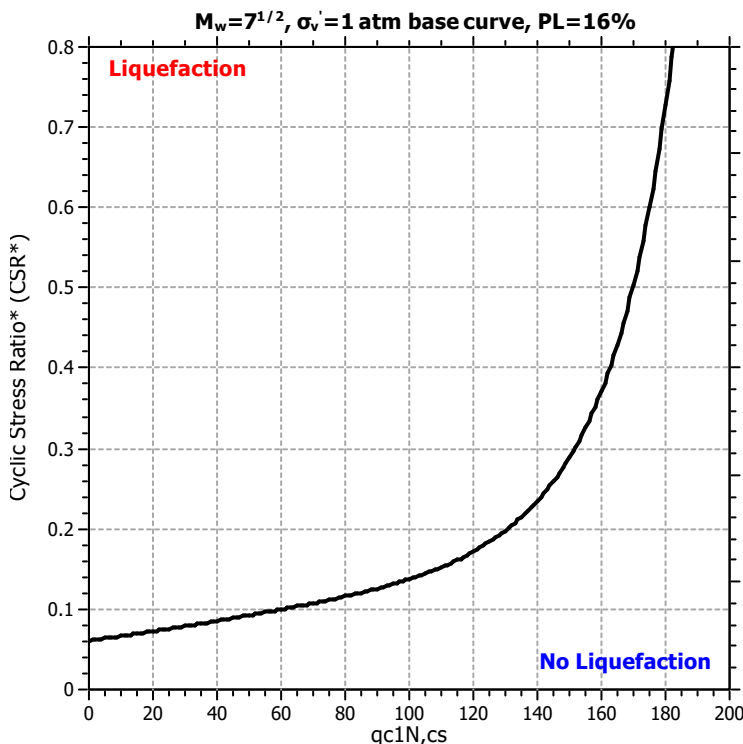
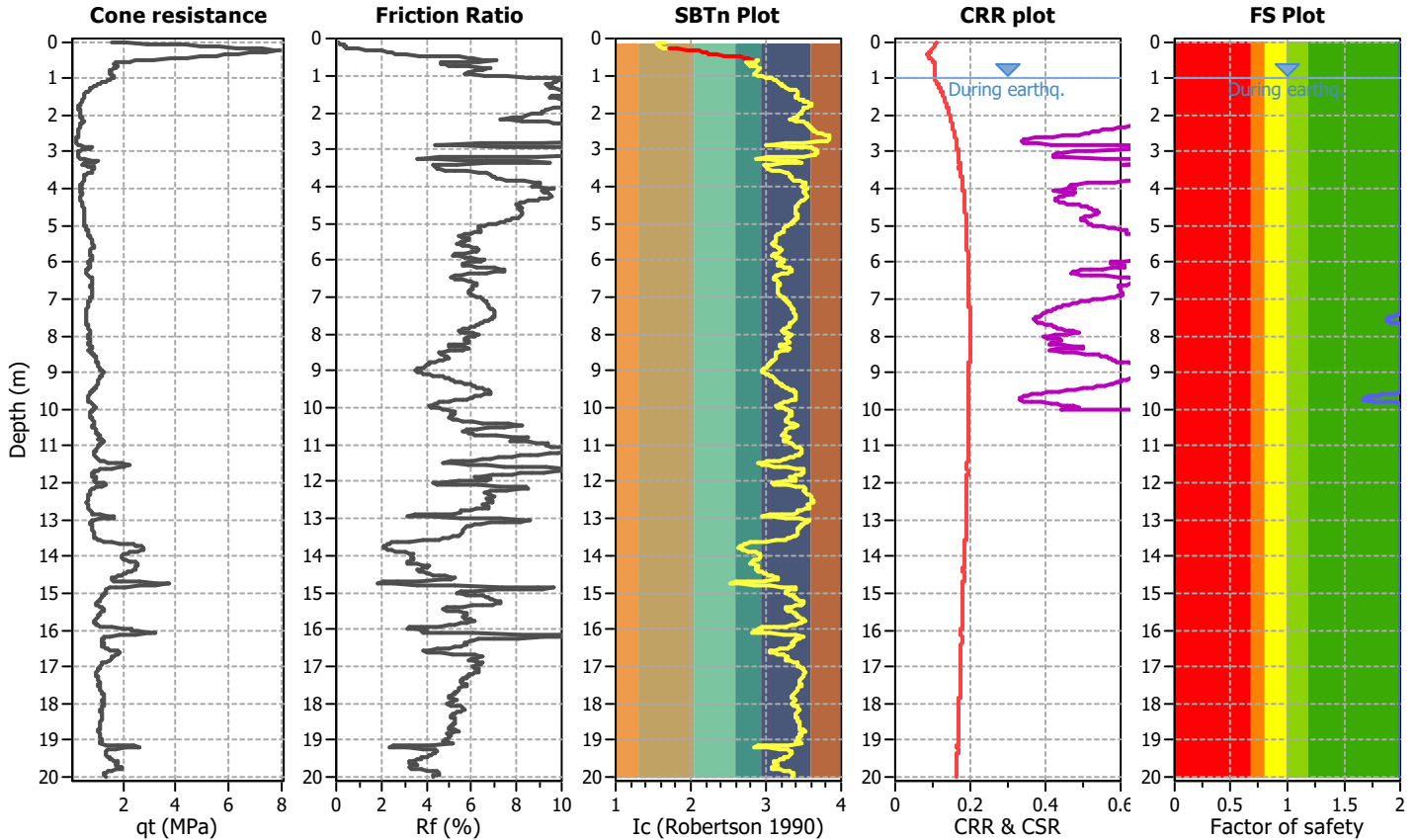
Project title : Sunfield Landholding

Location :

CPT file : CPT134

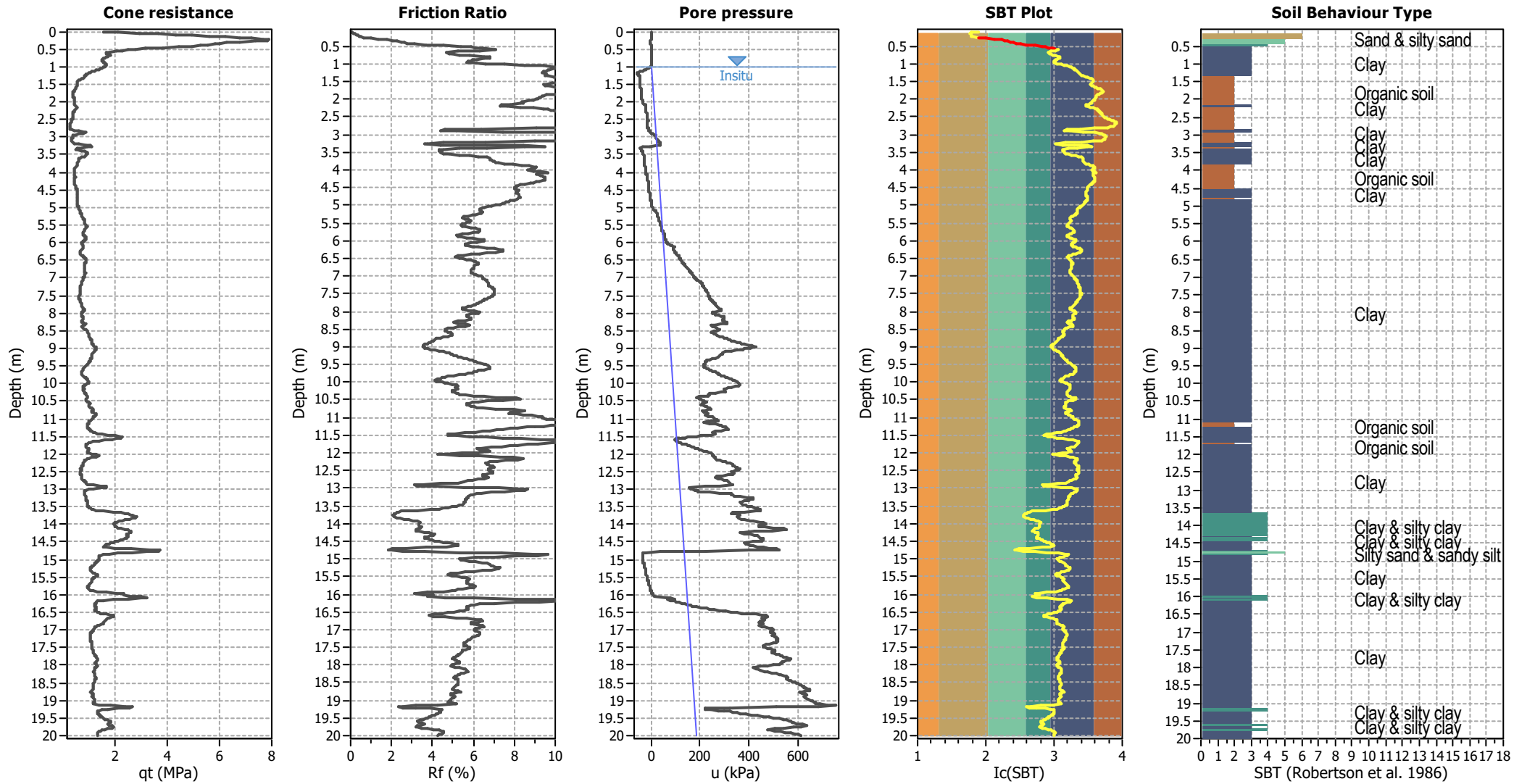
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



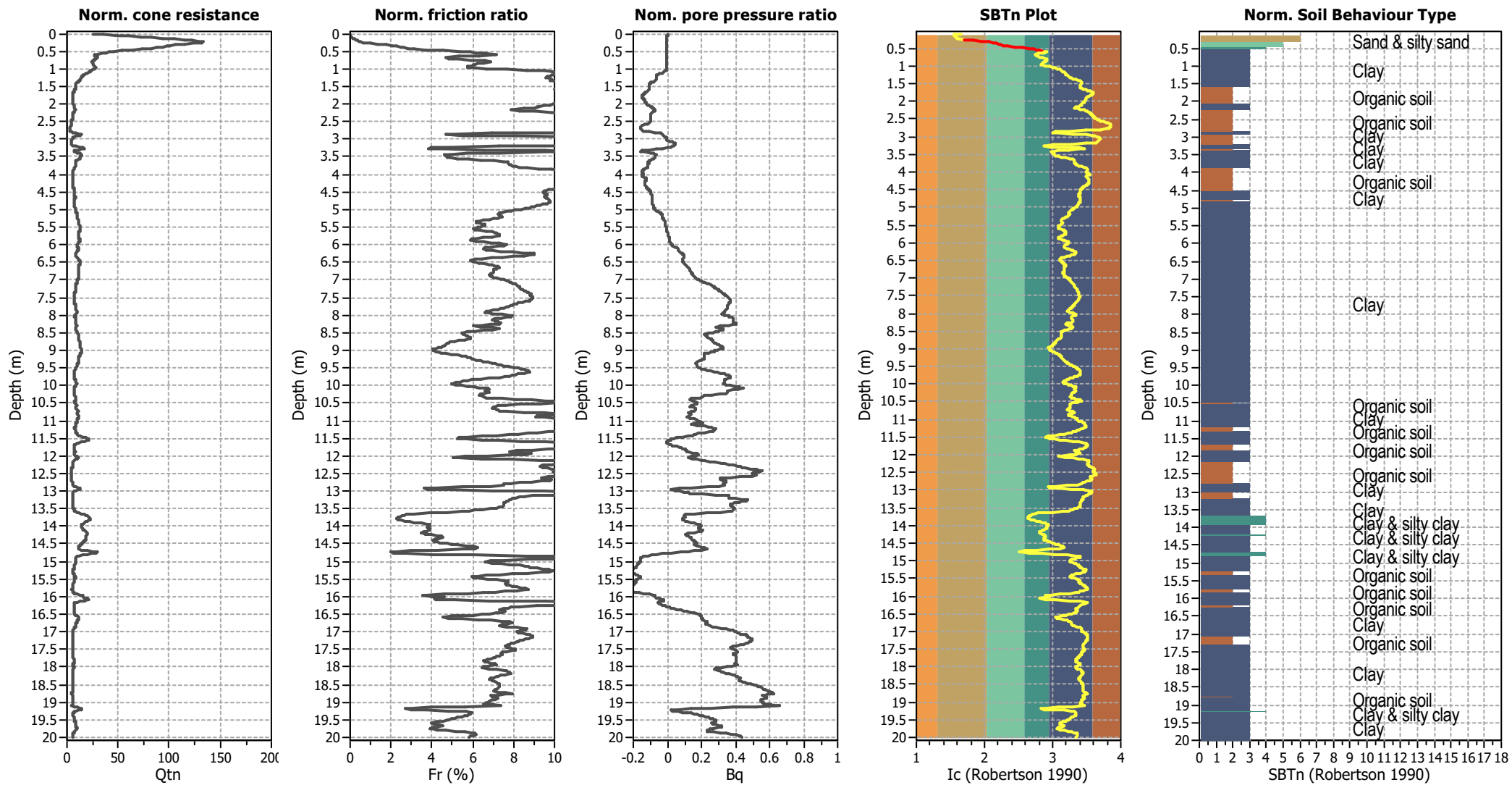
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



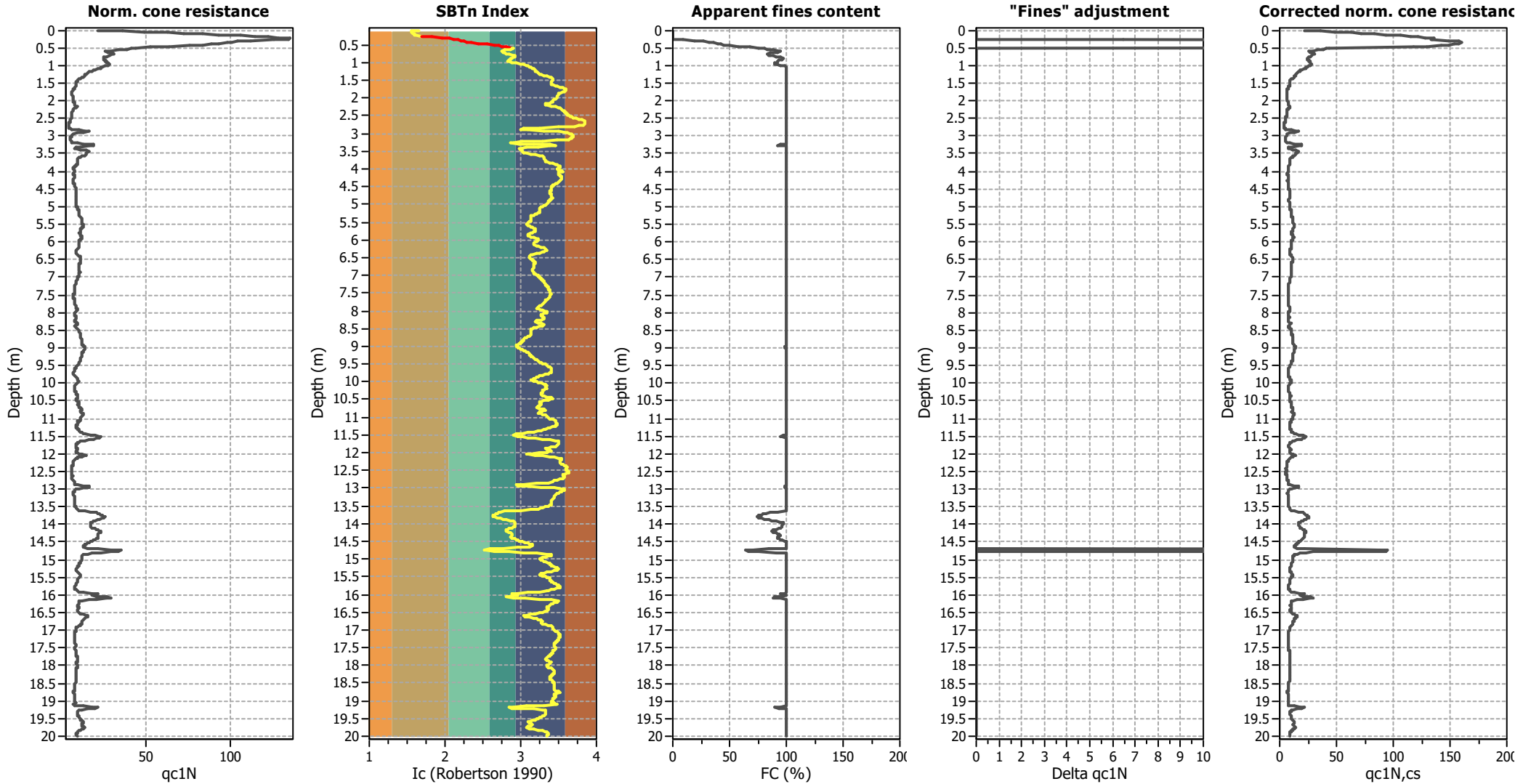
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend

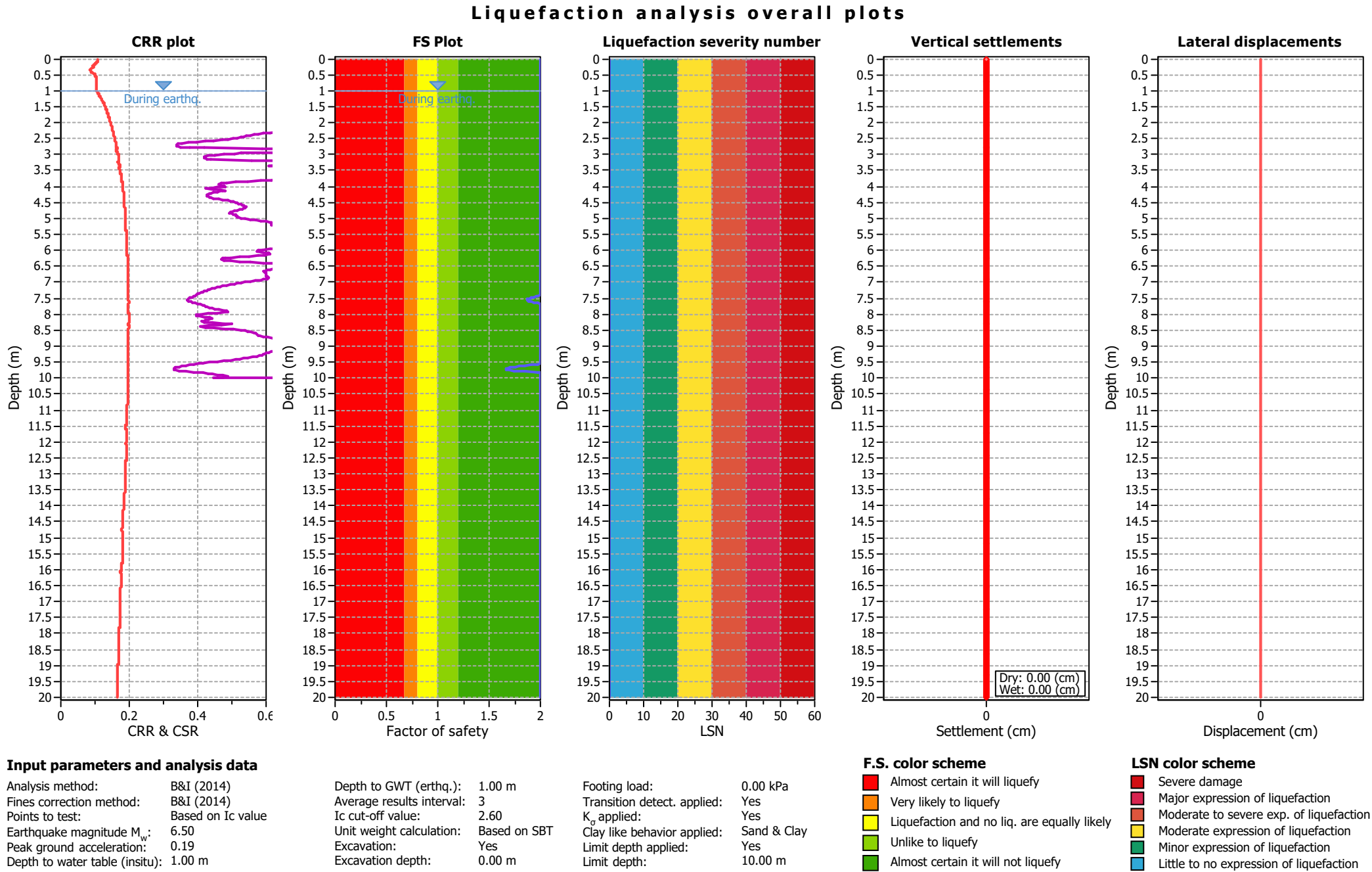
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

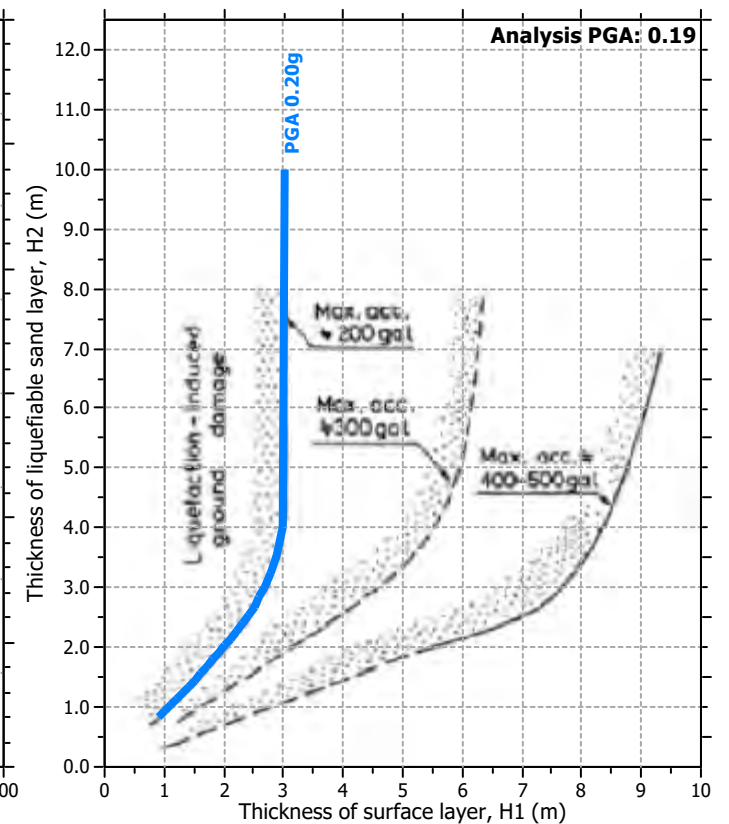
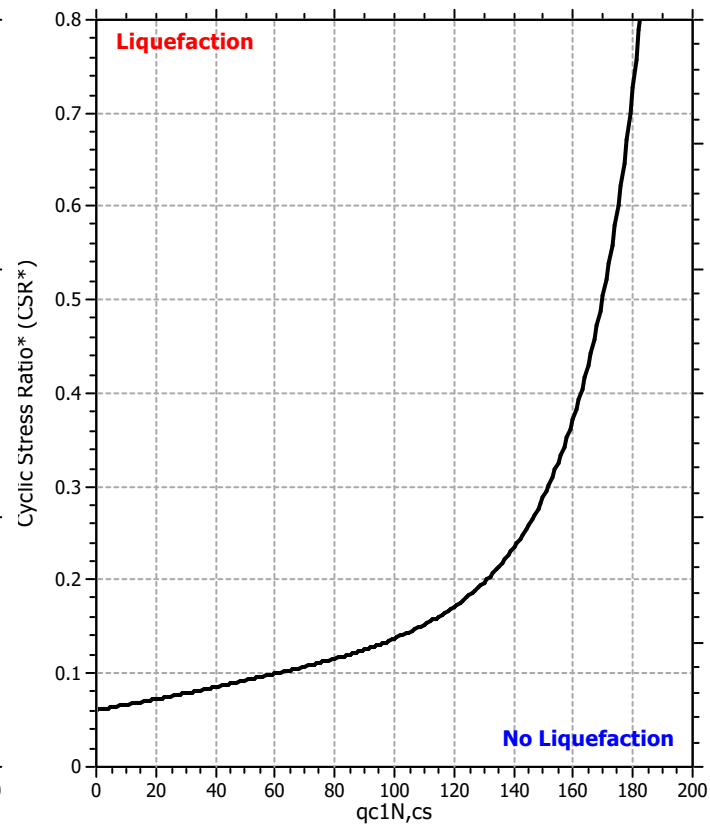
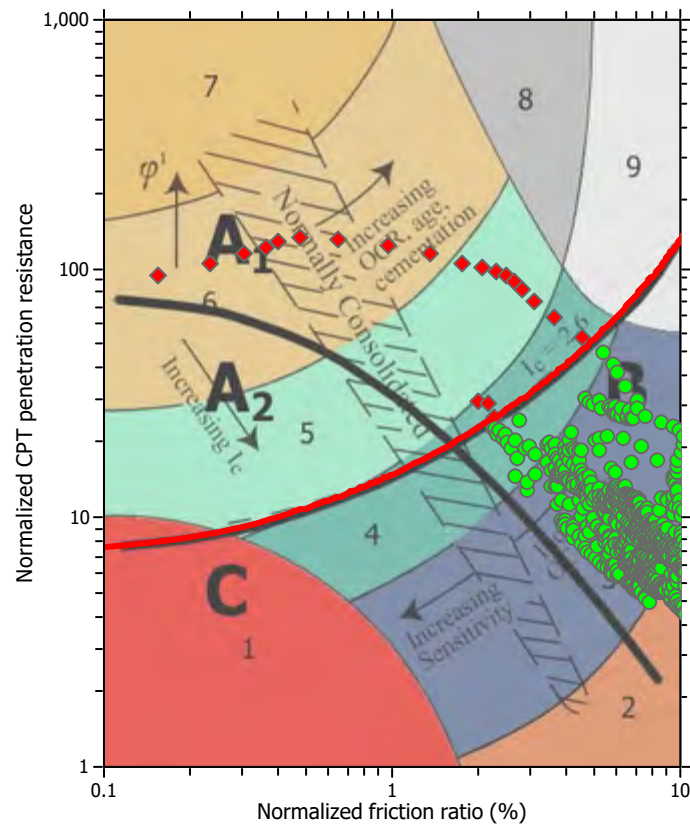


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



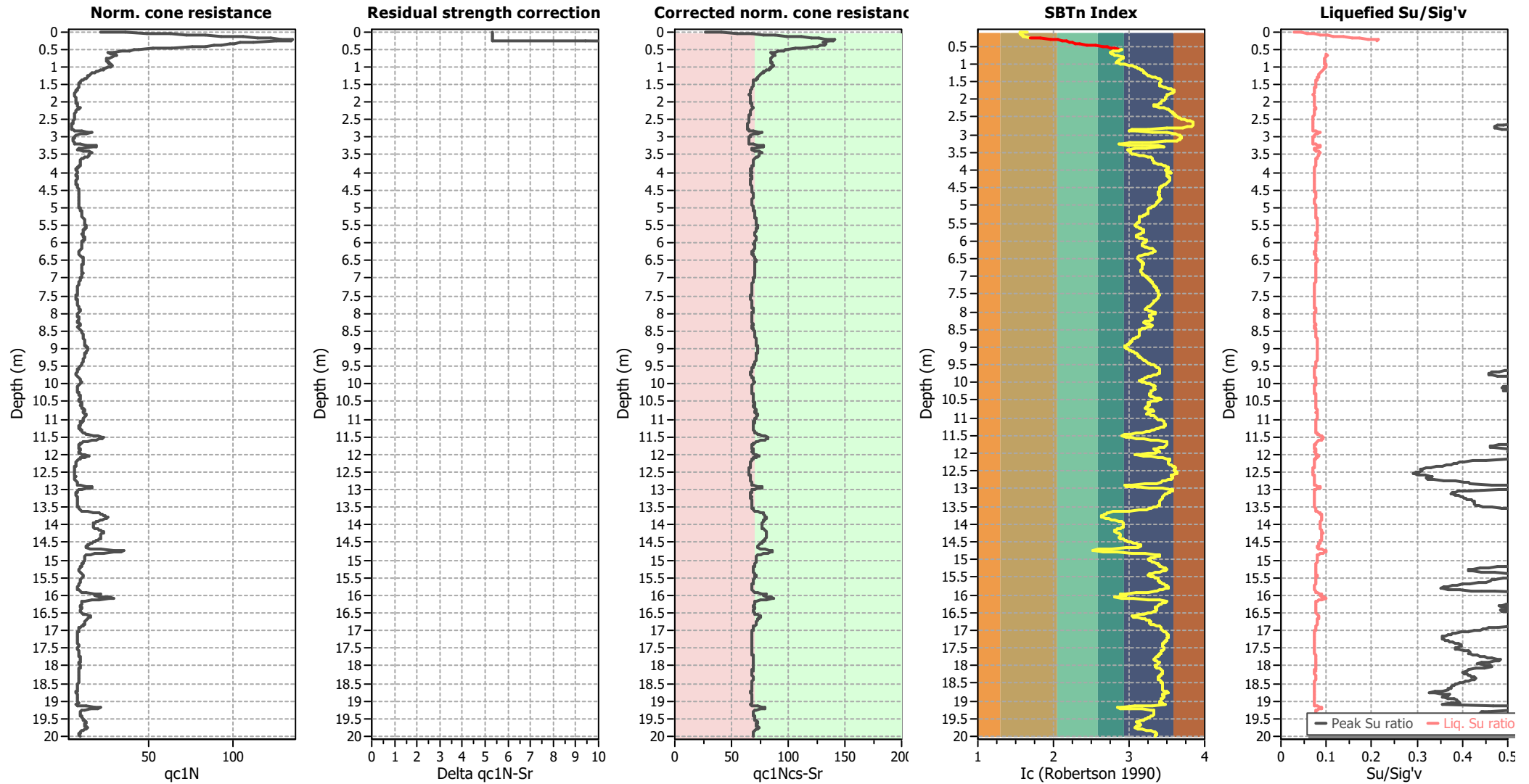
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _a applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

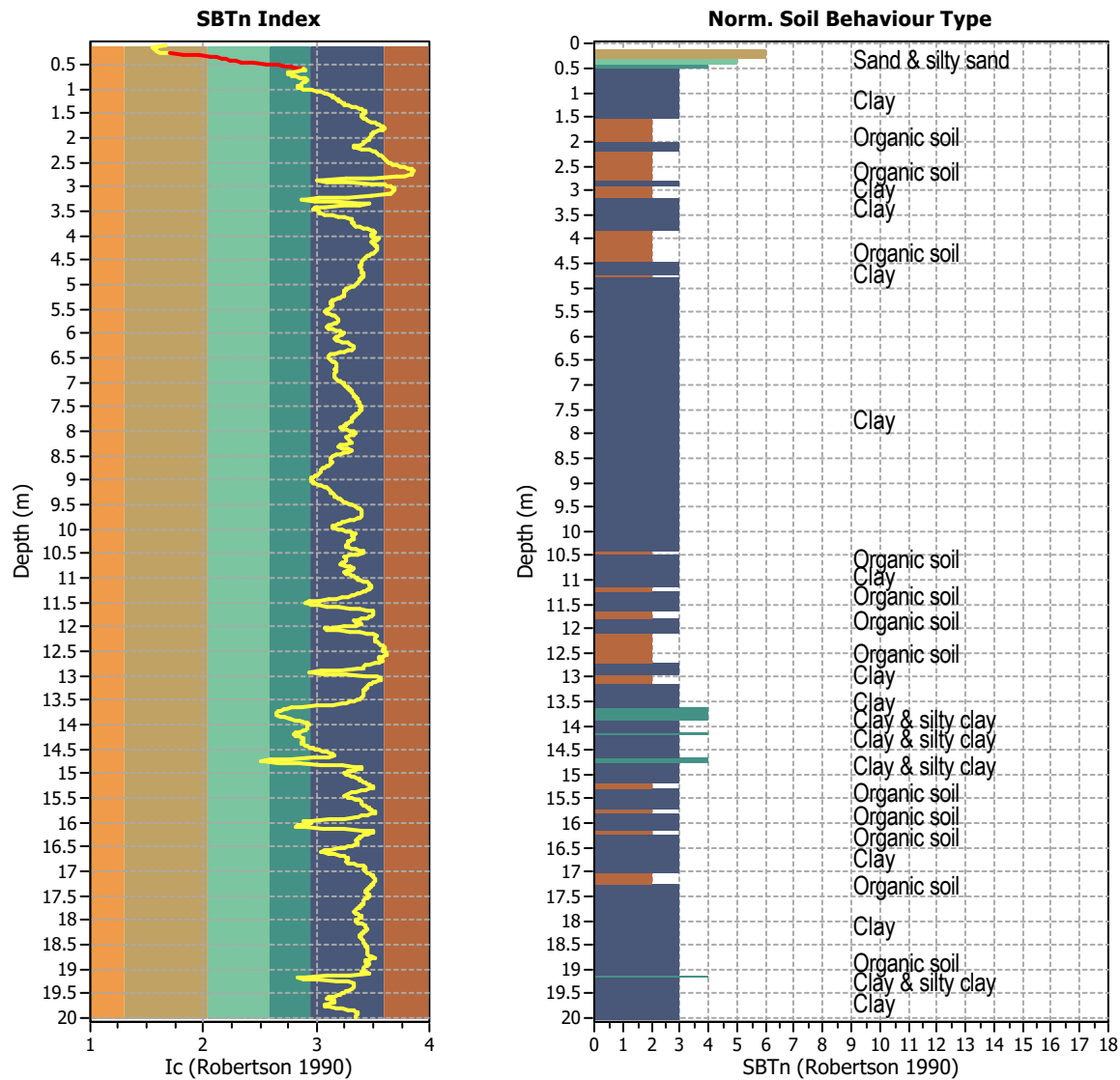
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



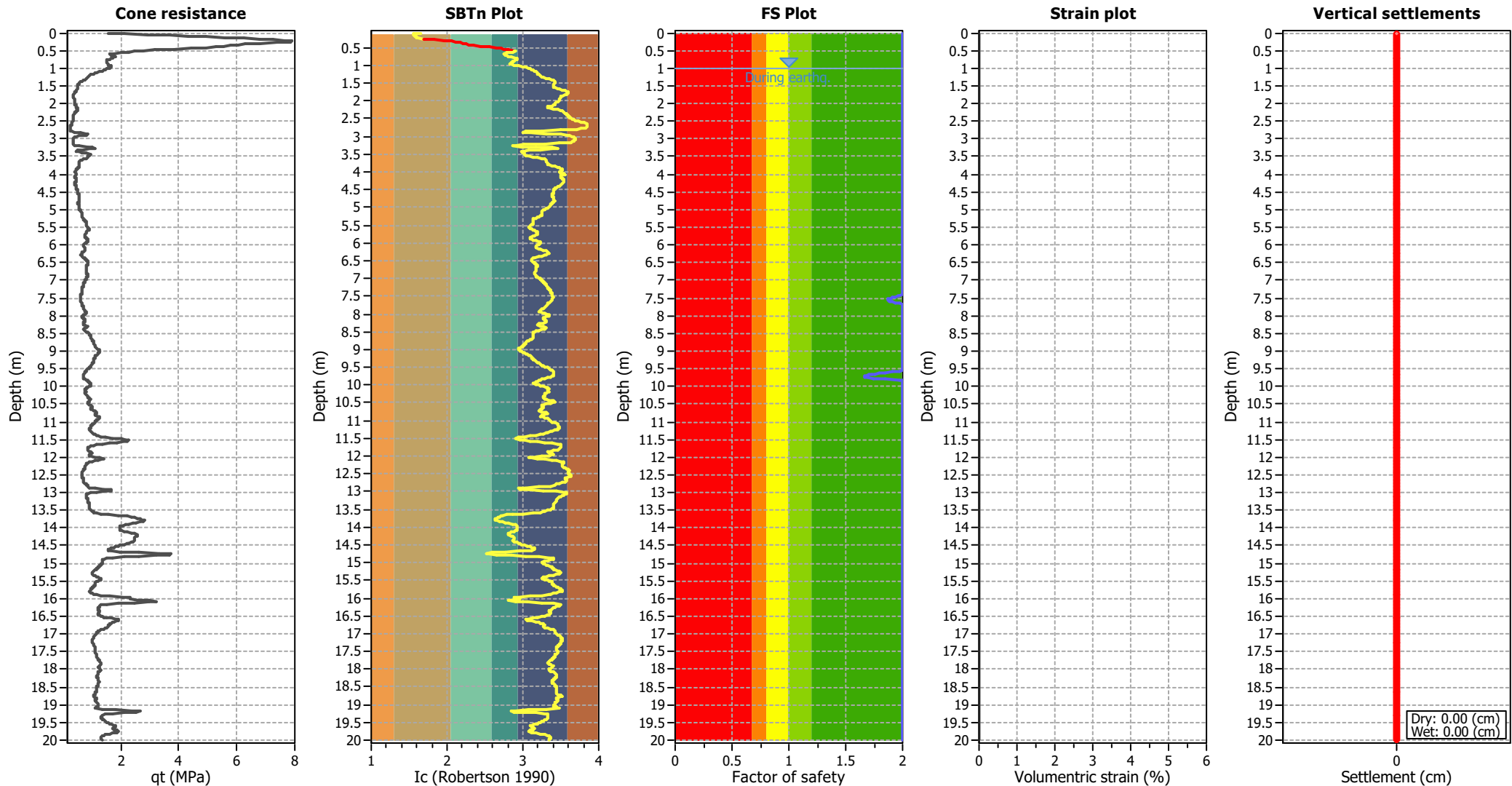
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1000
Total points excluded: 17
Exclusion percentage: 1.70%
Number of layers detected: 1

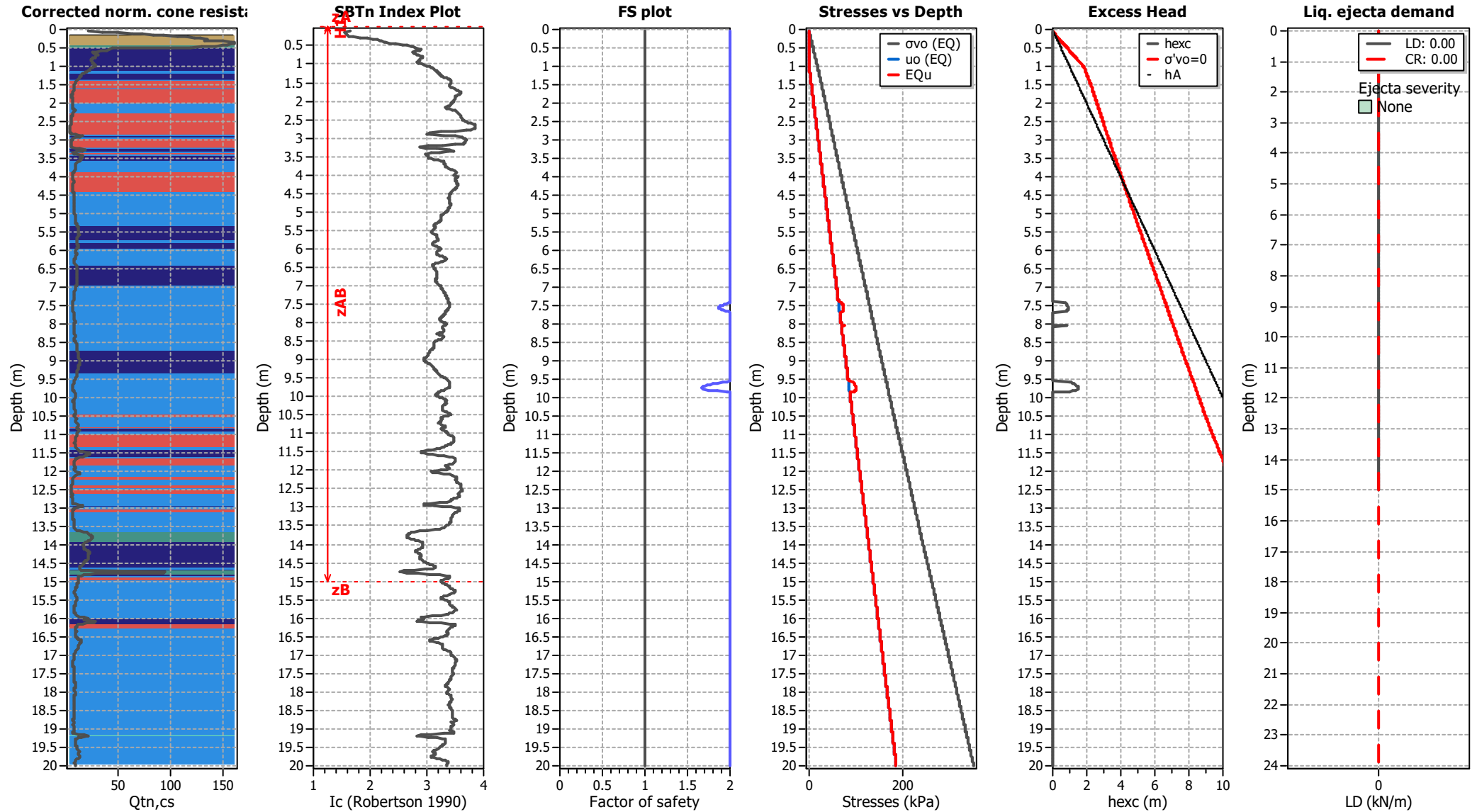
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

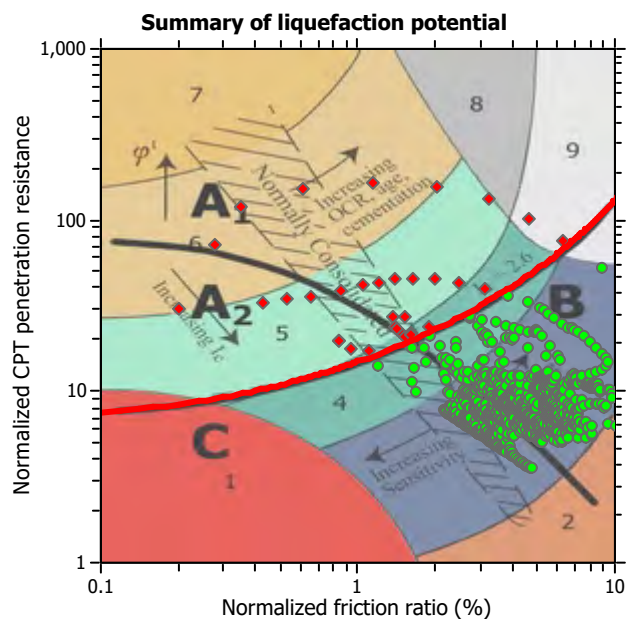
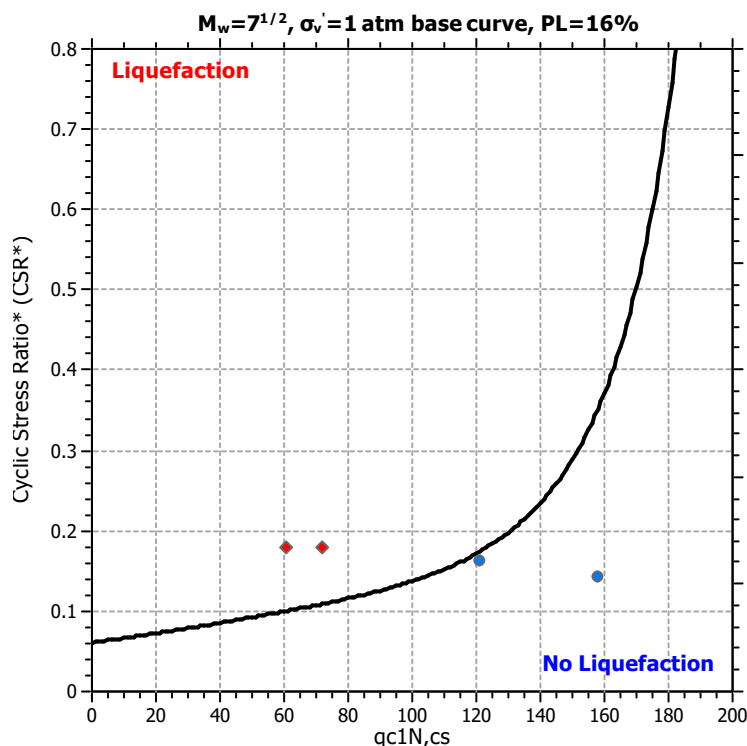
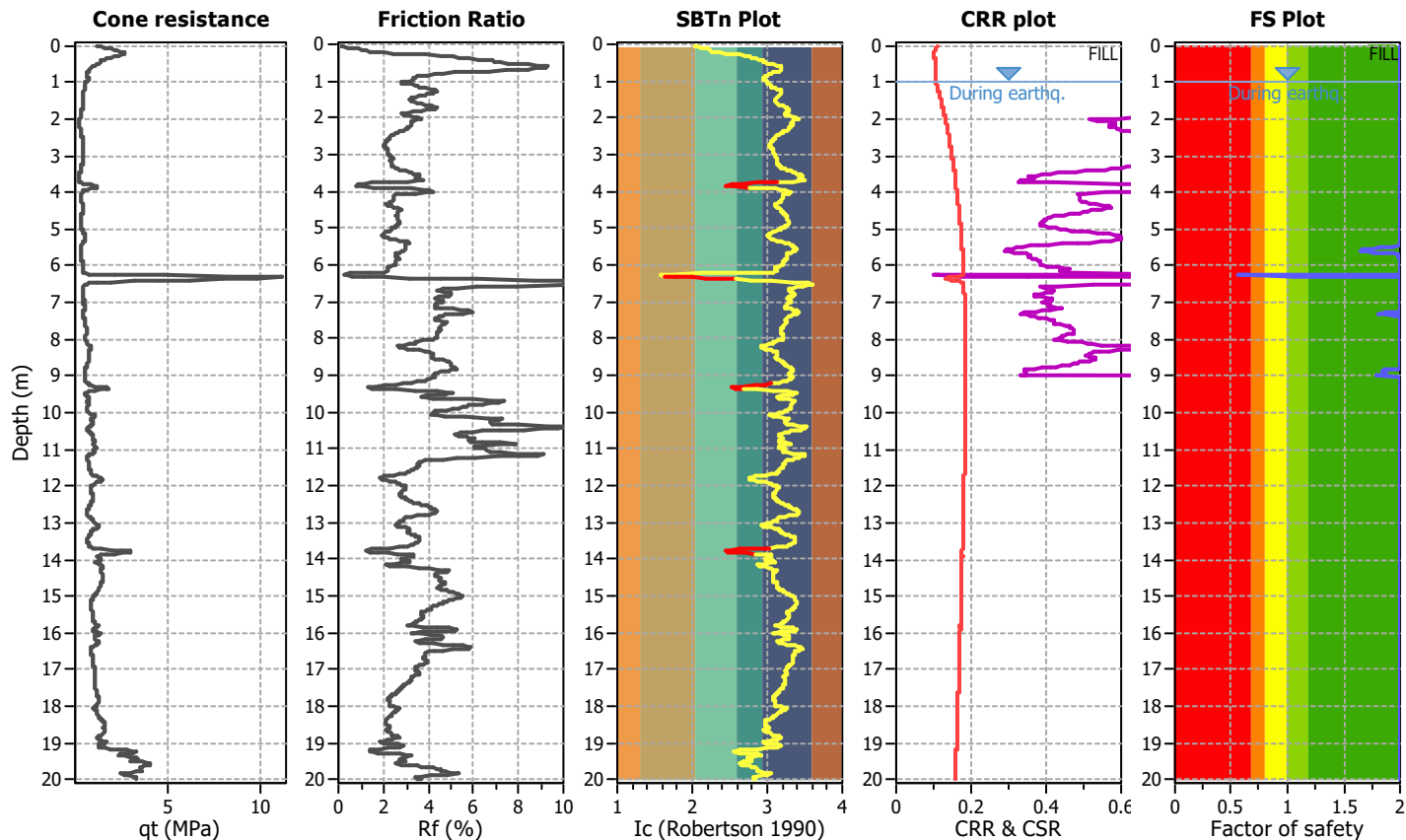
Project title : Sunfield Landholding

Location :

CPT file : CPT135

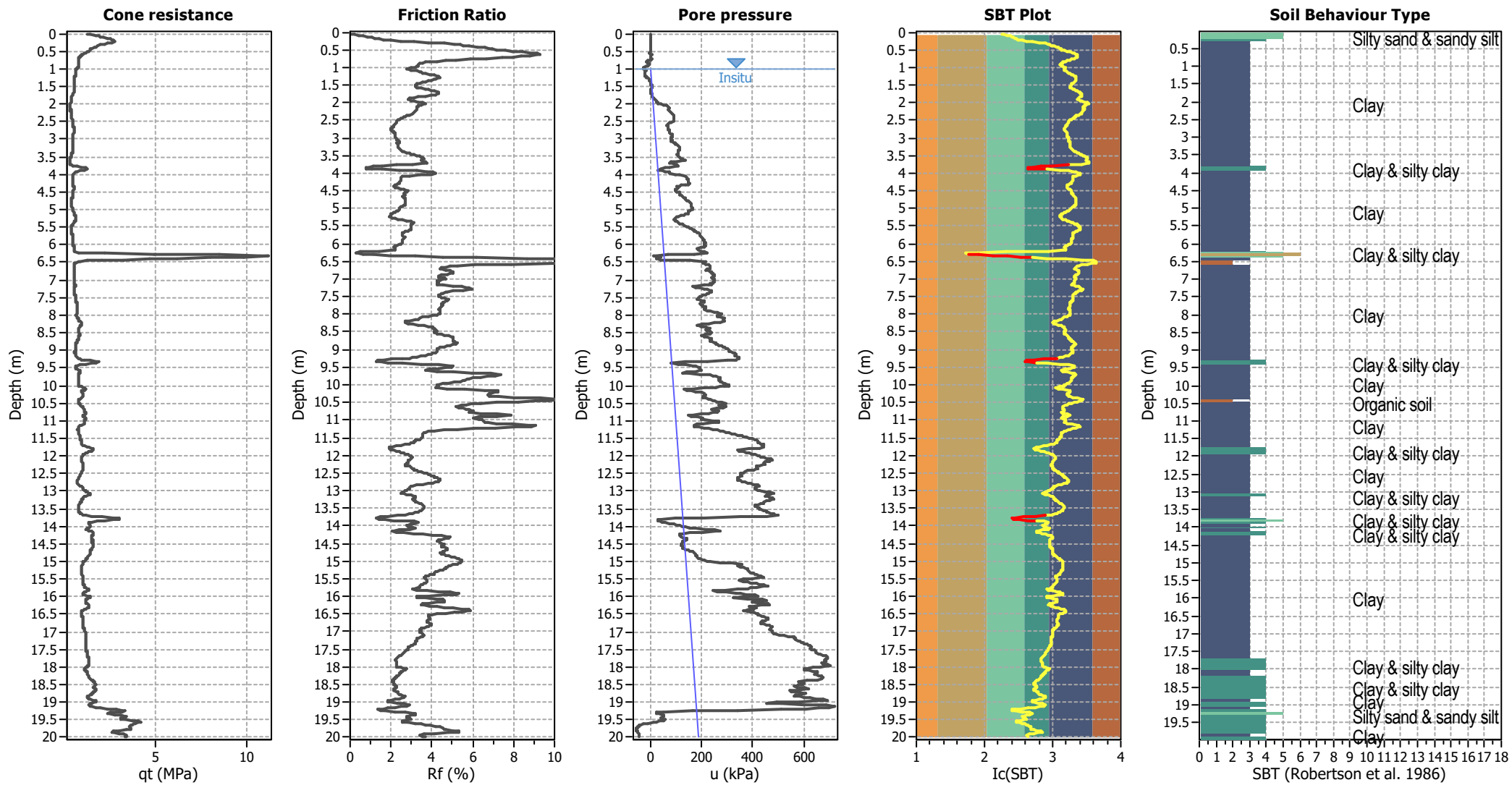
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



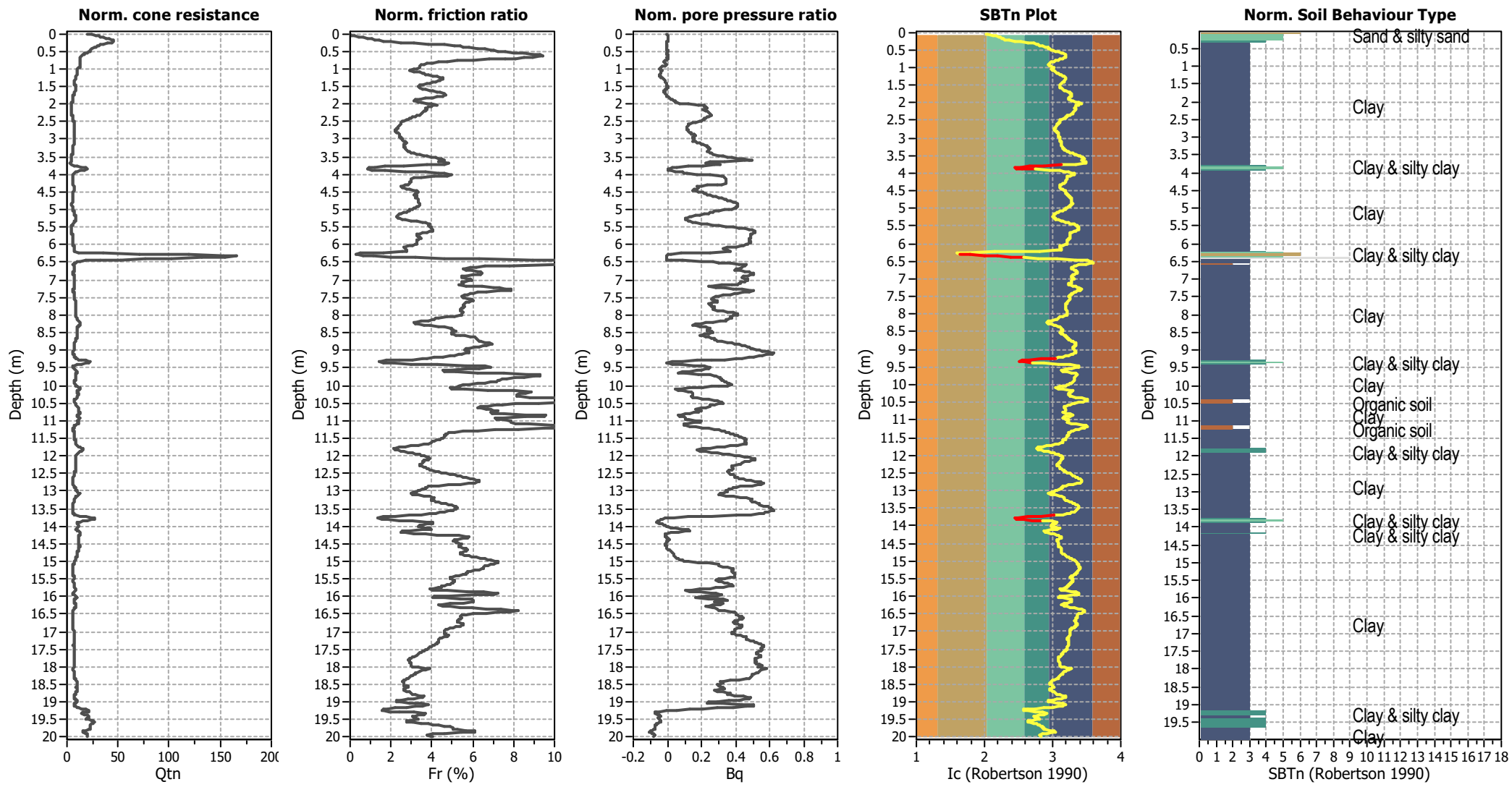
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



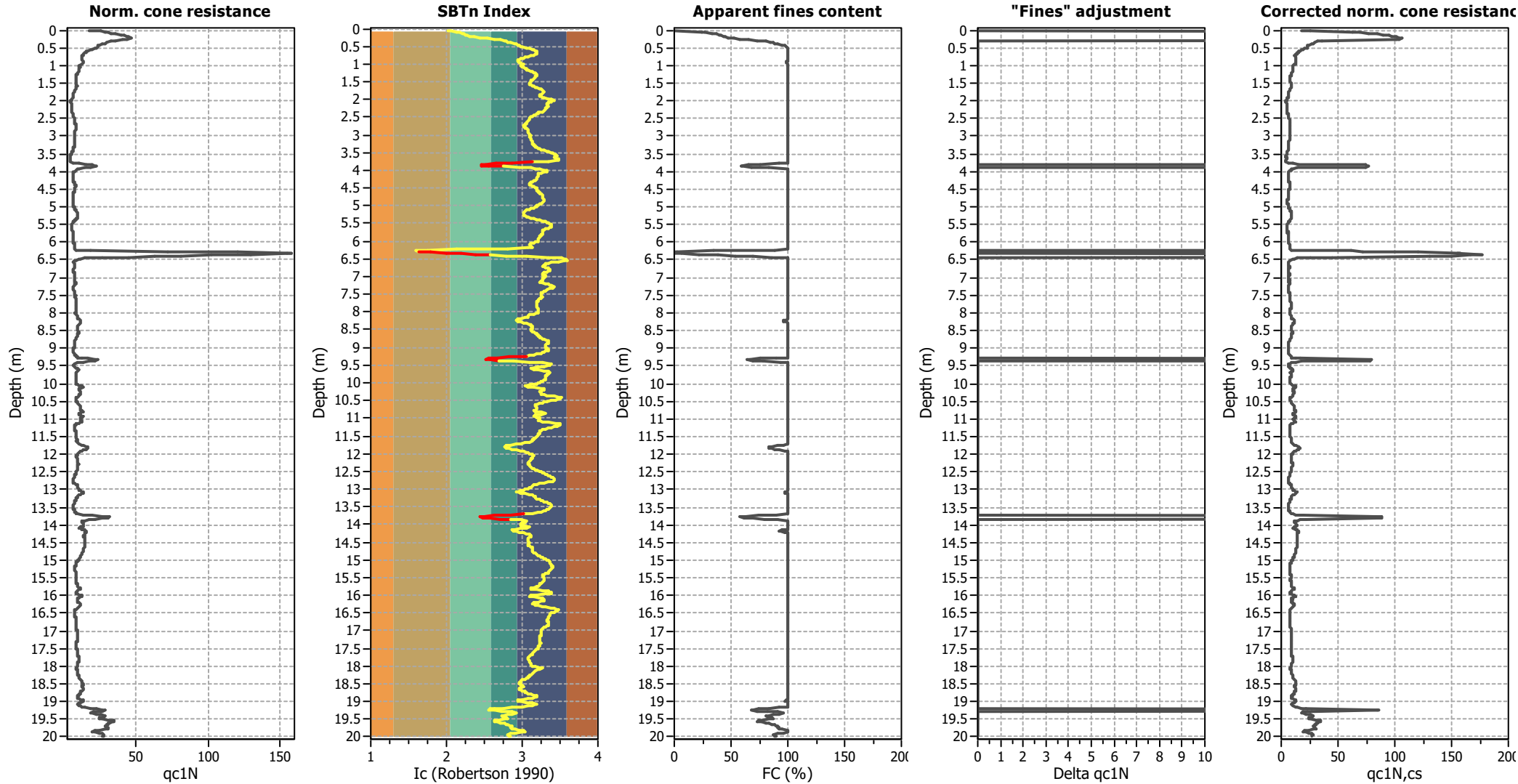
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

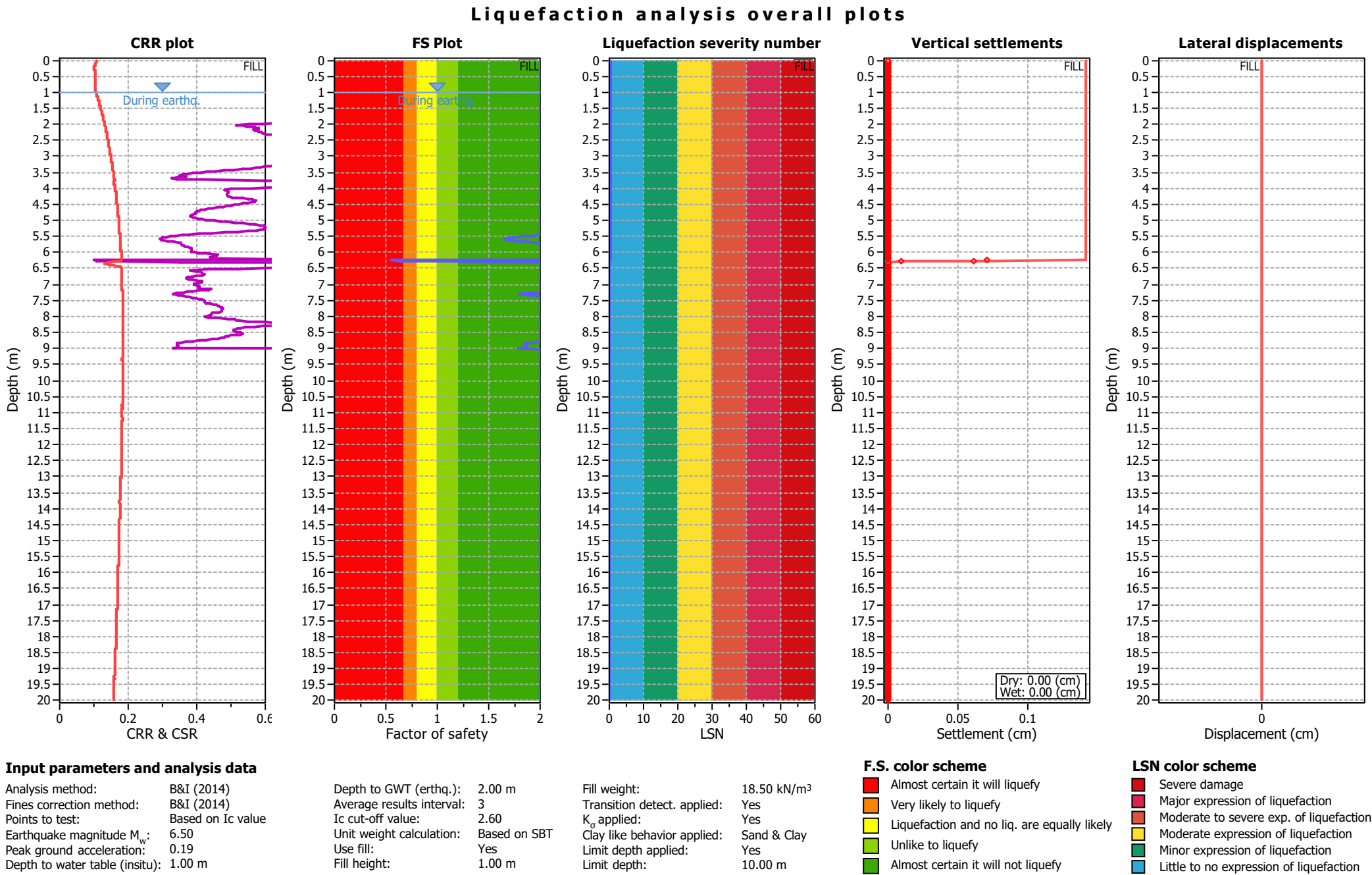
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

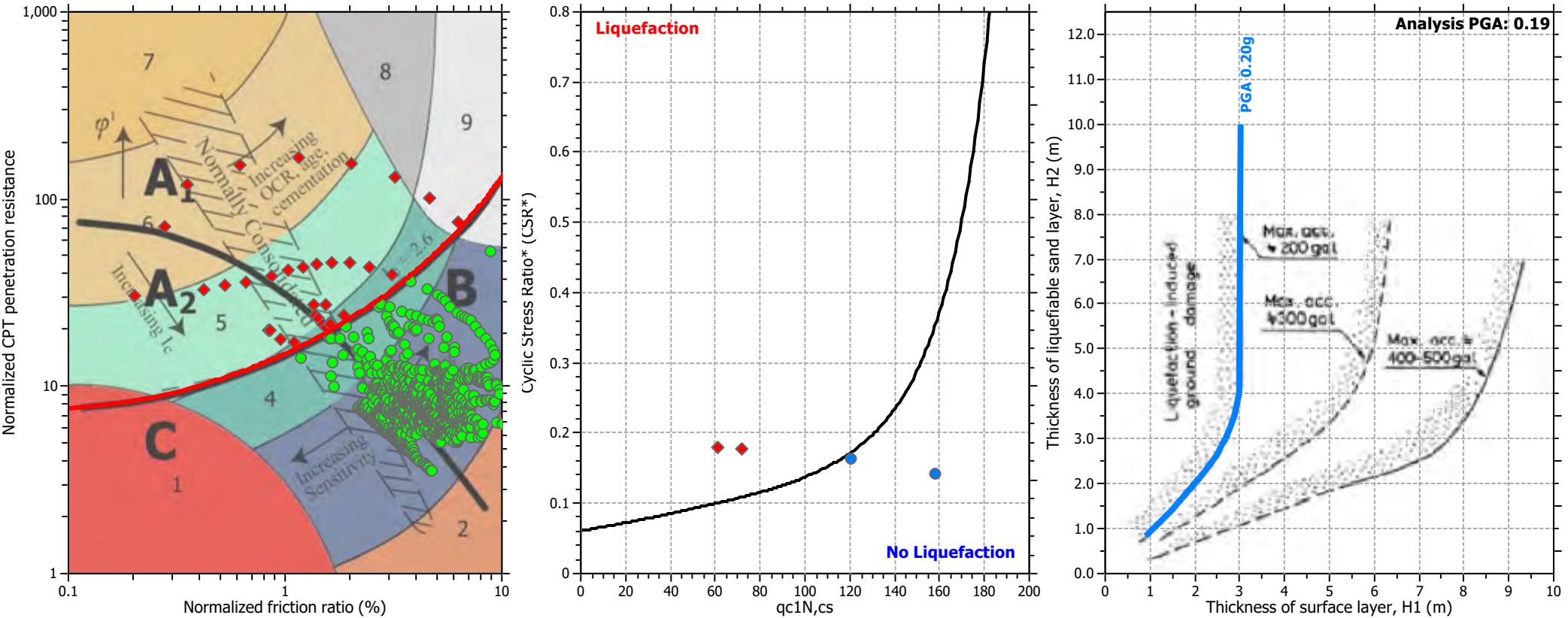


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



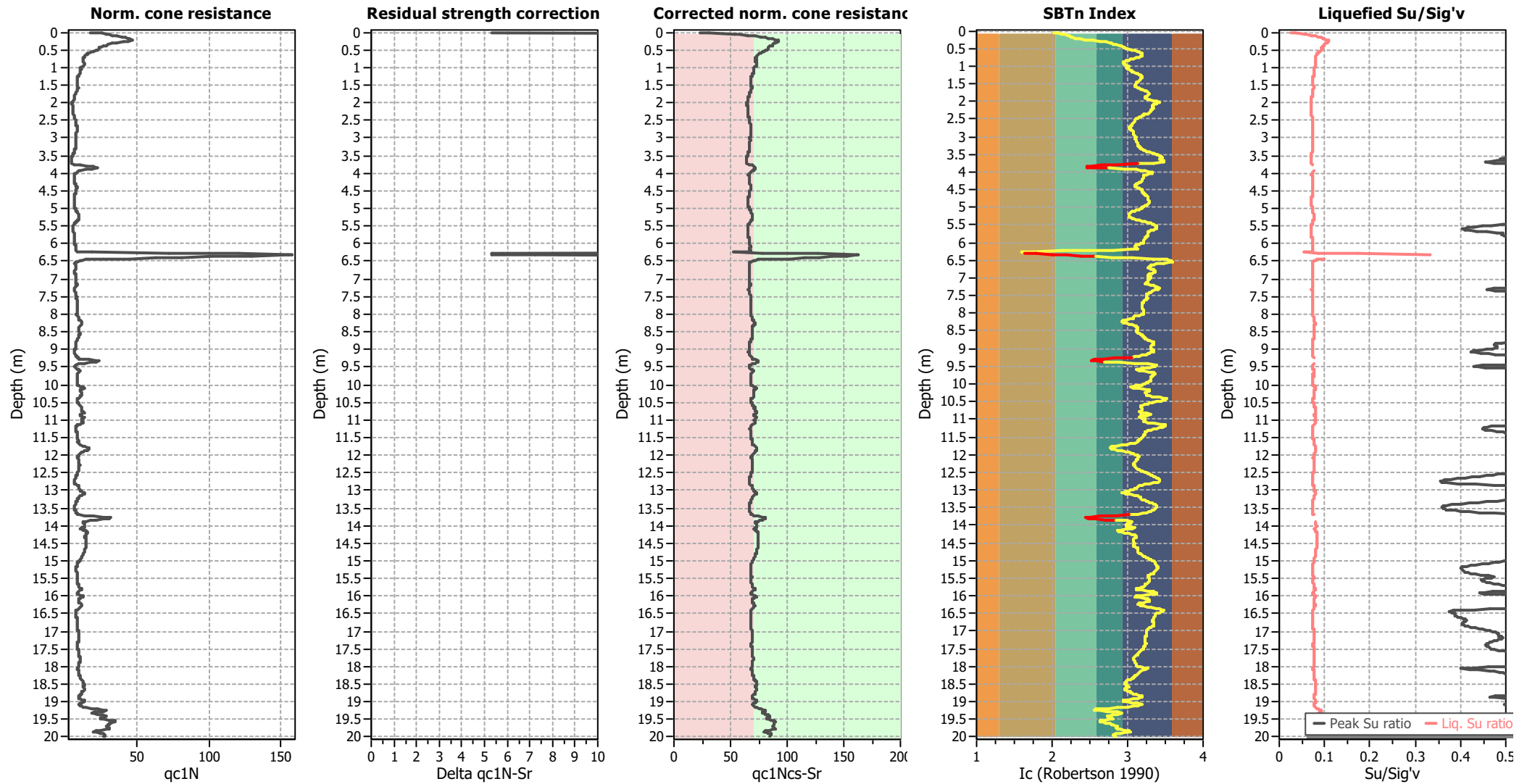
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

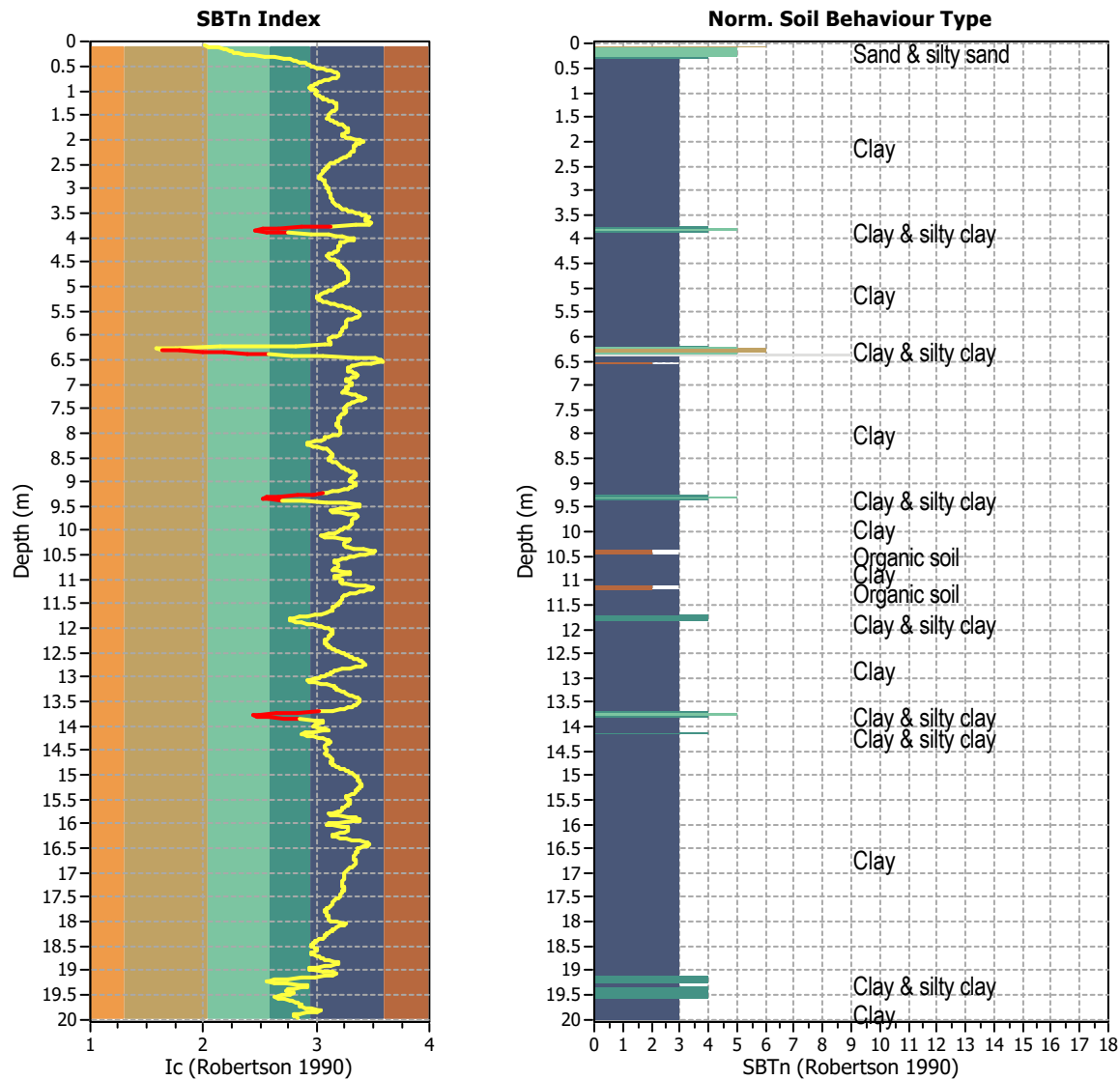
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



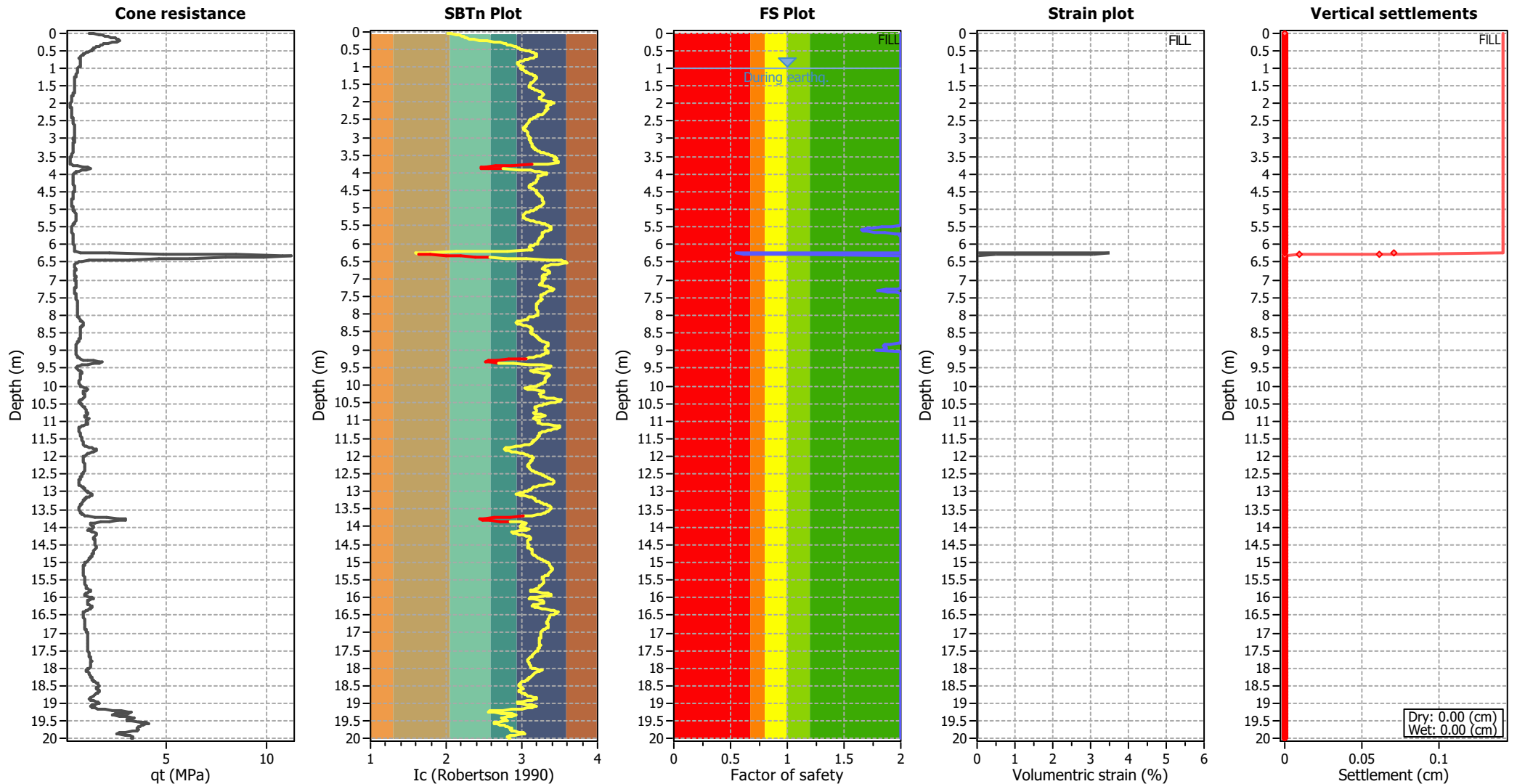
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 999
Total points excluded: 33
Exclusion percentage: 3.30%
Number of layers detected: 7

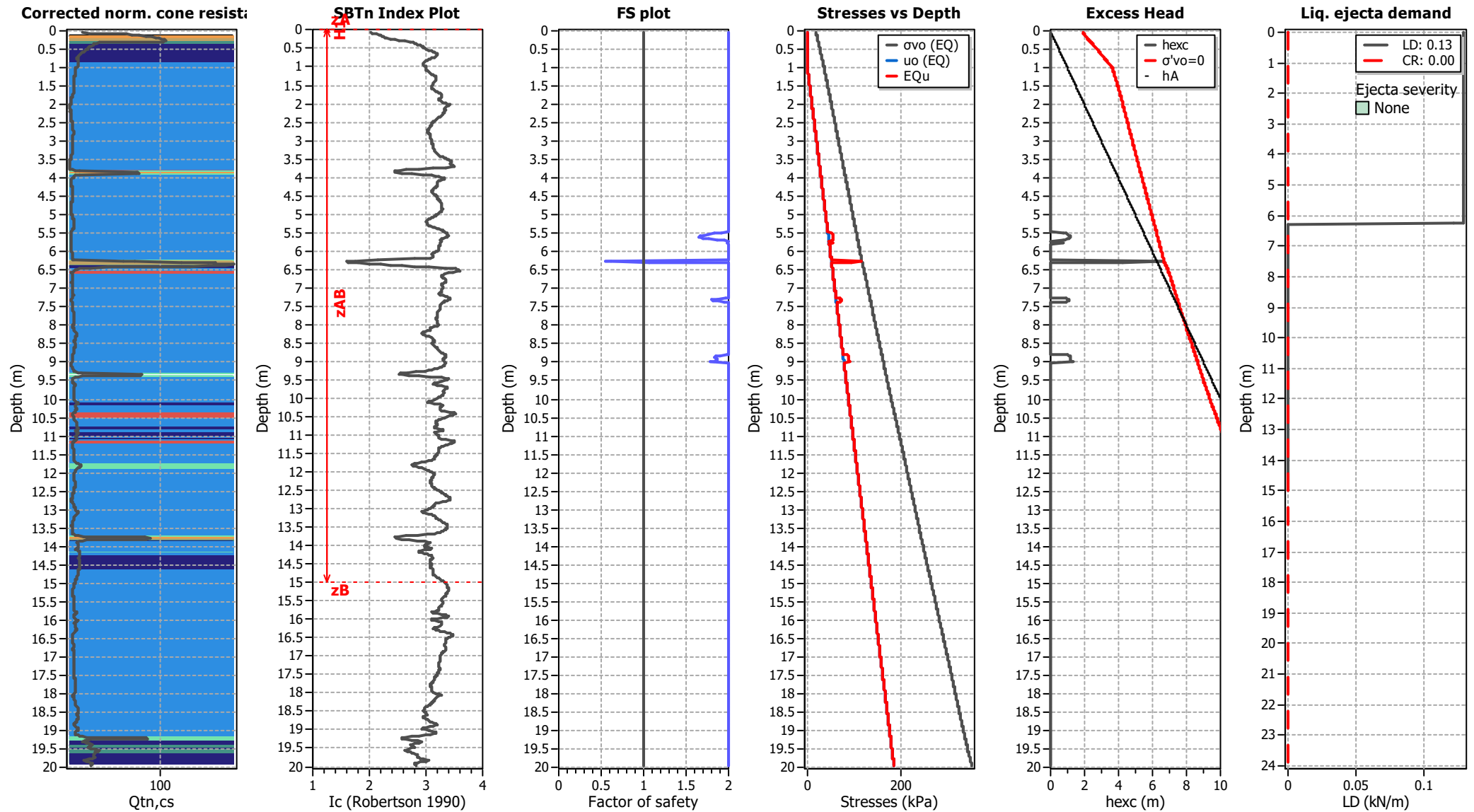
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

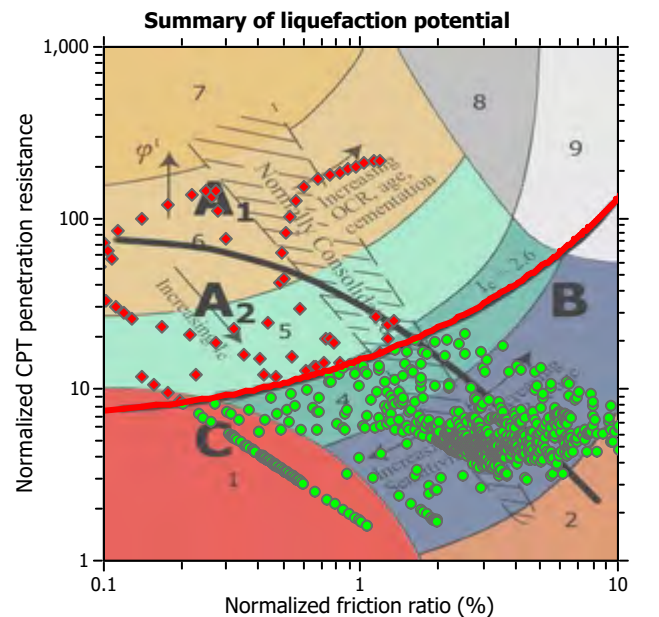
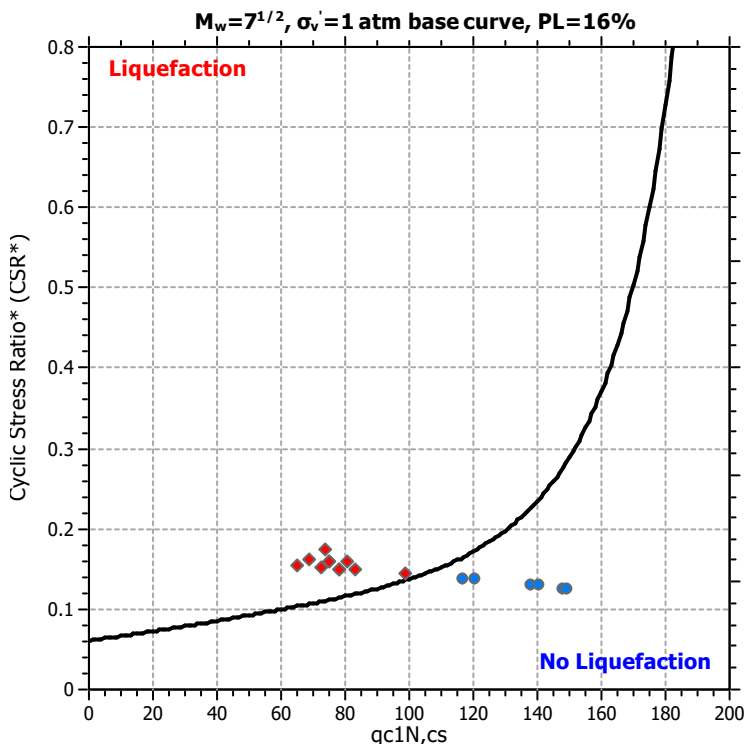
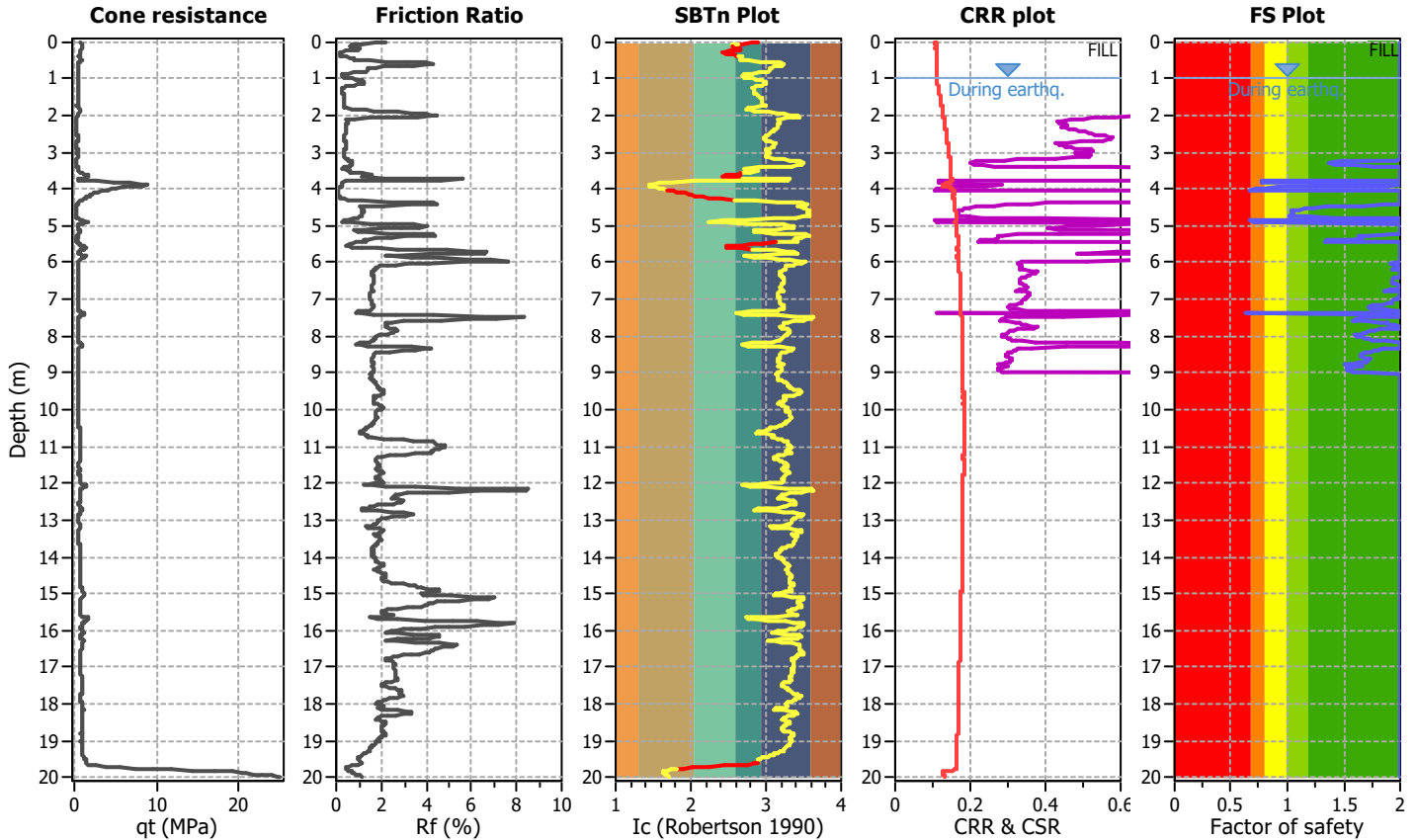
Project title : Sunfield Landholding

Location :

CPT file : CPT136

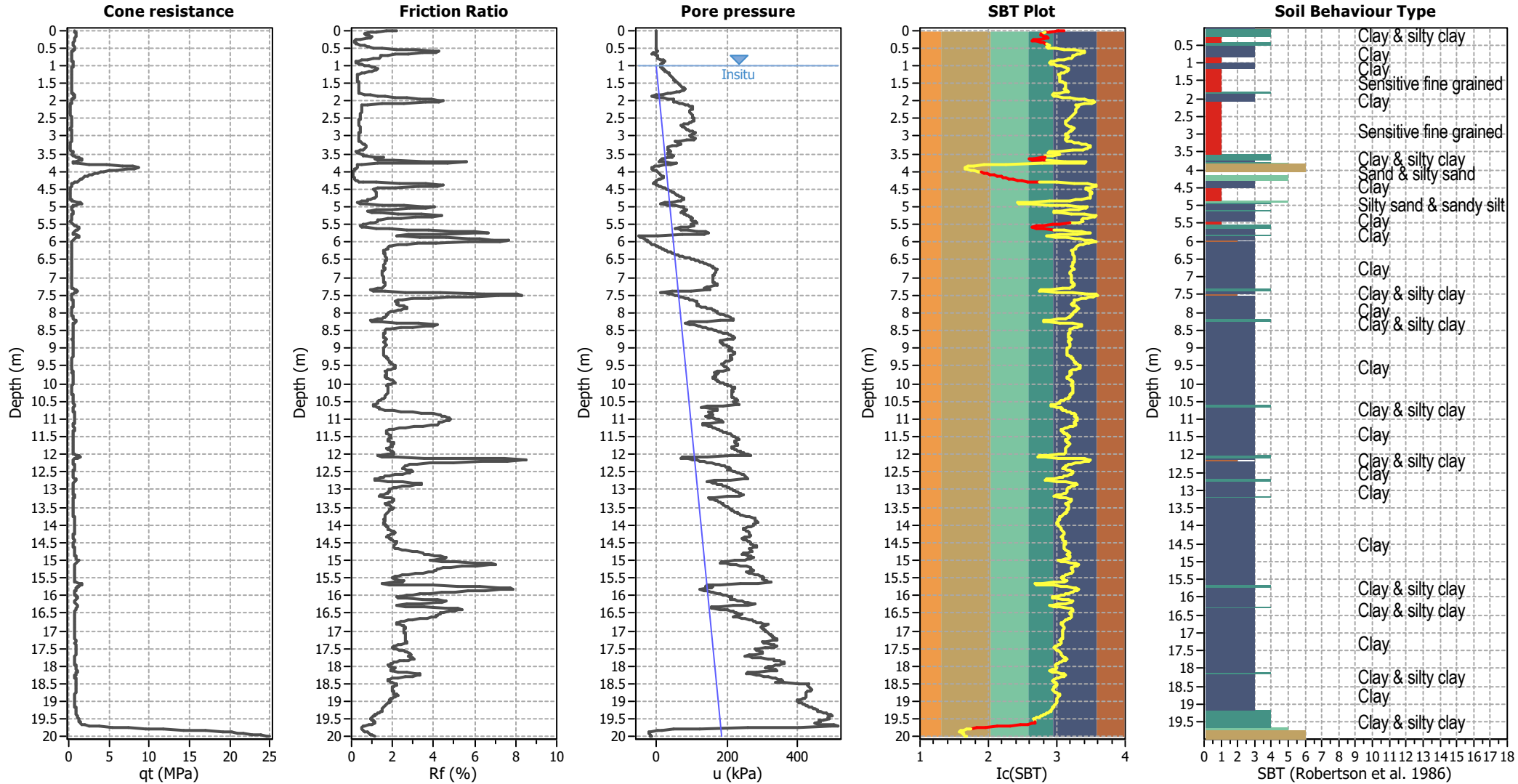
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



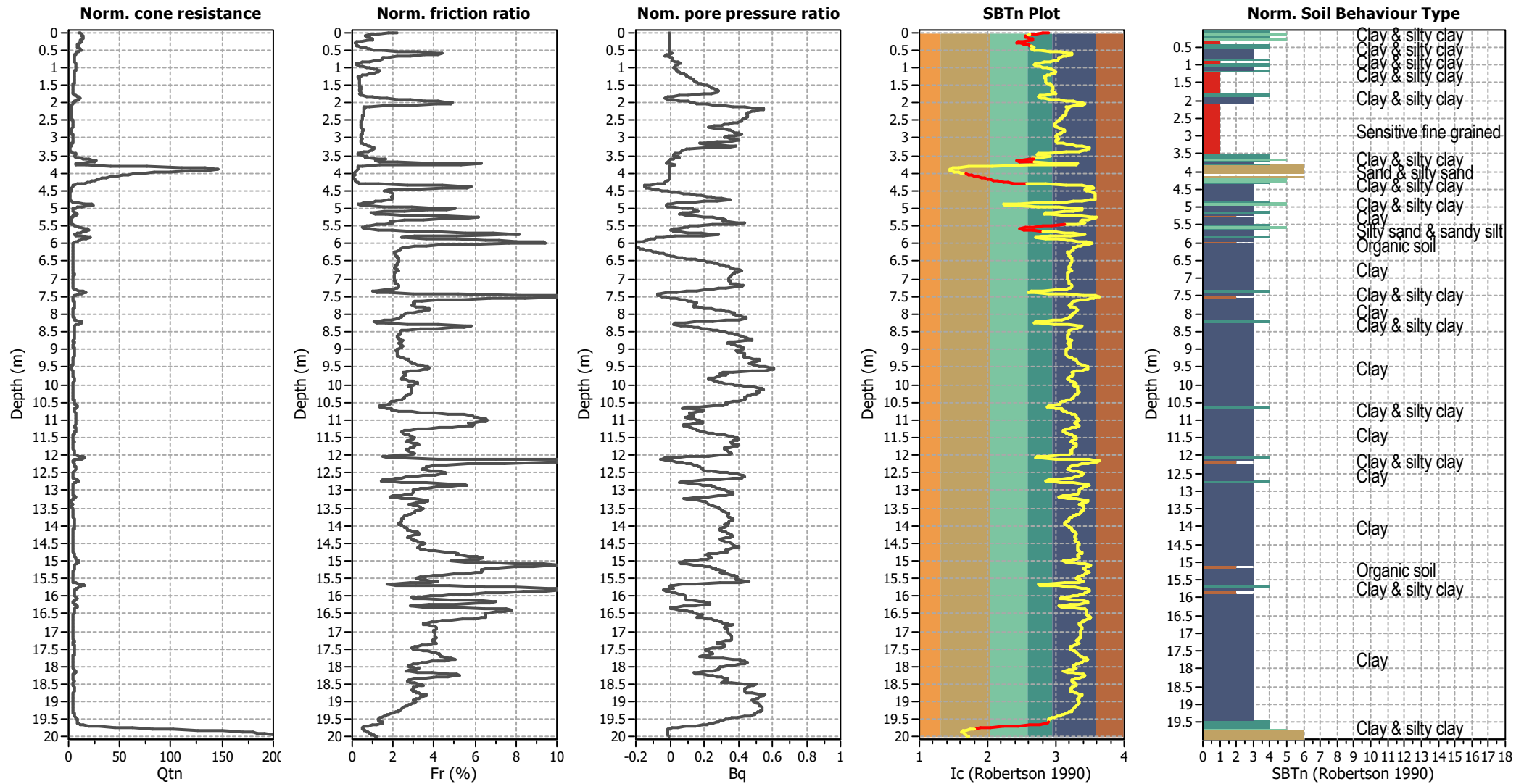
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

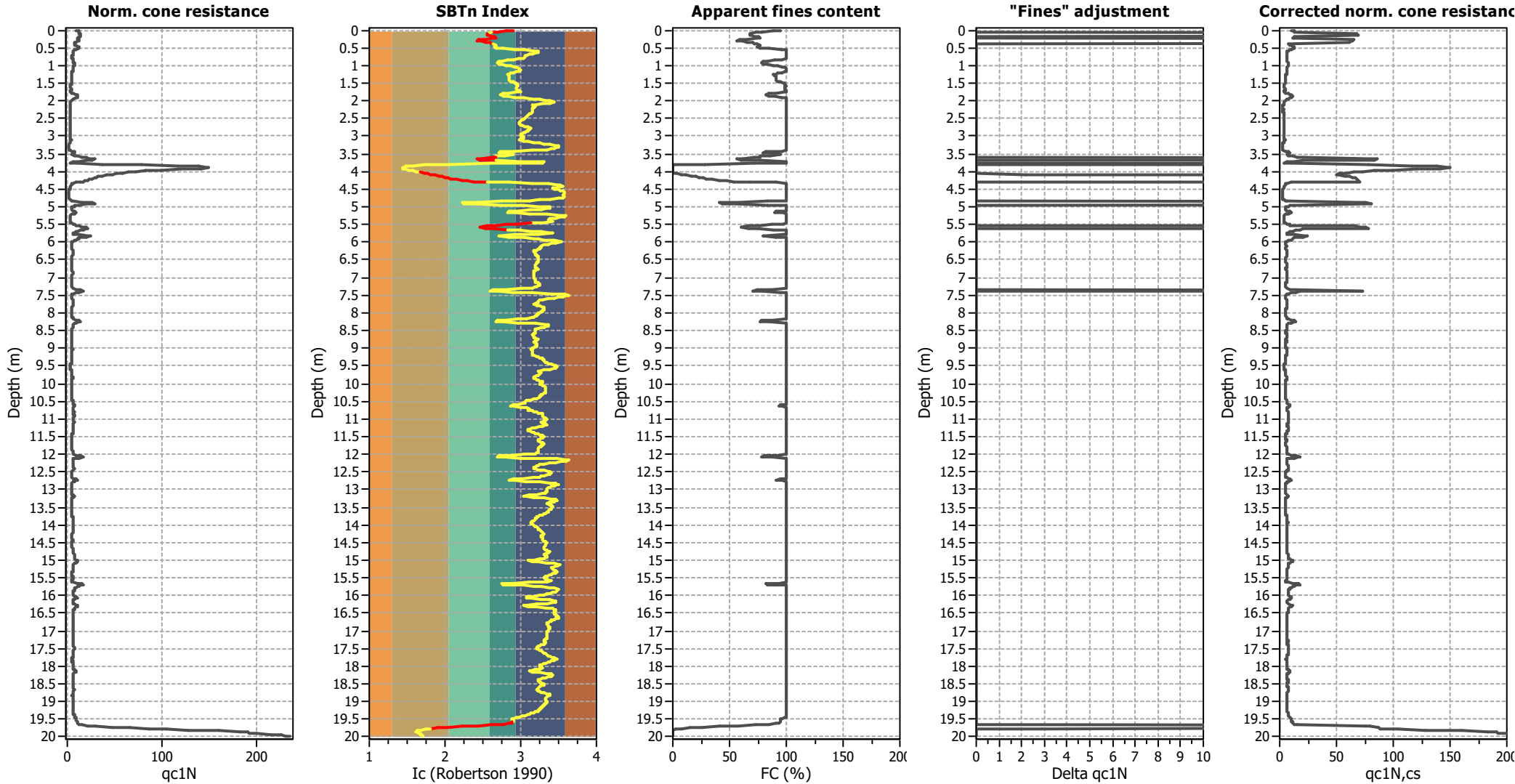
CPT basic interpretation plots (normalized)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

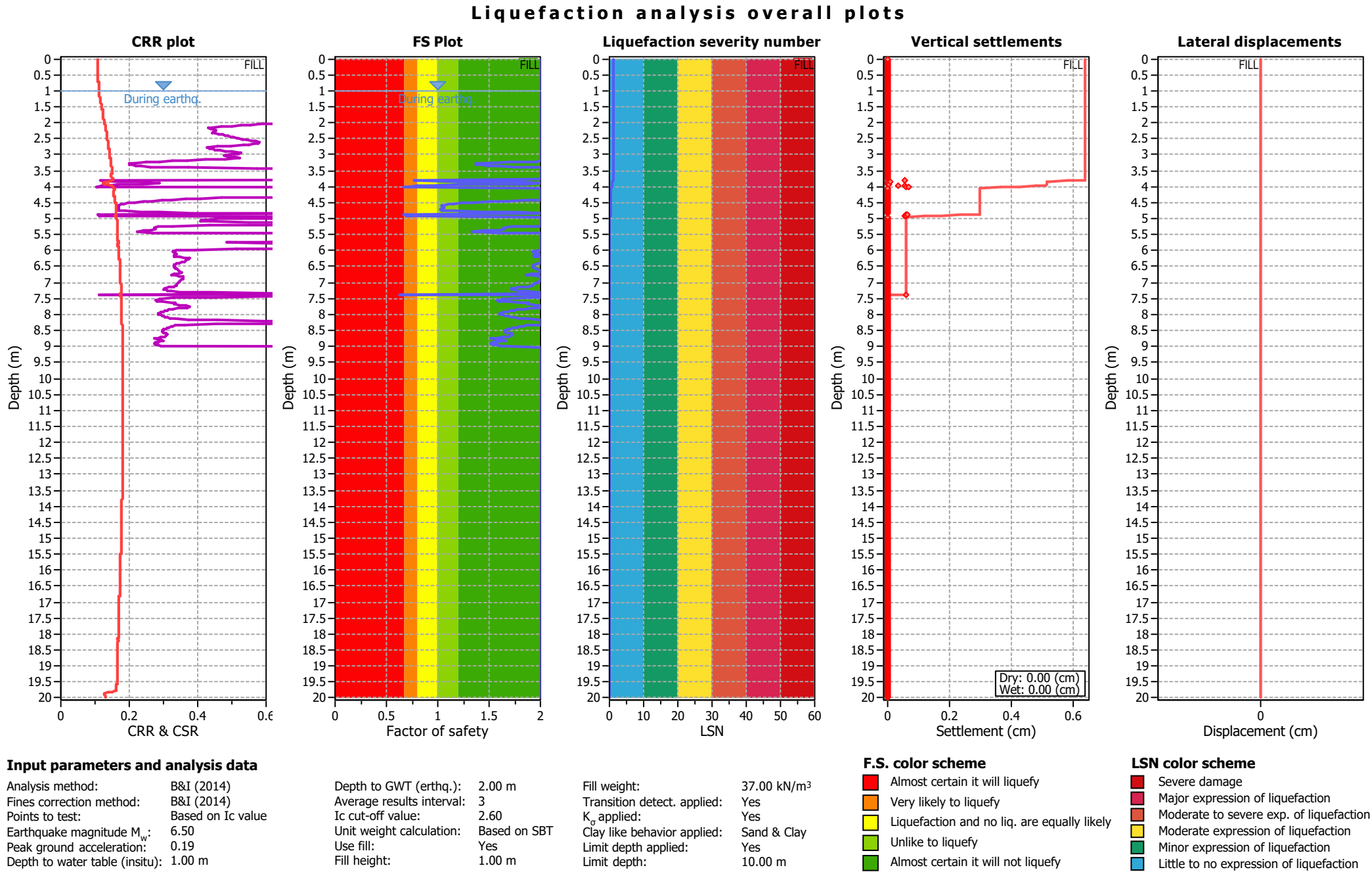
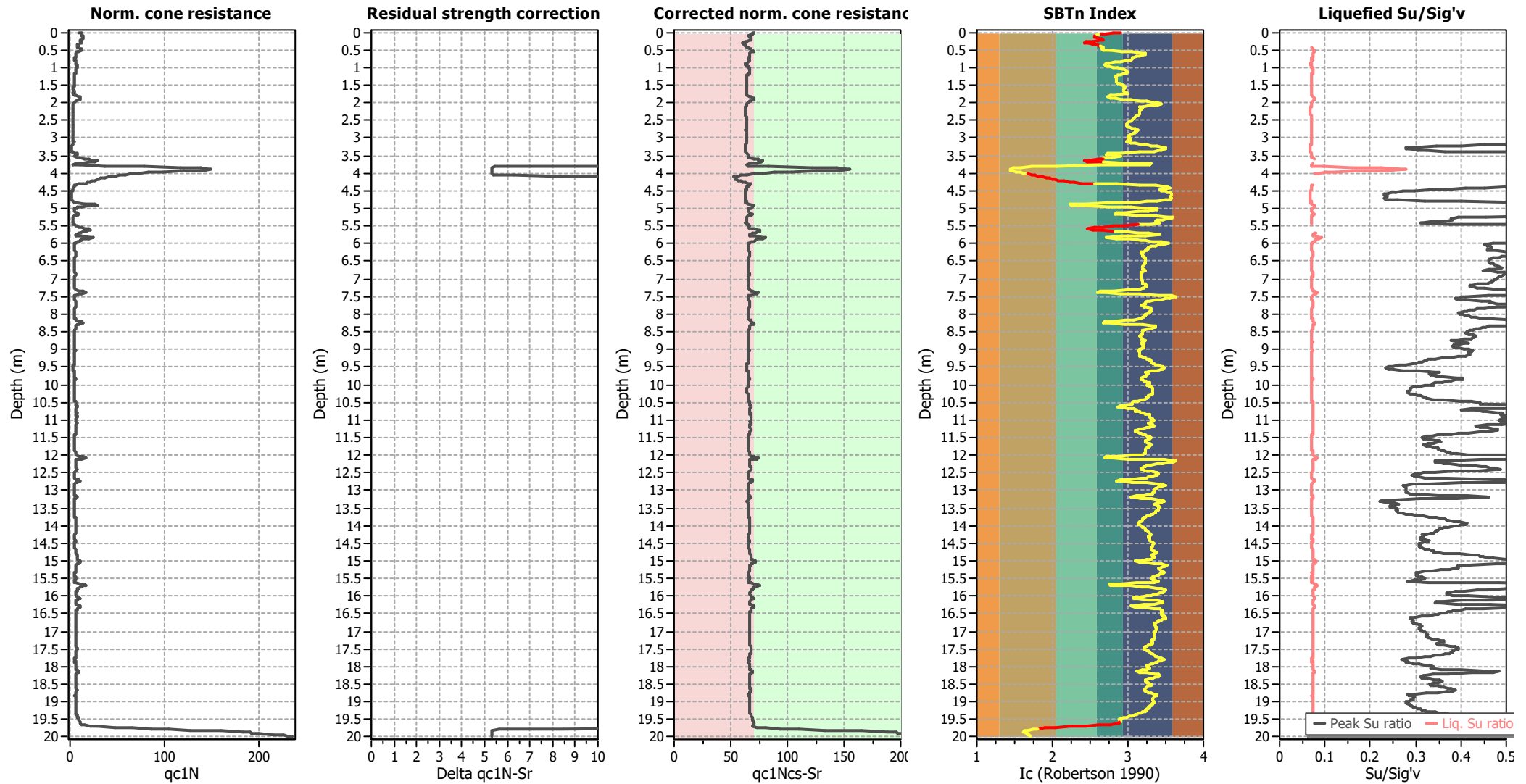


Figure 10 consists of three plots. The left plot shows Normalized CPT penetration resistance (log scale, 1 to 1,000) versus Normalized friction ratio (%) (log scale, 0.1 to 10). It includes data points for various soil types (1-9) and regions A1, A2, B, and C. The middle plot shows Cyclic Stress Ratio* (CSR*) (0 to 0.8) versus $qc_{1N,cs}$ (0 to 200). It features a black curve separating the 'Liquefaction' region (above) from the 'No Liquefaction' region (below). Data points are shown as red diamonds and blue circles. The right plot shows the Thickness of liquefiable sand layer, H_2 (m) (0.0 to 12.0) versus the Thickness of surface layer, H_1 (m) (0 to 10). It includes a blue curve for $PGA = 0.20g$ and a grey shaded region for 'Liquefaction-induced ground damage' with labels for maximum excess pore water pressure ratios ($Max. u_{eq}$) of 200 g, 400 g, and 400-500 g. The title of the right plot is 'Analysis PGA: 0.19'.

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

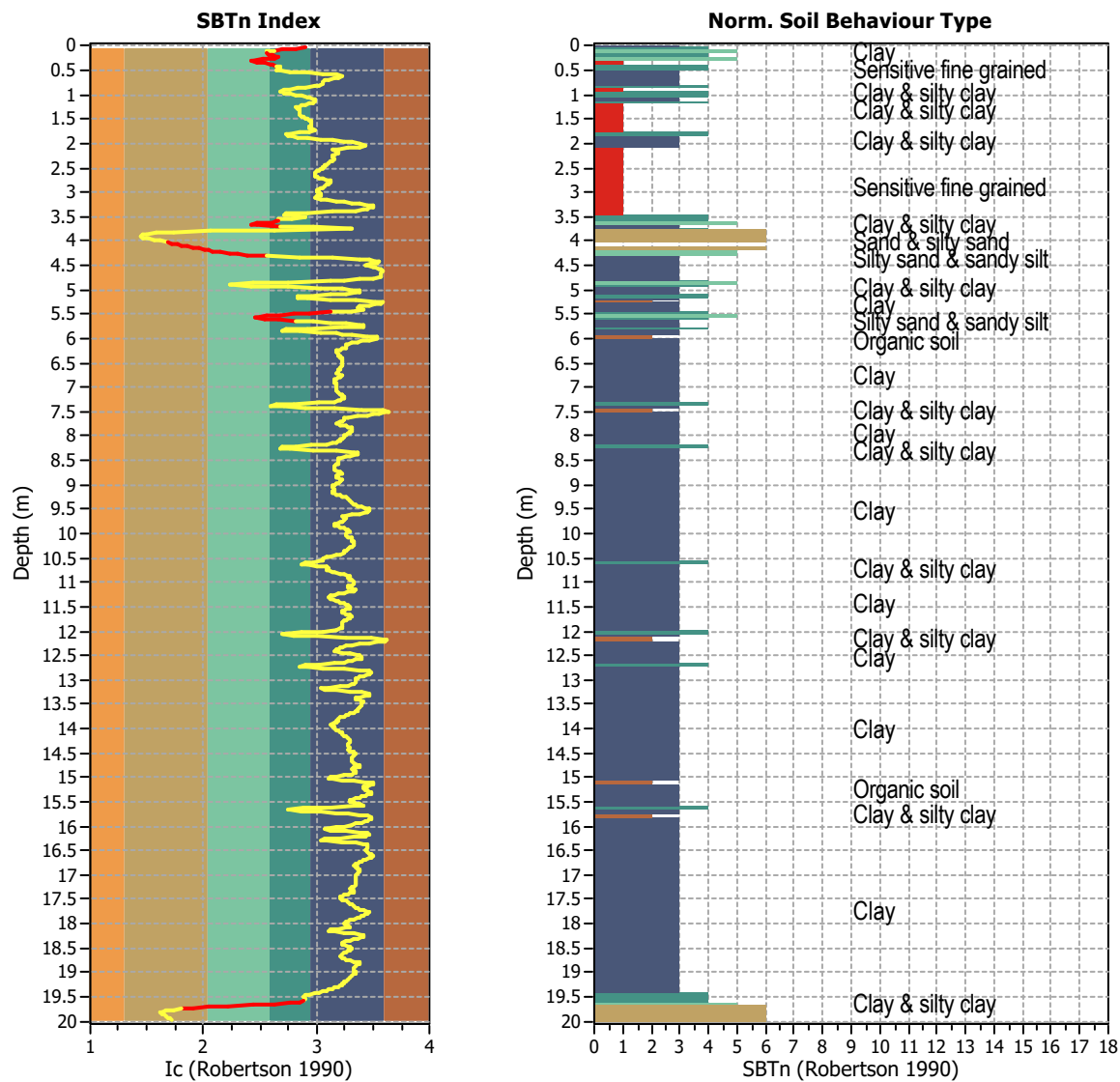
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



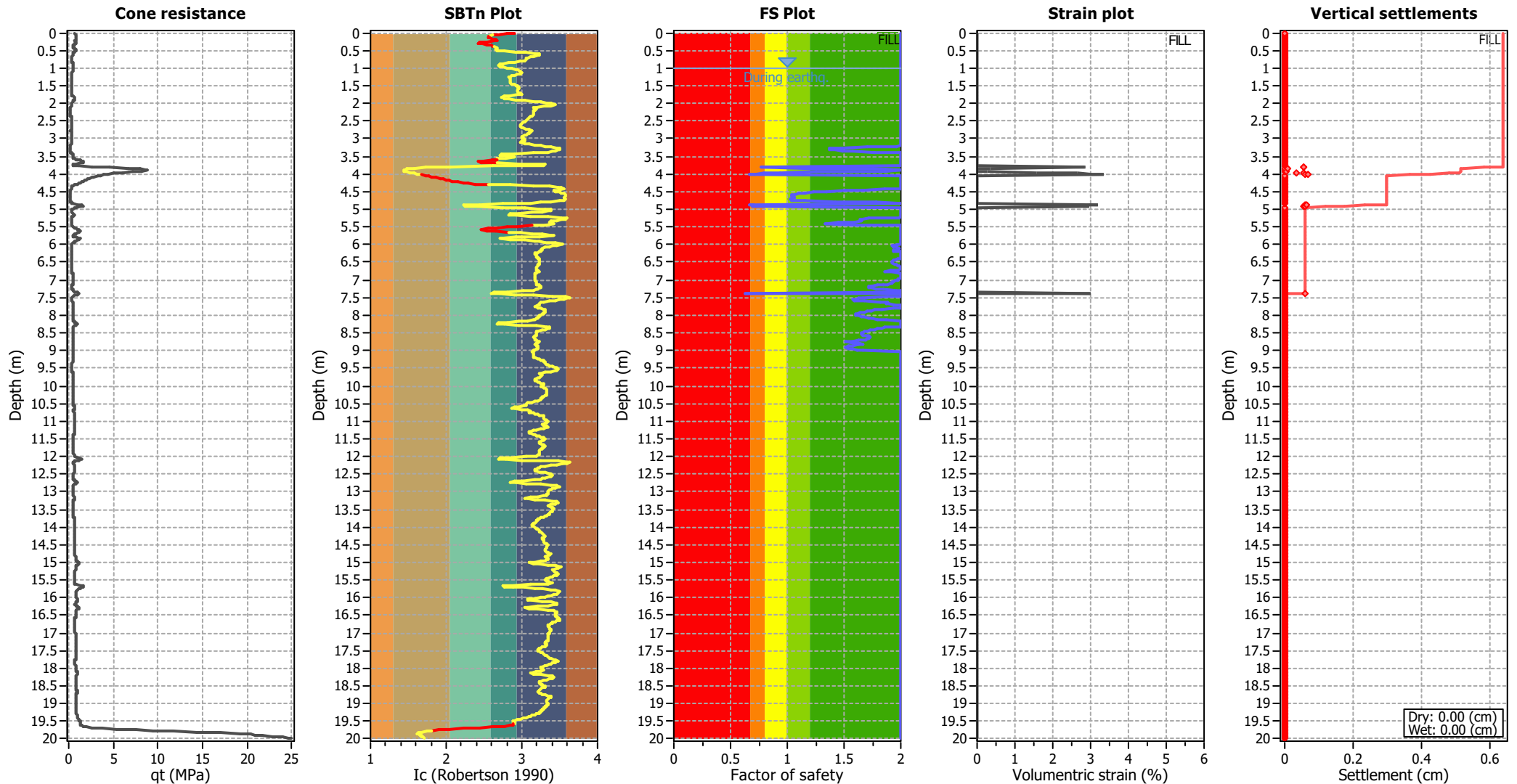
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 999
Total points excluded: 64
Exclusion percentage: 6.41%
Number of layers detected: 10

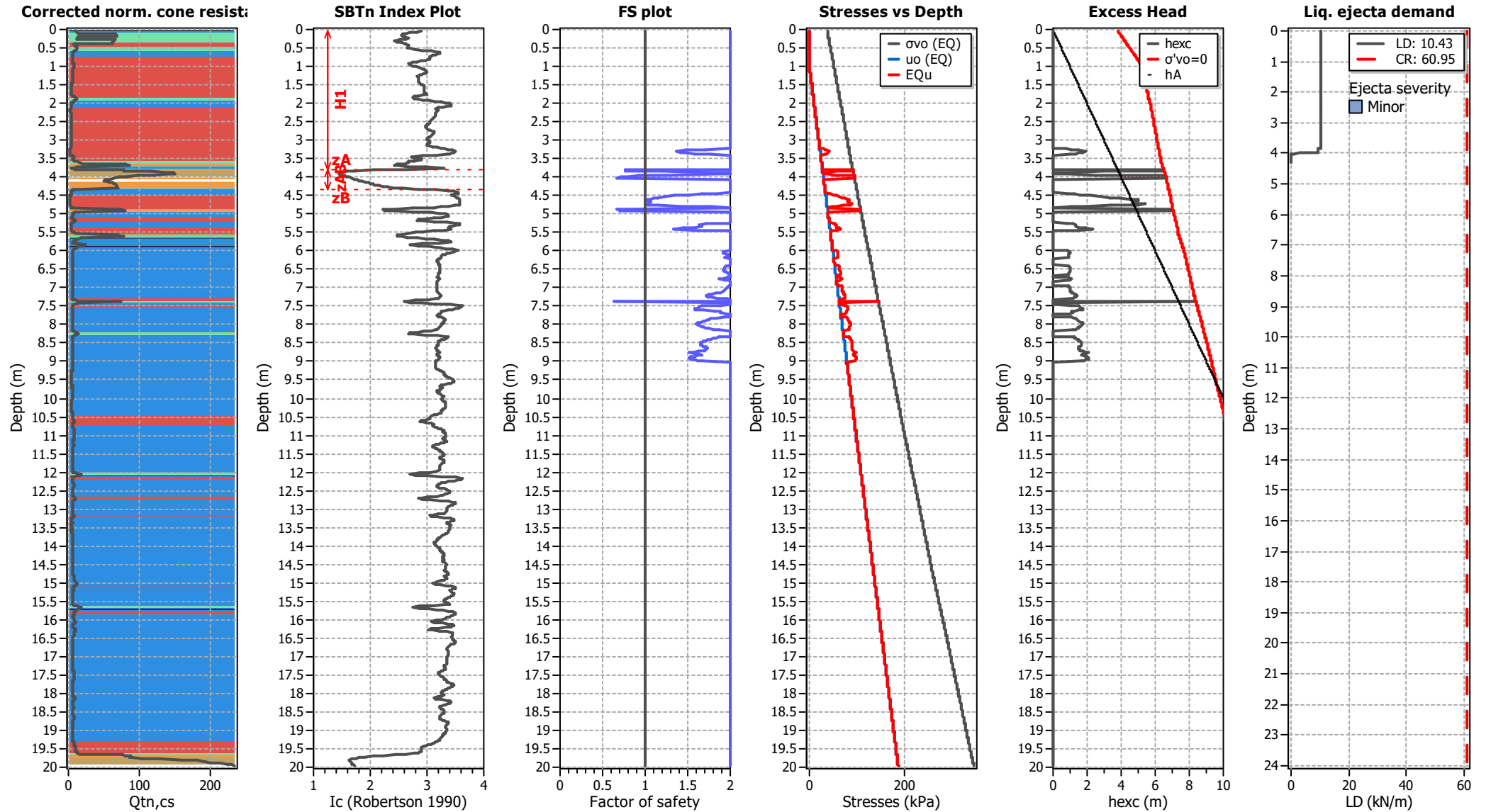
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

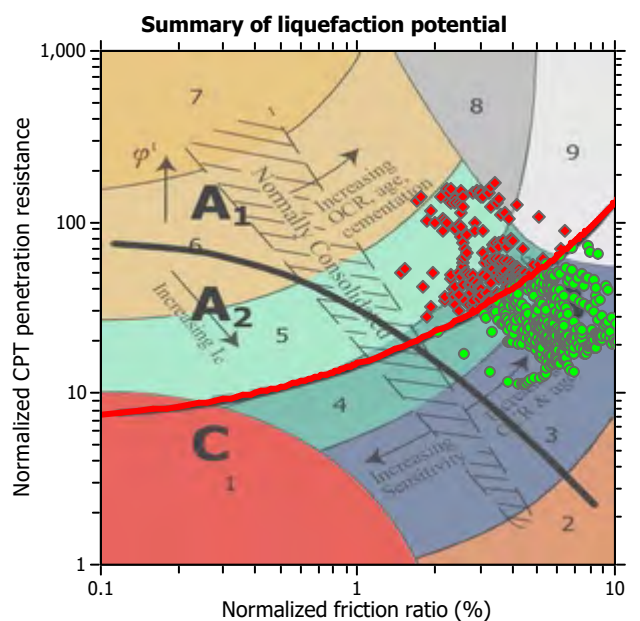
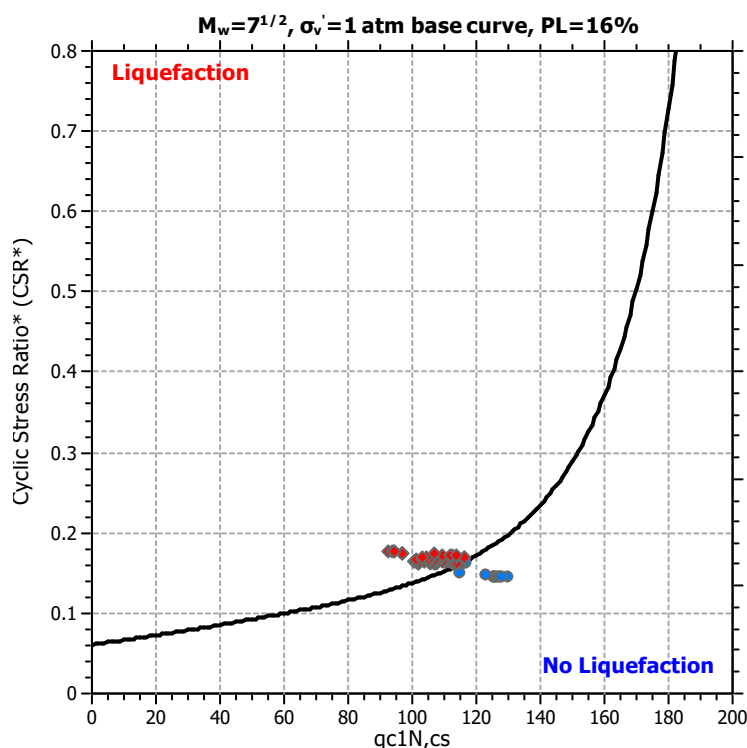
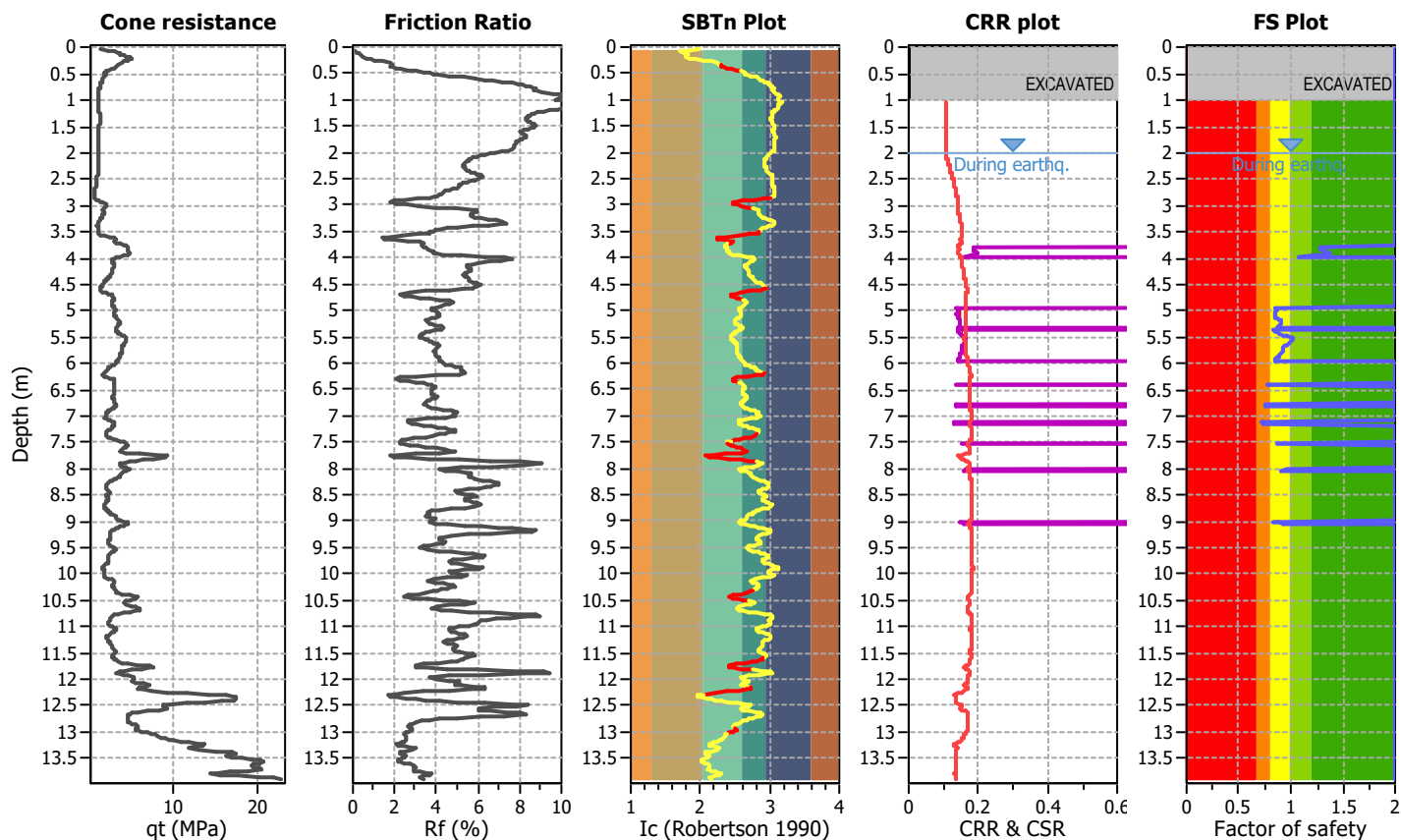
Project title : Sunfield Landholding

Location :

CPT file : CPT137

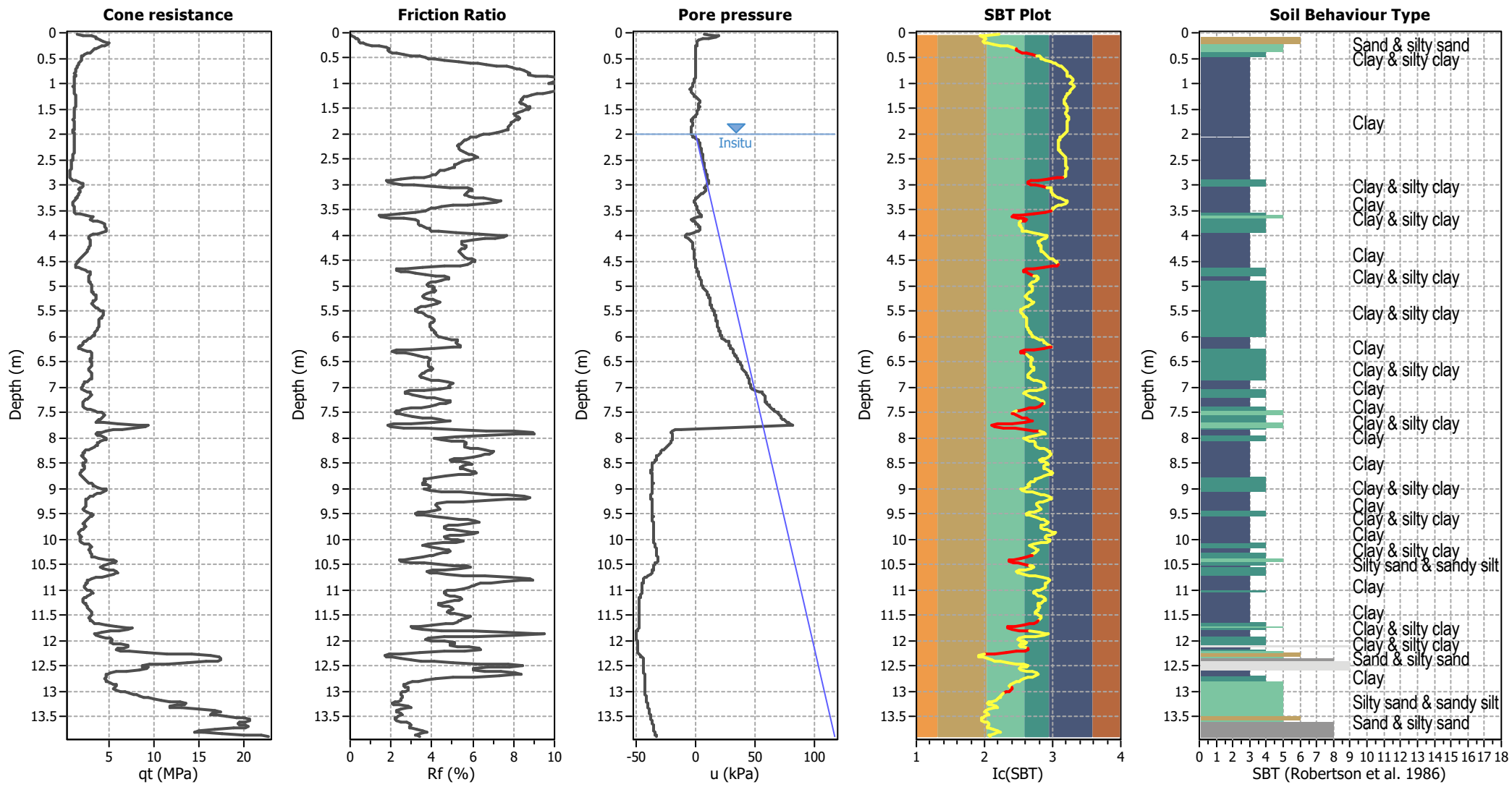
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	2.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Excavation depth:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

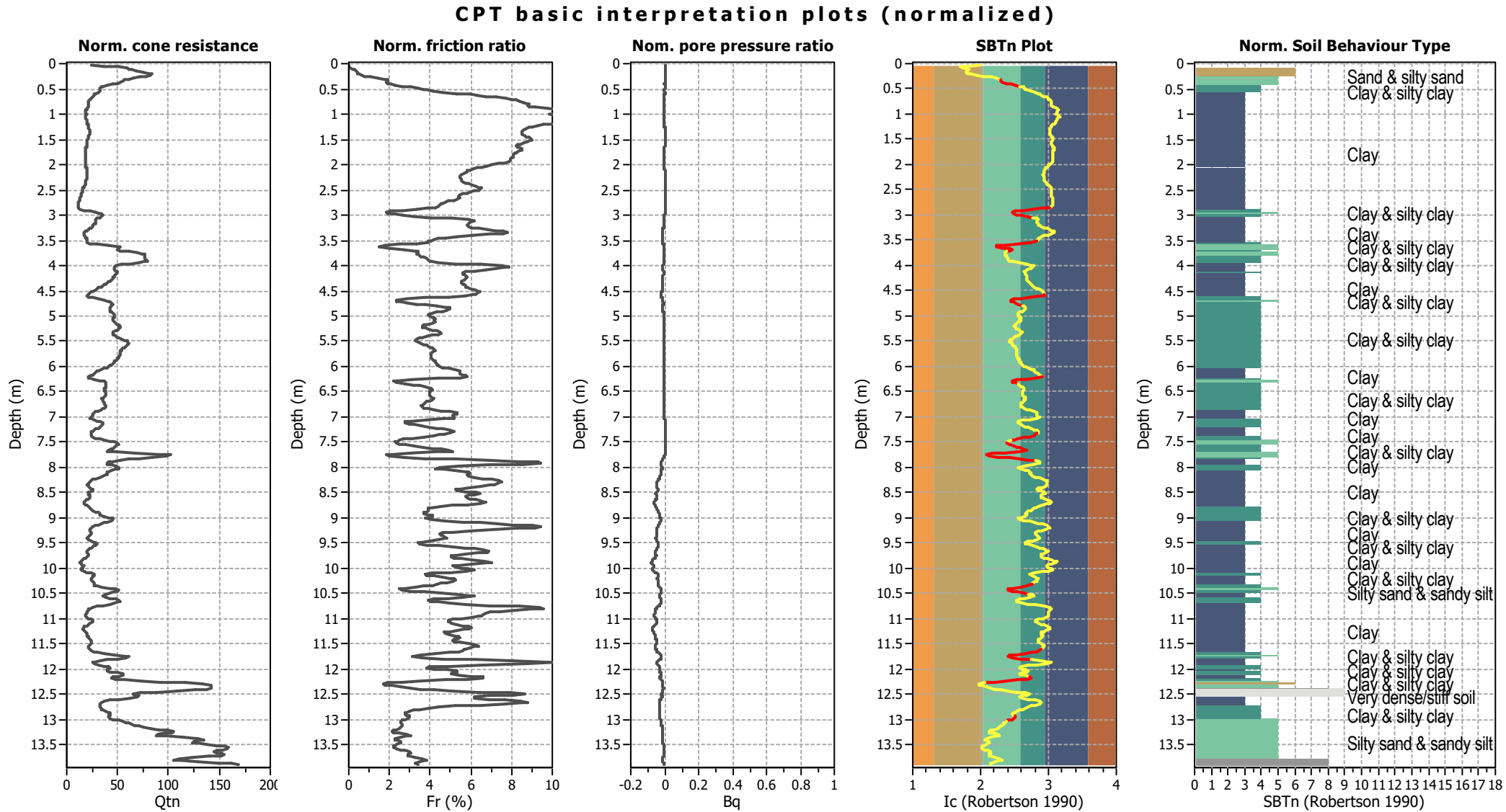
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

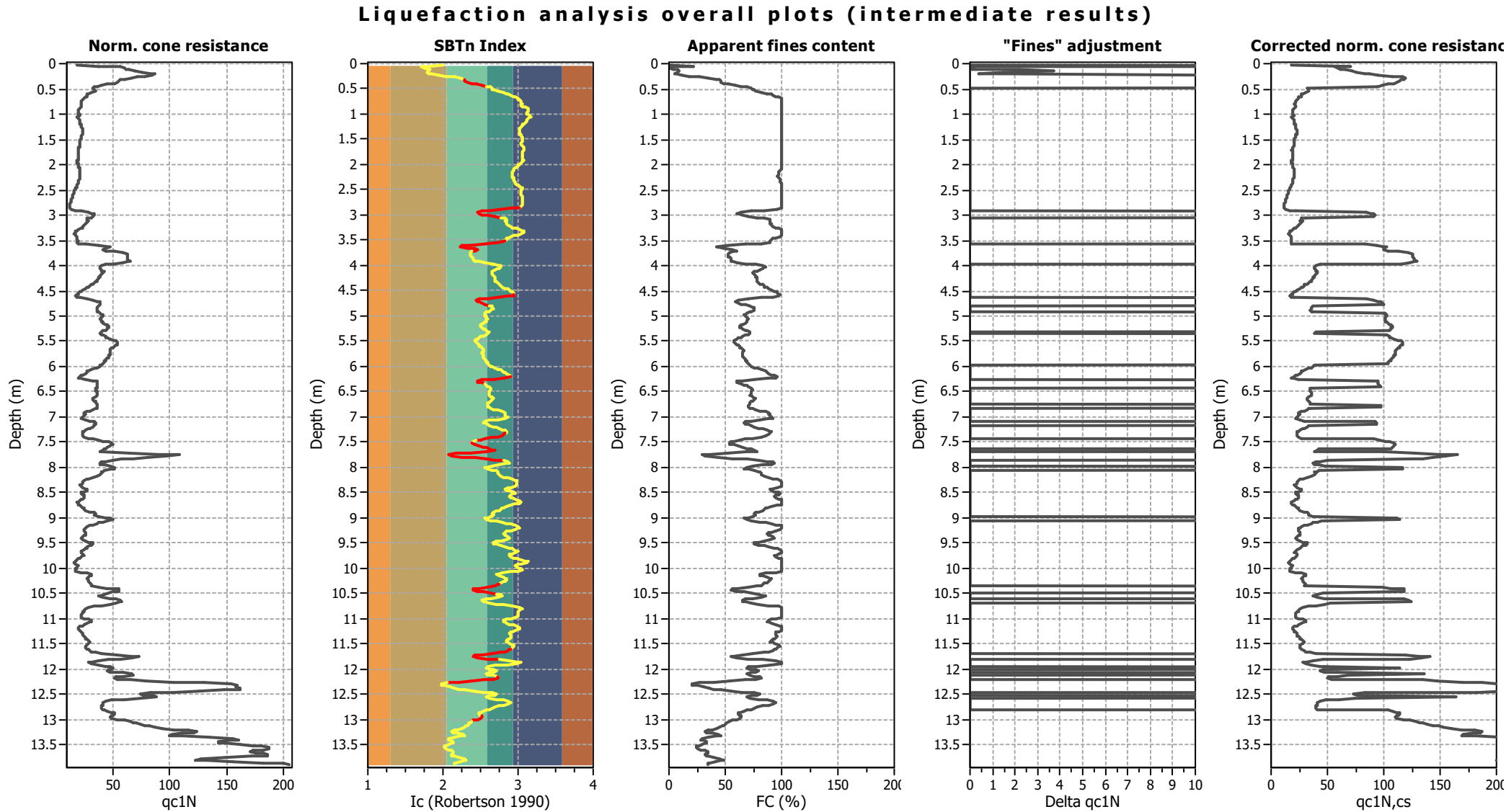
SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

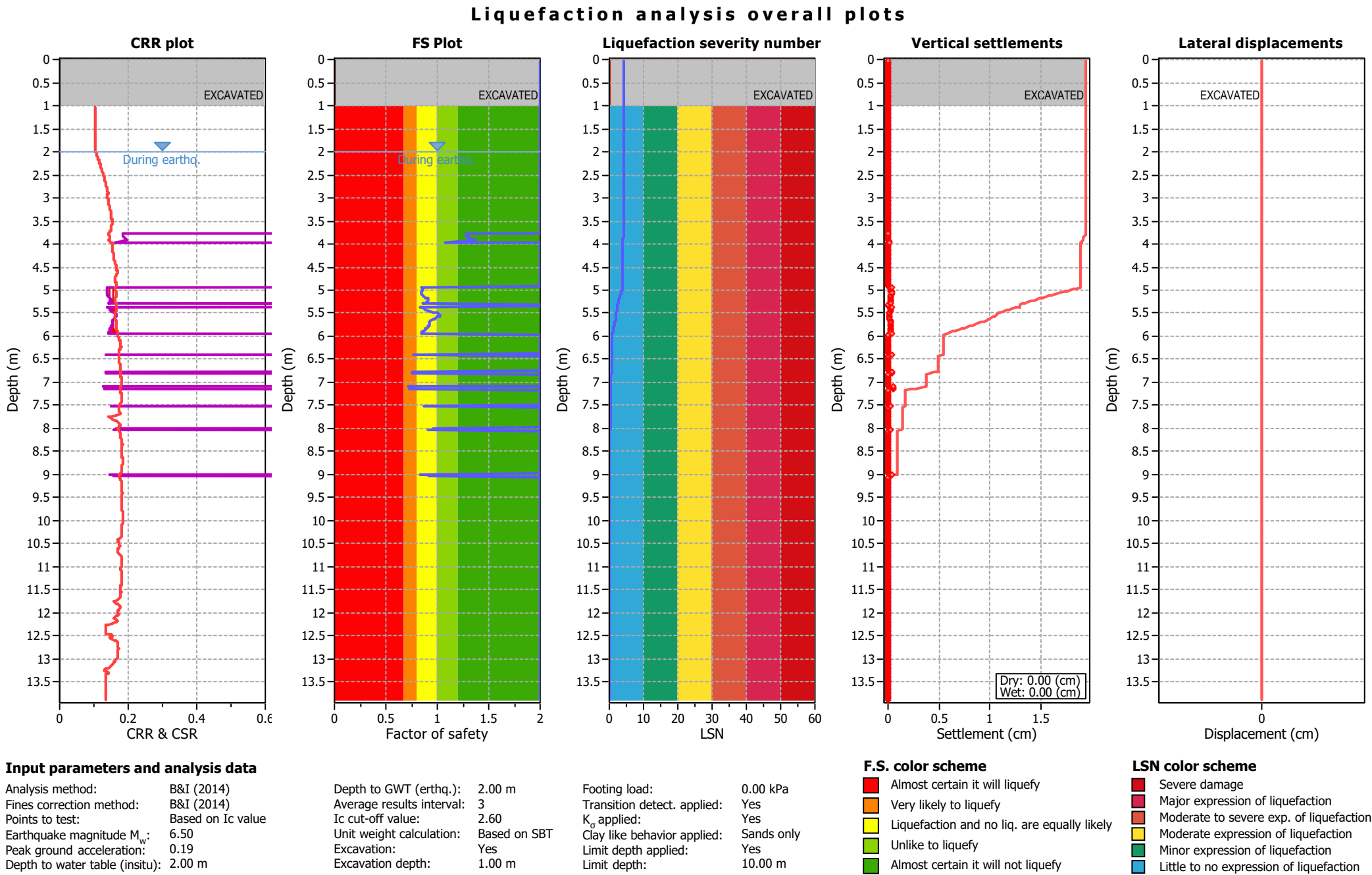
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

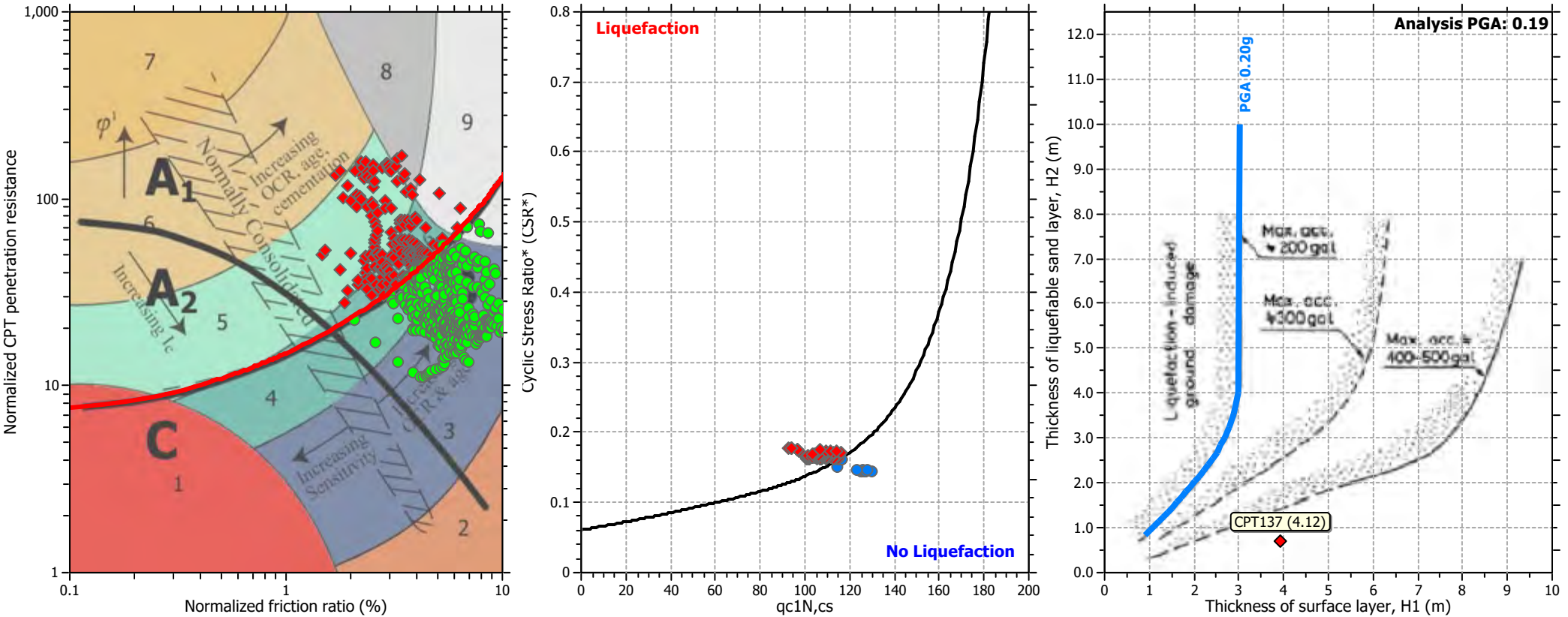


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m



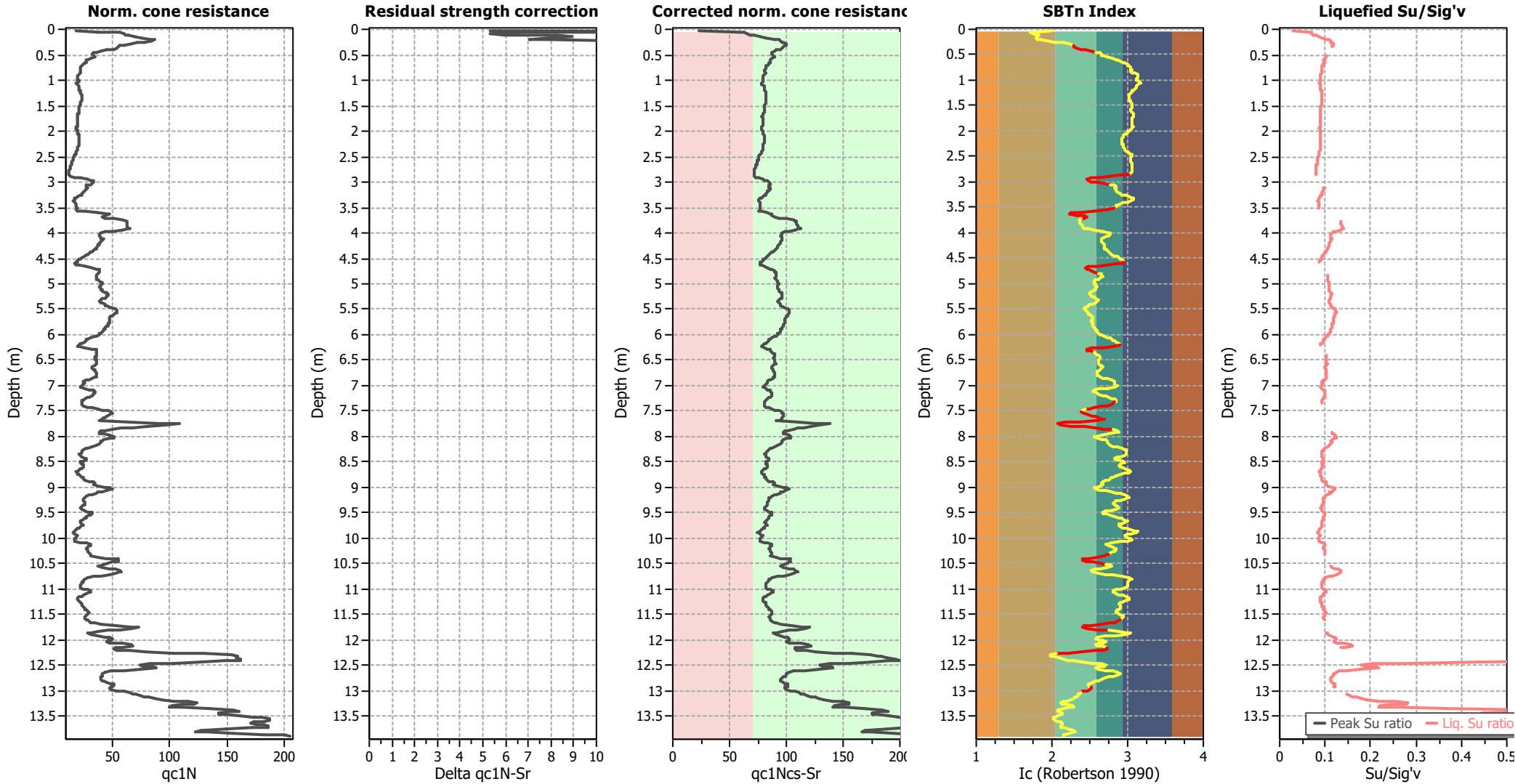
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	2.00 m	Excavation depth:	1.00 m	Limit depth:	10.00 m

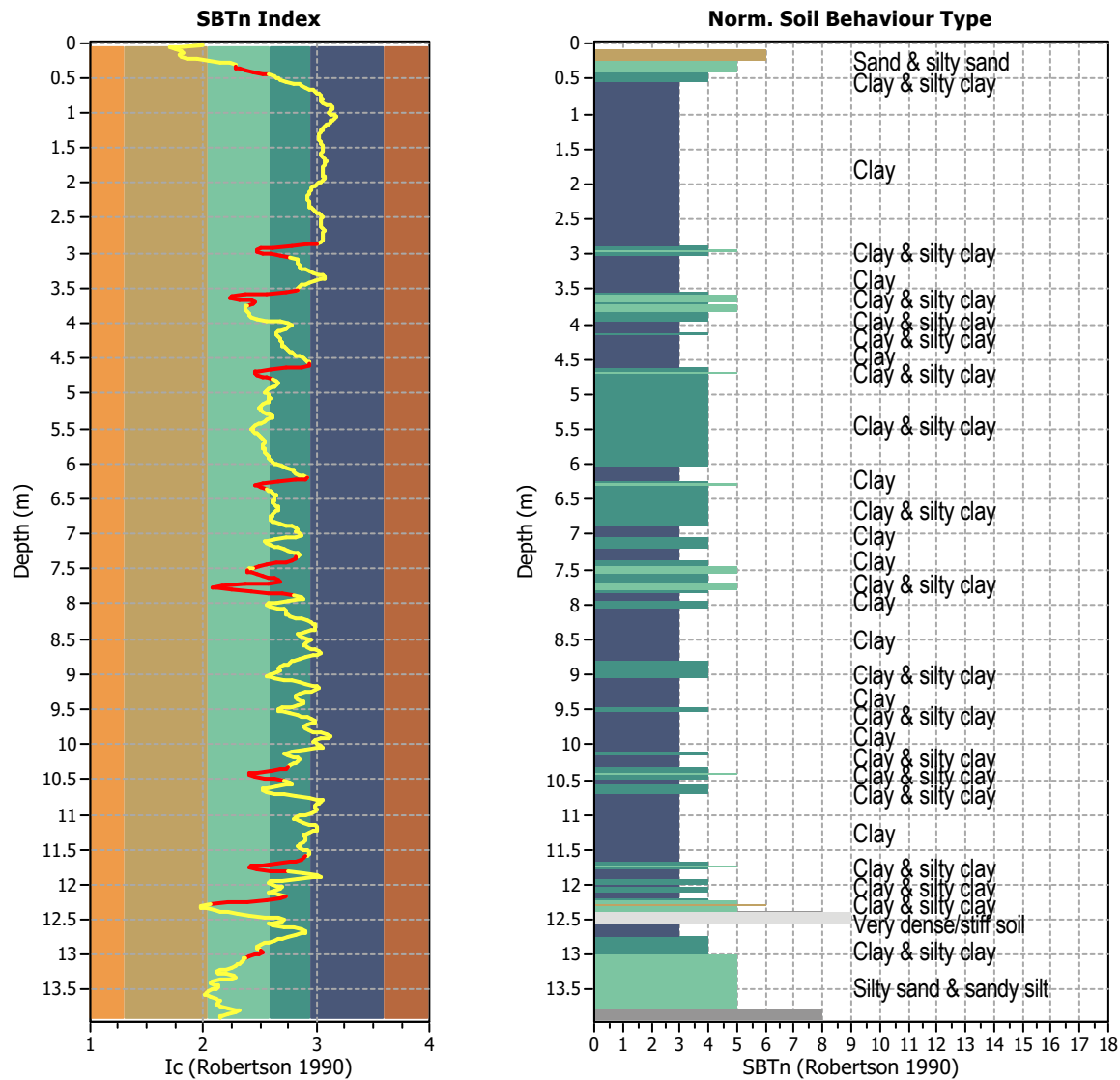
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

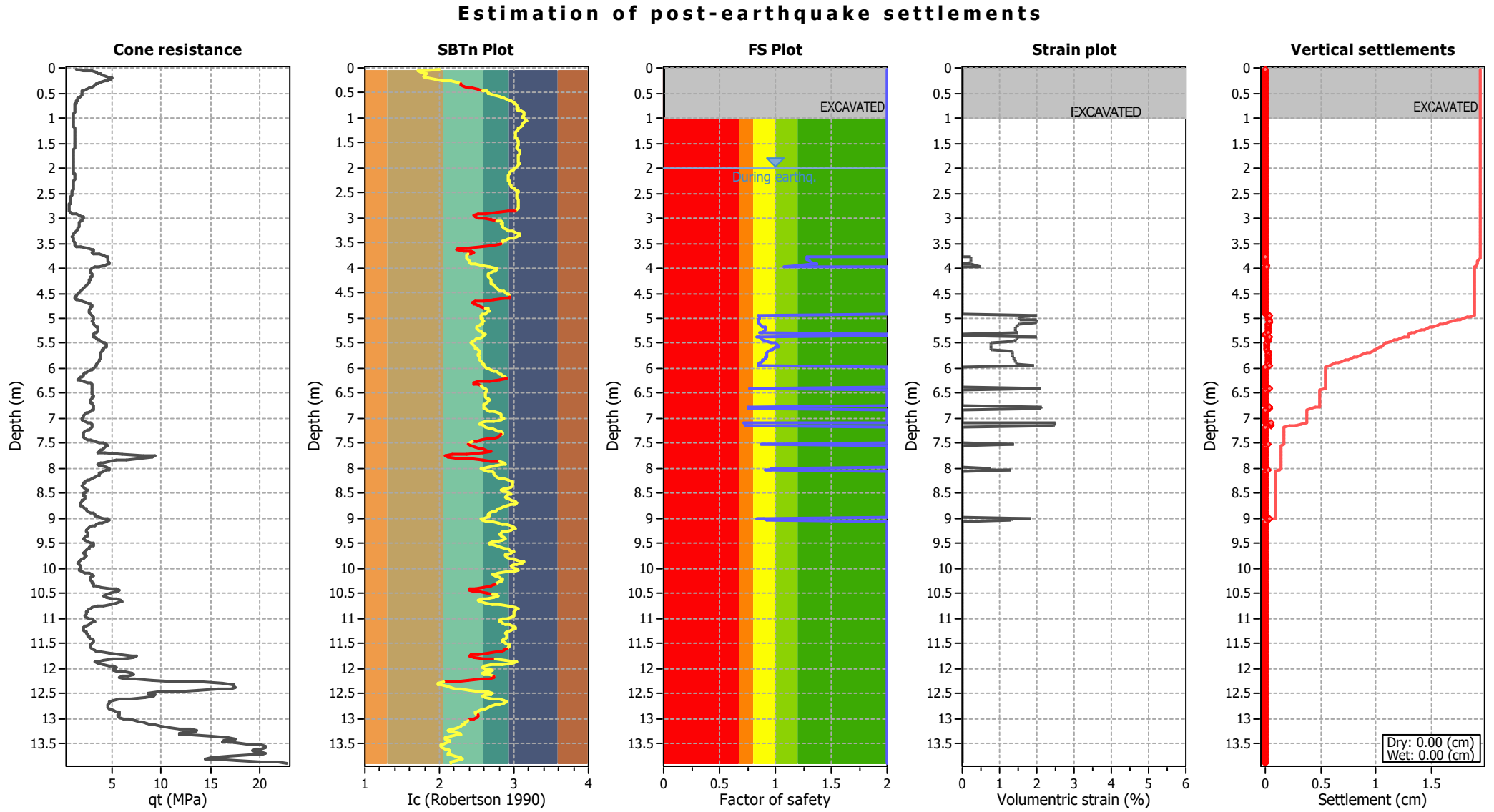


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

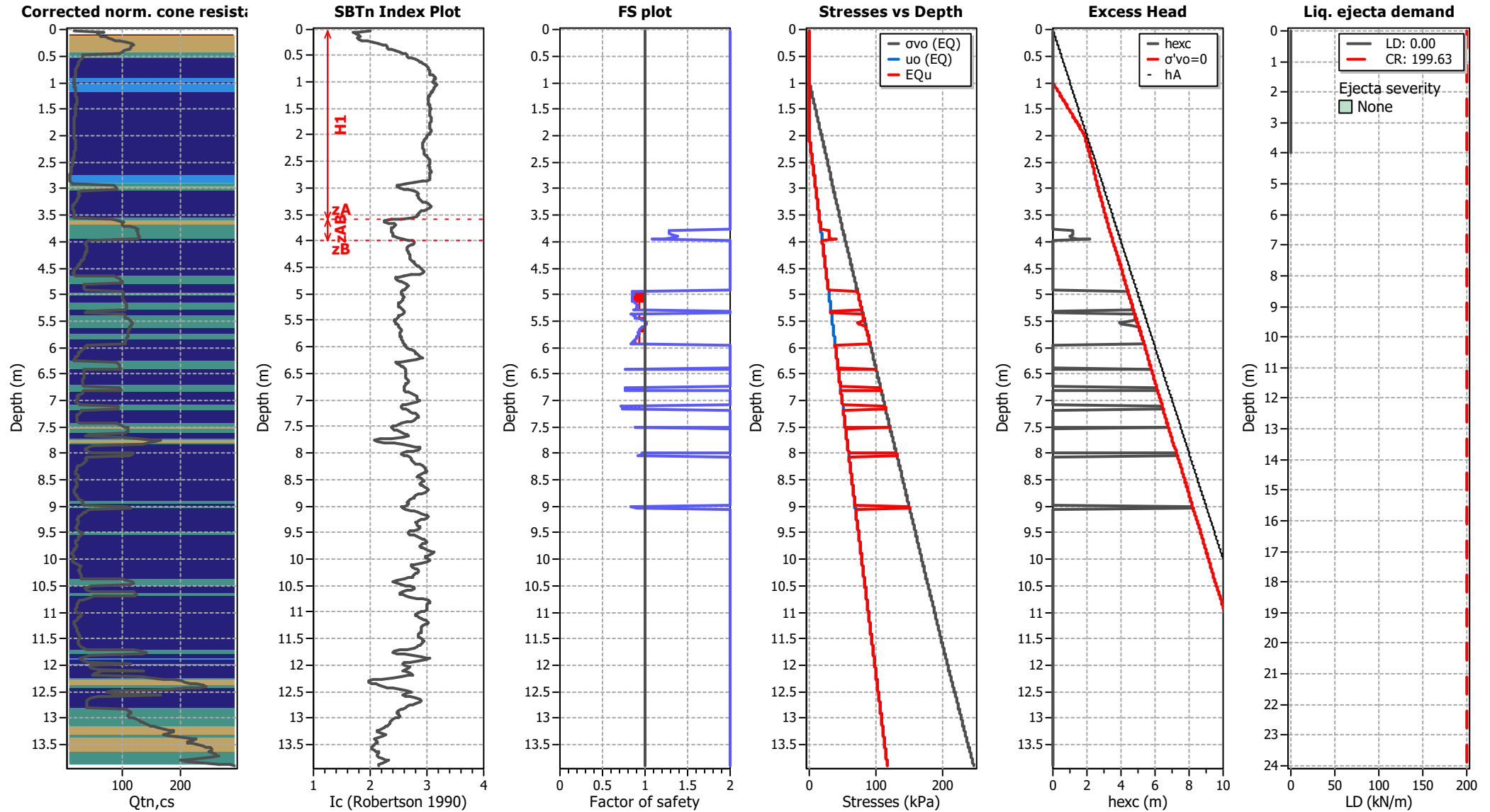
Total points in CPT file: 695
Total points excluded: 117
Exclusion percentage: 16.83%
Number of layers detected: 20



Abbreviations

- q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

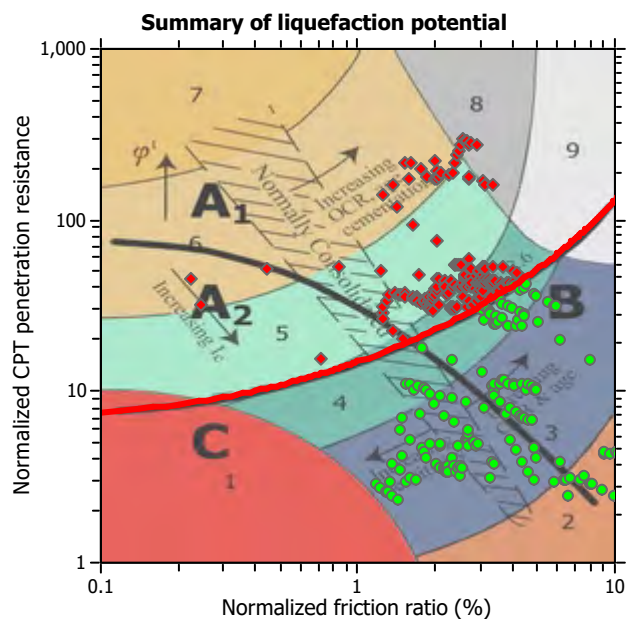
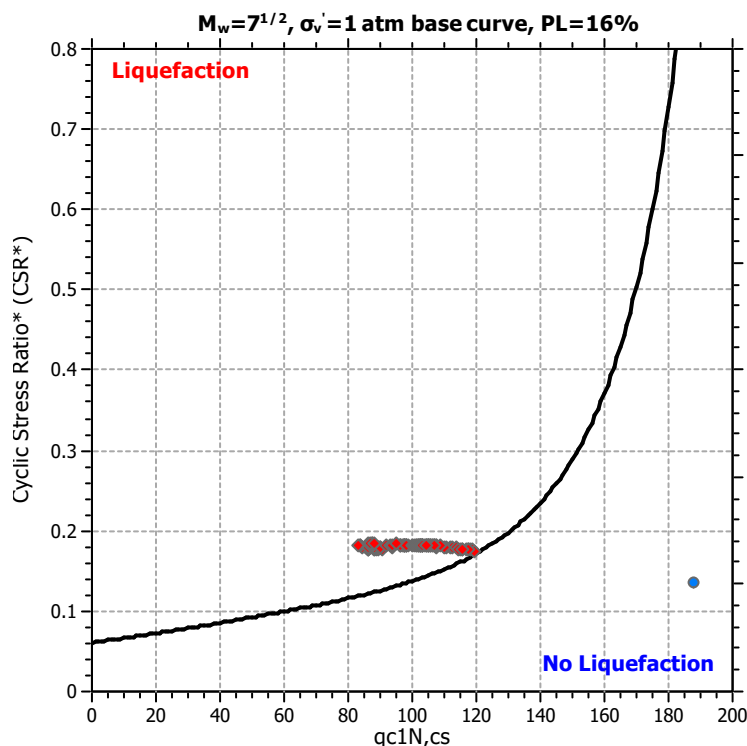
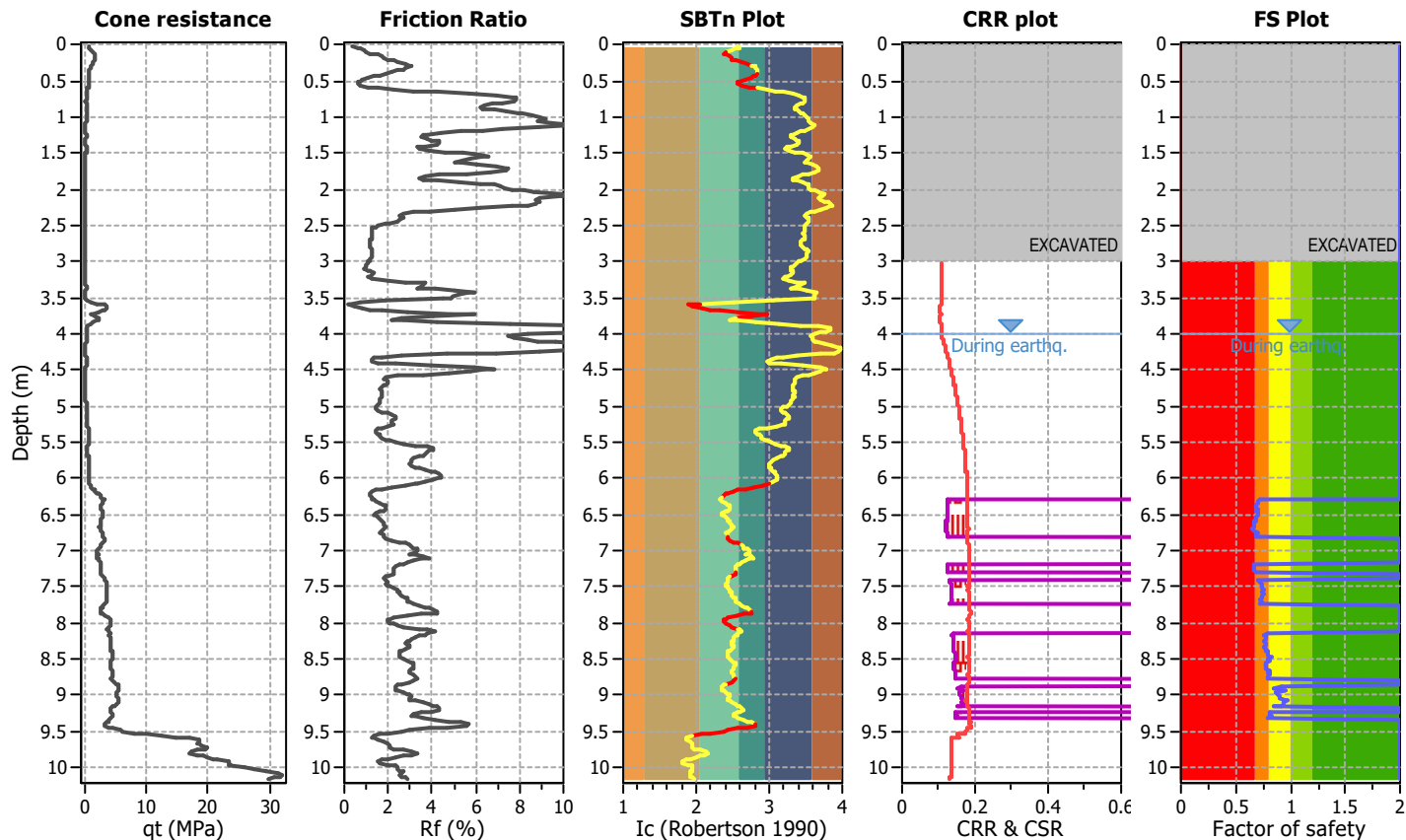
Project title : Sunfield Landholding

Location :

CPT file : CPT201

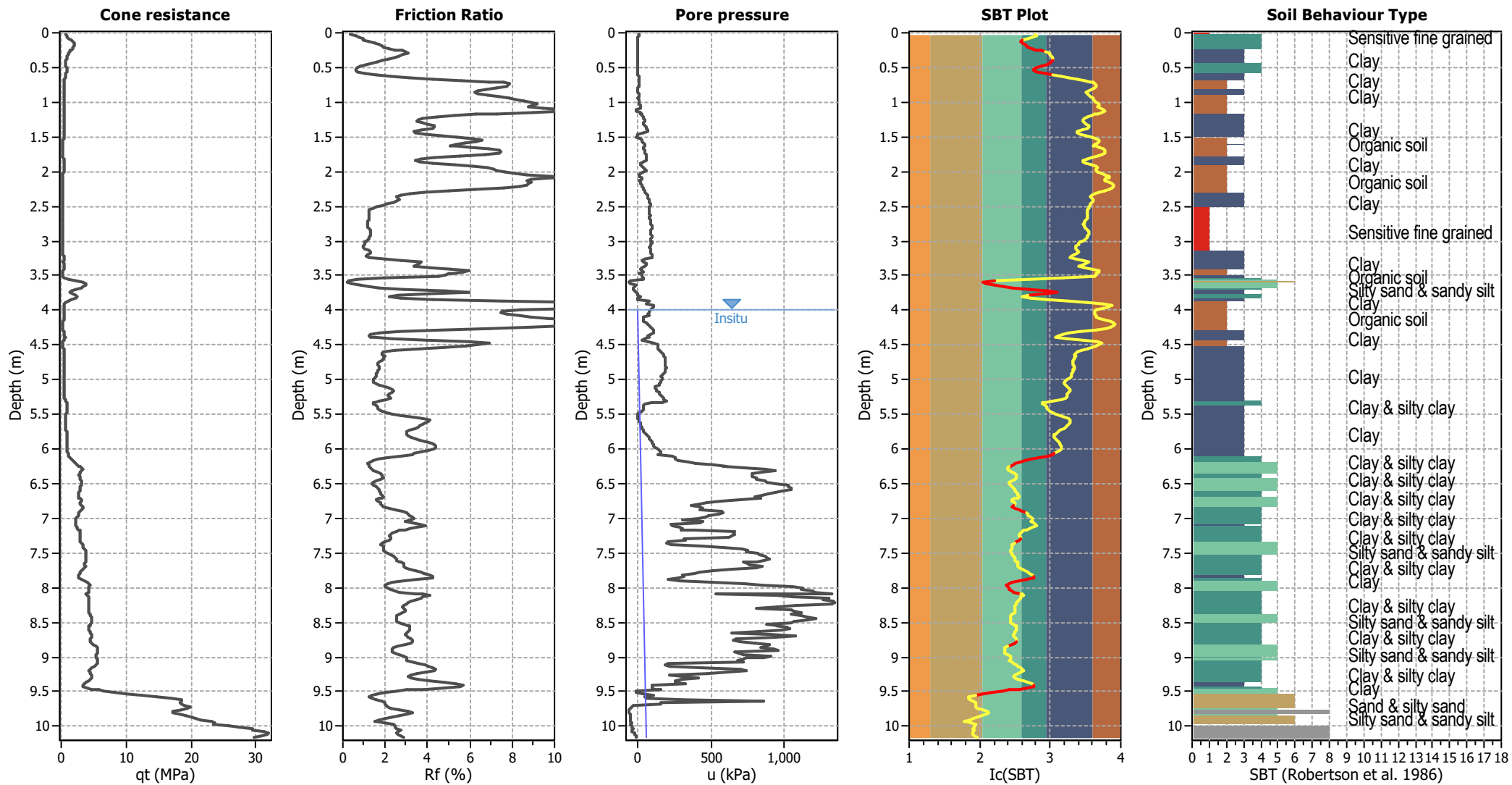
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

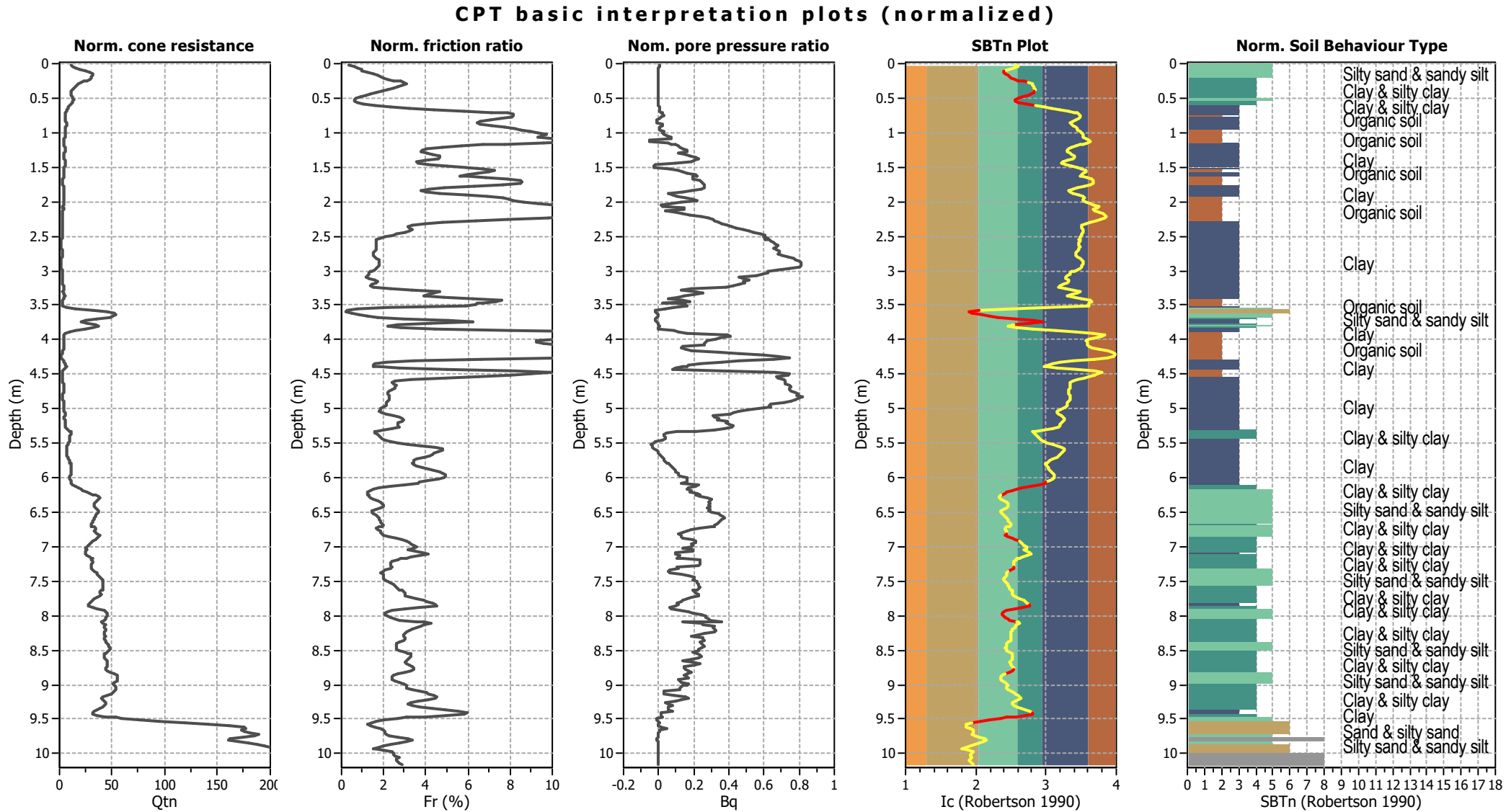


Input parameters and analysis data

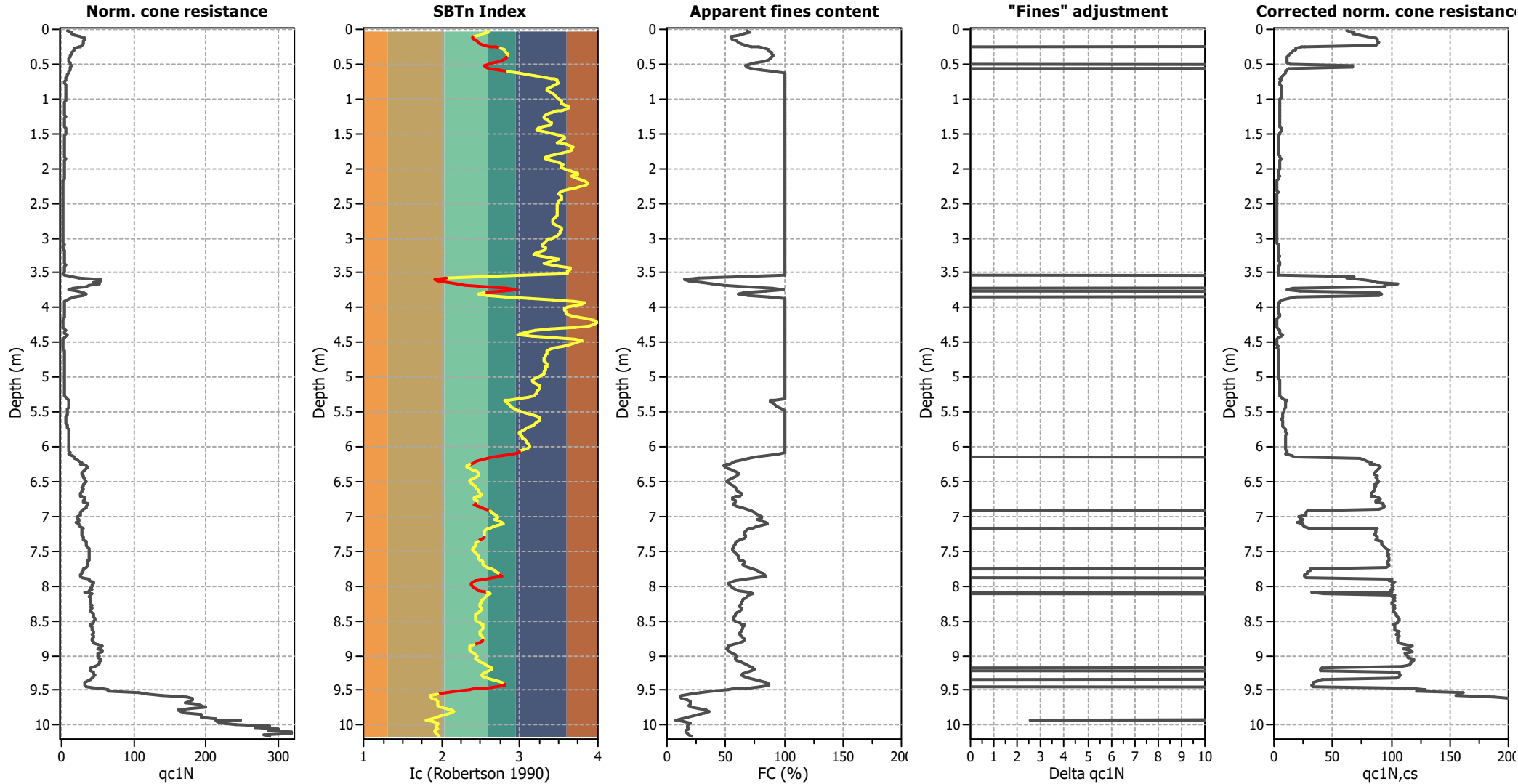
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

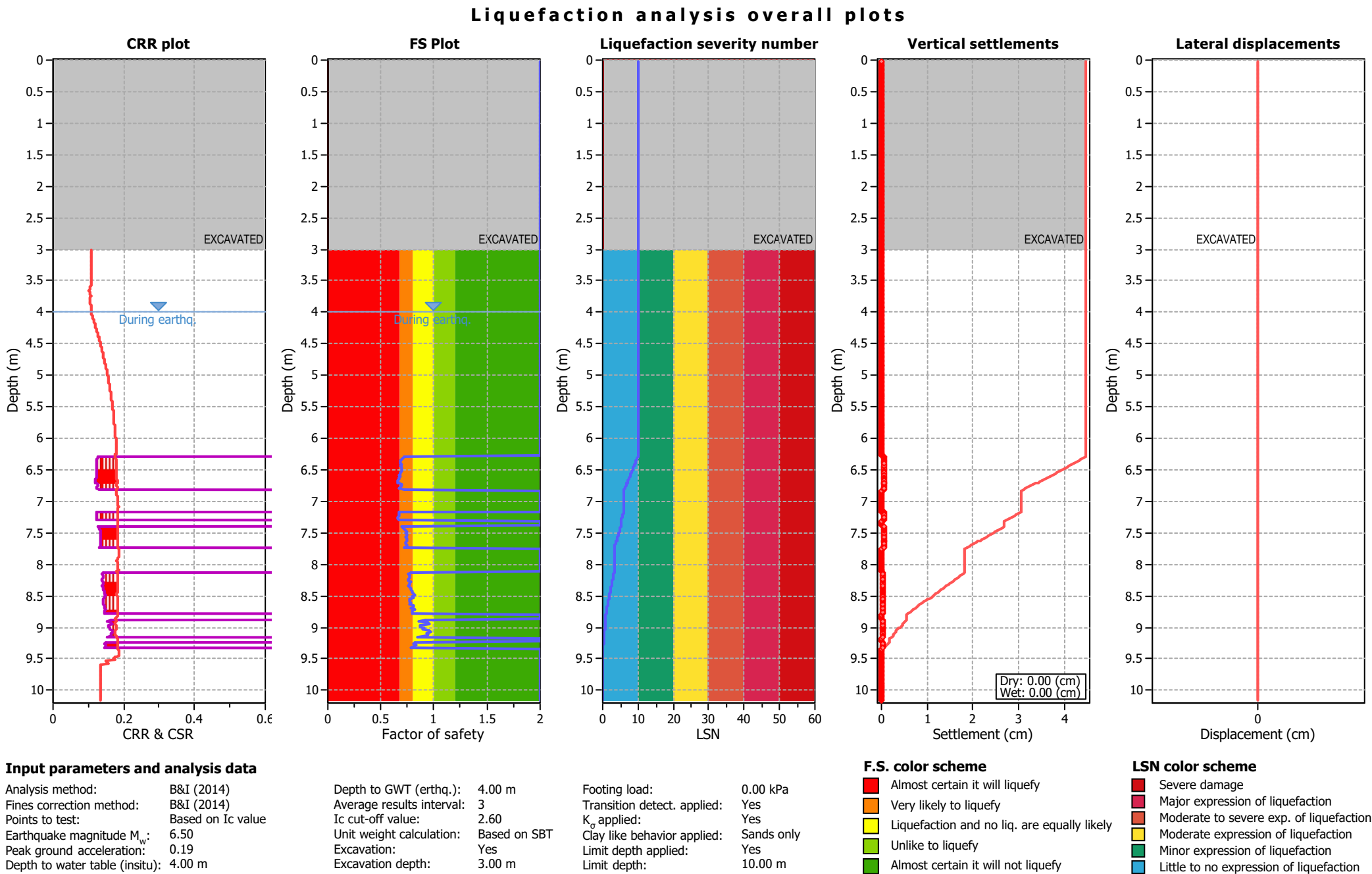


Liquefaction analysis overall plots (intermediate results)

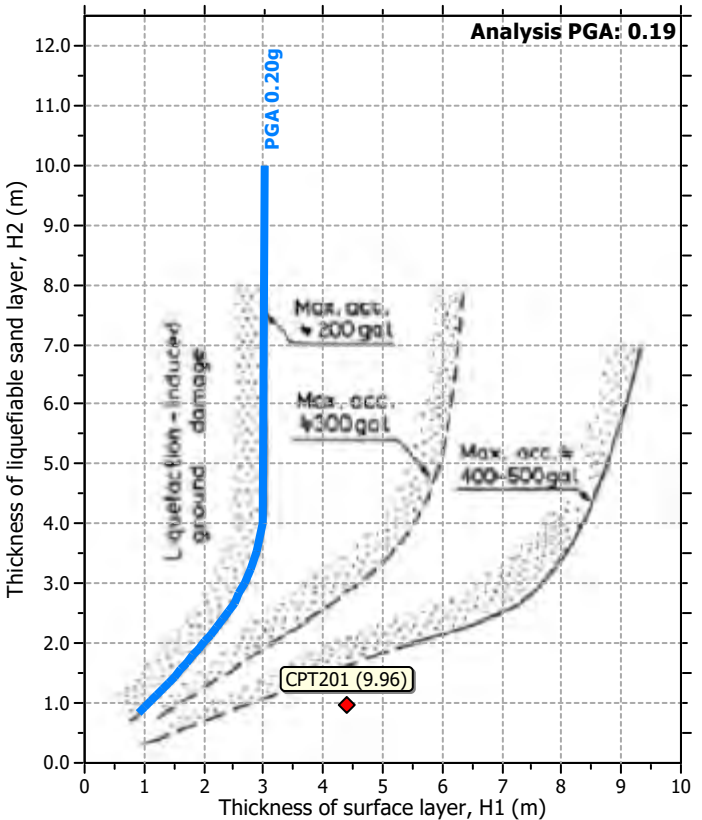
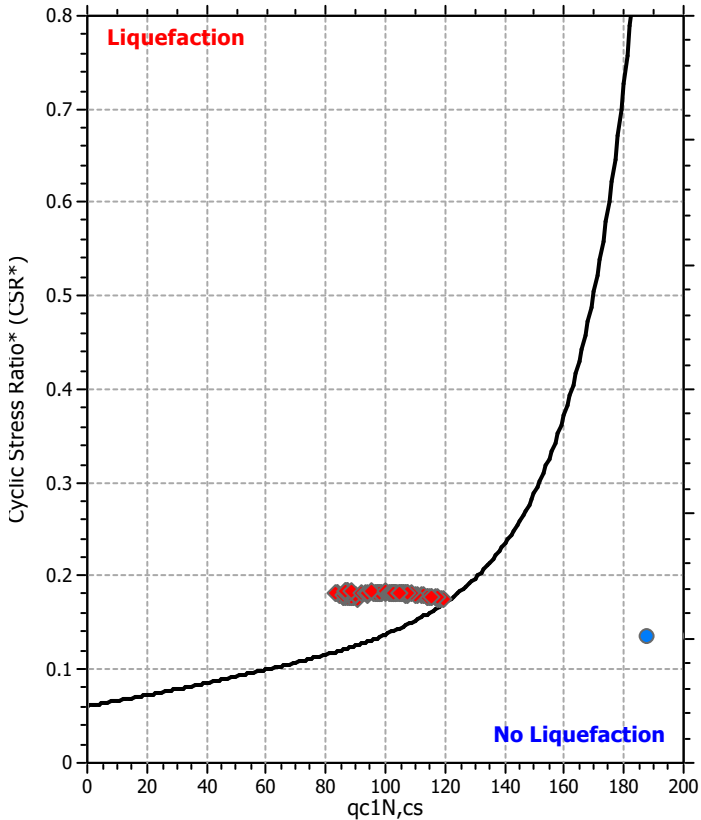
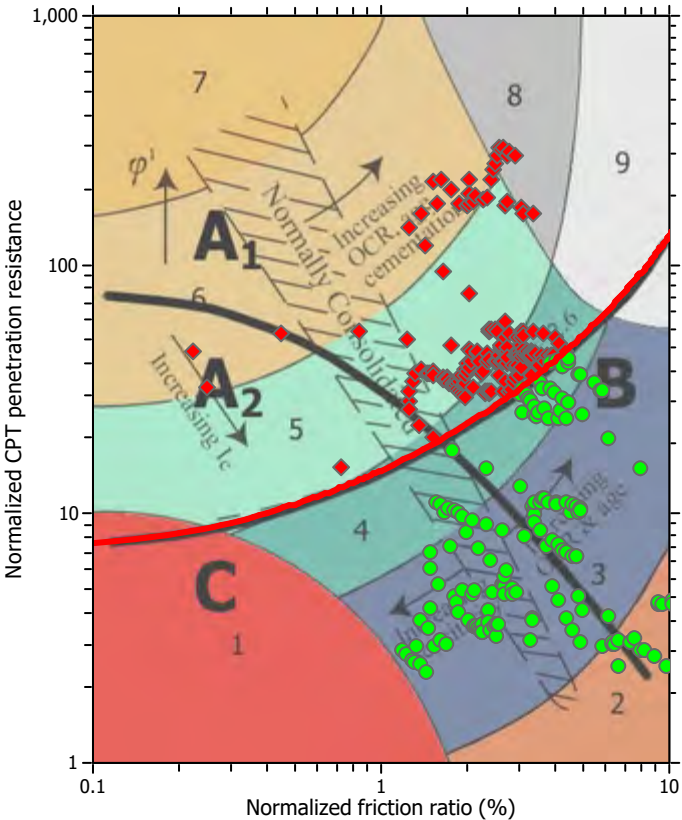


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



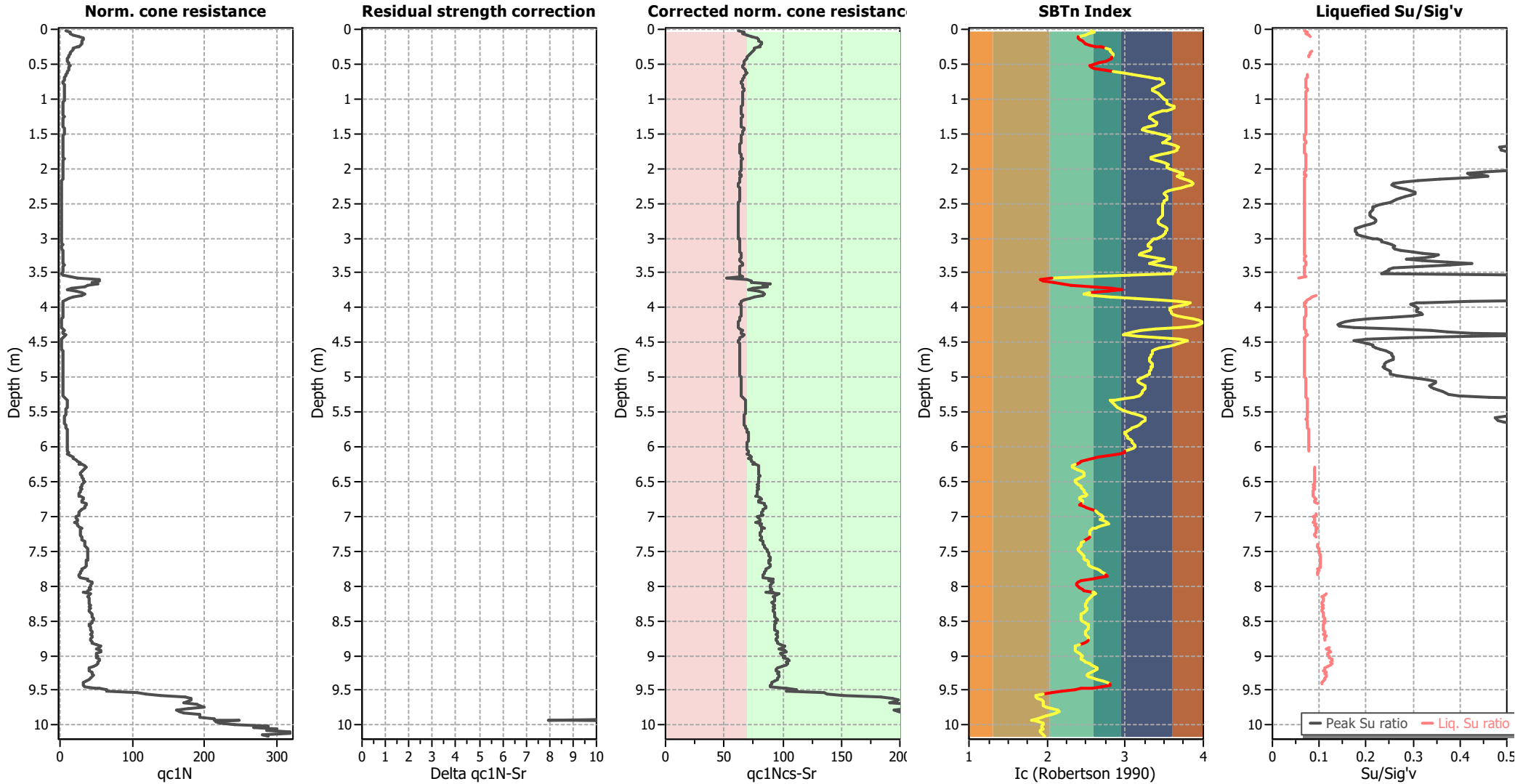
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

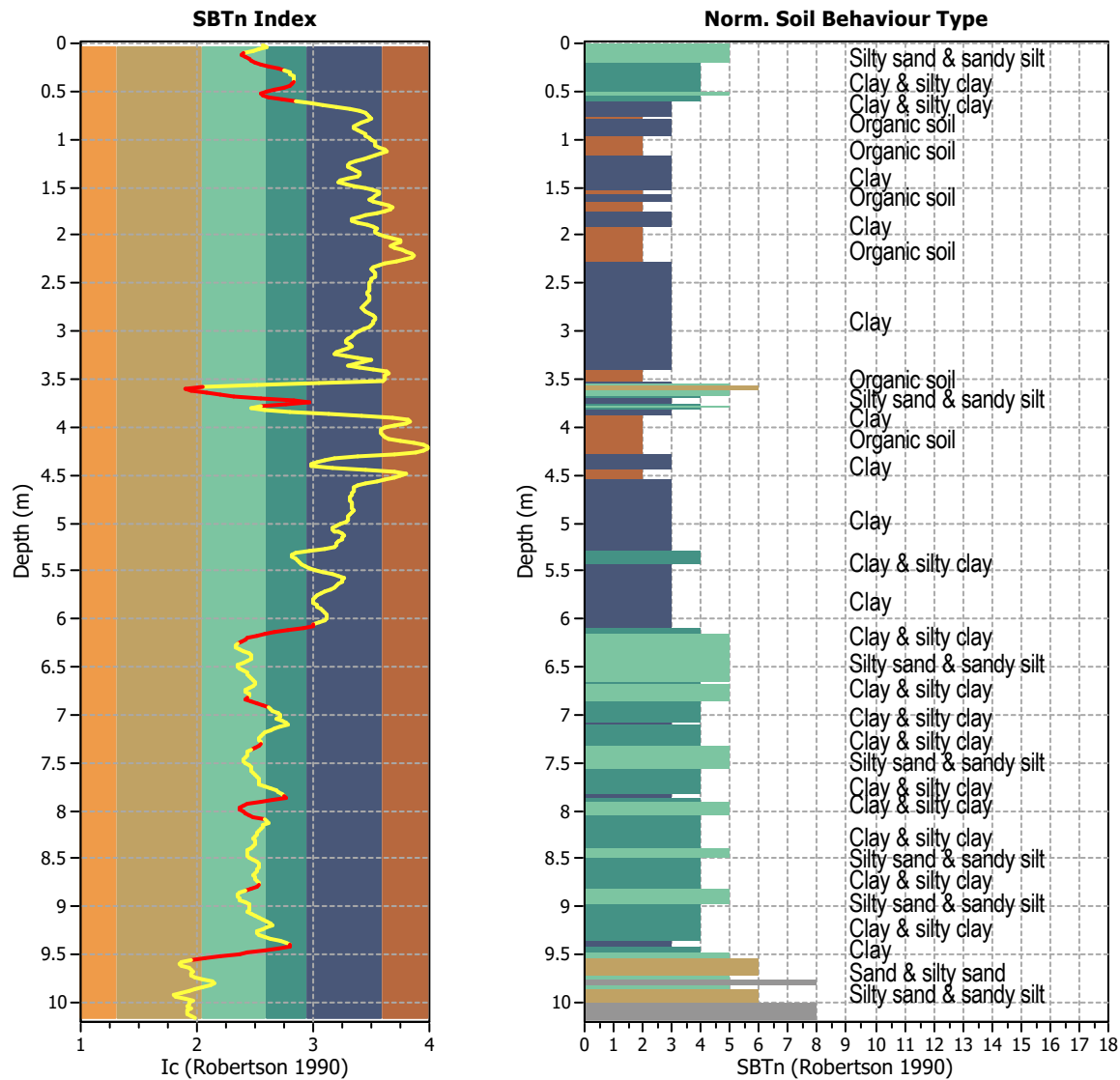
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



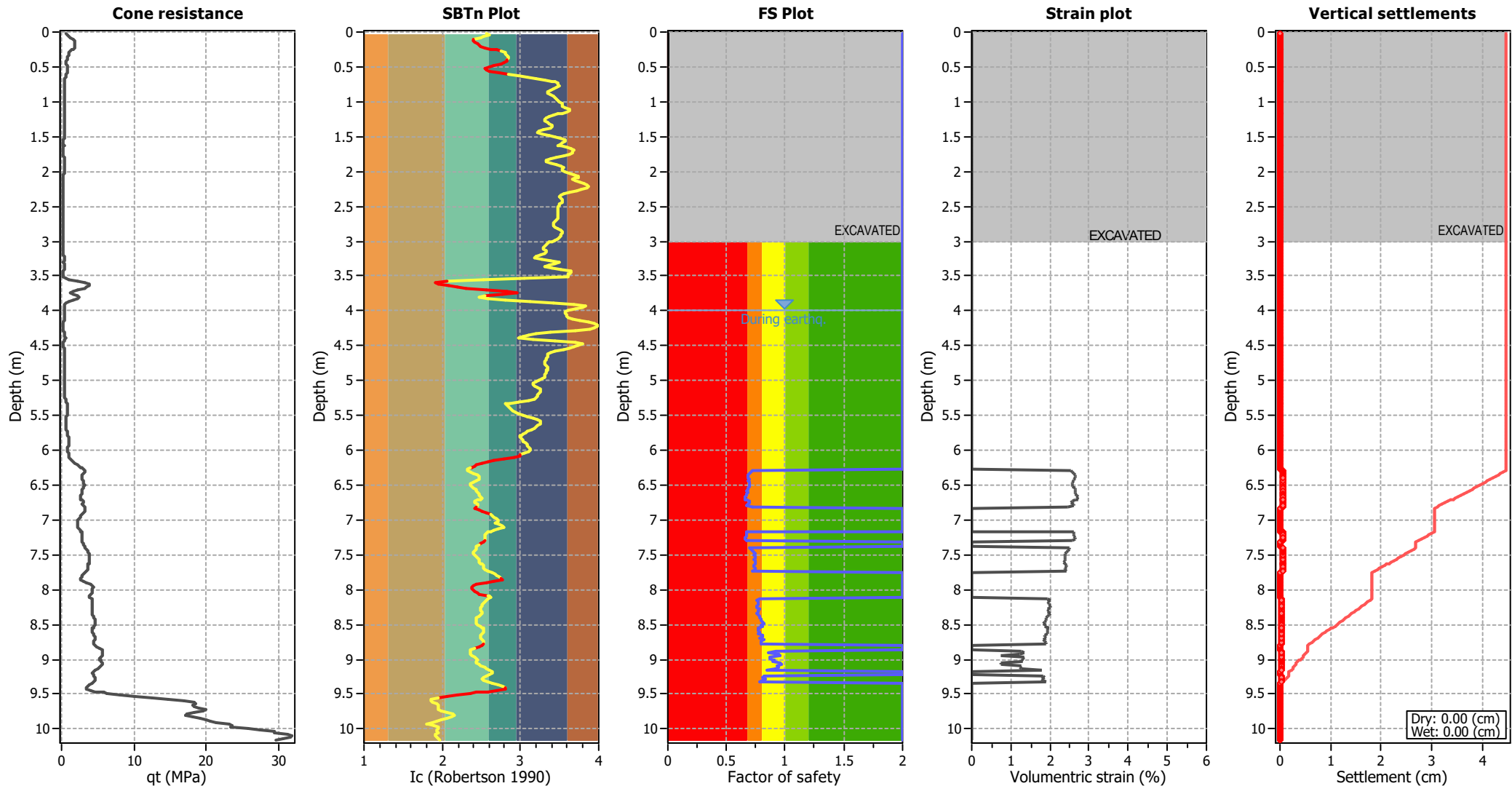
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 508
Total points excluded: 80
Exclusion percentage: 15.75%
Number of layers detected: 12

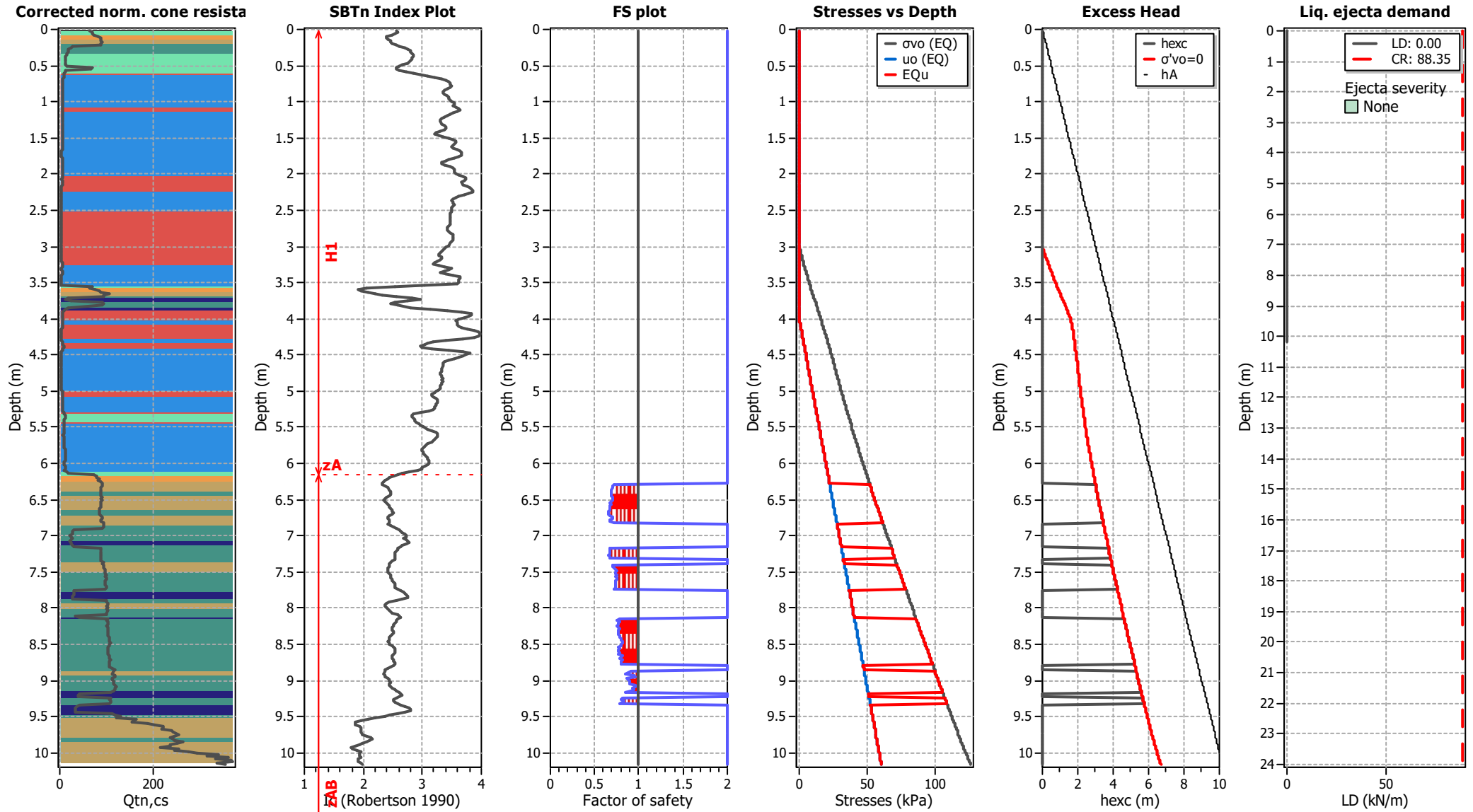
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

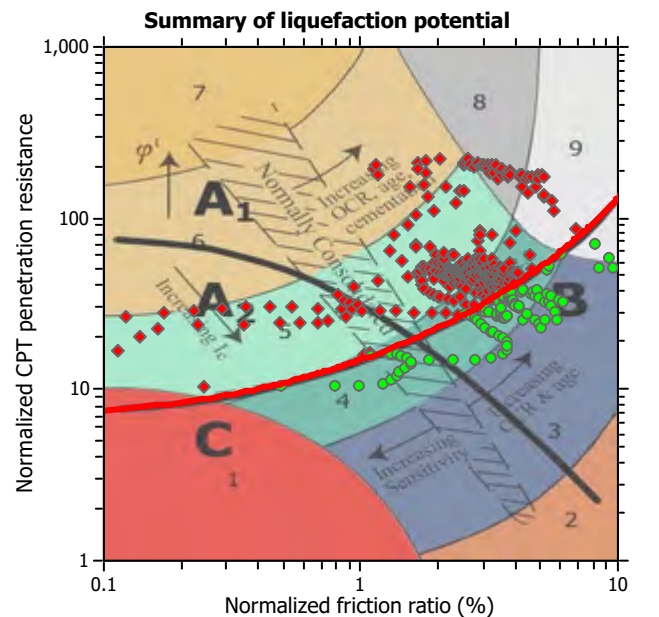
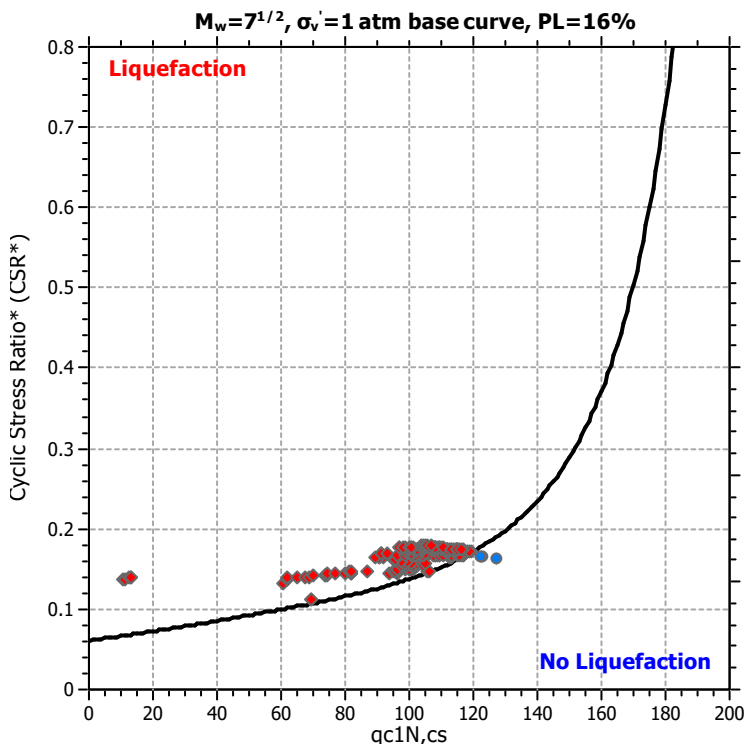
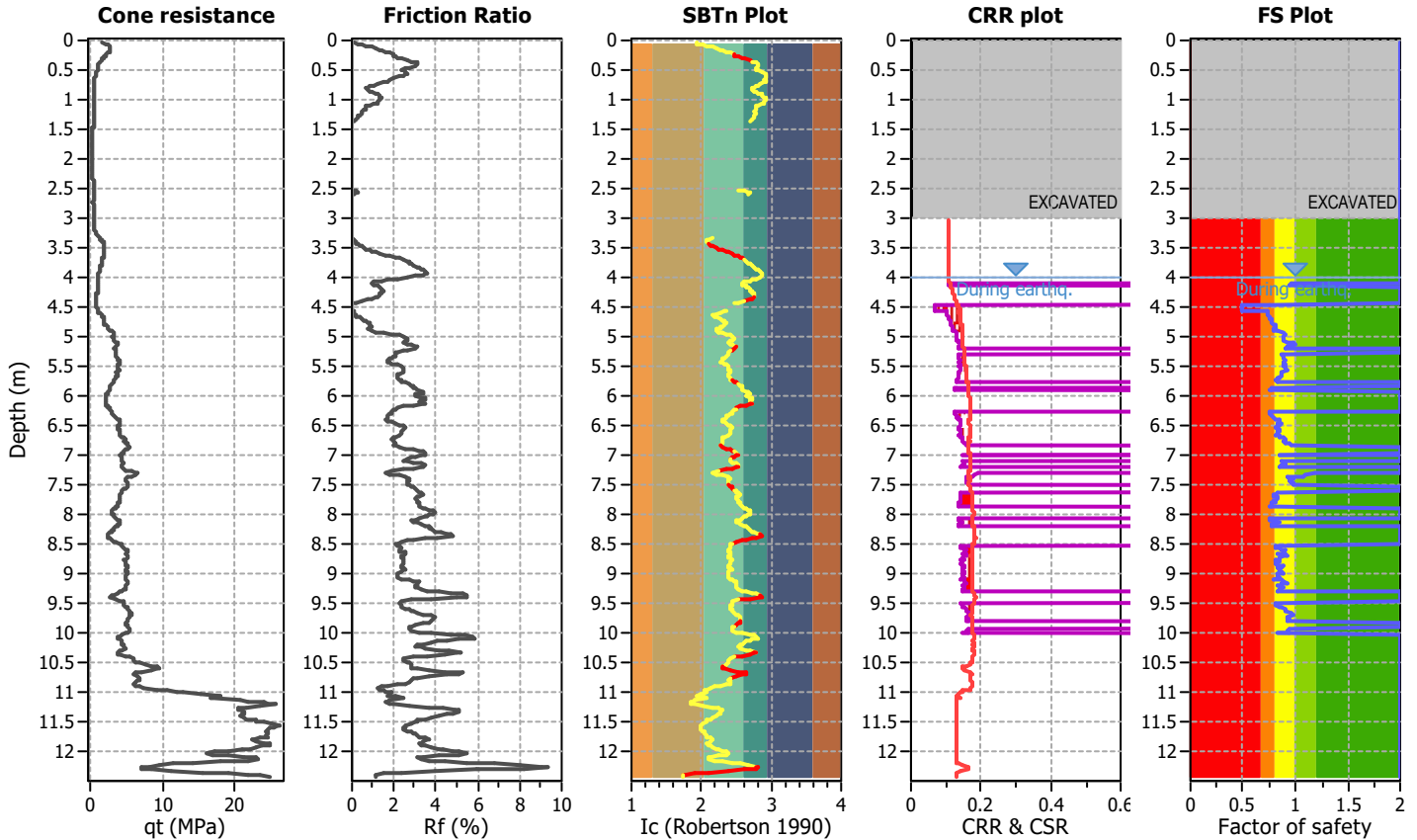
Project title : Sunfield Landholding

Location :

CPT file : CPT202

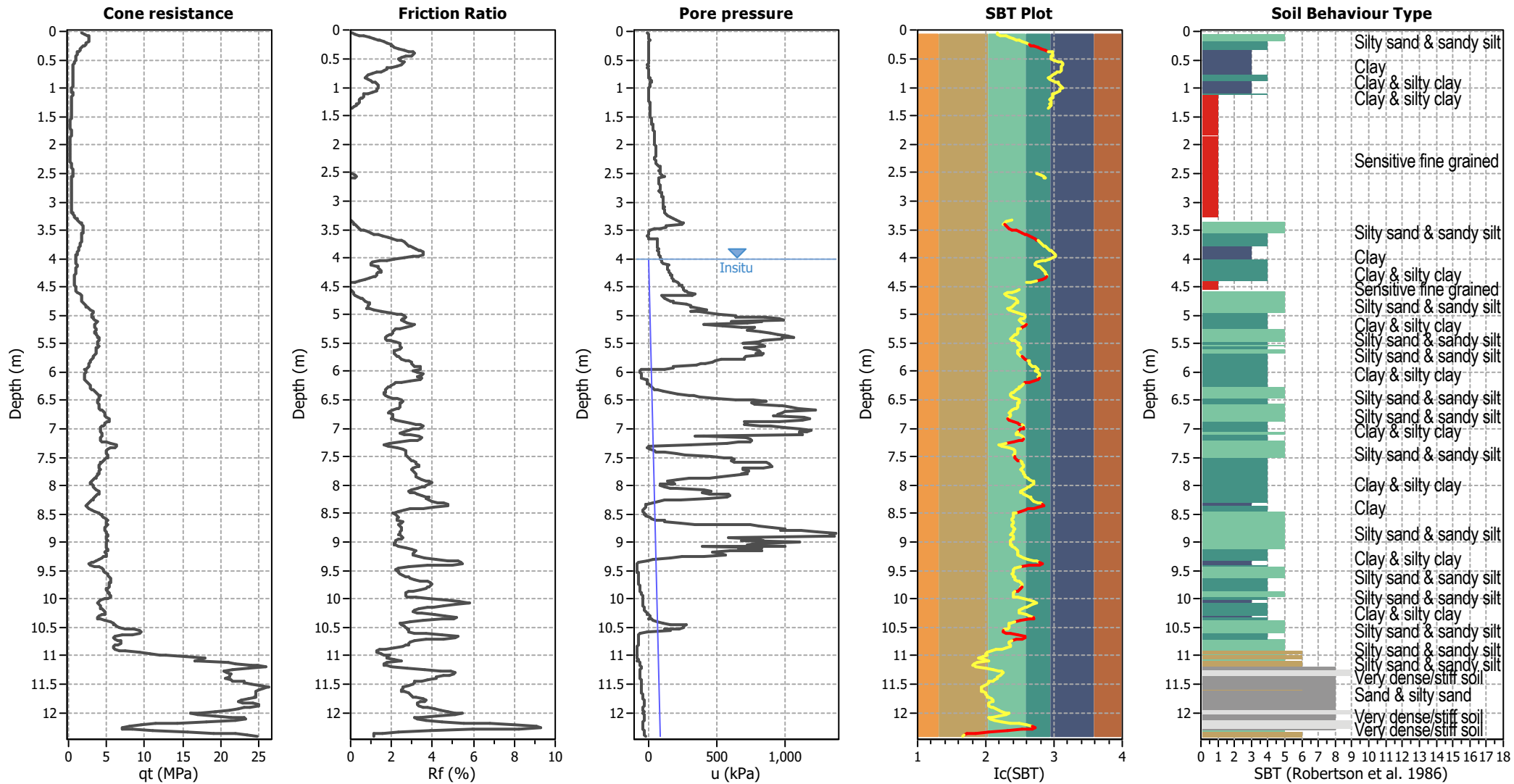
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.00 m	Excavation depth:	3.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

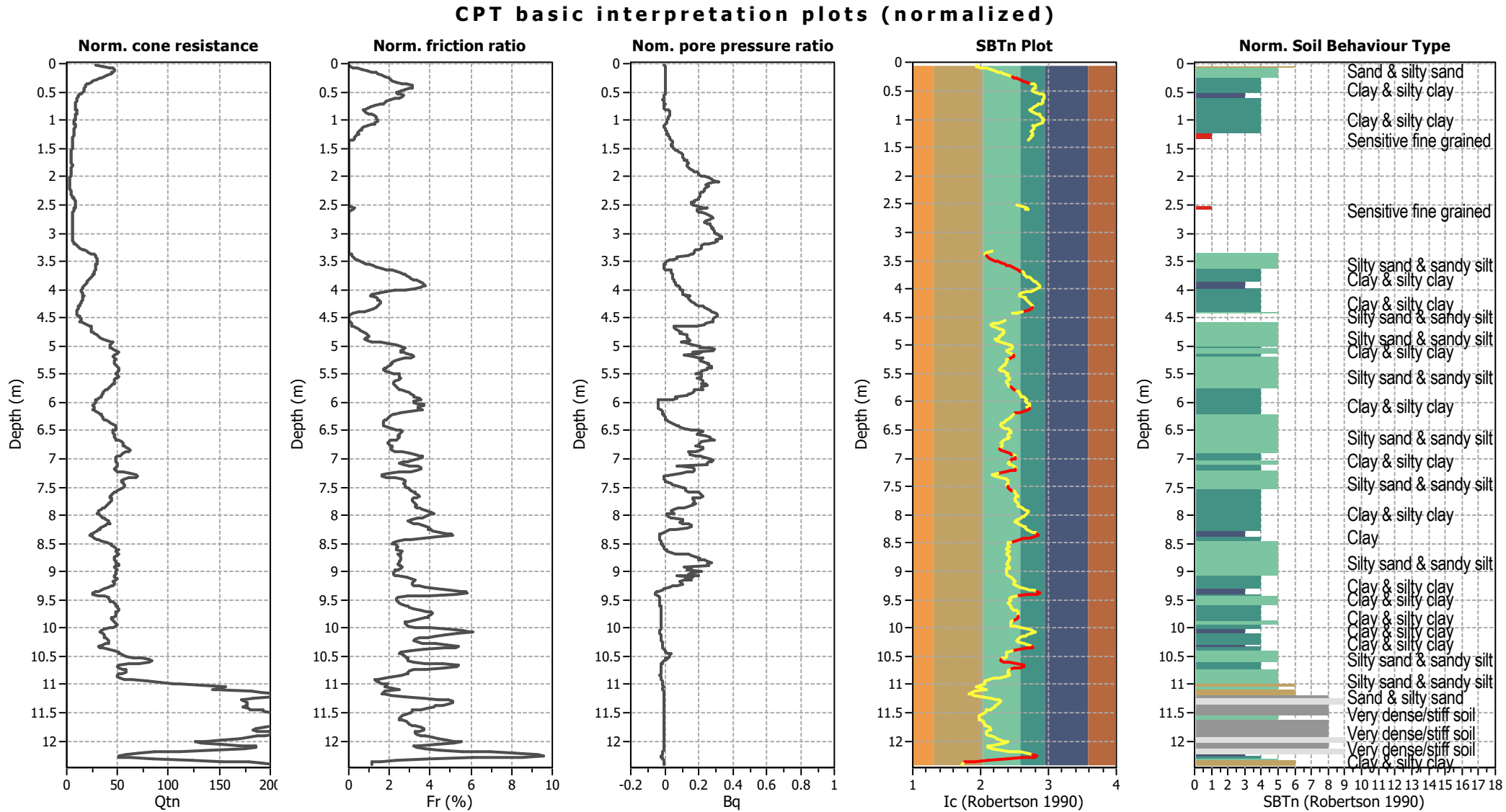


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

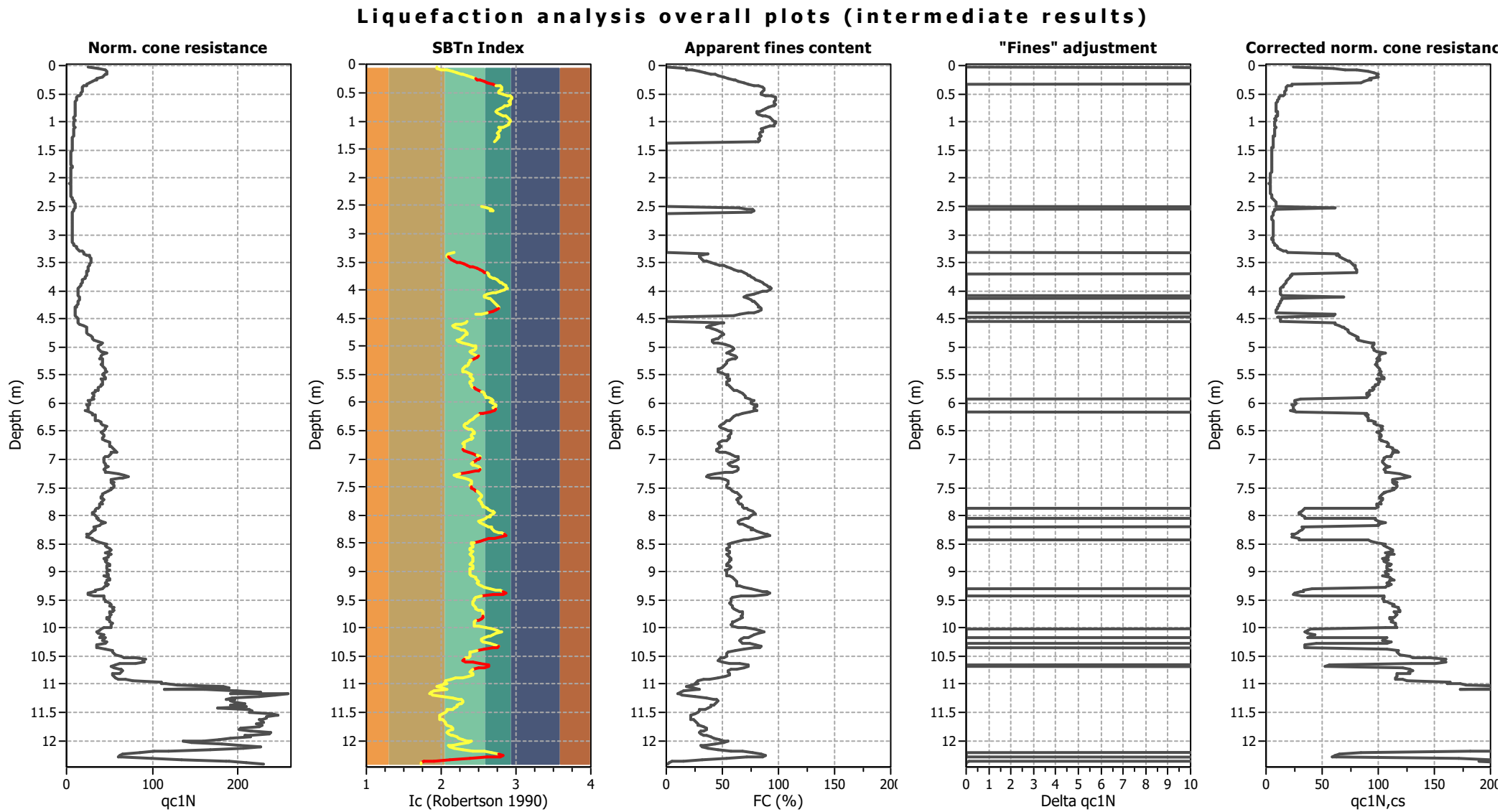
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

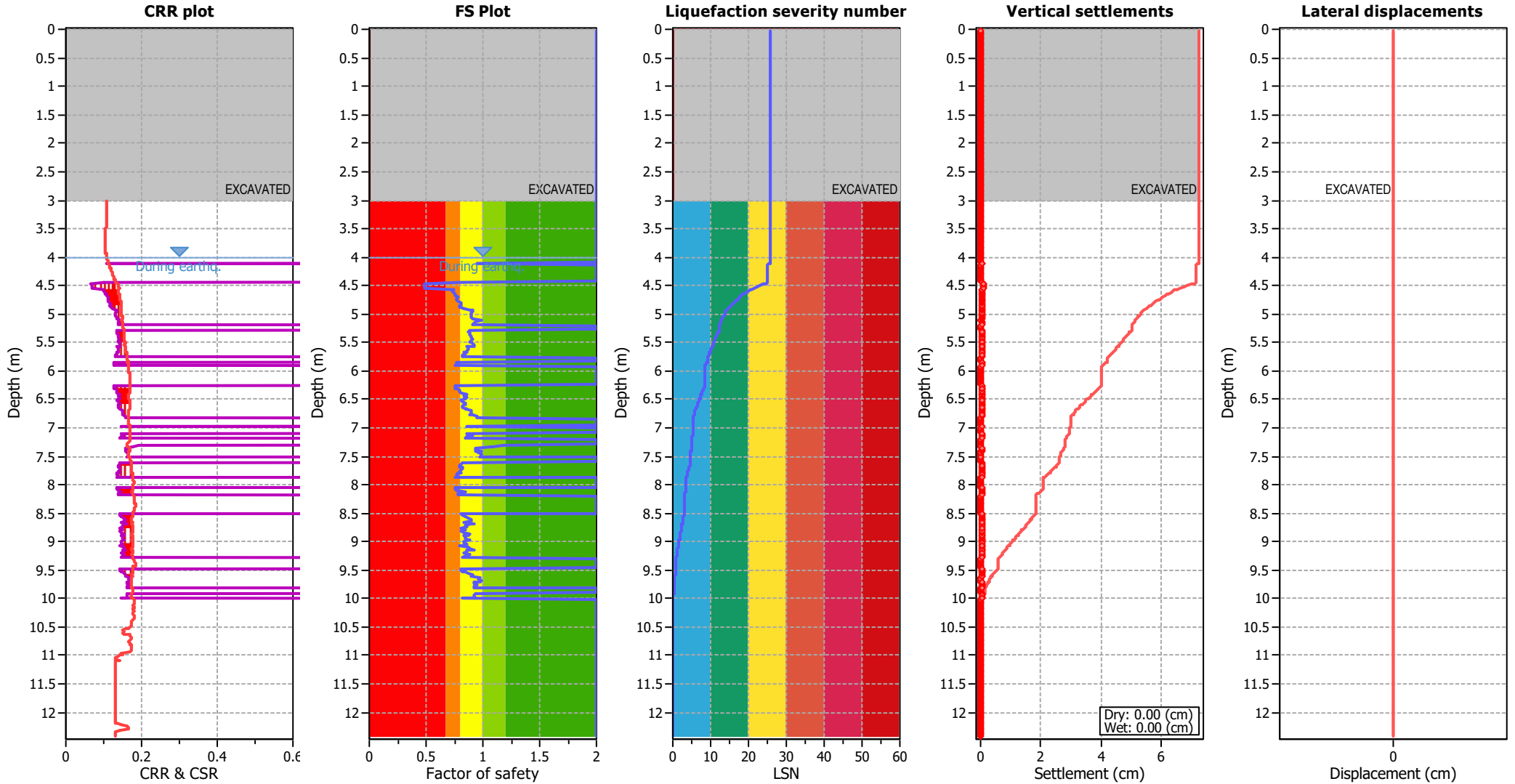
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

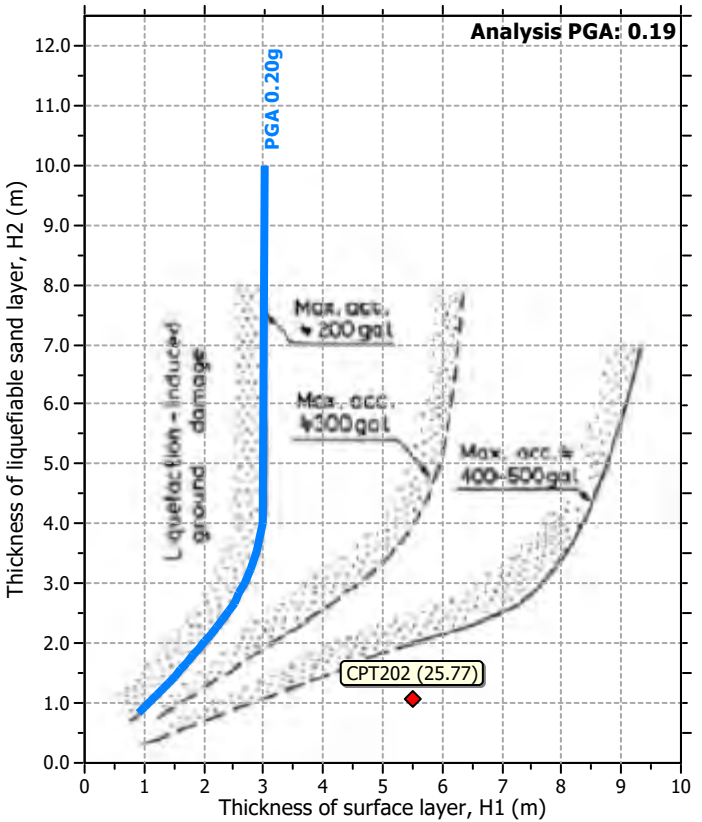
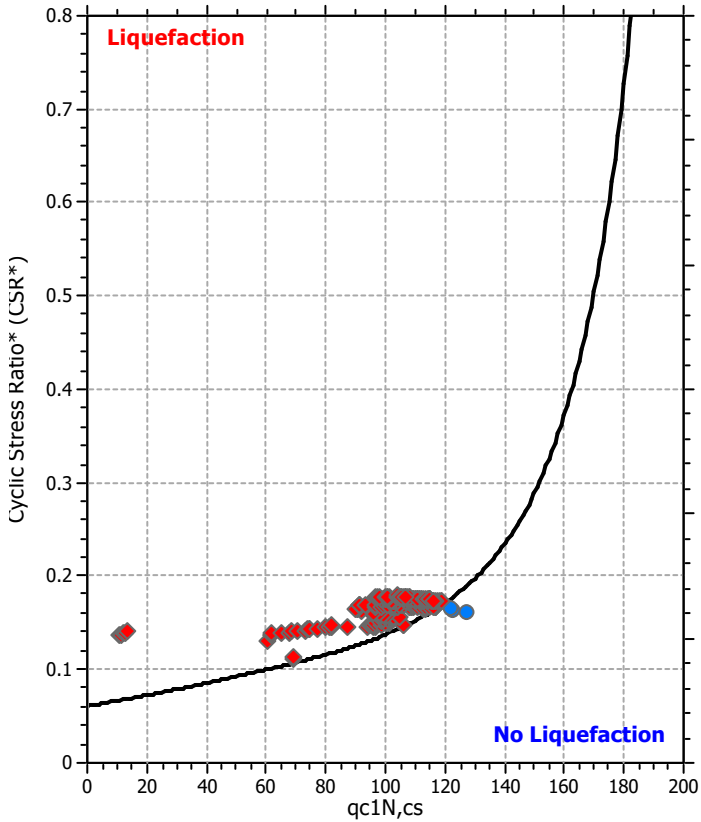
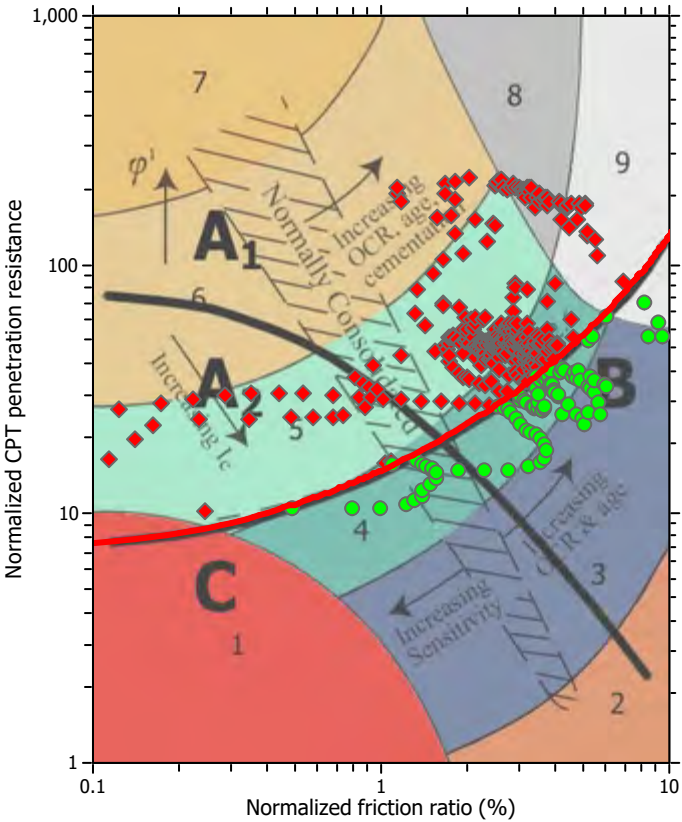
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

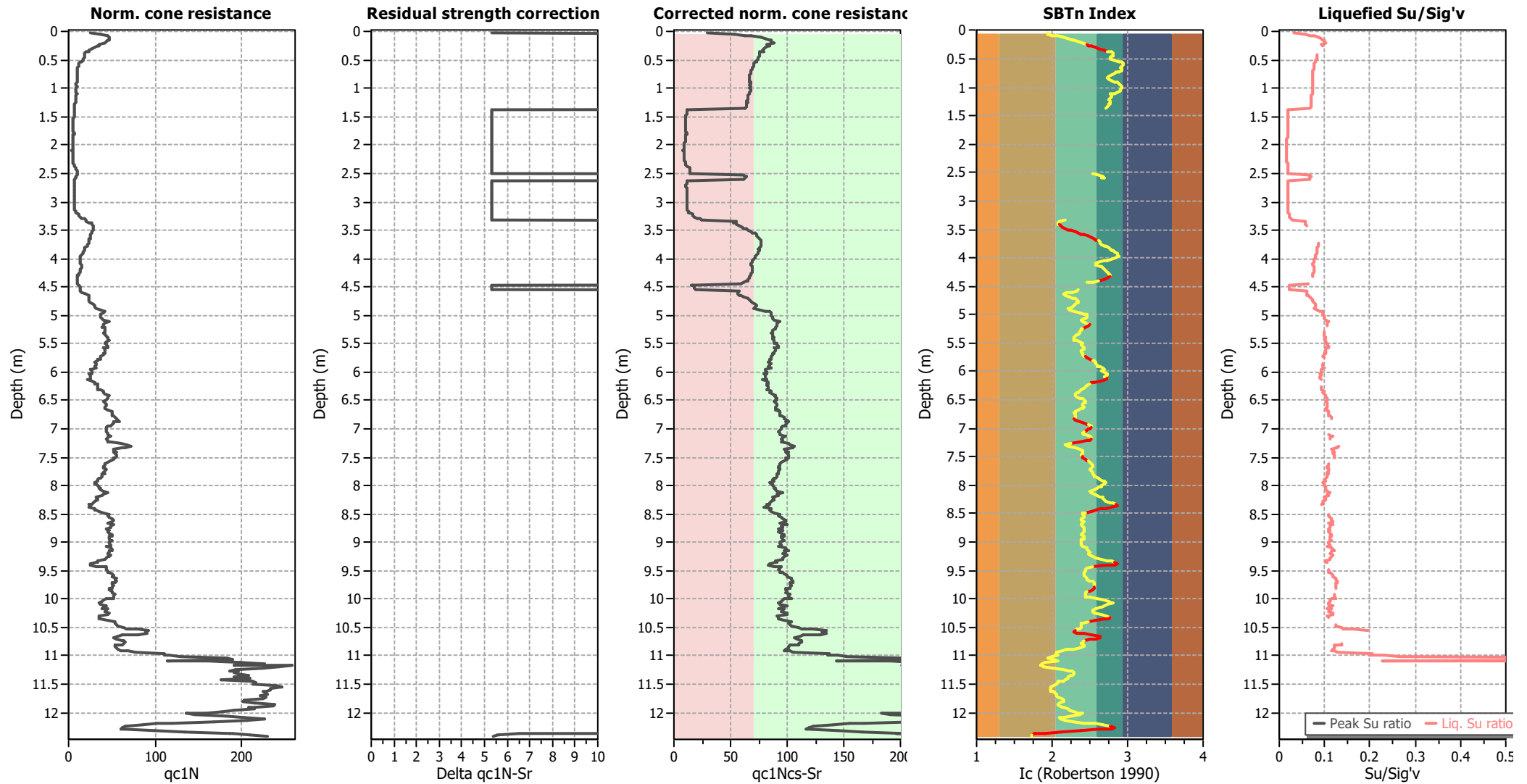
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.00 m	Excavation depth:	3.00 m	Limit depth:	10.00 m

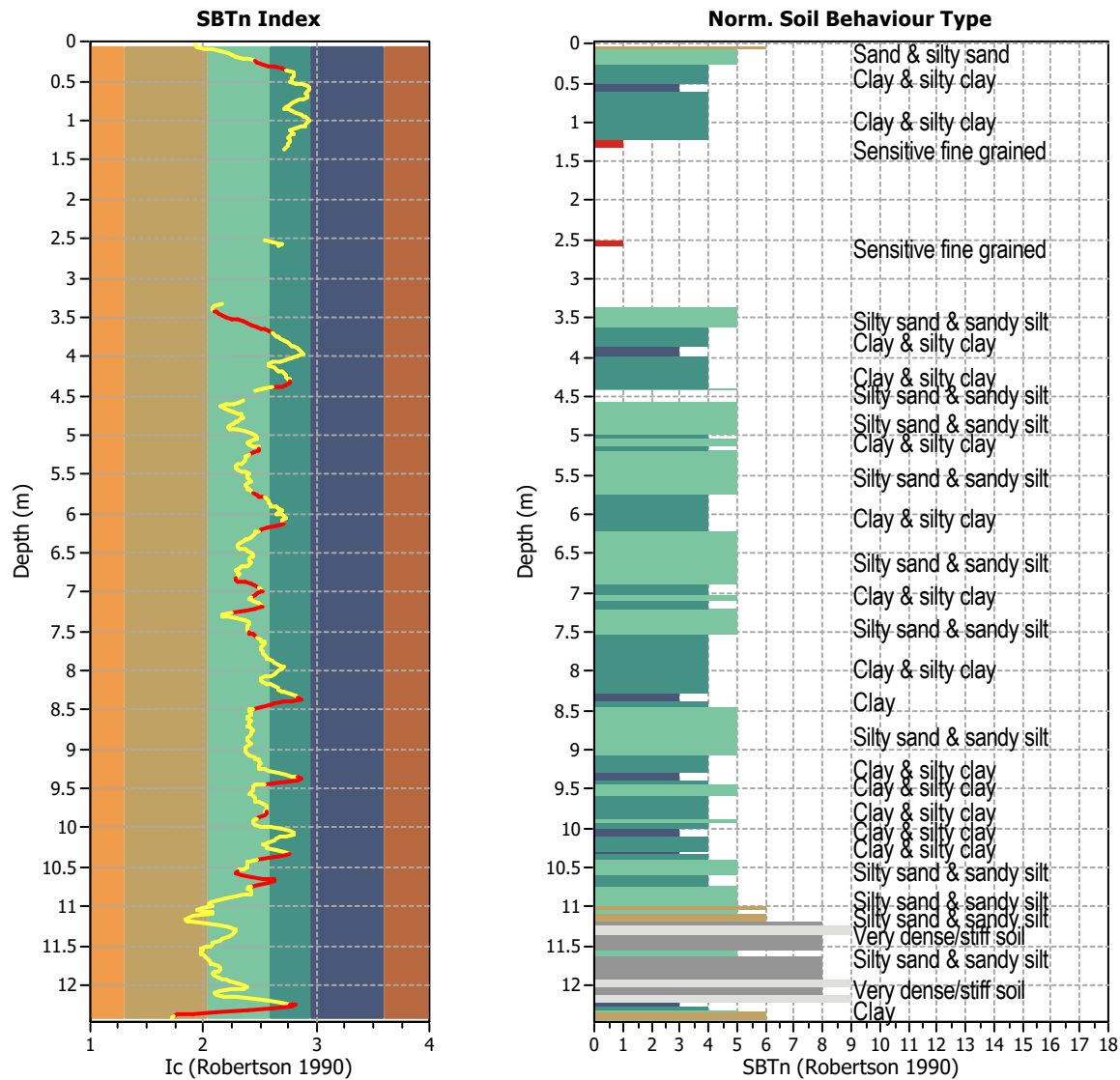
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



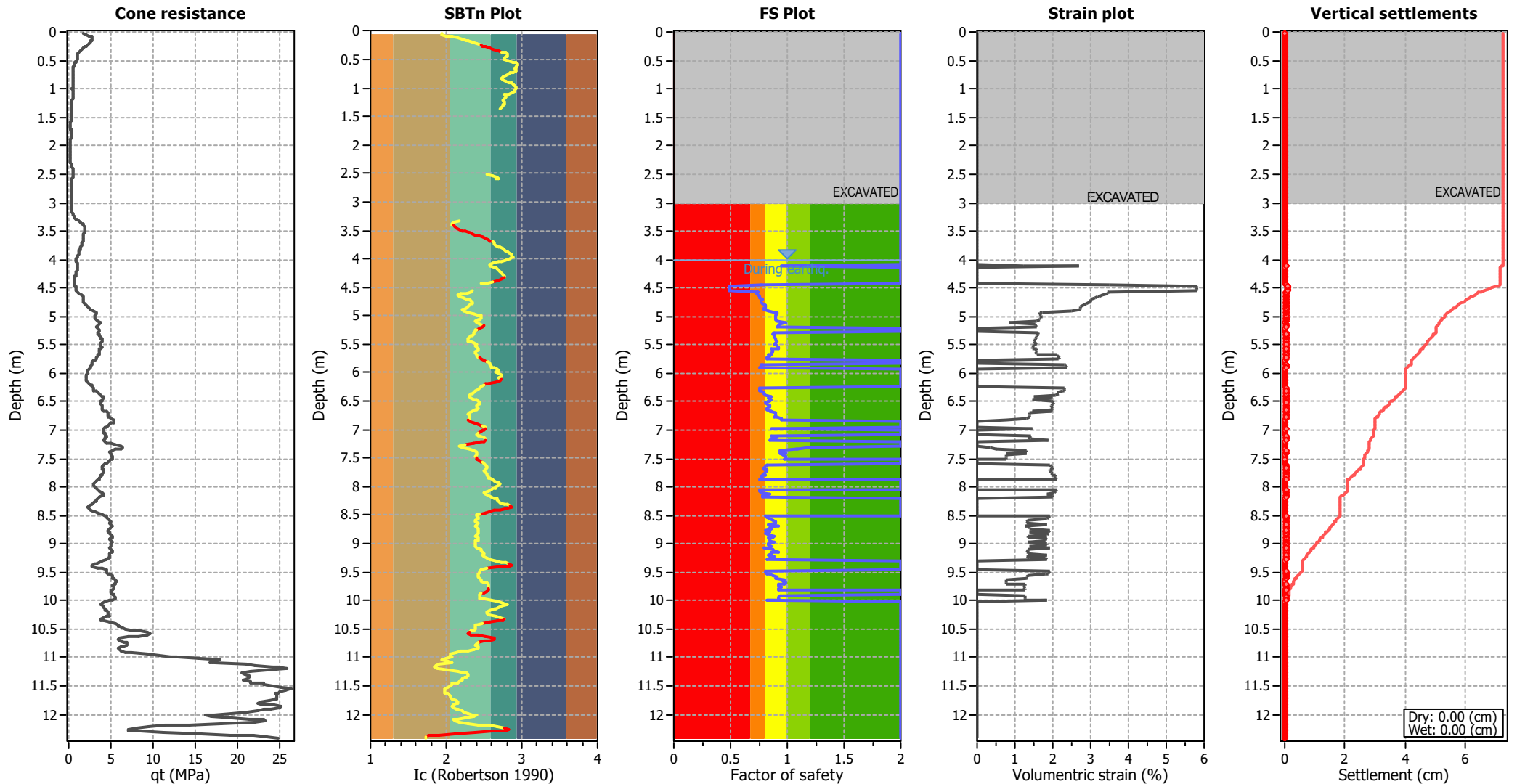
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 621
Total points excluded: 104
Exclusion percentage: 16.75%
Number of layers detected: 17

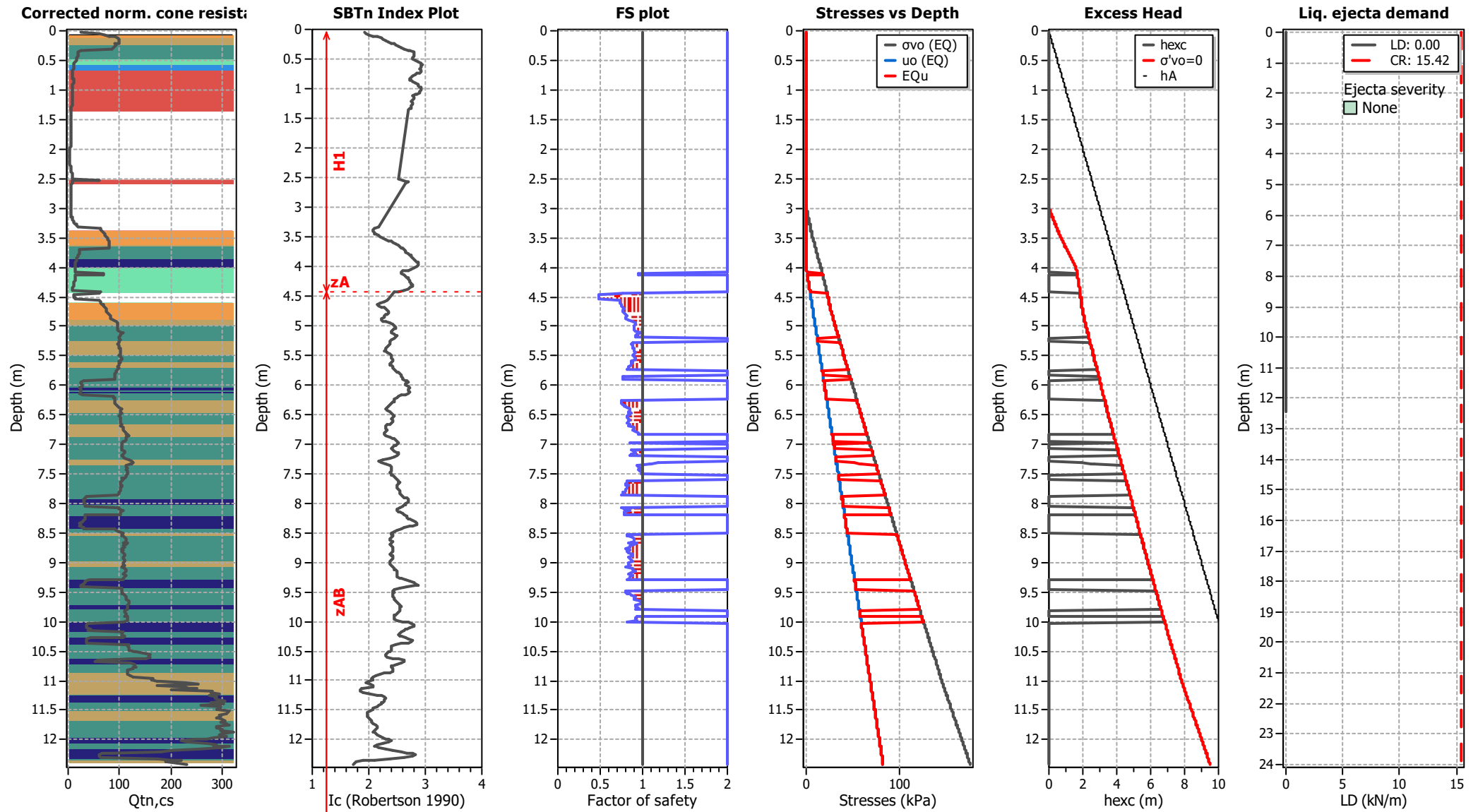
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

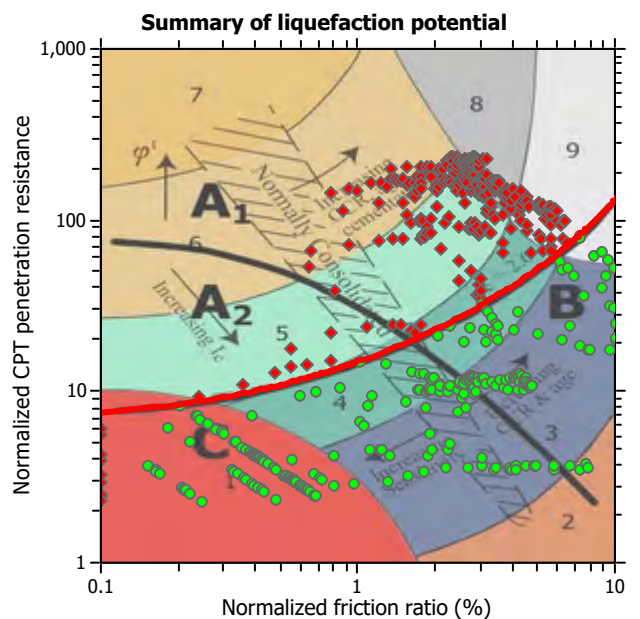
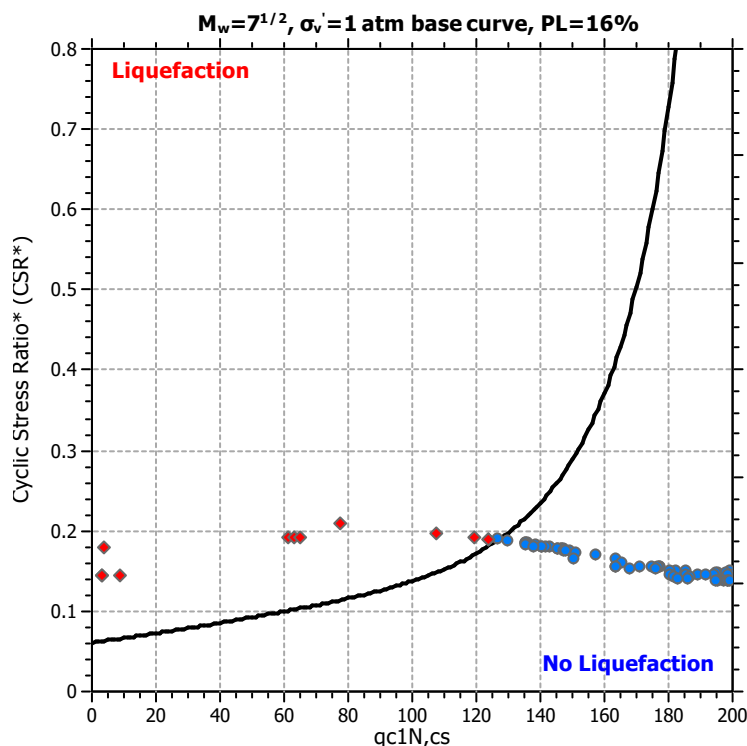
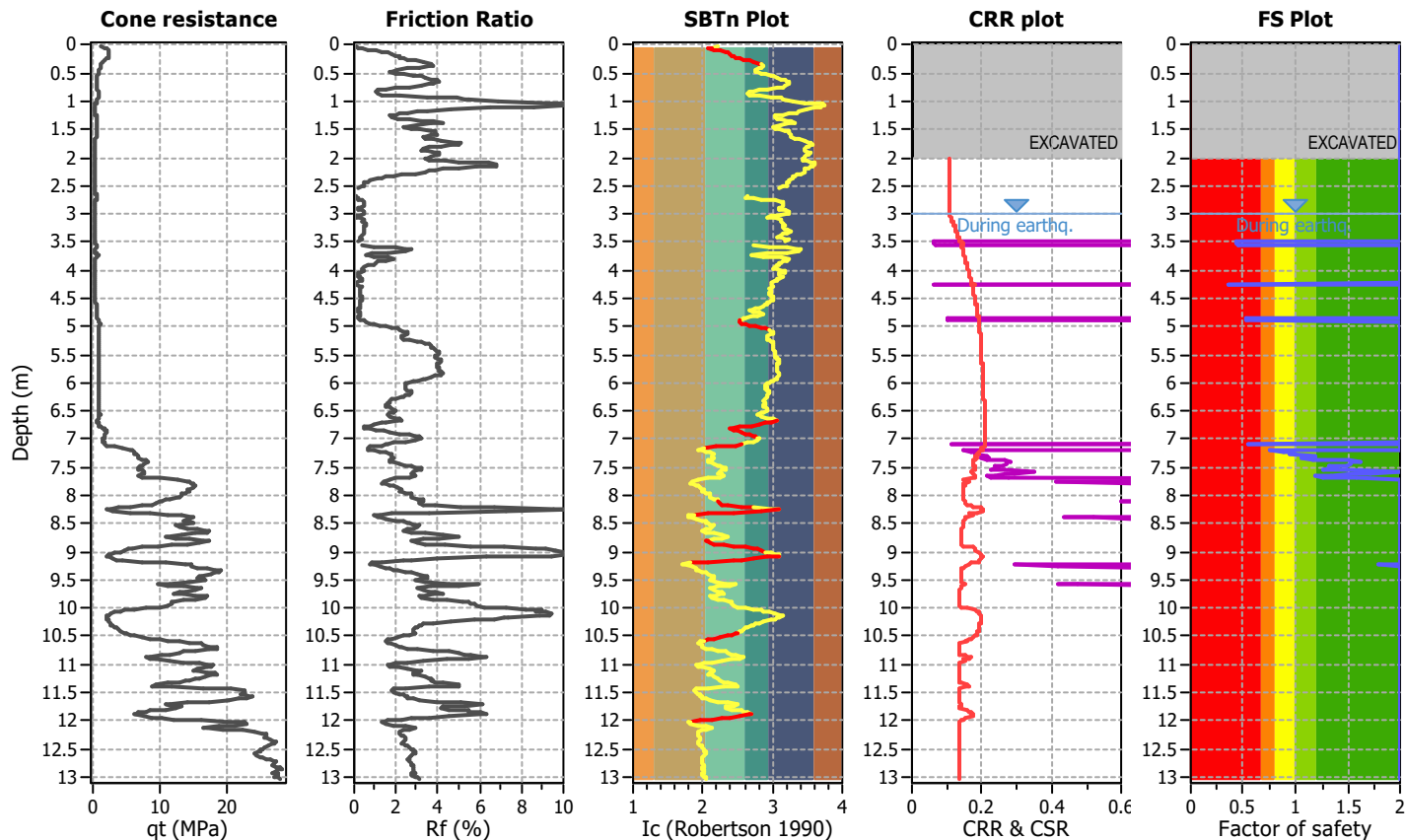
Project title : Sunfield Landholding

Location :

CPT file : CPT203

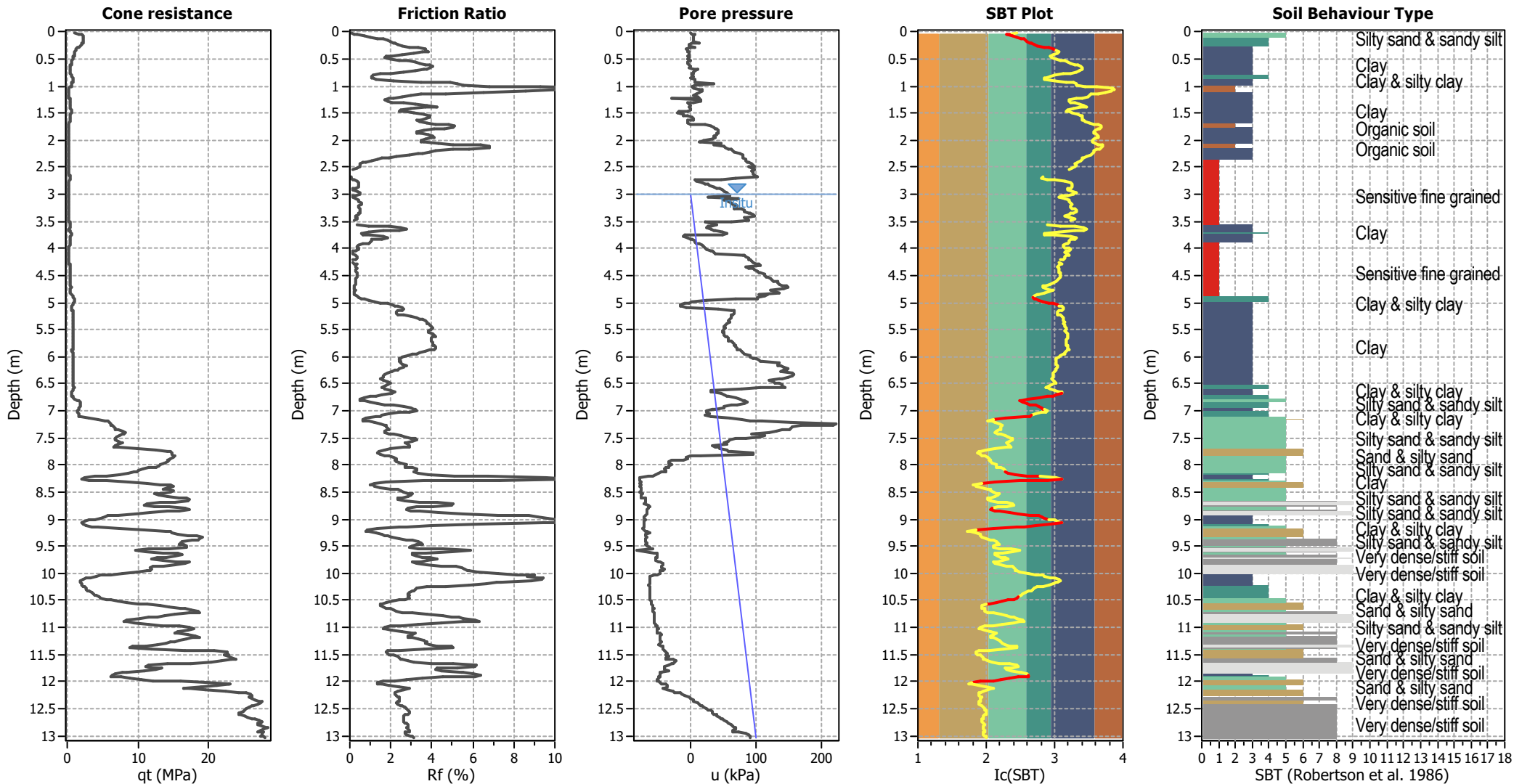
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	3.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	3.00 m	Excavation depth:	2.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

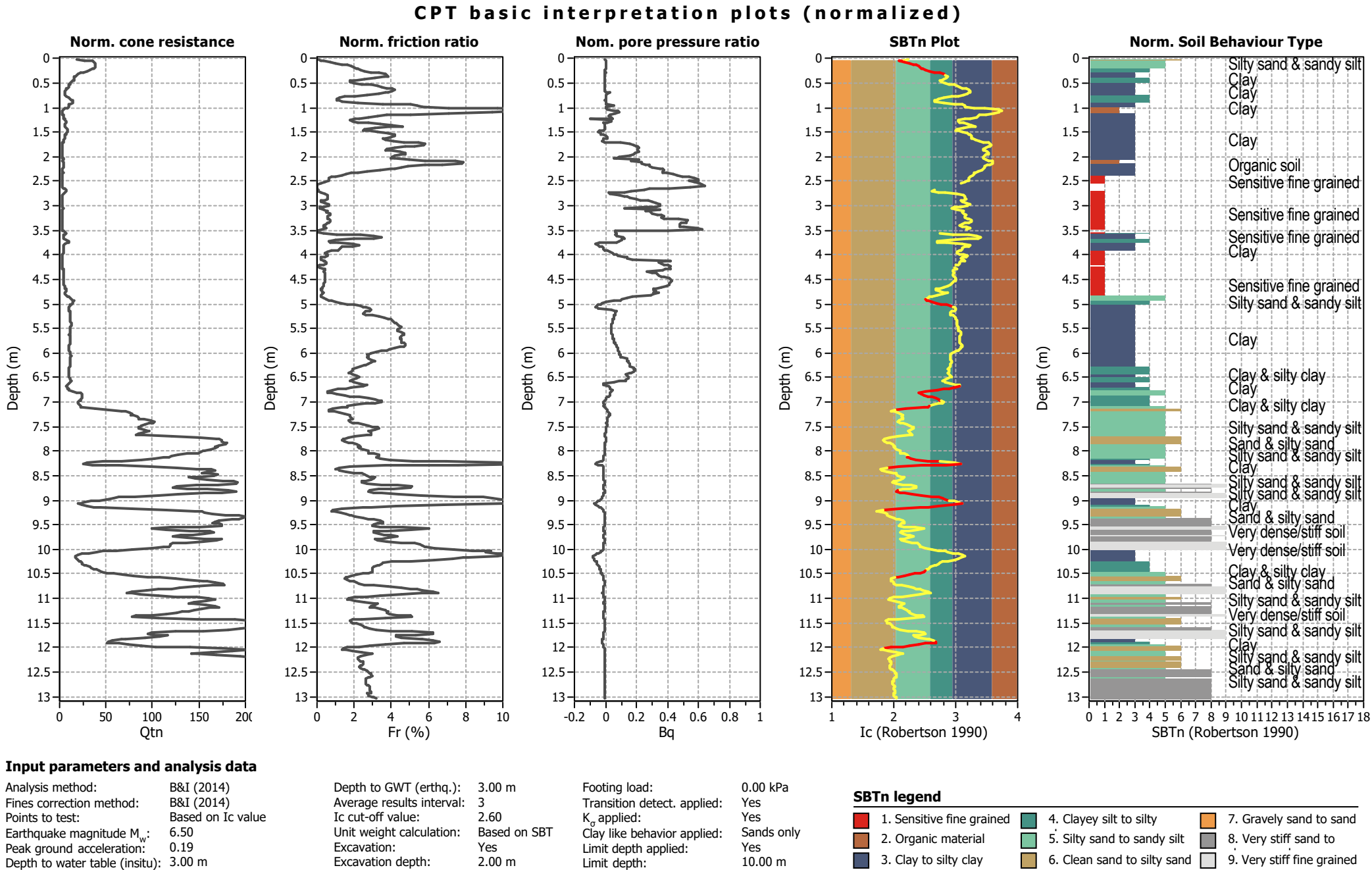


Input parameters and analysis data

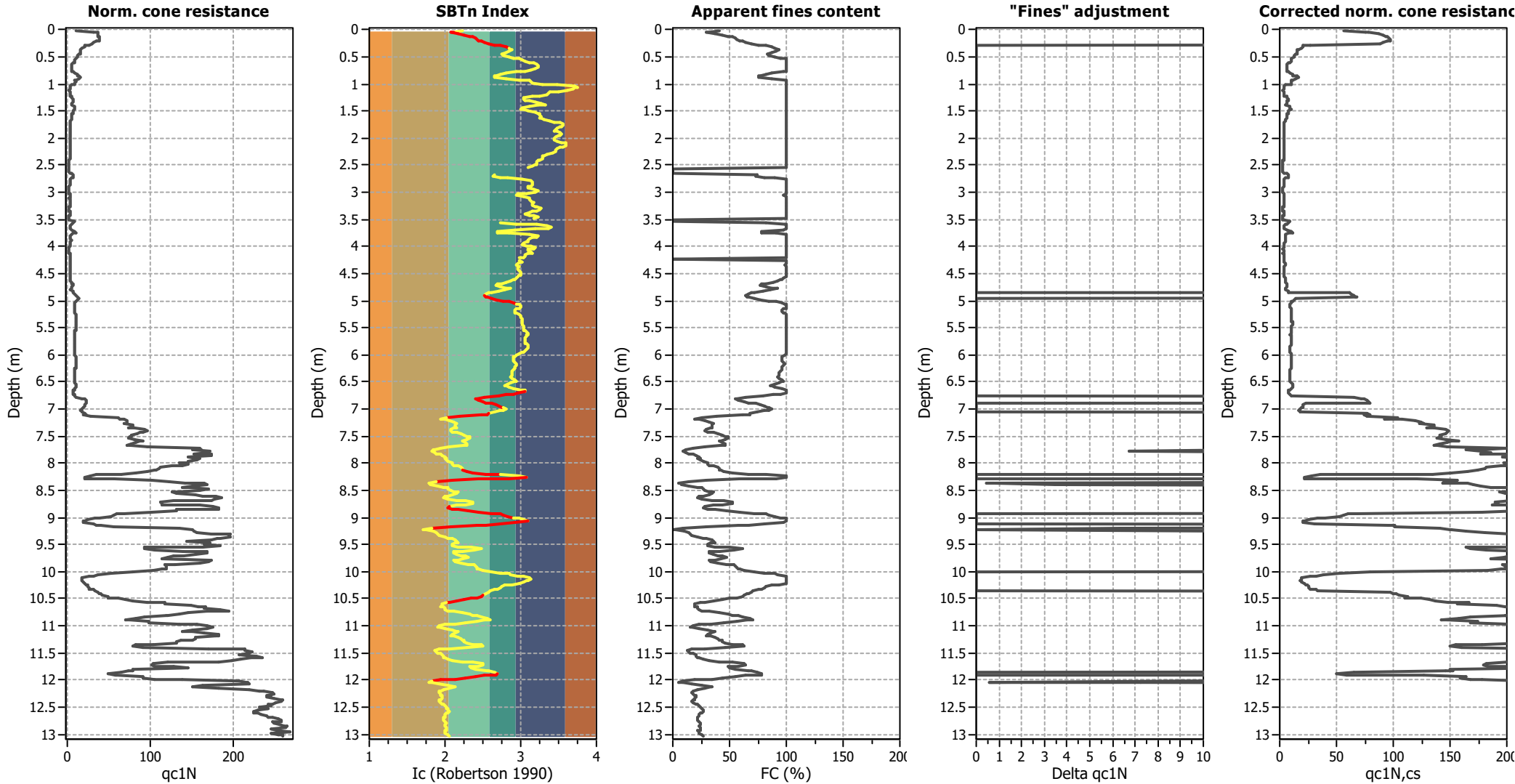
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

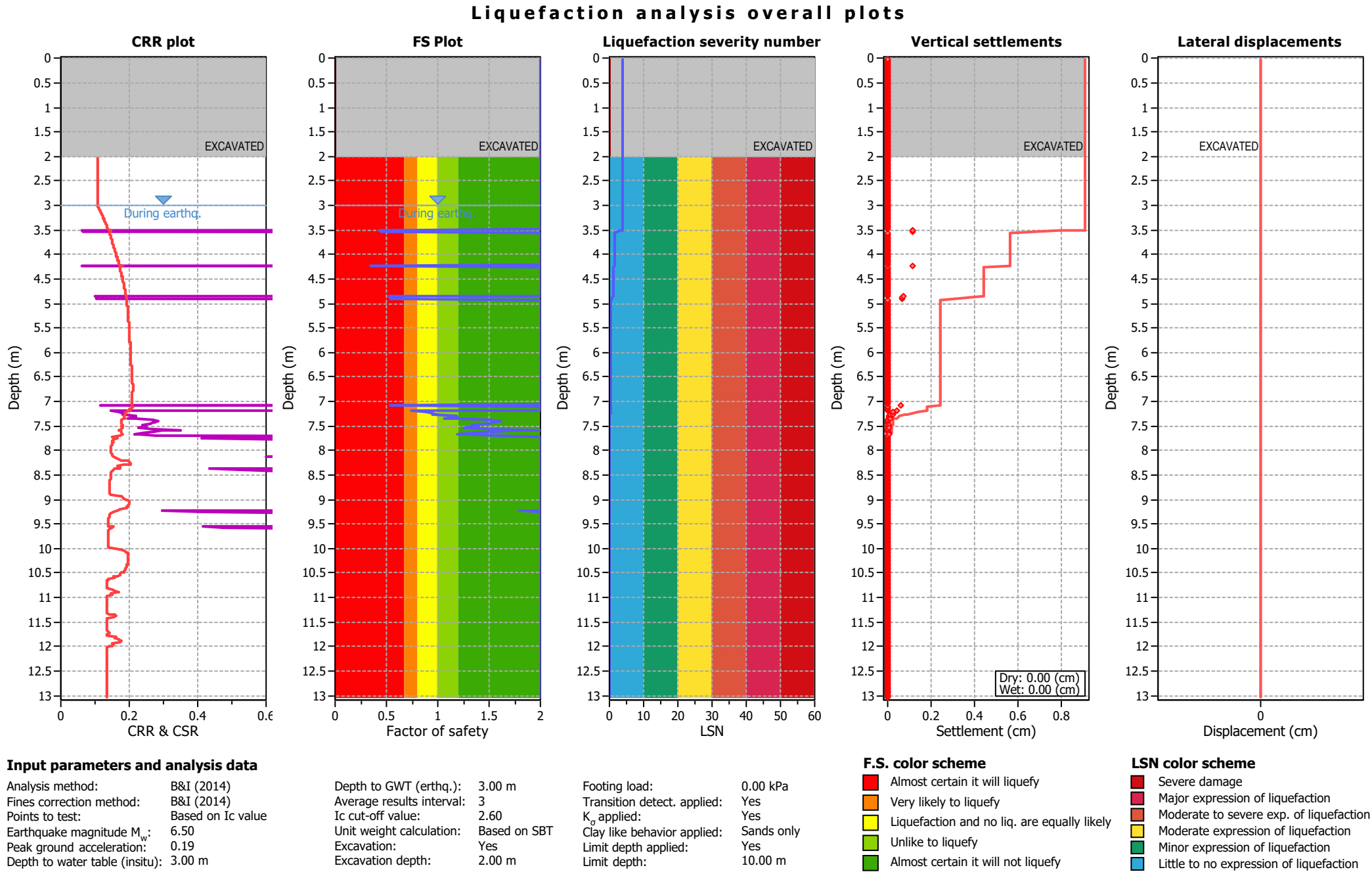


Liquefaction analysis overall plots (intermediate results)

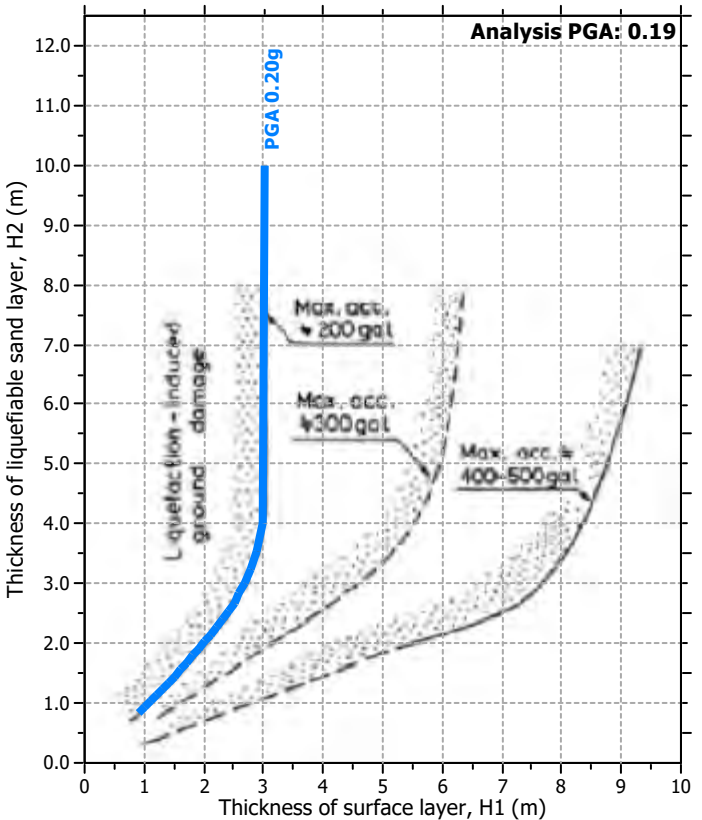
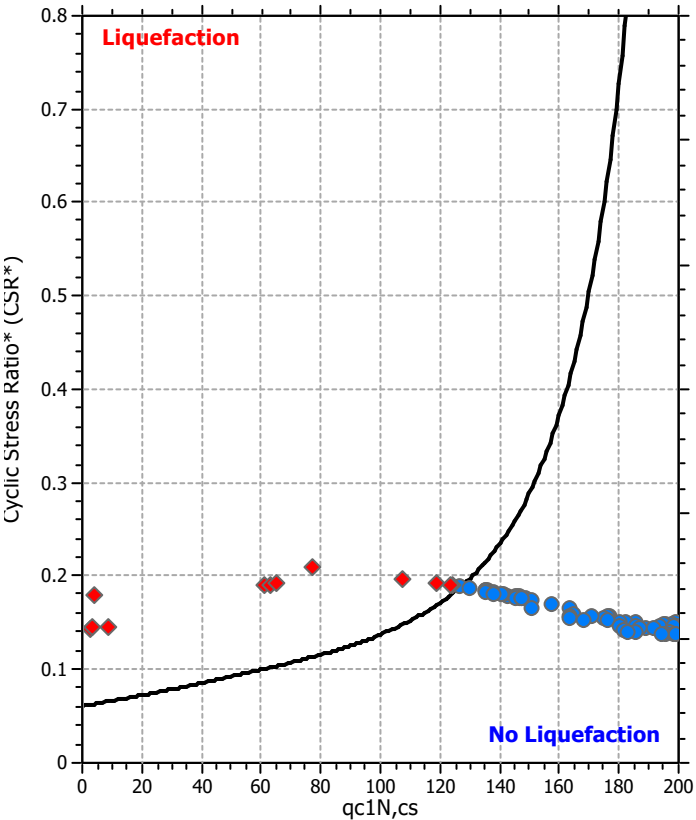
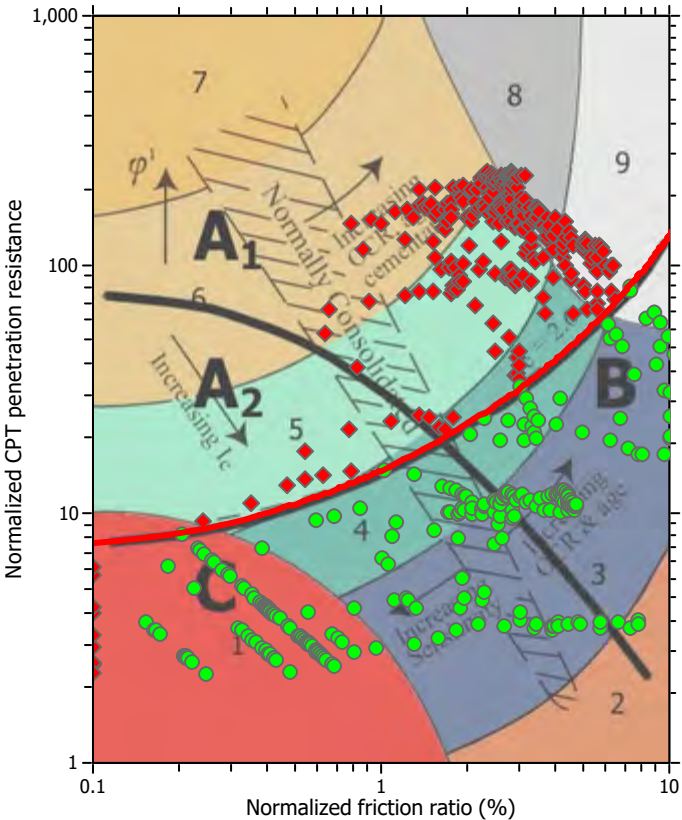


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m



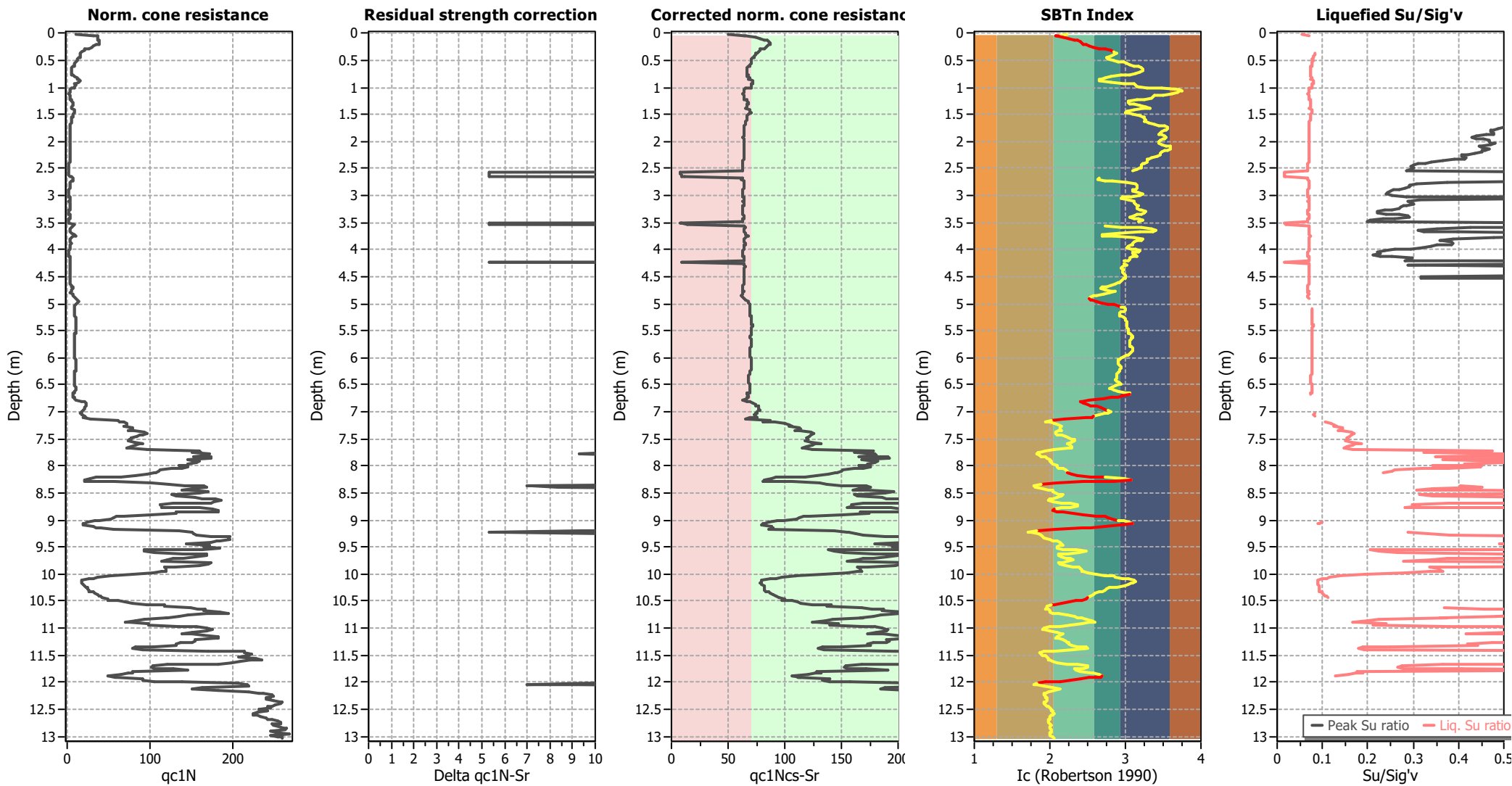
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

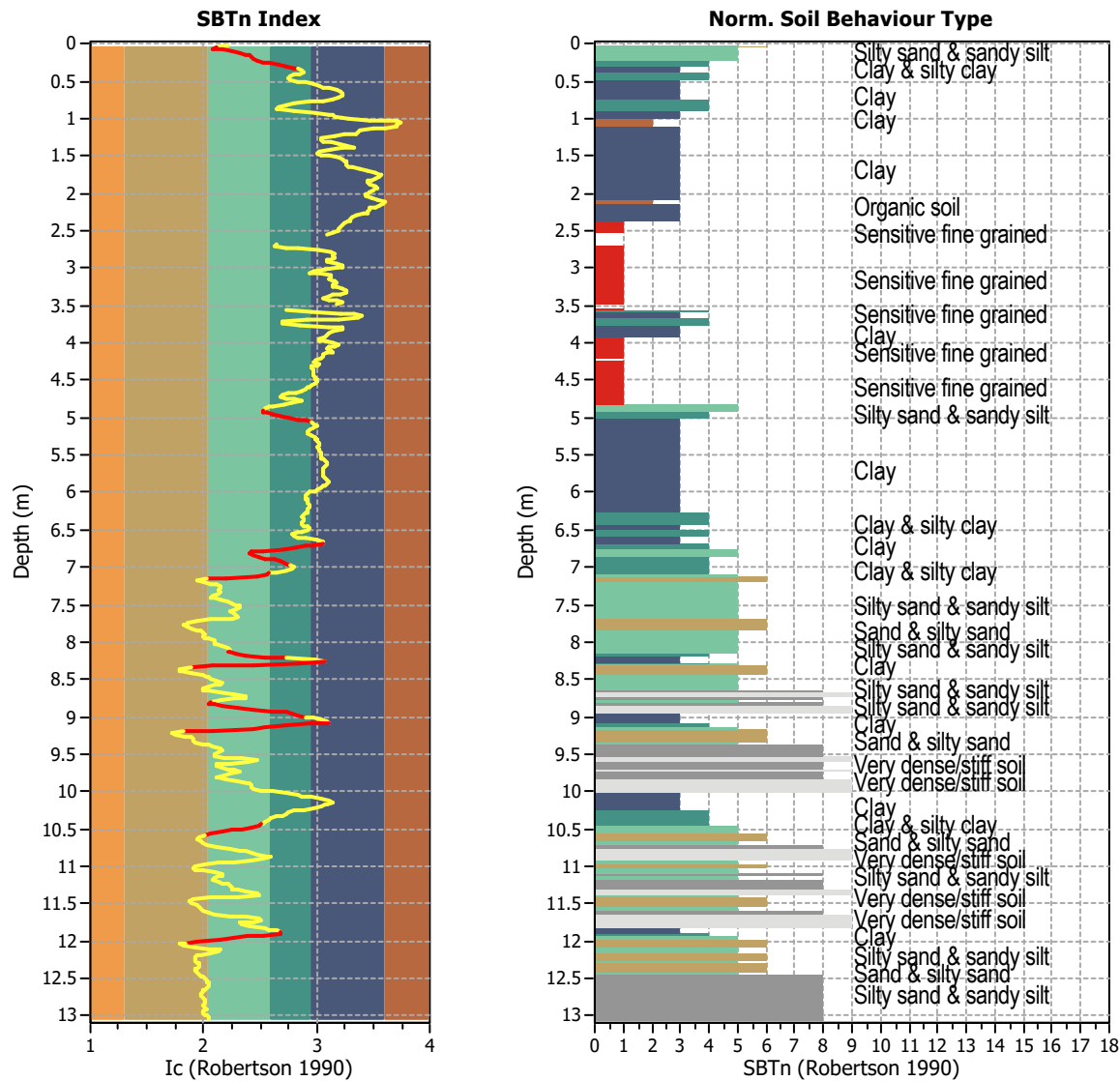
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

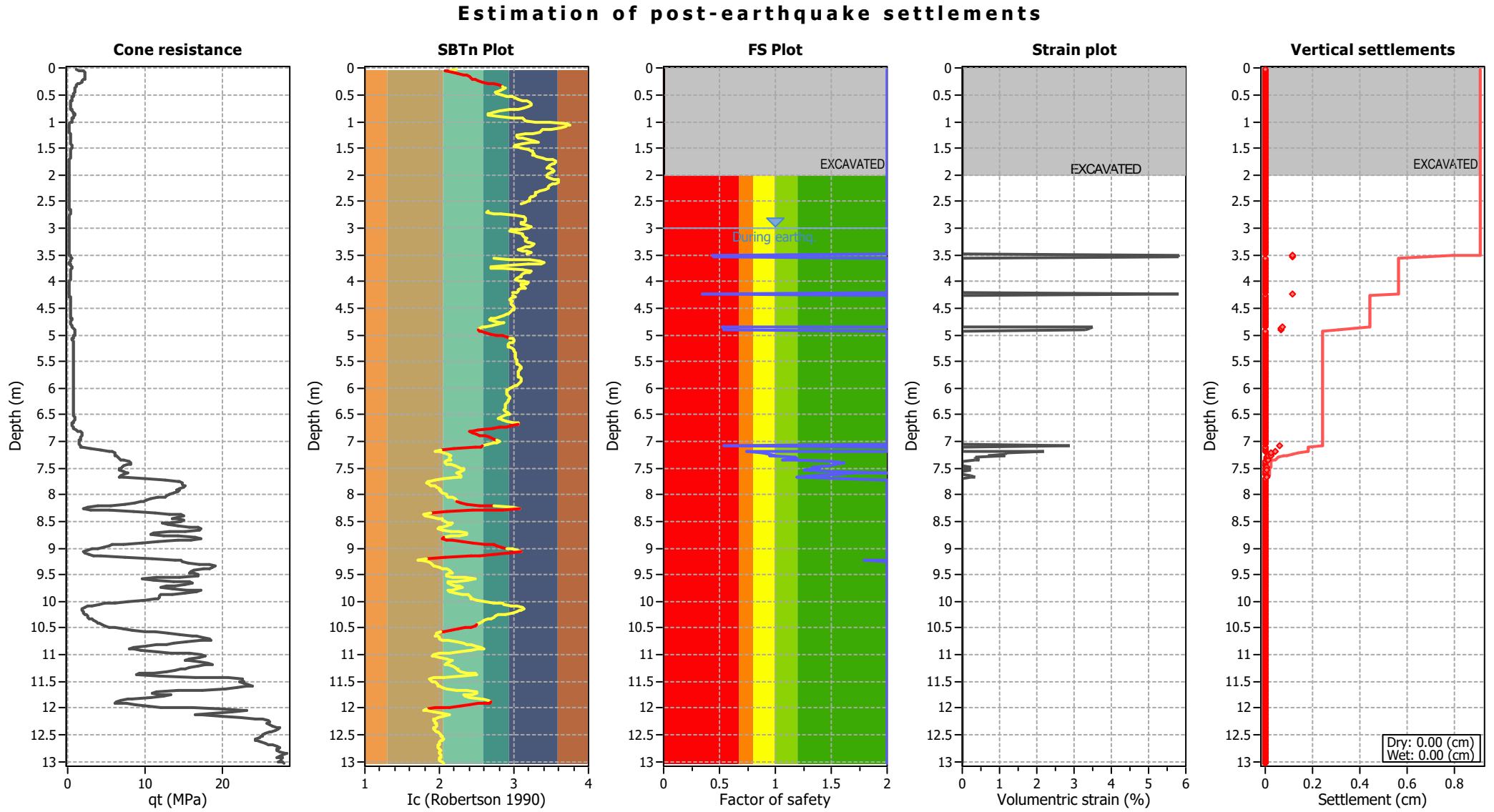


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

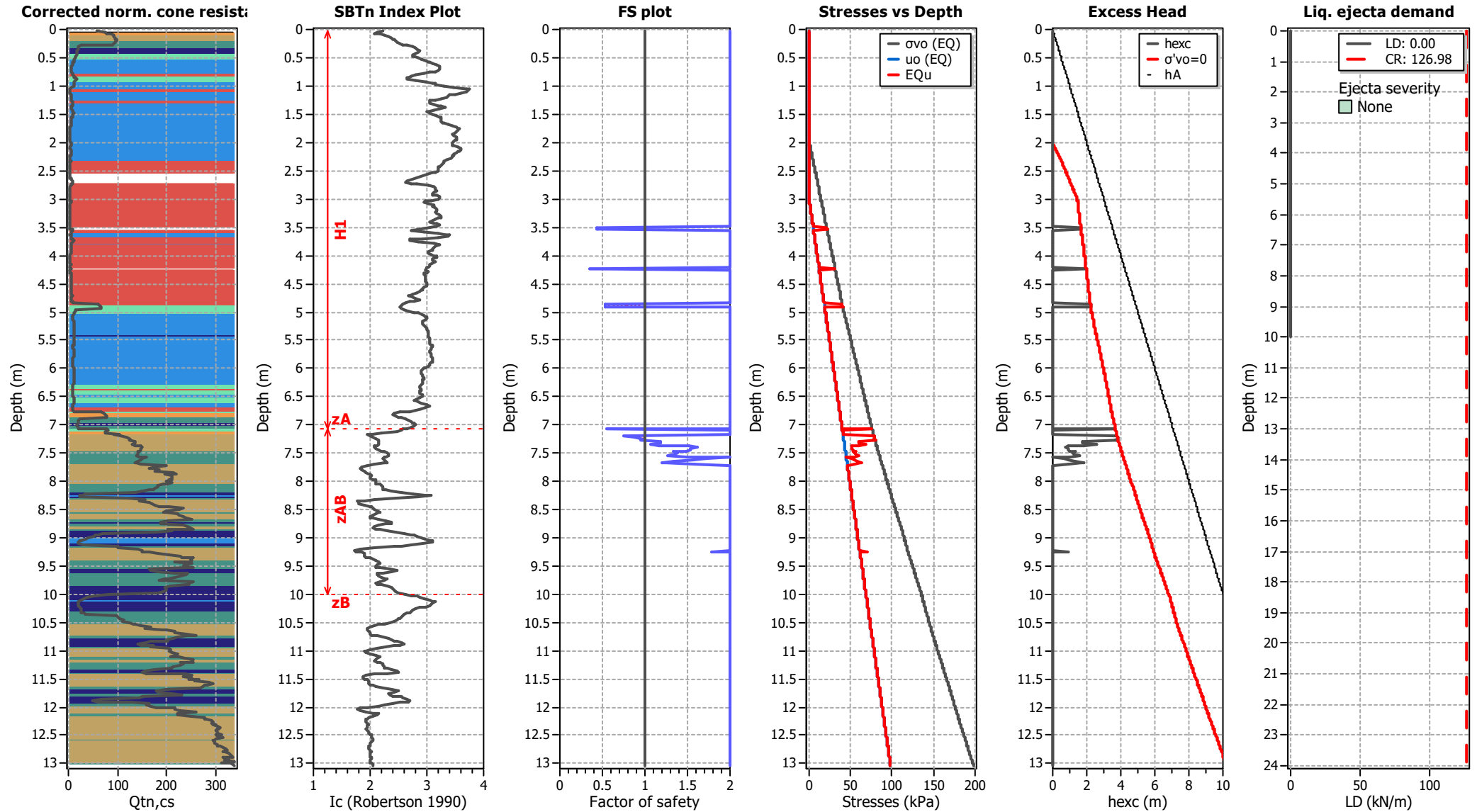
Total points in CPT file: 652
Total points excluded: 91
Exclusion percentage: 13.96%
Number of layers detected: 11



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

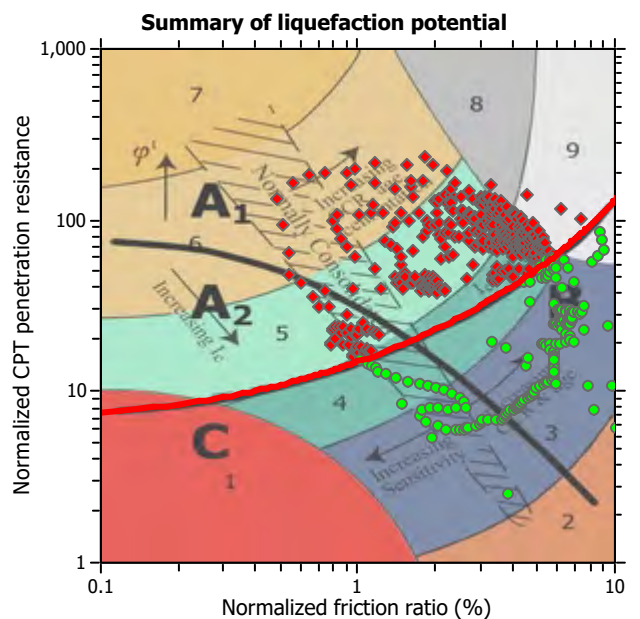
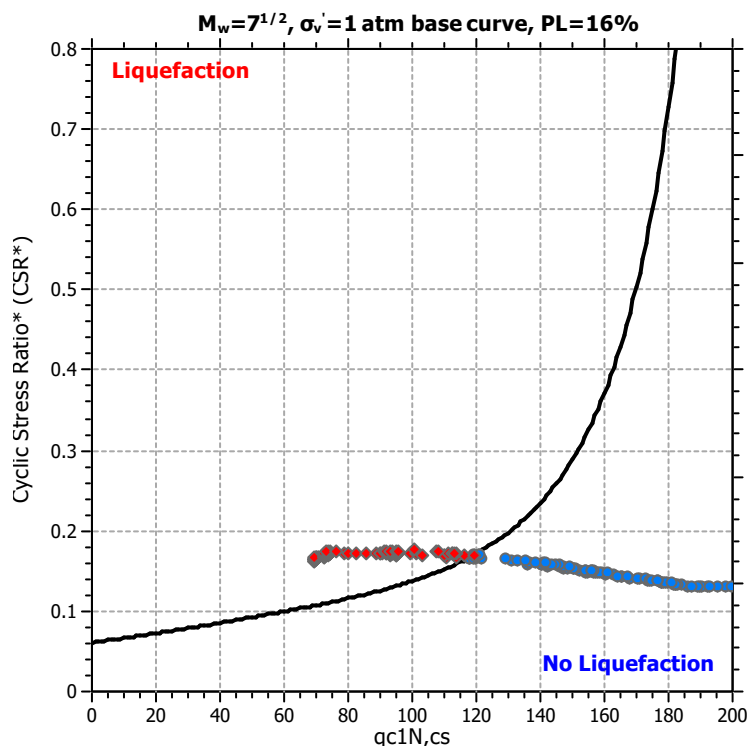
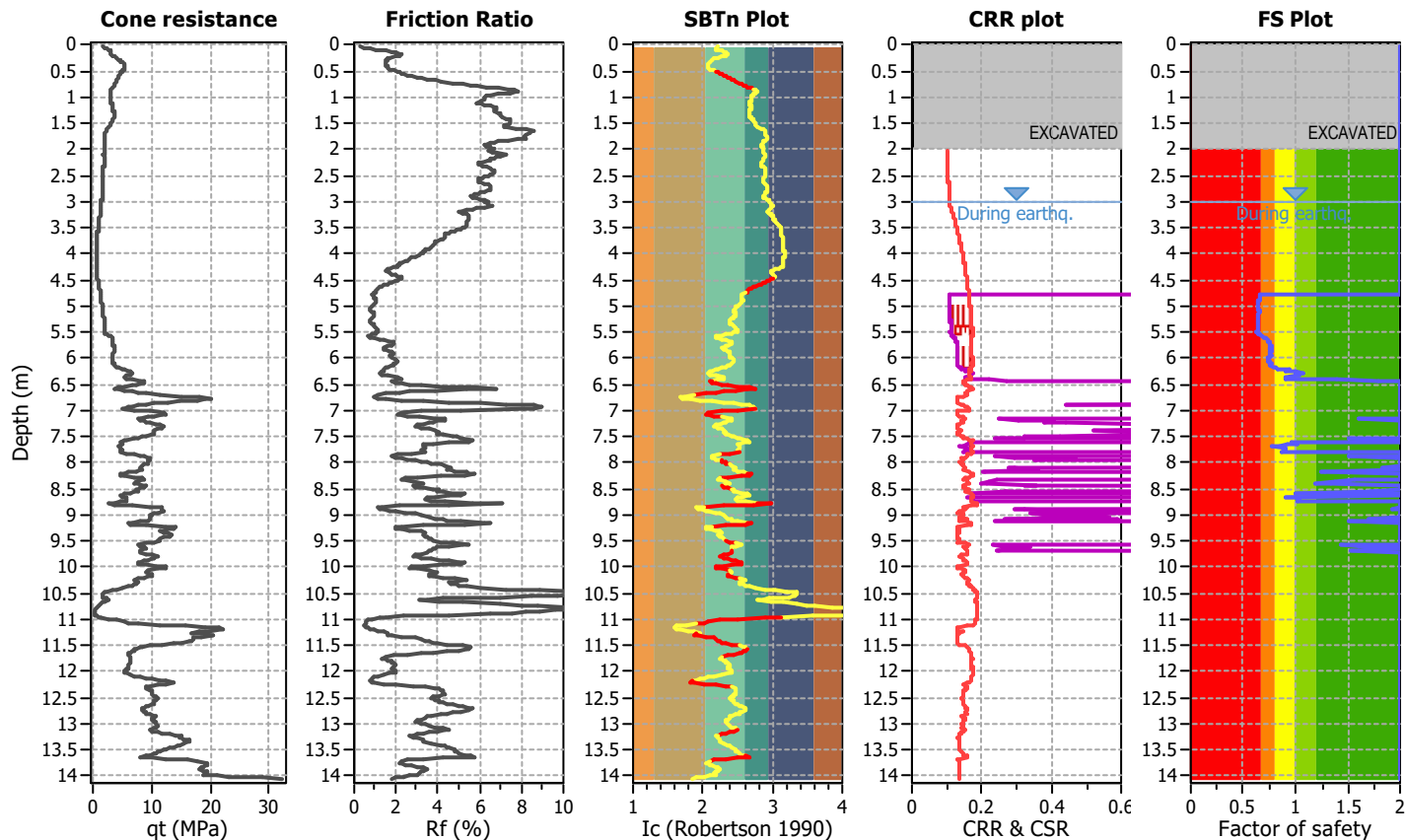
Project title : Sunfield Landholding

Location :

CPT file : CPT204

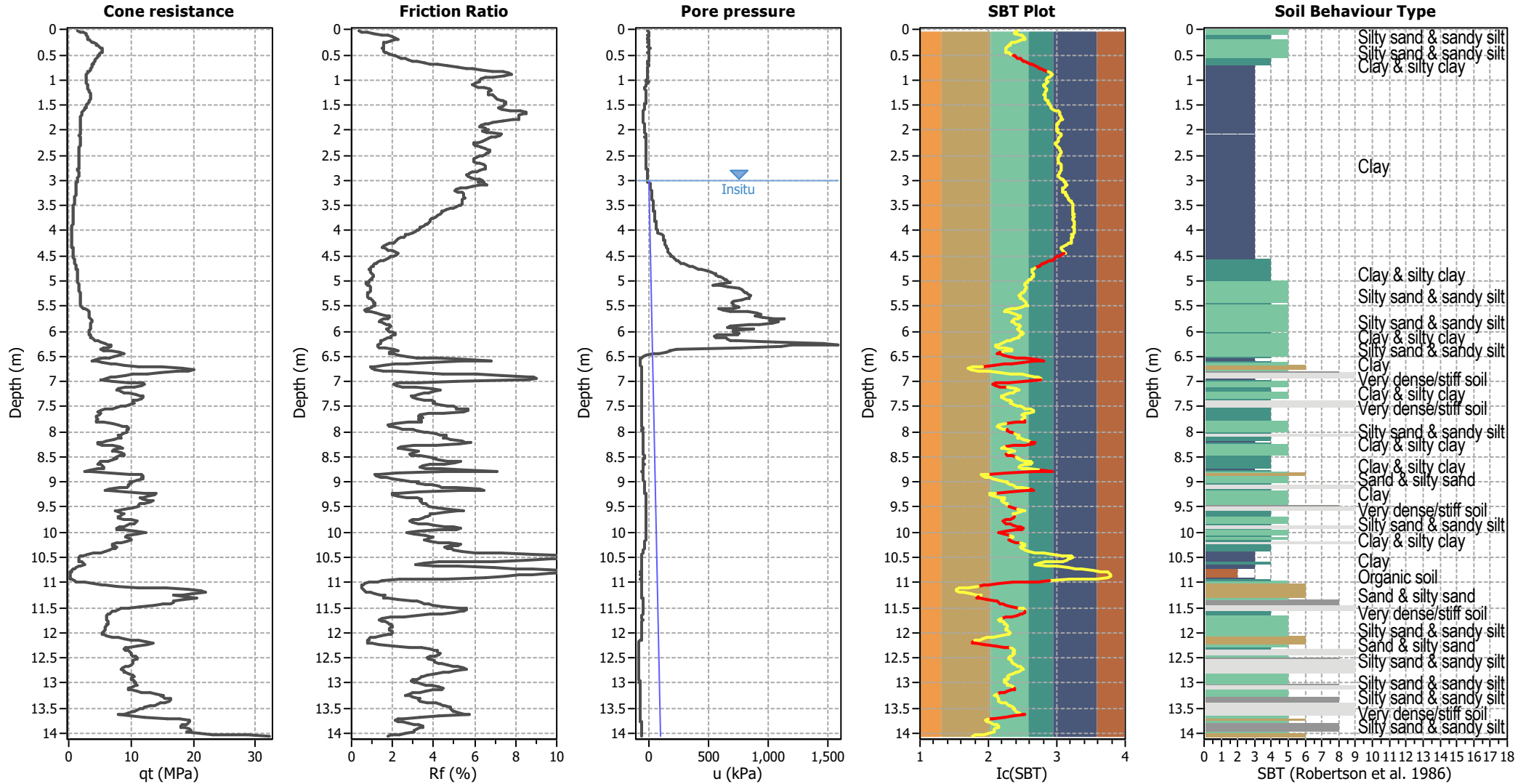
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	3.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	3.00 m	Excavation depth:	2.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

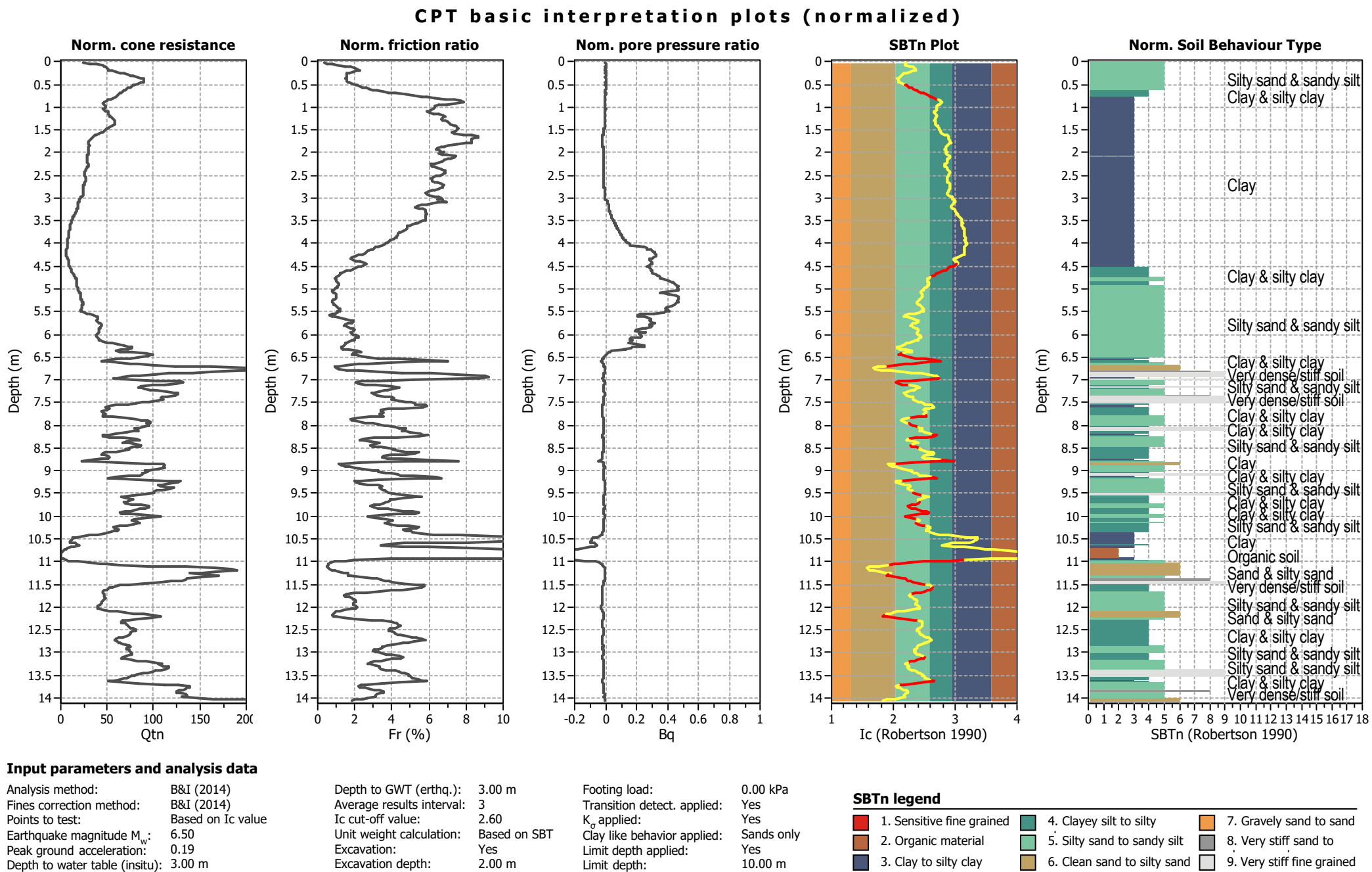


Input parameters and analysis data

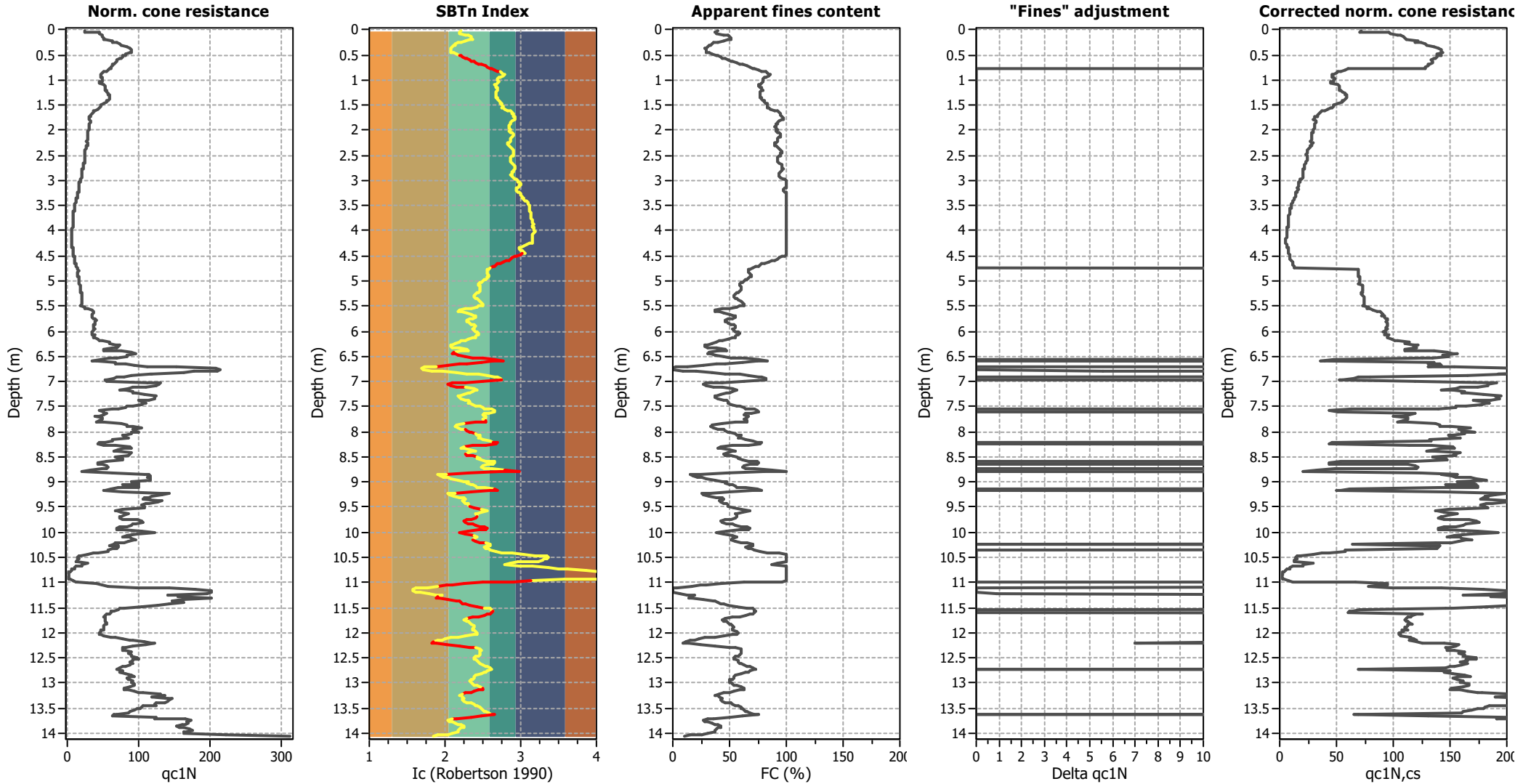
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



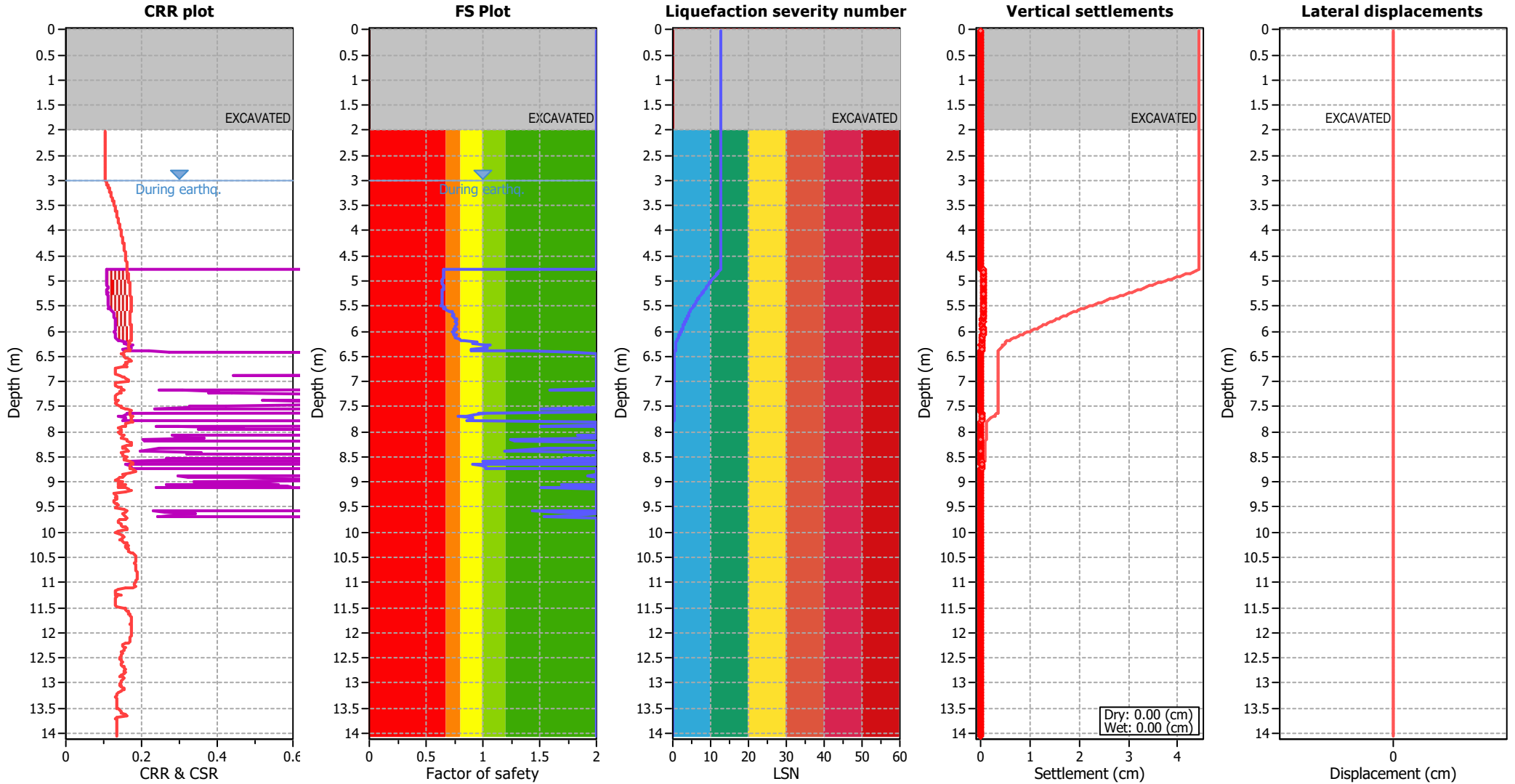
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

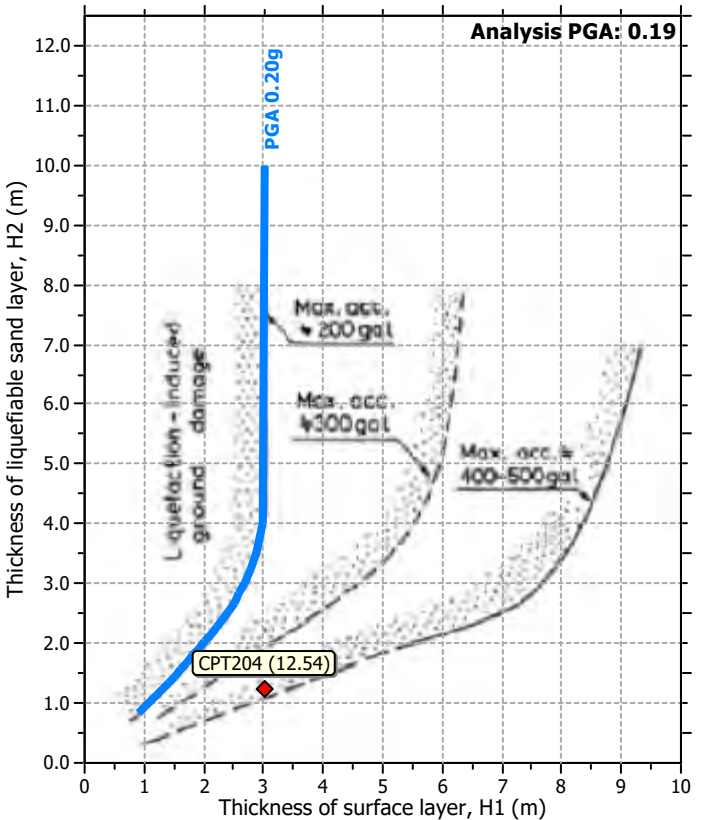
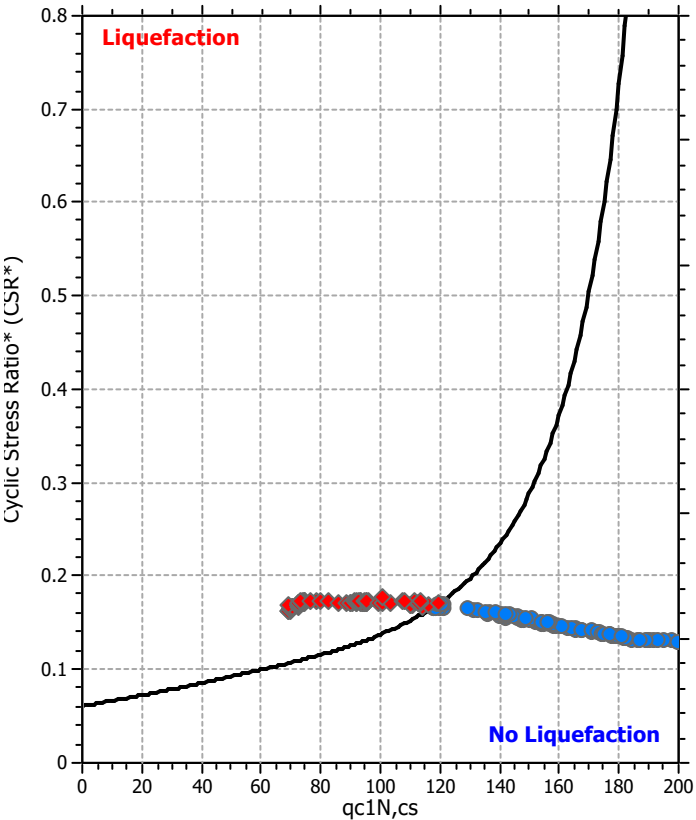
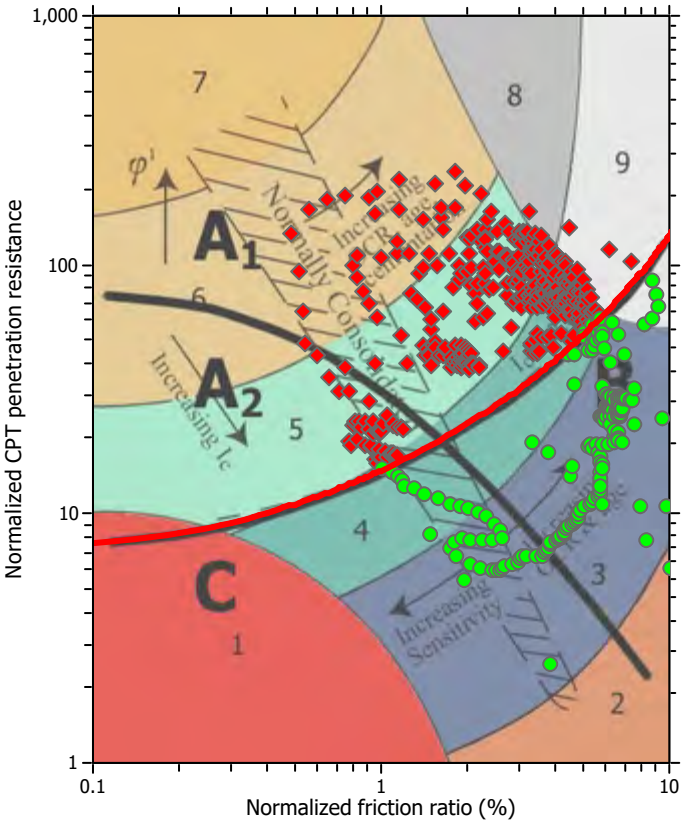
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

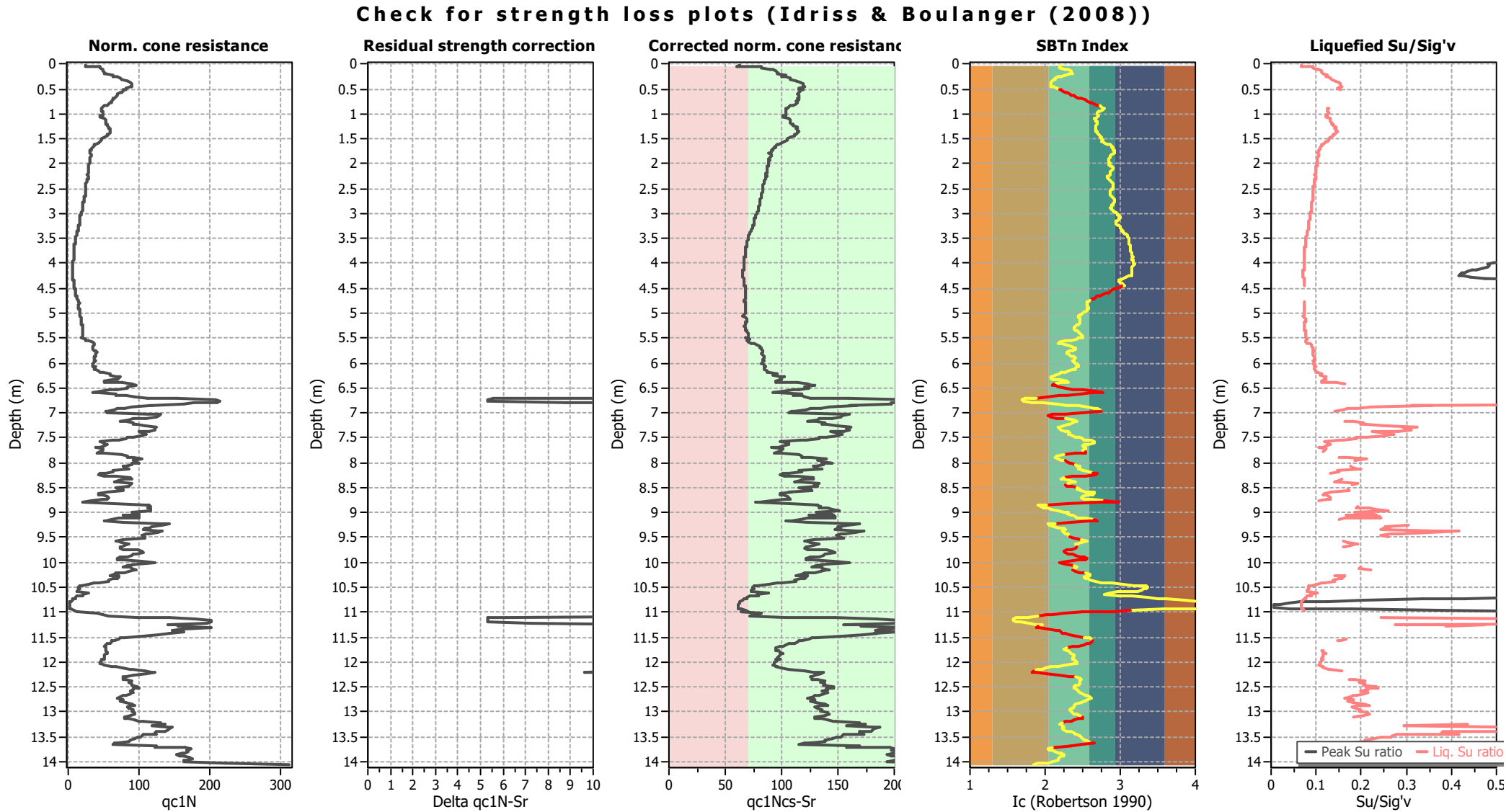
Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

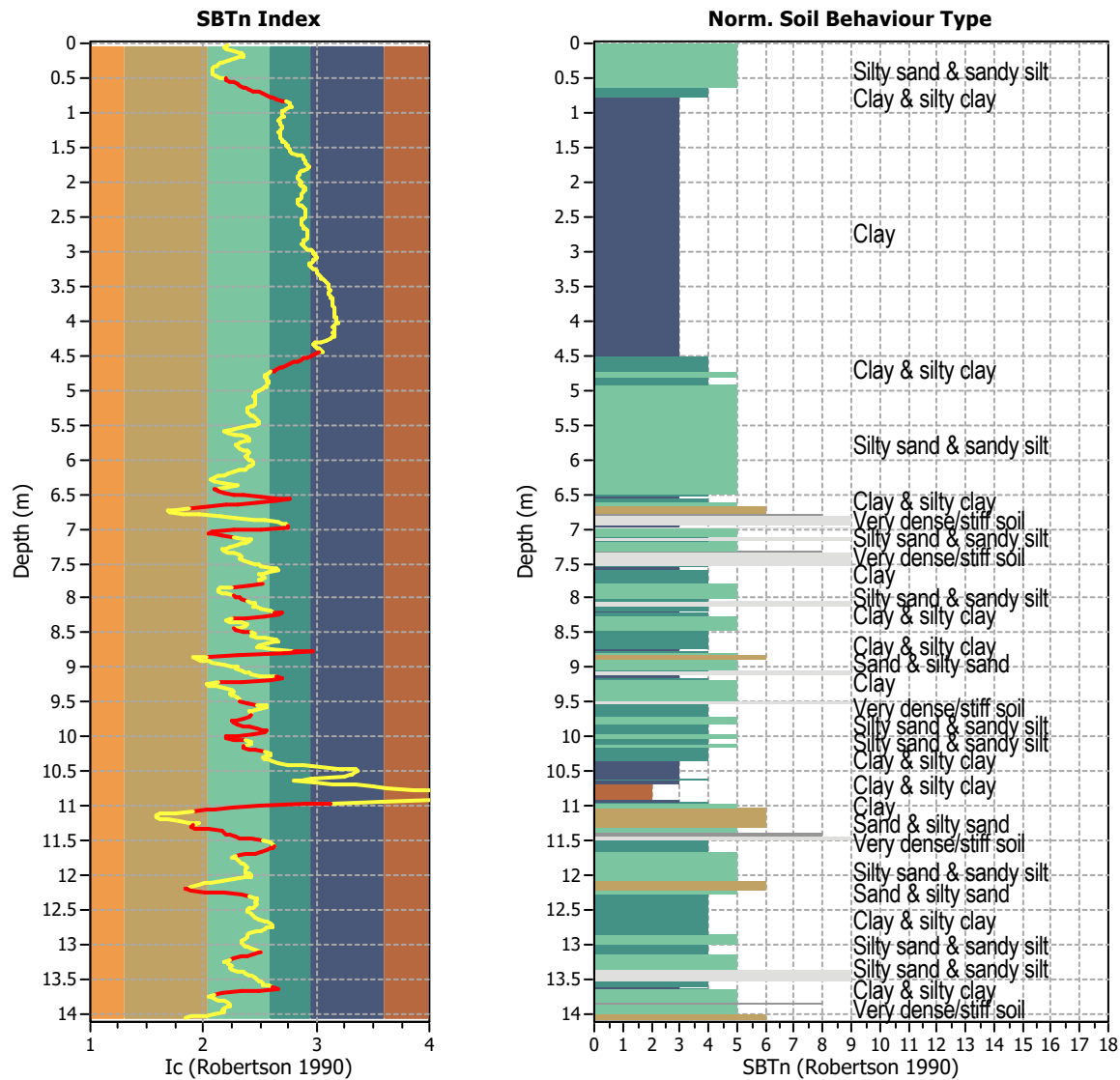
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



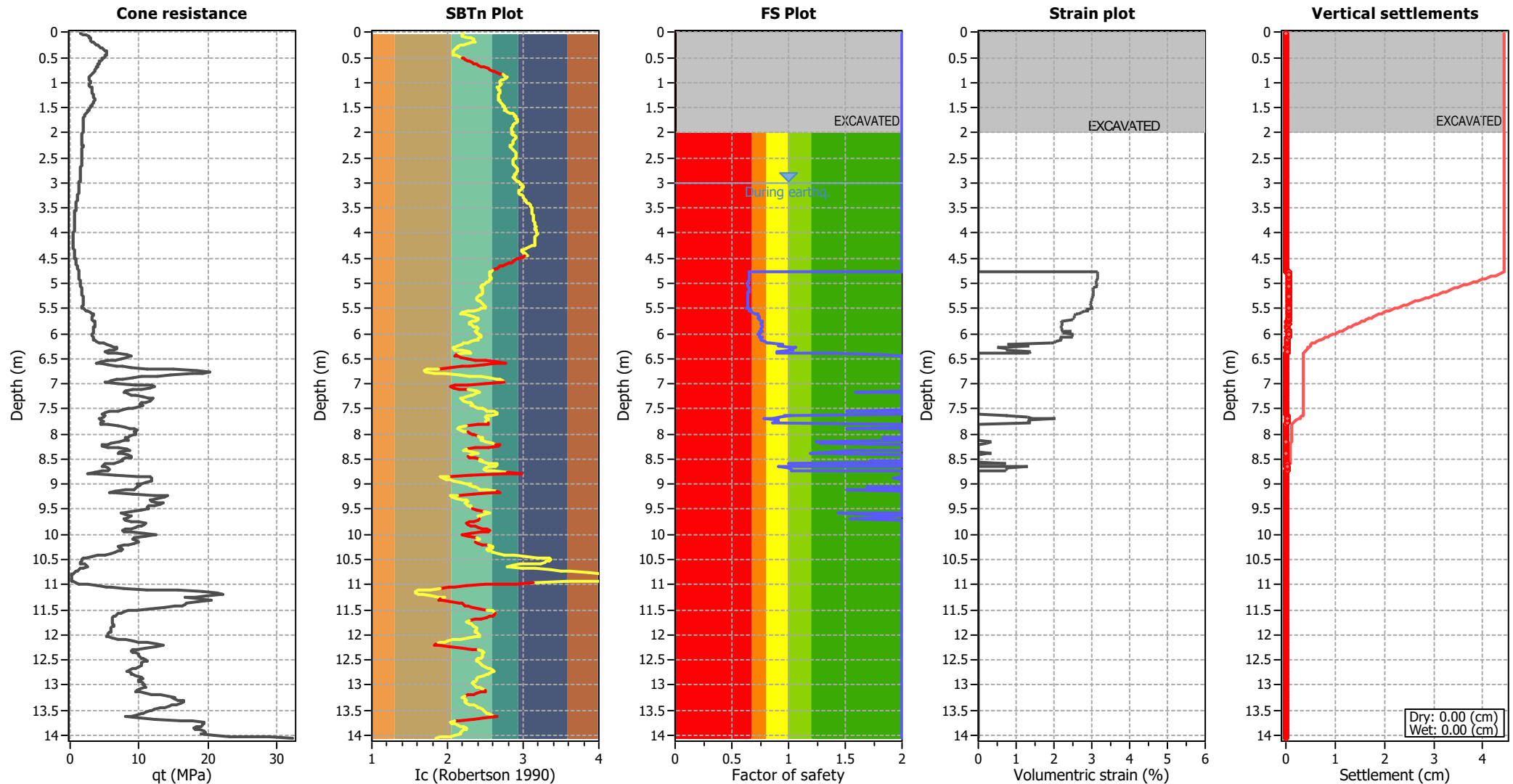
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 703
Total points excluded: 164
Exclusion percentage: 23.33%
Number of layers detected: 24

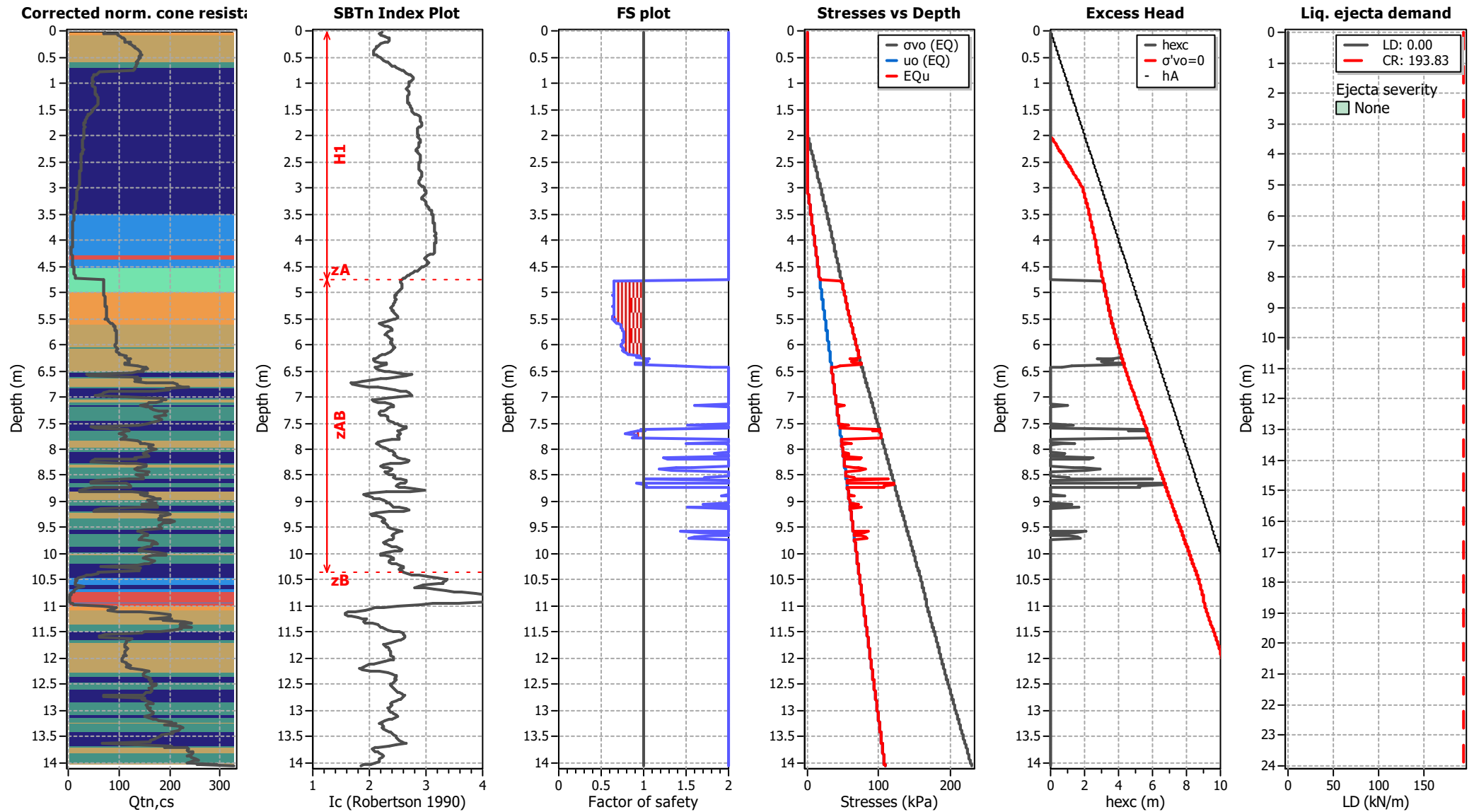
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

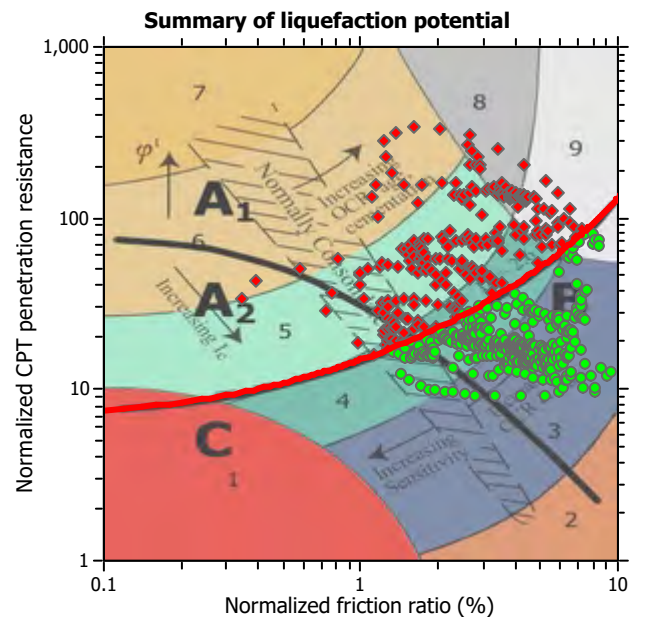
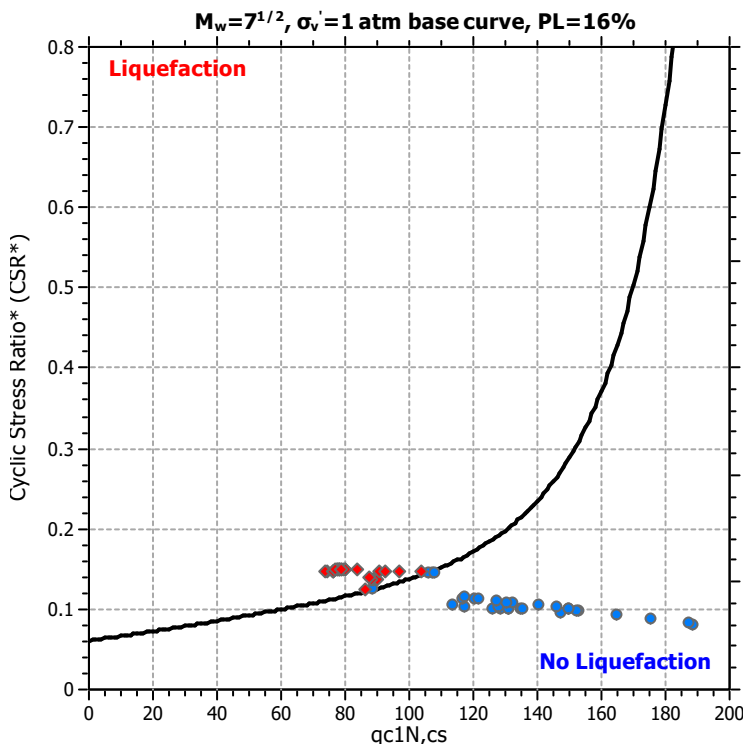
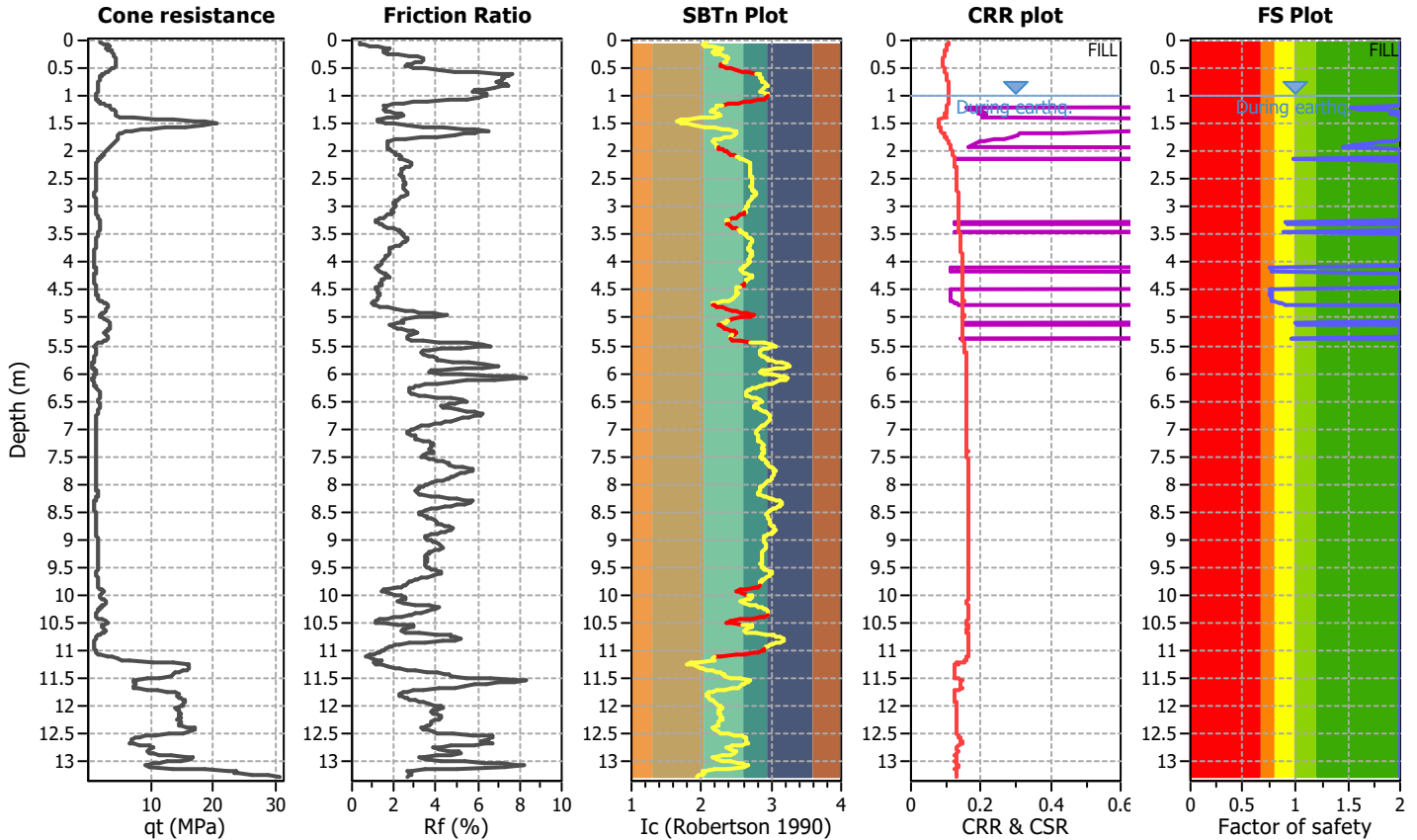
Project title : Sunfield Landholding

Location :

CPT file : CPT205

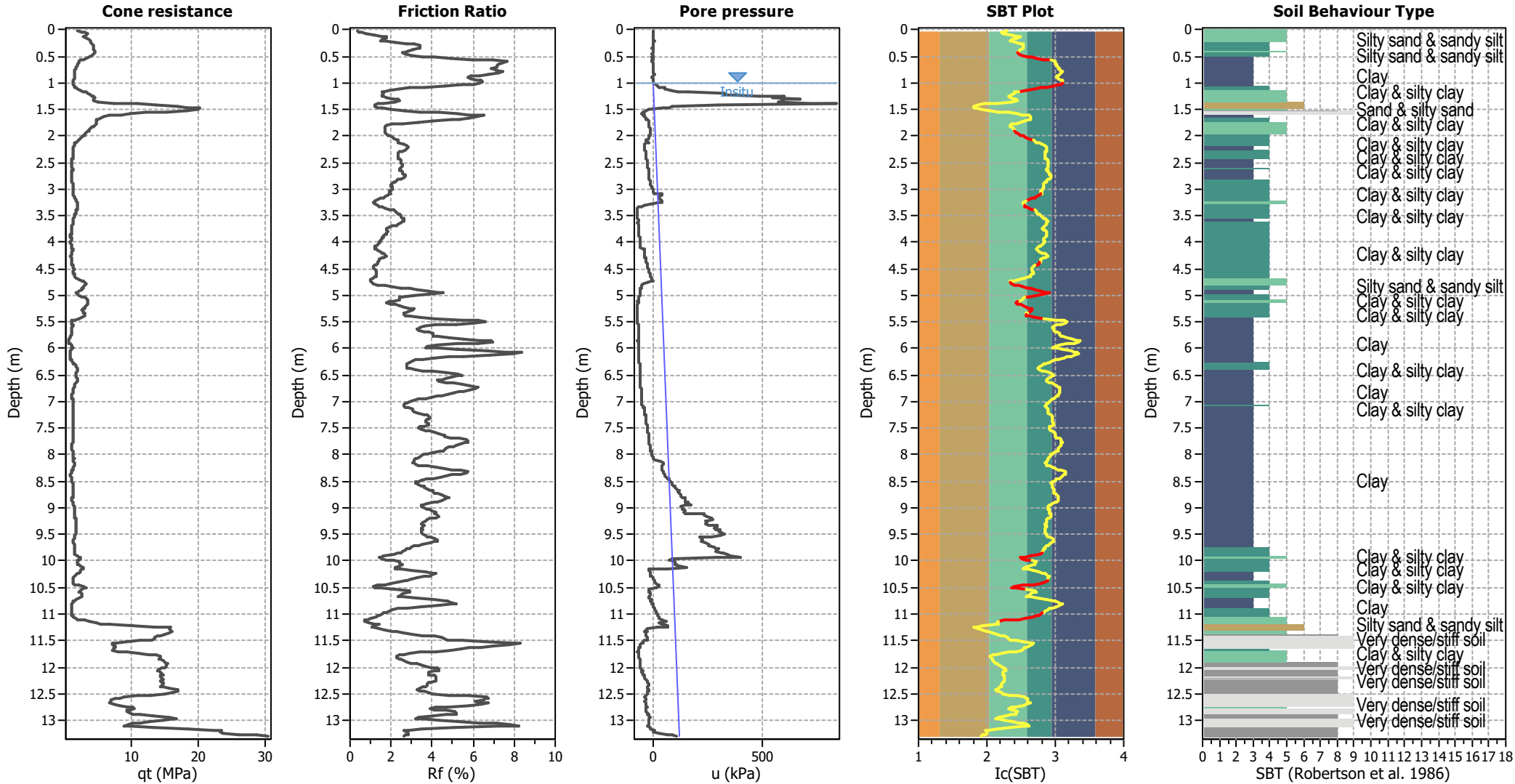
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

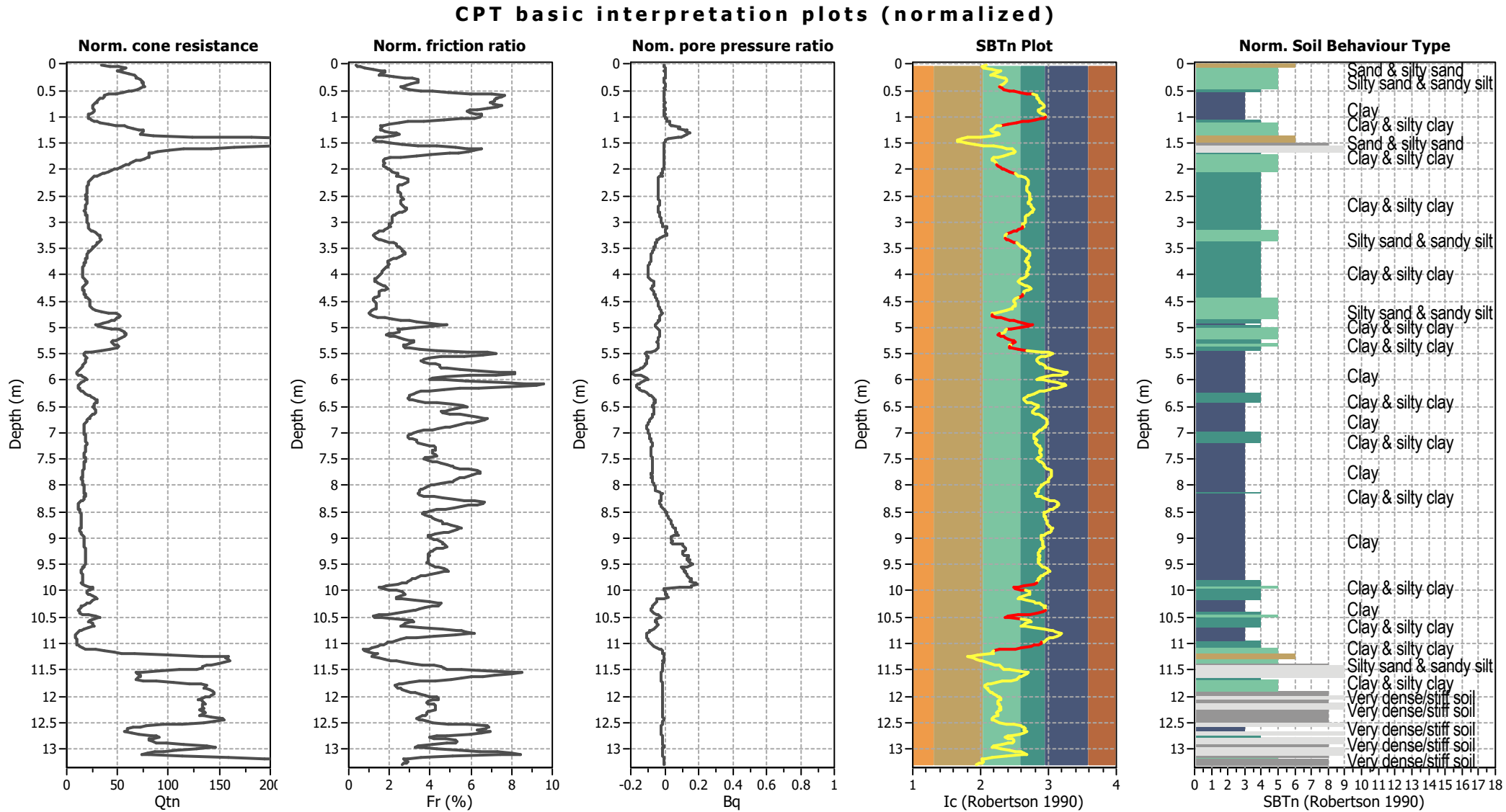


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

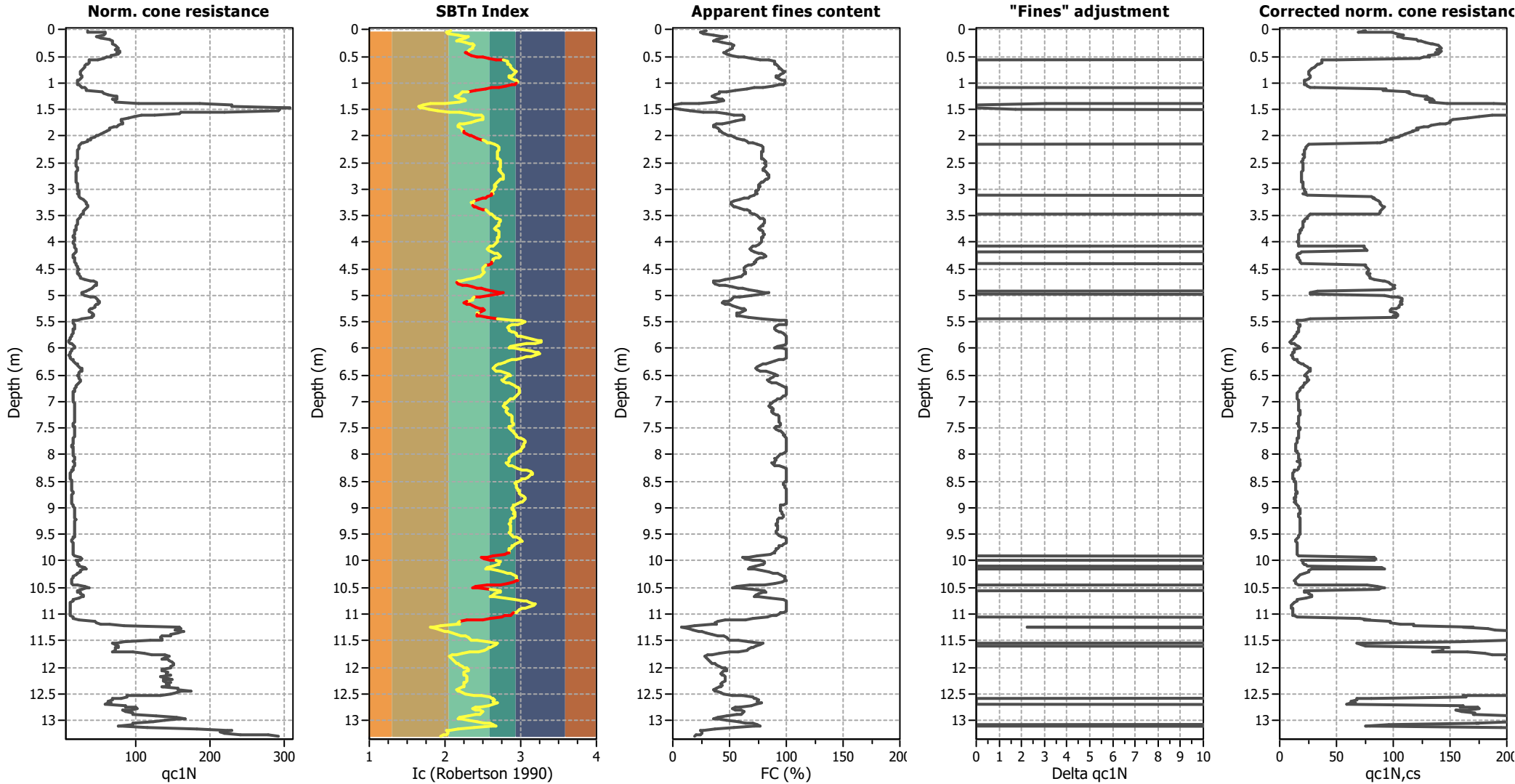


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

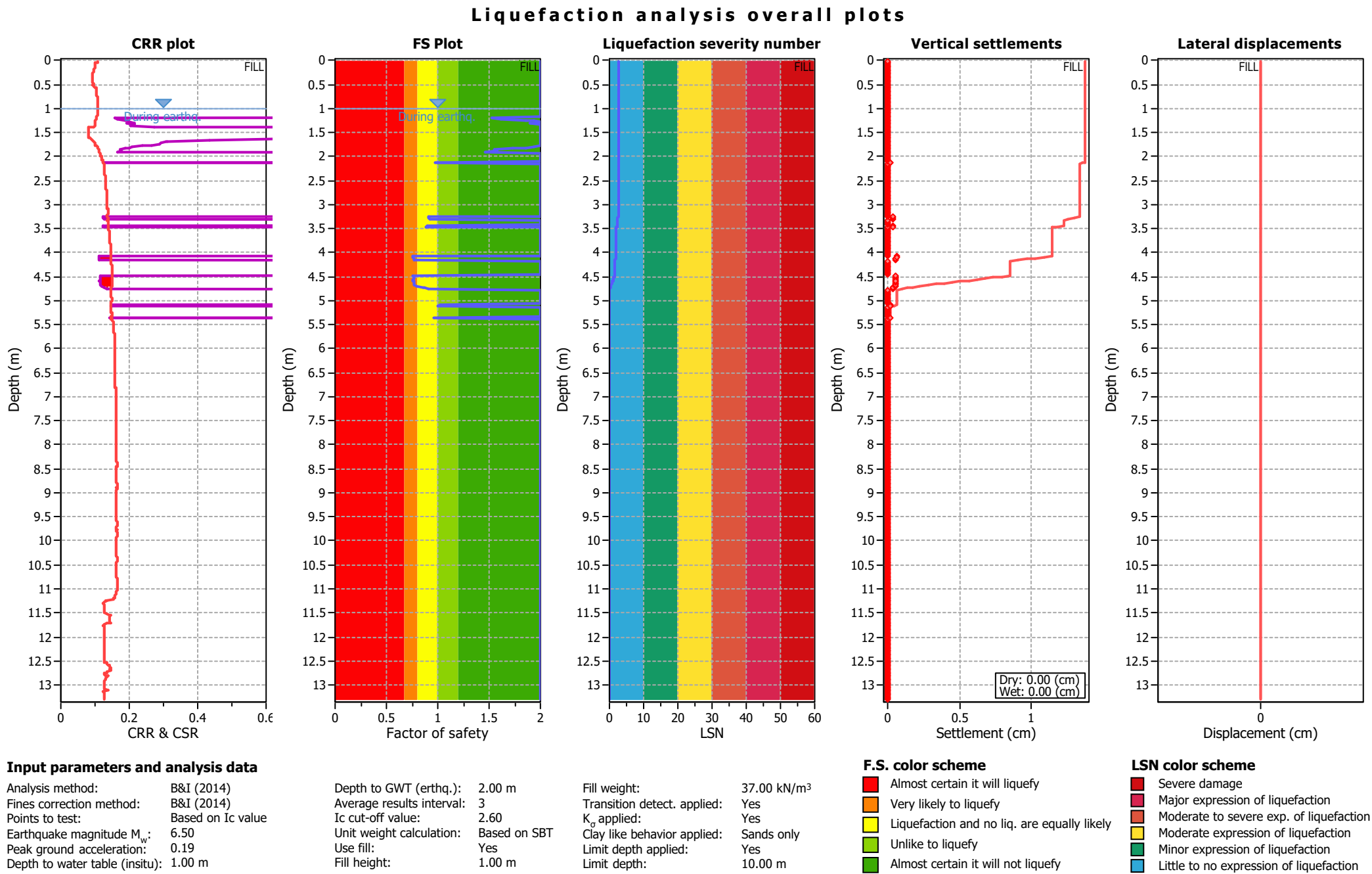
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

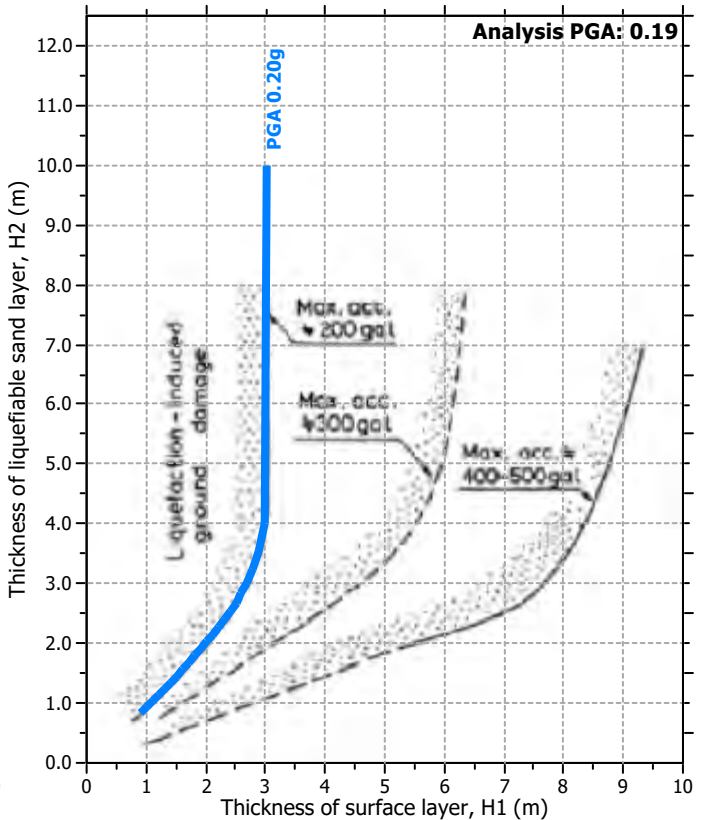
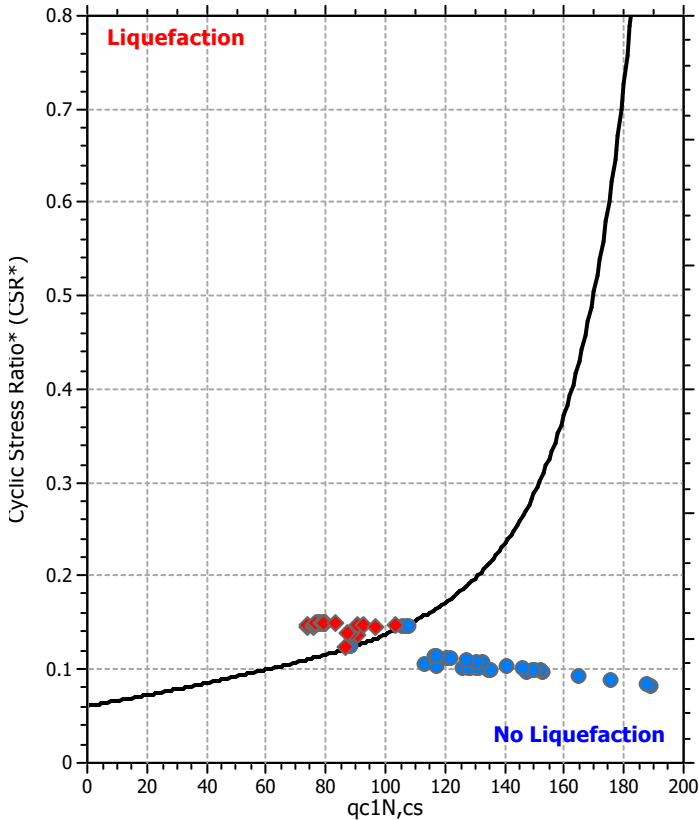
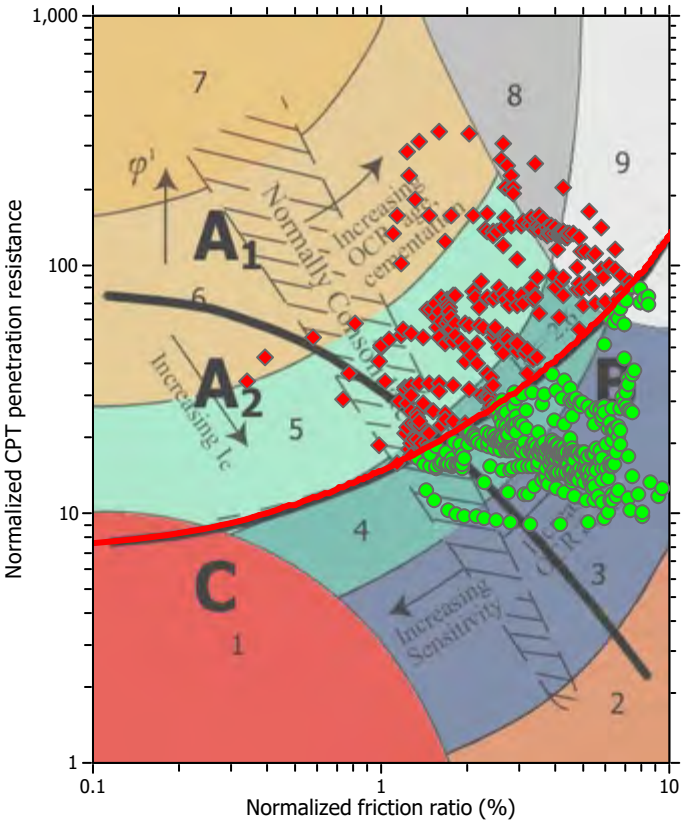


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



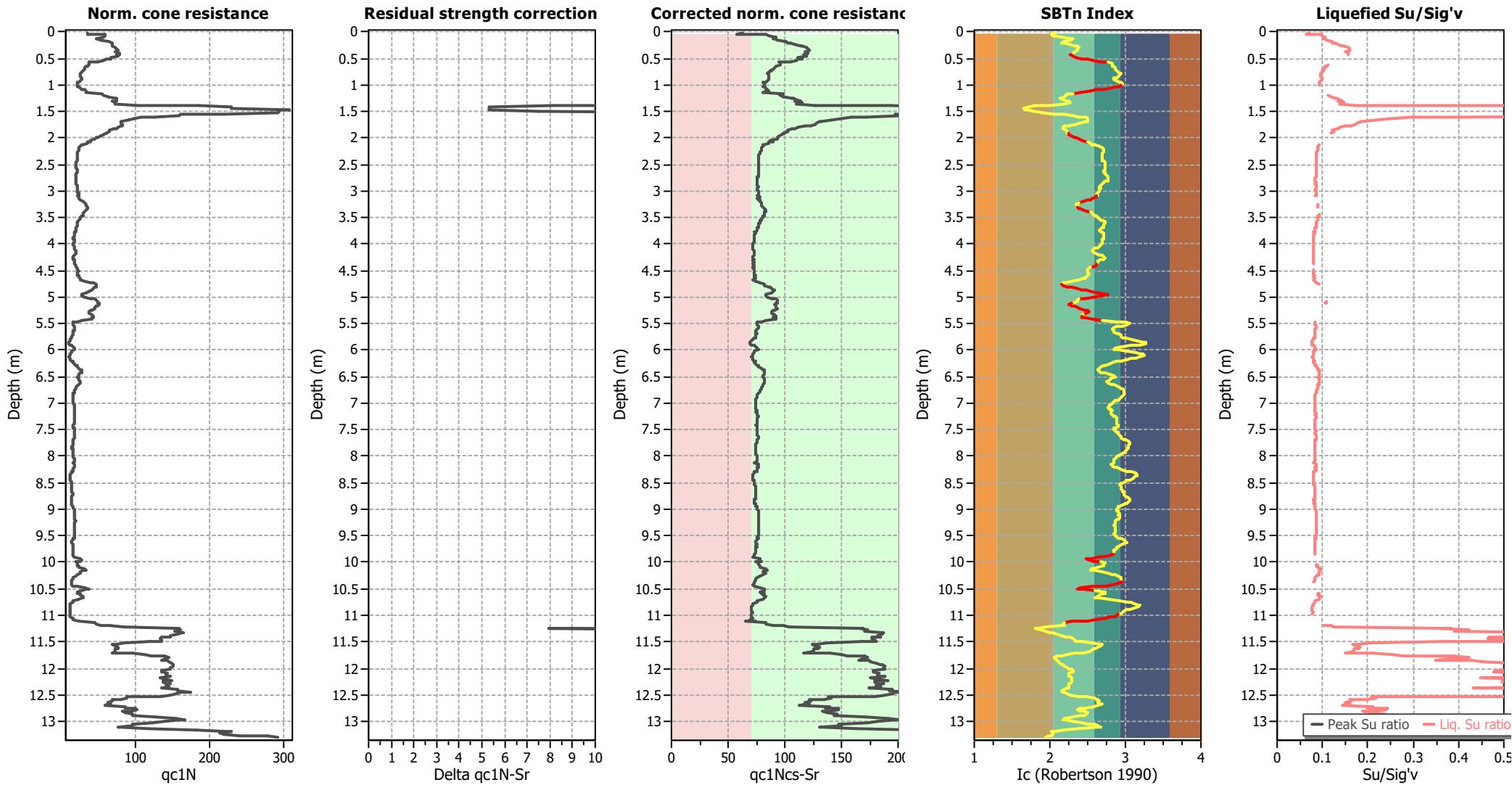
Liquefaction analysis summary plots



Input parameters and analysis data

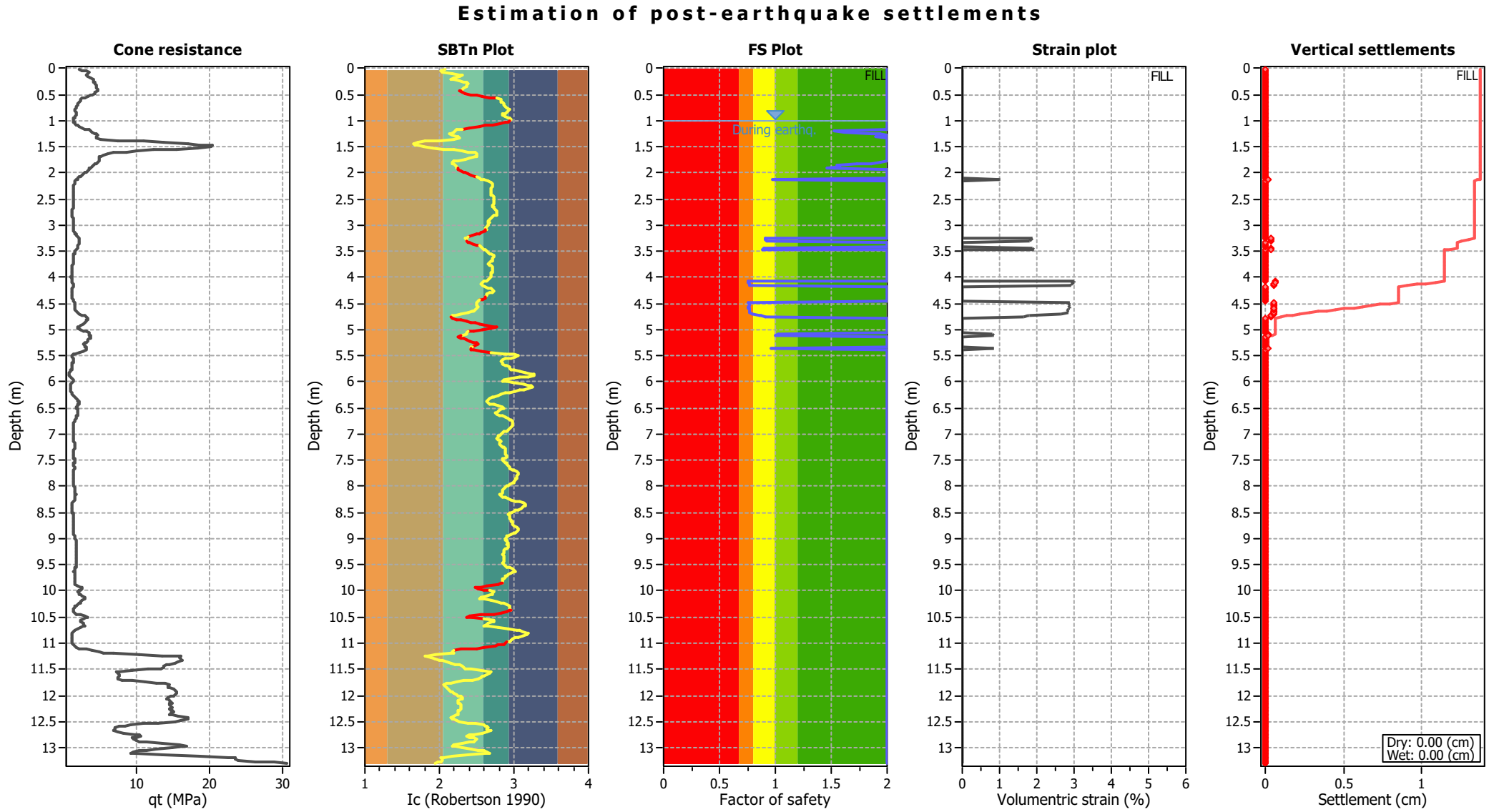
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

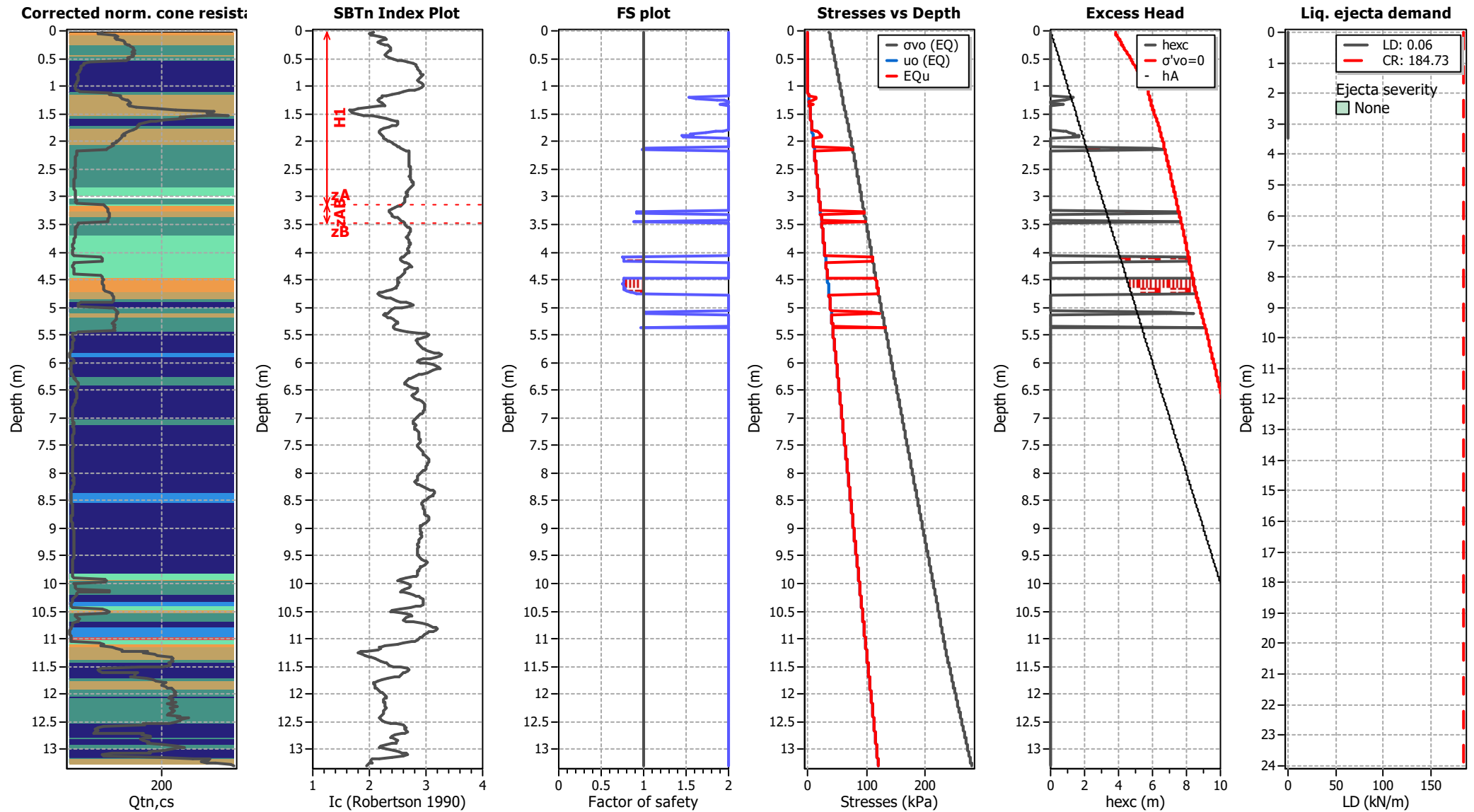
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

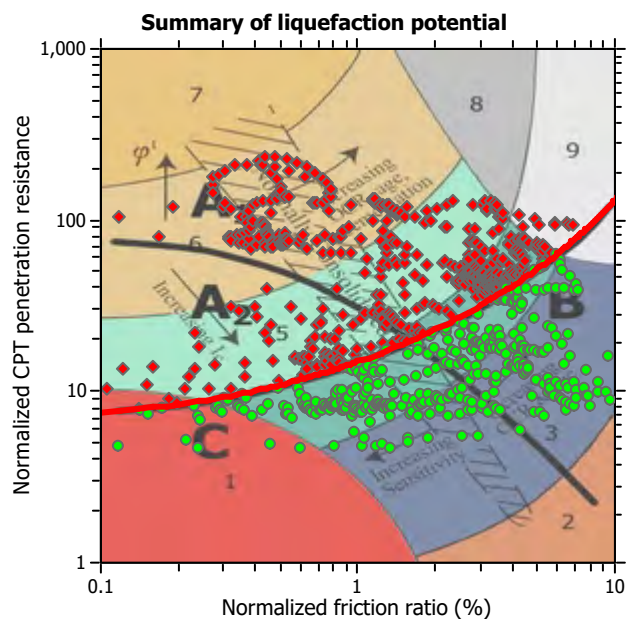
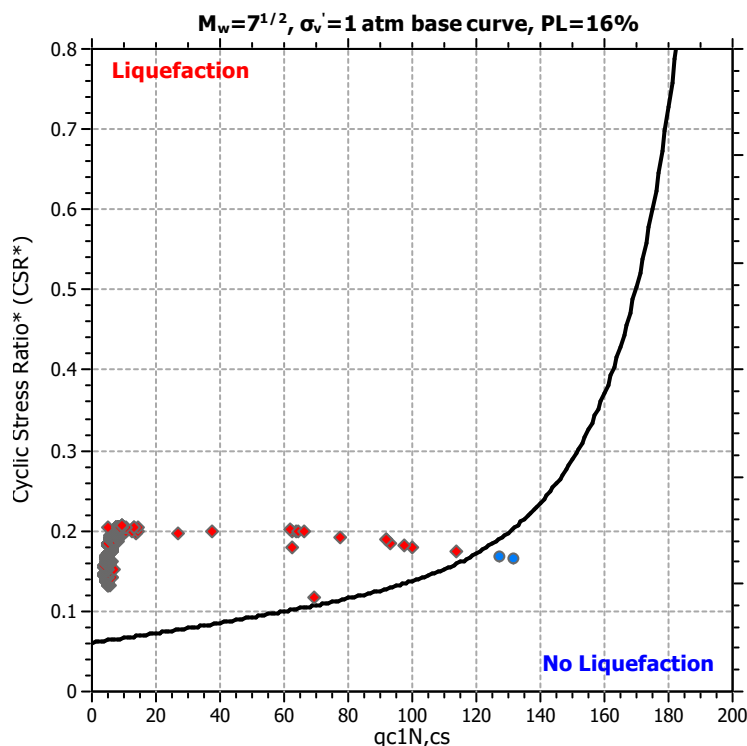
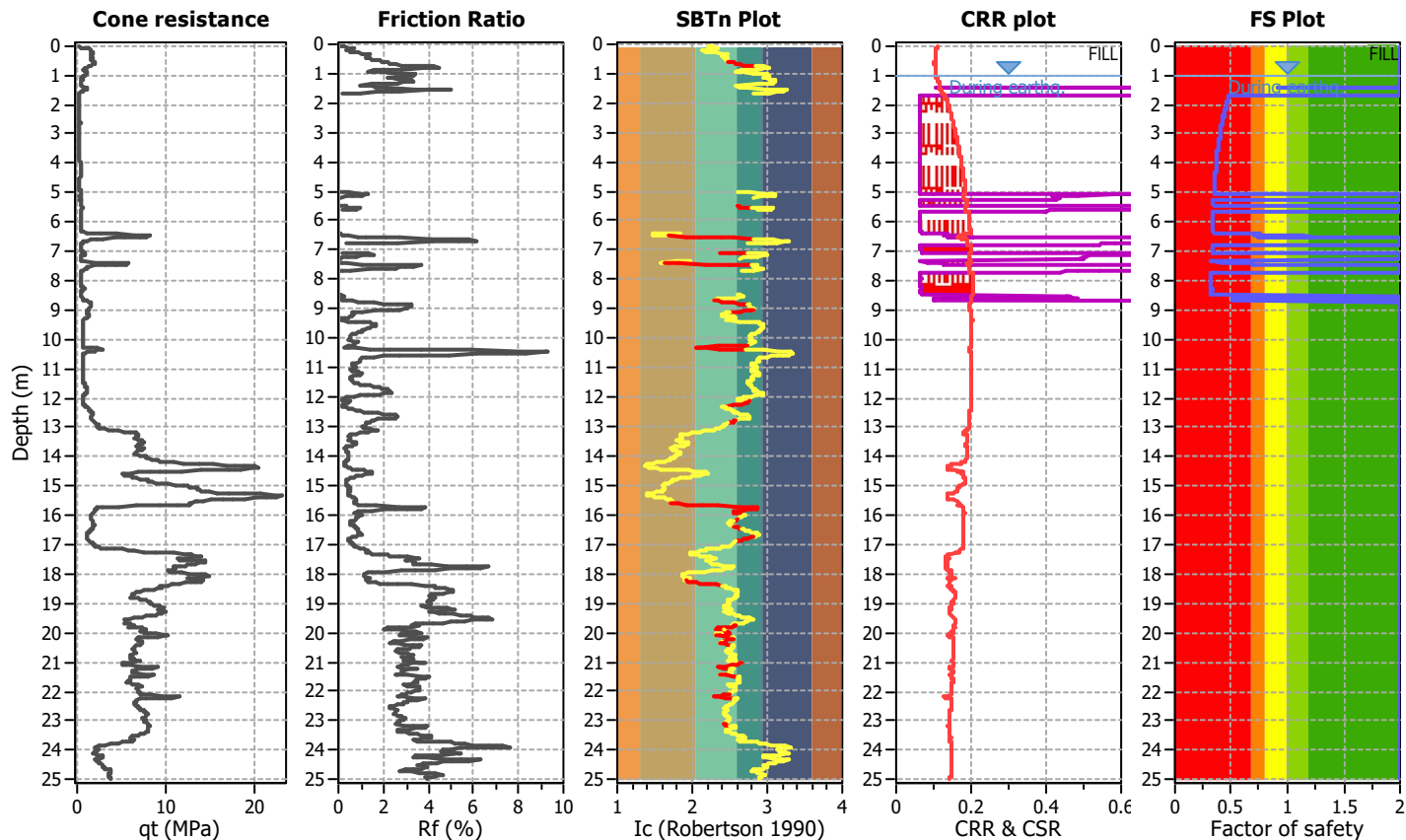
Project title : Sunfield Landholding

Location :

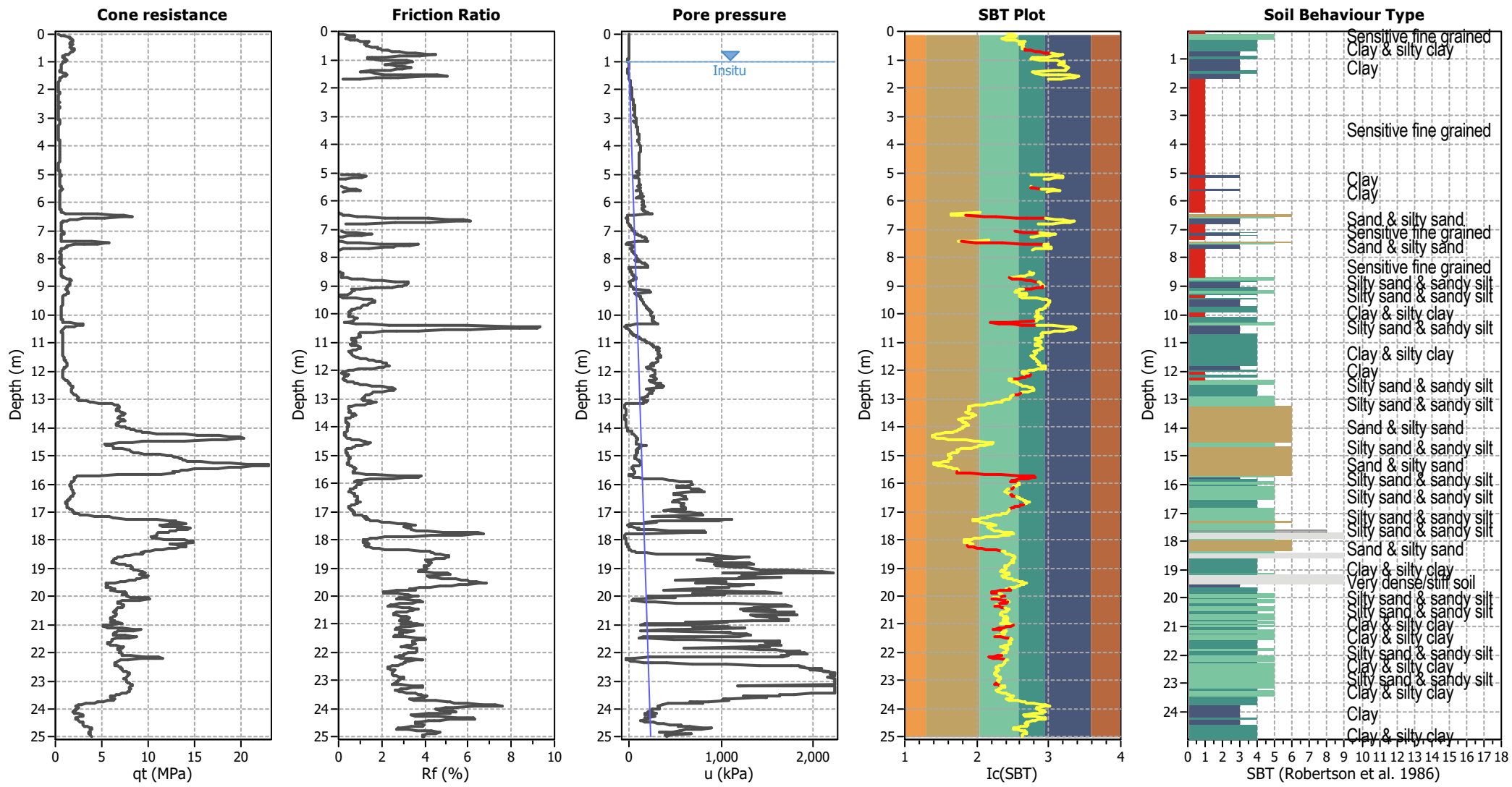
CPT file : CPT206

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

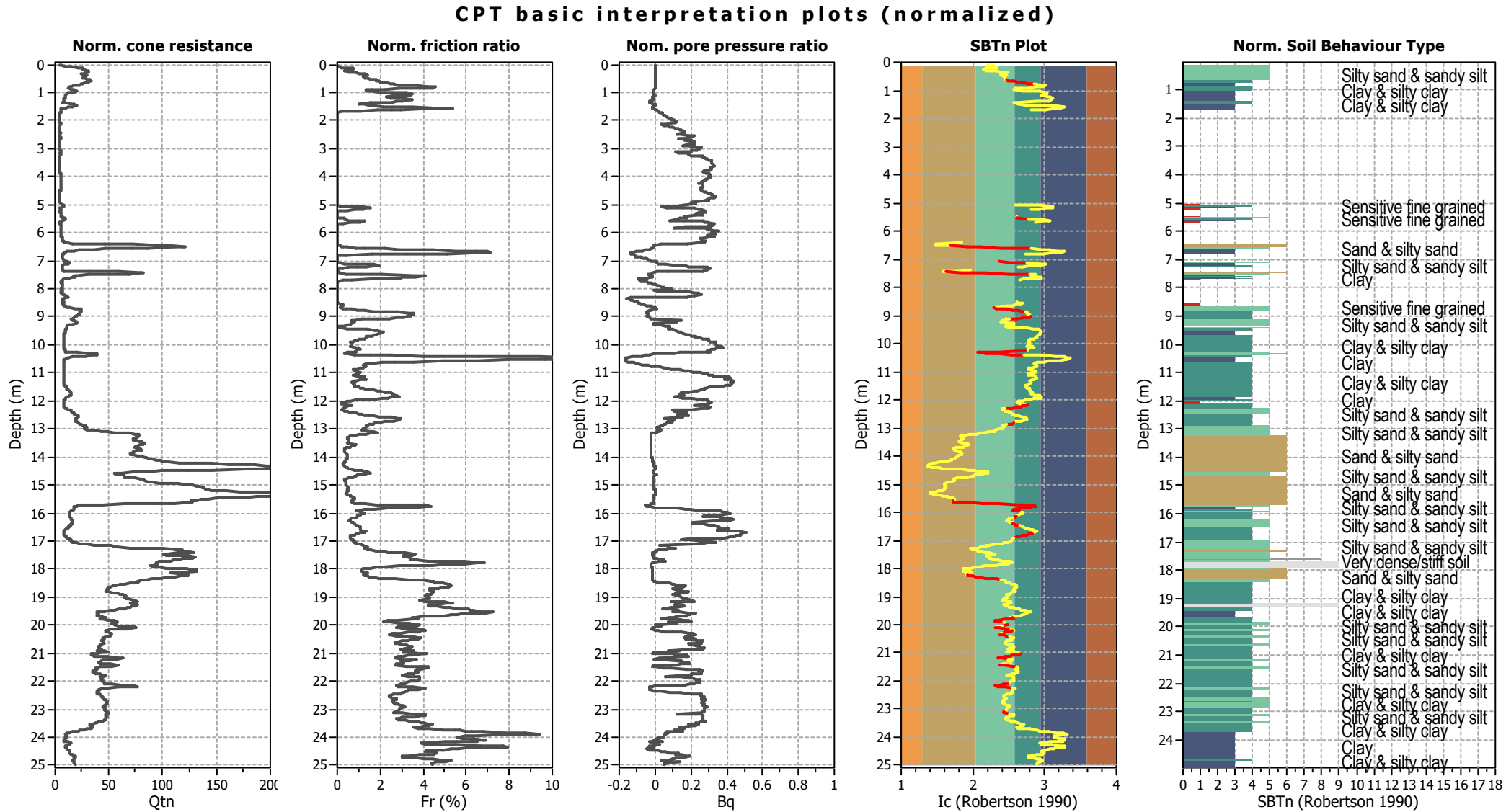


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

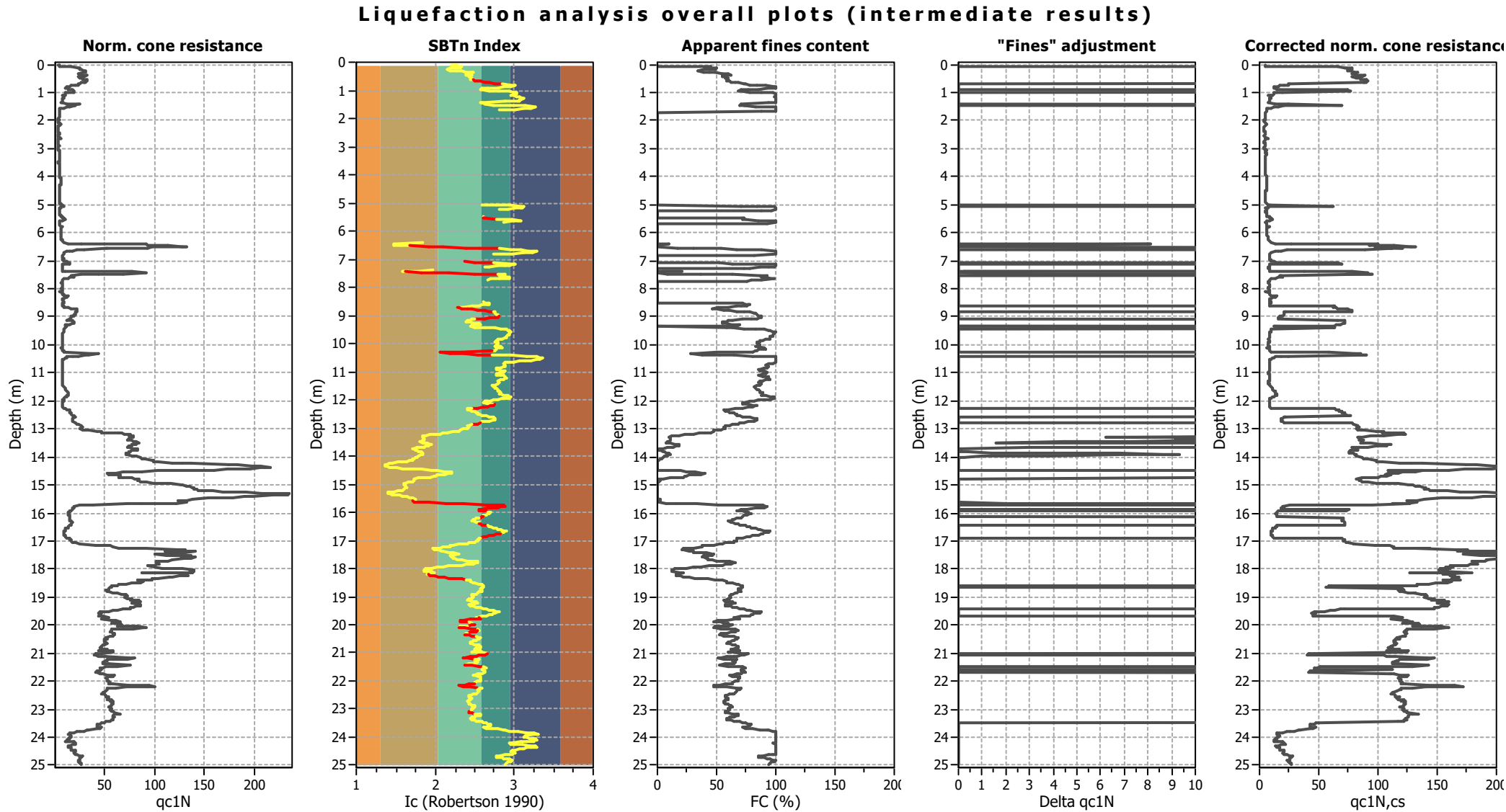
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



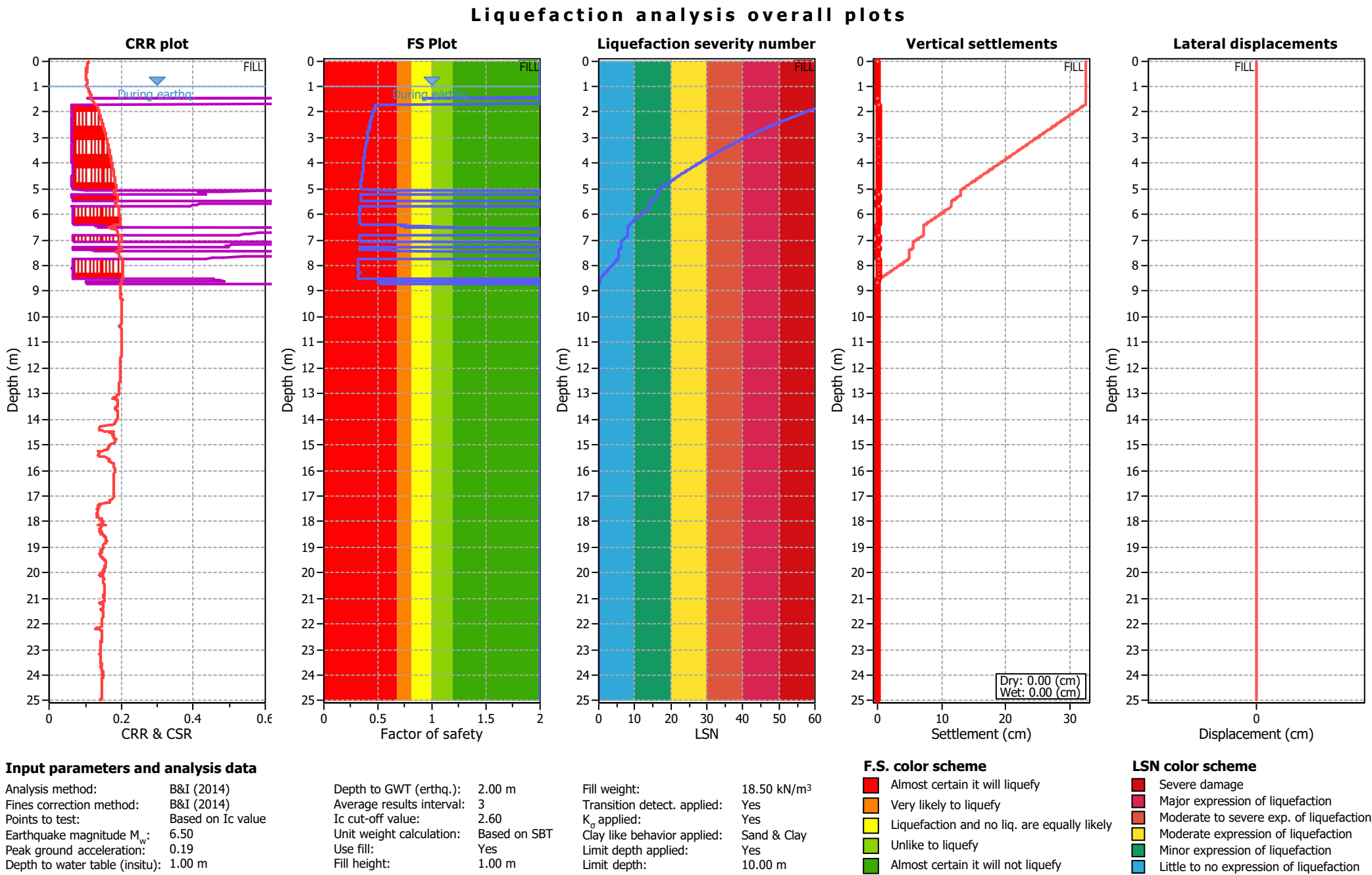
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³	SBTn legend 1. Sensitive fine grained 2. Organic material 3. Clay to silty clay 4. Clayey silt to silty 5. Silty sand to sandy silt 6. Clean sand to silty sand 7. Gravely sand to sand 8. Very stiff sand to 9. Very stiff fine grained		
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes			
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes			
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay			
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes			
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m			

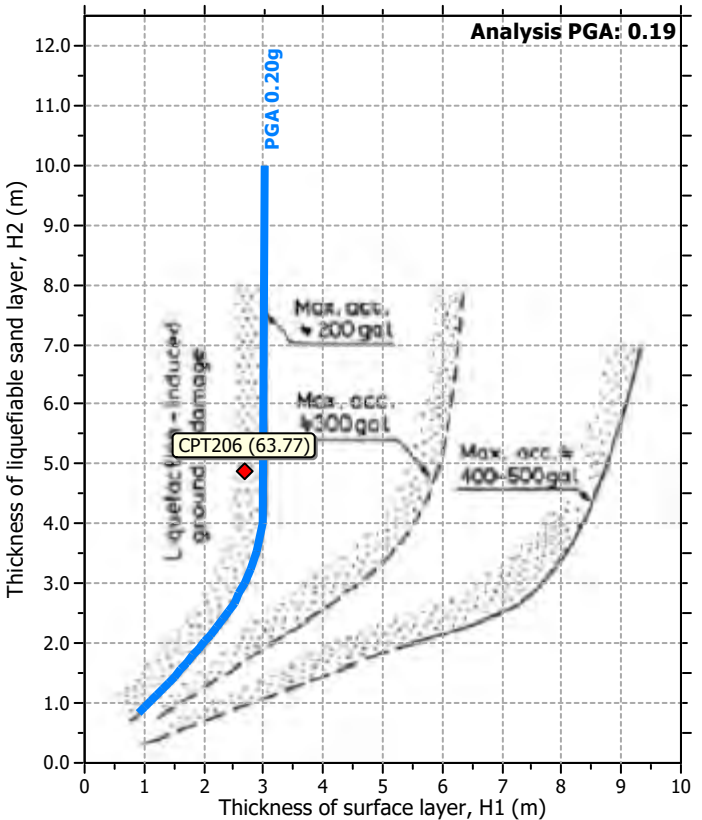
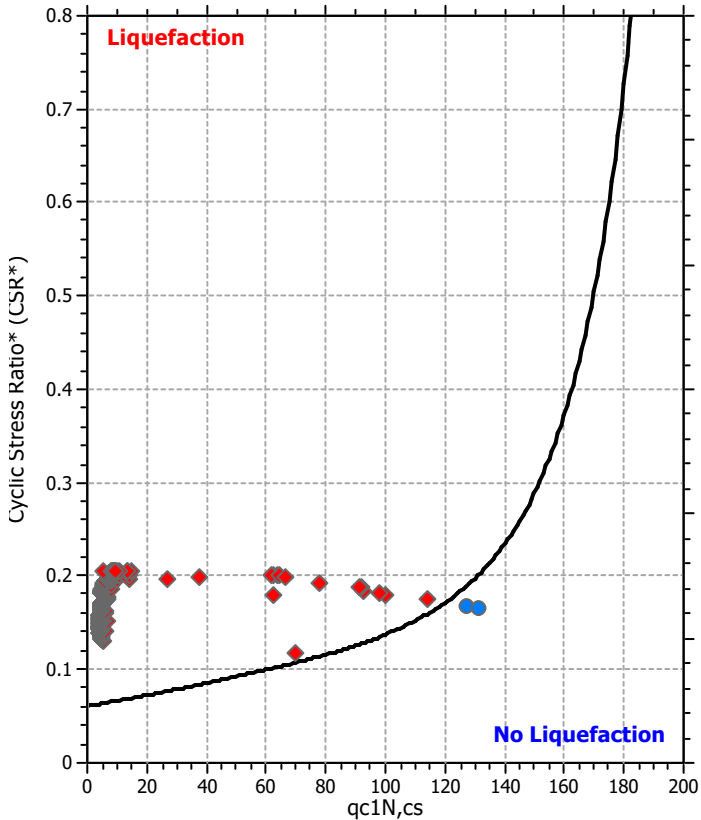
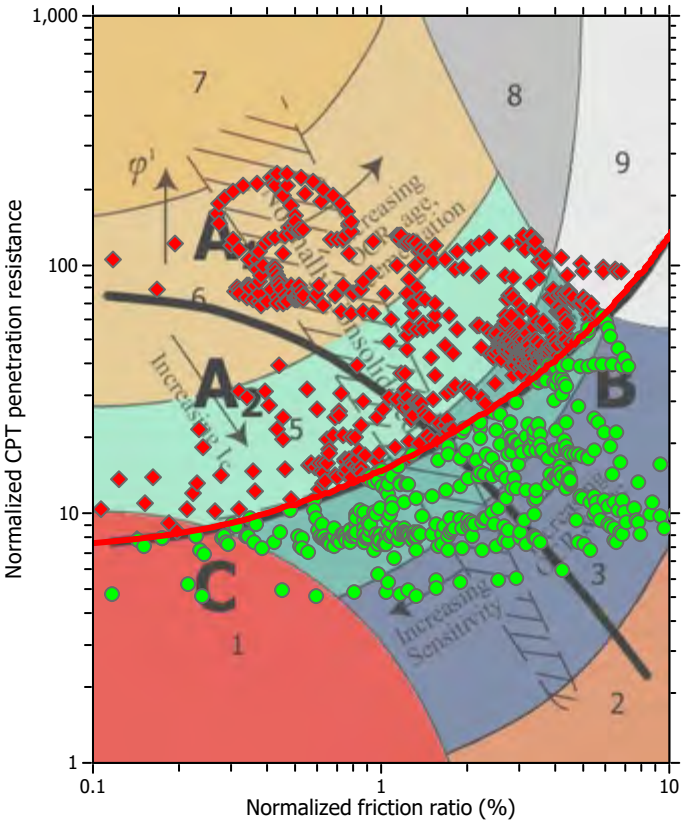


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



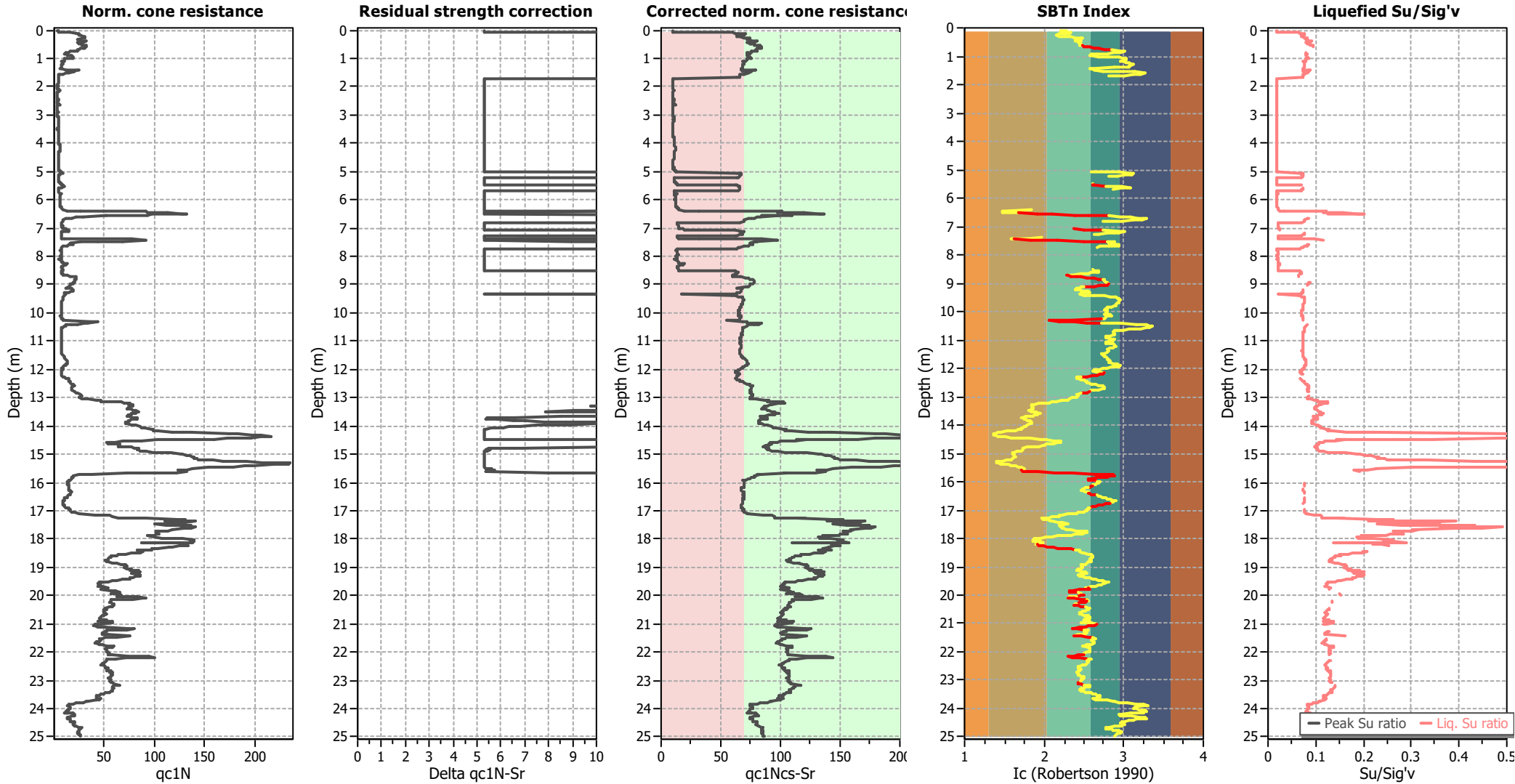
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

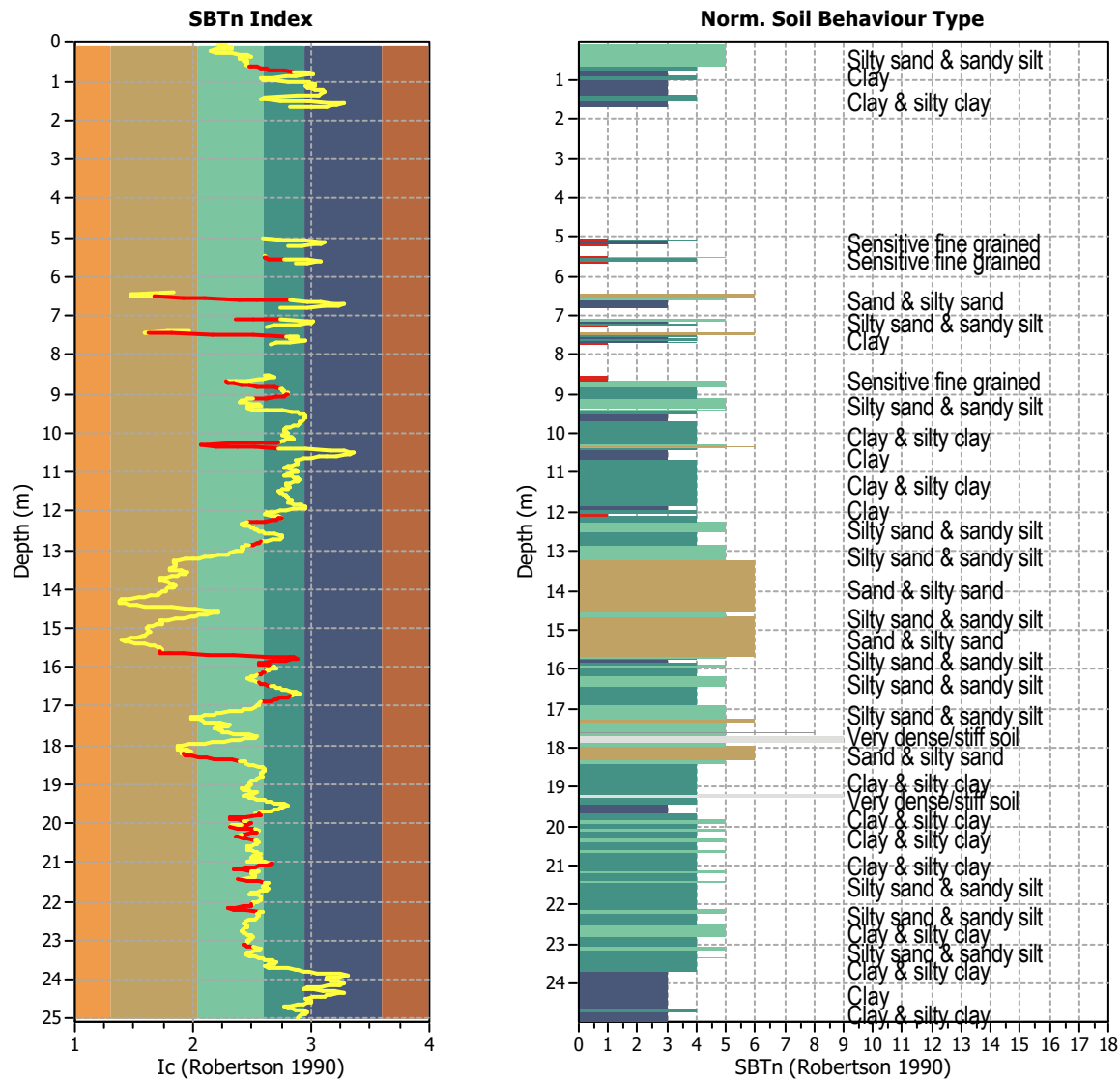
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

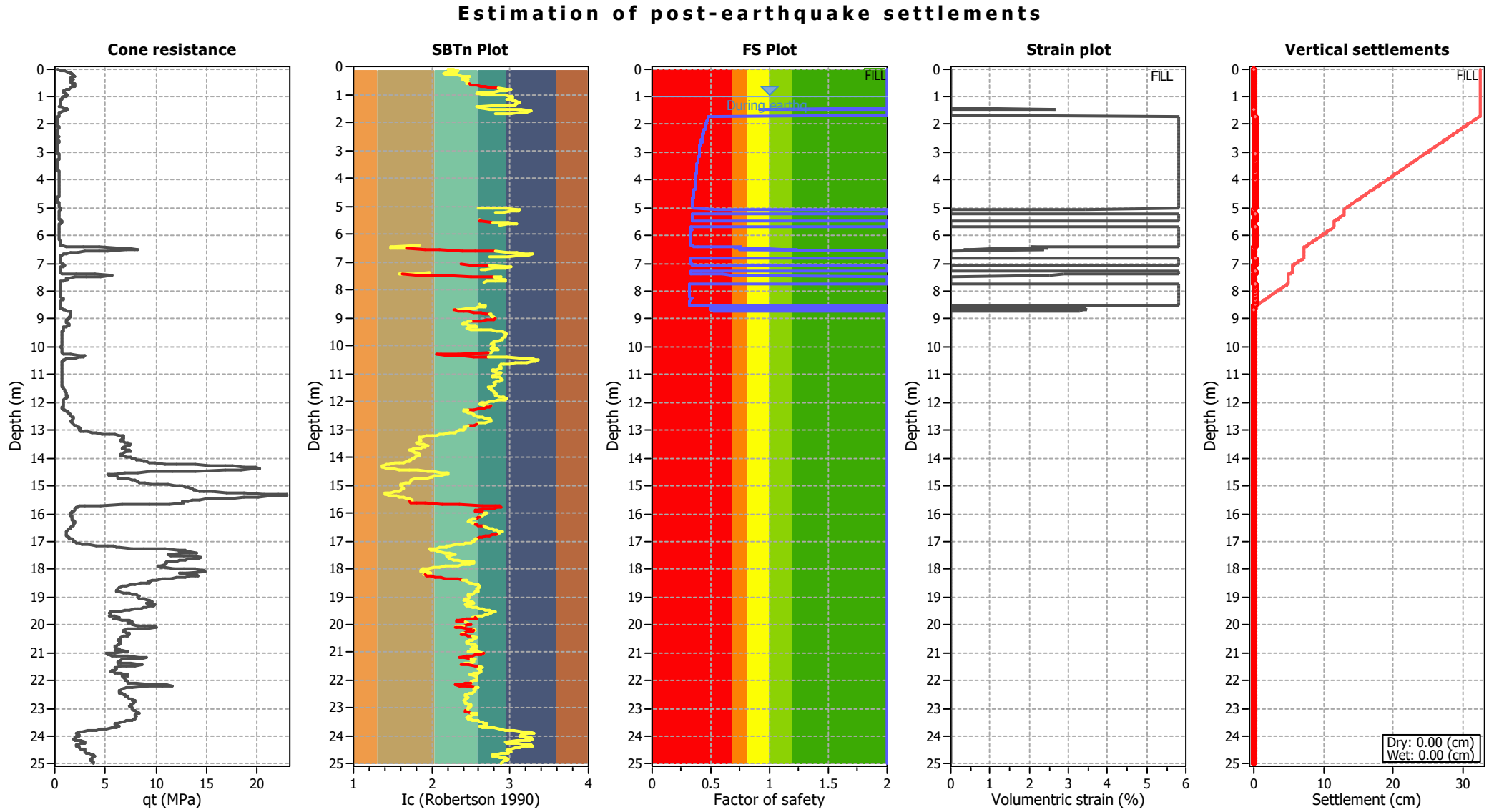


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

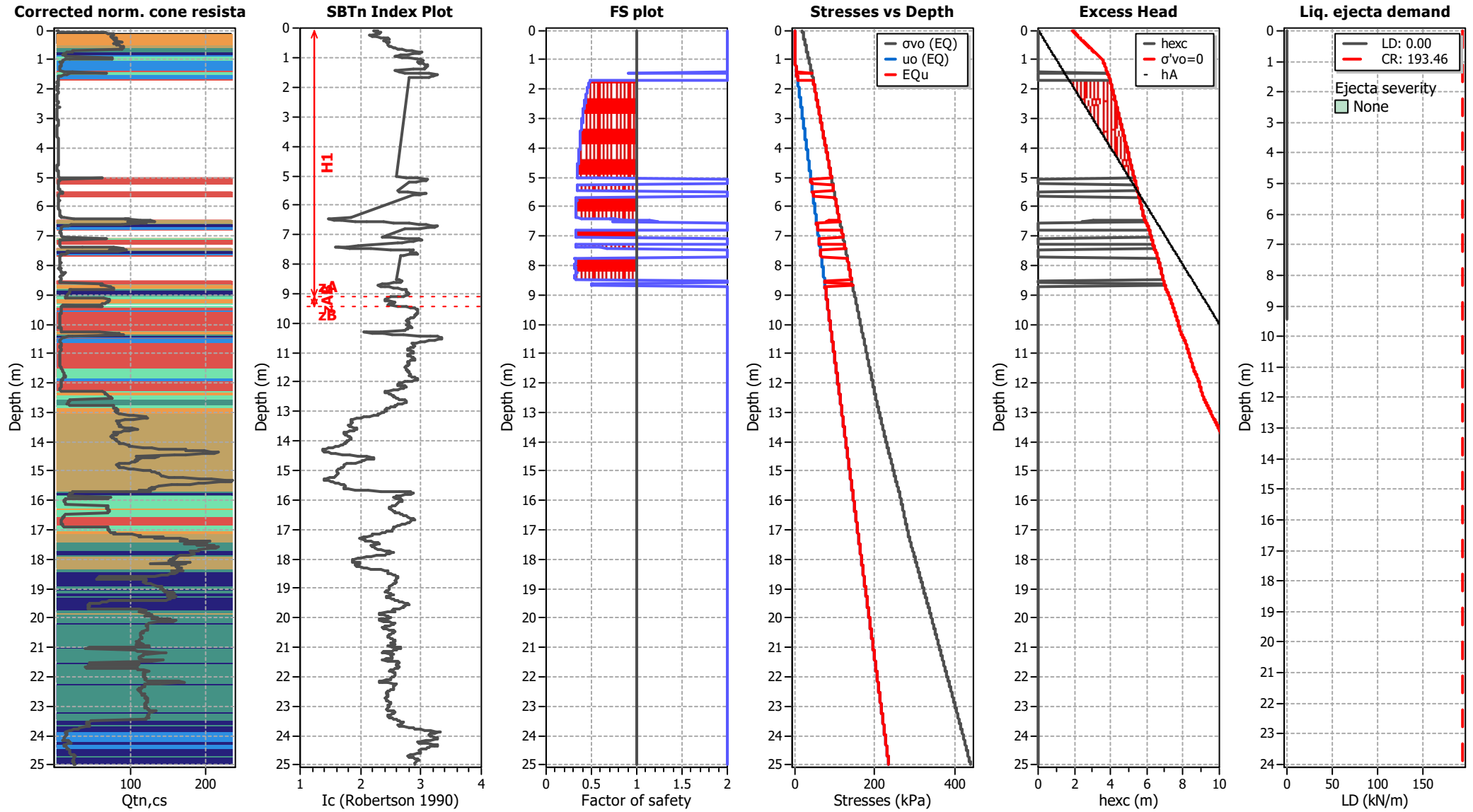
Total points in CPT file: 1249
Total points excluded: 172
Exclusion percentage: 13.77%
Number of layers detected: 30



Abbreviations

- q_c:
- Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c:
- Soil Behaviour Type Index
- FS:
- Calculated Factor of Safety against liquefaction
- Volumetric strain:
- Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

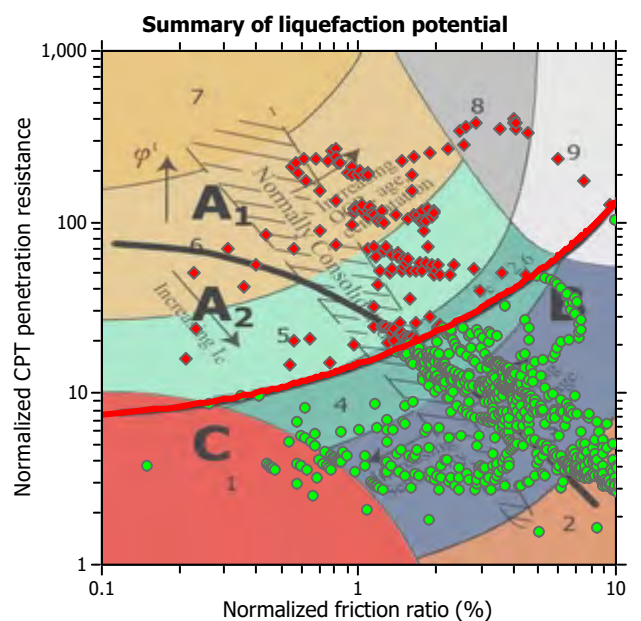
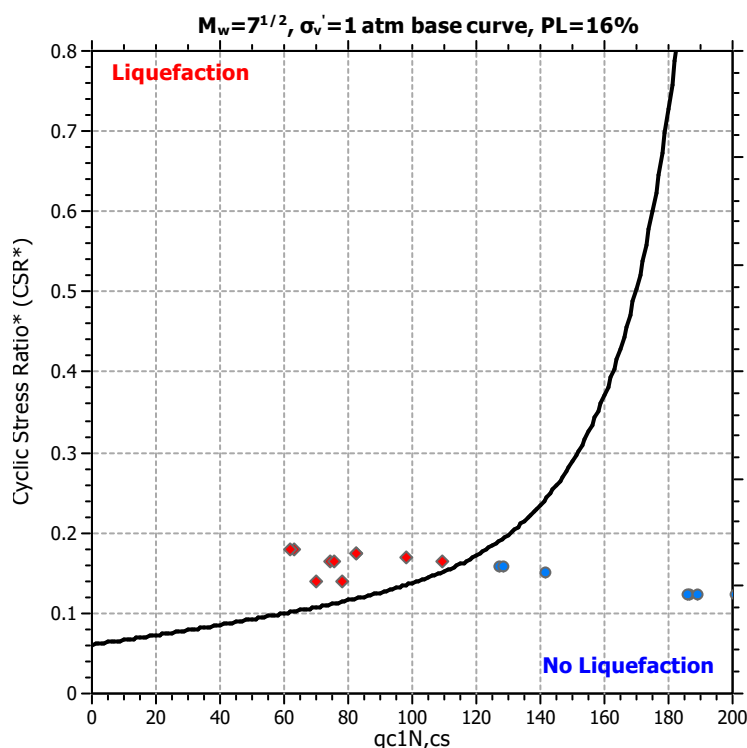
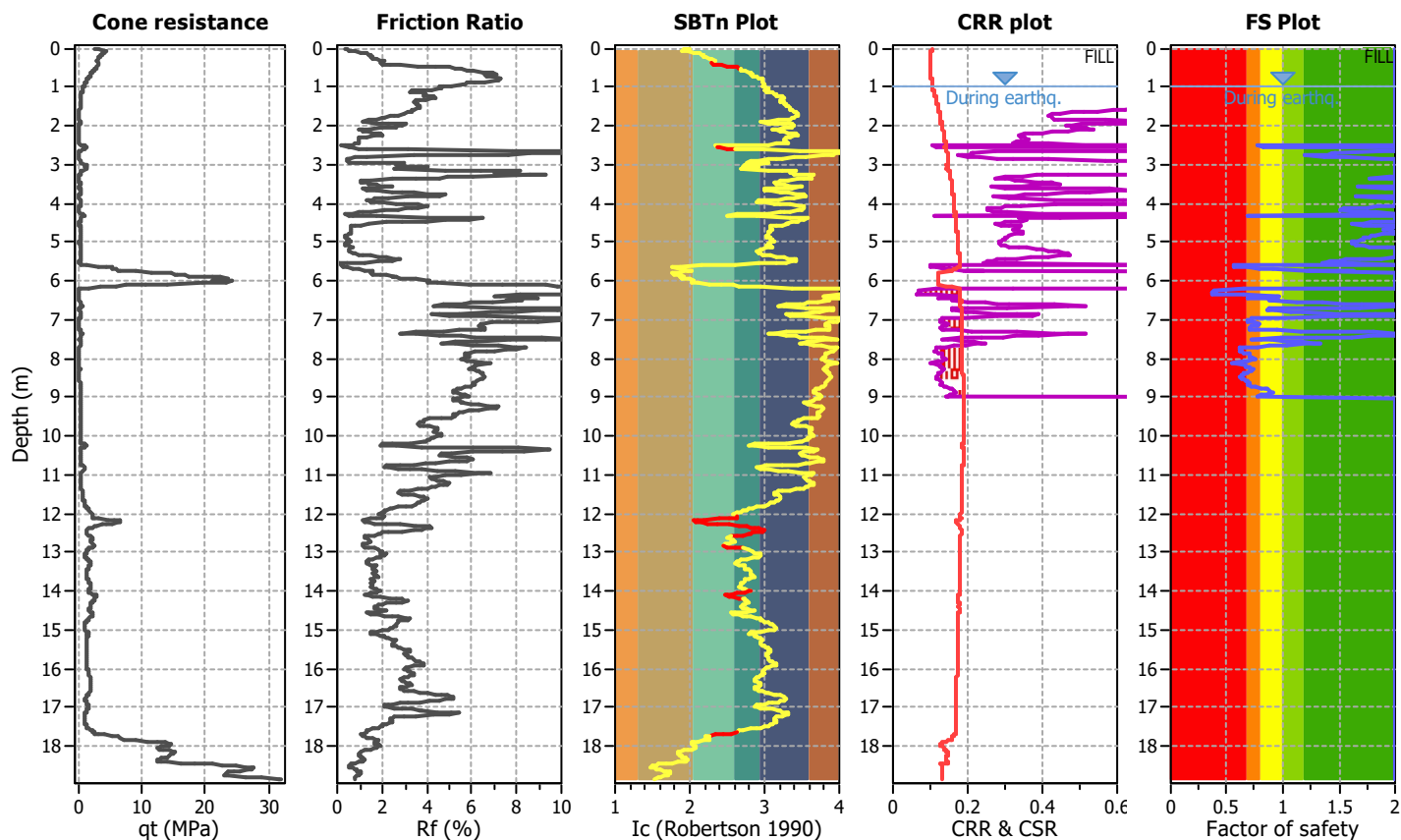
Project title : Sunfield Landholding

Location :

CPT file : CPT207

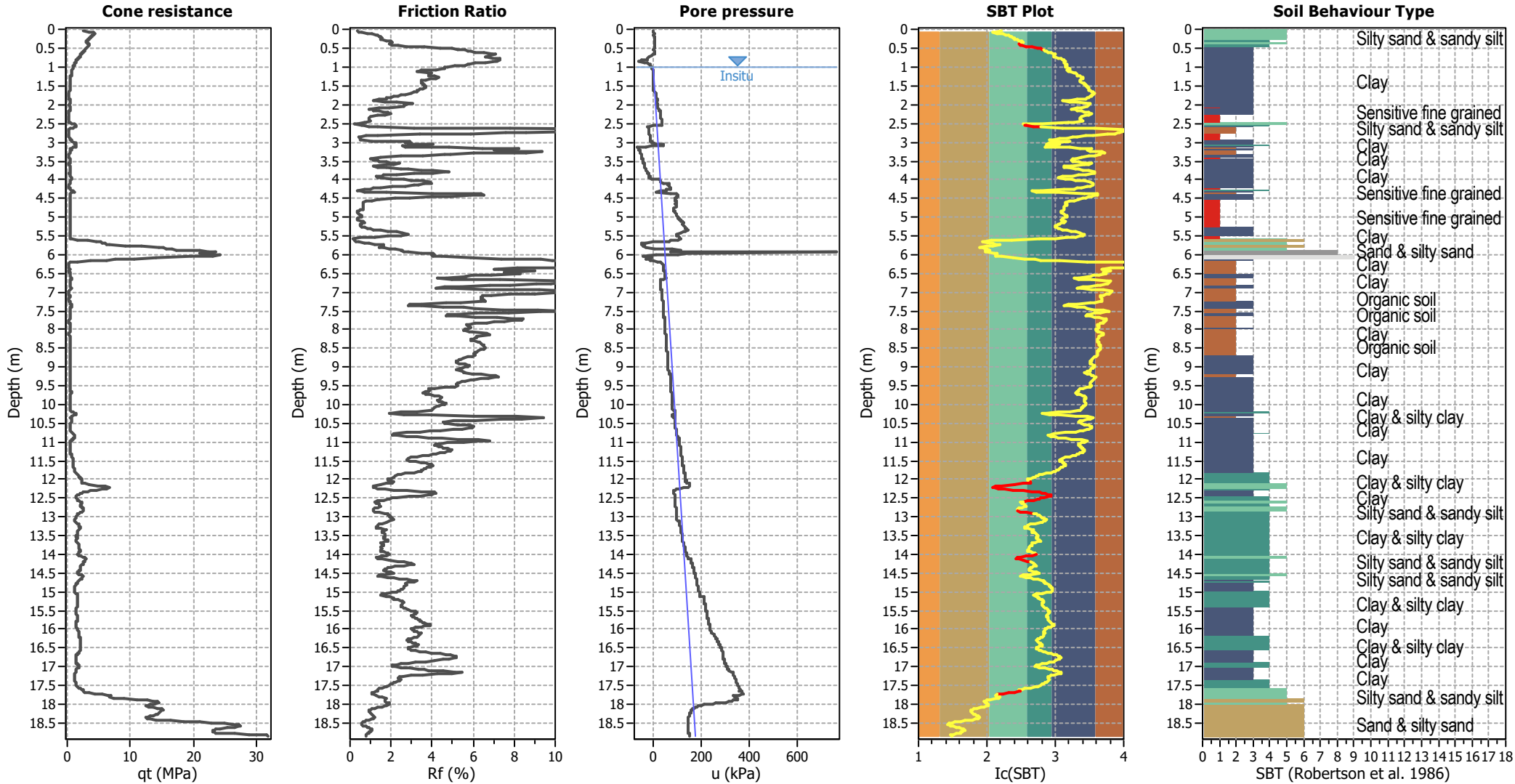
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

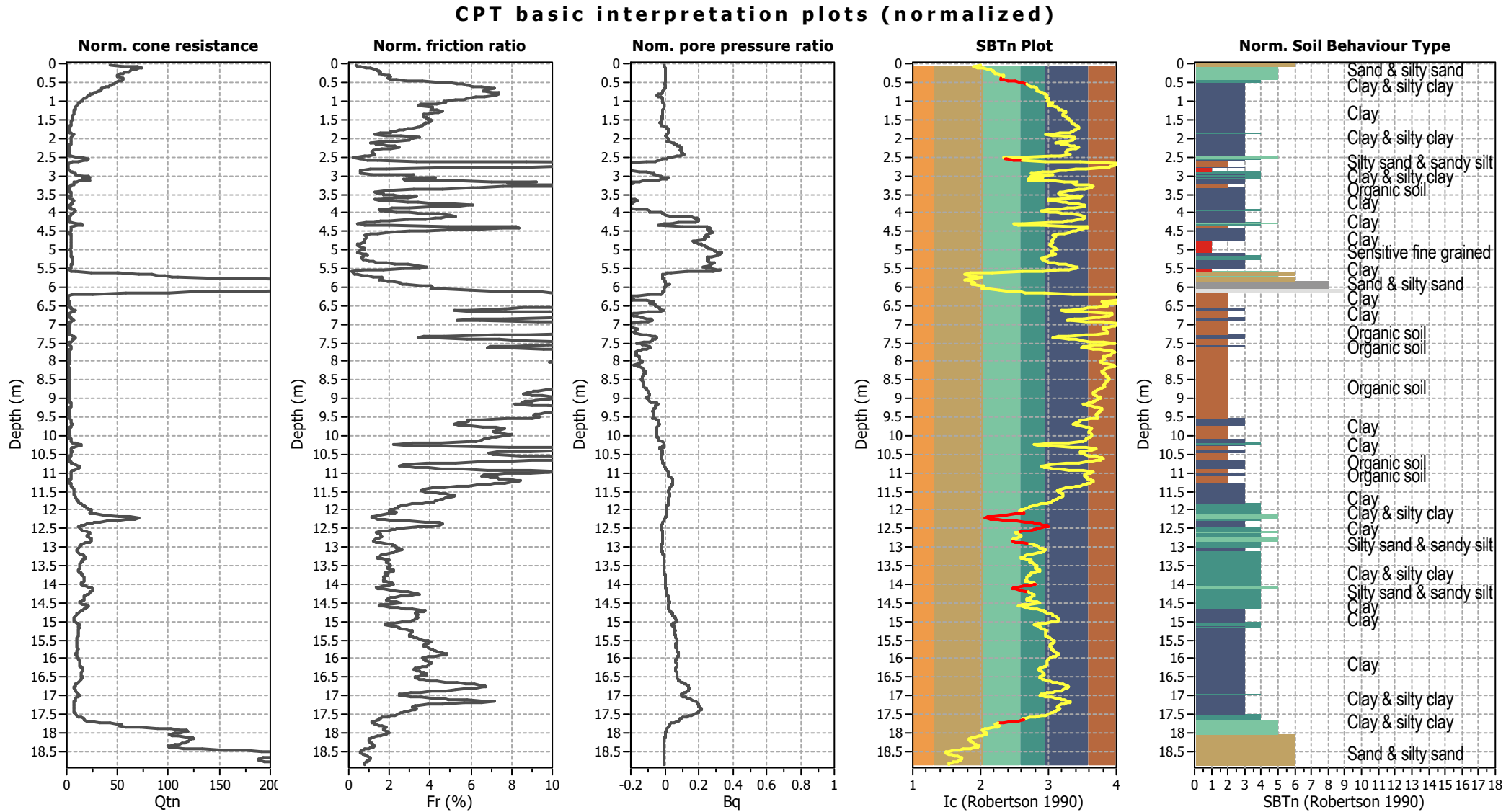


Input parameters and analysis data

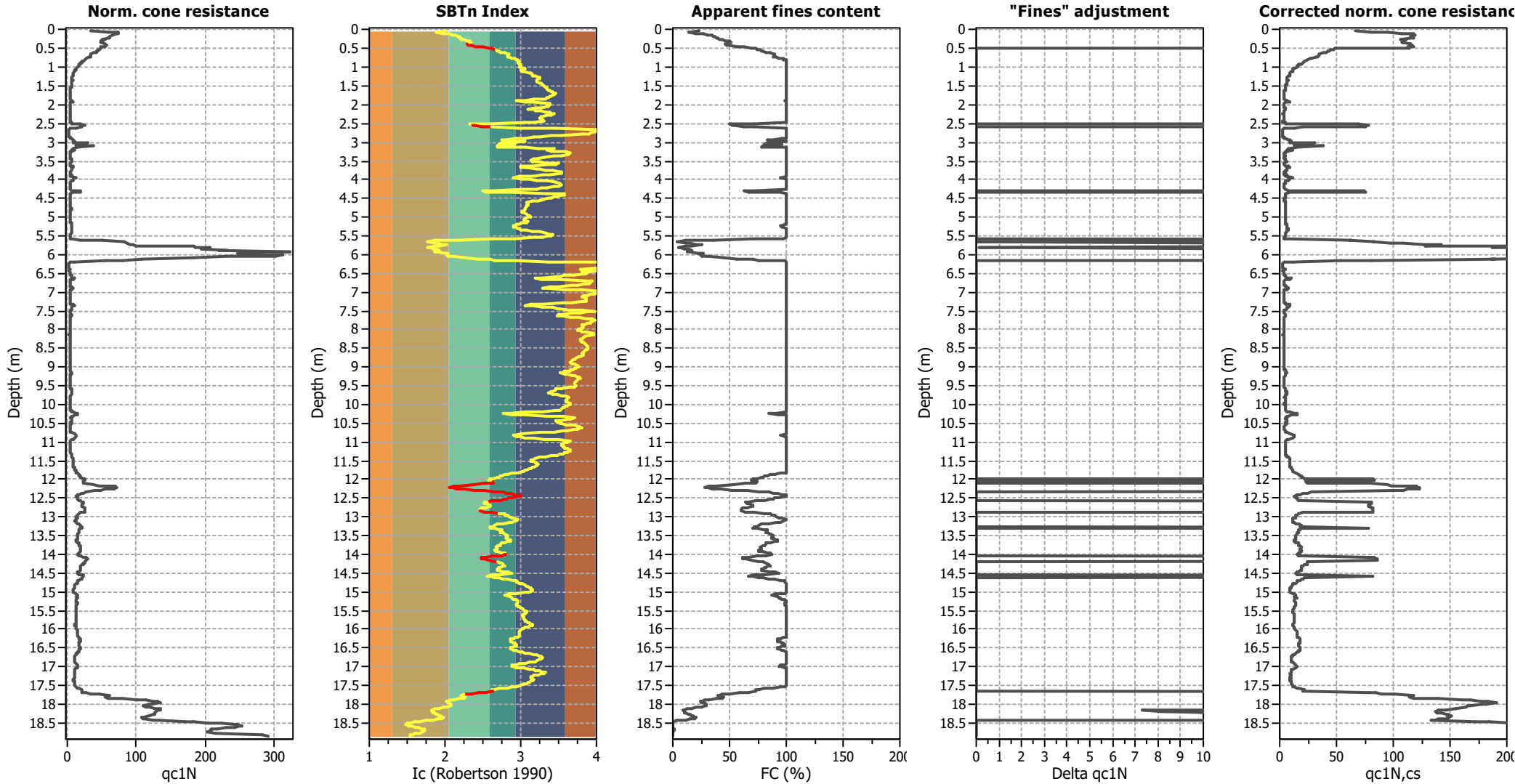
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



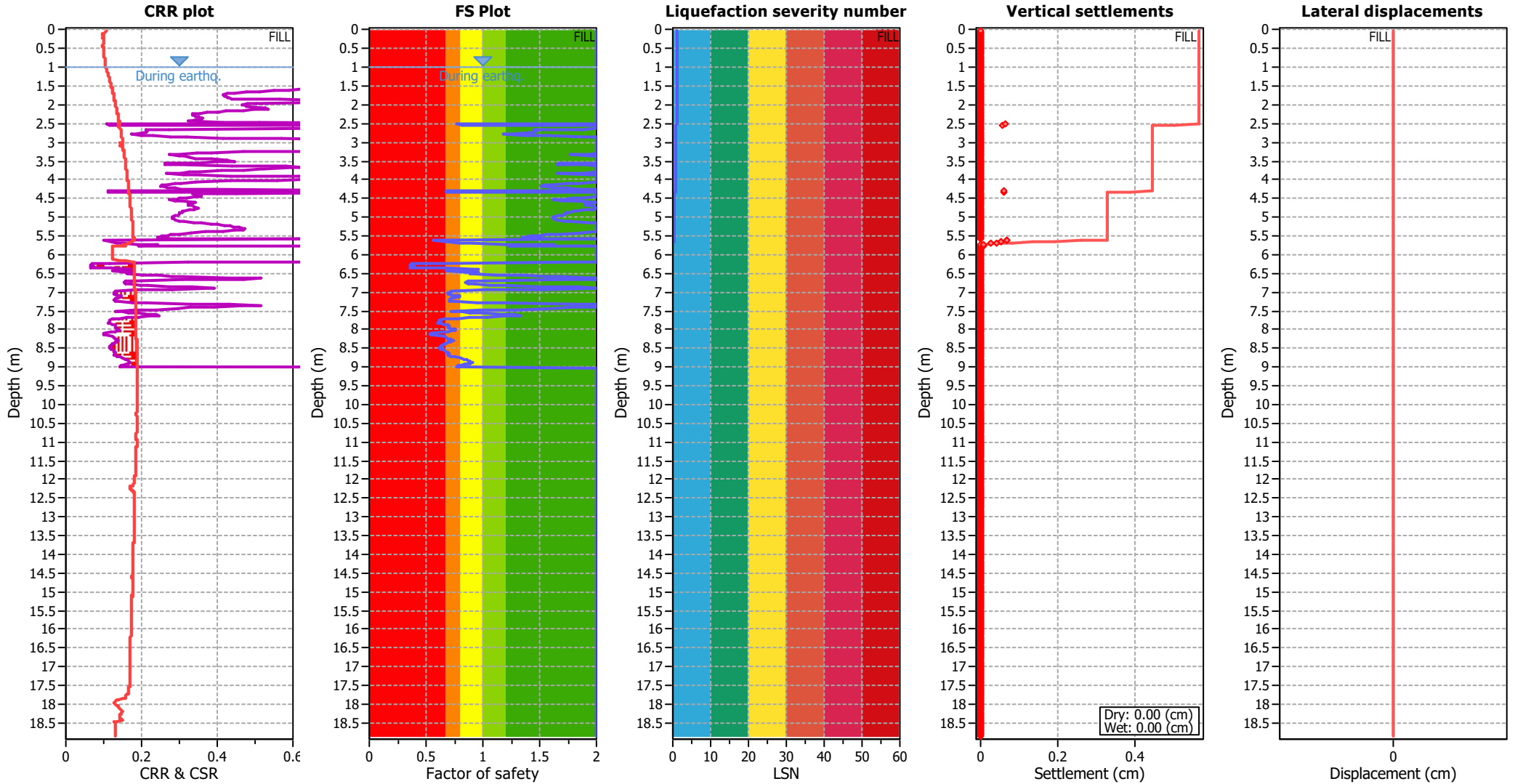
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

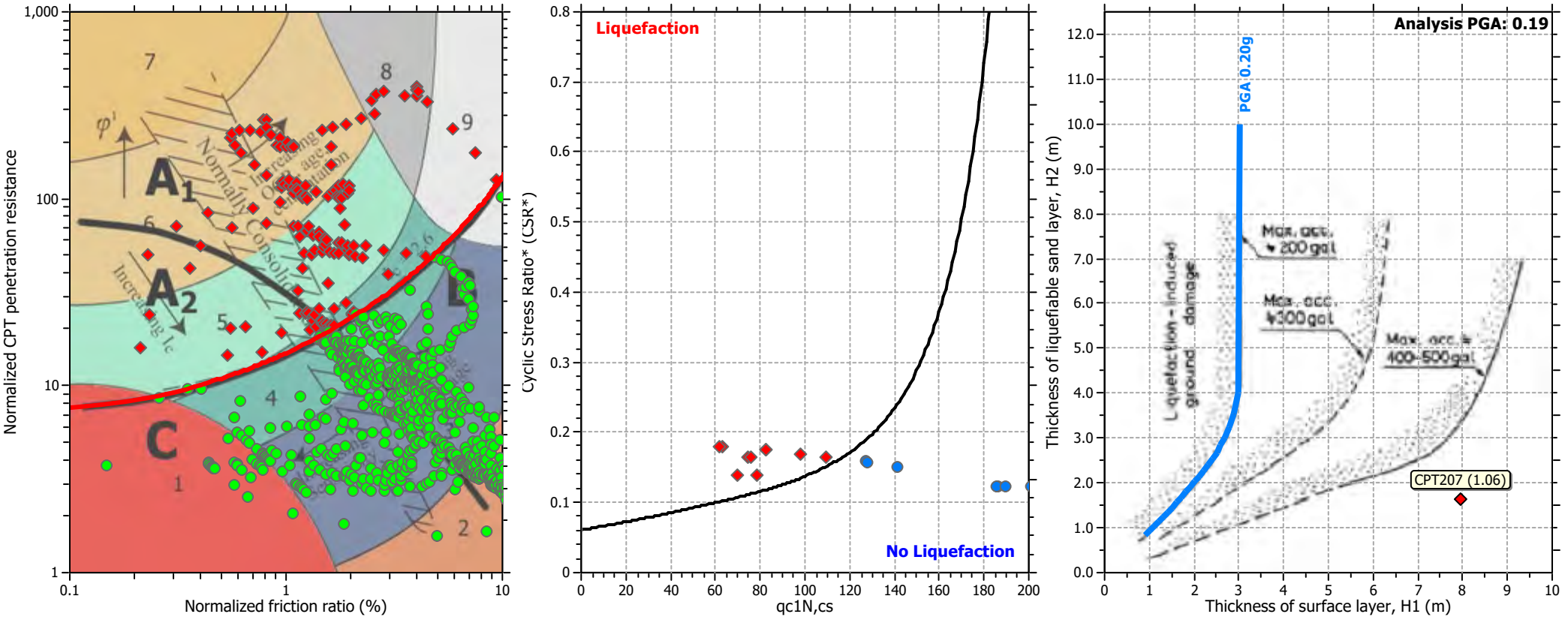
F.S. color scheme

Almost certain it will liquefy
Very likely to liquefy
Liquefaction and no liq. are equally likely
Unlike to liquefy
Almost certain it will not liquefy

LSN color scheme

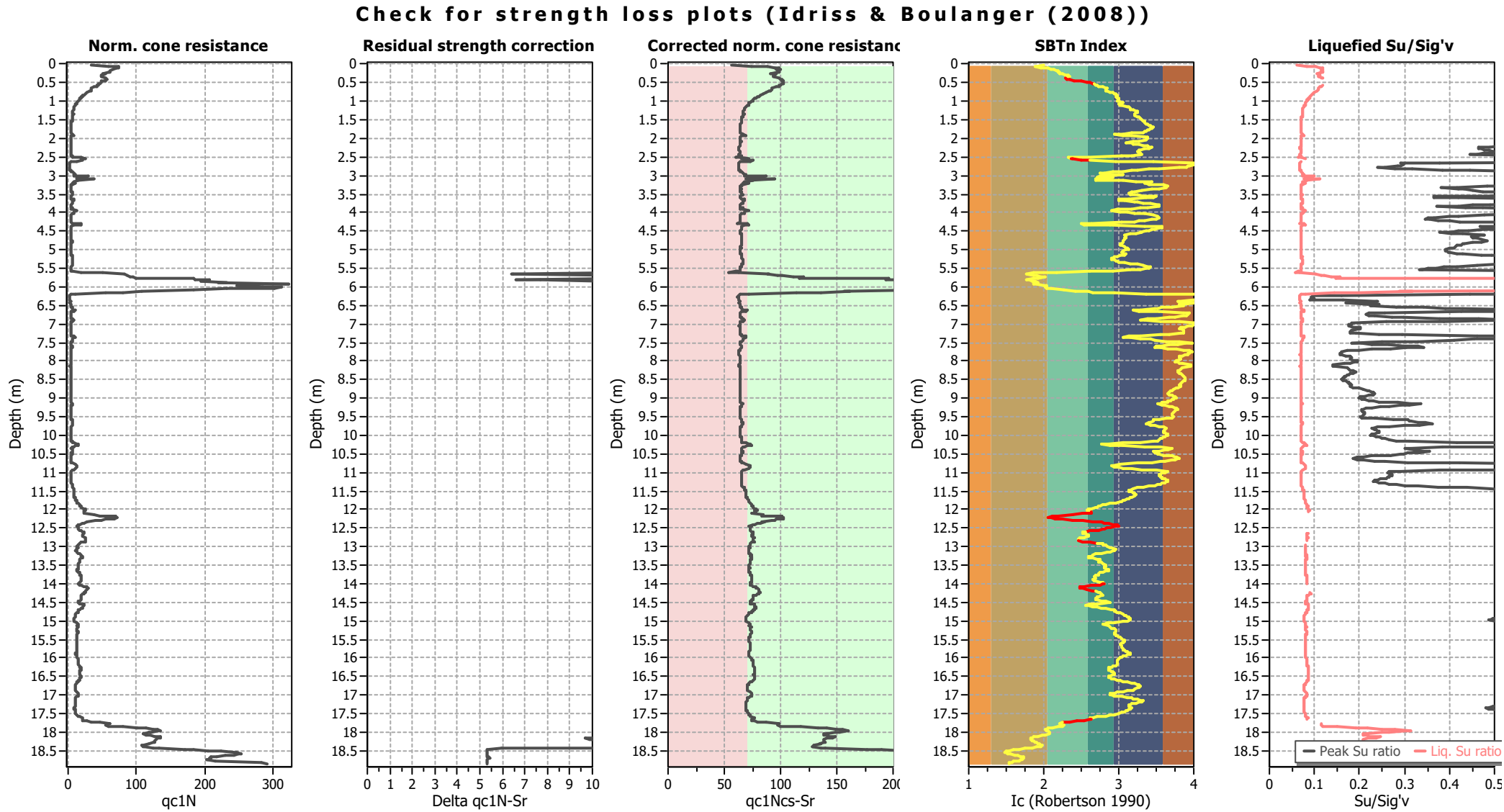
Severe damage
Major expression of liquefaction
Moderate to severe exp. of liquefaction
Moderate expression of liquefaction
Minor expression of liquefaction
Little to no expression of liquefaction

Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

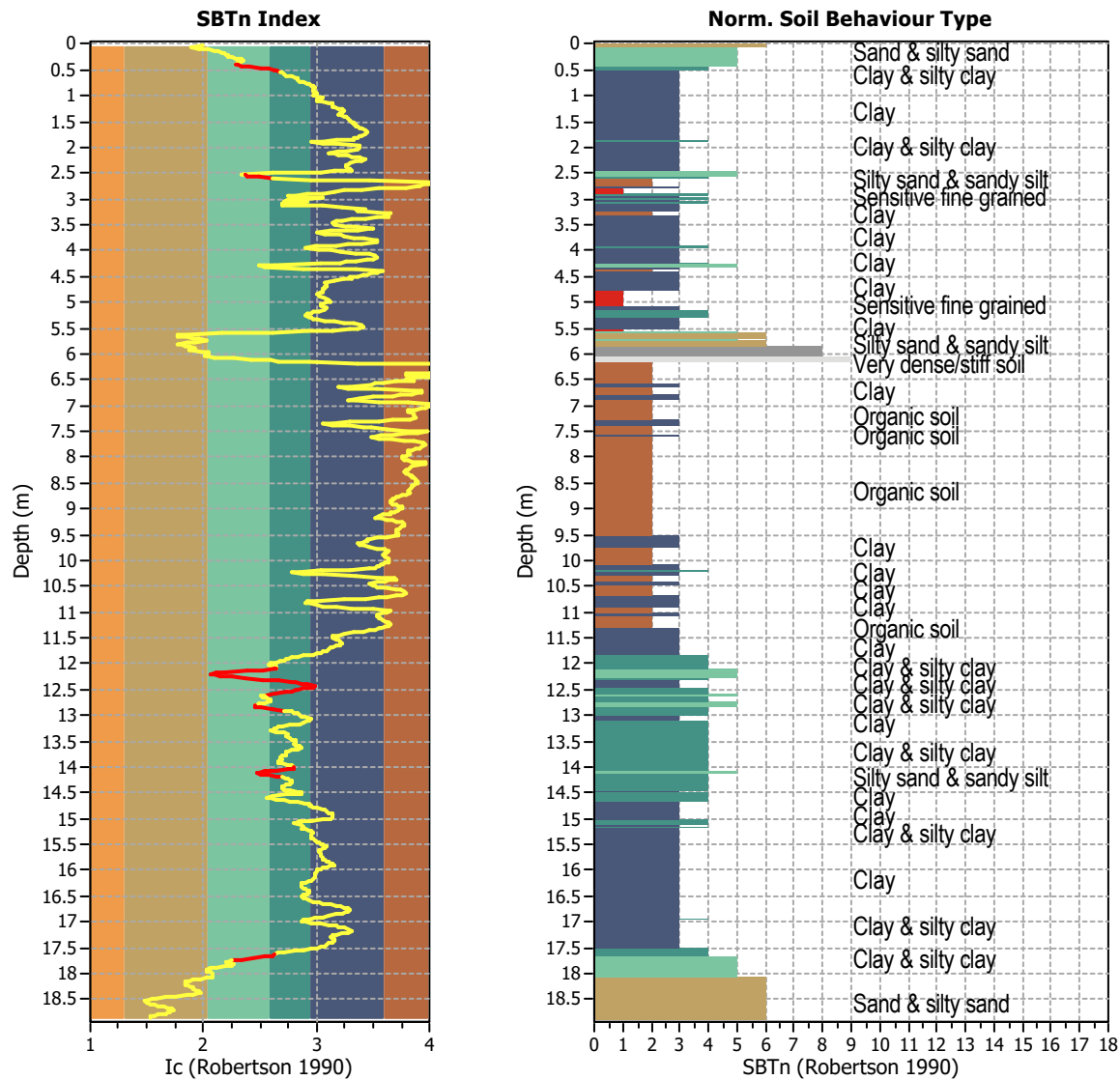
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



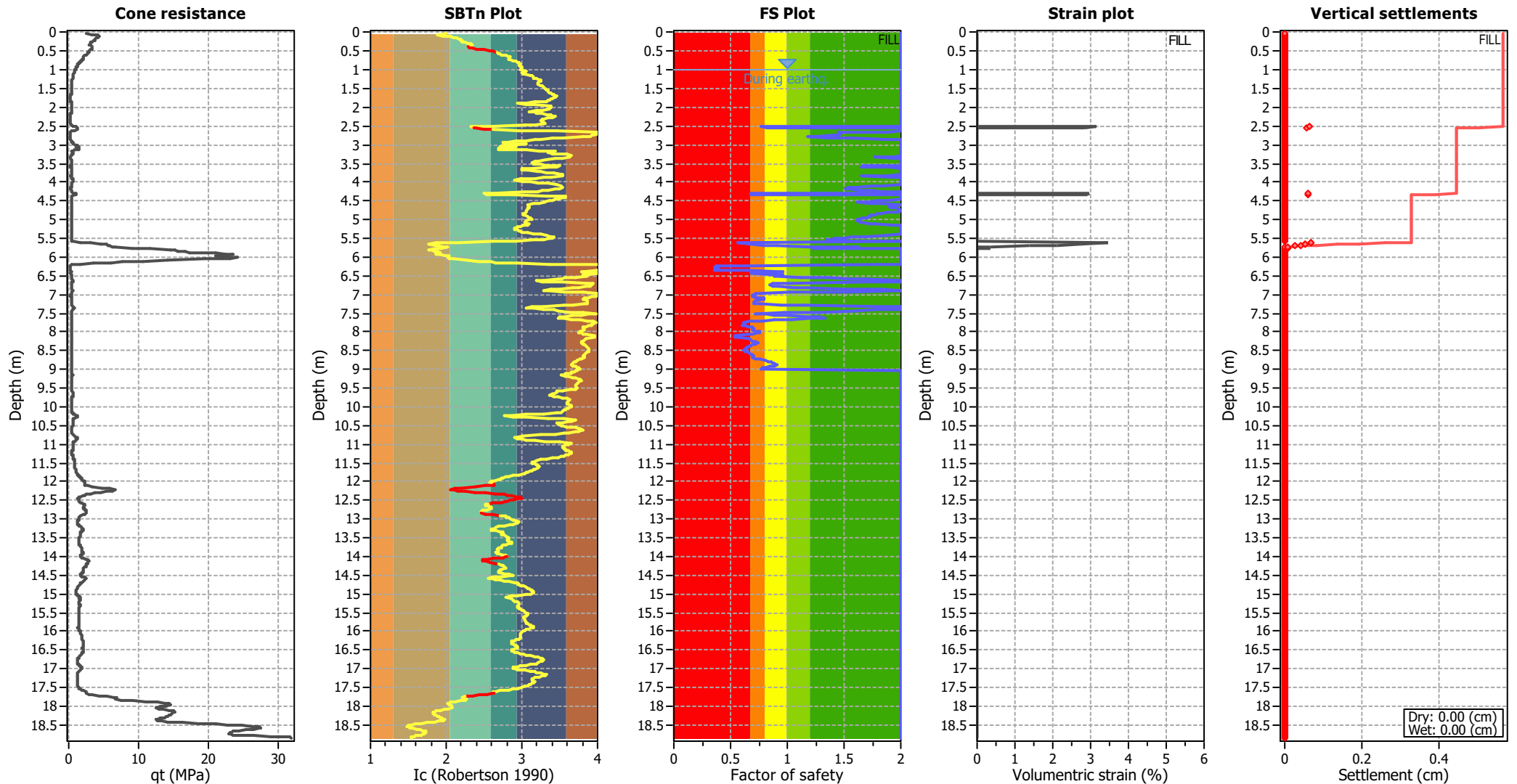
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 943
Total points excluded: 63
Exclusion percentage: 6.68%
Number of layers detected: 9

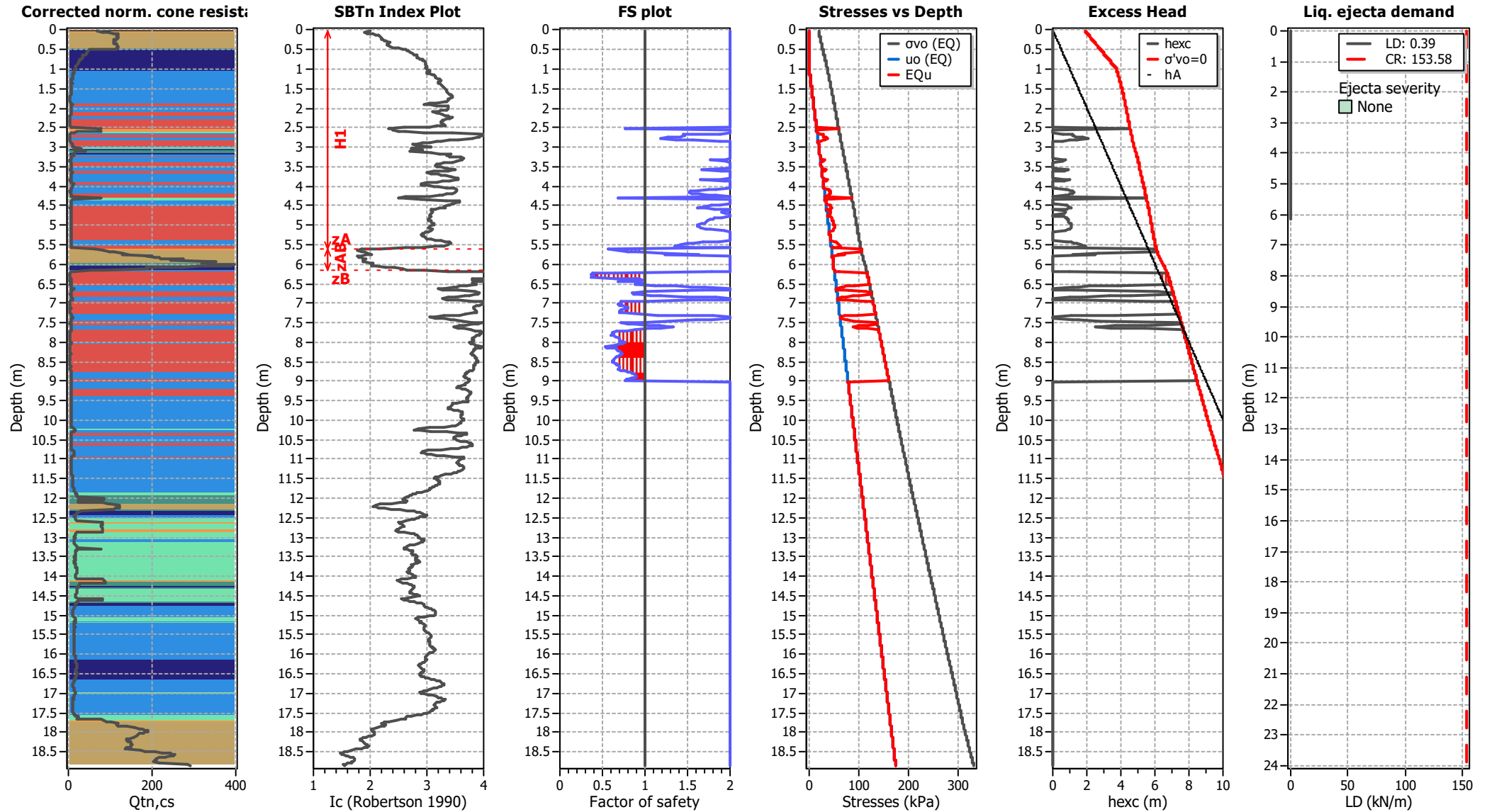
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

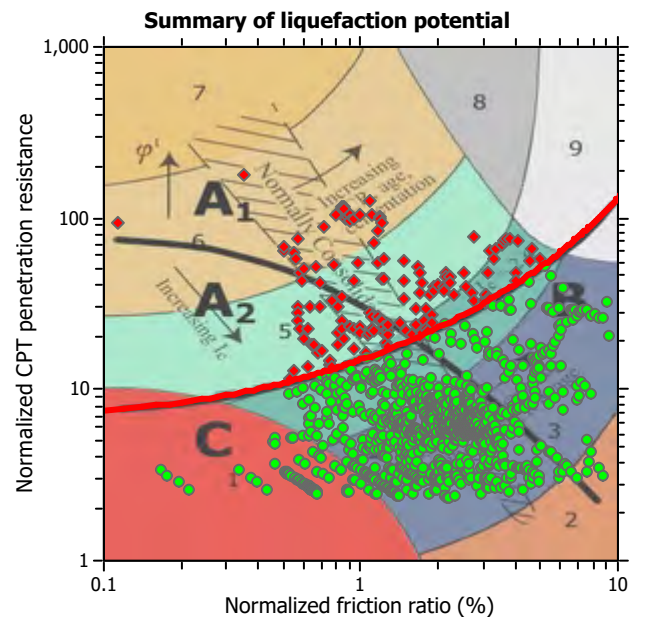
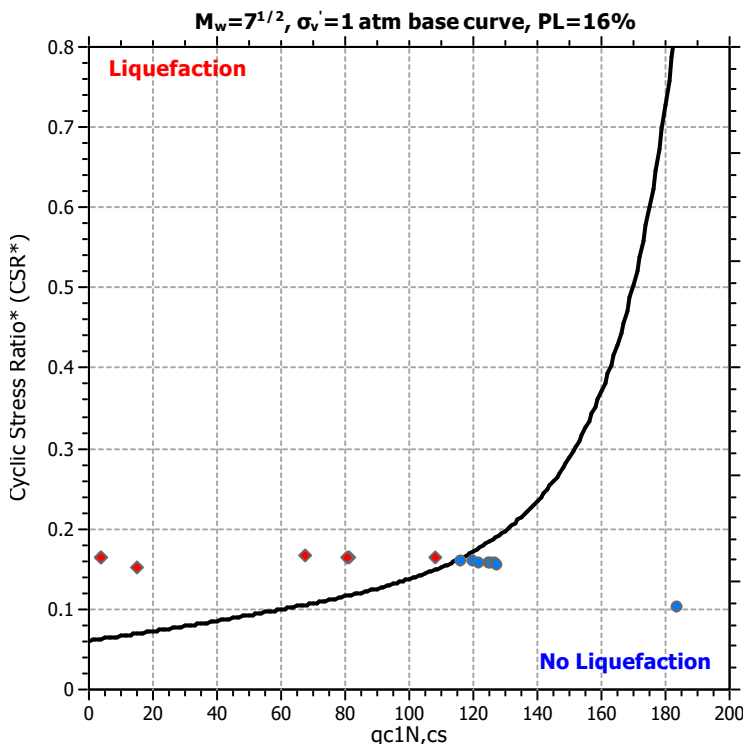
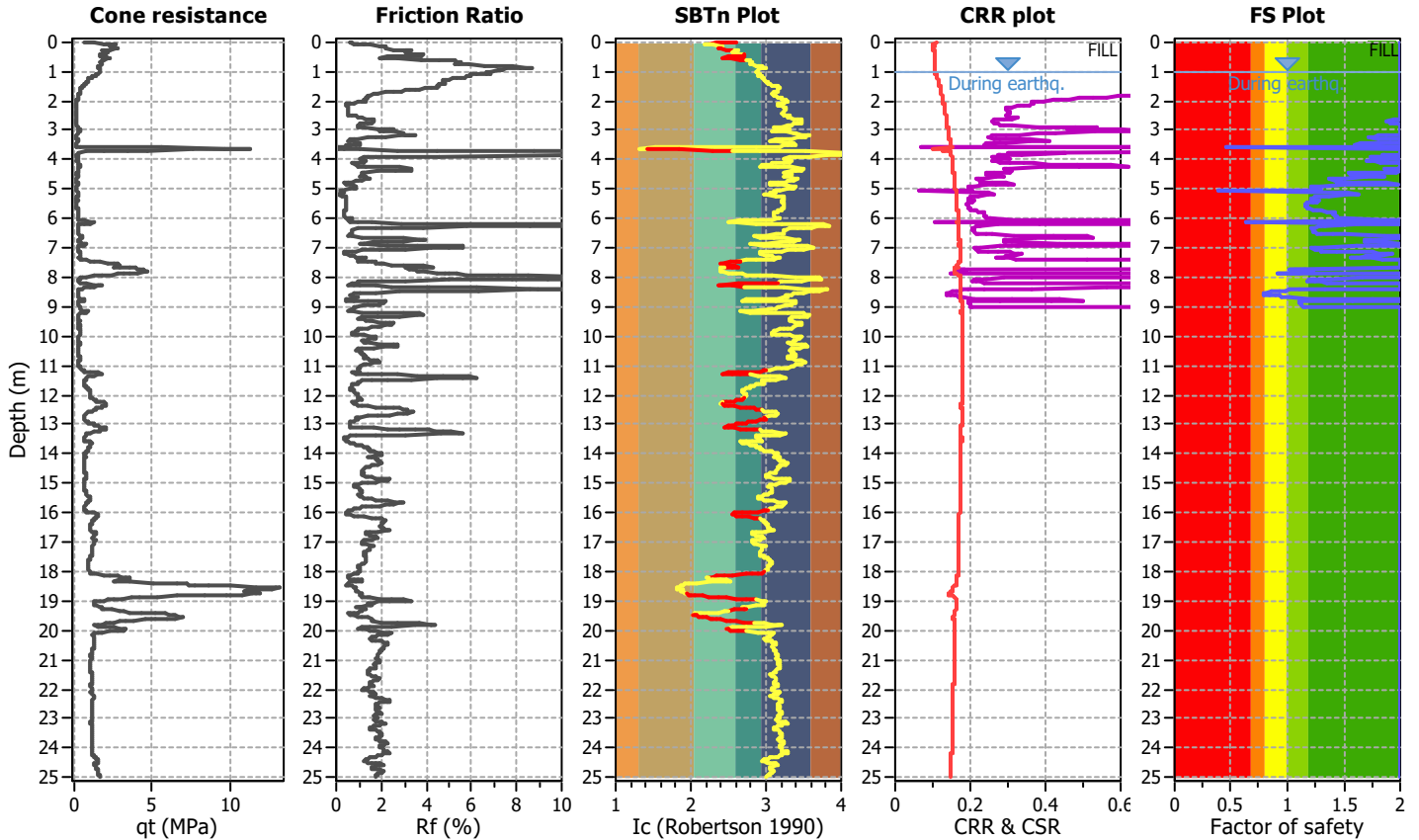
Project title : Sunfield Landholding

Location :

CPT file : CPT208

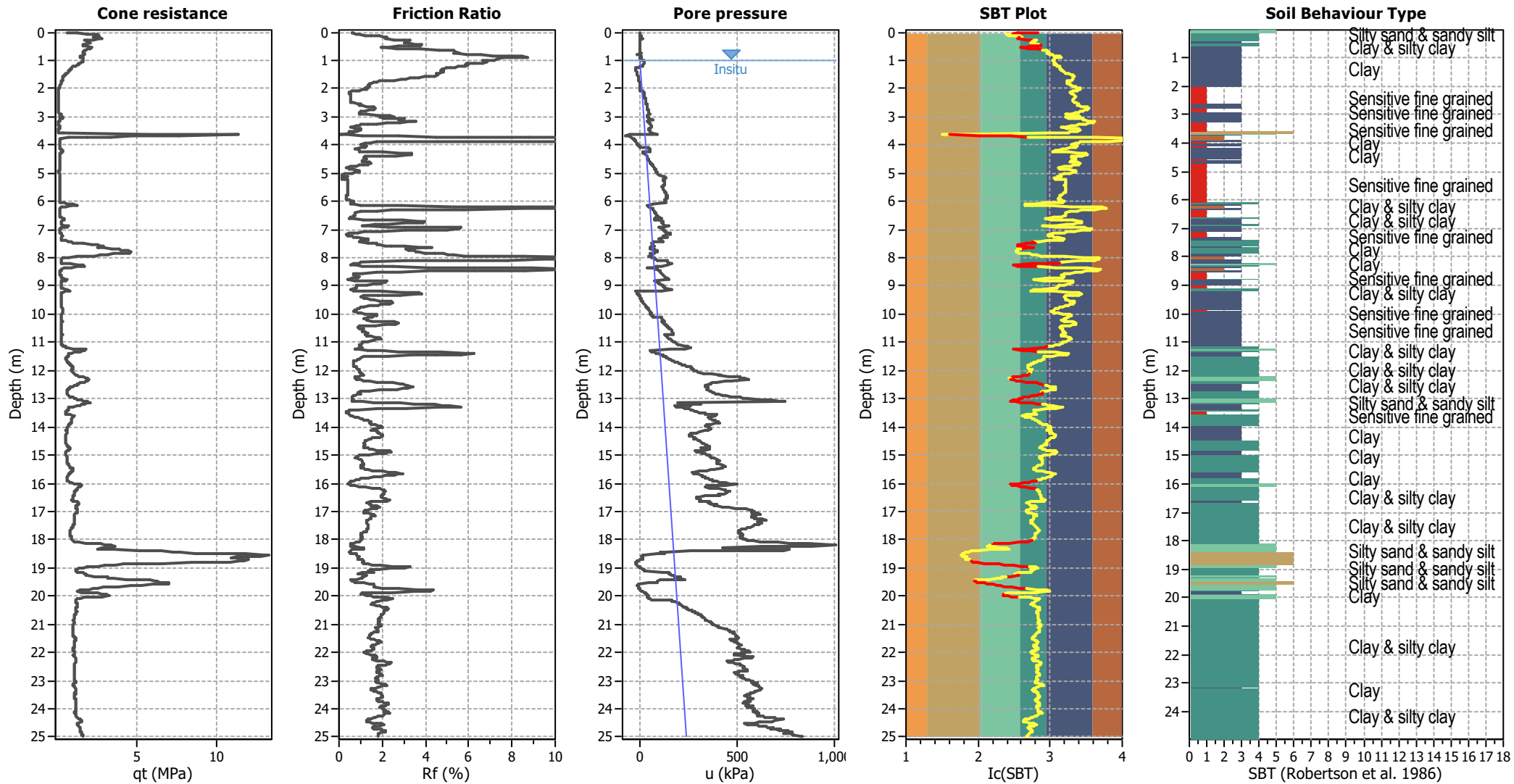
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

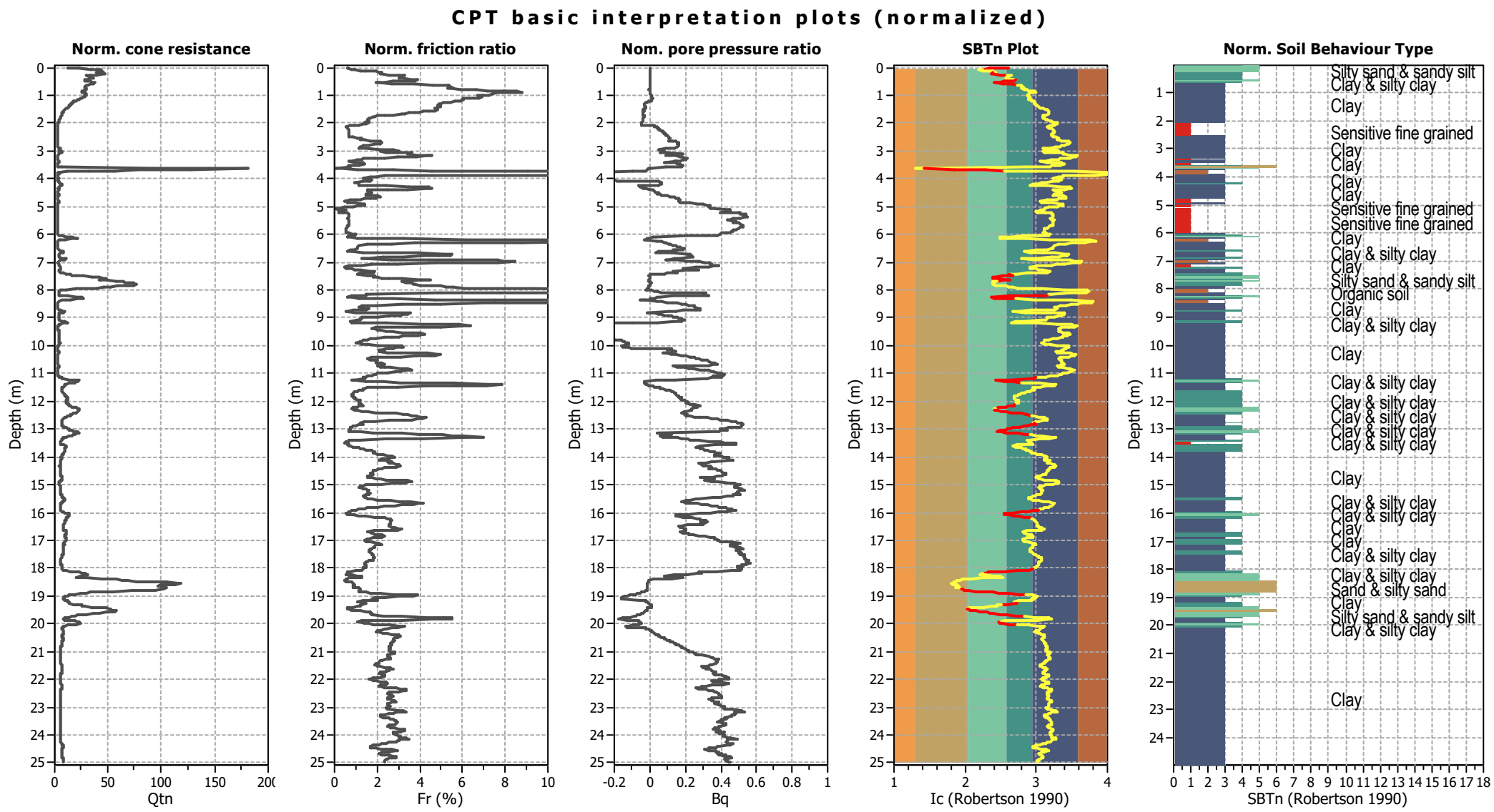


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

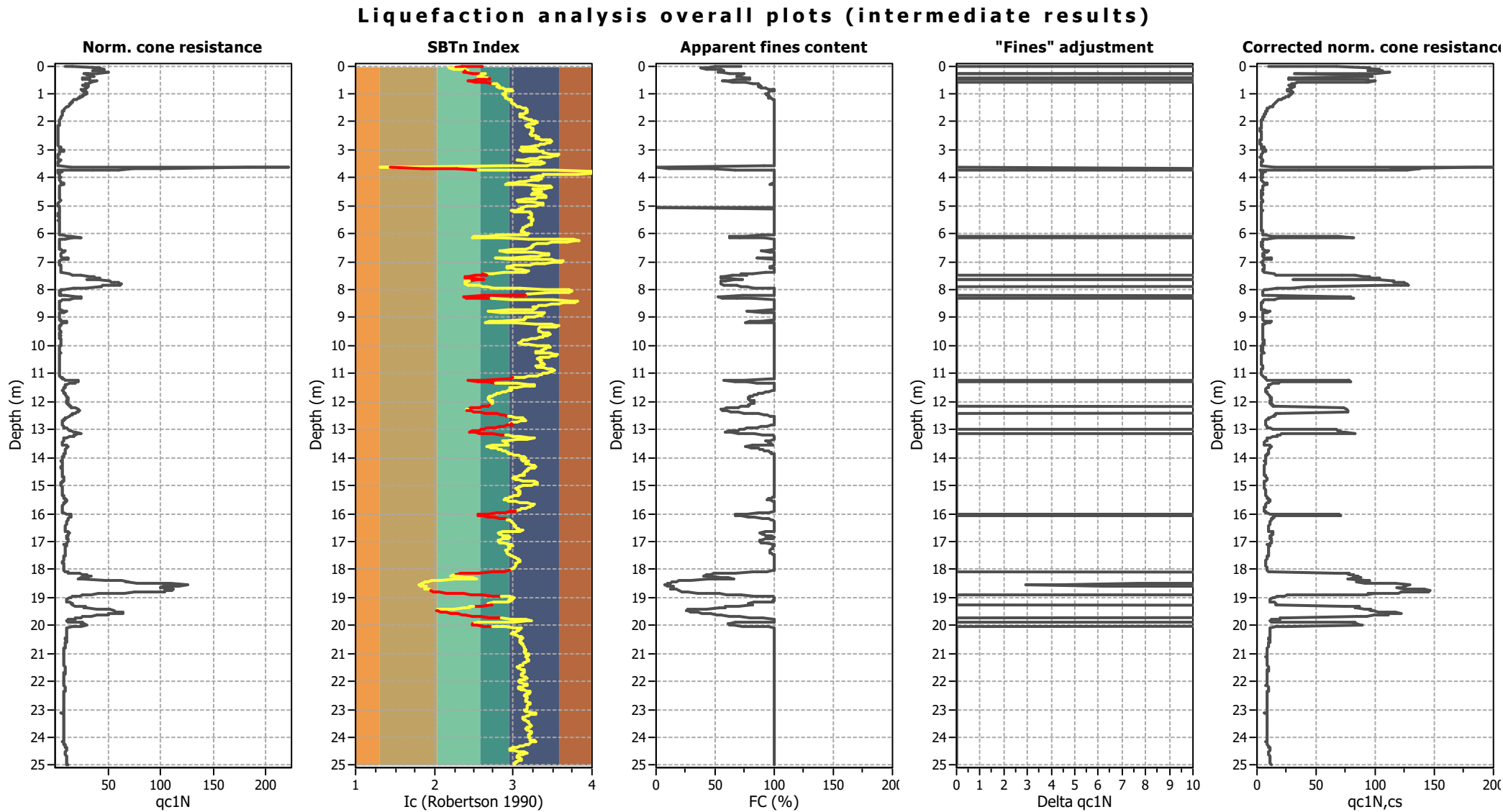
5. Silty sand to sandy silt

6. Clean sand to silty sand

7. Gravely sand to sand

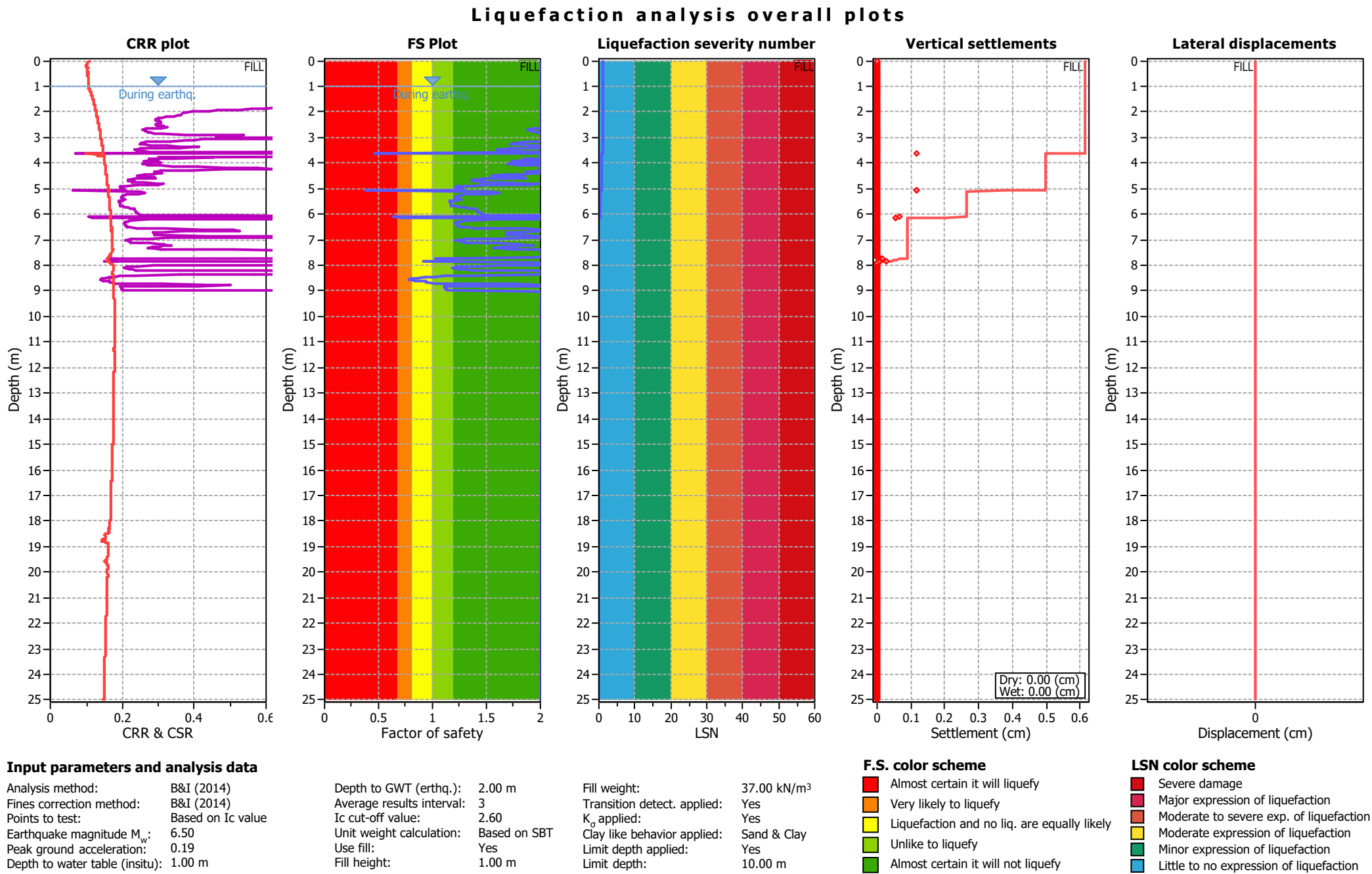
8. Very stiff sand to

9. Very stiff fine grained

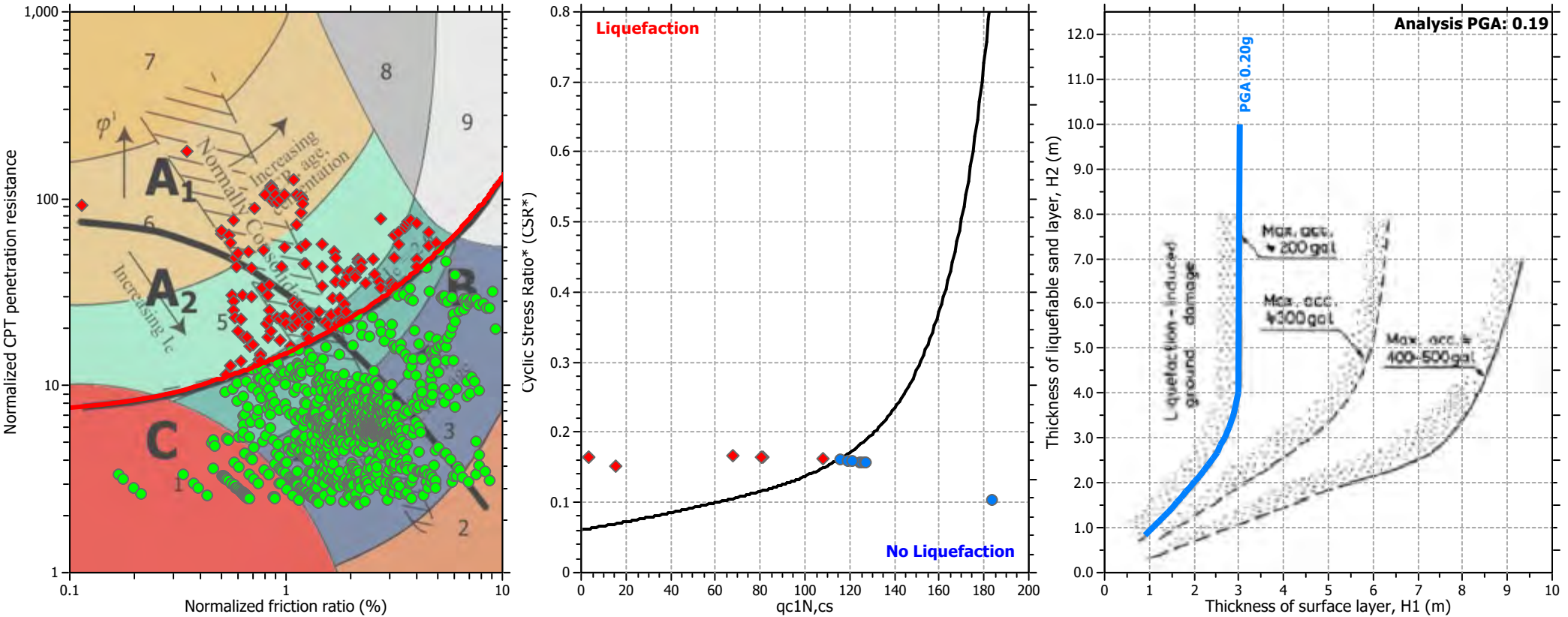


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

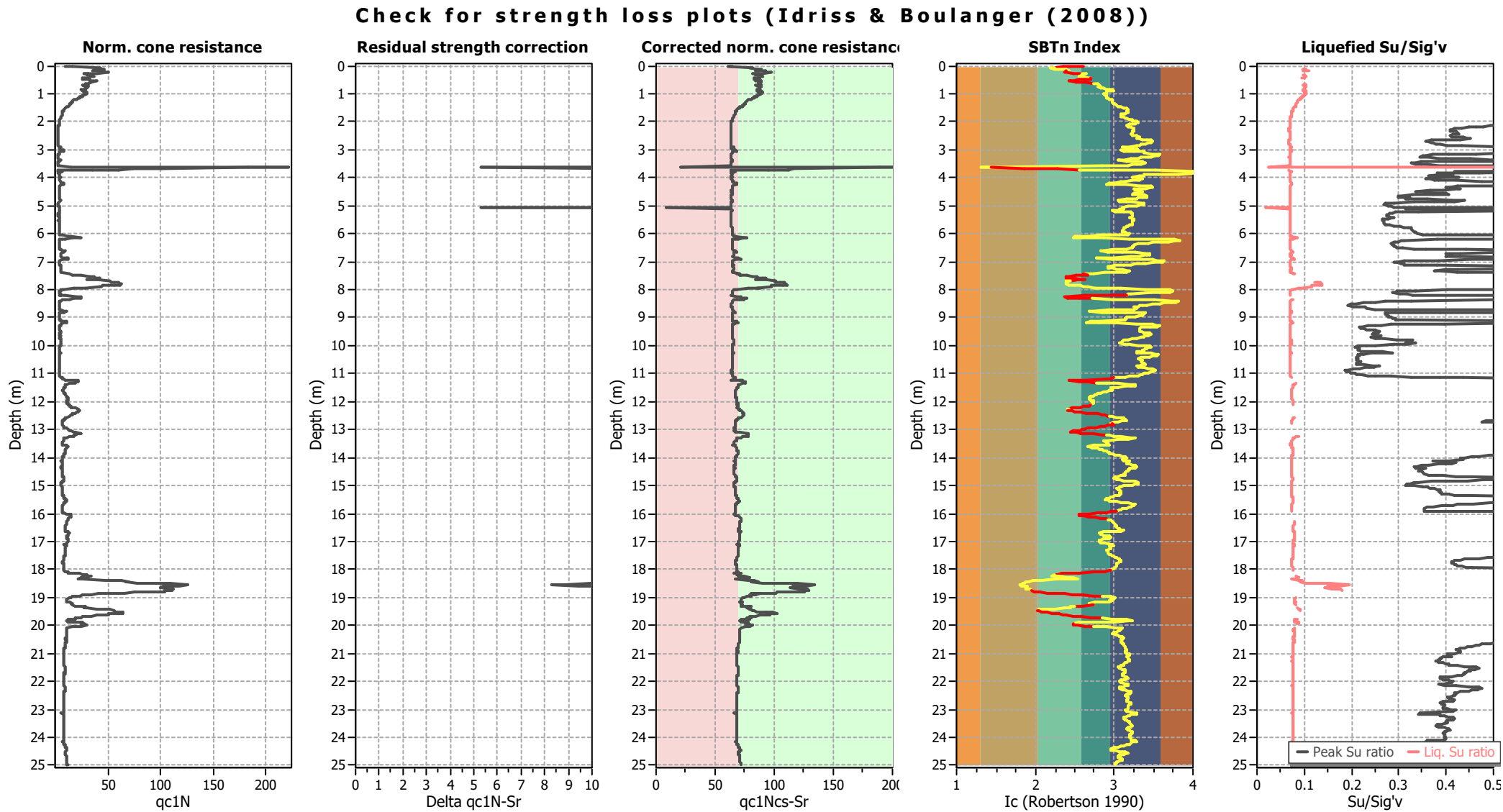


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

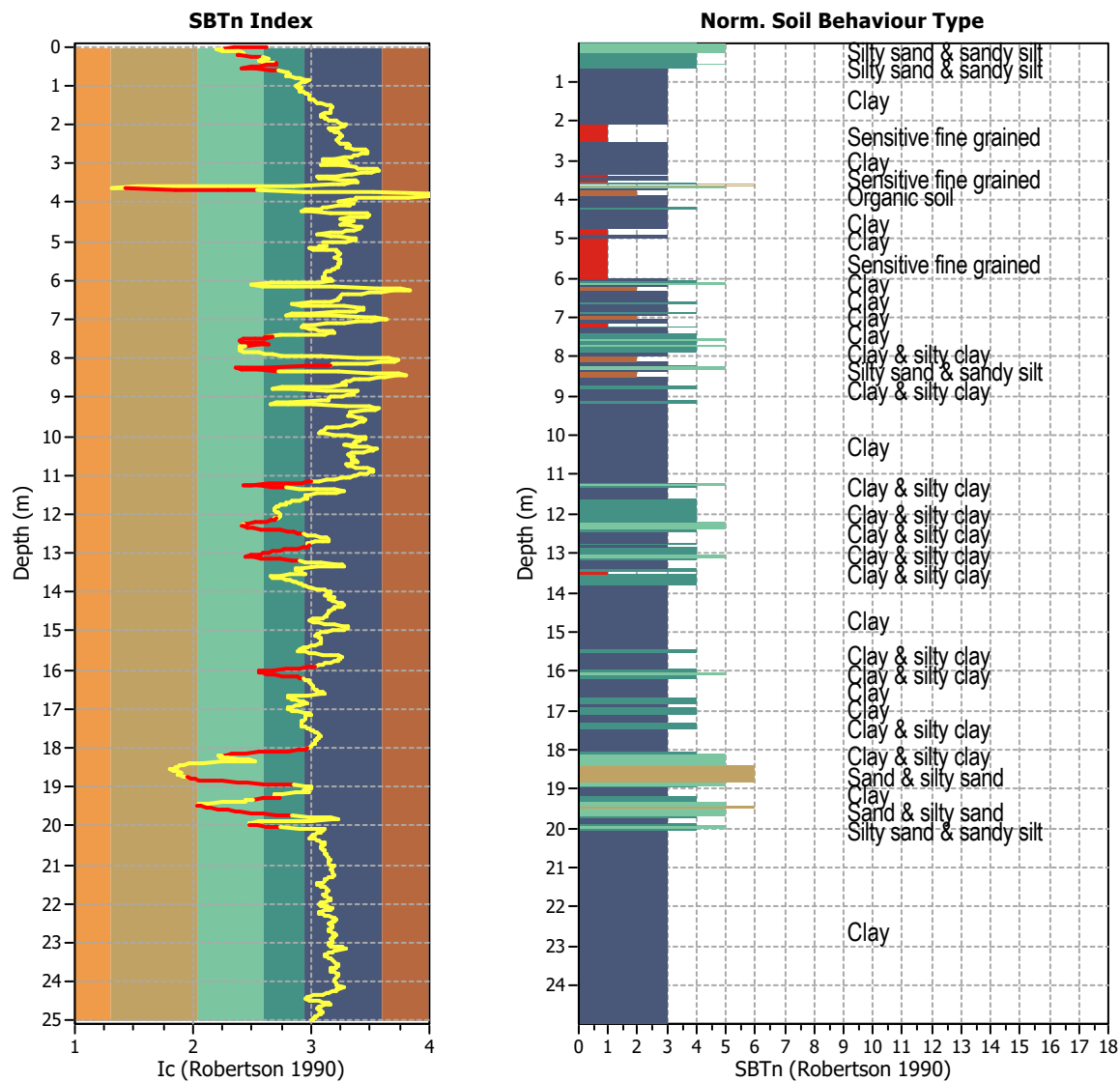
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

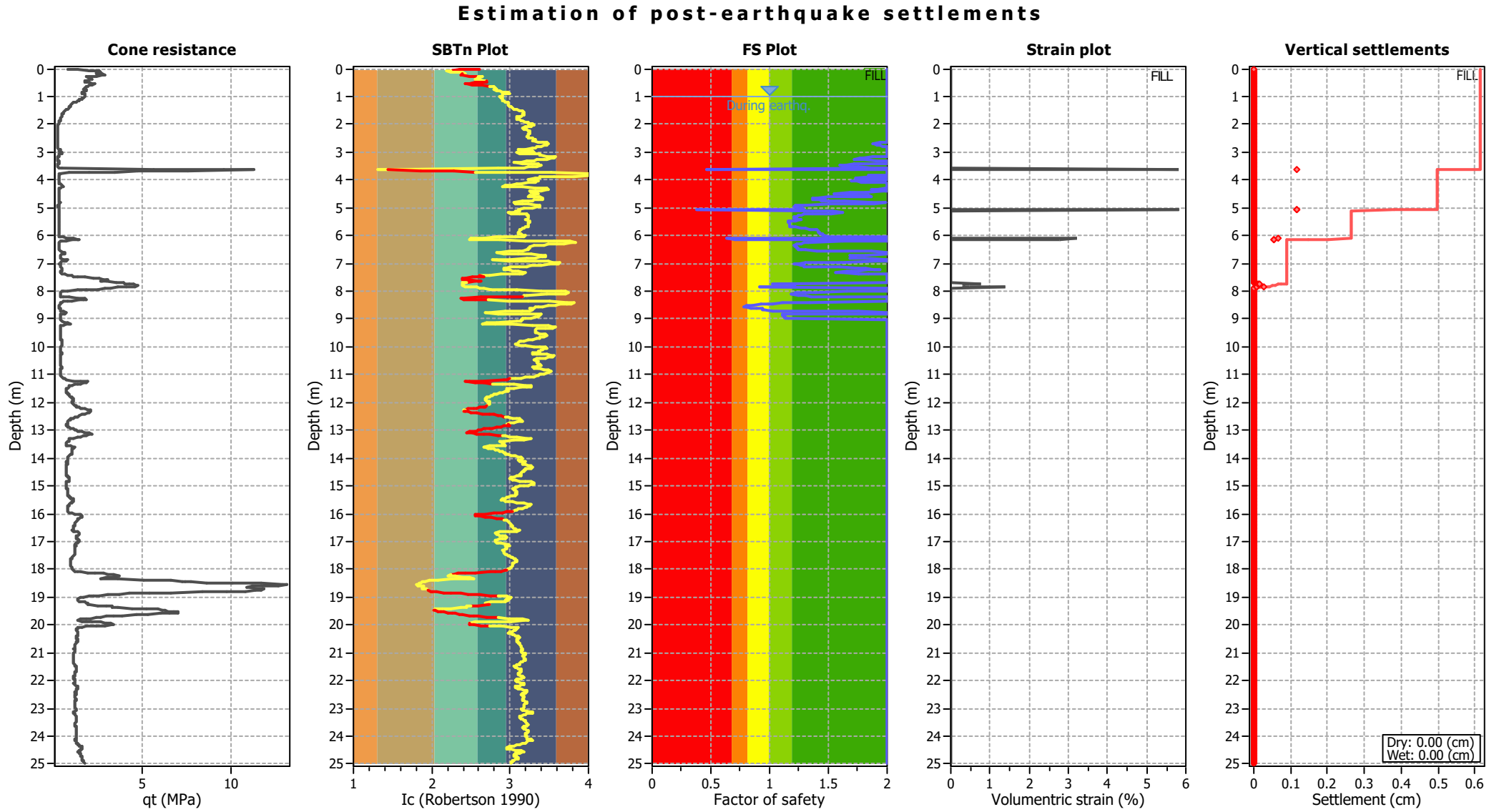


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

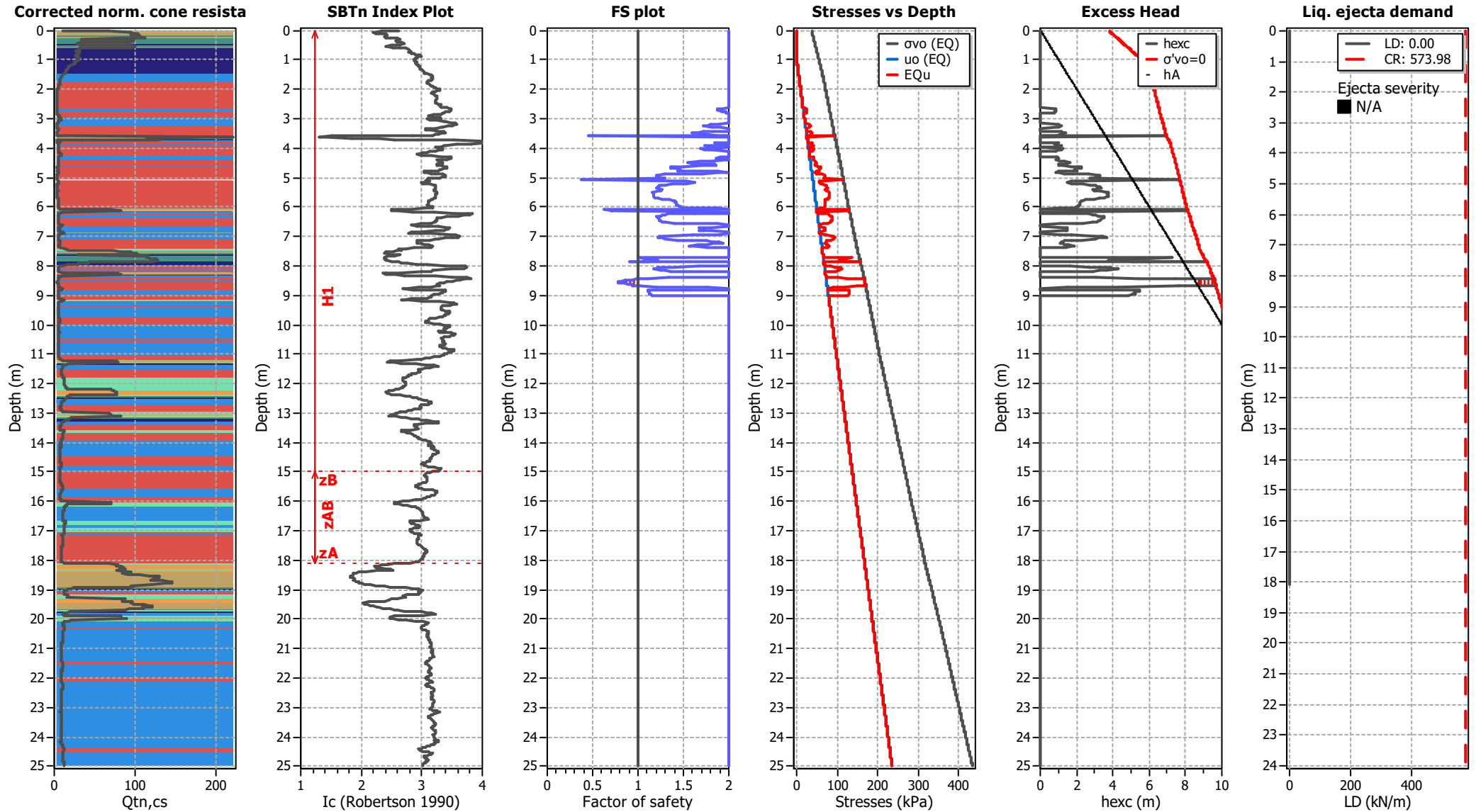
Total points in CPT file: 1249
Total points excluded: 162
Exclusion percentage: 12.97%
Number of layers detected: 23



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

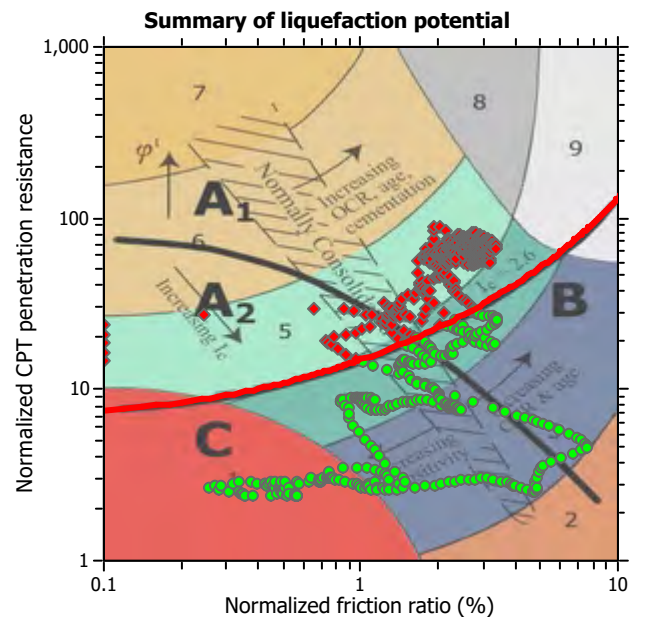
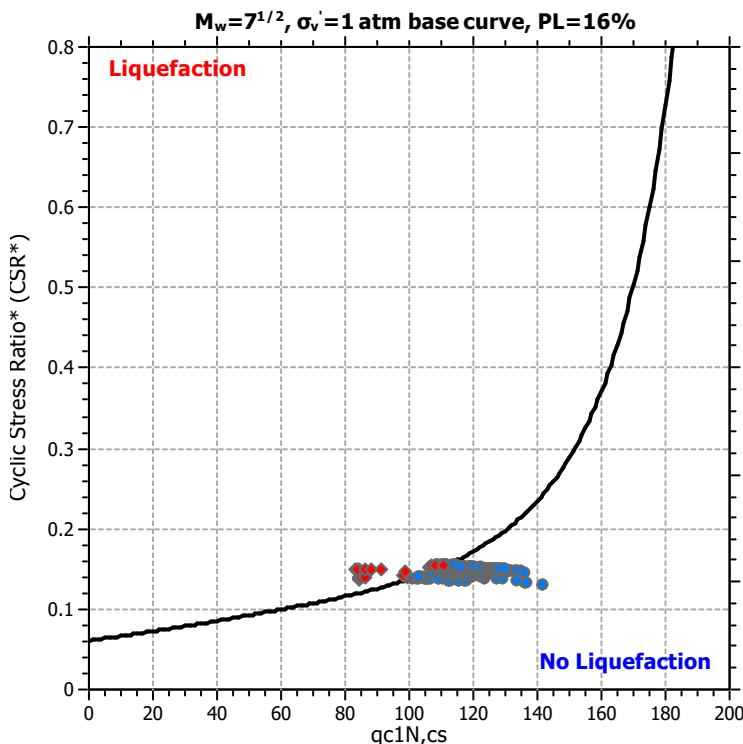
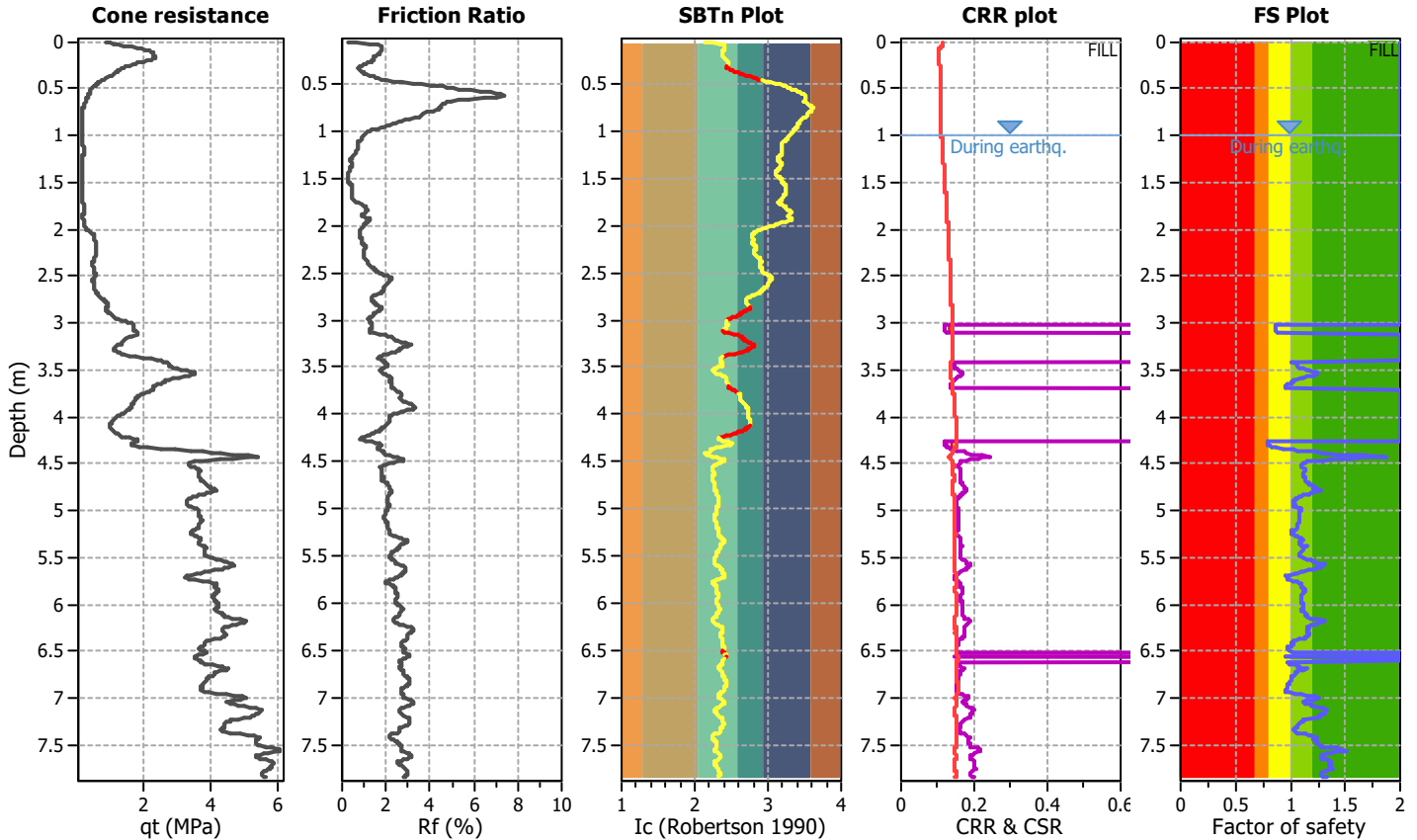
Project title : Sunfield Landholding

Location :

CPT file : CPT301

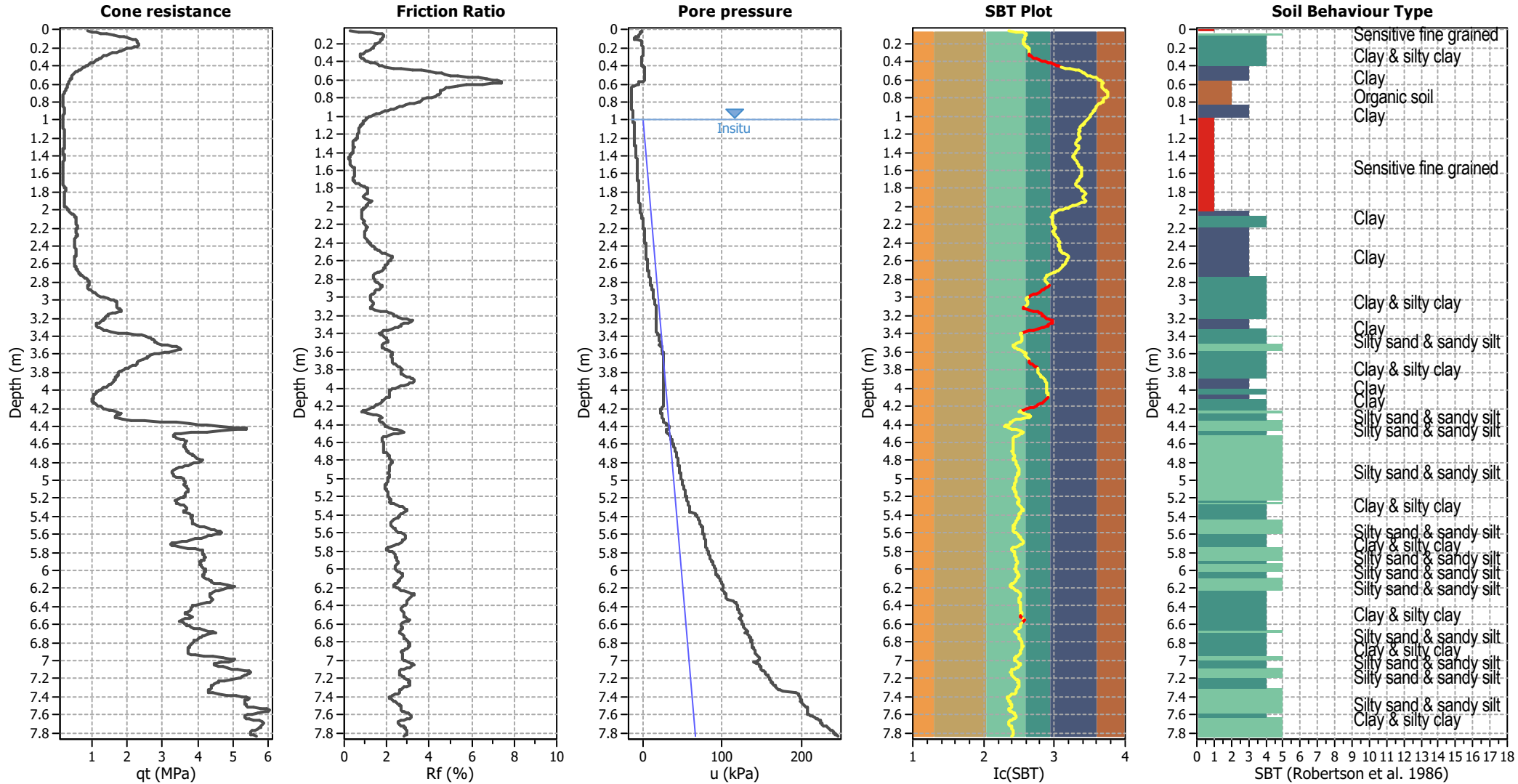
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

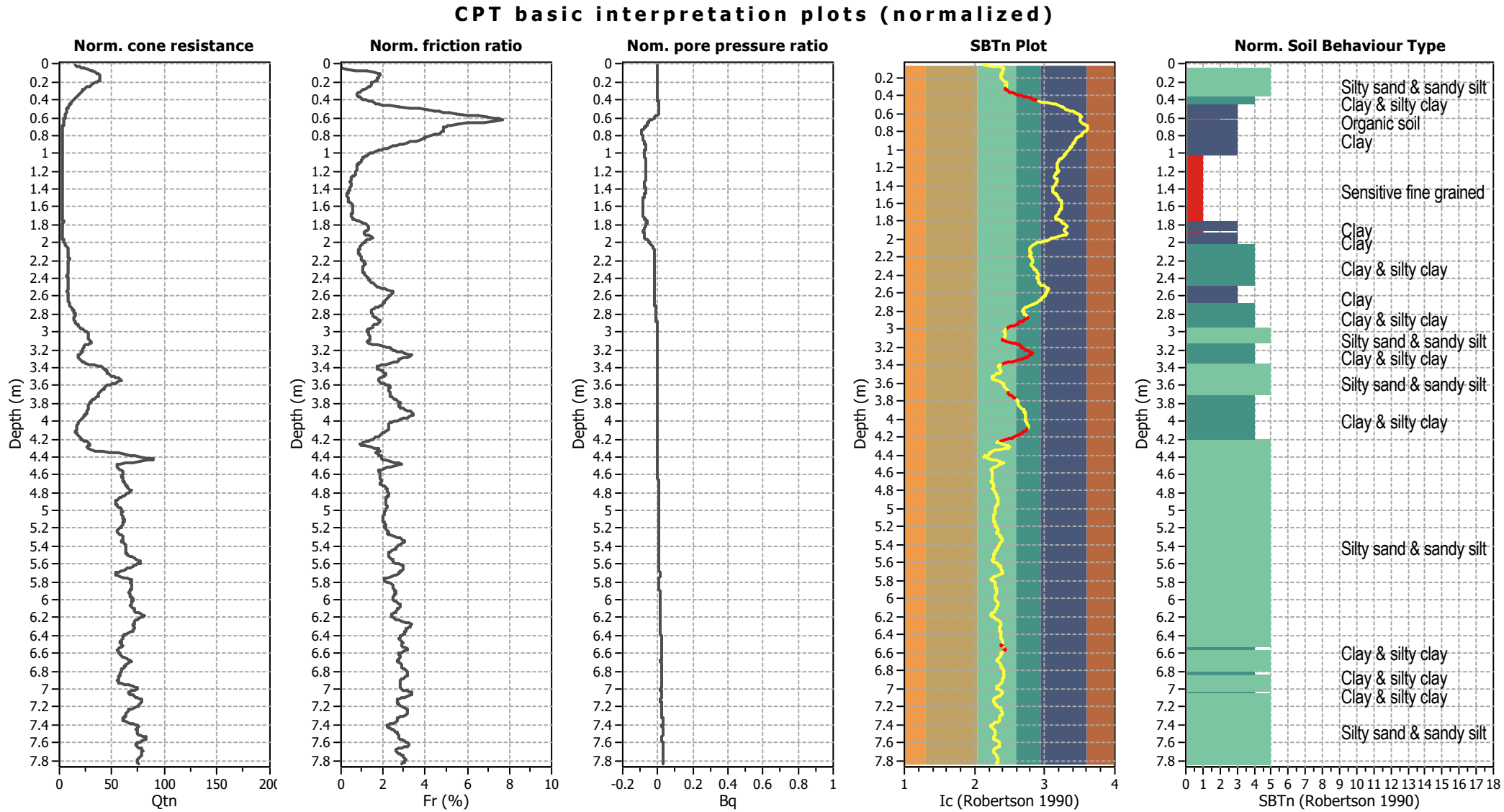


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



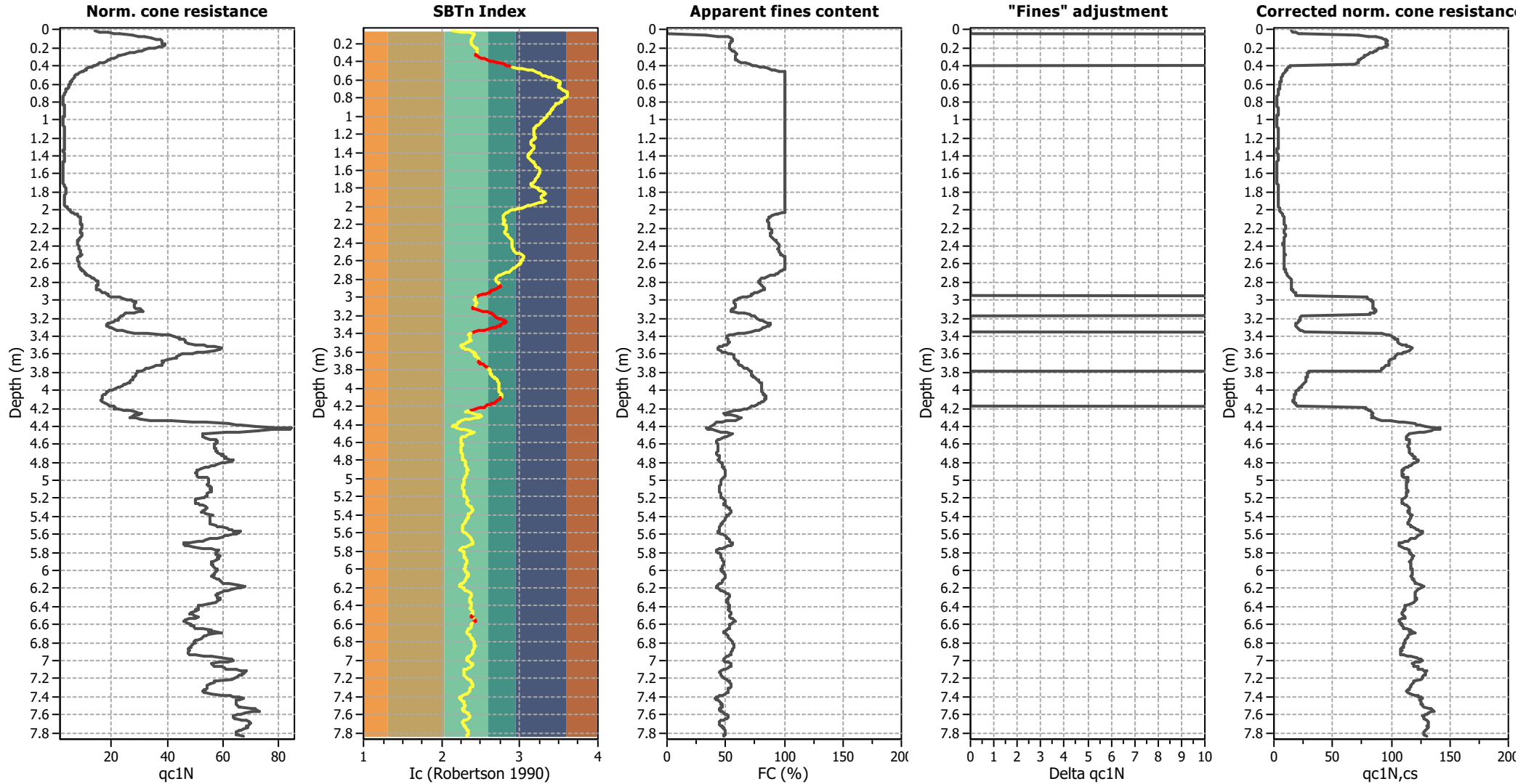
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

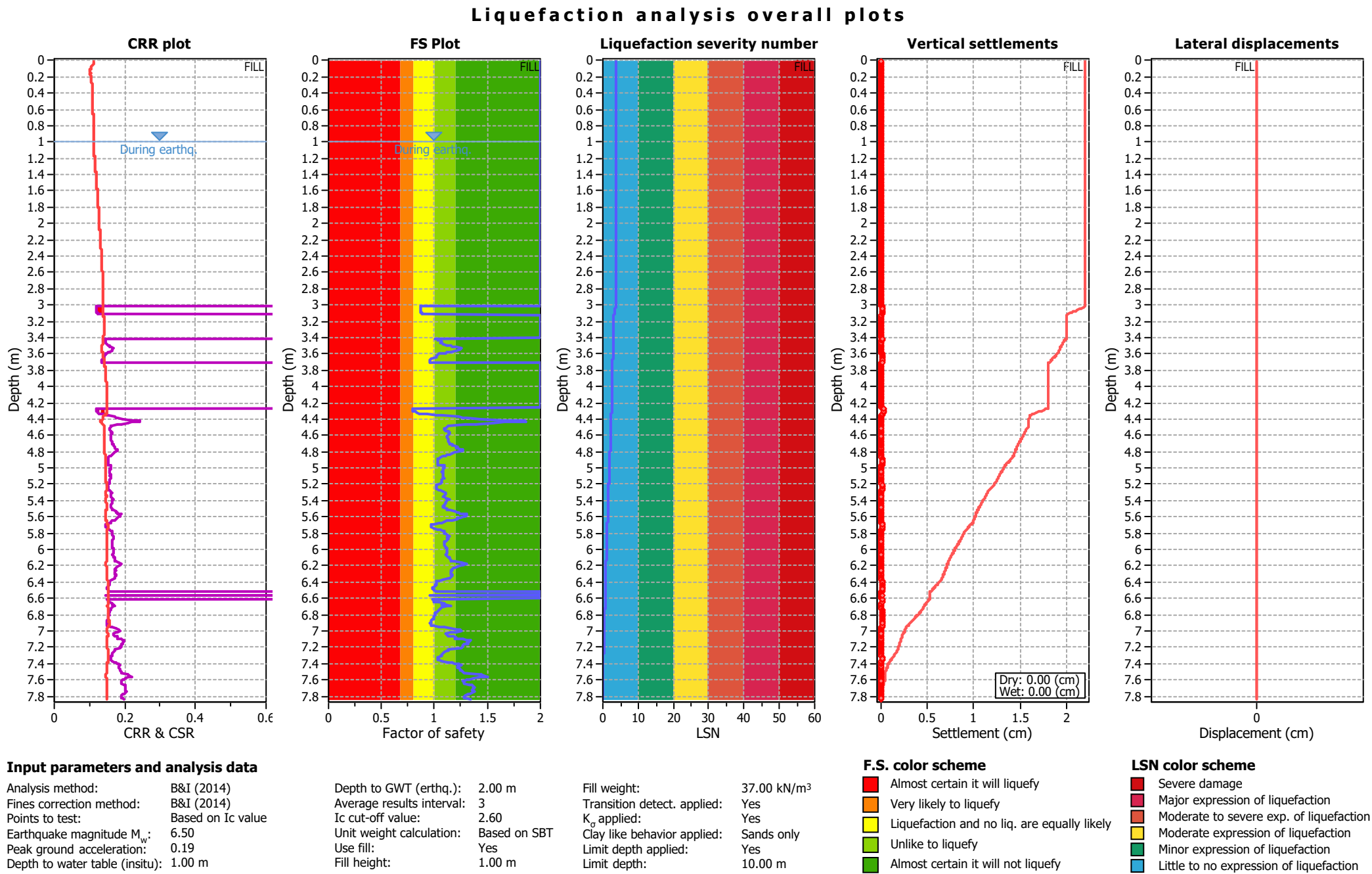
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

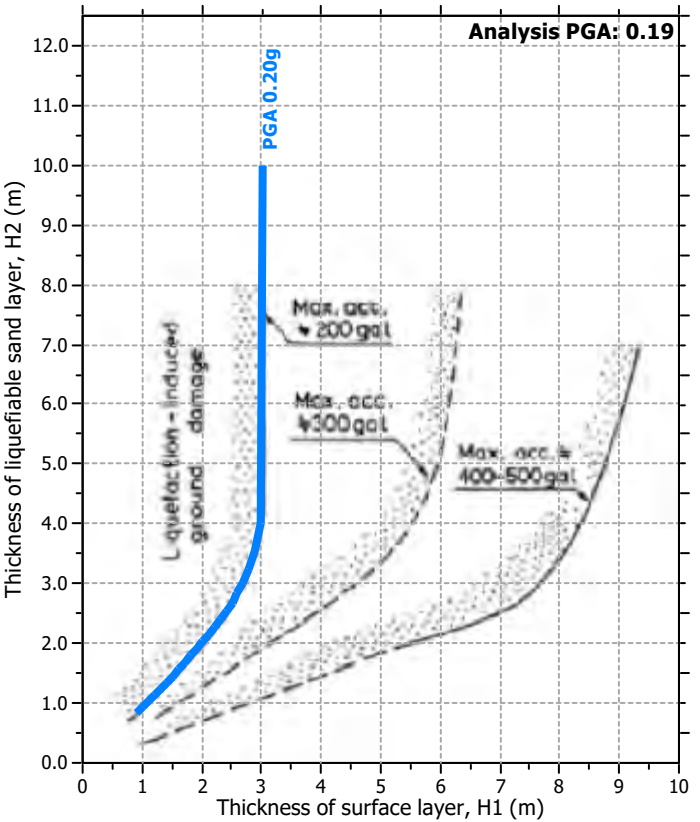
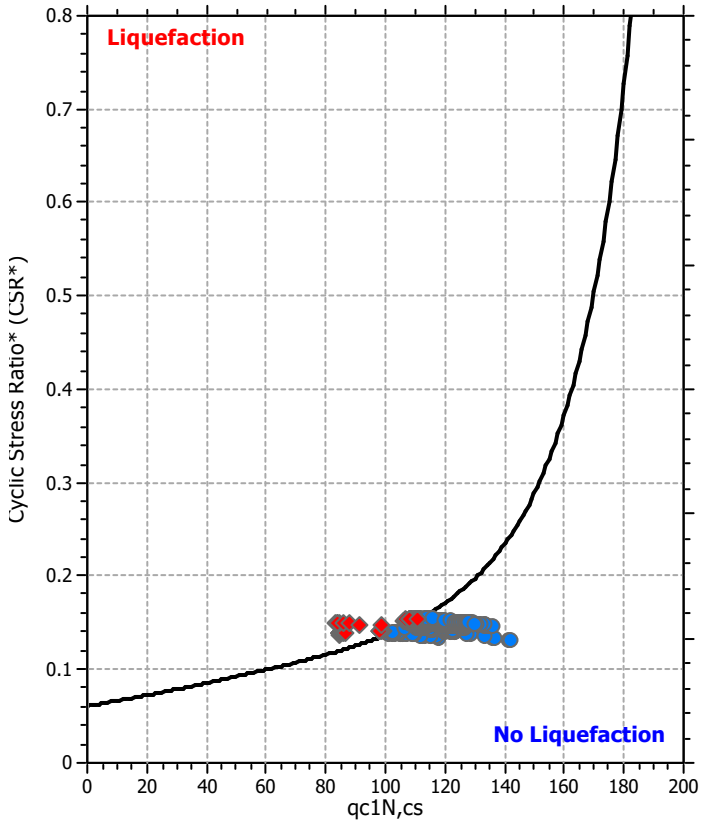
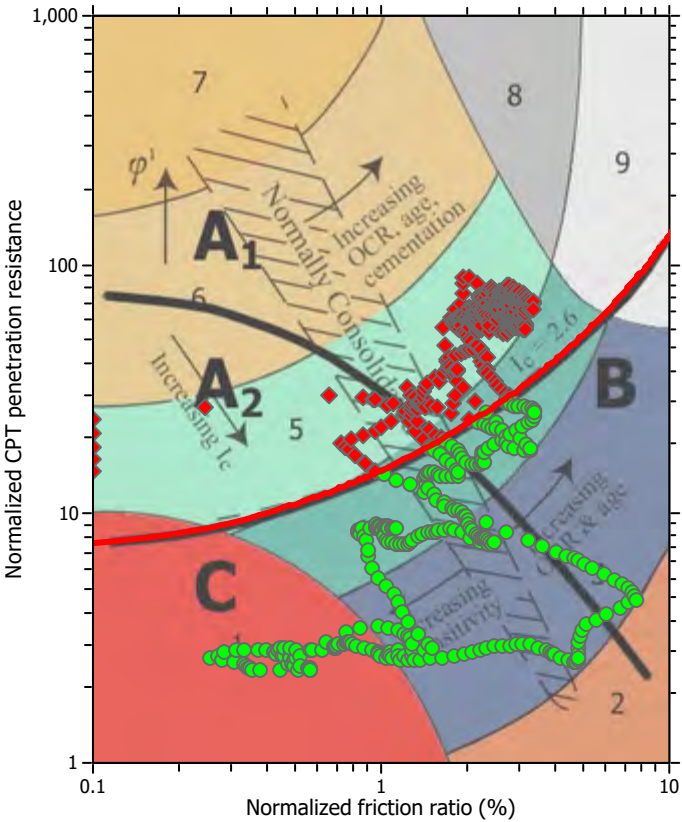


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



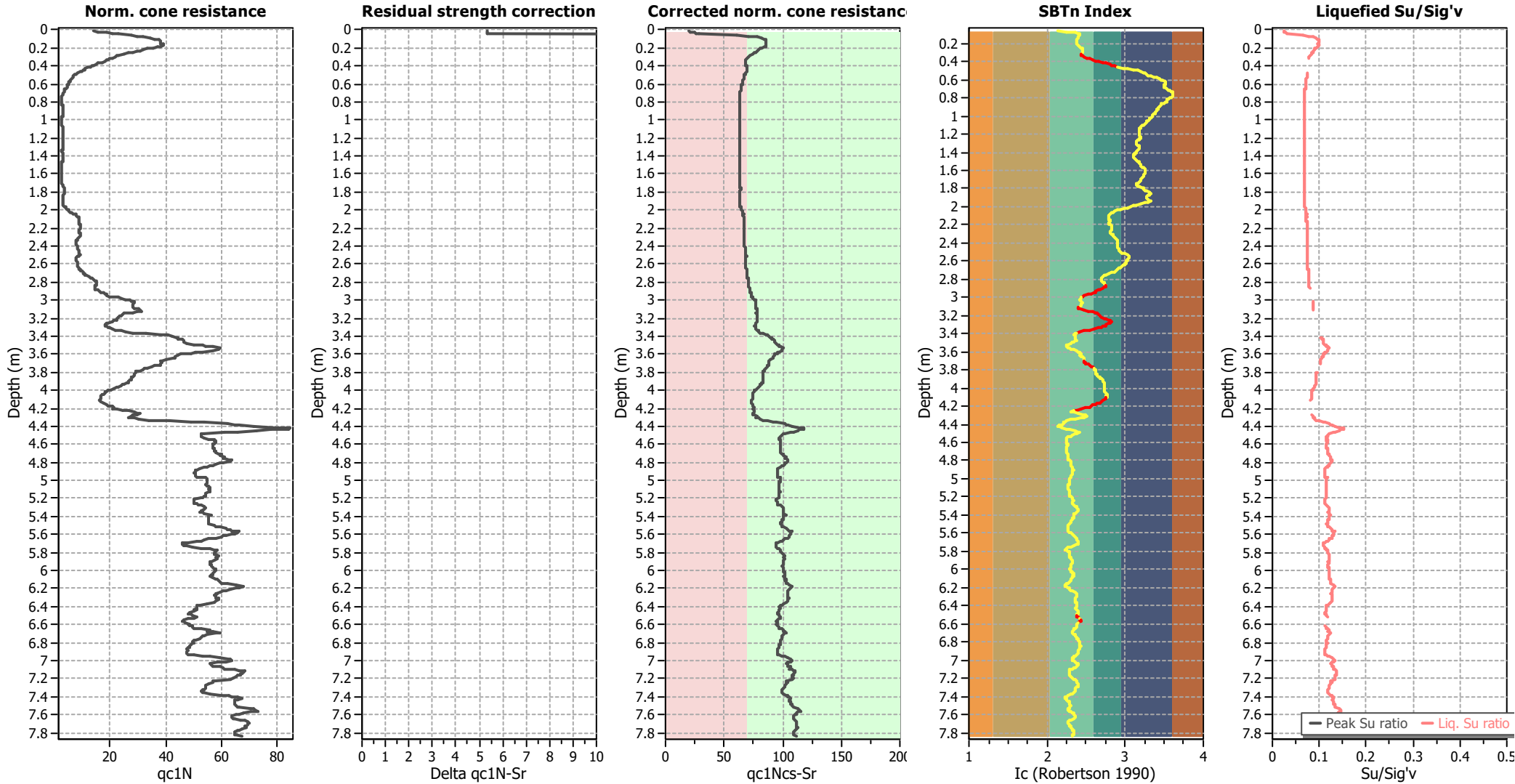
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

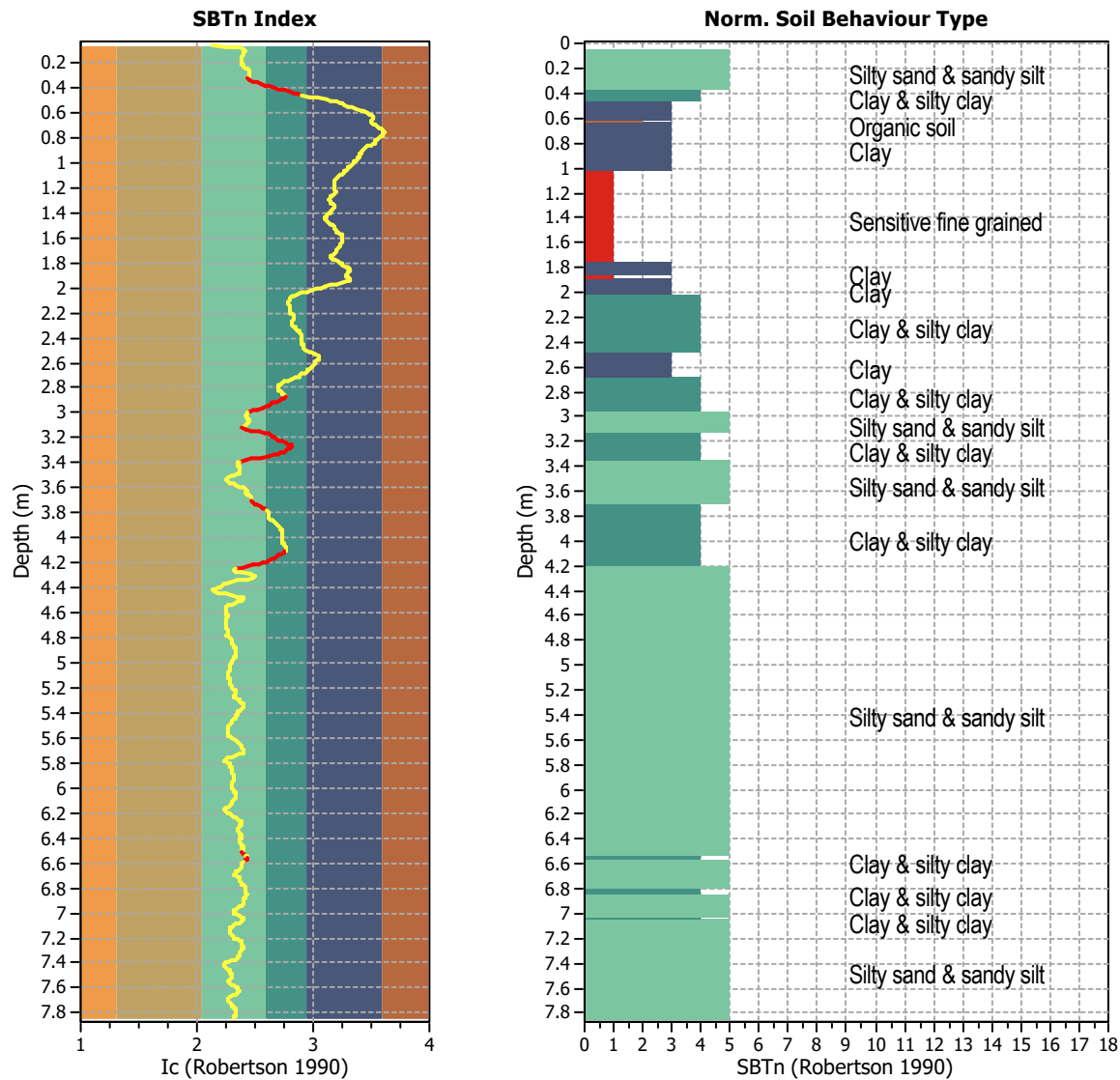
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



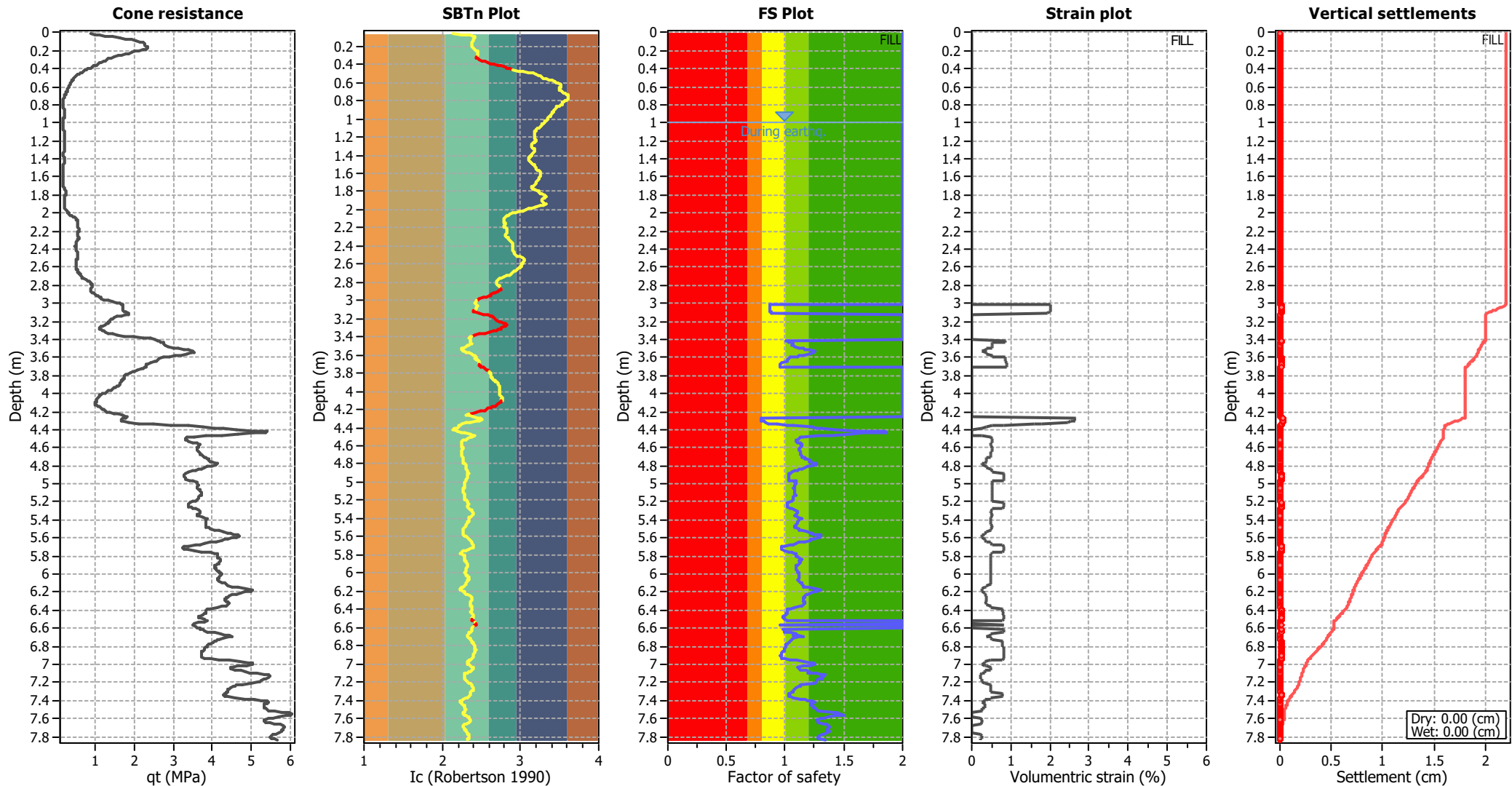
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 784
Total points excluded: 90
Exclusion percentage: 11.48%
Number of layers detected: 8

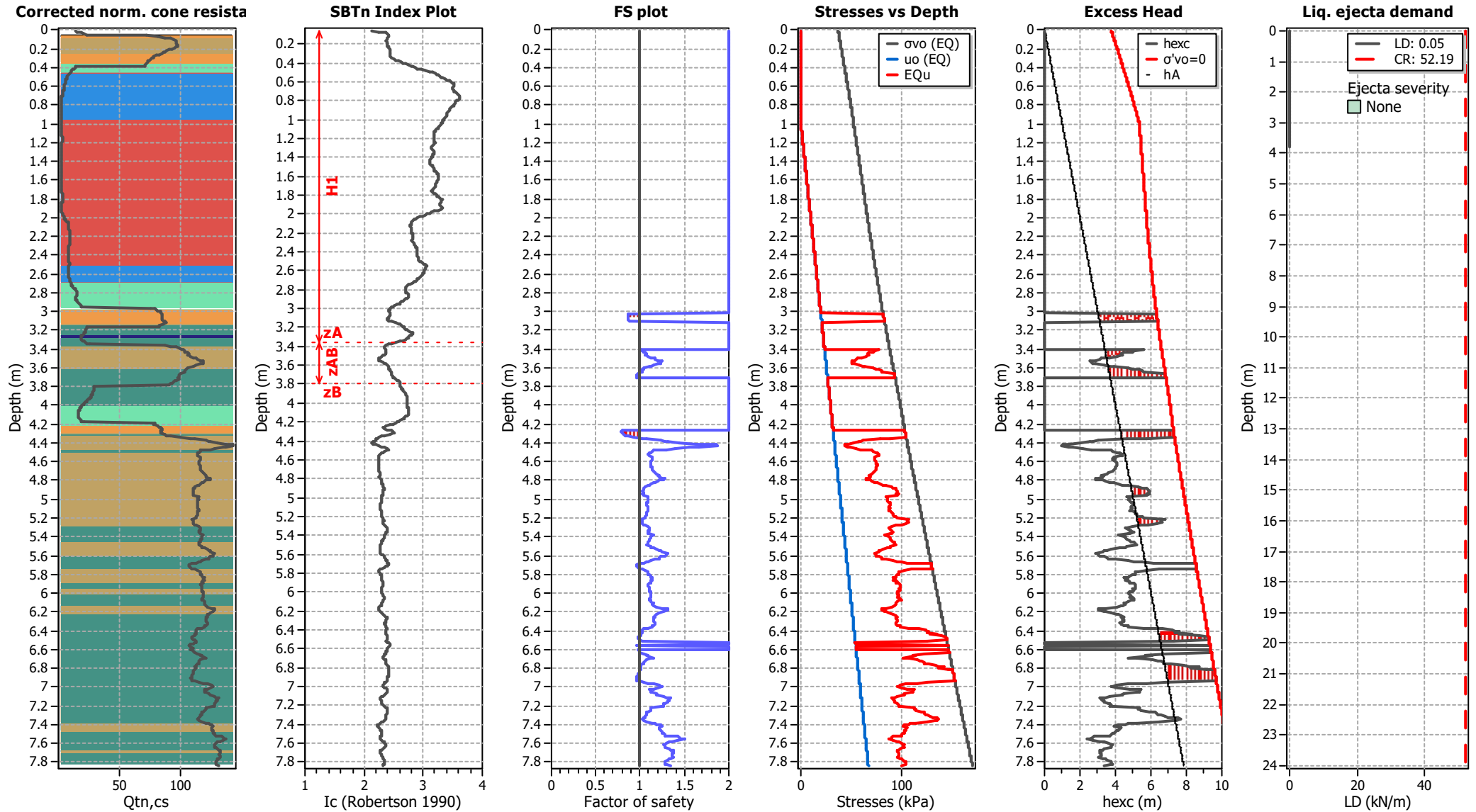
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

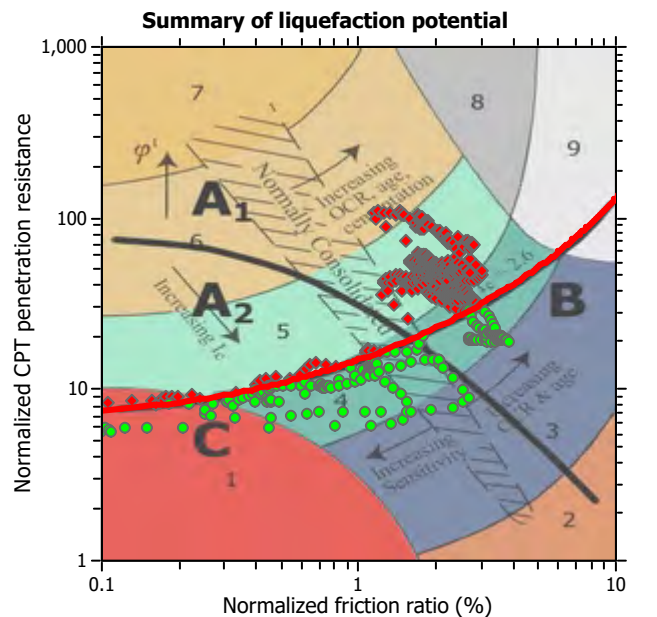
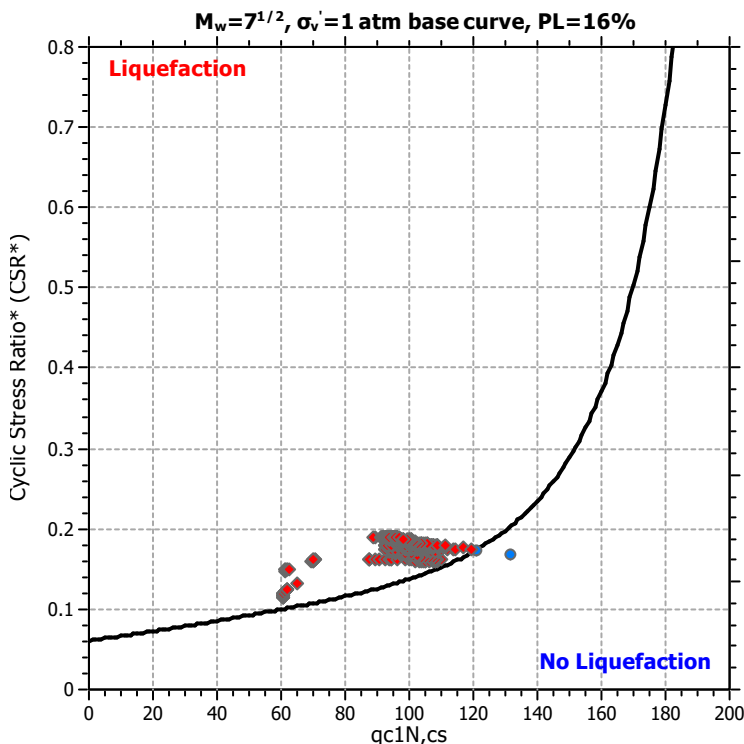
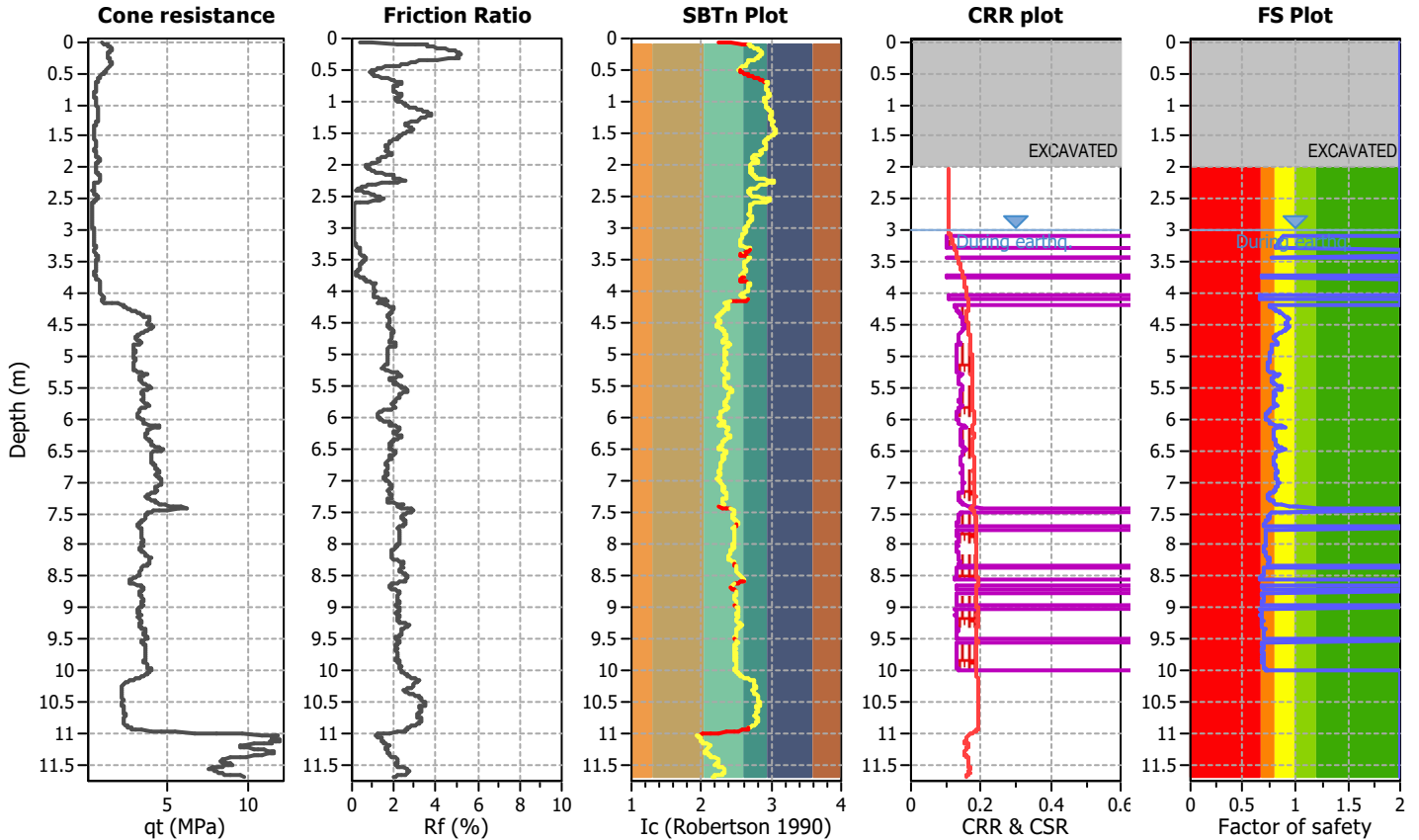
Project title : Sunfield Landholding

Location :

CPT file : CPT302

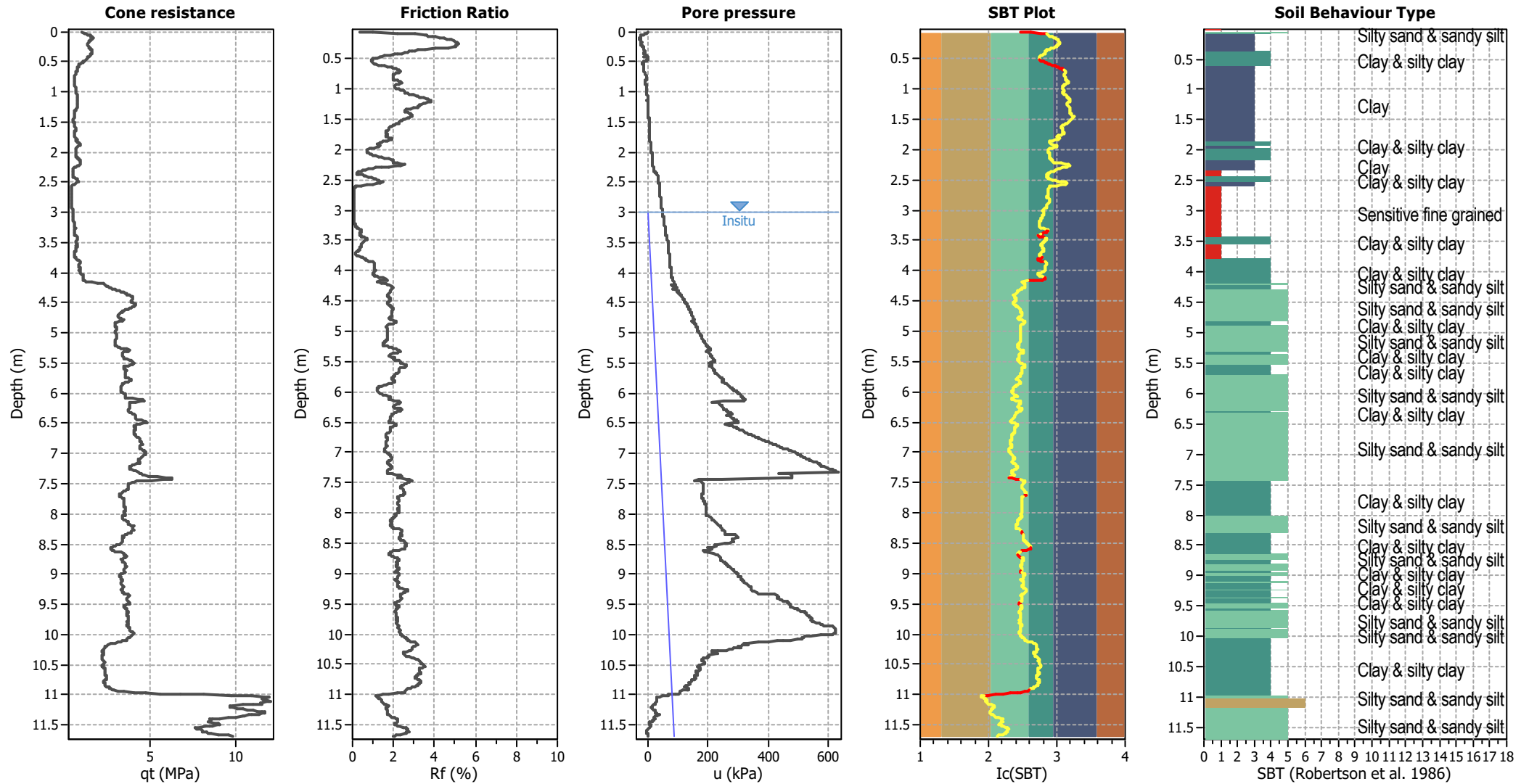
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	3.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	3.00 m	Excavation depth:	2.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

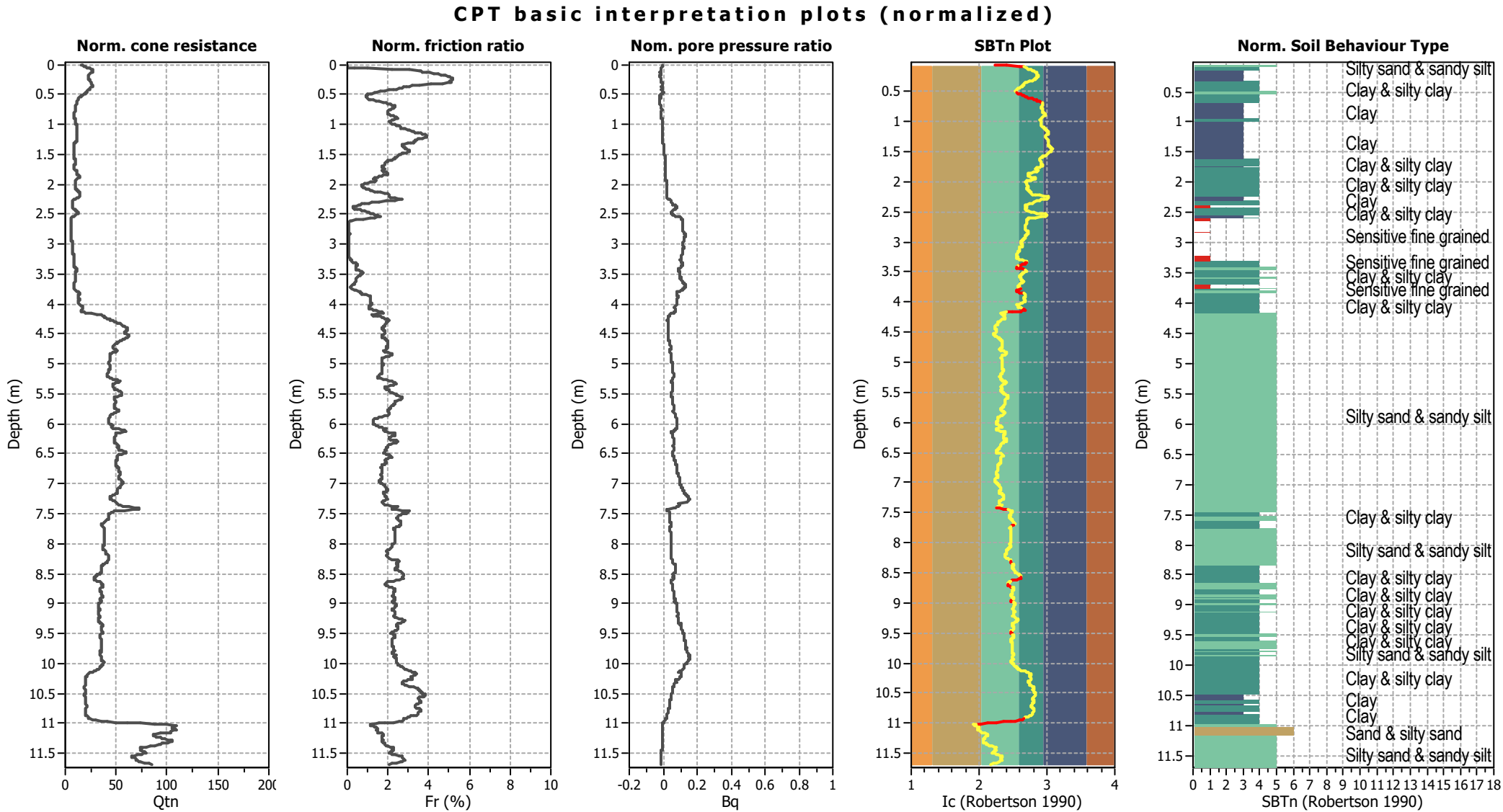


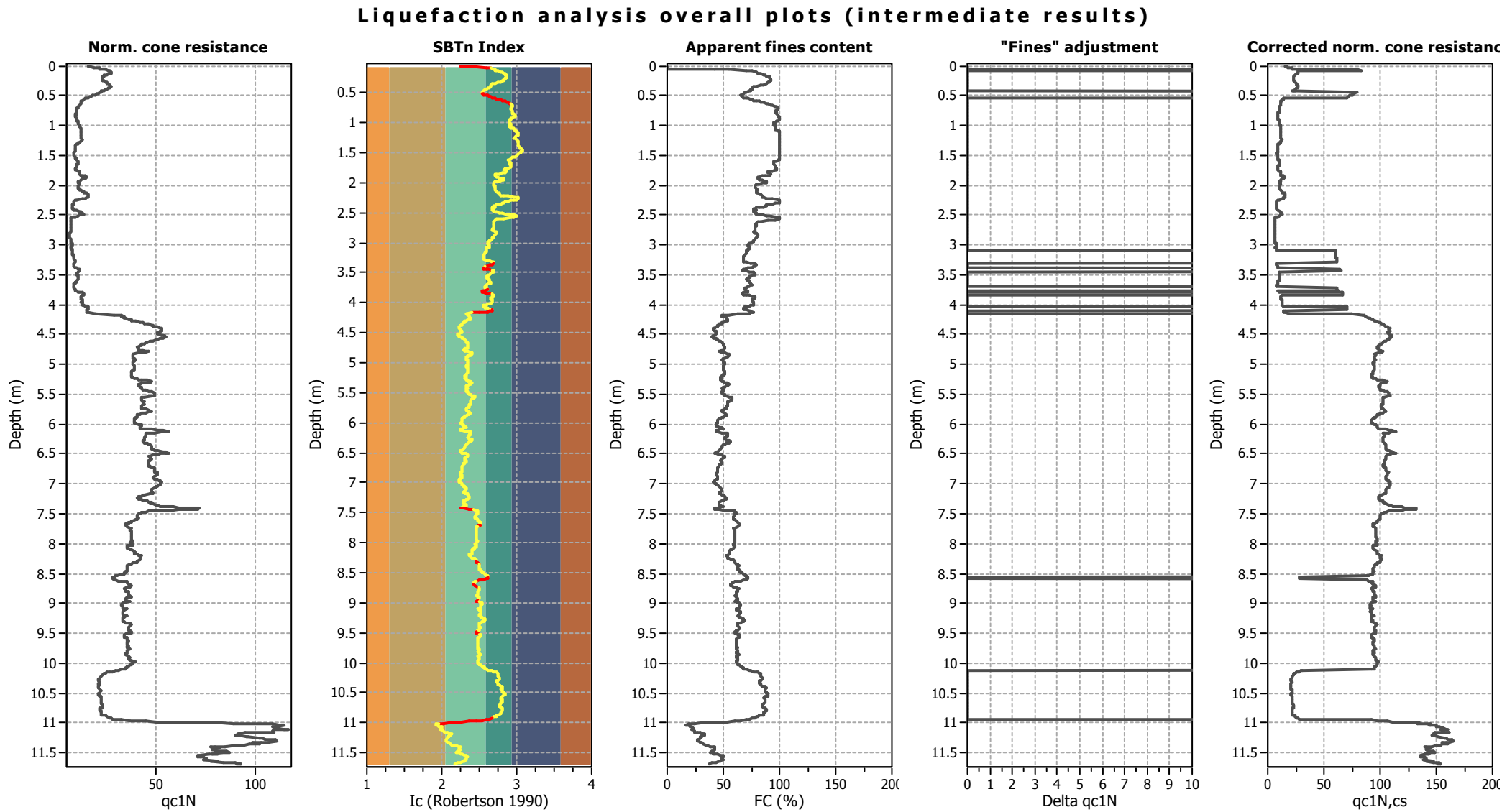
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

SBT legend

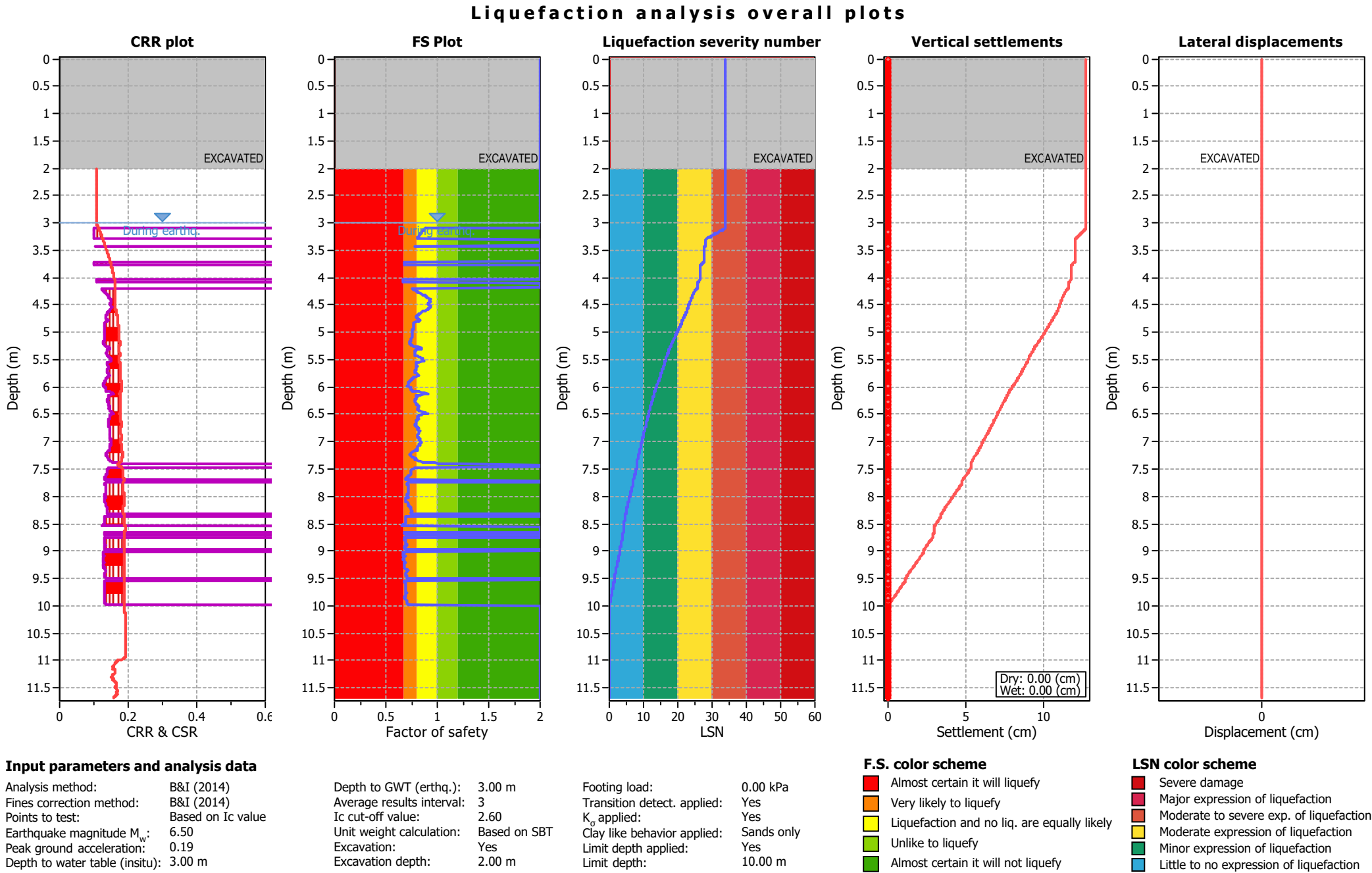
	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained



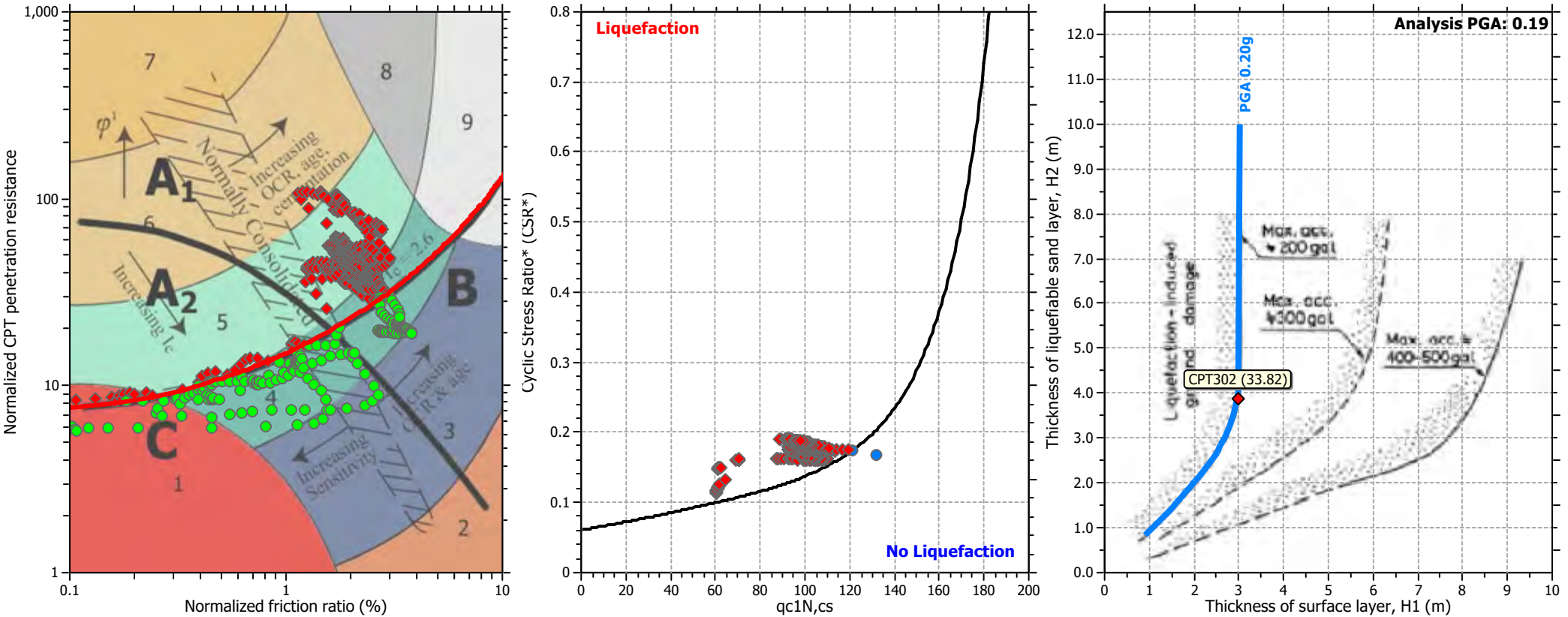


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

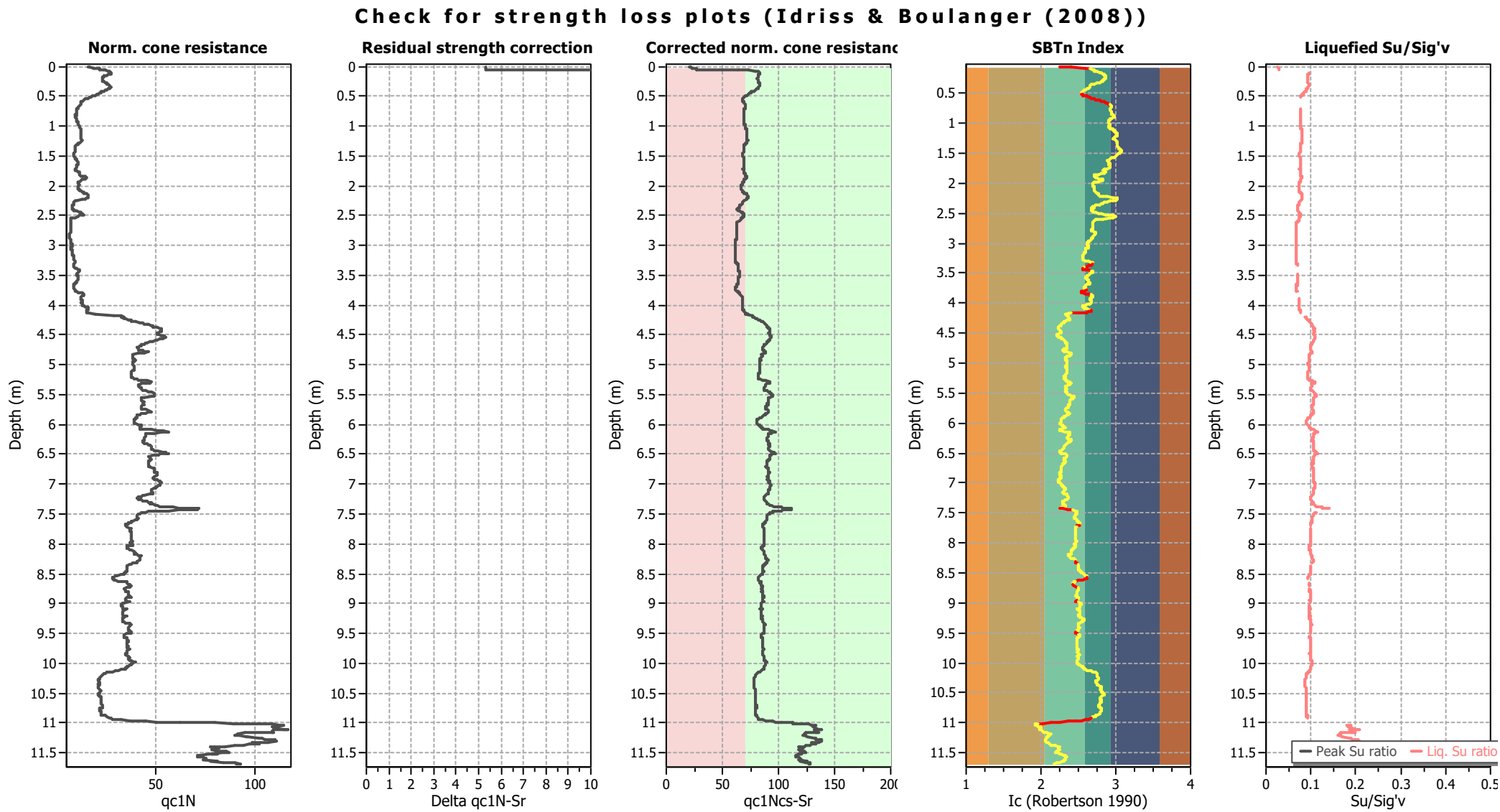


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.00 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

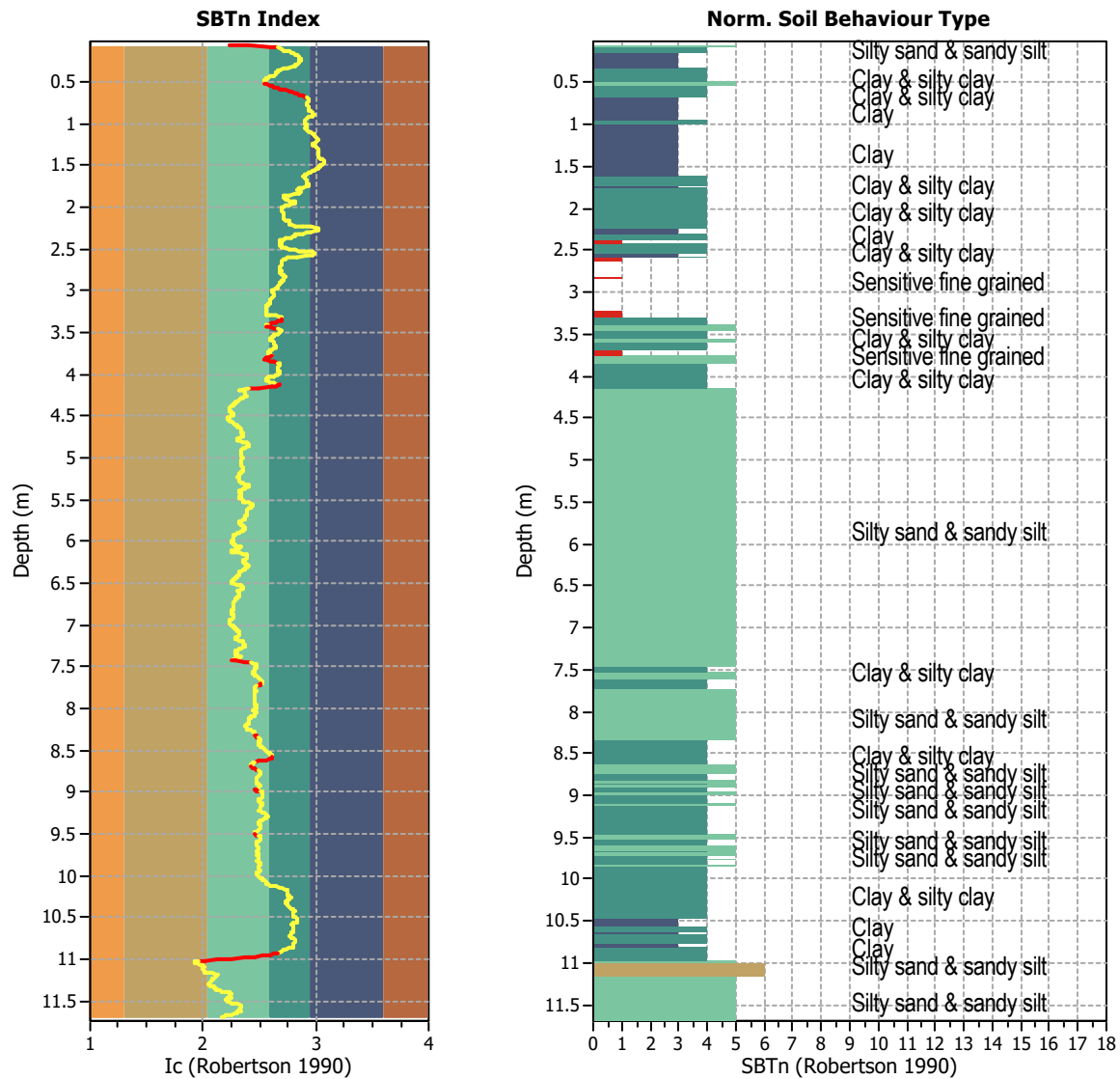
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



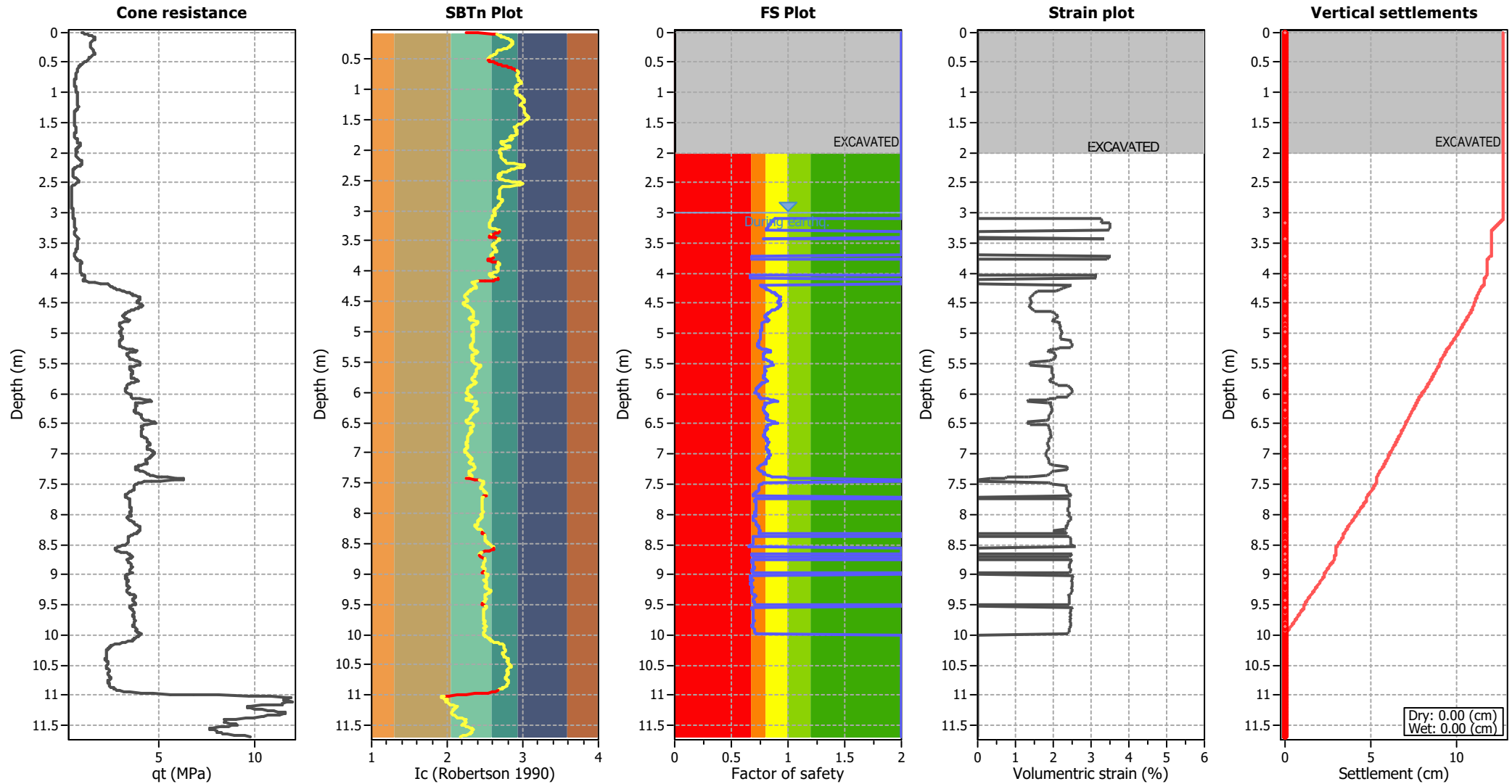
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1169
Total points excluded: 96
Exclusion percentage: 8.21%
Number of layers detected: 15

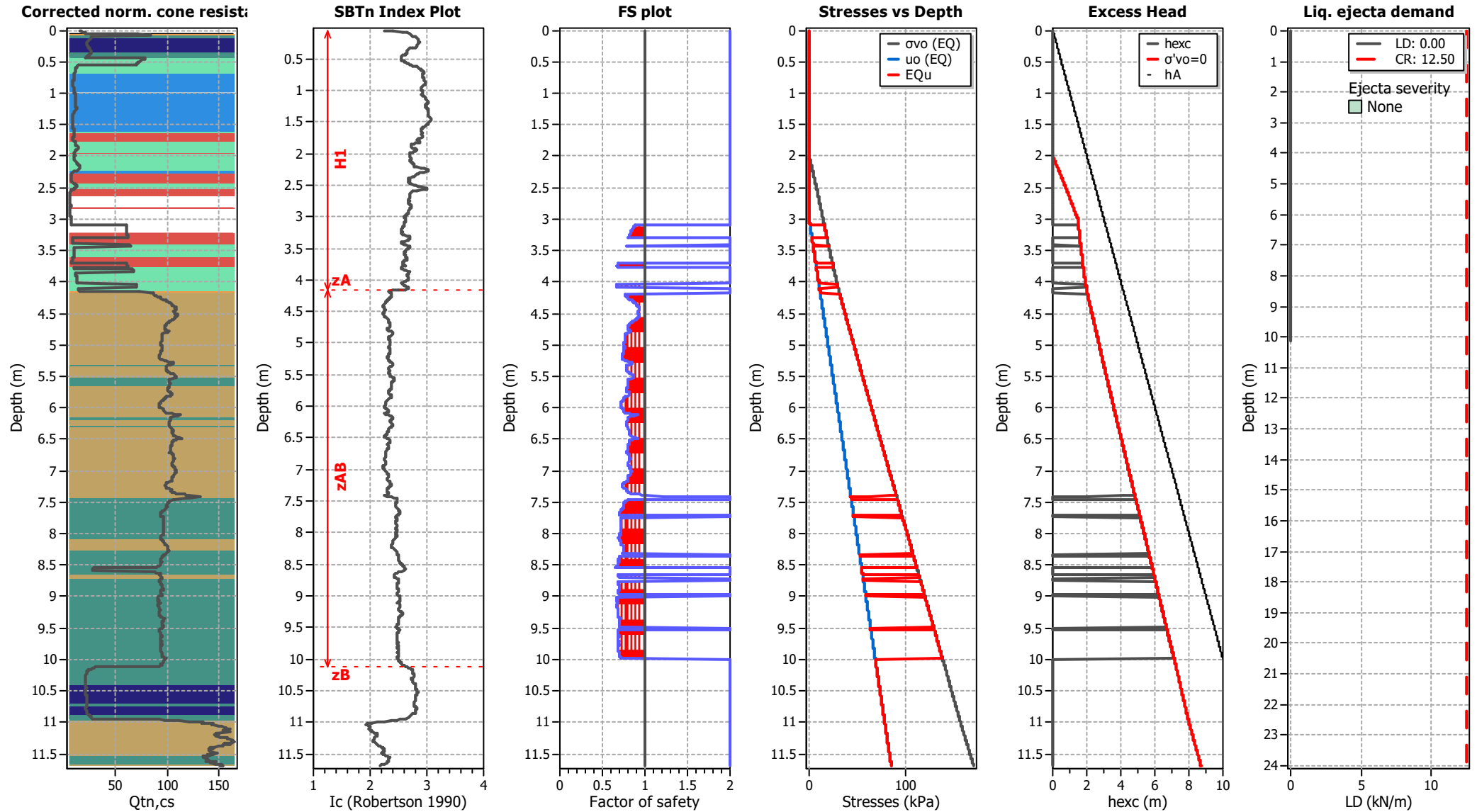
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

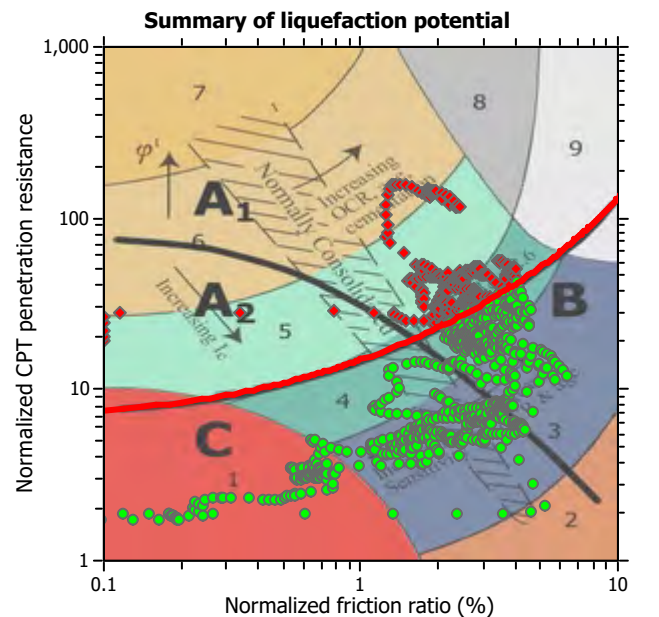
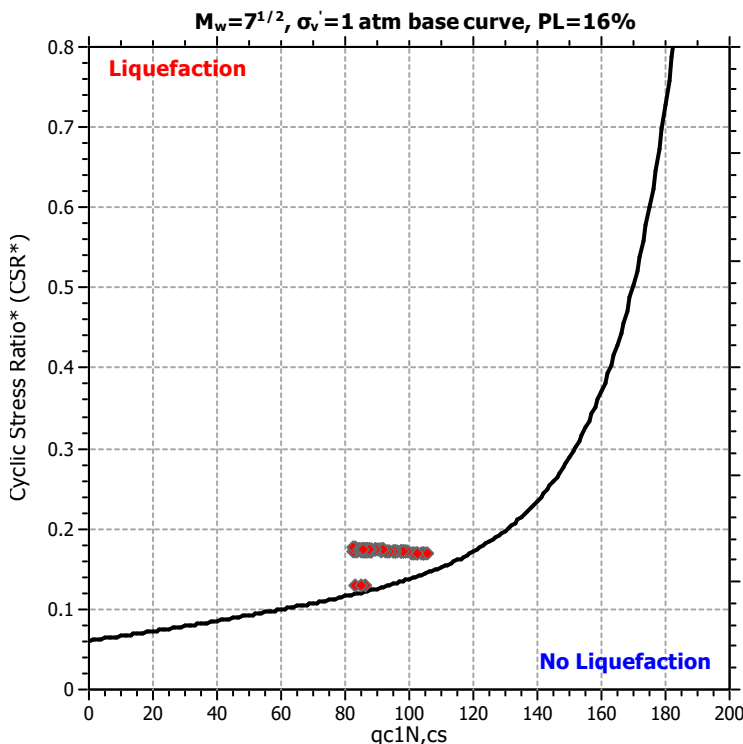
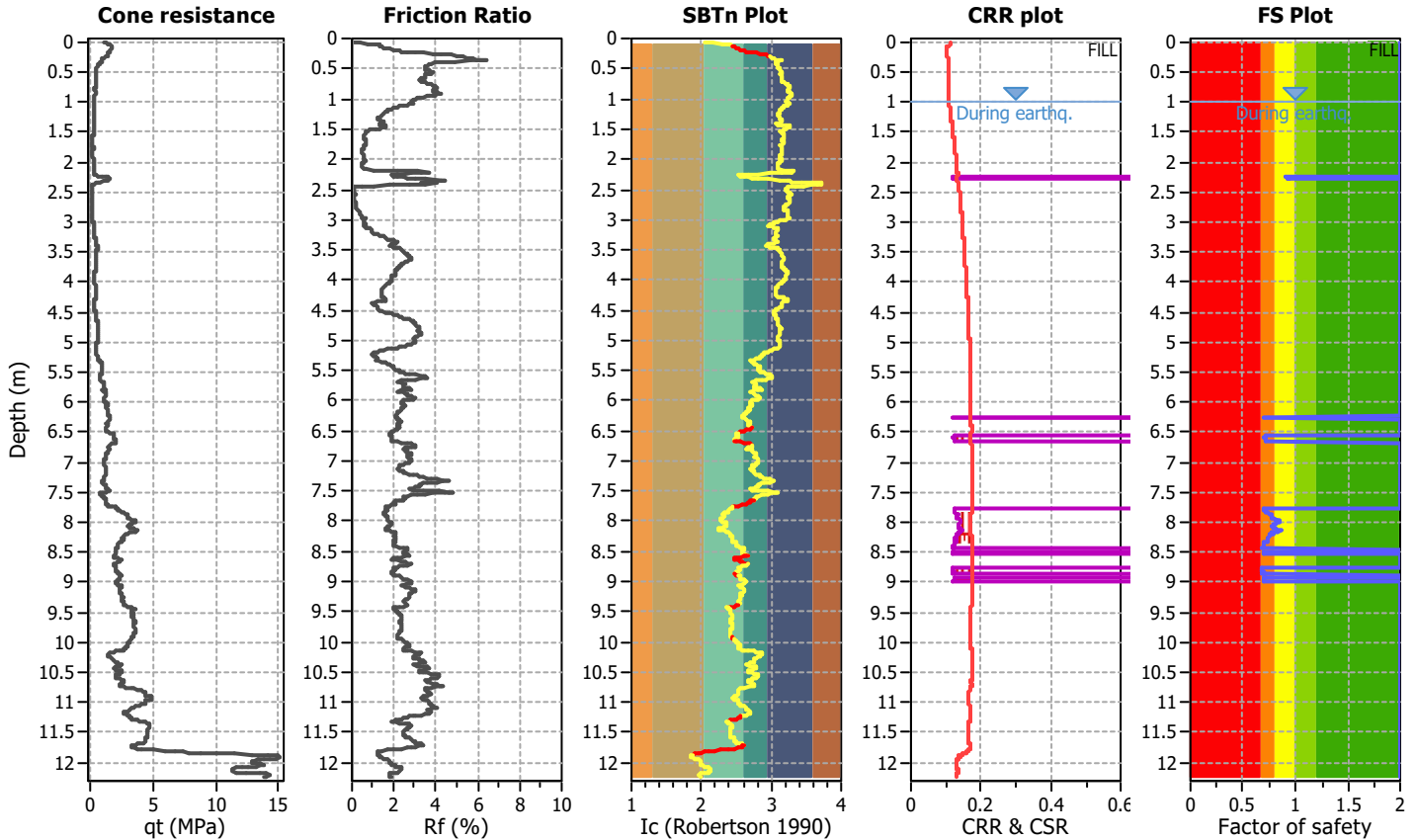
Project title : Sunfield Landholding

Location :

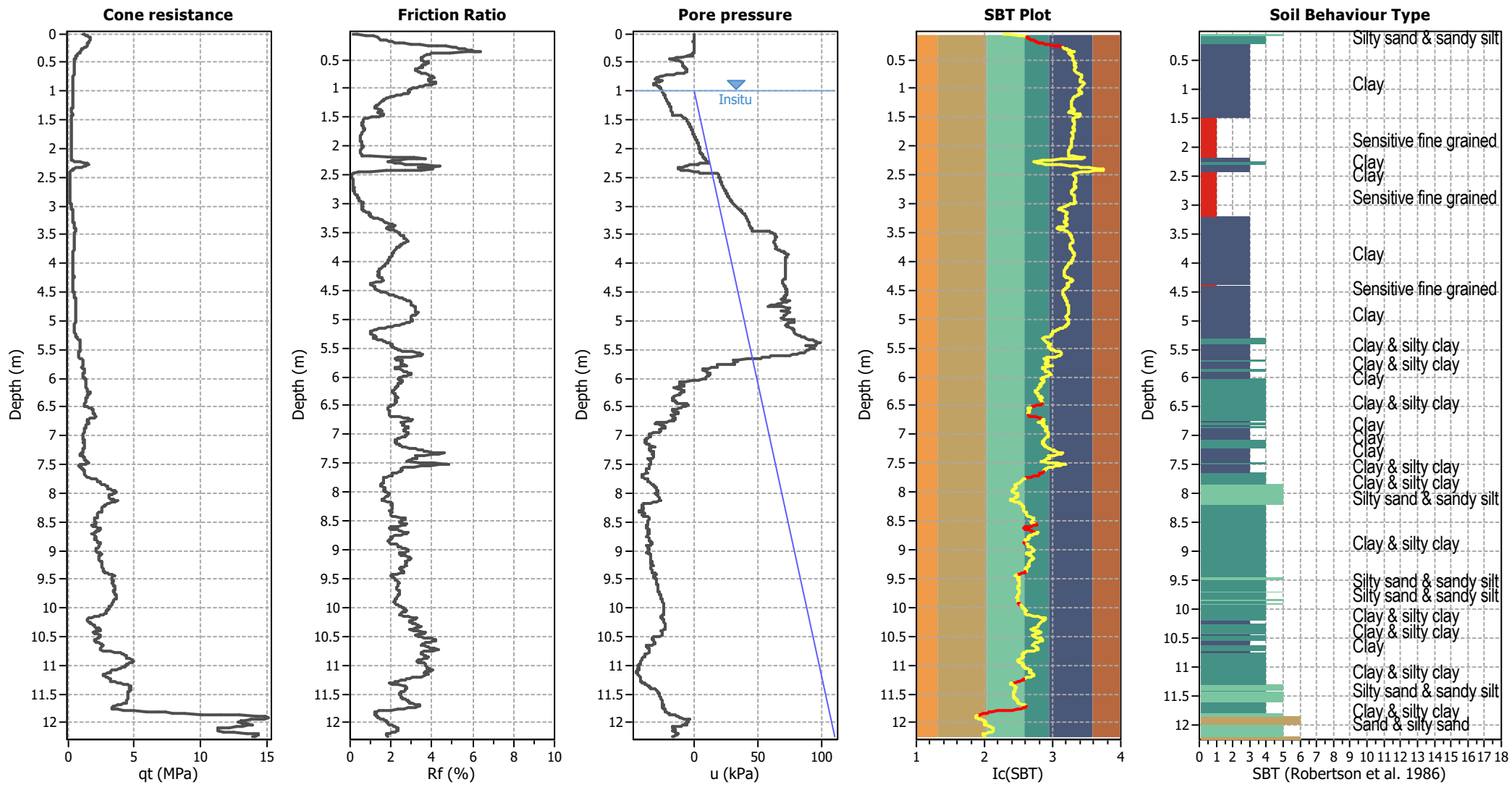
CPT file : CPT303

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	27.75 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



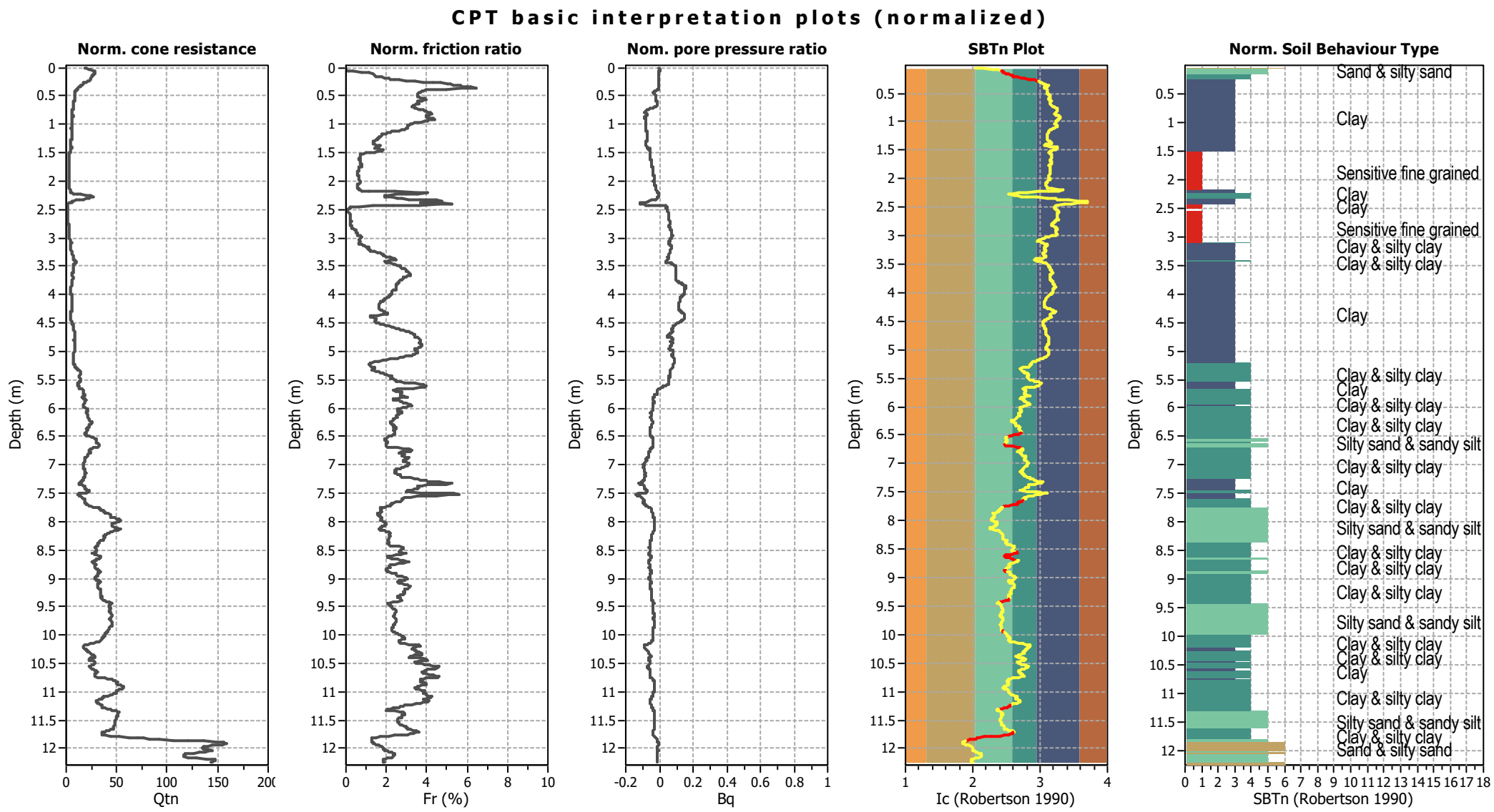
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

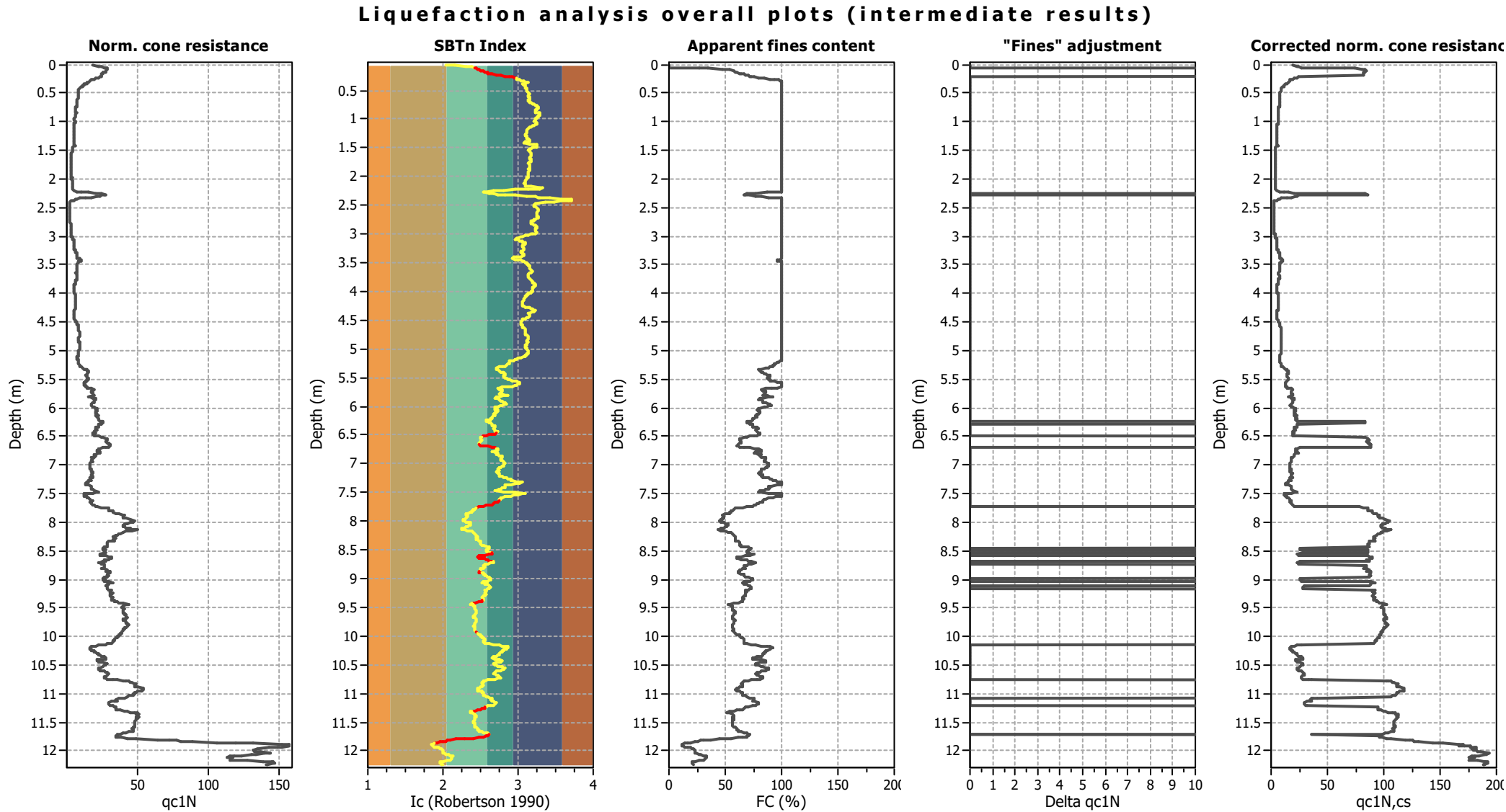
5. Silty sand to sandy silt

6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

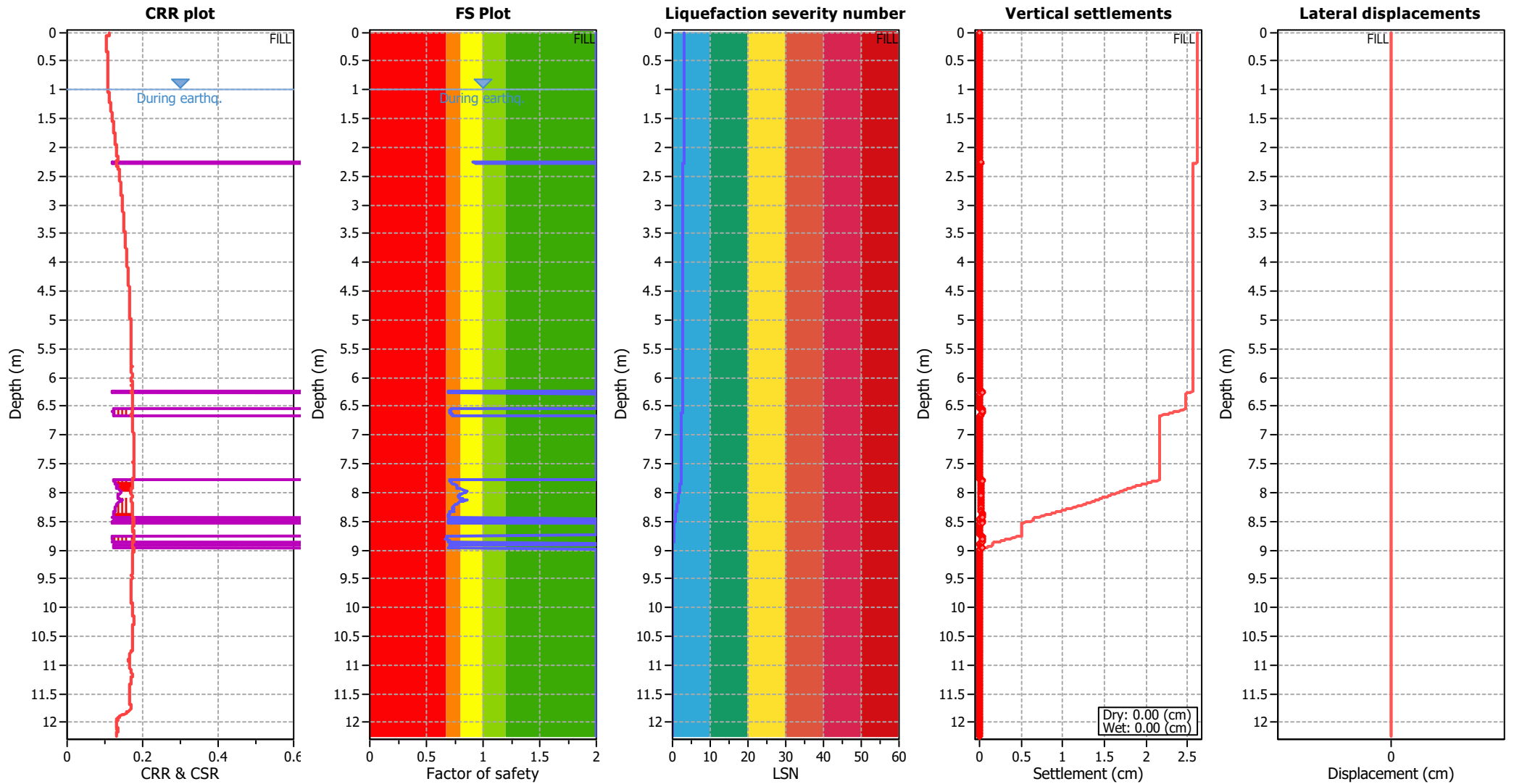
9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

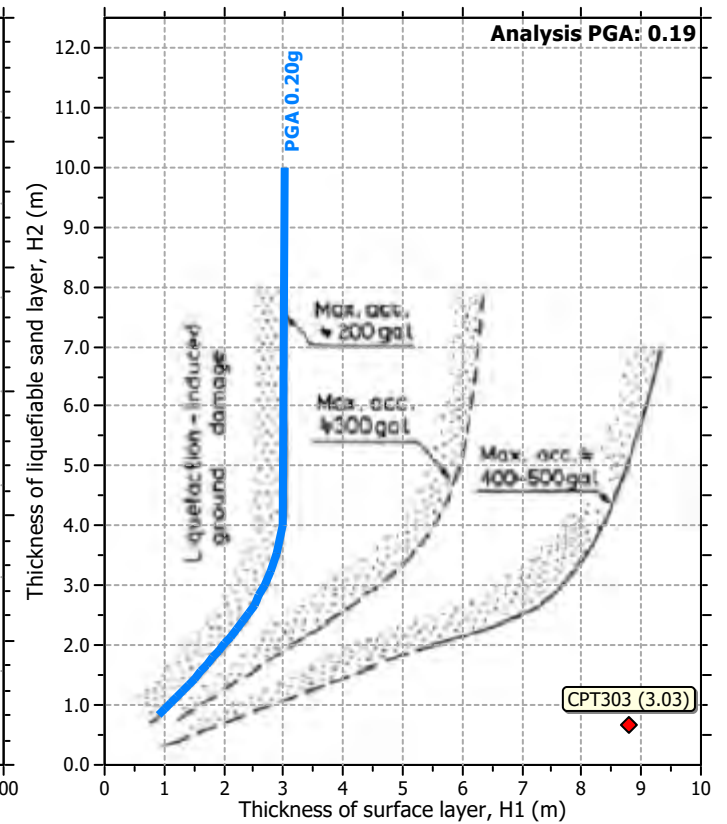
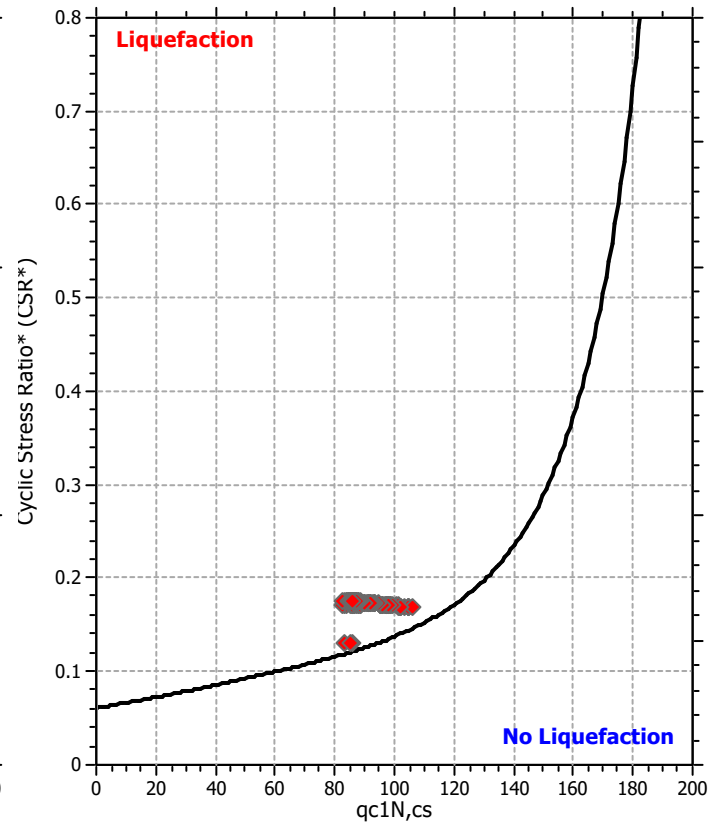
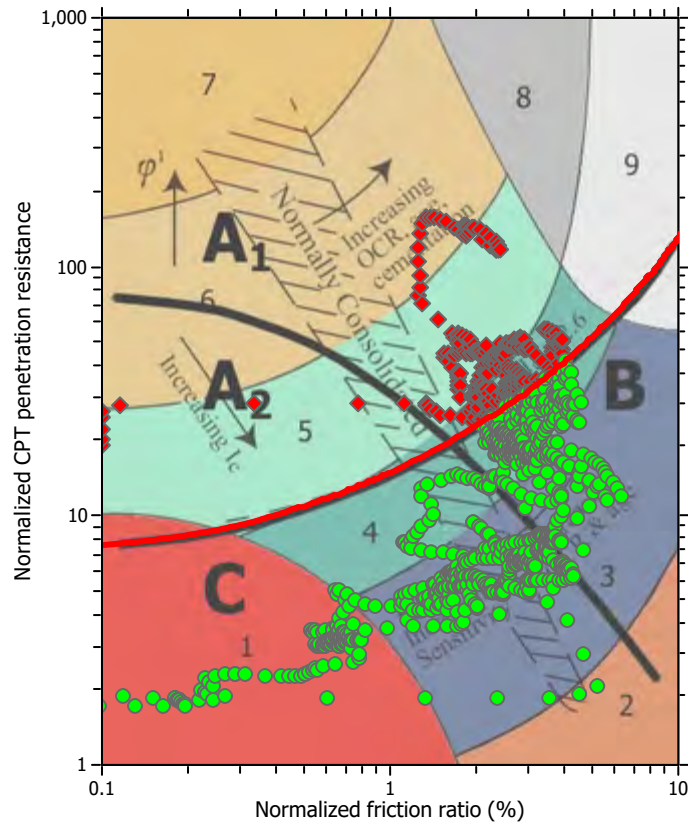
Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

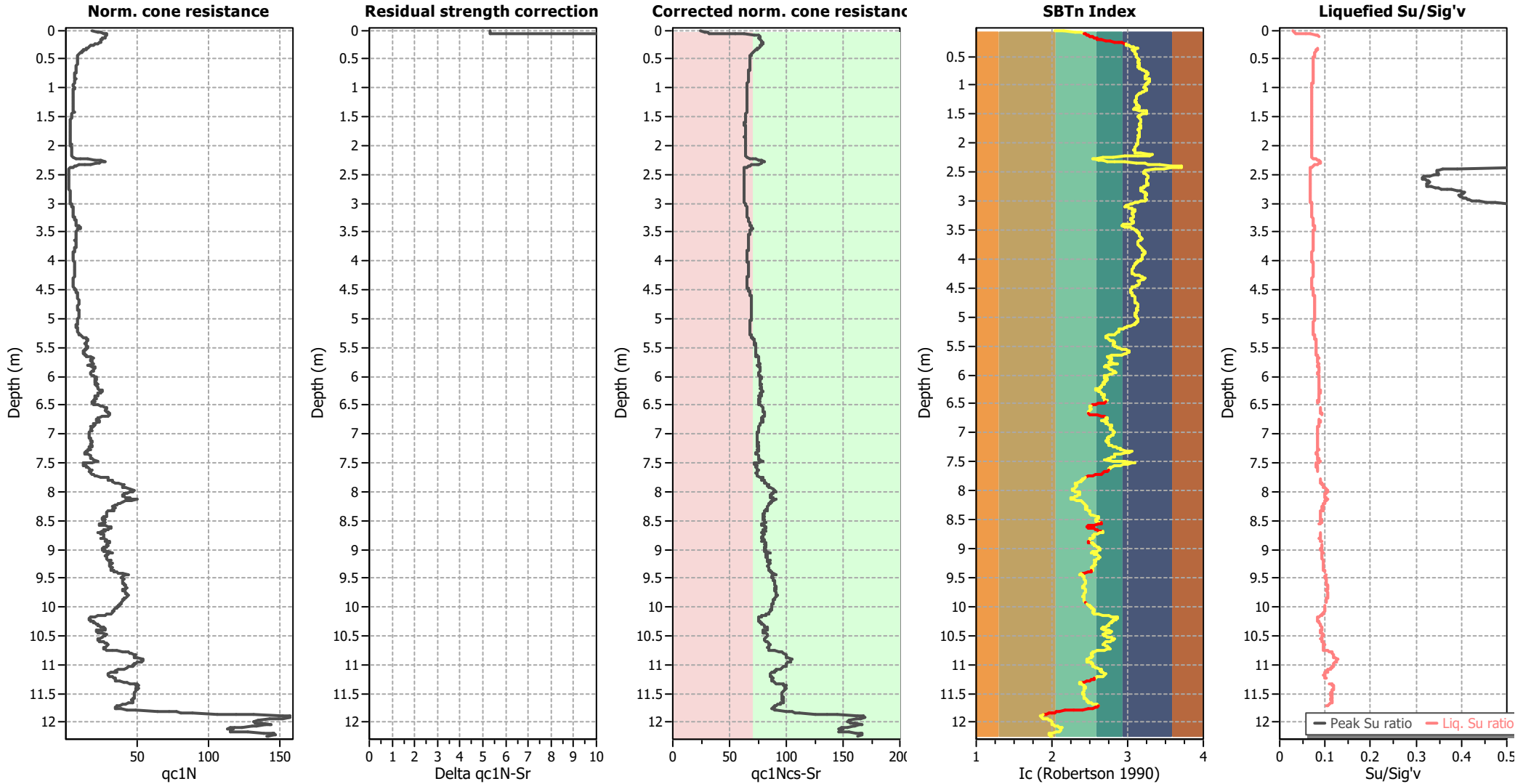
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	27.75 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

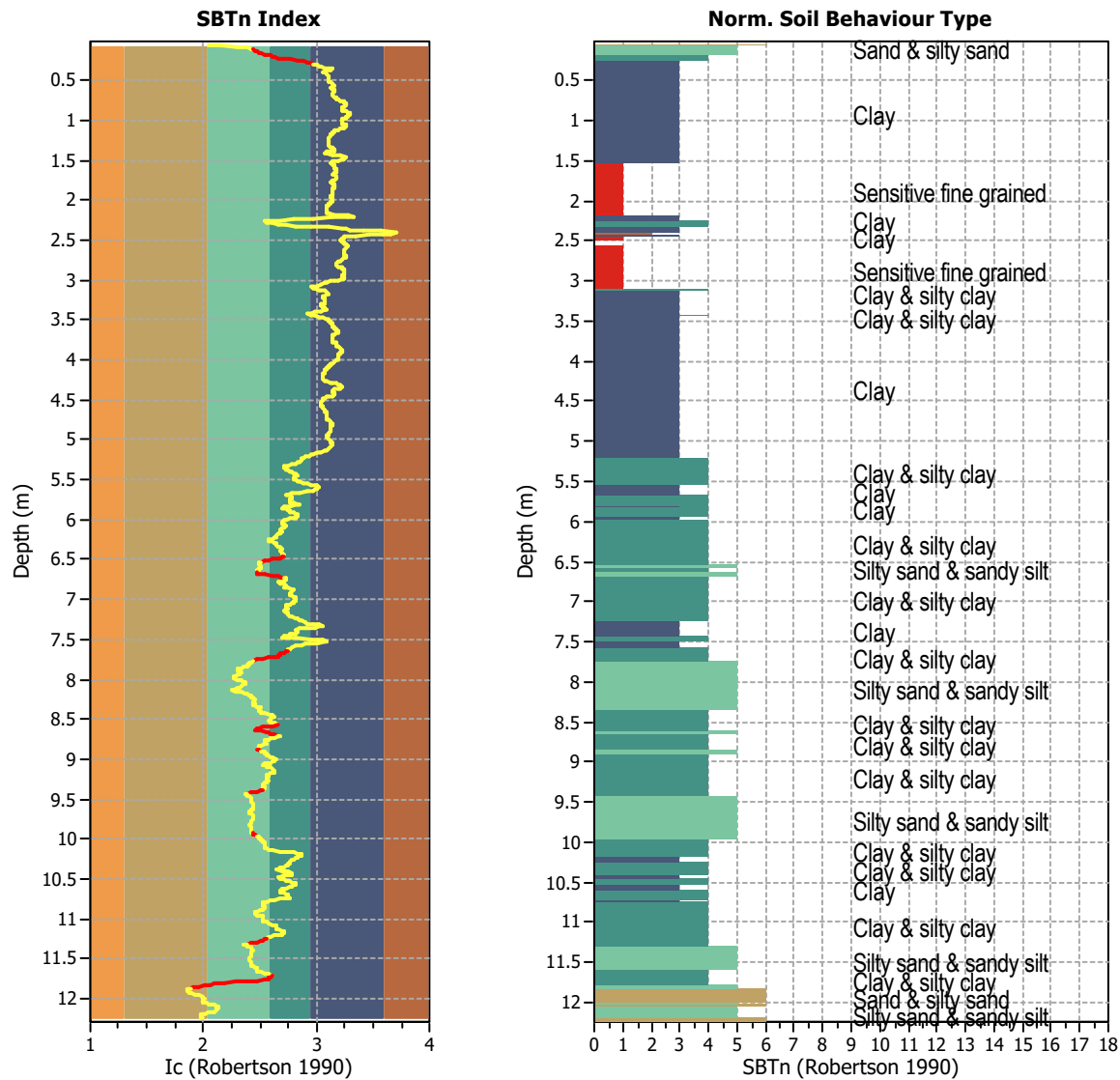
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



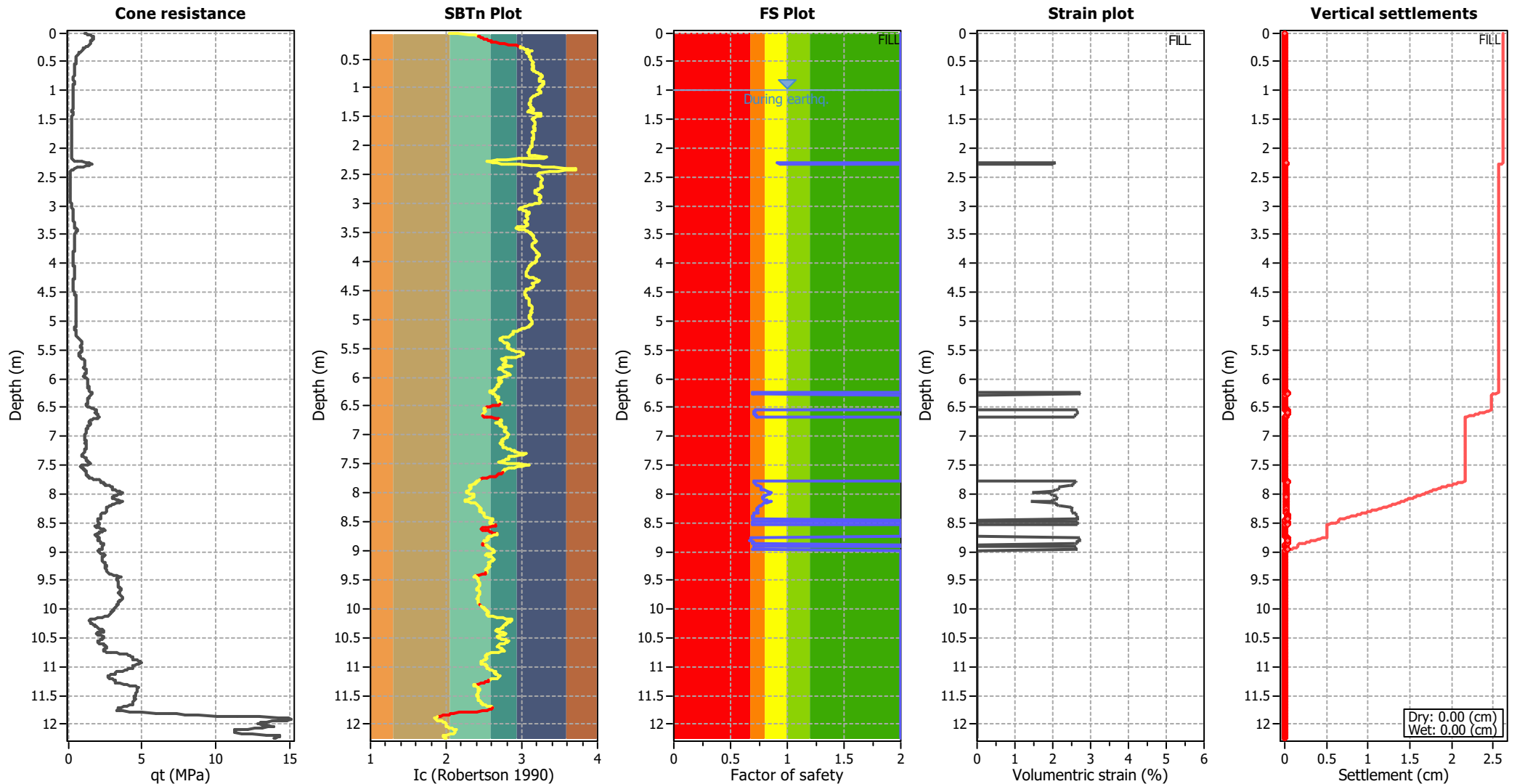
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1224
Total points excluded: 101
Exclusion percentage: 8.25%
Number of layers detected: 11

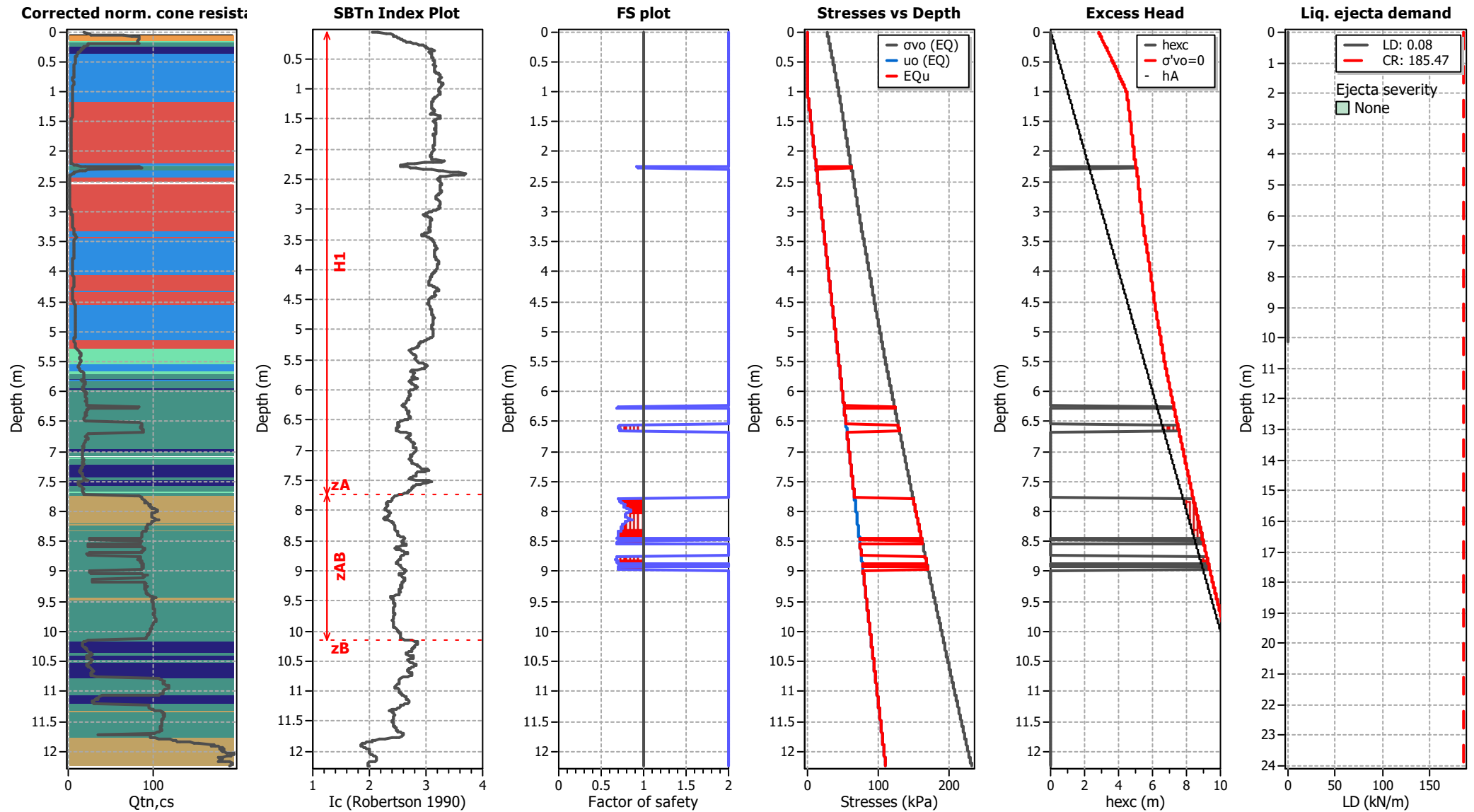
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

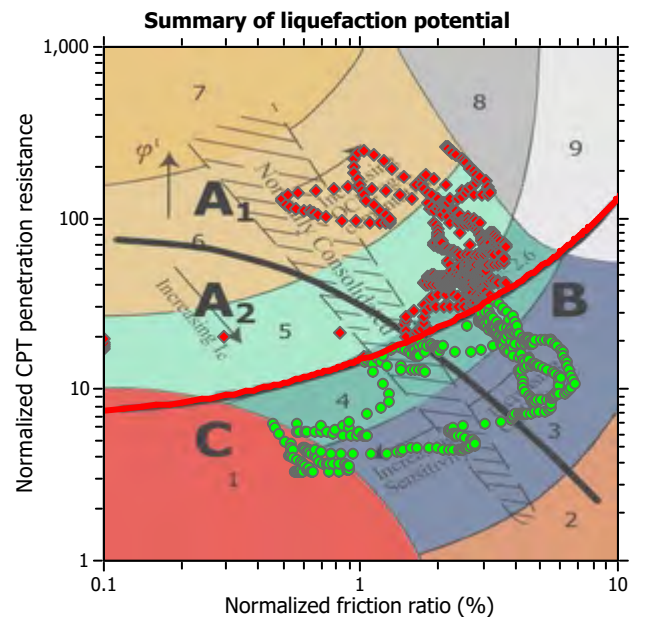
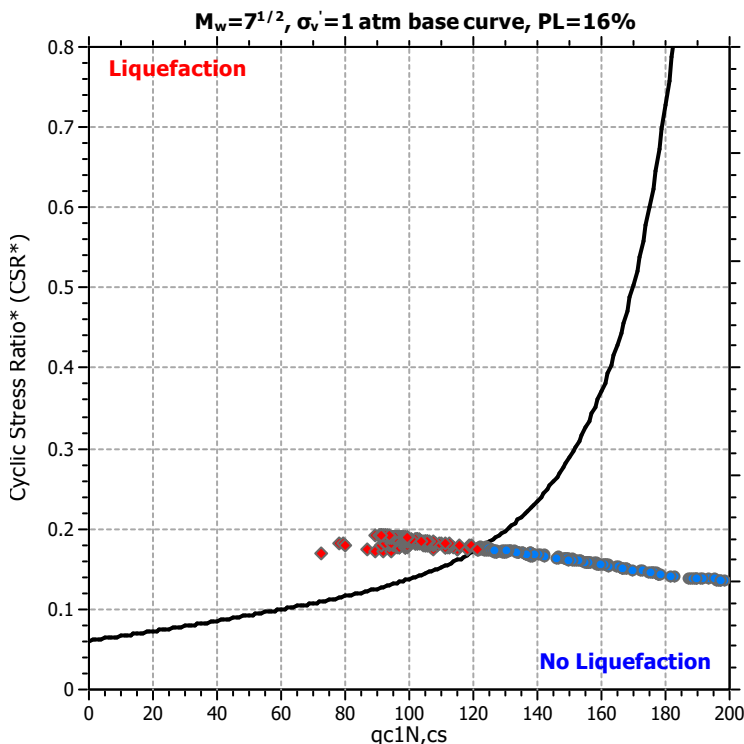
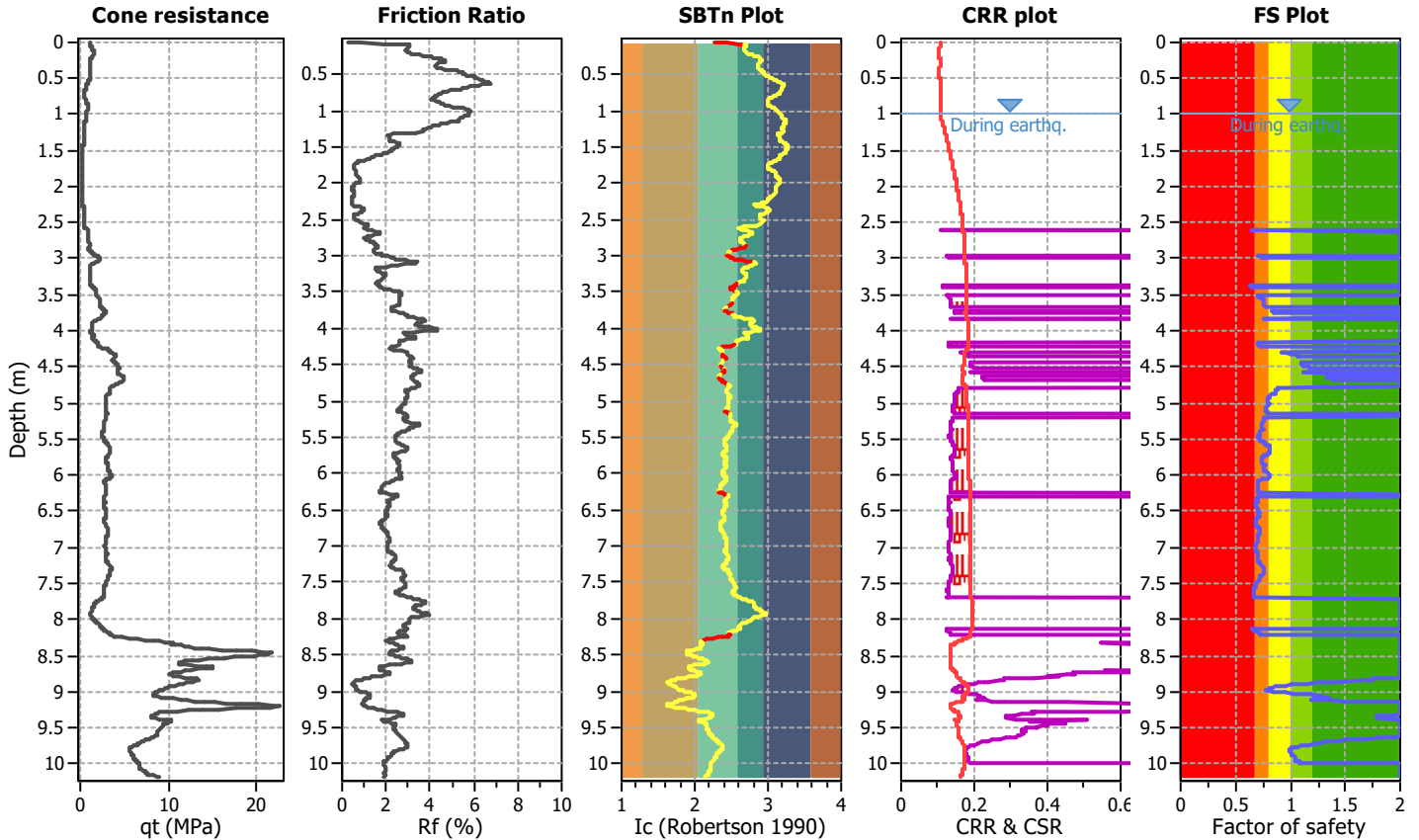
Project title : Sunfield Landholding

Location :

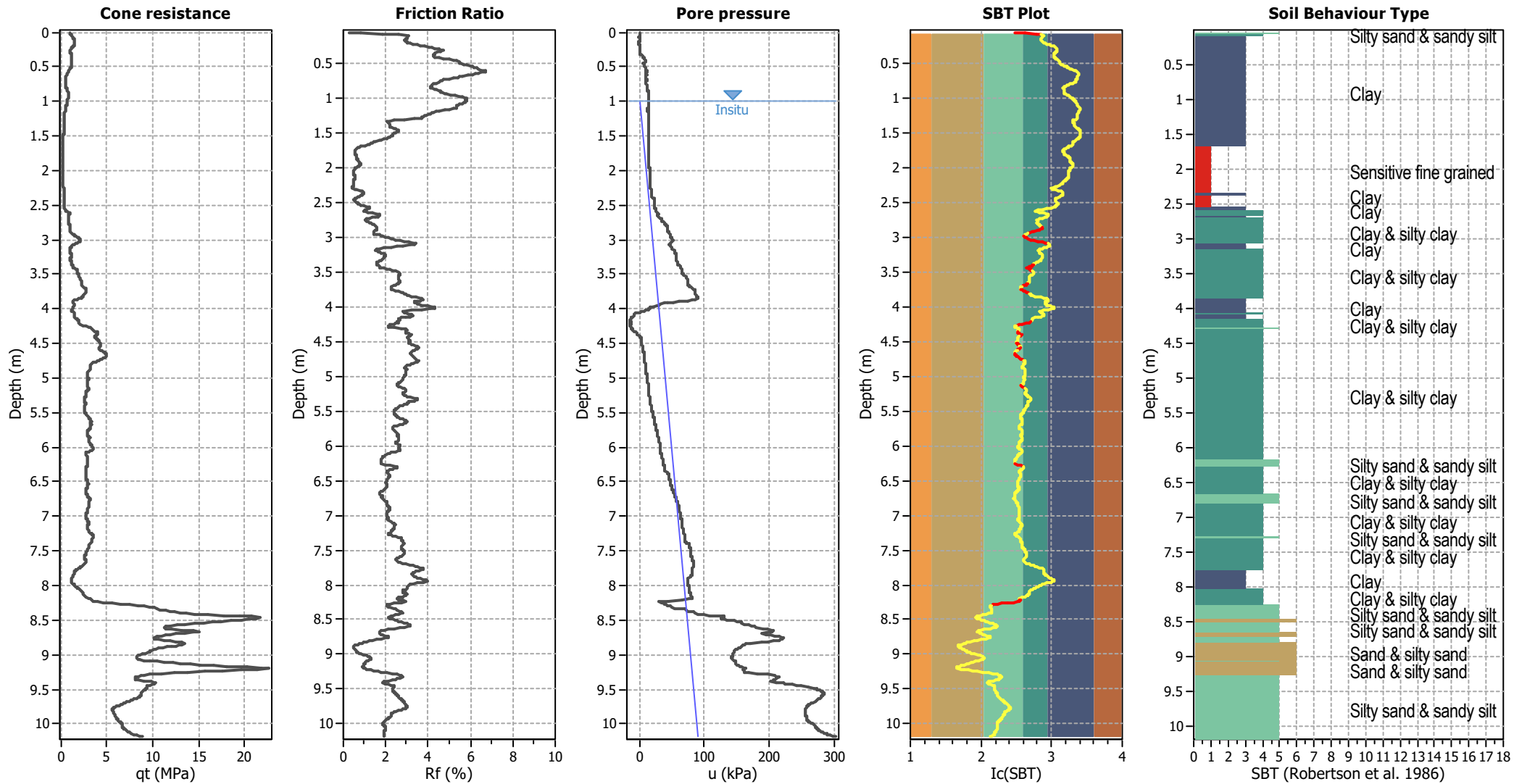
CPT file : CPT304

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

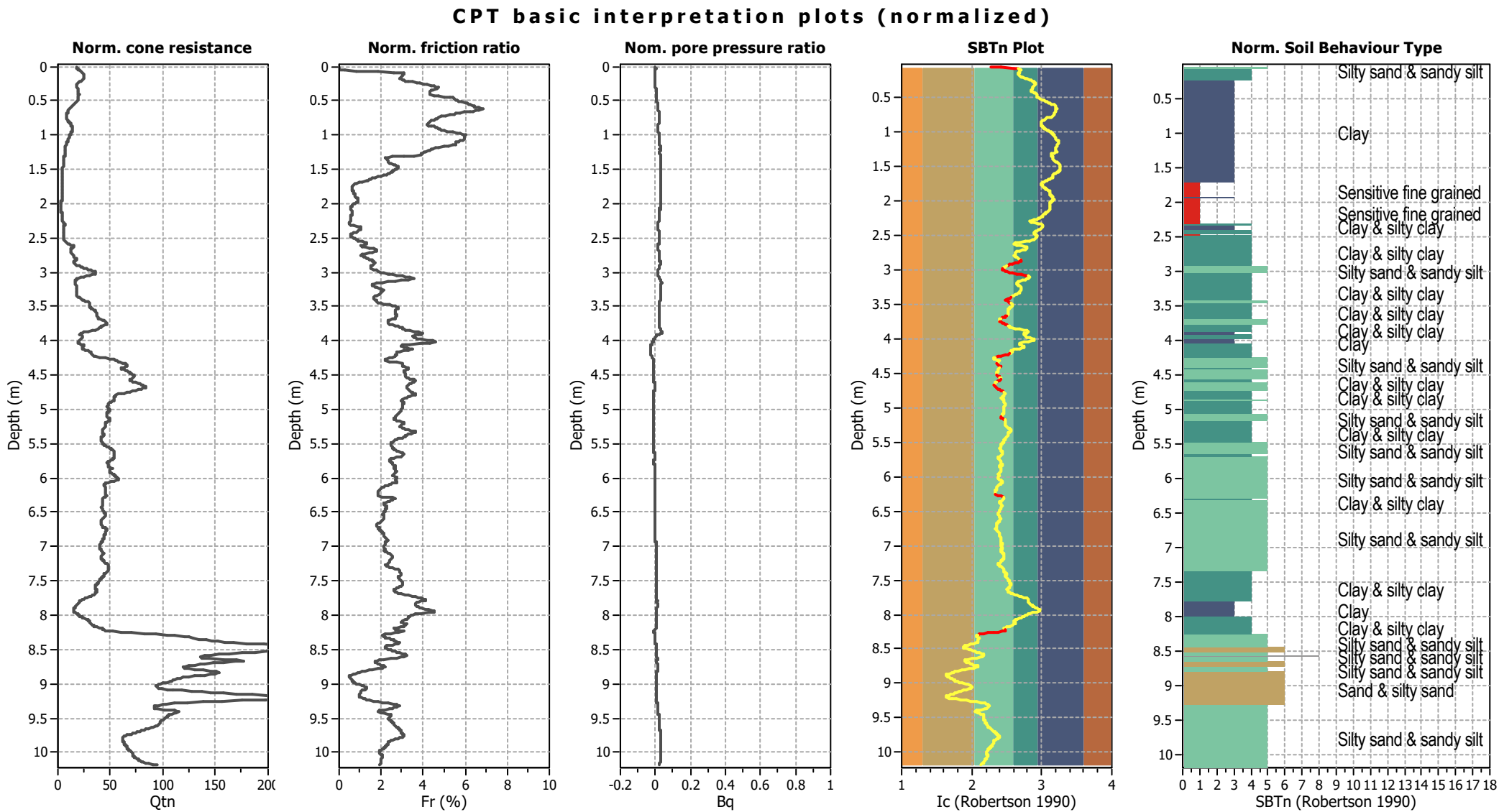


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

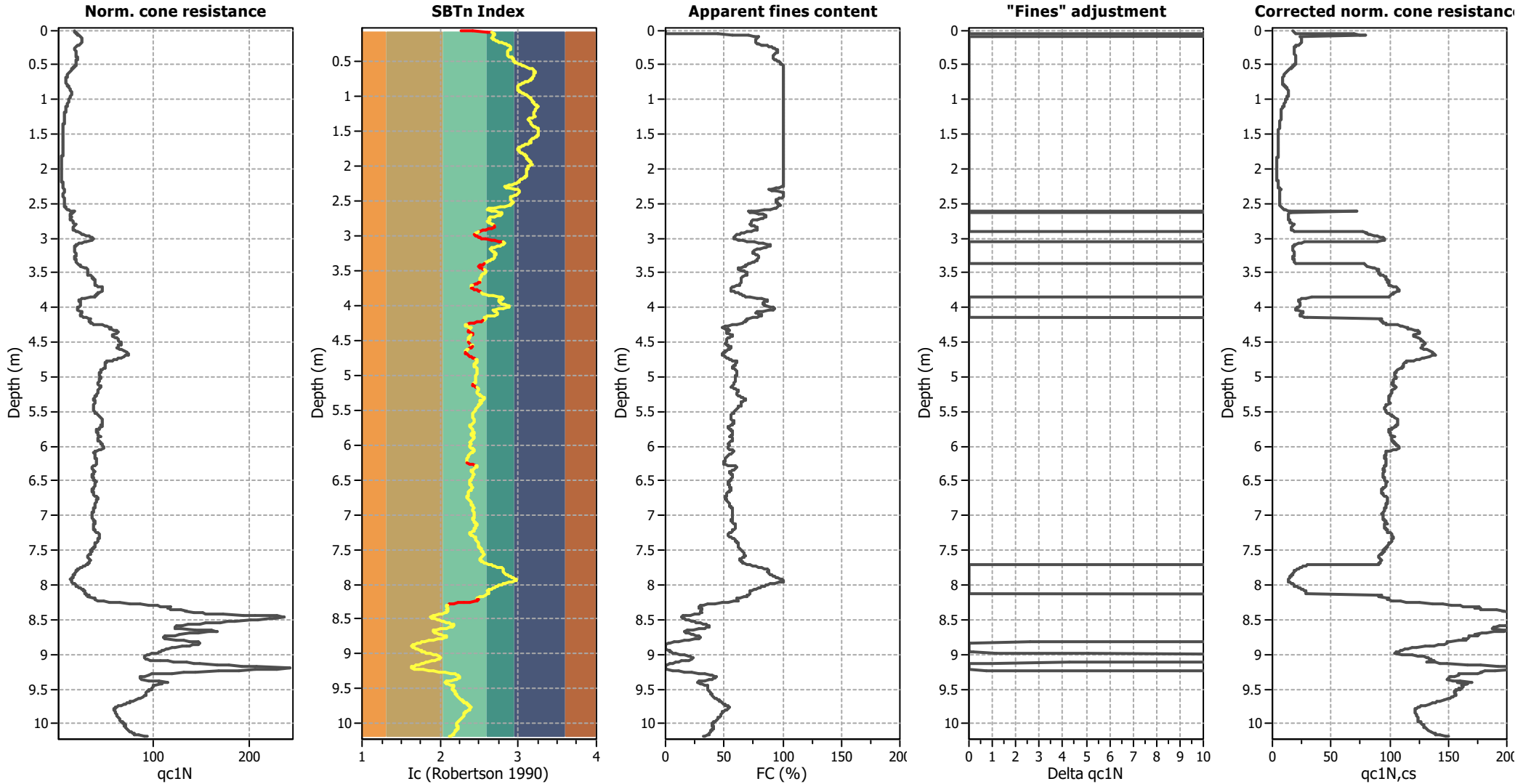


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

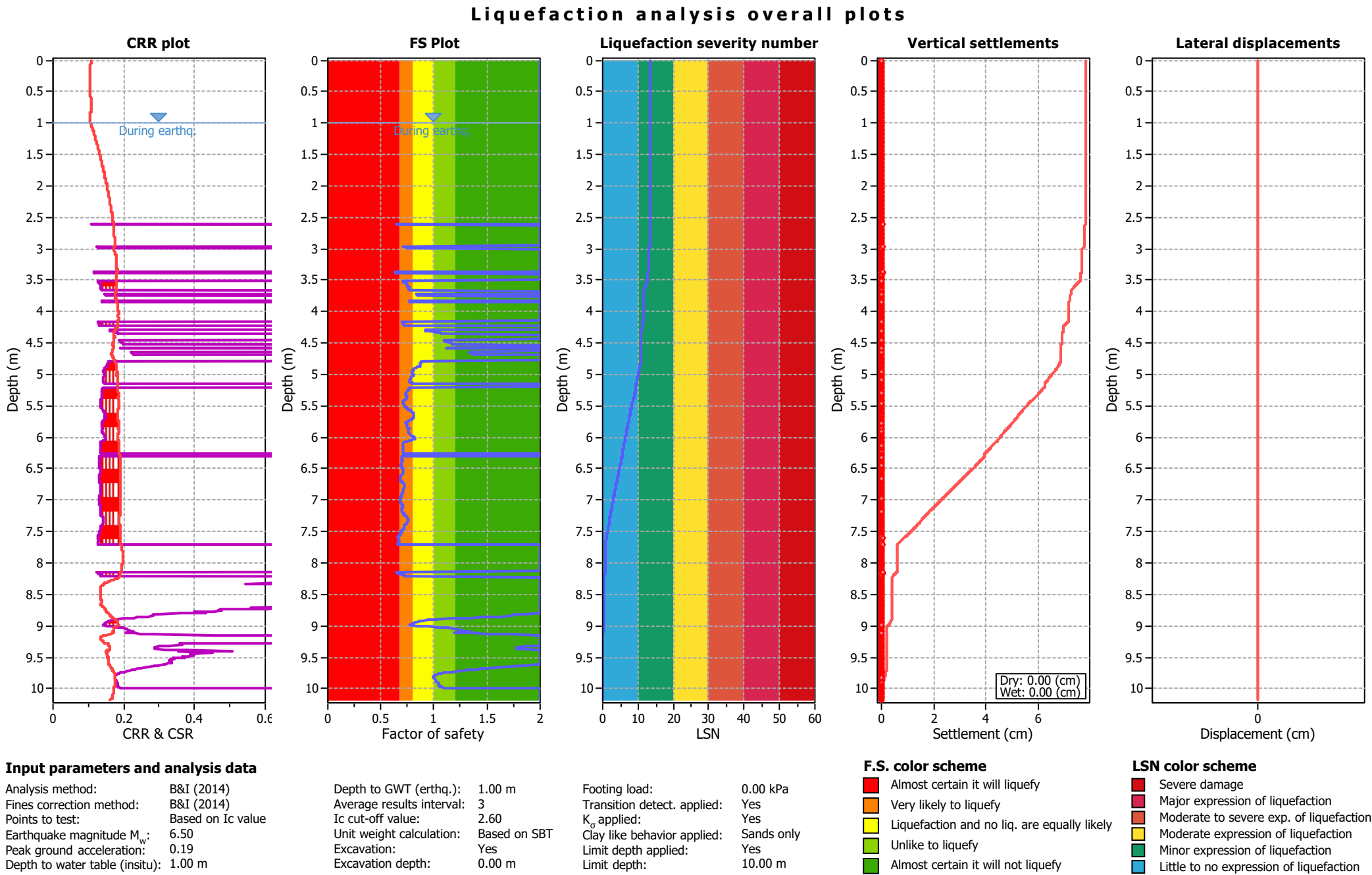
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

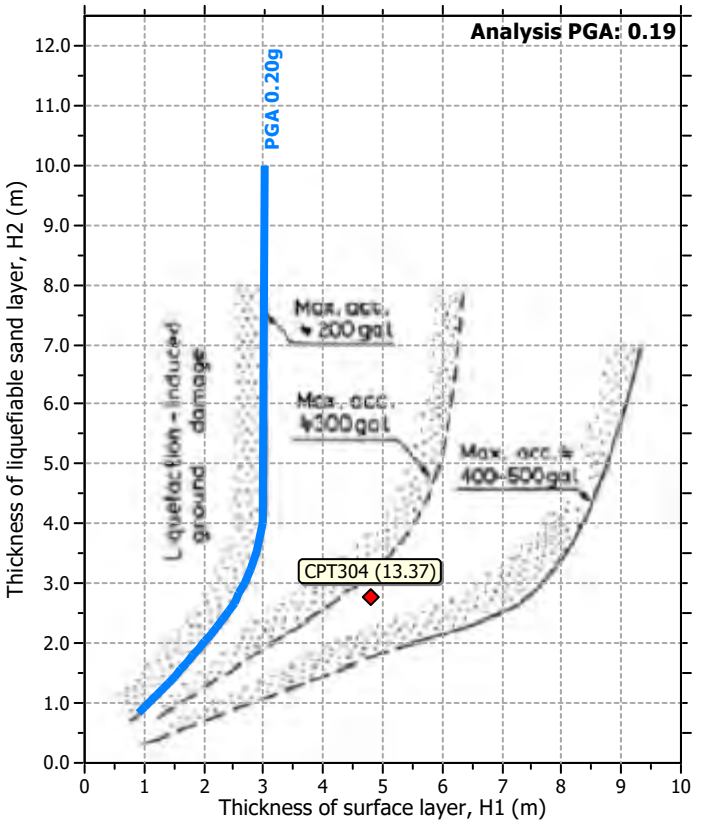
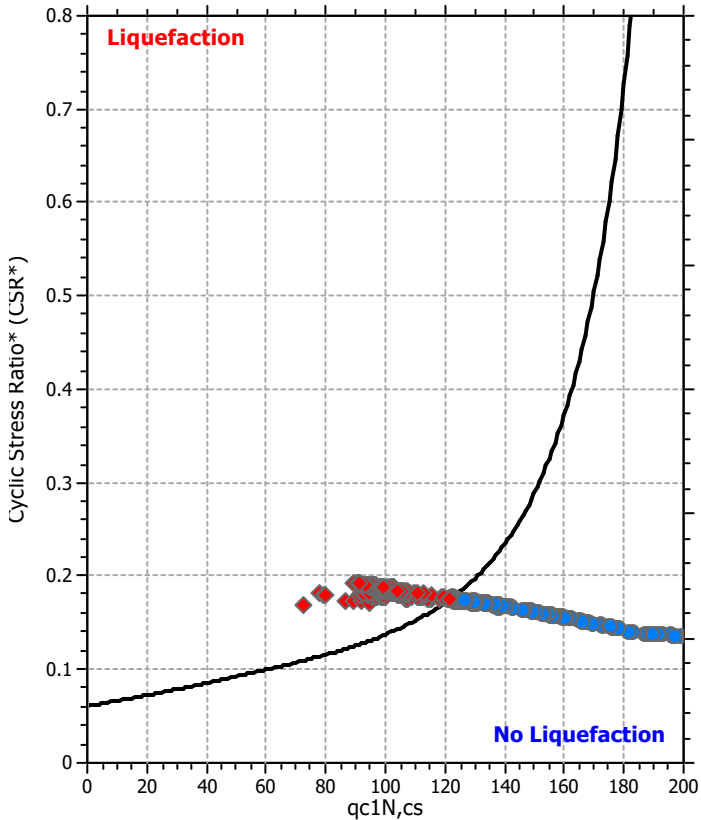
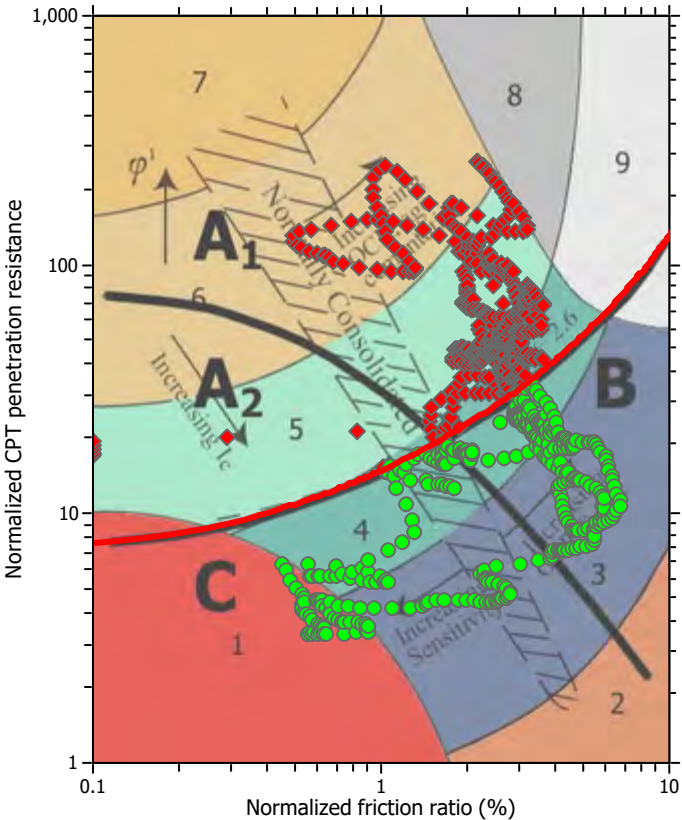


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



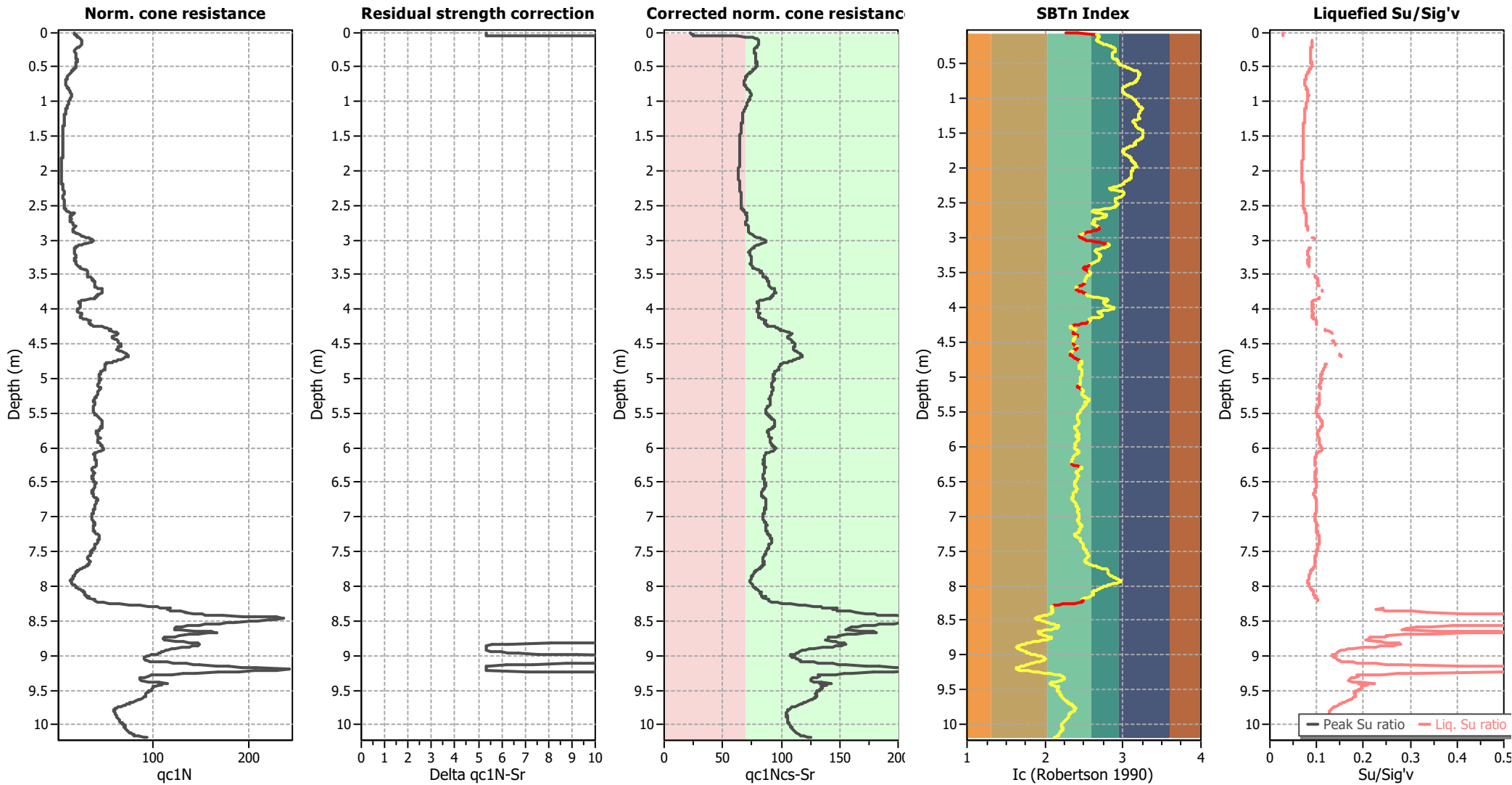
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

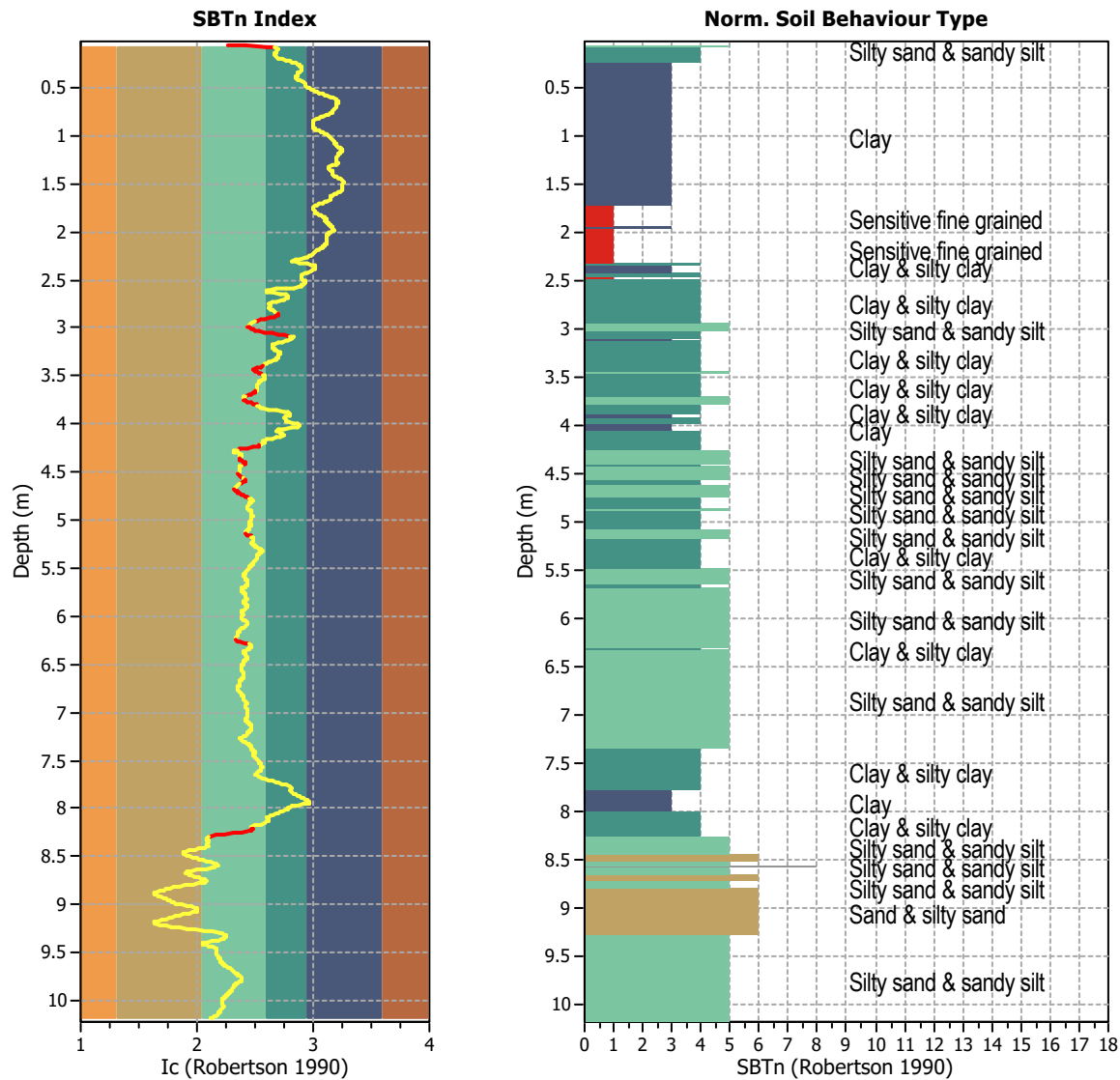
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



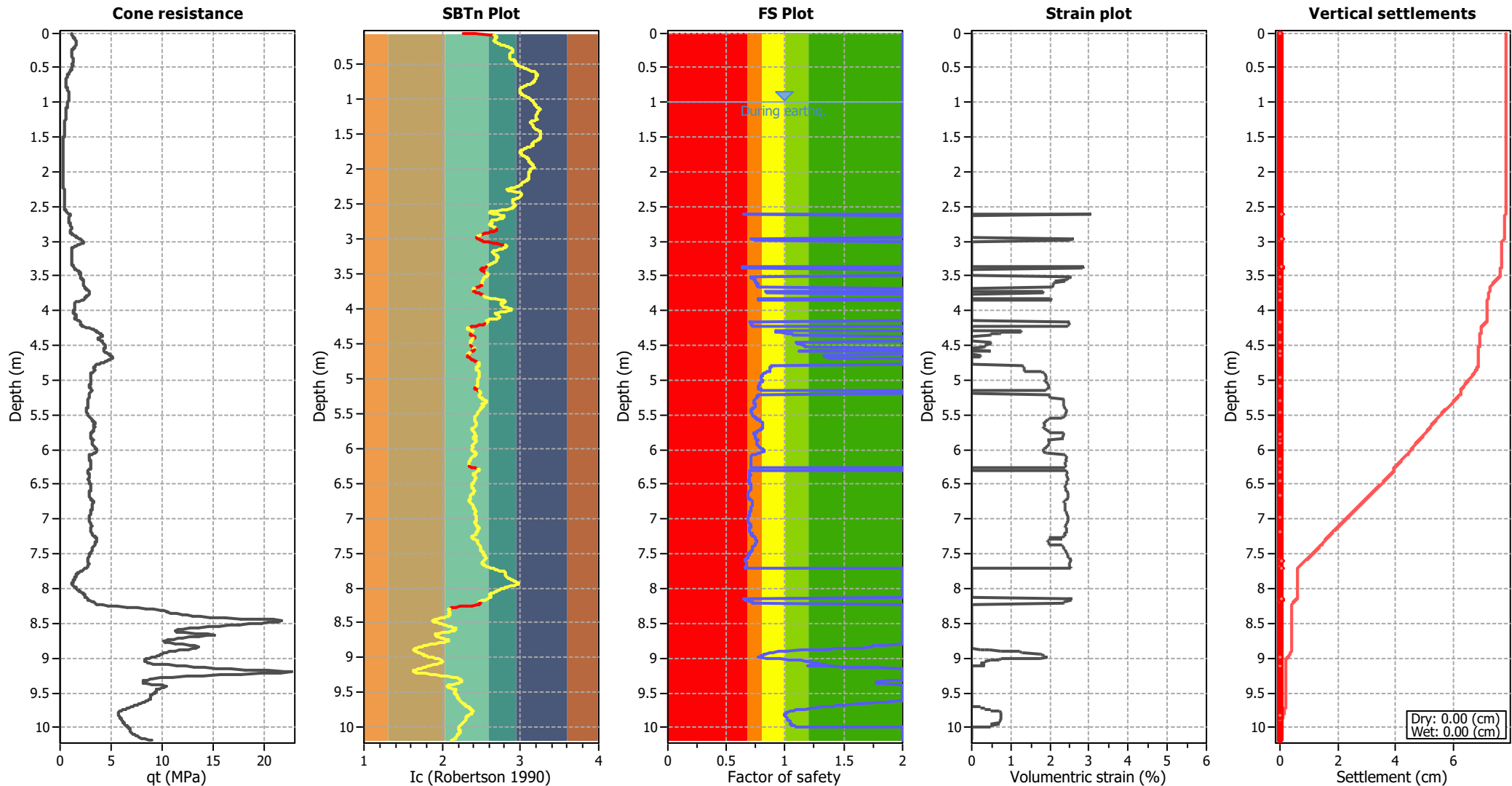
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1018
Total points excluded: 103
Exclusion percentage: 10.12%
Number of layers detected: 16

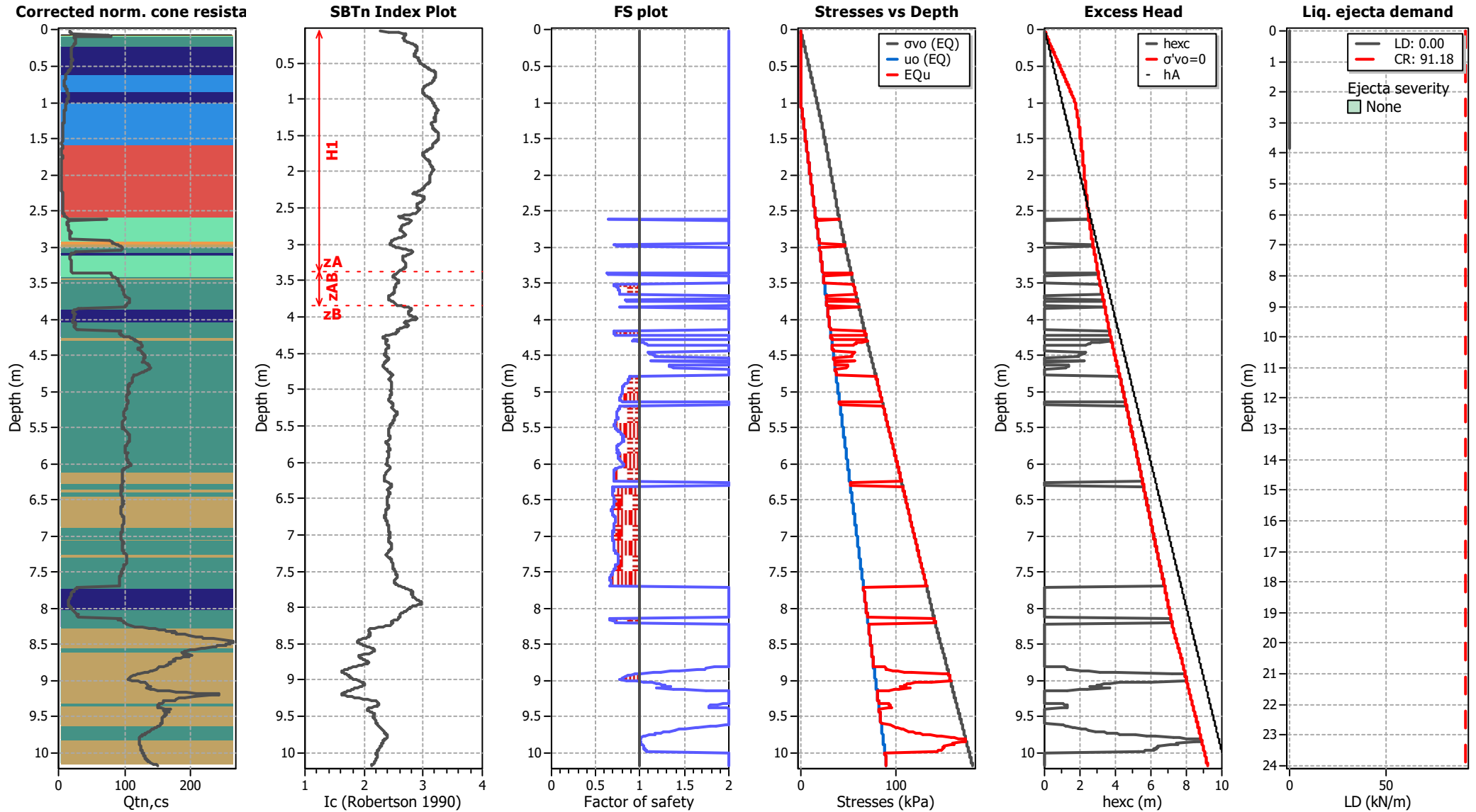
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

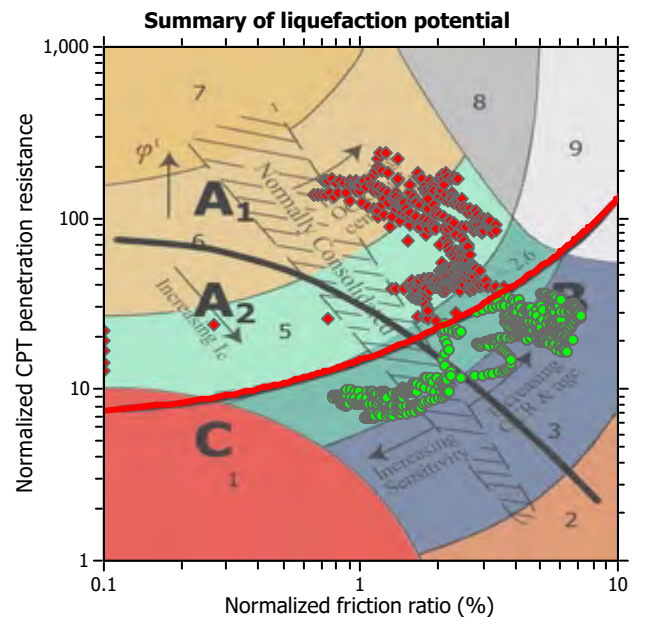
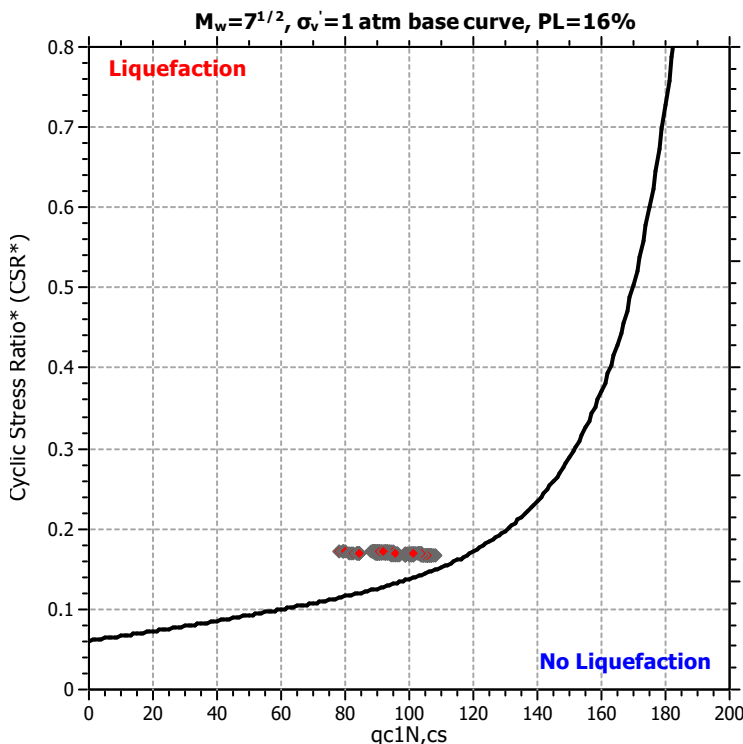
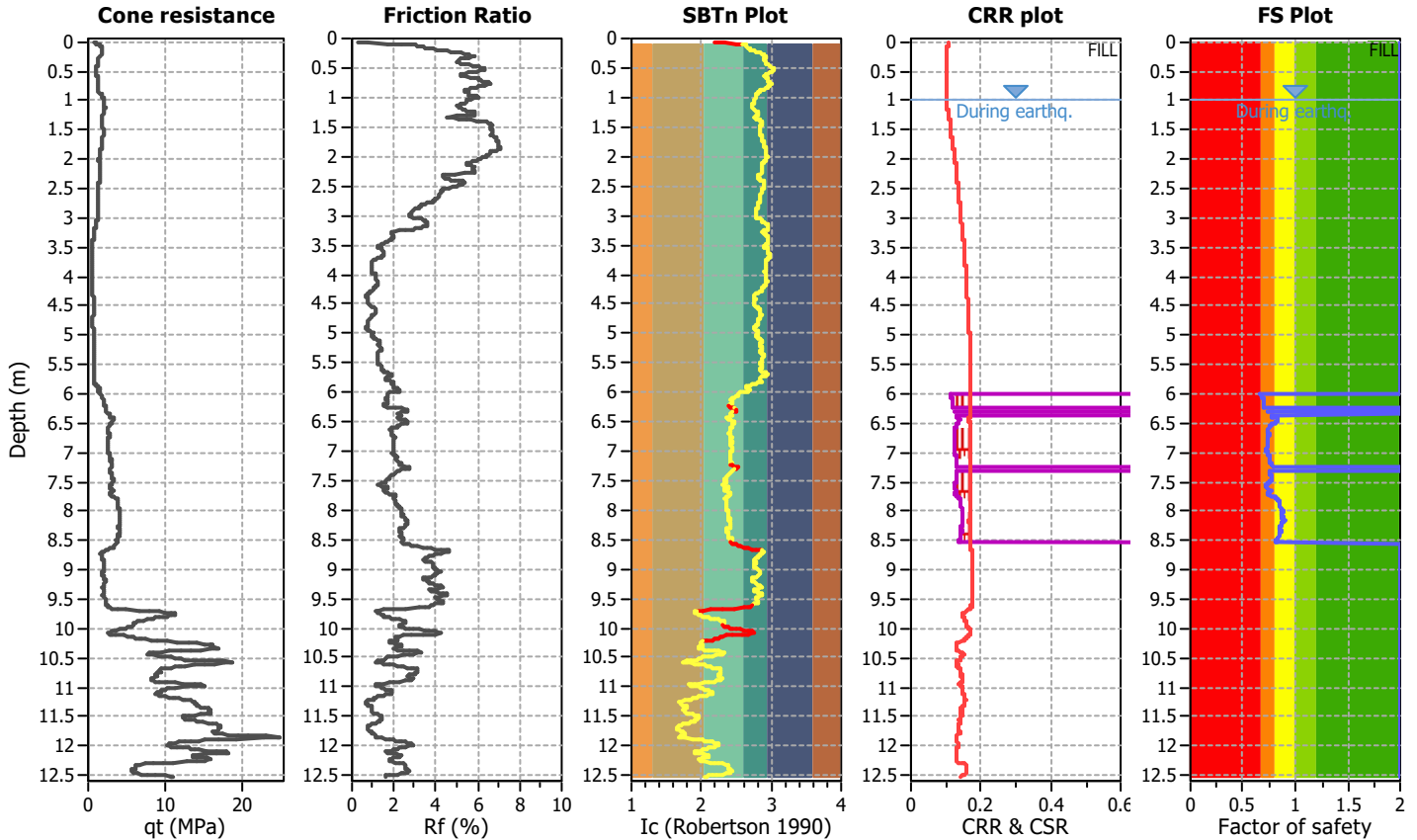
Project title : Sunfield Landholding

Location :

CPT file : CPT305

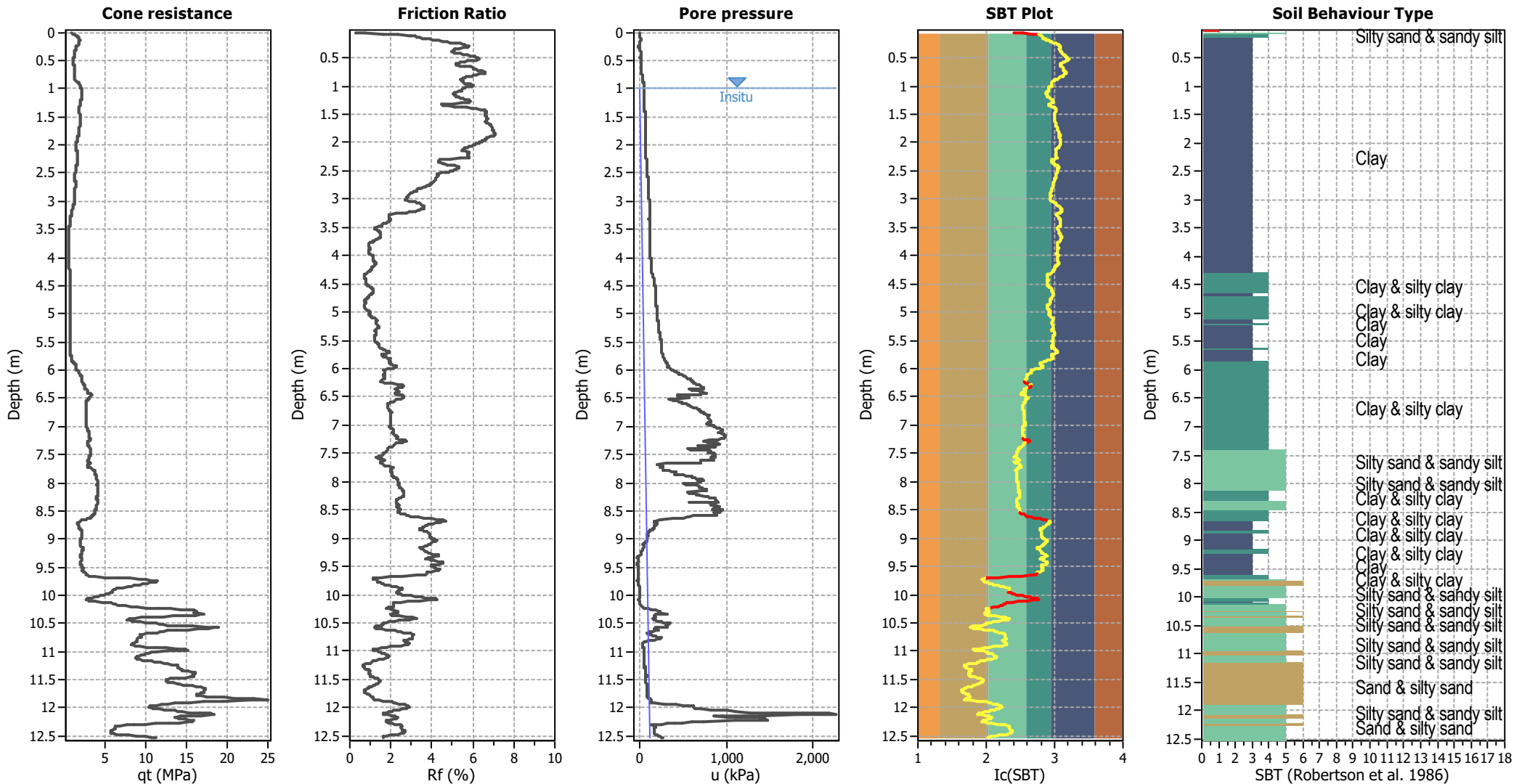
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

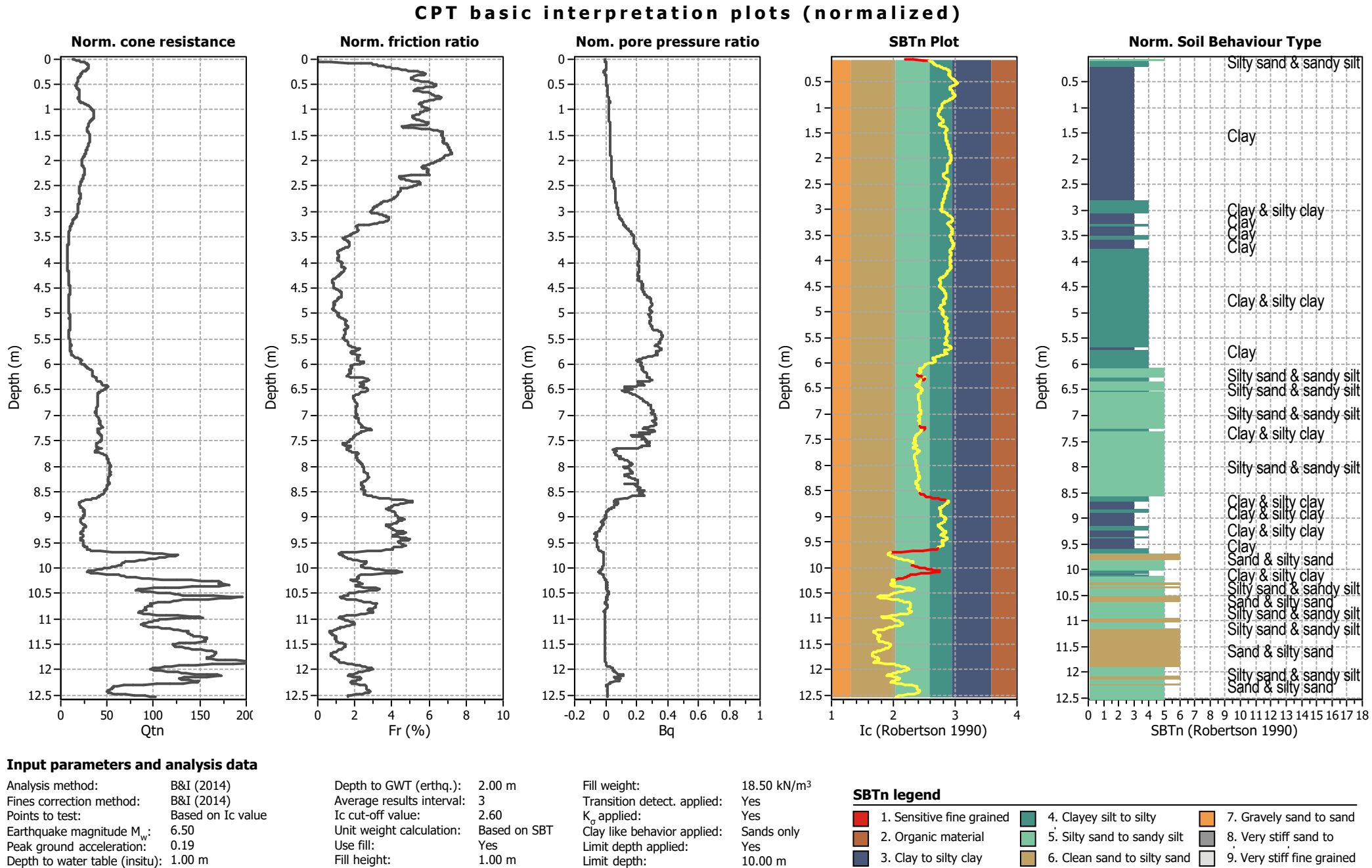


Input parameters and analysis data

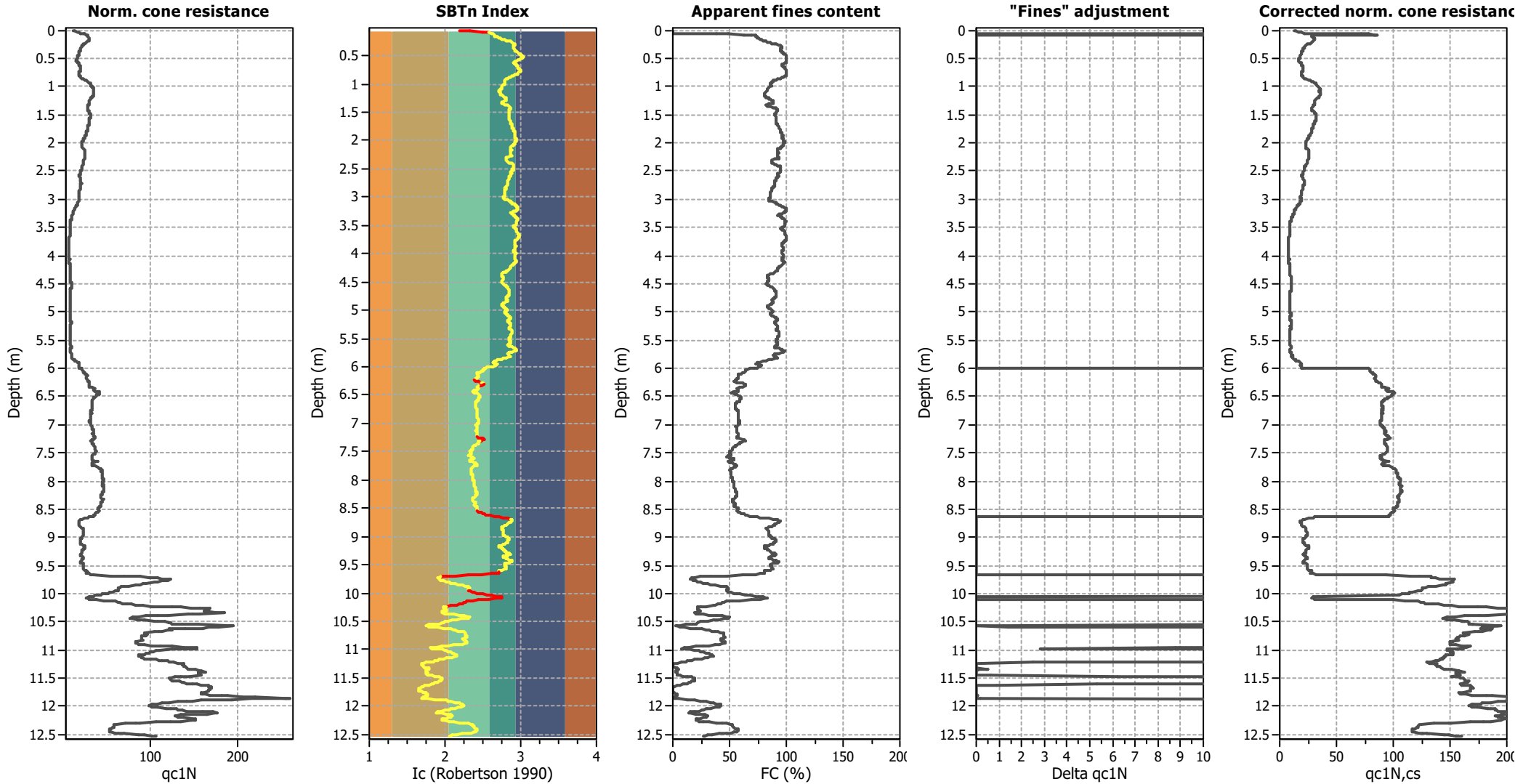
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



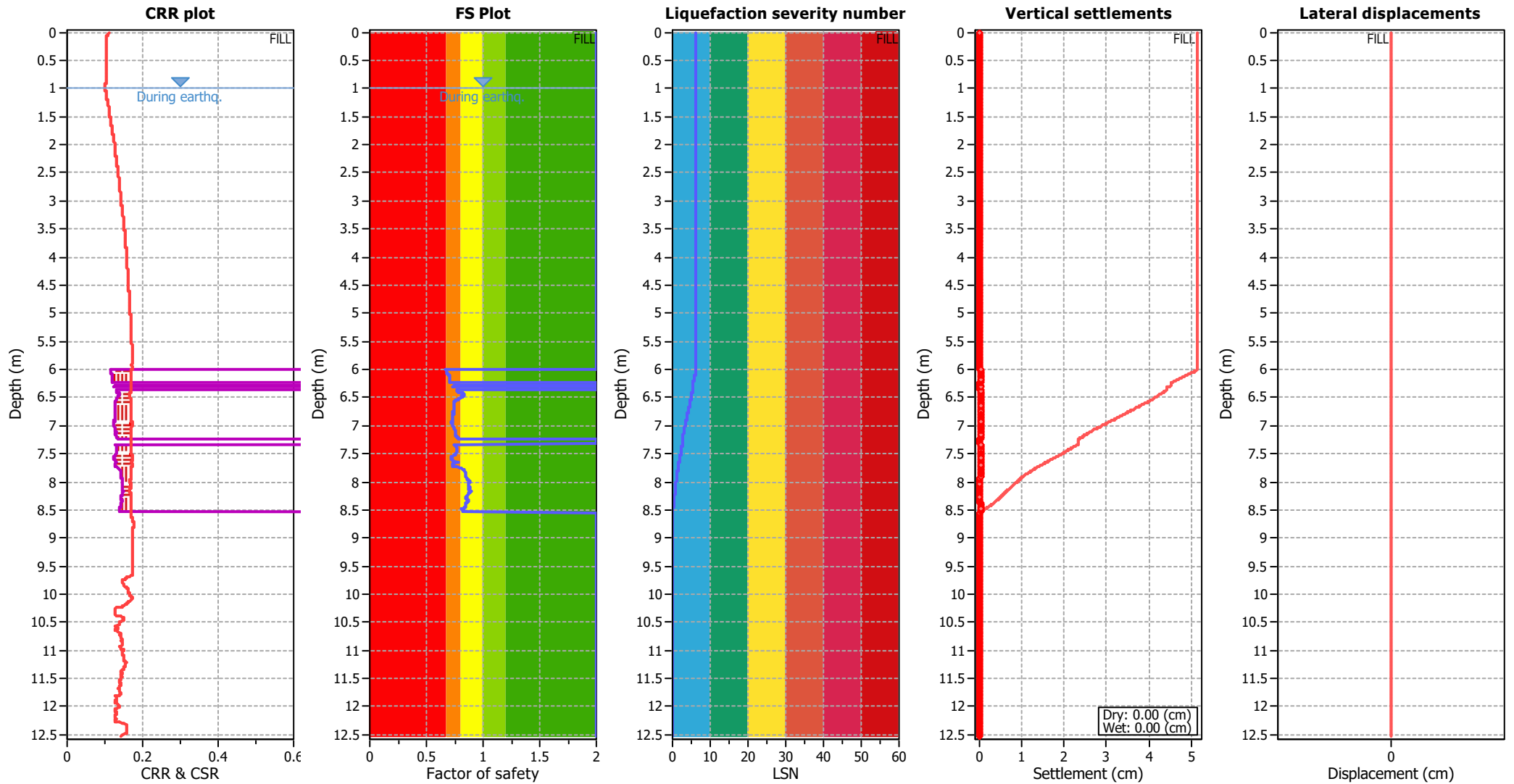
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

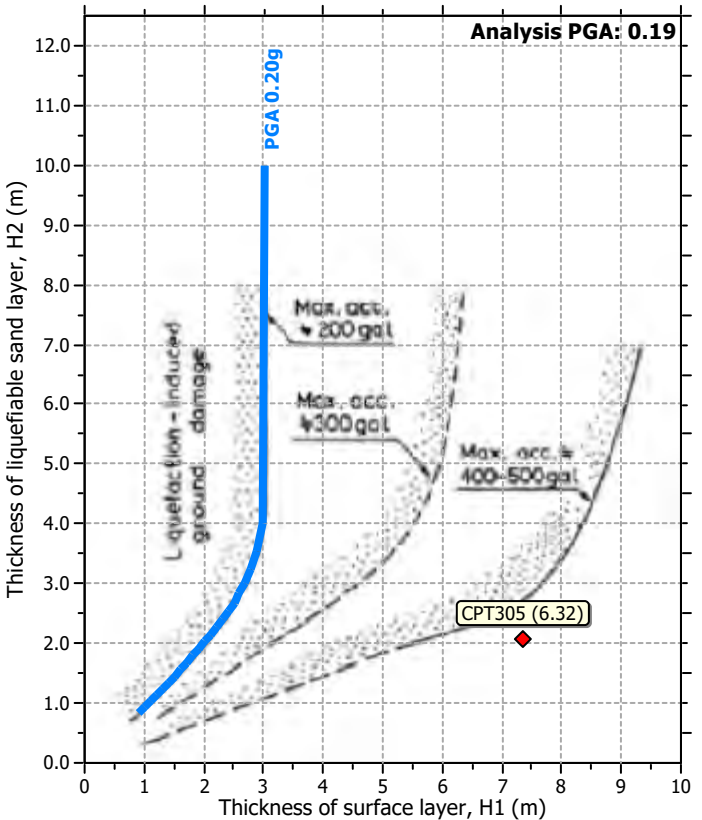
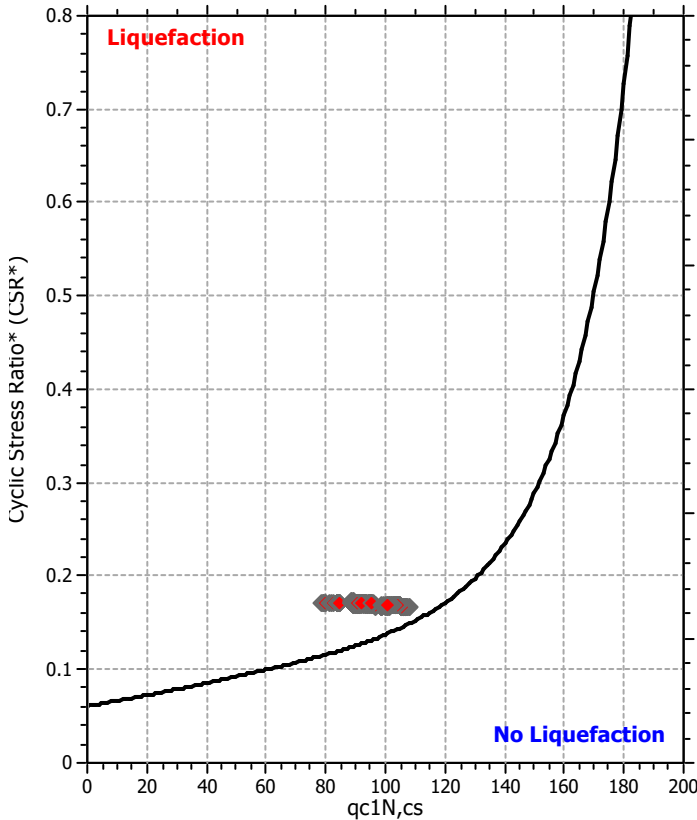
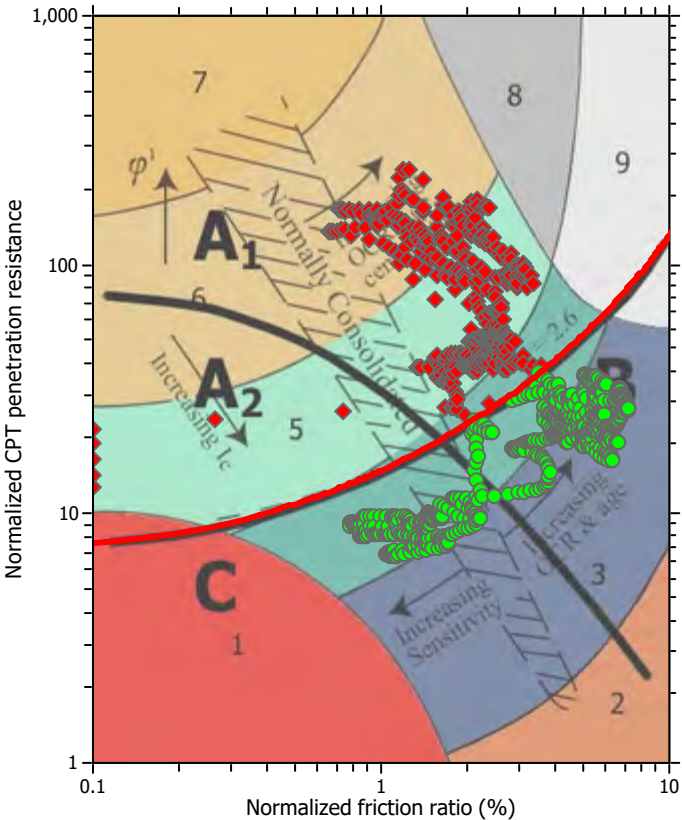
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

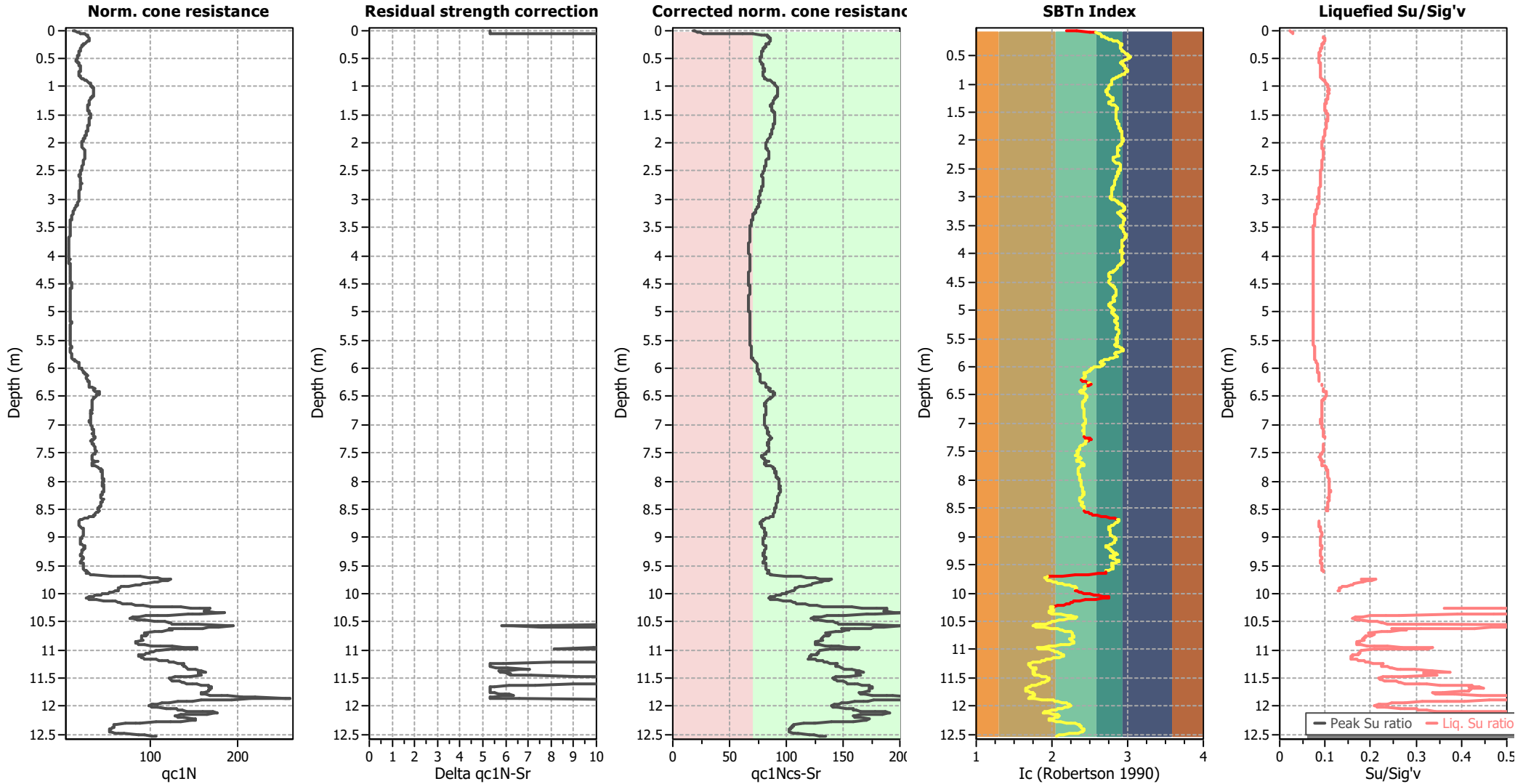
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

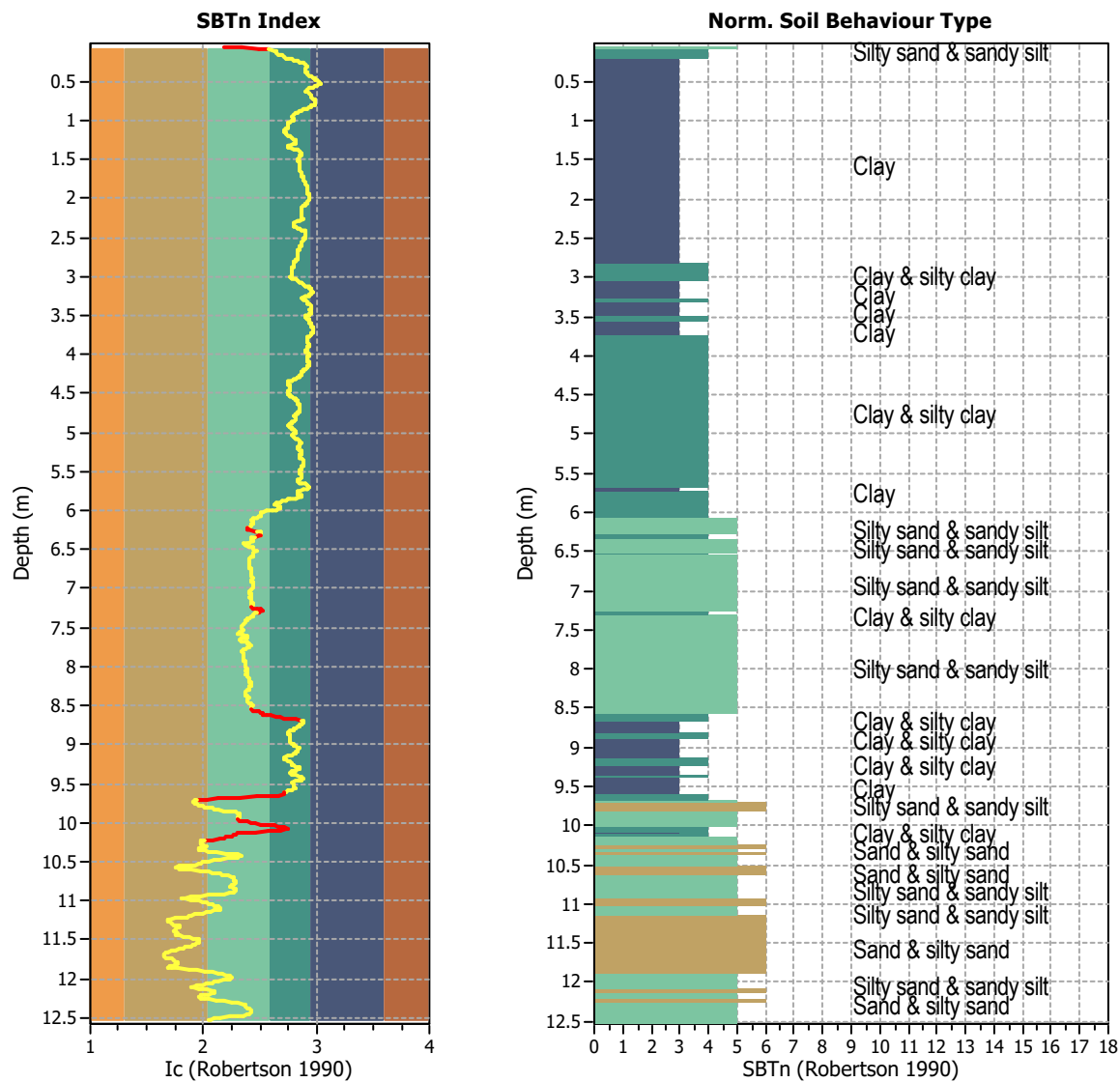
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



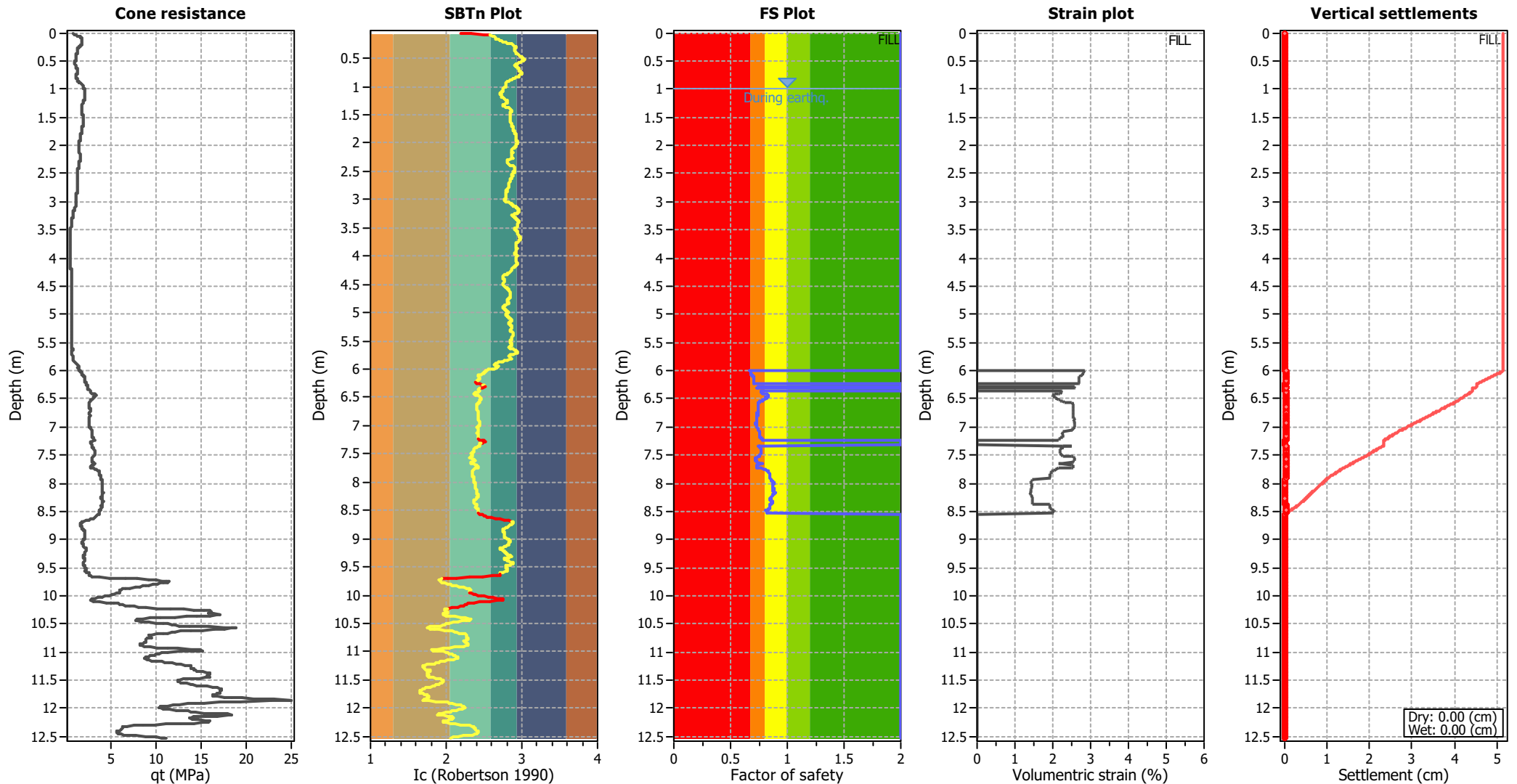
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1253
Total points excluded: 78
Exclusion percentage: 6.23%
Number of layers detected: 9

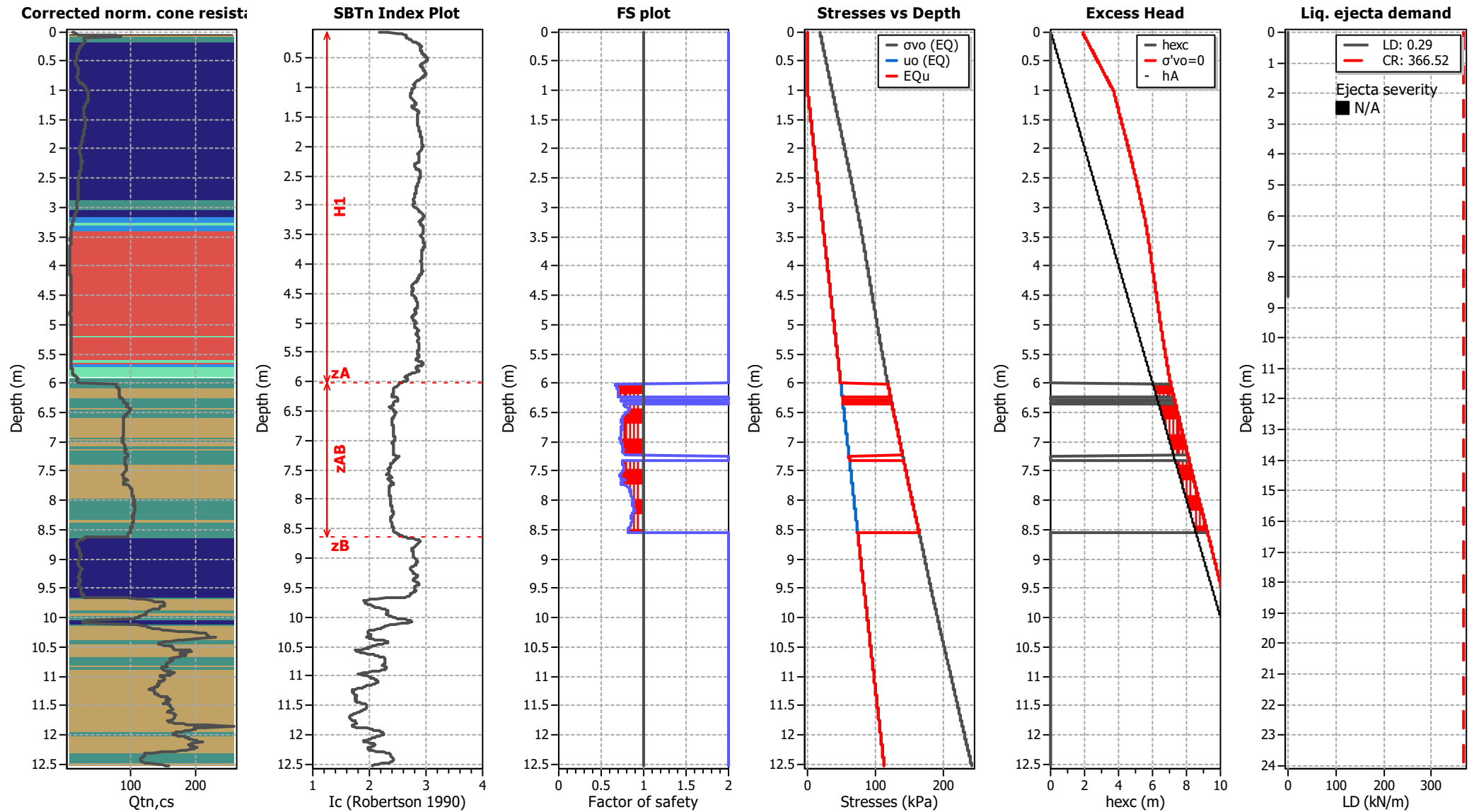
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

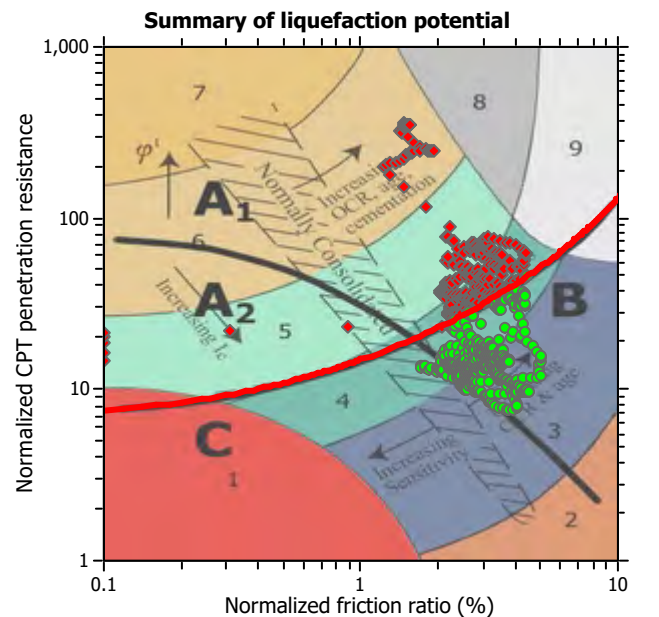
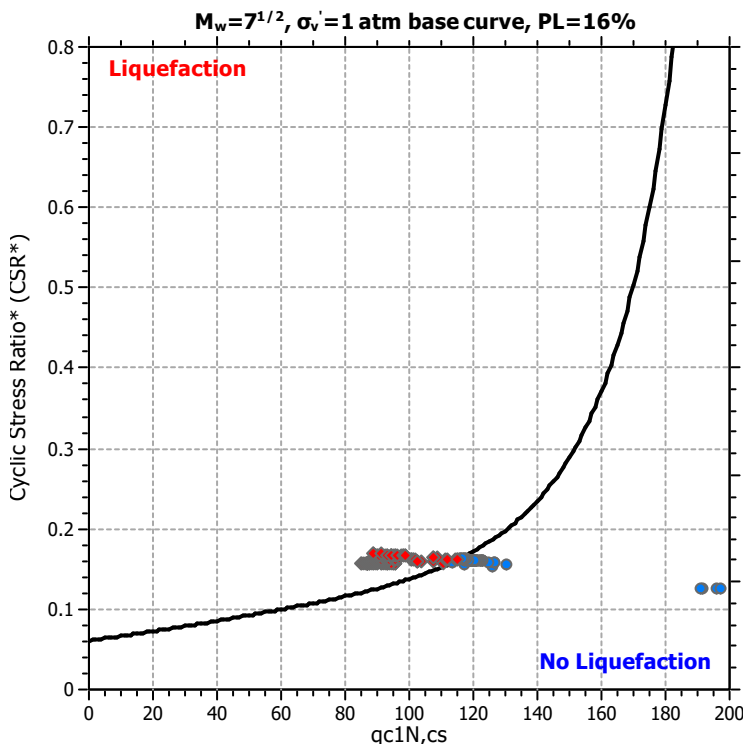
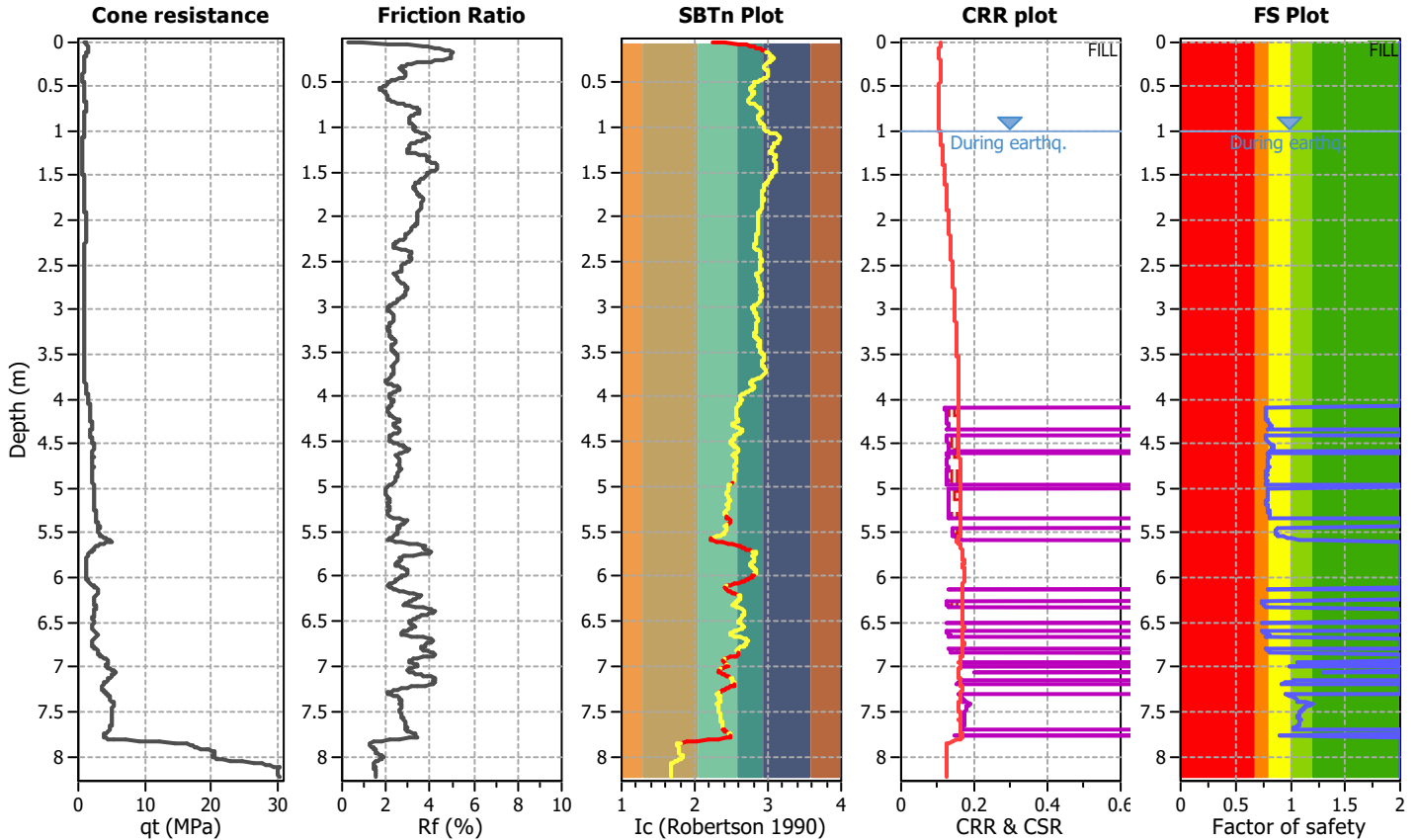
Project title : Sunfield Landholding

Location :

CPT file : CPT306

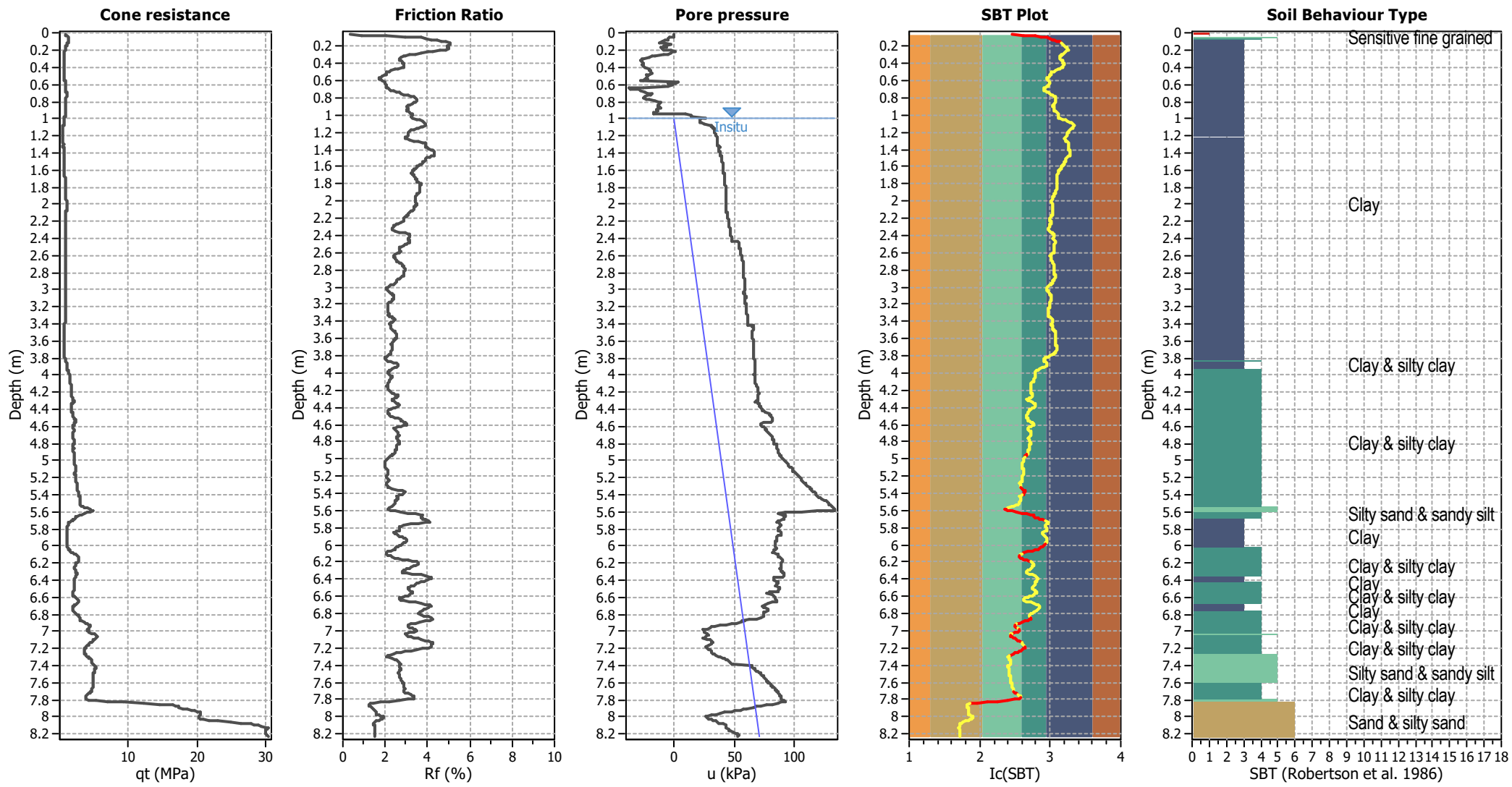
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

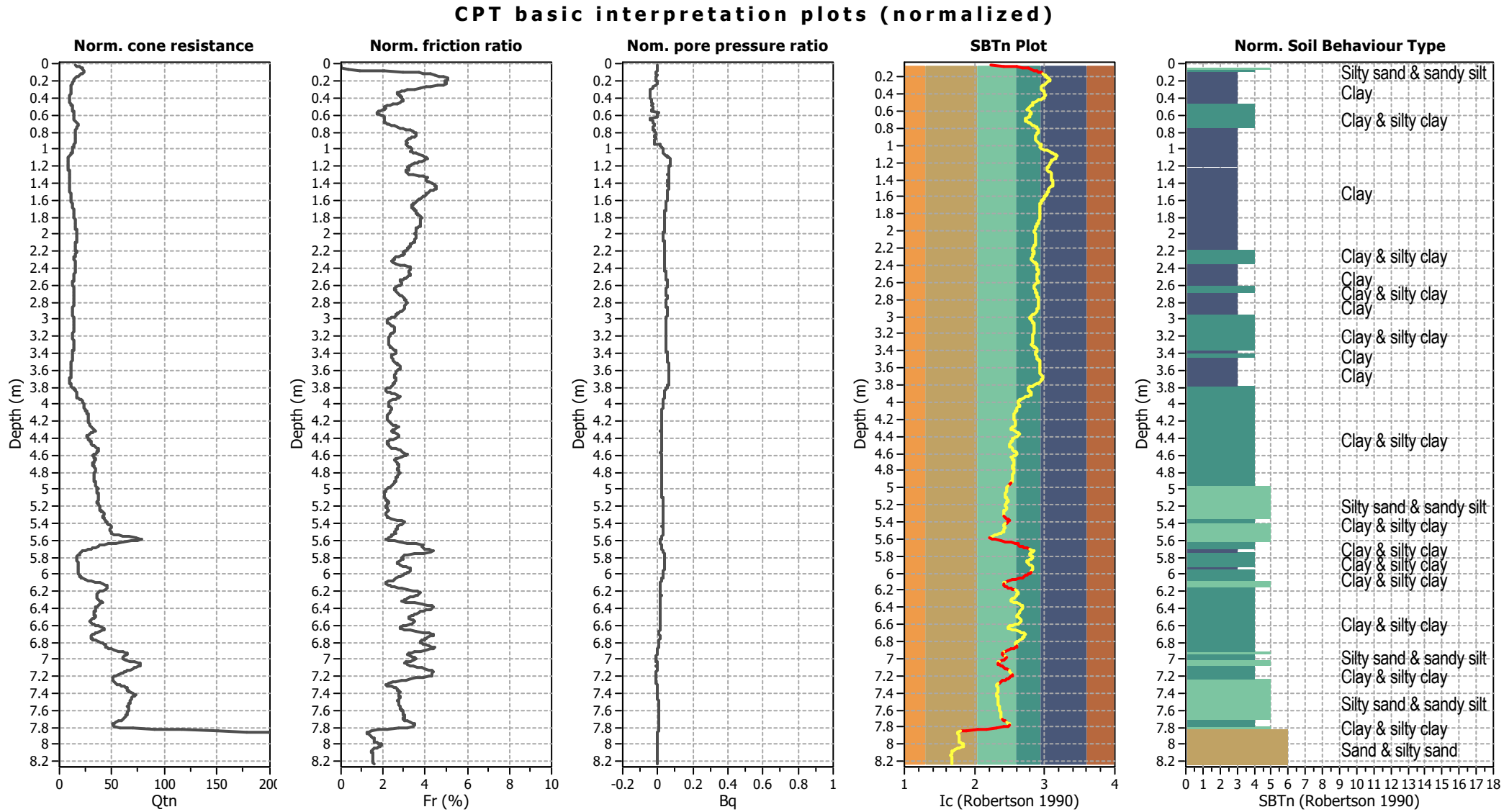


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

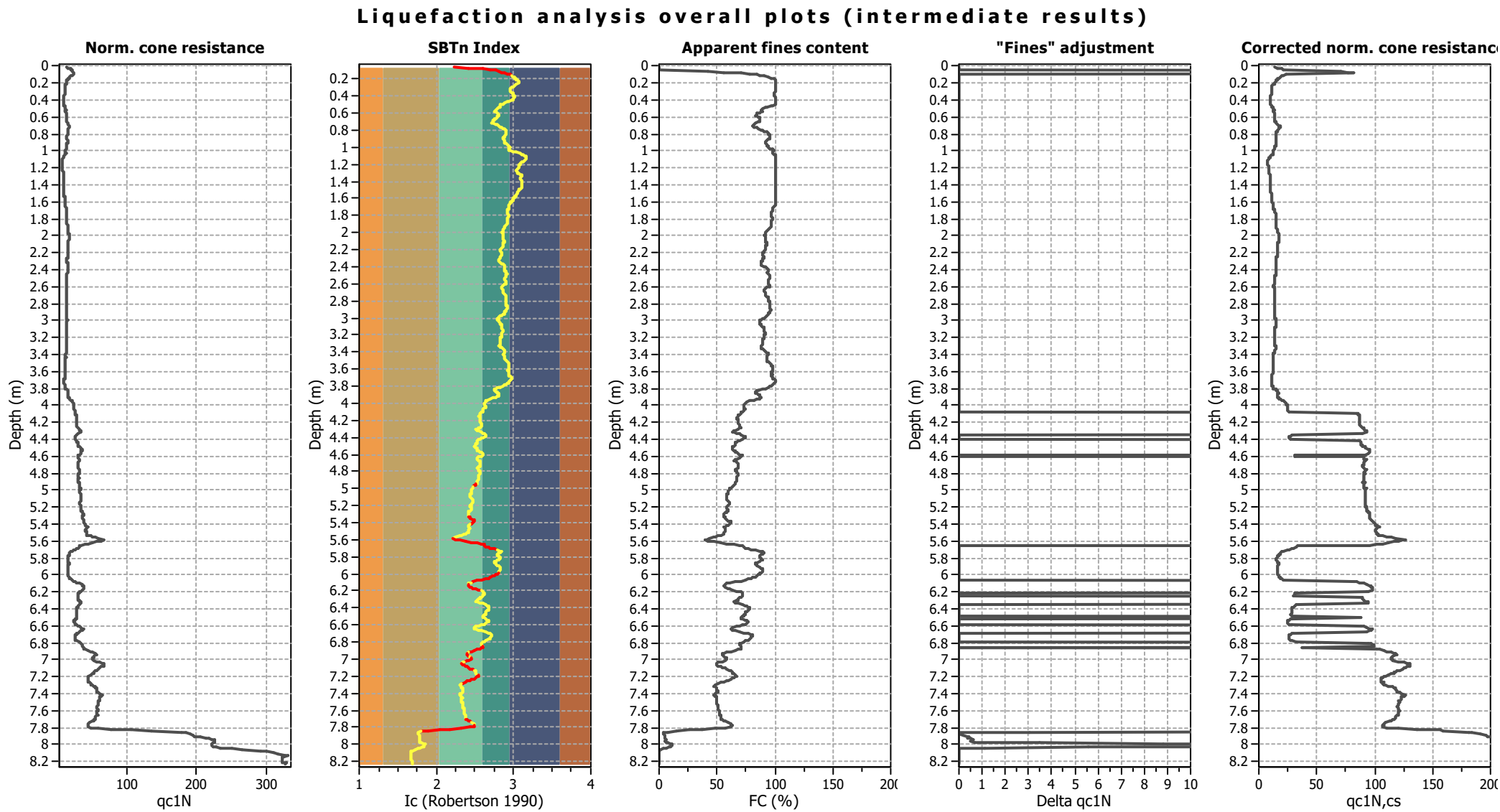


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

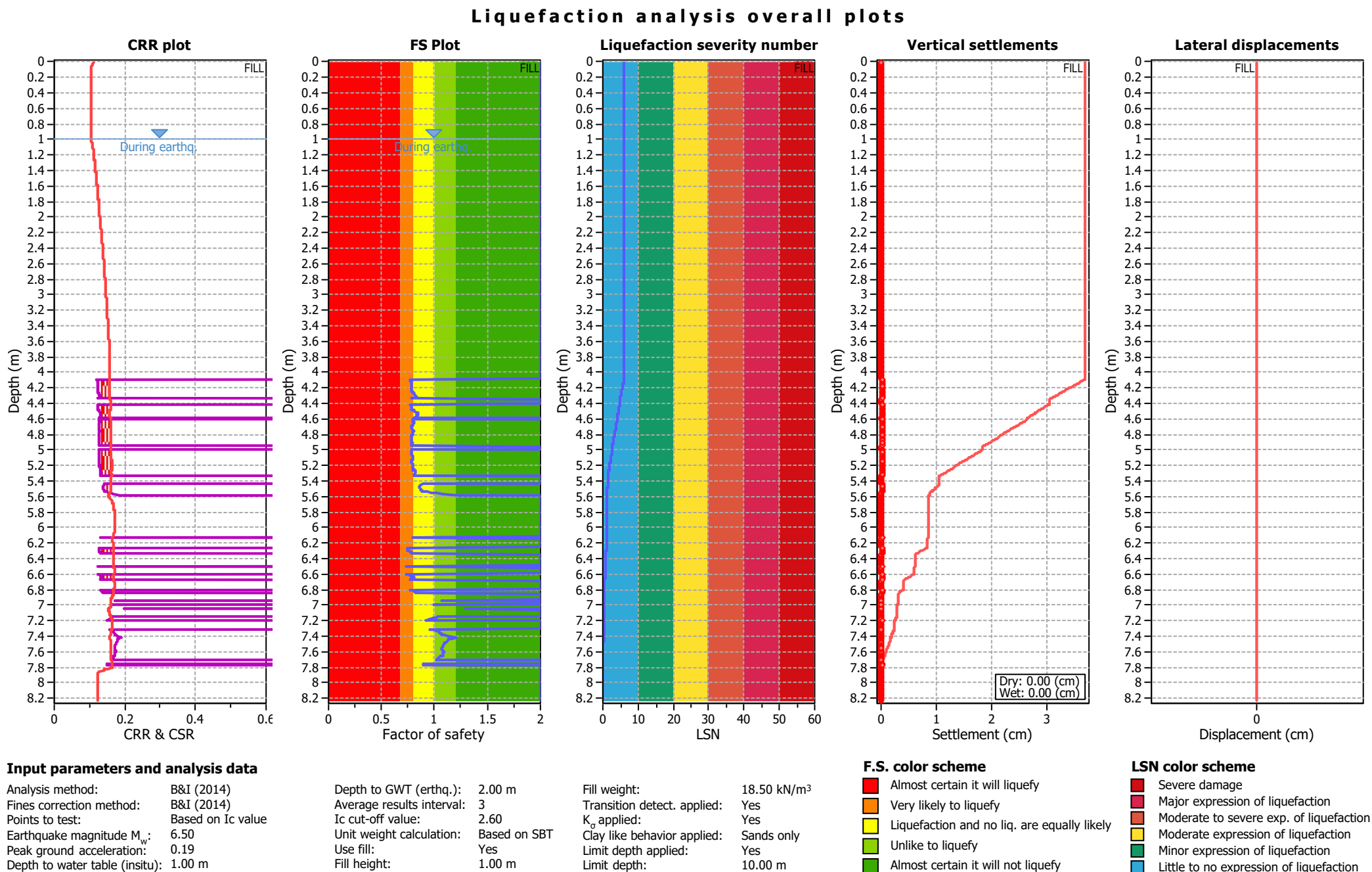
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

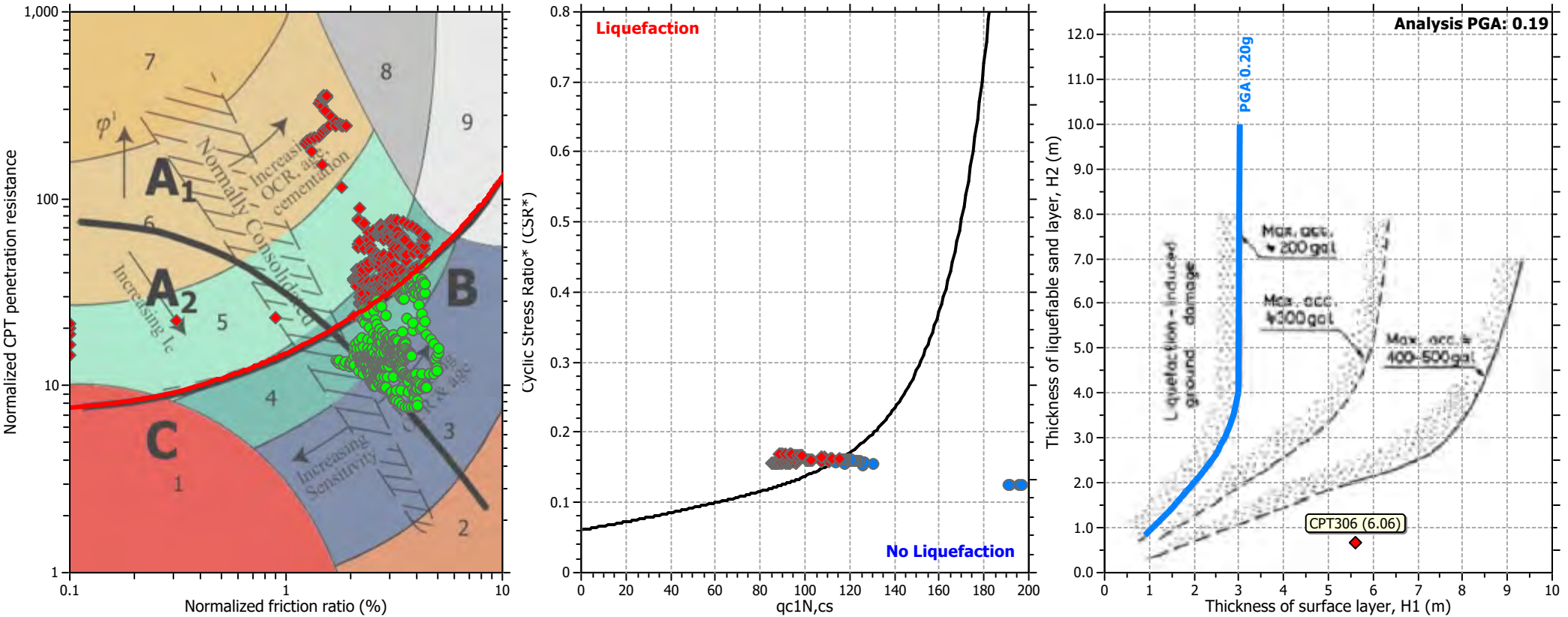


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

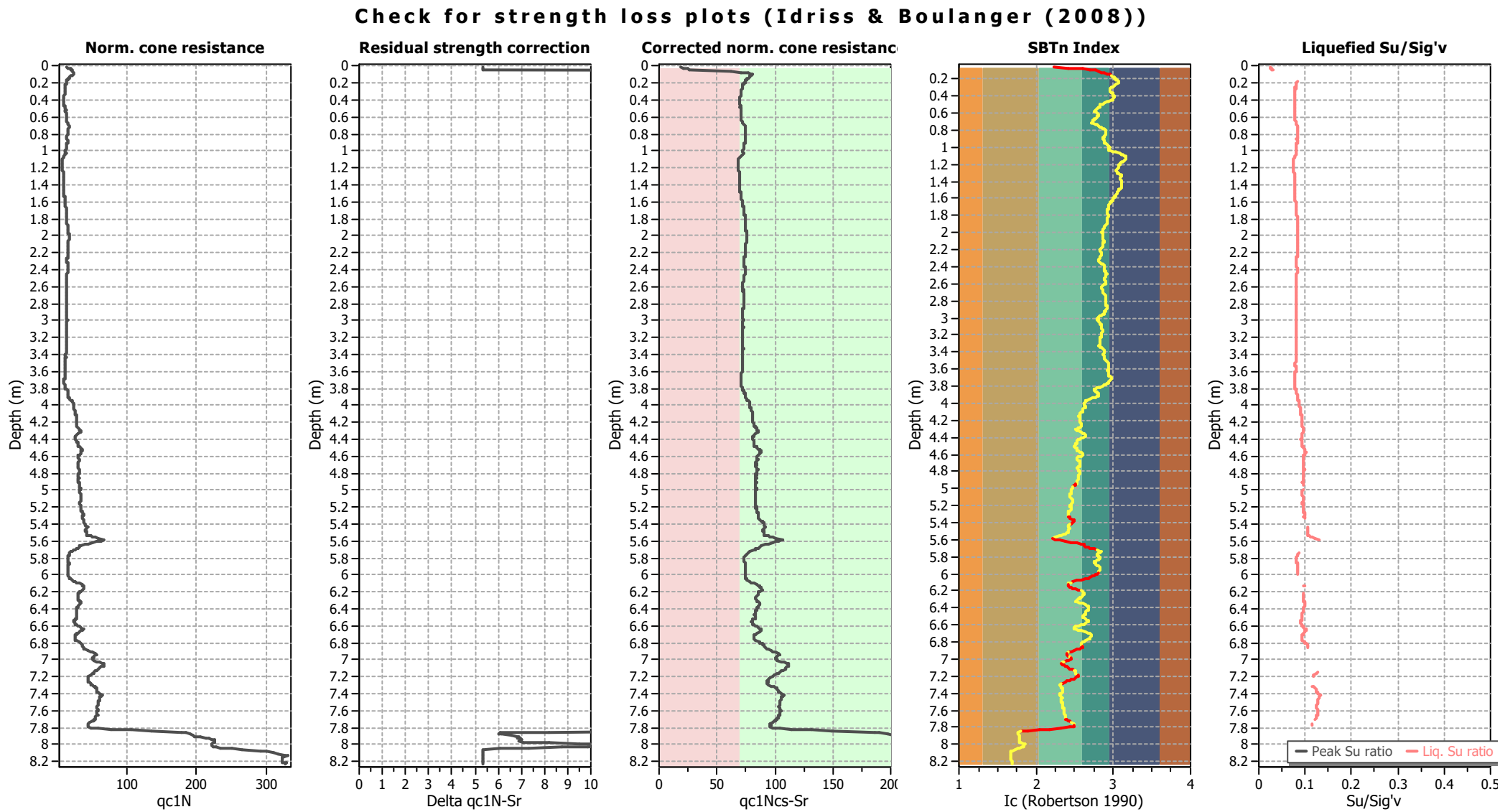


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

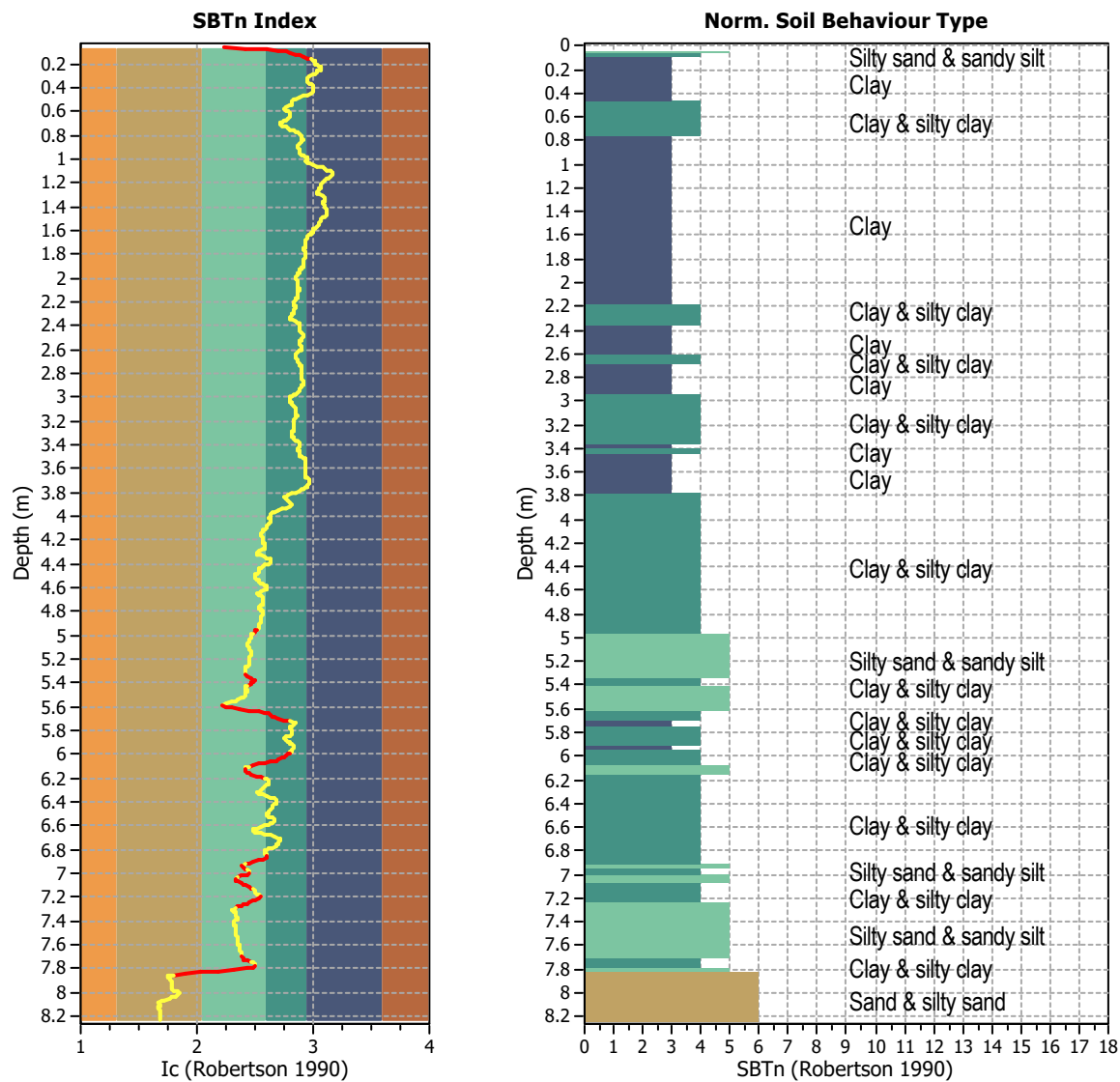
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



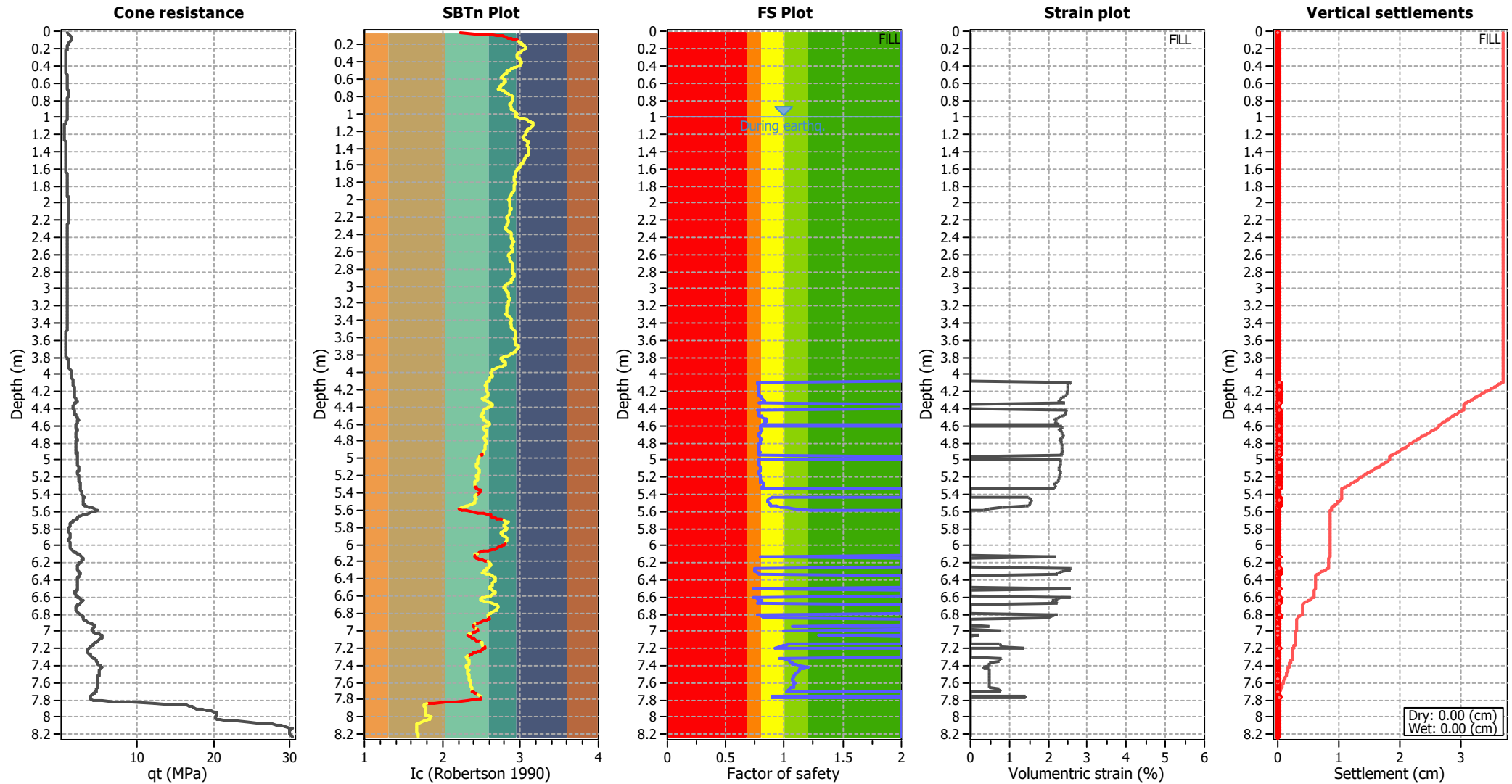
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 823
Total points excluded: 113
Exclusion percentage: 13.73%
Number of layers detected: 14

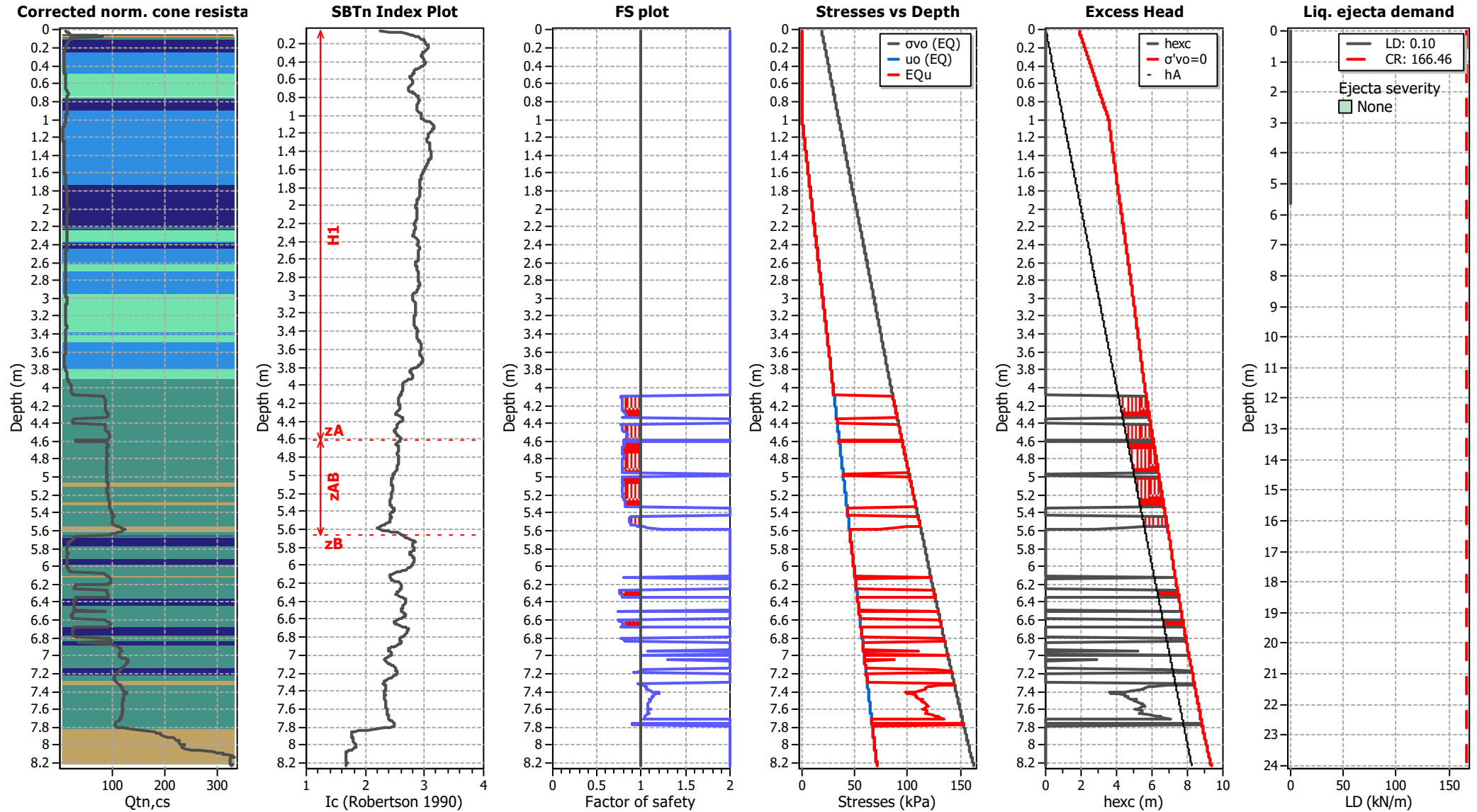
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

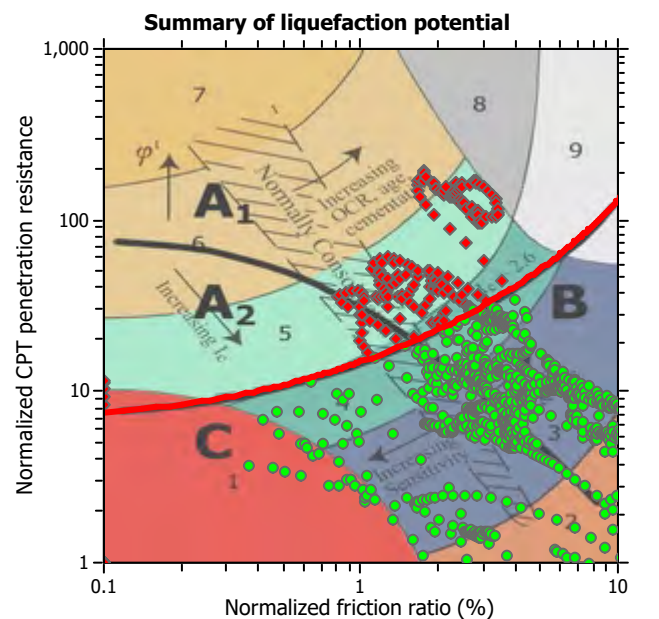
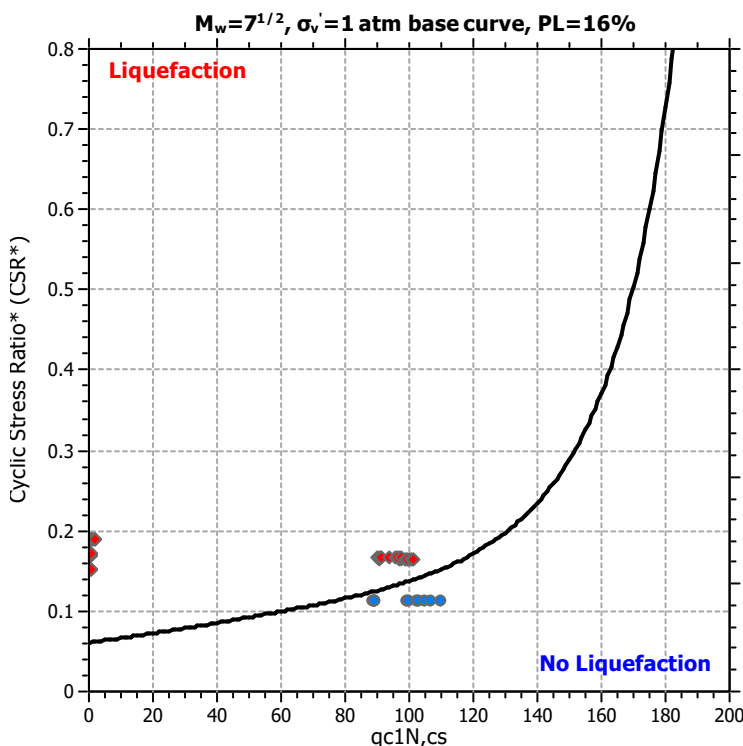
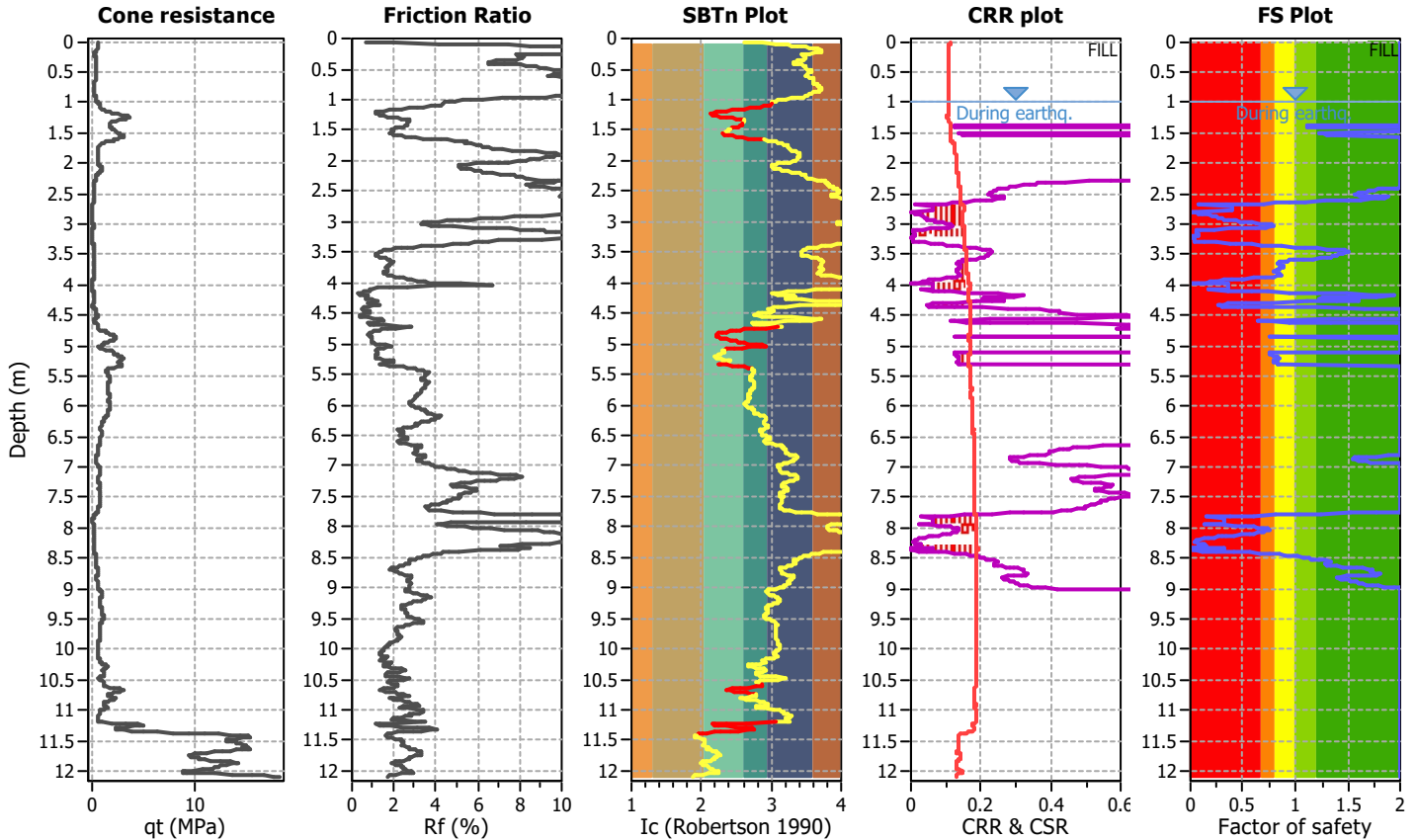
Project title : Sunfield Landholding

Location :

CPT file : CPT307

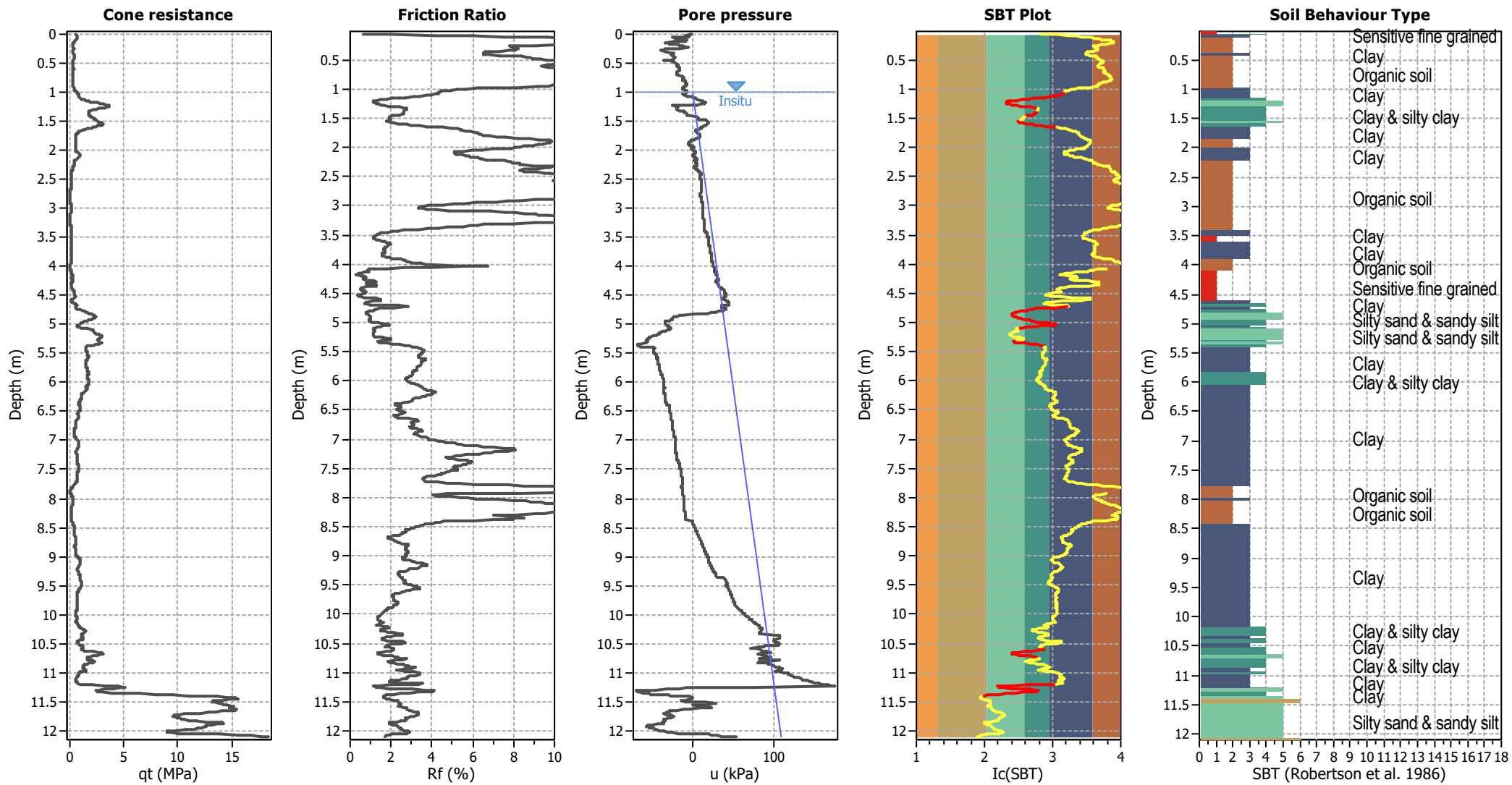
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



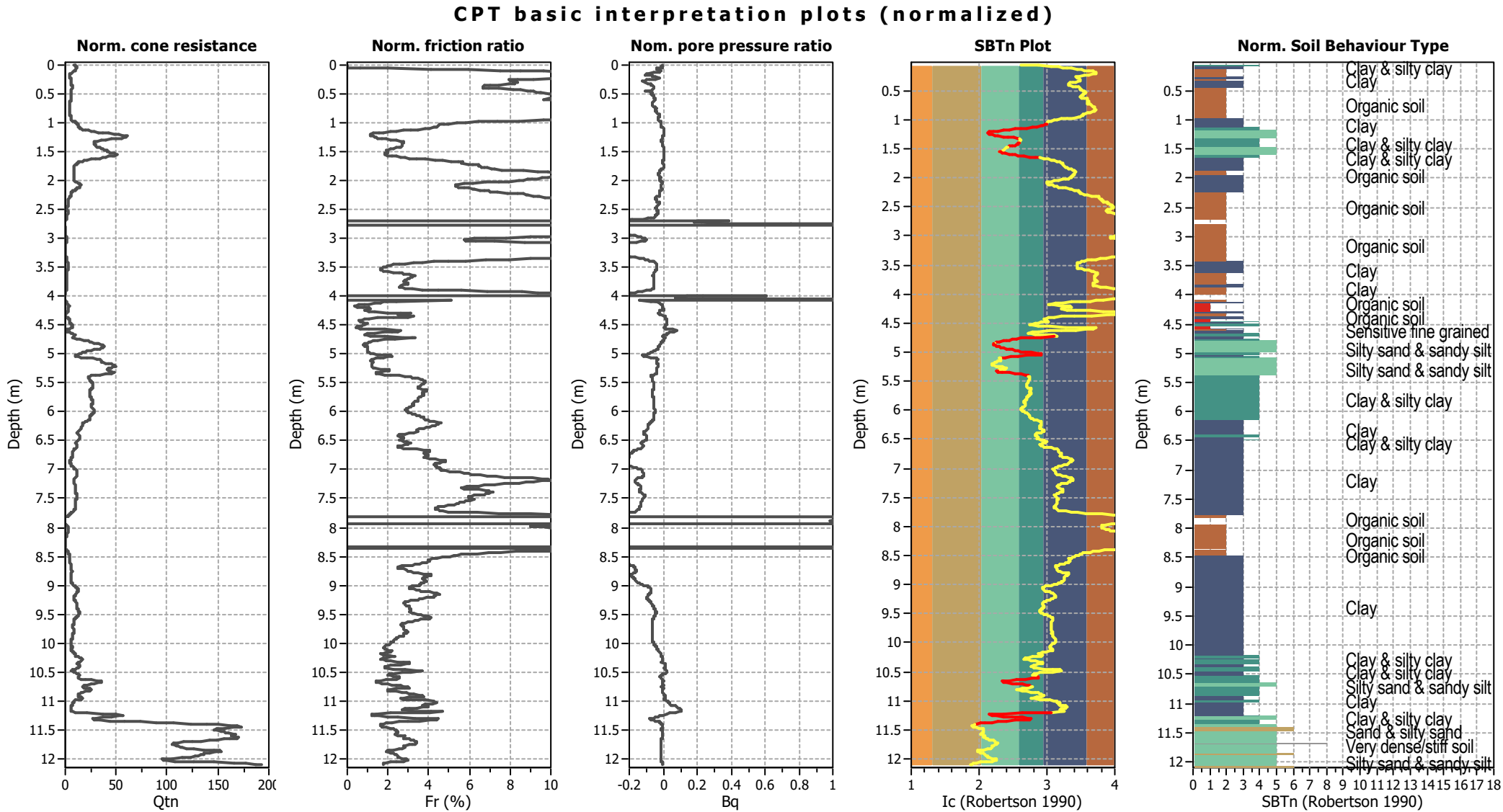
Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³	SBT legend 1. Sensitive fine grained 2. Organic material 3. Clay to silty clay 4. Clayey silt to silty 5. Silty sand to sandy silt 6. Clean sand to silty sand 7. Gravely sand to sand 8. Very stiff sand to 9. Very stiff fine grained
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes	
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes	
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay	
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes	
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m	

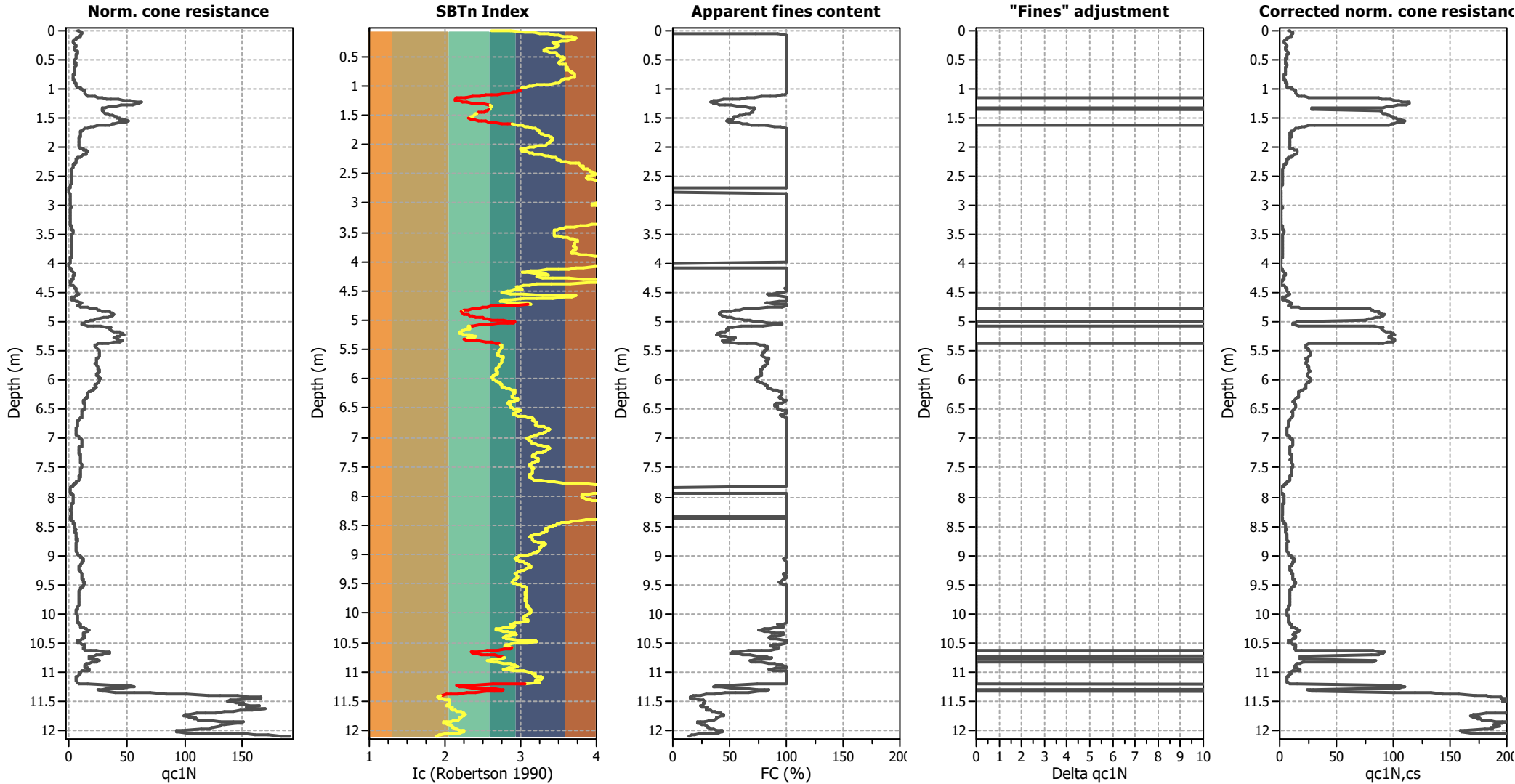


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

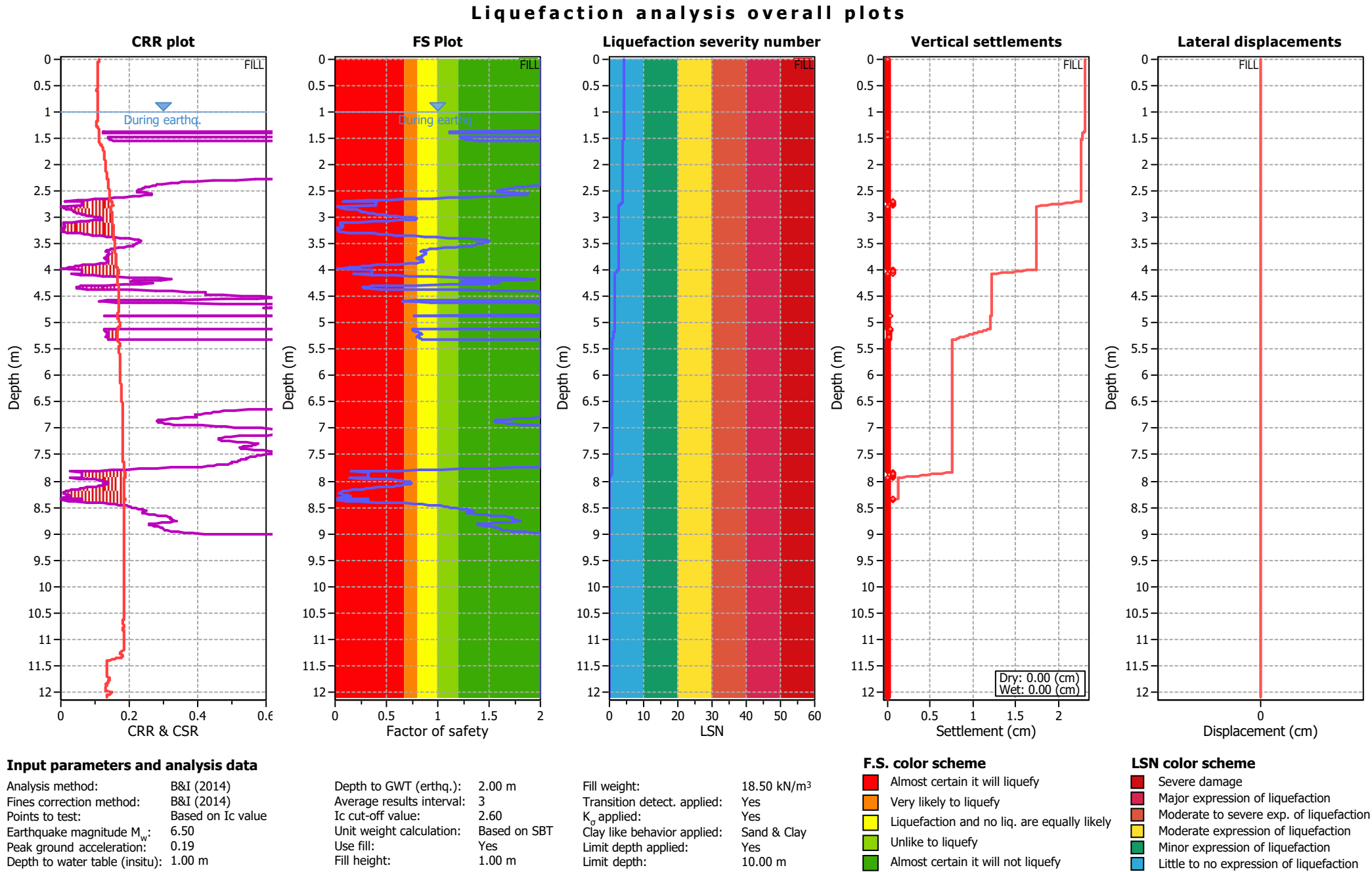
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

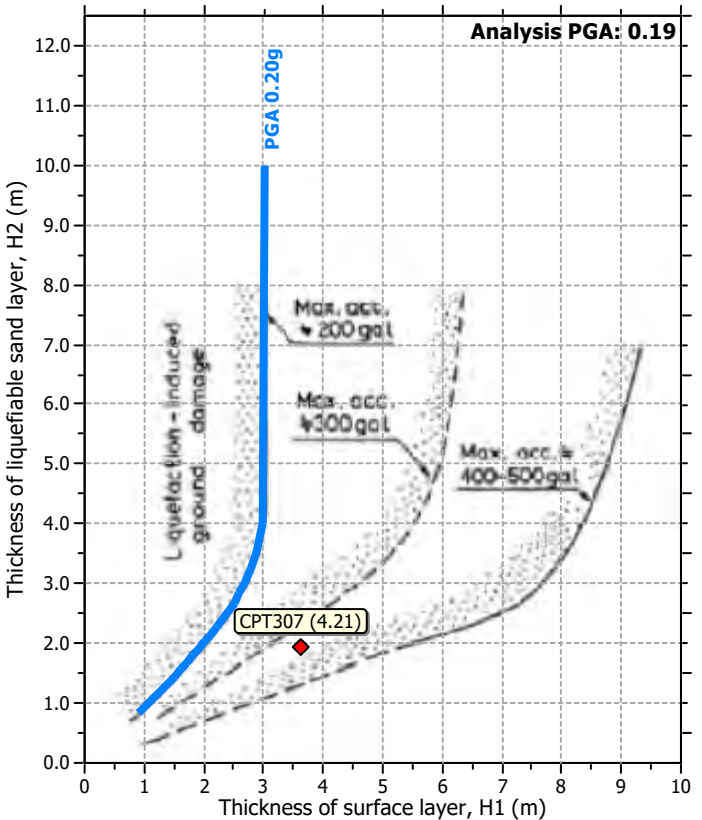
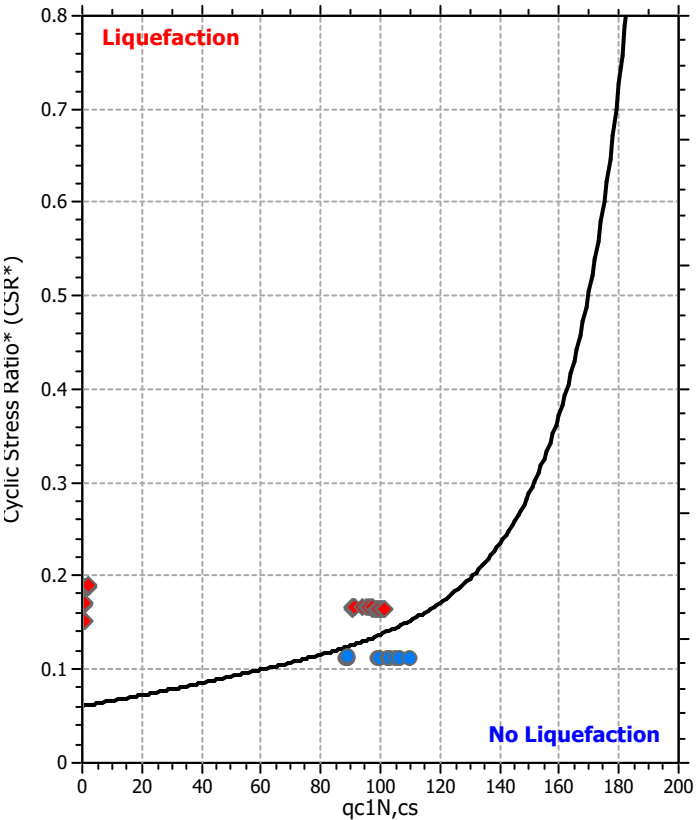
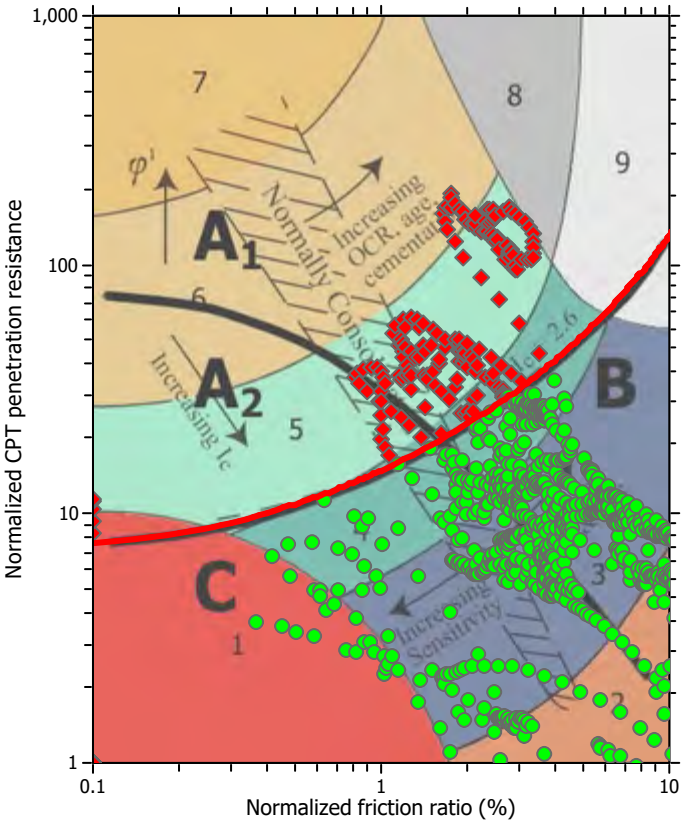


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



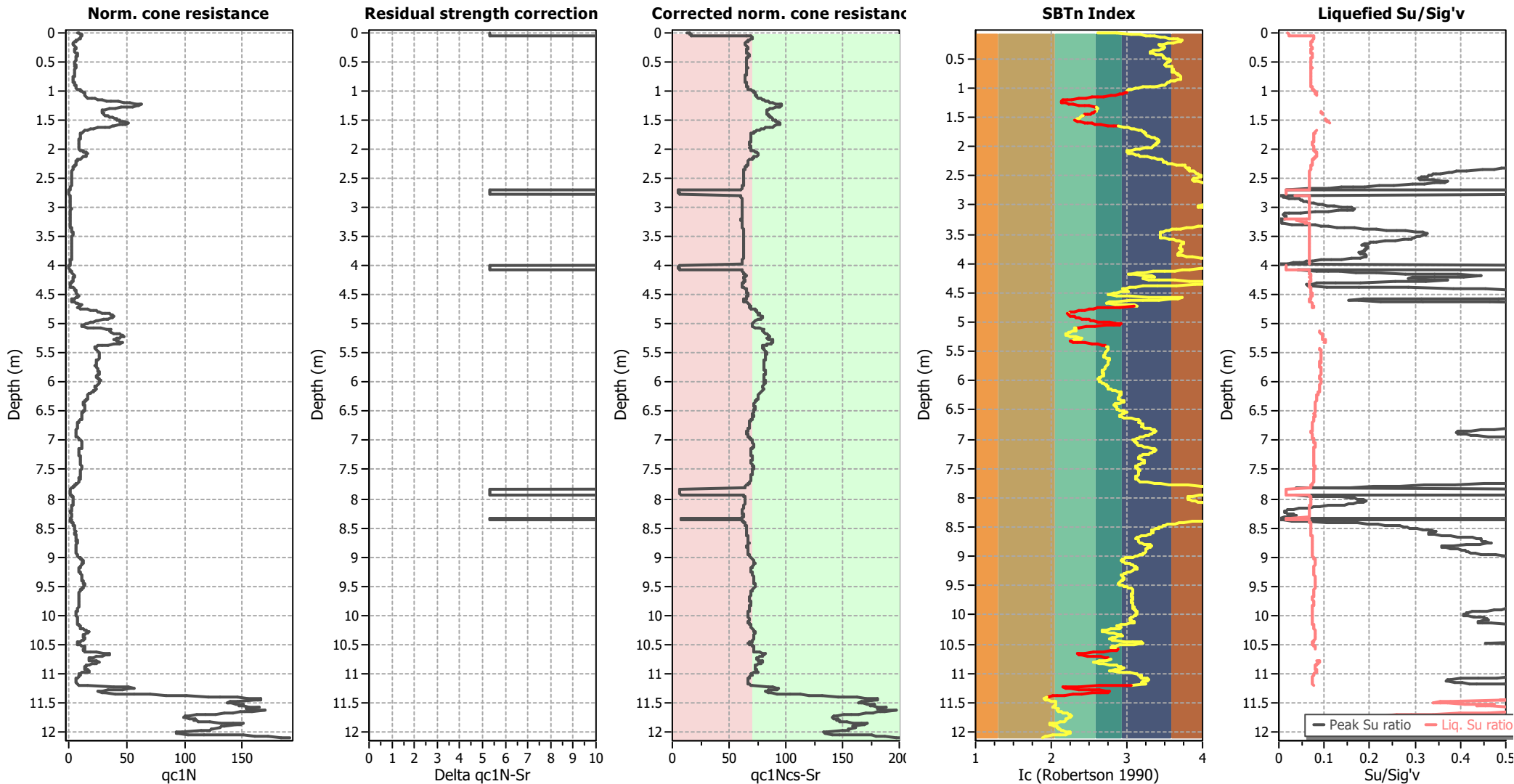
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

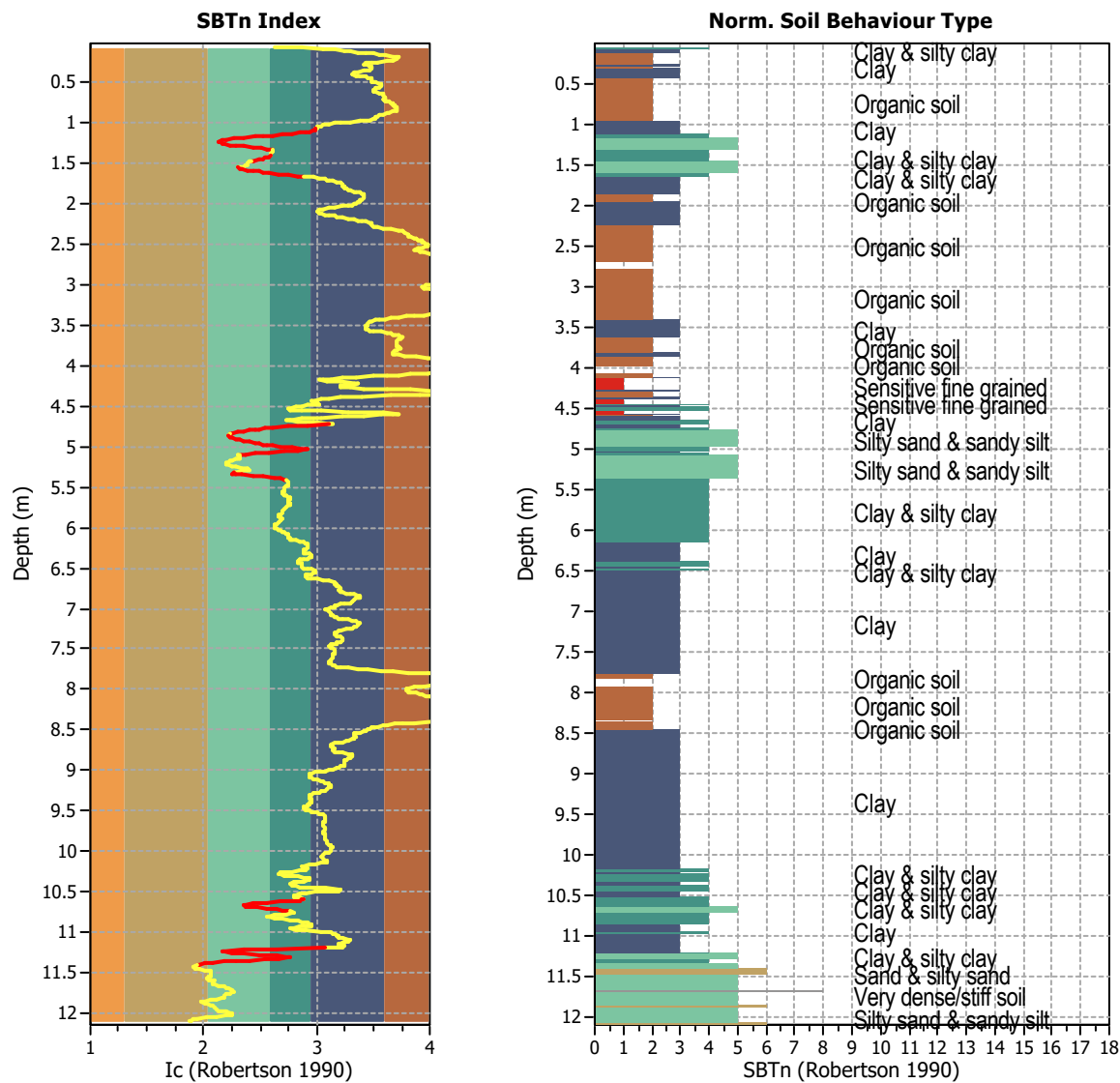
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

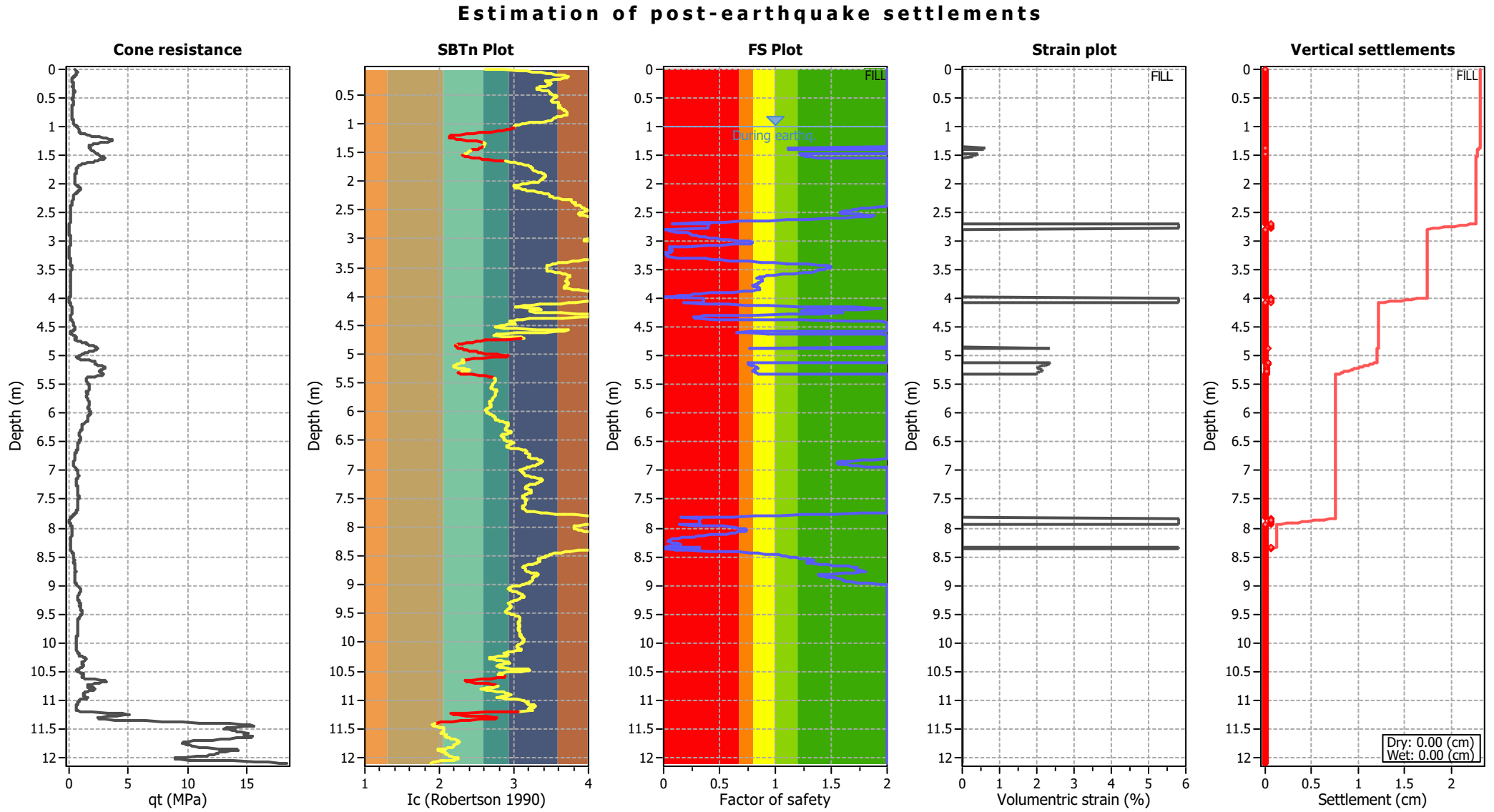


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

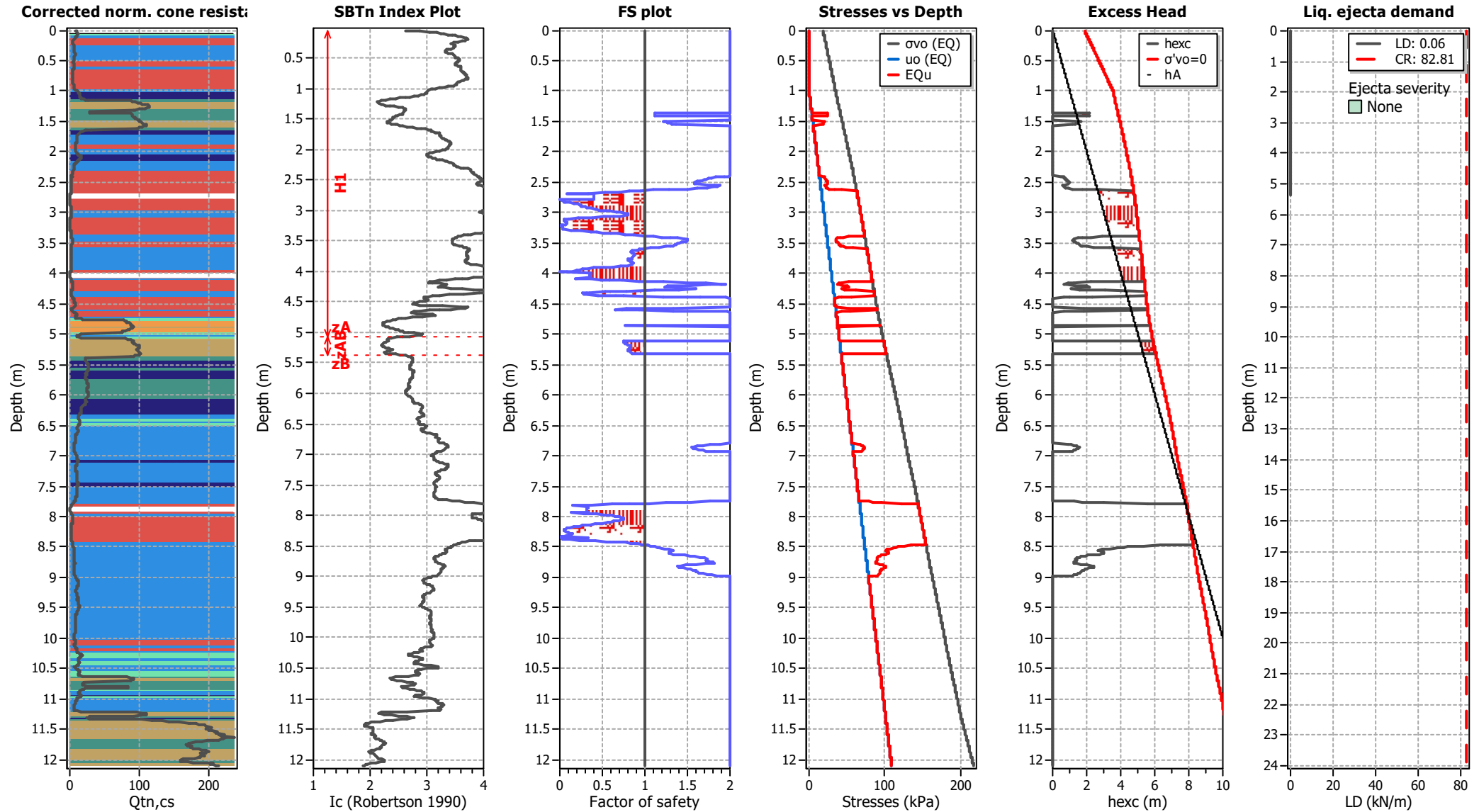
Total points in CPT file: 1210
Total points excluded: 137
Exclusion percentage: 11.32%
Number of layers detected: 13



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

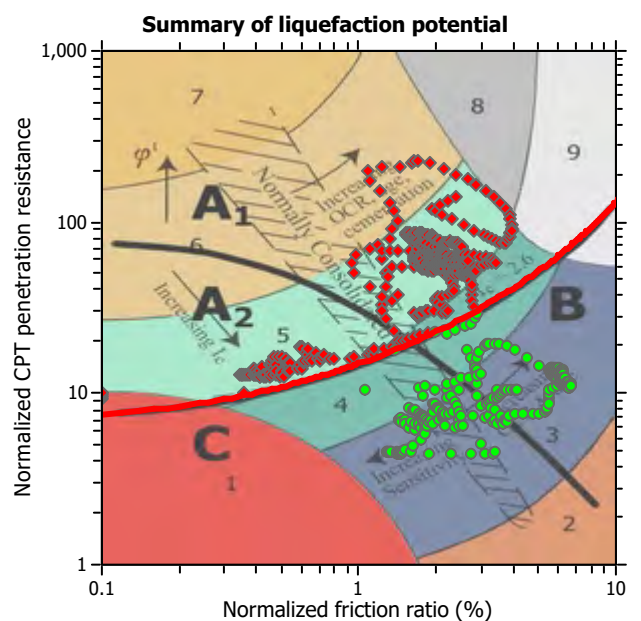
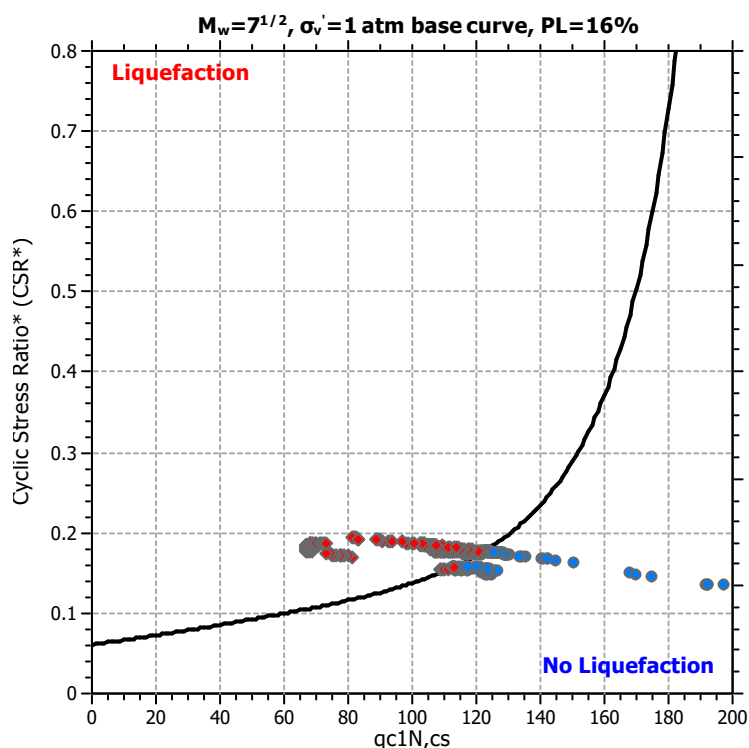
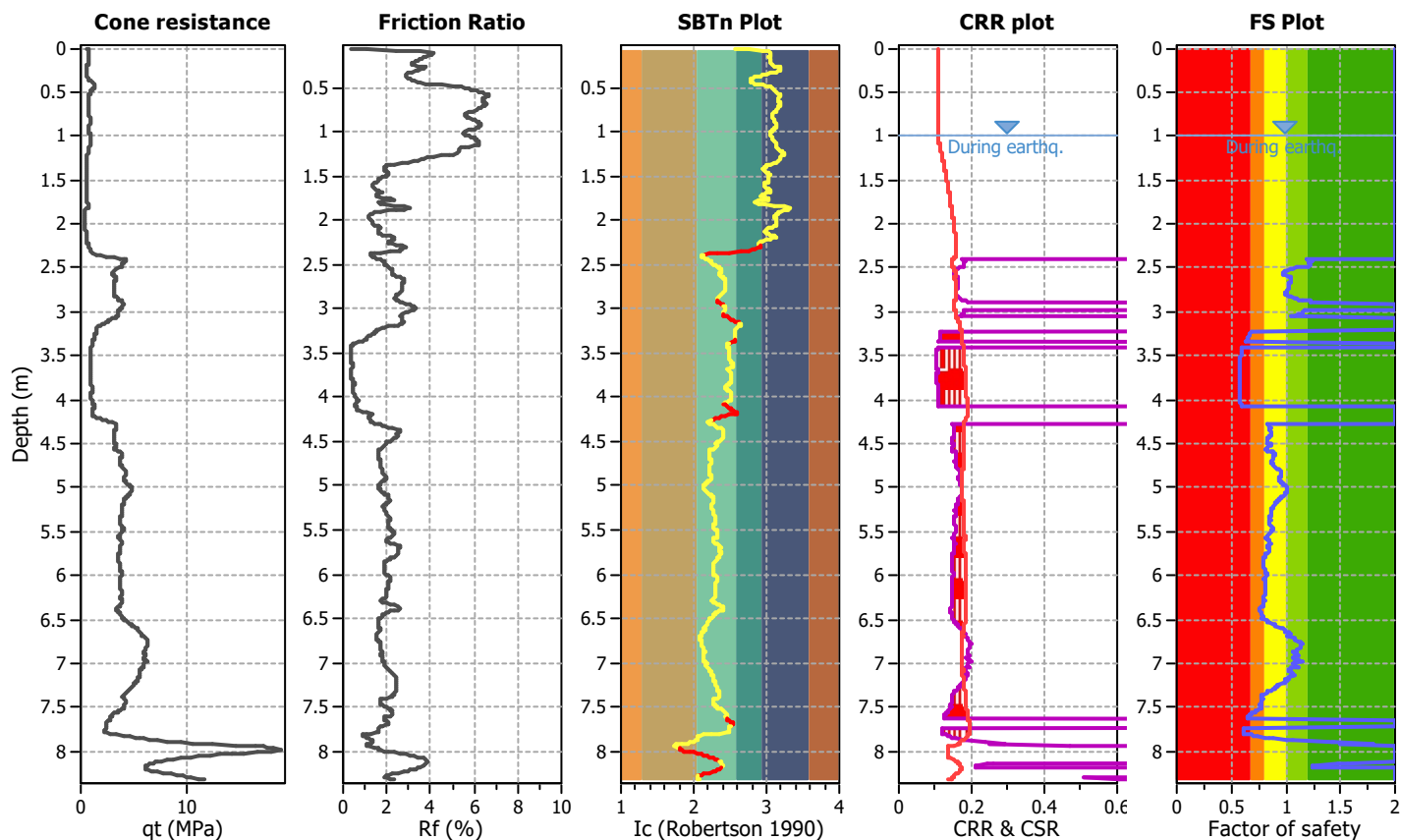
Project title : Sunfield Landholding

Location :

CPT file : CPT308

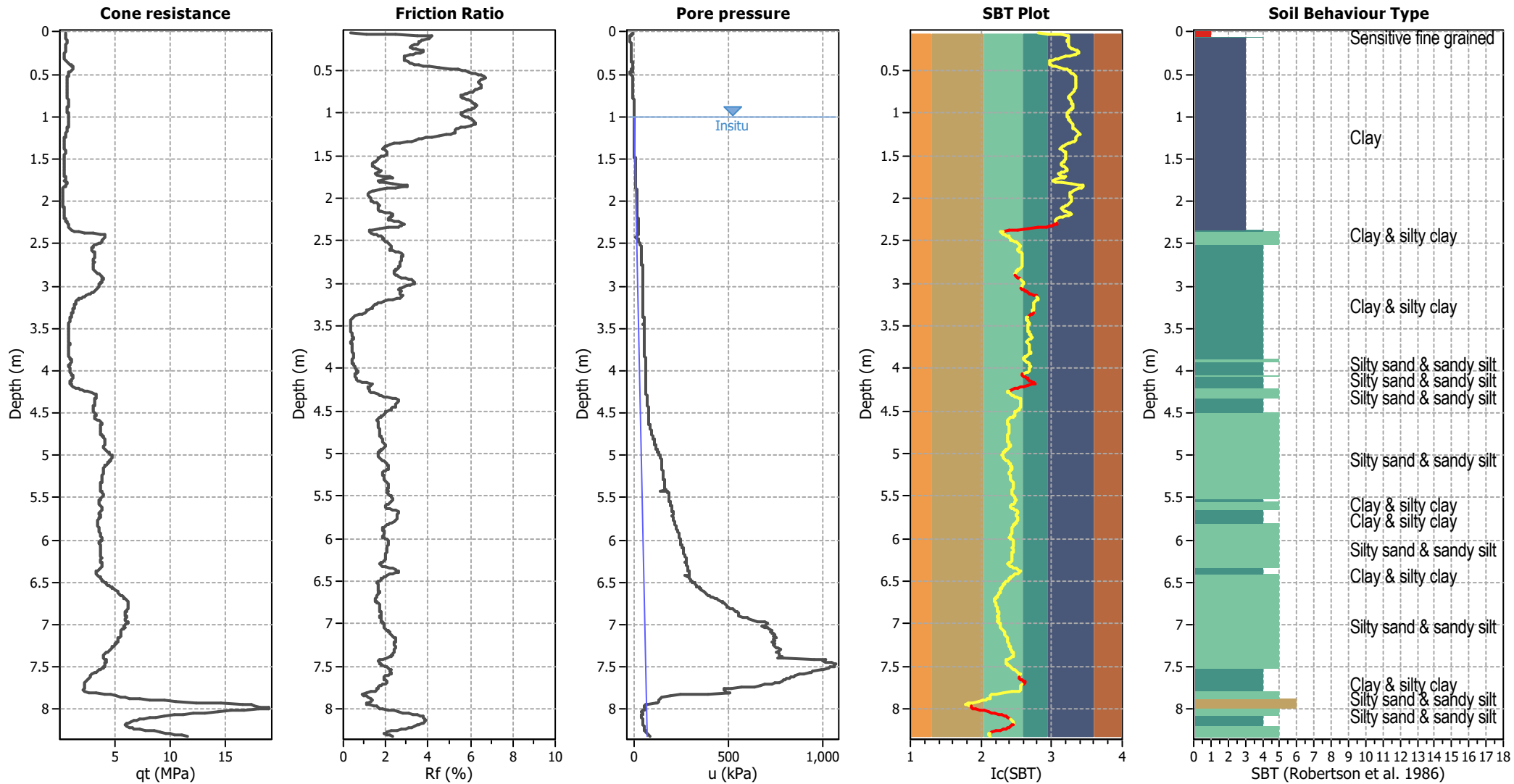
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

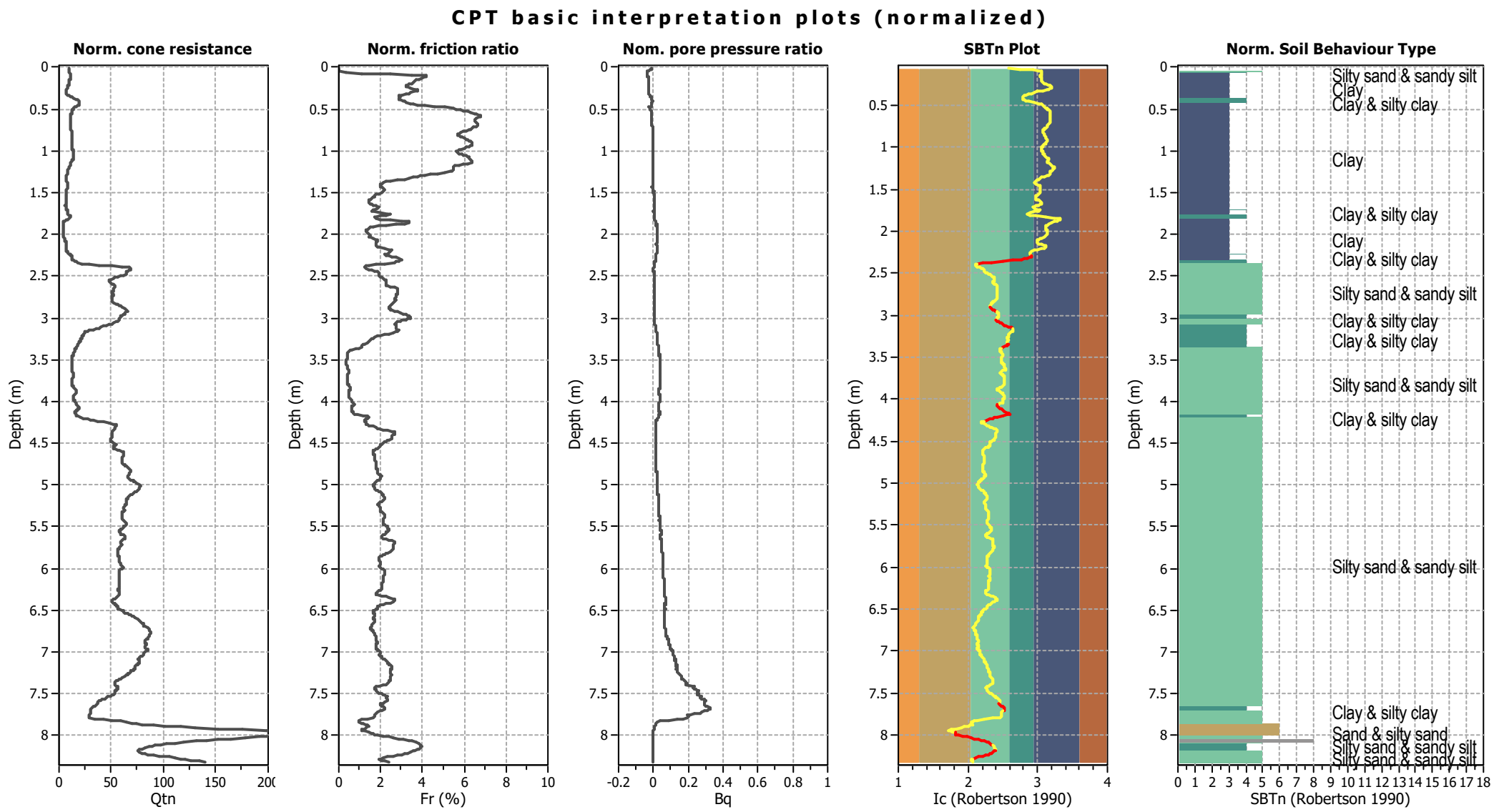


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

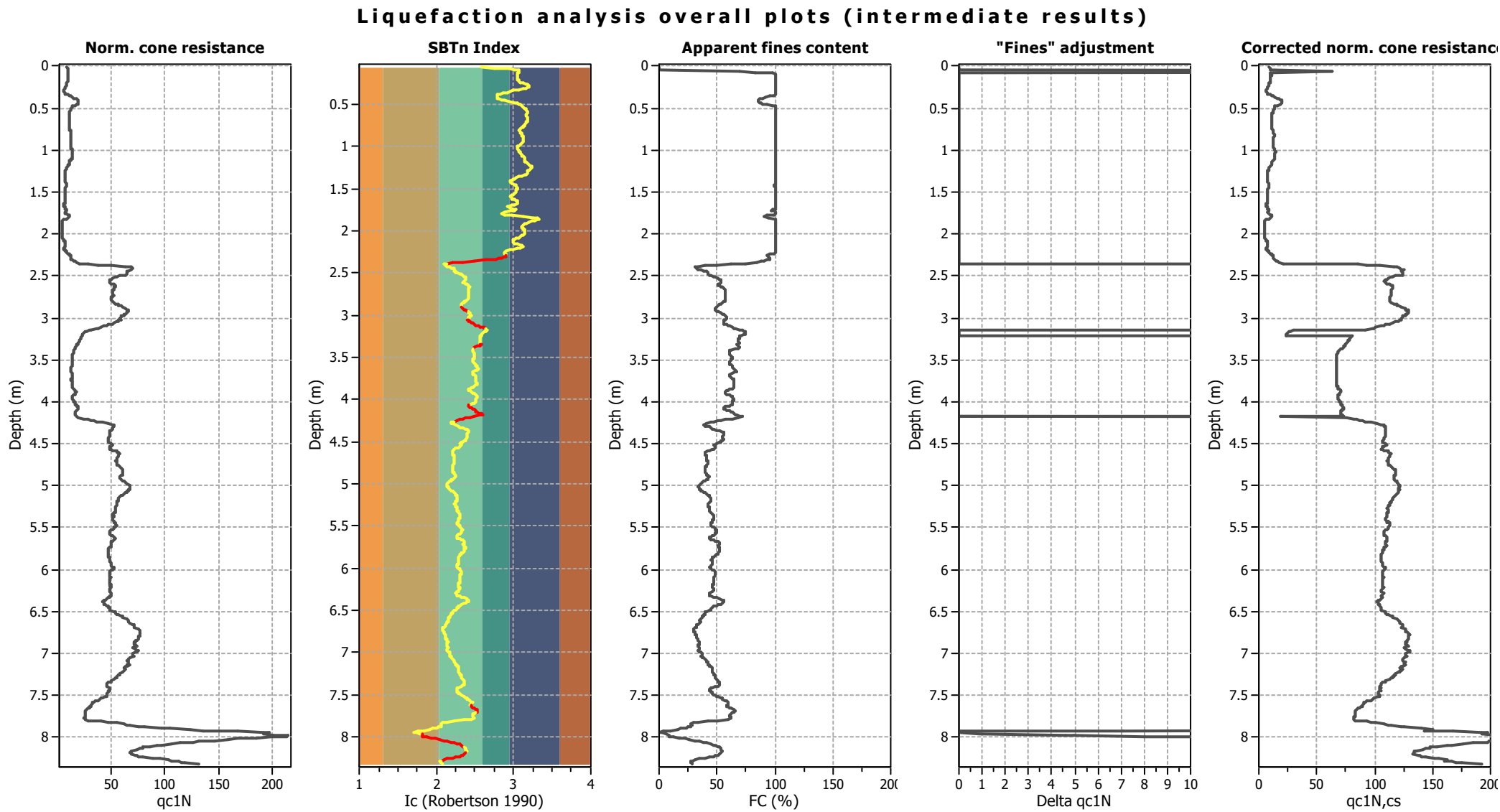
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



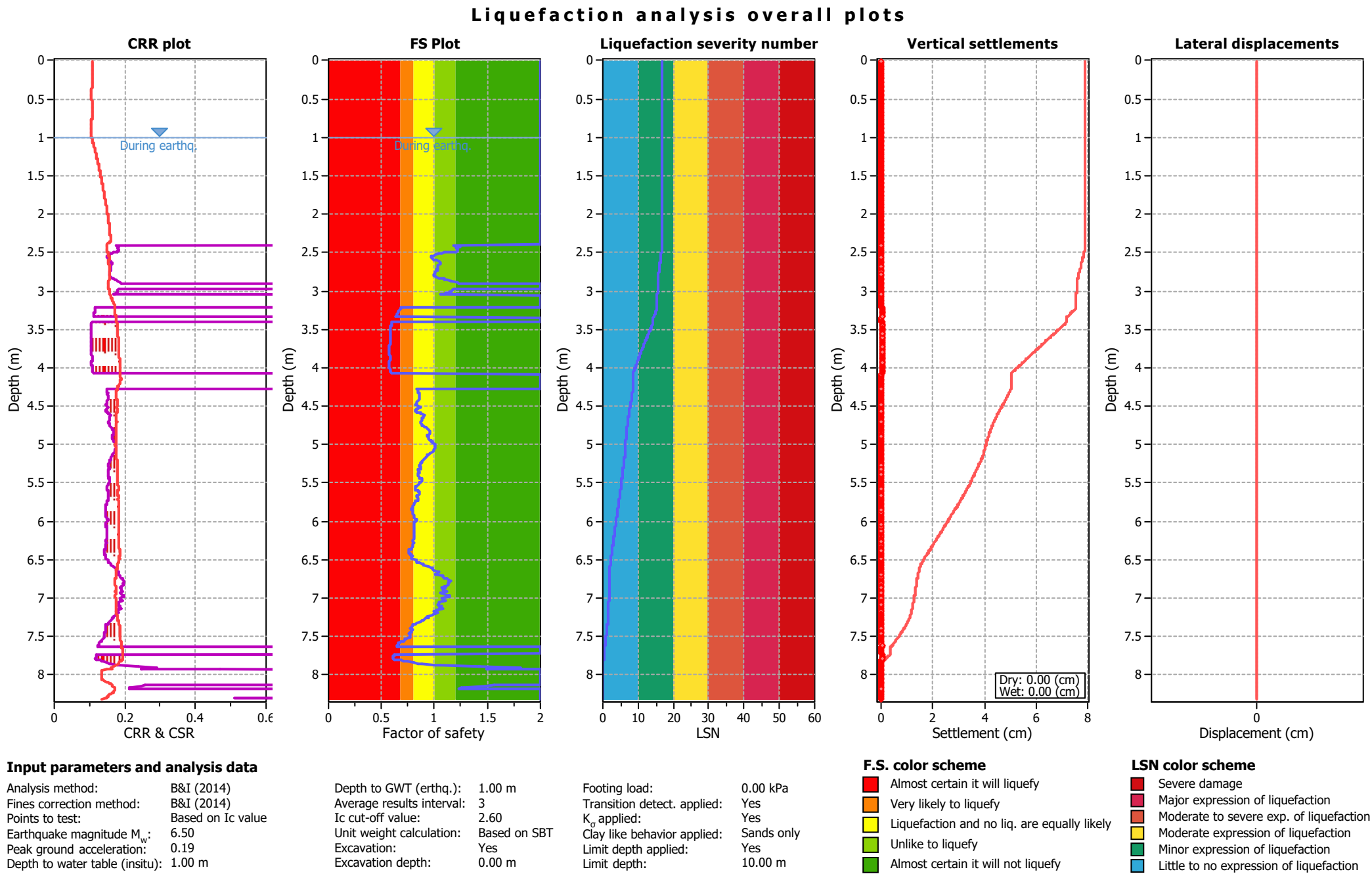
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

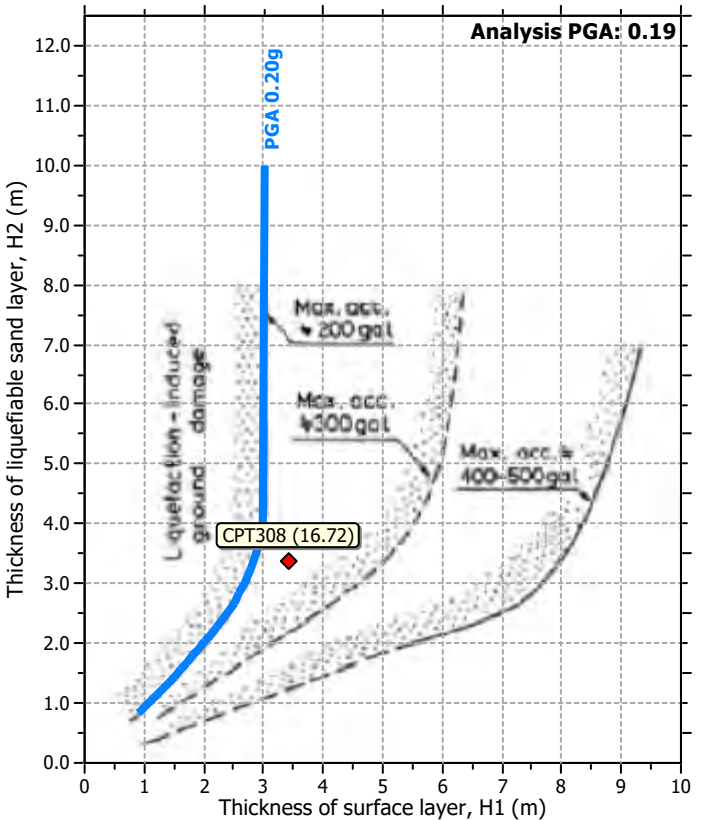
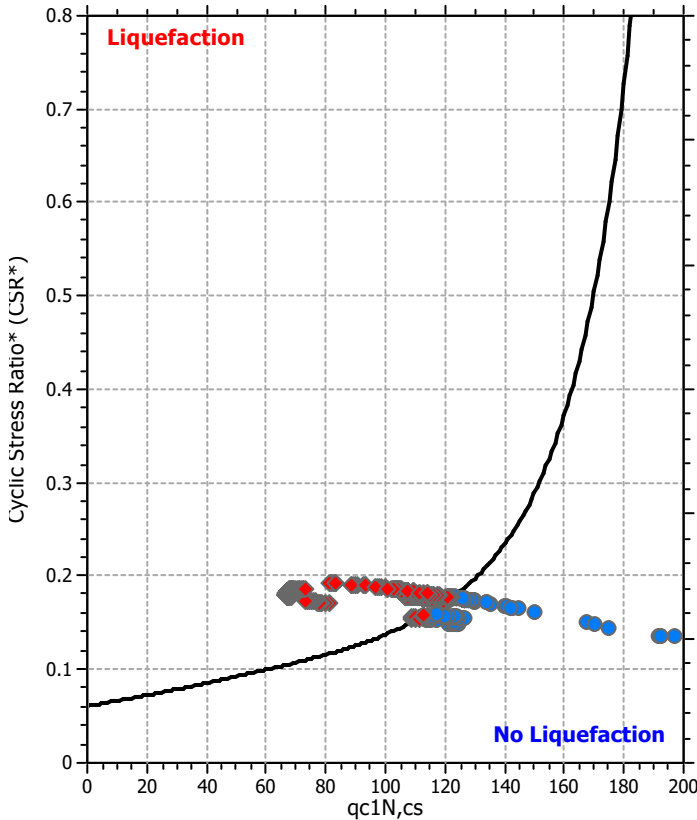
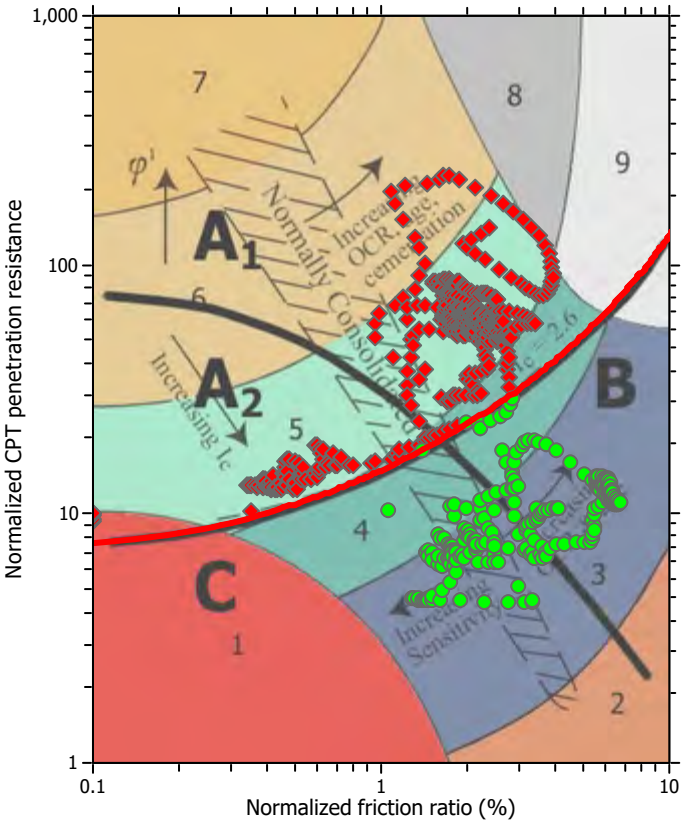


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_s applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

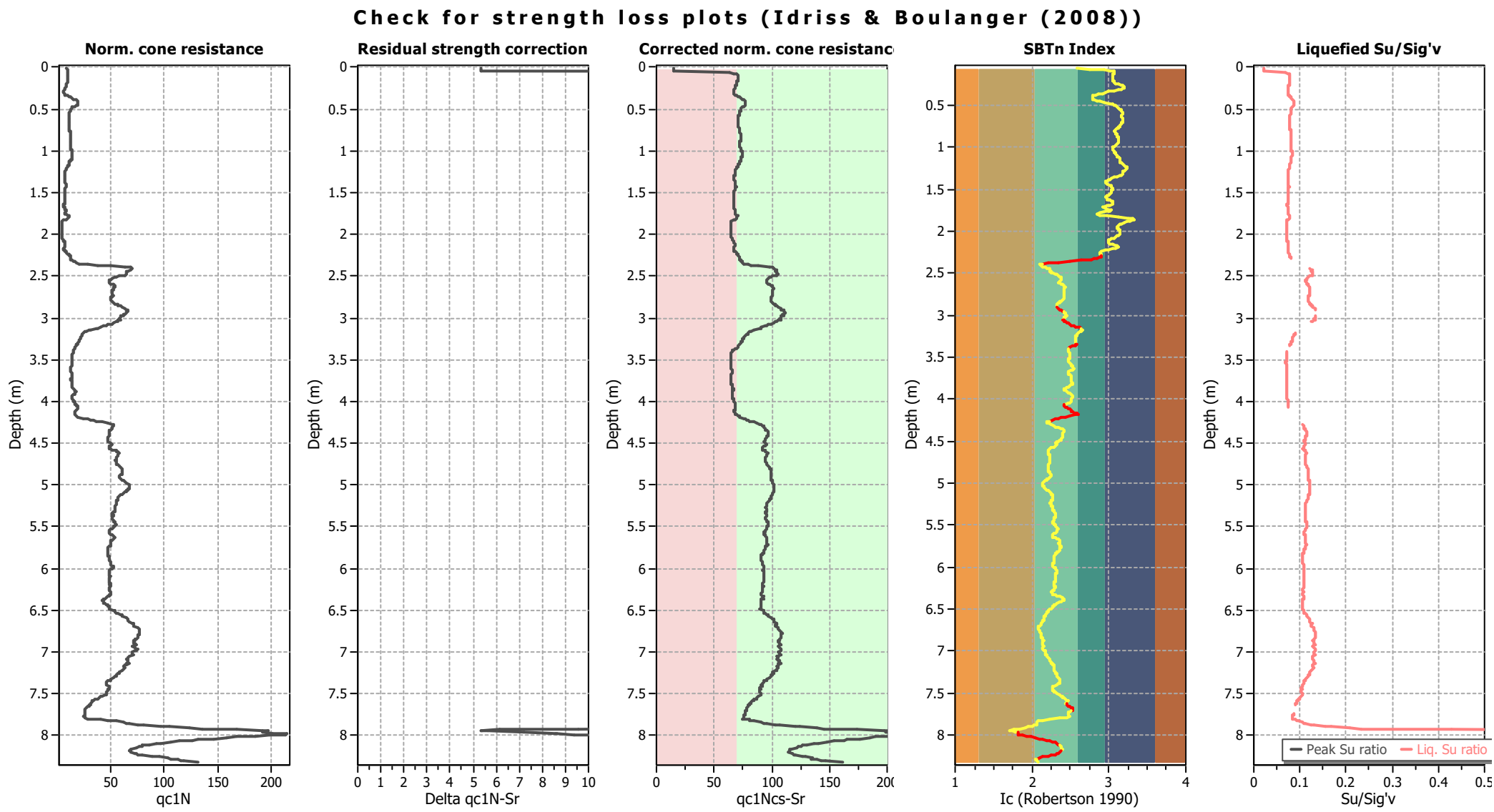


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

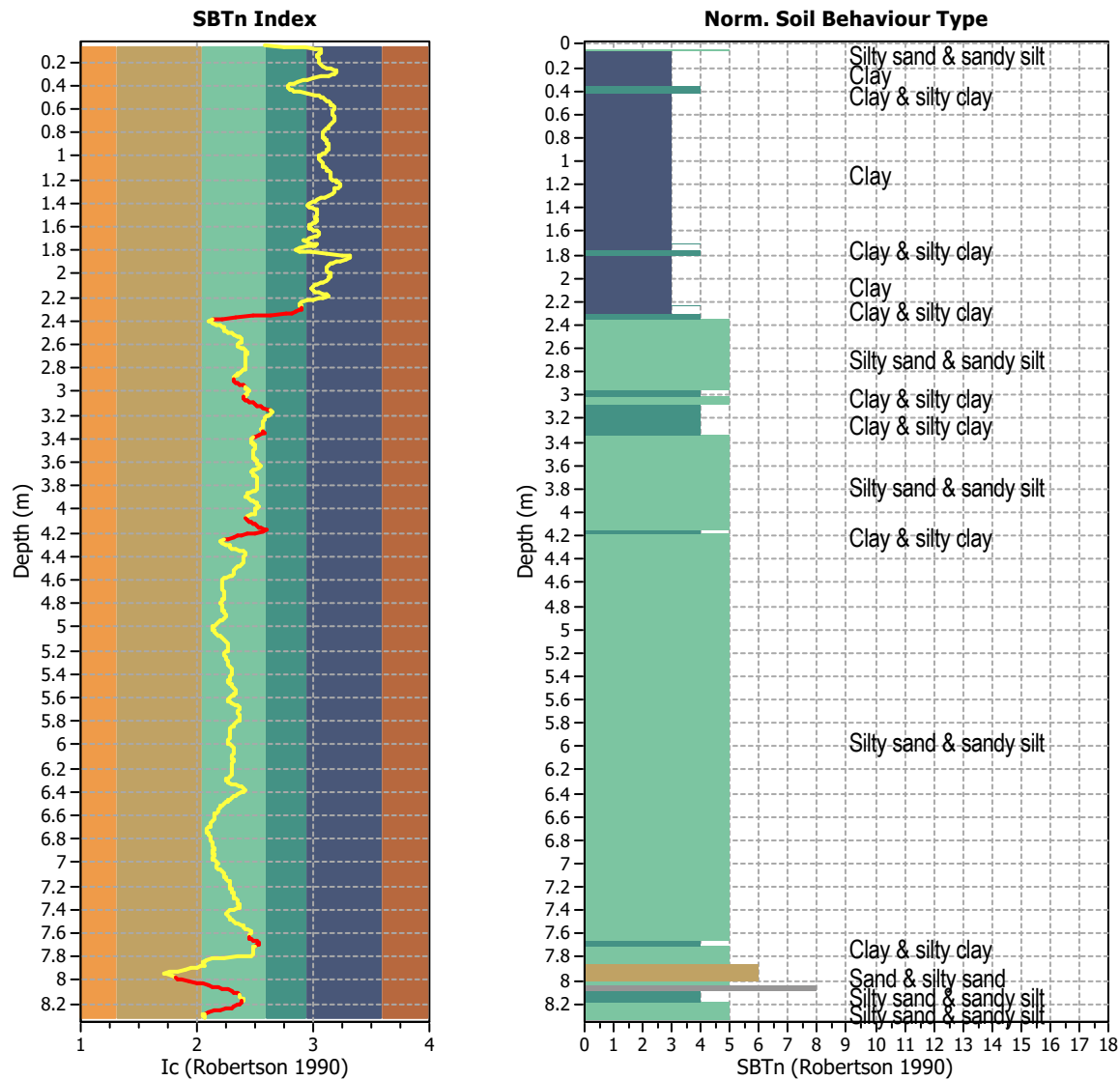
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

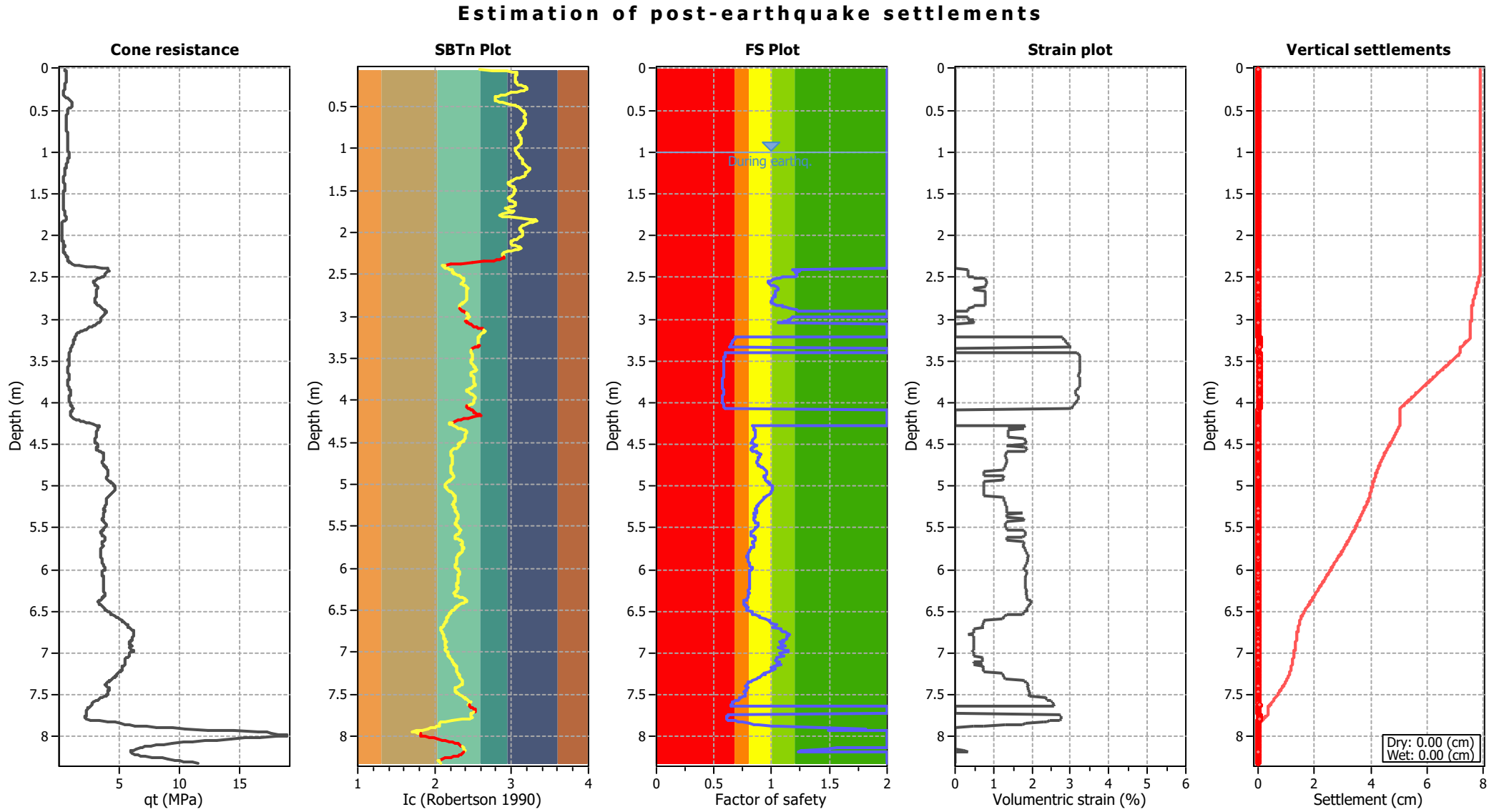


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

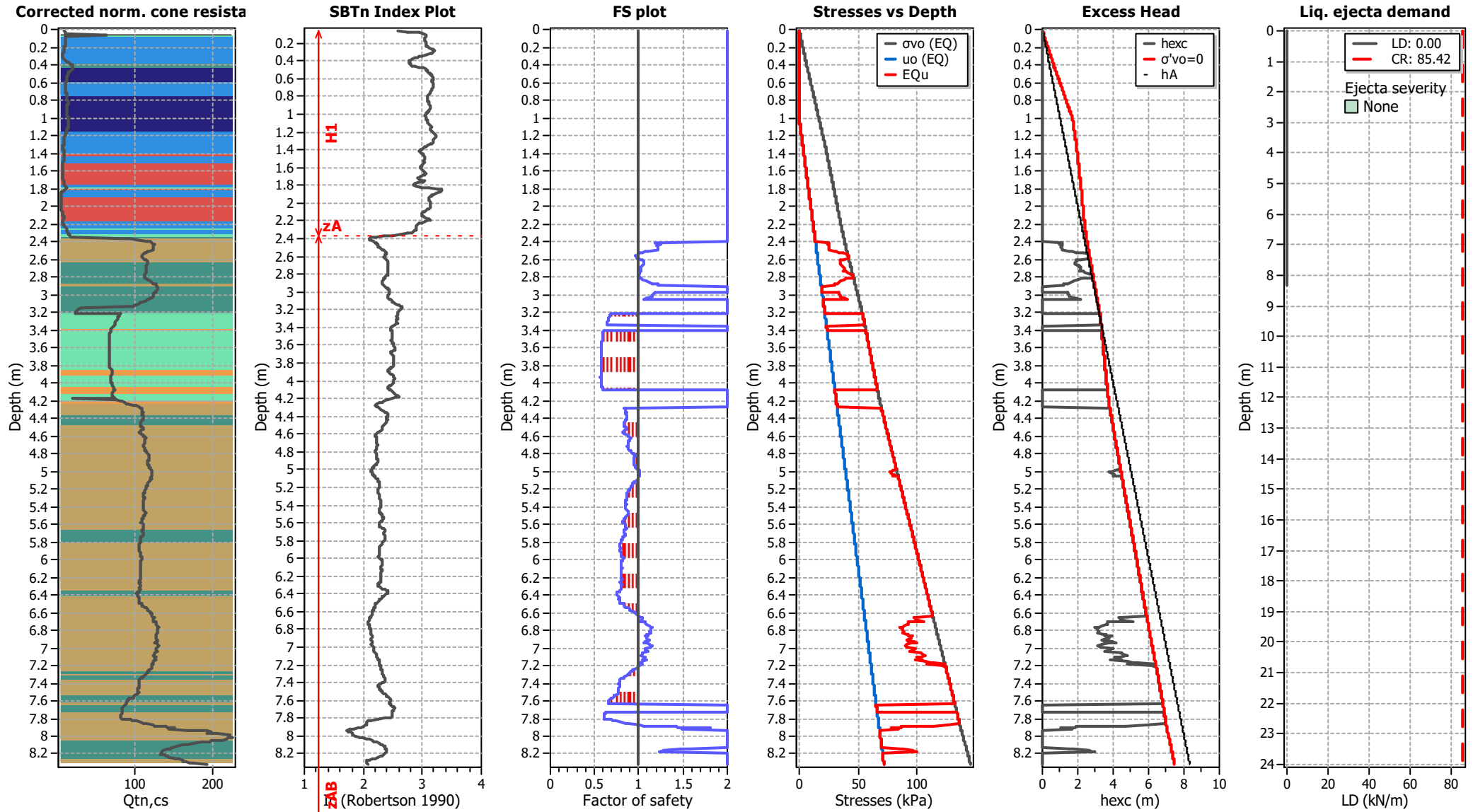
Total points in CPT file: 832
Total points excluded: 93
Exclusion percentage: 11.18%
Number of layers detected: 10



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

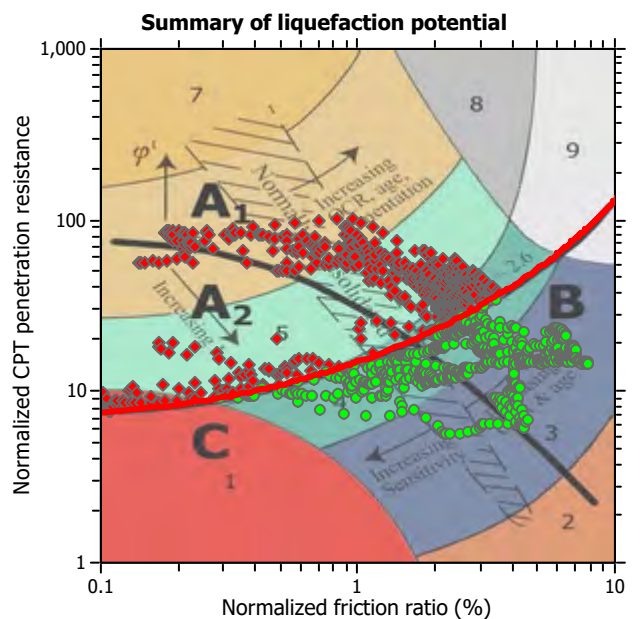
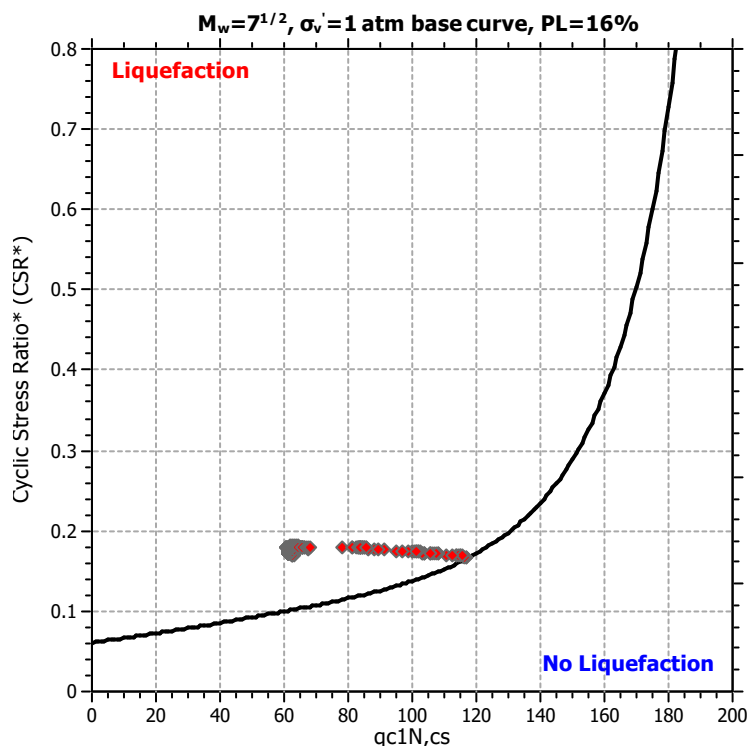
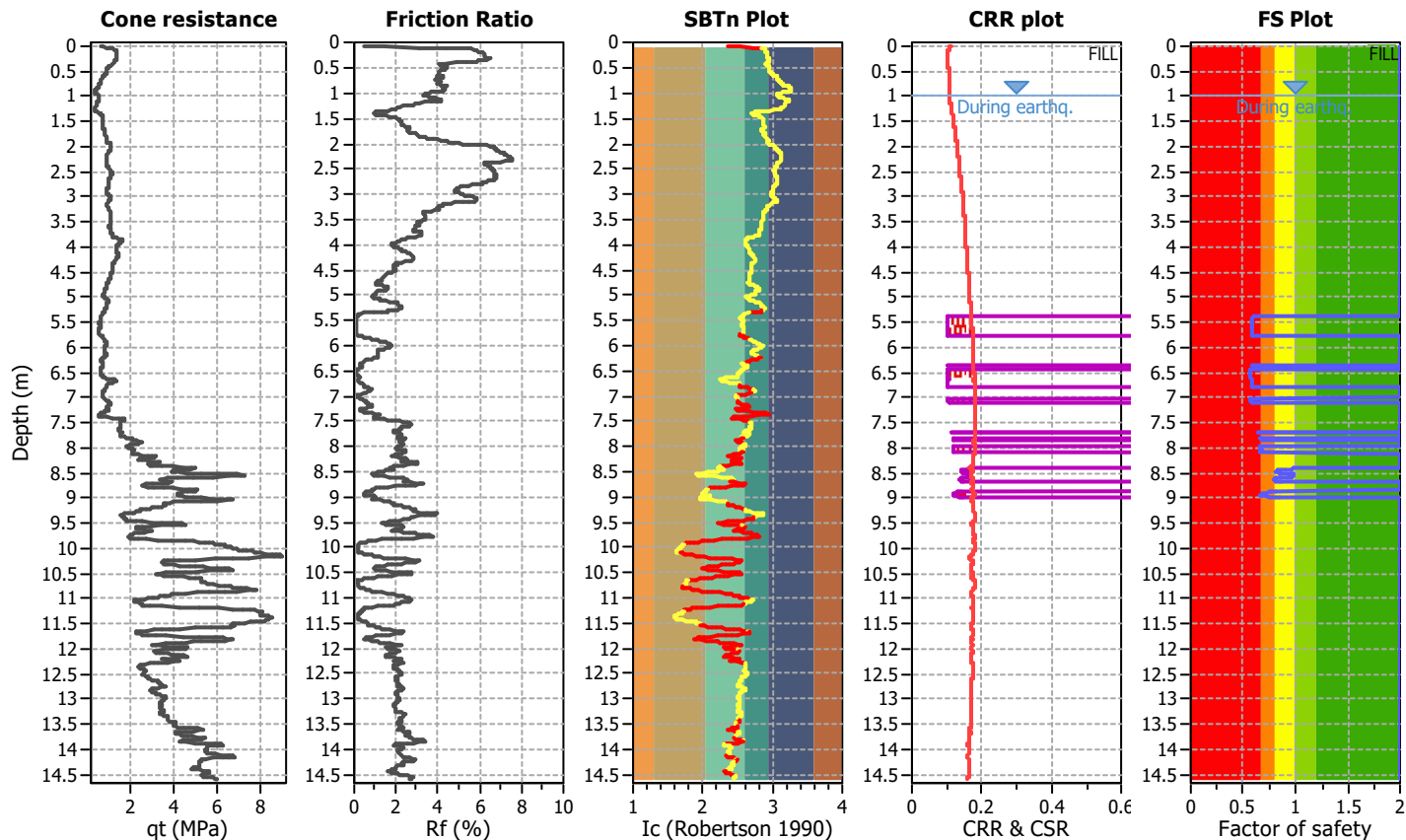
Project title : Sunfield Landholding

Location :

CPT file : CPT401

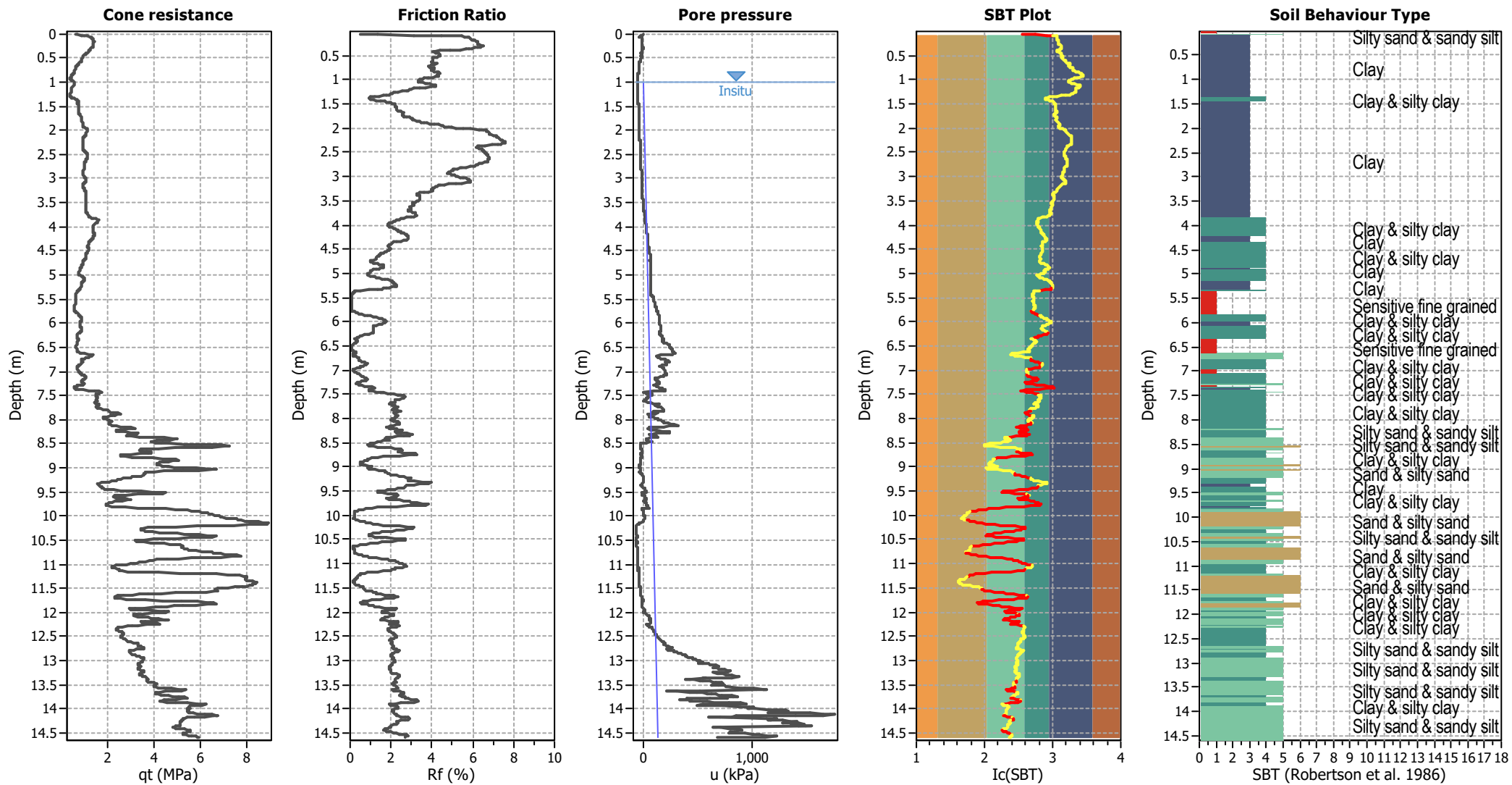
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



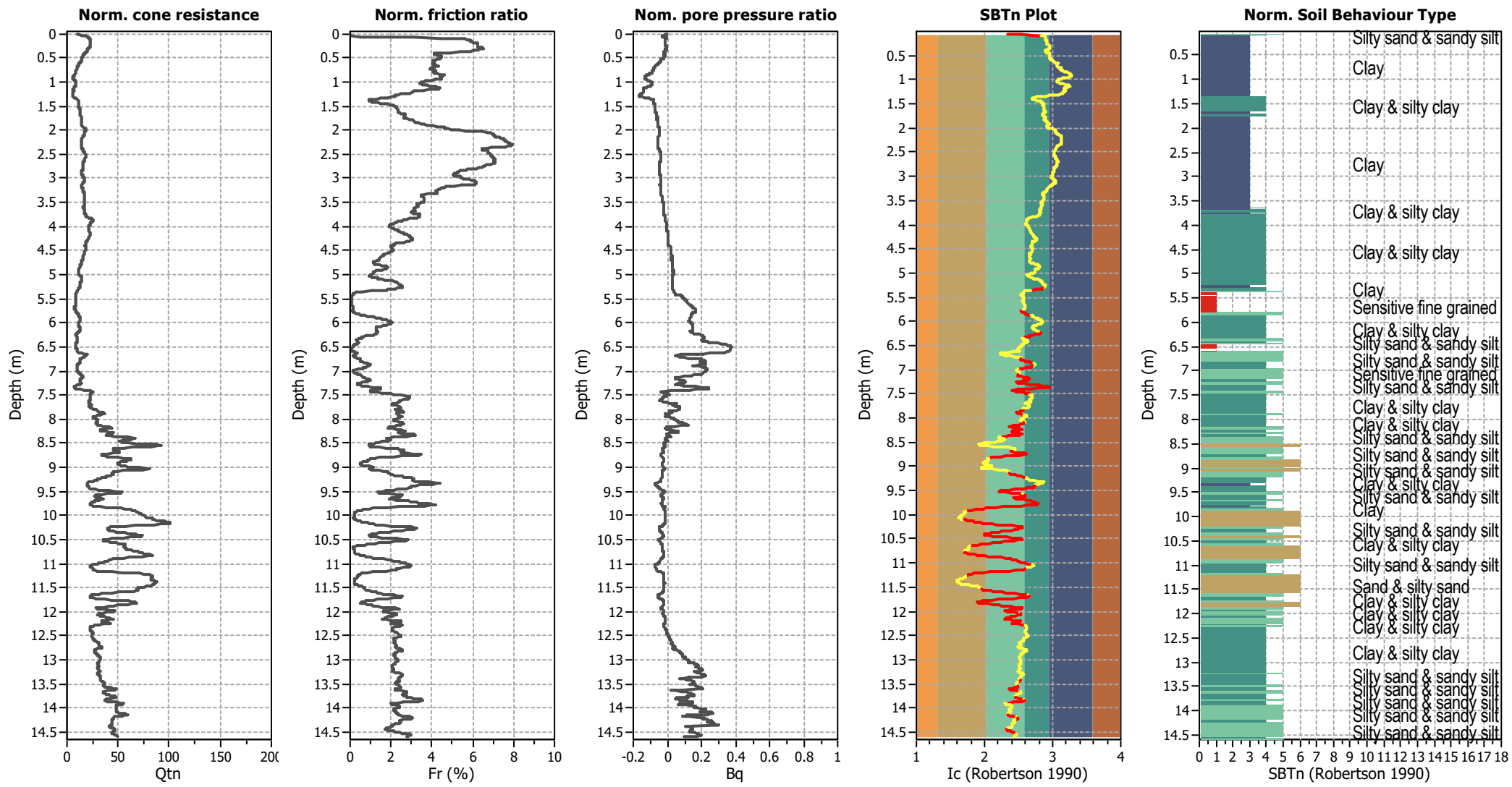
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)

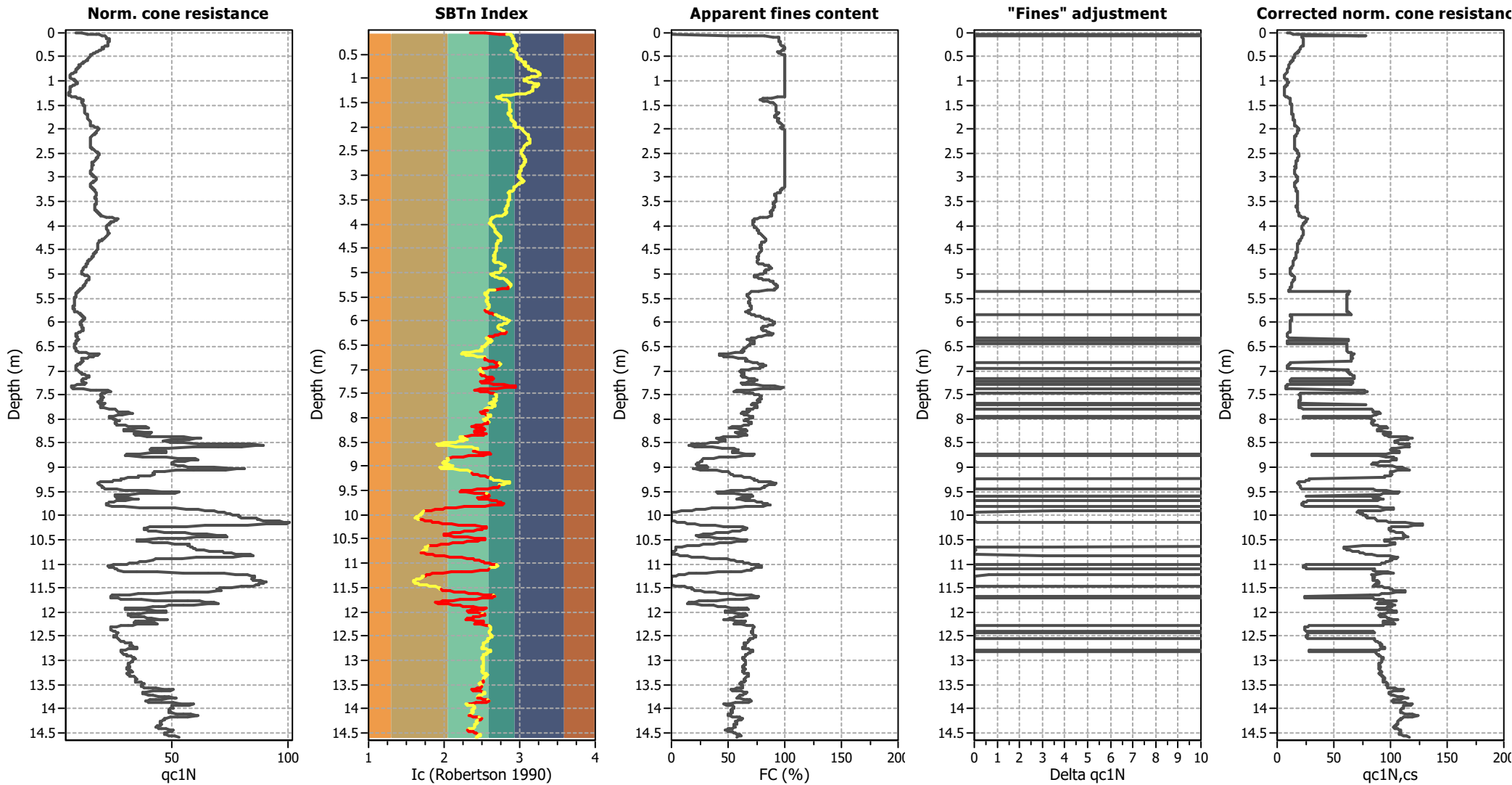


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

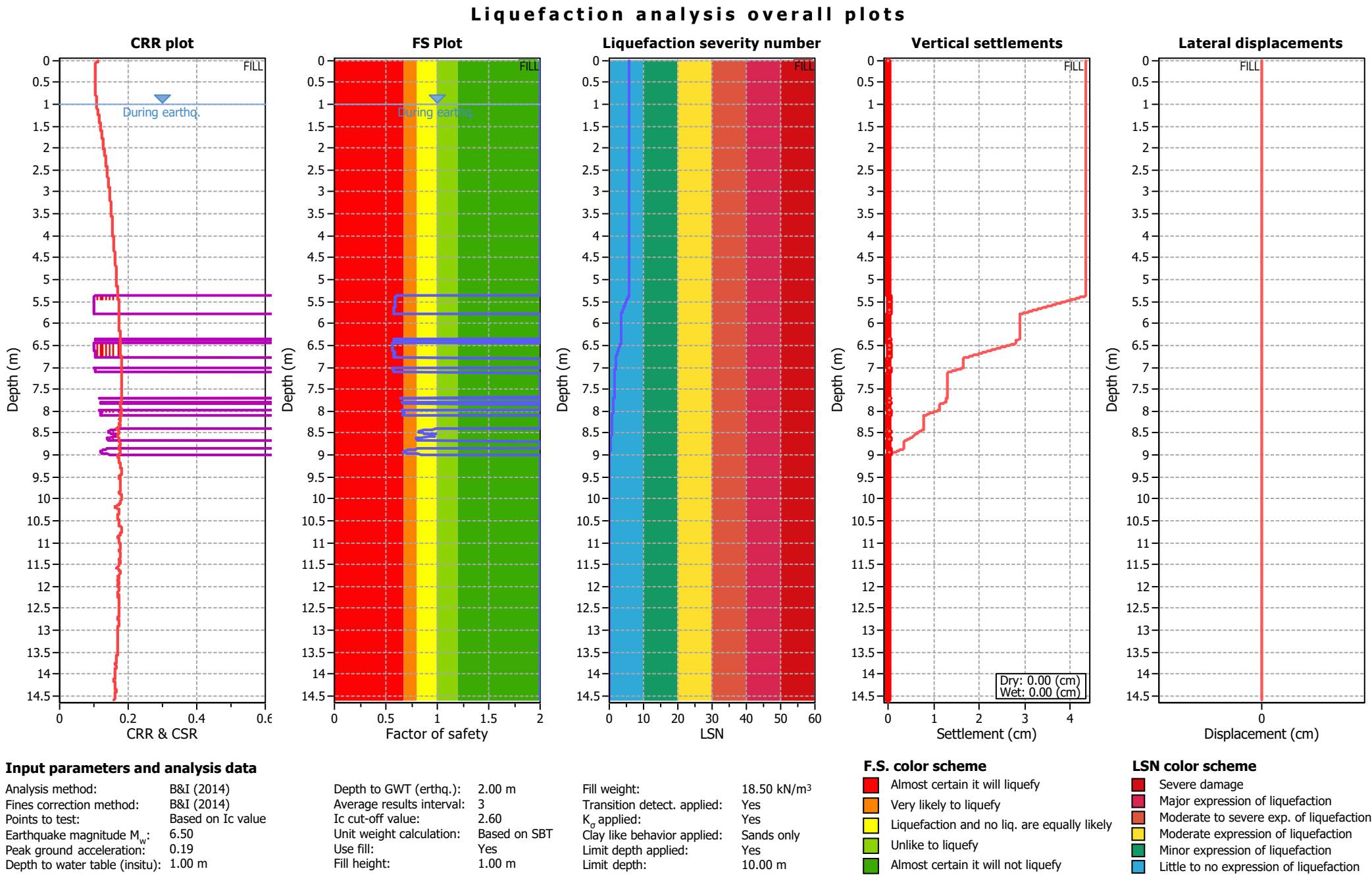
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

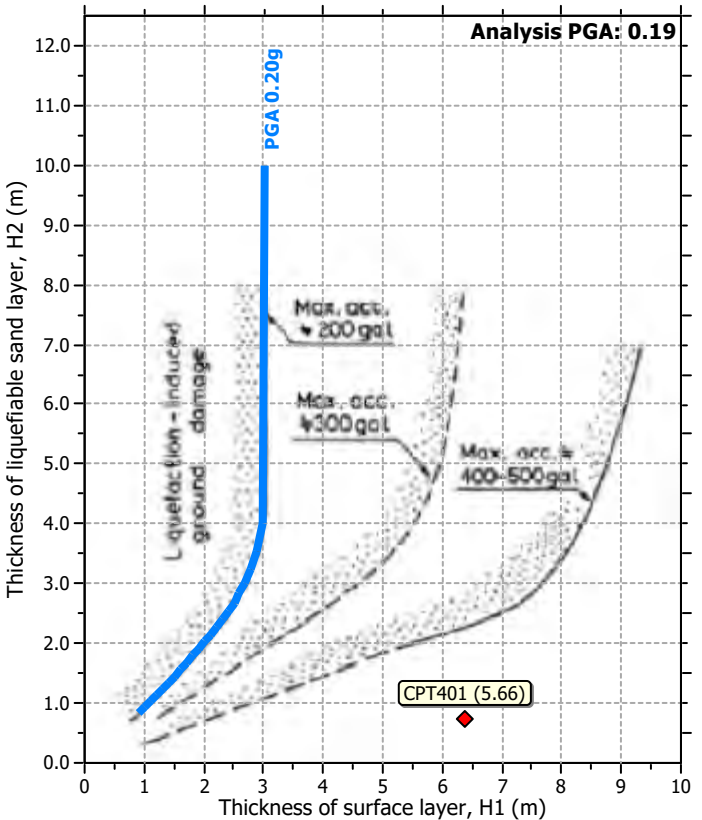
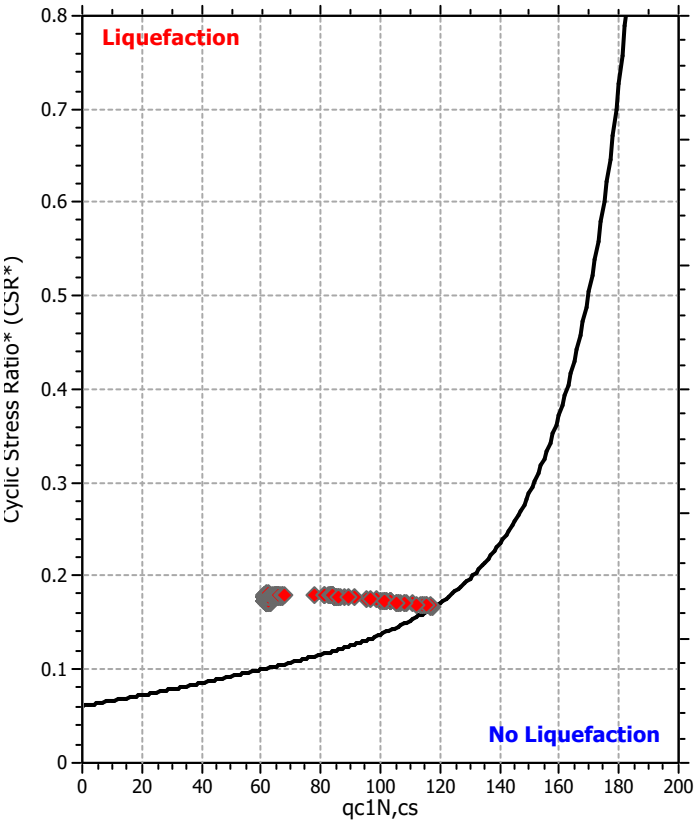
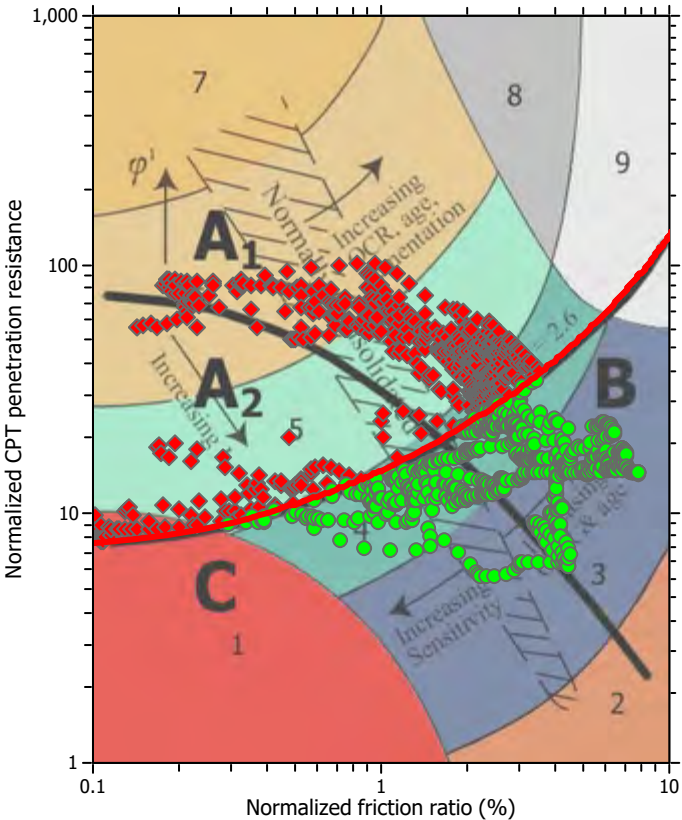


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



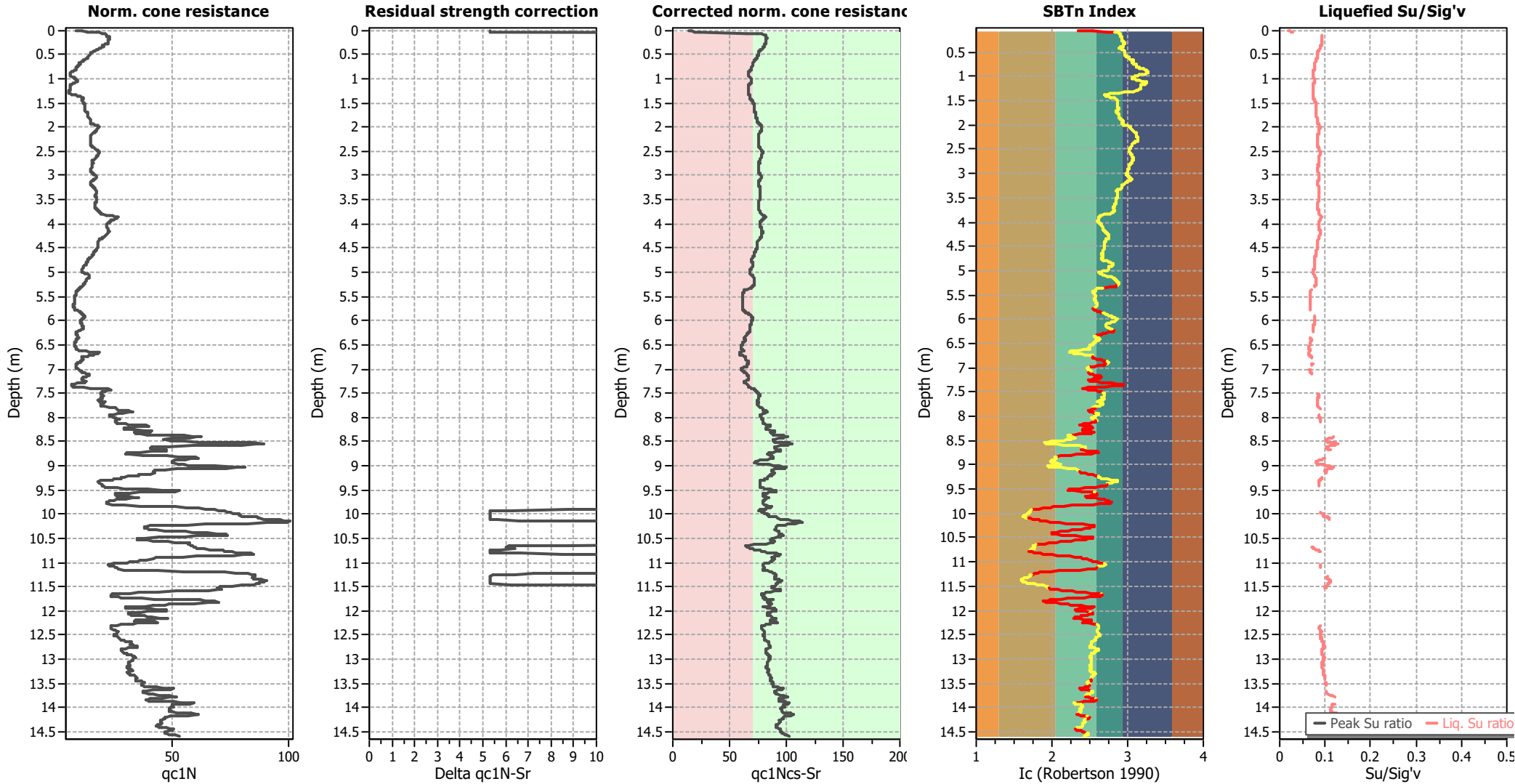
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_0 applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

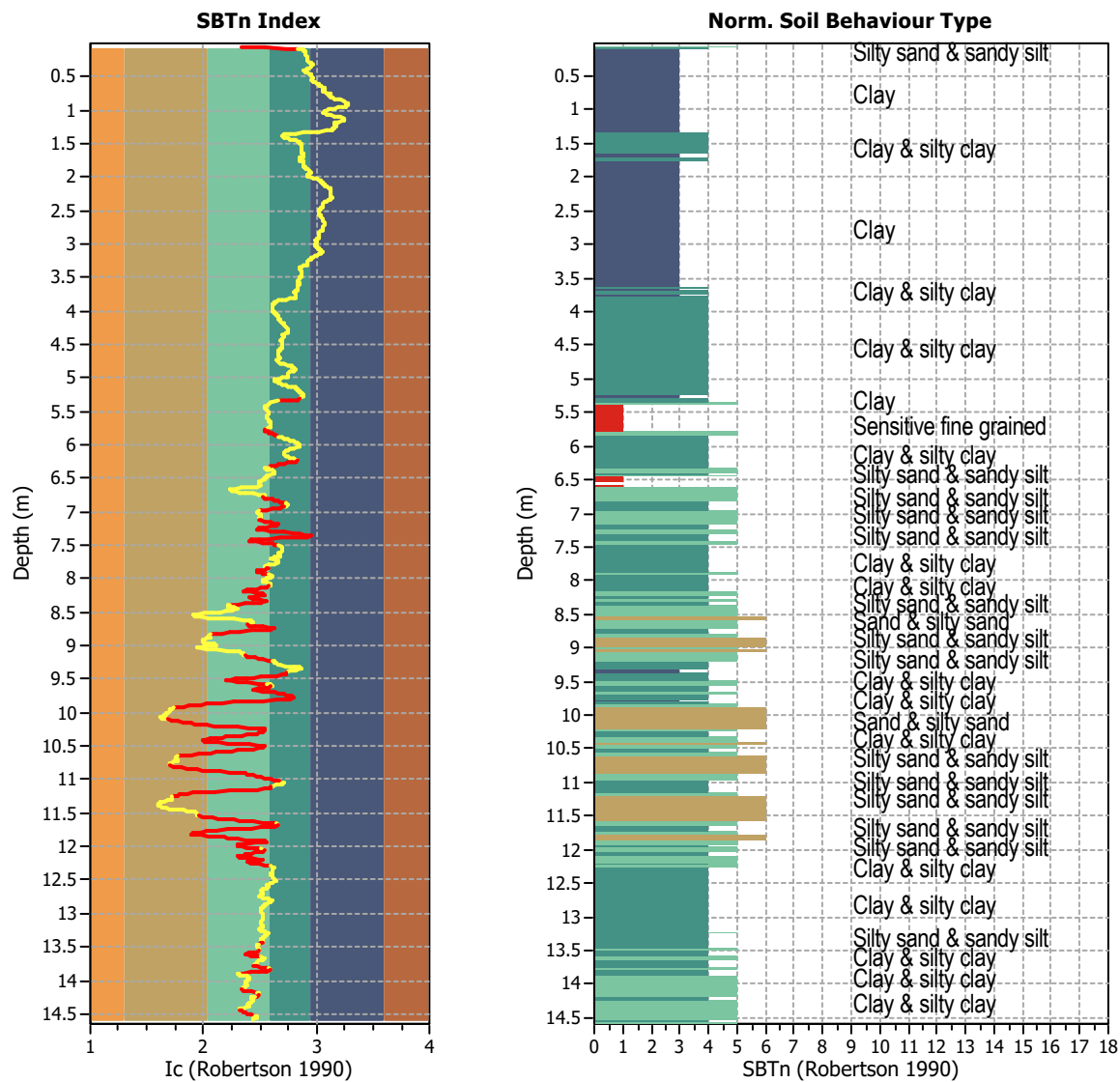
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



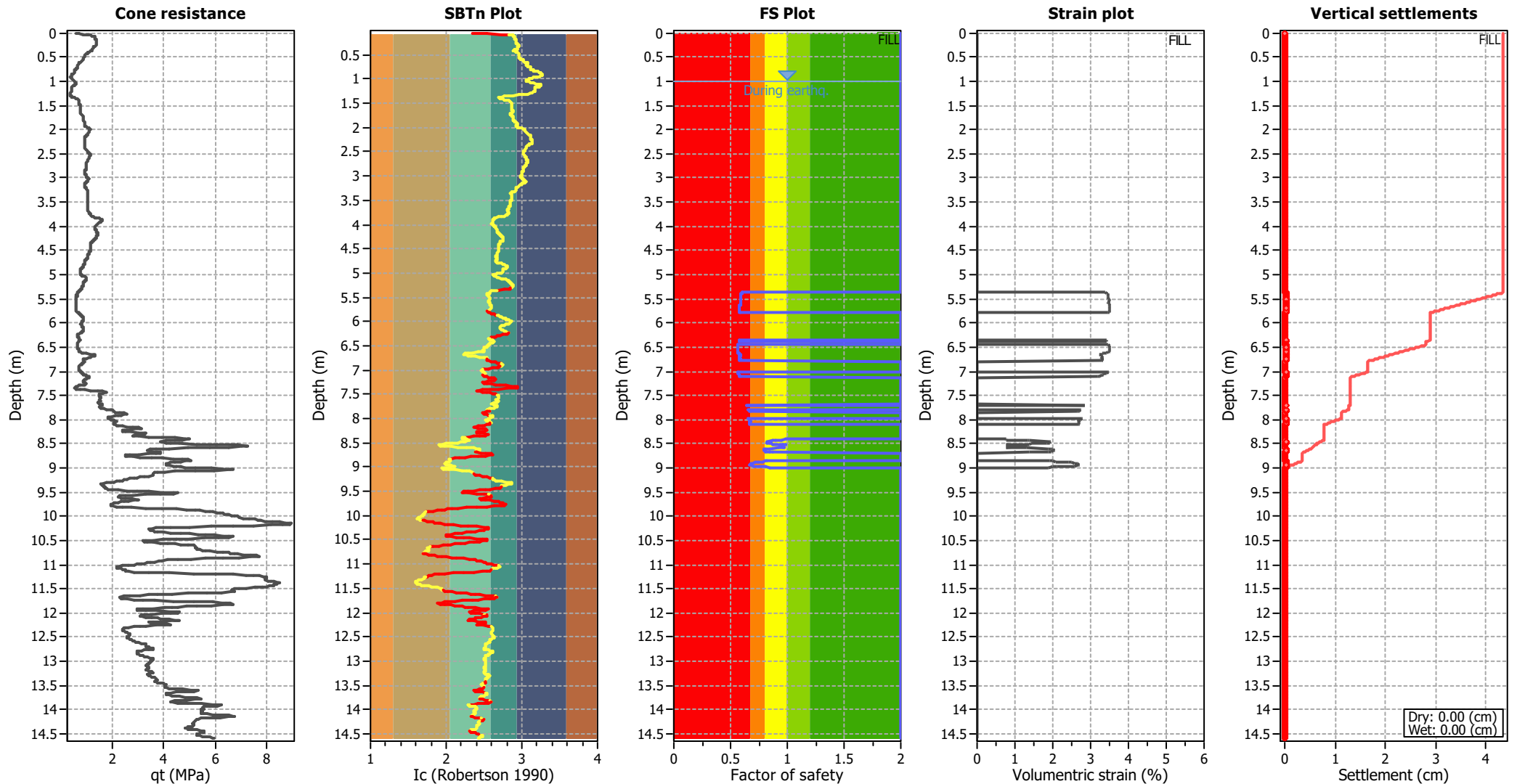
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1459
Total points excluded: 439
Exclusion percentage: 30.09%
Number of layers detected: 49

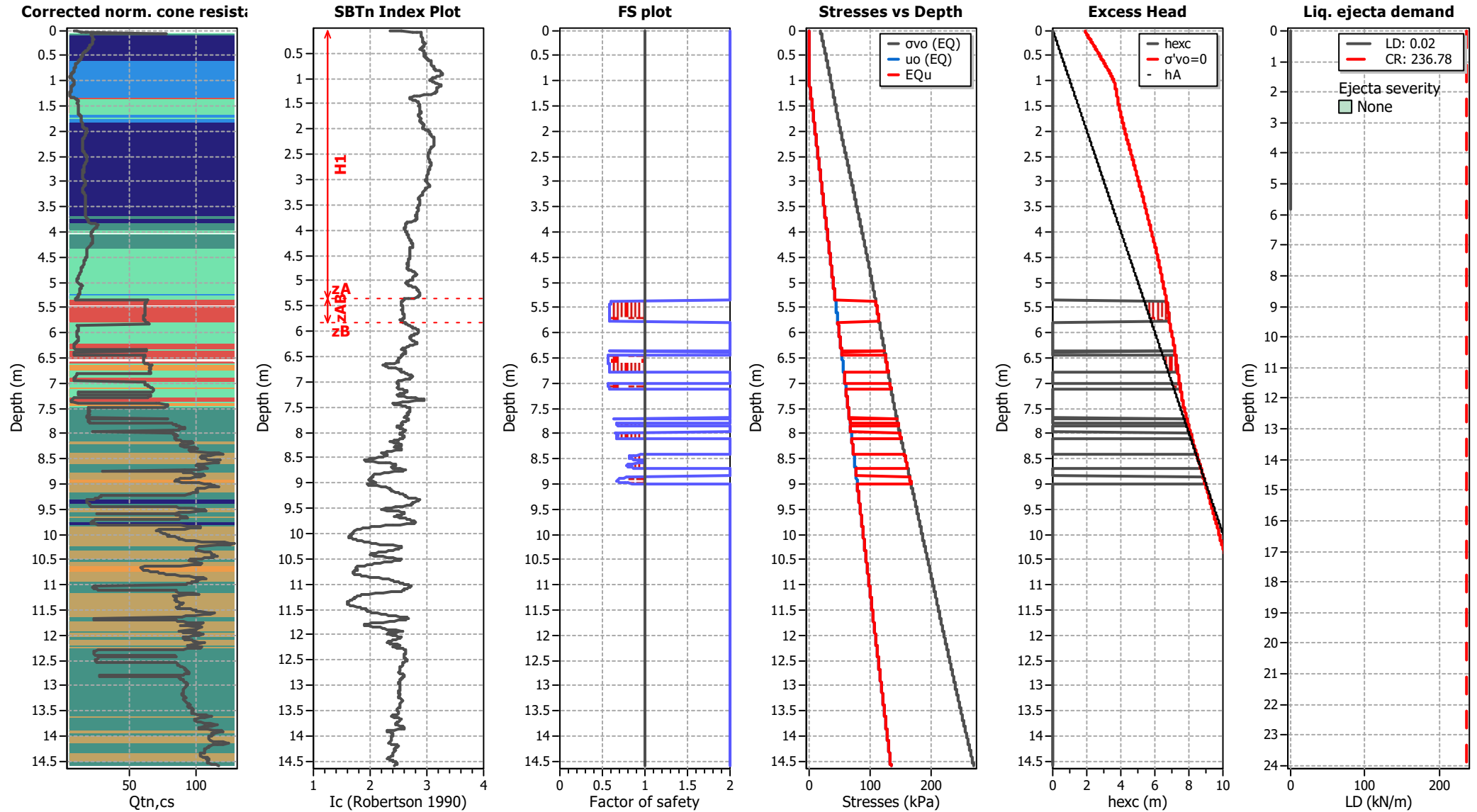
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

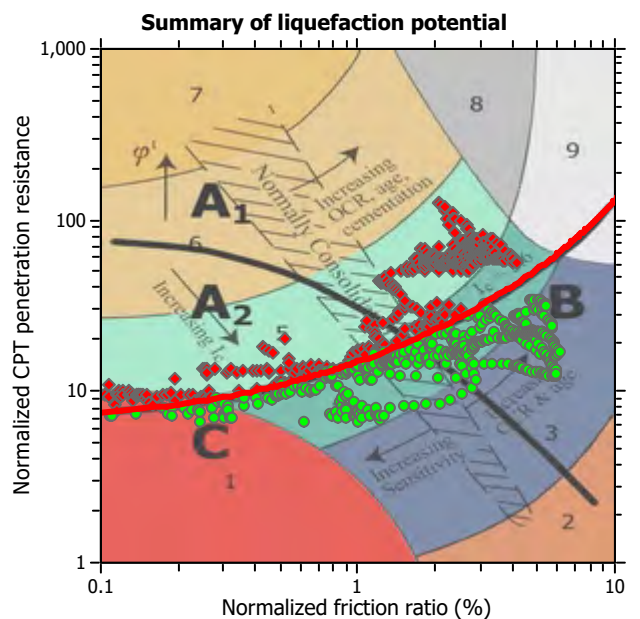
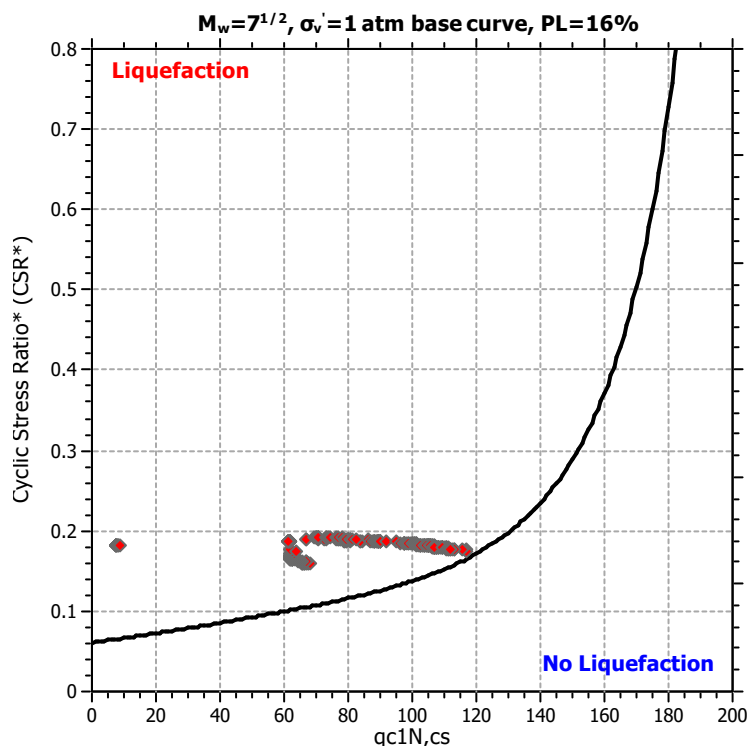
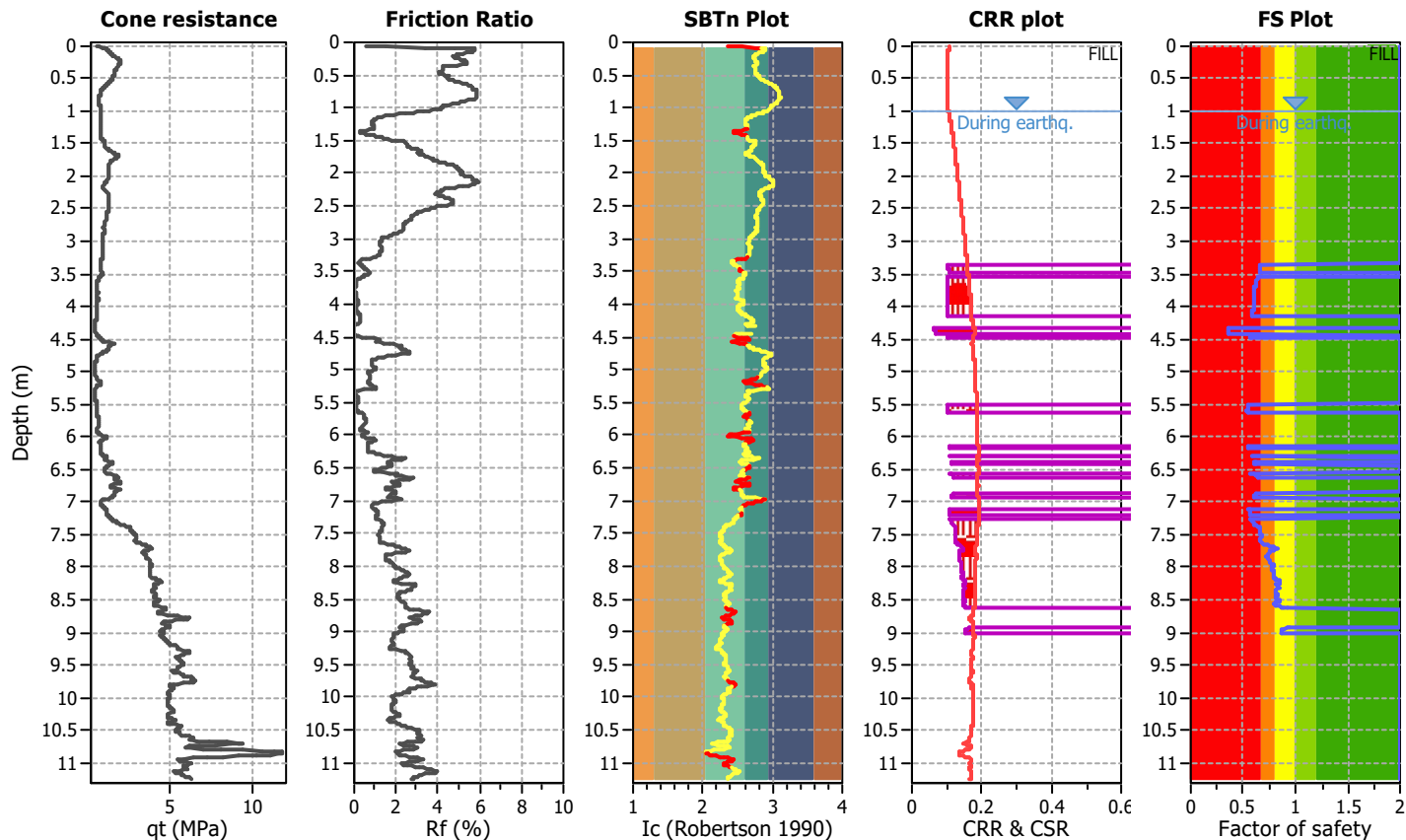
Project title : Sunfield Landholding

Location :

CPT file : CPT402

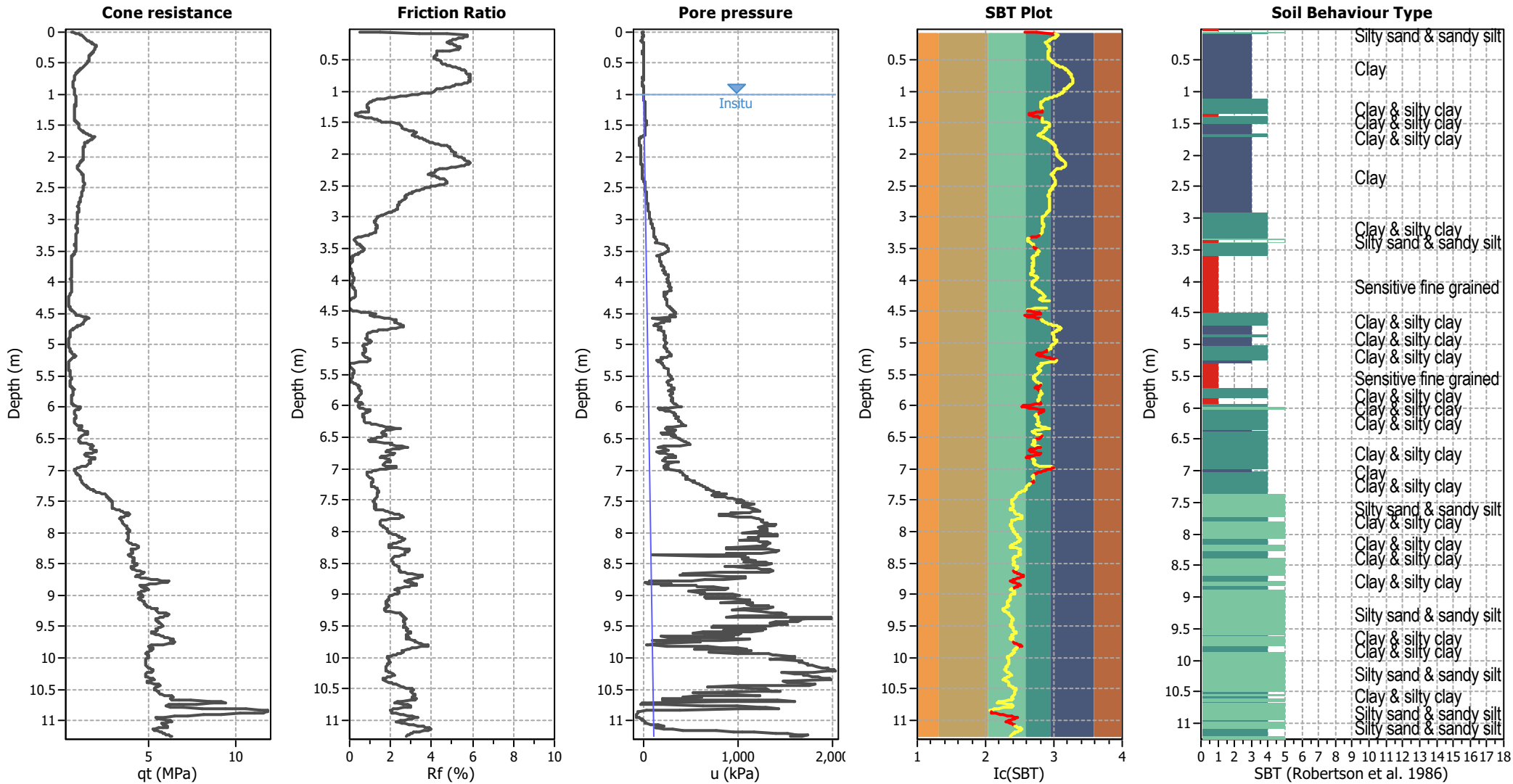
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	9.25 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

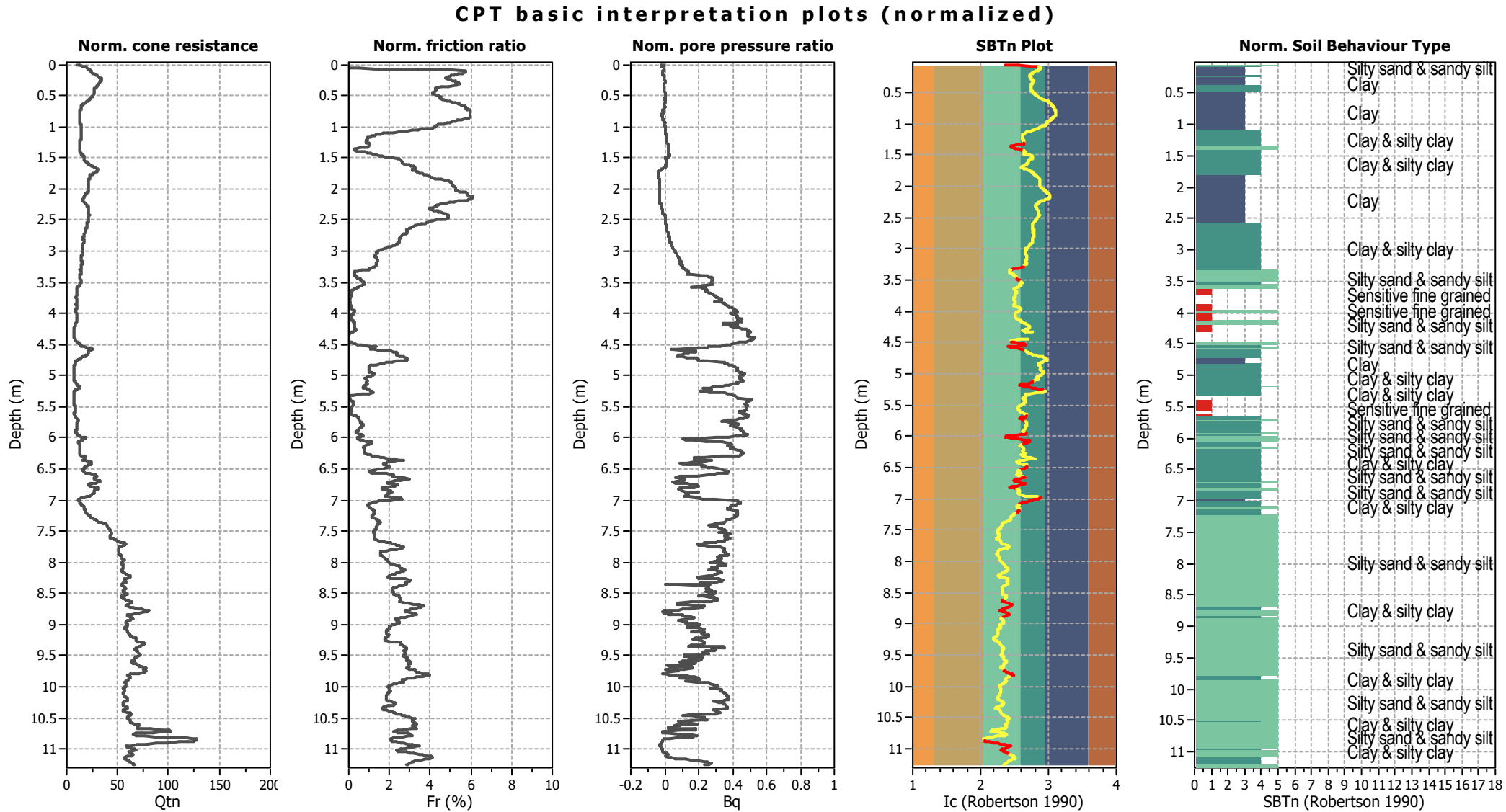


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

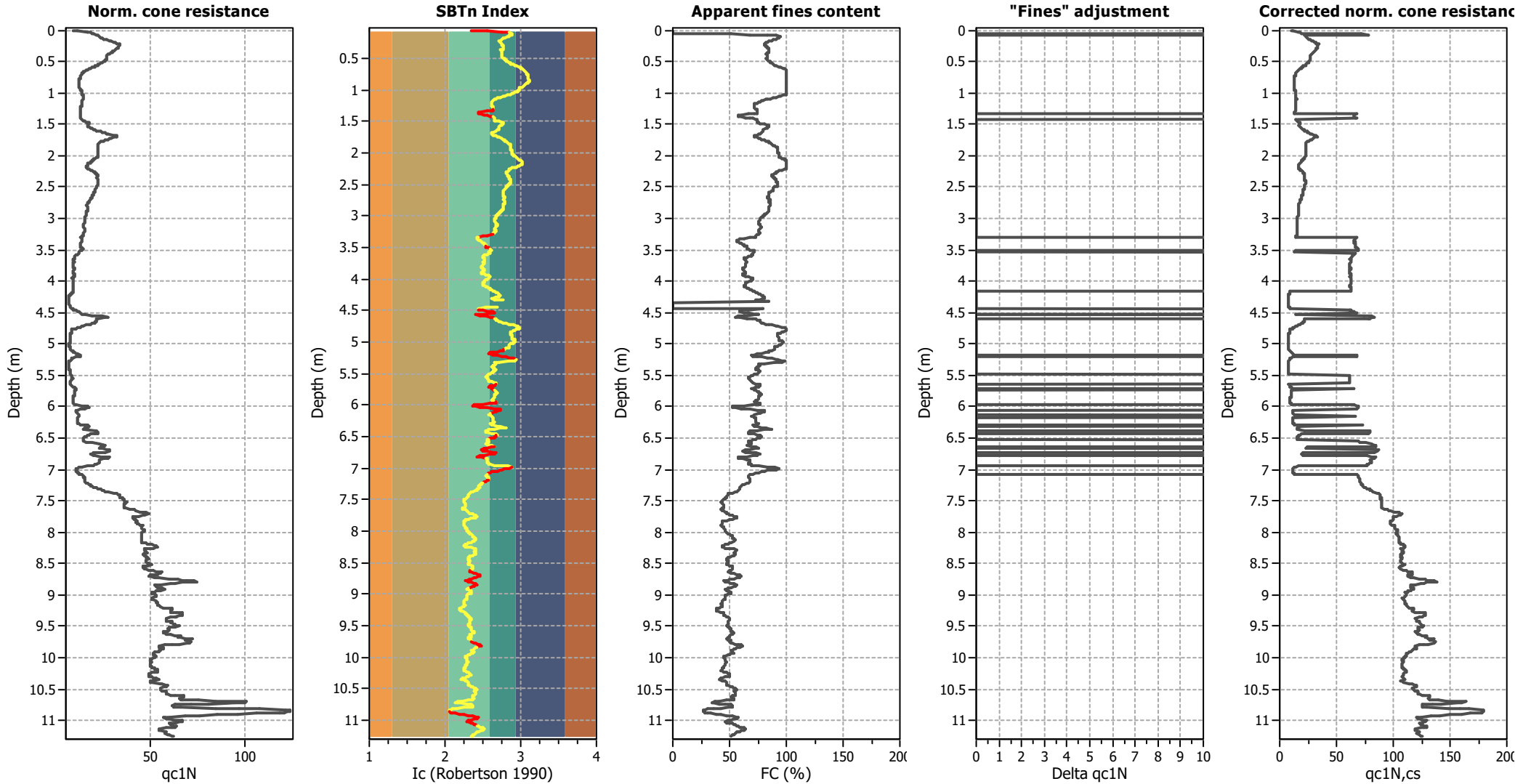
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

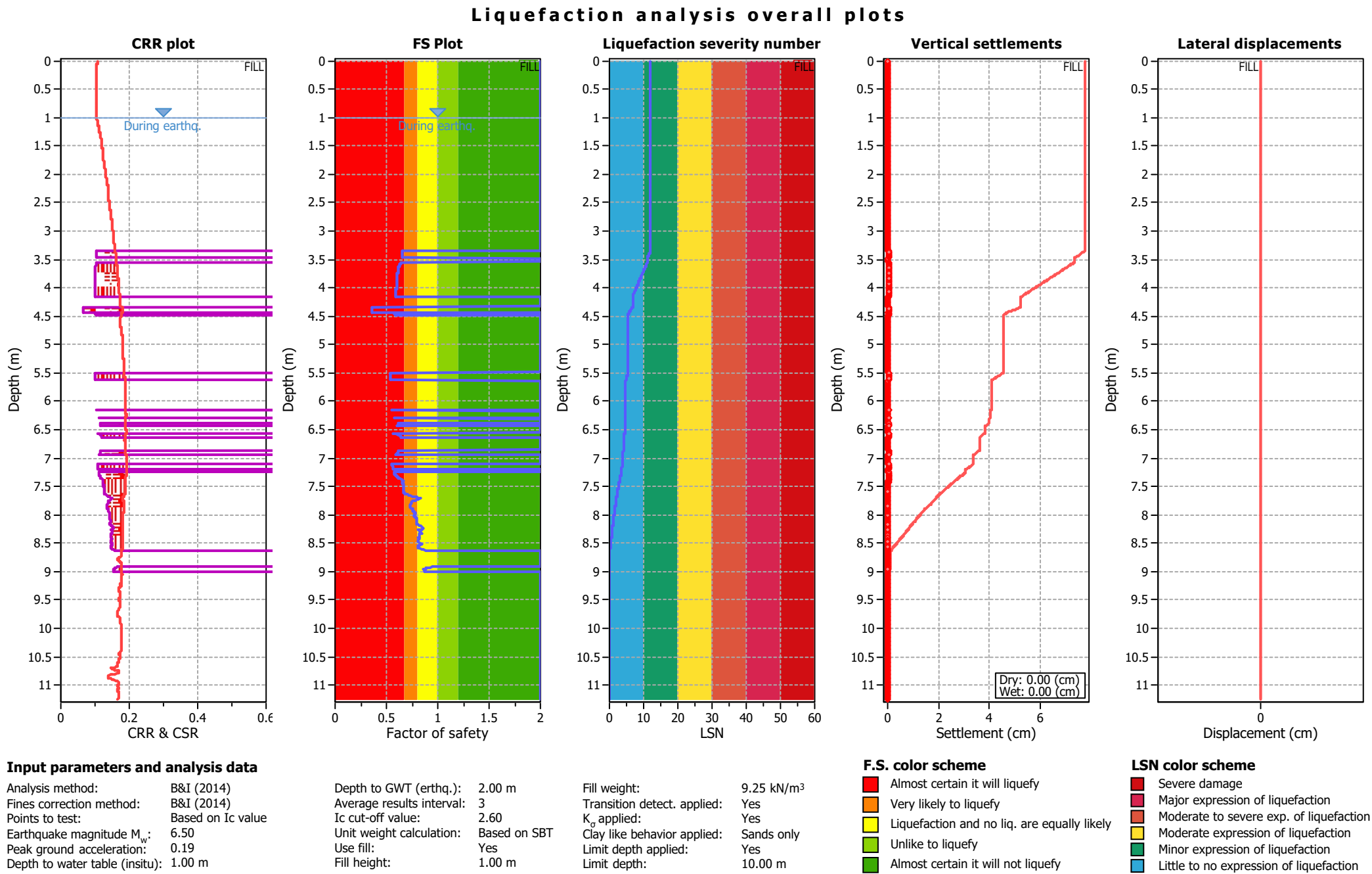
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m³	SBTn legend <table><tr><td></td><td>1. Sensitive fine grained</td><td></td><td>4. Clayey silt to silty</td><td></td><td>7. Gravely sand to sand</td></tr><tr><td></td><td>2. Organic material</td><td></td><td>5. Silty sand to sandy silt</td><td></td><td>8. Very stiff sand to</td></tr><tr><td></td><td>3. Clay to silty clay</td><td></td><td>6. Clean sand to silty sand</td><td></td><td>9. Very stiff fine grained</td></tr></table>		1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand		2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to		3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained
	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand																			
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to																			
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained																			
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes																			
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes																			
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only																			
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes																			
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m																			

Liquefaction analysis overall plots (intermediate results)

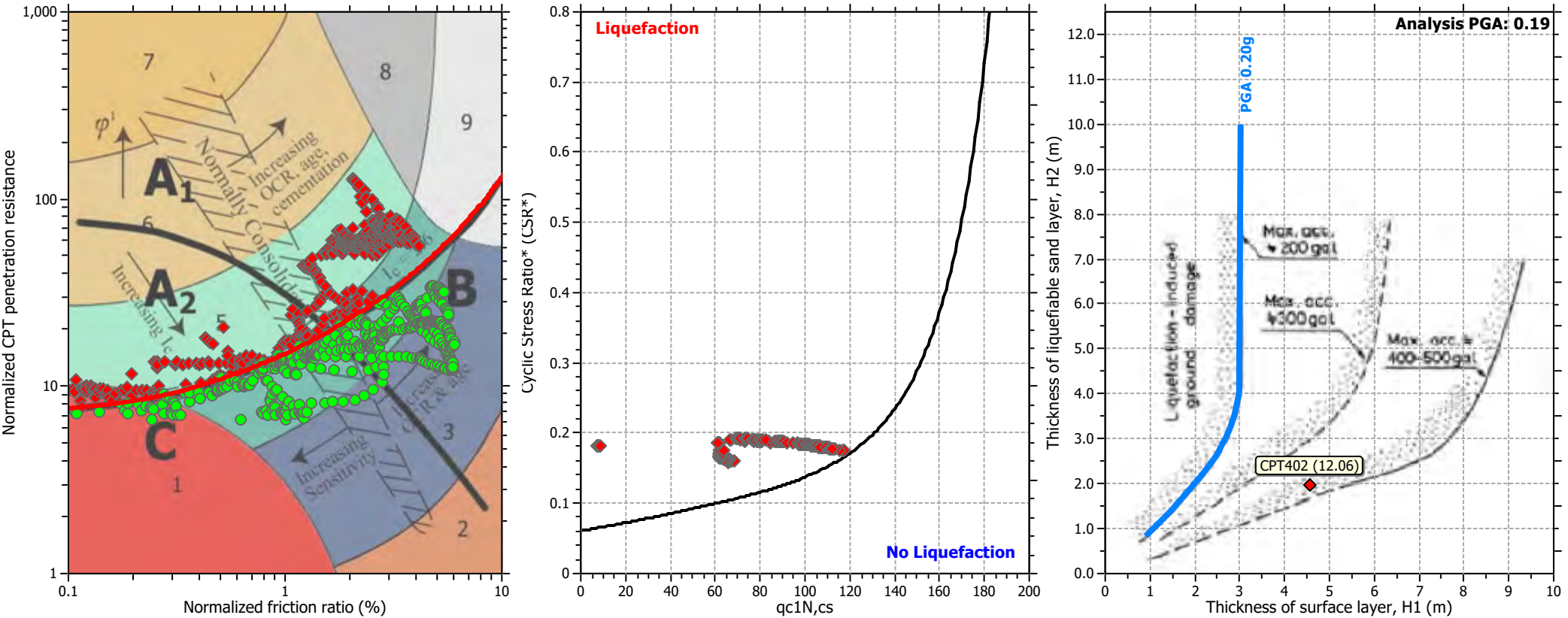


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



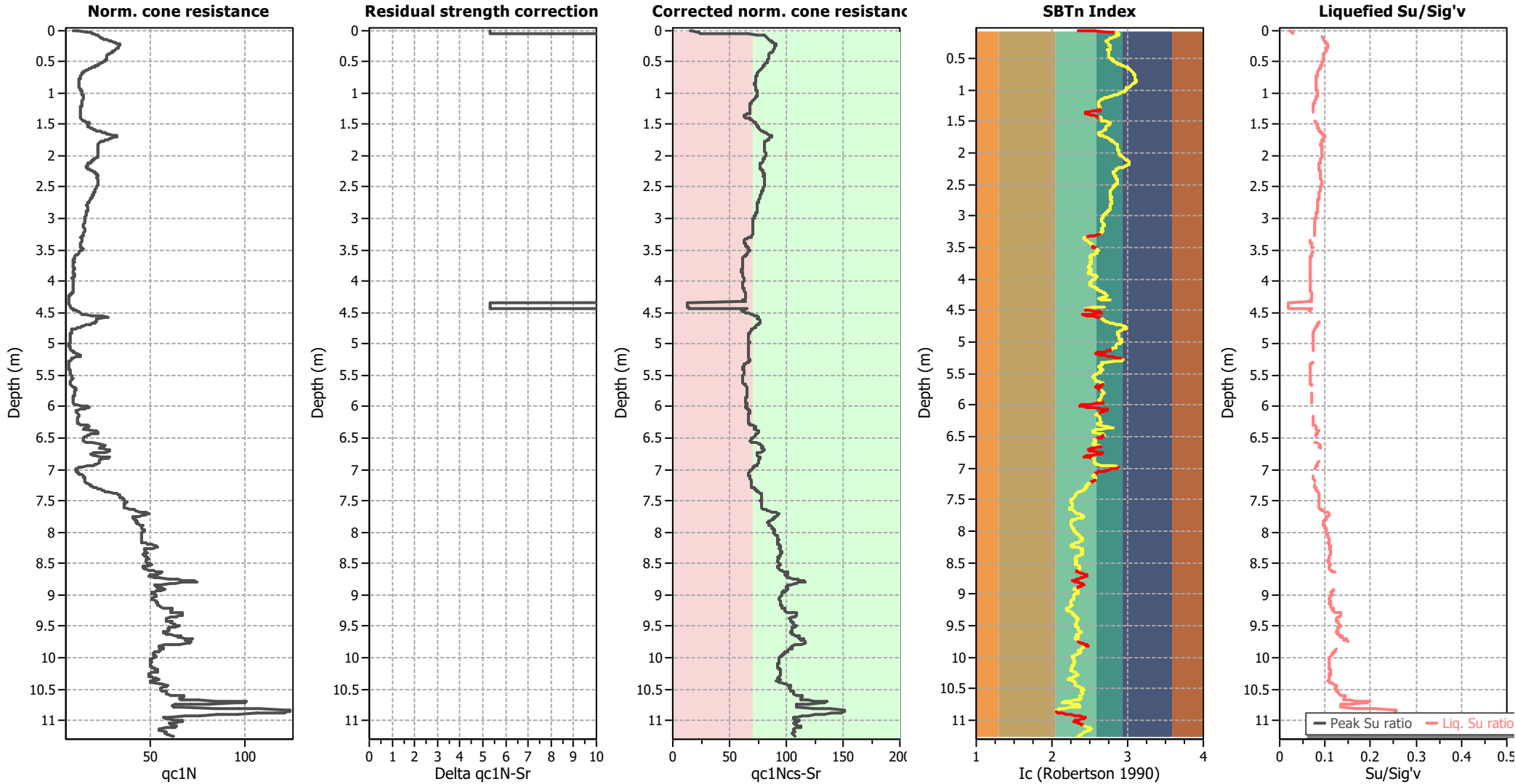
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	9.25 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

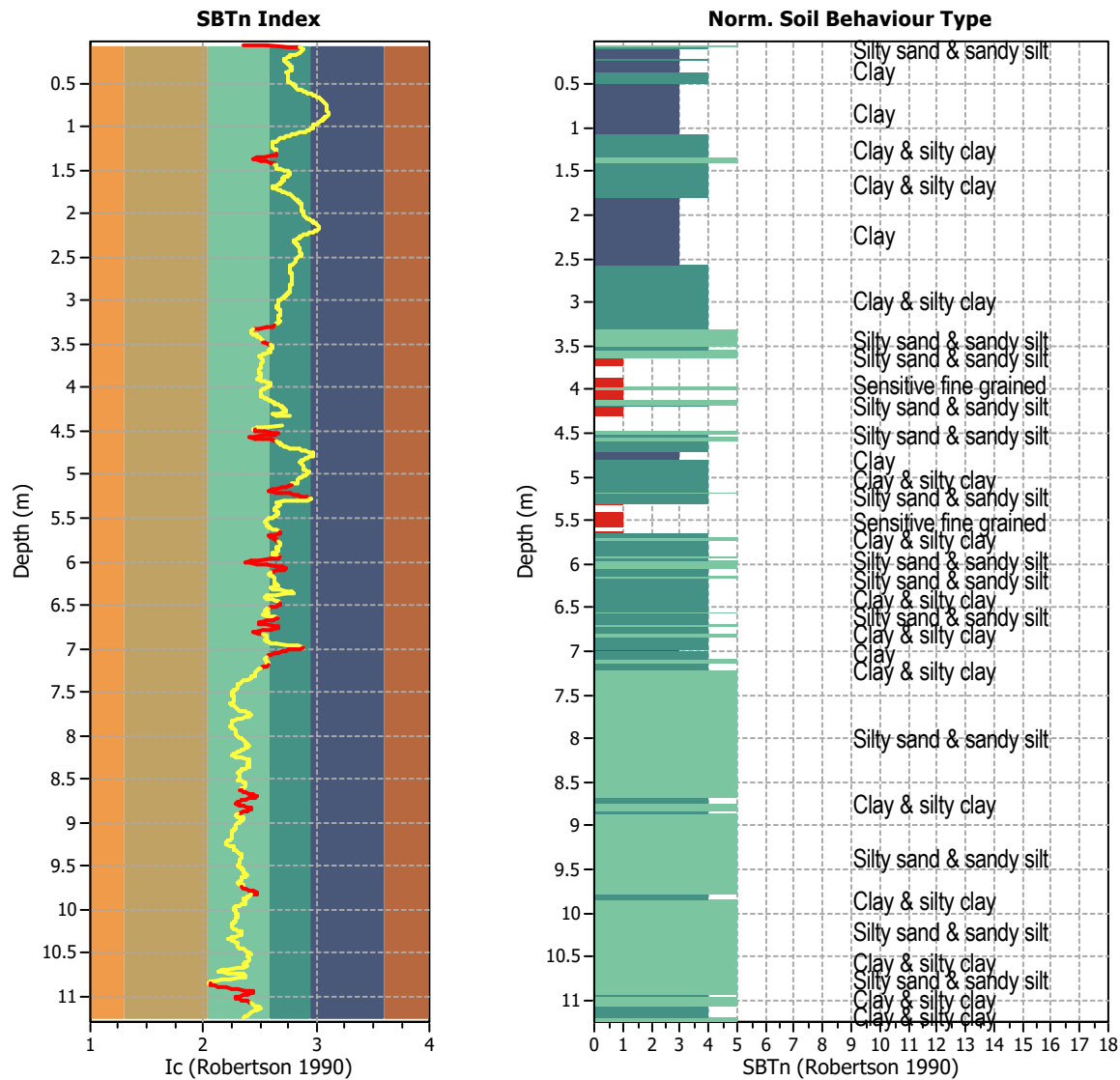
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



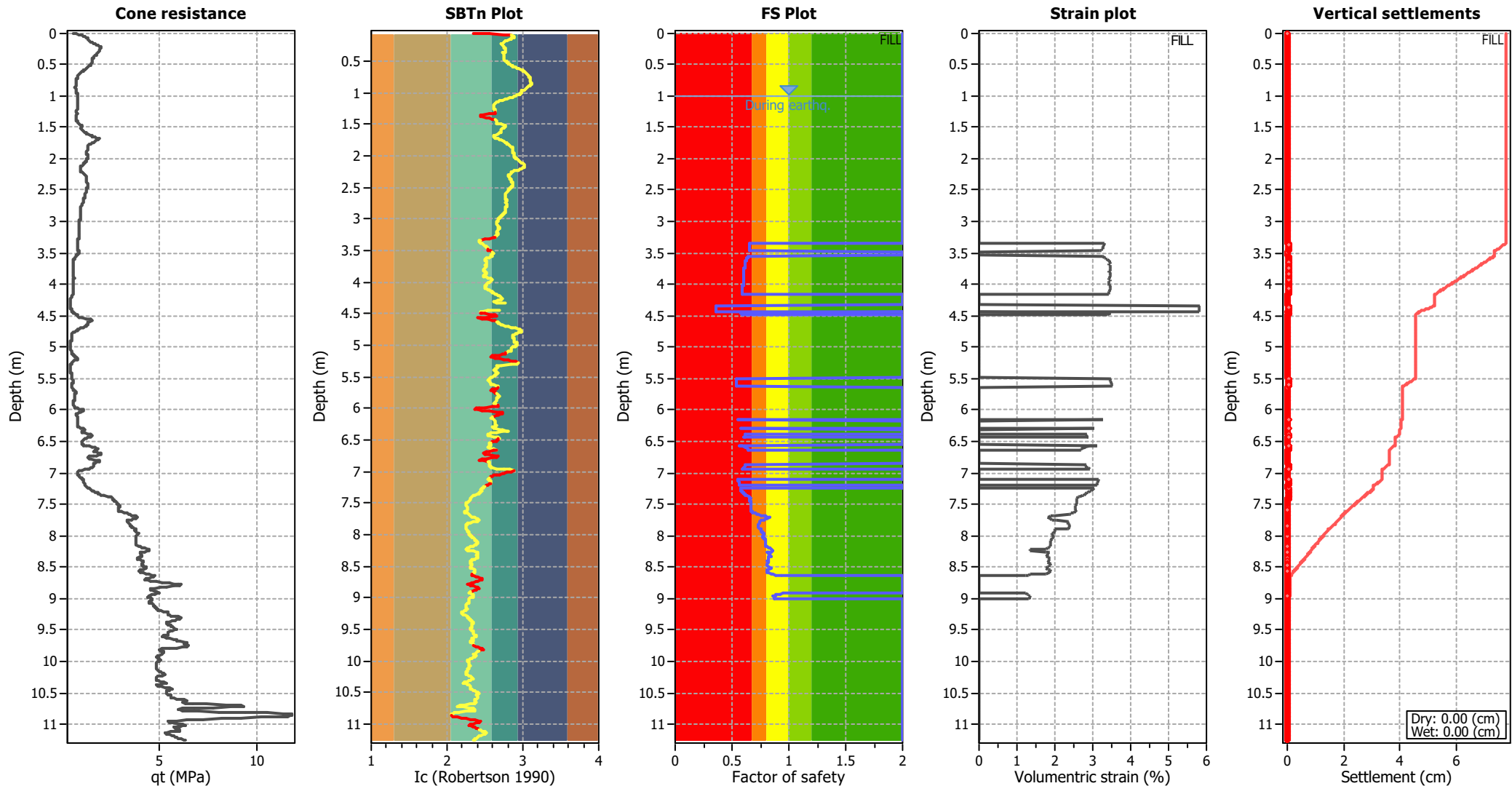
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1125
Total points excluded: 201
Exclusion percentage: 17.87%
Number of layers detected: 31

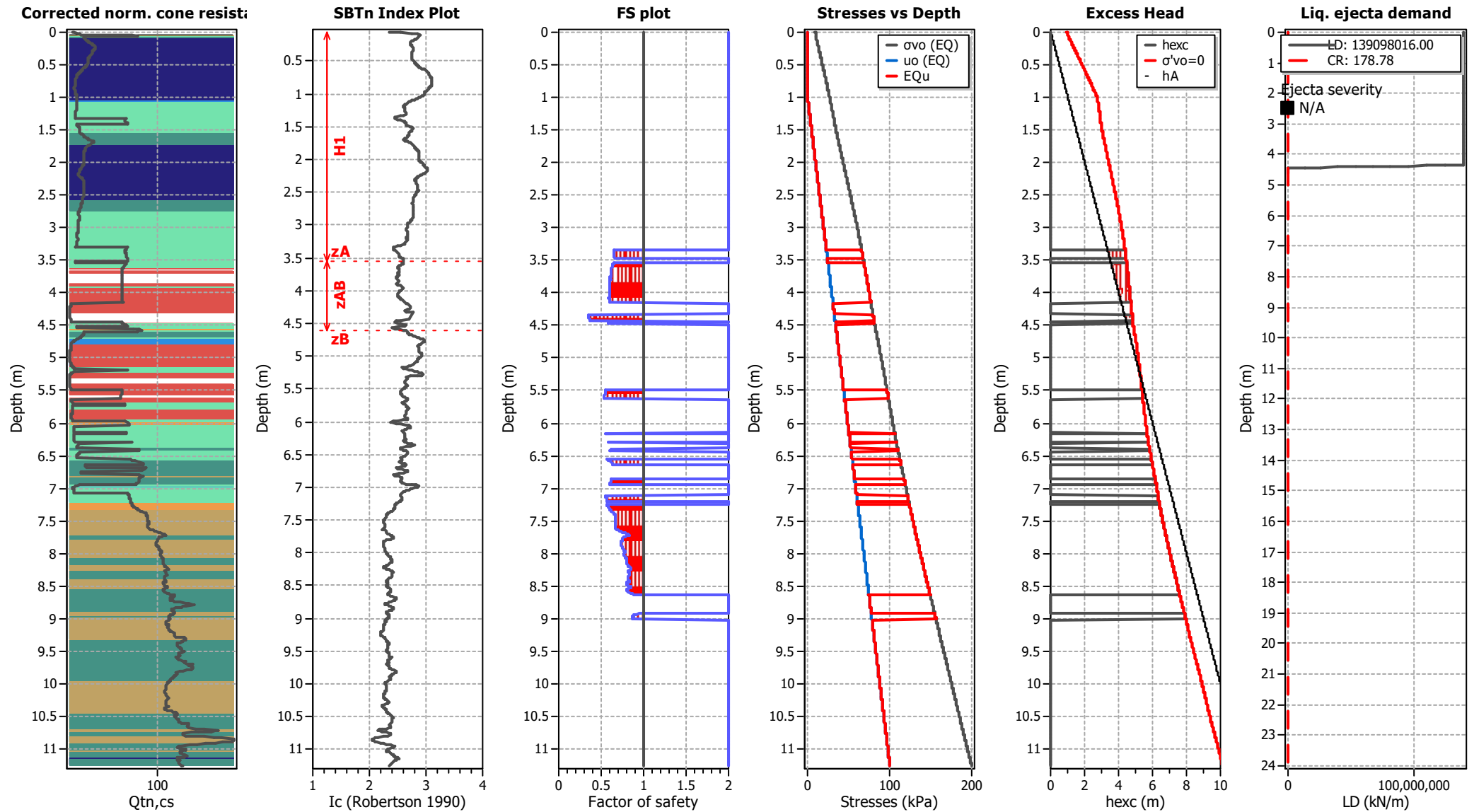
Estimation of post-earthquake settlements



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

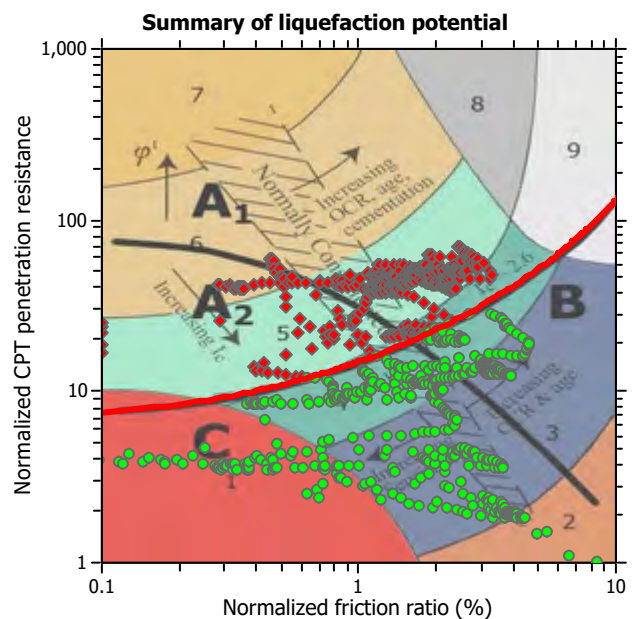
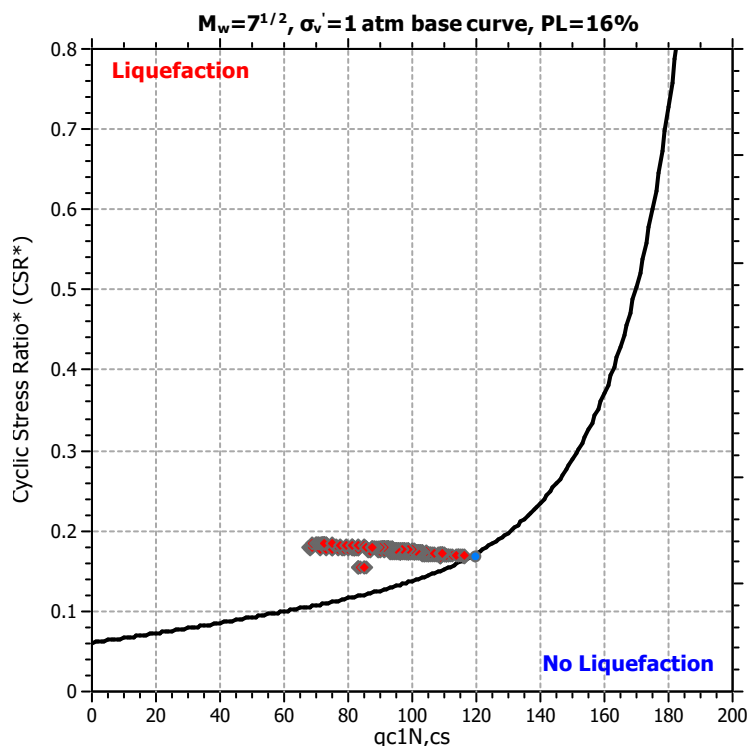
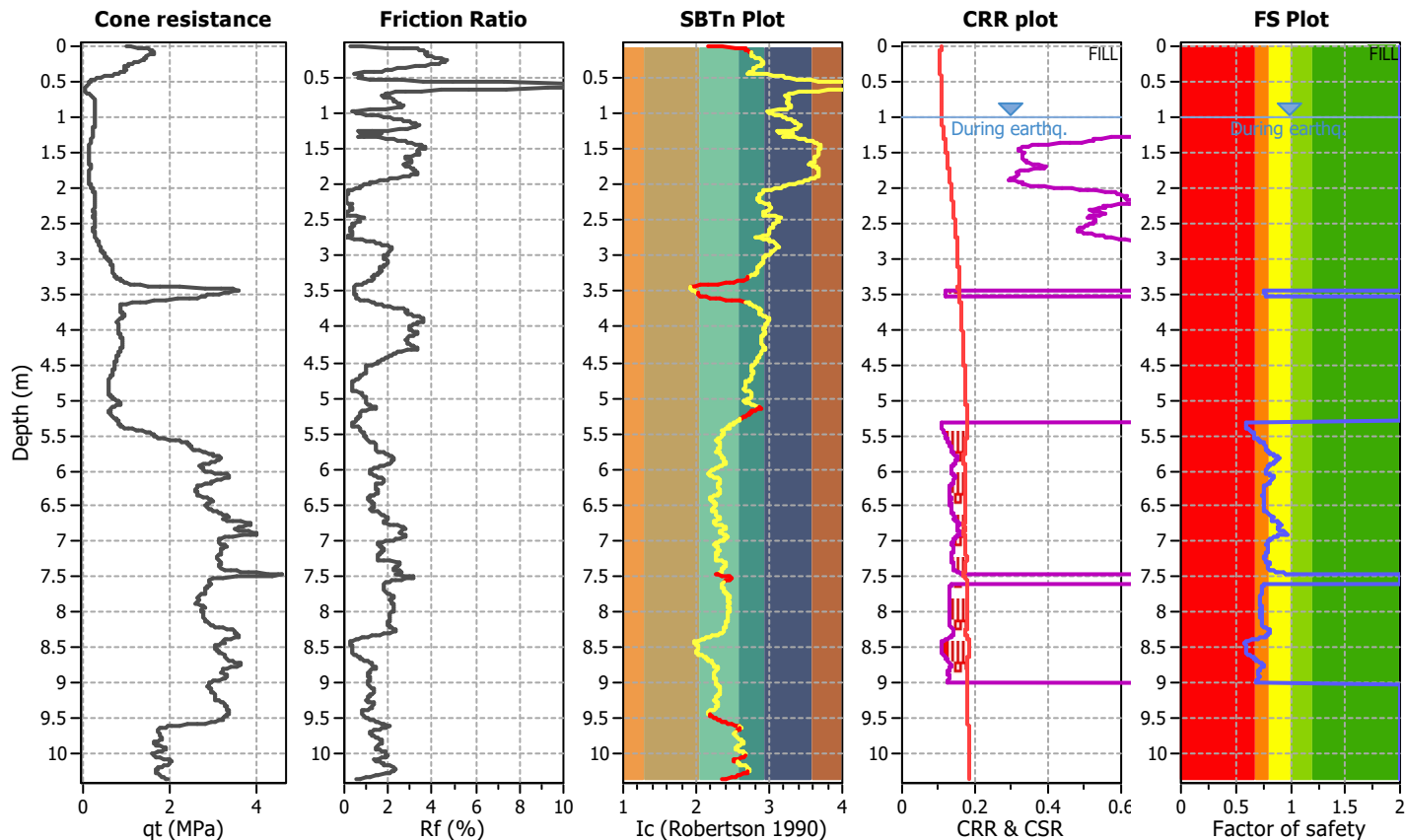
Project title : Sunfield Landholding

Location :

CPT file : CPT403

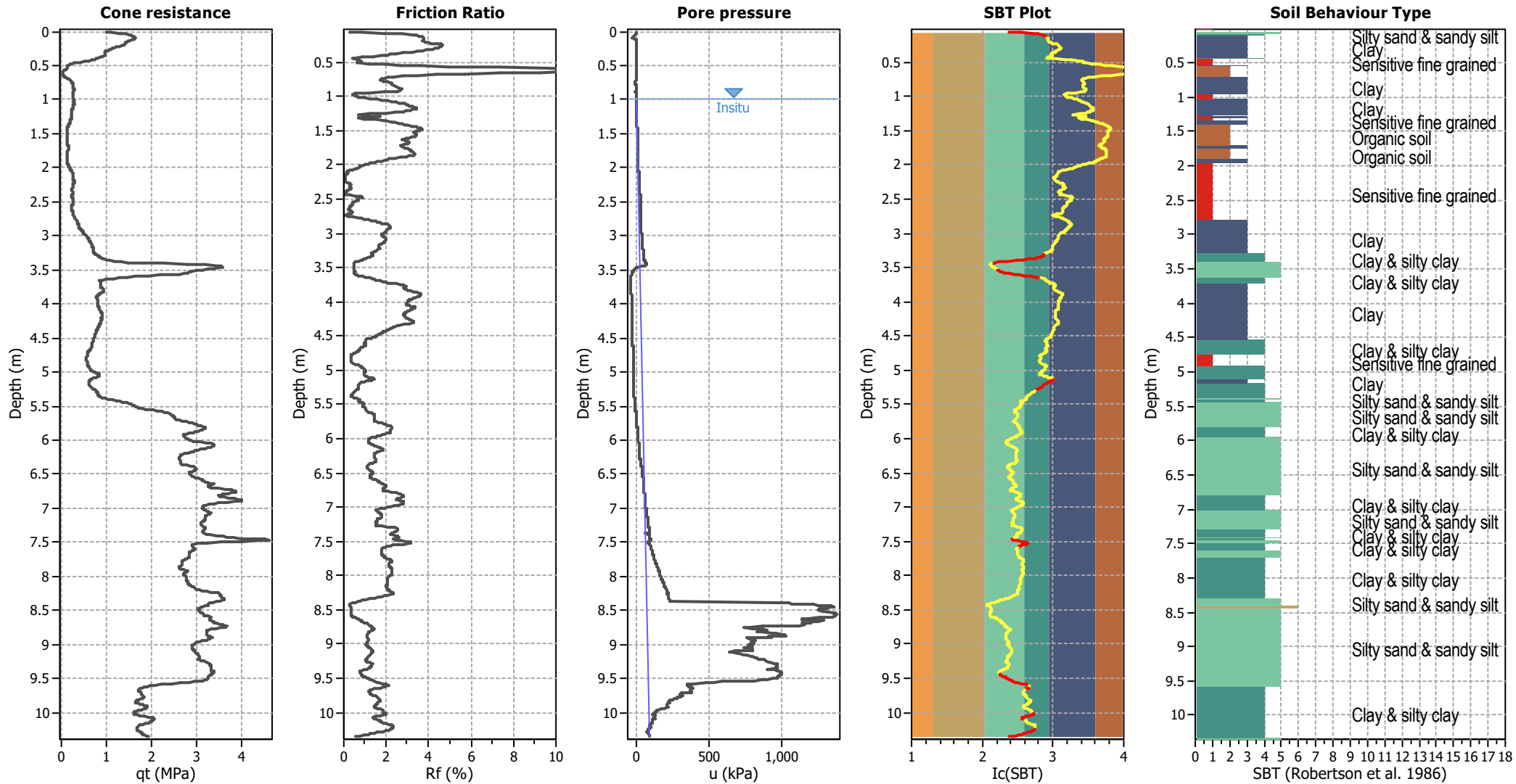
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	18.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

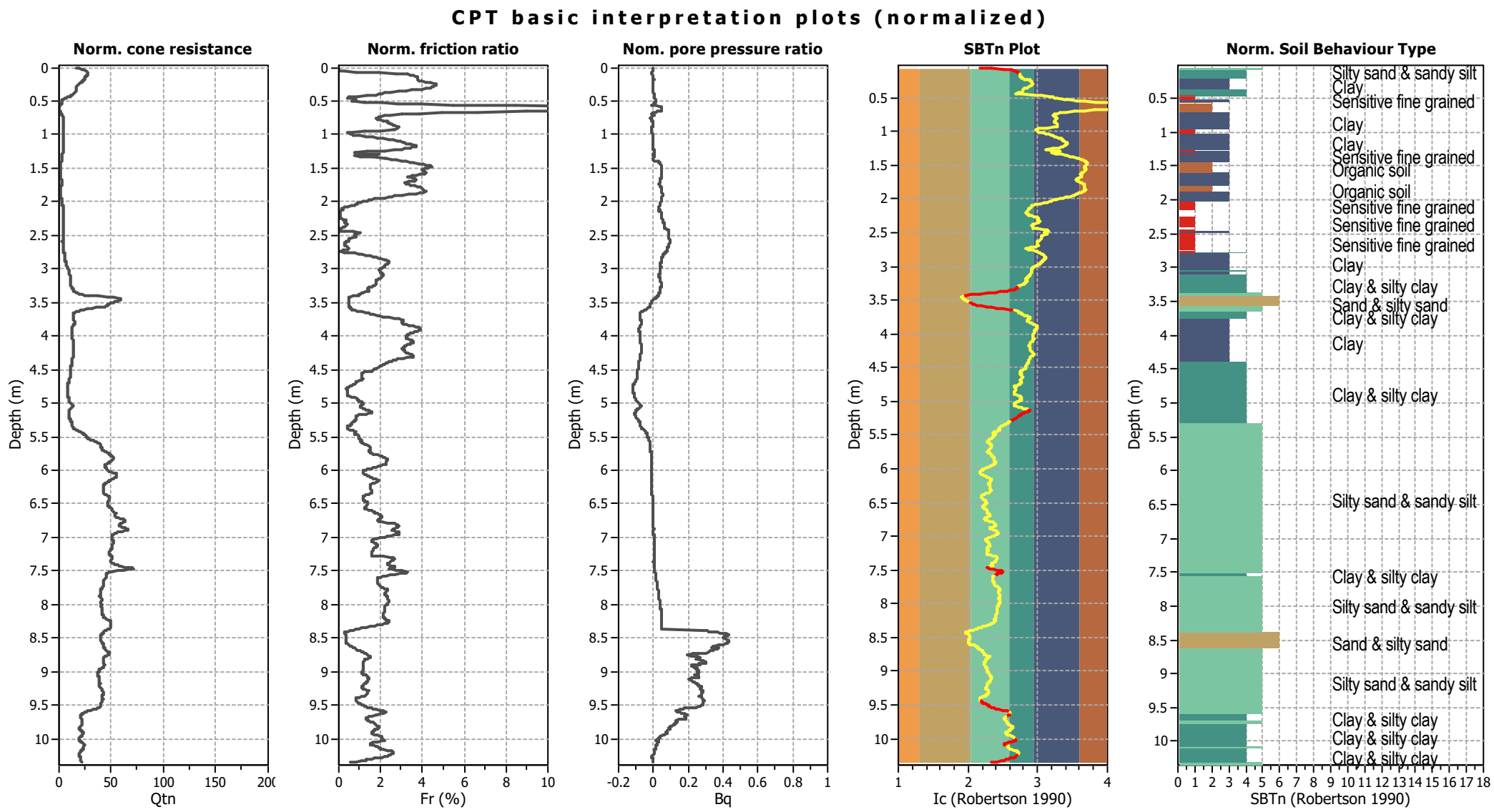


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

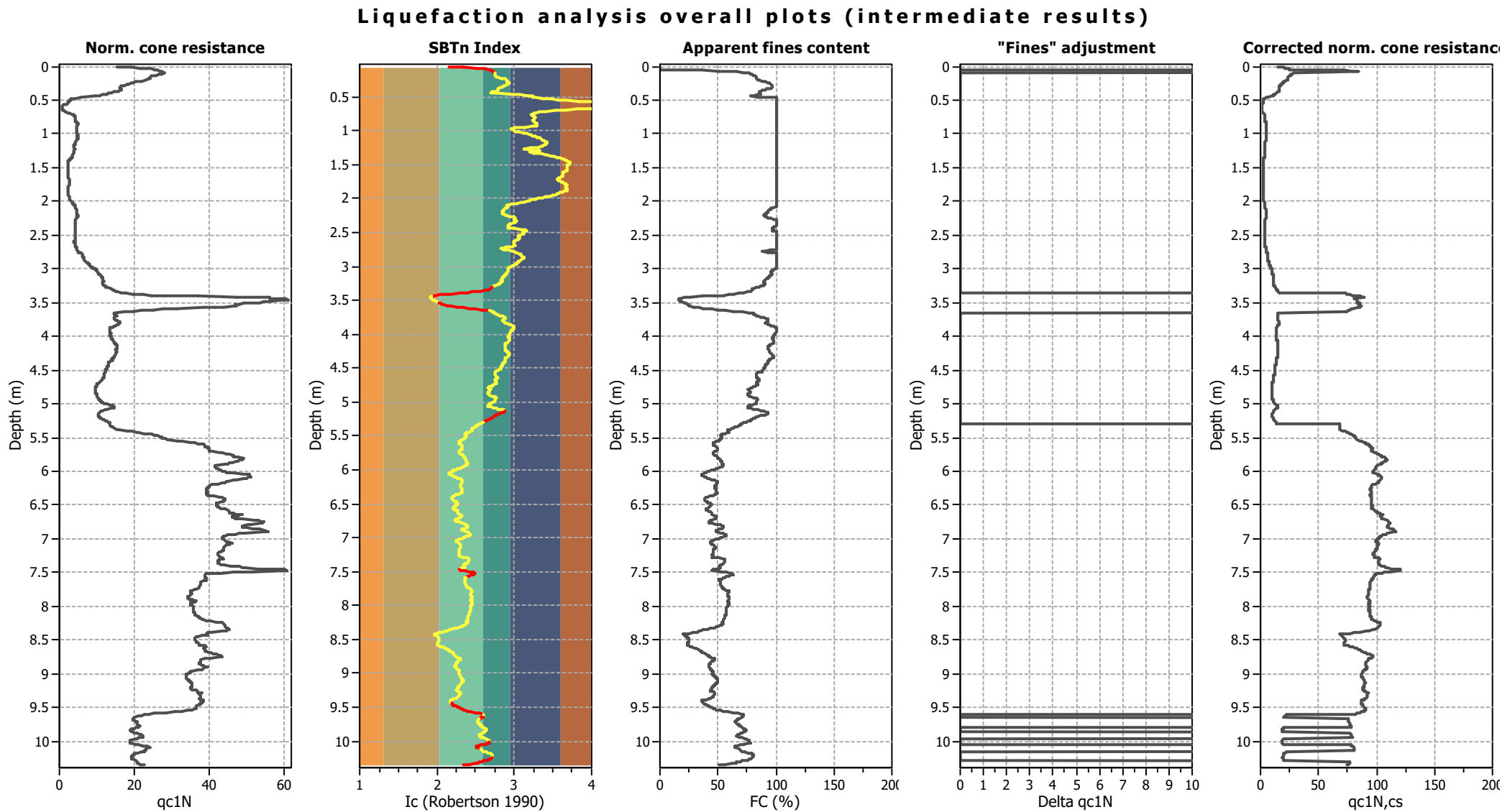


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

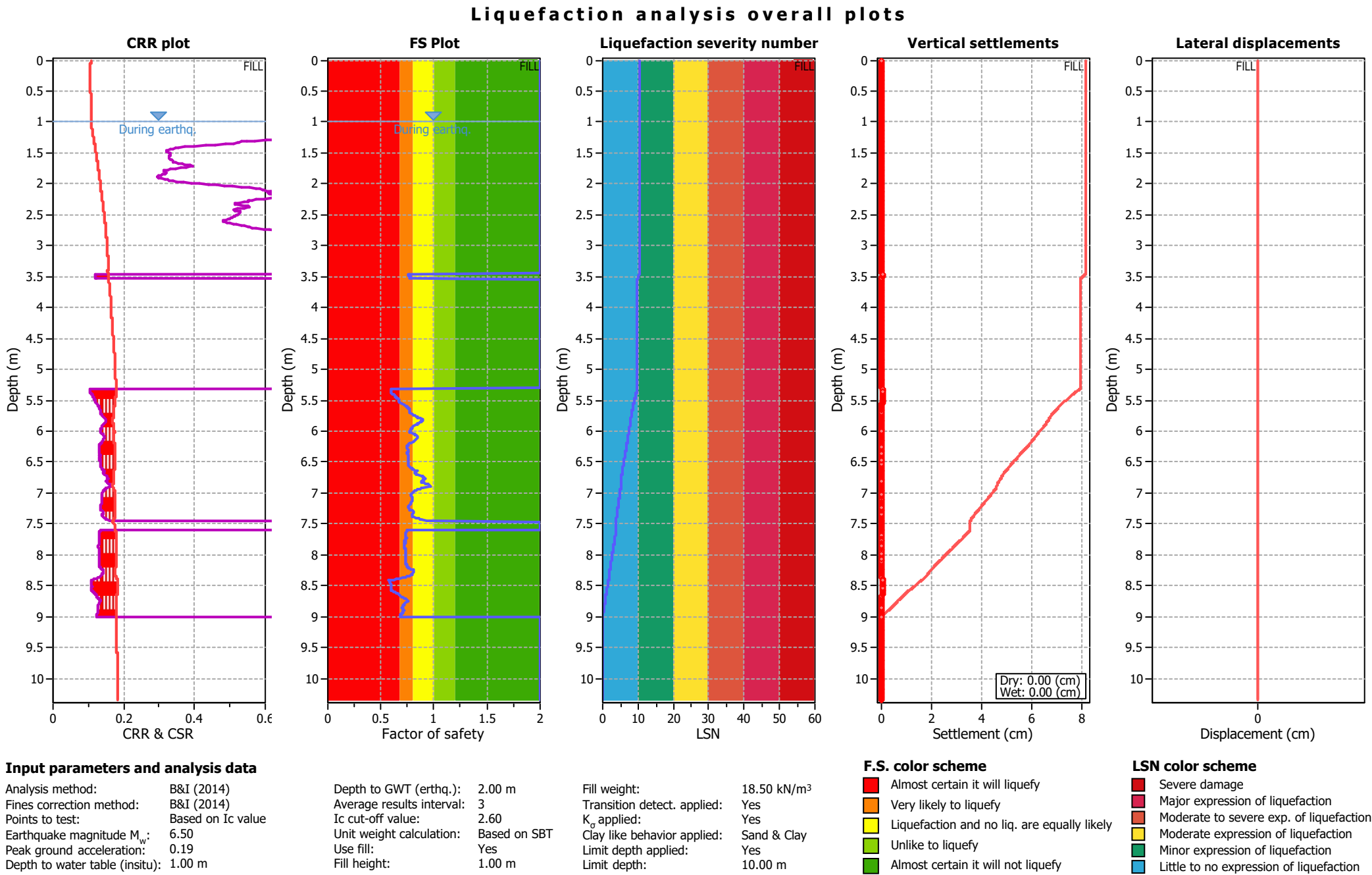
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

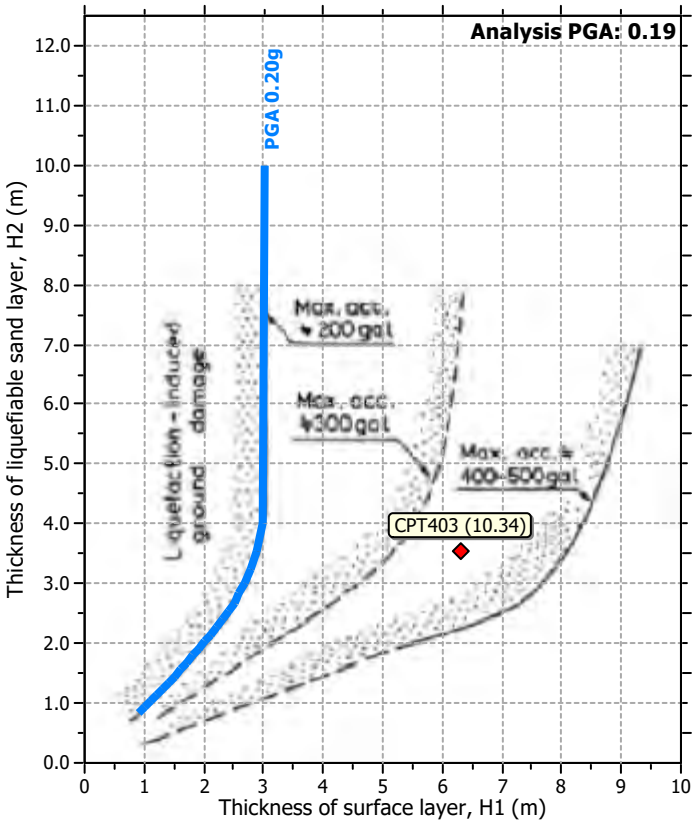
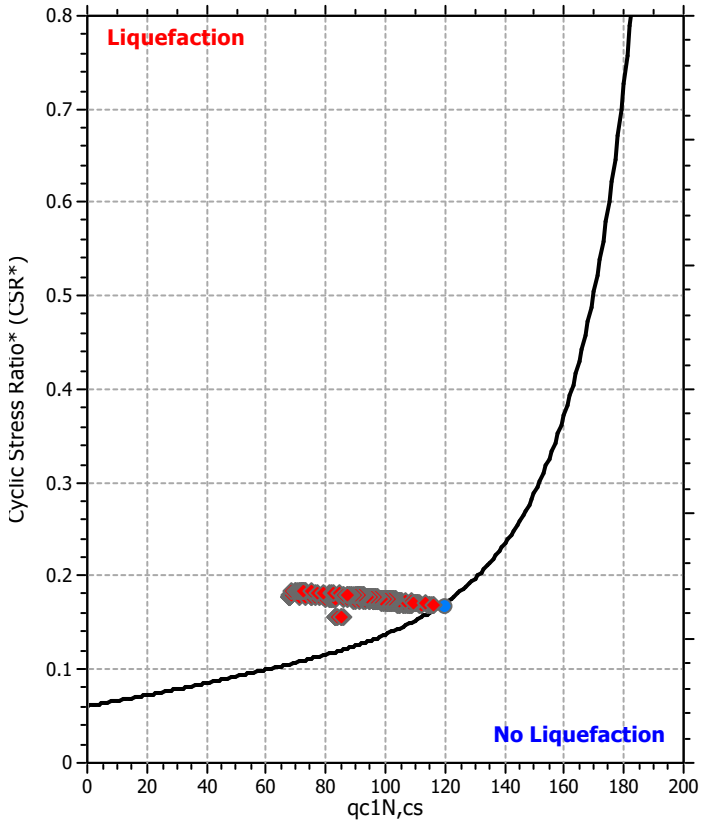
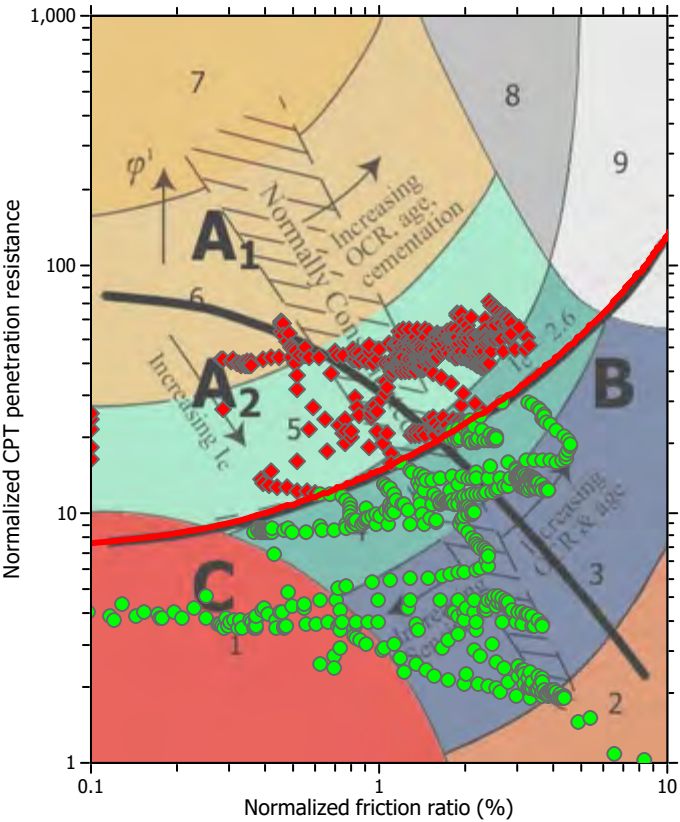


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

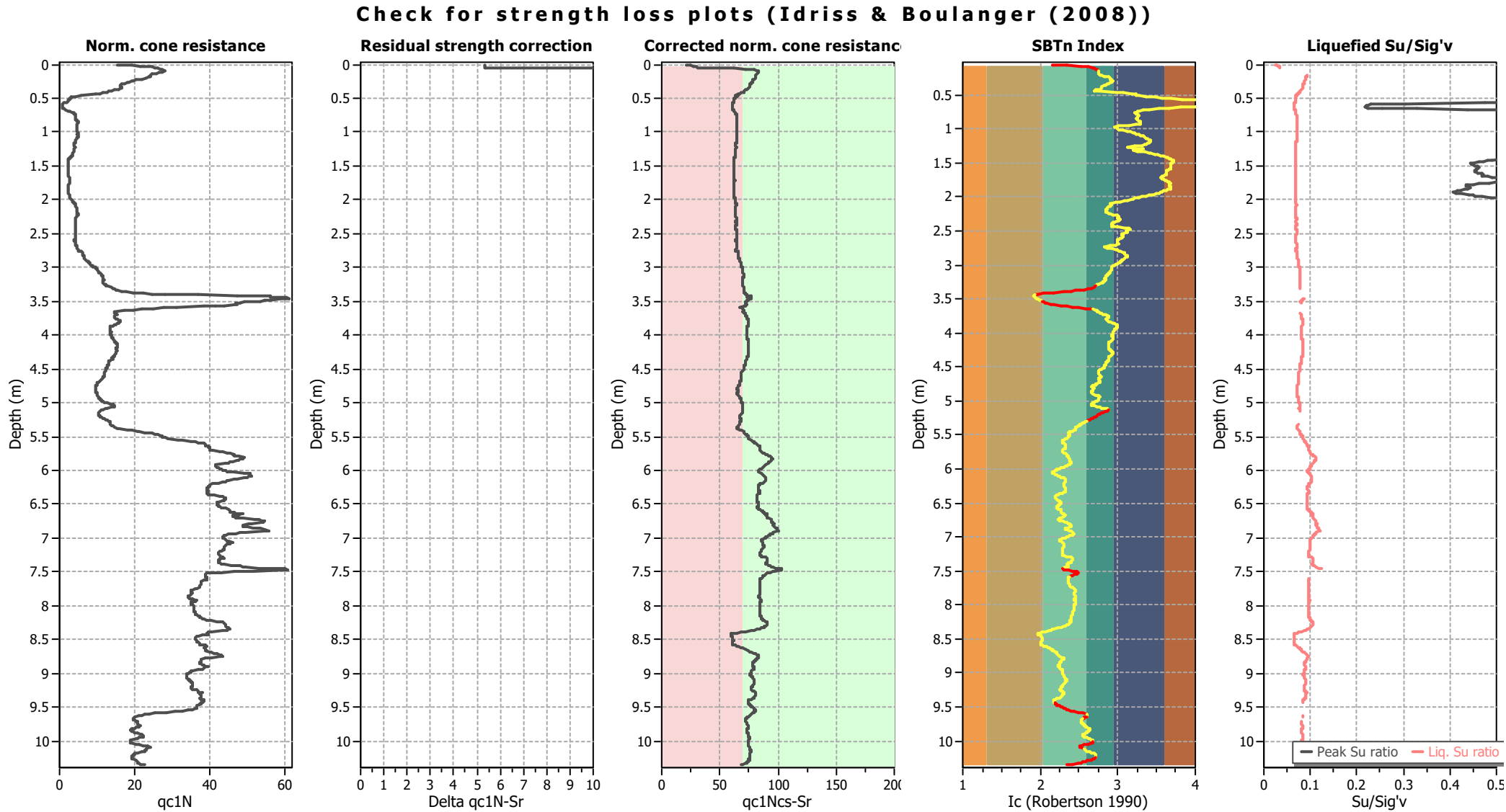


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	18.50 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

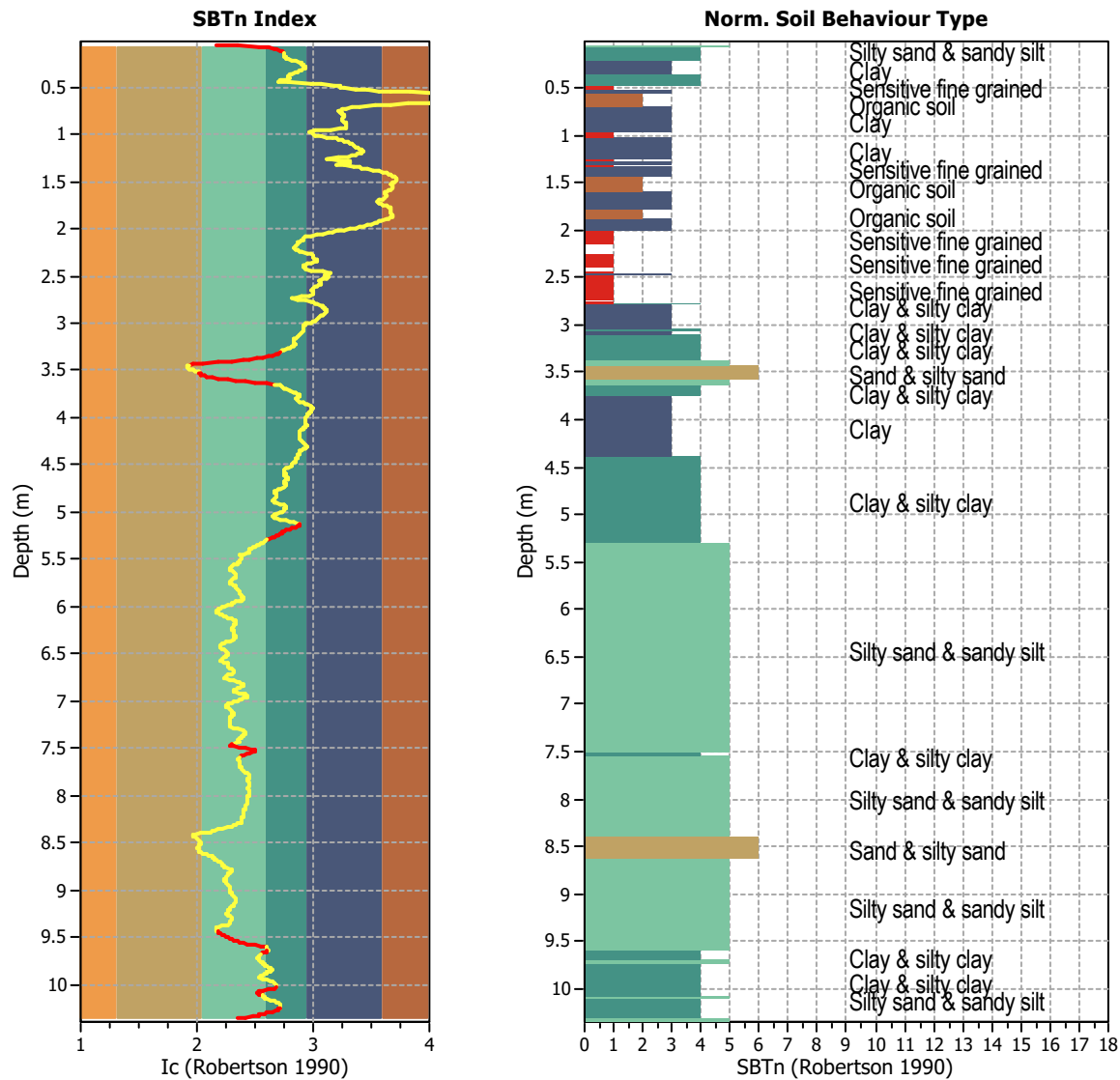
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



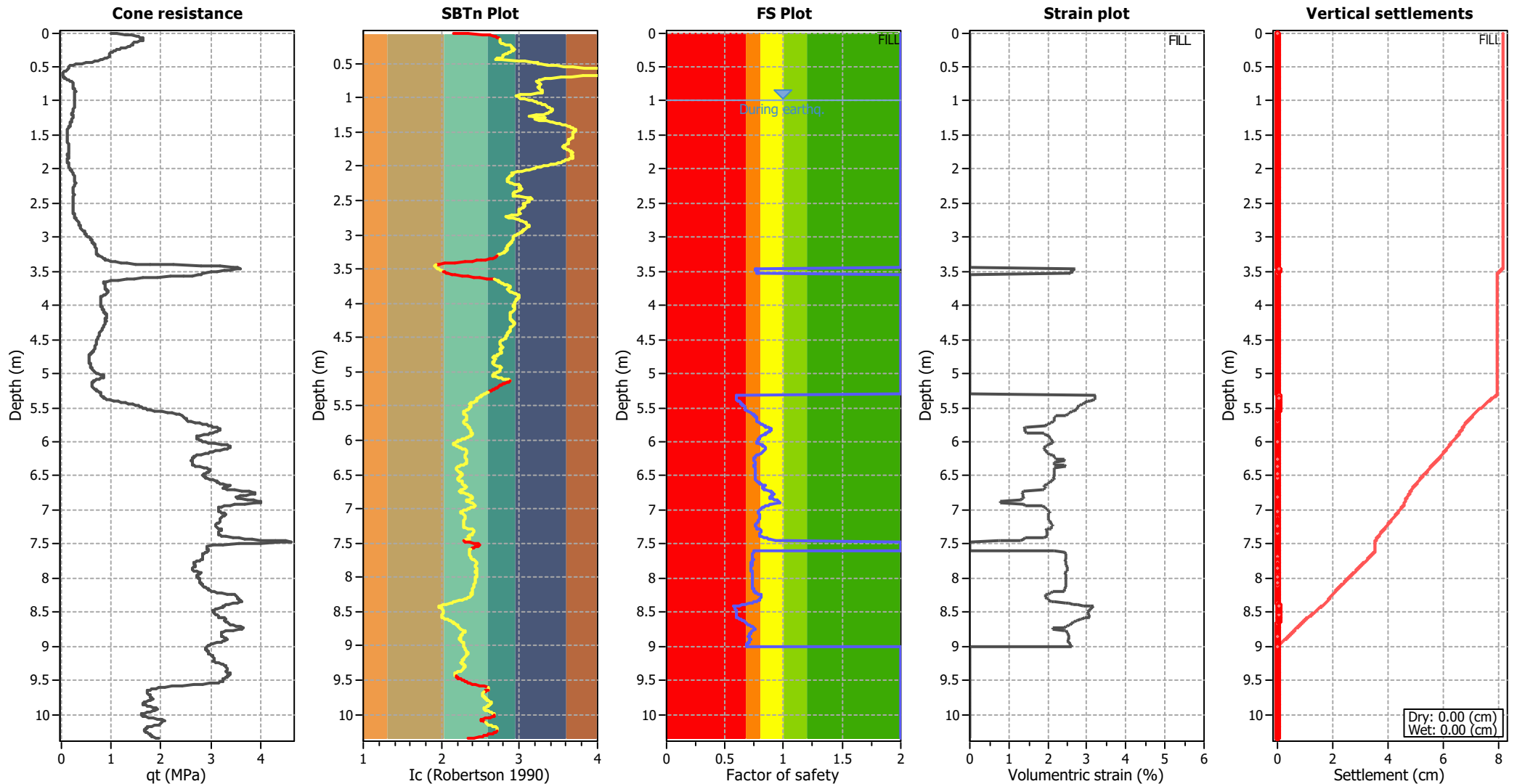
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1035
Total points excluded: 111
Exclusion percentage: 10.72%
Number of layers detected: 11

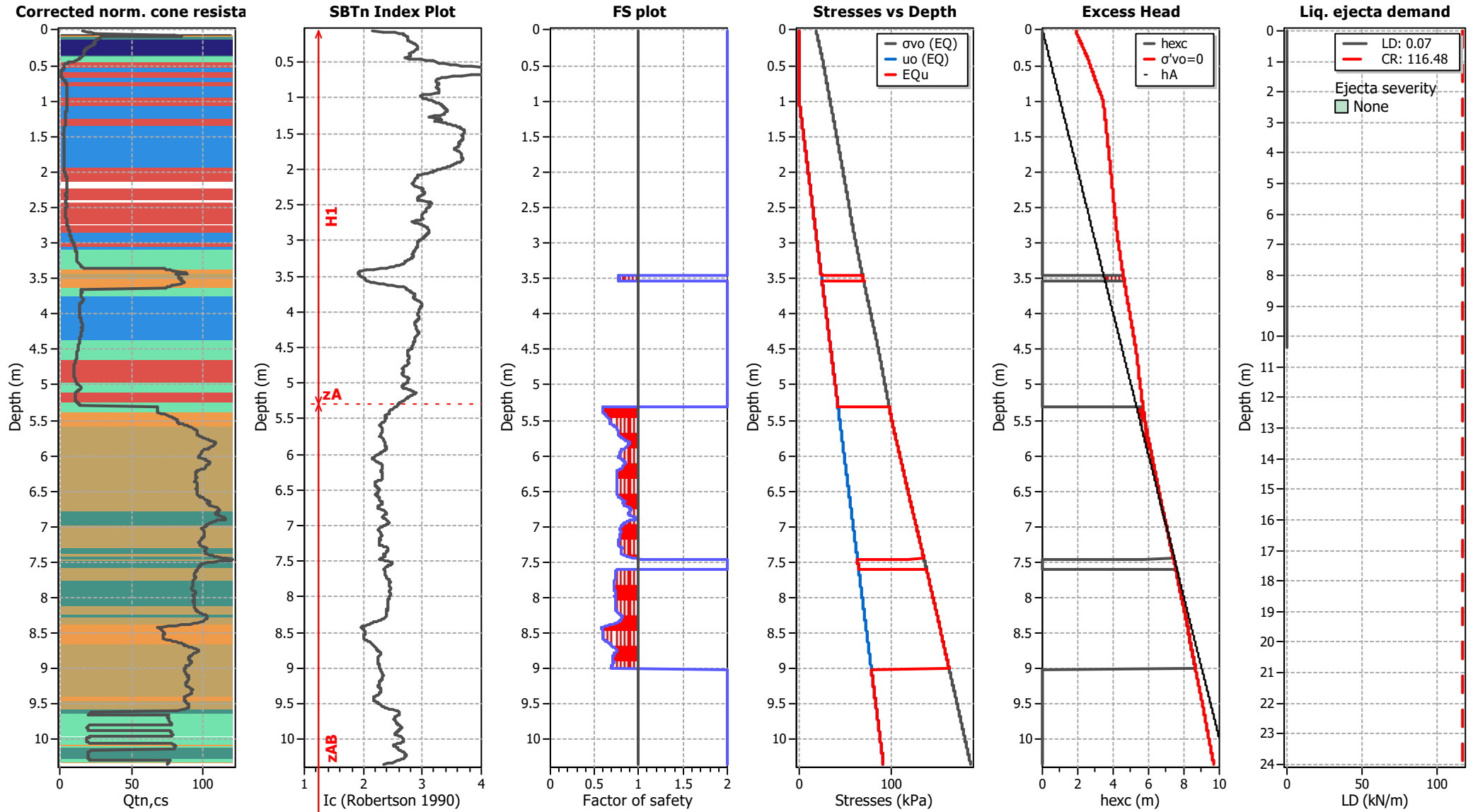
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

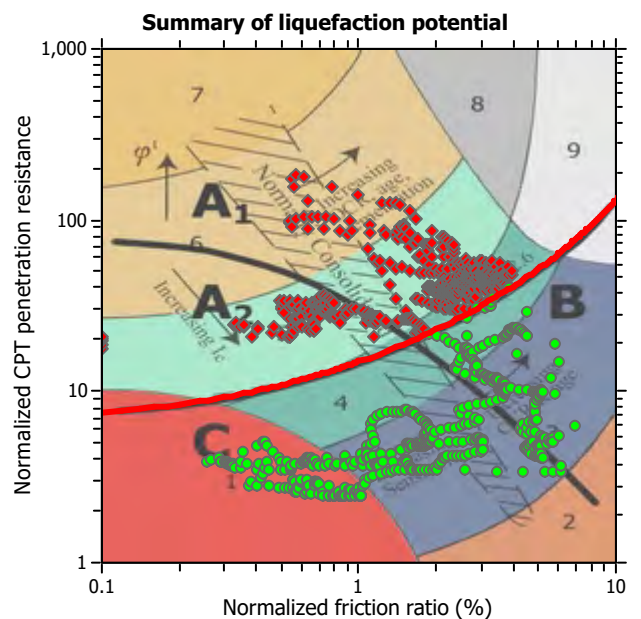
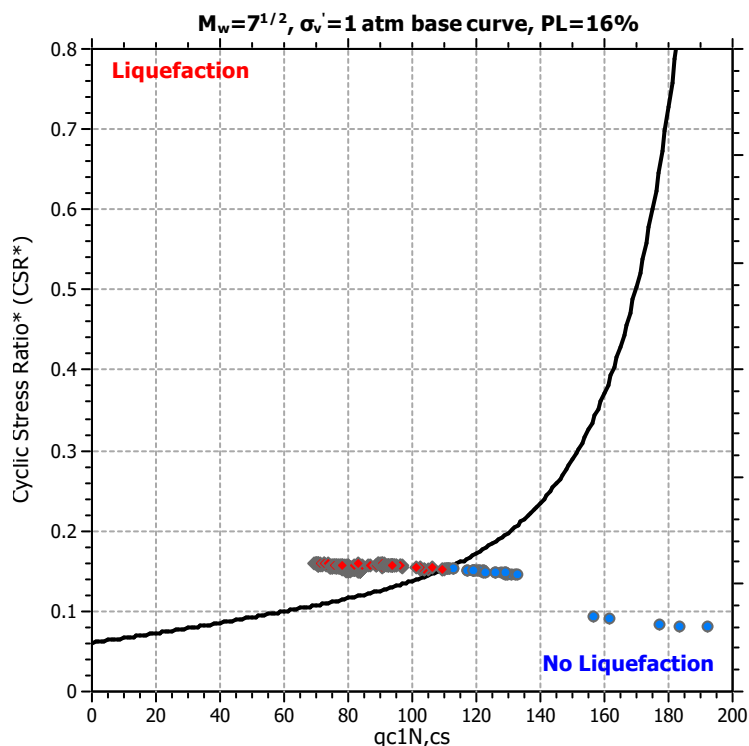
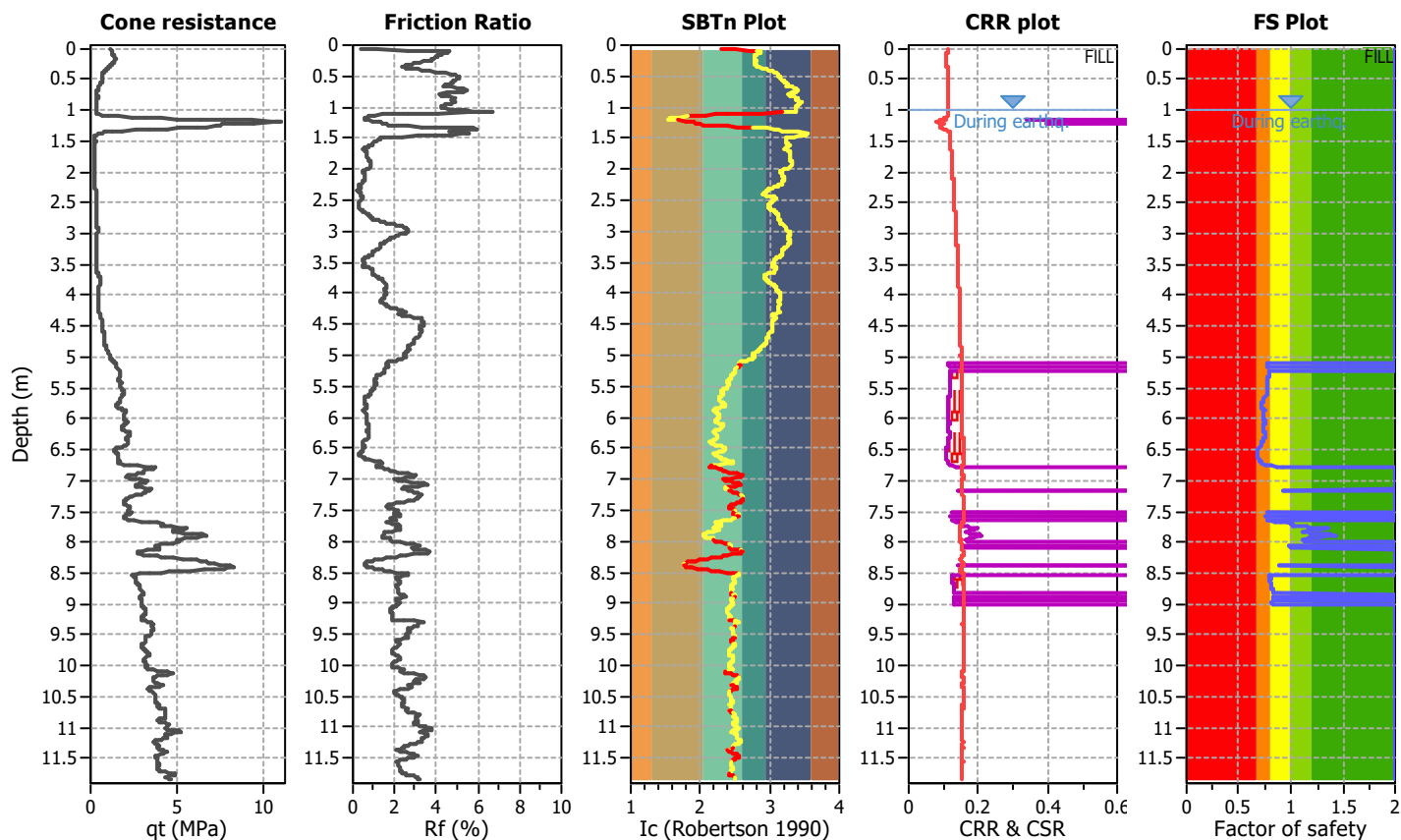
Project title : Sunfield Landholding

Location :

CPT file : CPT404

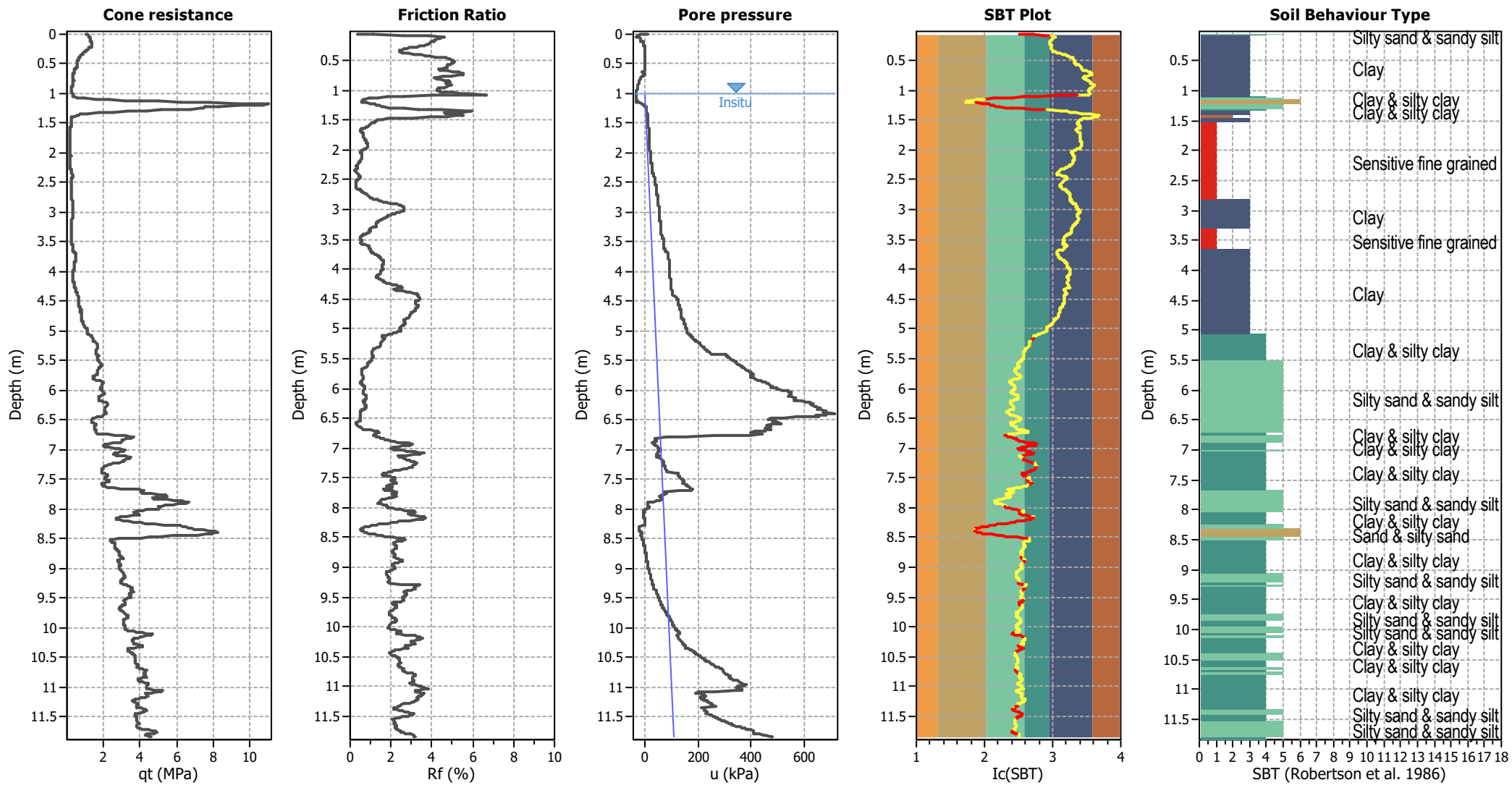
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	55.50 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	55.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

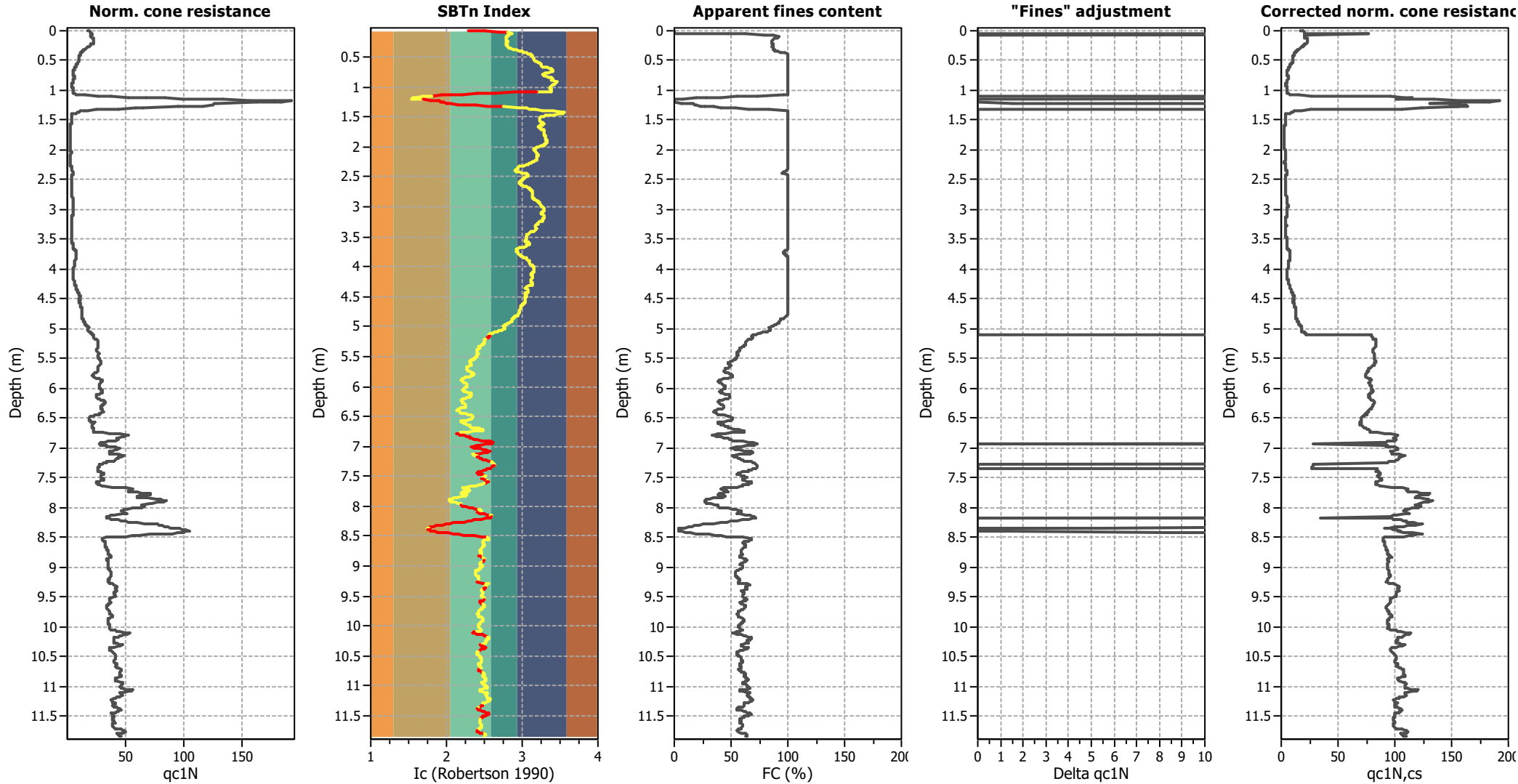
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	55.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

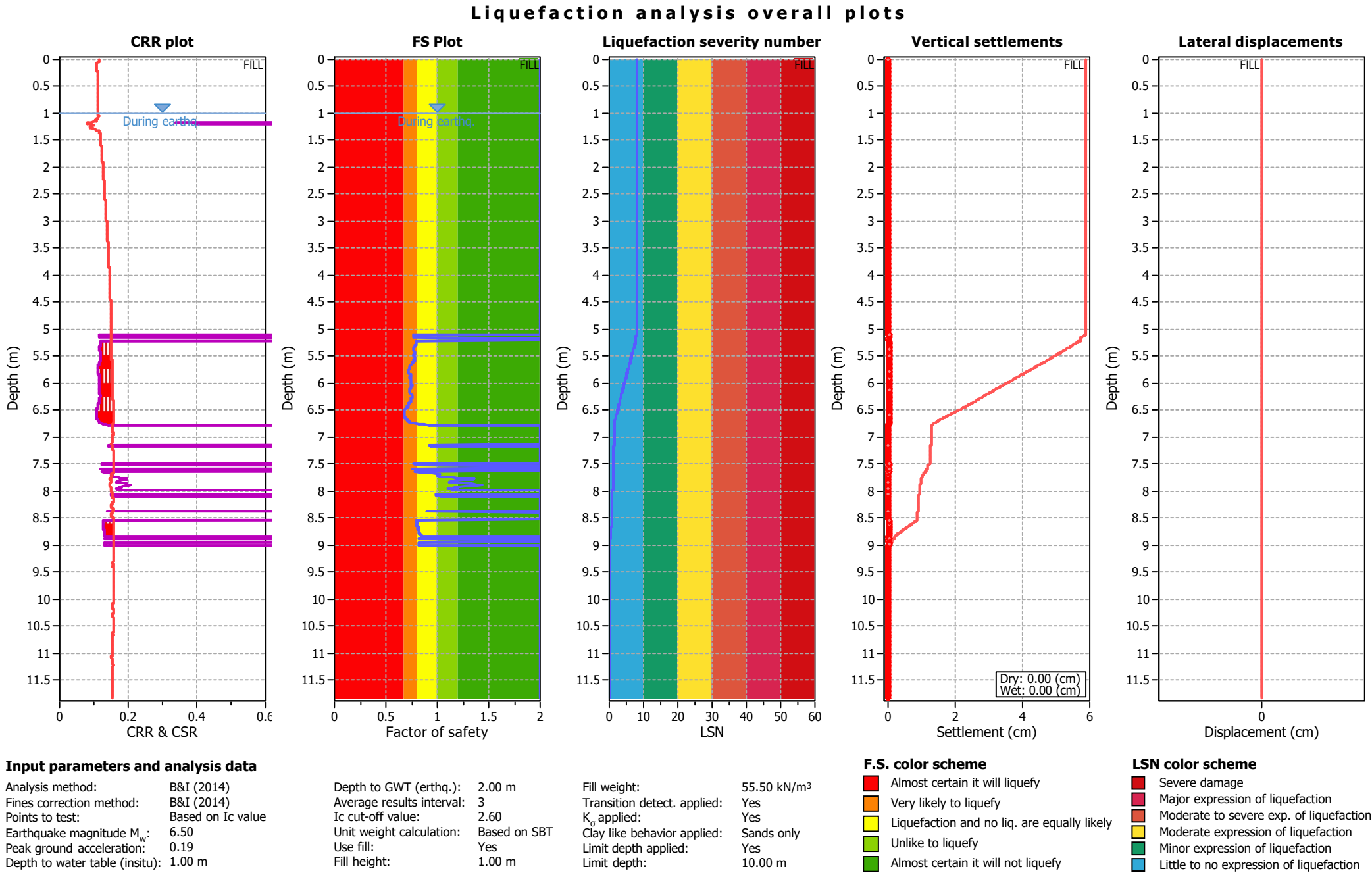
	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

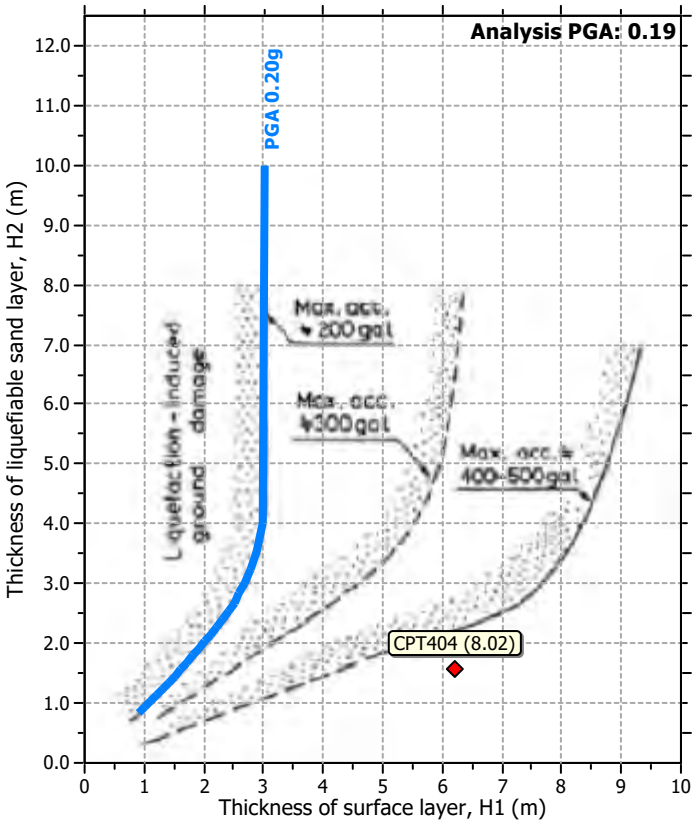
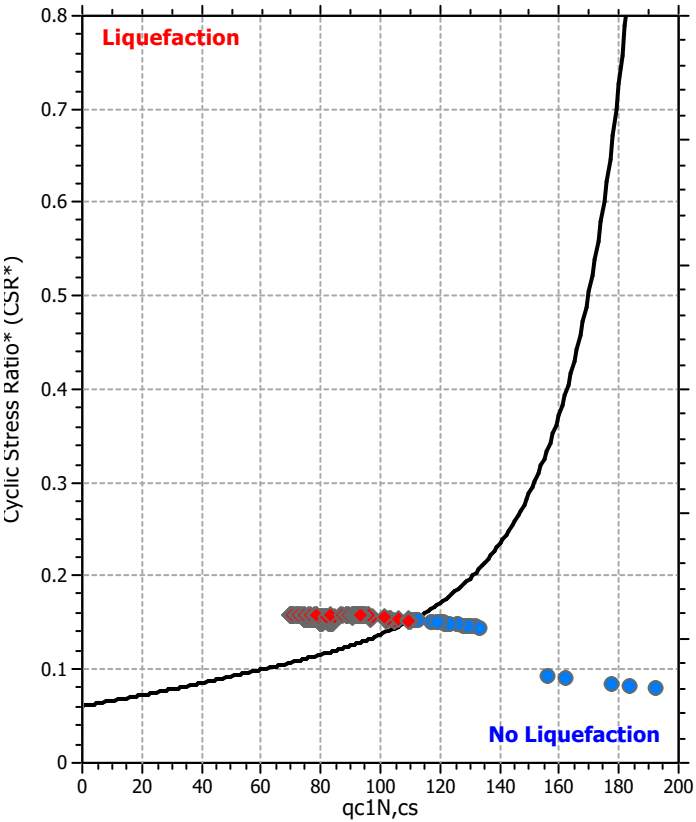
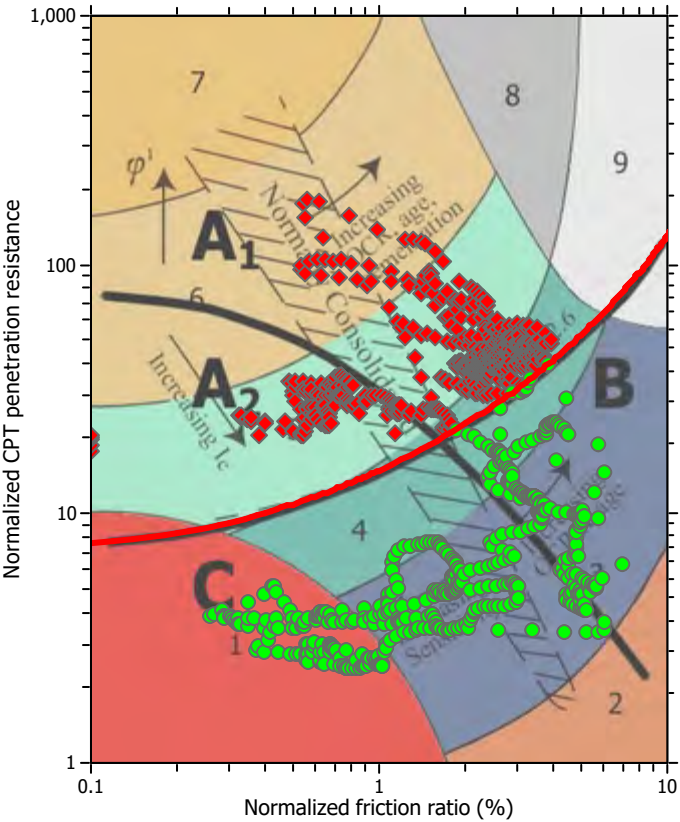


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	55.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



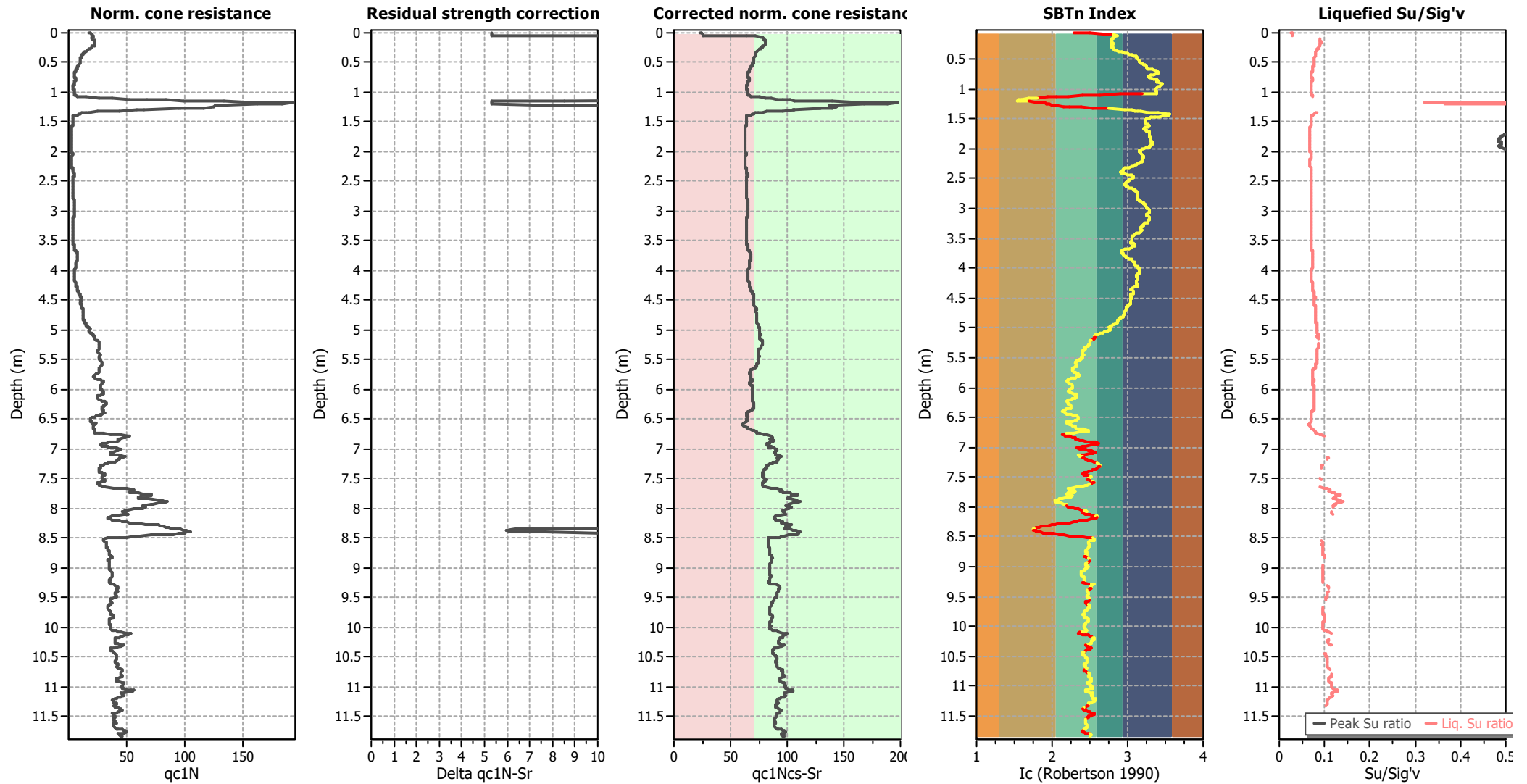
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	55.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	55.50 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

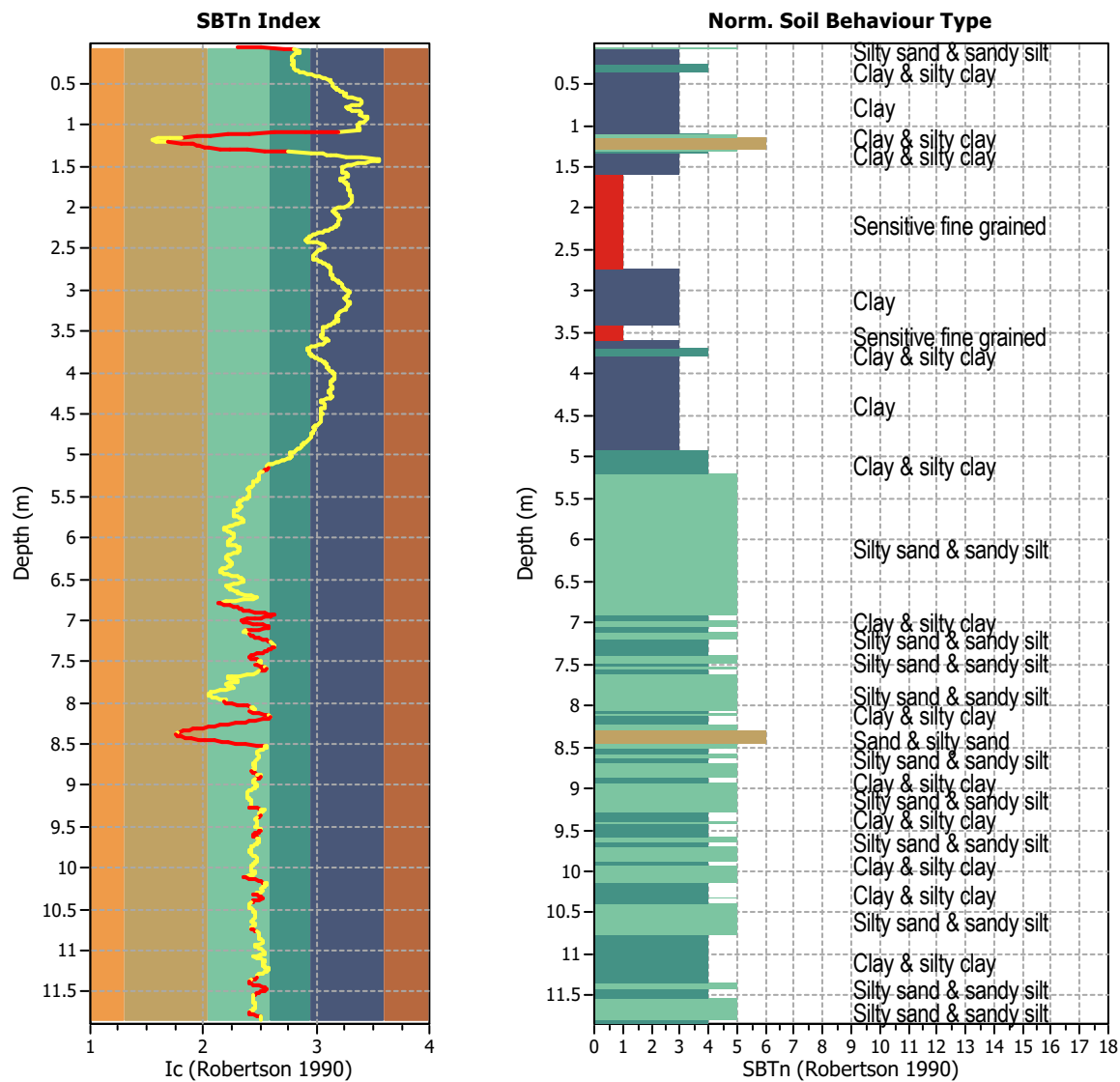
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



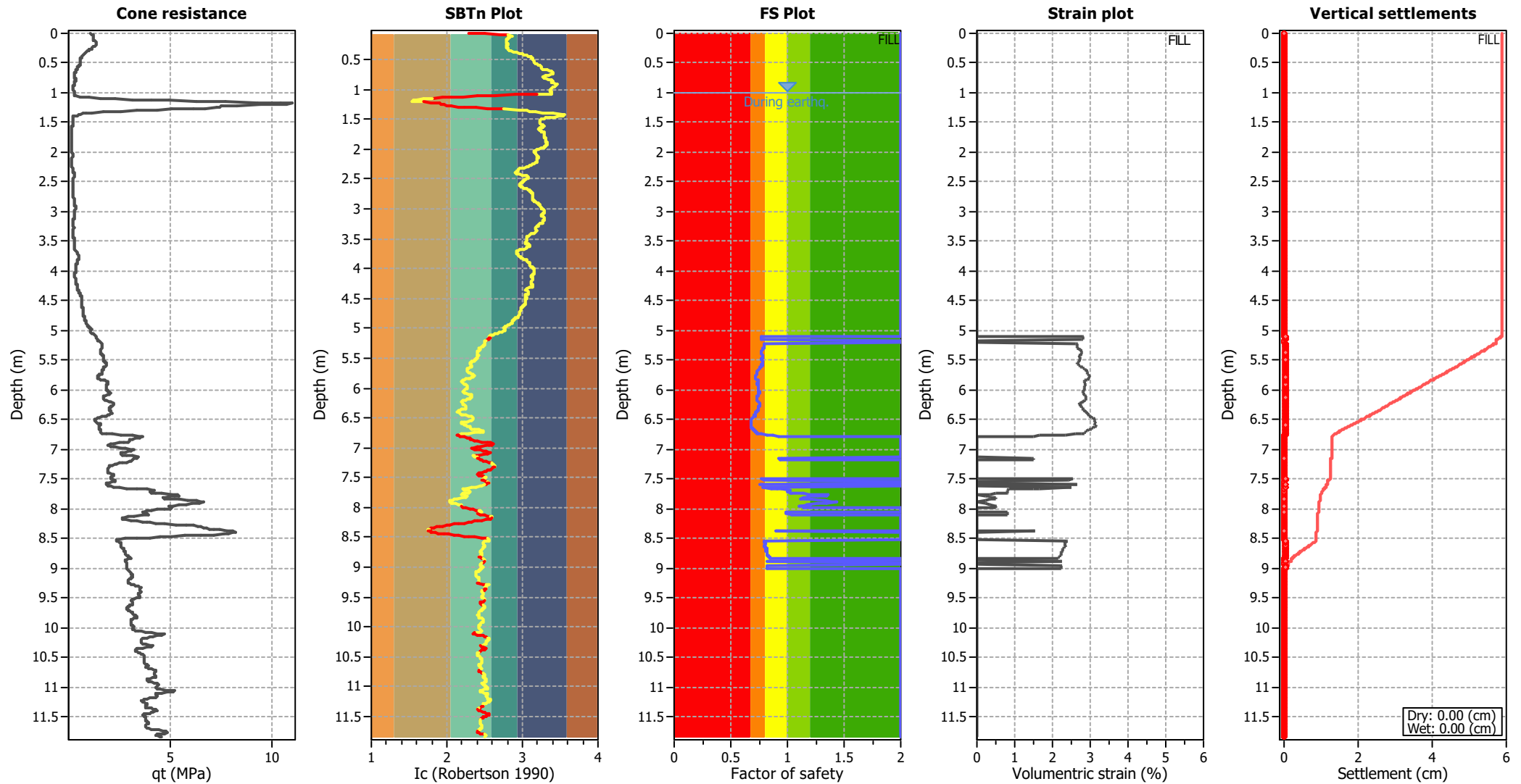
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1184
Total points excluded: 233
Exclusion percentage: 19.68%
Number of layers detected: 31

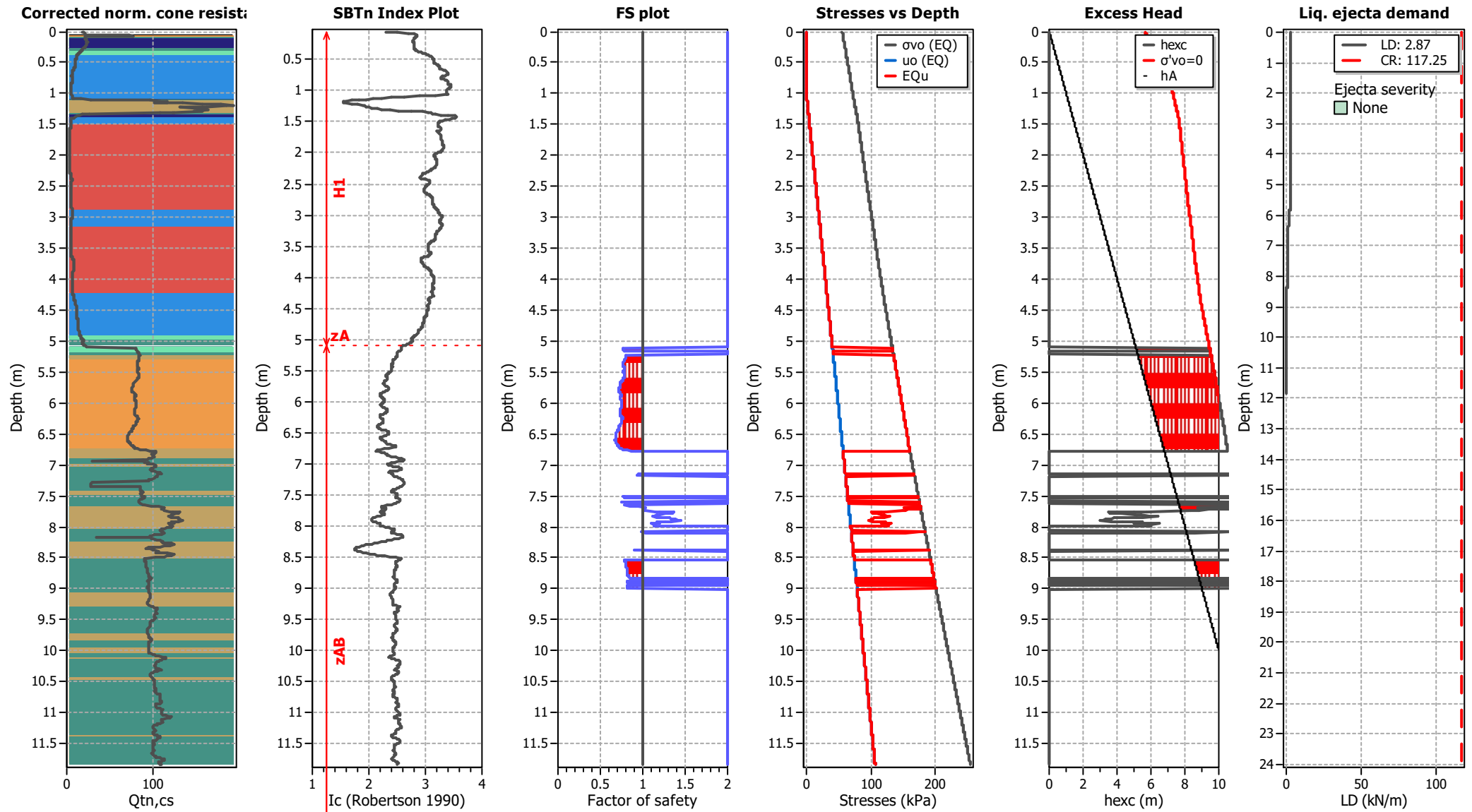
Estimation of post-earthquake settlements



Abbreviations

q_t : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

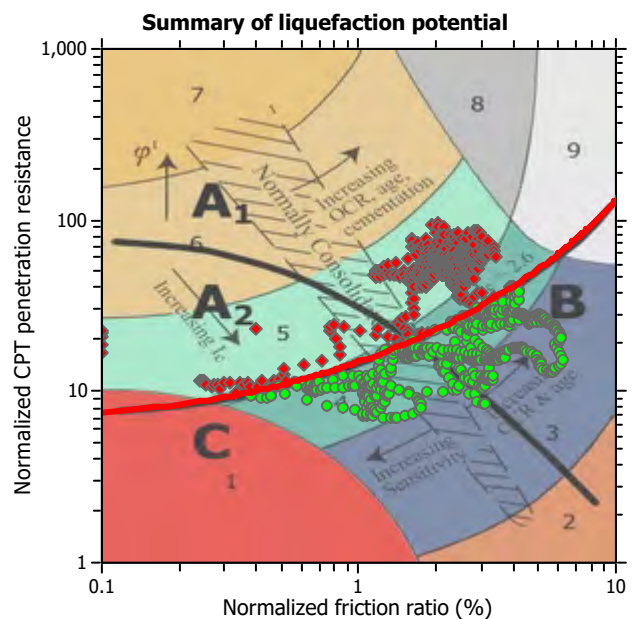
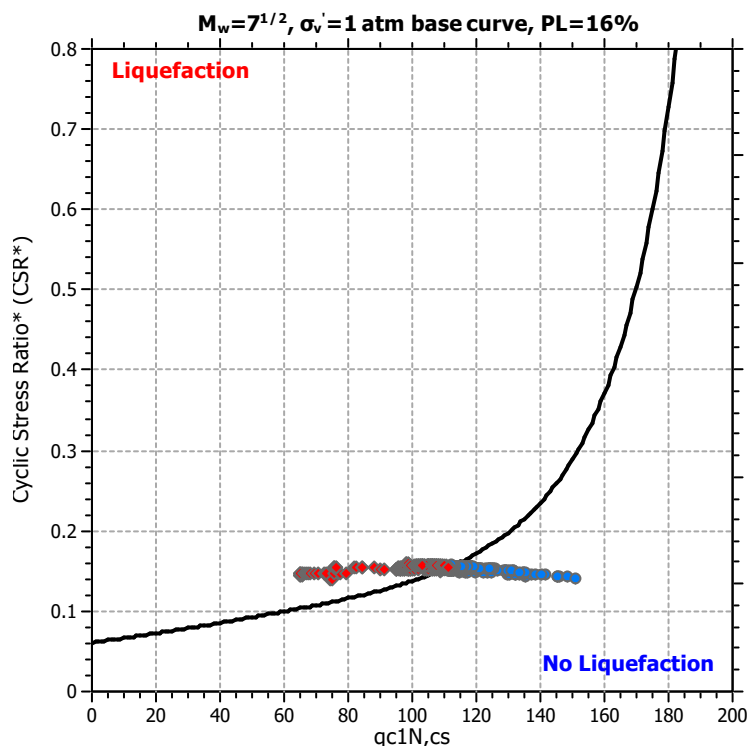
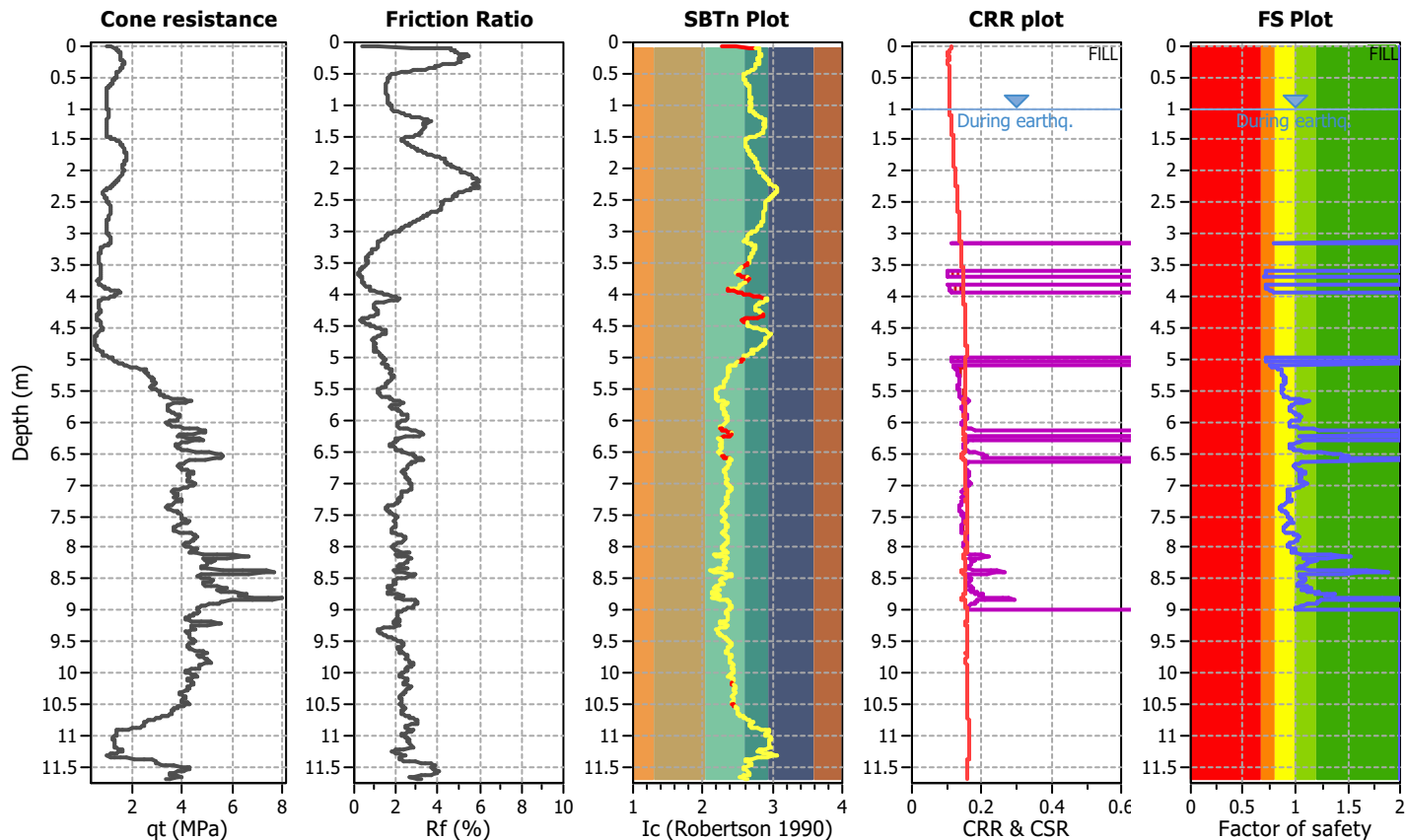
Project title : Sunfield Landholding

Location :

CPT file : CPT405

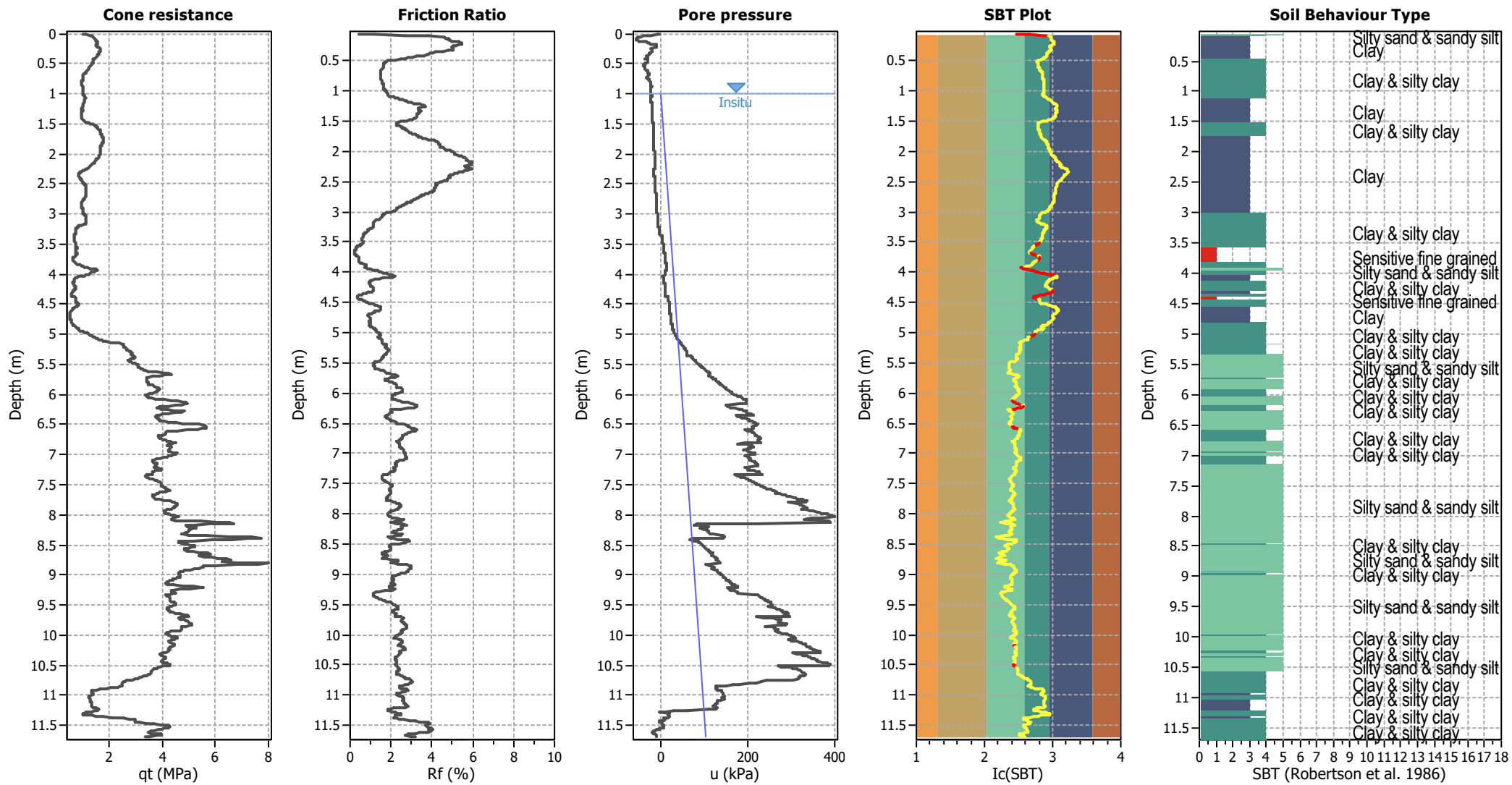
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

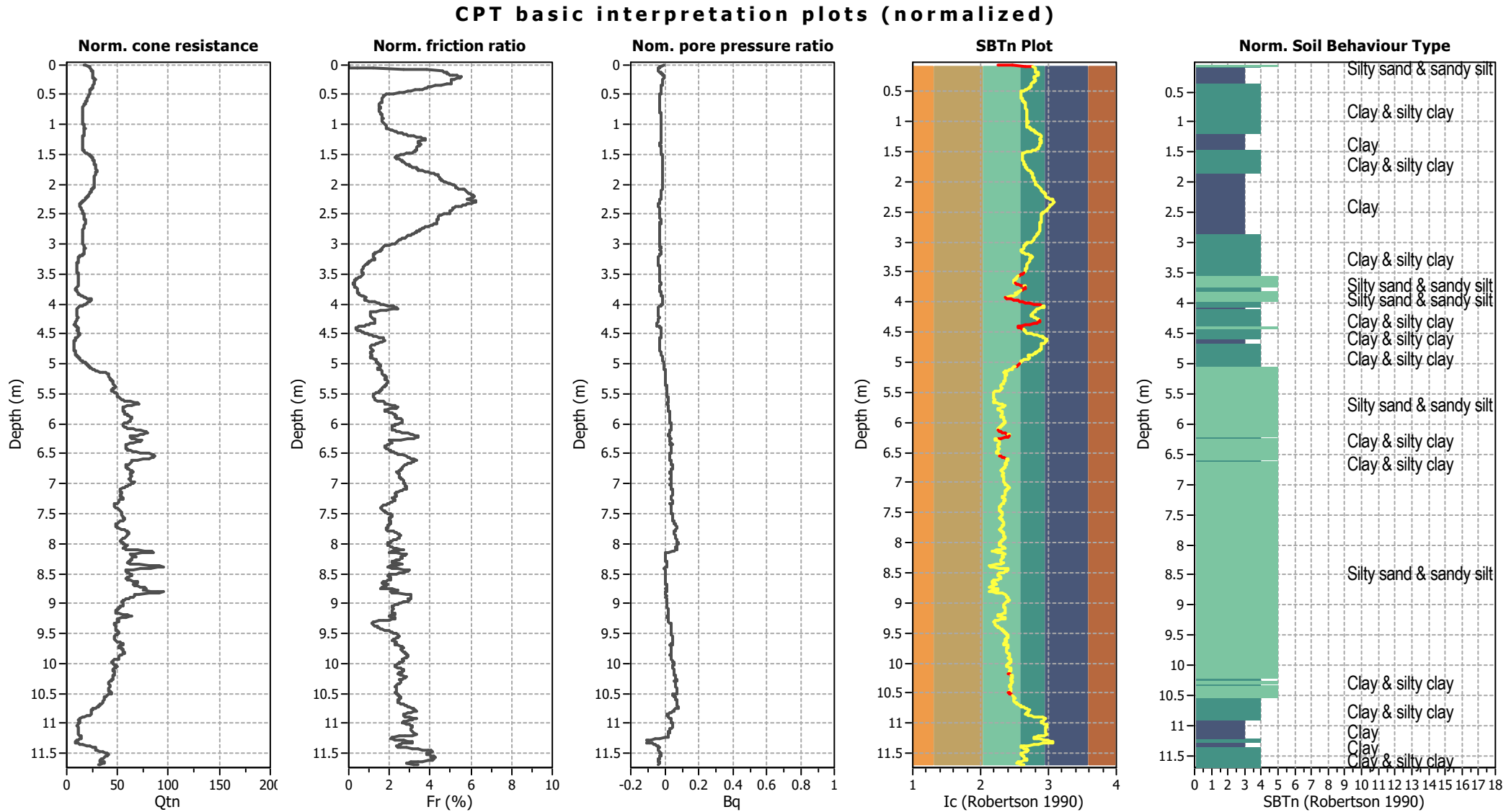


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



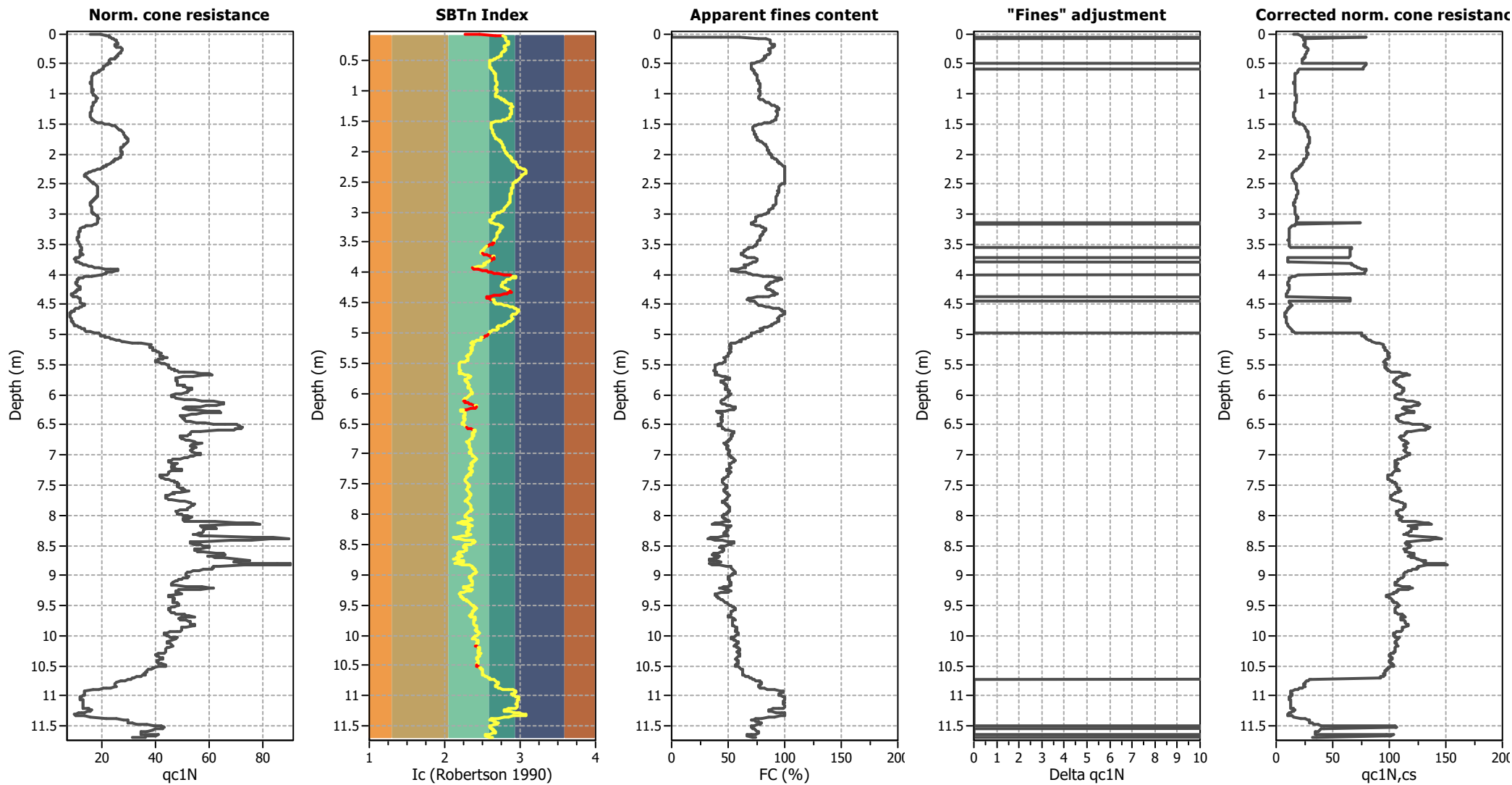
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

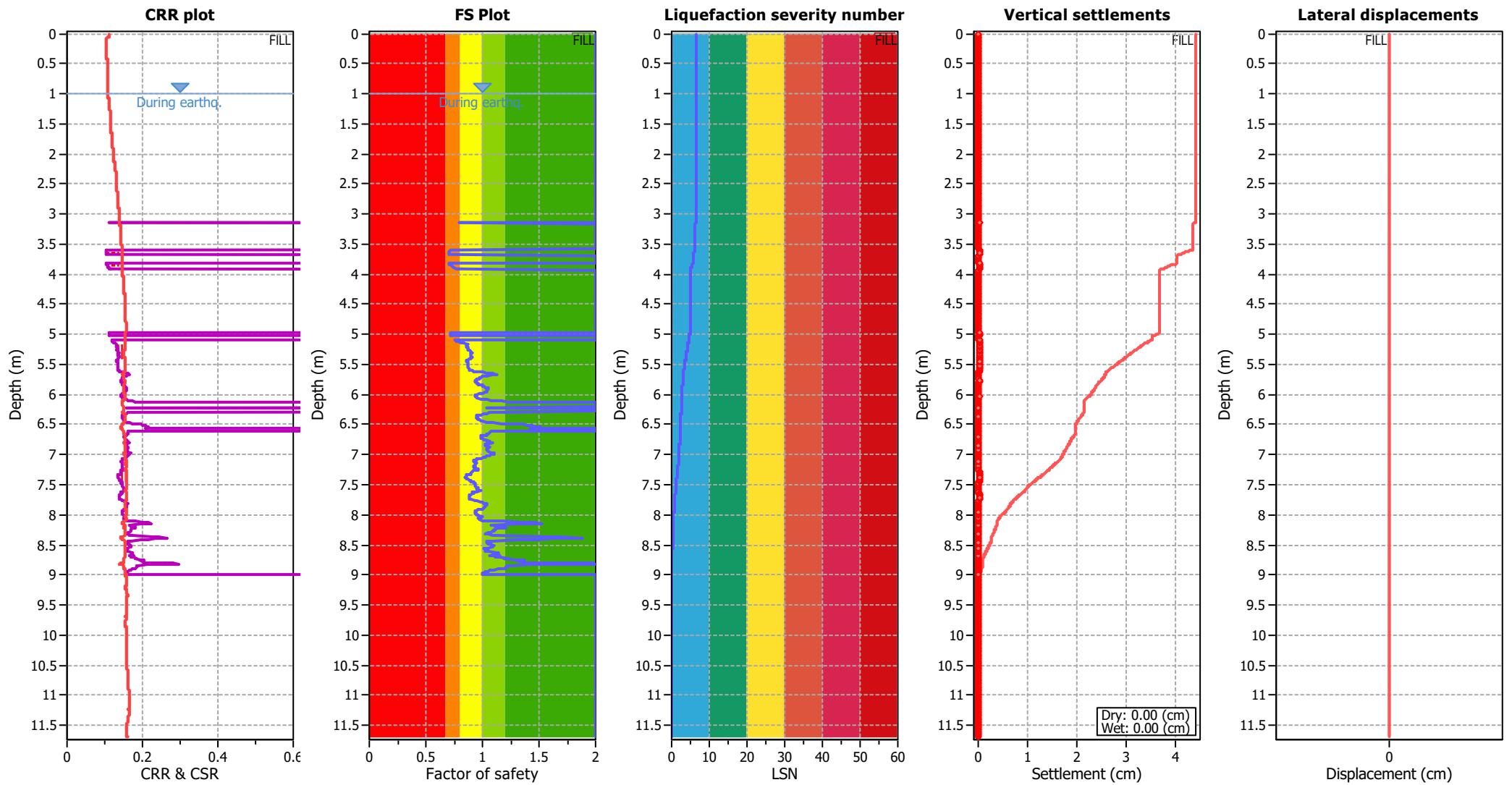
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

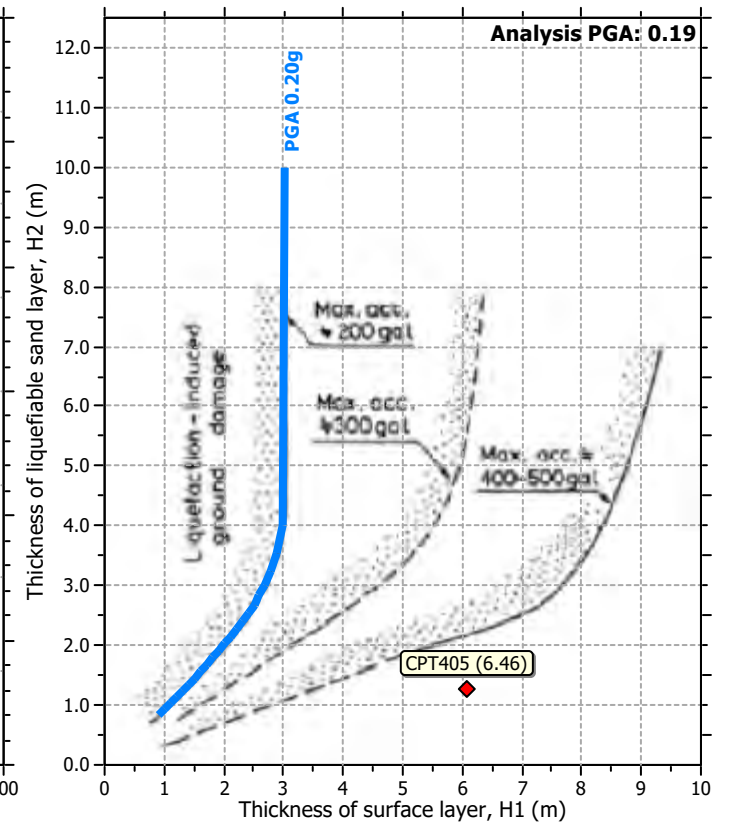
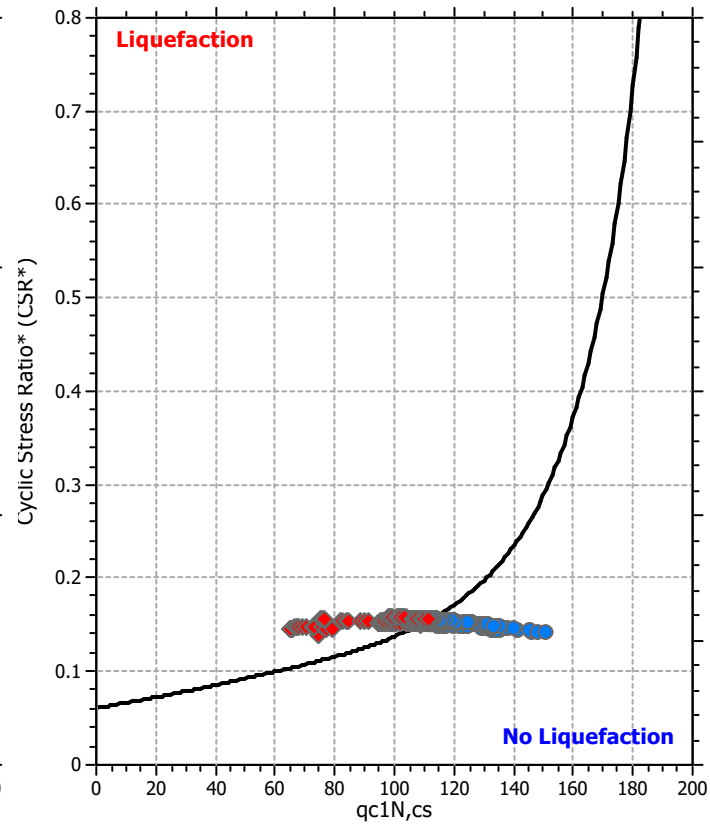
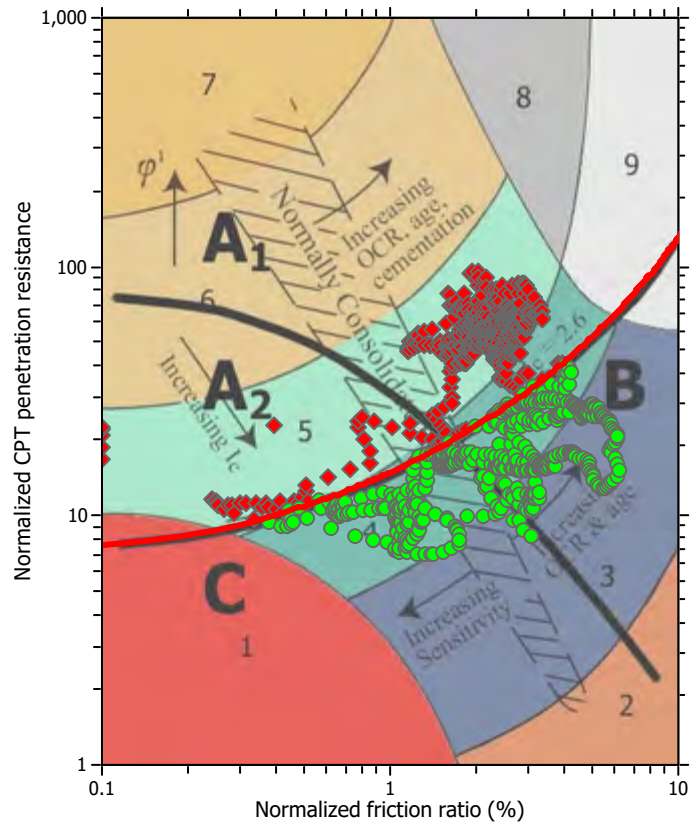
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LSN color scheme

Red	Severe damage
Dark Red	Major expression of liquefaction
Orange	Moderate to severe exp. of liquefaction
Yellow	Moderate expression of liquefaction
Light Green	Minor expression of liquefaction
Dark Green	Little to no expression of liquefaction

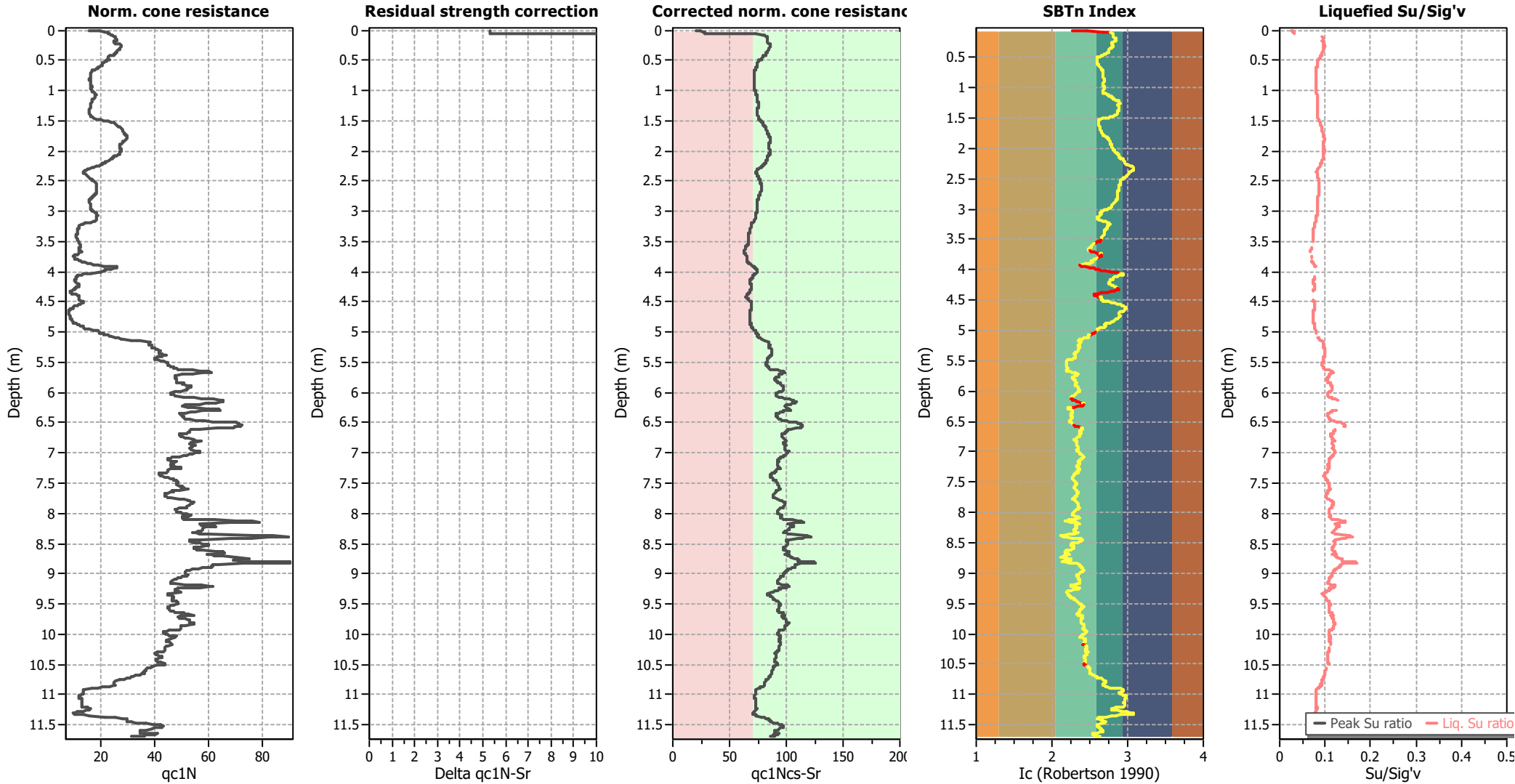
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

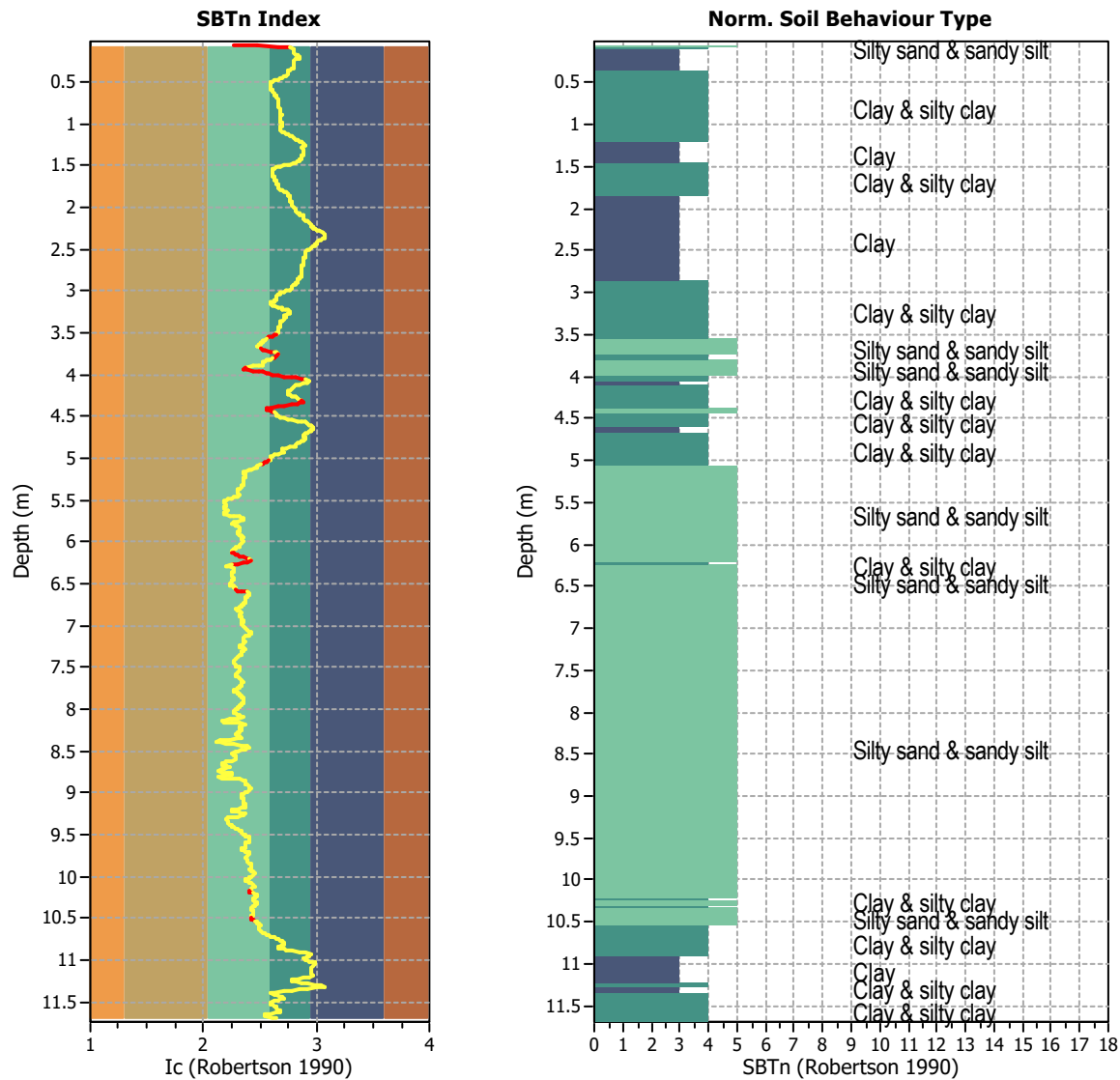
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



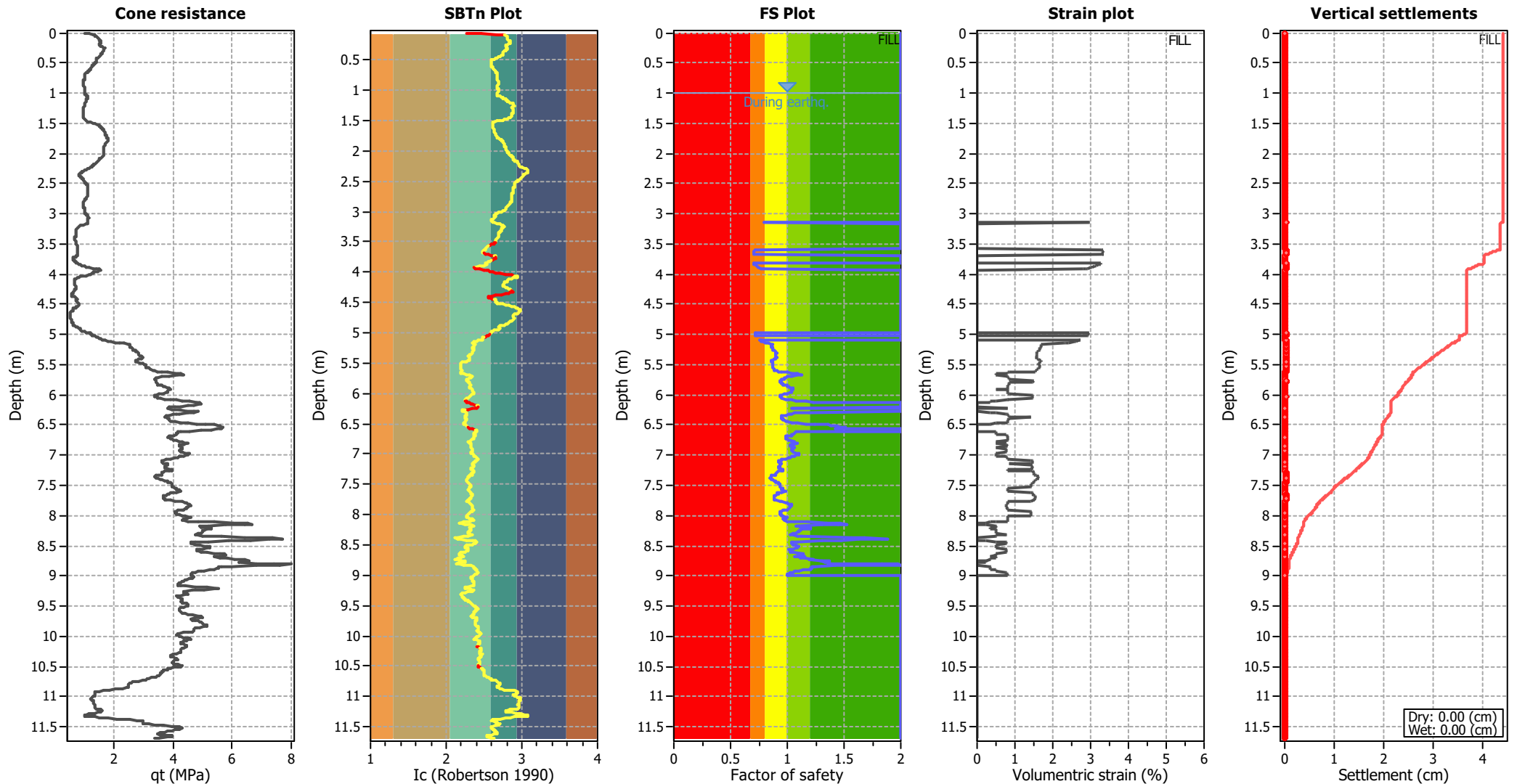
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1169
Total points excluded: 88
Exclusion percentage: 7.53%
Number of layers detected: 13

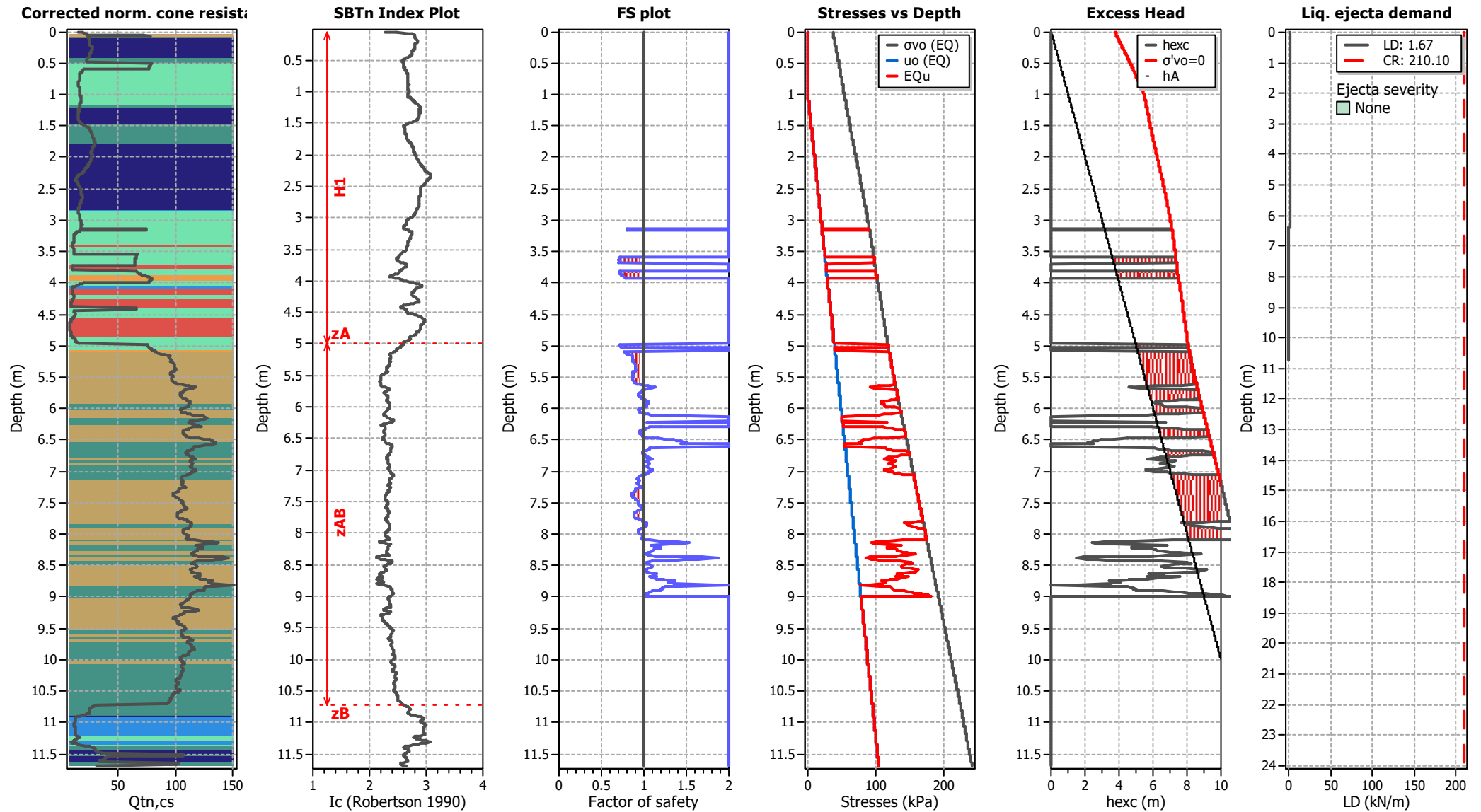
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

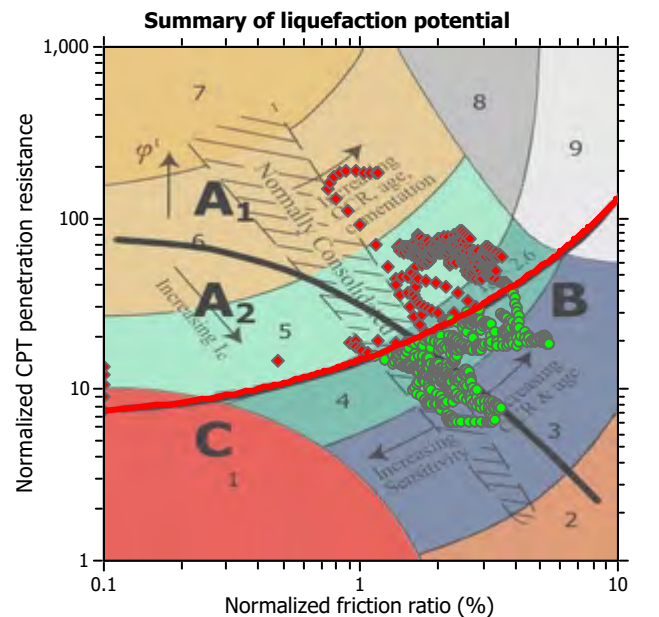
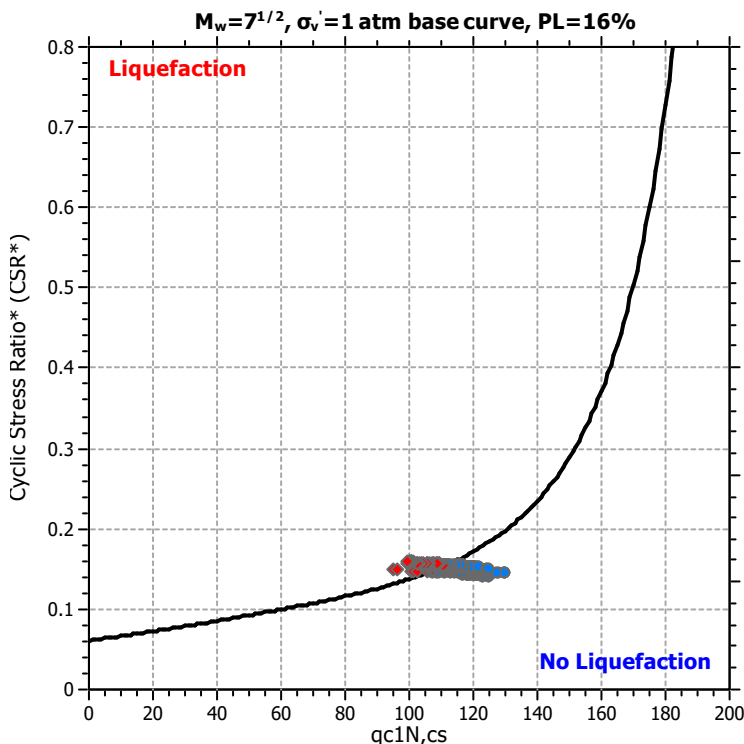
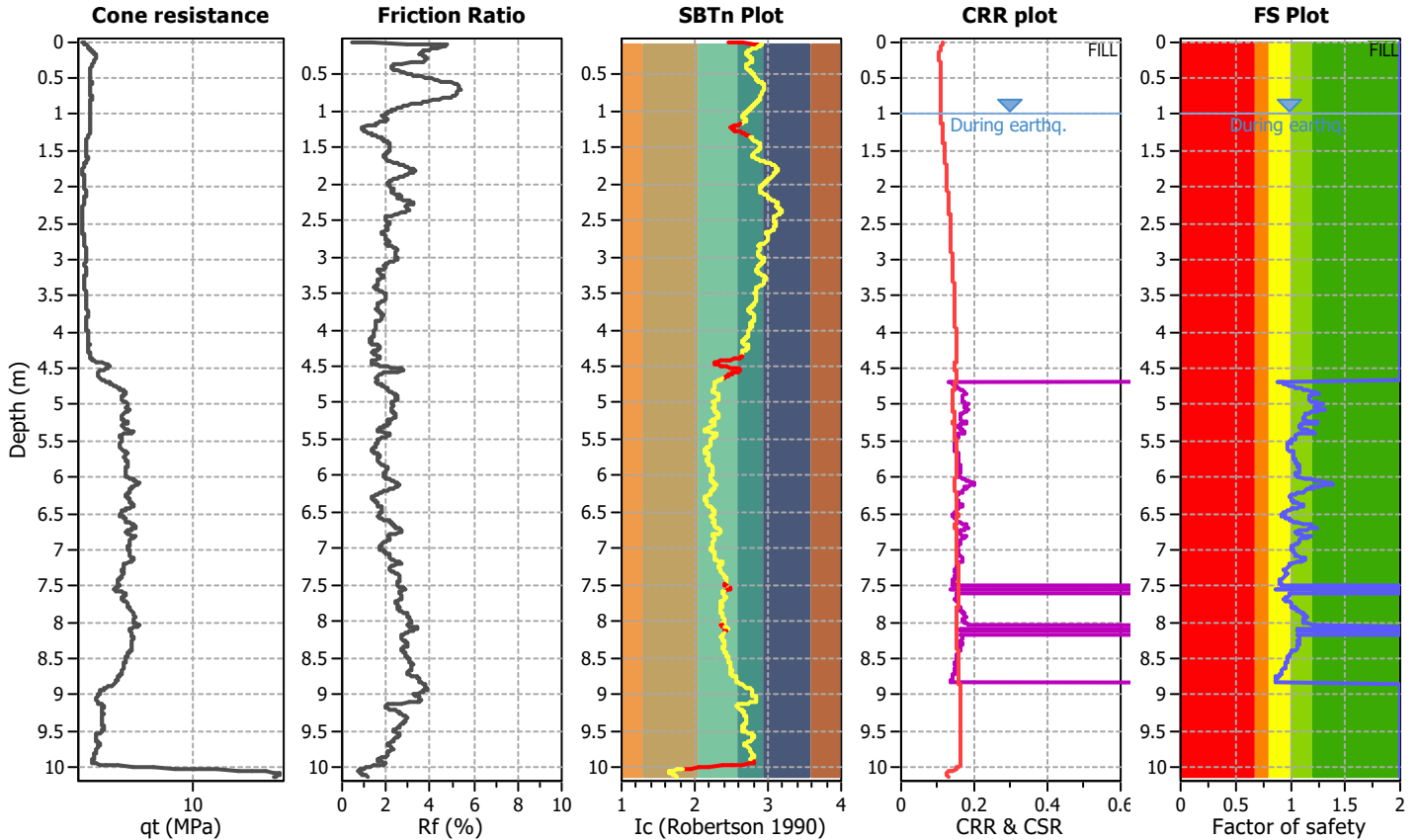
Project title : Sunfield Landholding

Location :

CPT file : CPT406

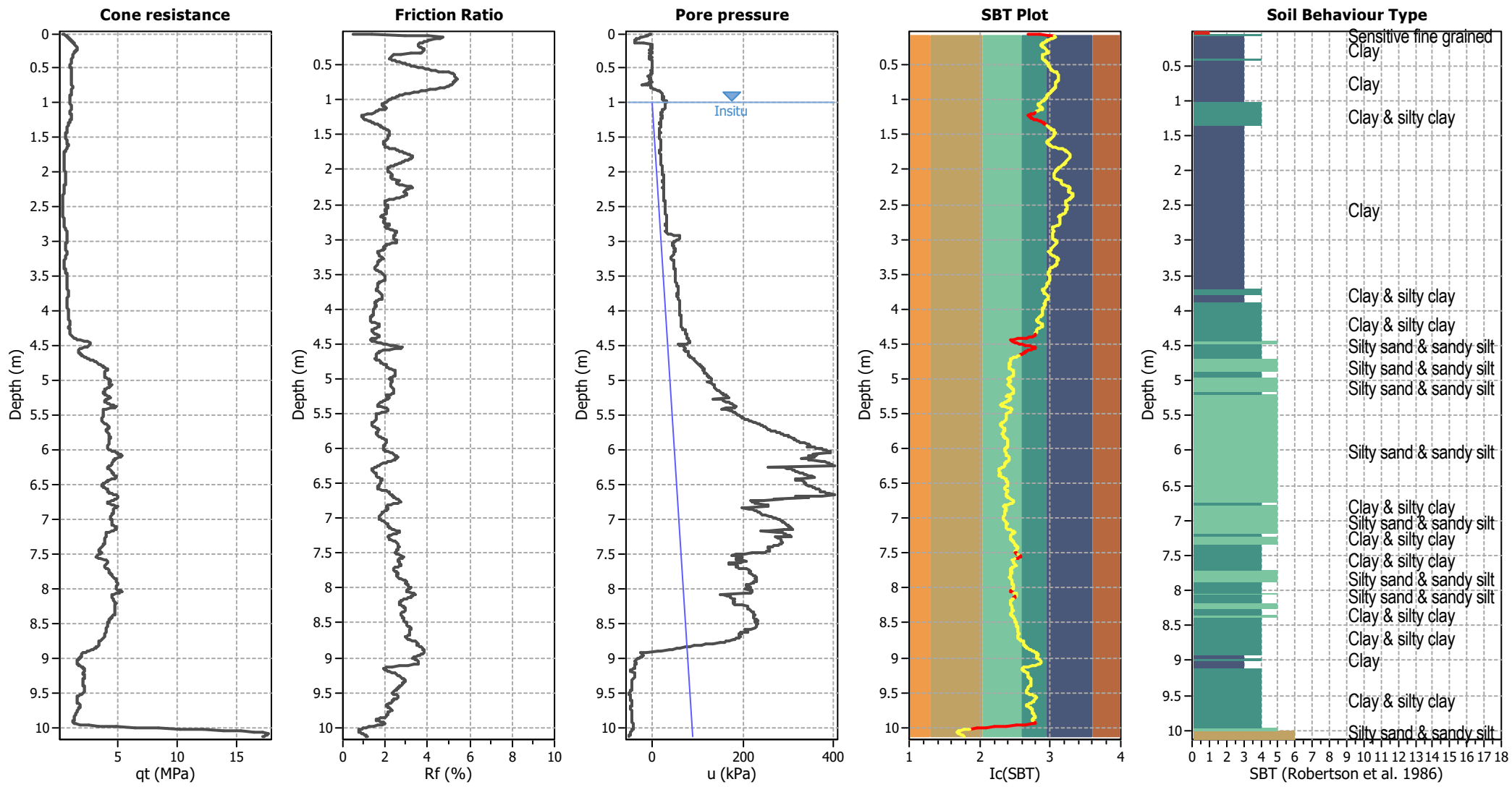
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

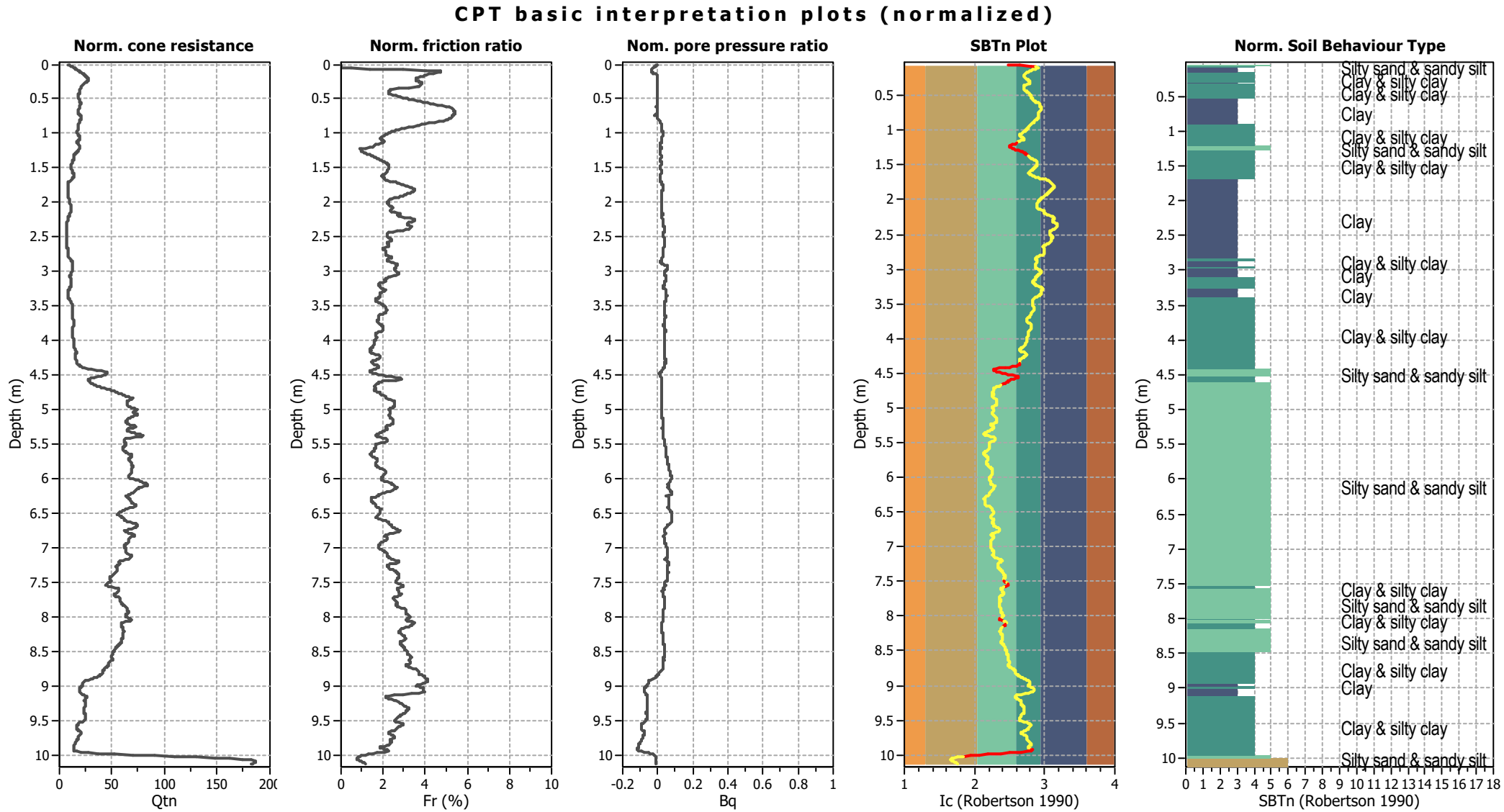
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



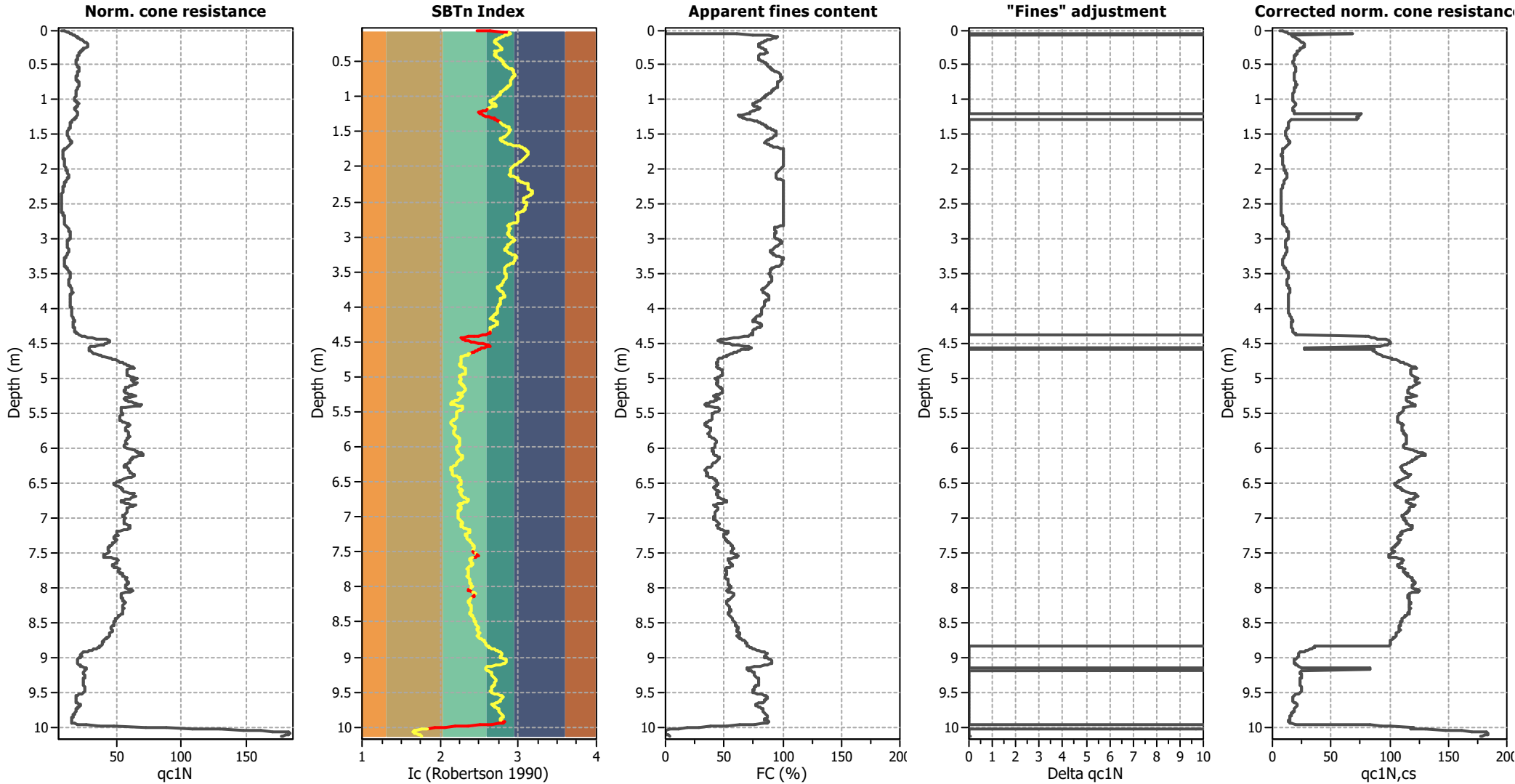
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

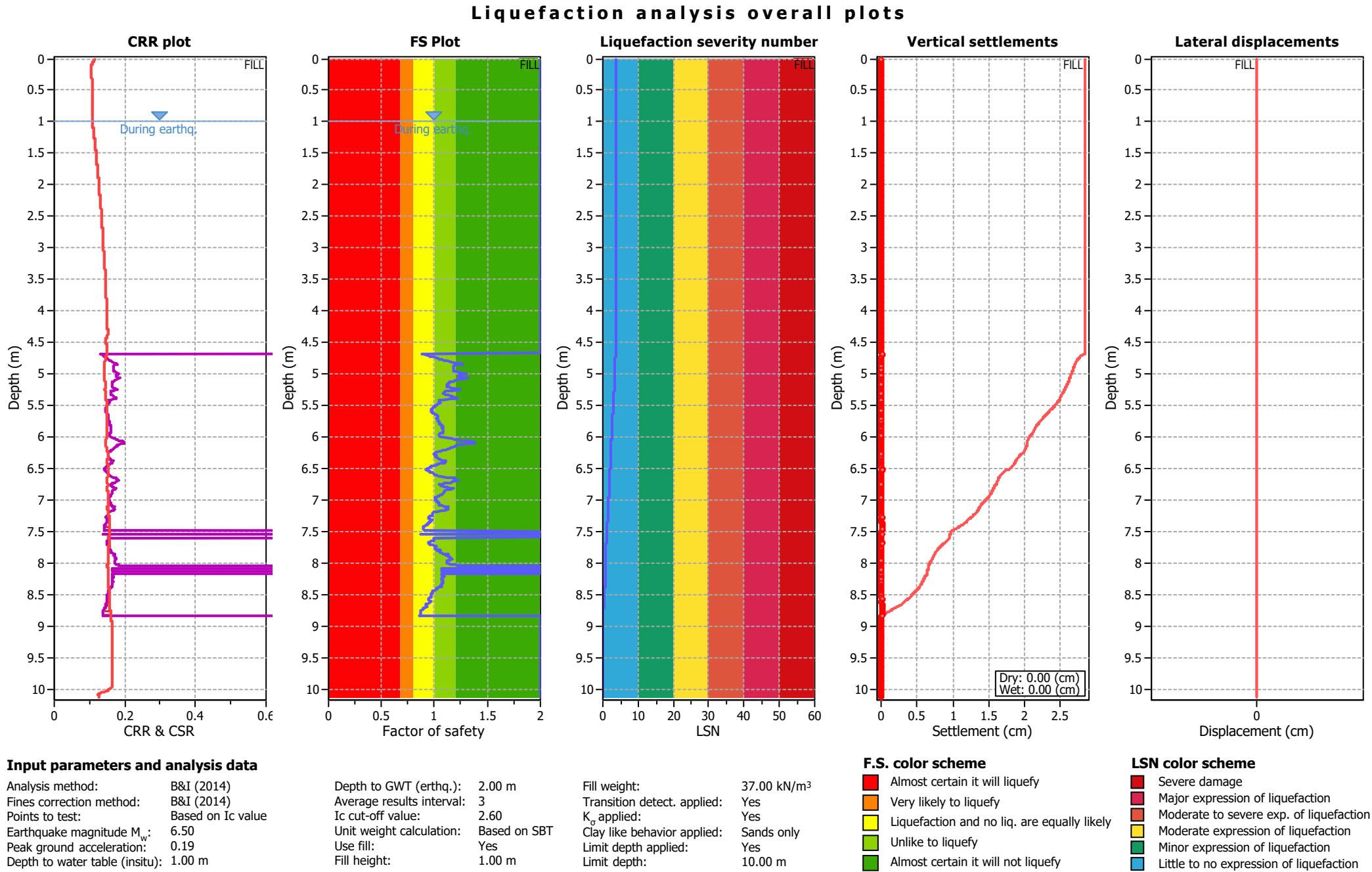
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

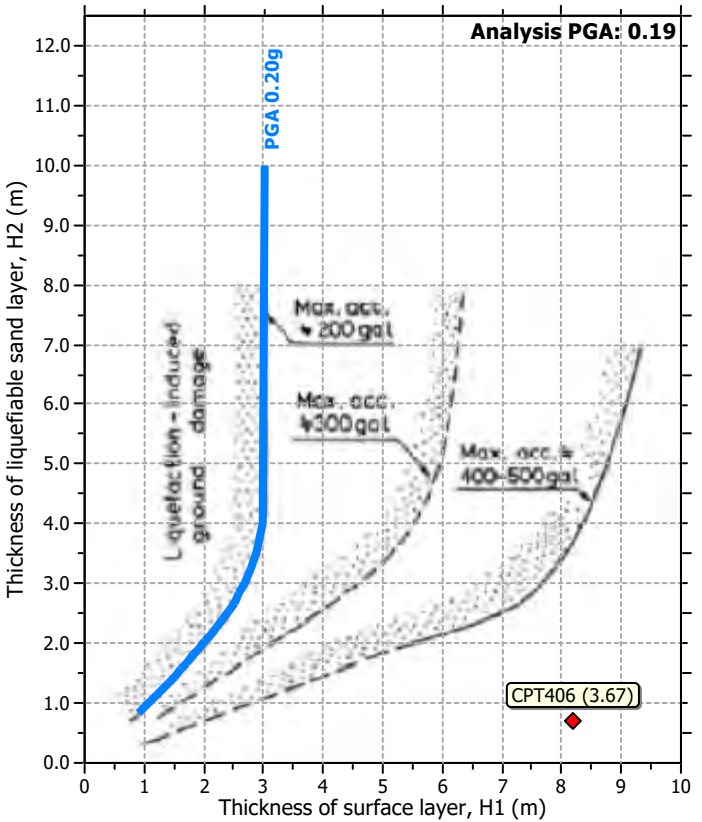
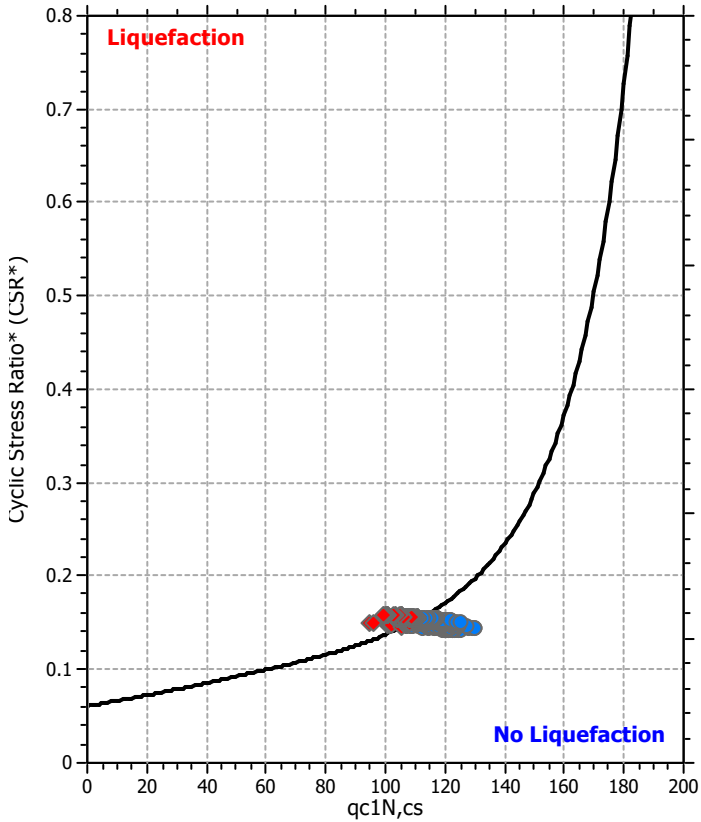
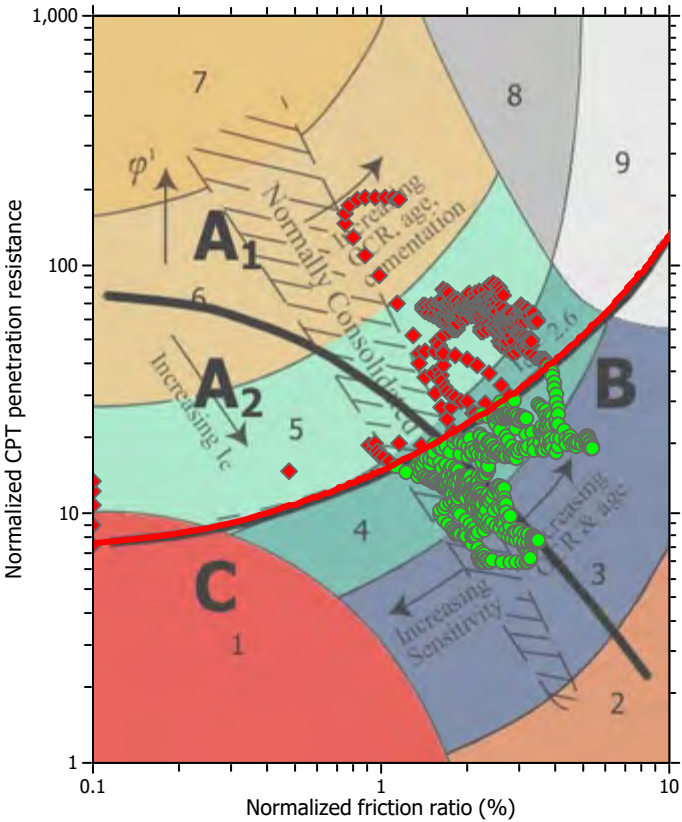


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



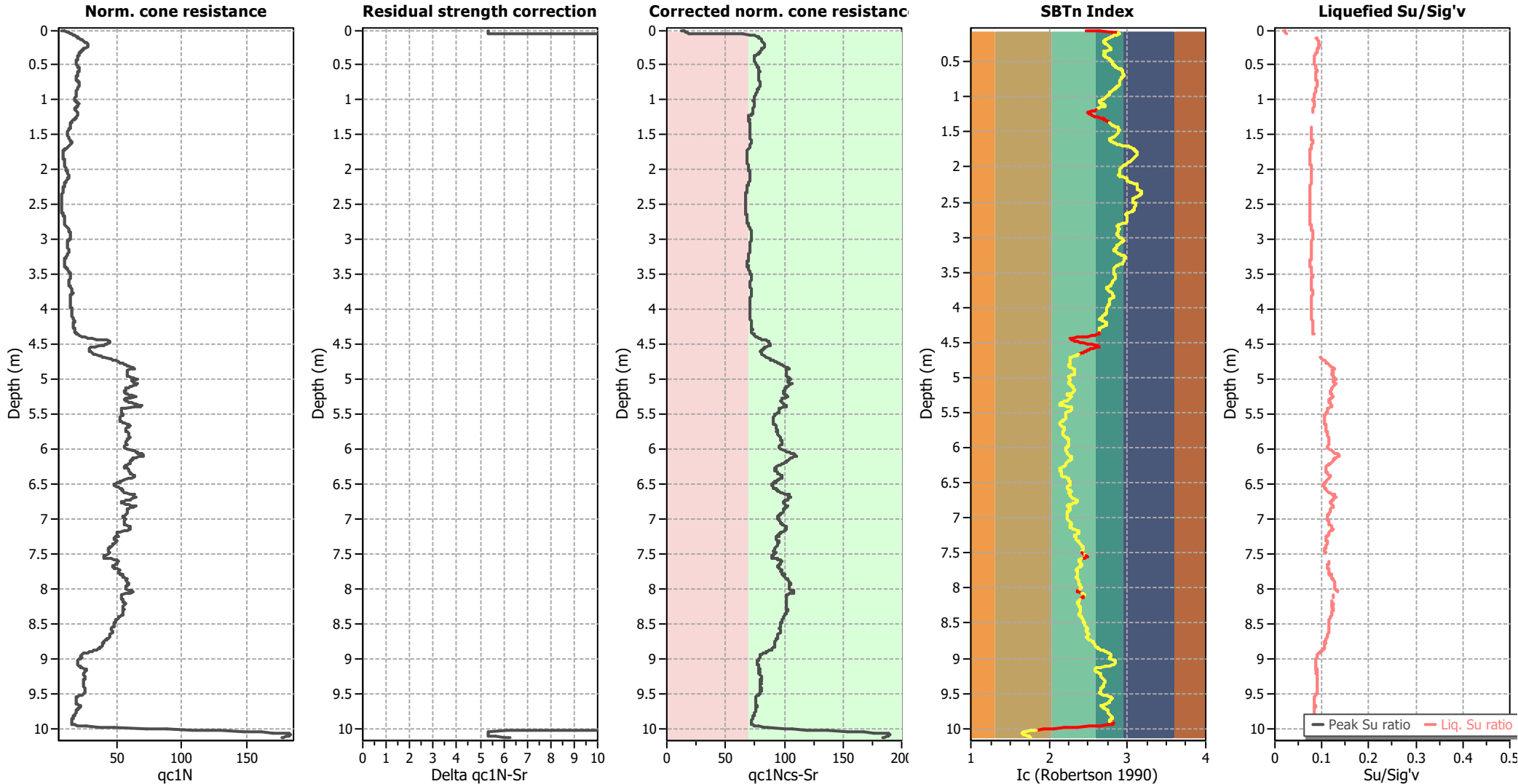
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

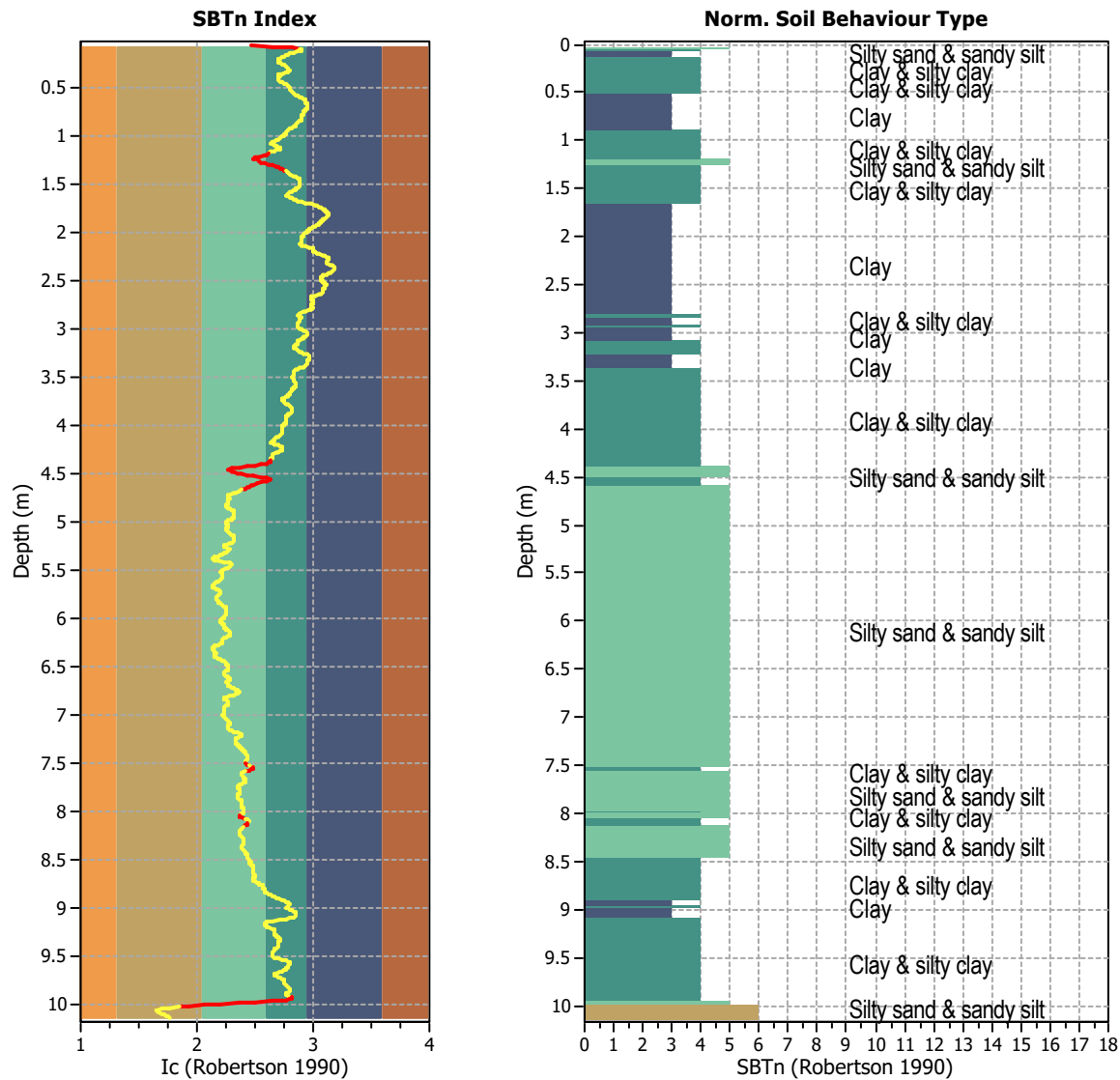
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



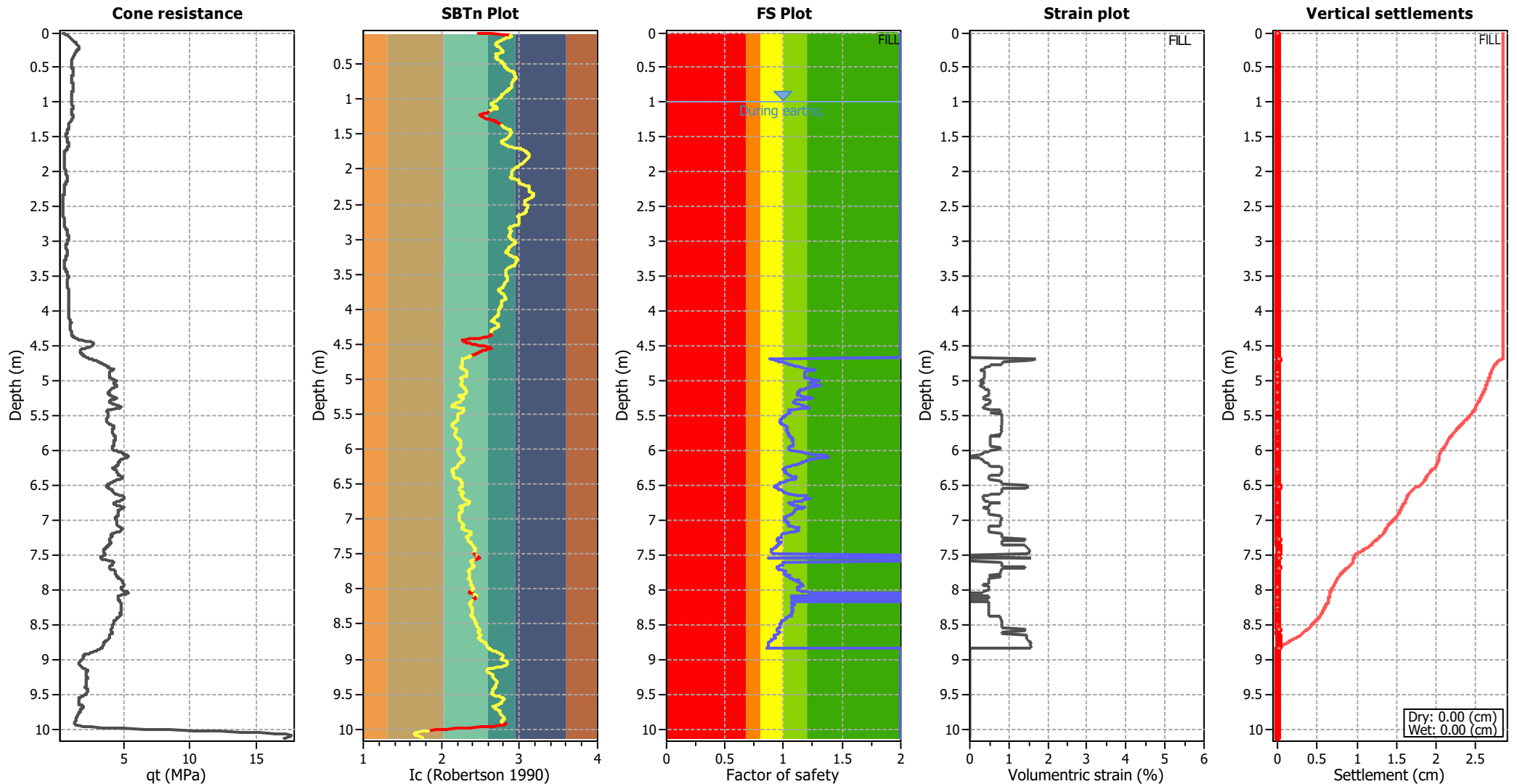
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1013
Total points excluded: 83
Exclusion percentage: 8.19%
Number of layers detected: 11

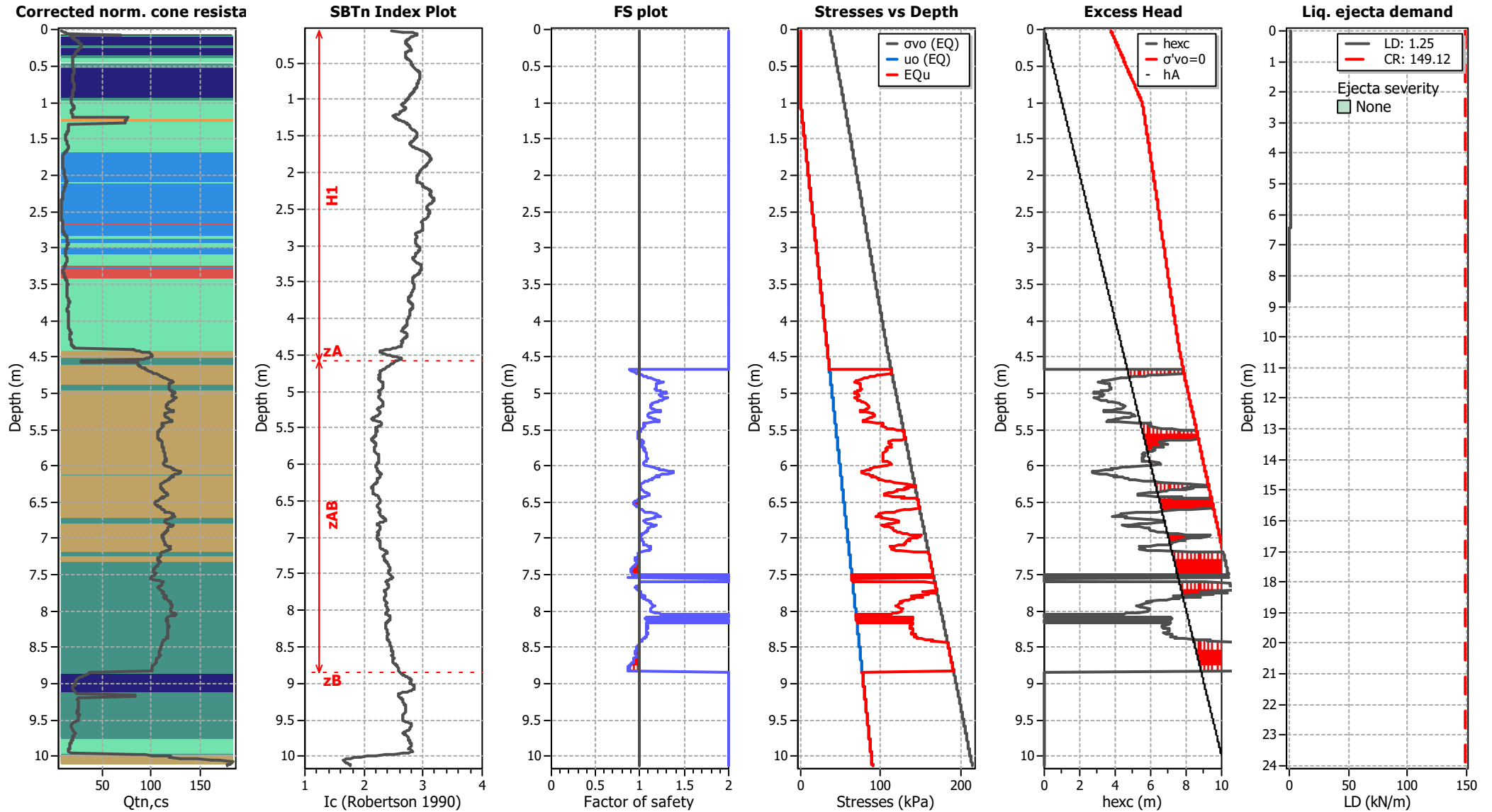
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

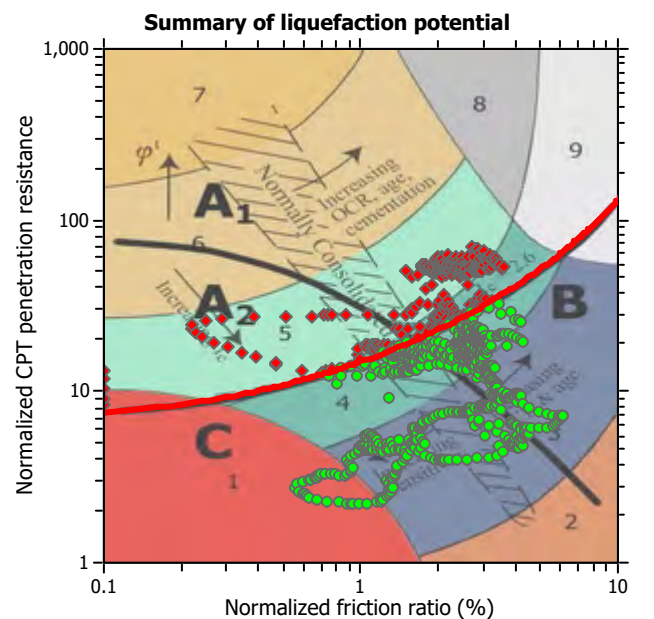
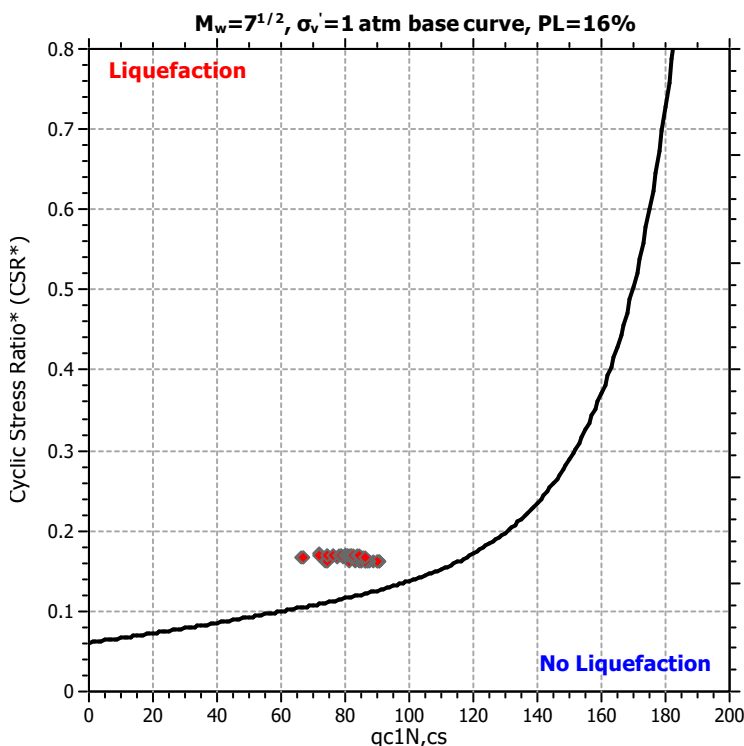
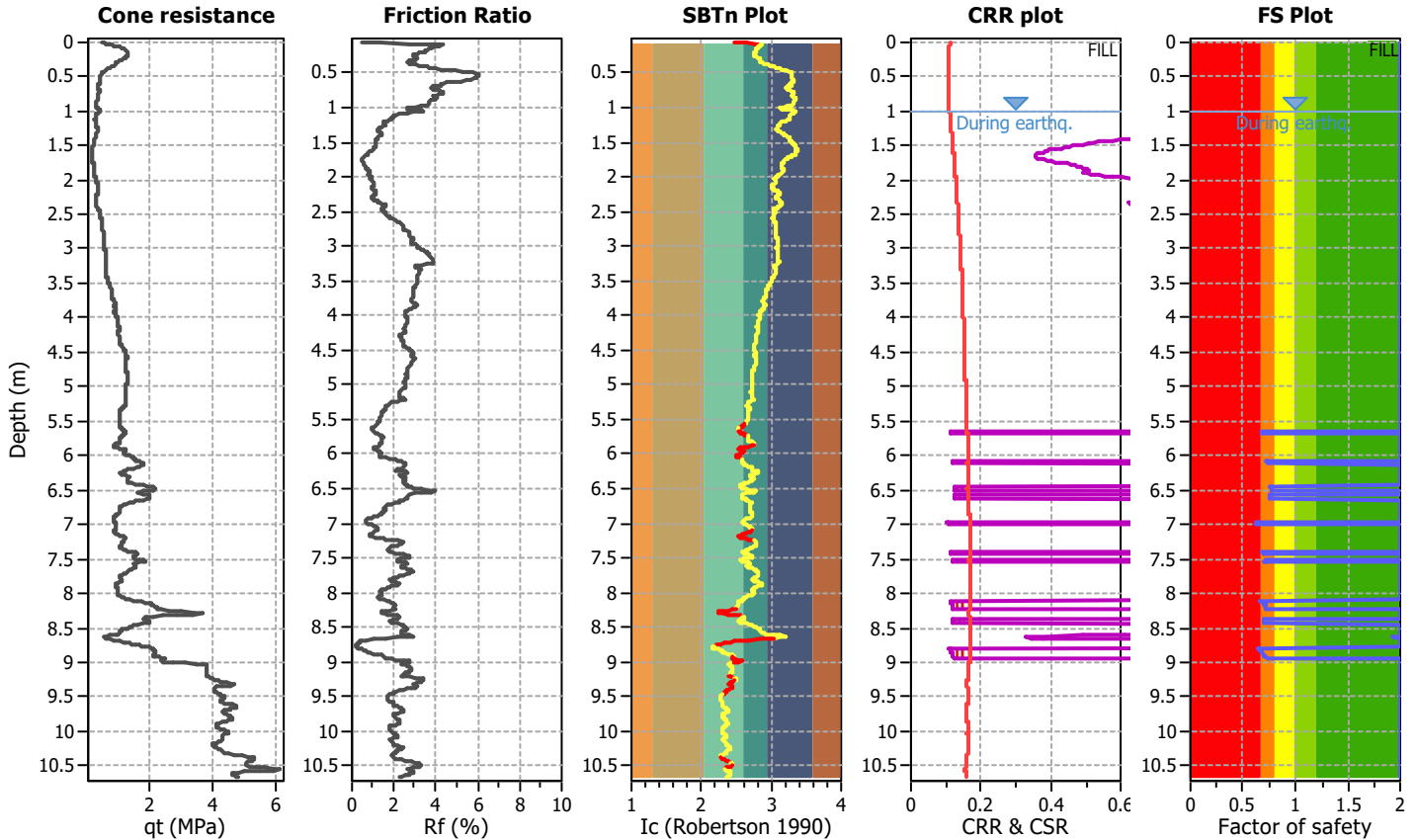
Project title : Sunfield Landholding

Location :

CPT file : CPT407

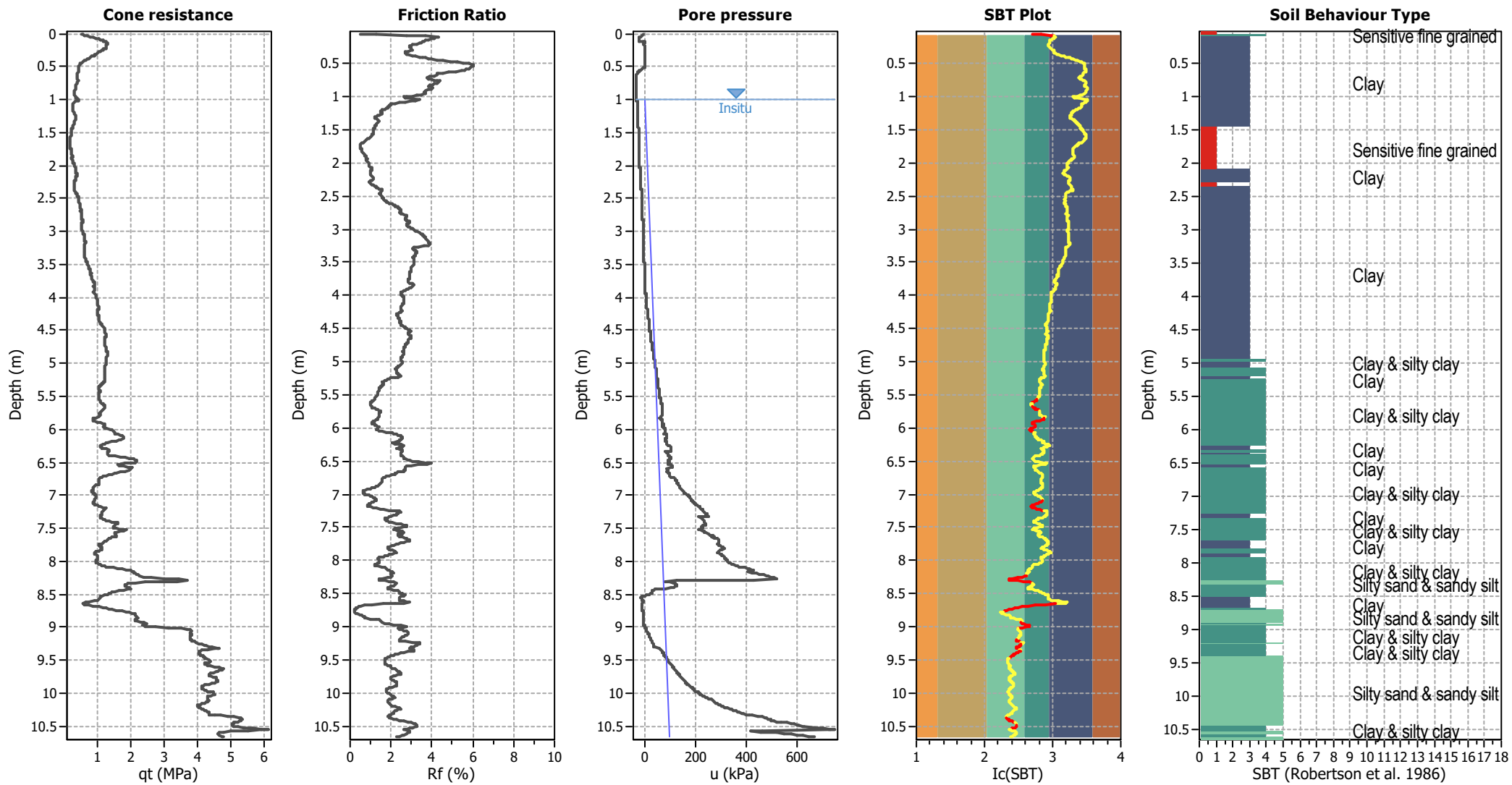
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

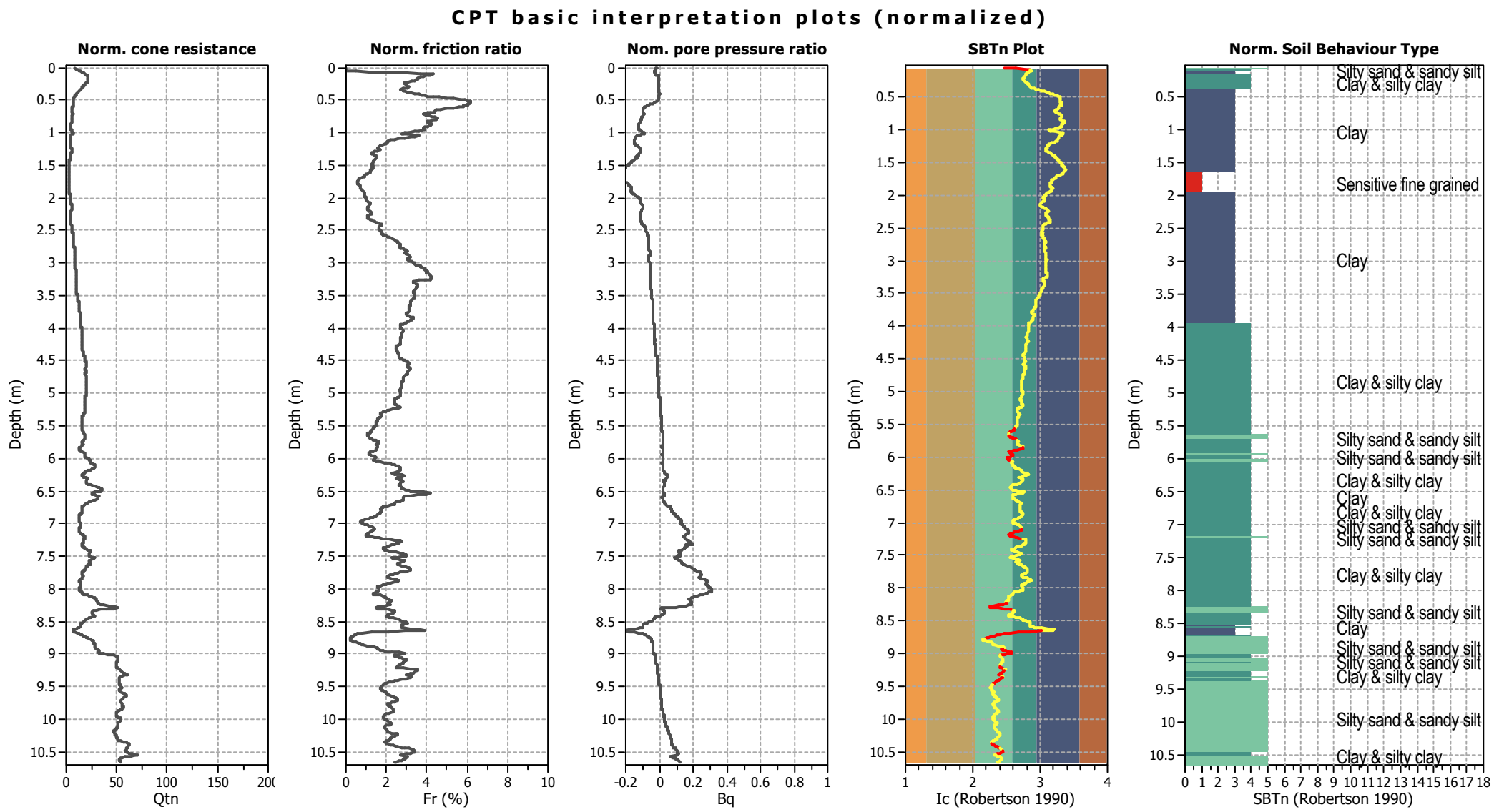


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

5. Silty sand to sandy silt

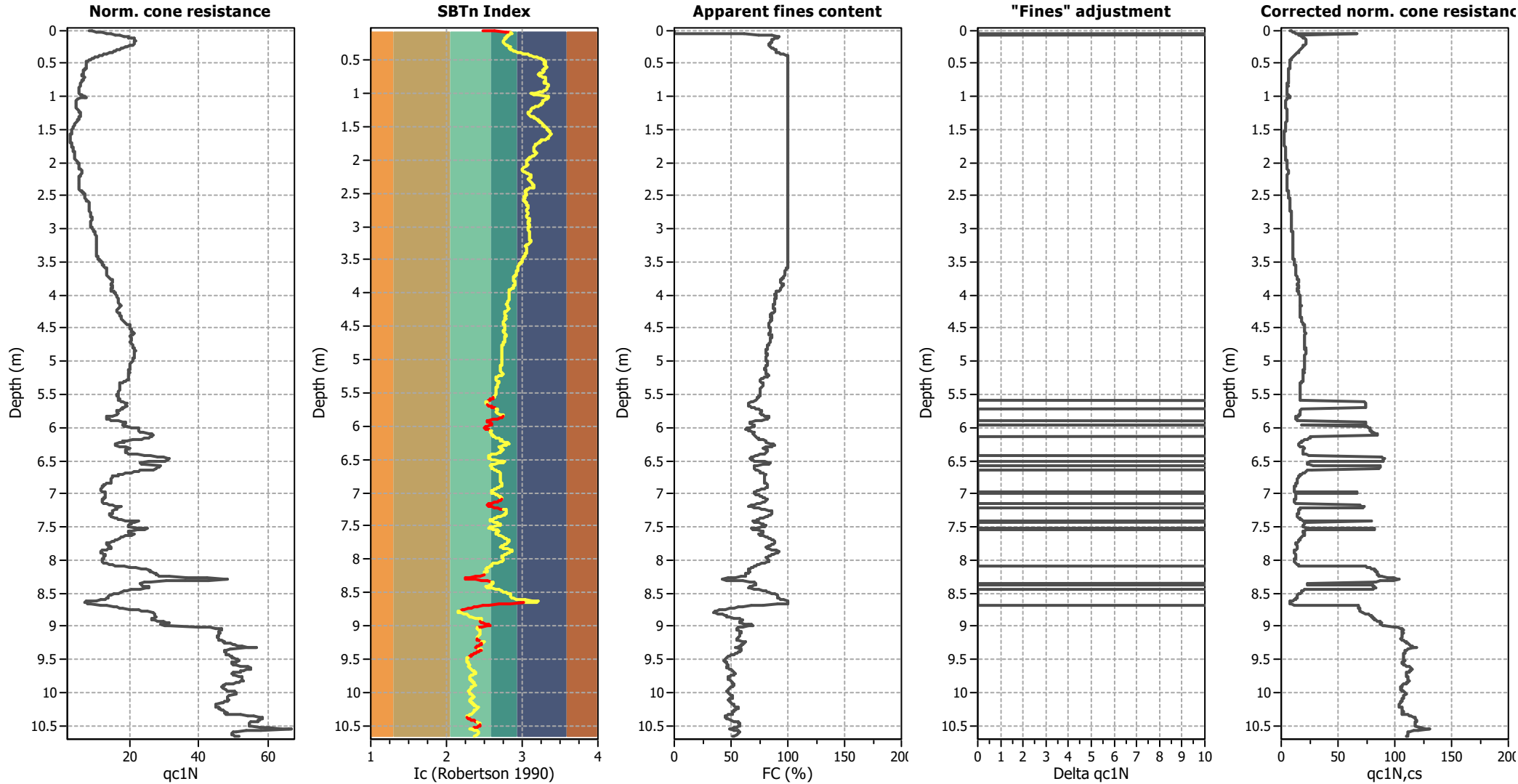
6. Clean sand to silty sand

7. Gravely sand to sand

8. Very stiff sand to

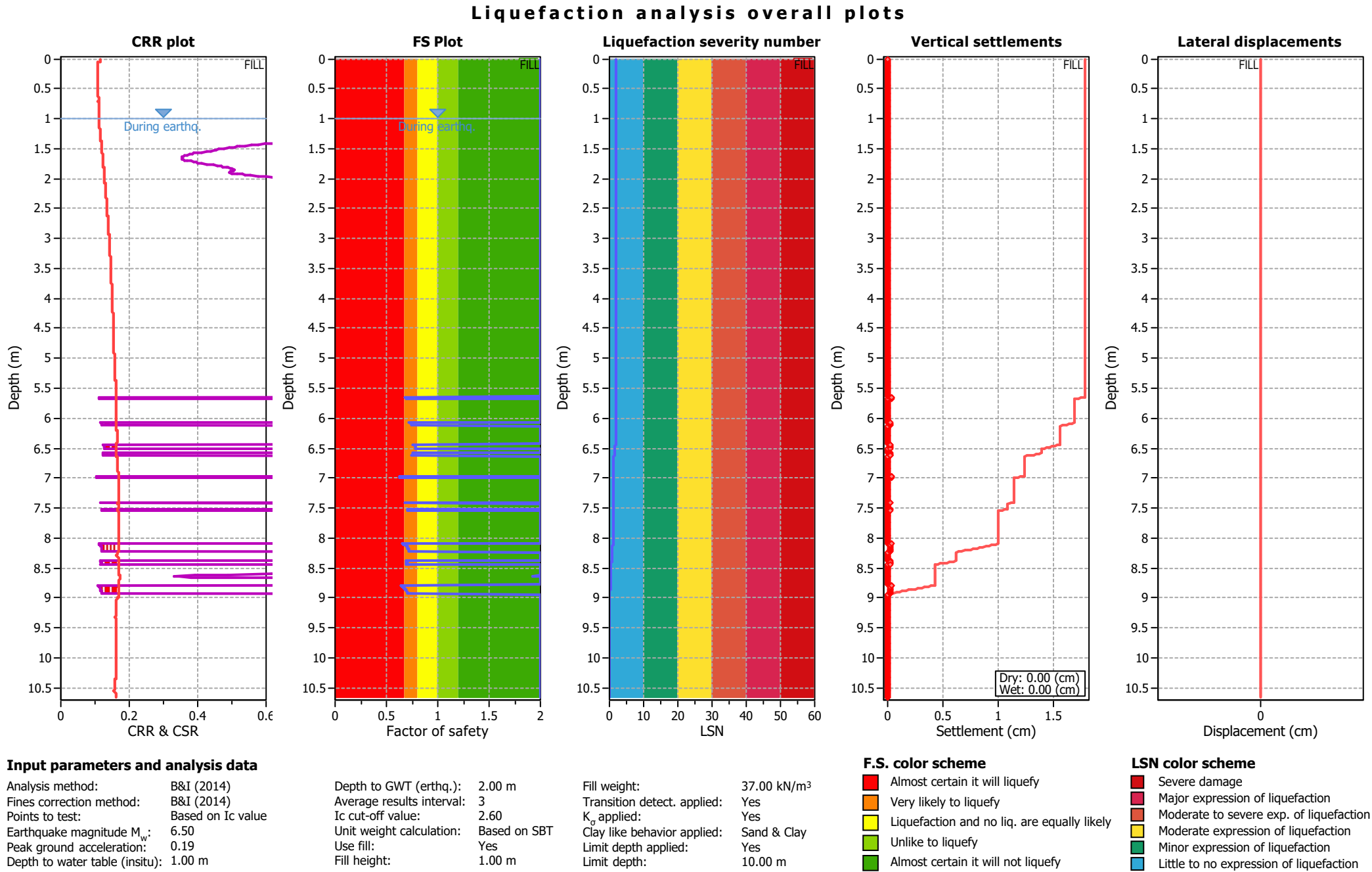
9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

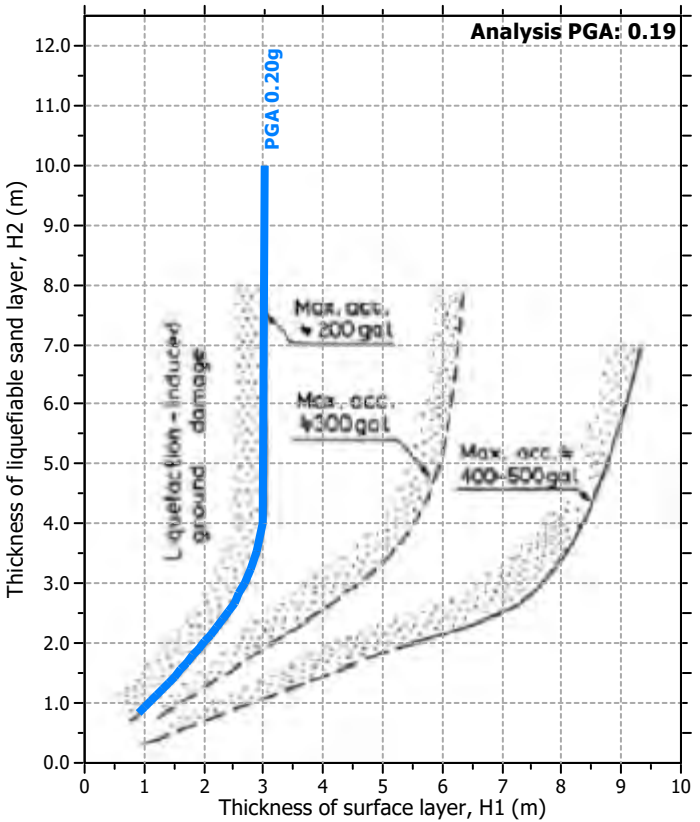
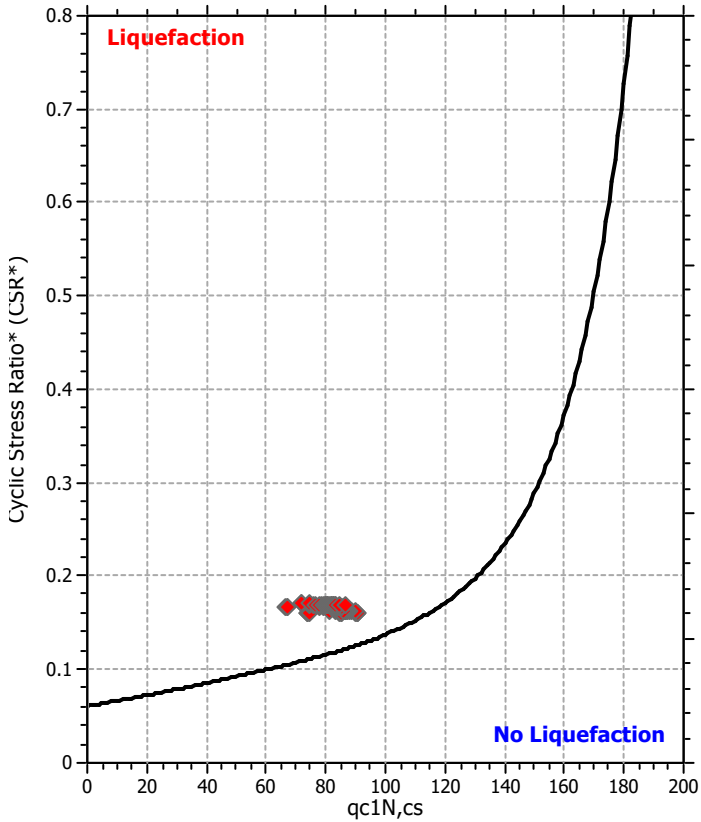
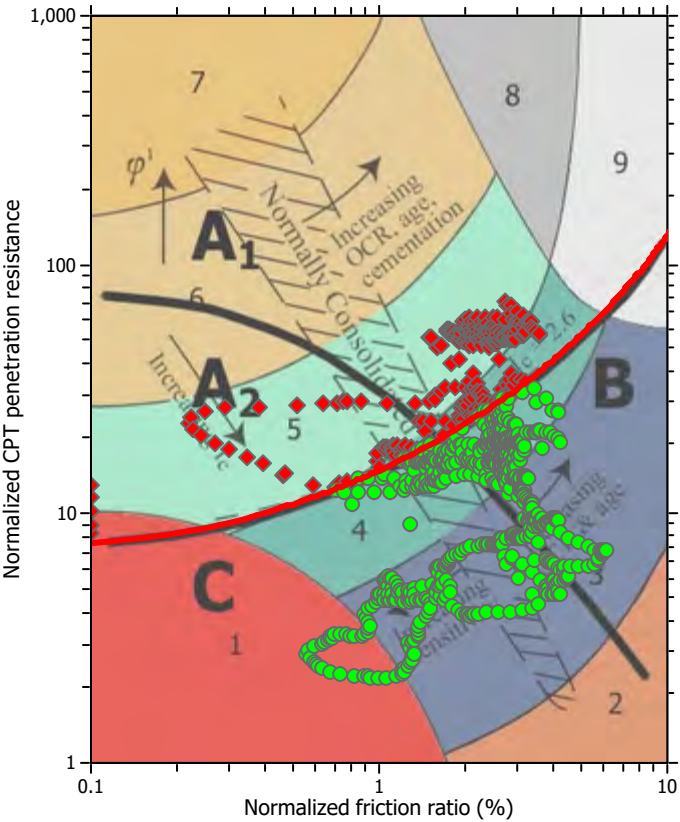


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

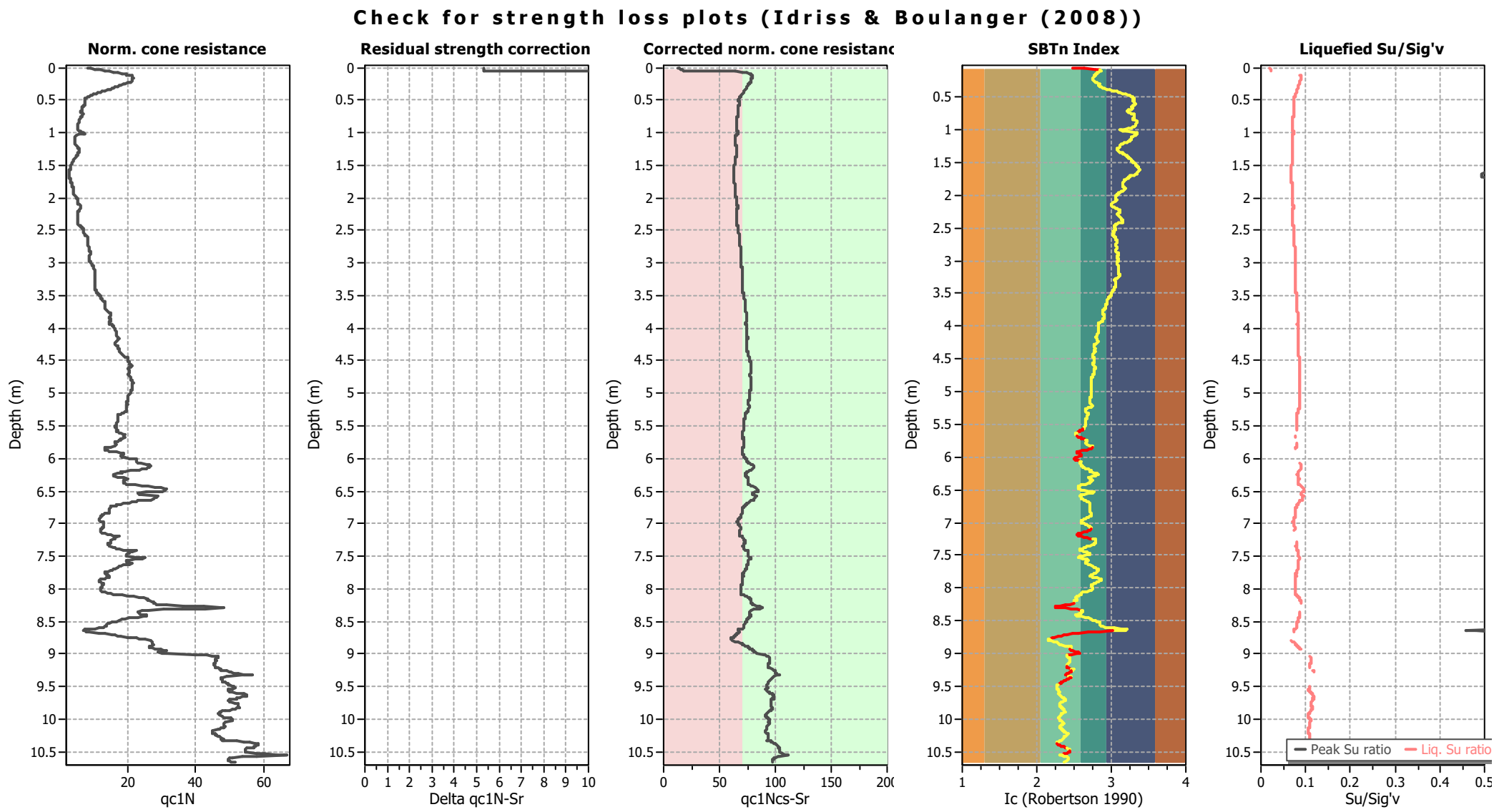


Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

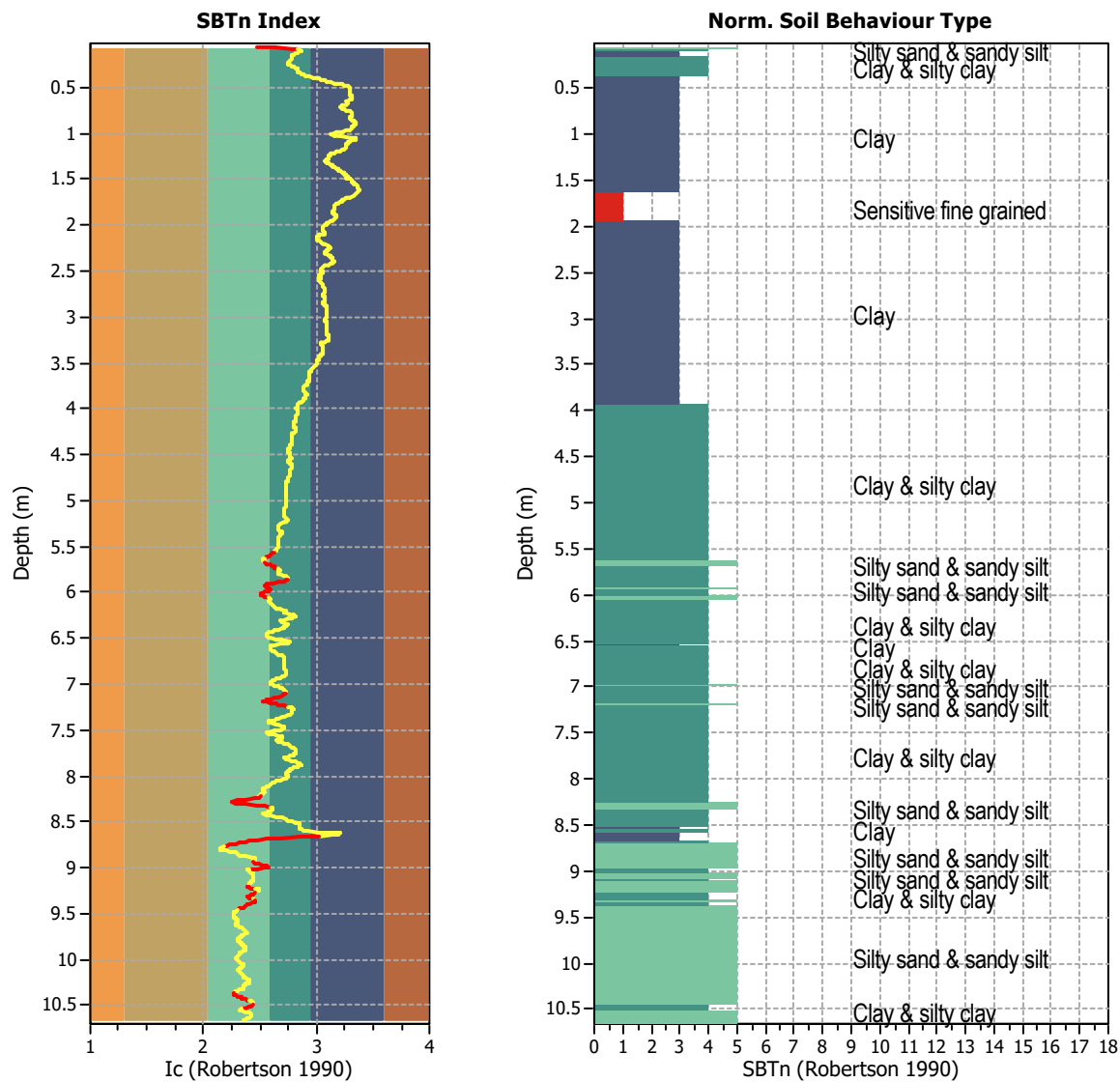
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



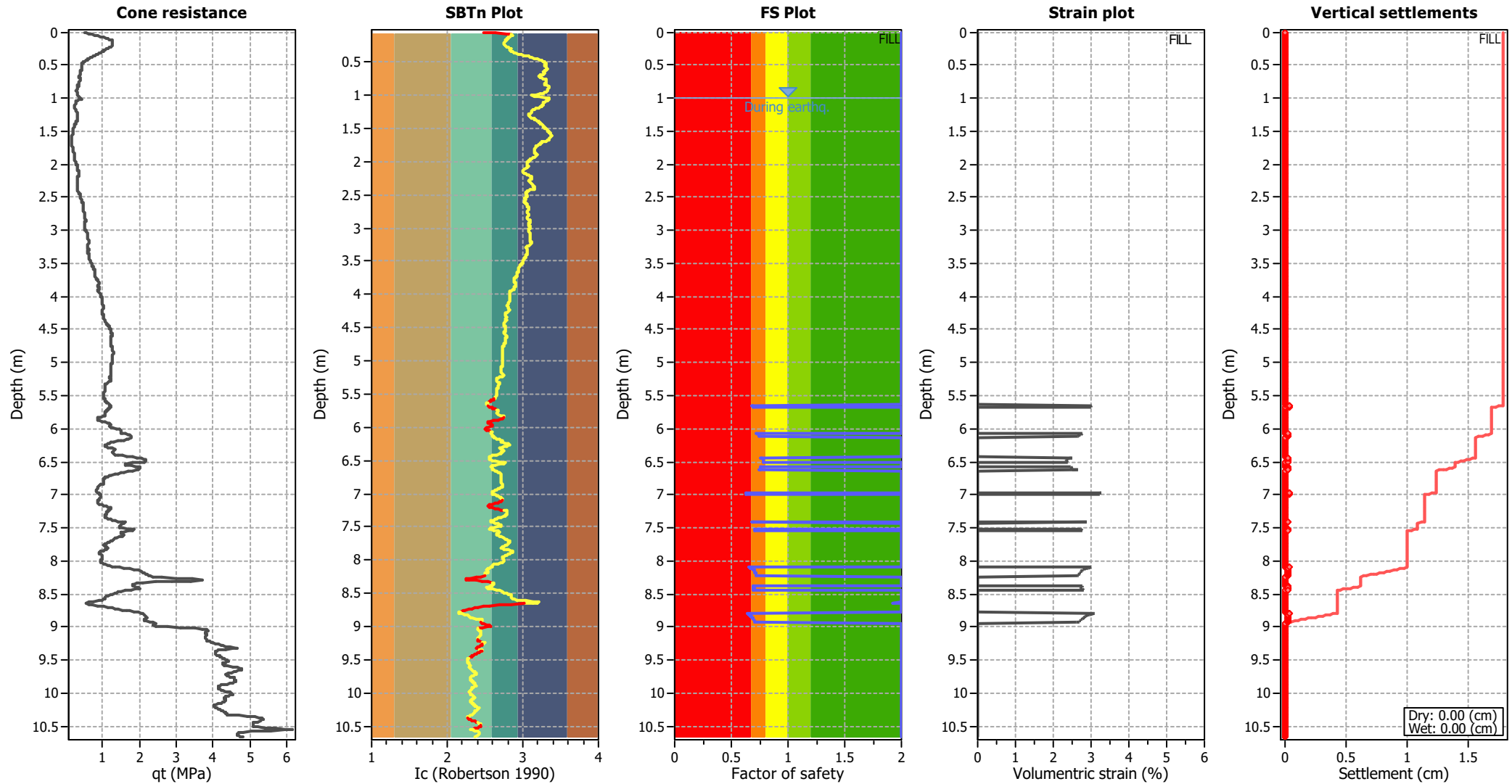
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

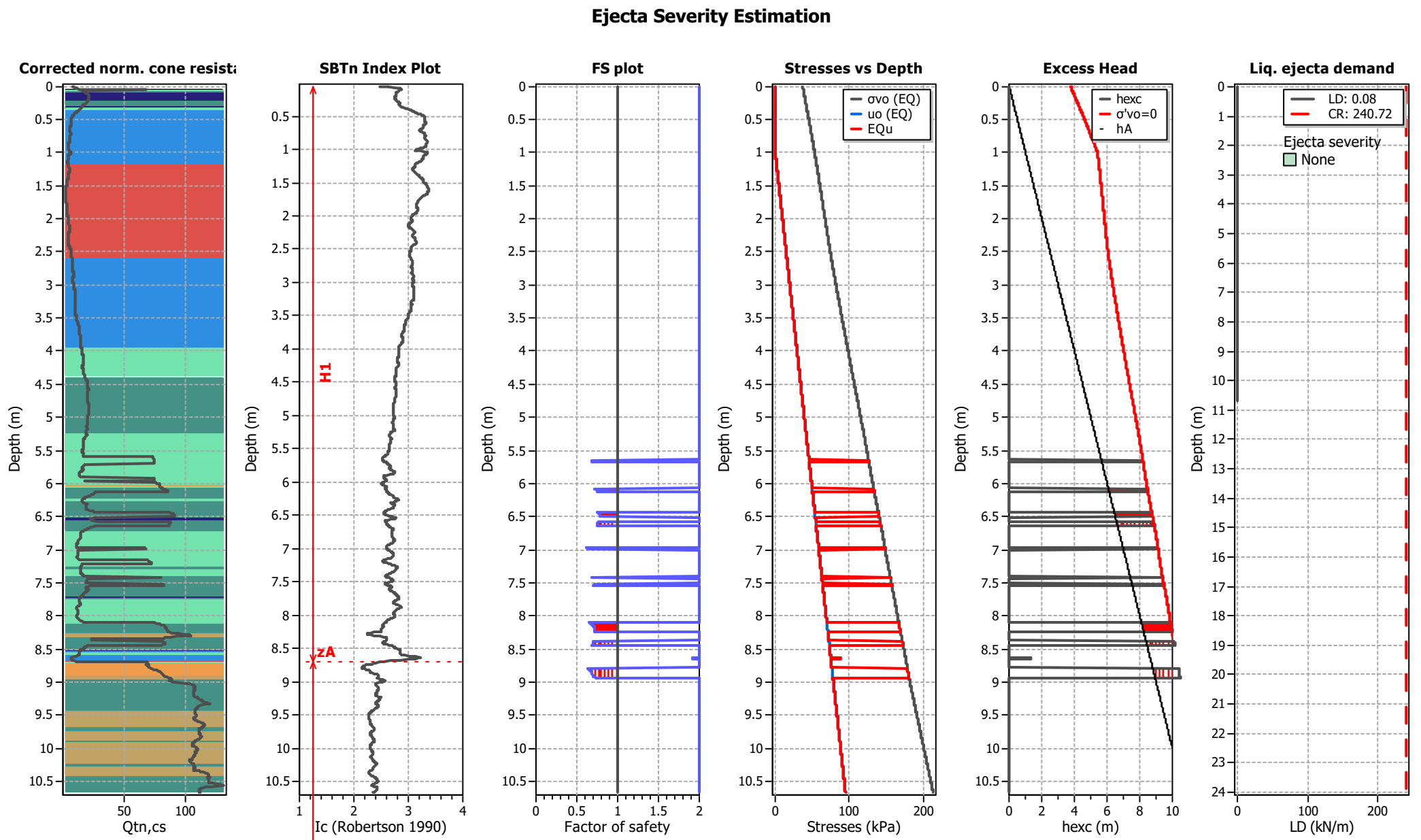
Total points in CPT file: 1066
Total points excluded: 131
Exclusion percentage: 12.29%
Number of layers detected: 20

Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain



LIQUEFACTION ANALYSIS REPORT

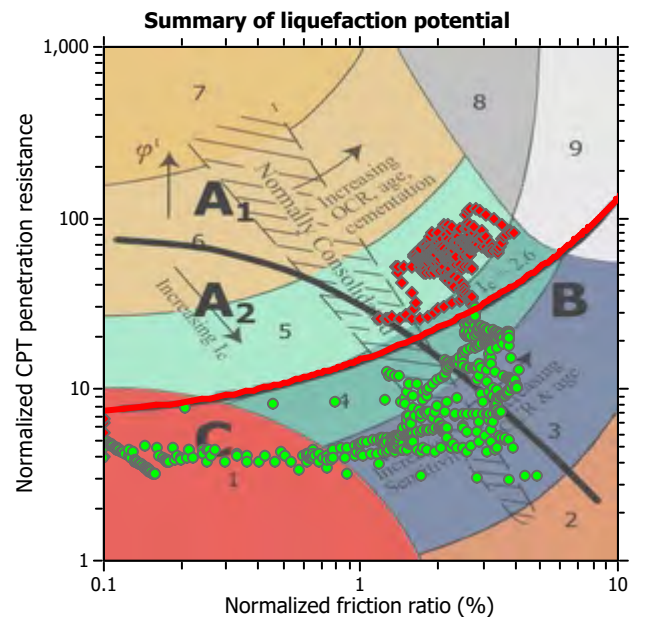
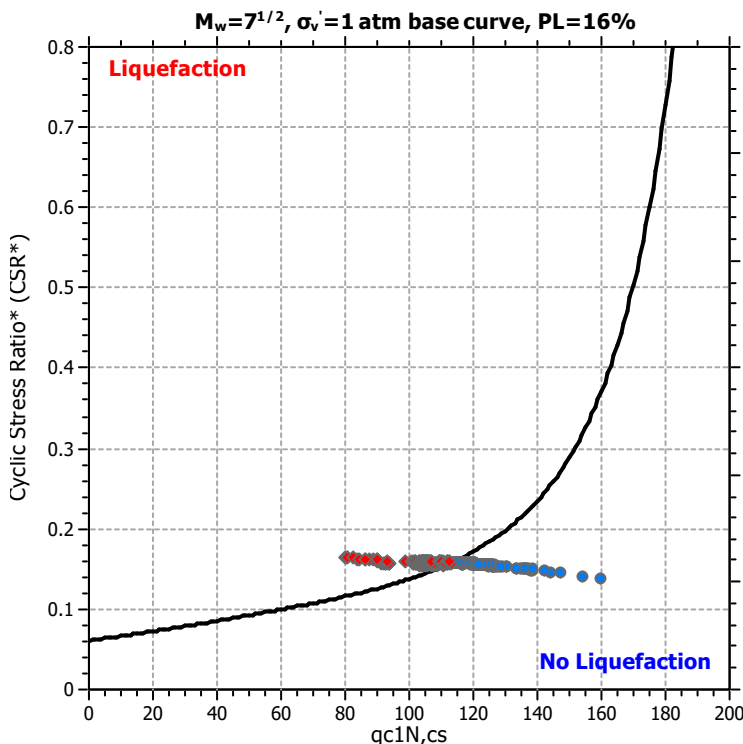
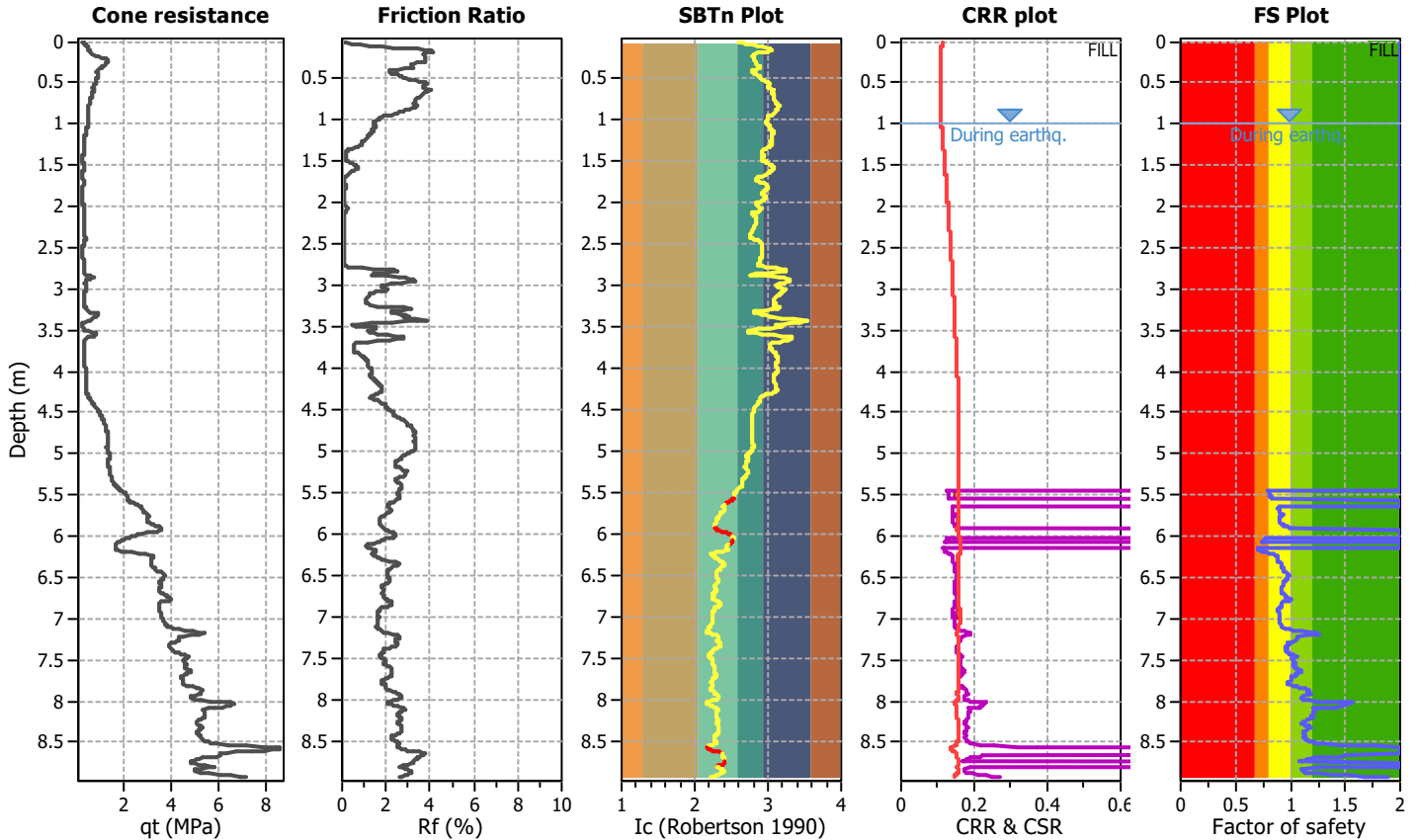
Project title : Sunfield Landholding

Location :

CPT file : CPT408

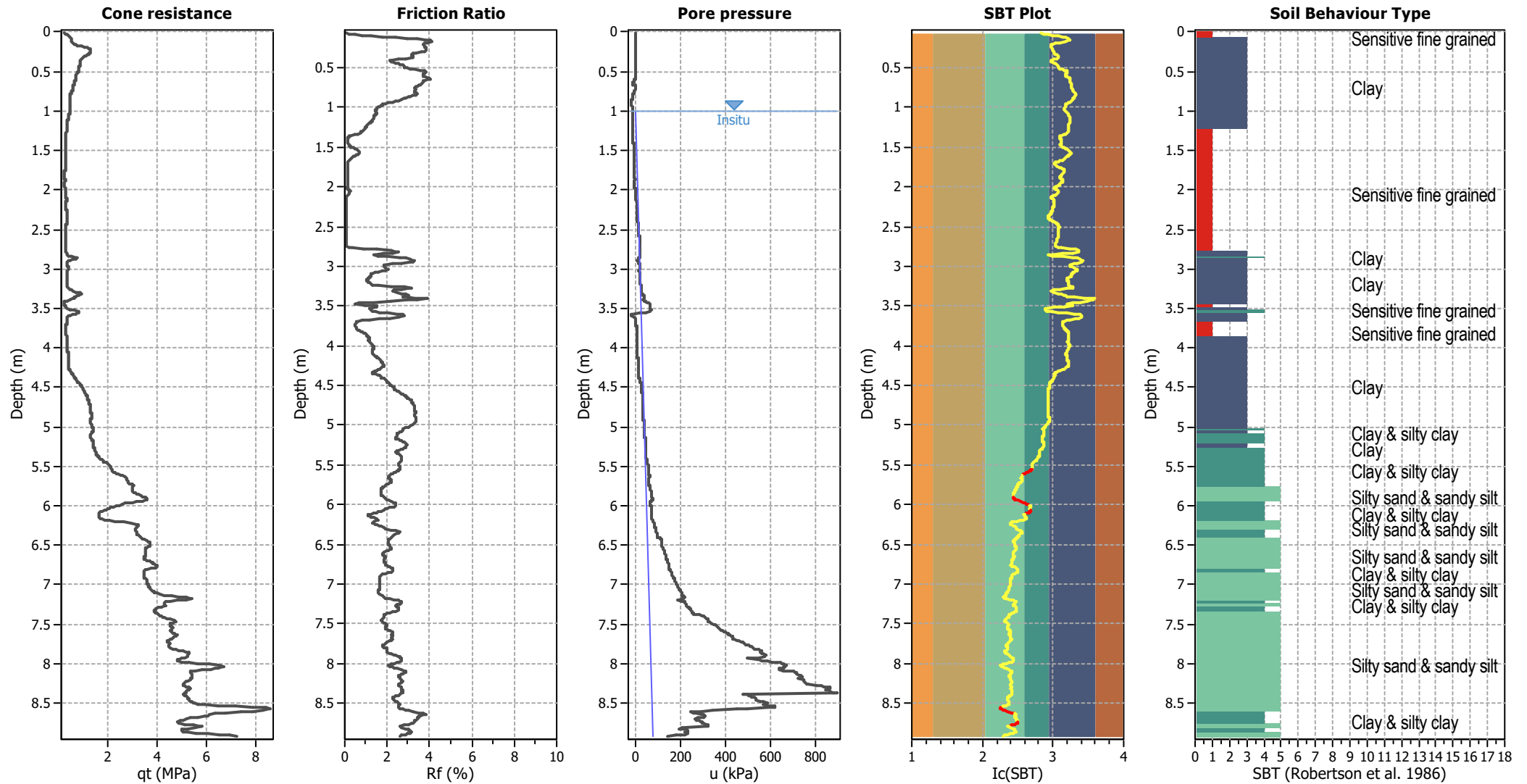
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

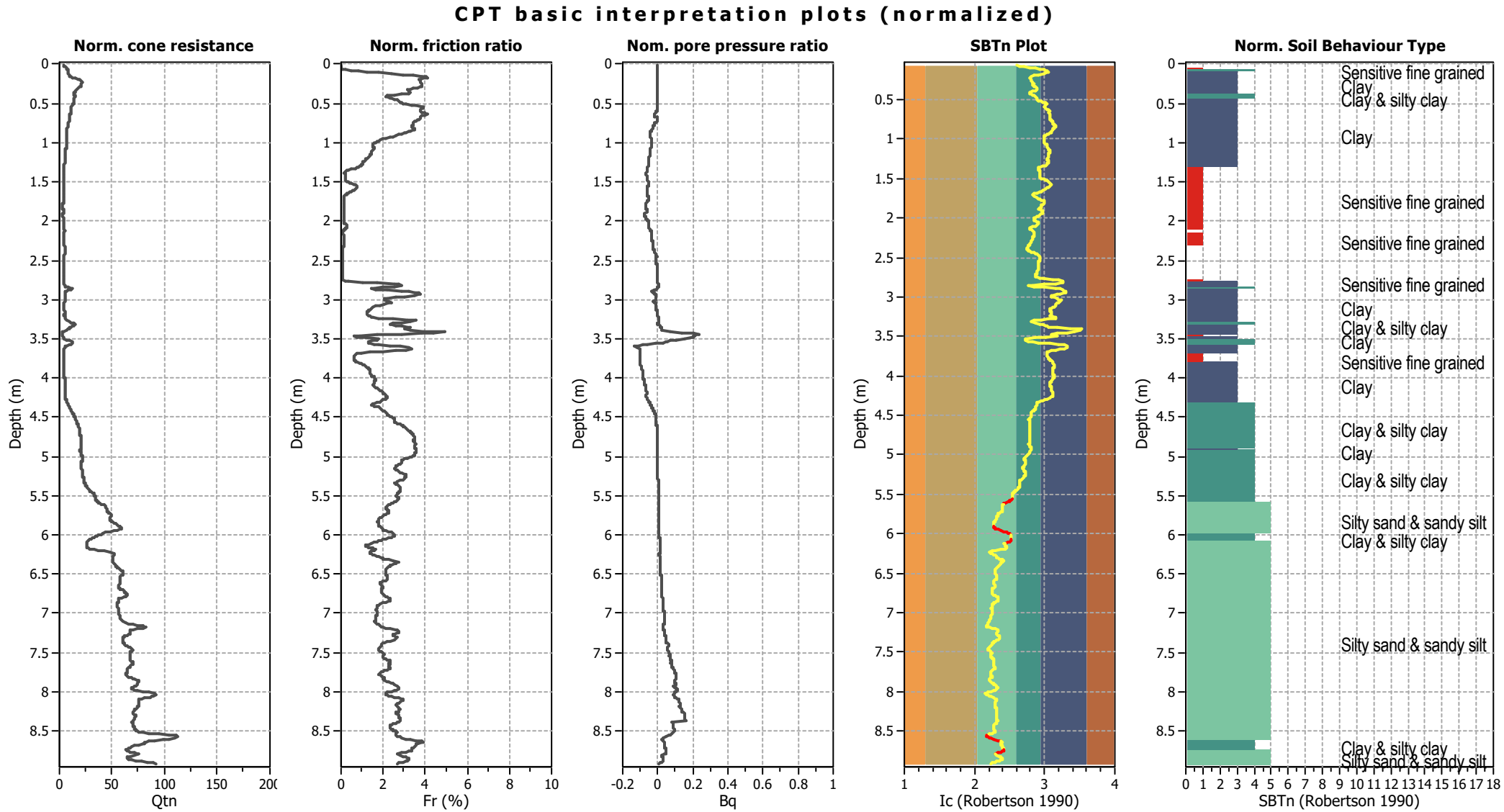


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained

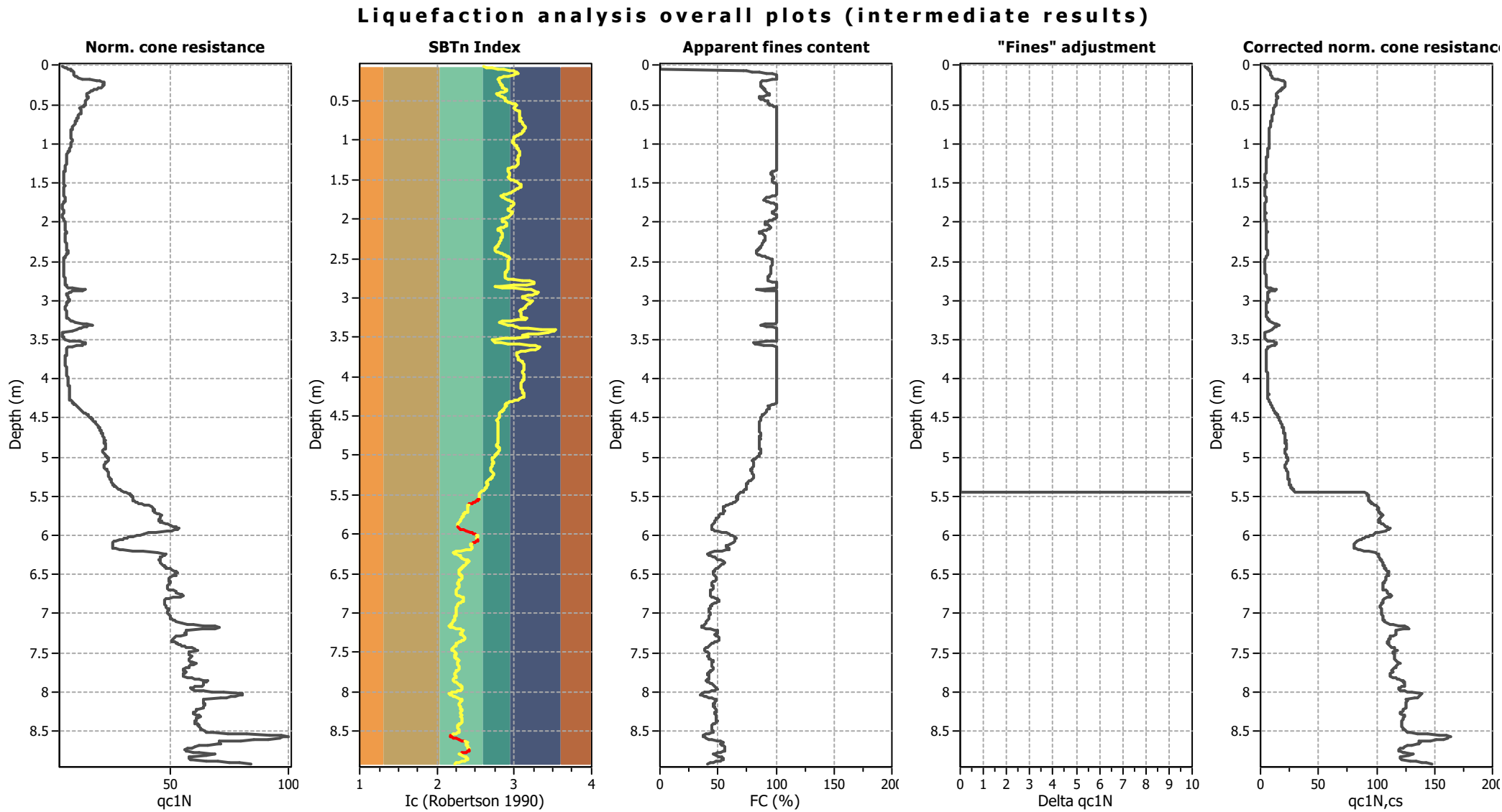


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

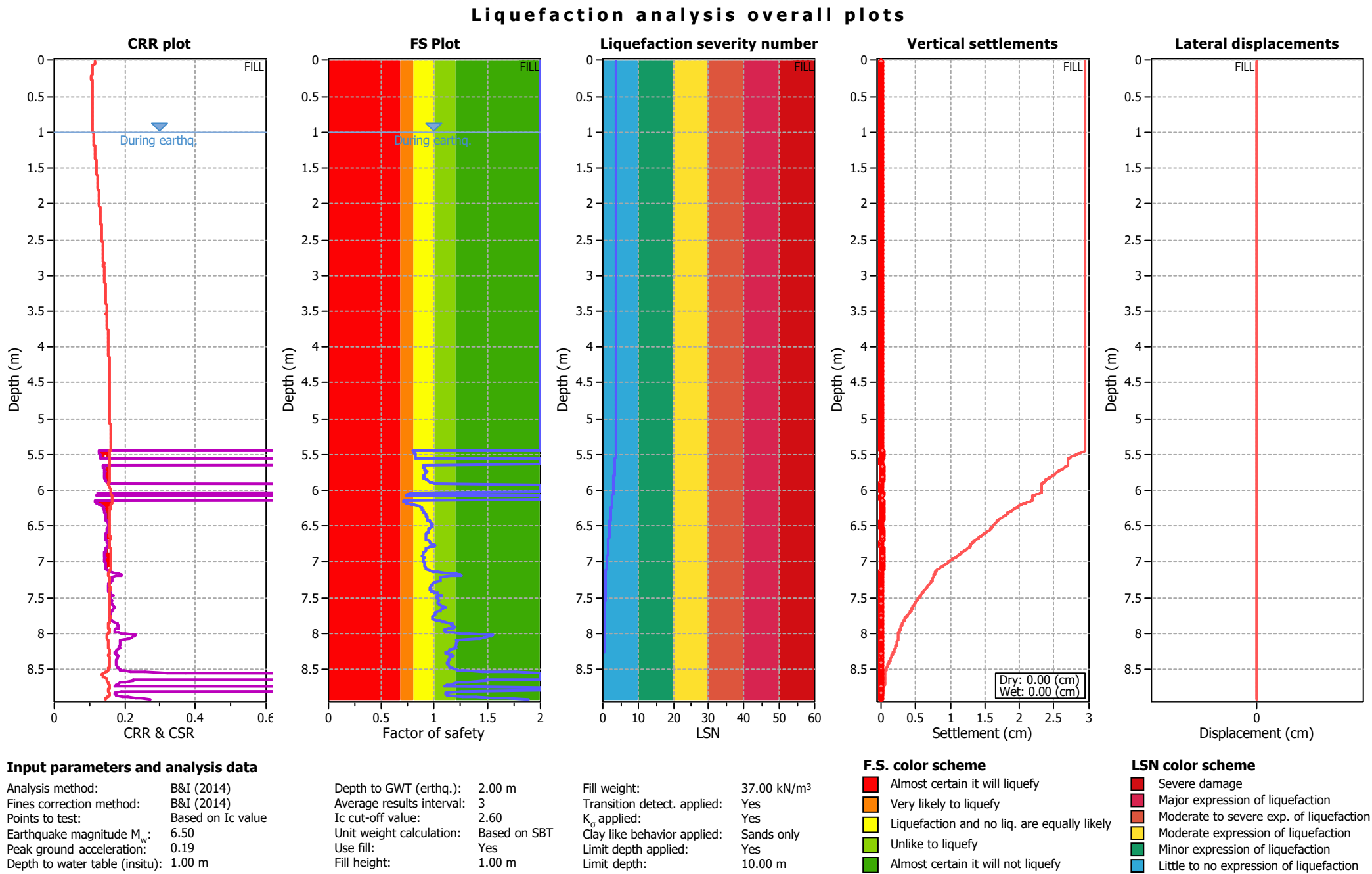
SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

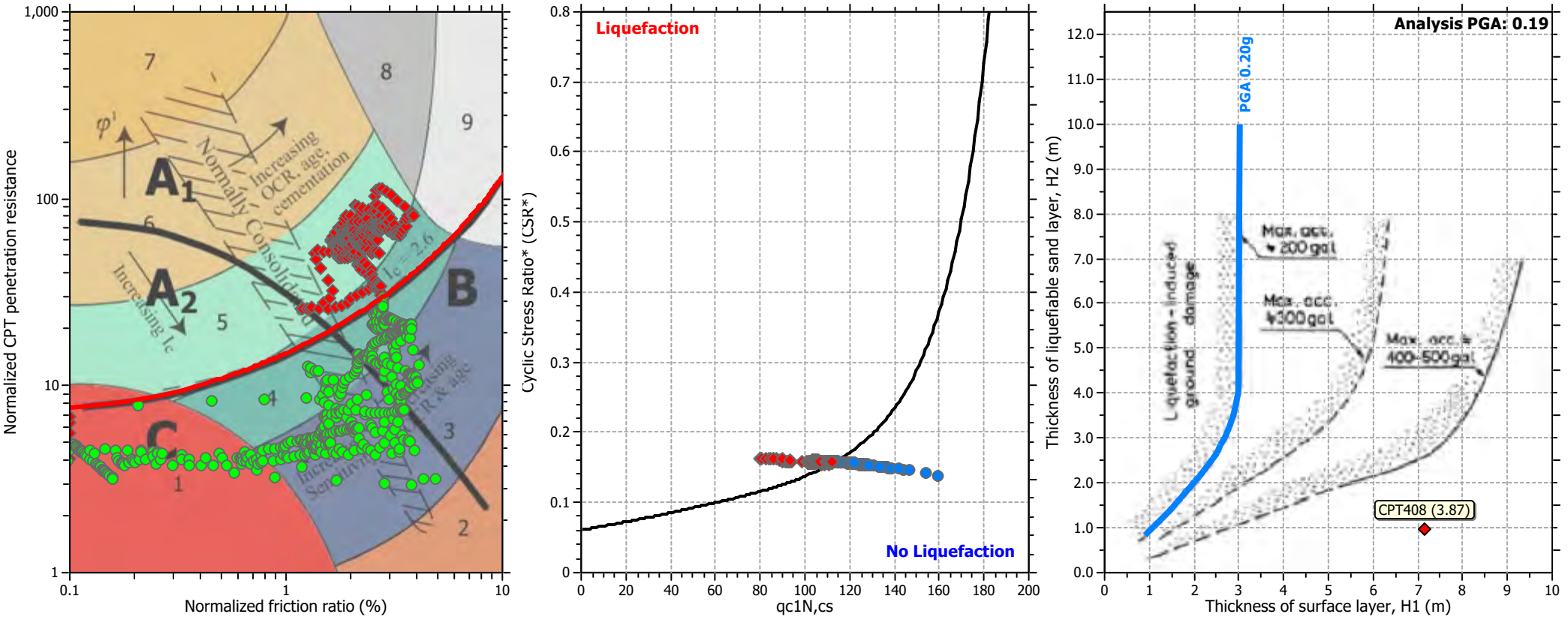


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



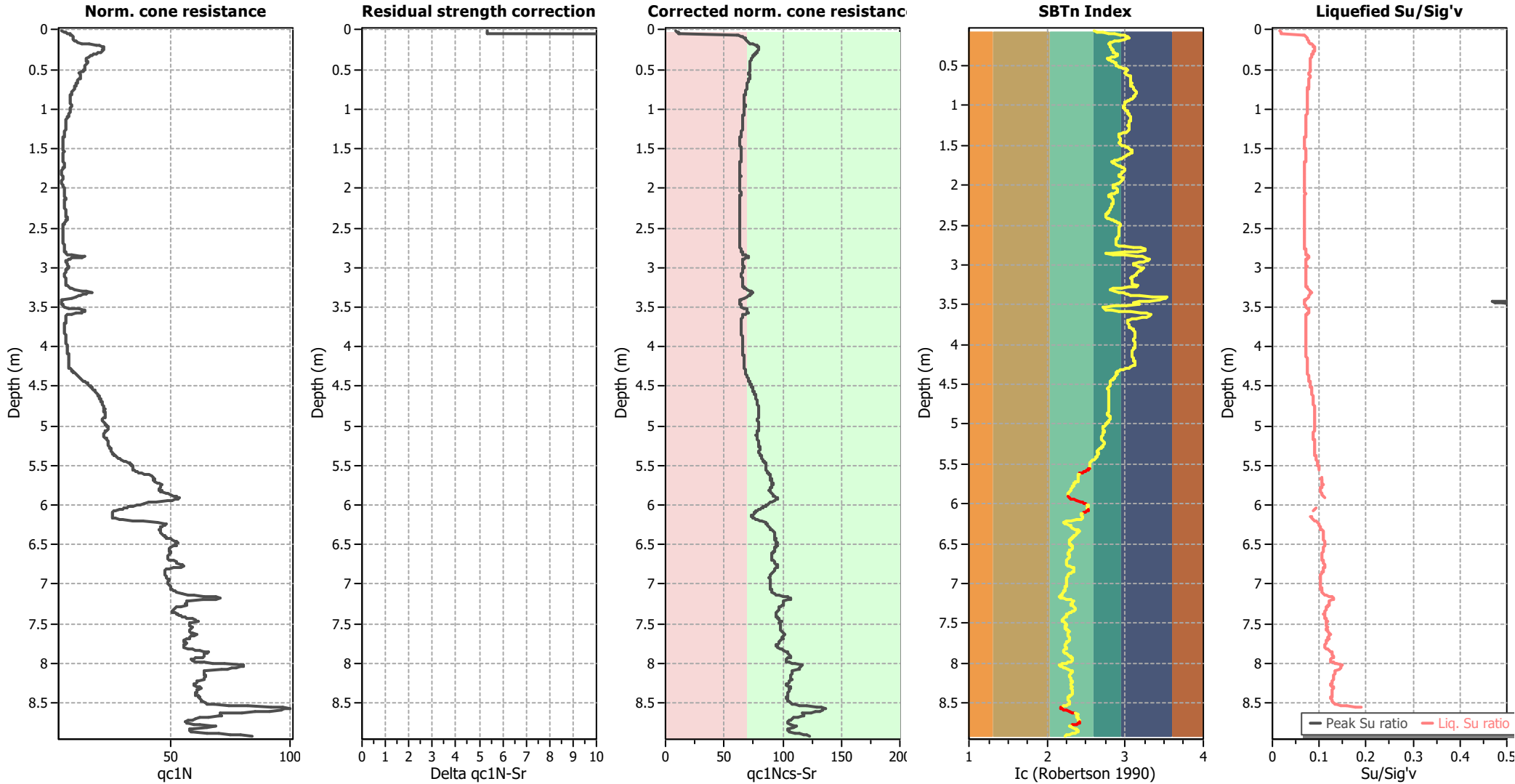
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

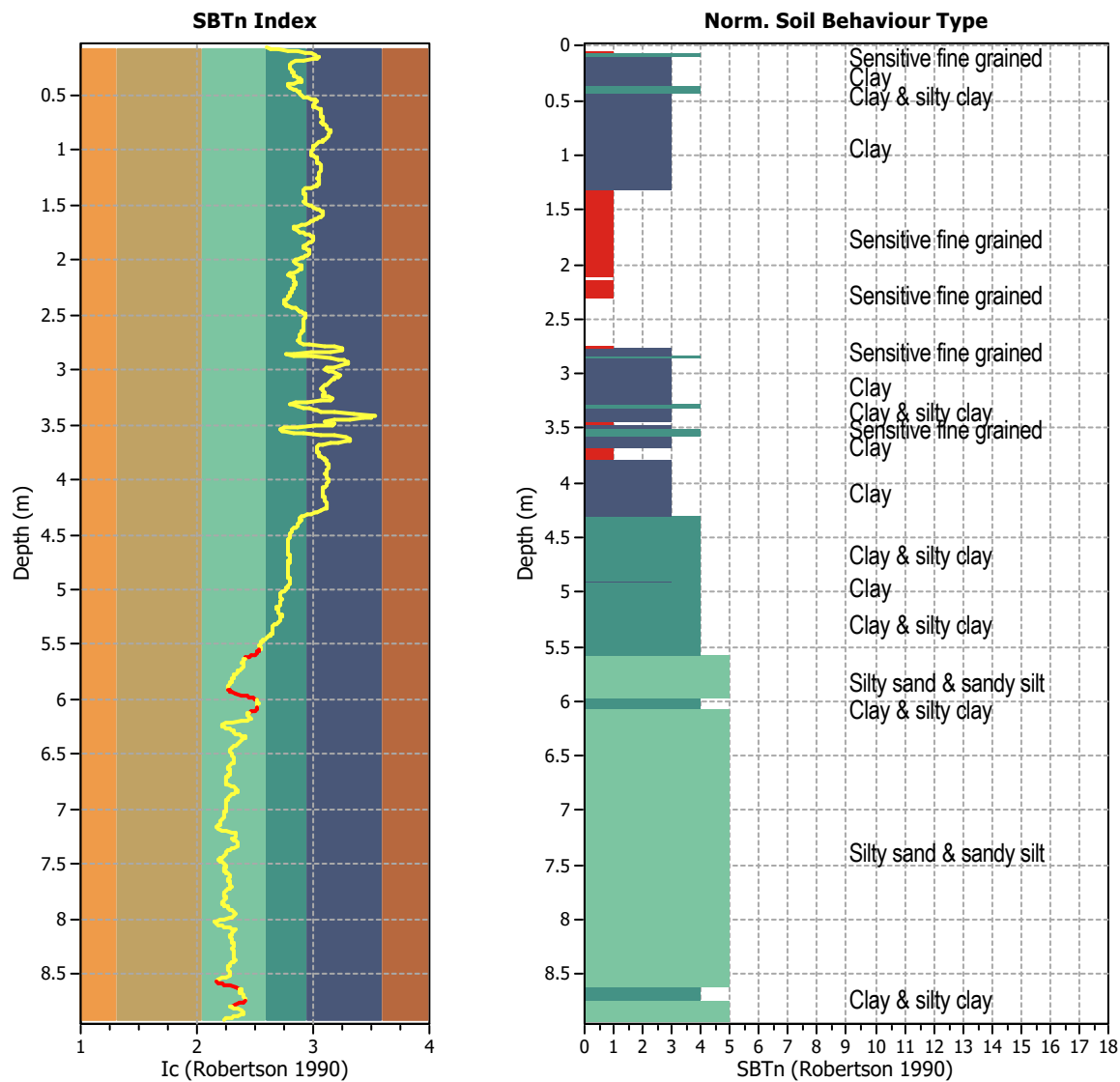
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



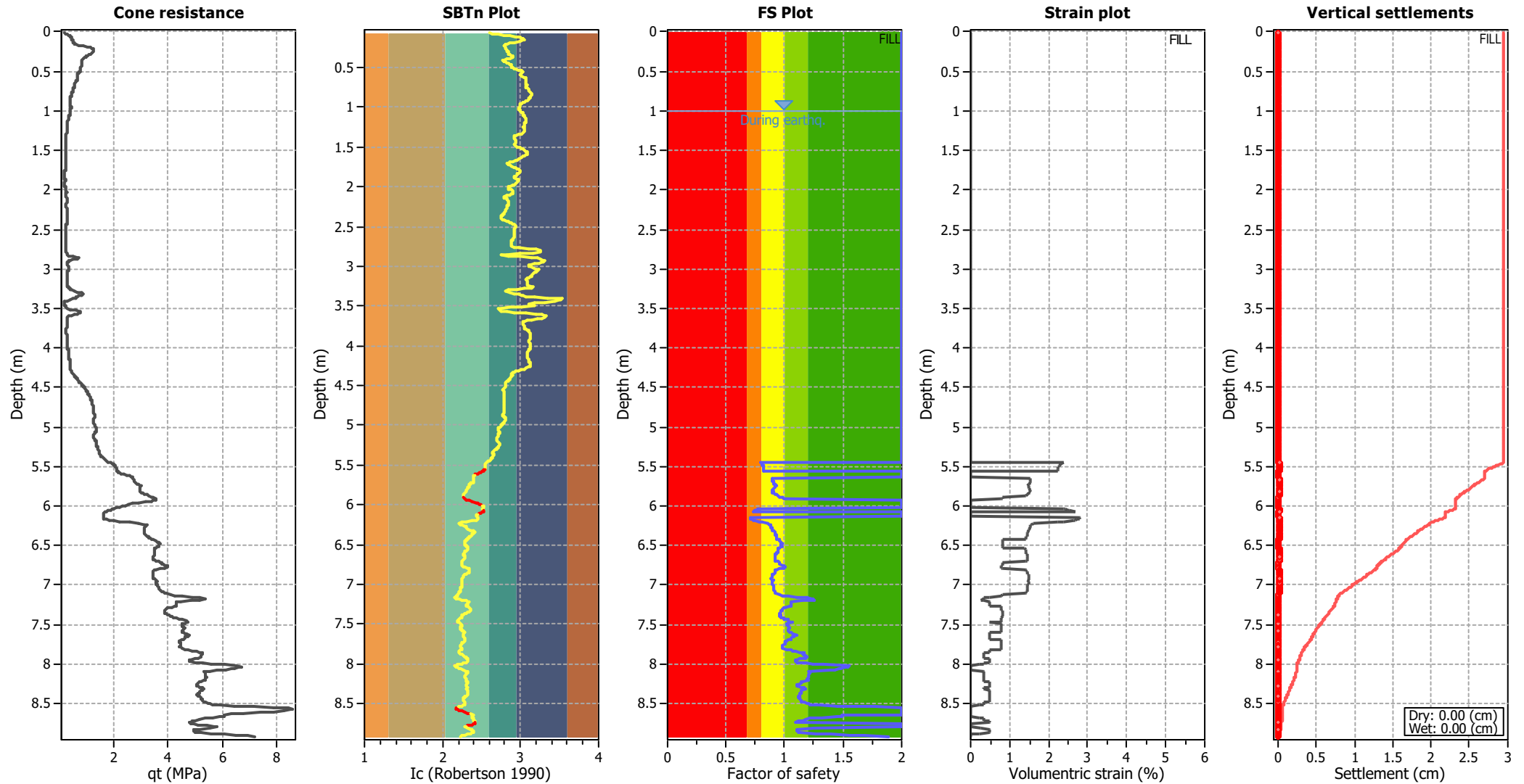
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 892
Total points excluded: 40
Exclusion percentage: 4.48%
Number of layers detected: 5

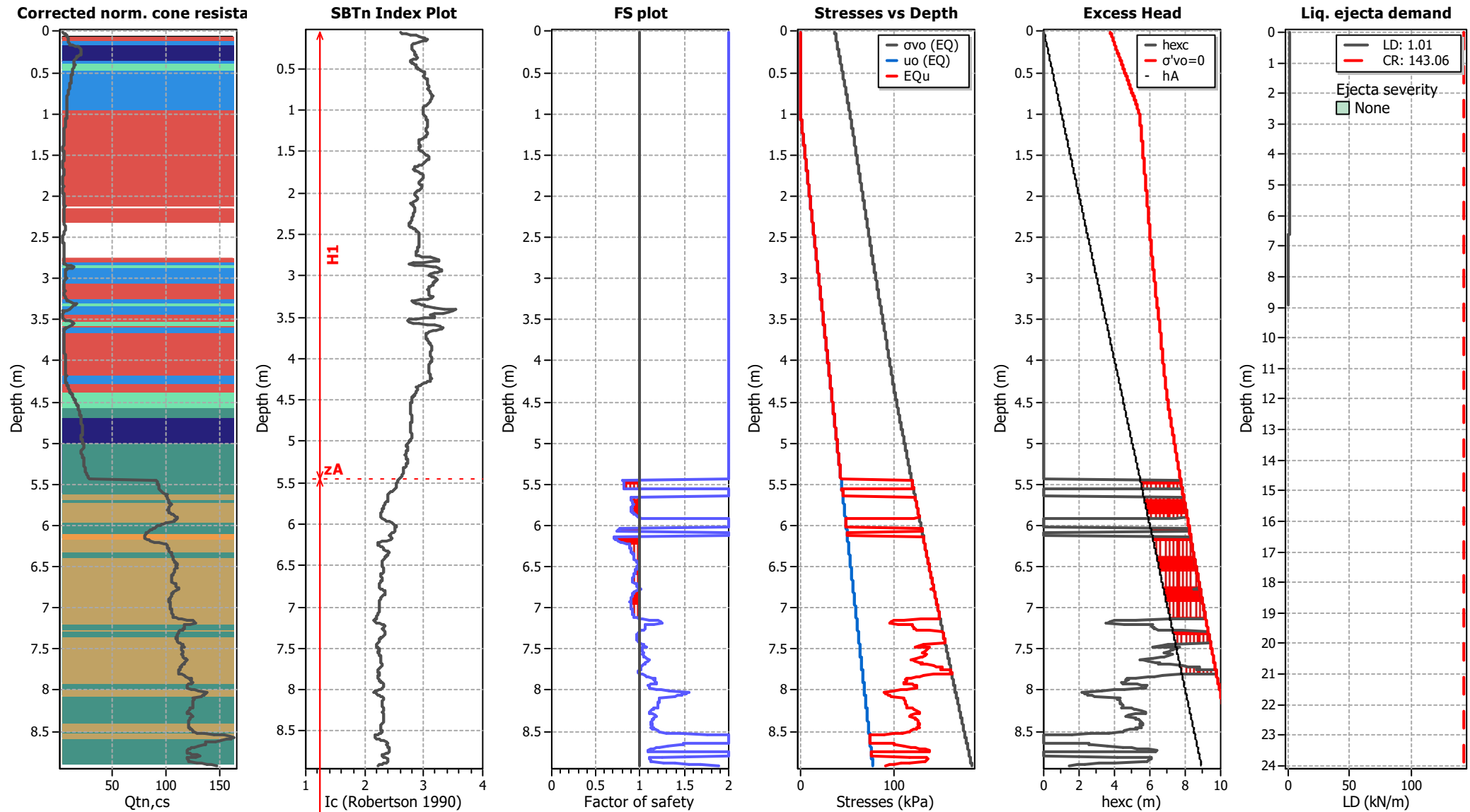
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

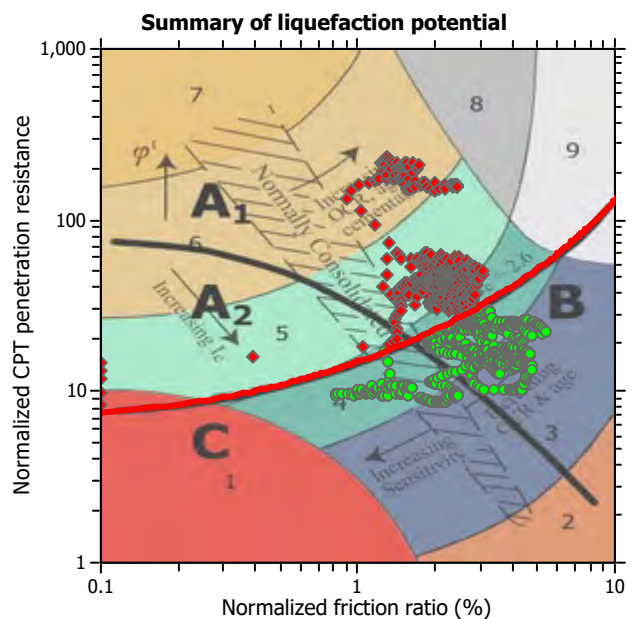
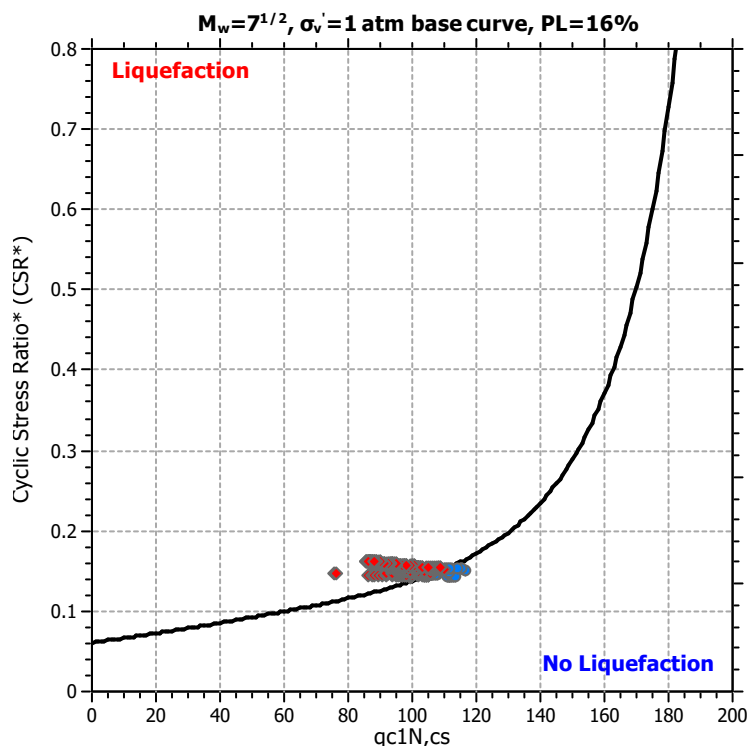
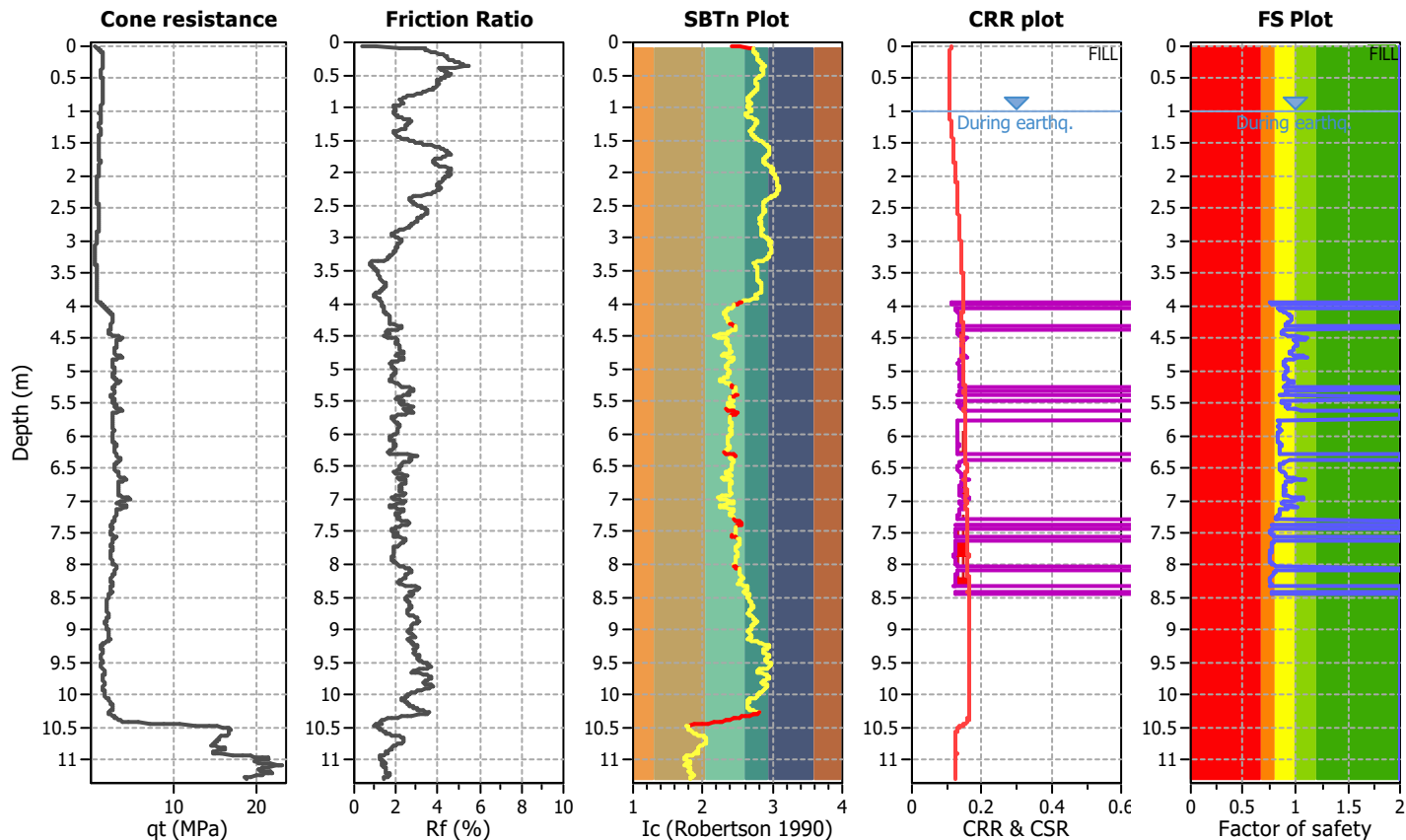
Project title : Sunfield Landholding

Location :

CPT file : CPT409

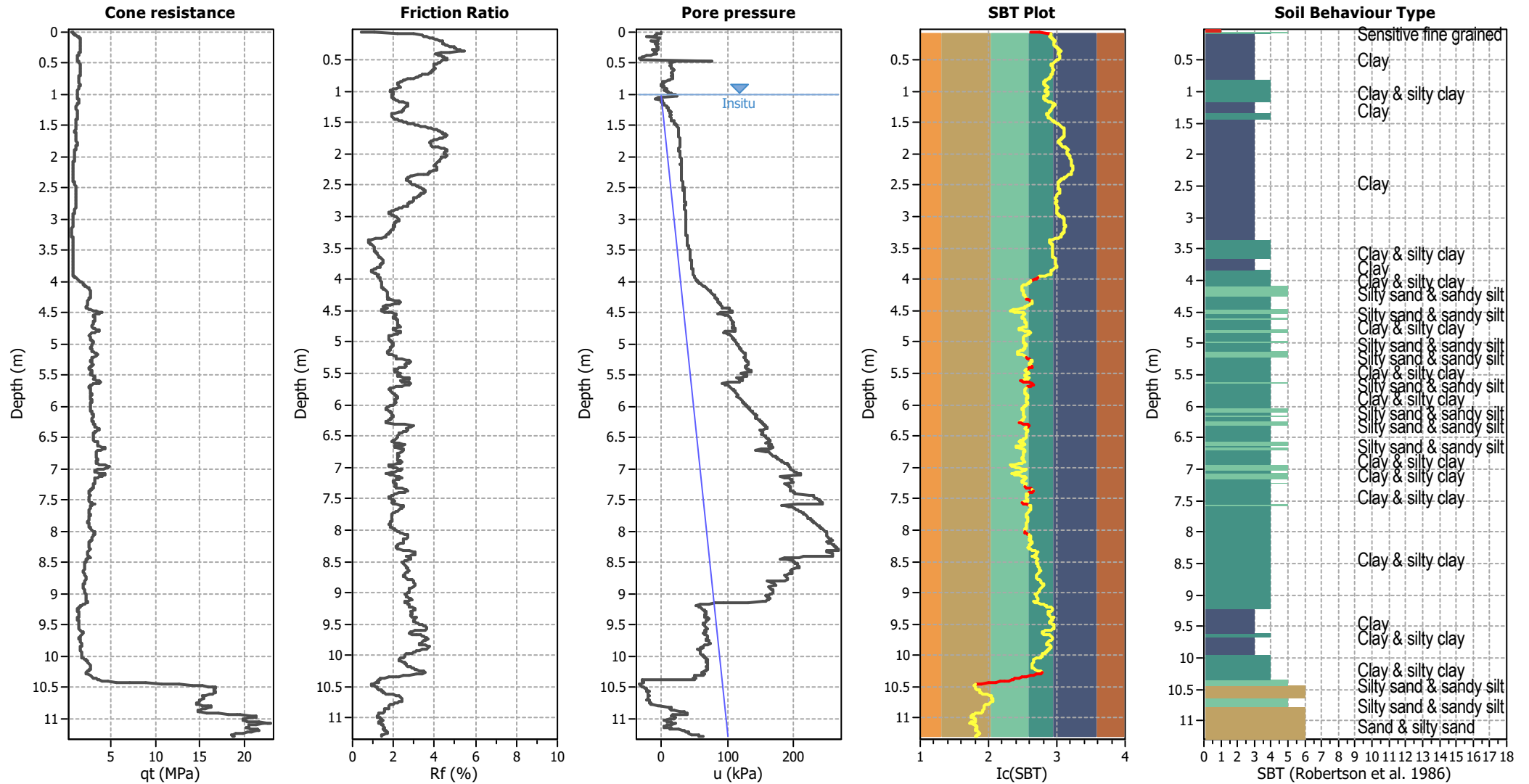
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Pore pressure

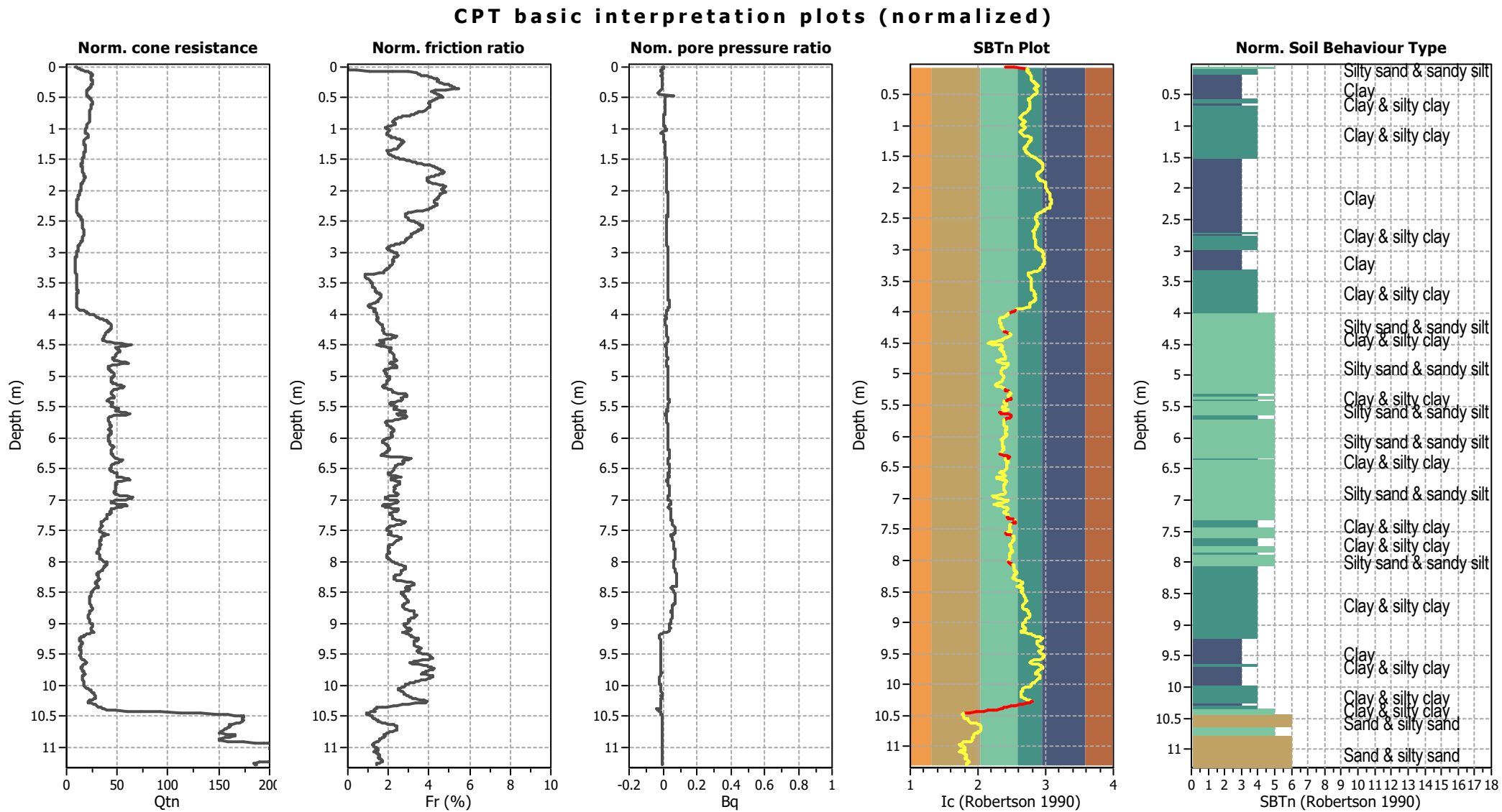


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

- | | | | | | |
|---|---------------------------|---|-----------------------------|---|----------------------------|
|  | 1. Sensitive fine grained |  | 4. Clayey silt to silty |  | 7. Gravely sand to sand |
|  | 2. Organic material |  | 5. Silty sand to sandy silt |  | 8. Very stiff sand to |
|  | 3. Clay to silty clay |  | 6. Clean sand to silty sand |  | 9. Very stiff fine grained |



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained

2. Organic material

3. Clay to silty clay

4. Clayey silt to silty

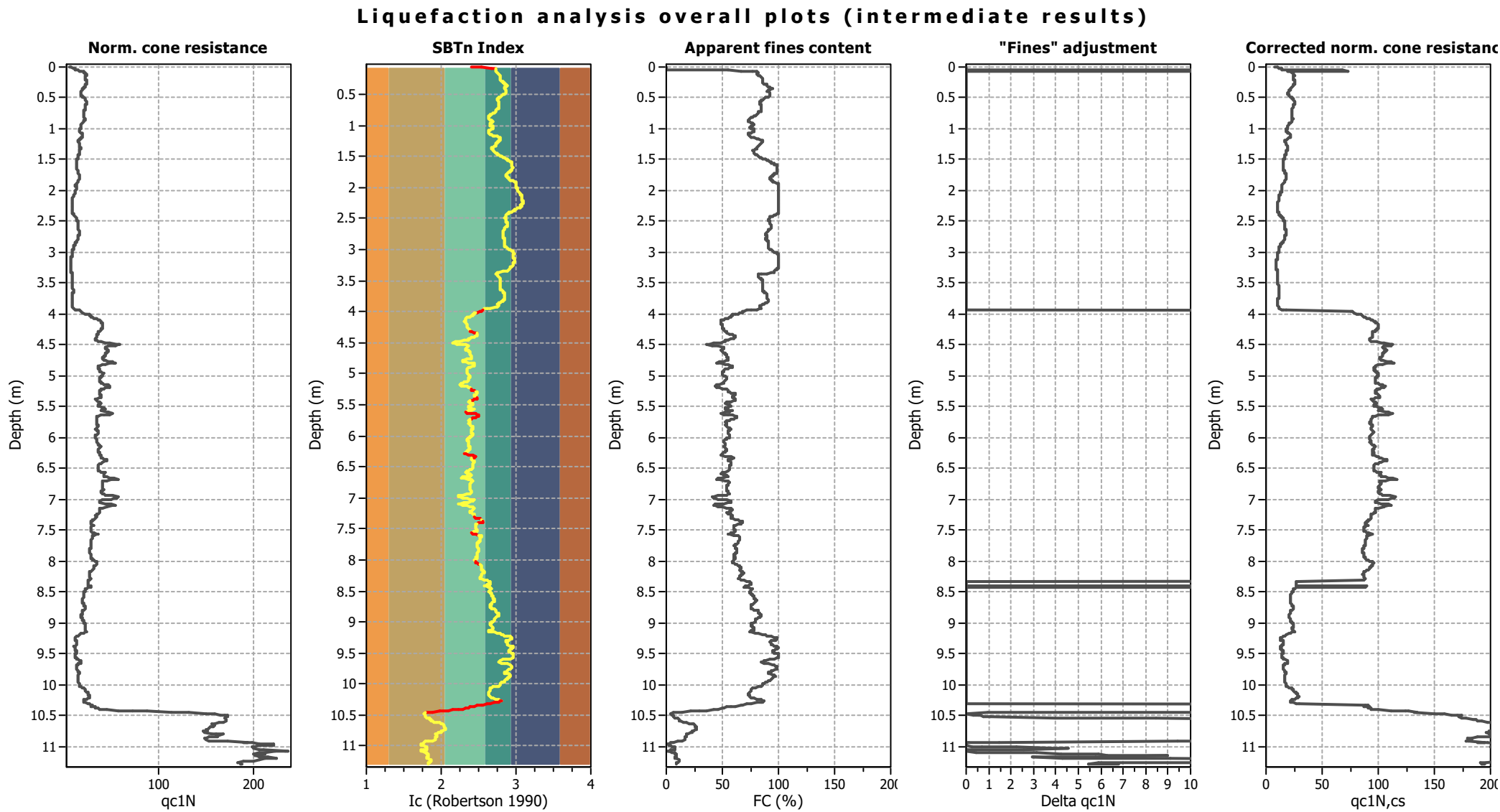
5. Silty sand to sandy silt

6. Clean sand to silty sand

7. Gravely sand to sand

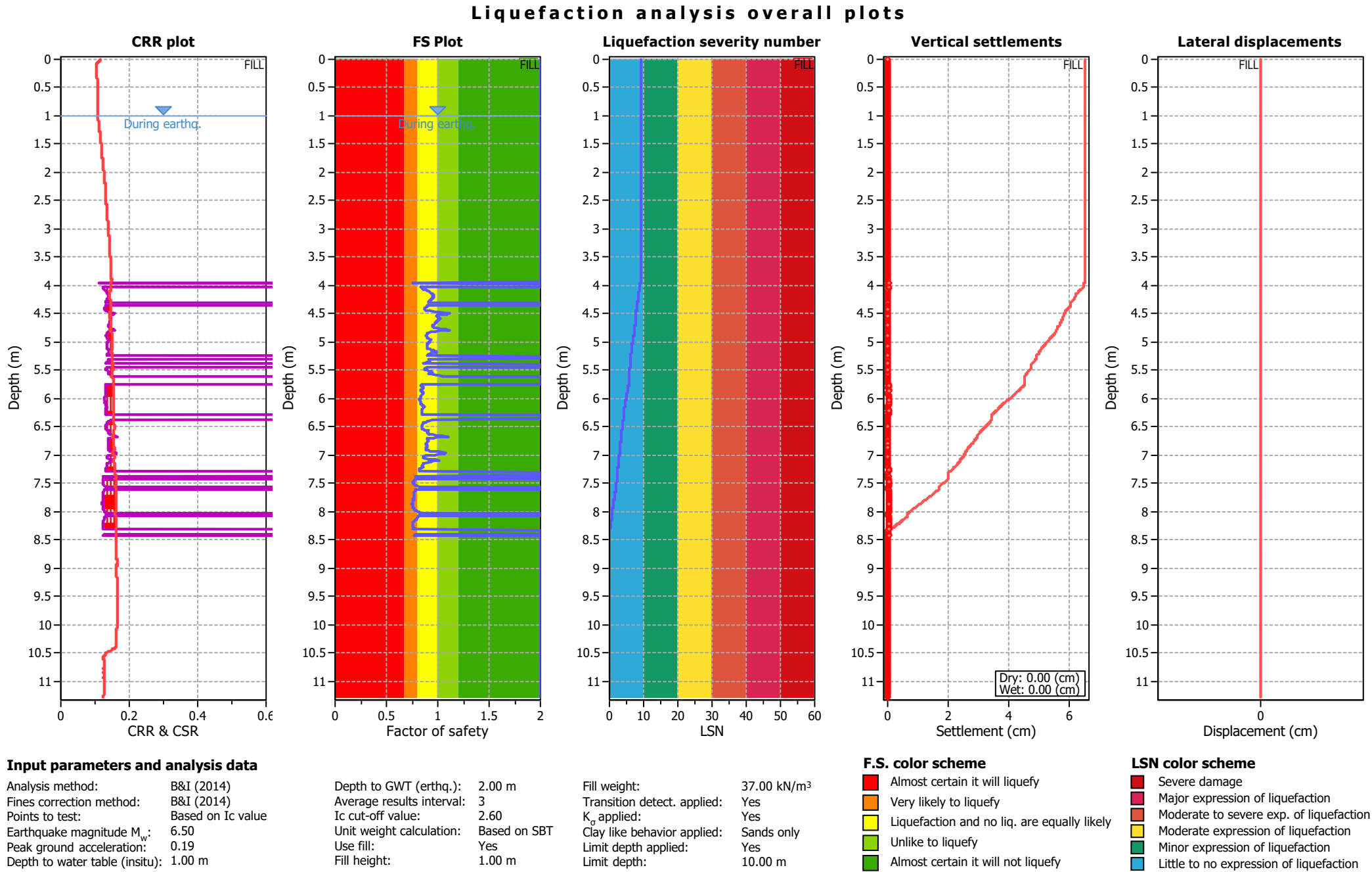
8. Very stiff sand to

9. Very stiff fine grained

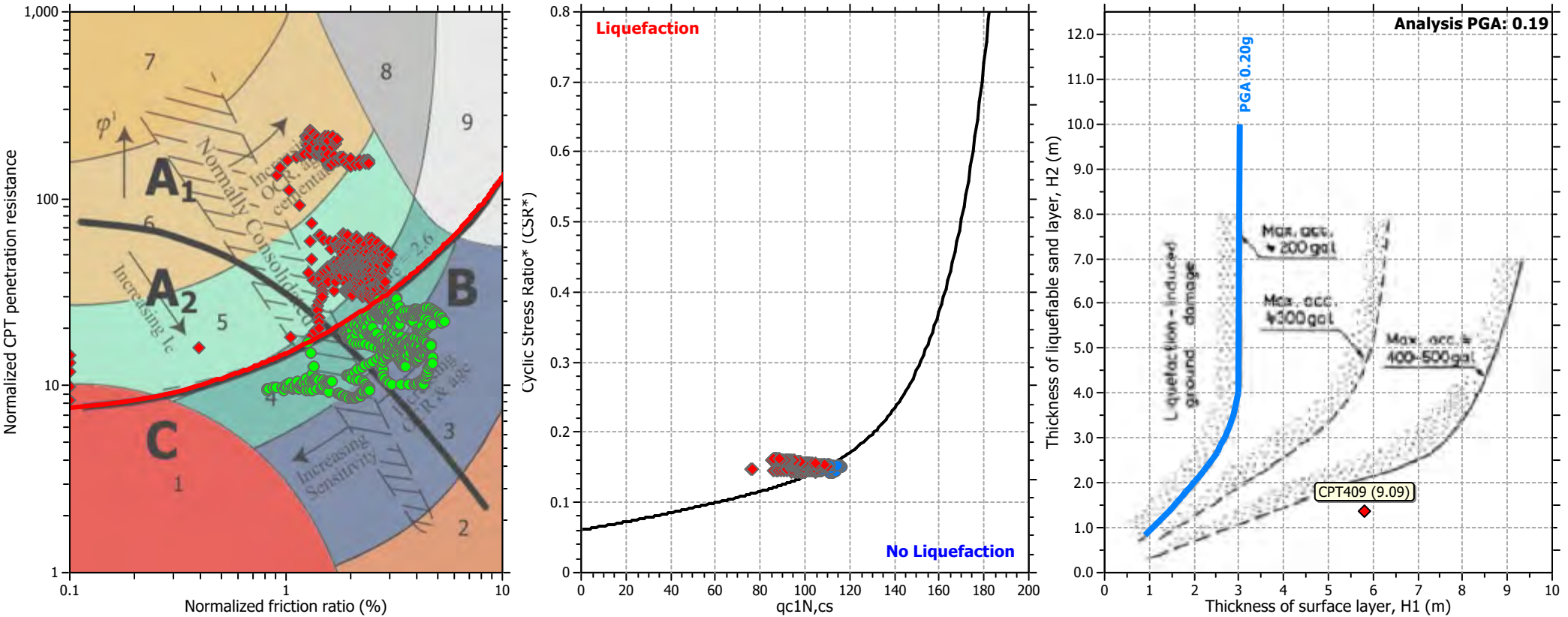


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



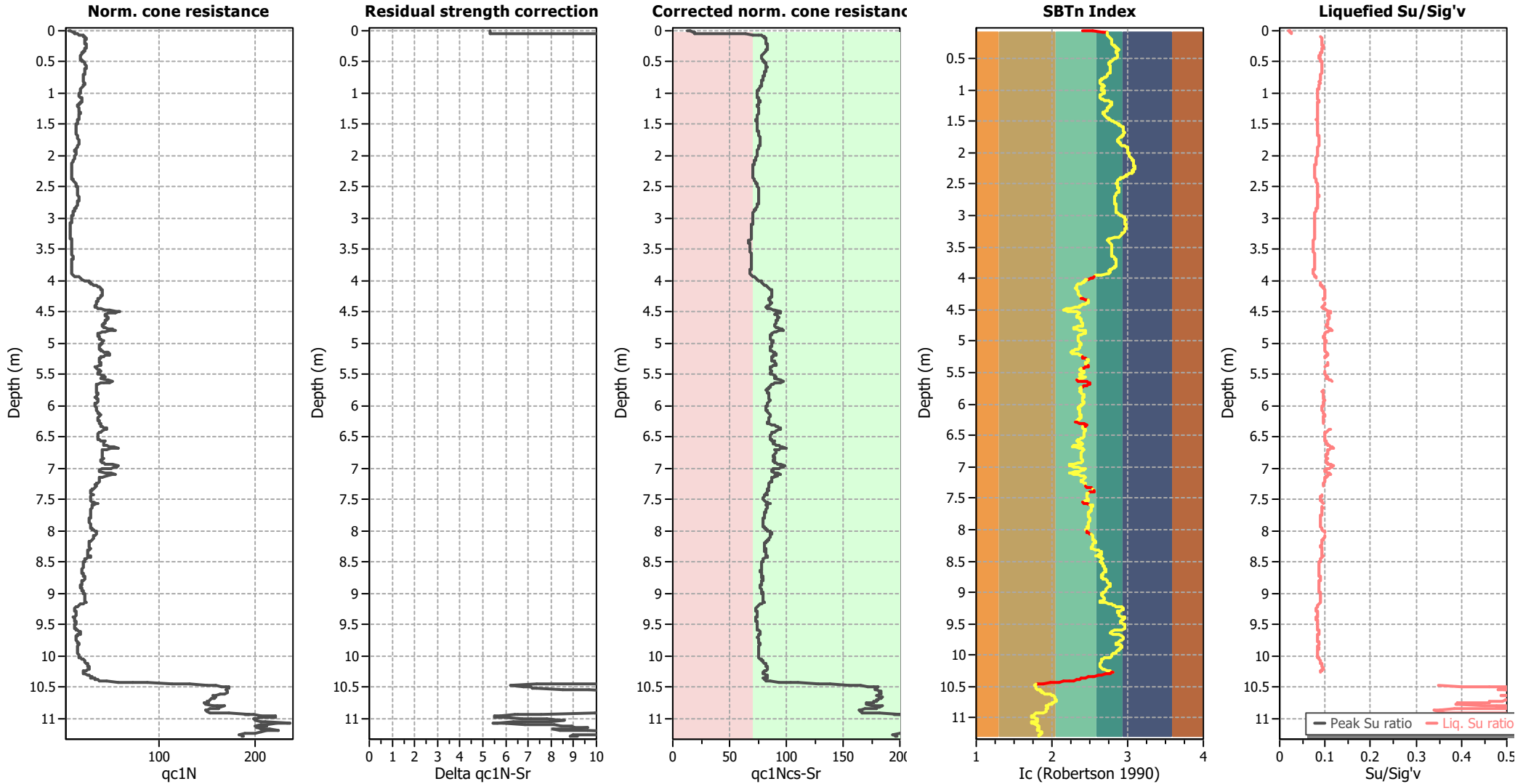
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

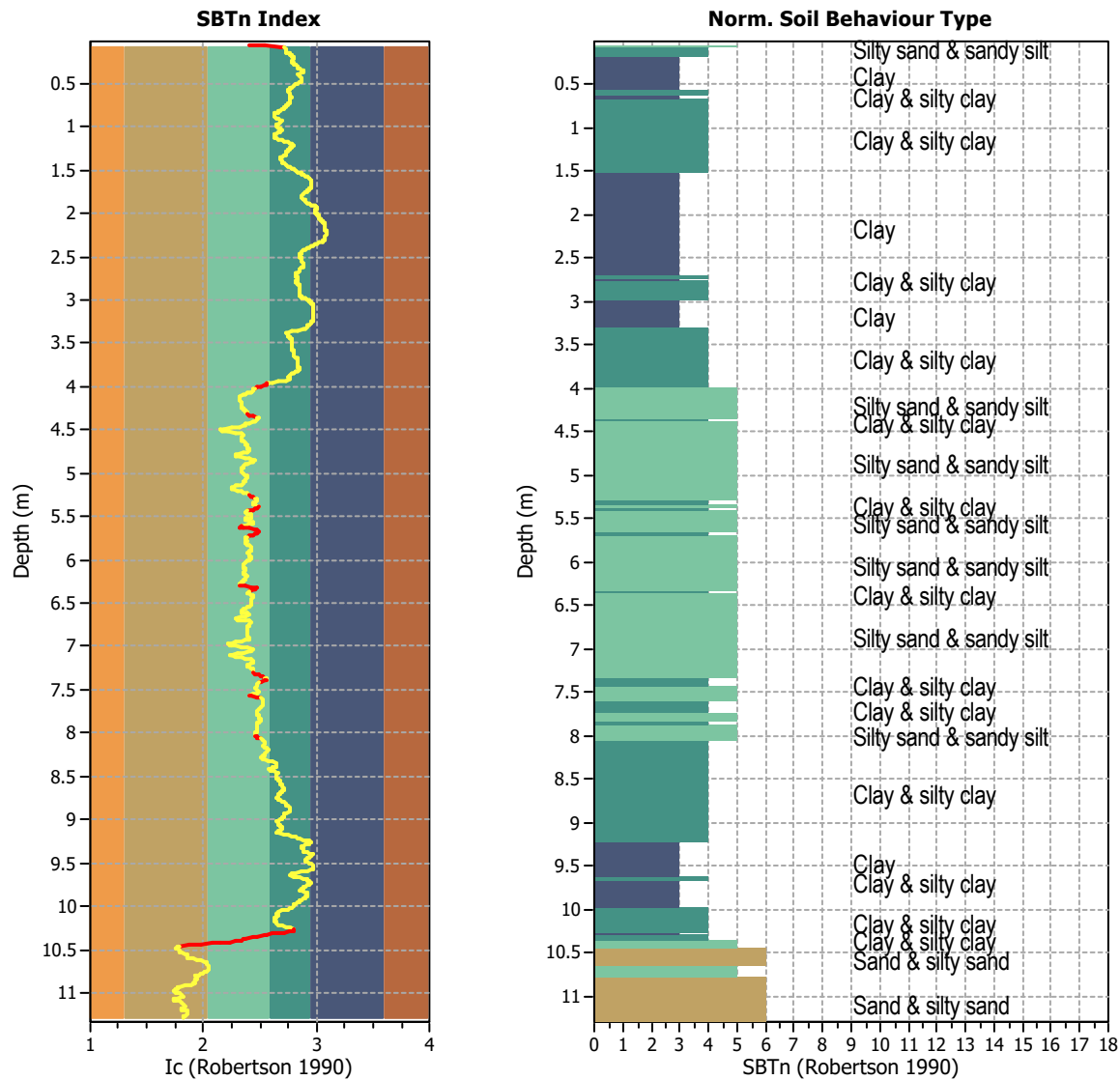
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vice-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



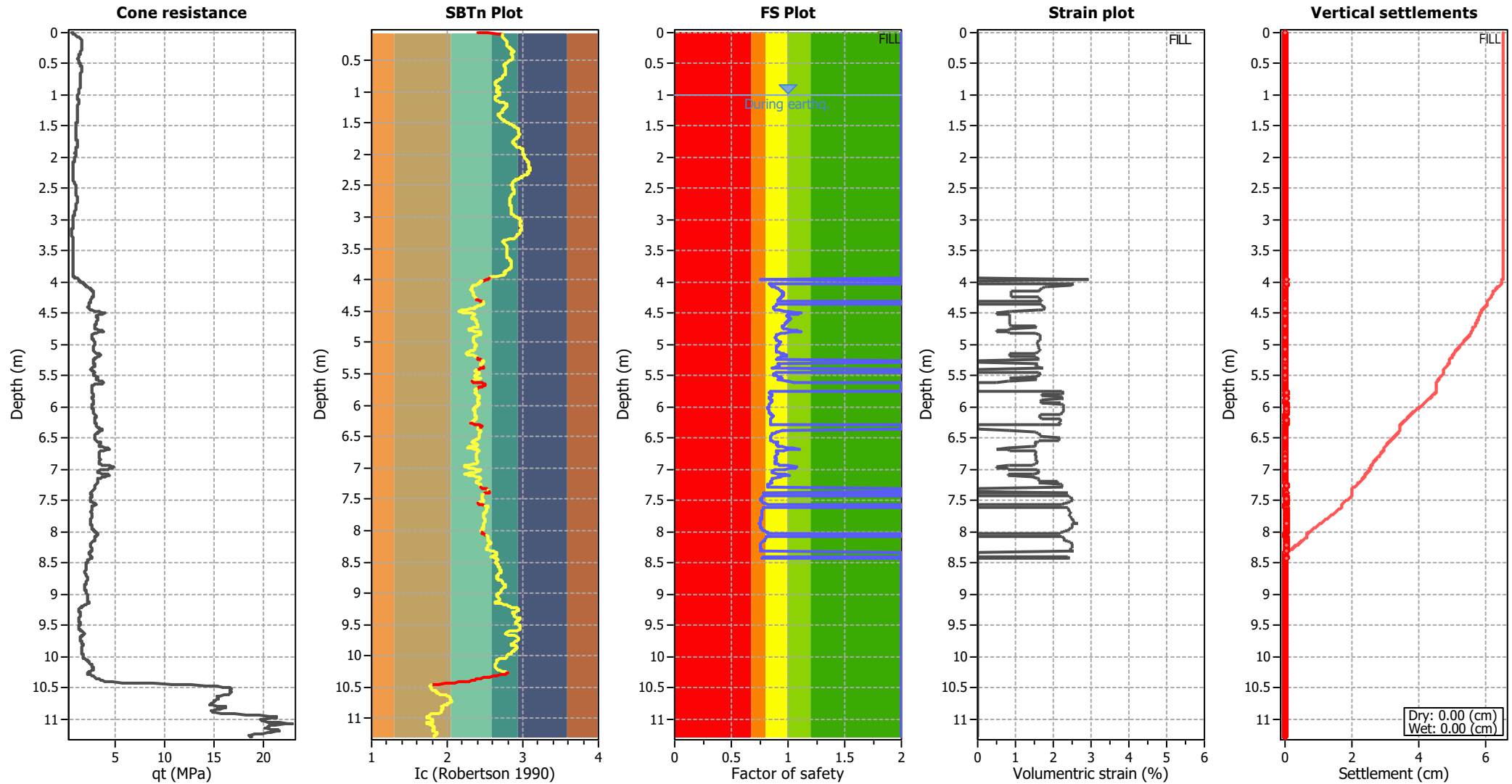
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1129
Total points excluded: 91
Exclusion percentage: 8.06%
Number of layers detected: 14

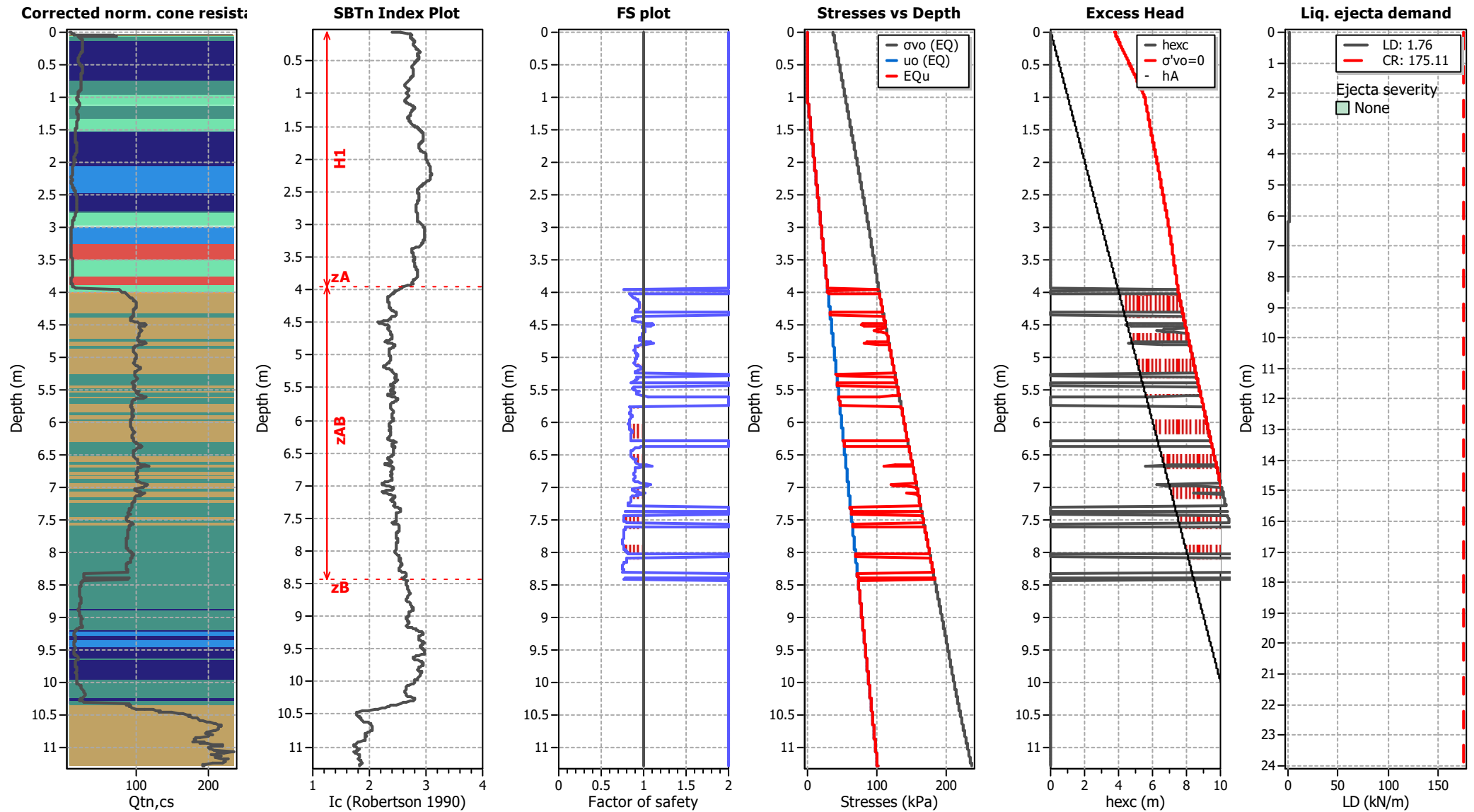
Estimation of post-earthquake settlements



Abbreviations

q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
 I_c : Soil Behaviour Type Index
 FS: Calculated Factor of Safety against liquefaction
 Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

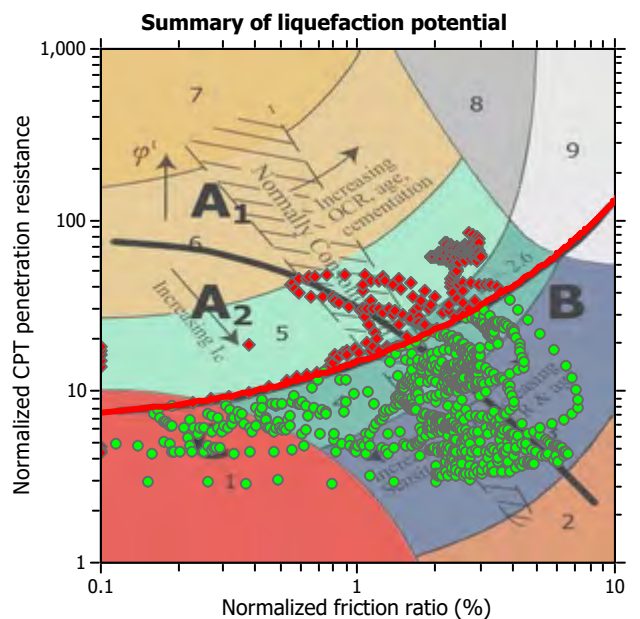
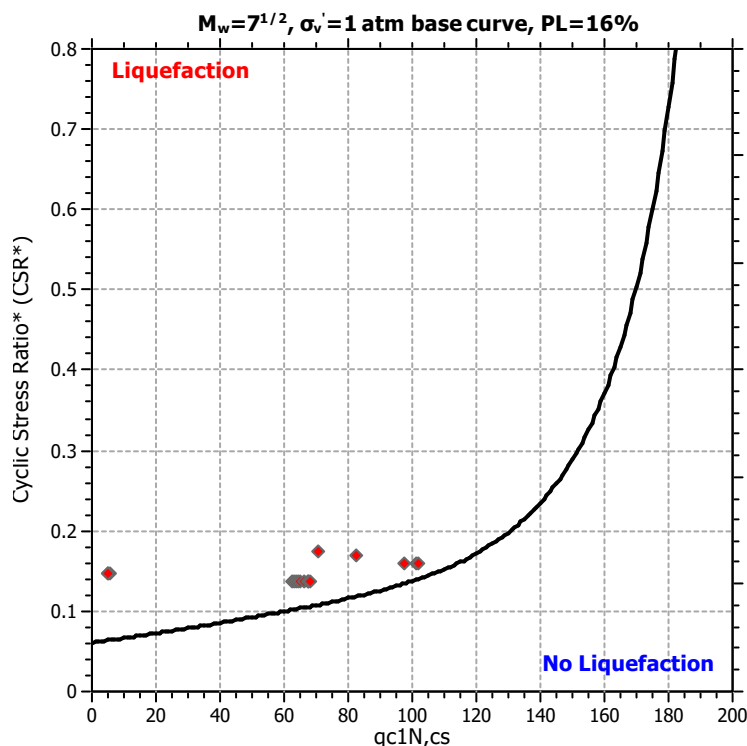
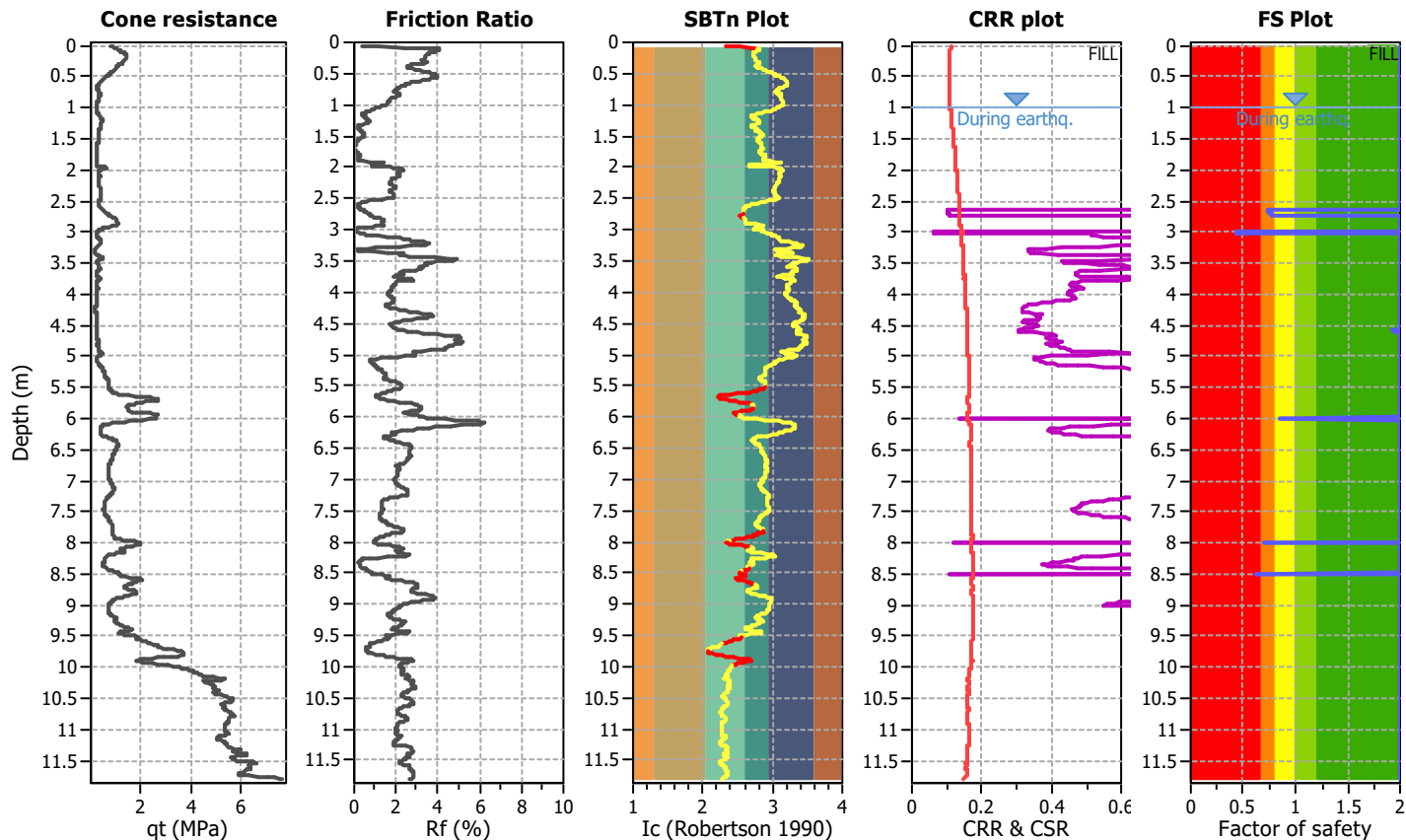
Project title : Sunfield Landholding

Location :

CPT file : CPT410

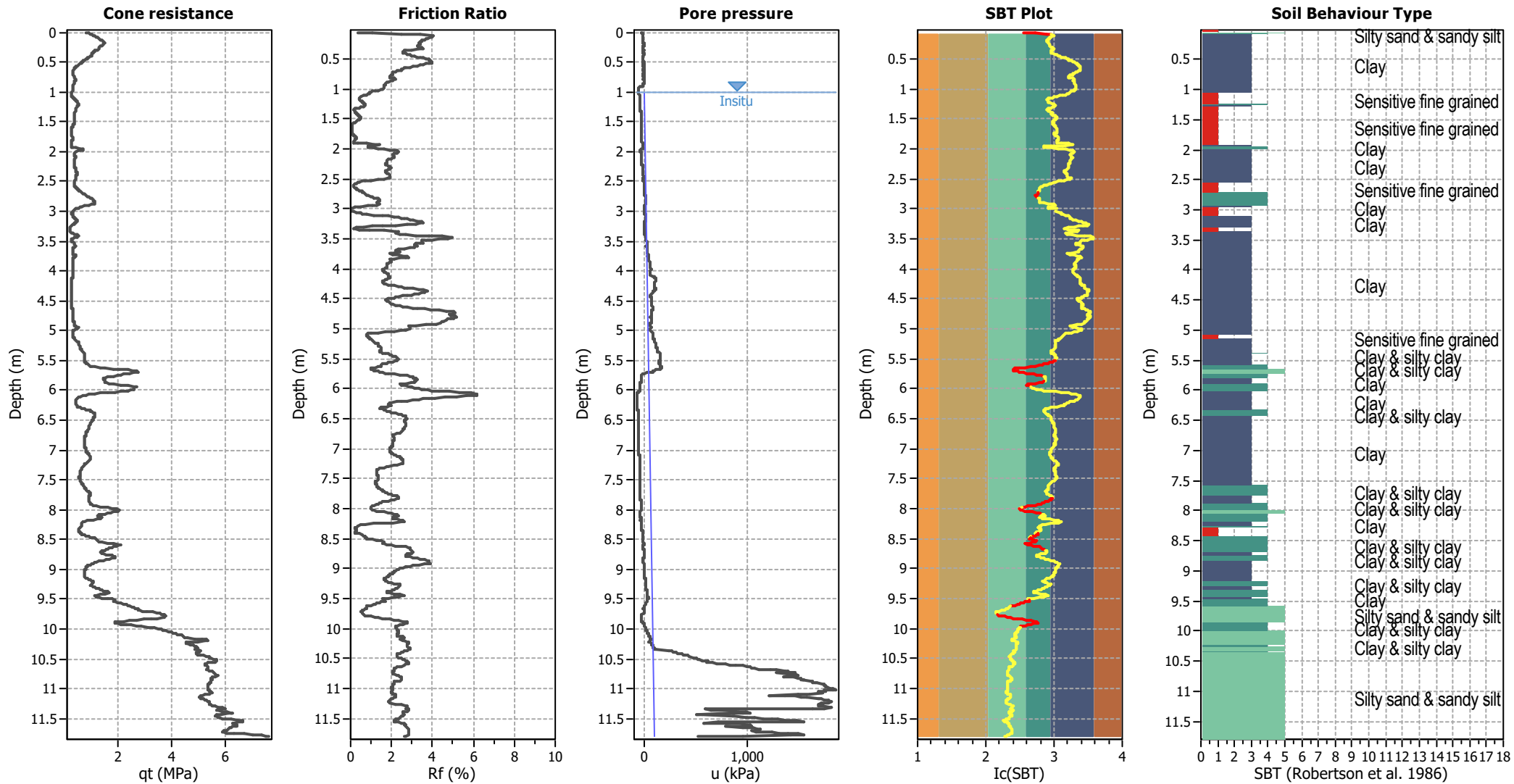
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



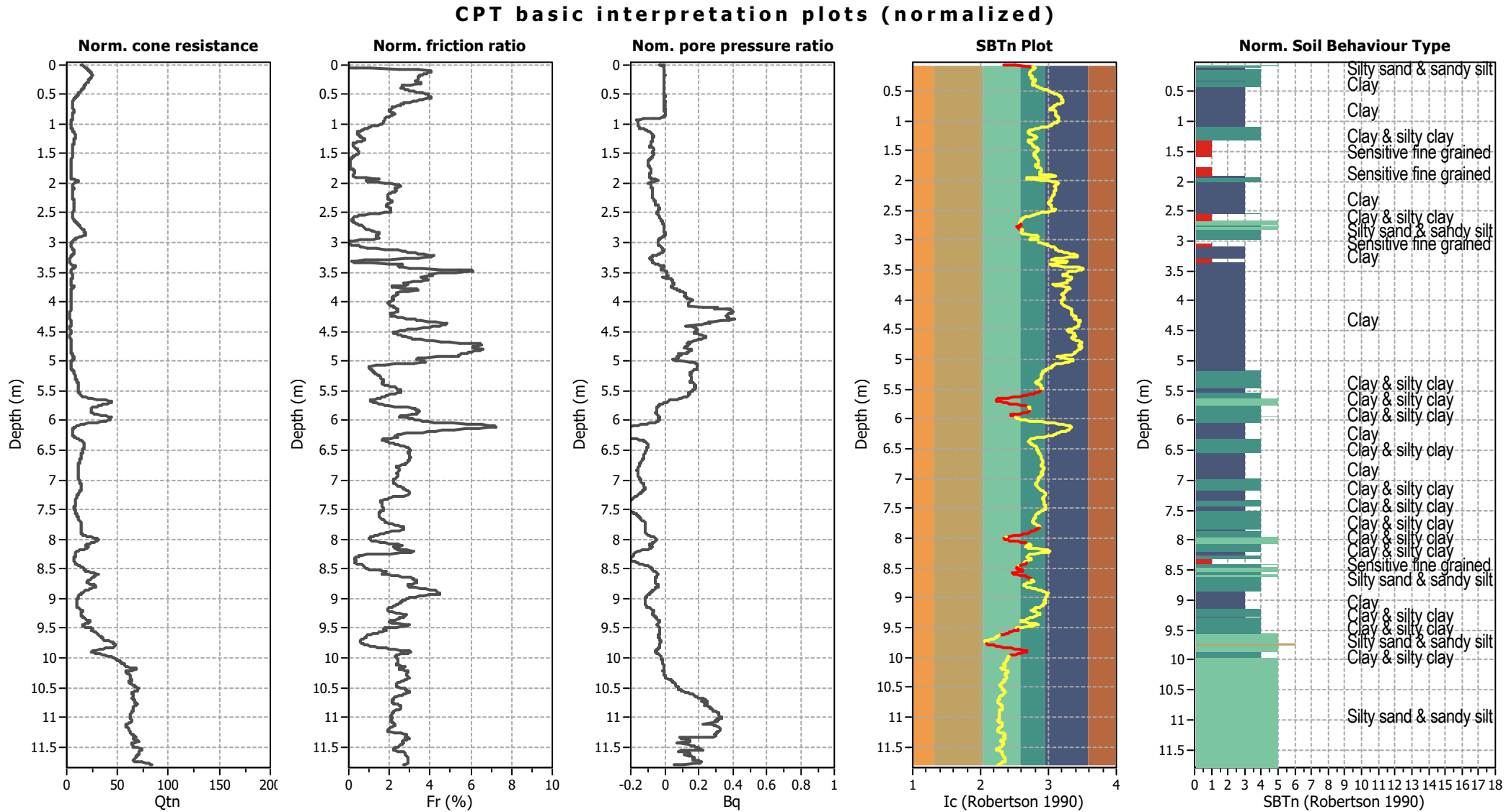
Zone A1: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

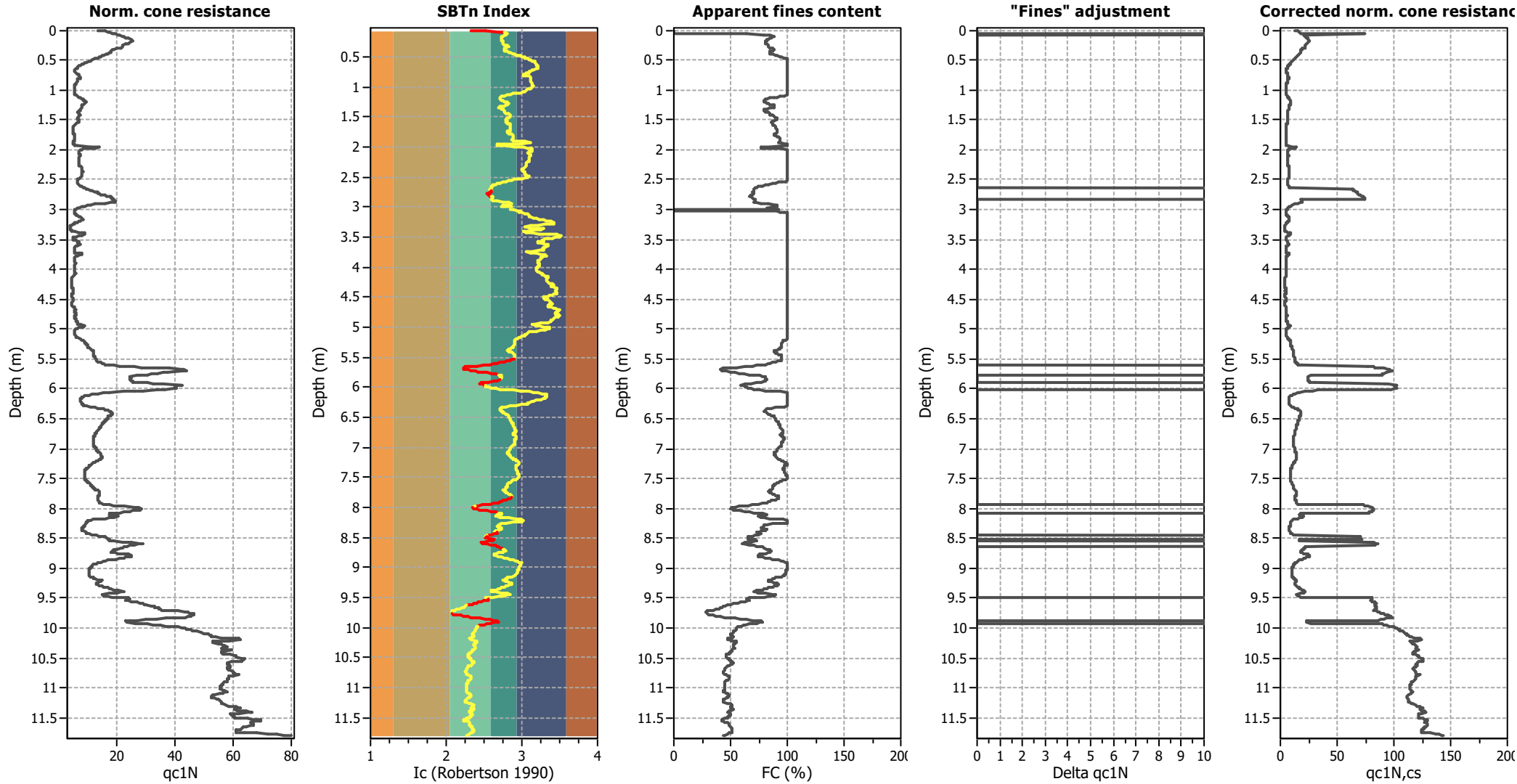


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

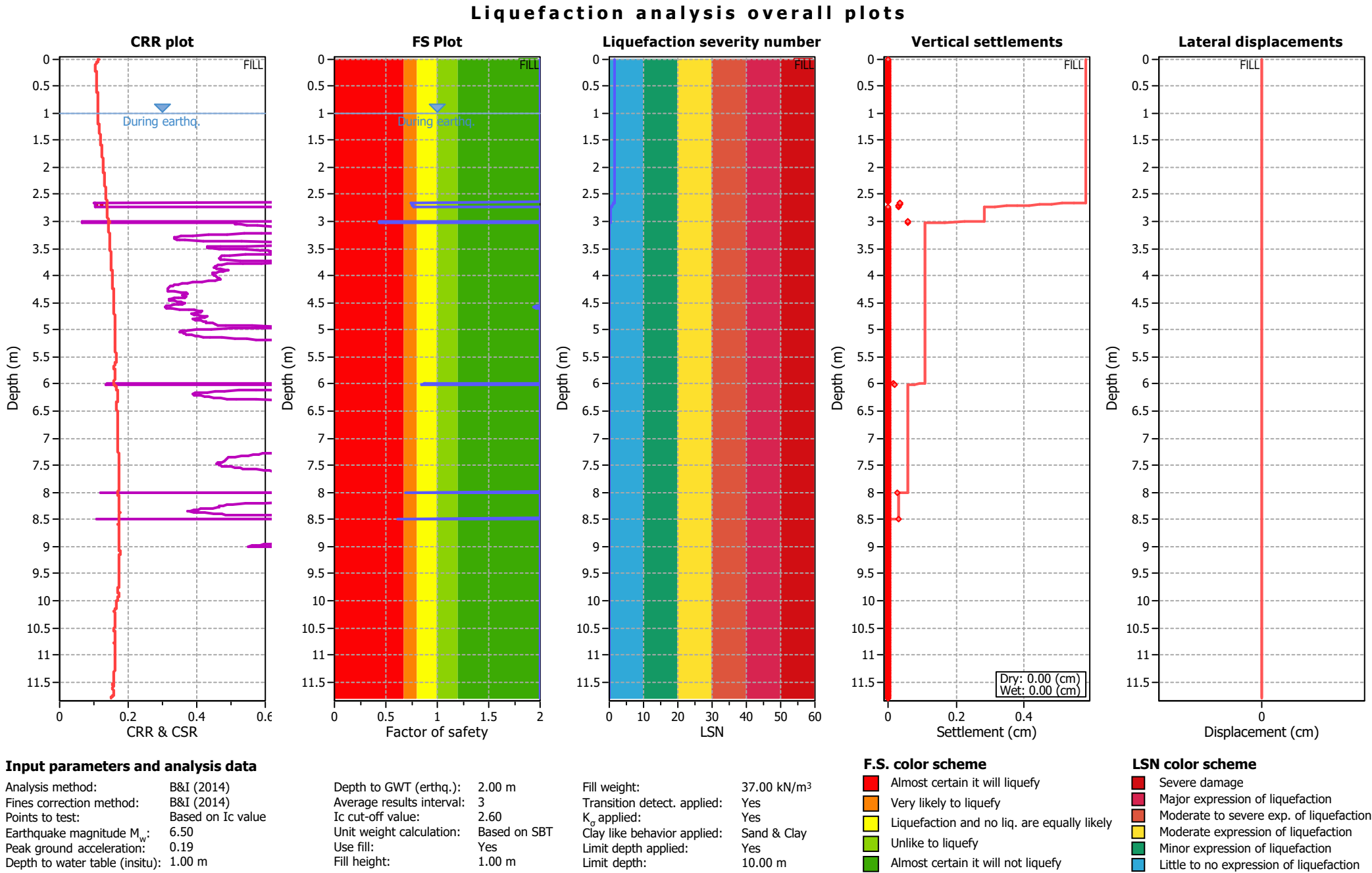
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

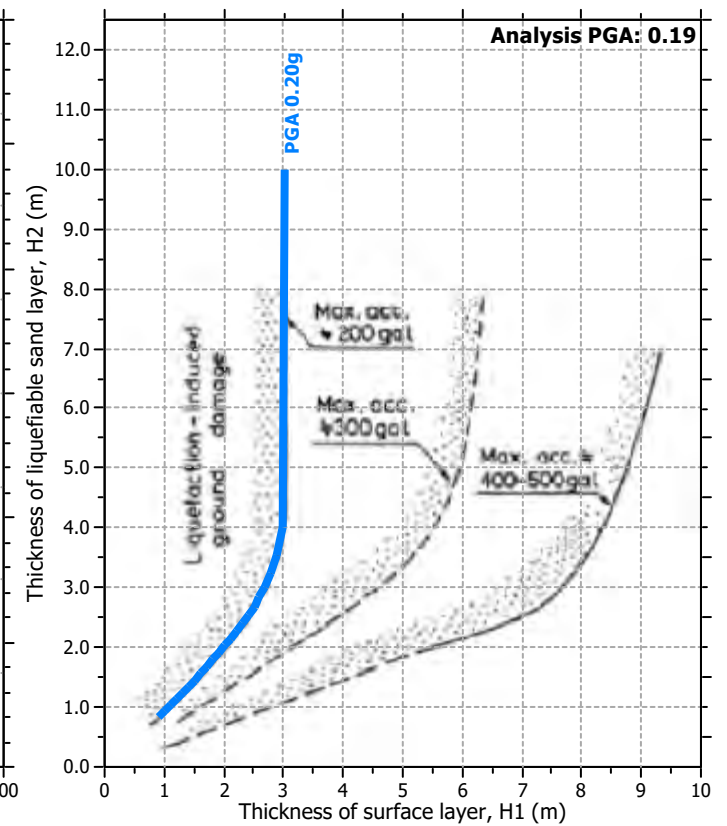
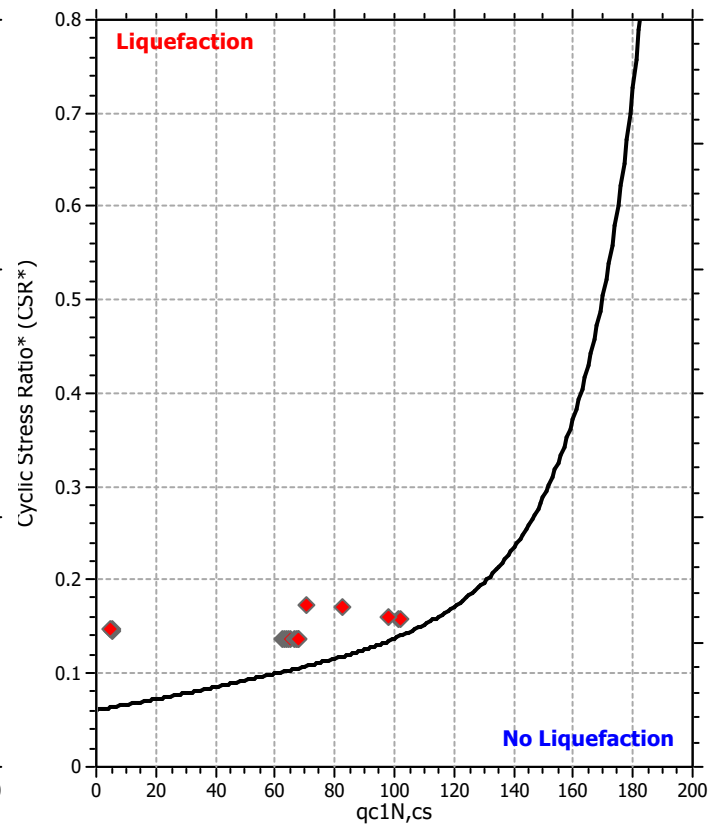
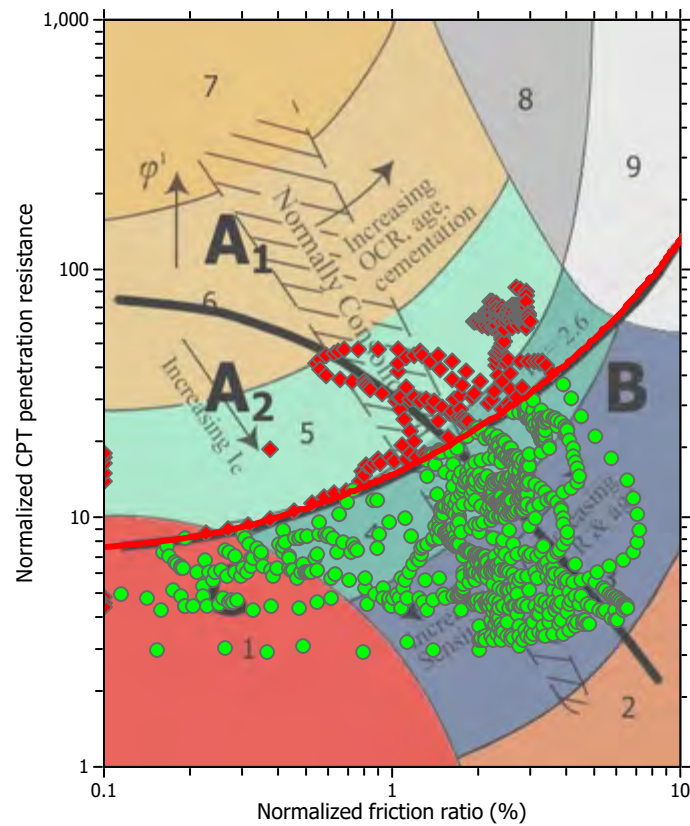


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



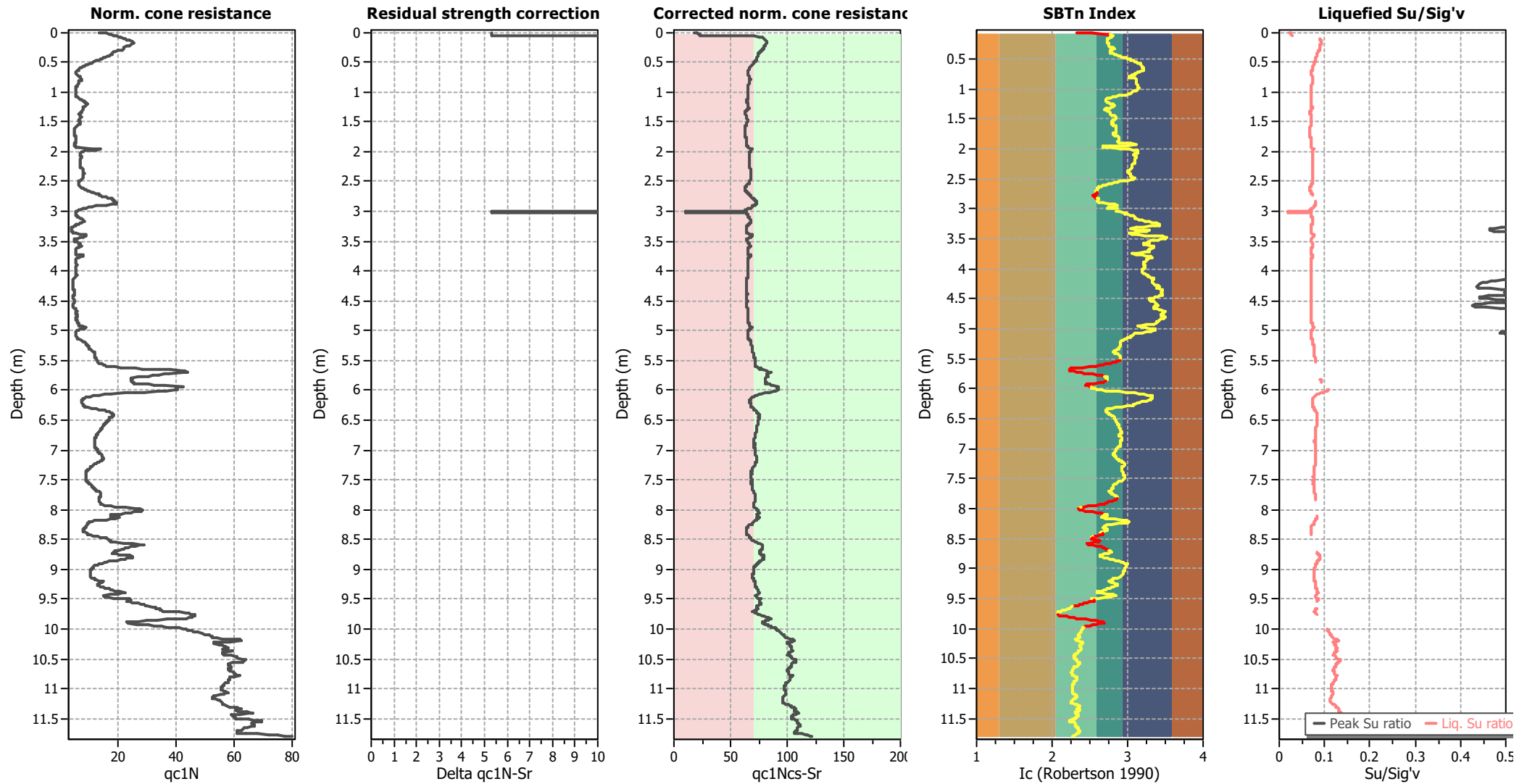
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

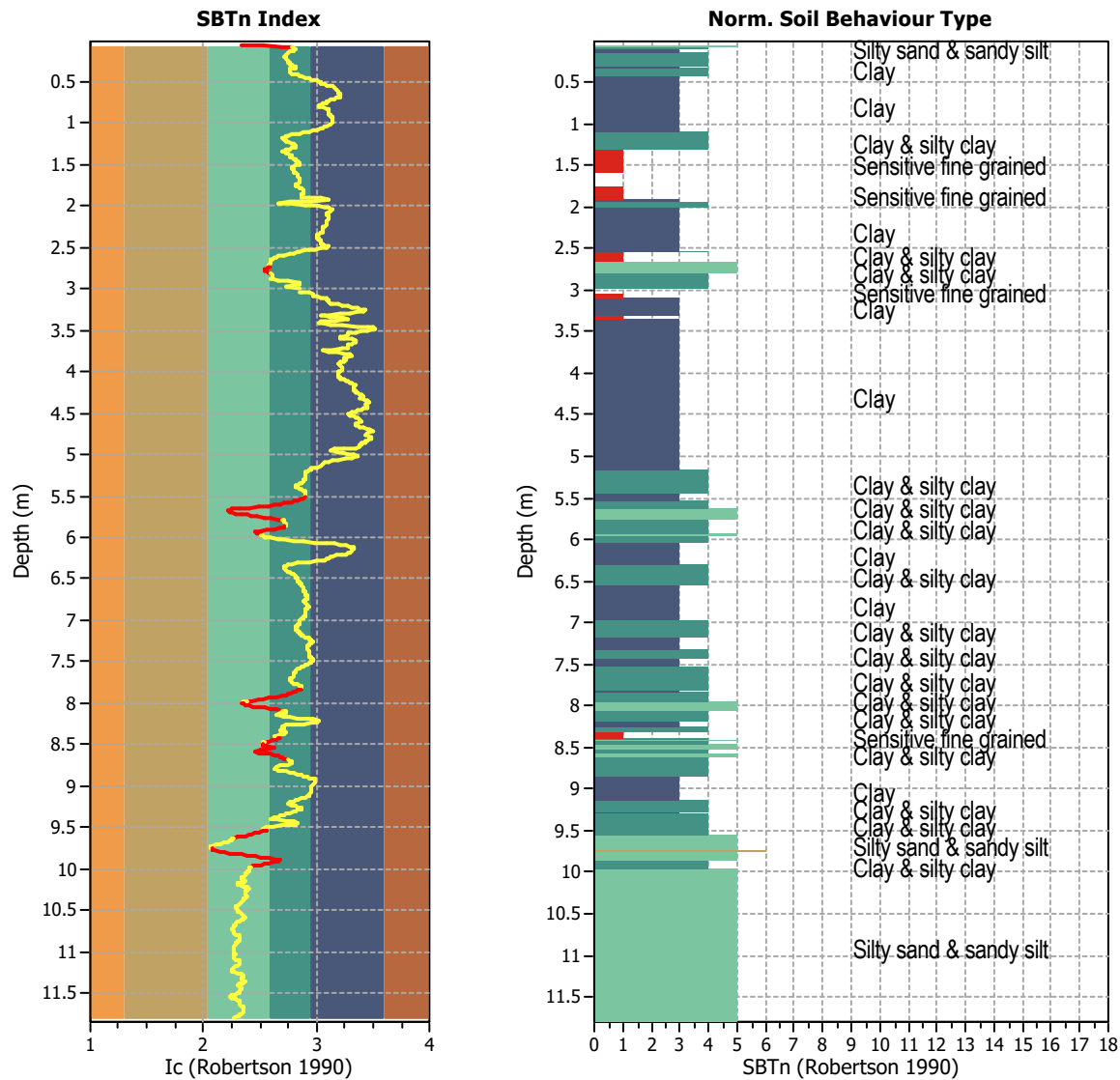
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



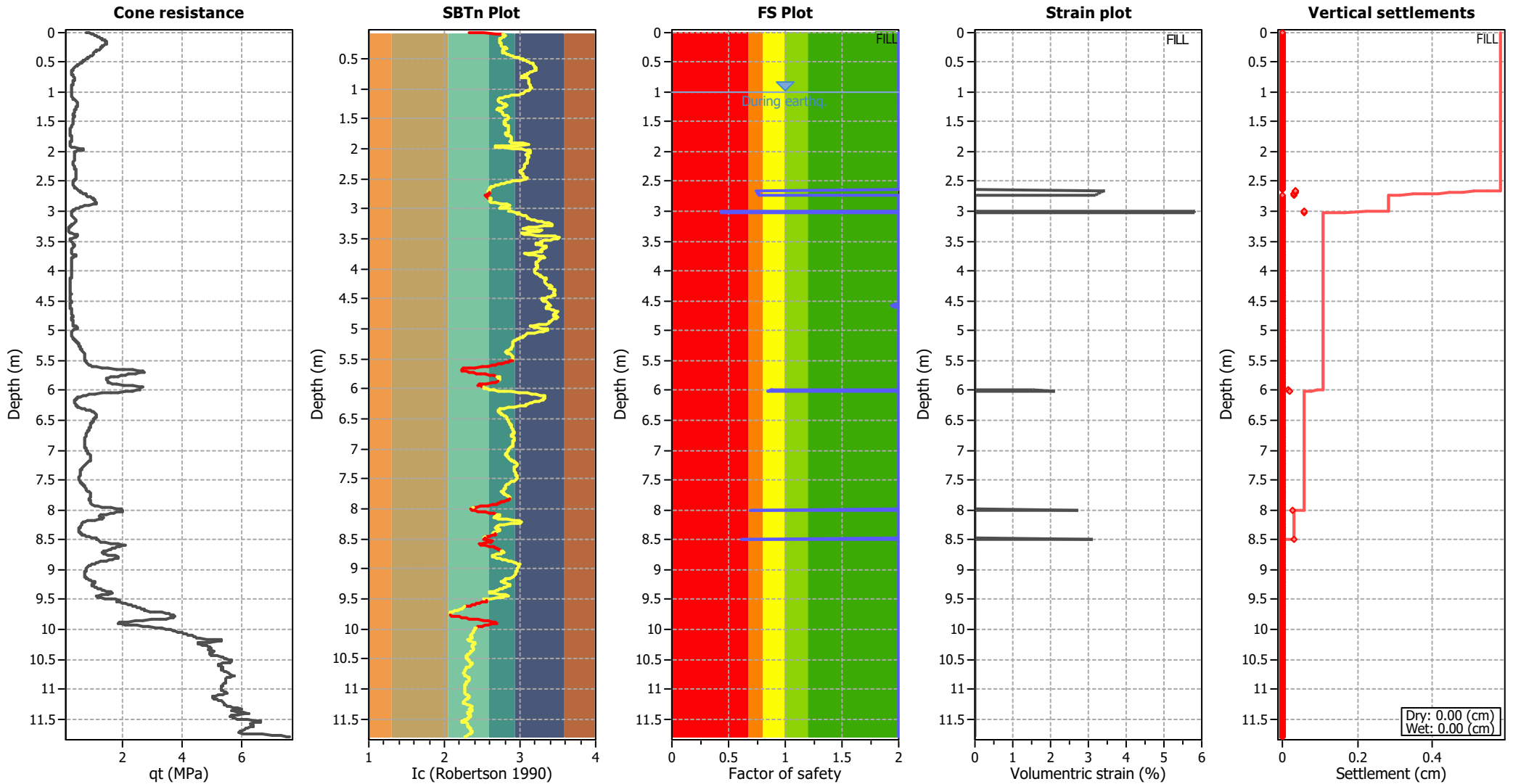
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1180
Total points excluded: 143
Exclusion percentage: 12.12%
Number of layers detected: 16

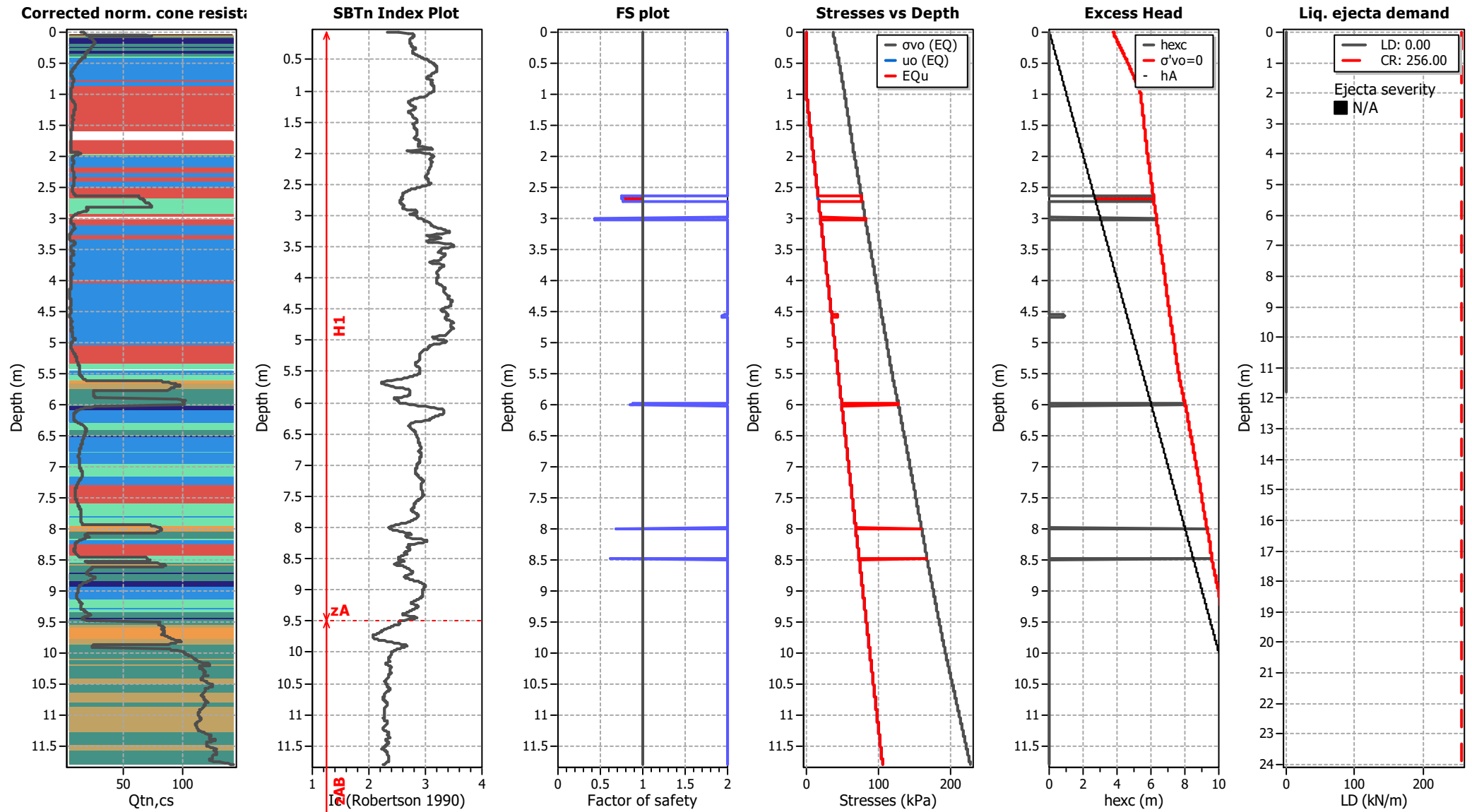
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

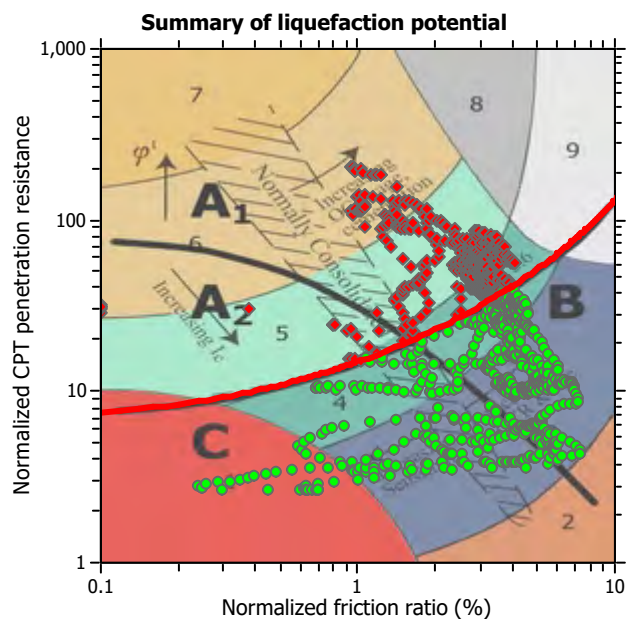
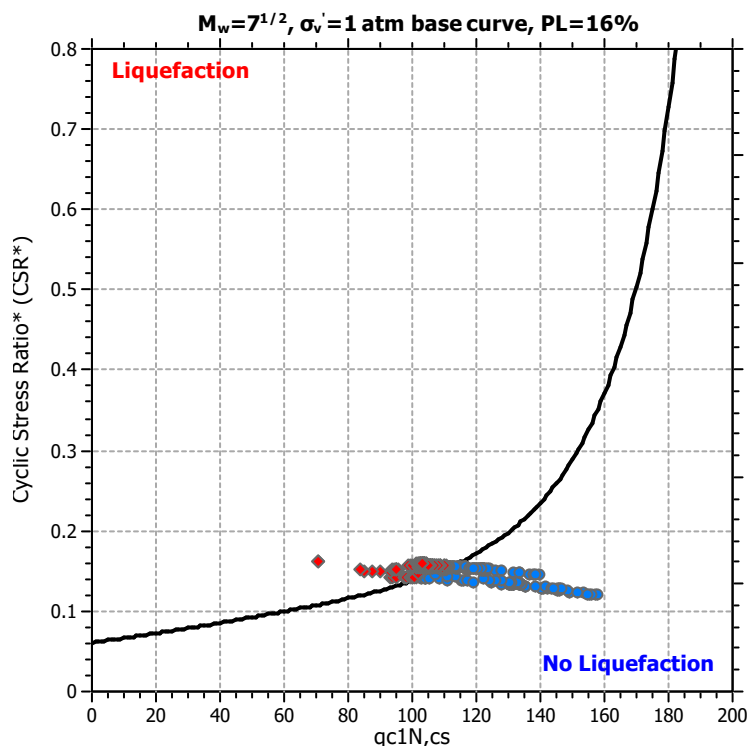
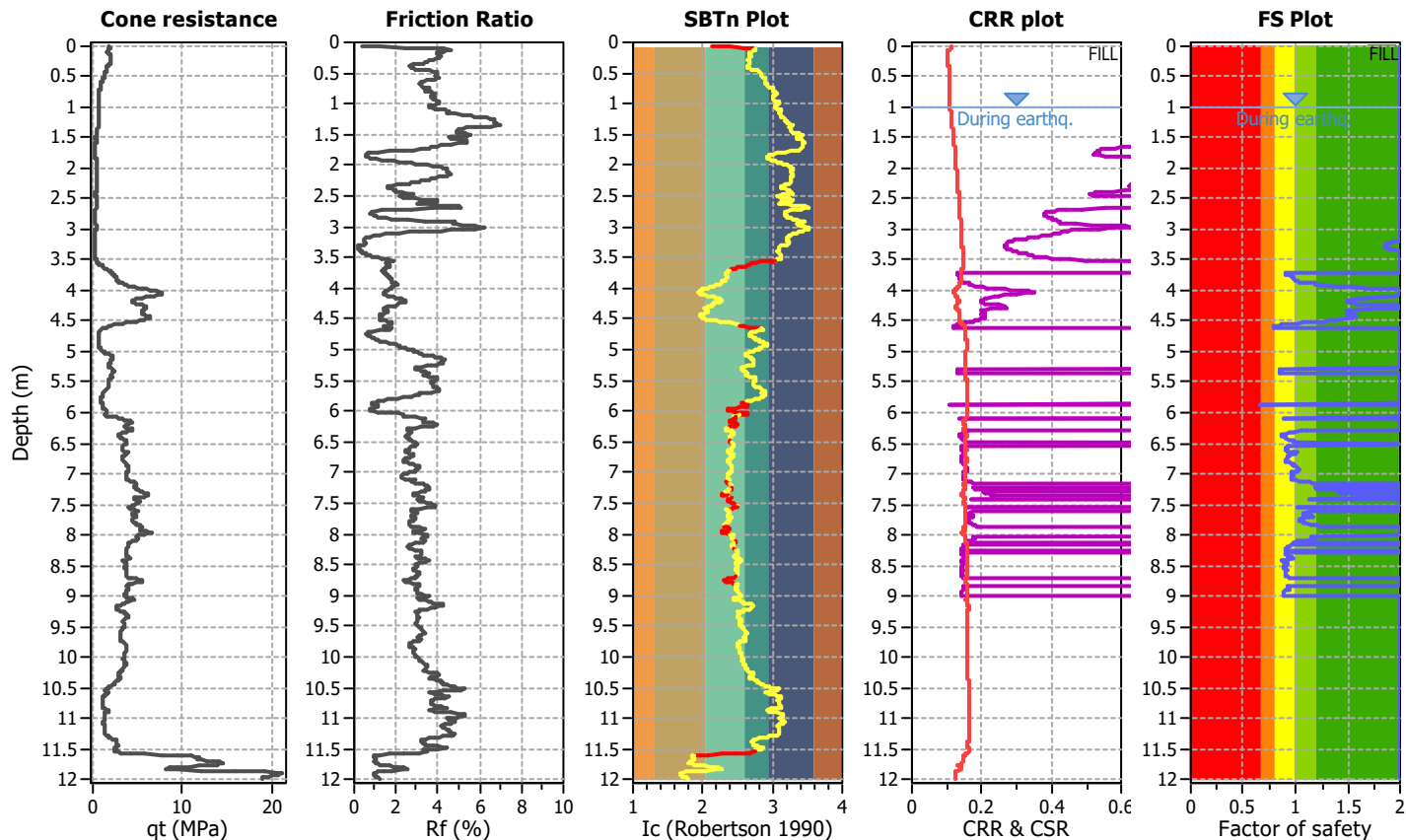
Project title : Sunfield Landholding

Location :

CPT file : CPT411

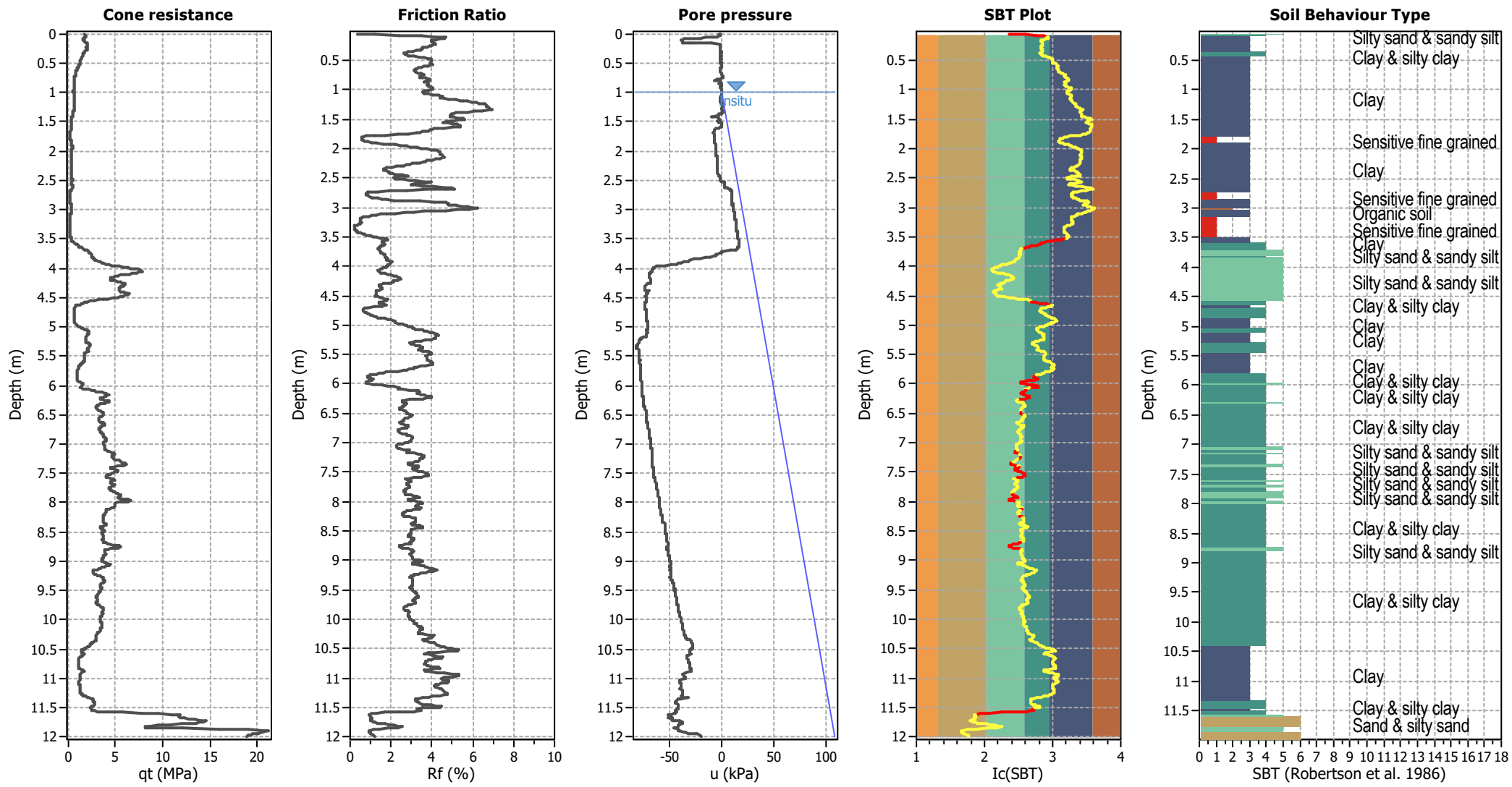
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

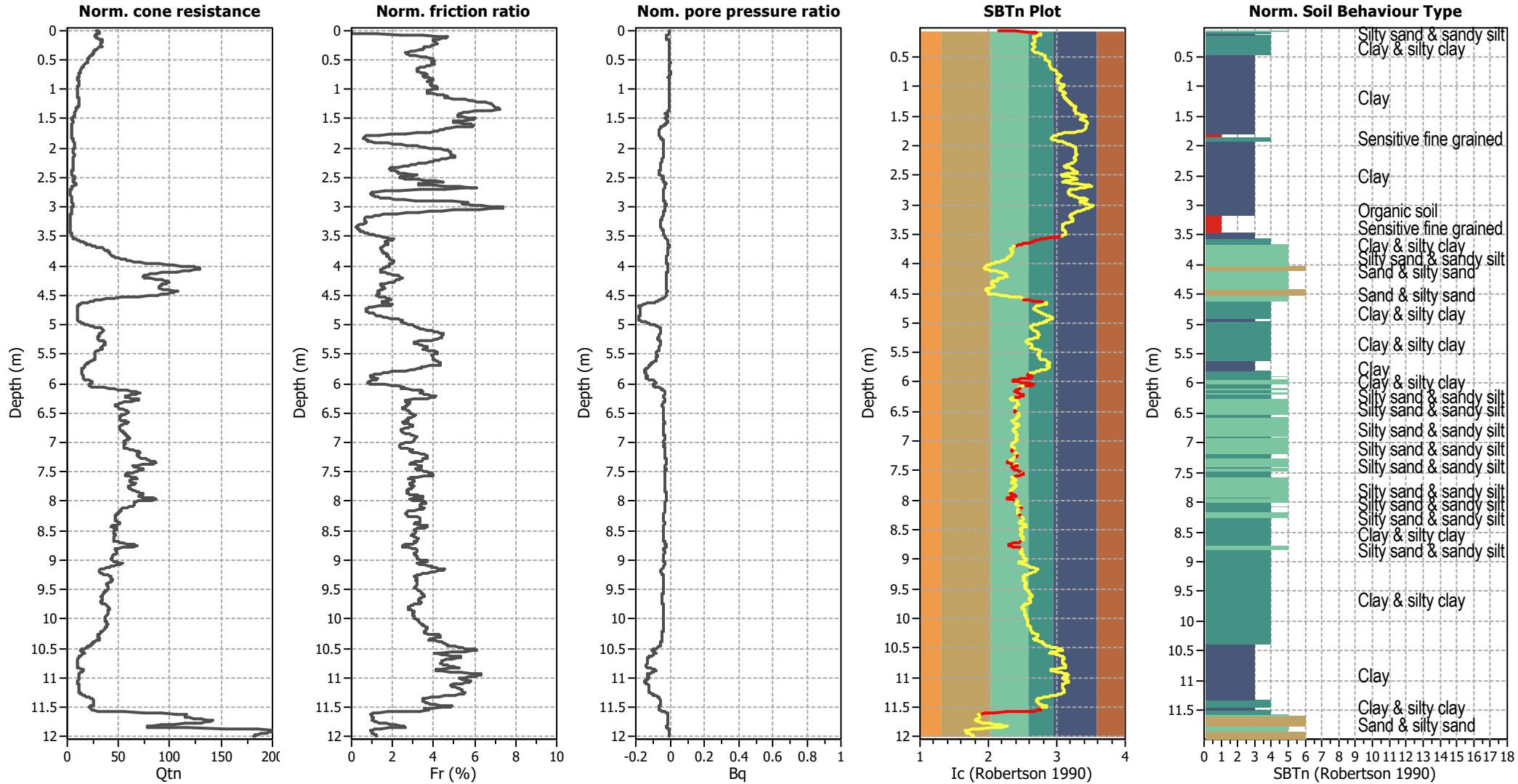


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

CPT basic interpretation plots (normalized)



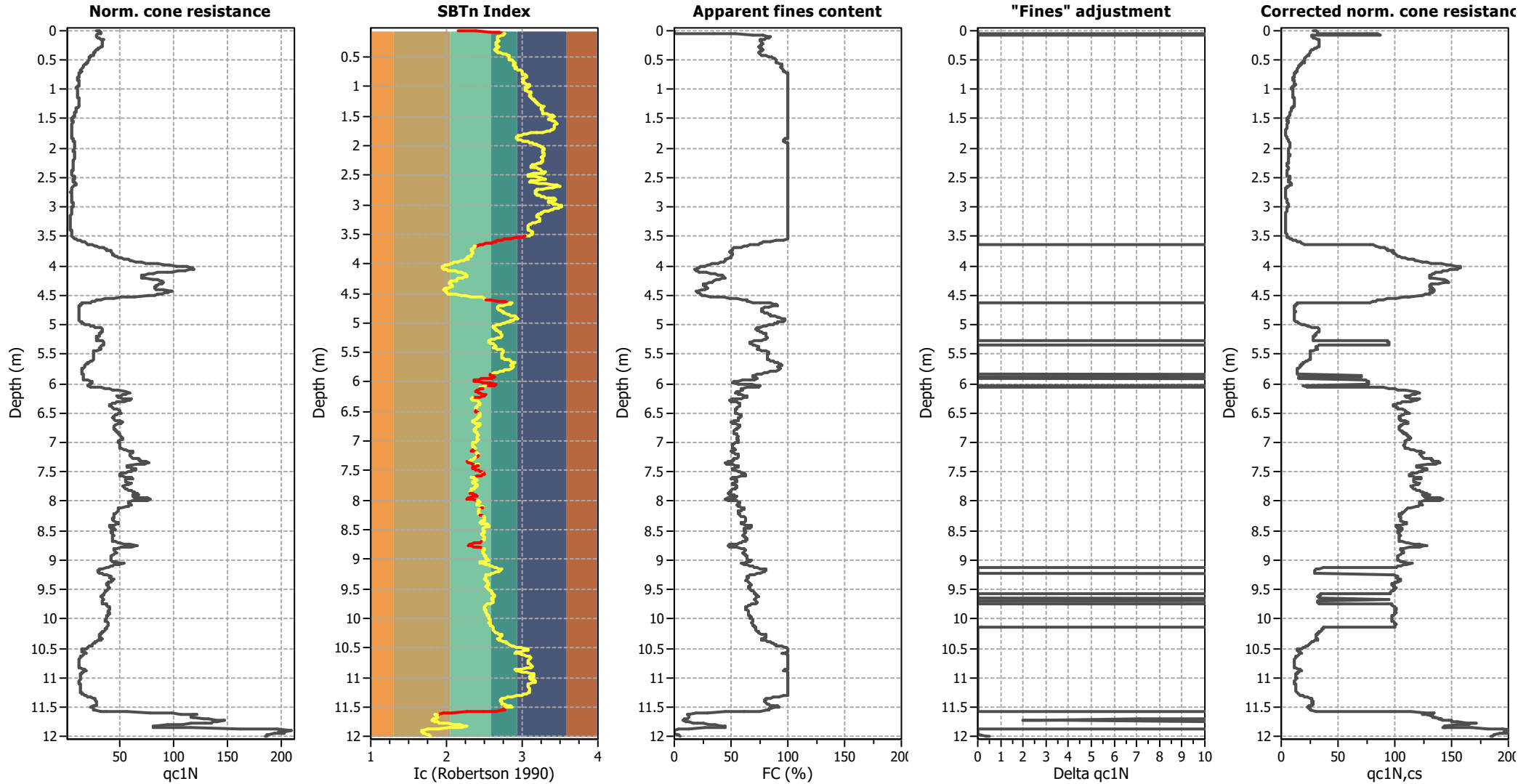
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

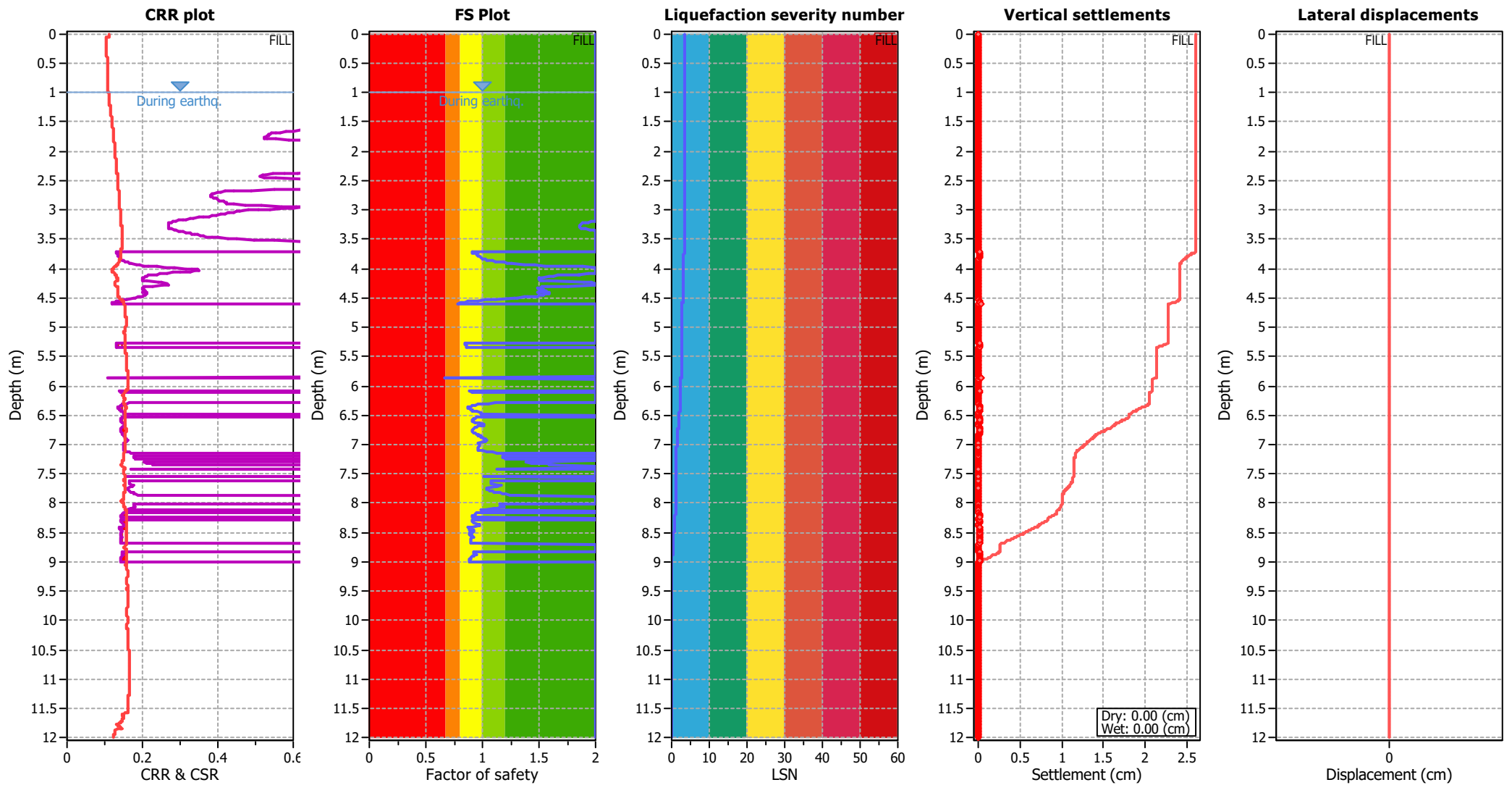
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (earthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

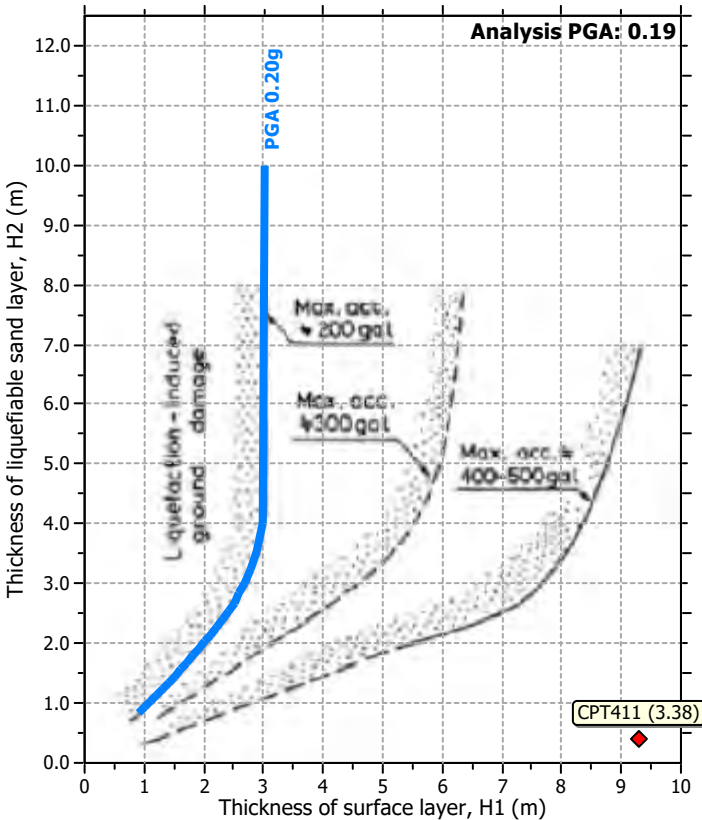
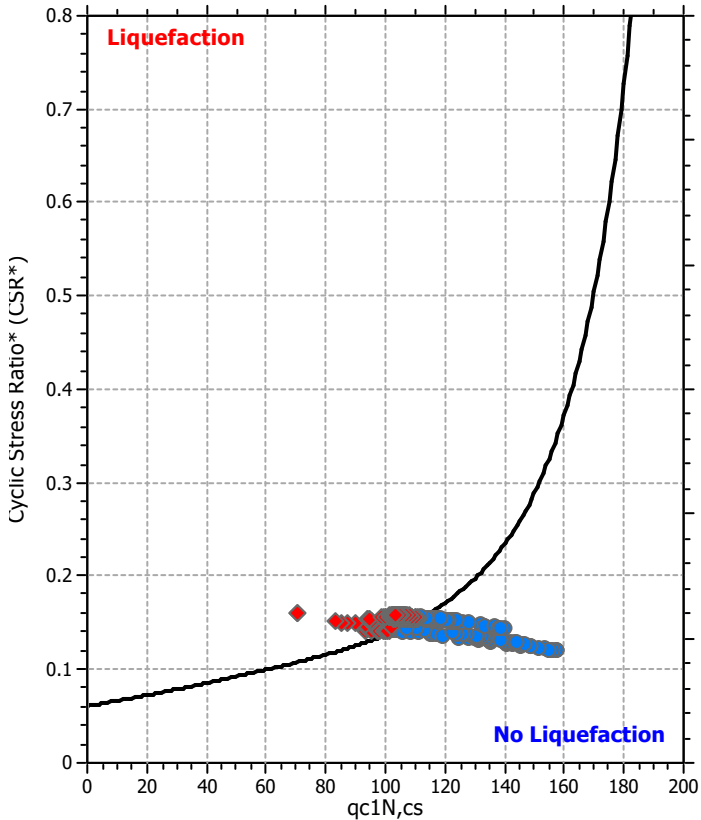
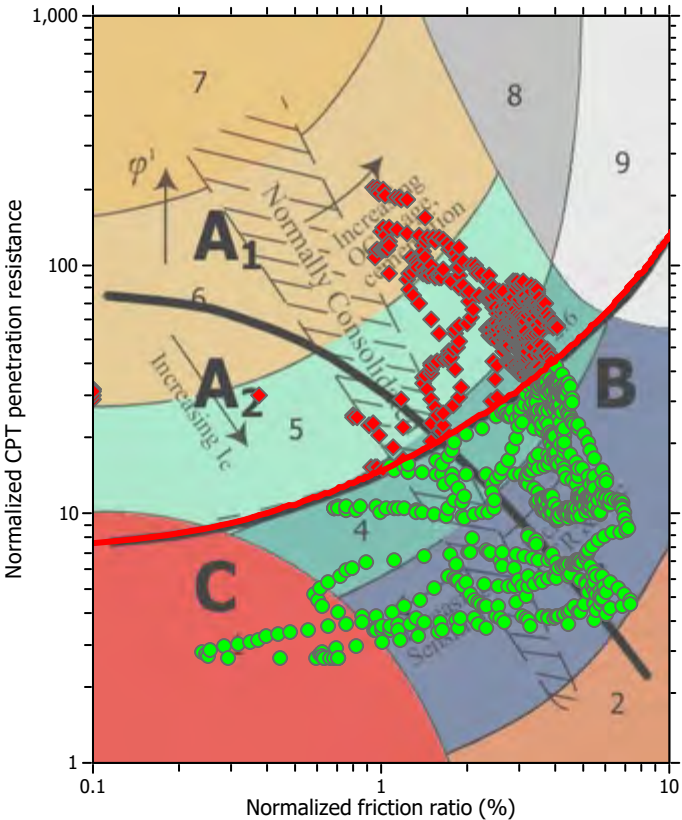
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

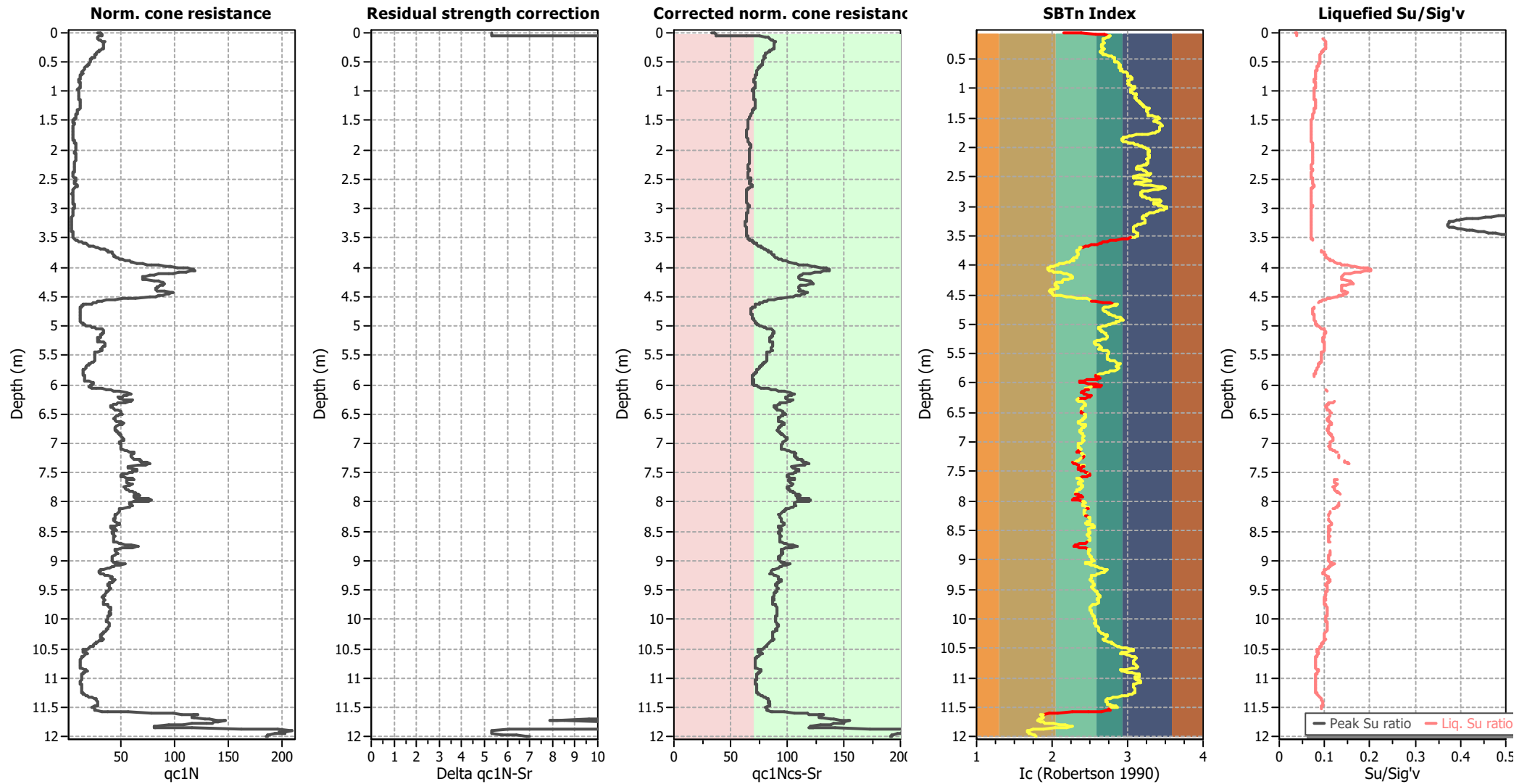
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_{ϕ} applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

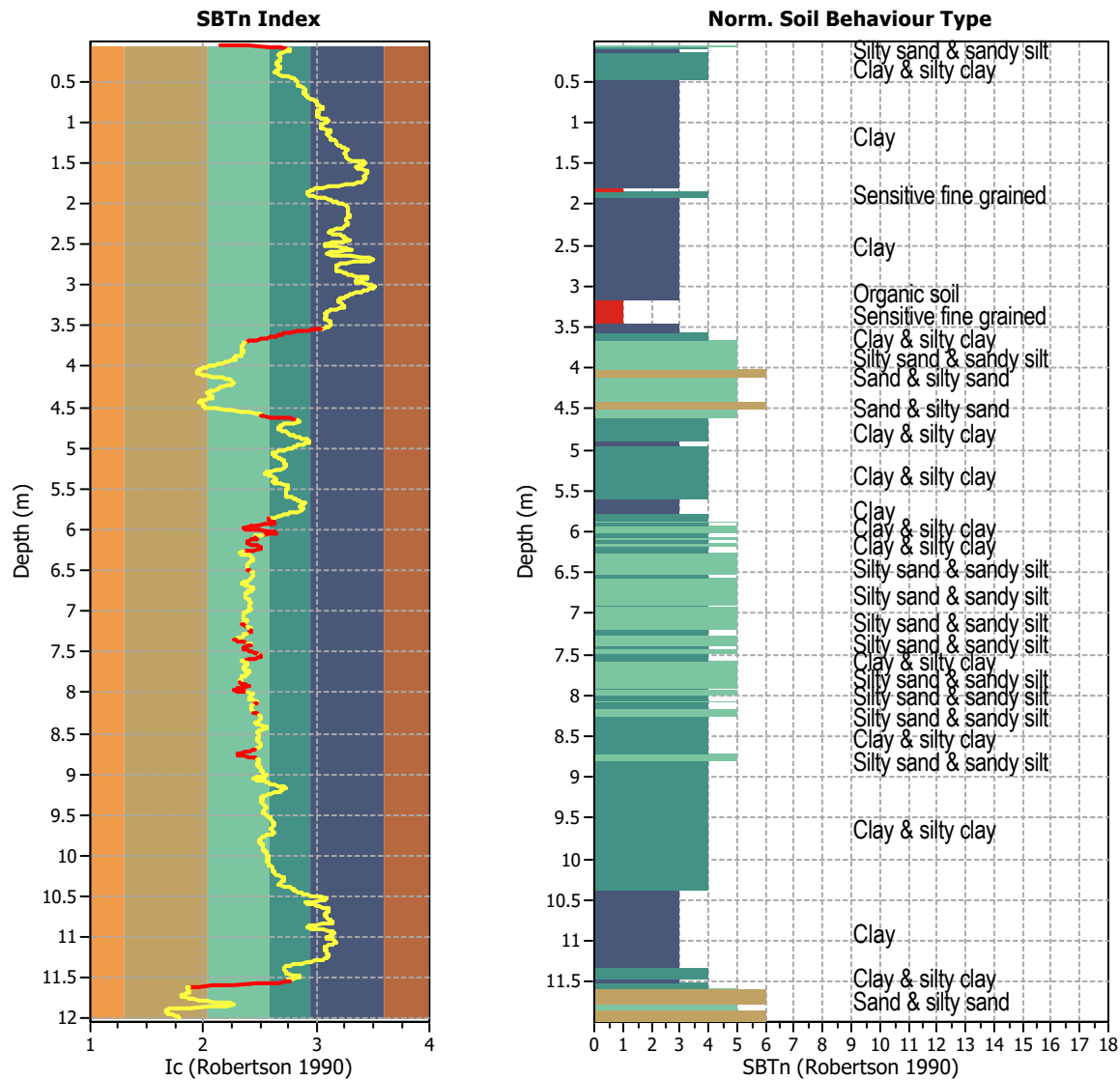
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



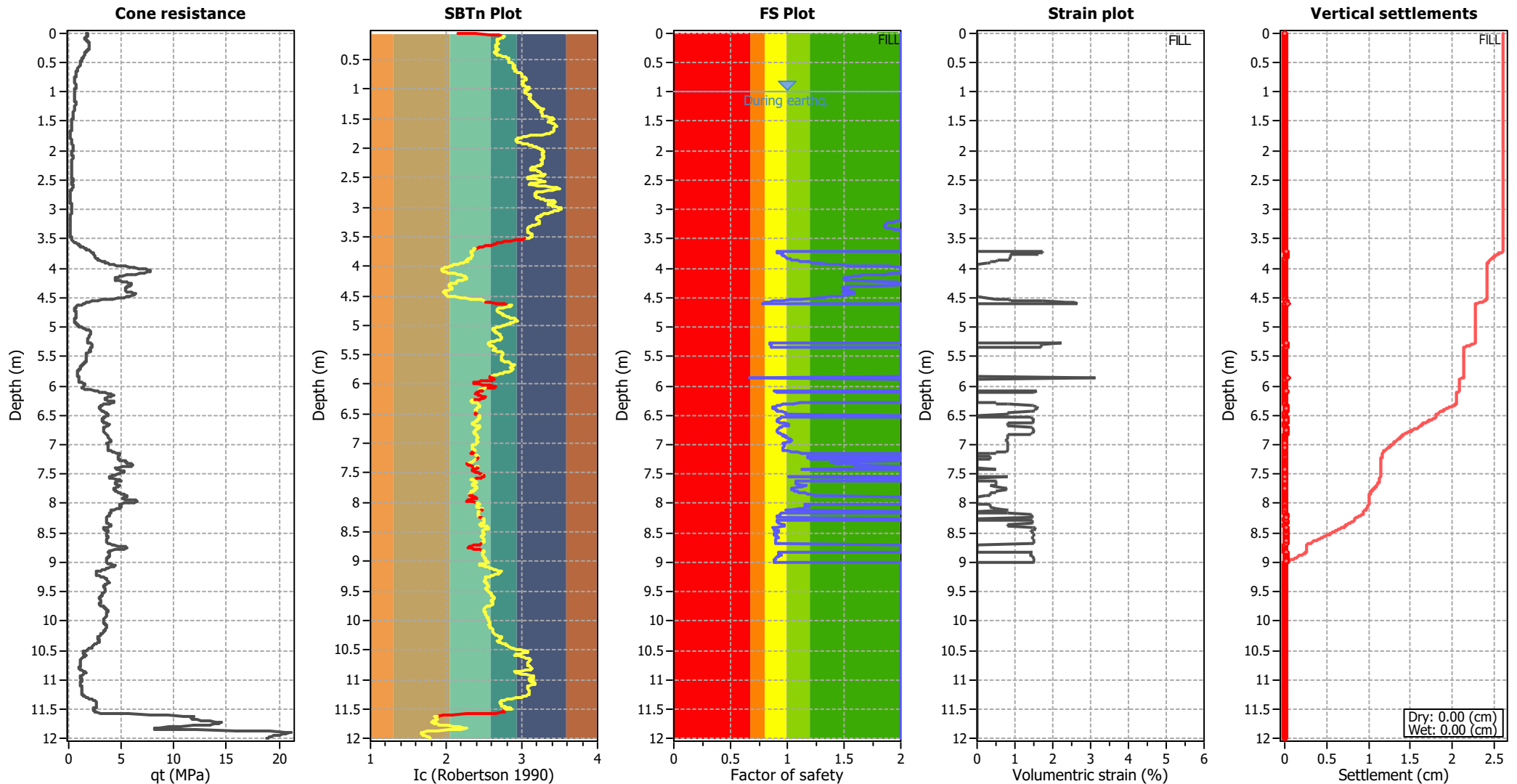
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1199
Total points excluded: 152
Exclusion percentage: 12.68%
Number of layers detected: 25

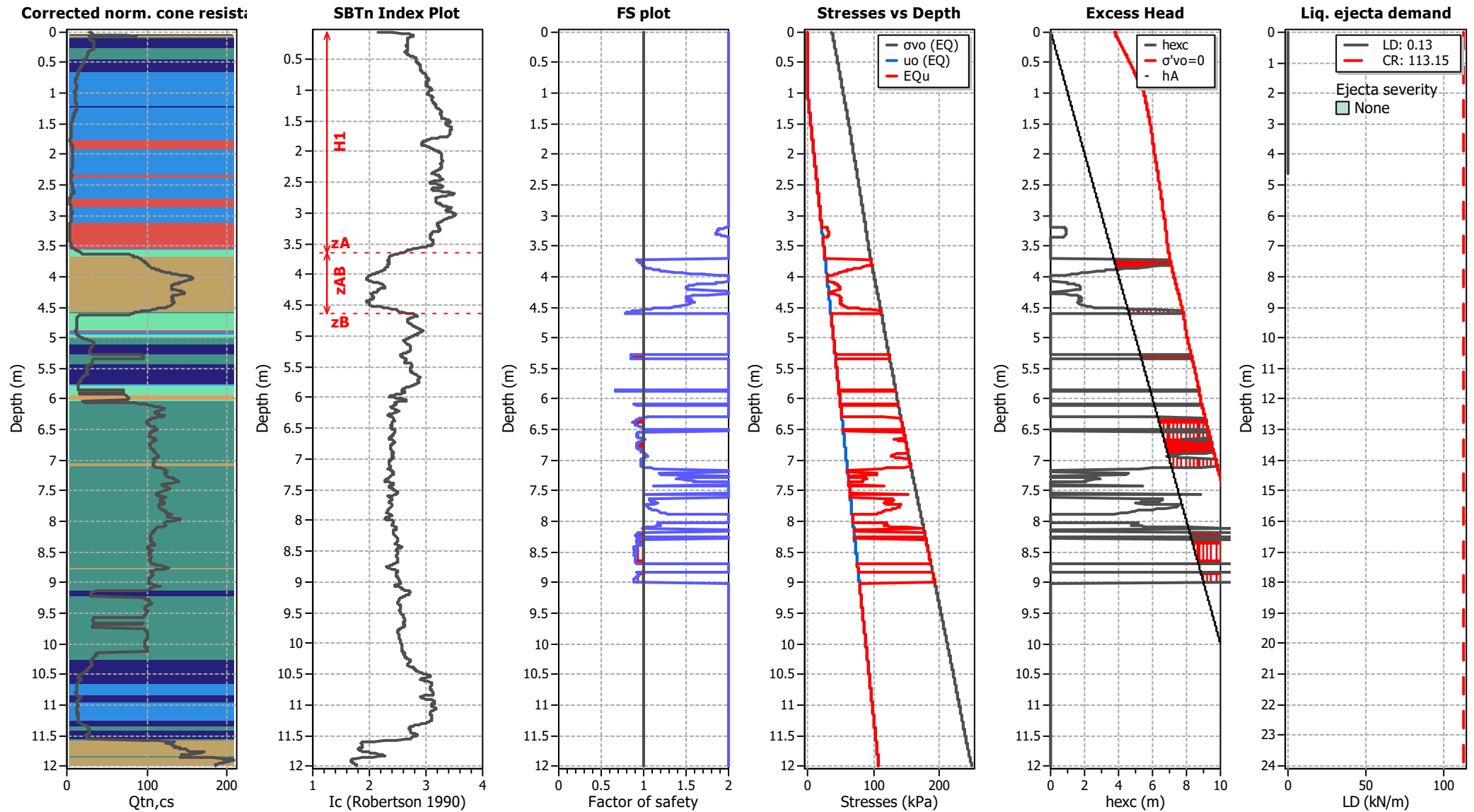
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

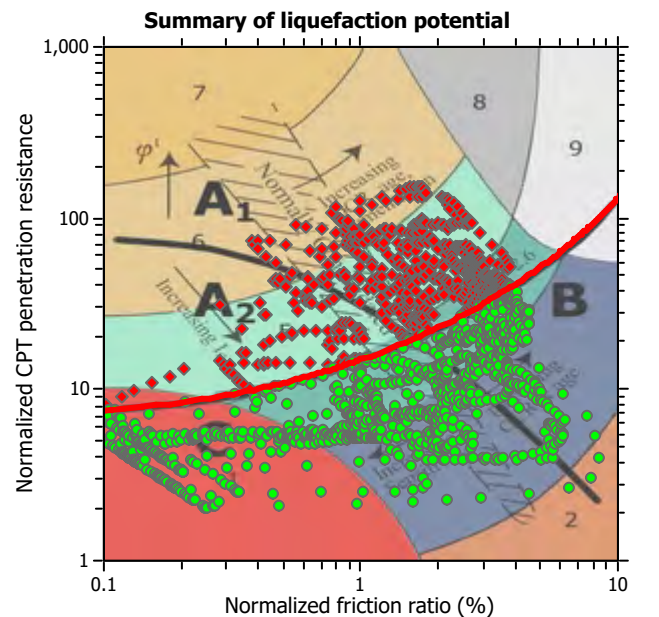
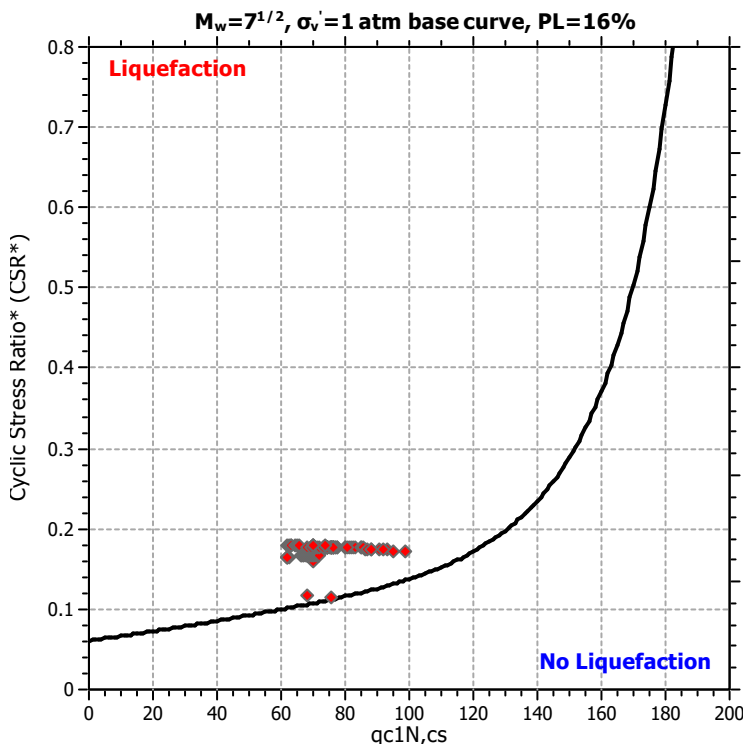
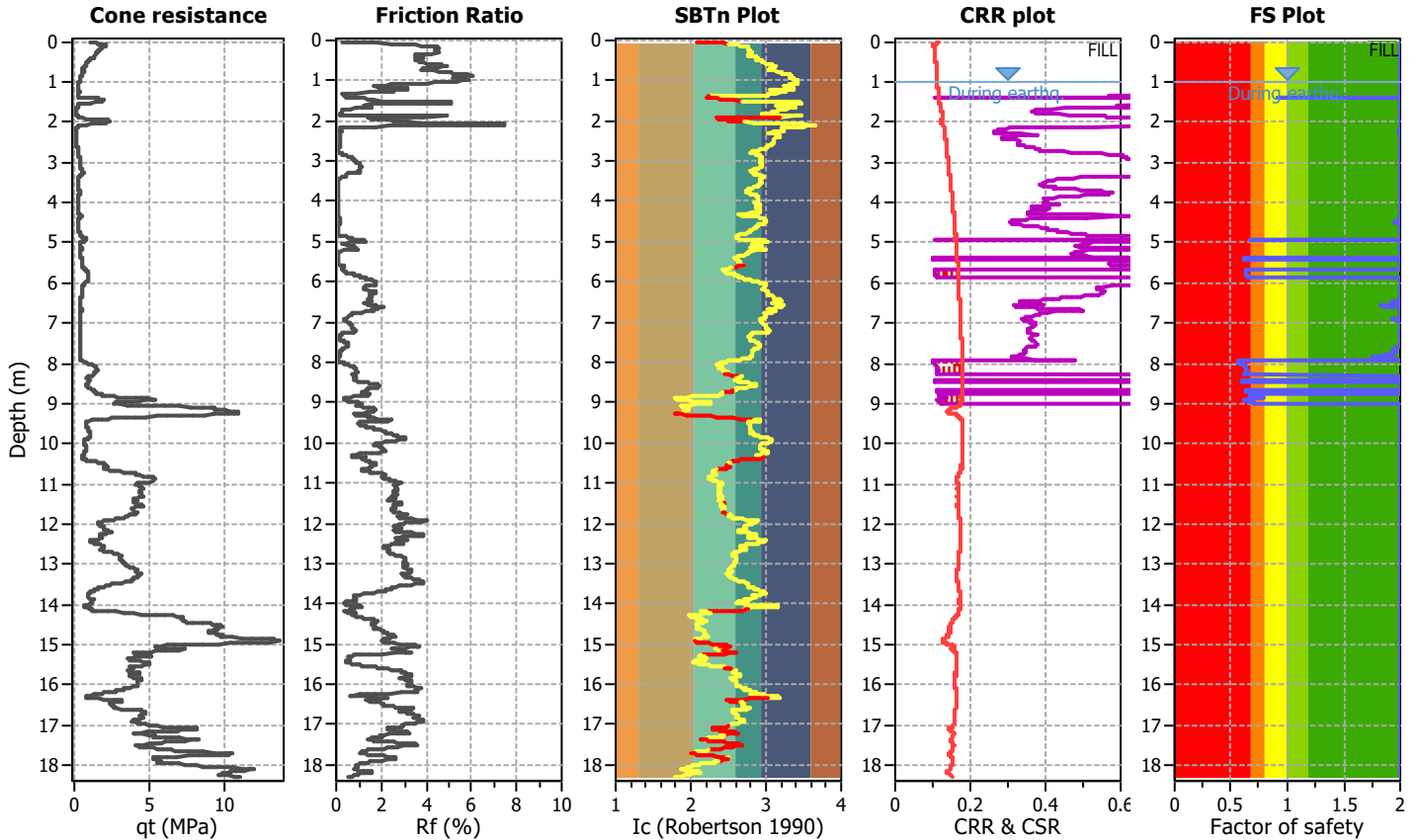
Project title : Sunfield Landholding

Location :

CPT file : CPT412

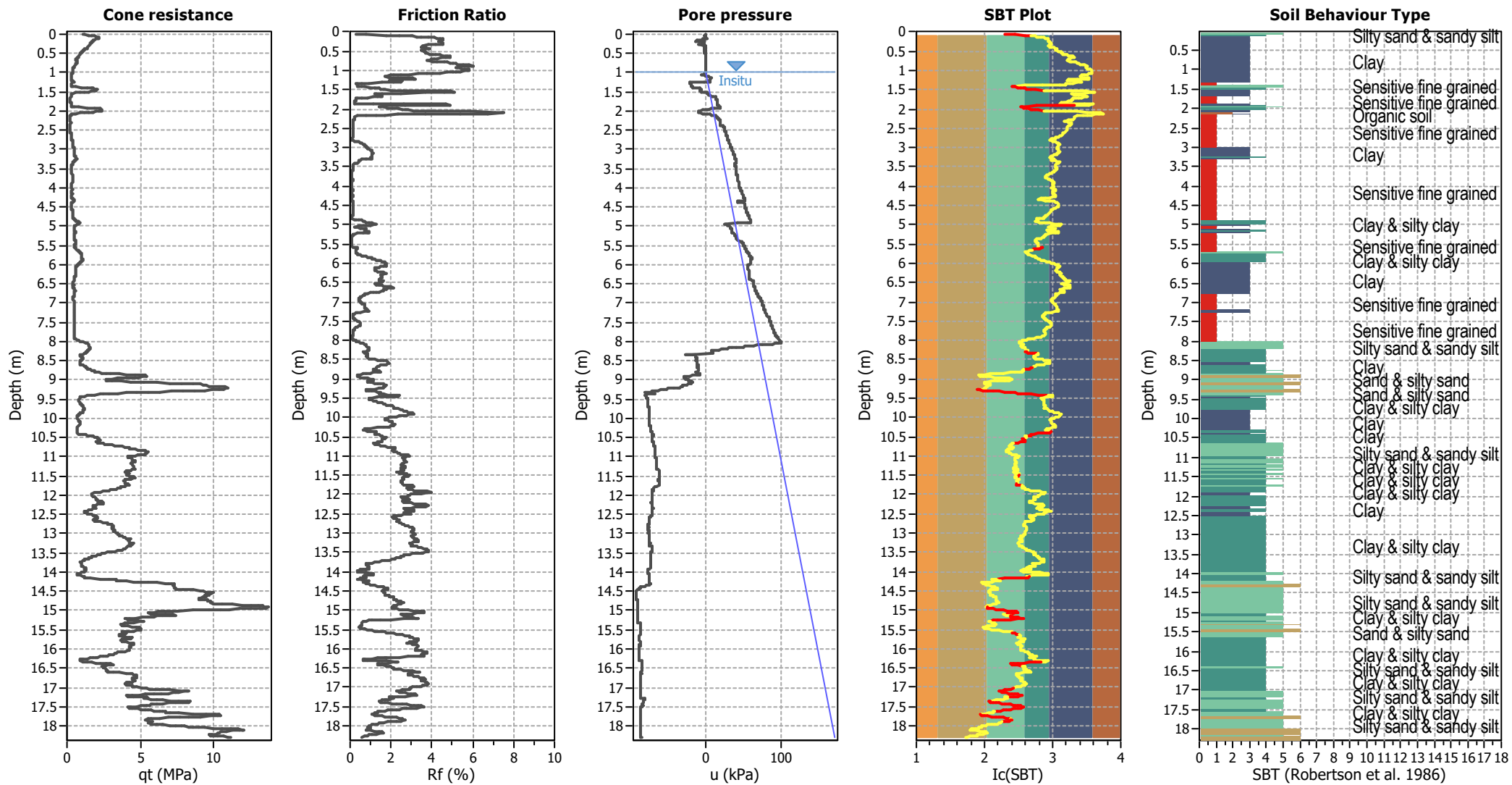
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

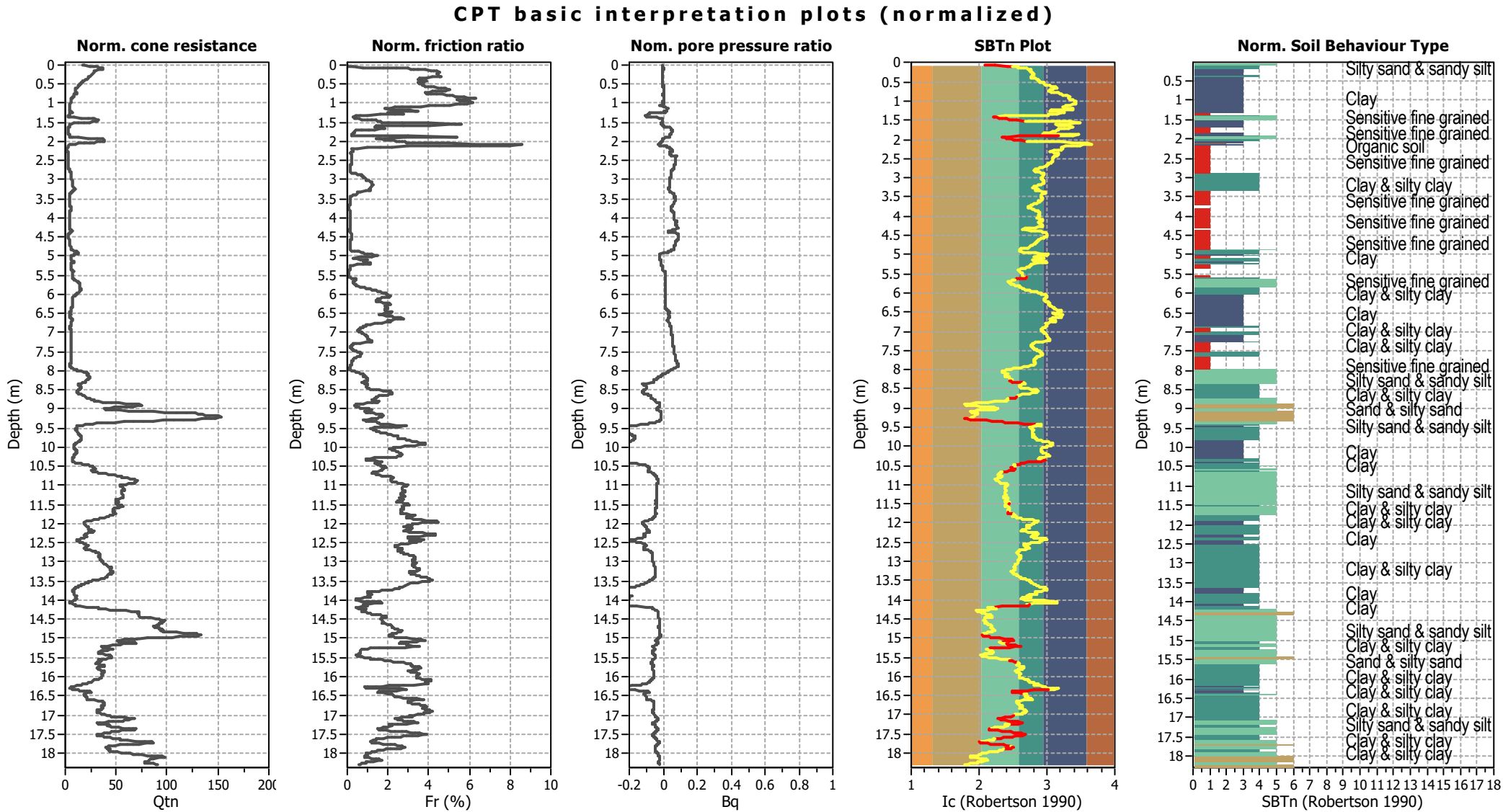


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

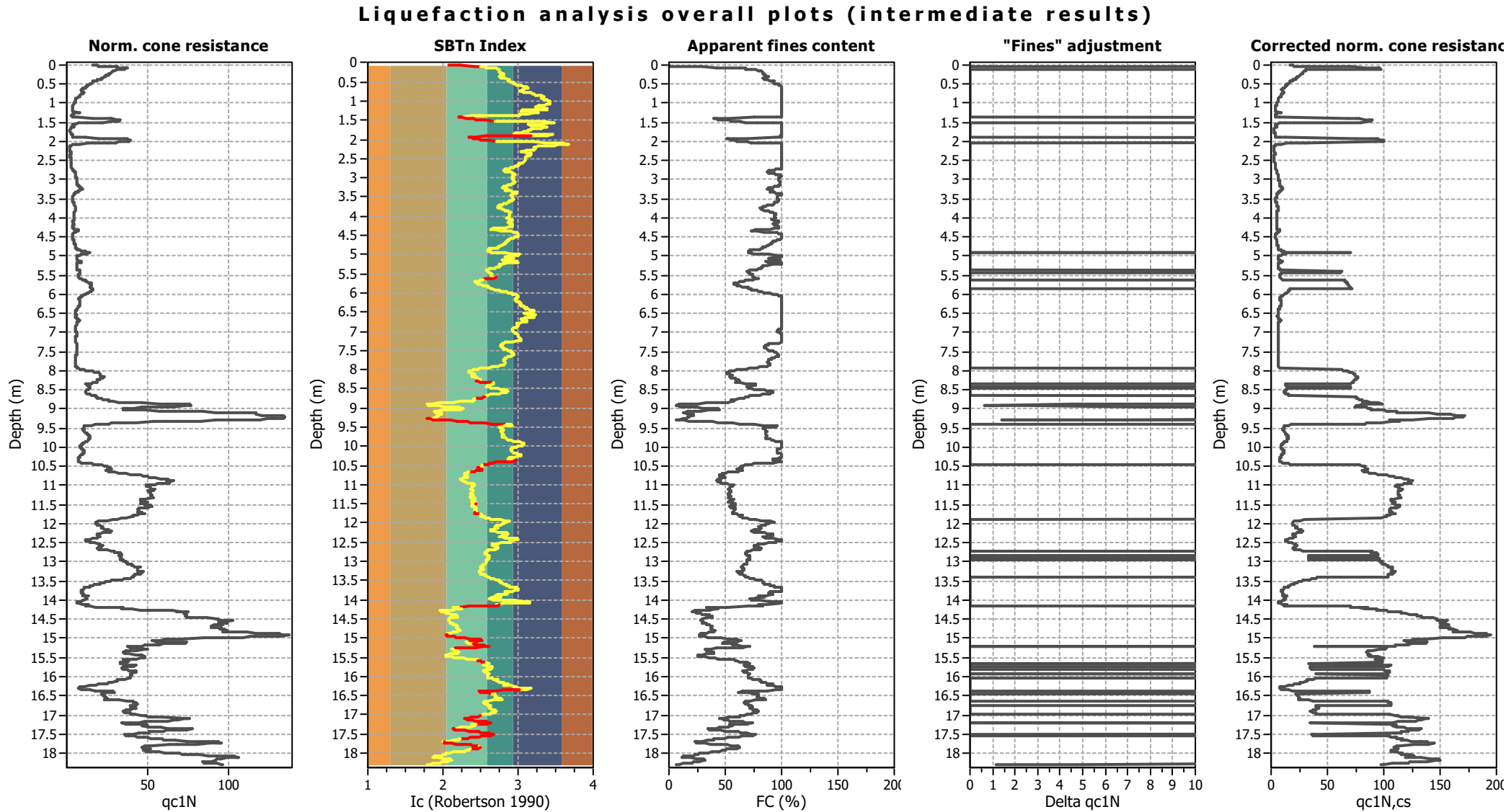
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

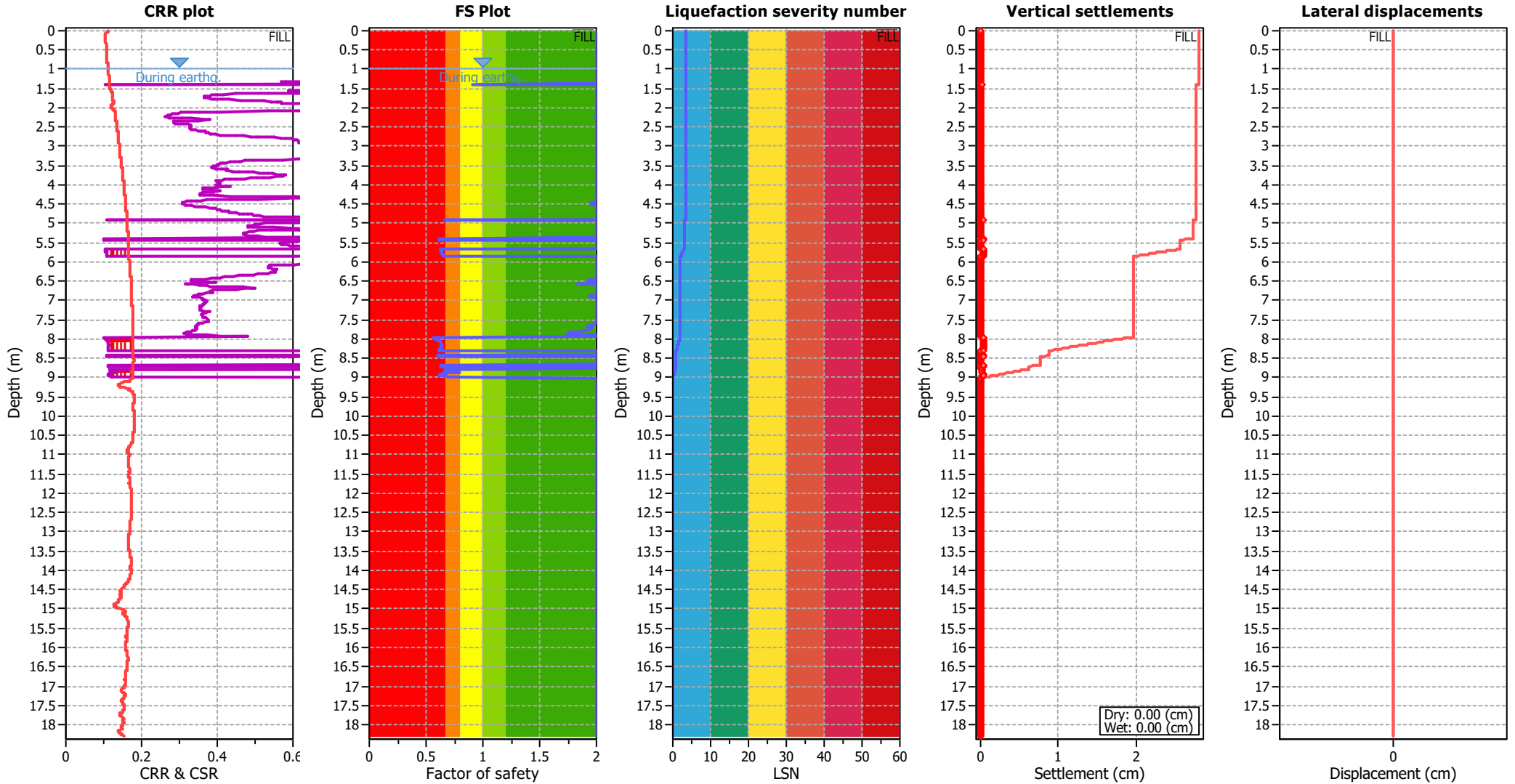
SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

F.S. color scheme

Almost certain it will liquefy
Very likely to liquefy
Liquefaction and no liq. are equally likely
Unlike to liquefy
Almost certain it will not liquefy

LSN color scheme

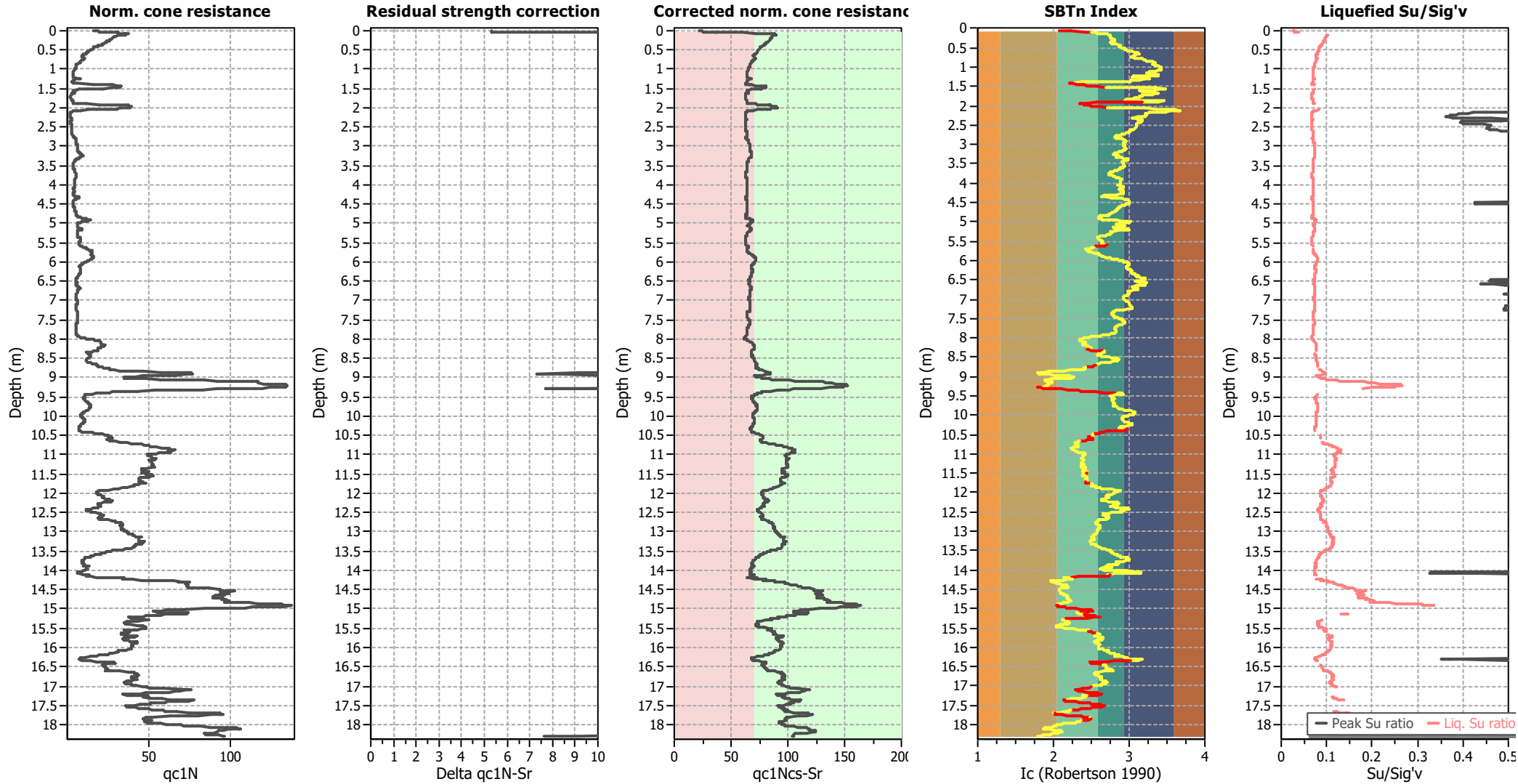
Severe damage
Major expression of liquefaction
Moderate to severe exp. of liquefaction
Moderate expression of liquefaction
Minor expression of liquefaction
Little to no expression of liquefaction

Figure 10 consists of three plots related to soil liquefaction analysis:

- Left Plot:** A log-log plot of Normalized CPT penetration resistance (y-axis, 1 to 1,000) versus Normalized friction ratio (%) (x-axis, 0.1 to 10). The plot shows various soil behavior zones (e.g., A1, A2, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z) and data points (red diamonds, green circles, blue triangles). A red curve indicates the boundary between liquefiable and non-liquefiable soils.
- Middle Plot:** A log-log plot of Cyclic Stress Ratio* (CSR*) (y-axis, 0 to 0.8) versus $qc_{1N,cs}$ (x-axis, 0 to 200). The plot shows a black curve representing the boundary between liquefaction (top) and no liquefaction (bottom). Data points (red diamonds, green circles, blue triangles) are plotted, with some points falling into the liquefaction region.
- Right Plot:** A log-log plot of Thickness of liquefiable sand layer, H_2 (m) (y-axis, 0.0 to 12.0) versus Thickness of surface layer, H_1 (m) (x-axis, 0 to 10). The plot shows a blue curve representing the boundary between liquefaction (top) and no liquefaction (bottom). Data points (red diamonds, green circles, blue triangles) are plotted, with some points falling into the liquefaction region. The plot also includes labels for "Max. acc. = 200 gal", "Max. acc. = 400 gal", and "Max. acc. = 400-500 gal".

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

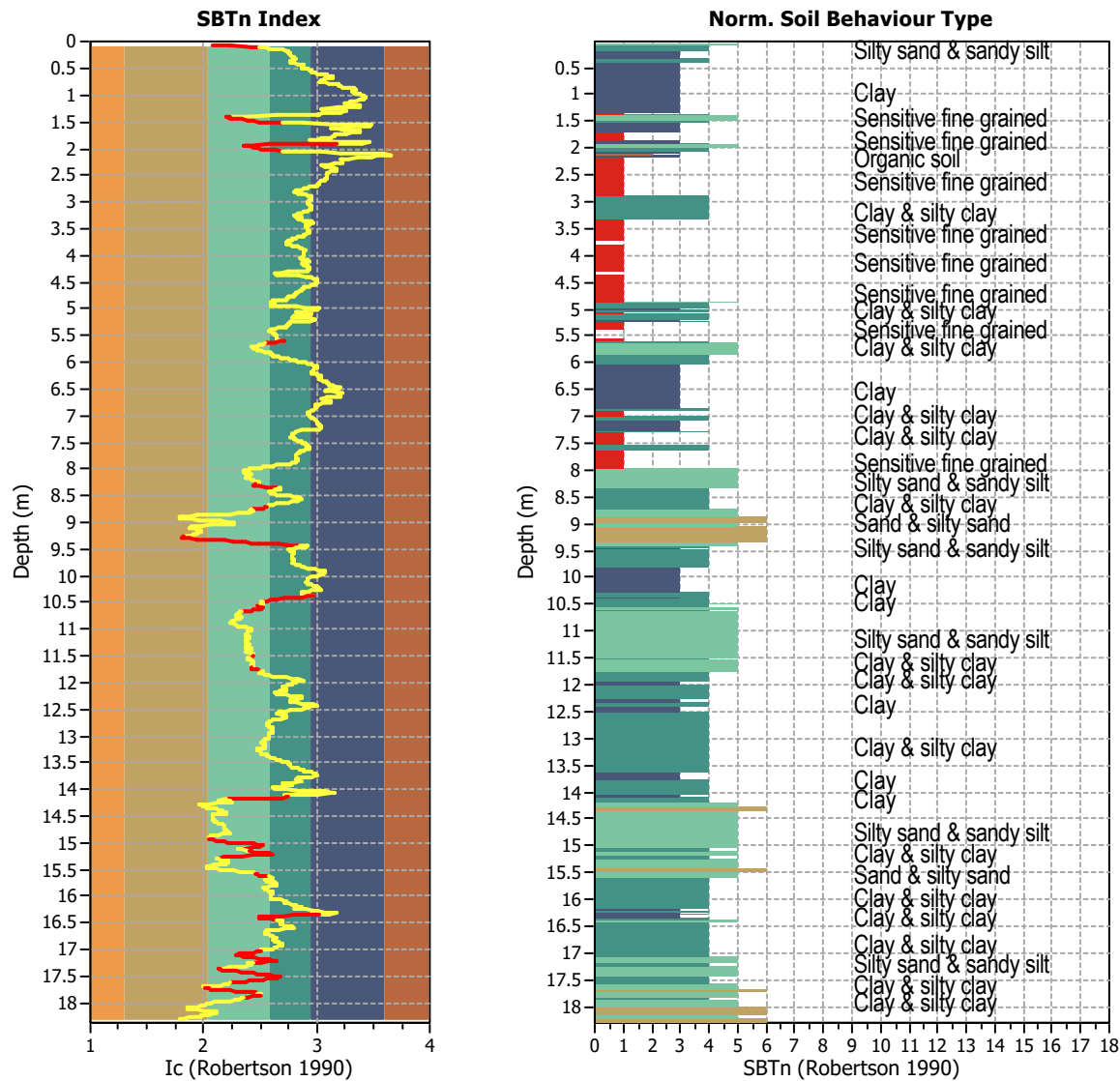
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



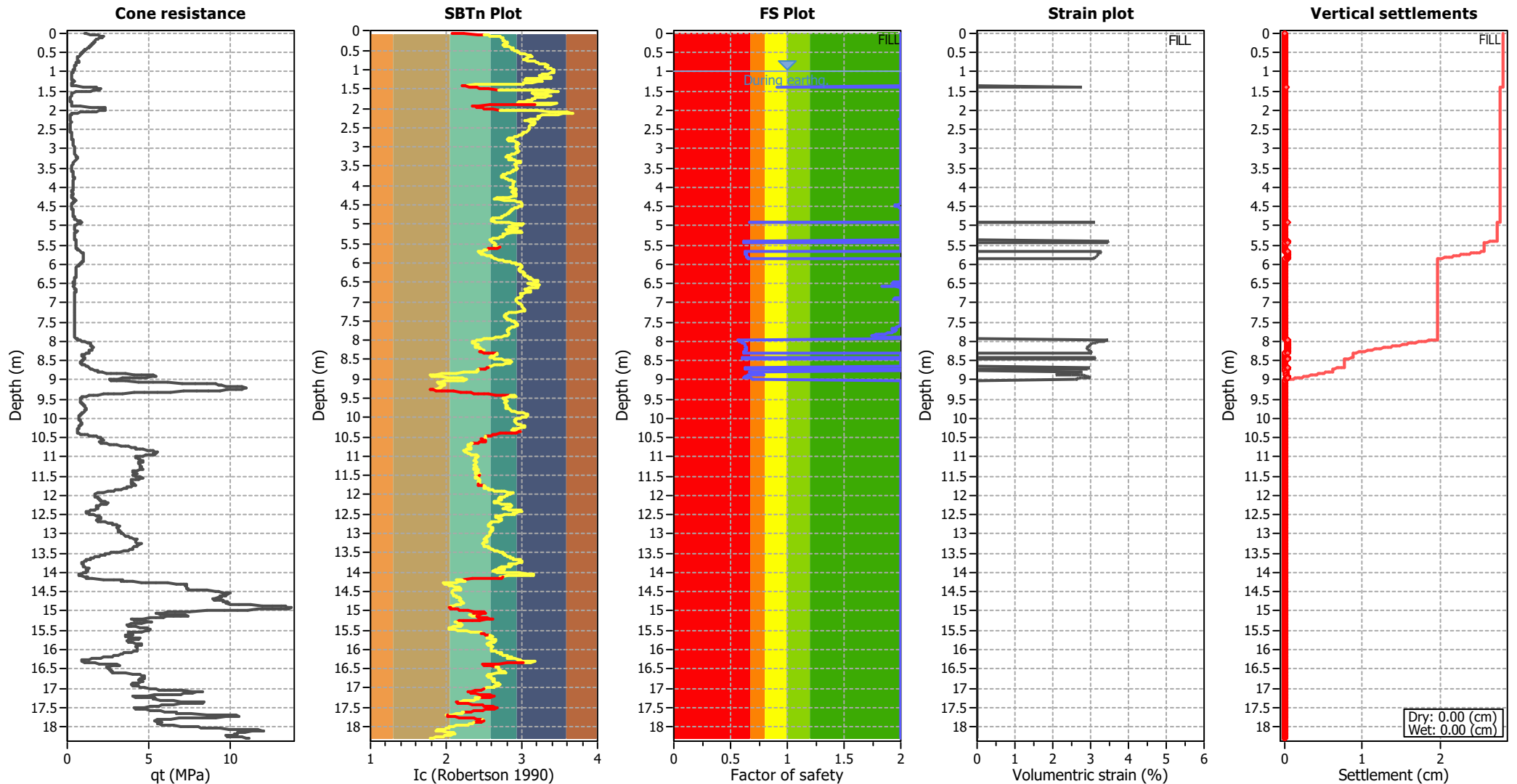
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1830
Total points excluded: 234
Exclusion percentage: 12.79%
Number of layers detected: 28

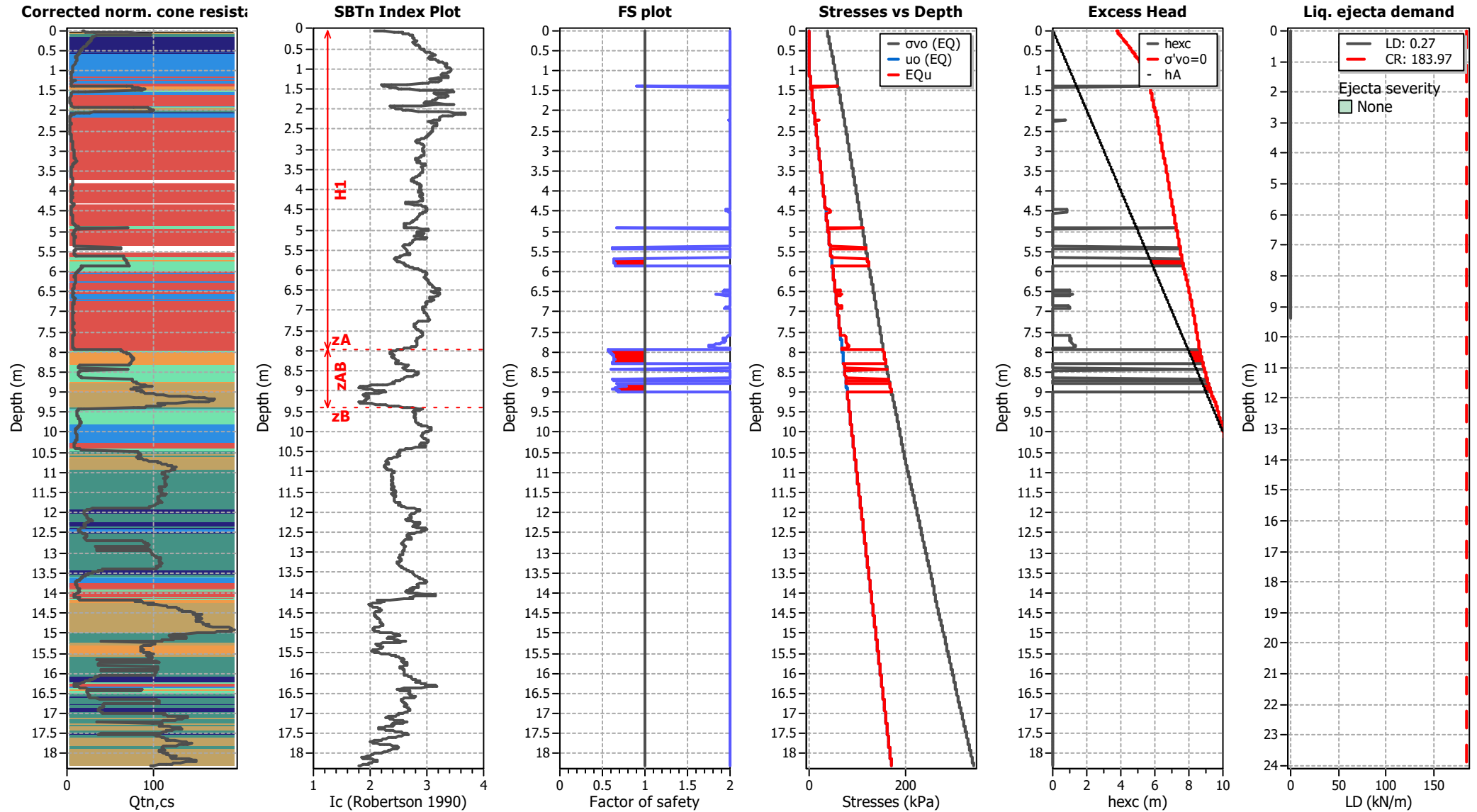
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

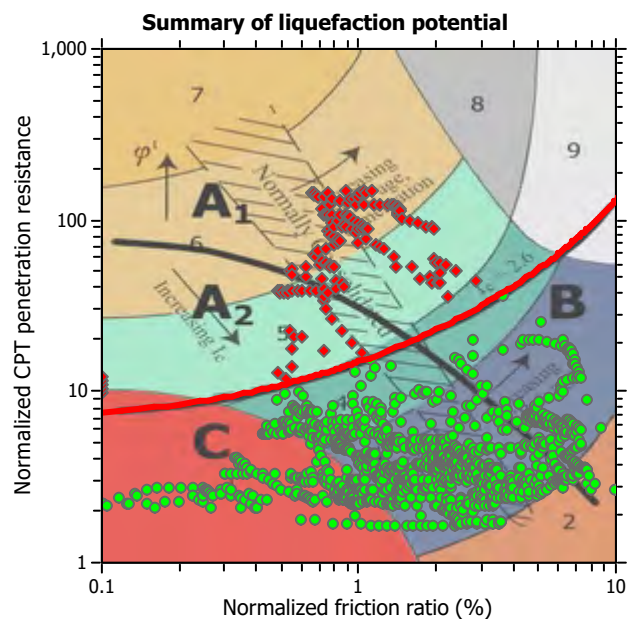
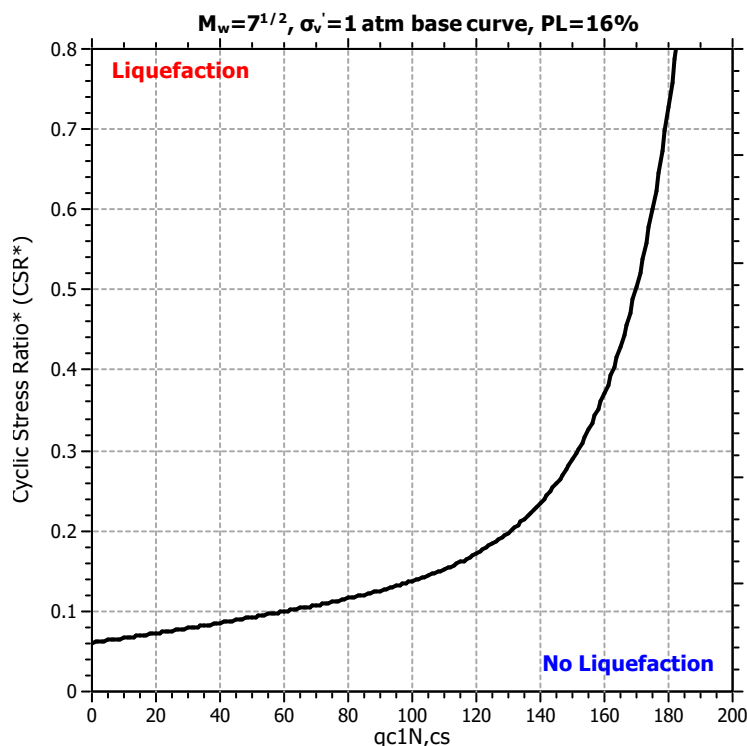
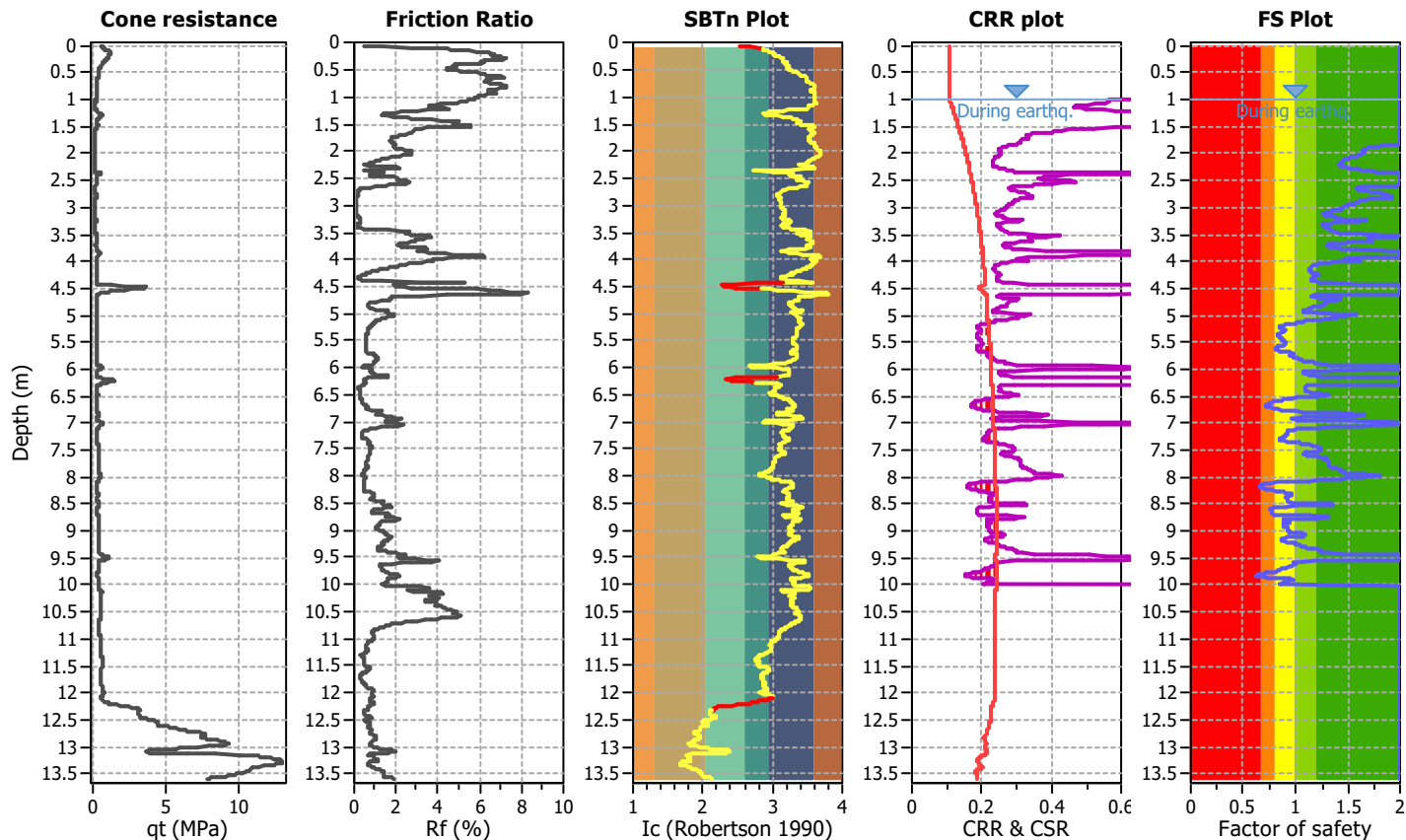
Project title : Sunfield Landholding

Location :

CPT file : CPT413

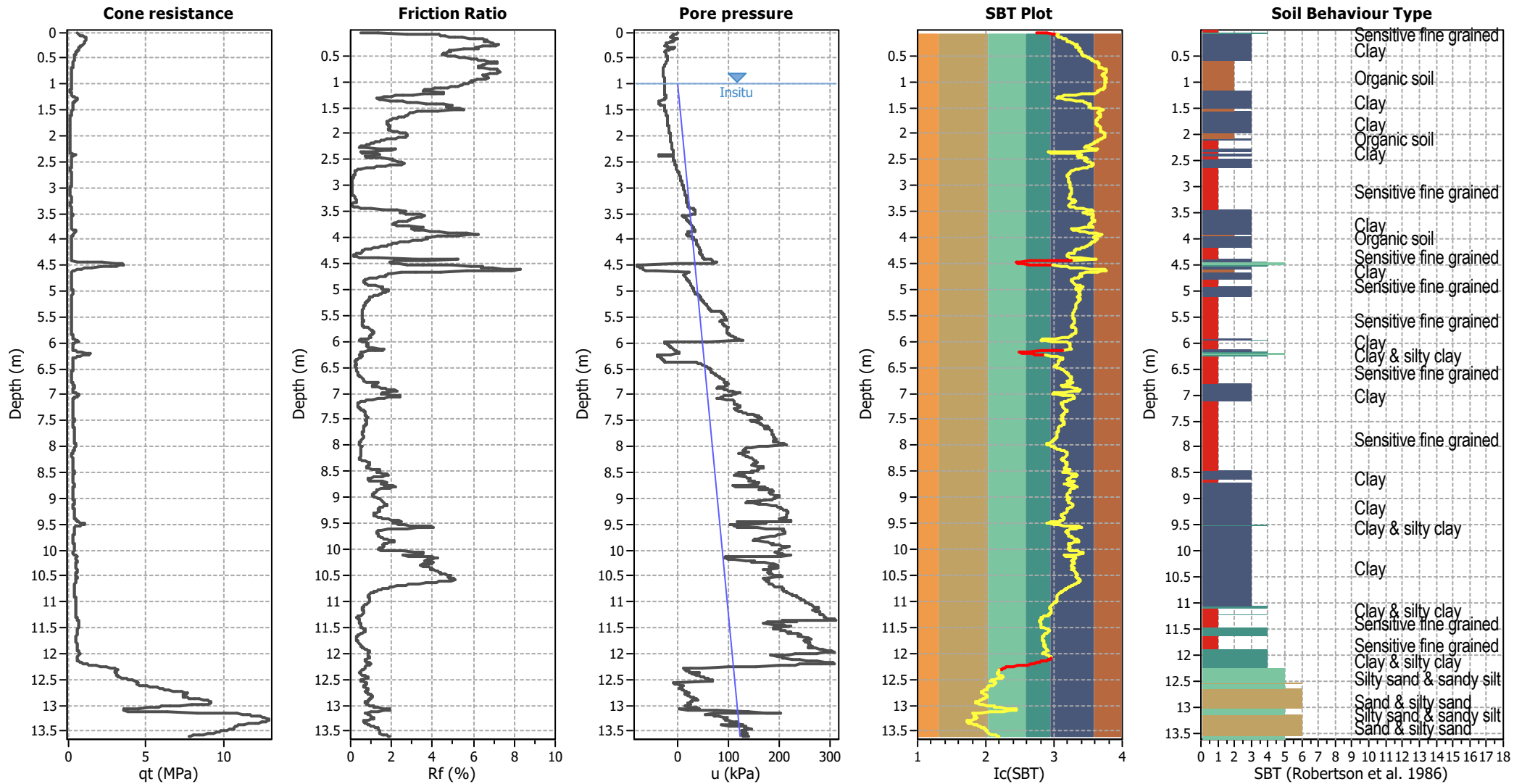
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Excavation:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Excavation depth:	0.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Footing load:	0.00 kPa	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots

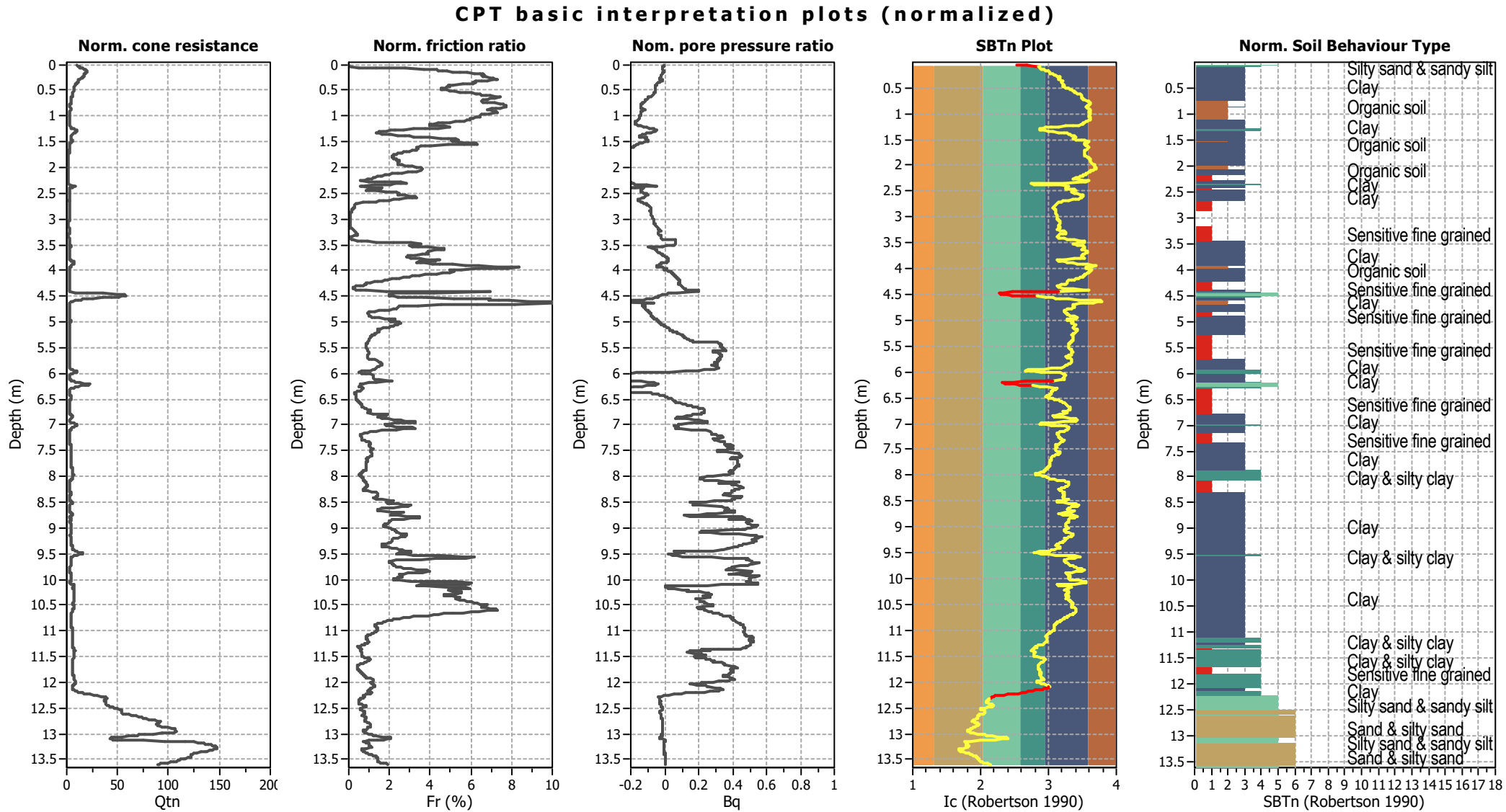


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



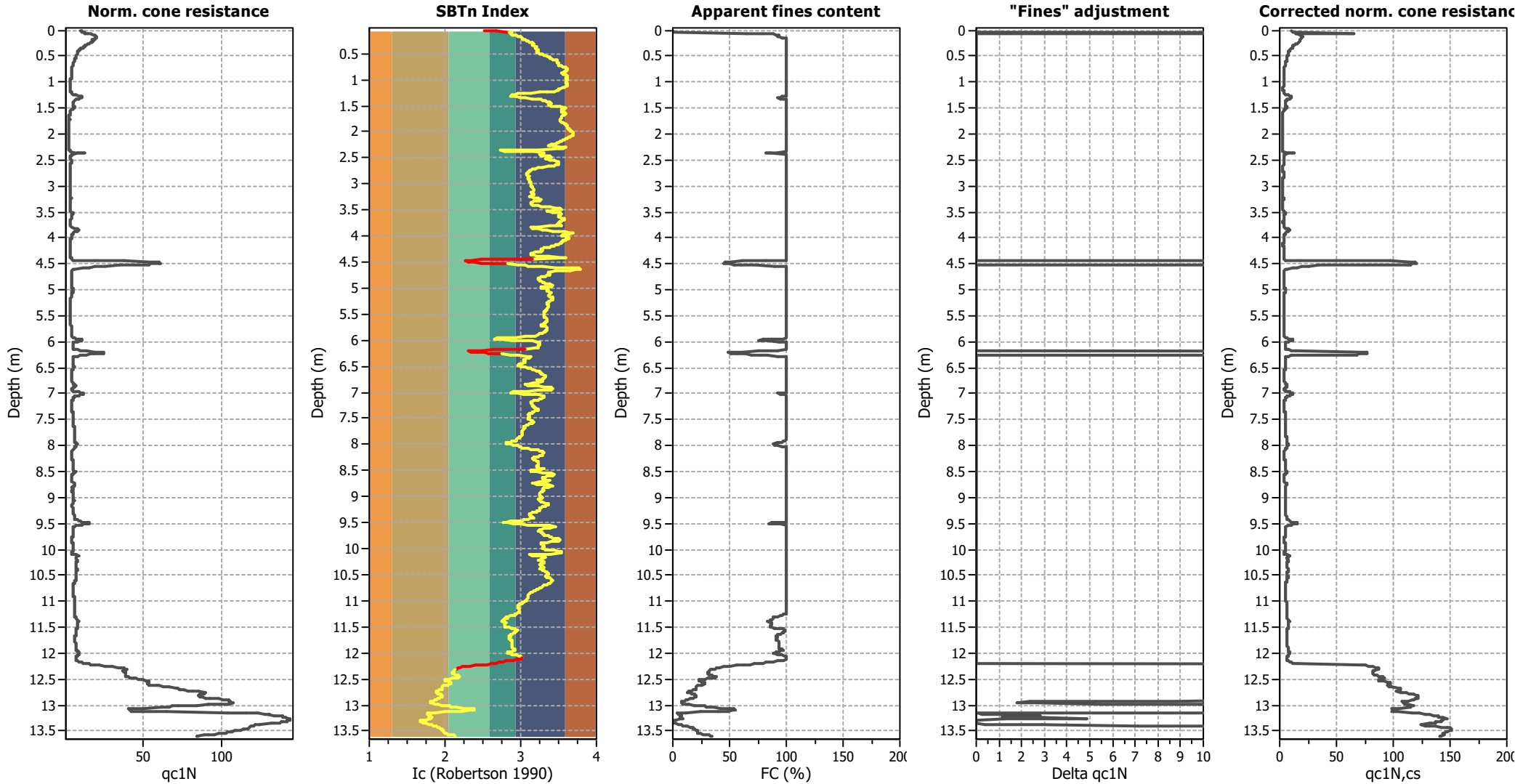
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

SBTn legend

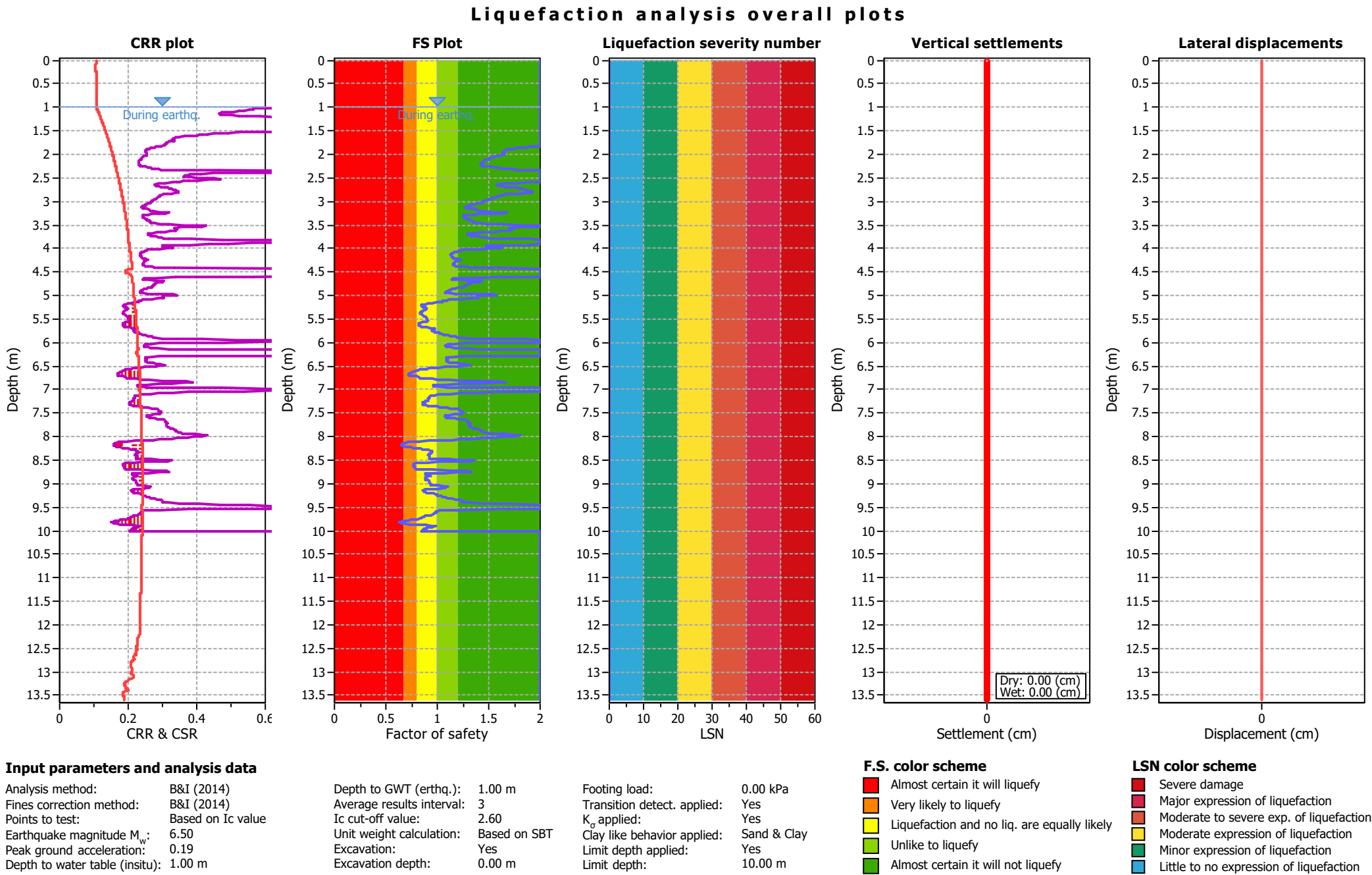
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

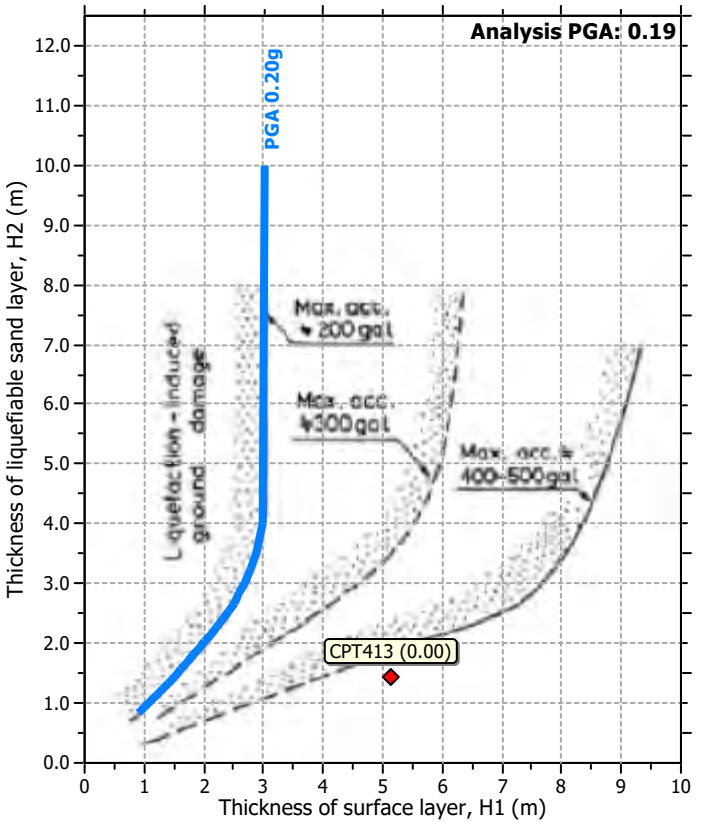
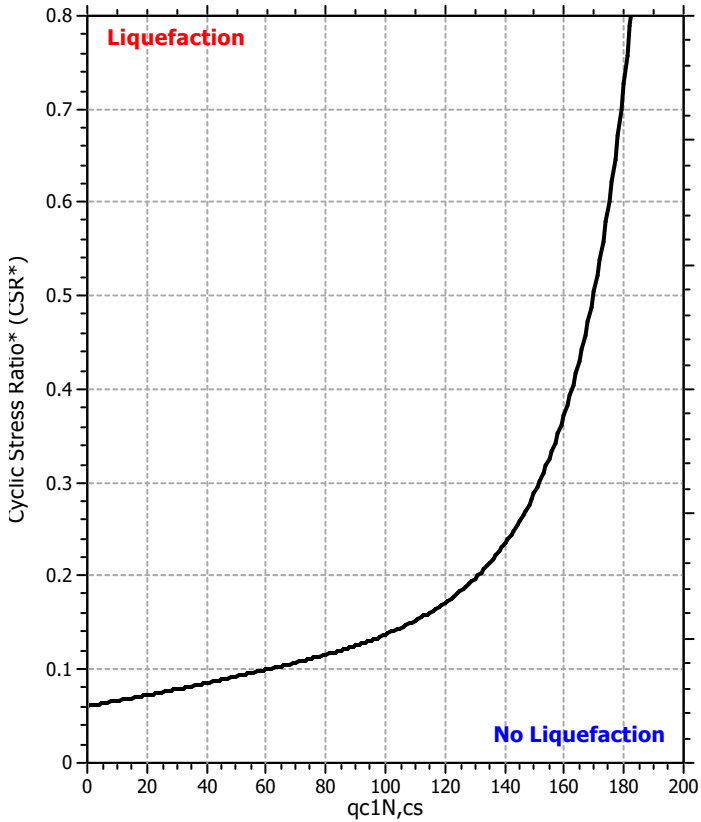
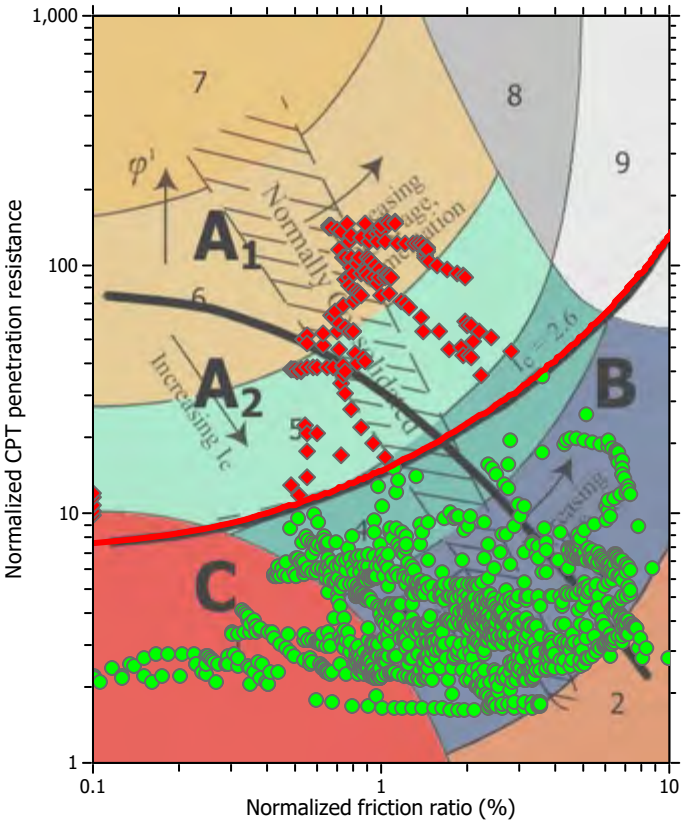


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m



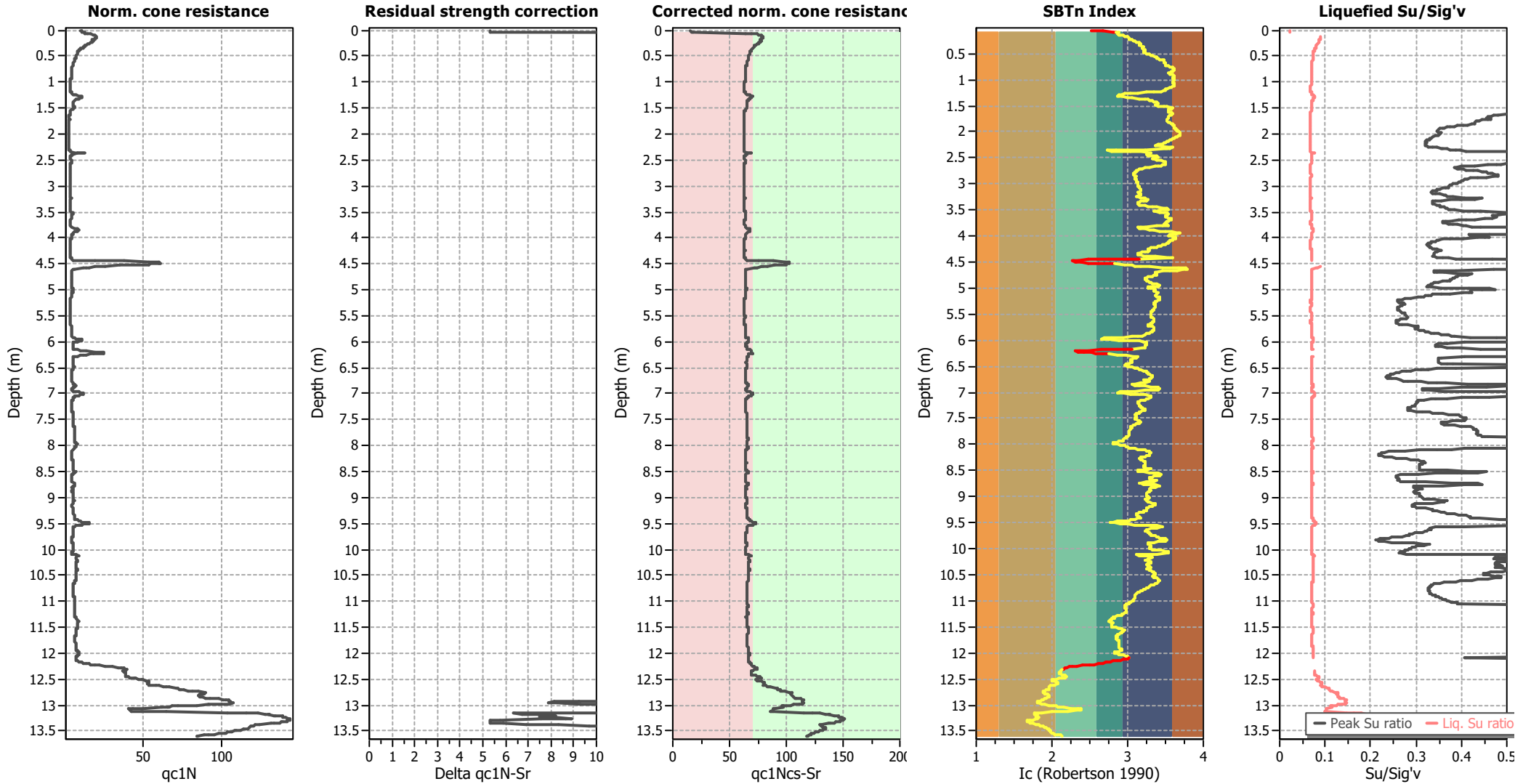
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Footing load:	0.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Excavation depth:	0.00 m	Limit depth:	10.00 m

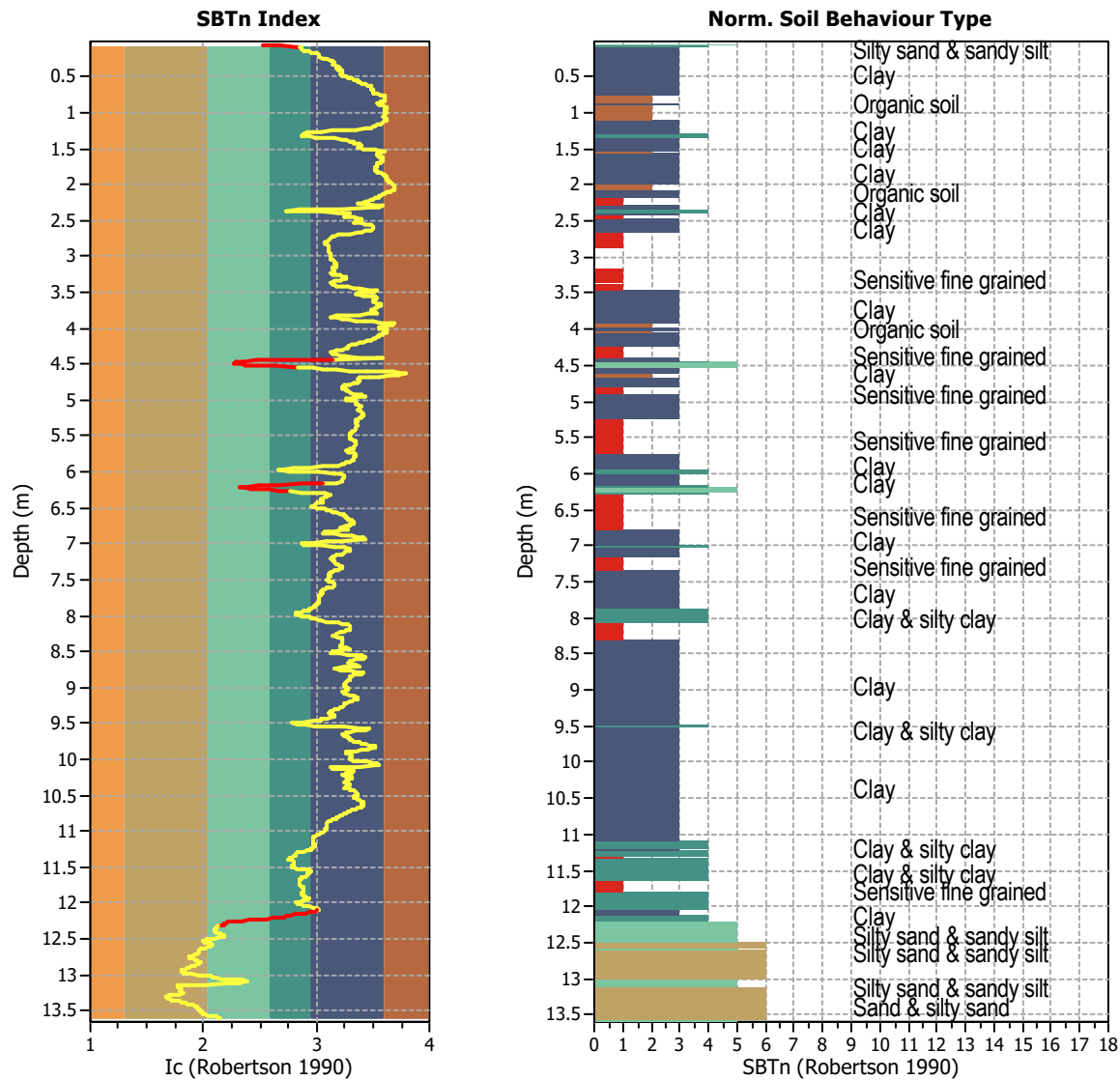
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.

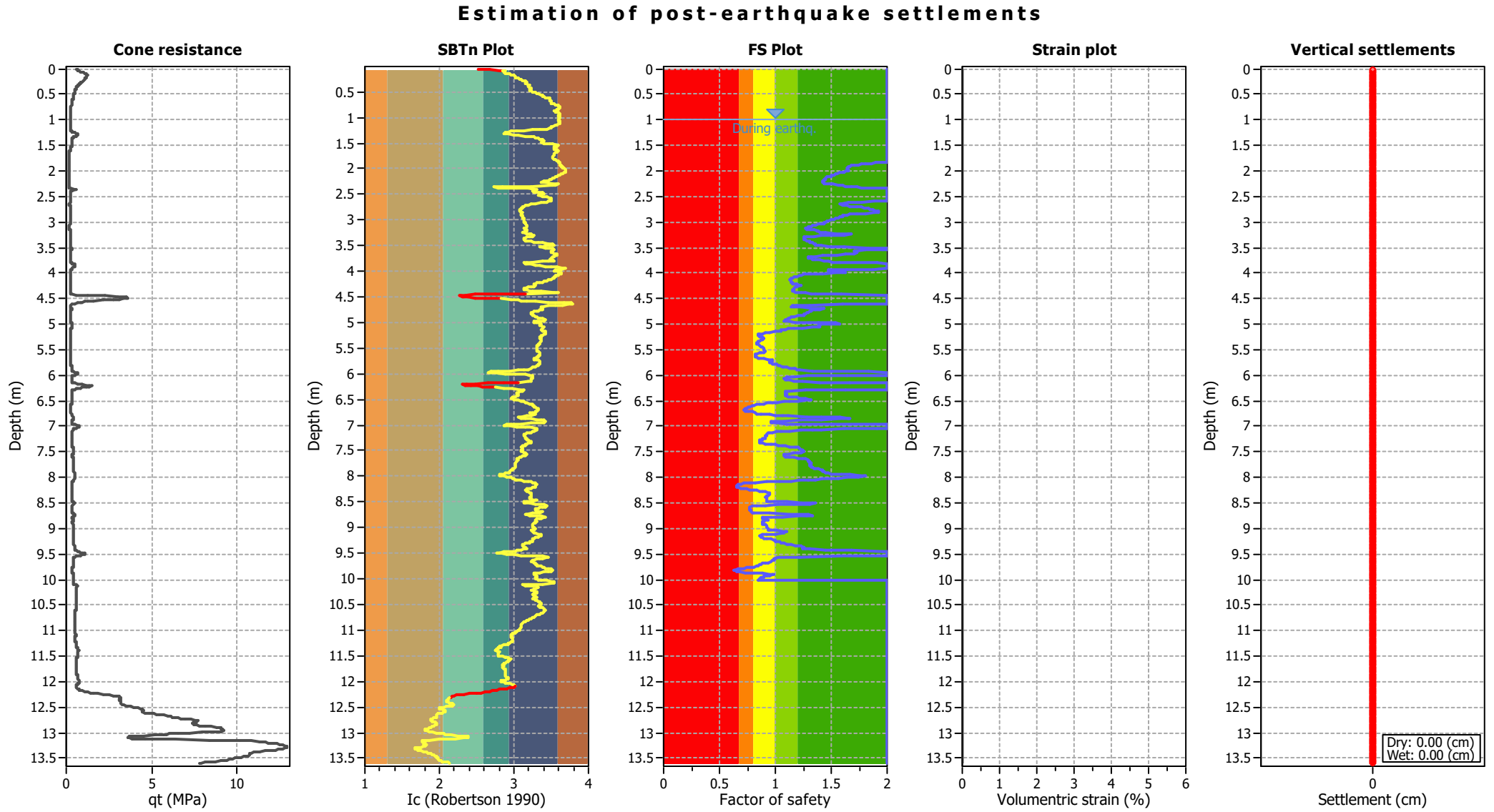


Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

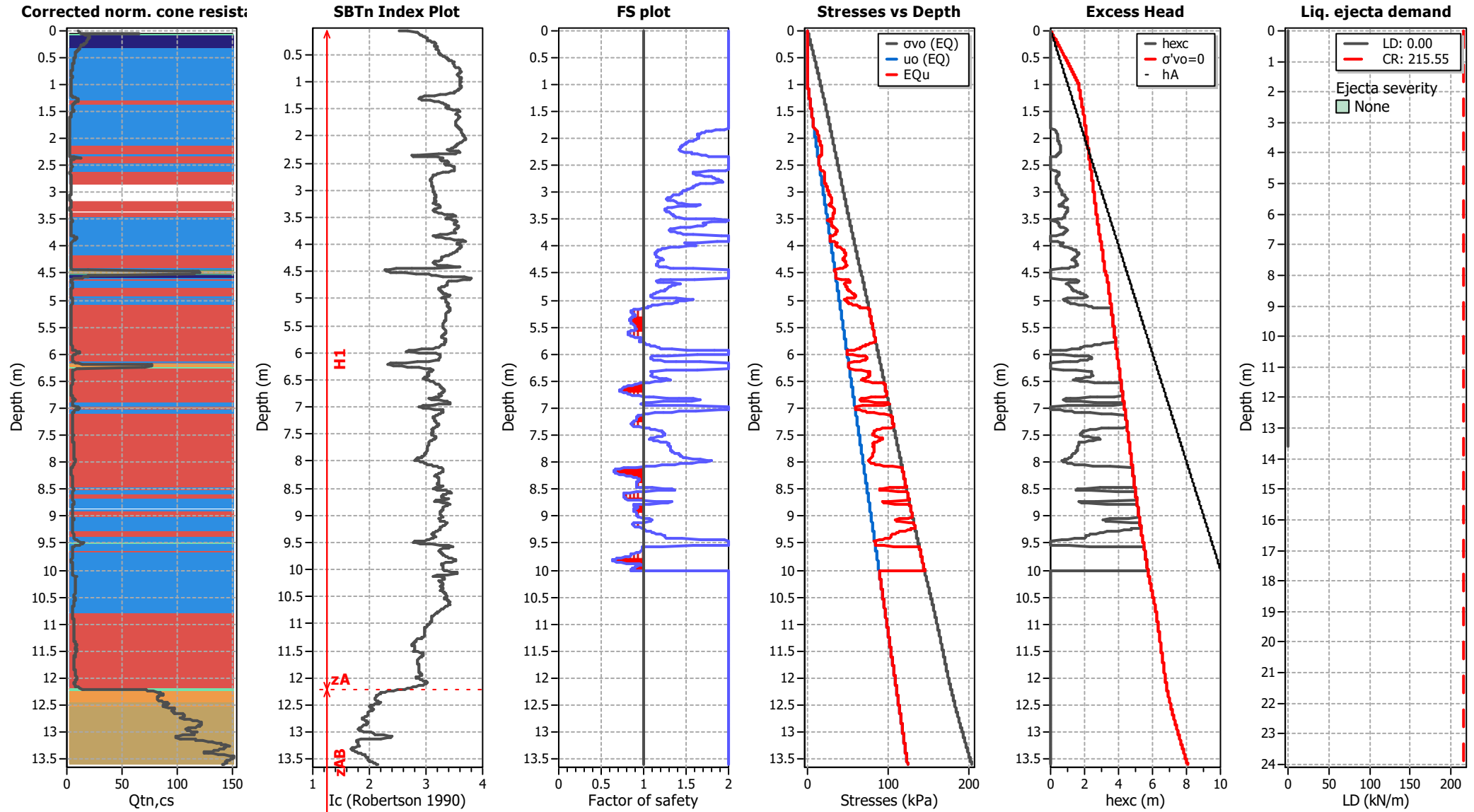
Total points in CPT file: 1360
Total points excluded: 54
Exclusion percentage: 3.97%
Number of layers detected: 6



Abbreviations

- q_c : Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c : Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

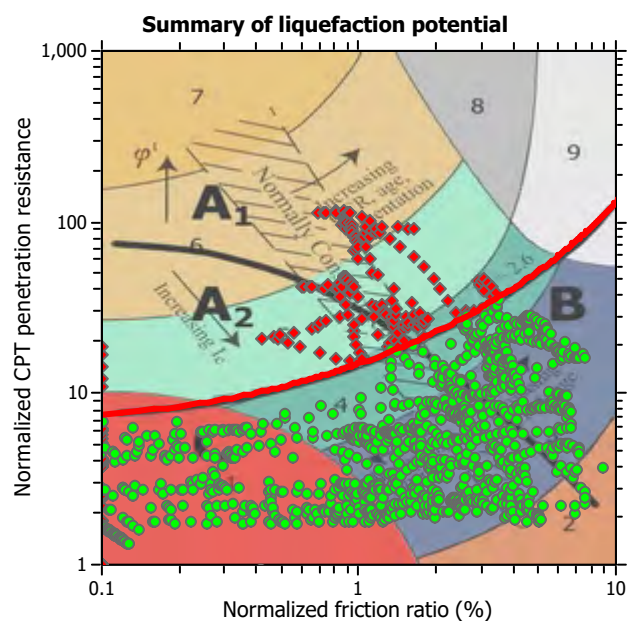
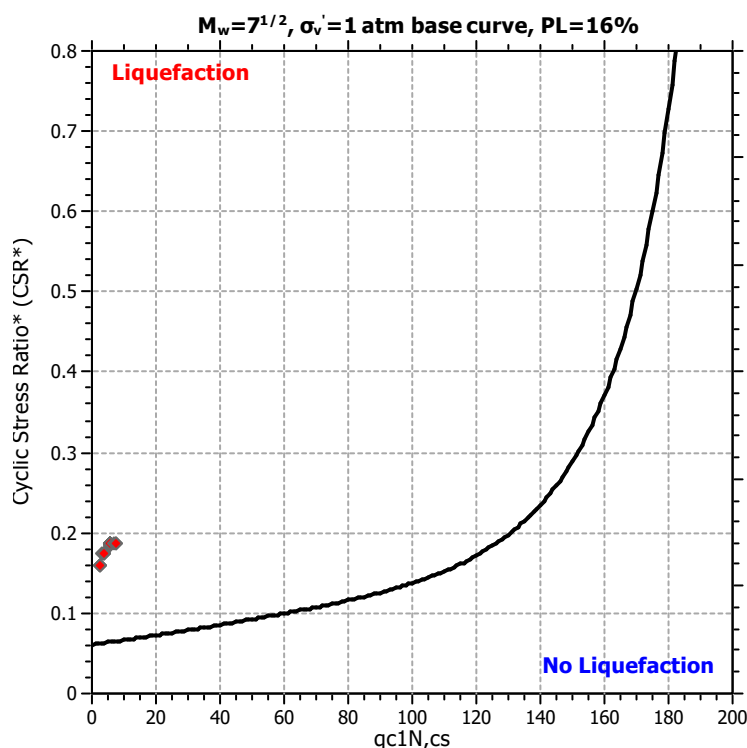
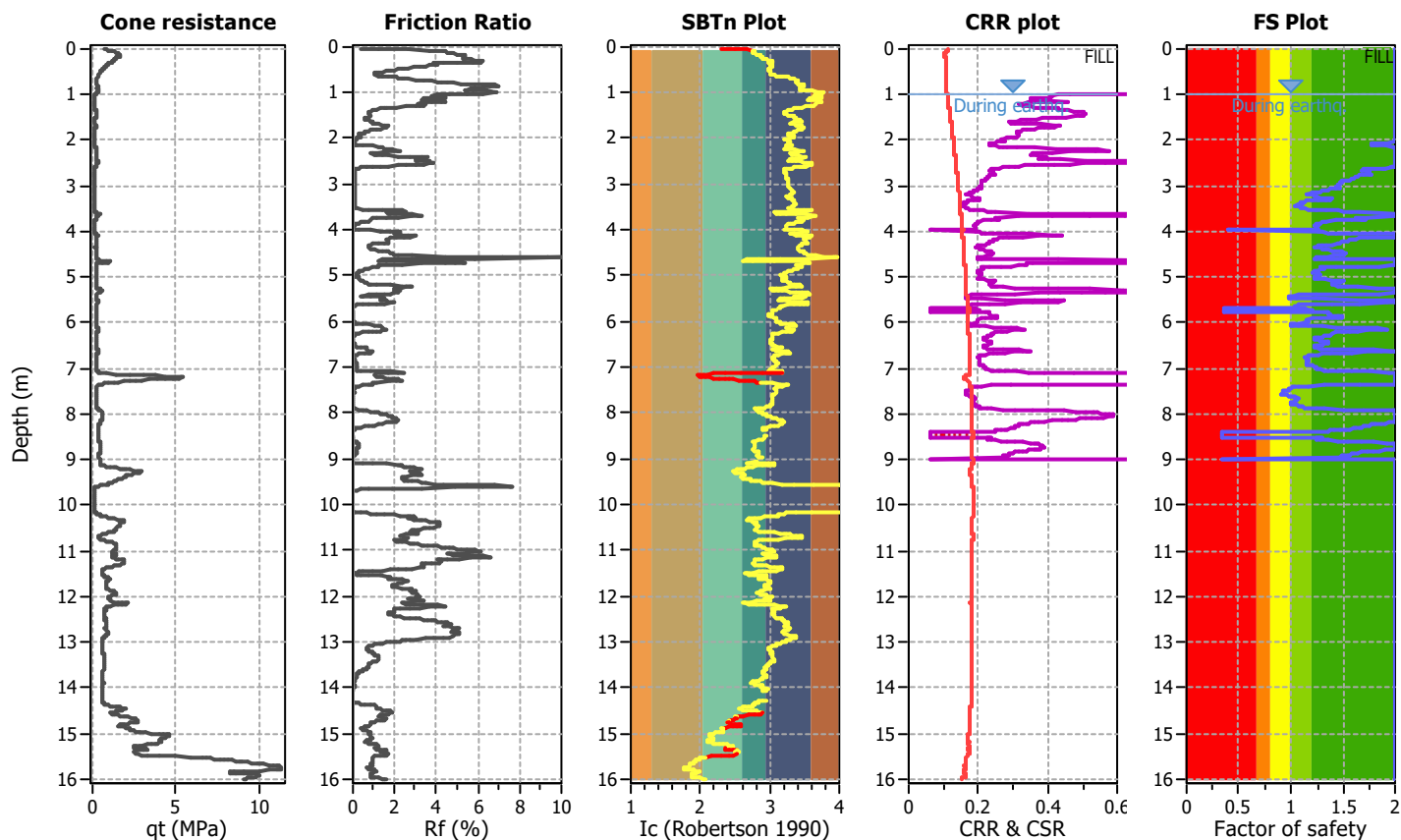
Project title : Sunfield Landholding

Location :

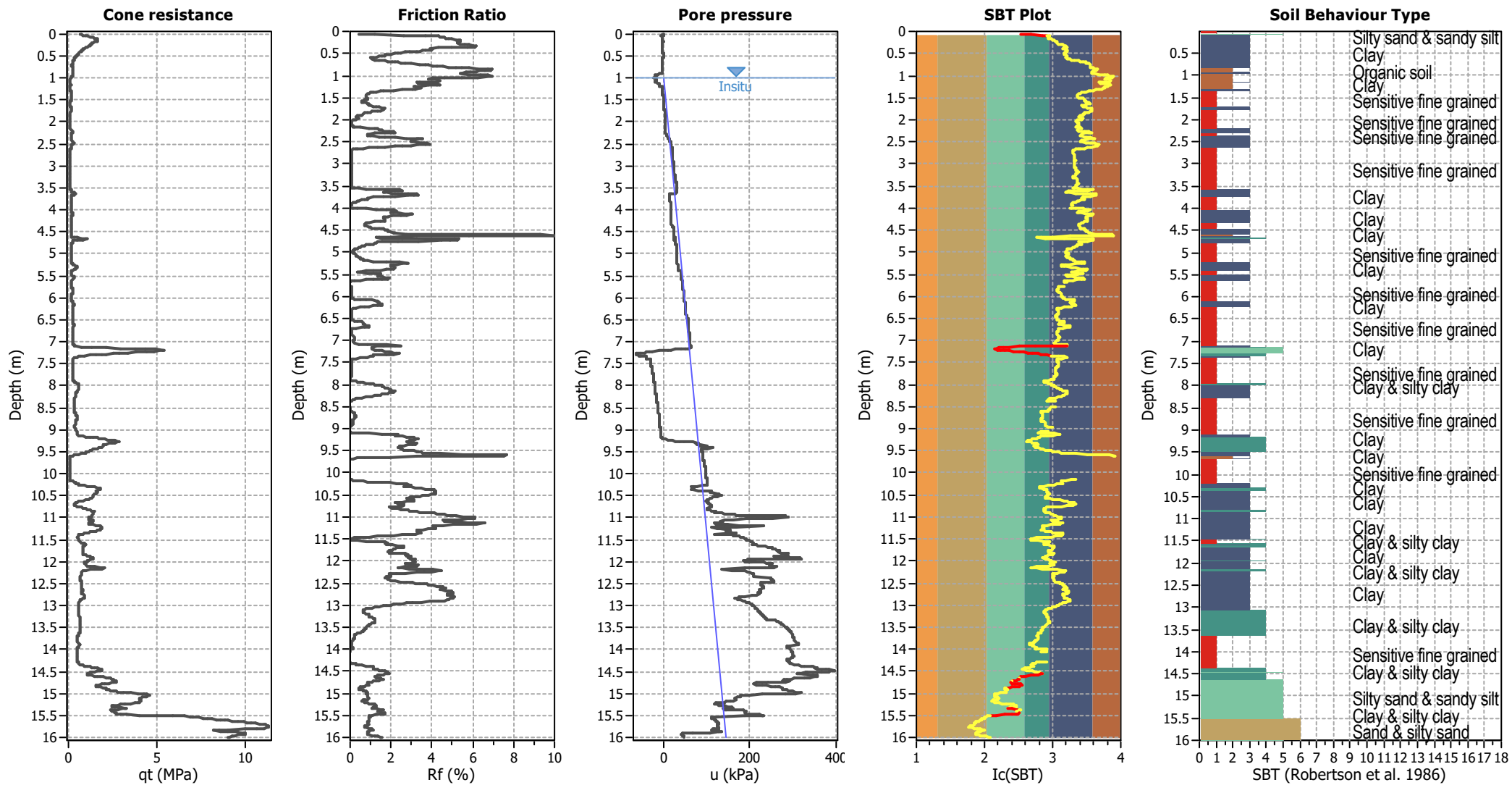
CPT file : CPT414

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



CPT basic interpretation plots

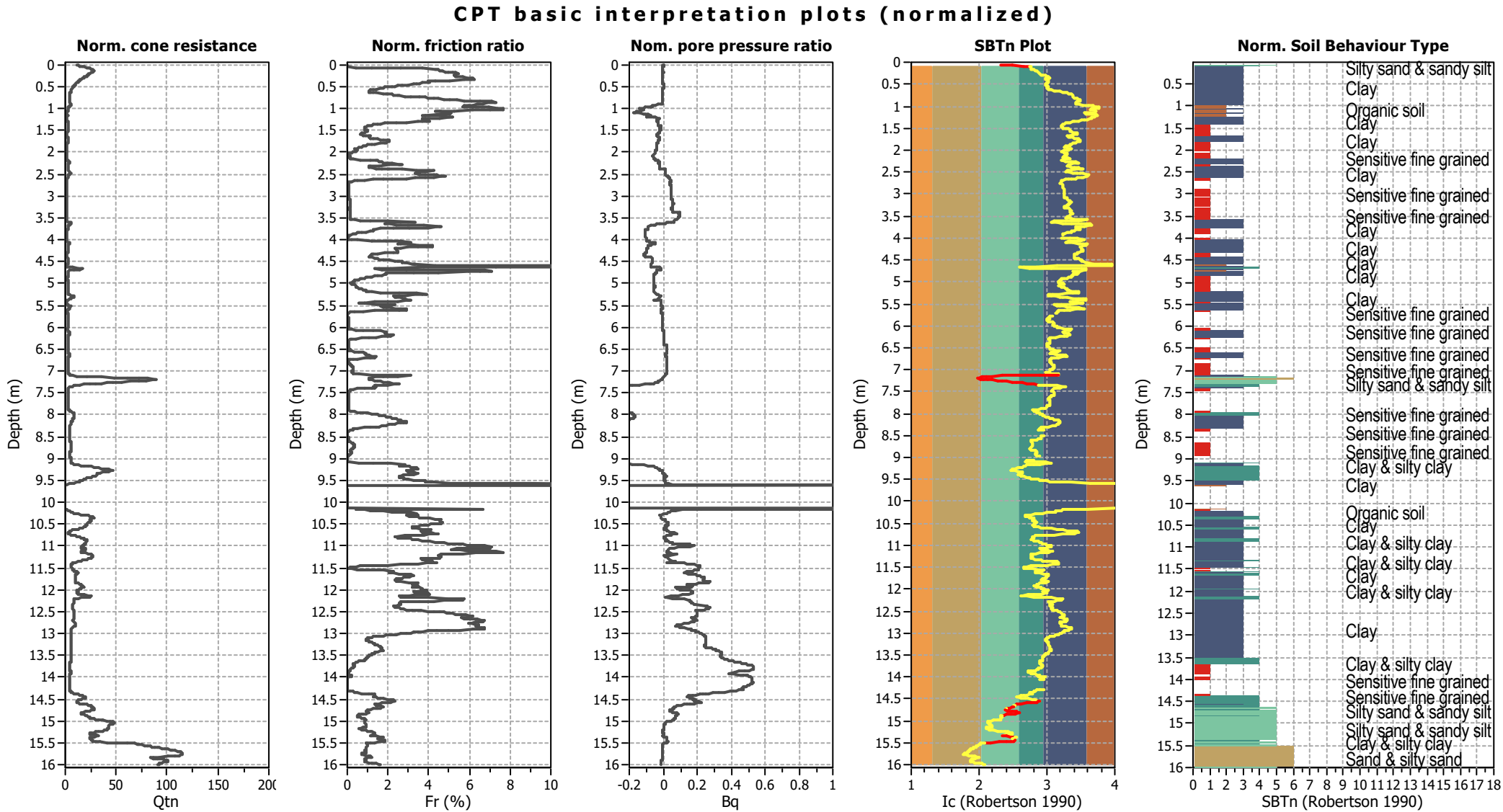


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



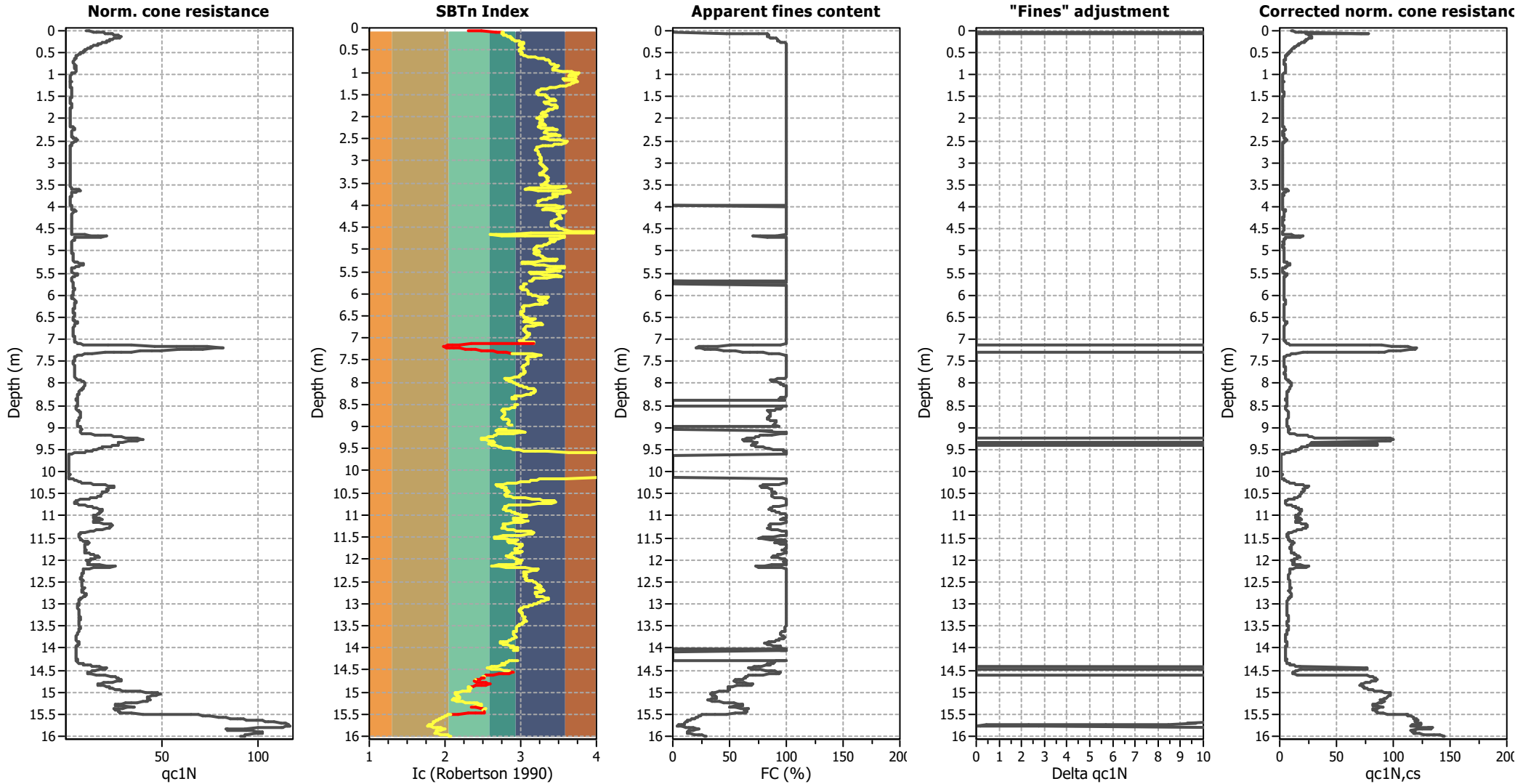
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

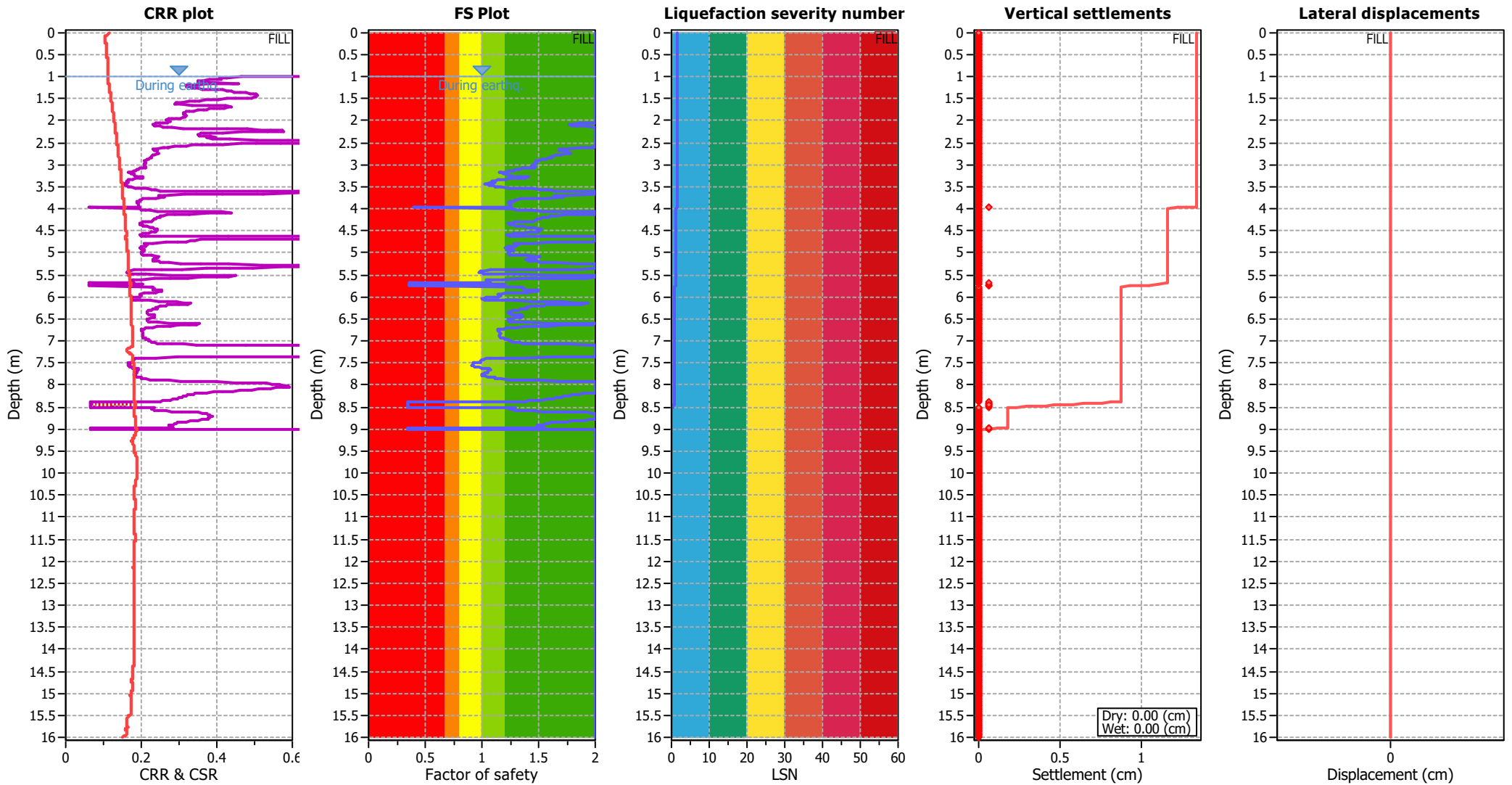
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _g applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

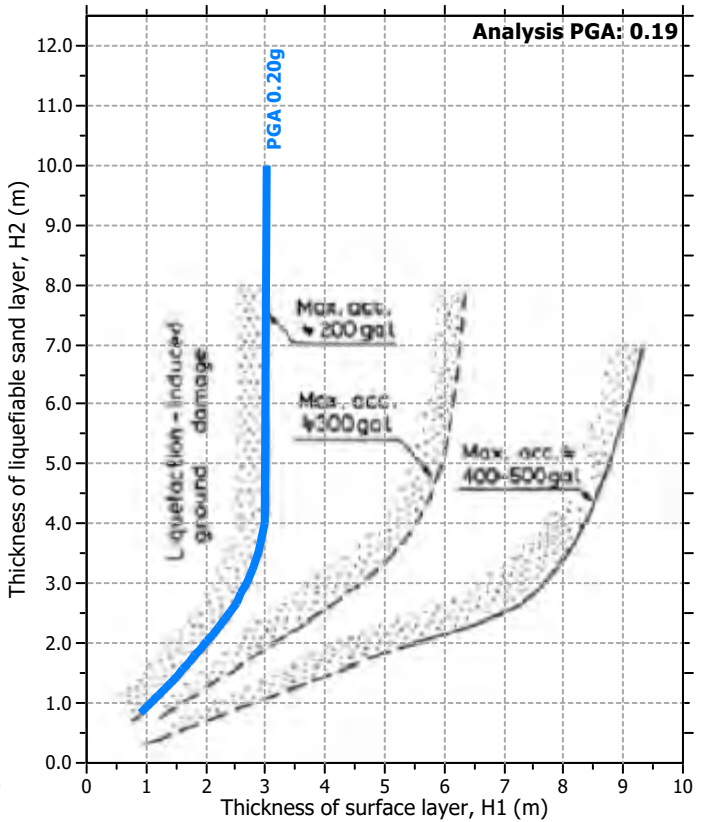
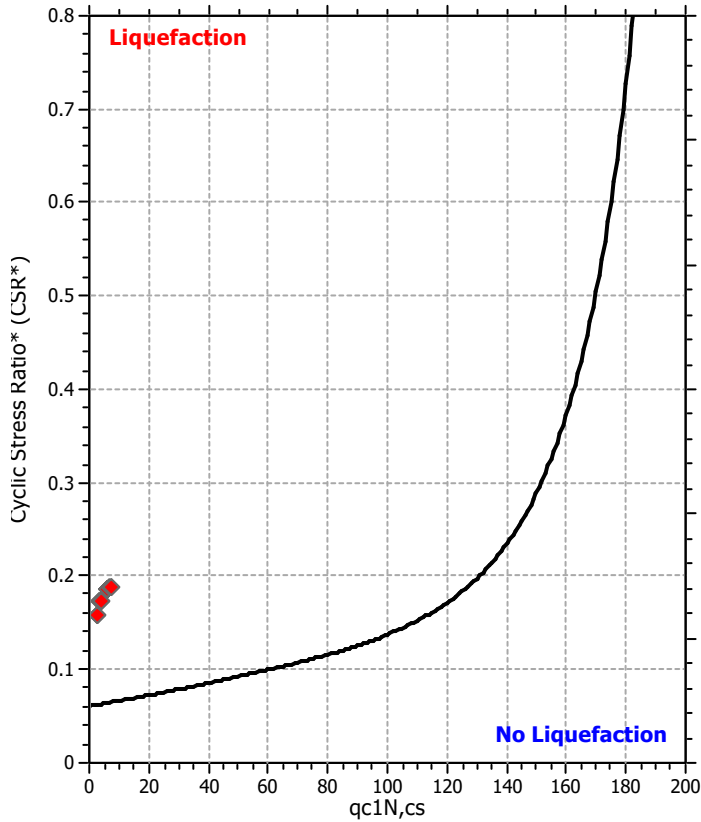
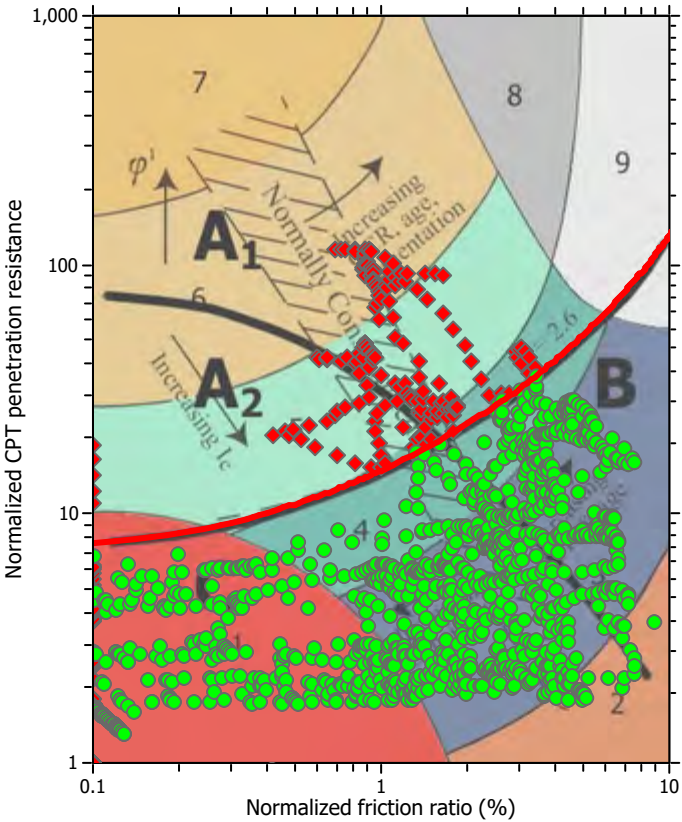
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LSN color scheme

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

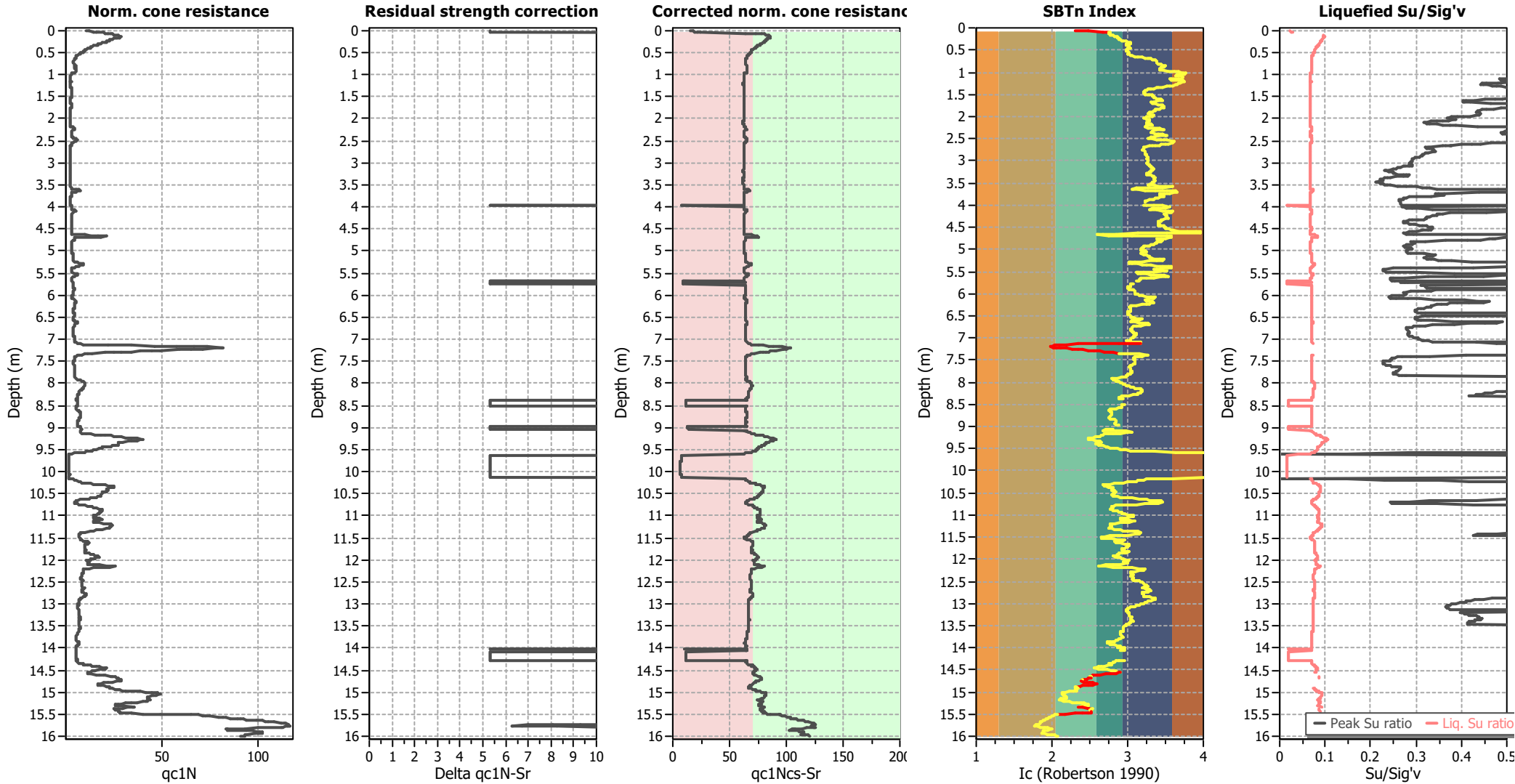
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on I_c value	I_c cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

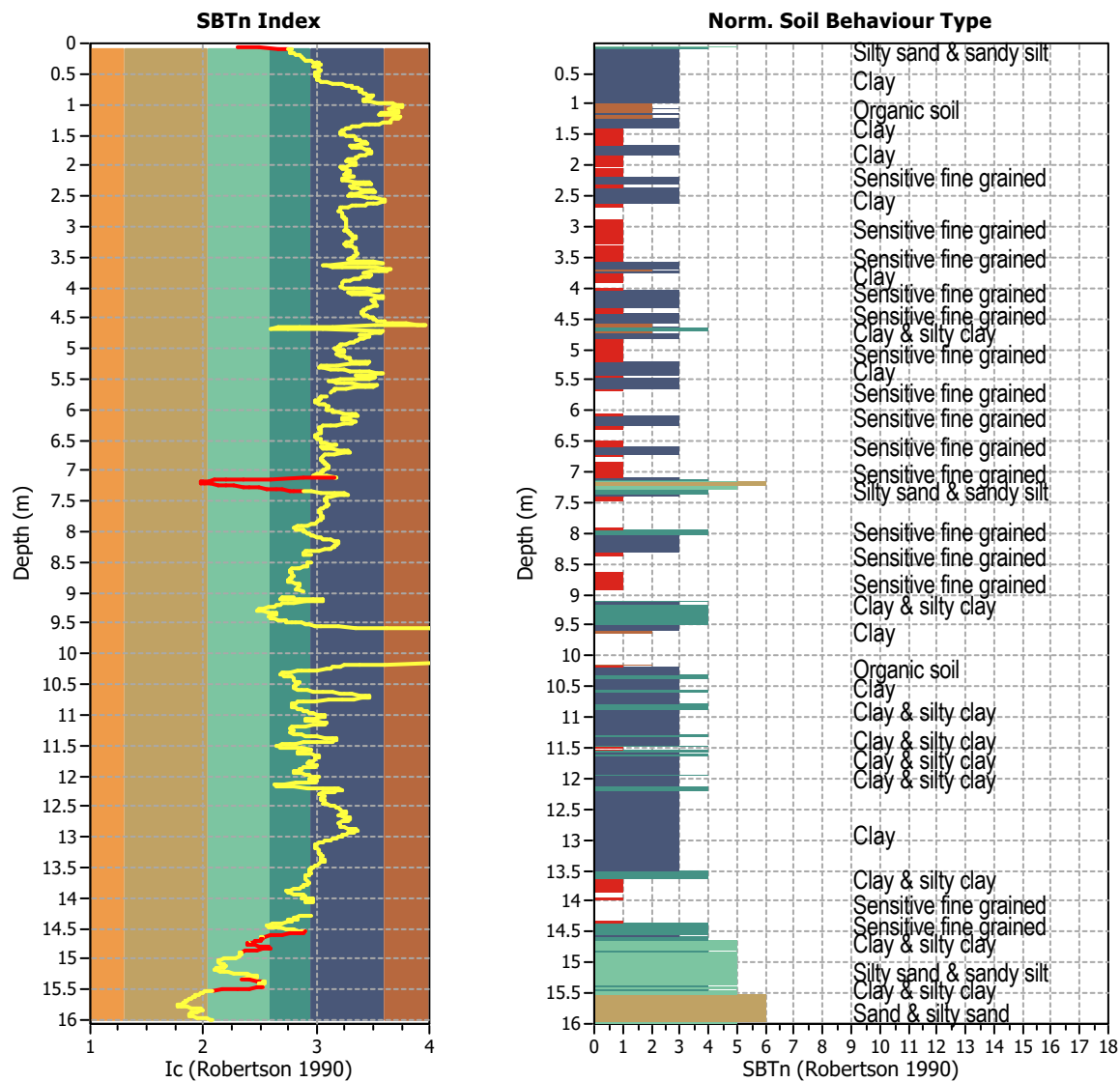
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



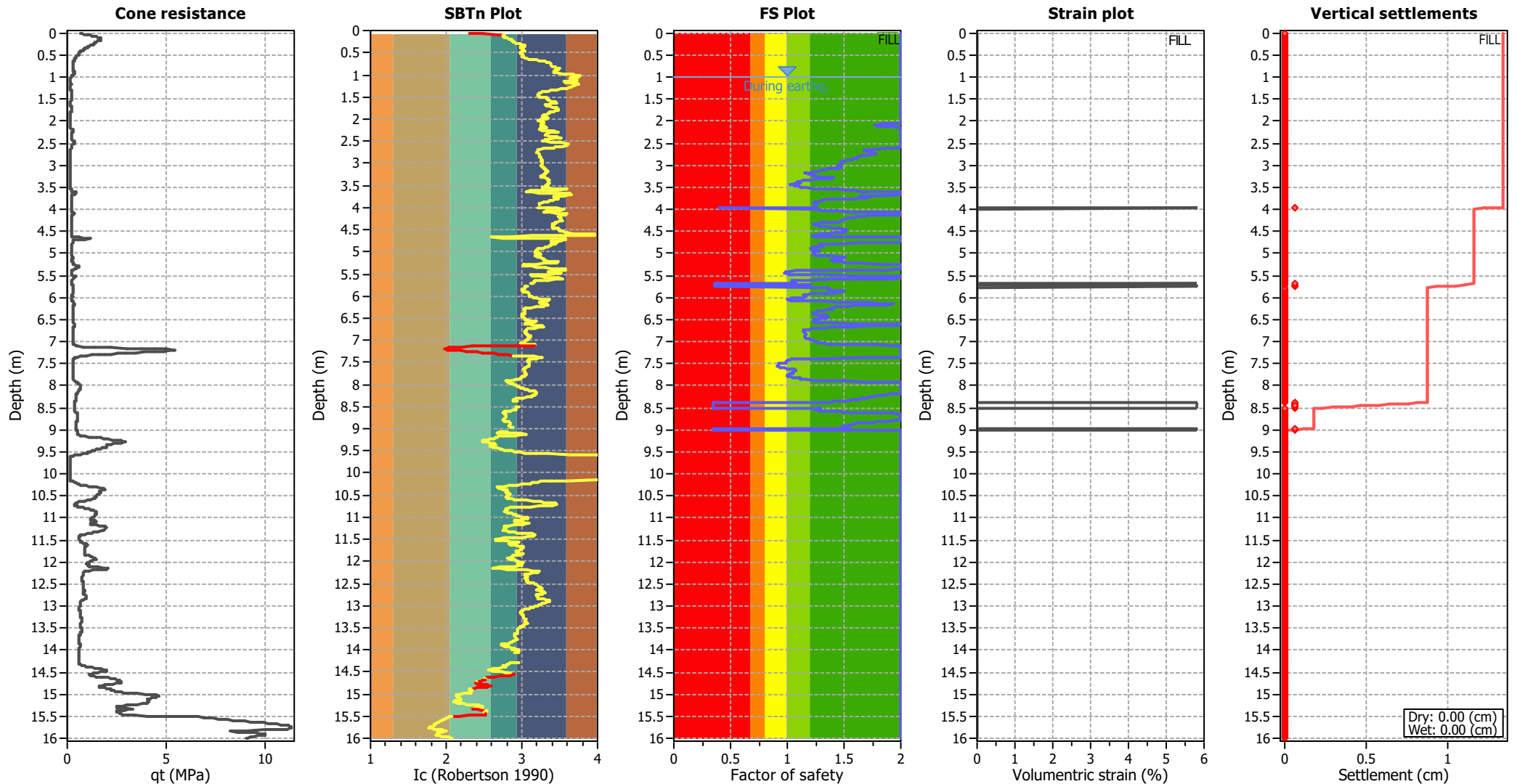
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1600
Total points excluded: 72
Exclusion percentage: 4.50%
Number of layers detected: 9

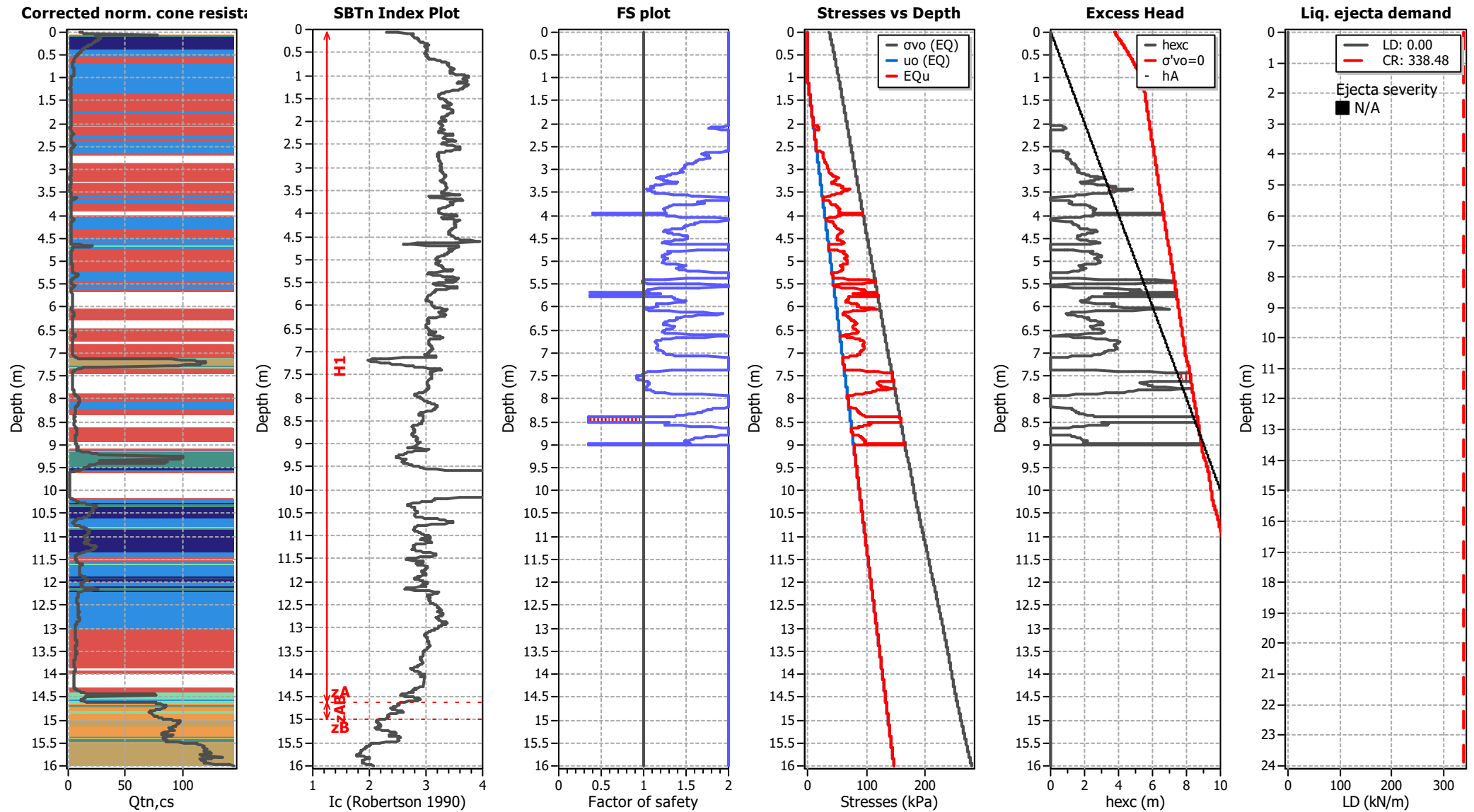
Estimation of post-earthquake settlements



Abbreviations

- q_c: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



LIQUEFACTION ANALYSIS REPORT

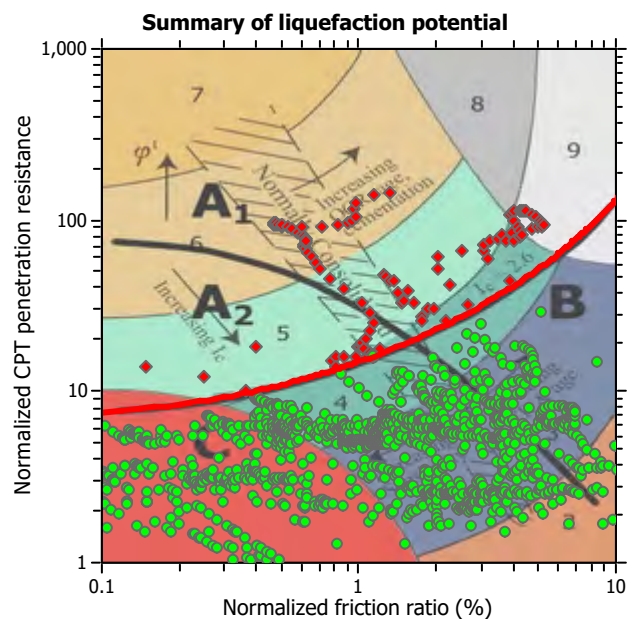
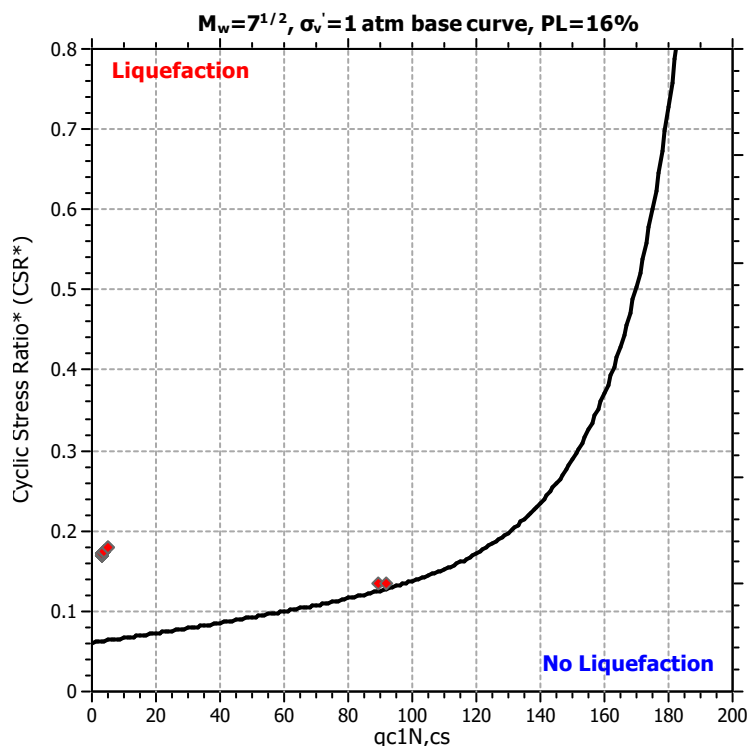
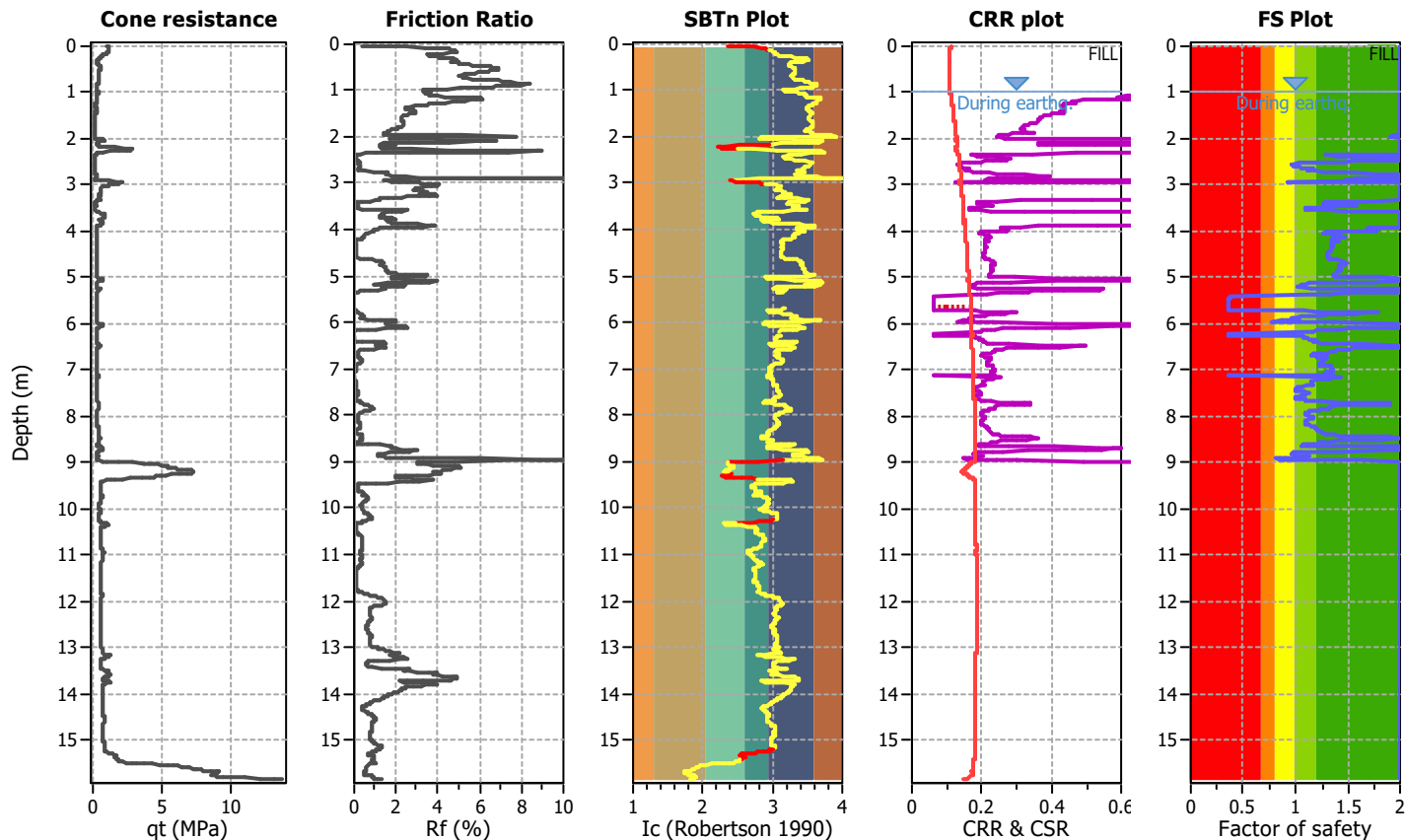
Project title : Sunfield Landholding

Location :

CPT file : CPT415A

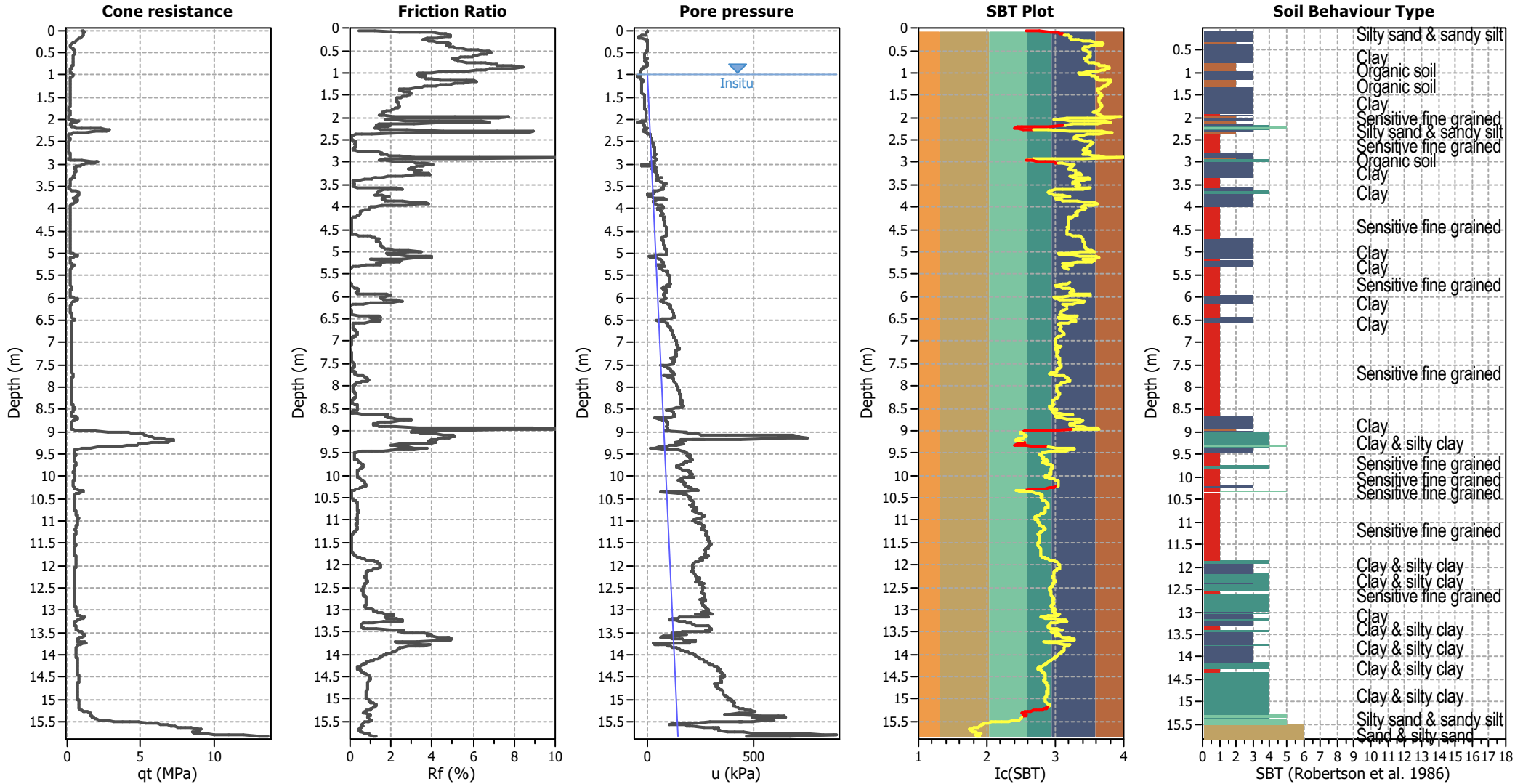
Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	Yes	Clay like behavior	
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	1.00 m	applied:	Sand & Clay
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	37.00 kN/m ³	Limit depth applied:	Yes
Earthquake magnitude M_w :	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	10.00 m
Peak ground acceleration:	0.19	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based



Zone A₁: Cyclic liquefaction likely depending on size and duration of cyclic loading
 Zone A₂: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

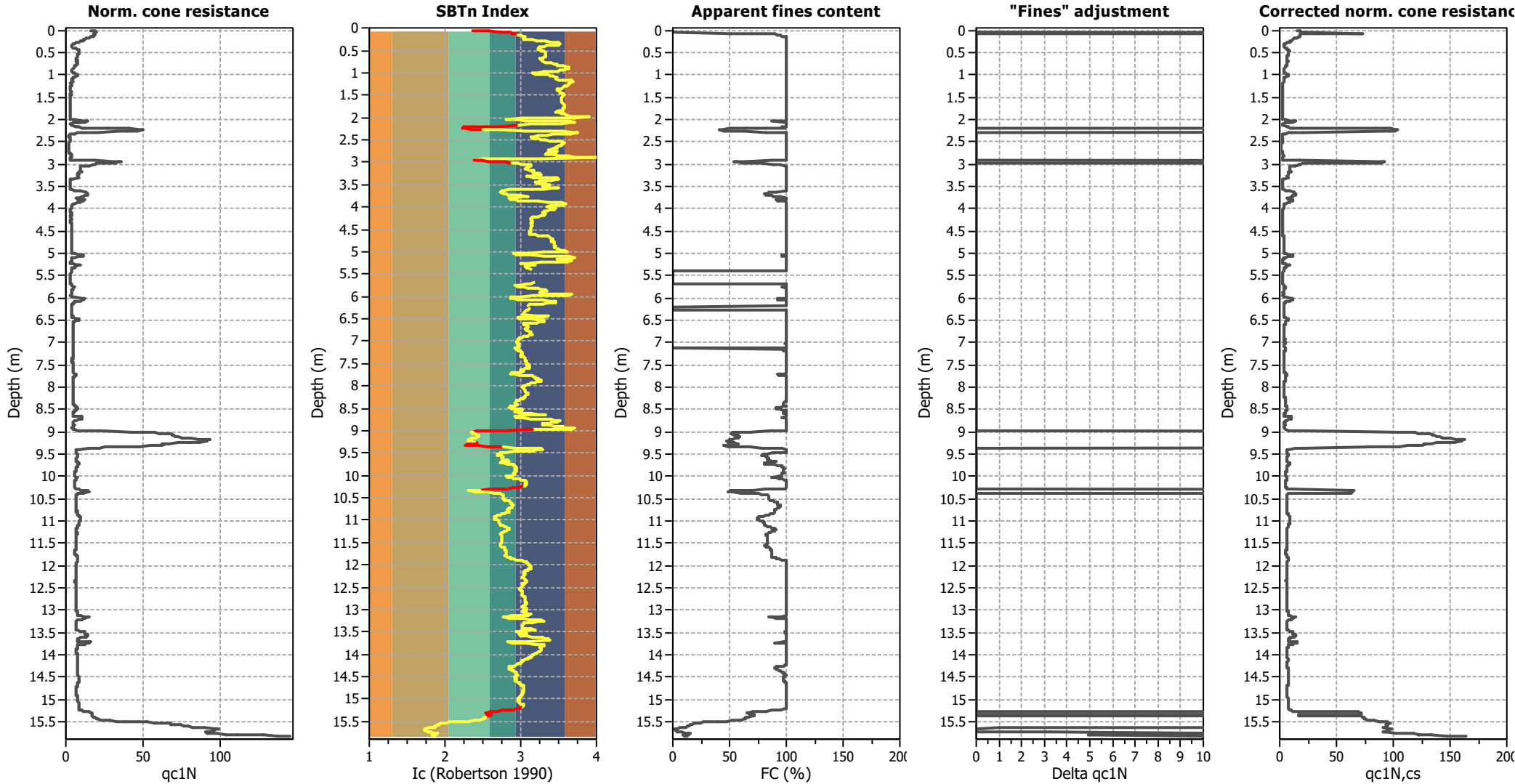
SBT legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _o applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

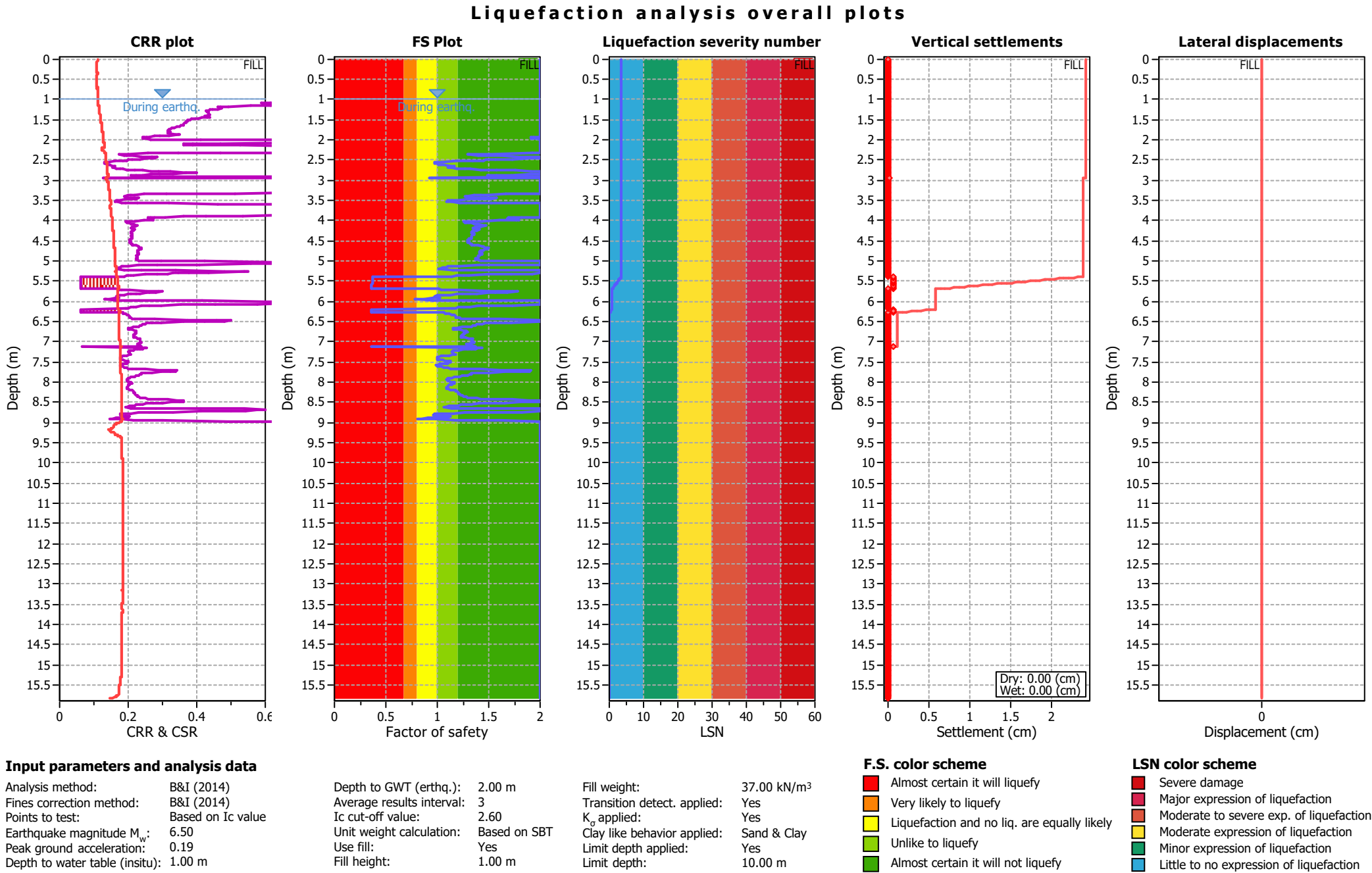
	1. Sensitive fine grained		4. Clayey silt to silty		7. Gravely sand to sand
	2. Organic material		5. Silty sand to sandy silt		8. Very stiff sand to
	3. Clay to silty clay		6. Clean sand to silty sand		9. Very stiff fine grained

Liquefaction analysis overall plots (intermediate results)

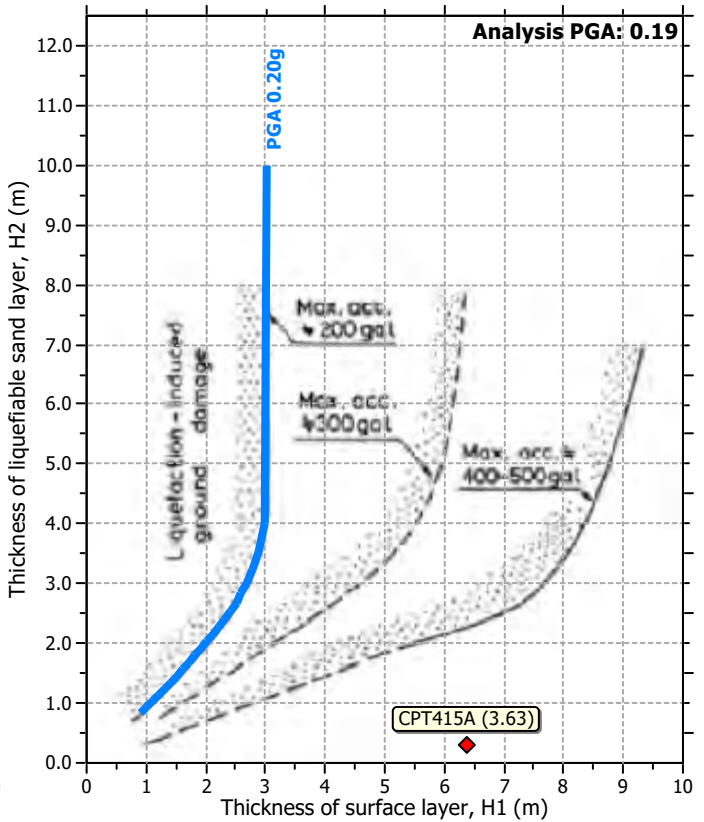
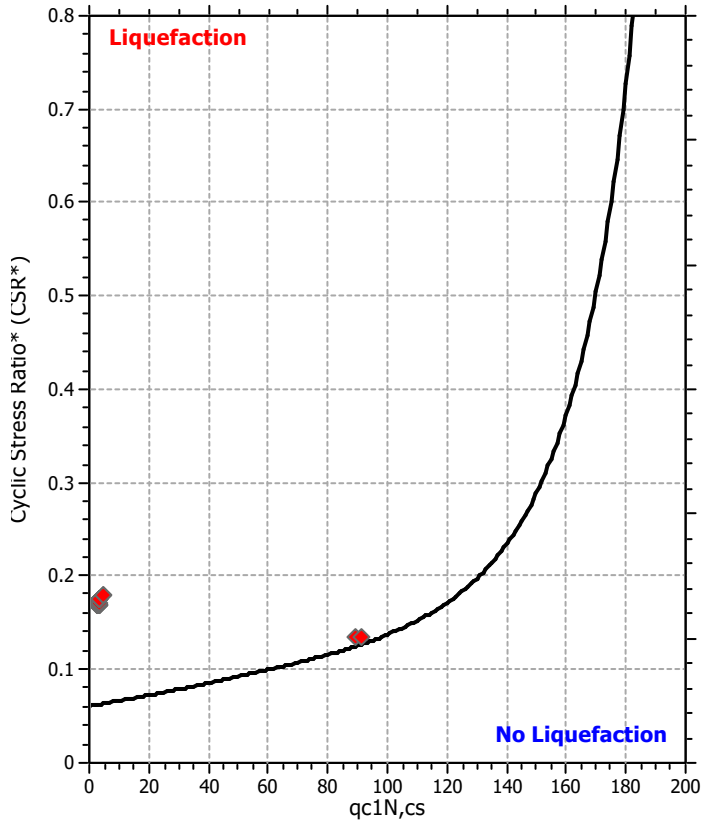
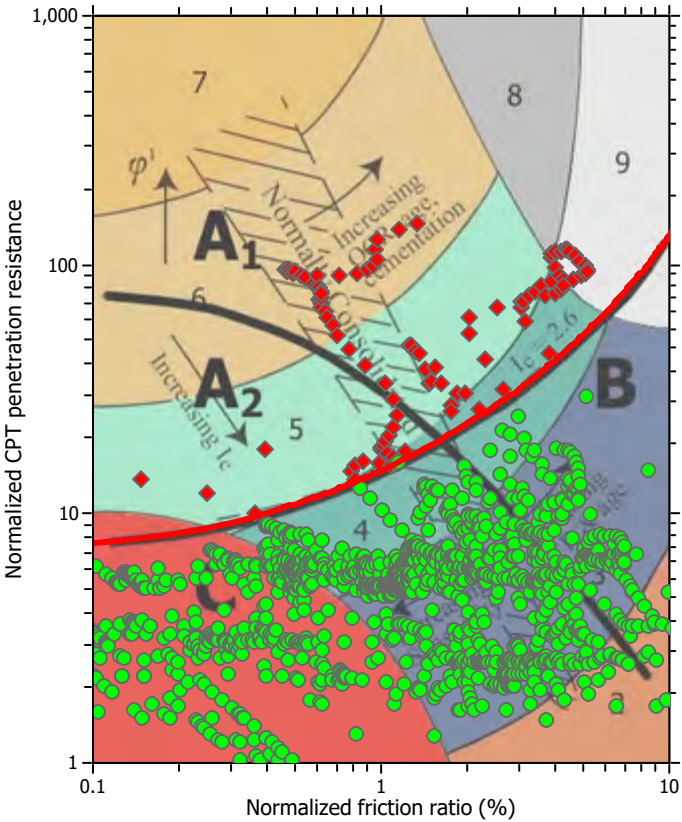


Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m



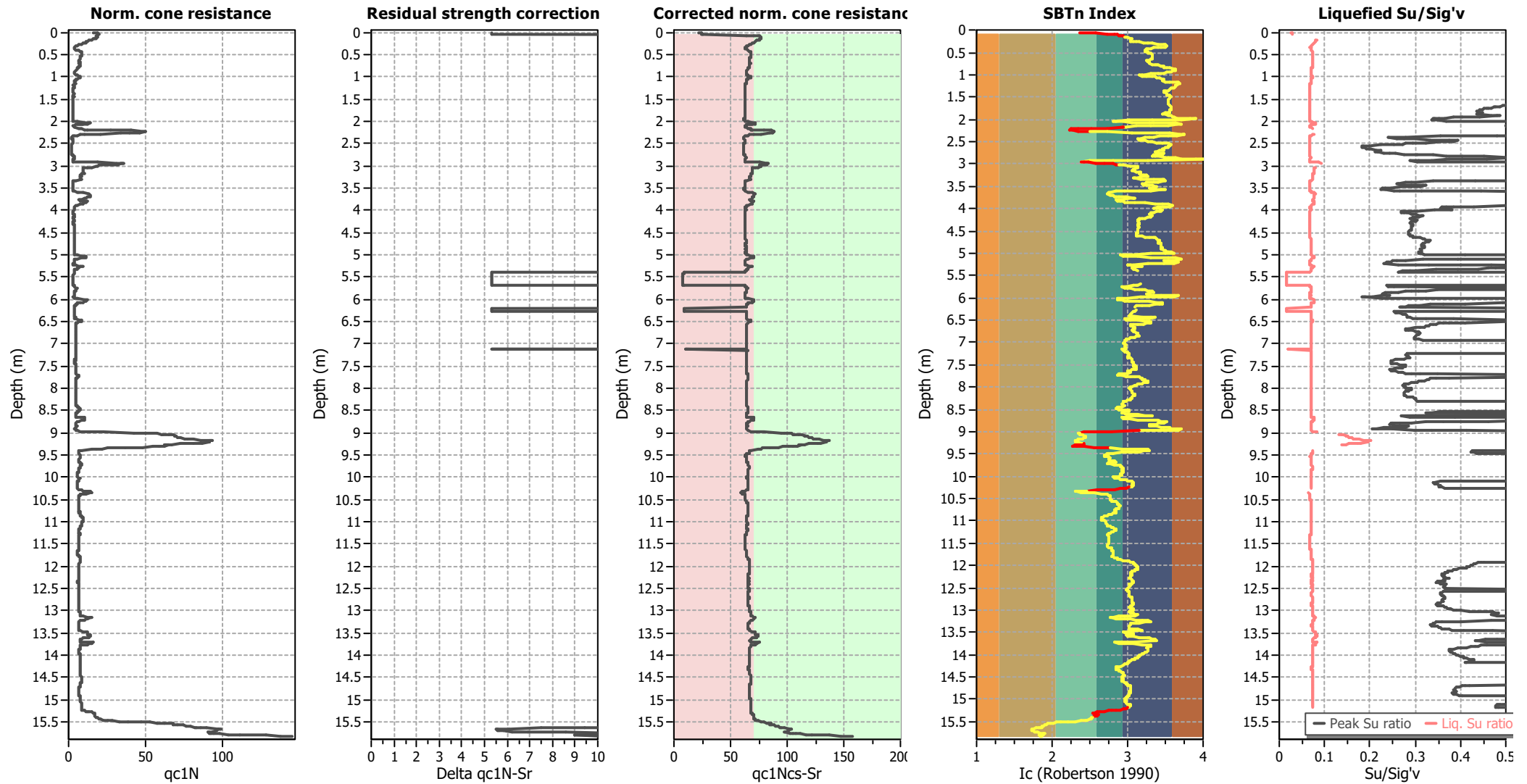
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K ₀ applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

Check for strength loss plots (Idriss & Boulanger (2008))



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	2.00 m	Fill weight:	37.00 kN/m ³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K _s applied:	Yes
Earthquake magnitude M _w :	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.19	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	1.00 m	Limit depth:	10.00 m

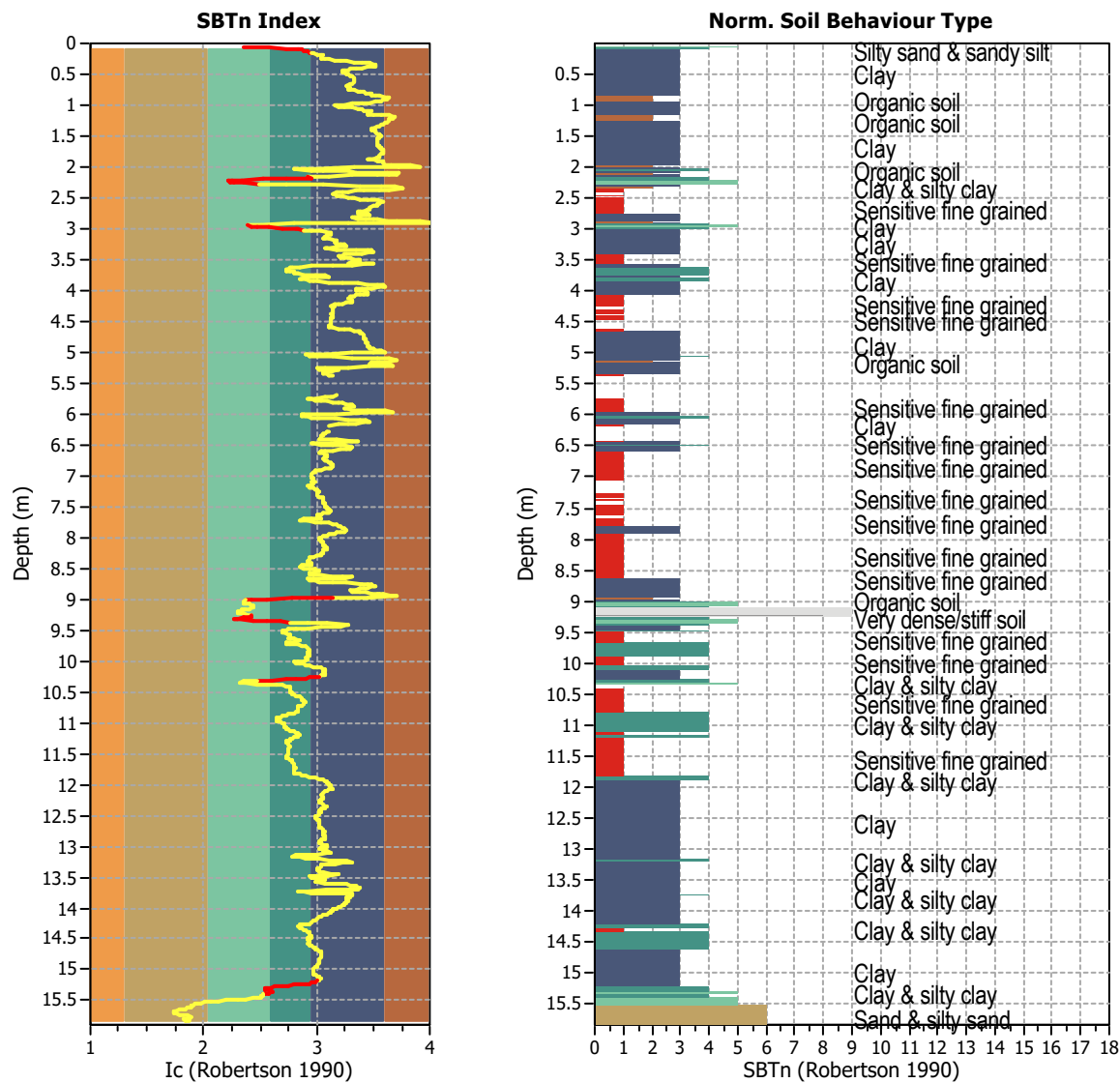
TRANSITION LAYER DETECTION ALGORITHM REPORT

Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between $1.80 < I_c < 3.0$) and a rate of change of I_c . Transitions typically occur when the rate of change of I_c is fast (i.e. ΔI_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



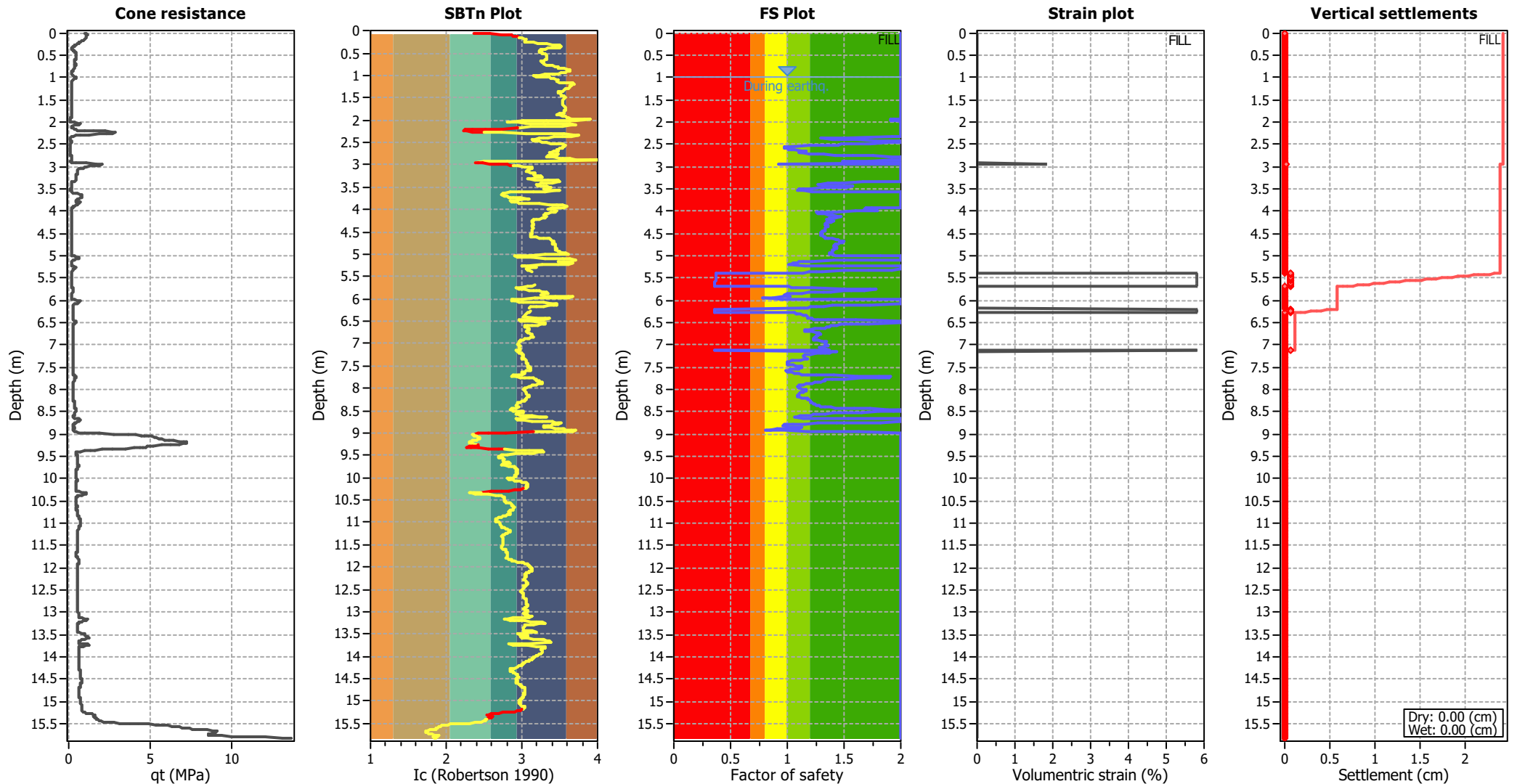
Transition layer algorithm properties

I_c minimum check value: 1.70
 I_c maximum check value: 3.00
 I_c change ratio value: 0.0100
Minimum number of points in layer: 4

General statistics

Total points in CPT file: 1583
Total points excluded: 80
Exclusion percentage: 5.05%
Number of layers detected: 11

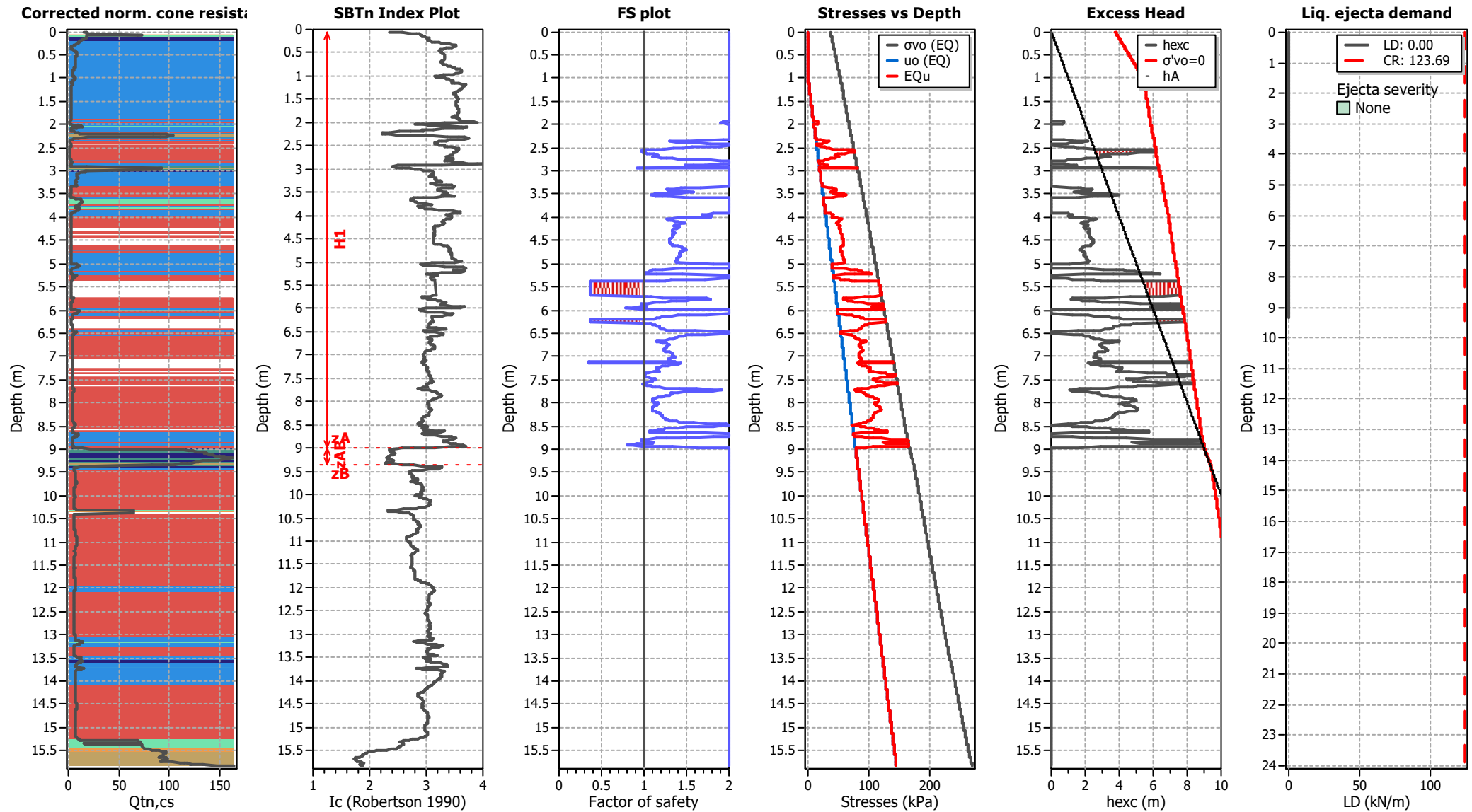
Estimation of post-earthquake settlements



Abbreviations

- q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
- I_c: Soil Behaviour Type Index
- FS: Calculated Factor of Safety against liquefaction
- Volumetric strain: Post-liquefaction volumetric strain

Ejecta Severity Estimation



APPENDIX E

SETTLEMENT ANALYSIS OUTPUTS

CPT ID#	Settlement Scenario / Result (mm) ¹			Surcharge Loads Applied (kPa)	
	Case 1 (Earthworks Surcharge Only)	Case 2 (End Use Surcharge Only)	Case 3 (Earthworks + End Use Surcharge) ²	Earthworks	End Use
DMT01	0	0	0	-140	12
DMT02	205	130	335	18.5	12
DMT03	220	180	405	18.5	15
DMT04	0	45	45	0	40
DMT05	160	170	330	18.5	20
DMT06	0	85	85	-35	40
DMT07	345	110	460	37	12
CPT01	0	5	5	-52.5	12
CPT02	230	25	255	37	12
CPT03	0	10	10	-52.5	12
CPT04A	330	205	535	18.5	20
CPT05	0	5	5	0	12
CPT06	0	60	60	0	12
CPT07	75	40	115	37	20
CPT08	0	30	30	-87.5	40
CPT09A	40	45	85	37	40
CPT10	10	50	60	9.25	40
CPT11	205	135	430	18.5	15
CPT12	80	45	125	37	20
CPT13A	310	105	415	18.5	12
CPT14	210	25	235	18.5	12
CPT15	920	90	1010	37	12
CPT16	0	115	115	-52.5	40
CPT17	0	20	20	0	40
CPT18	345	95	440	18.5	12
CPT19A	865	110	975	37	12
CPT20	25	50	75	18.5	40
CPT21A	435	60	495	37	12
CPT22	50	40	100	18.5	15
CPT101	0	380	380	-52.5	40
CPT102	0	690	690	-35	40
CPT106	0	50	50	0	20
CPT107	0	65	65	-52.5	40
CPT108	0	65	65	-35	40
CPT110	10	35	45	9.25	40
CPT111	0	35	35	0	40
CPT112	0	45	45	-8.75	40
CPT113	0	35	35	-8.75	40
CPT115	0	5	5	-8.75	12
CPT116	200	65	275	37	15
CPT118	110	15	125	37	12
CPT119	155	15	170	37	12
CPT120	50	55	105	18.5	20
CPT121	25	25	50	18.5	20
CPT122	55	30	95	27.75	20
CPT123	240	130	370	37	20
CPT124	35	40	75	18.5	20
CPT125	0	25	25	0	40
CPT126	0	15	15	-96.25	40
CPT127	0	30	30	0	40
CPT130	300	105	410	37	15
CPT131	0	190	190	0	15
CPT132	0	90	90	-17.5	40
CPT133	0	20	20	0	40
CPT134	0	10	10	0	12
CPT135	40	15	55	18.5	12
CPT136	165	25	190	37	12
CPT137	0	30	30	-17.5	40
CPT201	0	180	180	-52.5	40
CPT202	0	315	315	-52.5	40
CPT203	0	190	190	-35	40
CPT204	0	50	50	-35	40
CPT205	40	40	80	37	40
CPT206	325	125	450	18.5	12
CPT207	105	20	125	18.5	12
CPT208	405	135	550	37	15
CPT301	60	25	85	37	15
CPT302	0	45	45	-35	40
CPT303	85	45	130	27.75	15
CPT304	0	50	50	0	40
CPT305	20	45	70	18.5	40
CPT306	15	35	50	18.5	40
CPT307	285	230	515	18.5	15

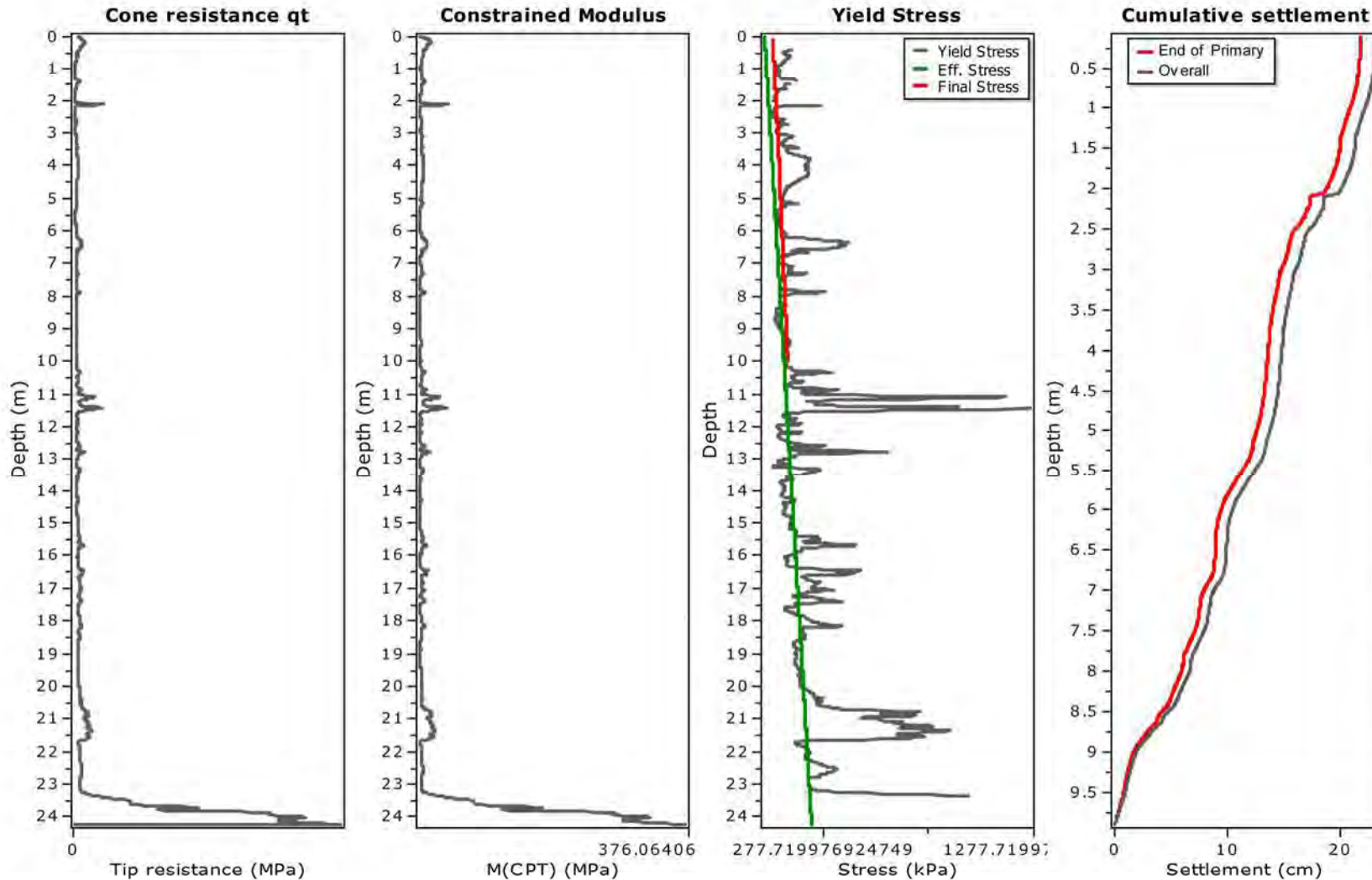
CPT308	0	35	35	0	40
CPT401	30	40	70	18.5	25
CPT402	15	35	50	9.25	25
CPT403	50	40	90	18.5	15
CPT404	125	35	170	55.5	15
CPT405	35	40	75	37	40
CPT406	35	40	75	37	40
CPT407	75	50	125	37	25
CPT408	70	50	120	37	25
CPT409	35	25	60	37	25
CPT410	105	45	150	37	15
CPT411	65	25	90	37	15
CPT412	145	55	205	37	15
CPT413	0	215	215	0	15
CPT414	480	195	675	37	15
CPT415A	520	215	735	37	15

Notes:

1. All settlement values reported to the nearest 5mm.
2. Case 3 settlement values calculated from Case 1 + Case 2 settlement values except where total earthworks + end use surcharge yields higher settlement values



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

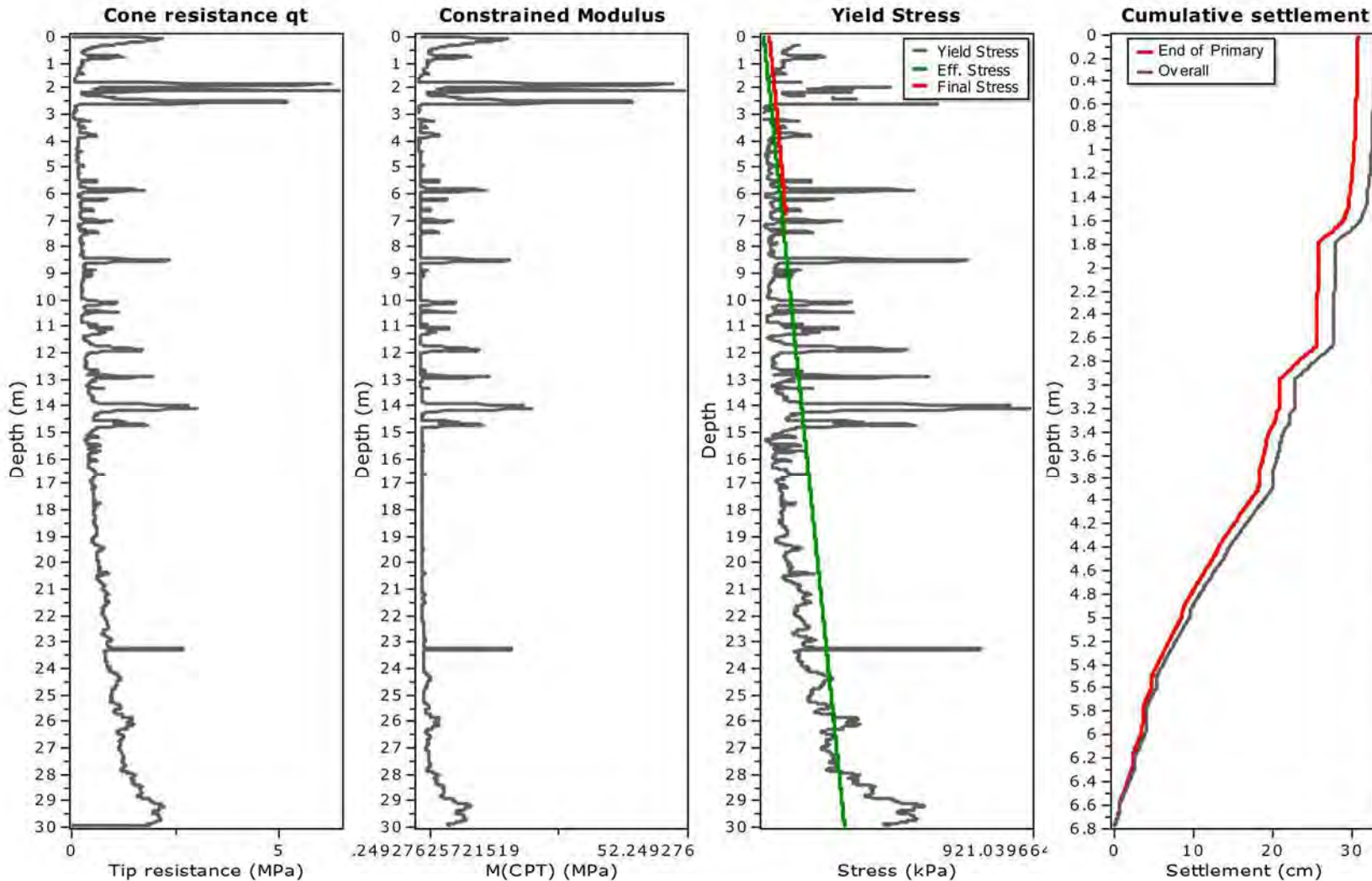
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

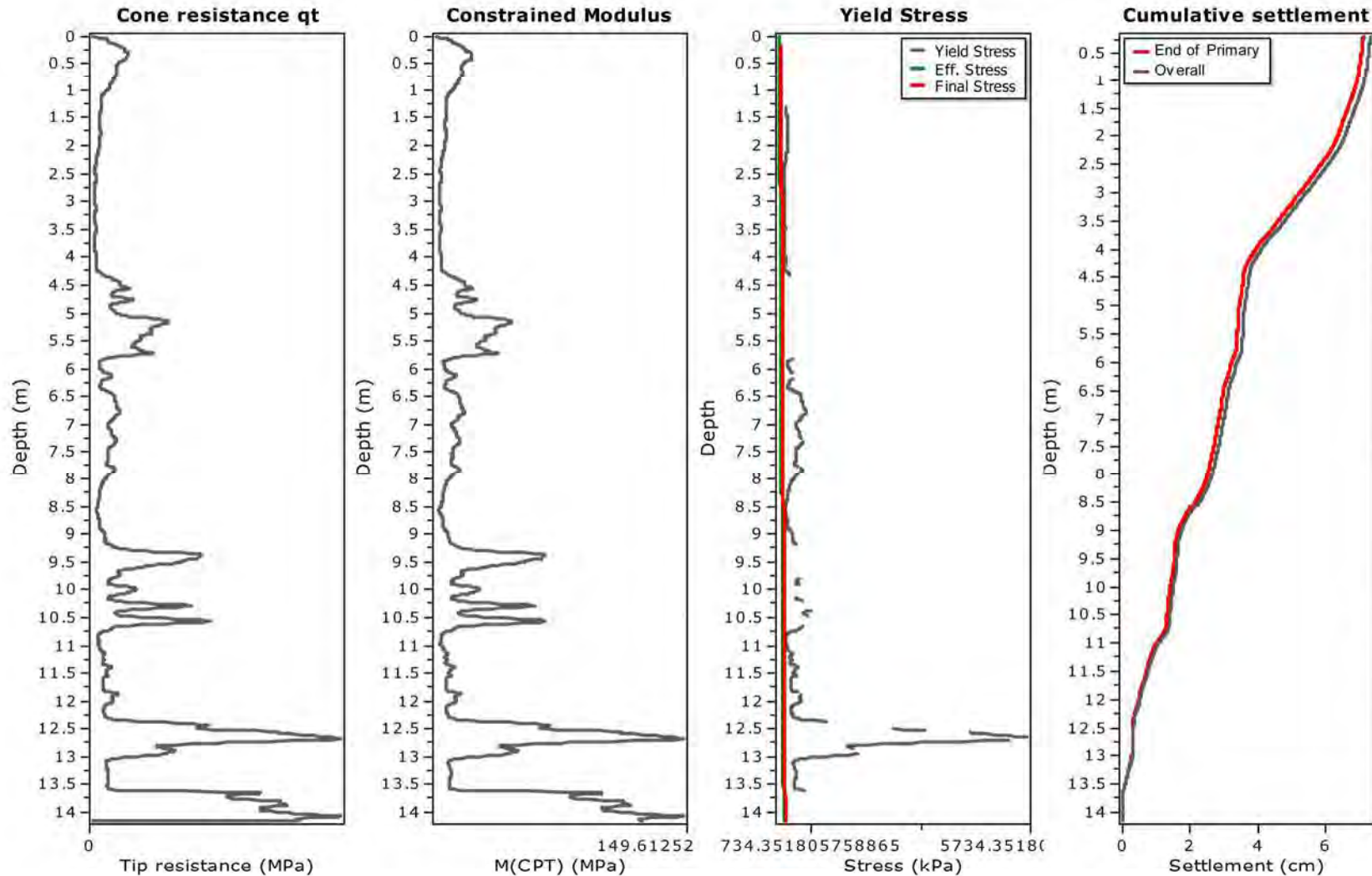
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

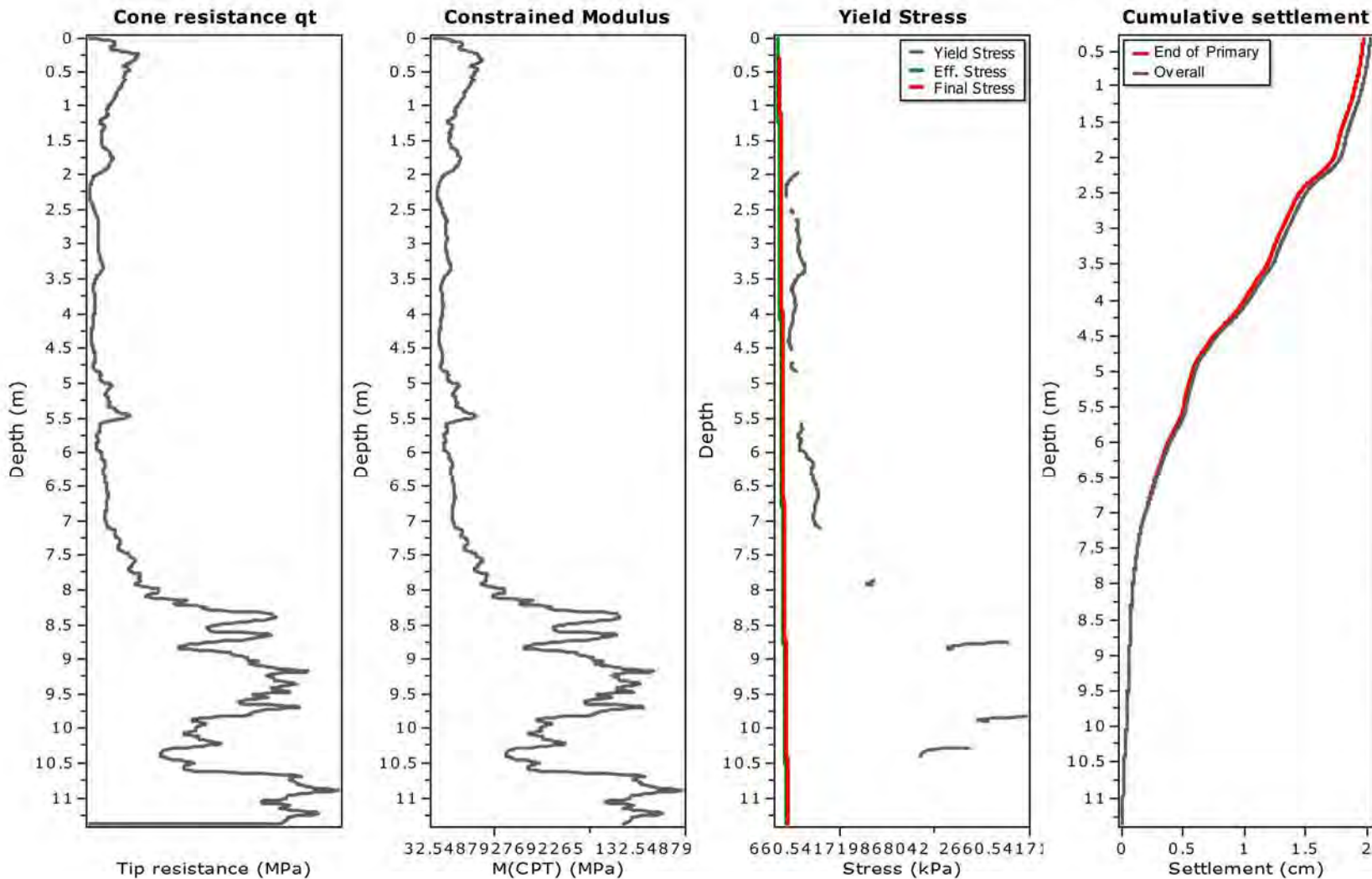
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.30 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

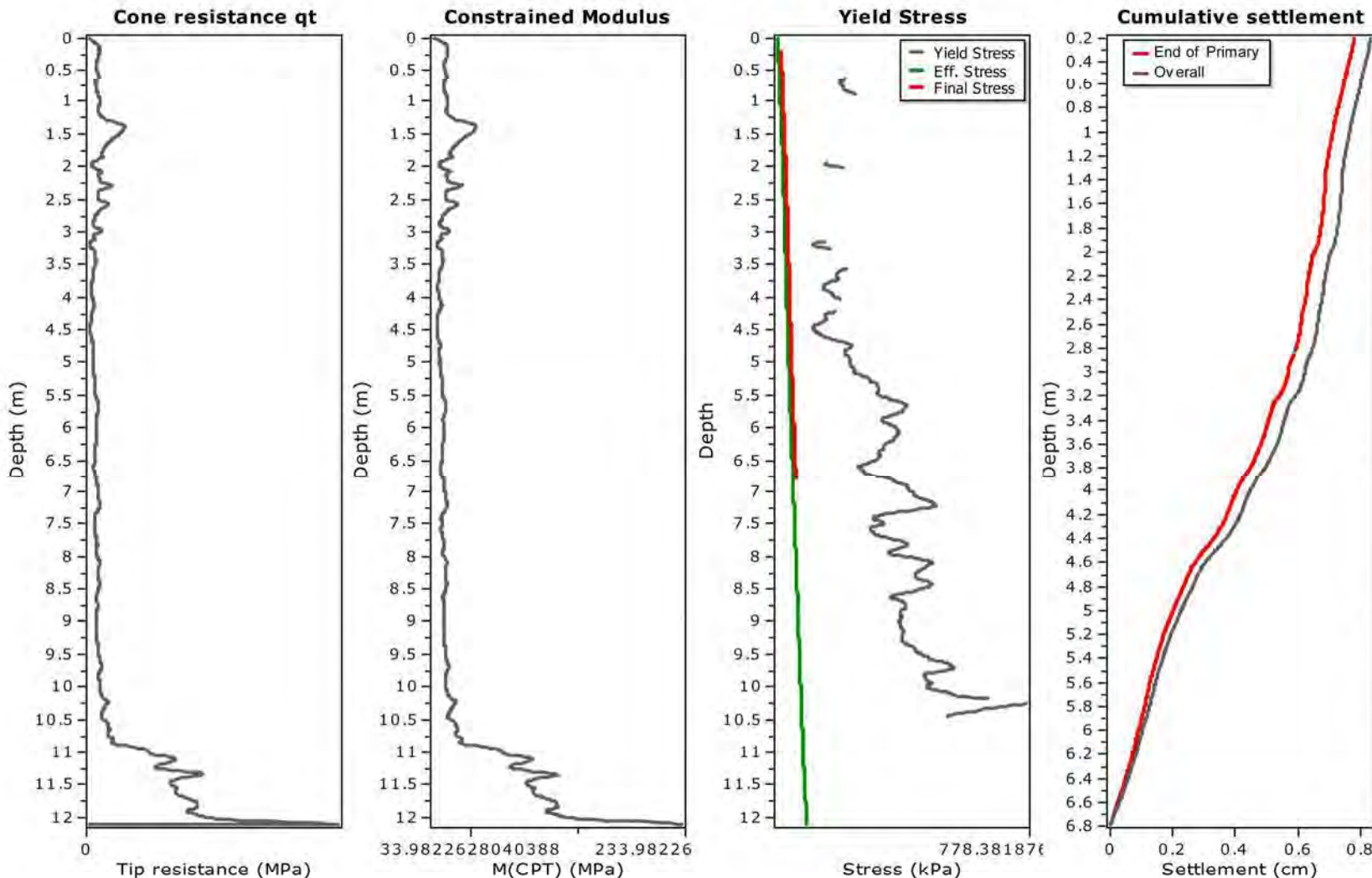
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 9.25 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

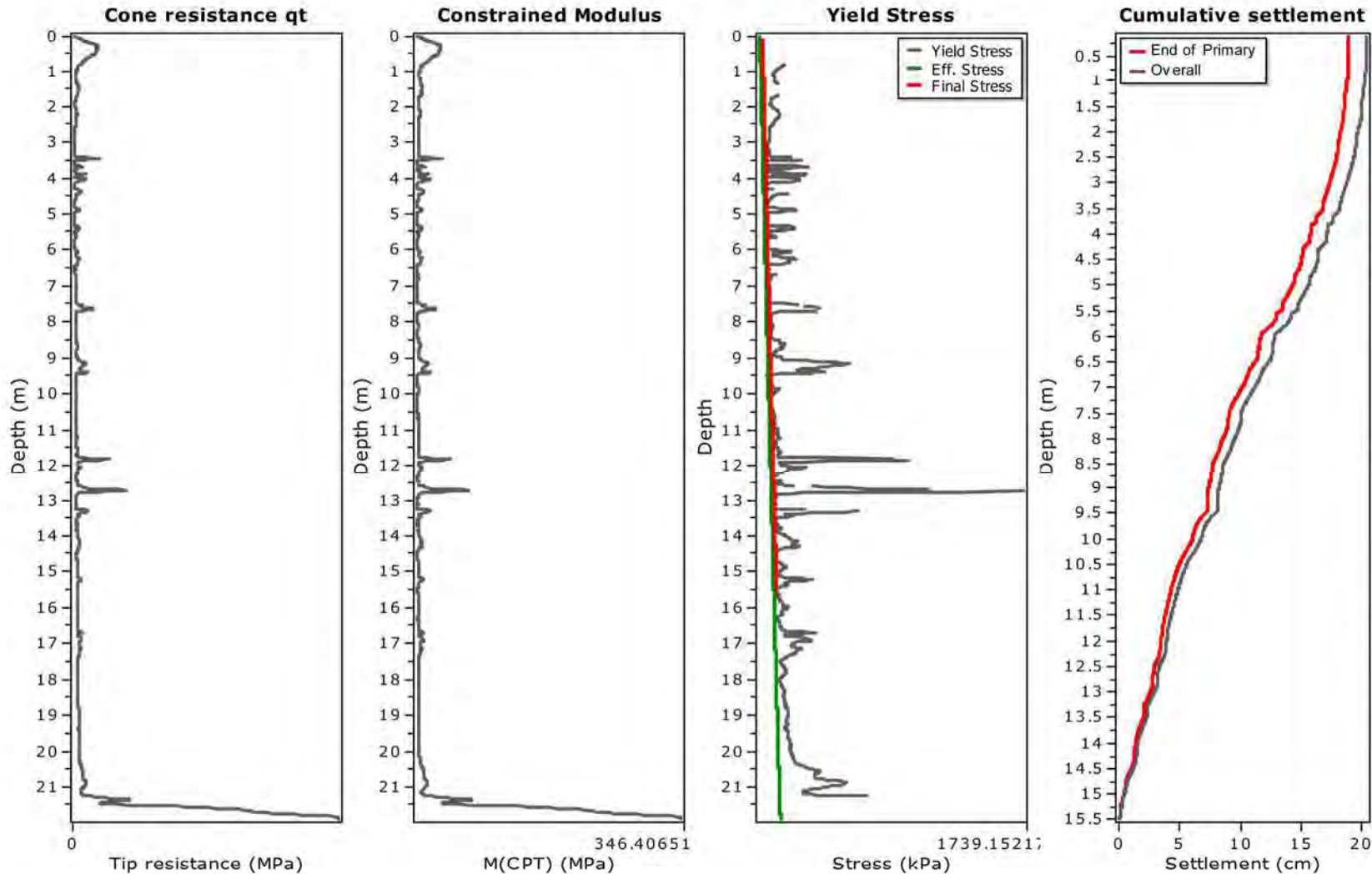
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

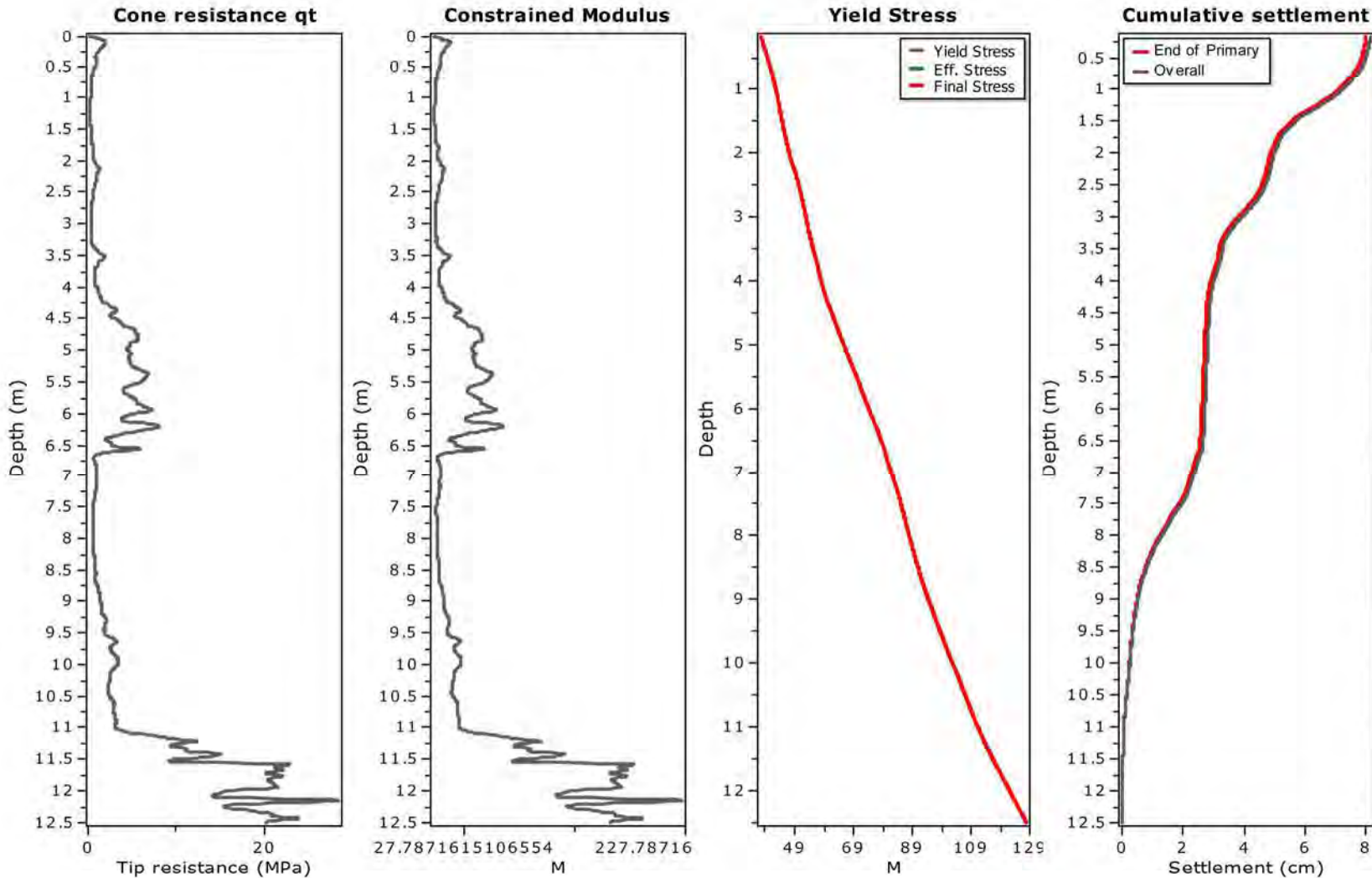
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.15 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

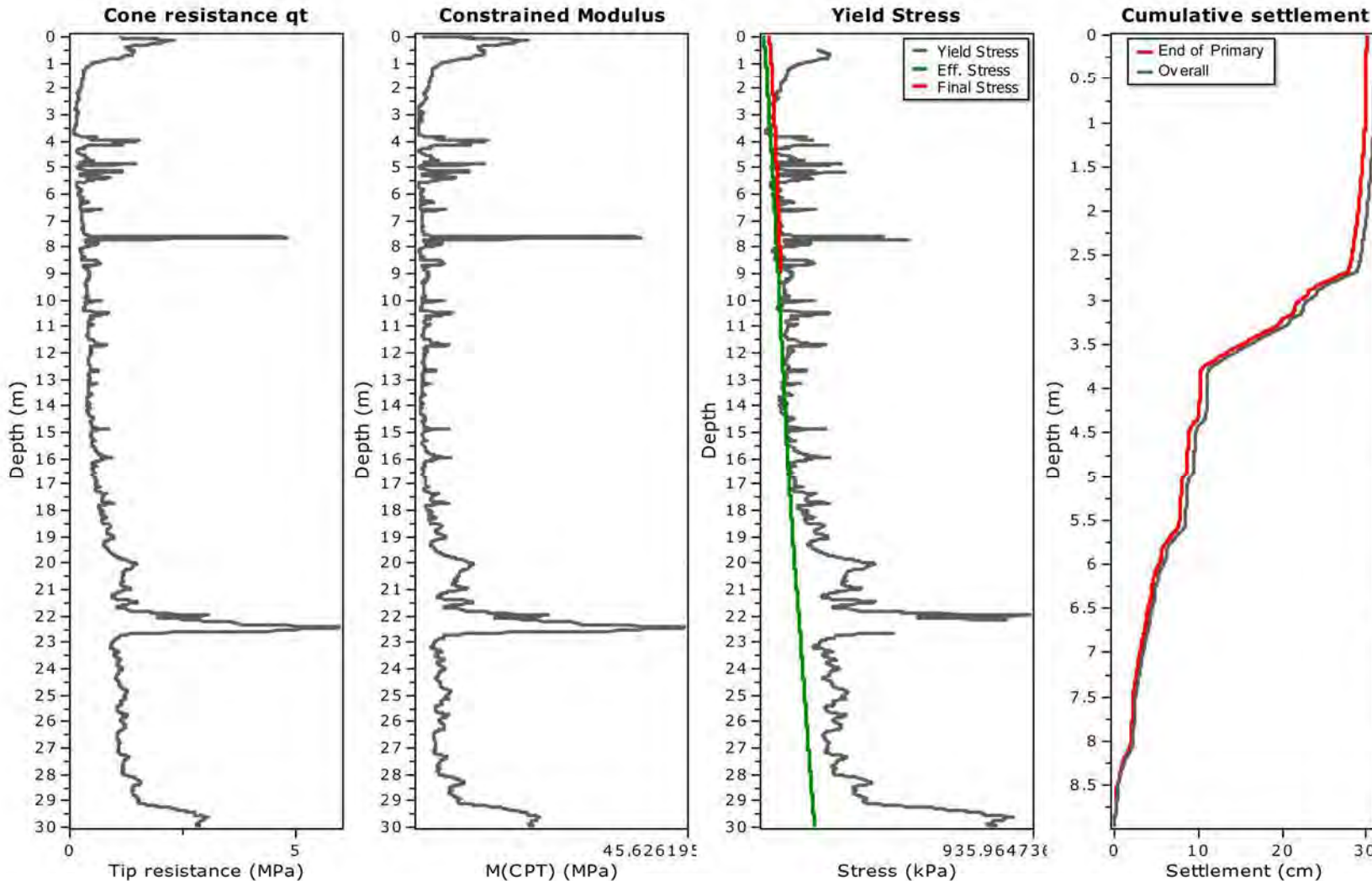


Project: Sunfield Landholding
Location:

CPT: CPT013A

Total depth: 29.93 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

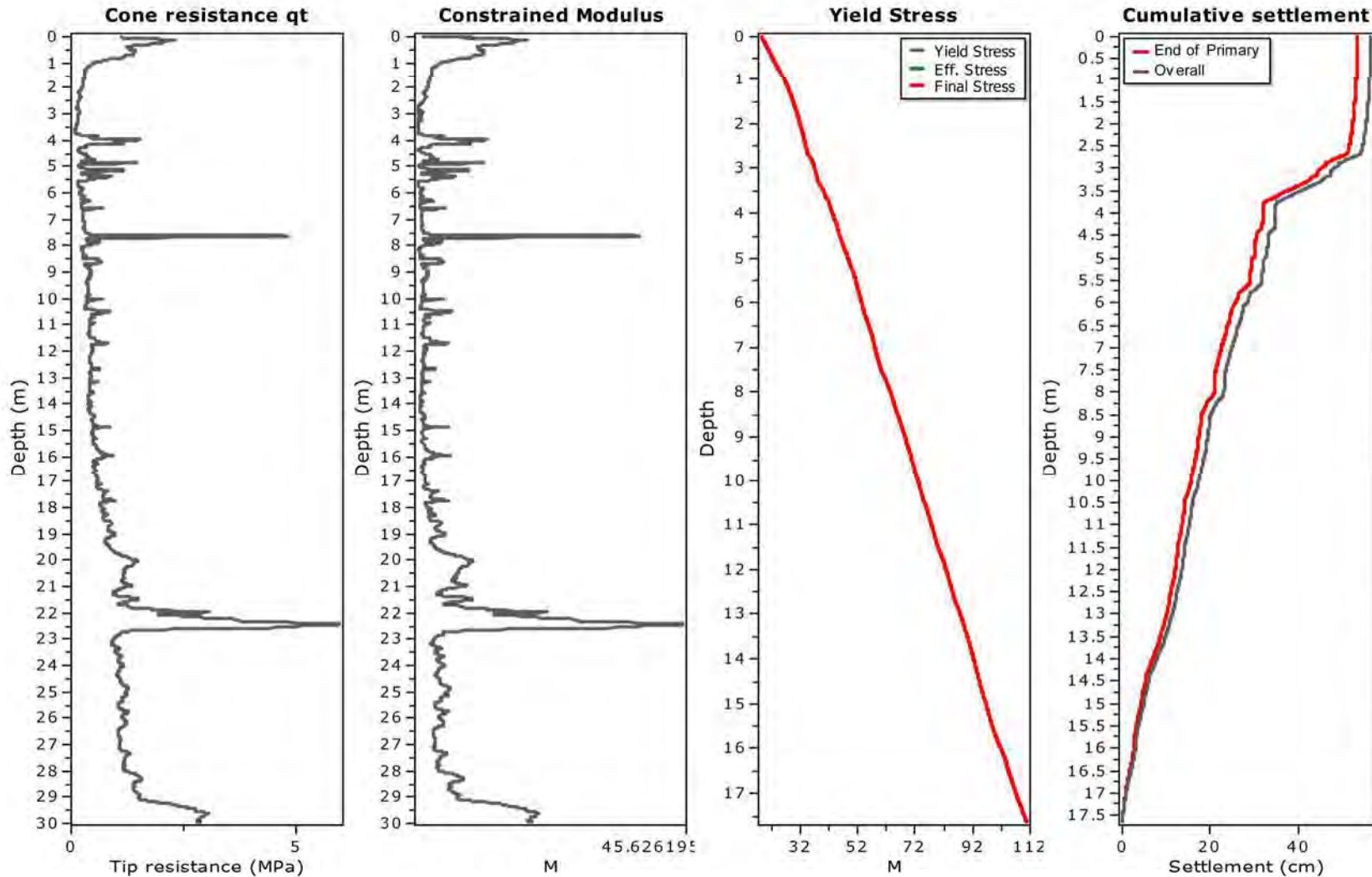
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

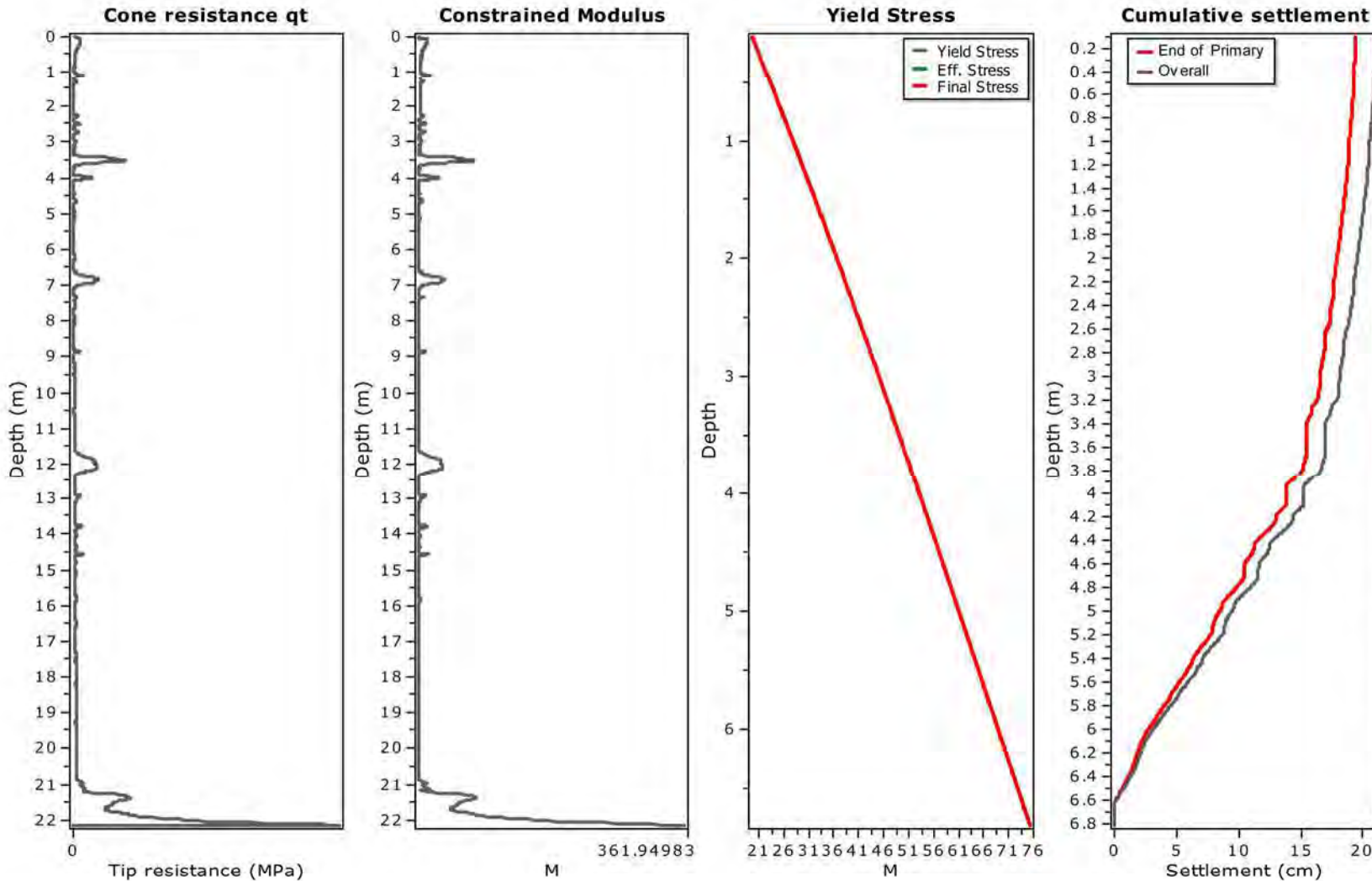
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(1 - e^{-\frac{t}{t_p}} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

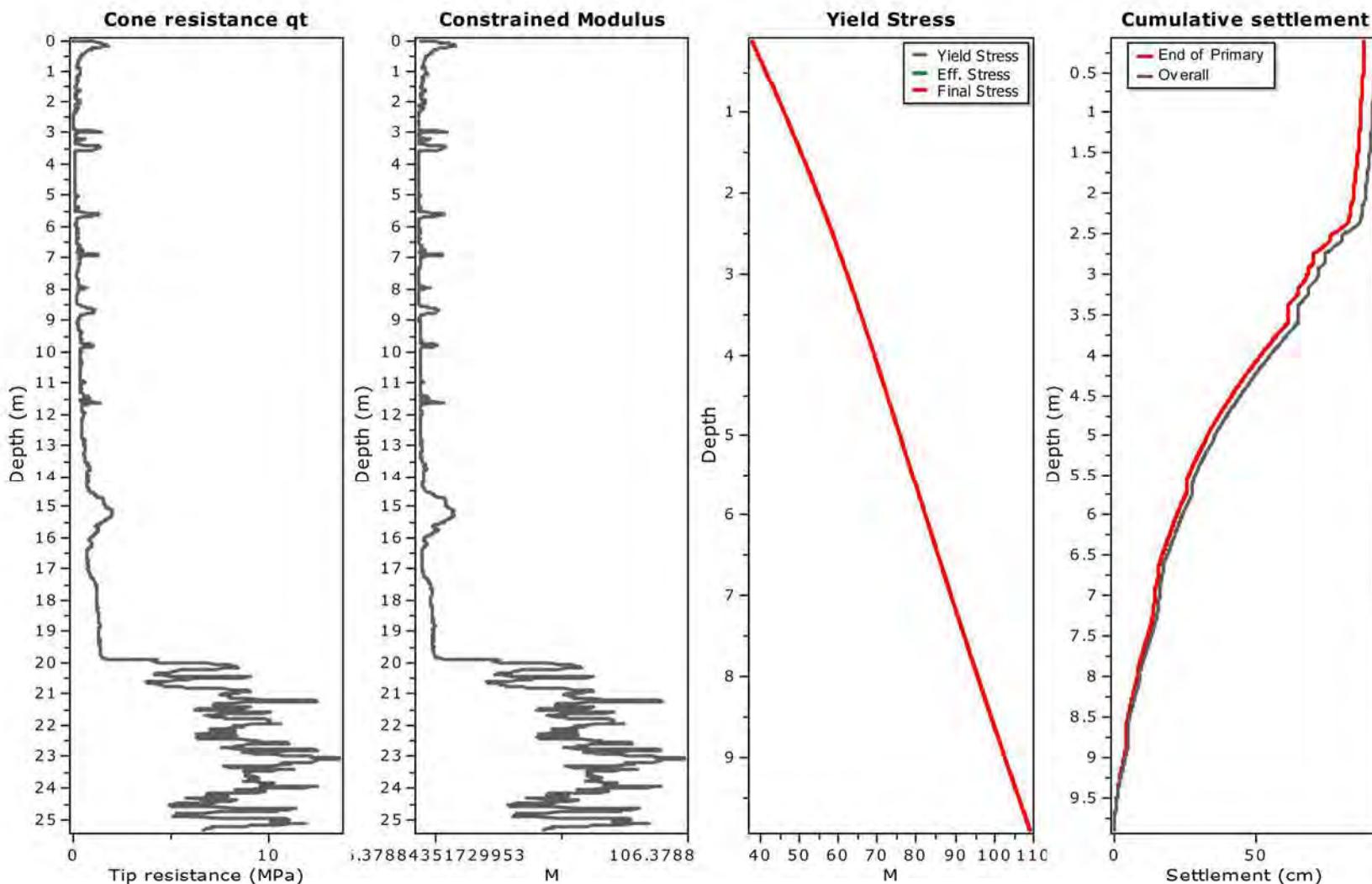
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

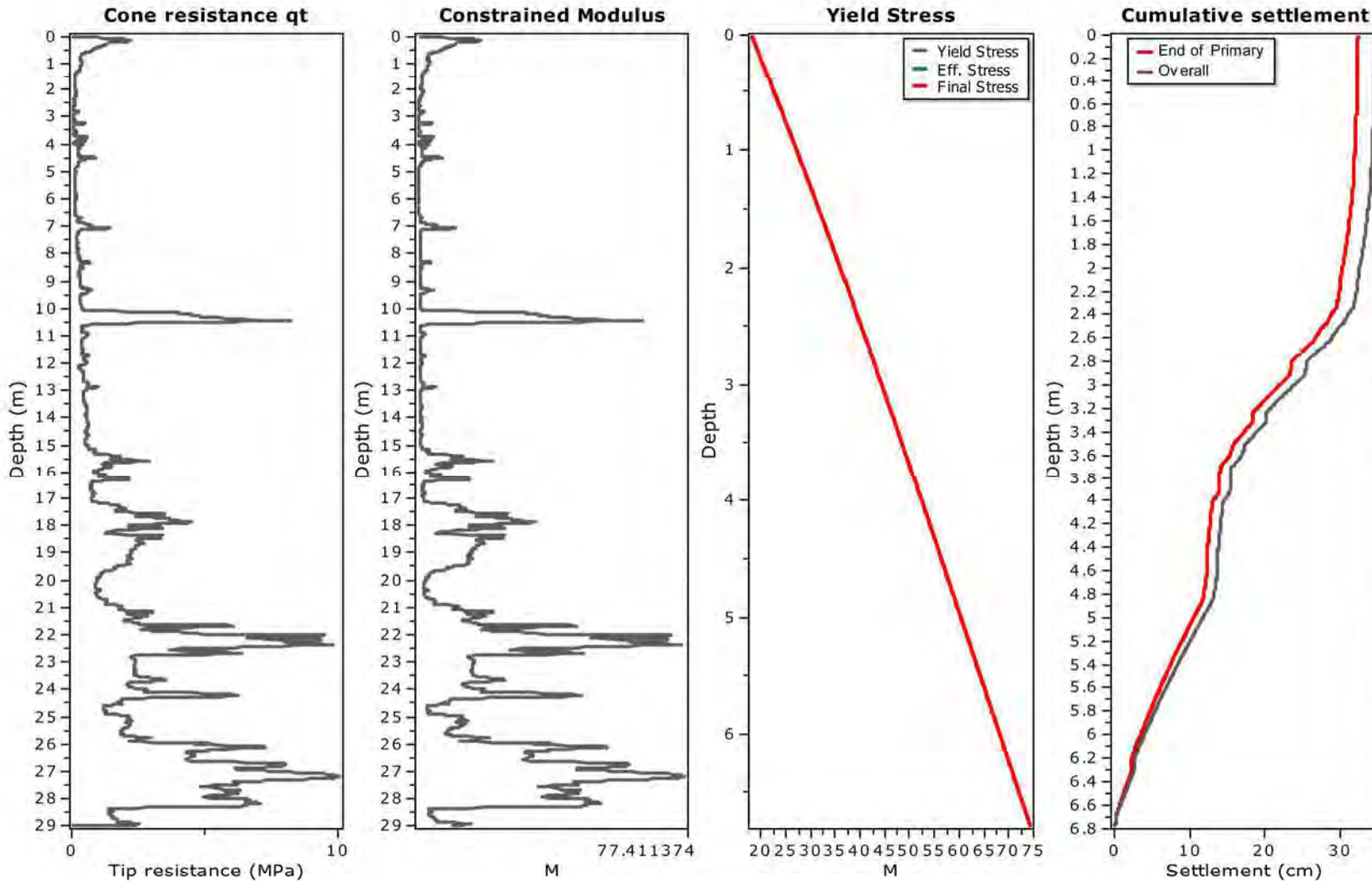
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

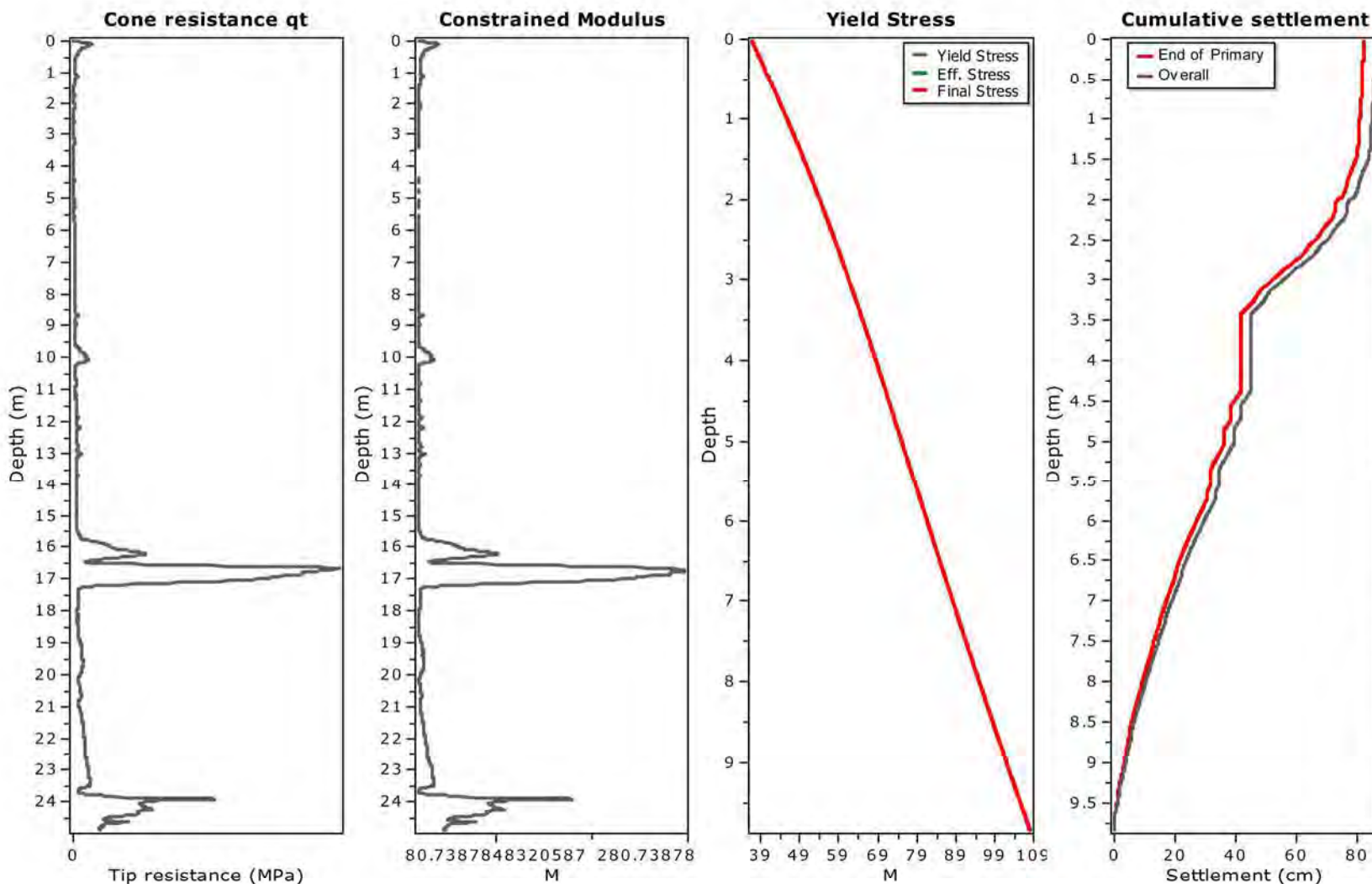
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

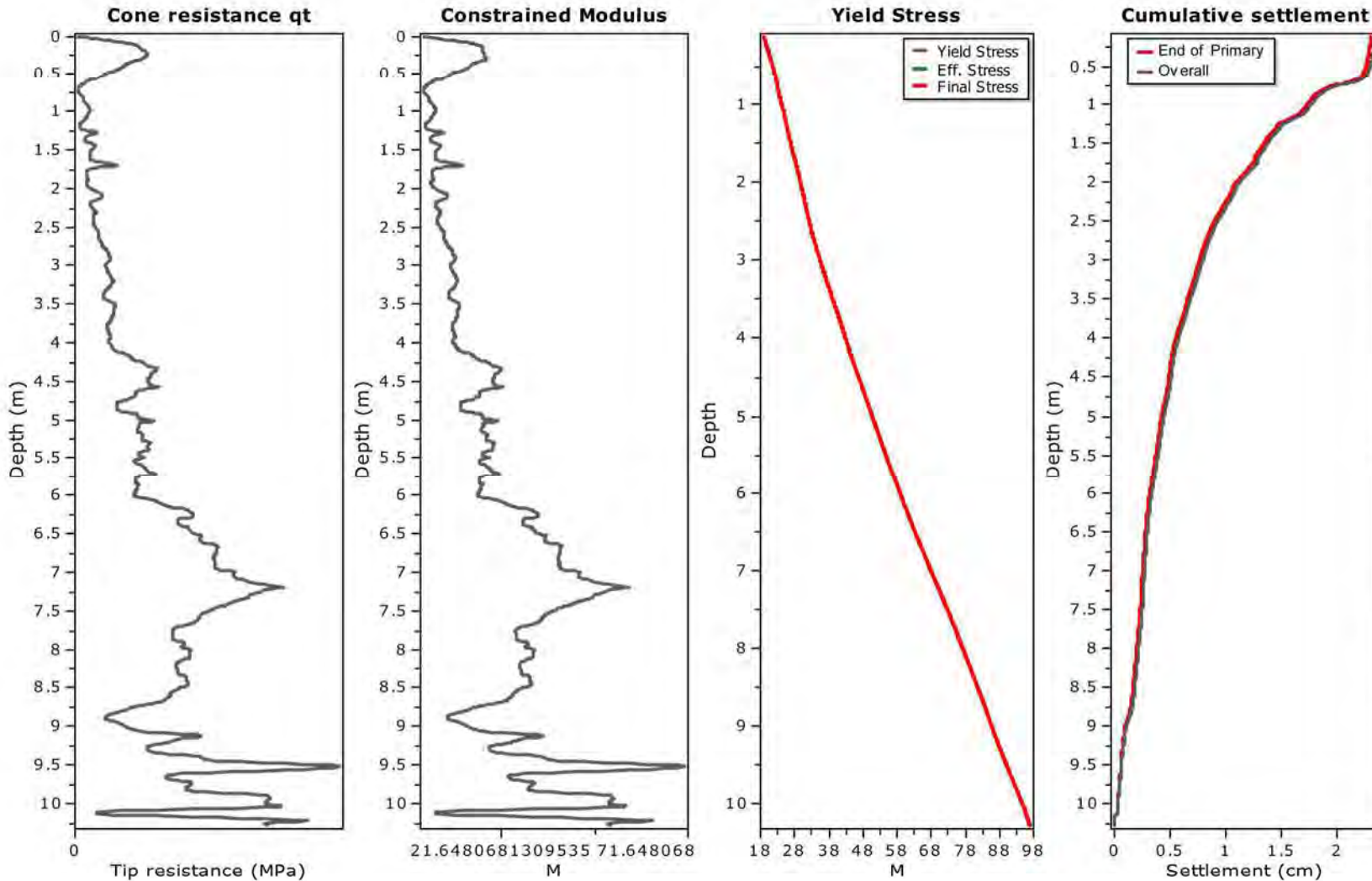
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

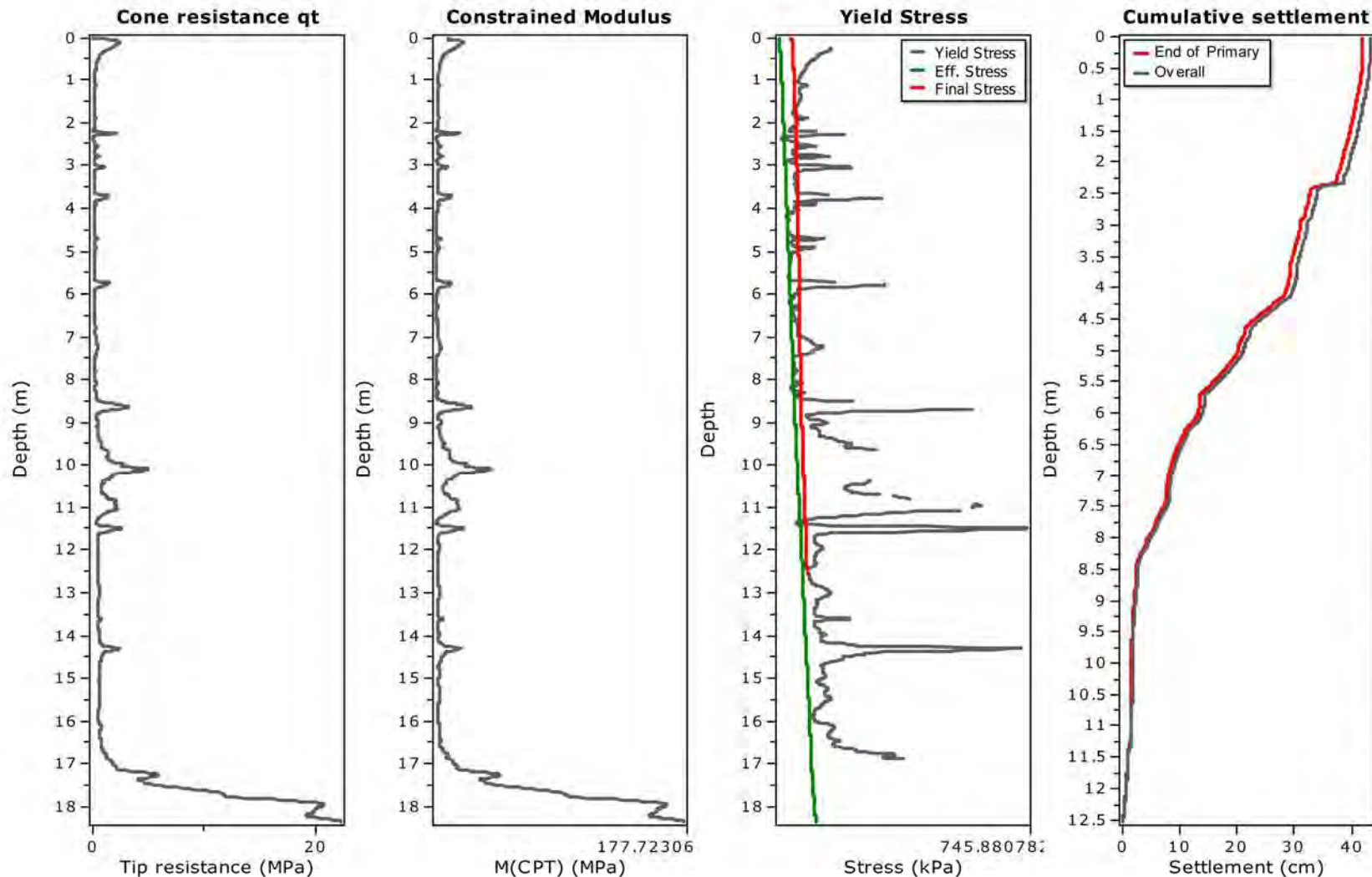
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

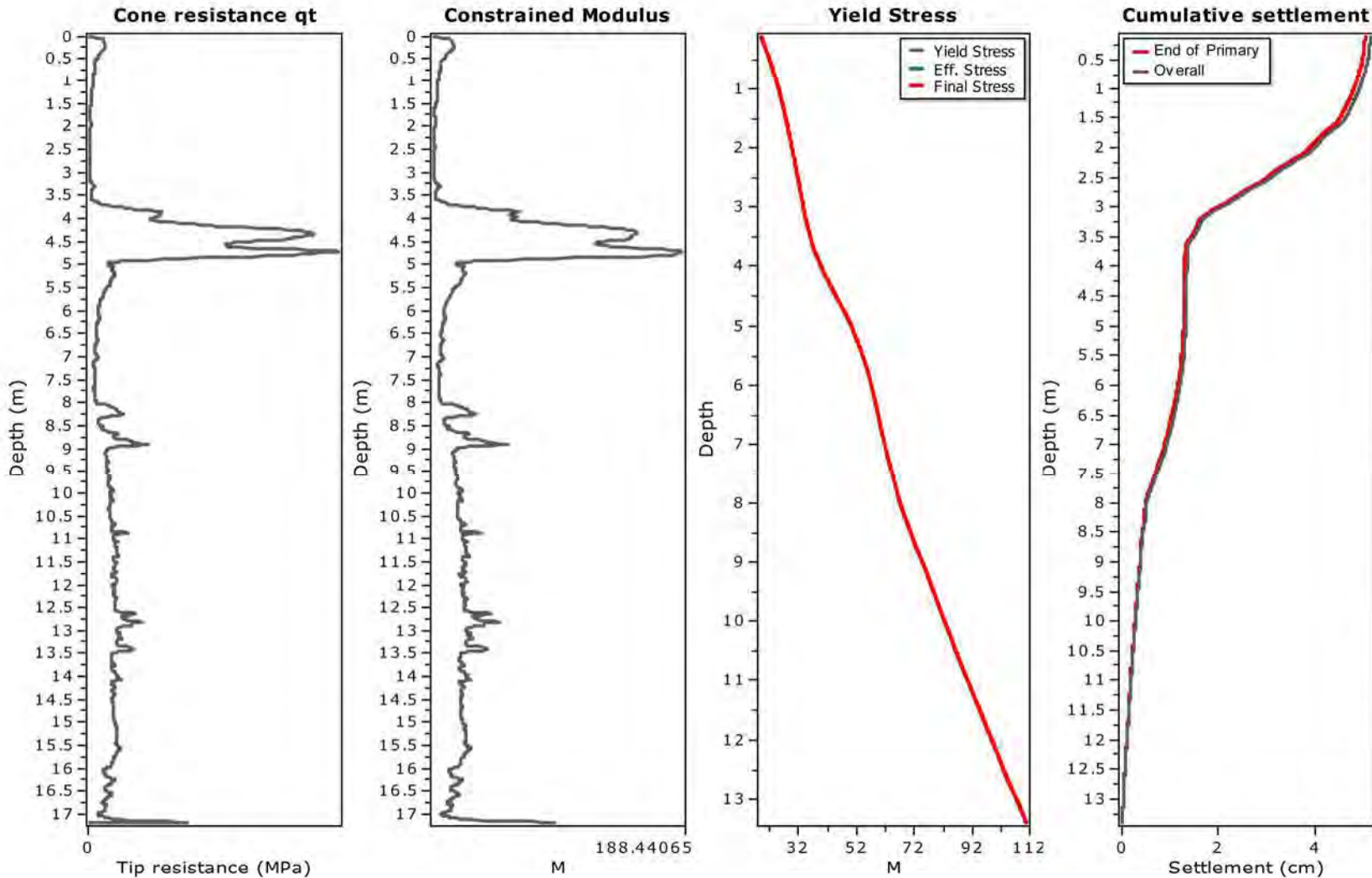
where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT110

Total depth: 12.04 m, Date: 31/03/2025

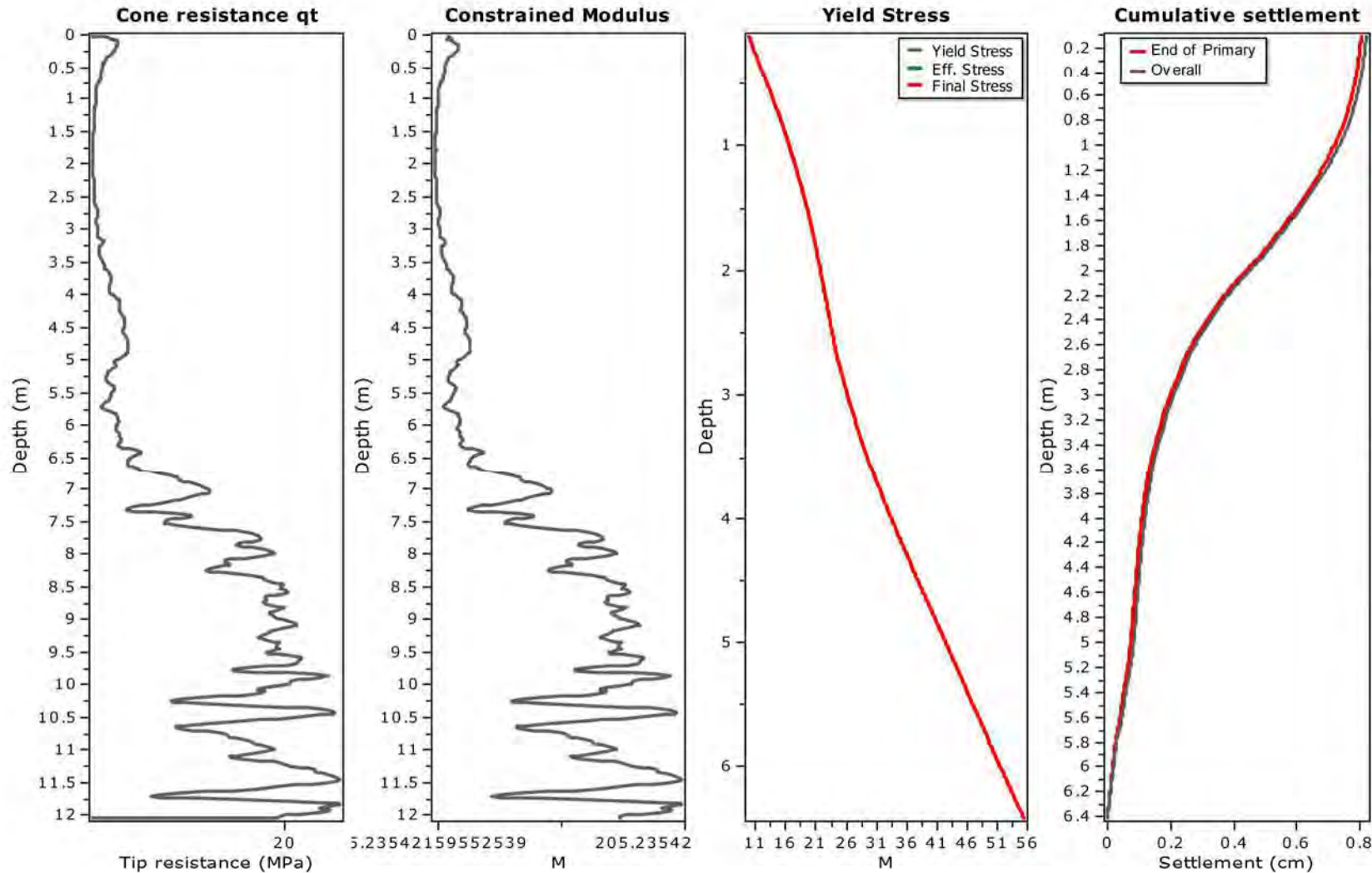
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 9.25 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

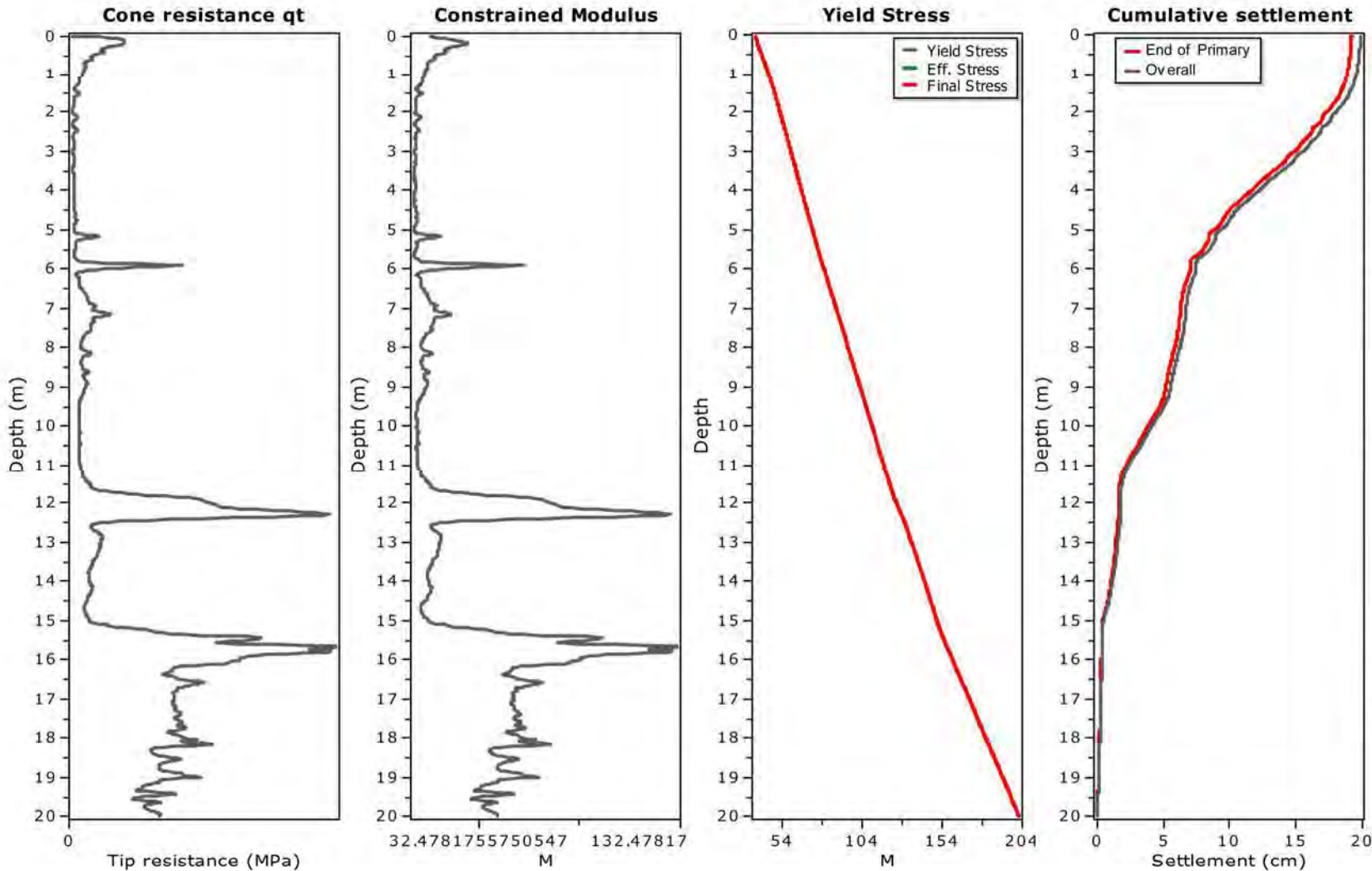
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT118

Total depth: 6.56 m, Date: 31/03/2025

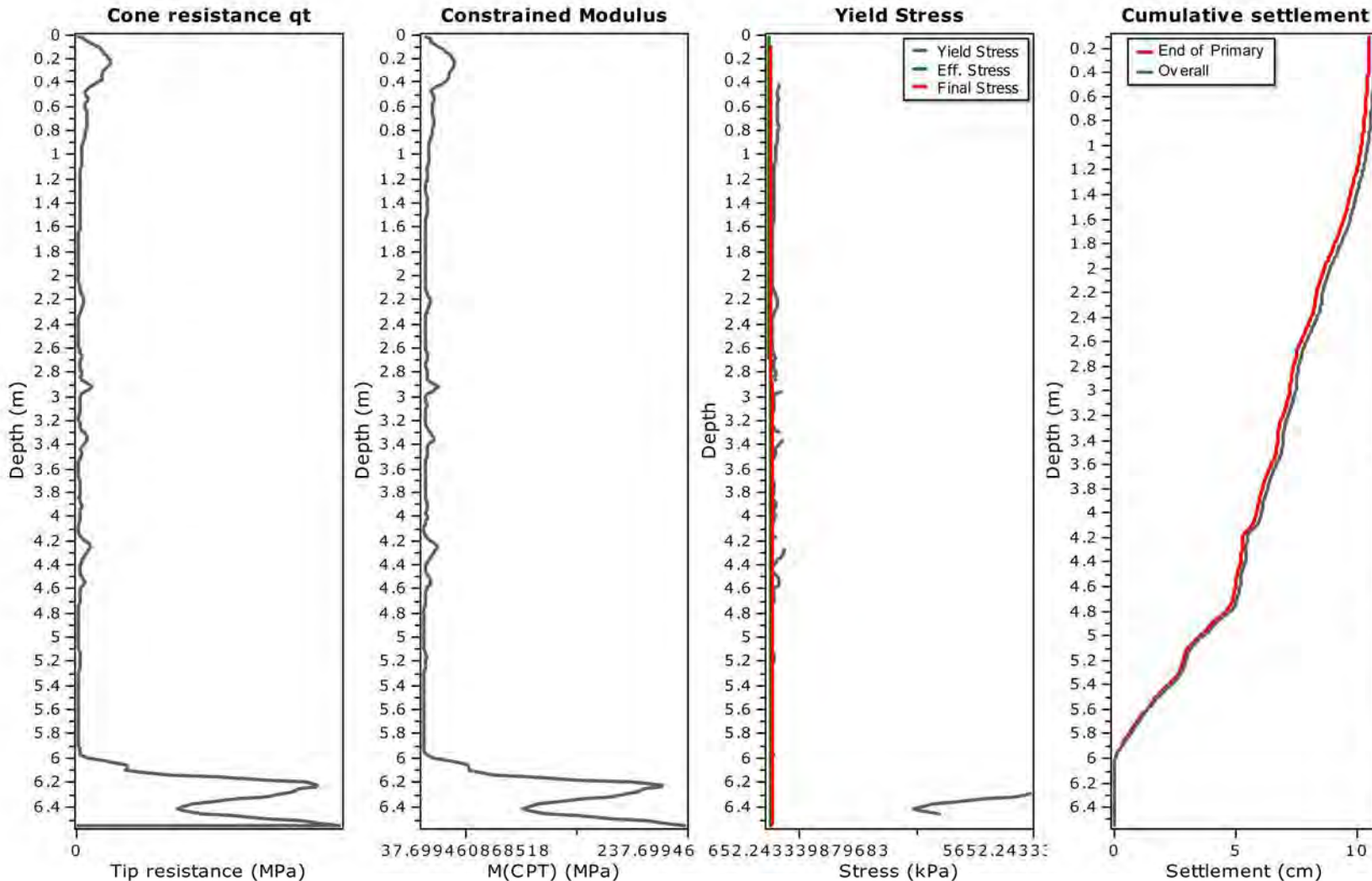
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

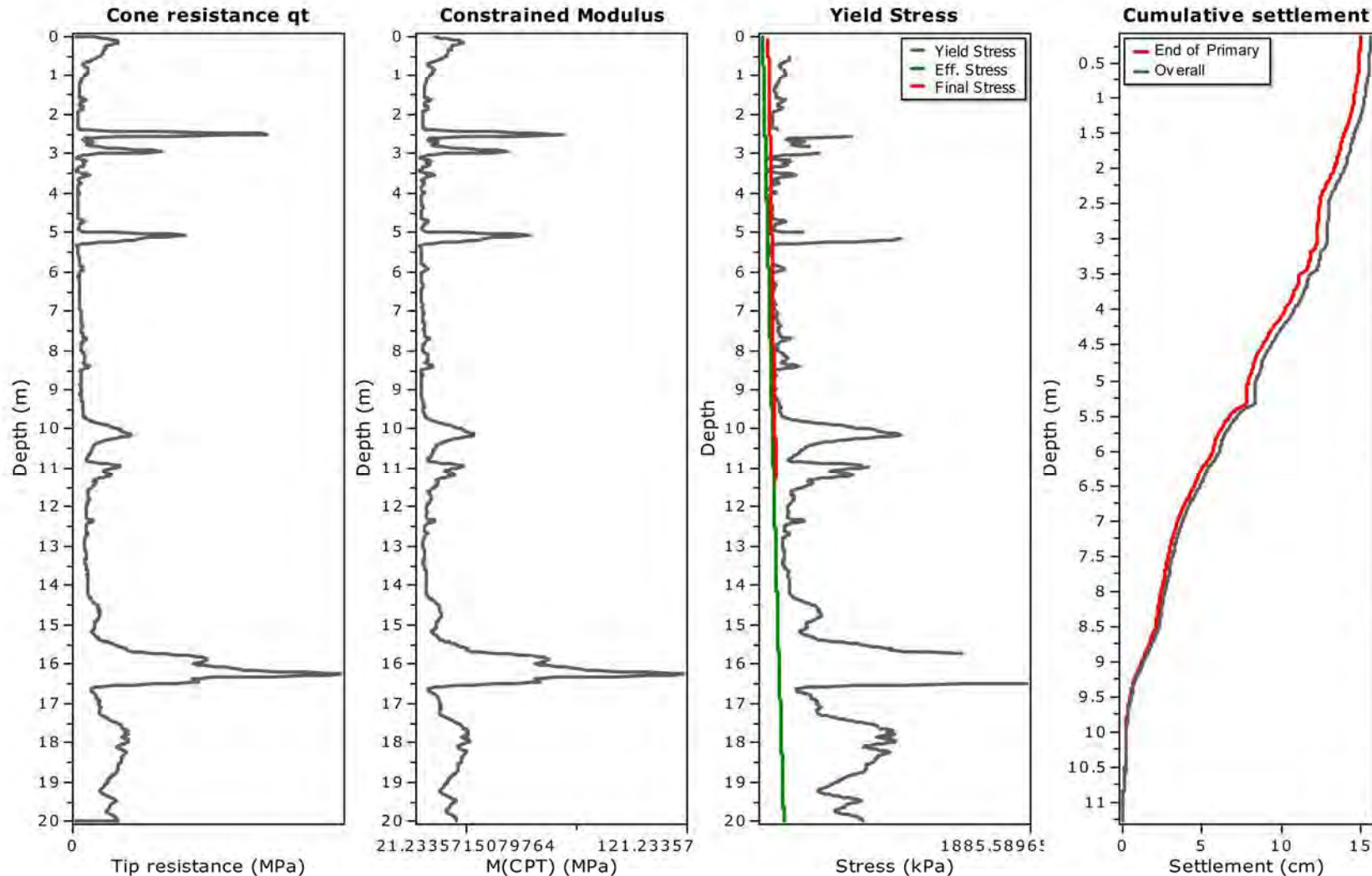


Project: Sunfield Landholding
Location:

CPT: CPT119

Total depth: 19.98 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT120

Total depth: 12.14 m, Date: 31/03/2025

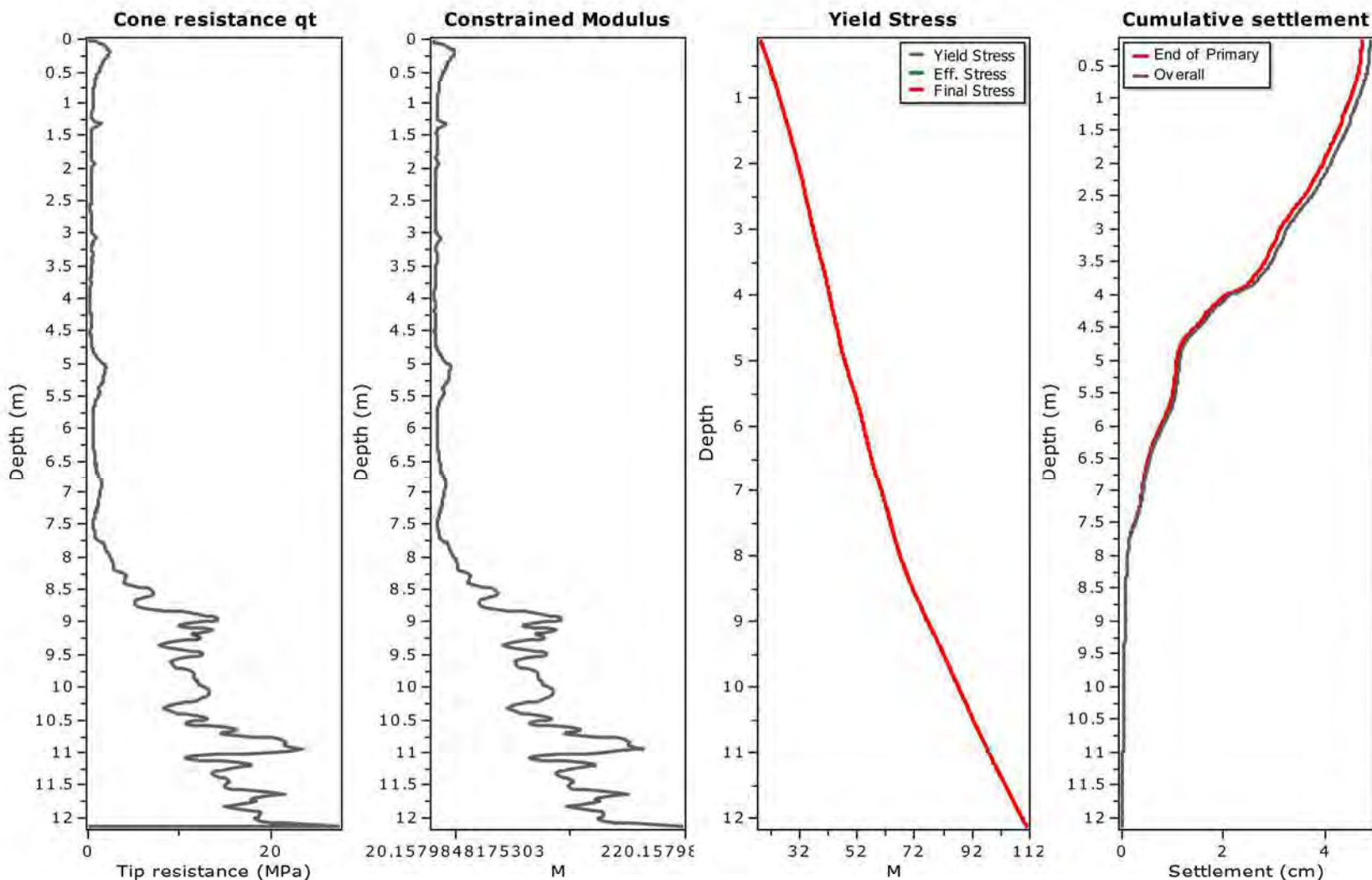
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

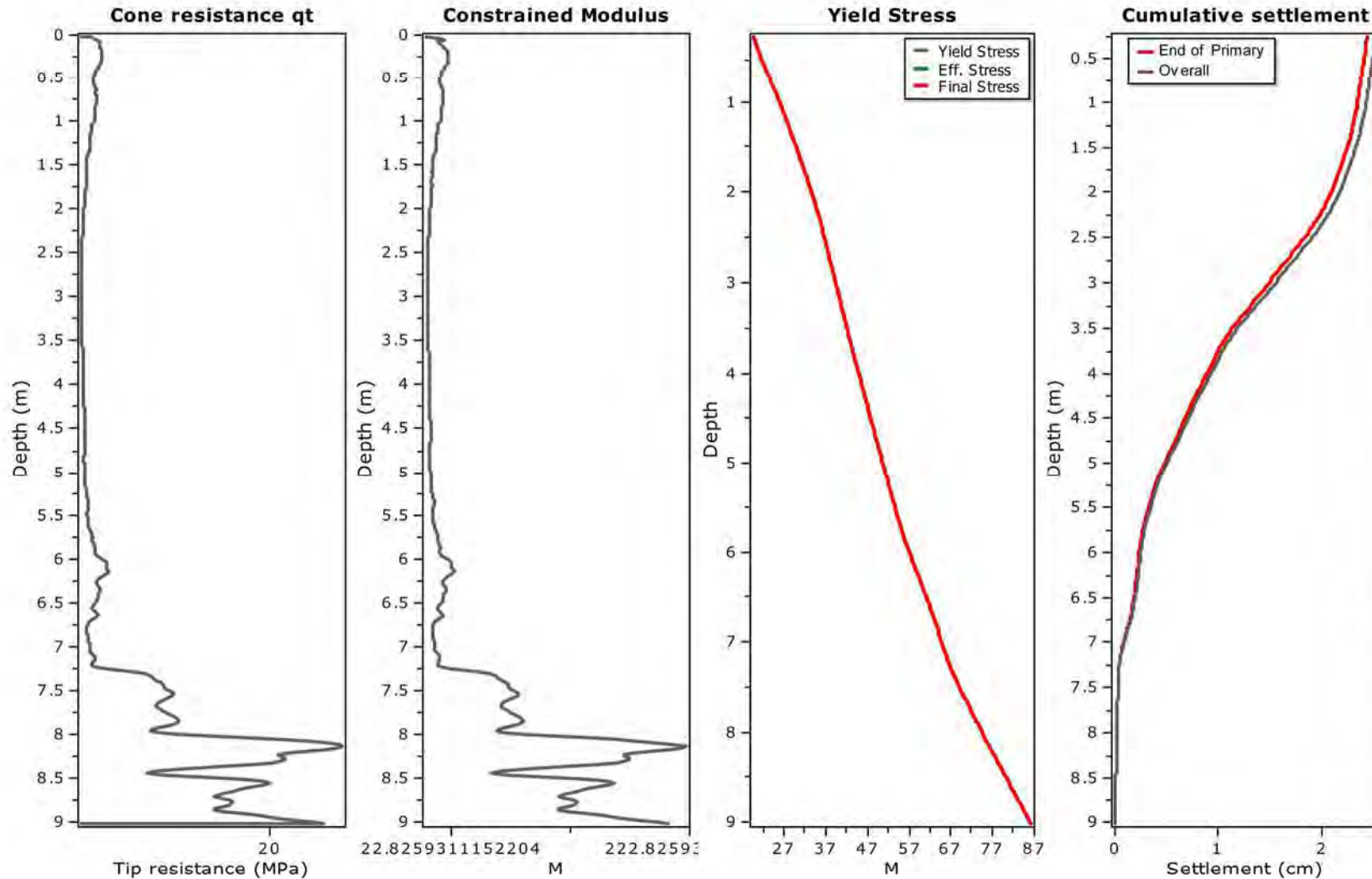
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.25 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

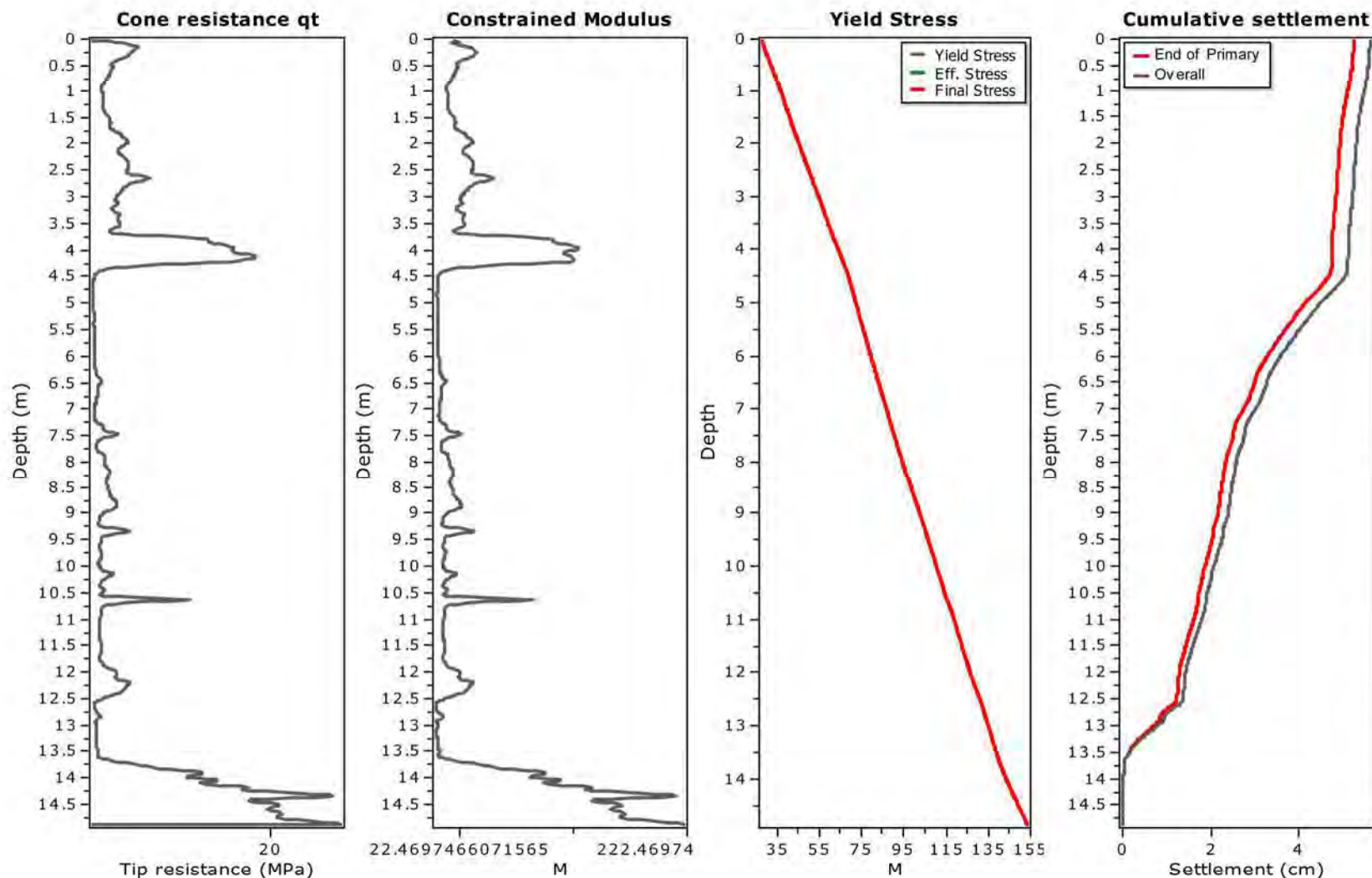
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(1 - e^{-\frac{t}{t_p}} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 27.75 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

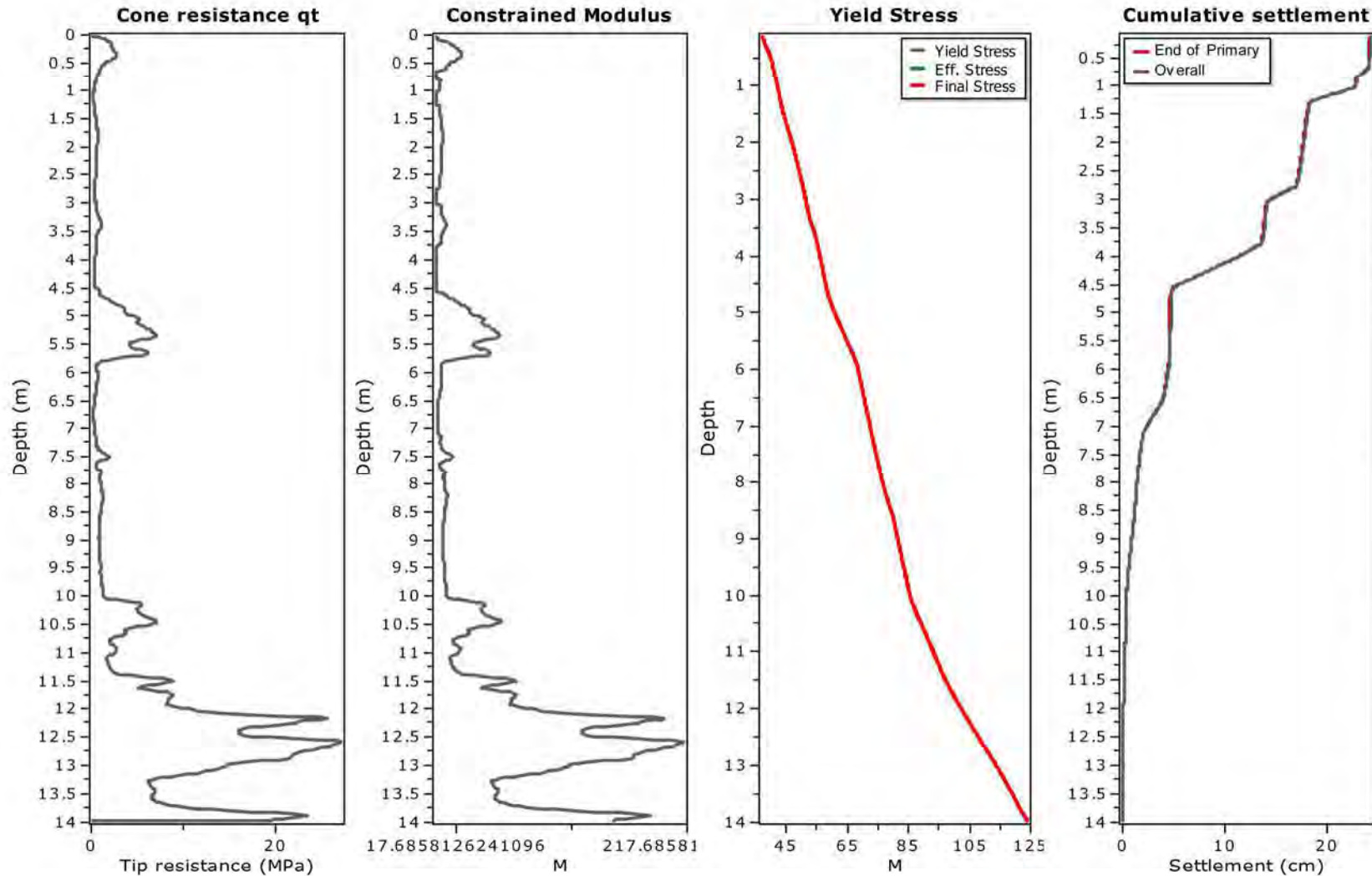
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(1 - e^{-\frac{t}{t_p}} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT124

Total depth: 17.68 m, Date: 31/03/2025

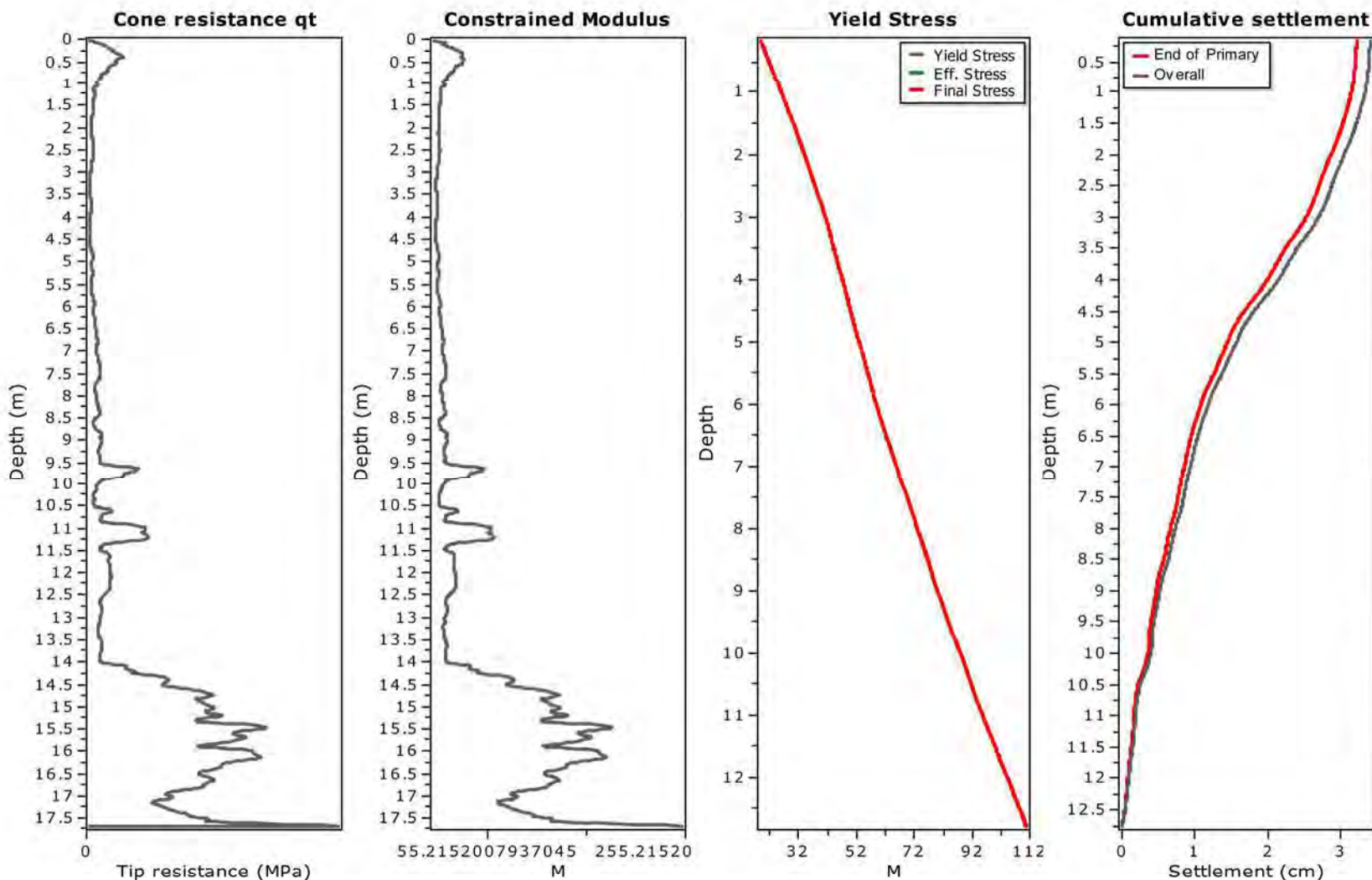
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.15 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

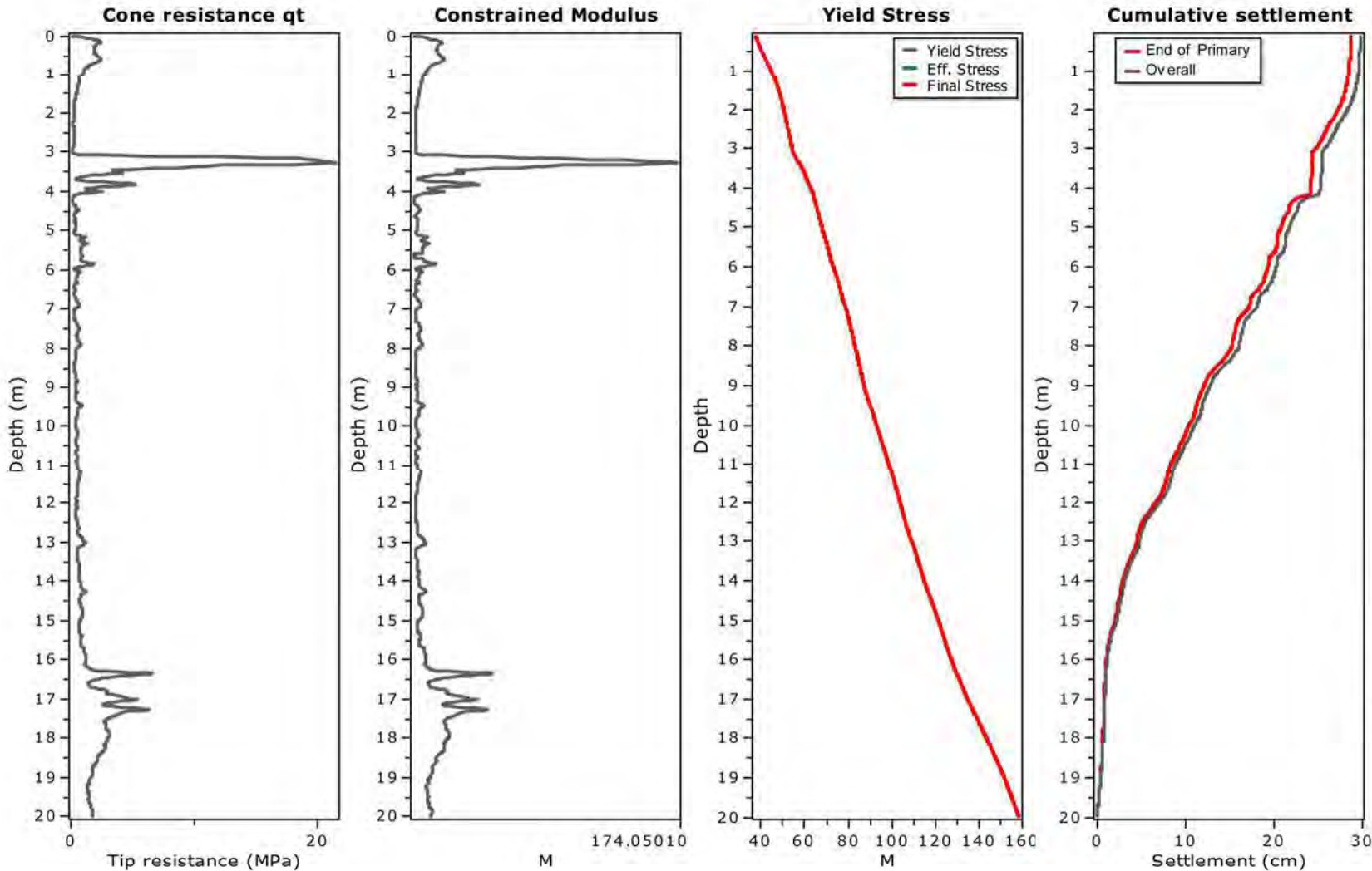
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

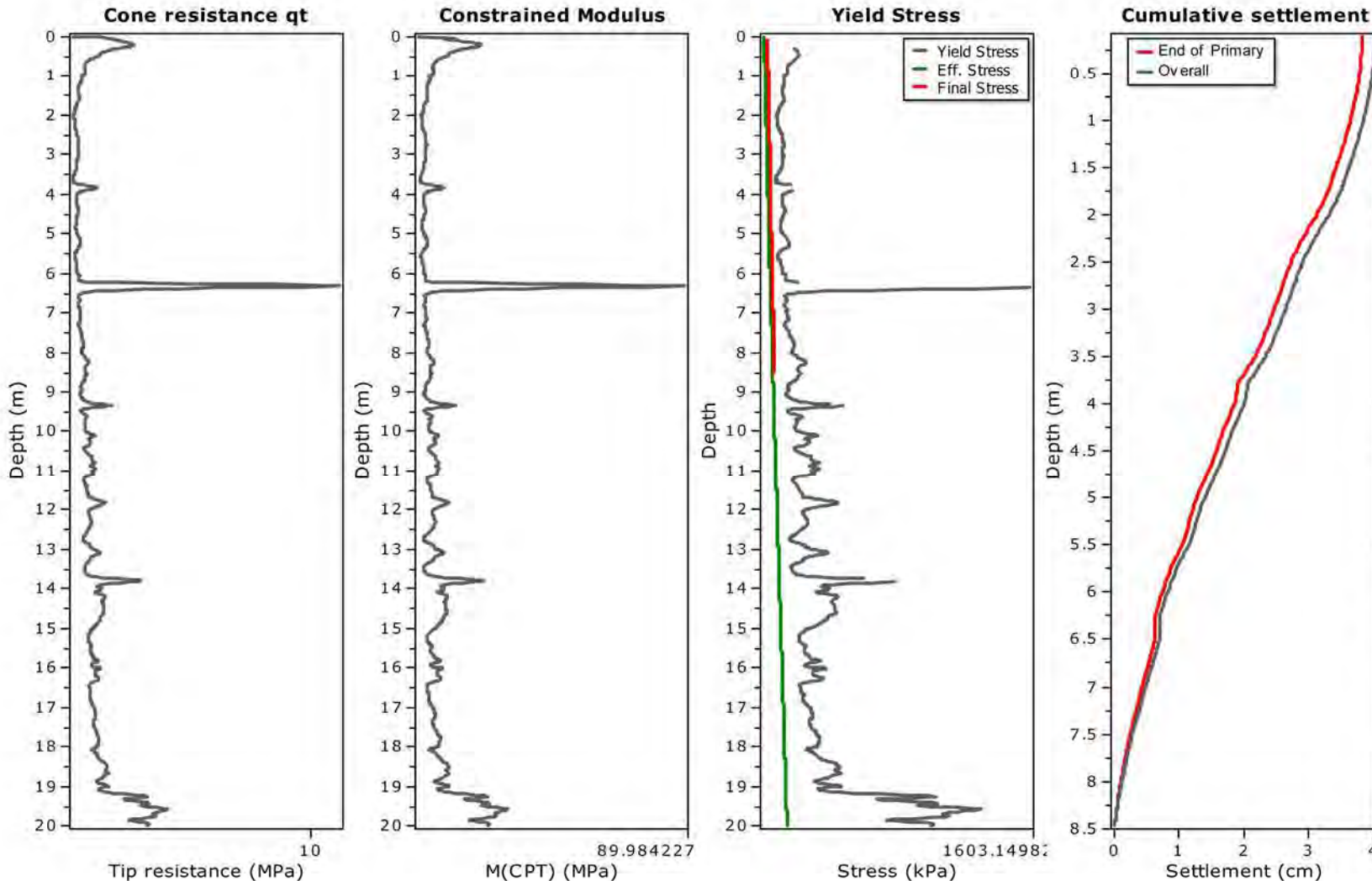
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular

Footing width: 10.00 (m)

L/B: 2.0

Footing pressure: 18.50 (kPa)

Embedment depth: 0.10 (m)

Footing is rigid: No

Remove excavation load: No

Apply 20% rule: Yes

Calculate secondary settlements: Yes

Time period for primary consolidation: 6 months

Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

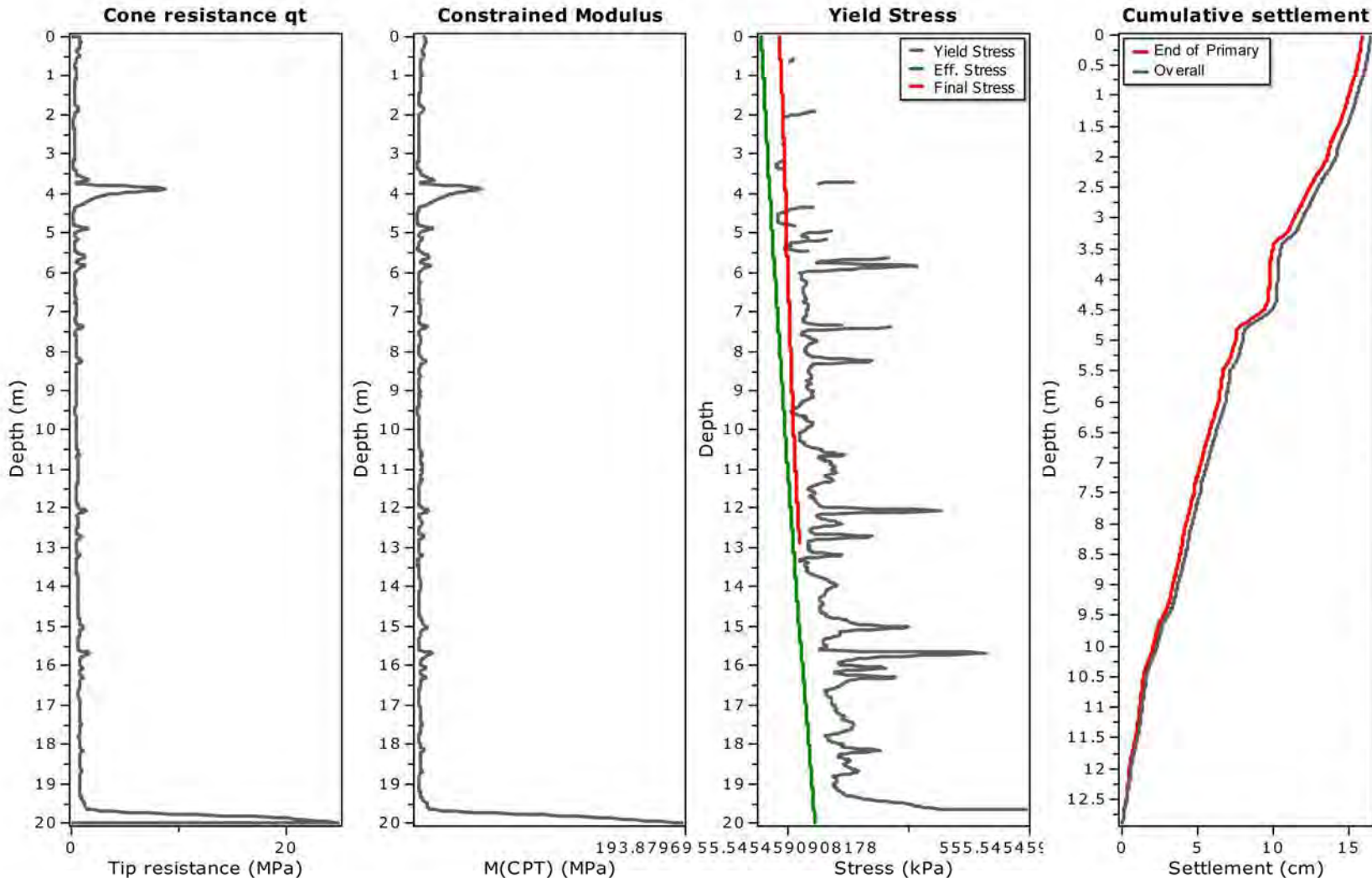
$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding
Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

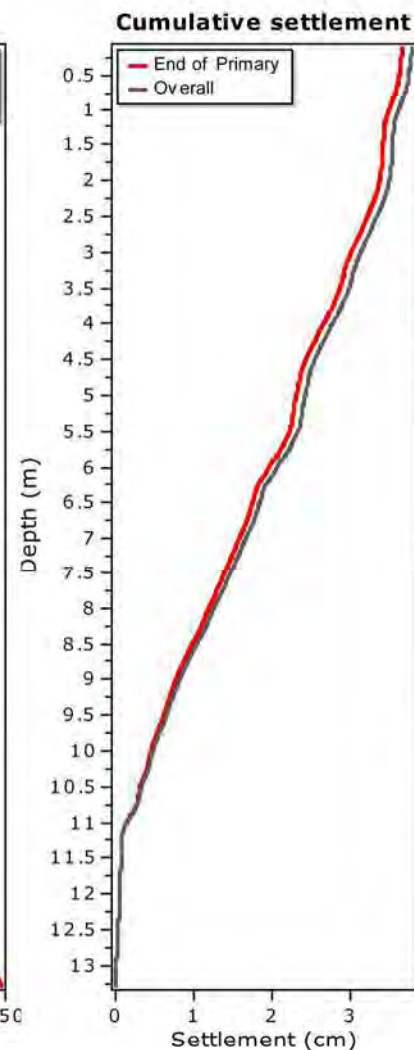
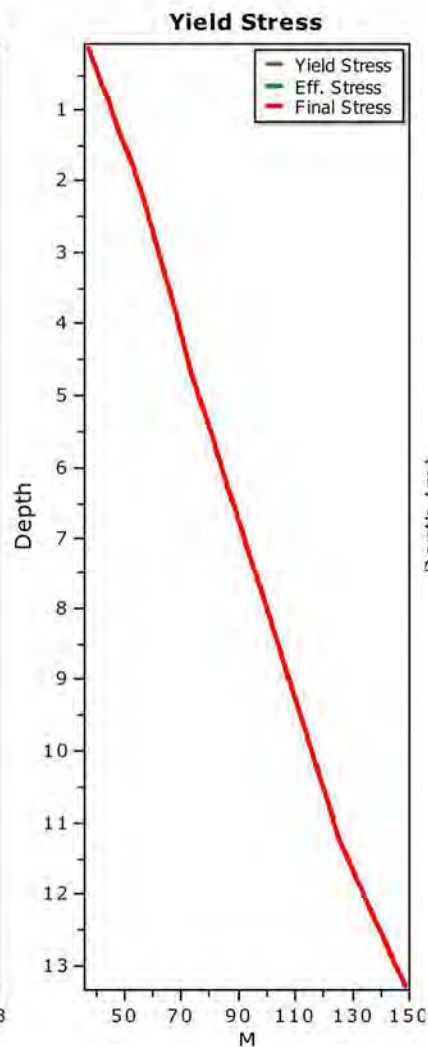
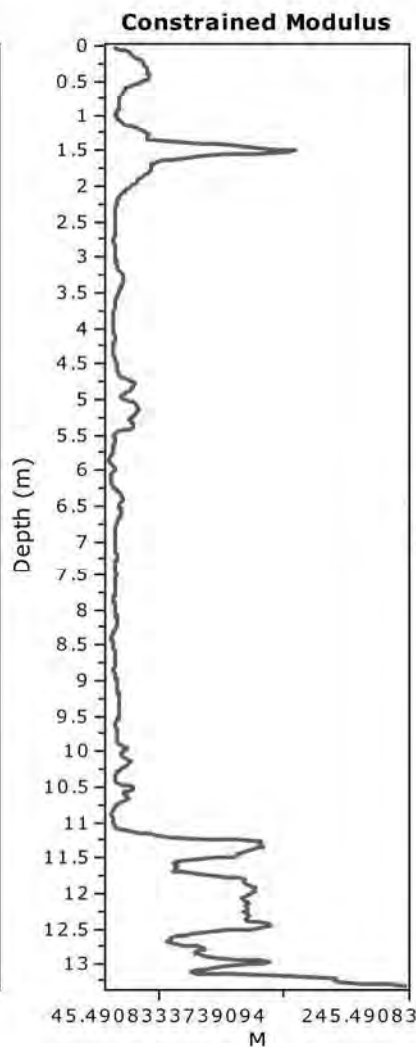
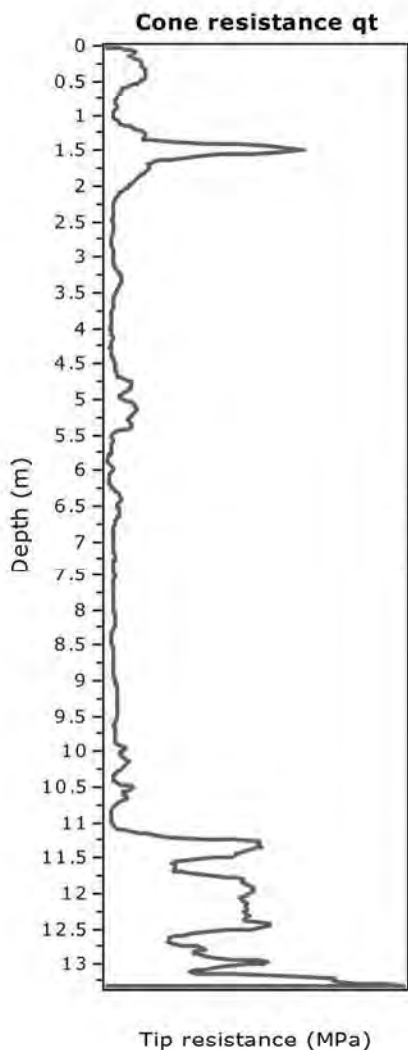
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \sim \lambda$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

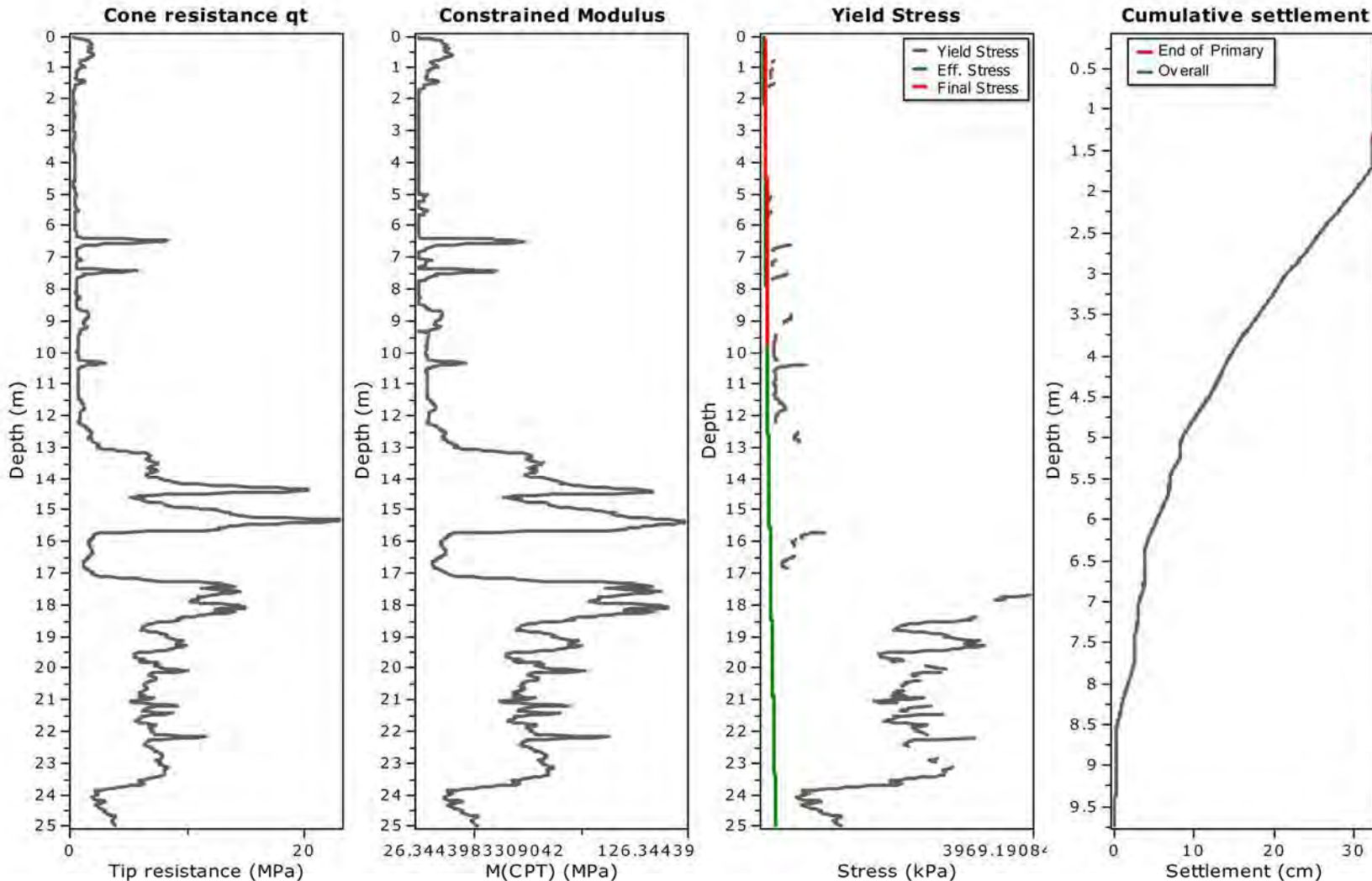
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(1 - e^{-\frac{t}{t_p}} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

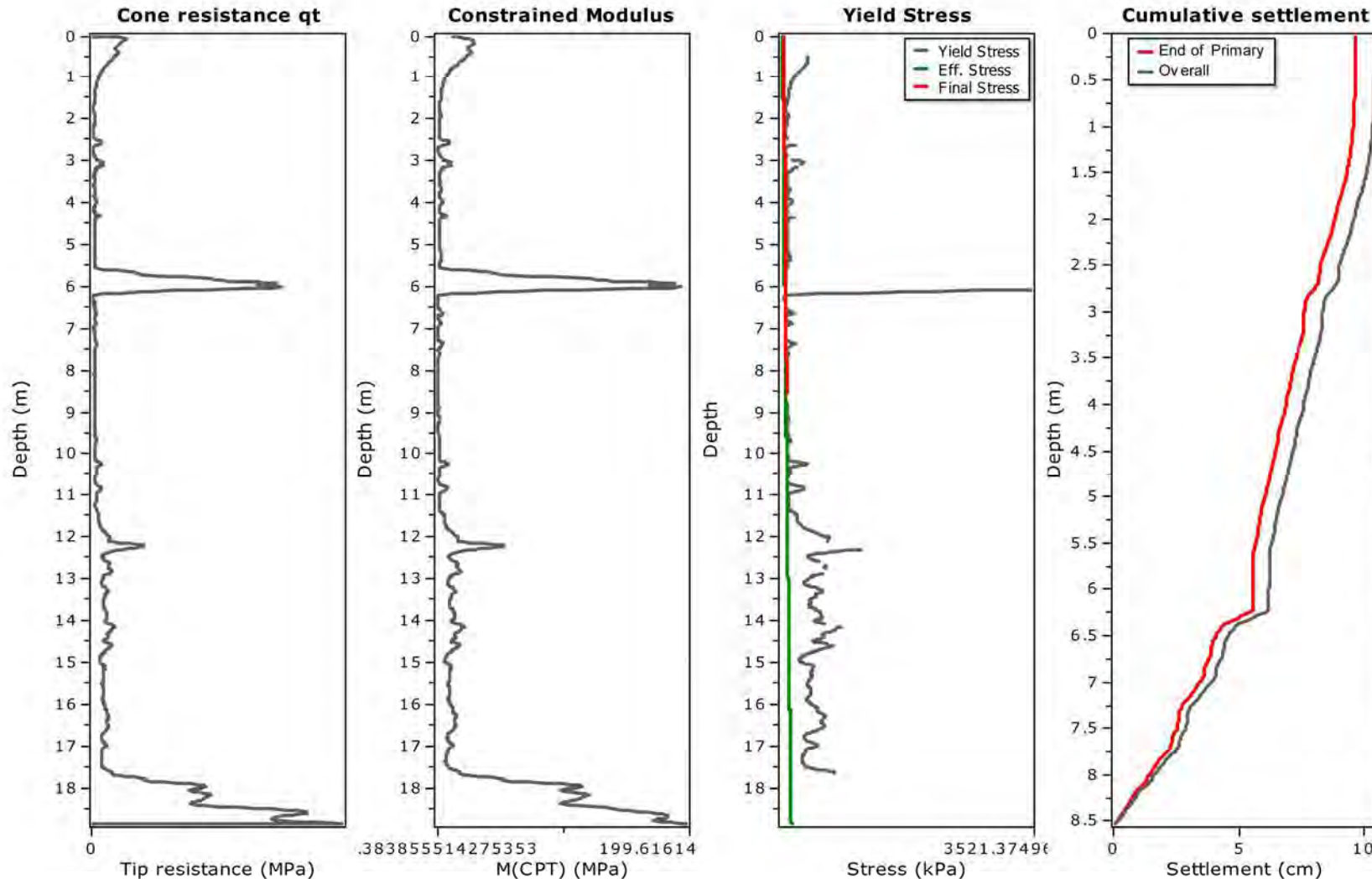
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

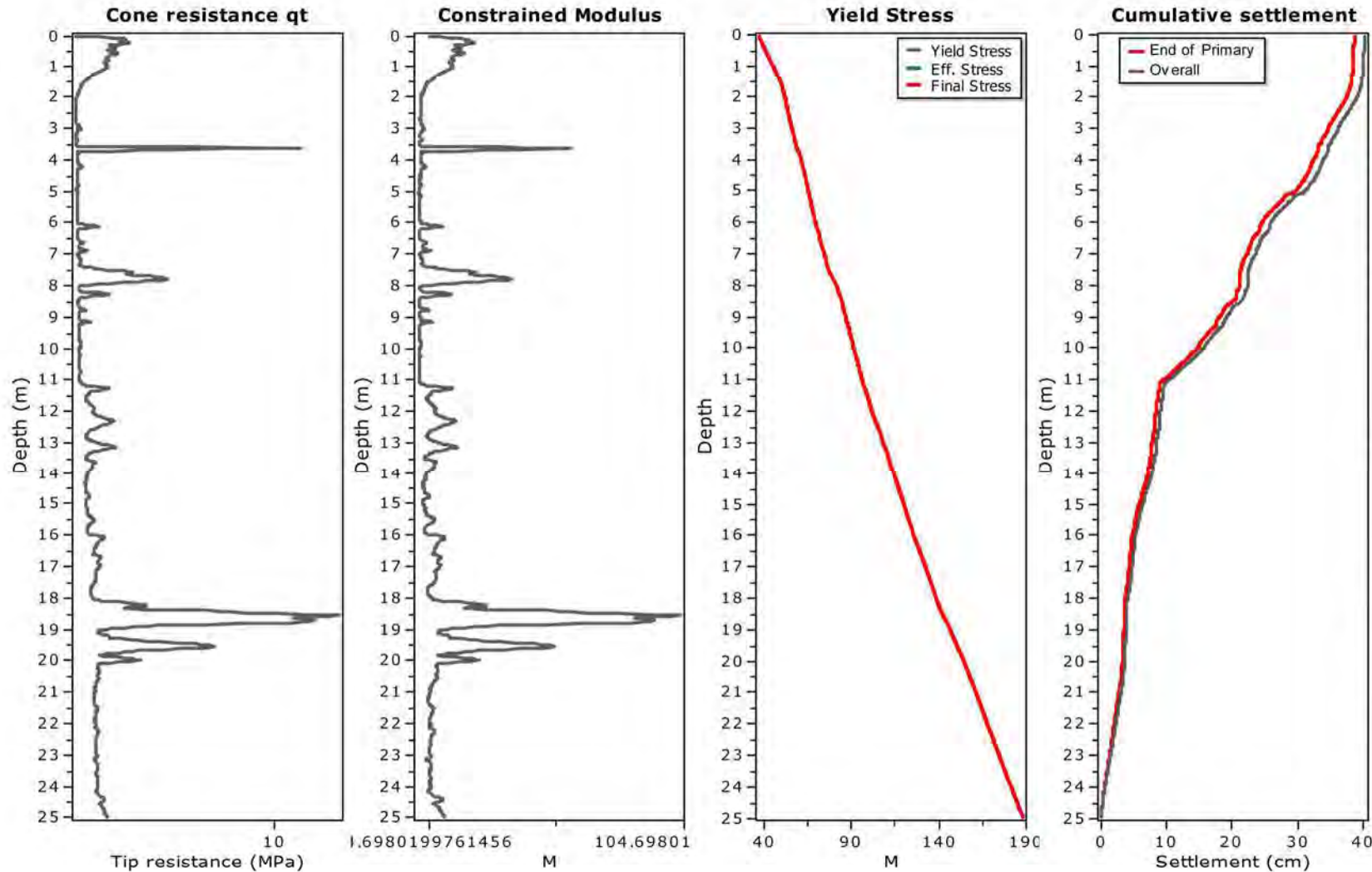
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT301

Total depth: 7.84 m, Date: 31/03/2025

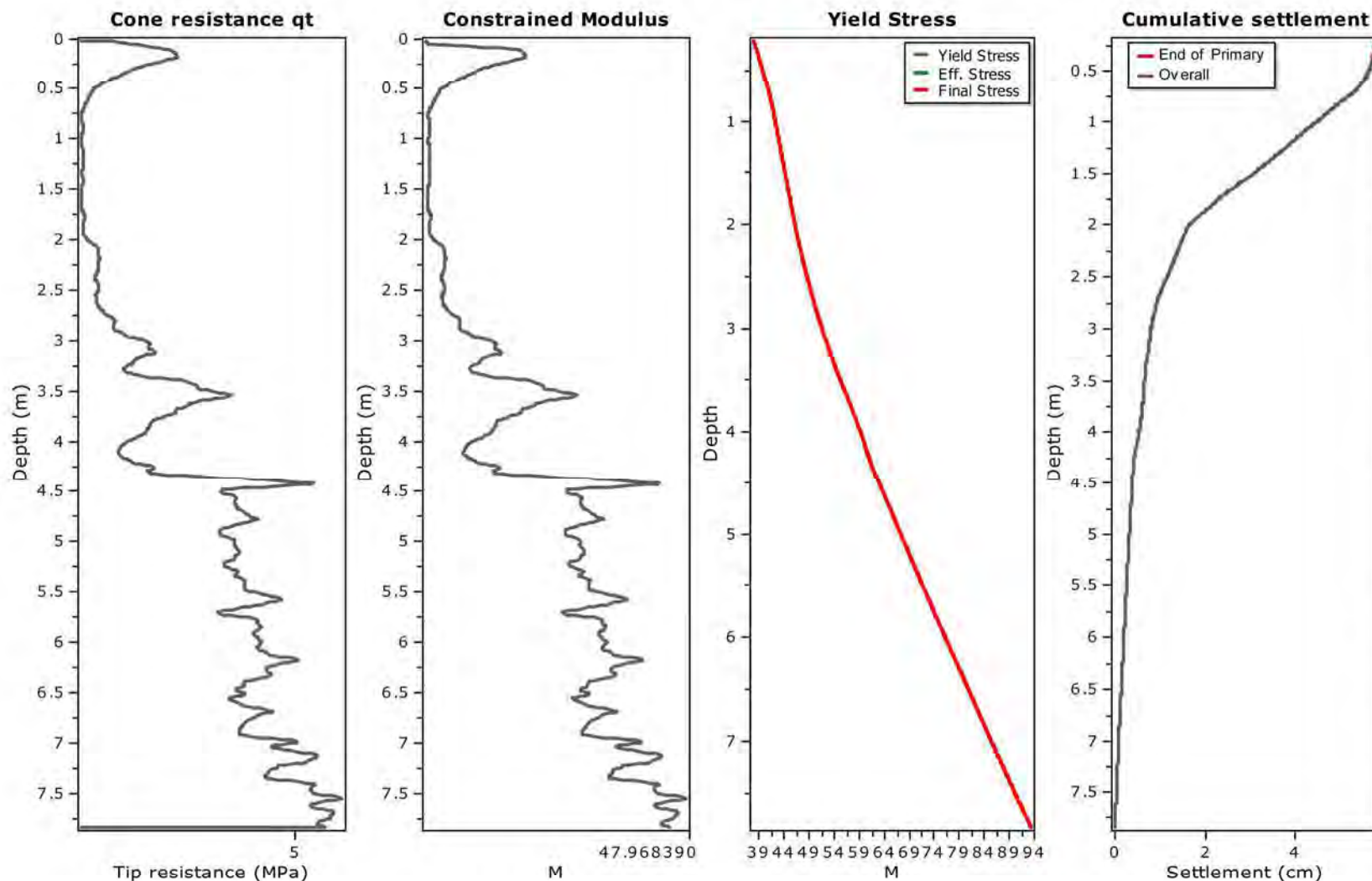
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

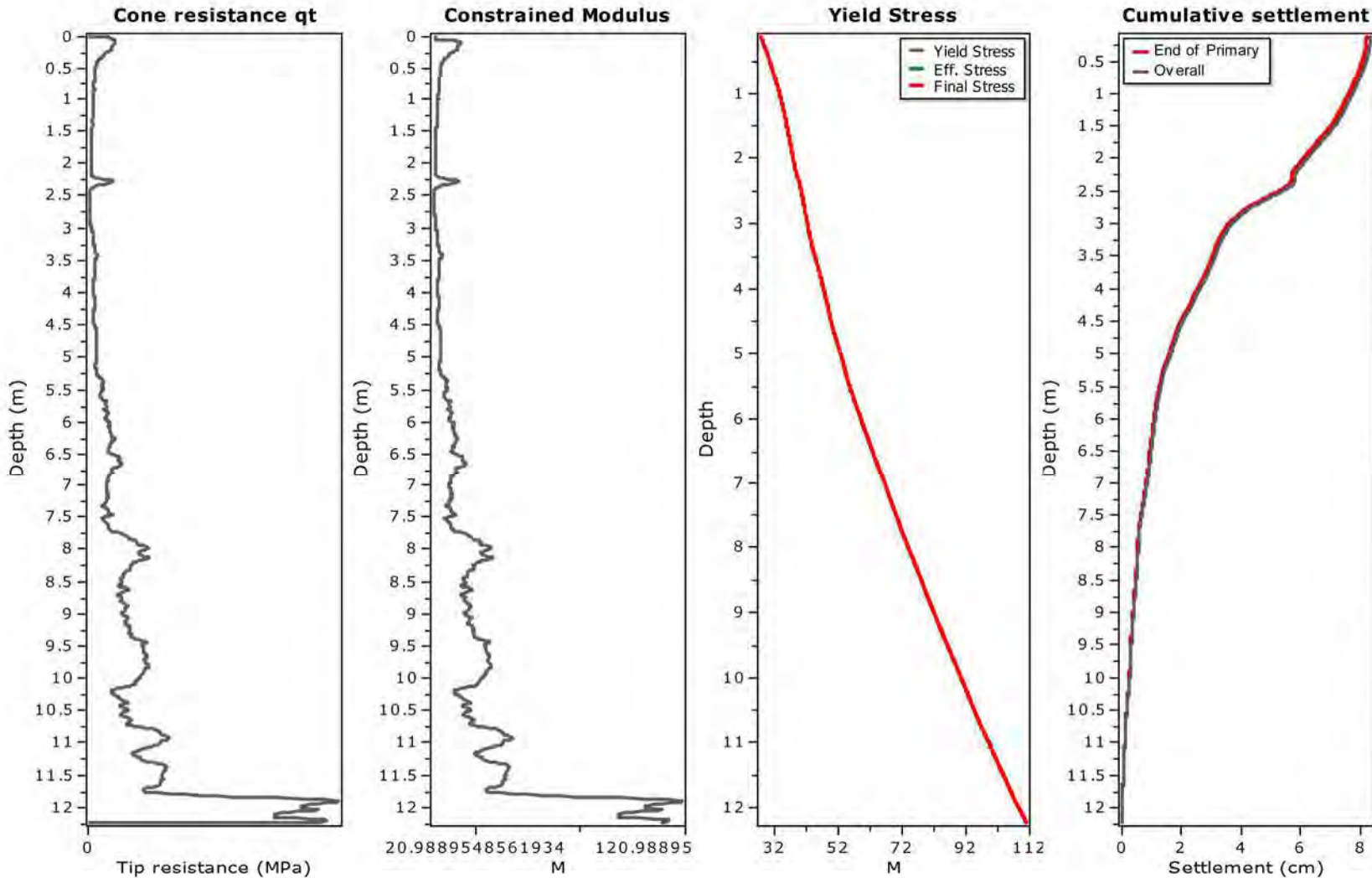
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(1 - e^{-\frac{t}{t_p}} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 27.75 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

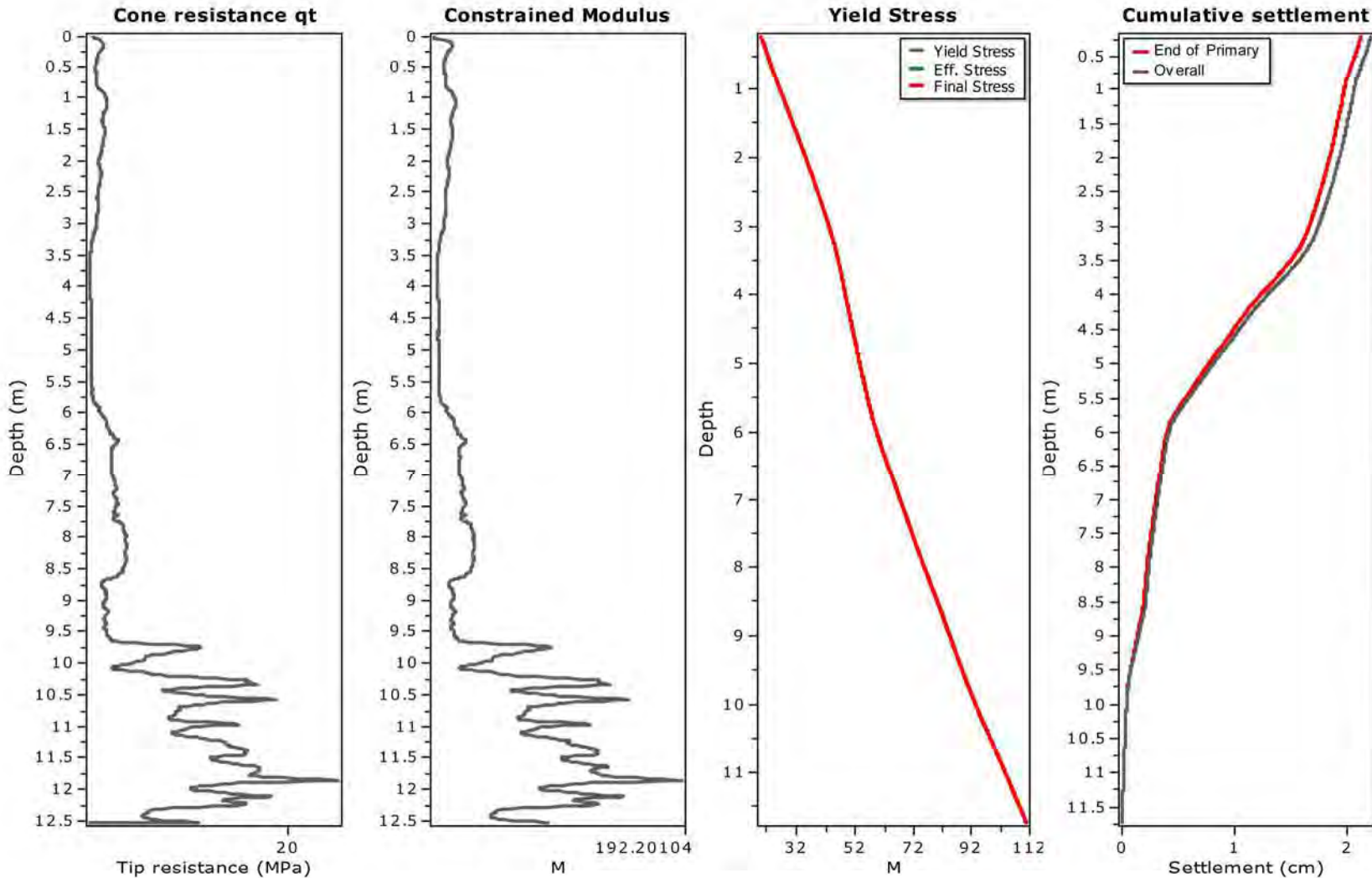
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

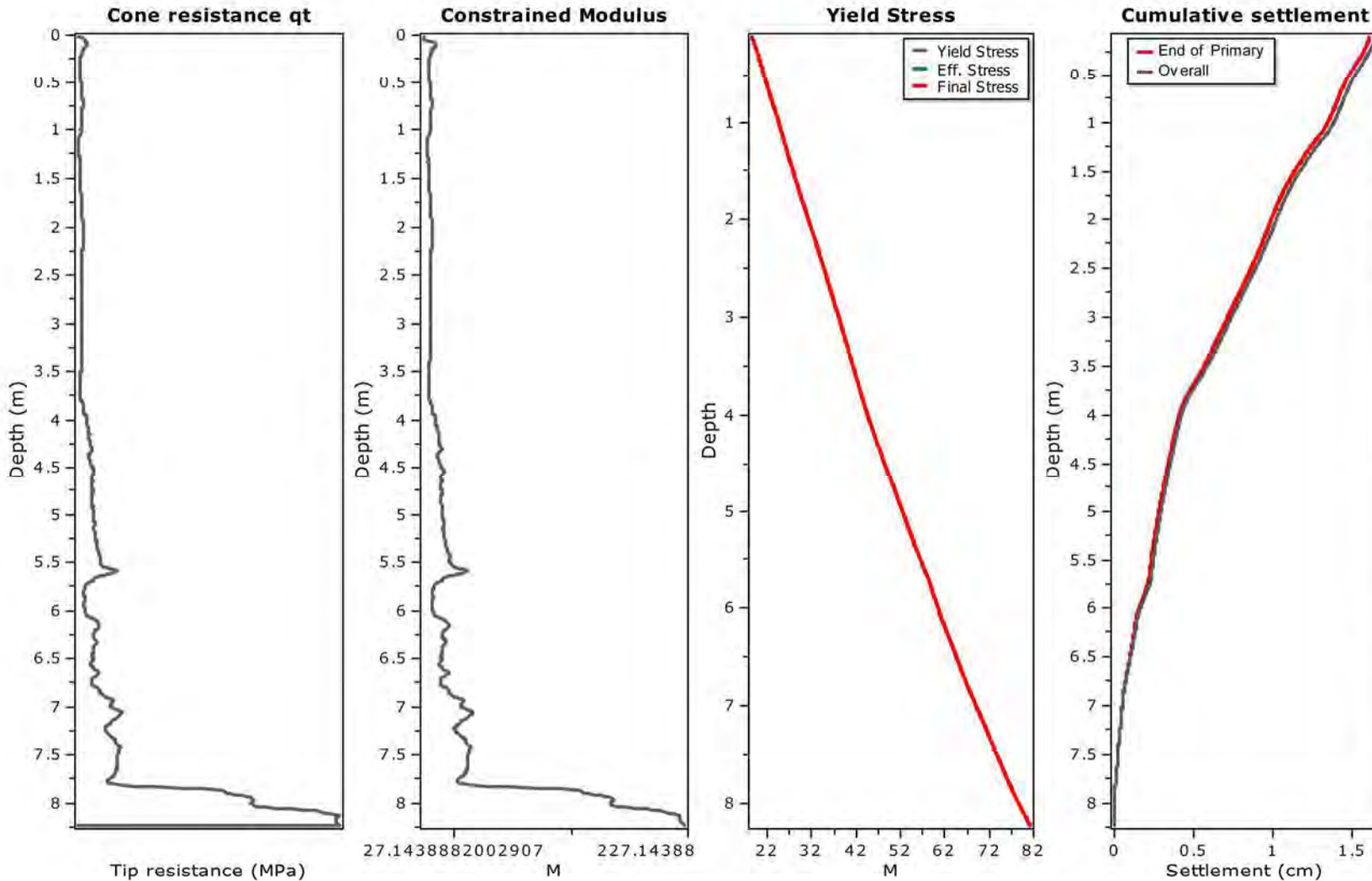
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

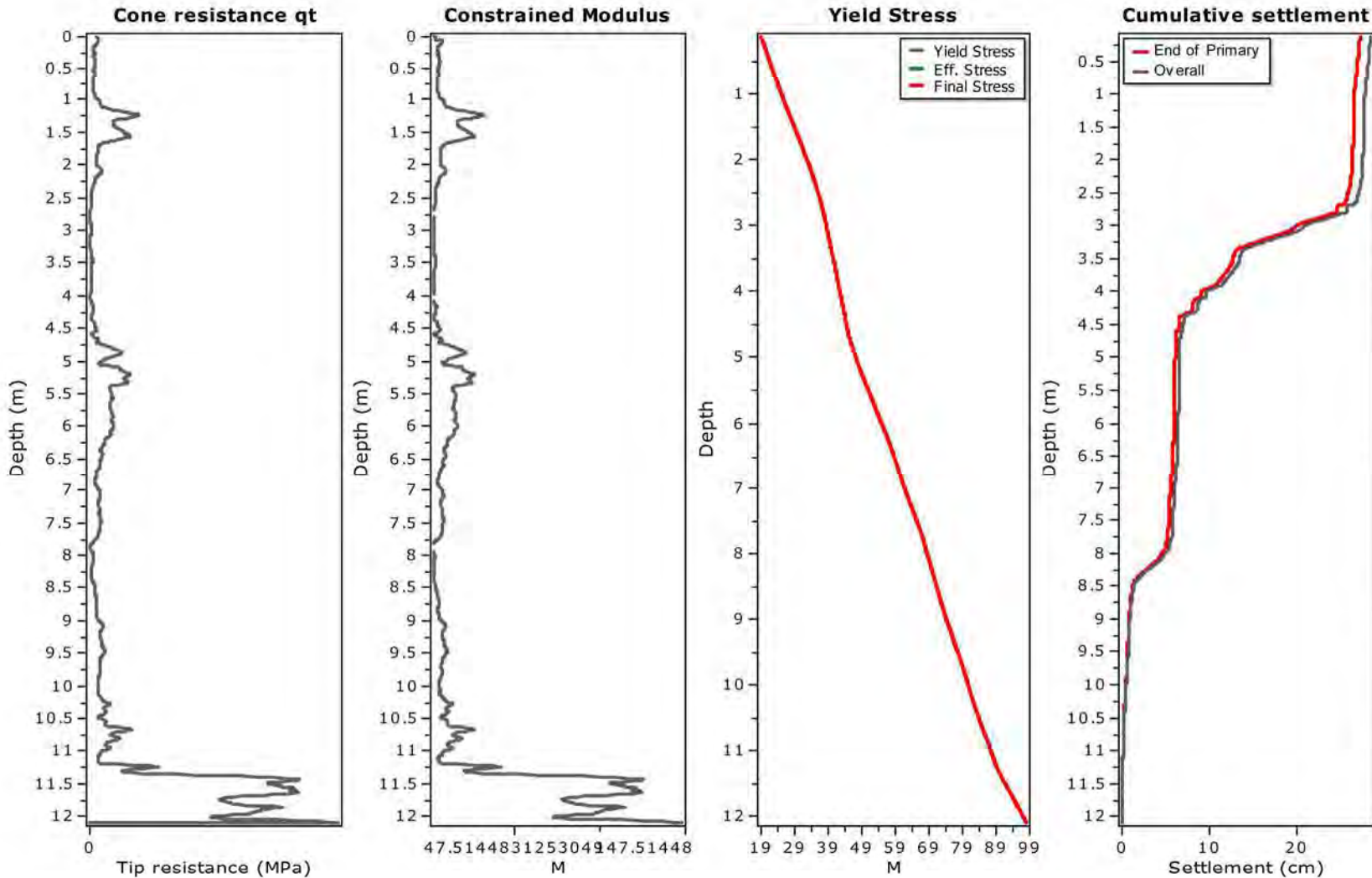
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT401

Total depth: 14.59 m, Date: 31/03/2025

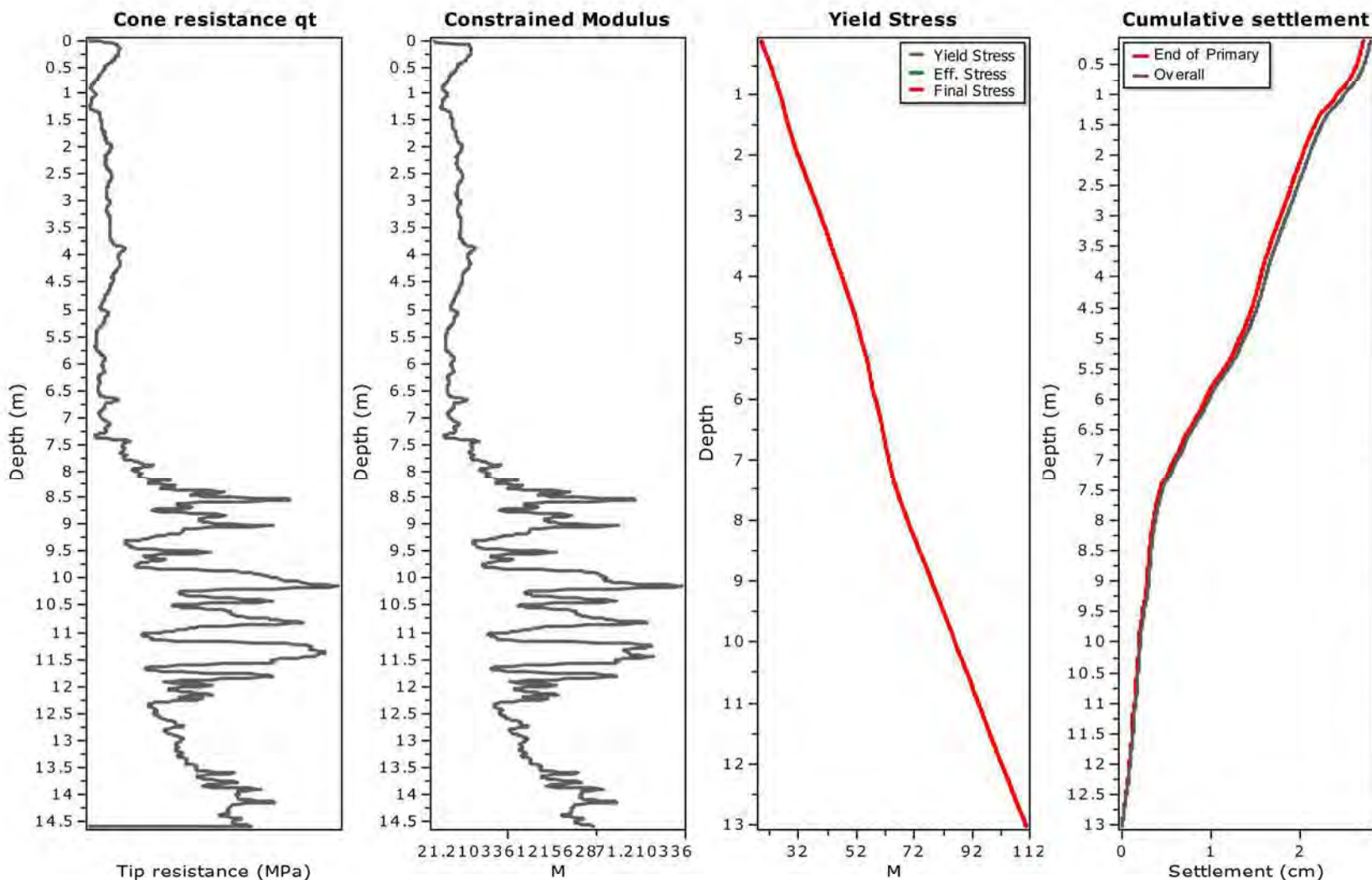
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 18.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

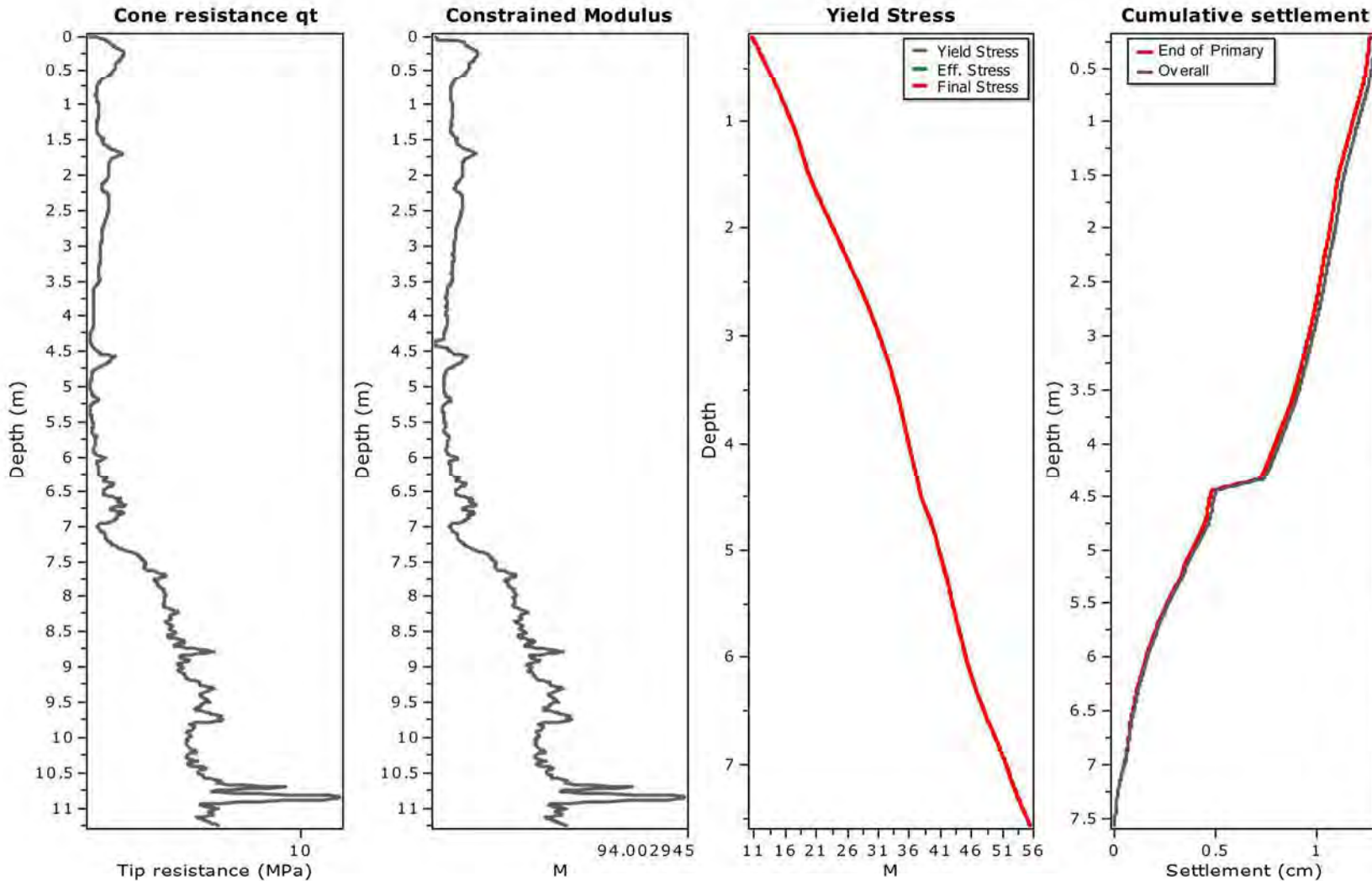
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(1 - e^{-t/t_p} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 9.25 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

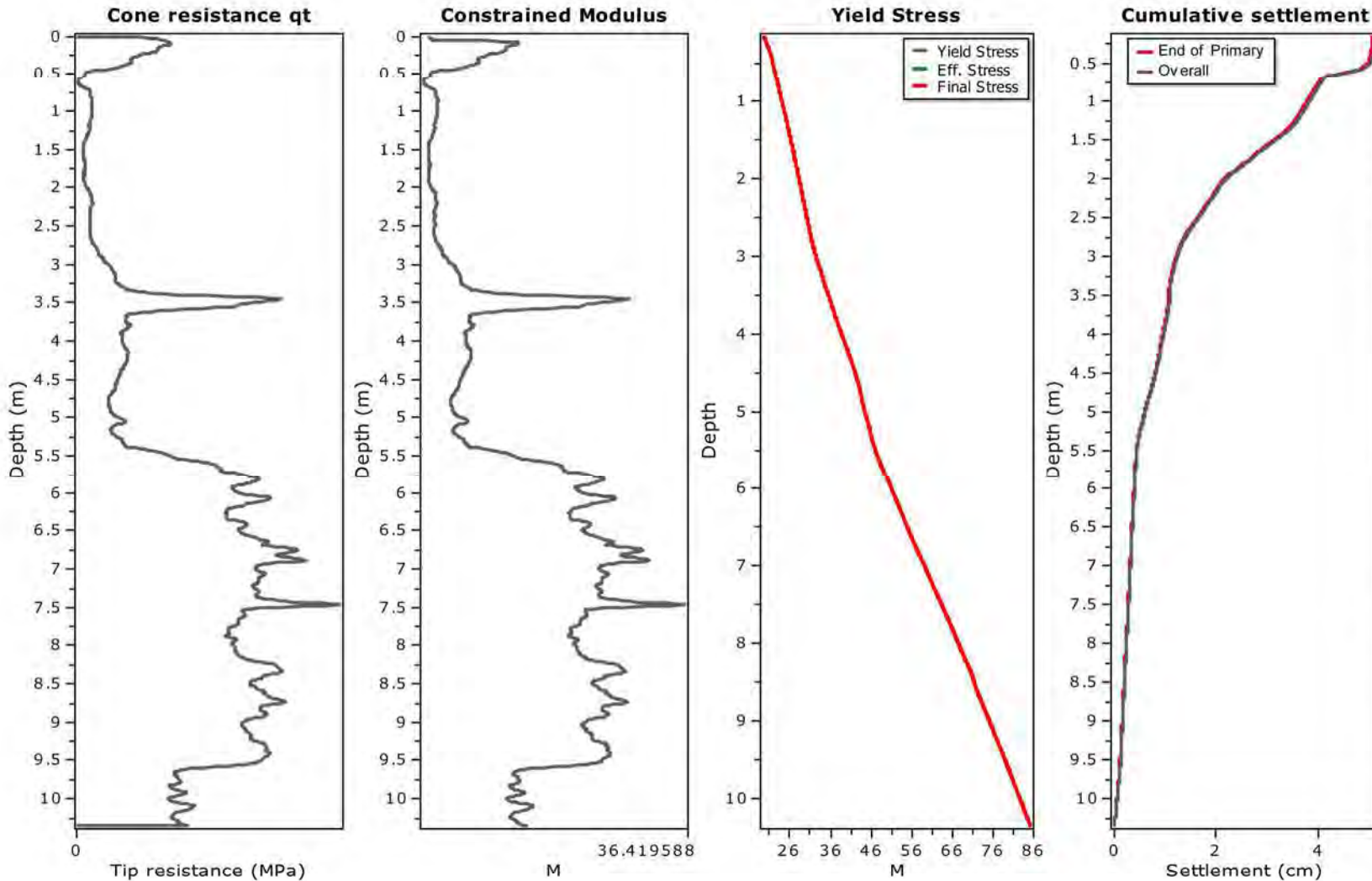
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 18.50 (kPa)
 Embedment depth: 0.15 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

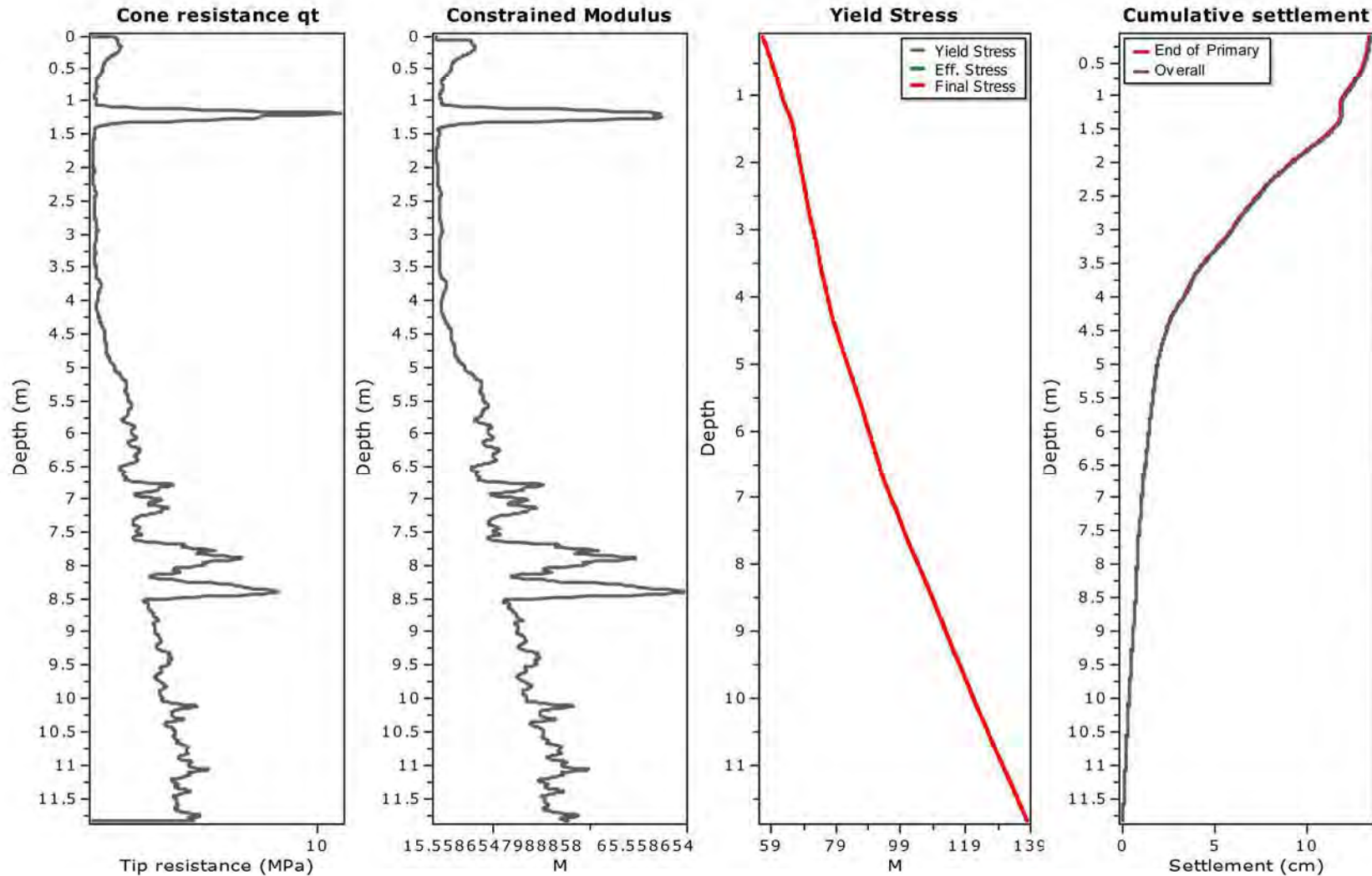
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(1 - e^{-\frac{t}{t_p}} \right)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 55.50 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT405

Total depth: 11.69 m, Date: 31/03/2025

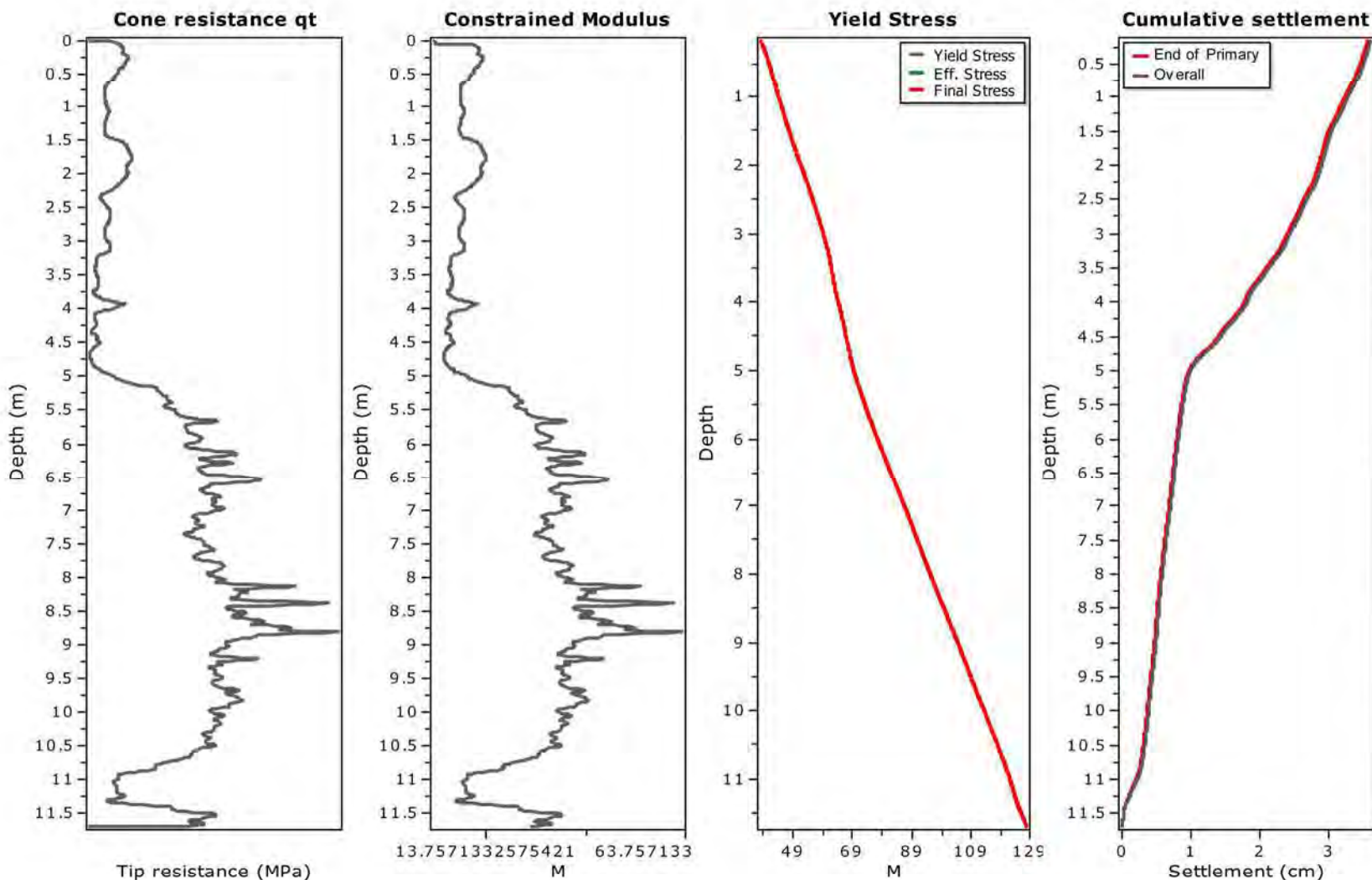
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.15 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

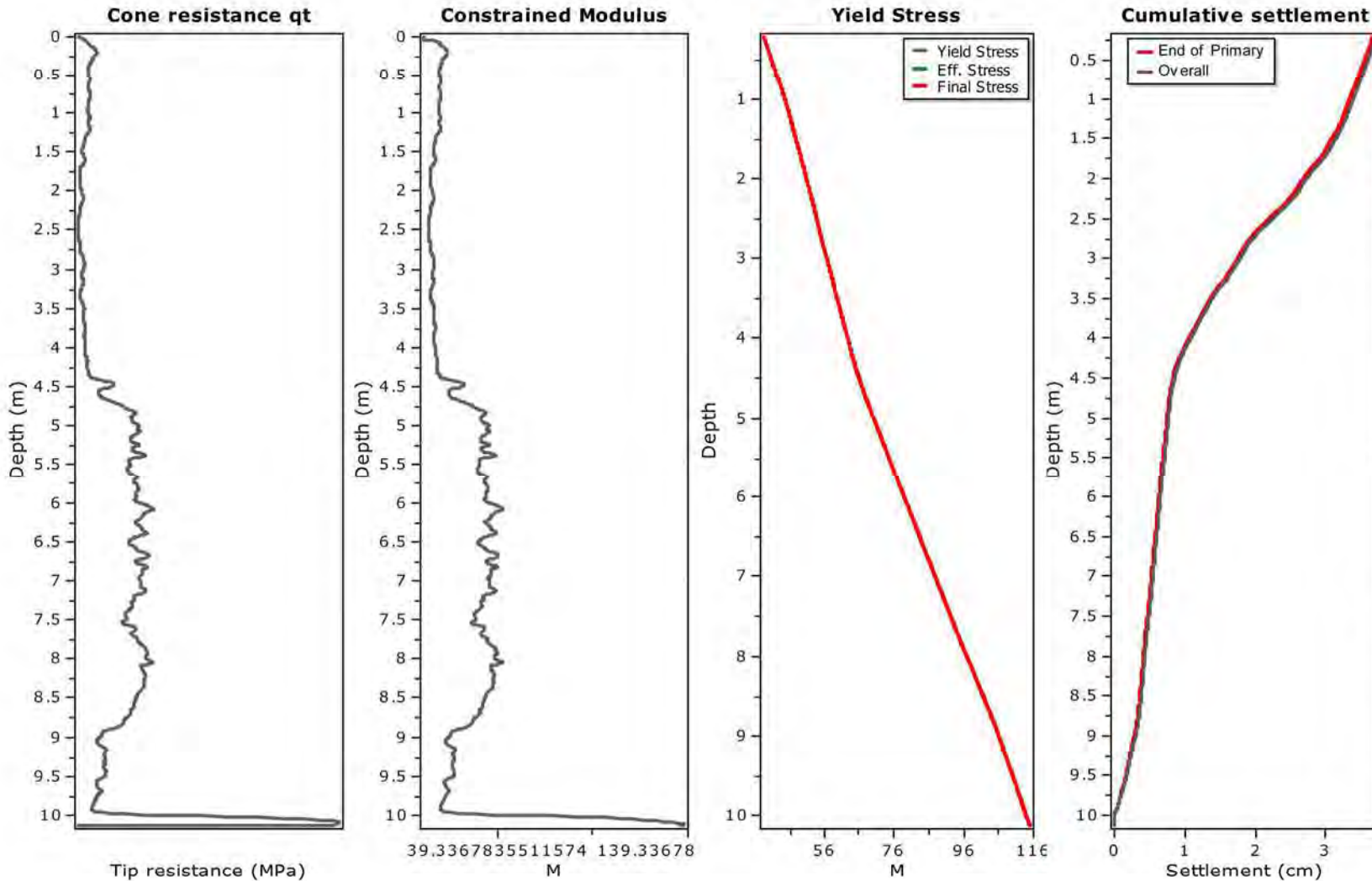
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.20 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

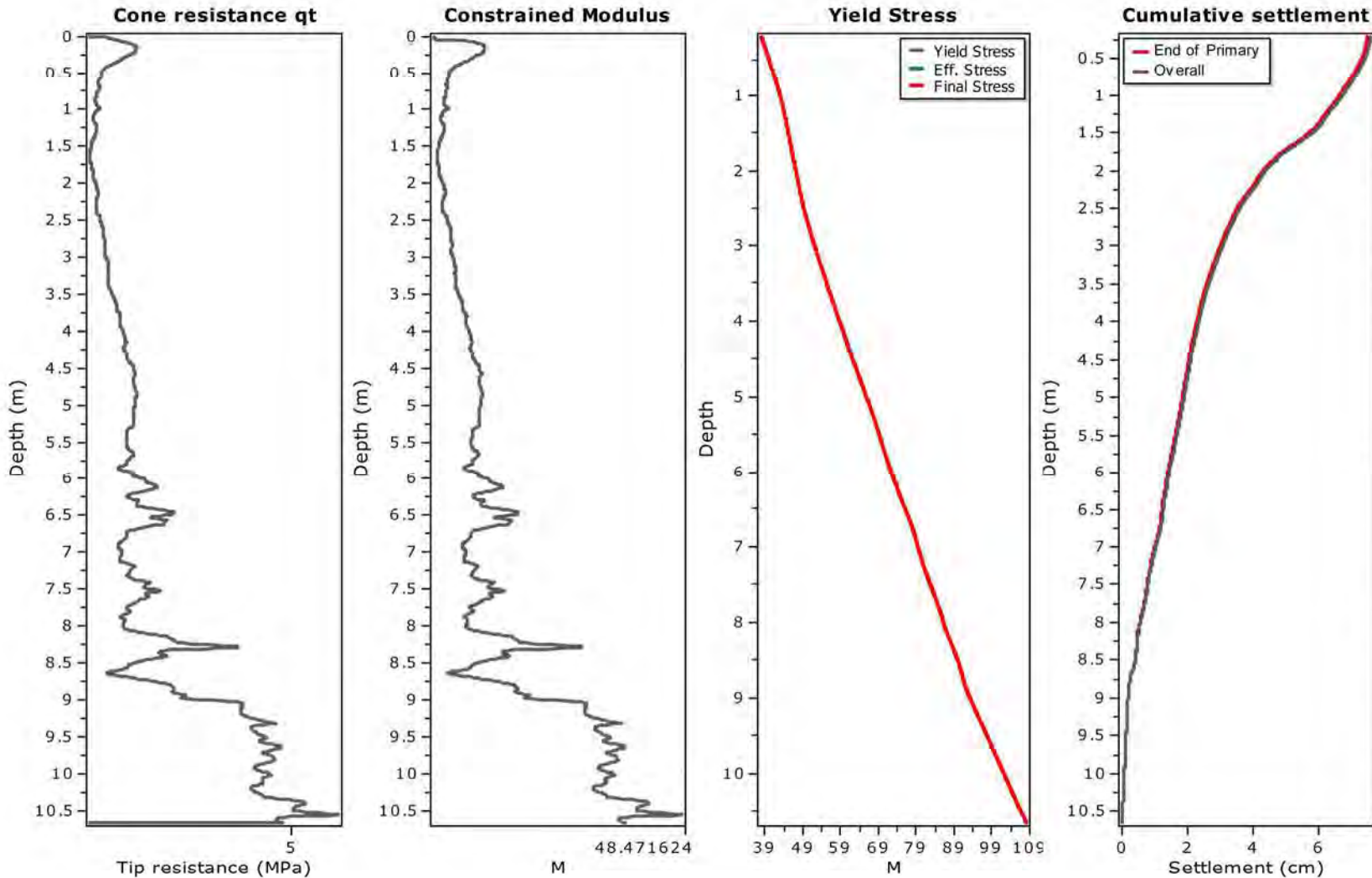
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.20 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

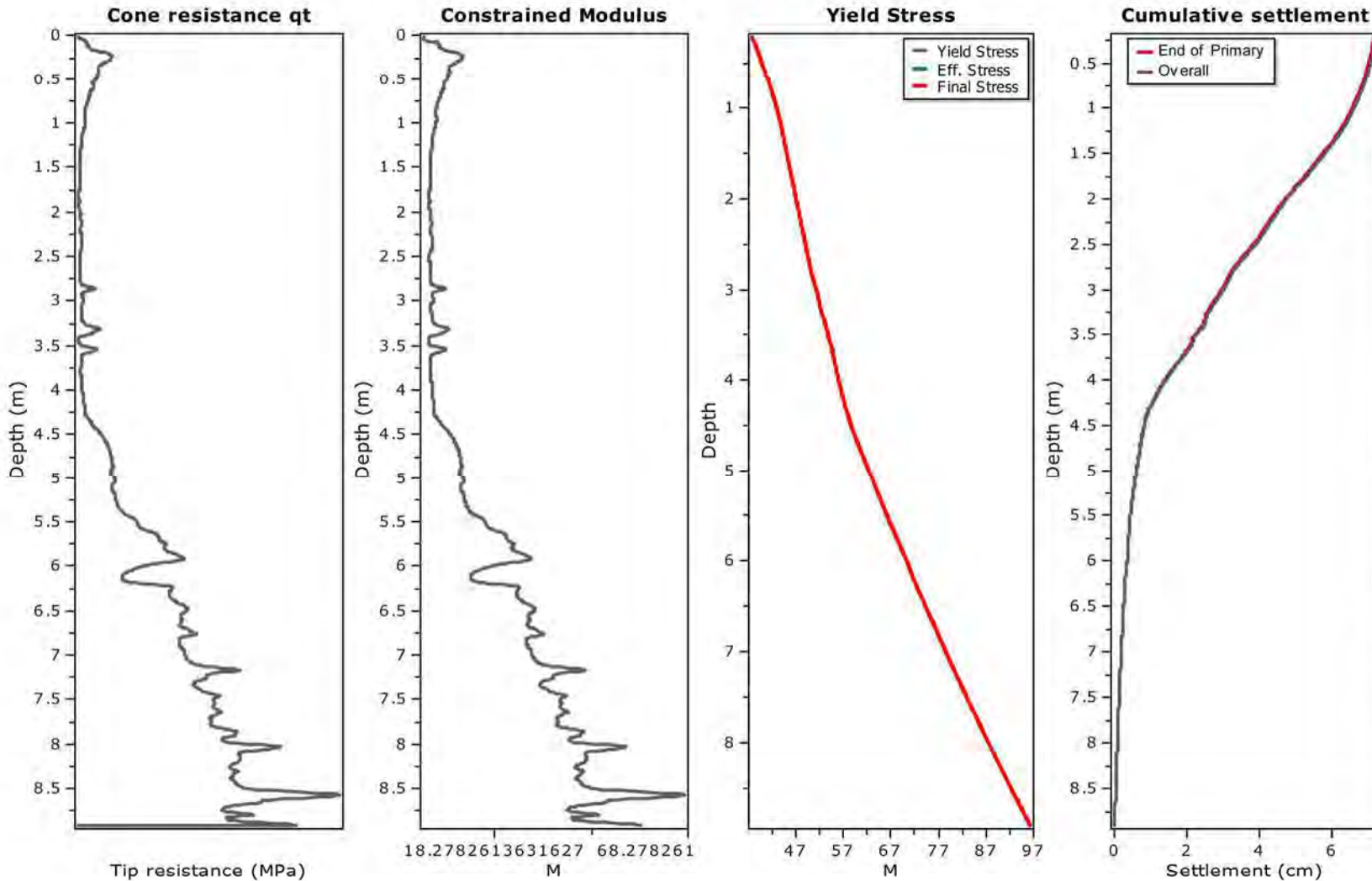
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

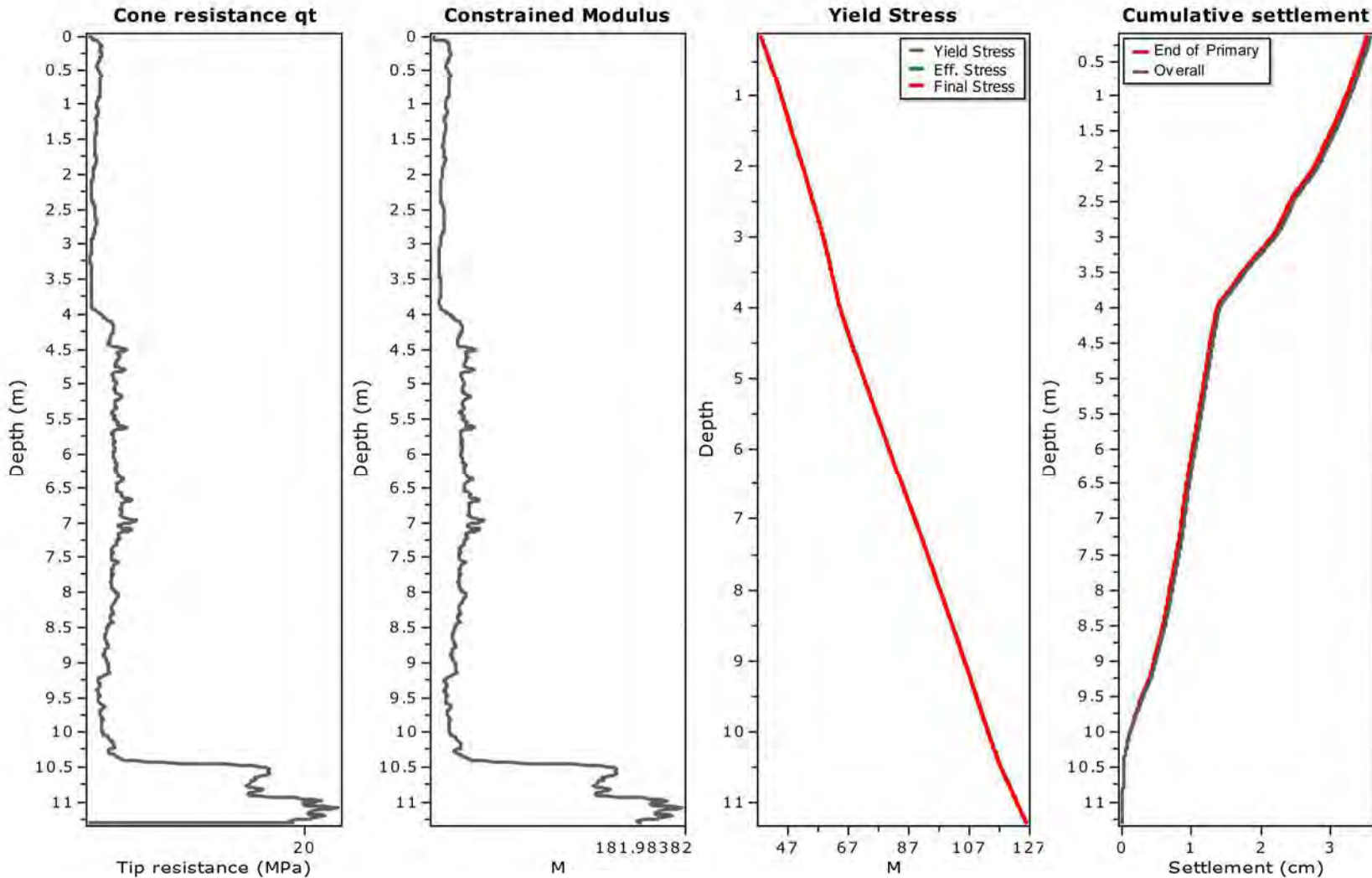
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 37.00 (kPa)
 Embedment depth: 0.15 (m)
 Footing is rigid: No
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

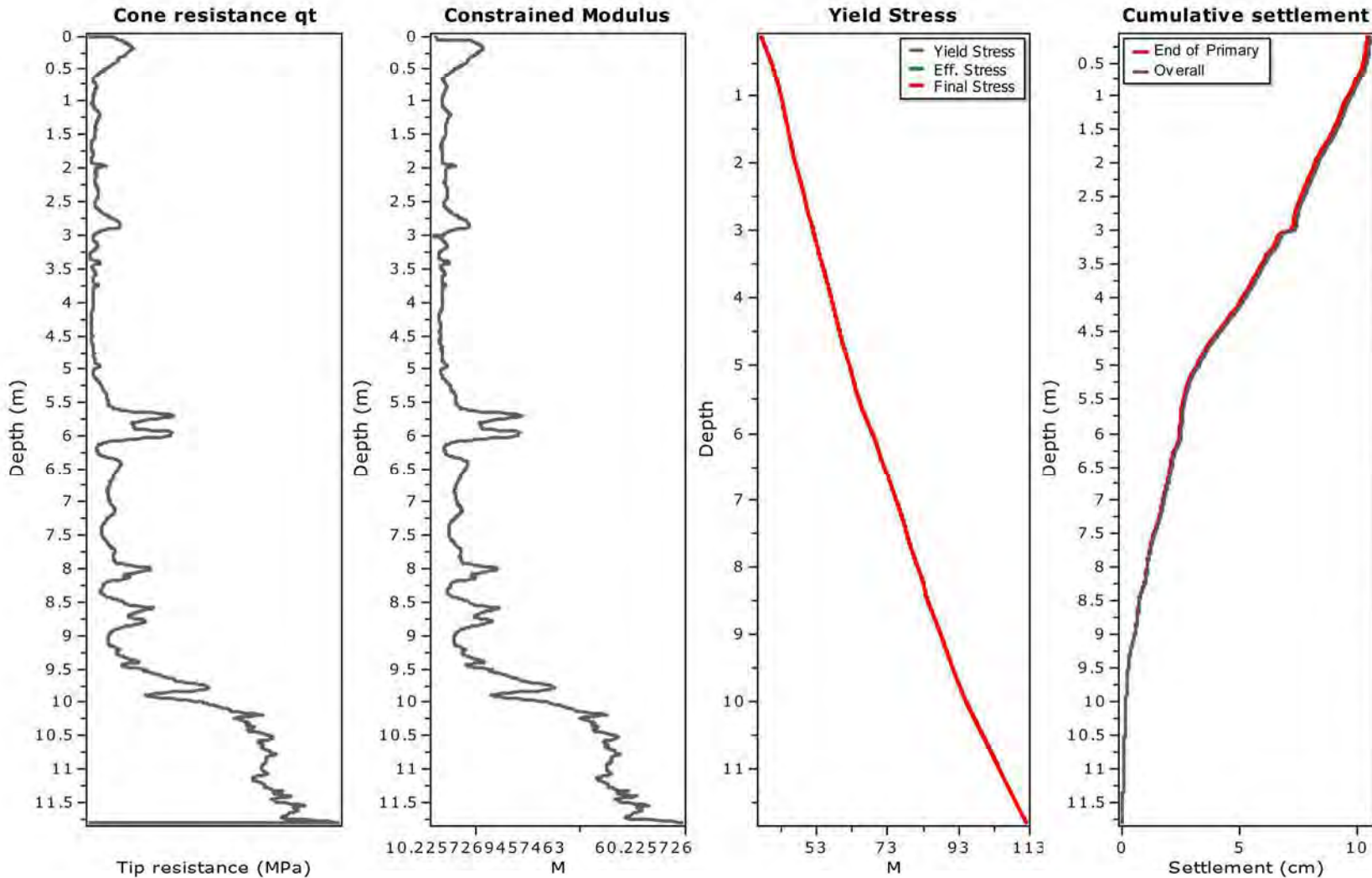
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT411

Total depth: 11.99 m, Date: 31/03/2025

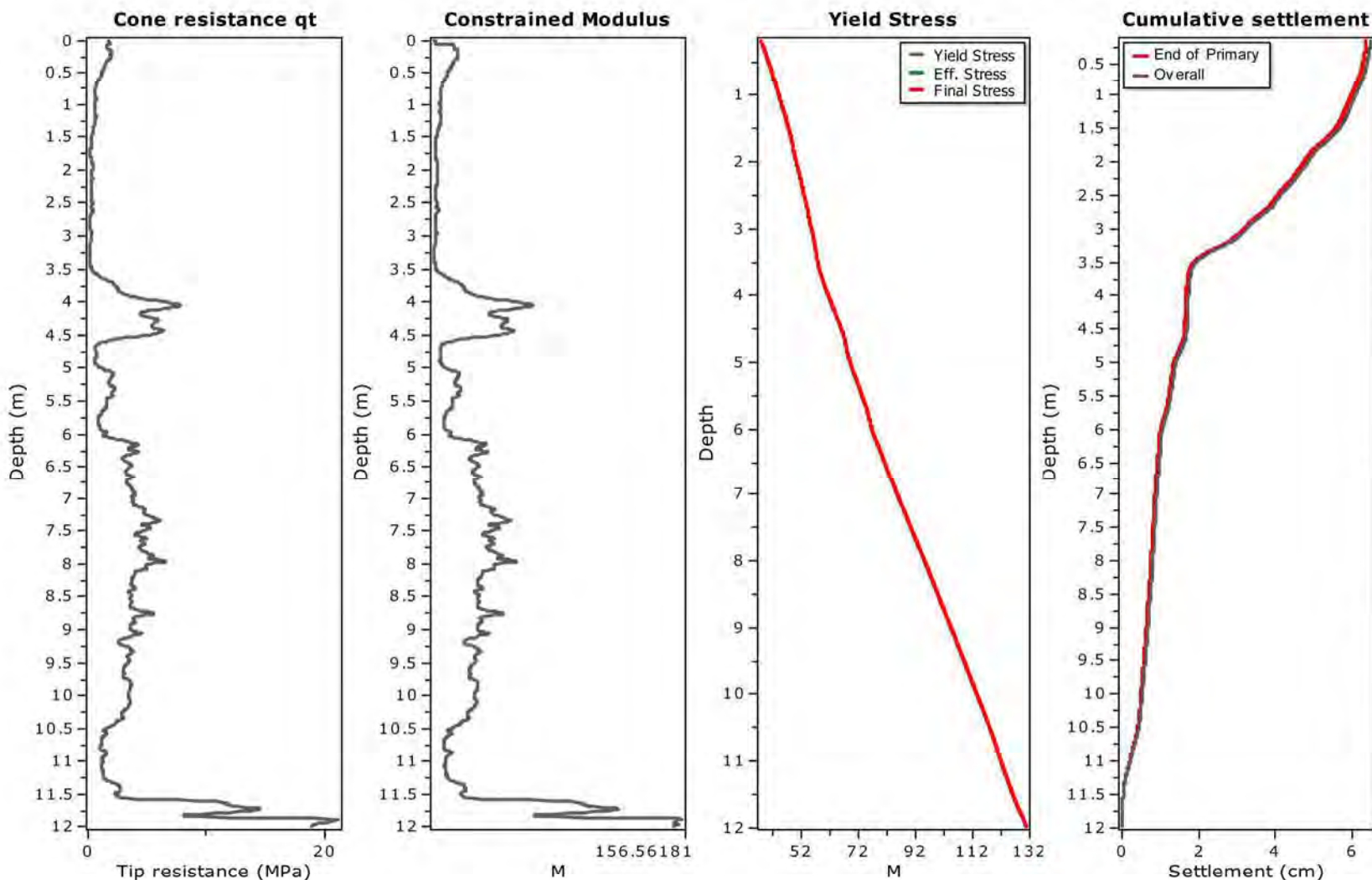
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.15 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

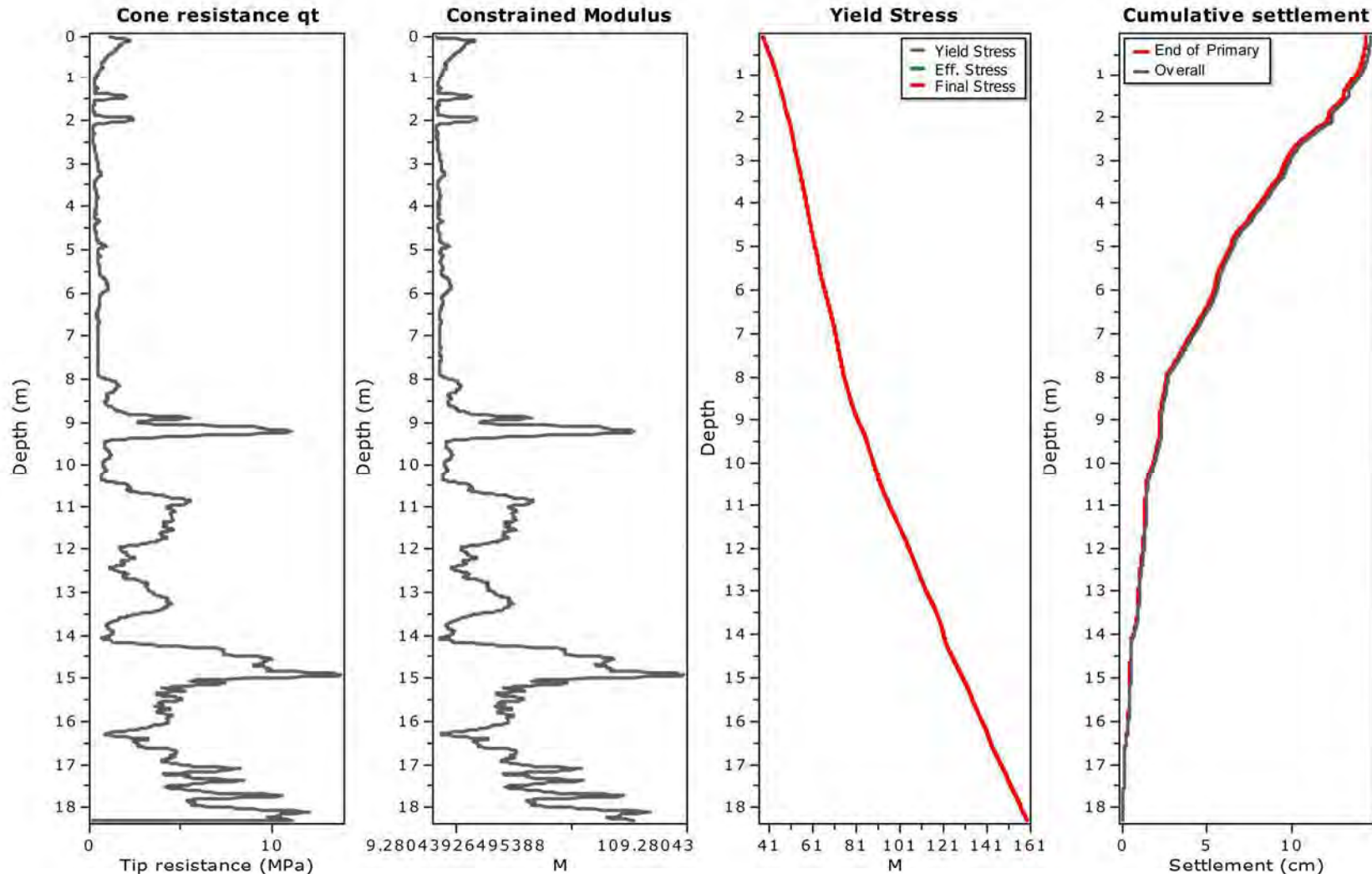
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

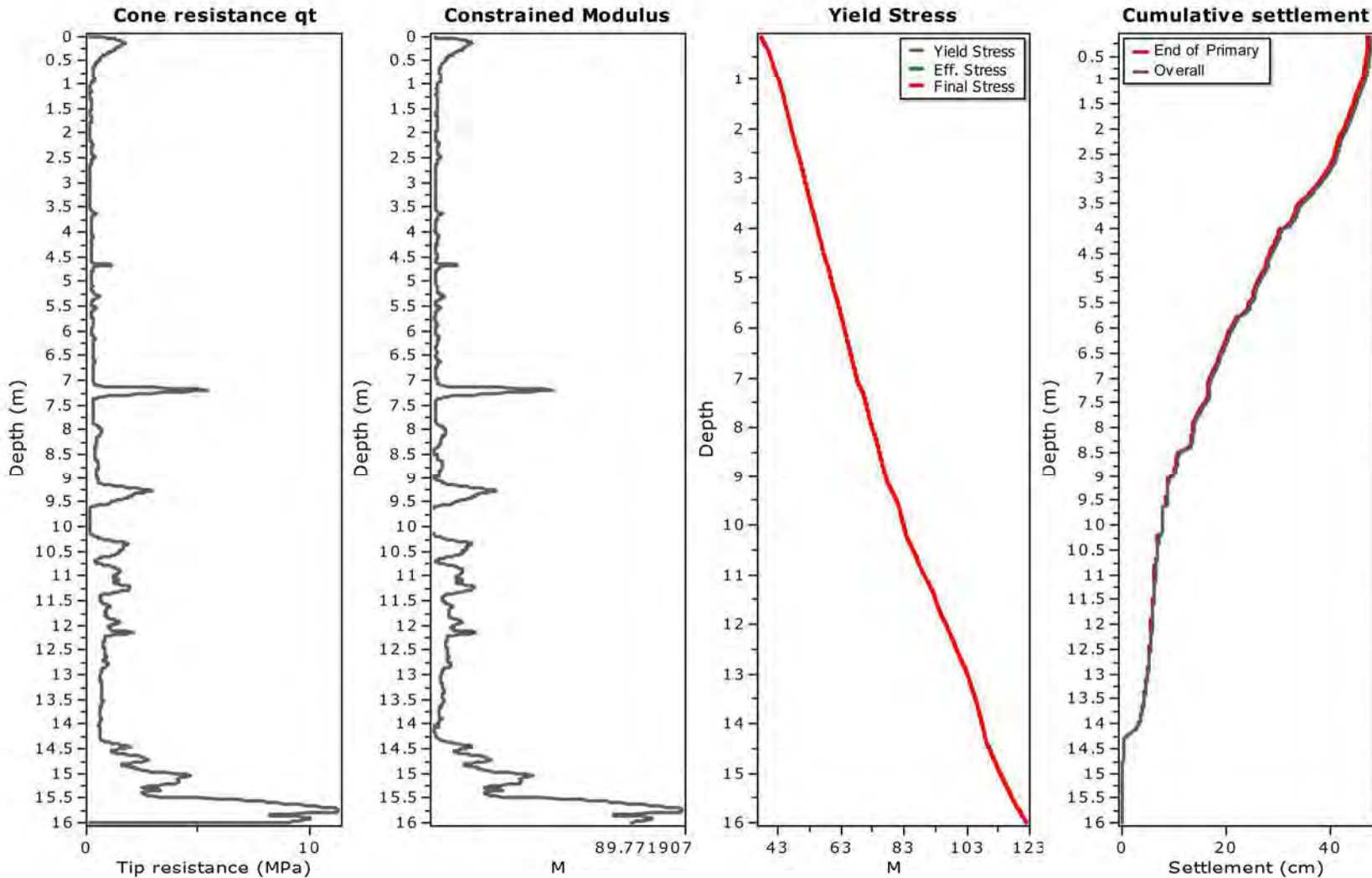
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

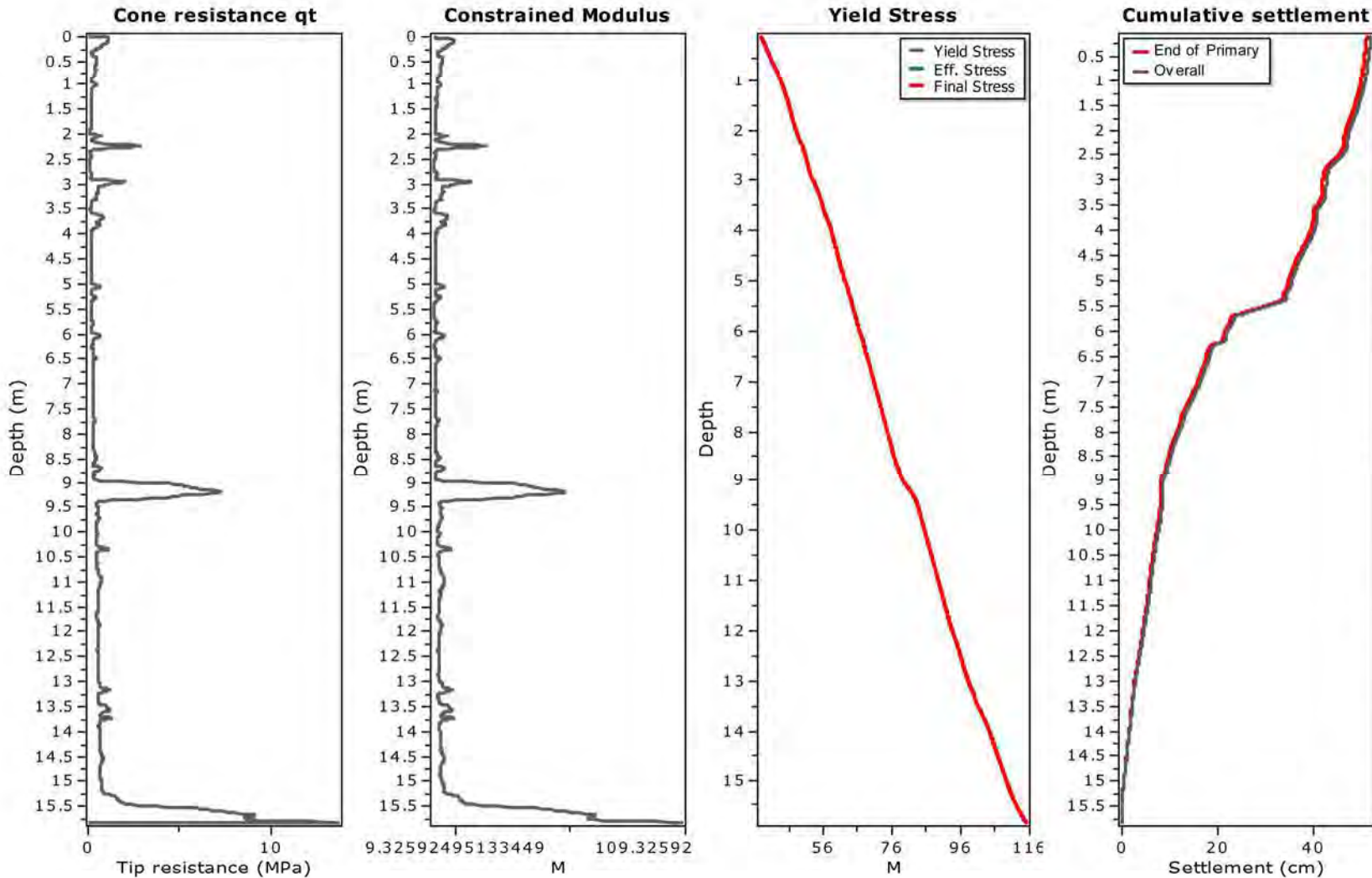


Project: Sunfield Landholding
Location:

CPT: CPT415A

Total depth: 15.83 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

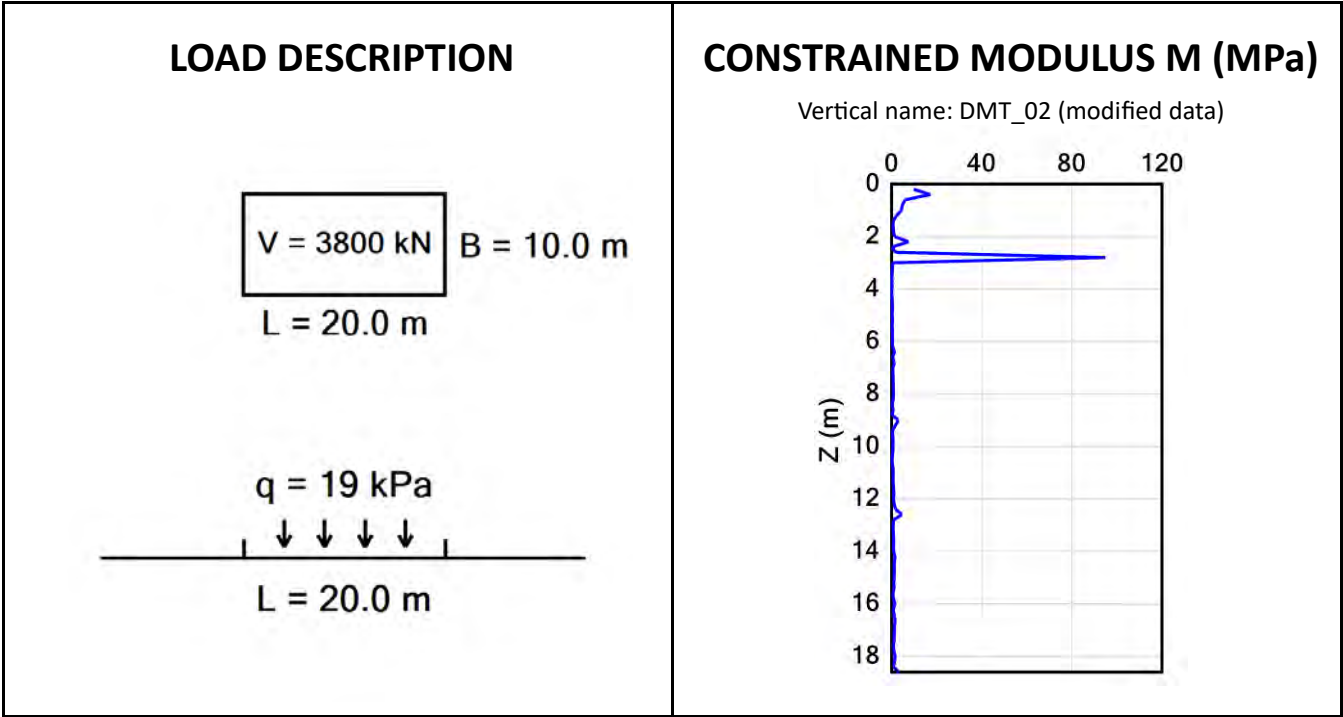
Settlements Calculation

Drill Force NZ

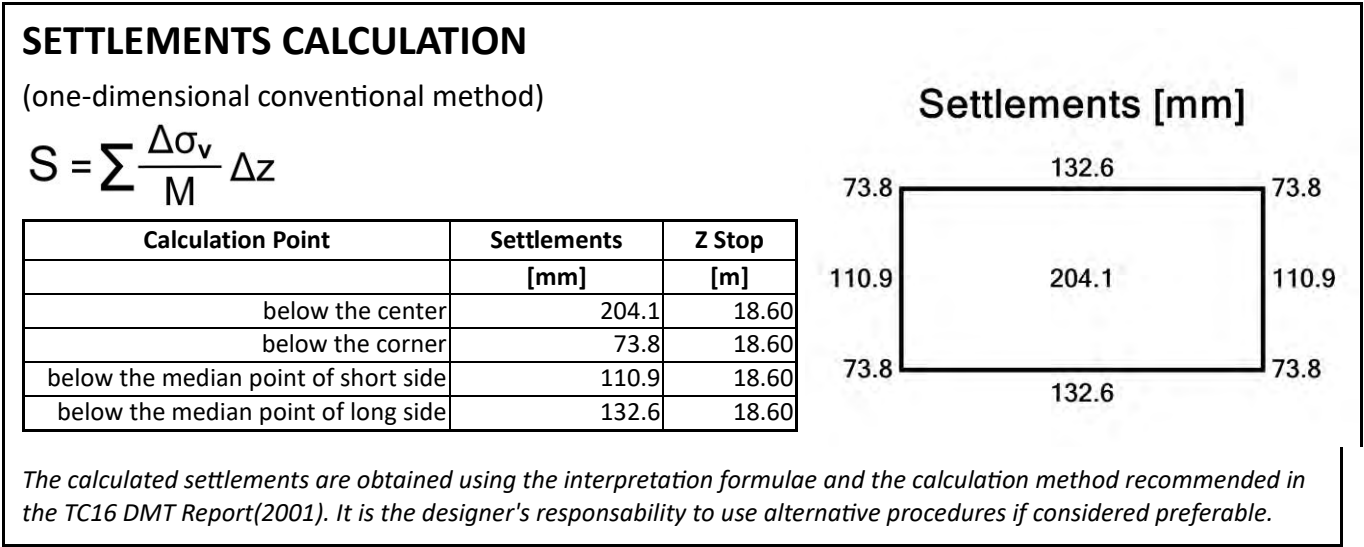
LDE Limited

DF21GE034

Hamlin Rd, Ardmore



CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



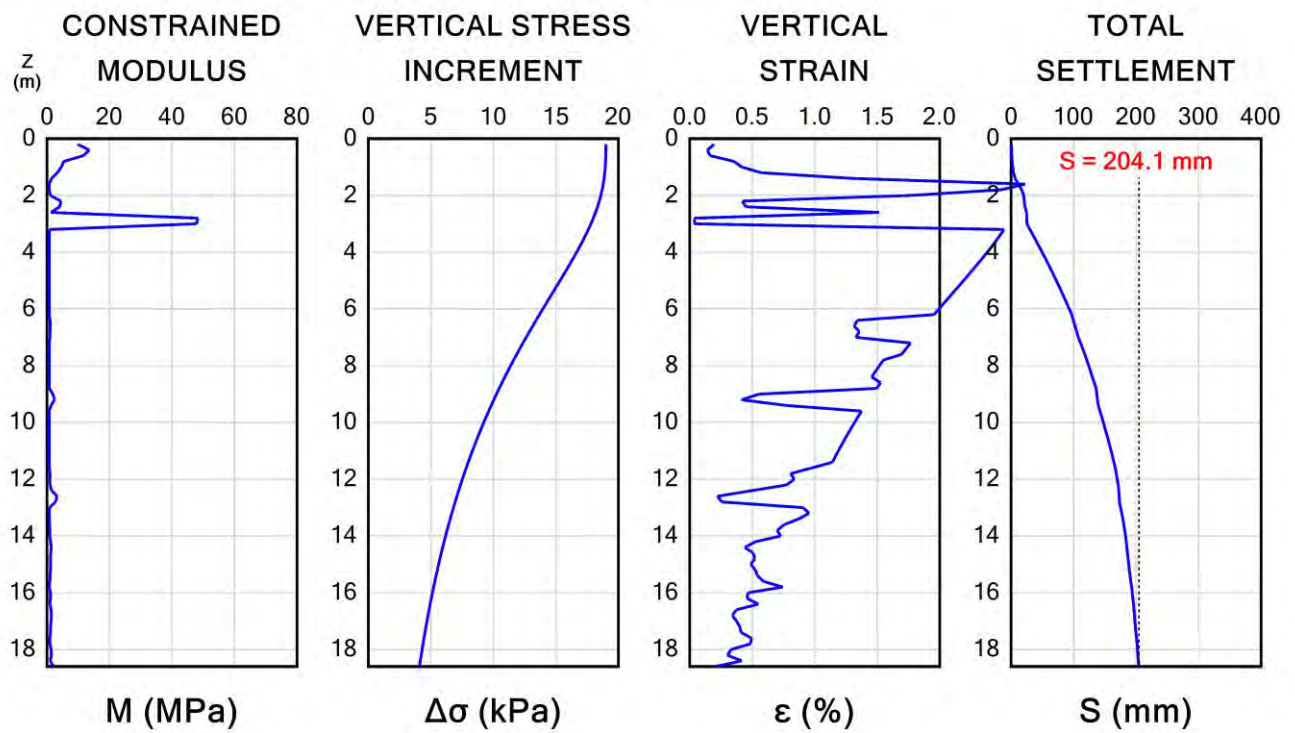
SETTLEMENTS CALCULATION - below the center

Drill Force NZ

DF21GE034

LDE Limited

Hamlin Rd, Ardmore



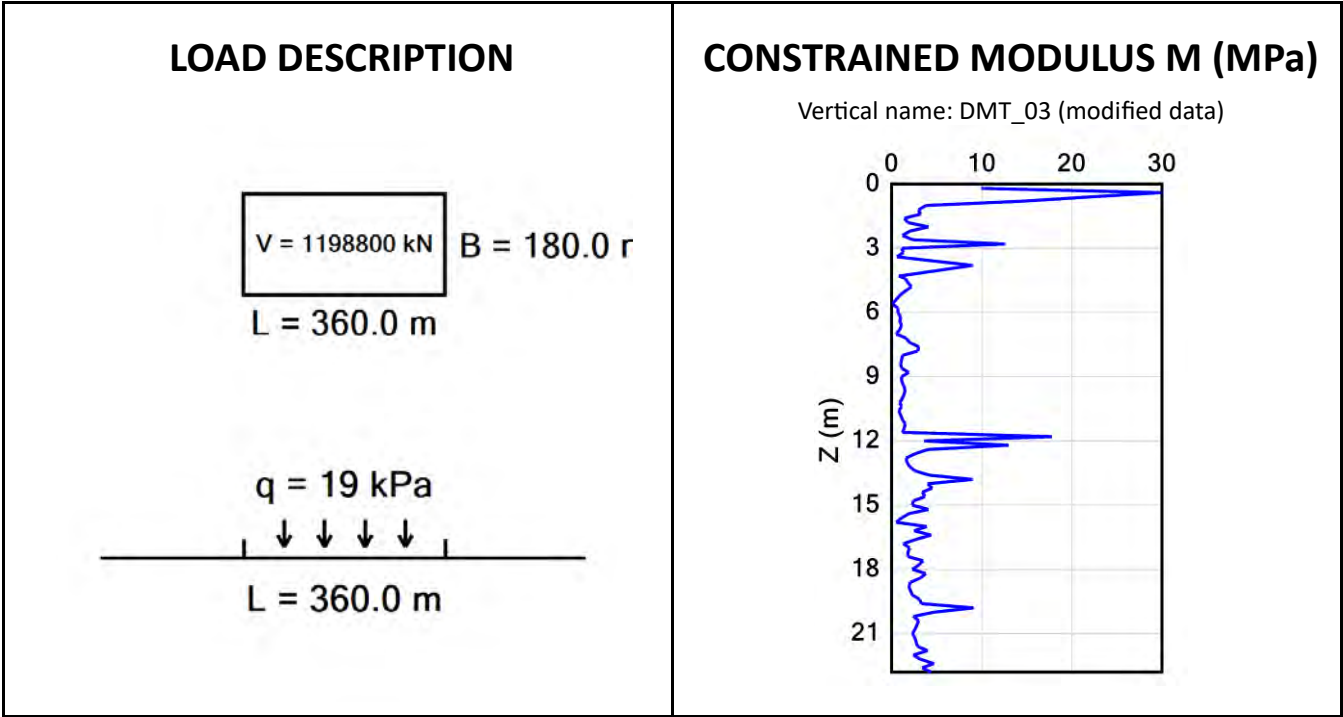
Settlements Calculation

Drill Force NZ

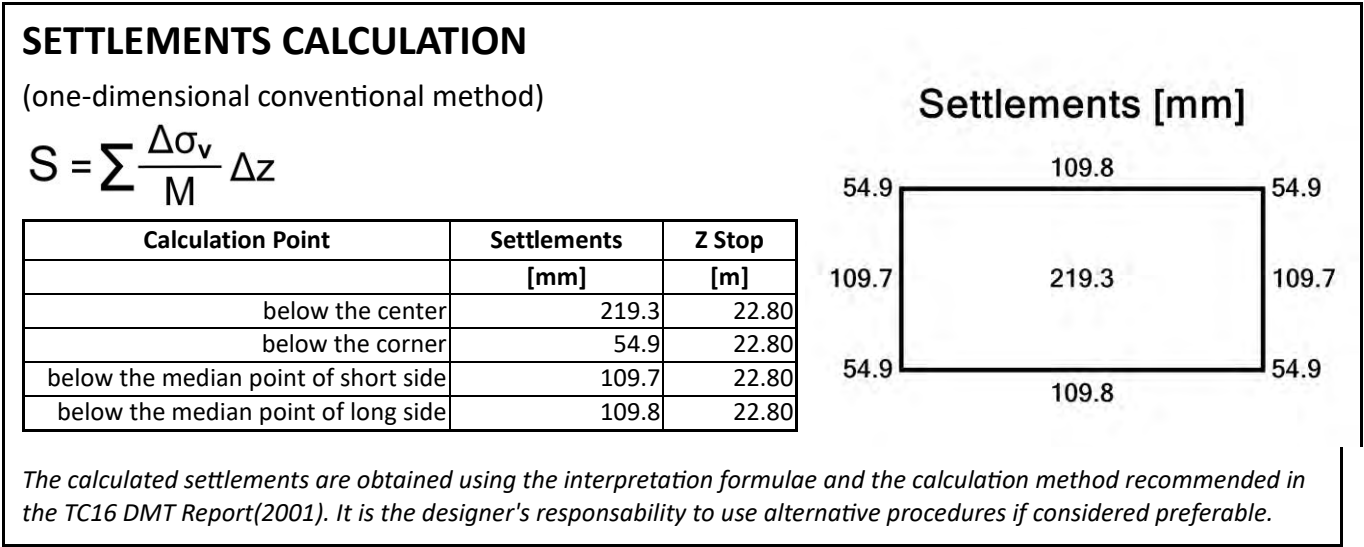
LDE Limited

DF21GE034

Hamlin Rd, Ardmore



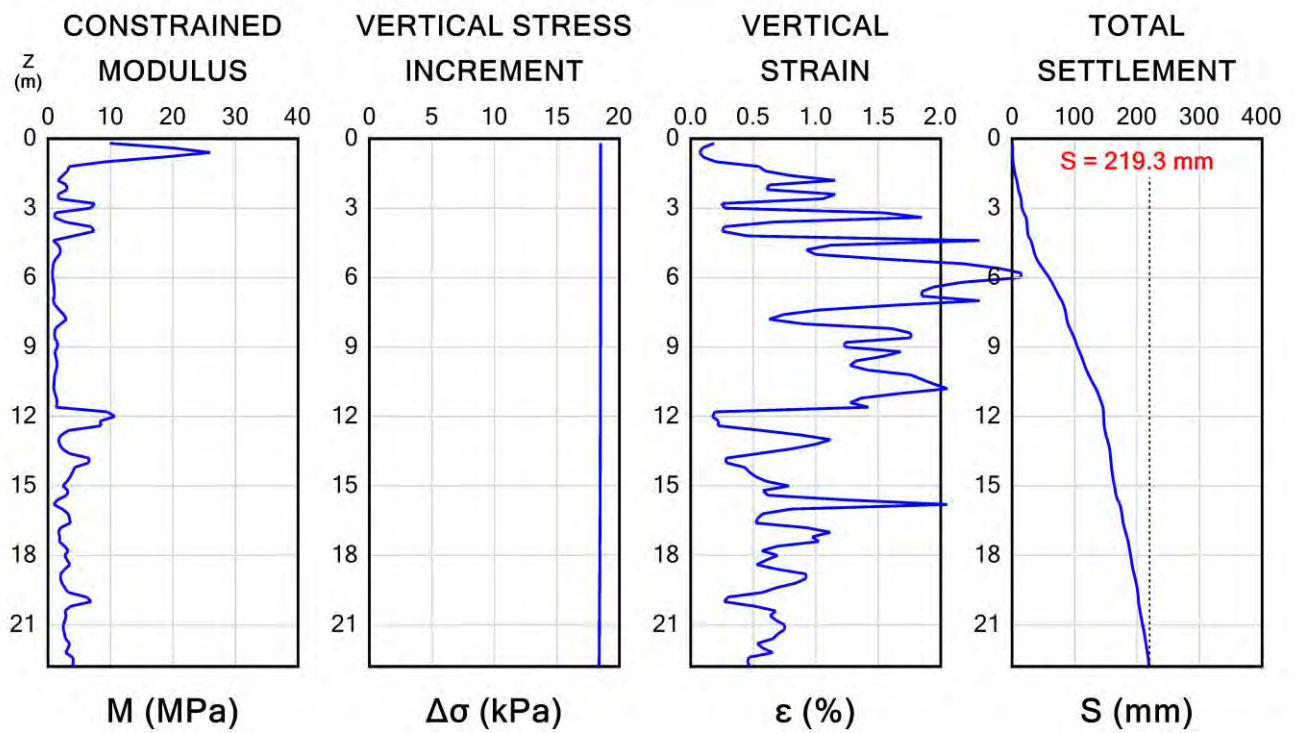
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

Drill Force NZ
LDE Limited

DF21GE034
Hamlin Rd, Ardmore



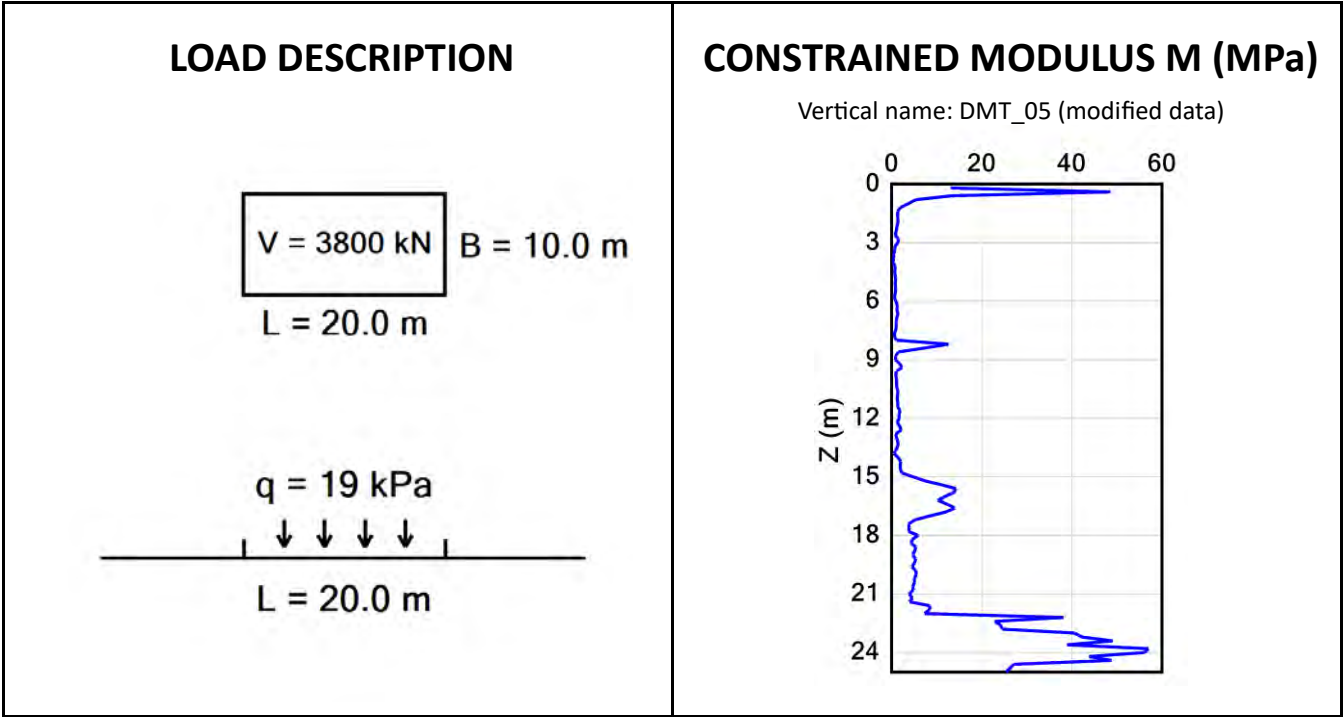
Settlements Calculation

Drill Force NZ

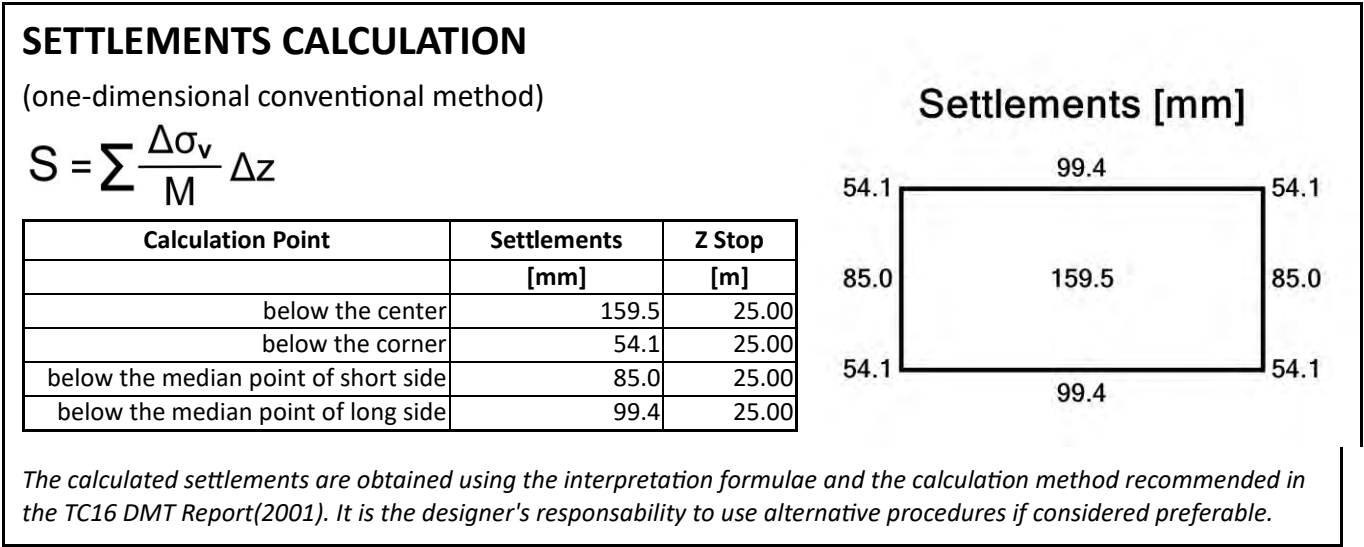
LDE Limited

DF21GE034

Hamlin Rd, Ardmore



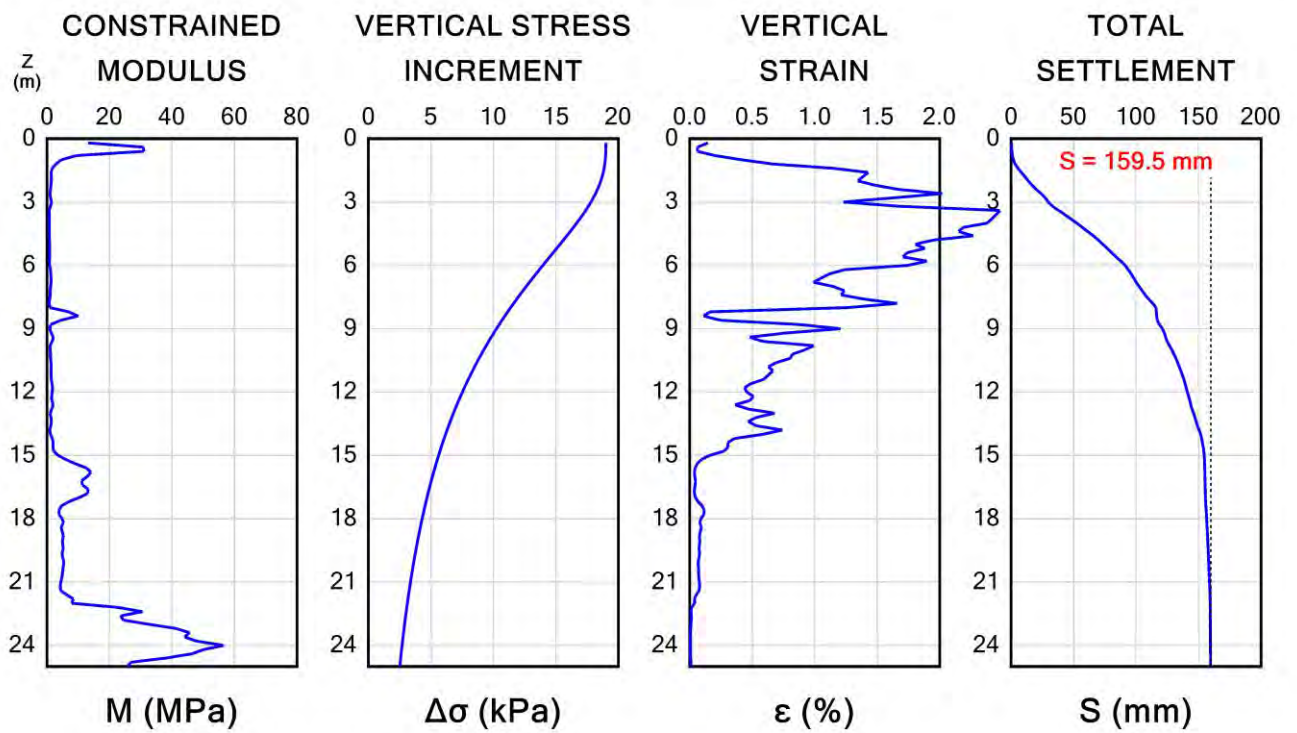
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

Drill Force NZ
LDE Limited

DF21GE034
Hamlin Rd, Ardmore



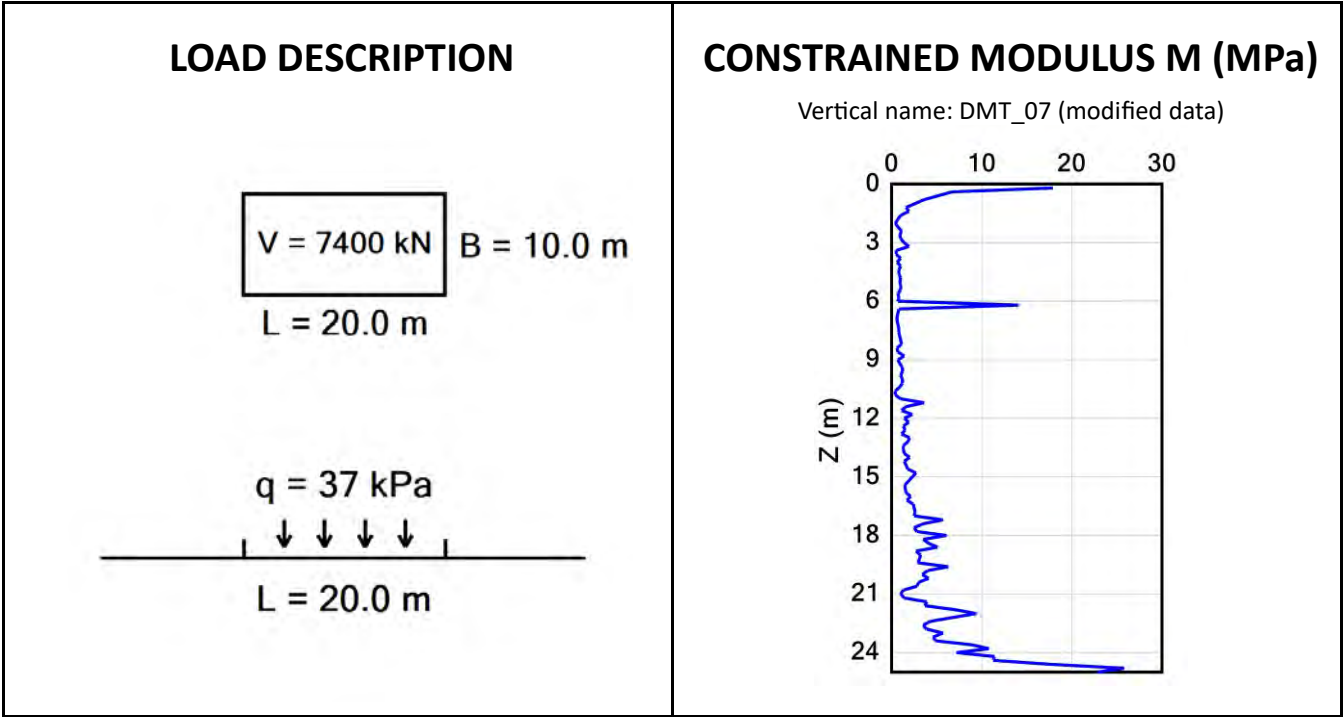
Settlements Calculation

Drill Force NZ

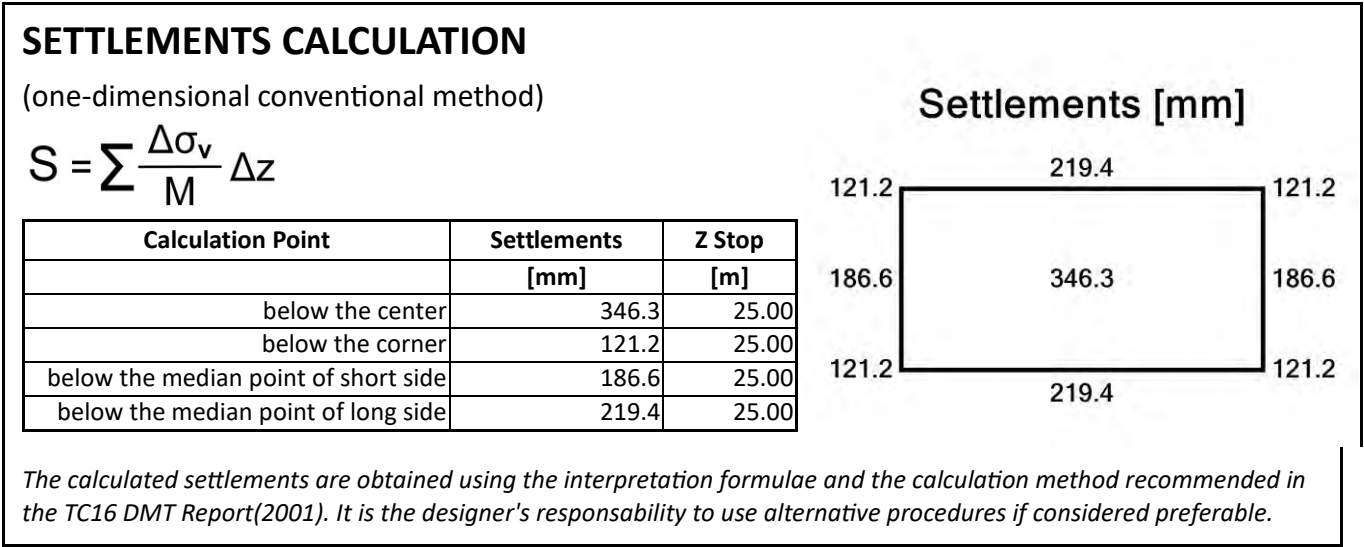
DF21GE034

LDE Limited

Hamlin Rd, Ardmore



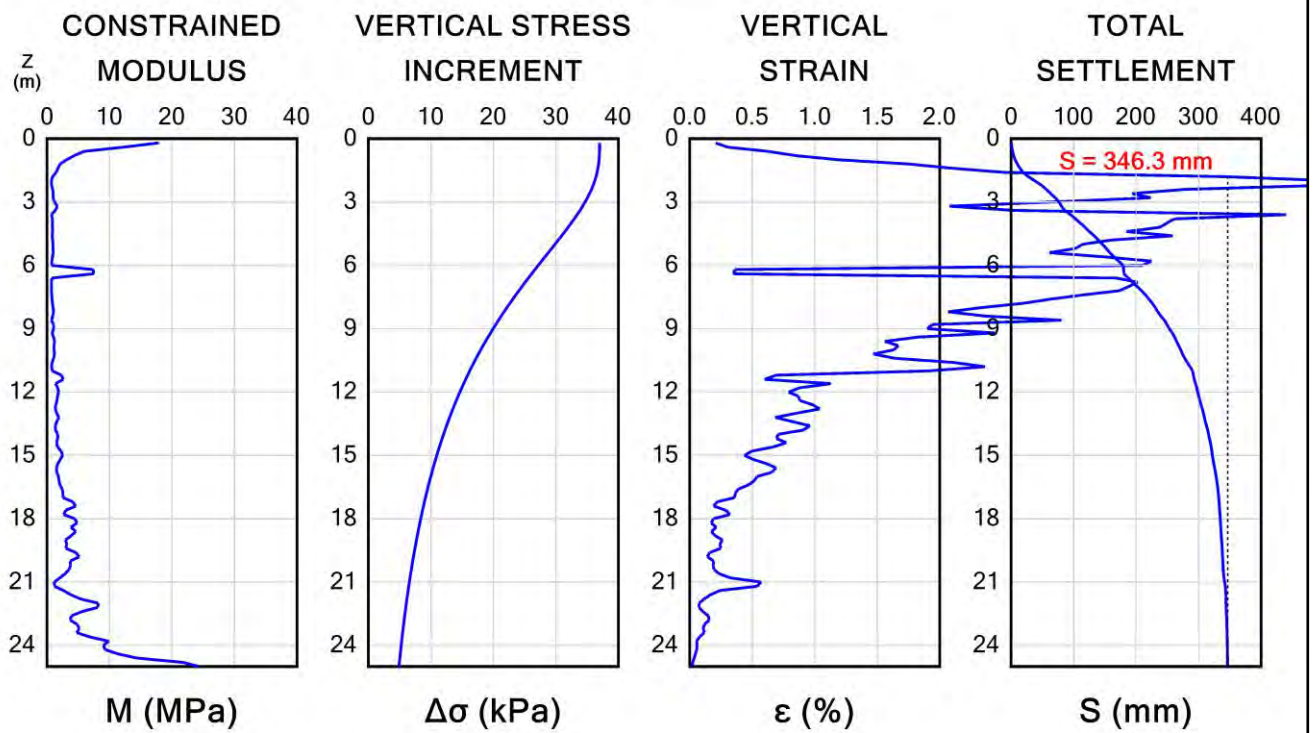
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

Drill Force NZ
LDE Limited

DF21GE034
Hamlin Rd, Ardmore





Project: Sunfield Landholding

Location:

CPT: CPT001

Total depth: 9.05 m, Date: 18/07/2025

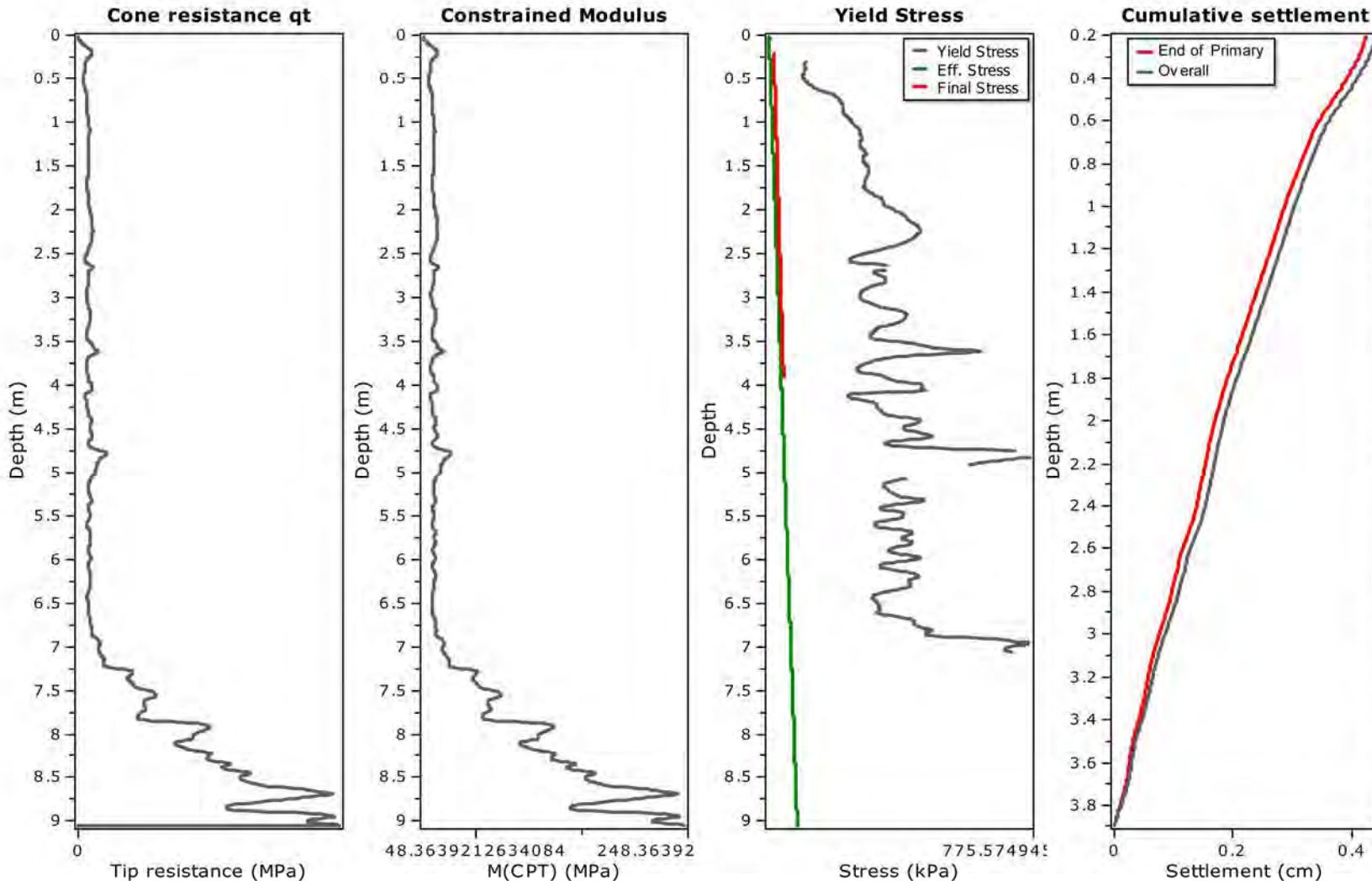
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

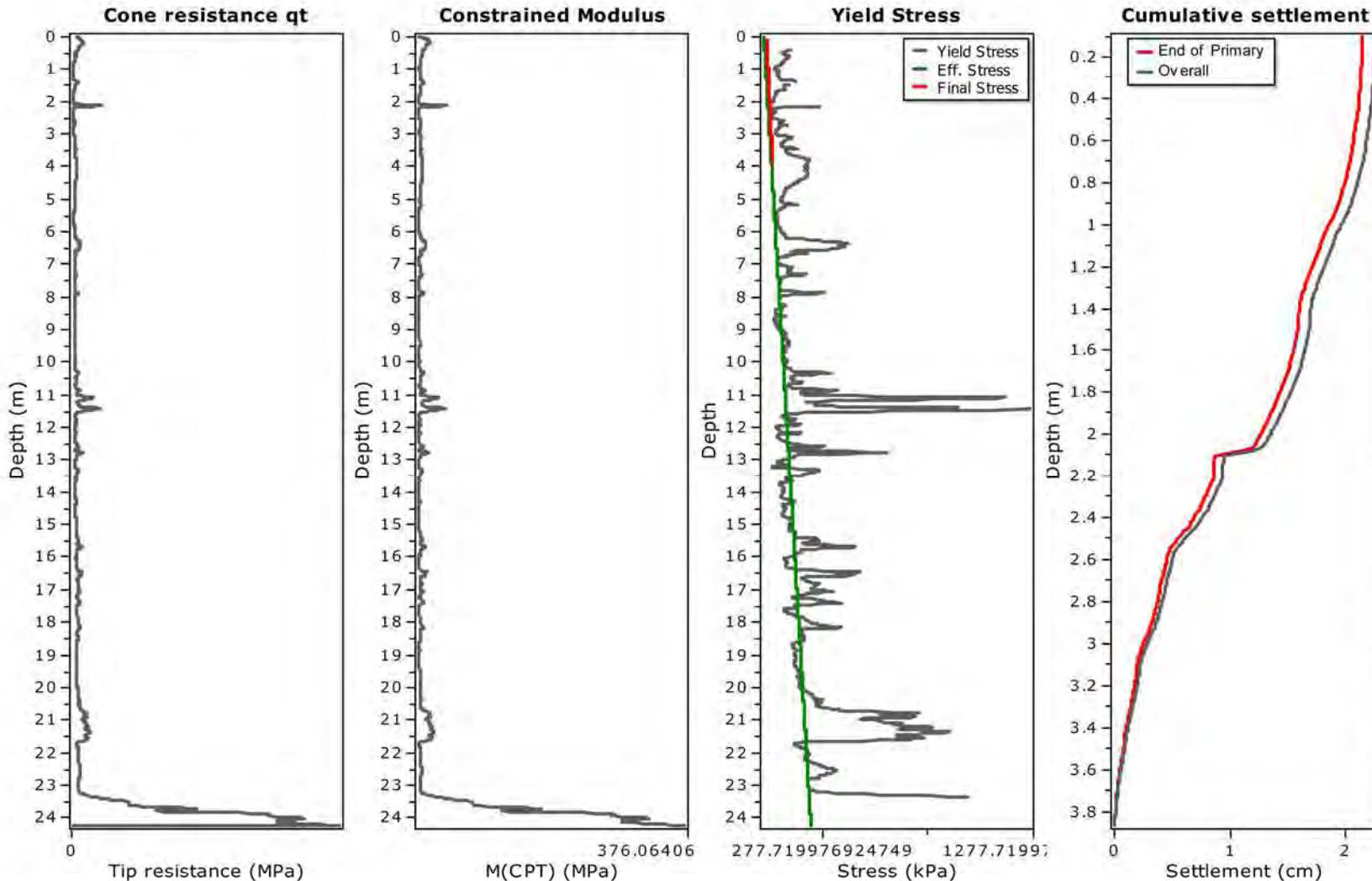
$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding
Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

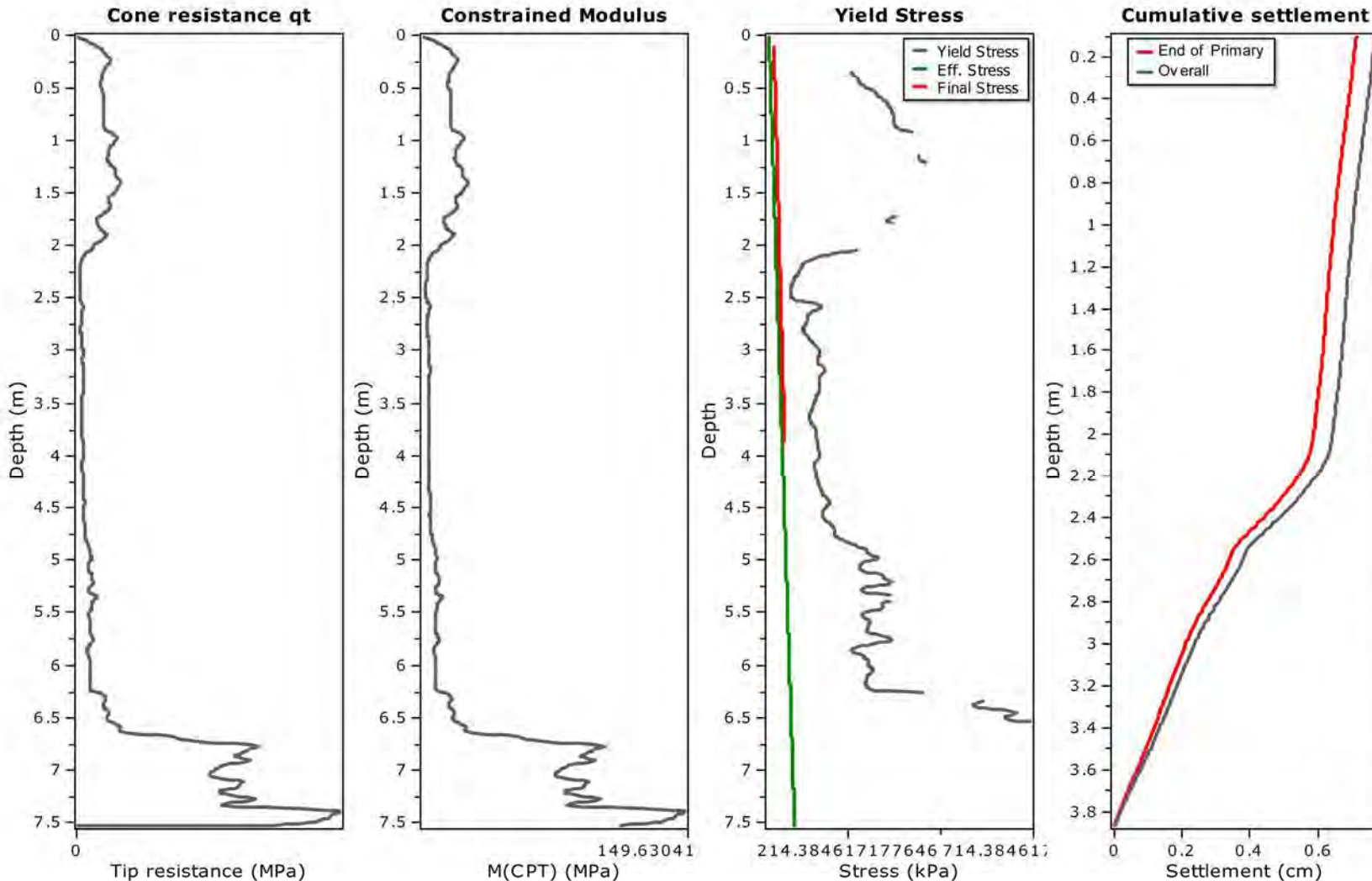
$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding
Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

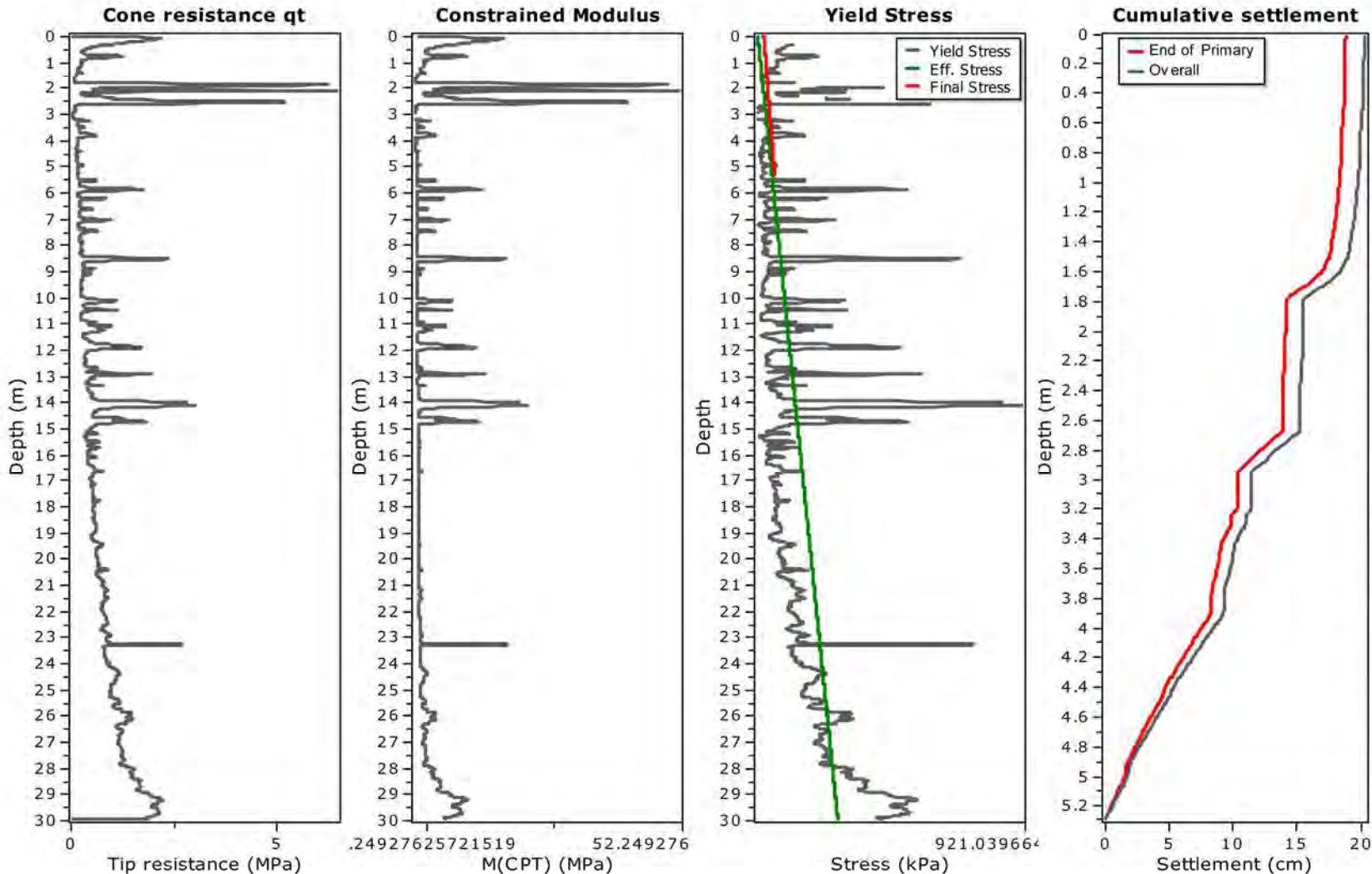


Project: Sunfield Landholding
Location:

CPT: CPT004

Total depth: 29.93 m, Date: 18/07/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

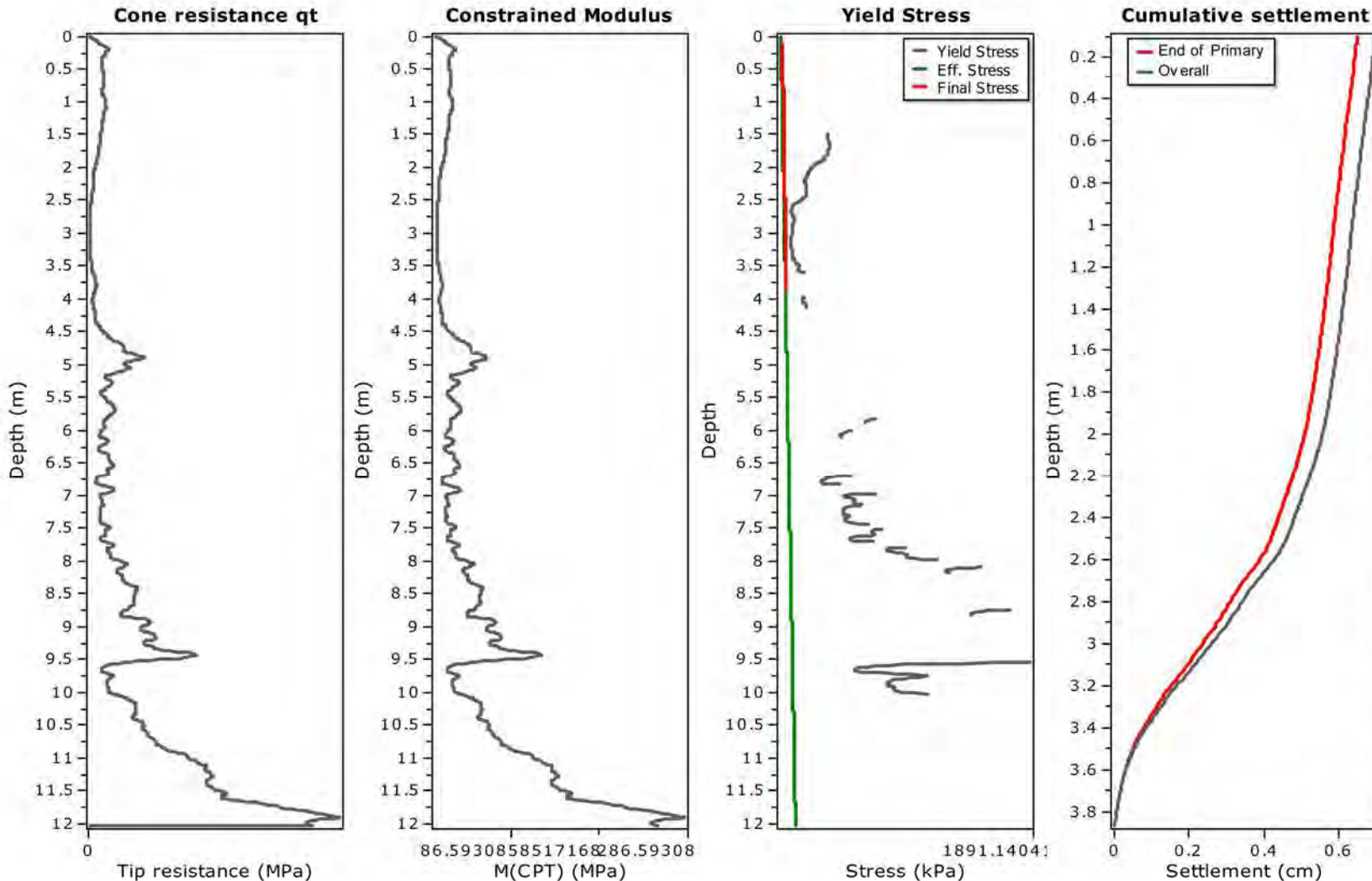
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-n}$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

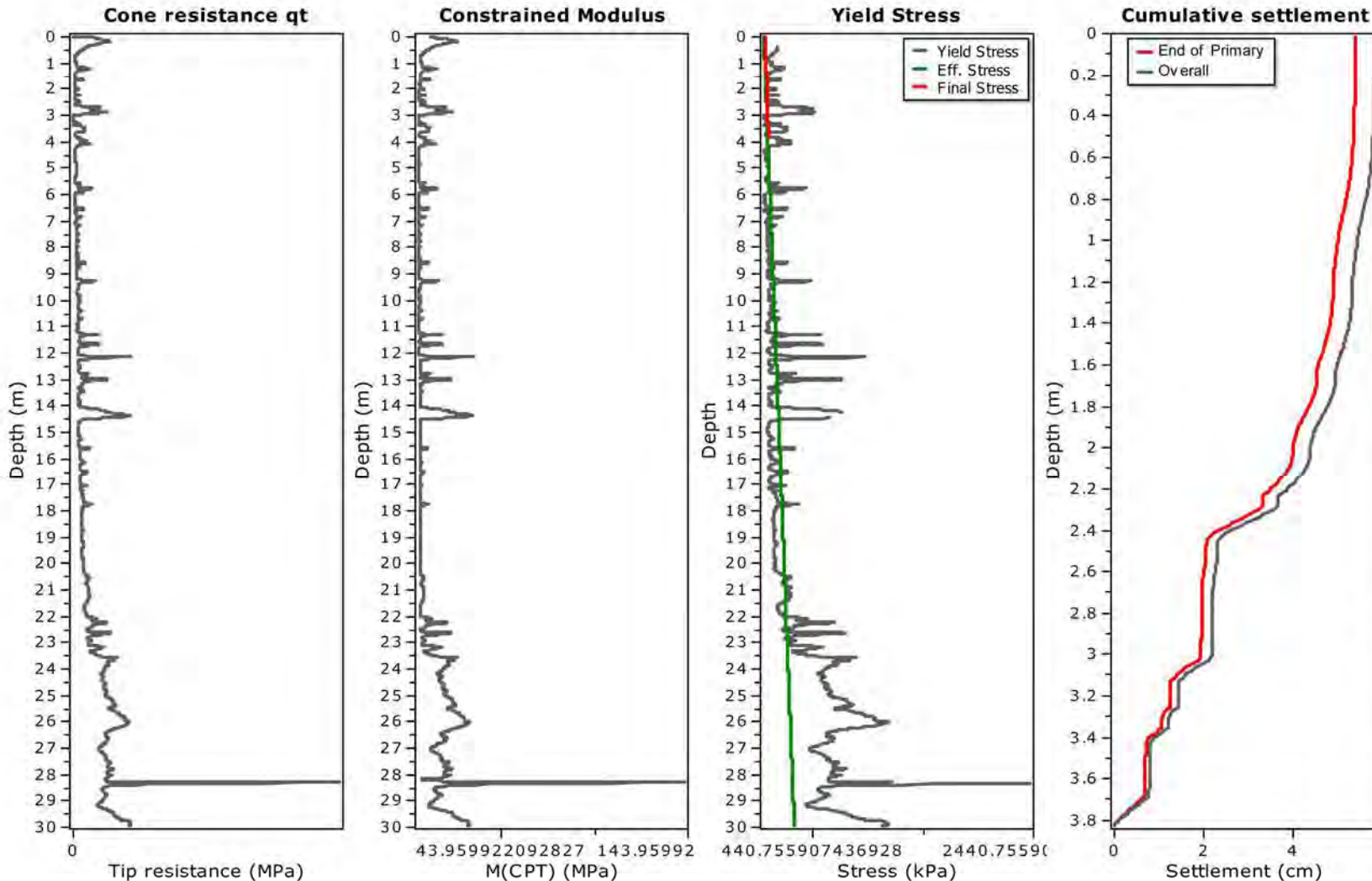
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular;
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-n}$$

where t_p is the duration of primary consolidation

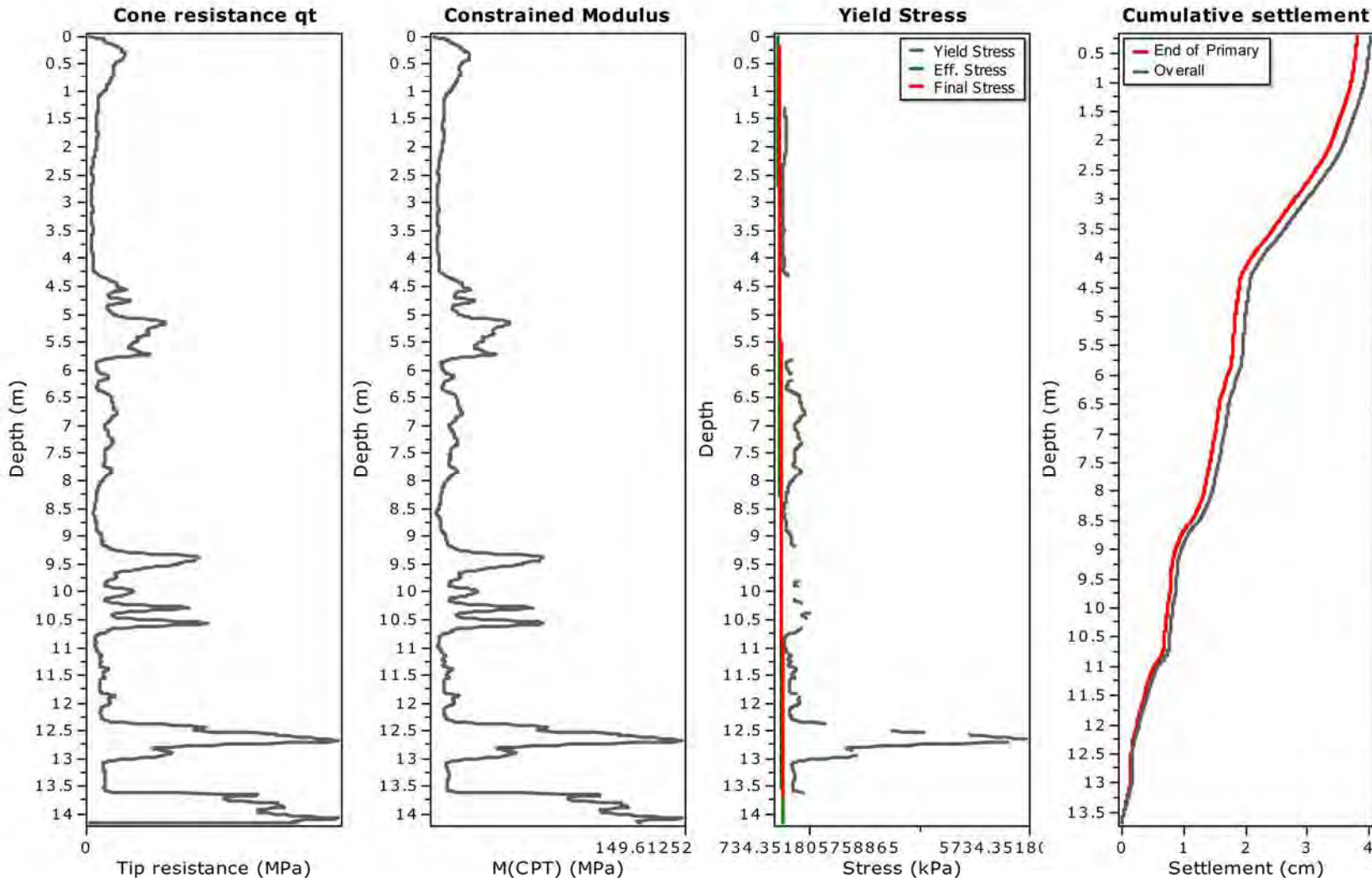


Project: Sunfield Landholding
Location:

CPT: CPT007

Total depth: 14.15 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

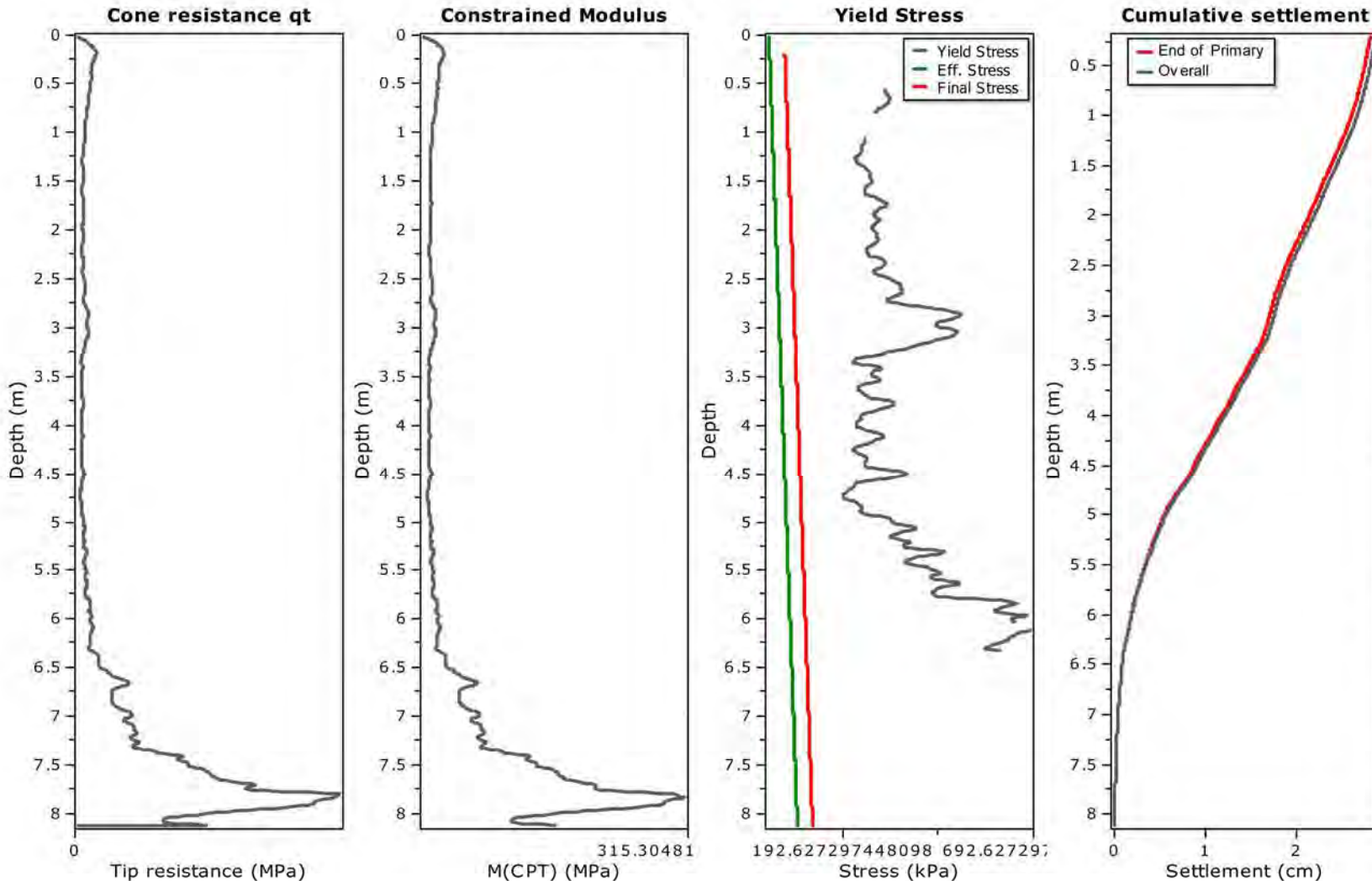
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.20 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

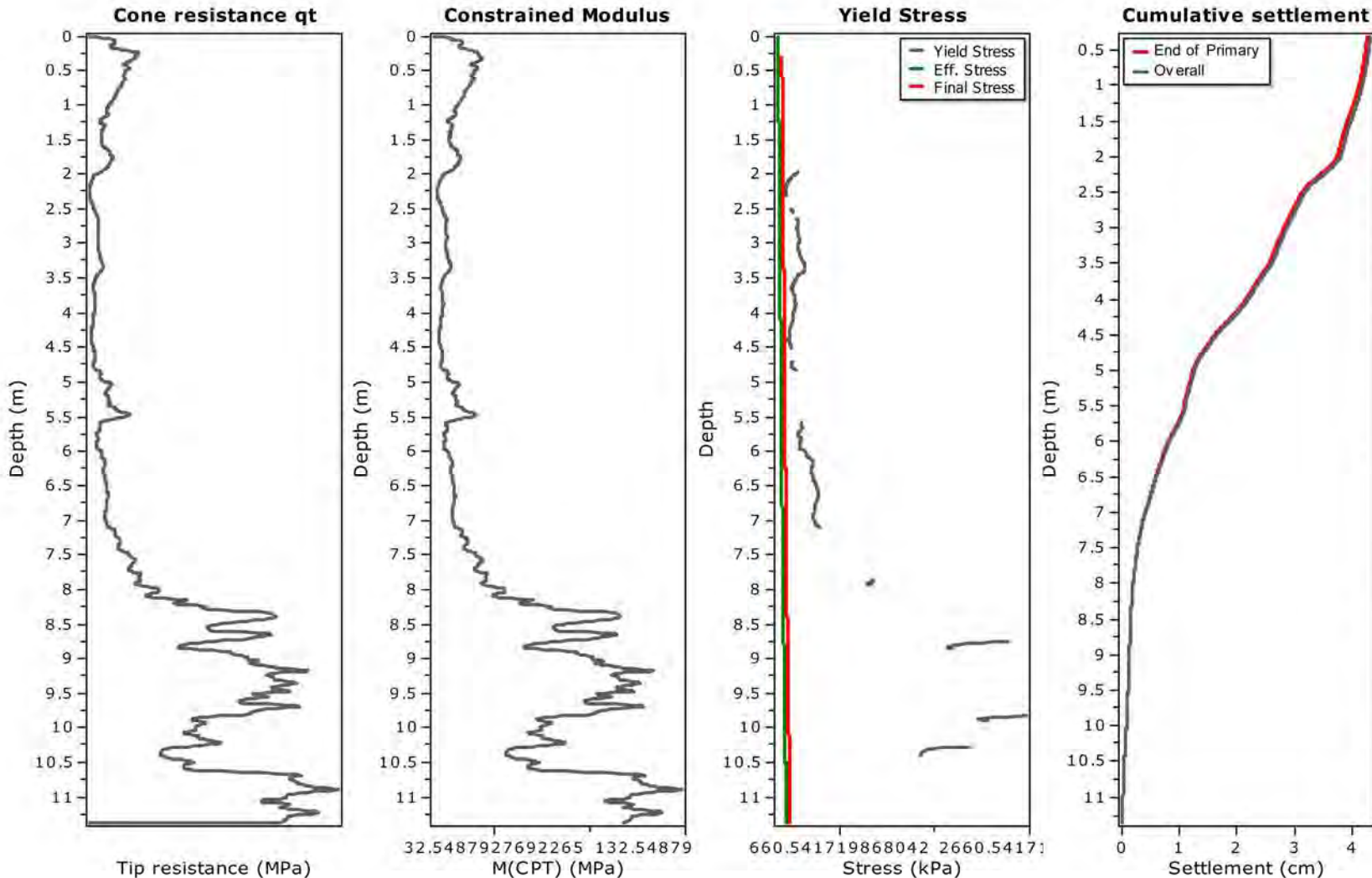
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.30 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

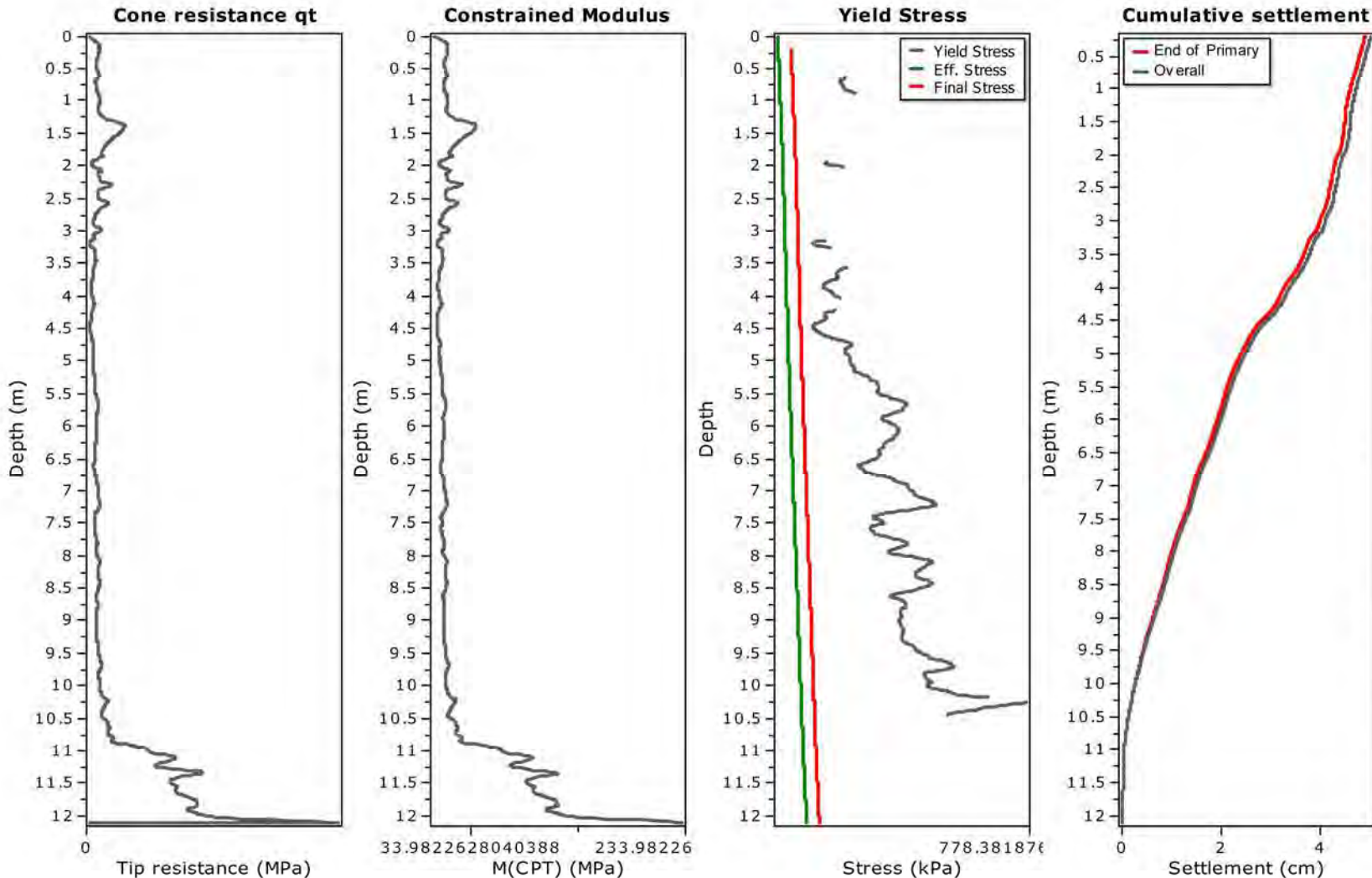
$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding
Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

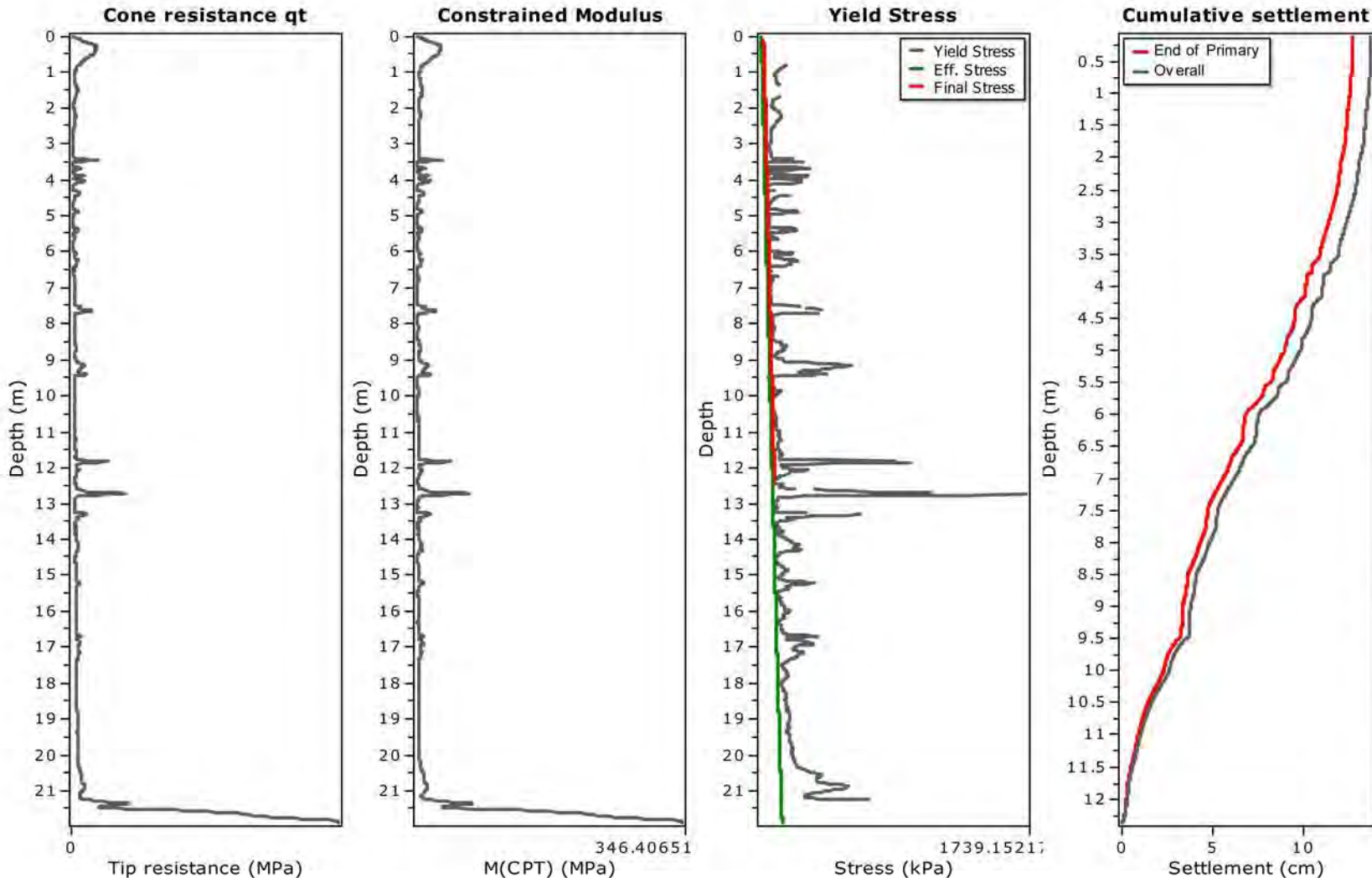
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 15.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT012

Total depth: 12.51 m, Date: 31/03/2025

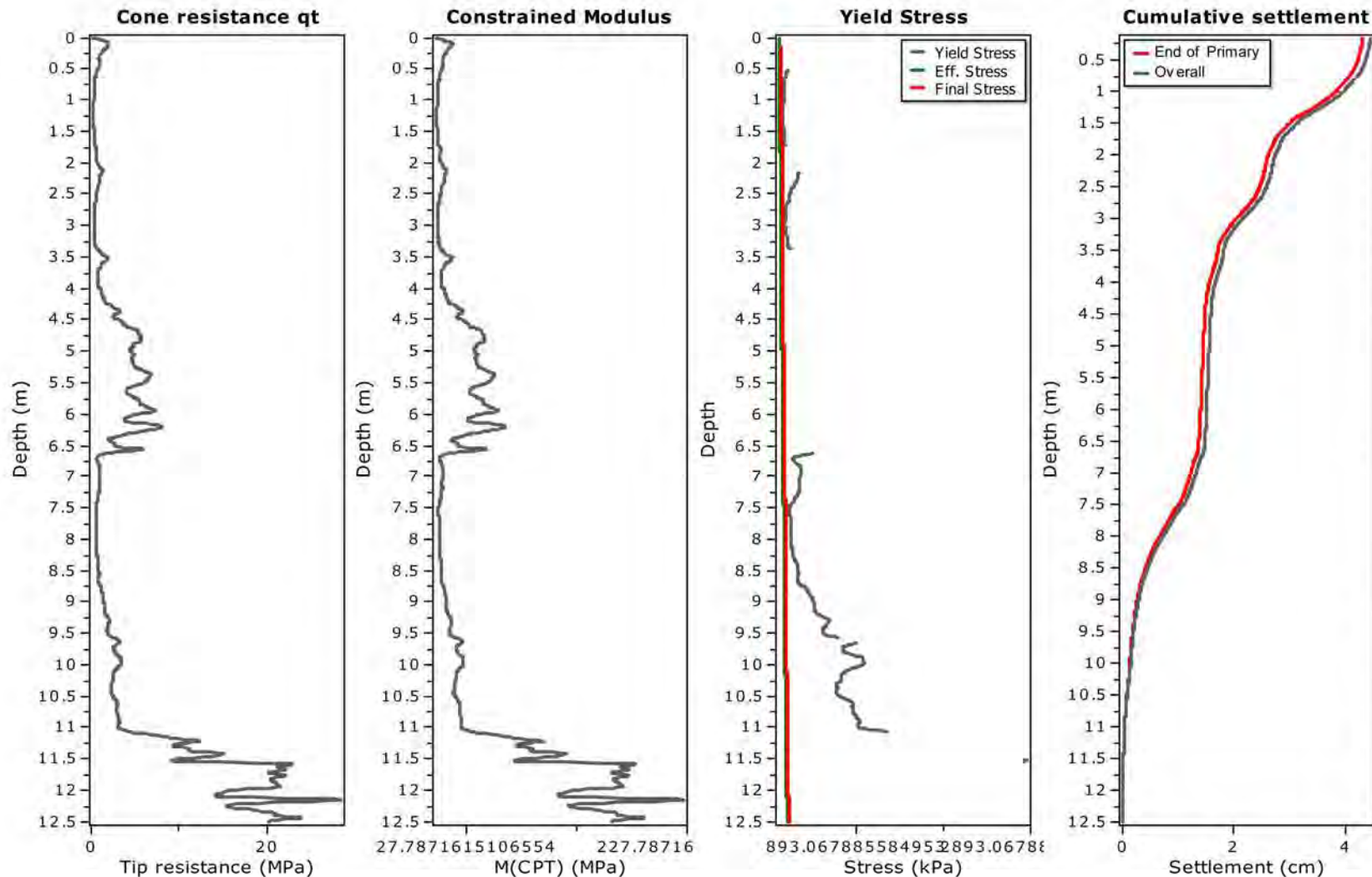
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.15 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

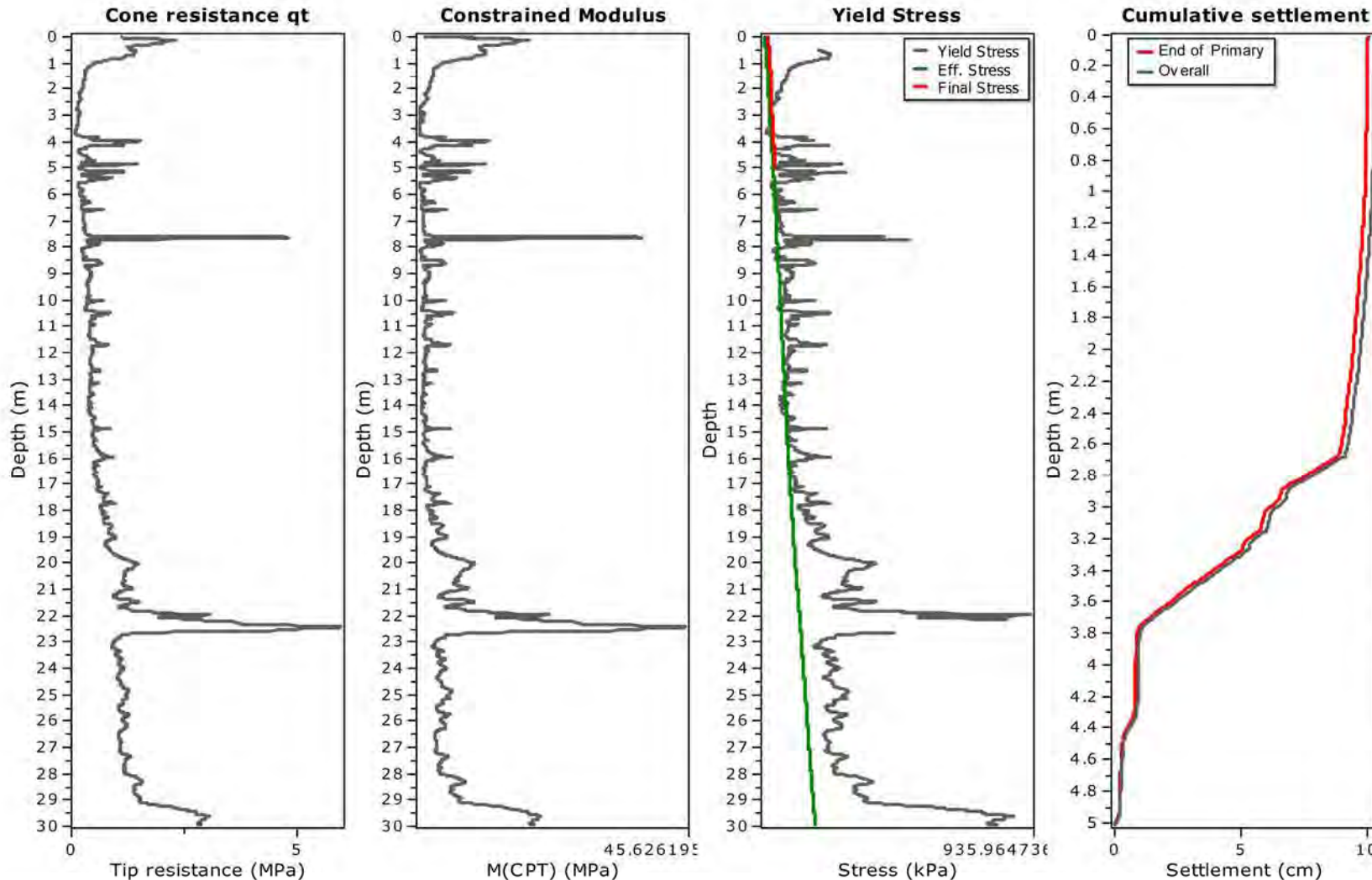


Project: Sunfield Landholding
Location:

CPT: CPT013A

Total depth: 29.93 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

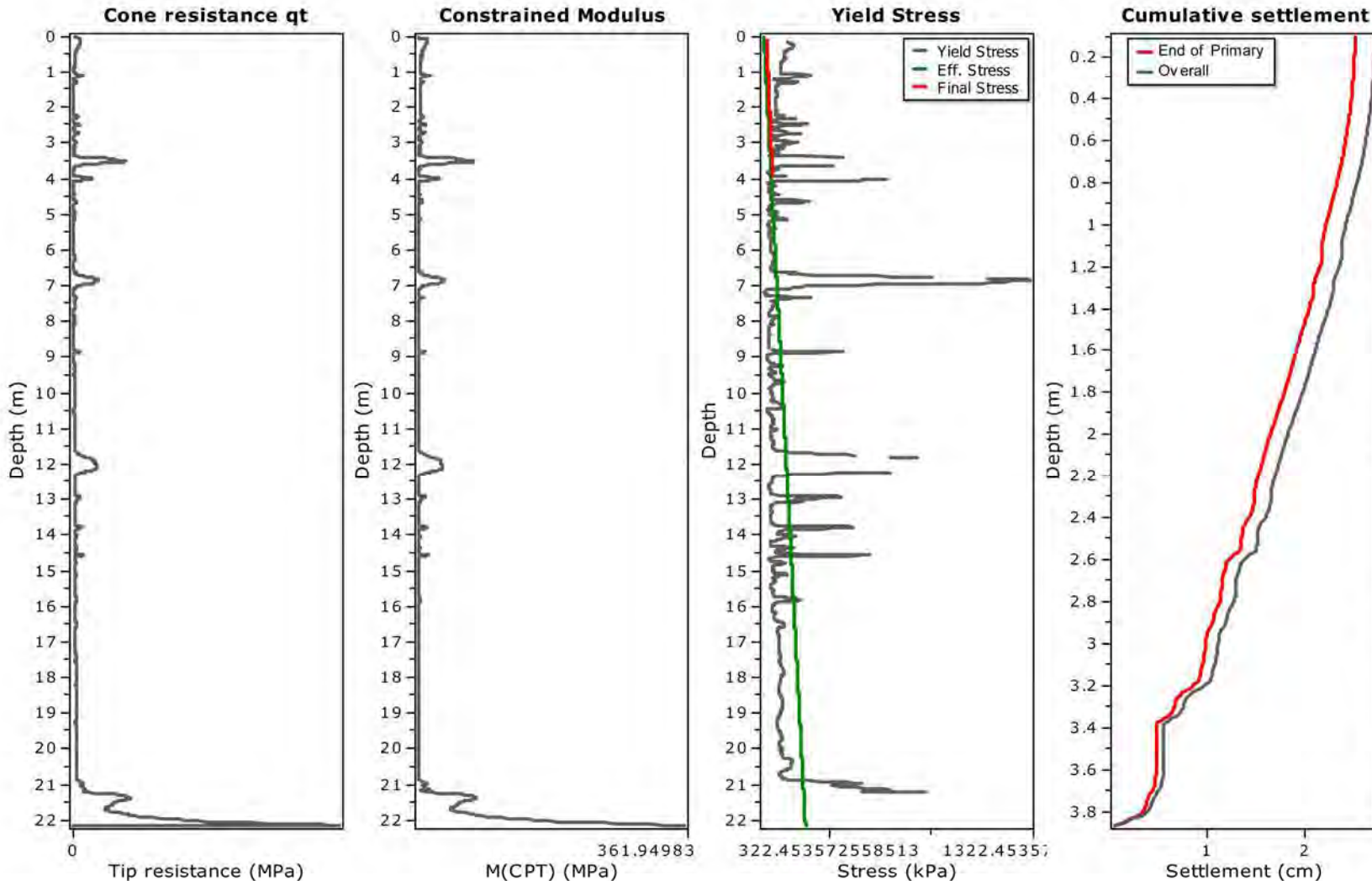
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

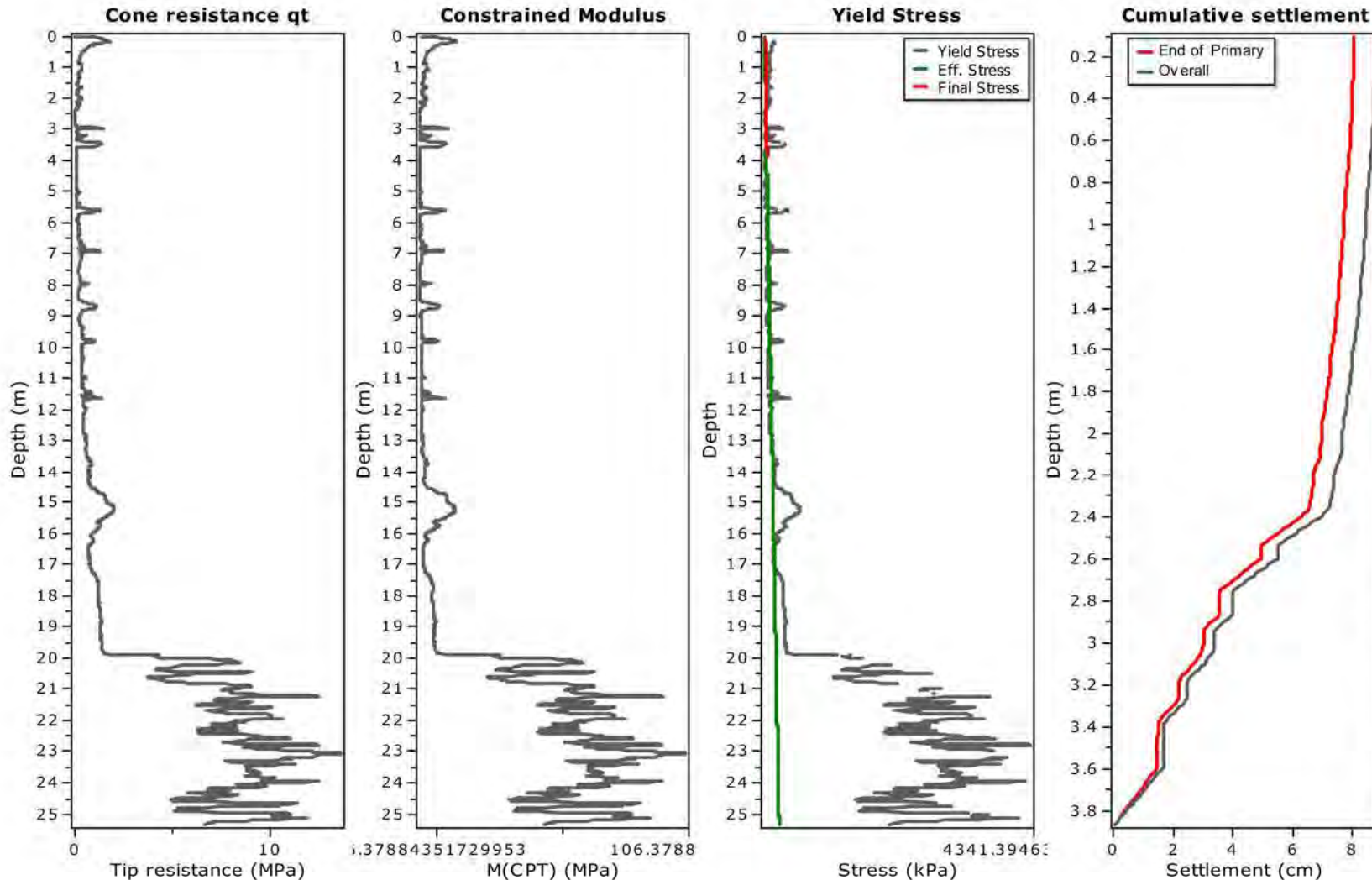
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

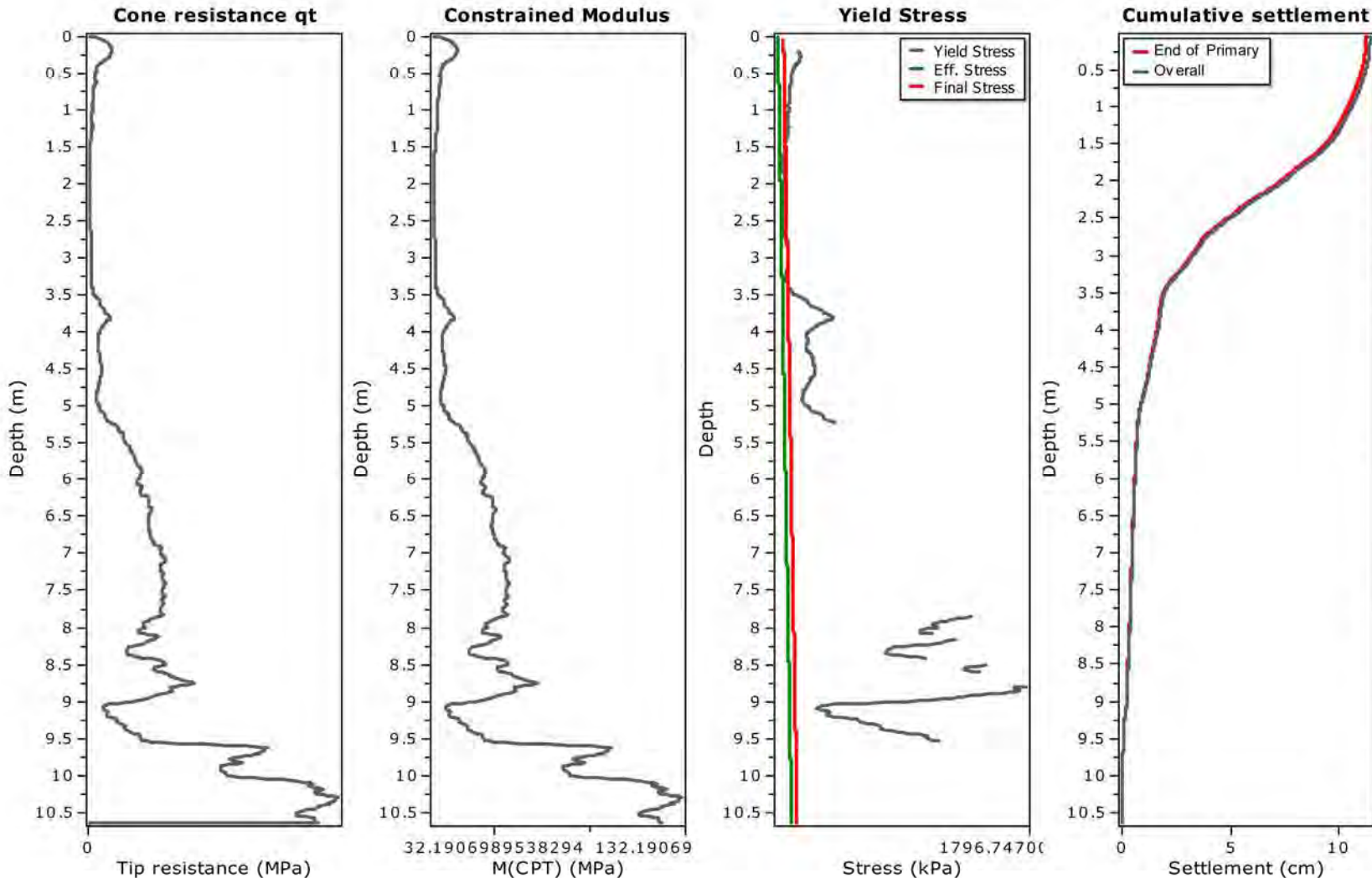
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-n}$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.05 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

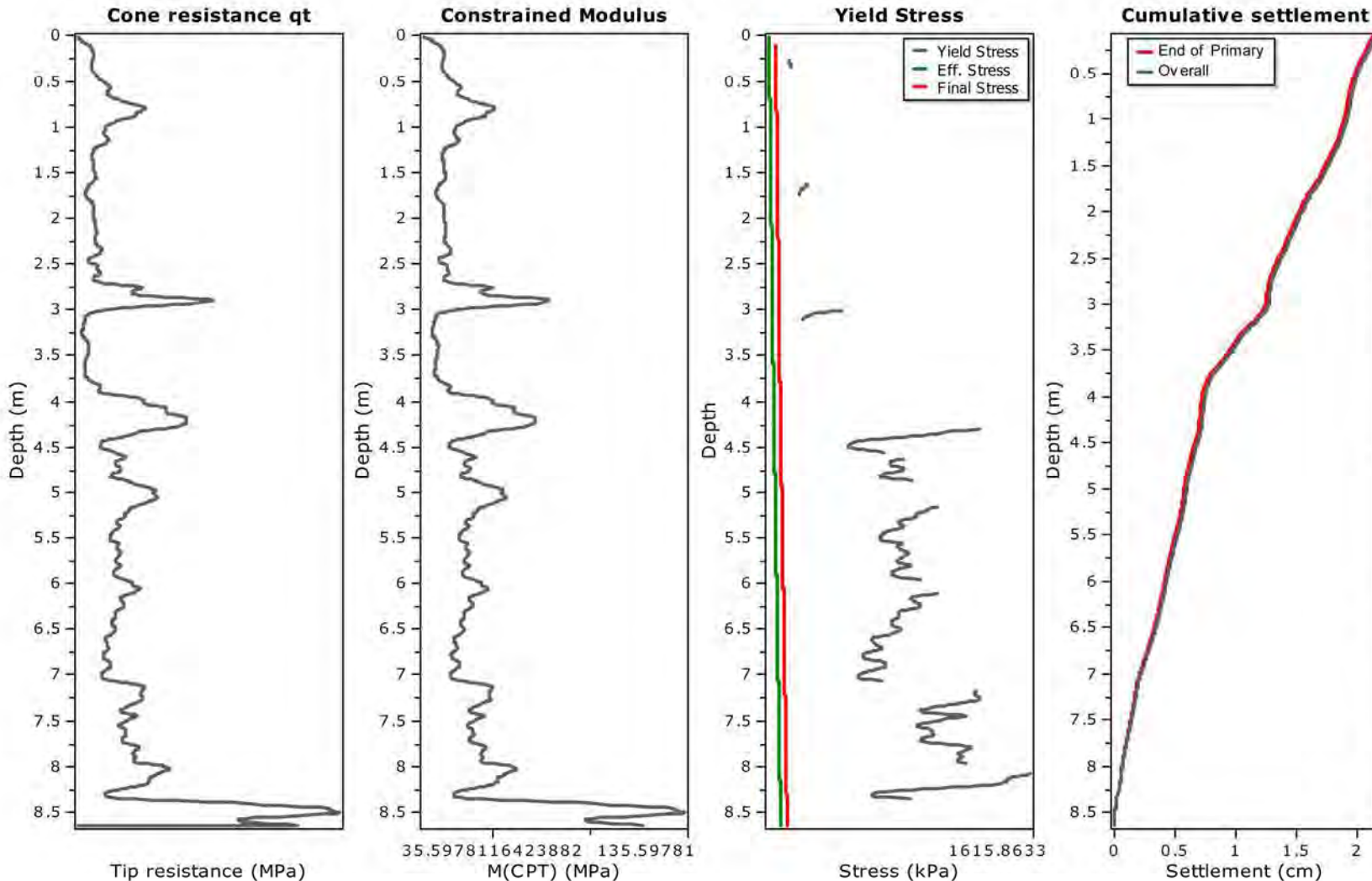


Project: Sunfield Landholding
Location:

CPT: CPT017

Total depth: 8.65 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

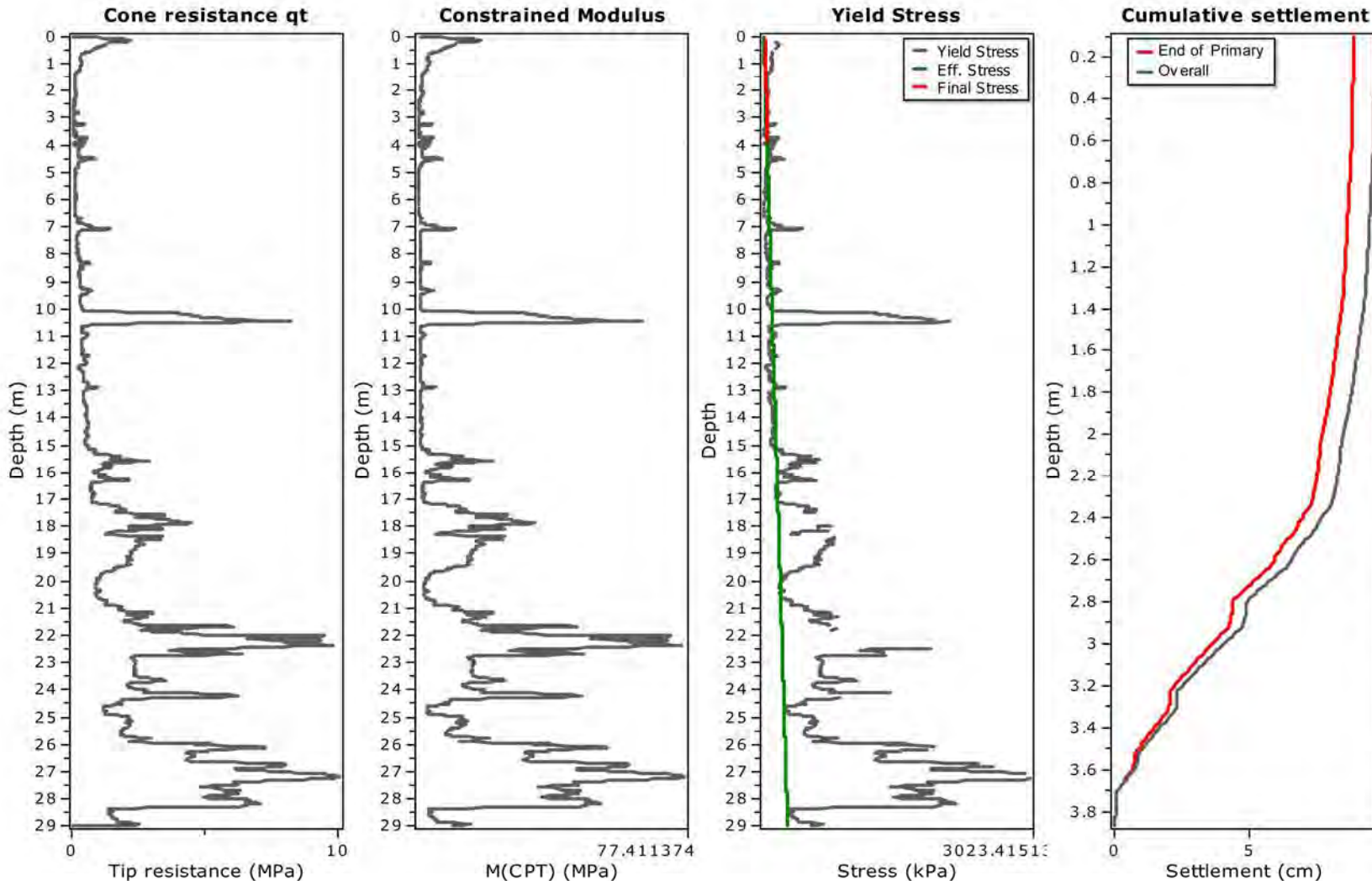
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 12.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

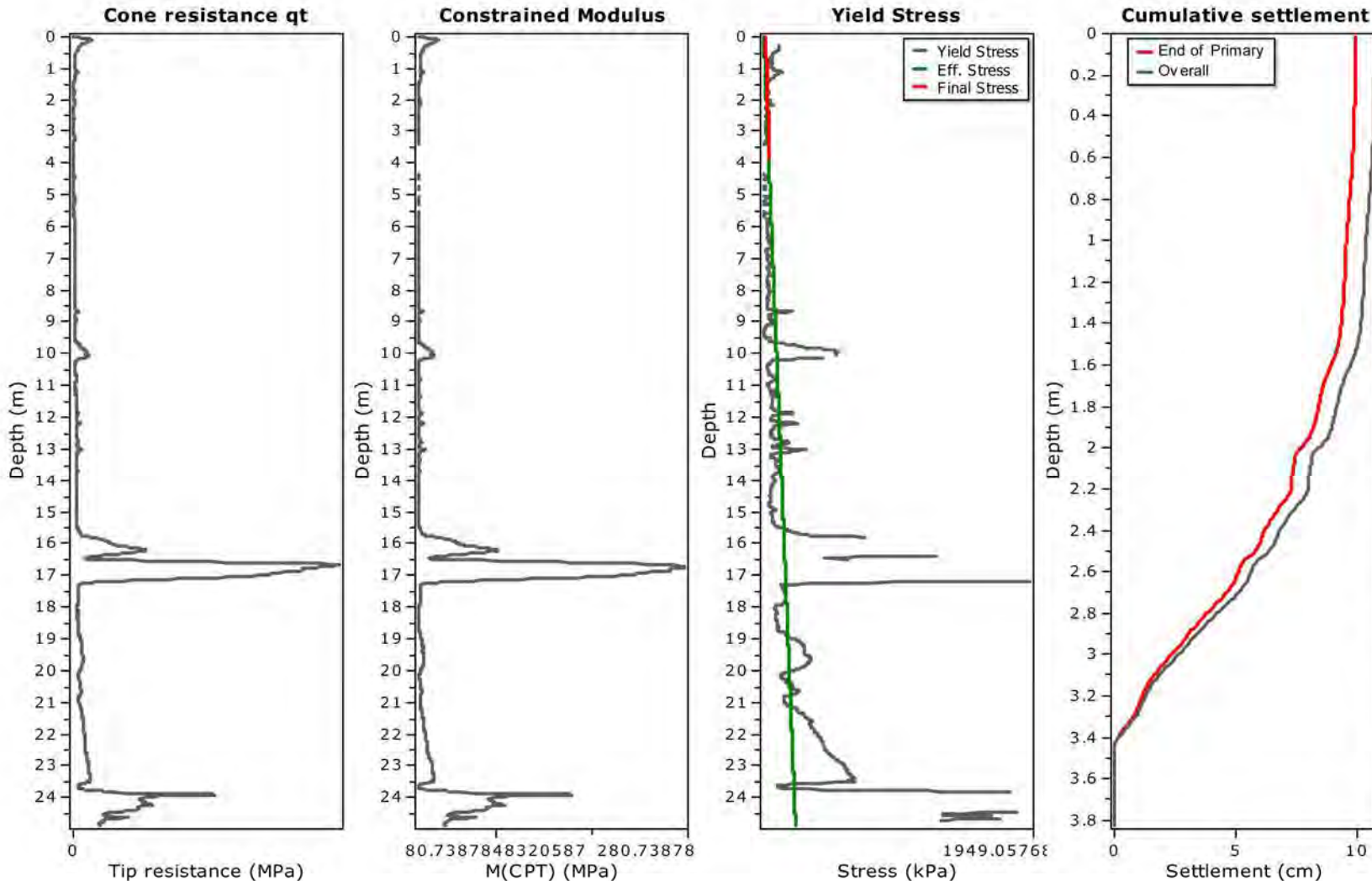
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 10.00 (m)
 L/B: 2.0
 Footing pressure: 12.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

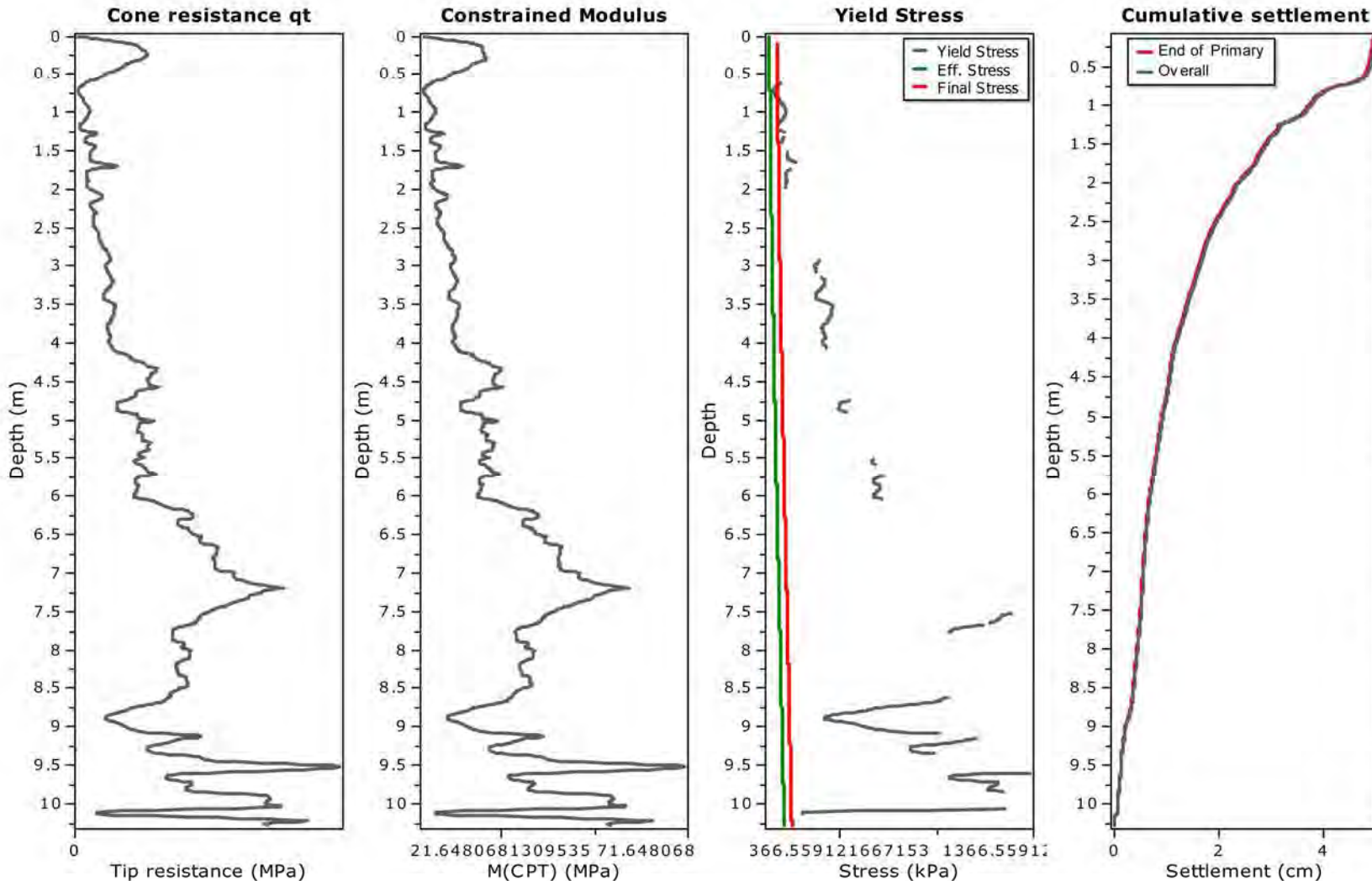
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

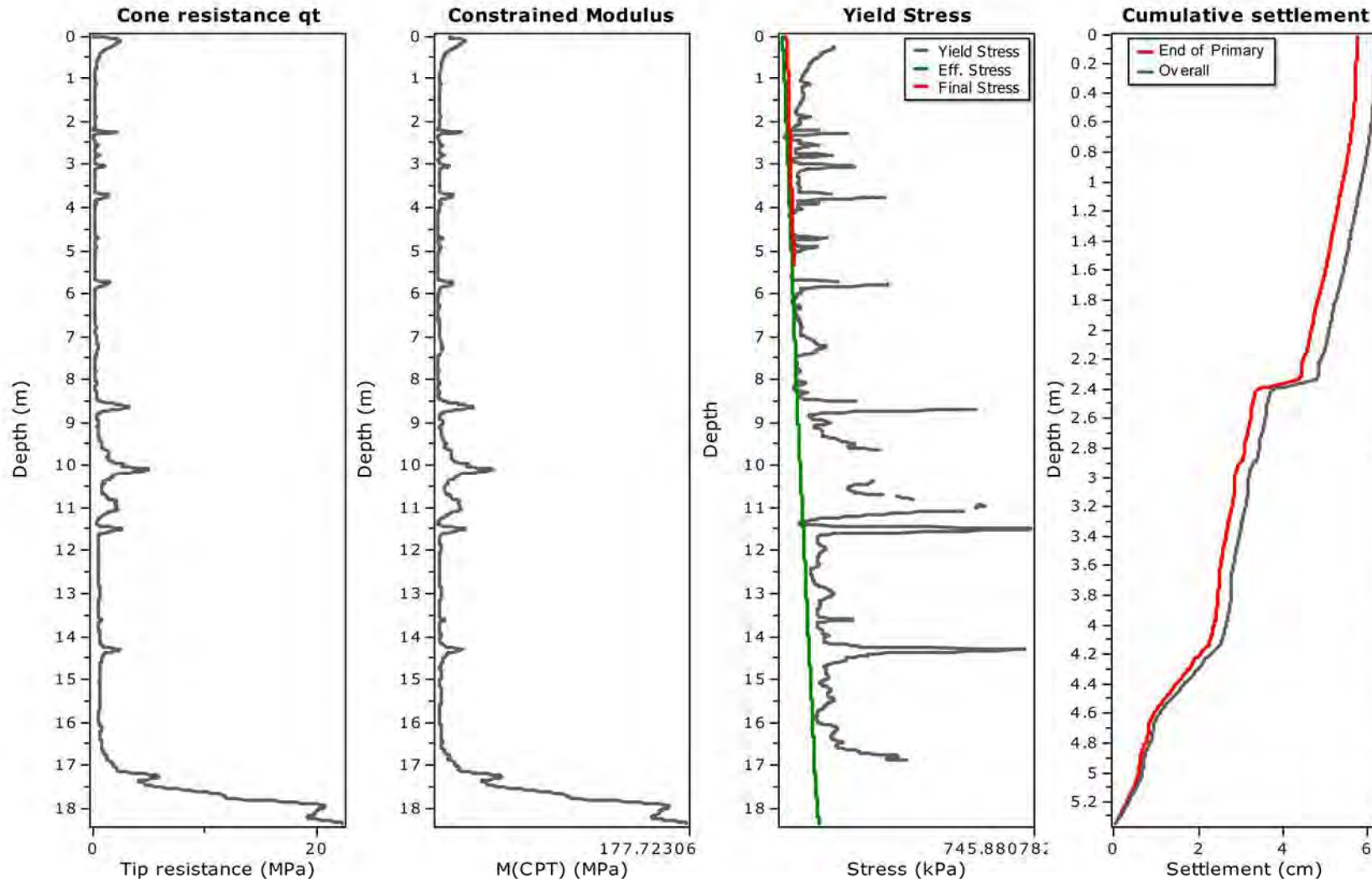


Project: Sunfield Landholding
Location:

CPT: CPT021A

Total depth: 18.36 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

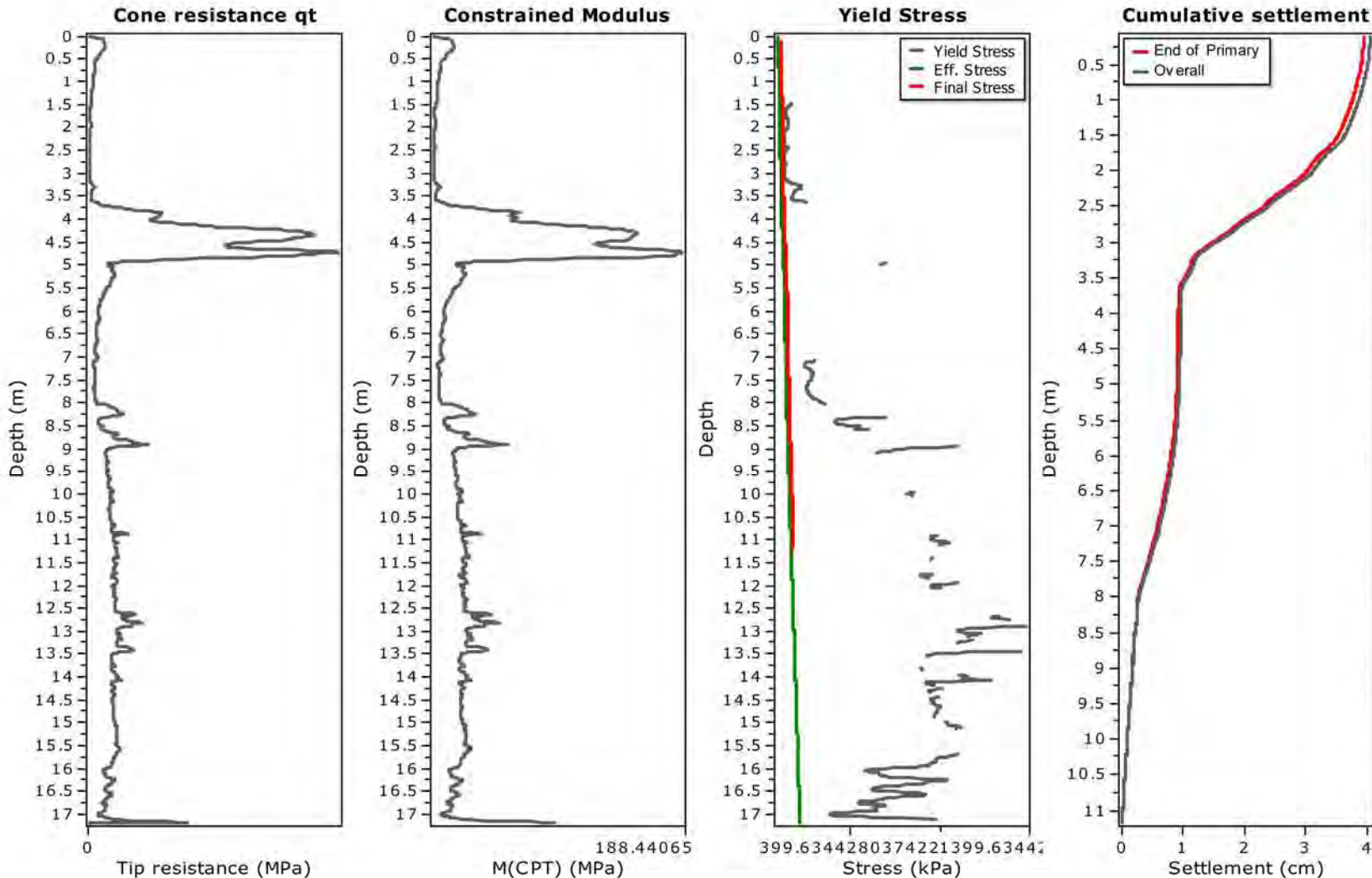


Project: Sunfield Landholding
Location:

CPT: CPT022

Total depth: 17.18 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT101

Total depth: 16.48 m, Date: 18/07/2025

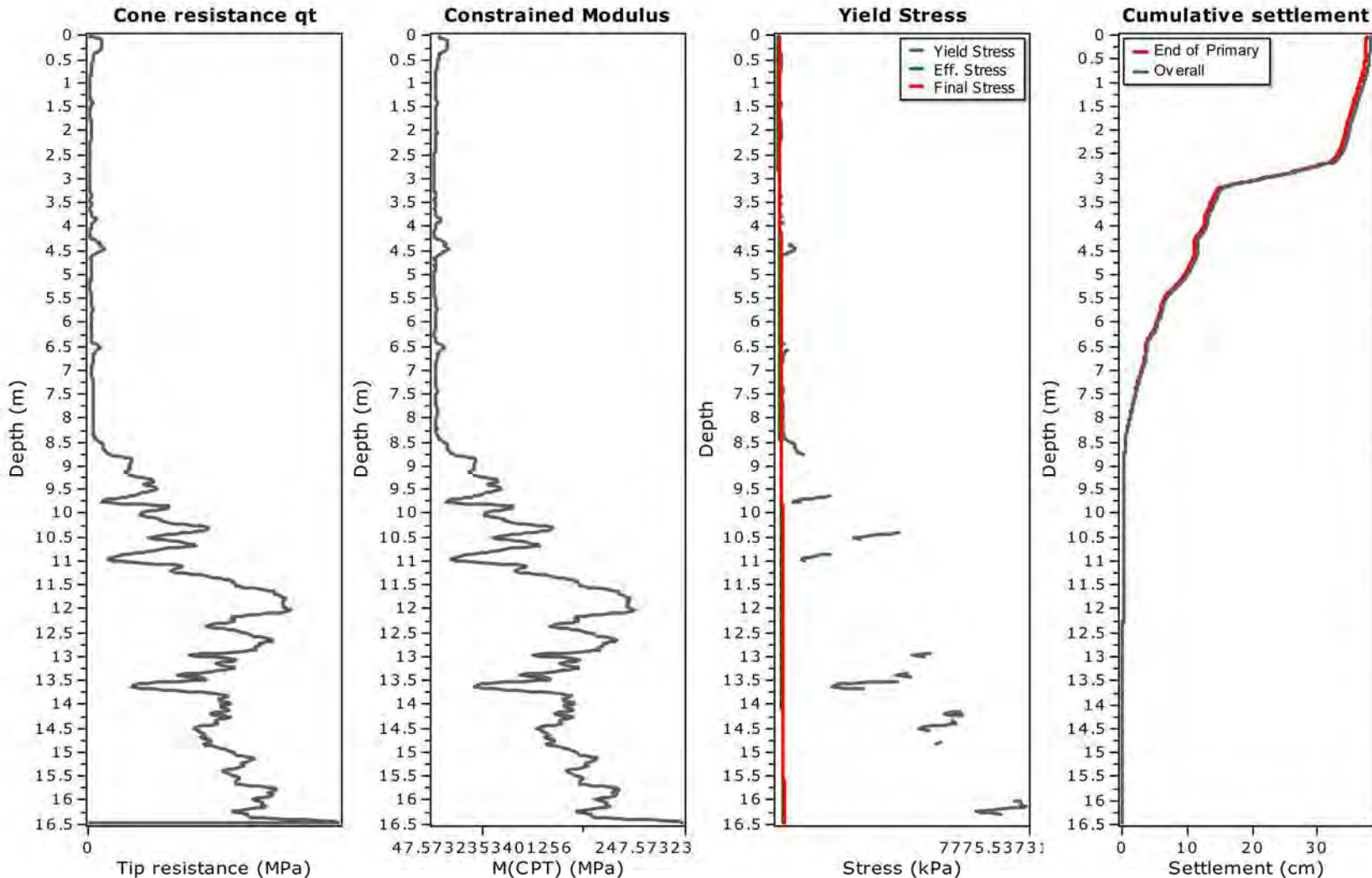
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times A$$

where t_p is the duration of primary consolidation

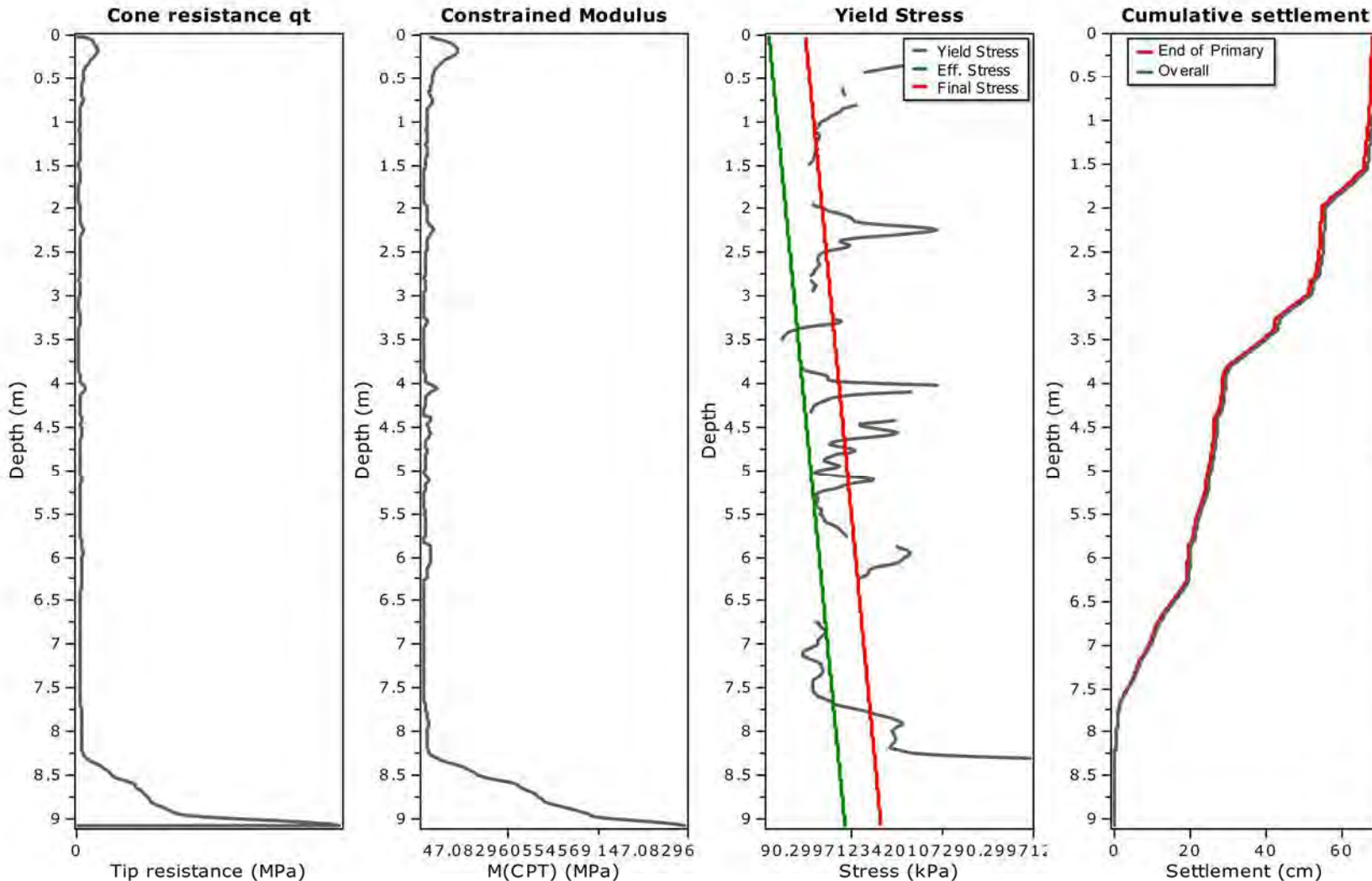


Project: Sunfield Landholding
Location:

CPT: CPT102

Total depth: 9.08 m, Date: 18/07/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

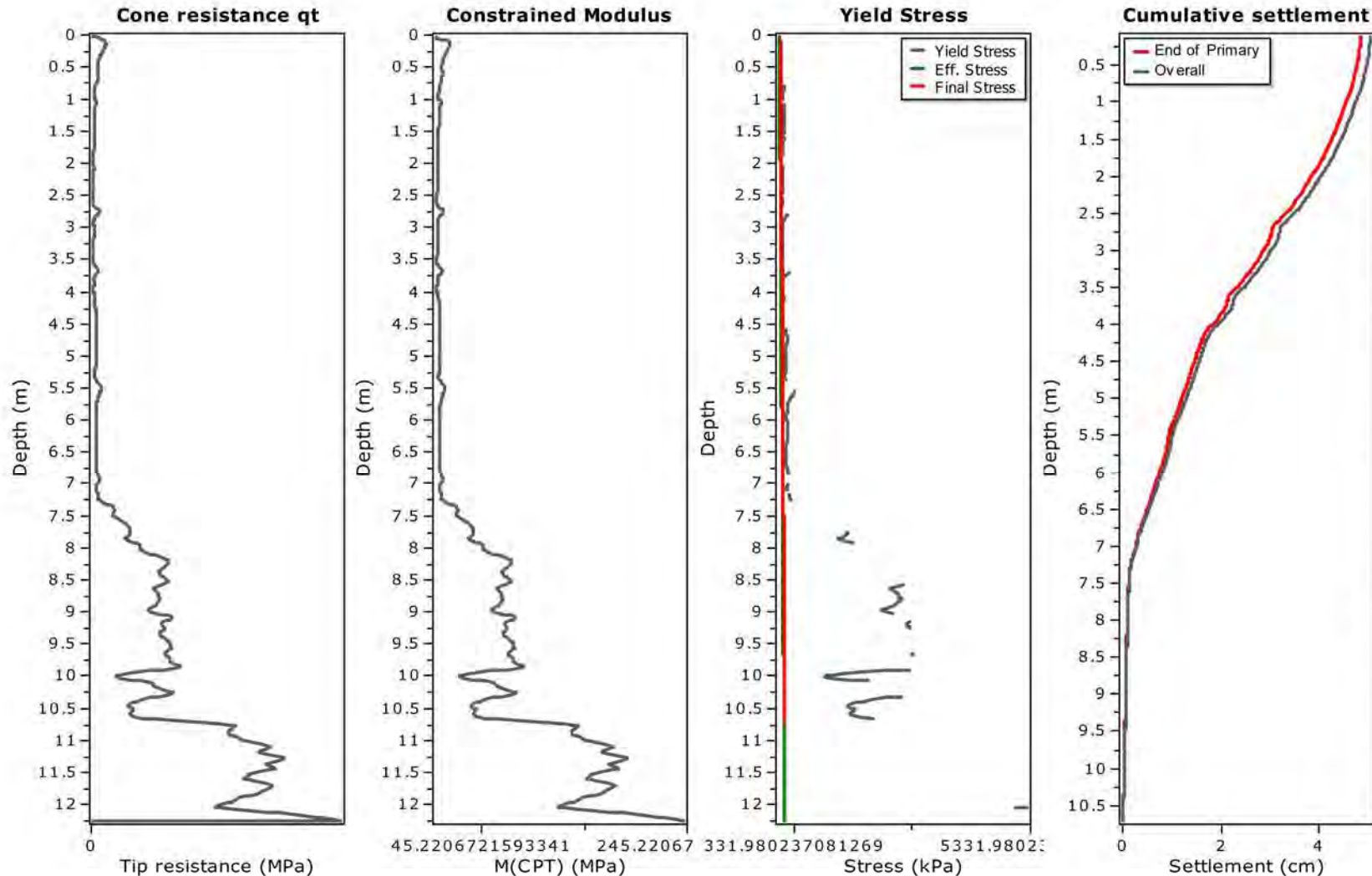
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

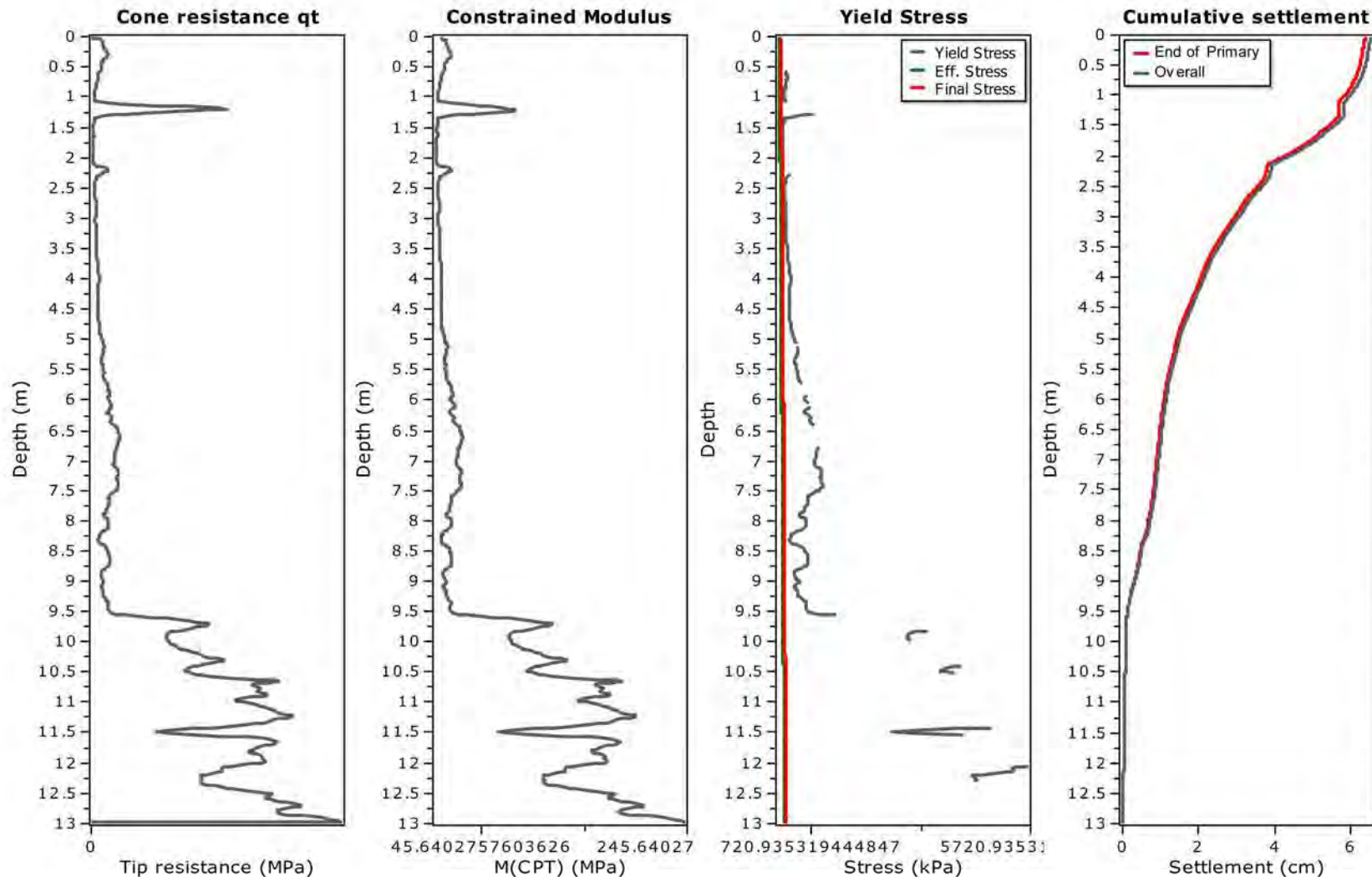
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.05 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

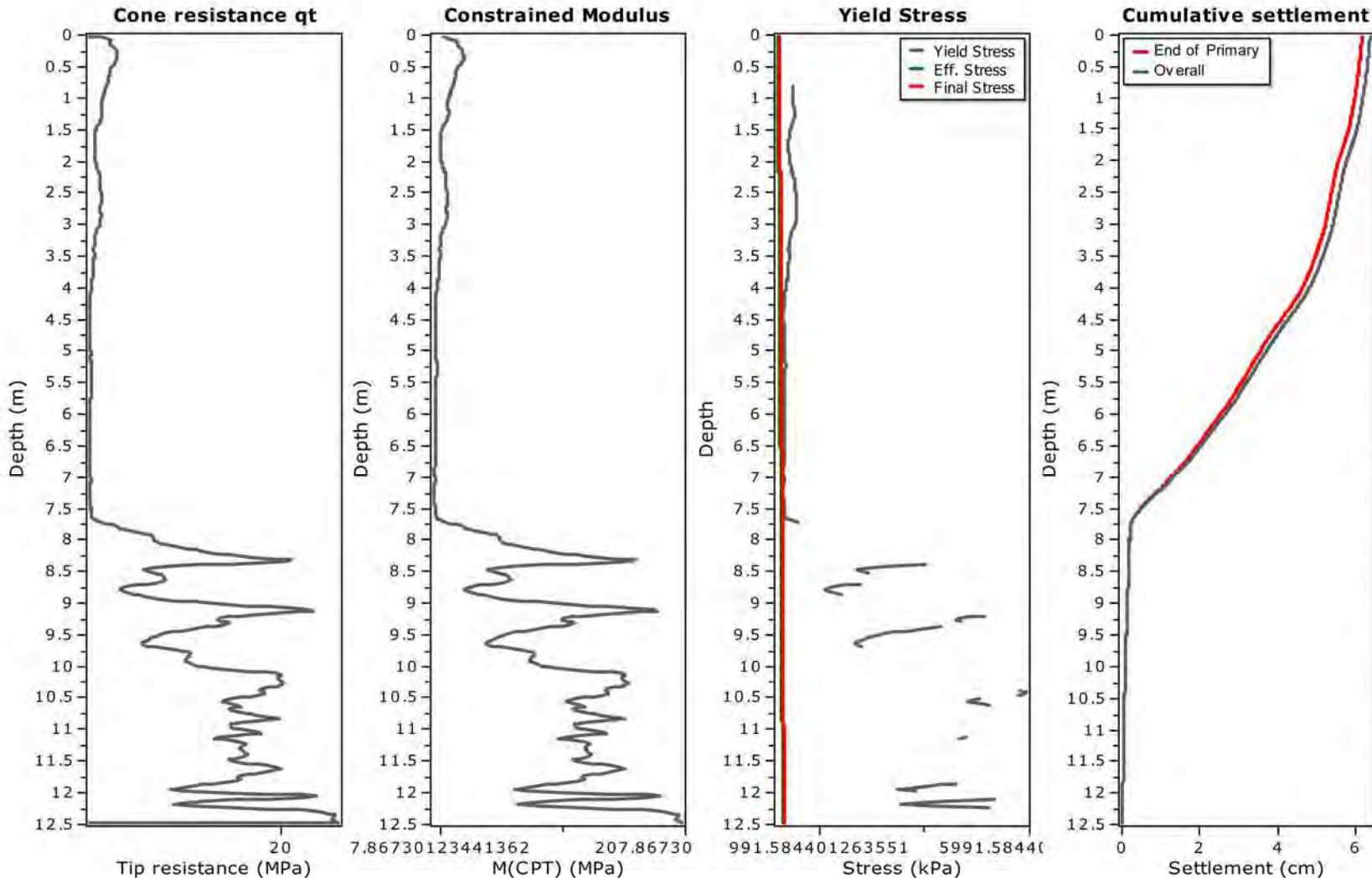
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

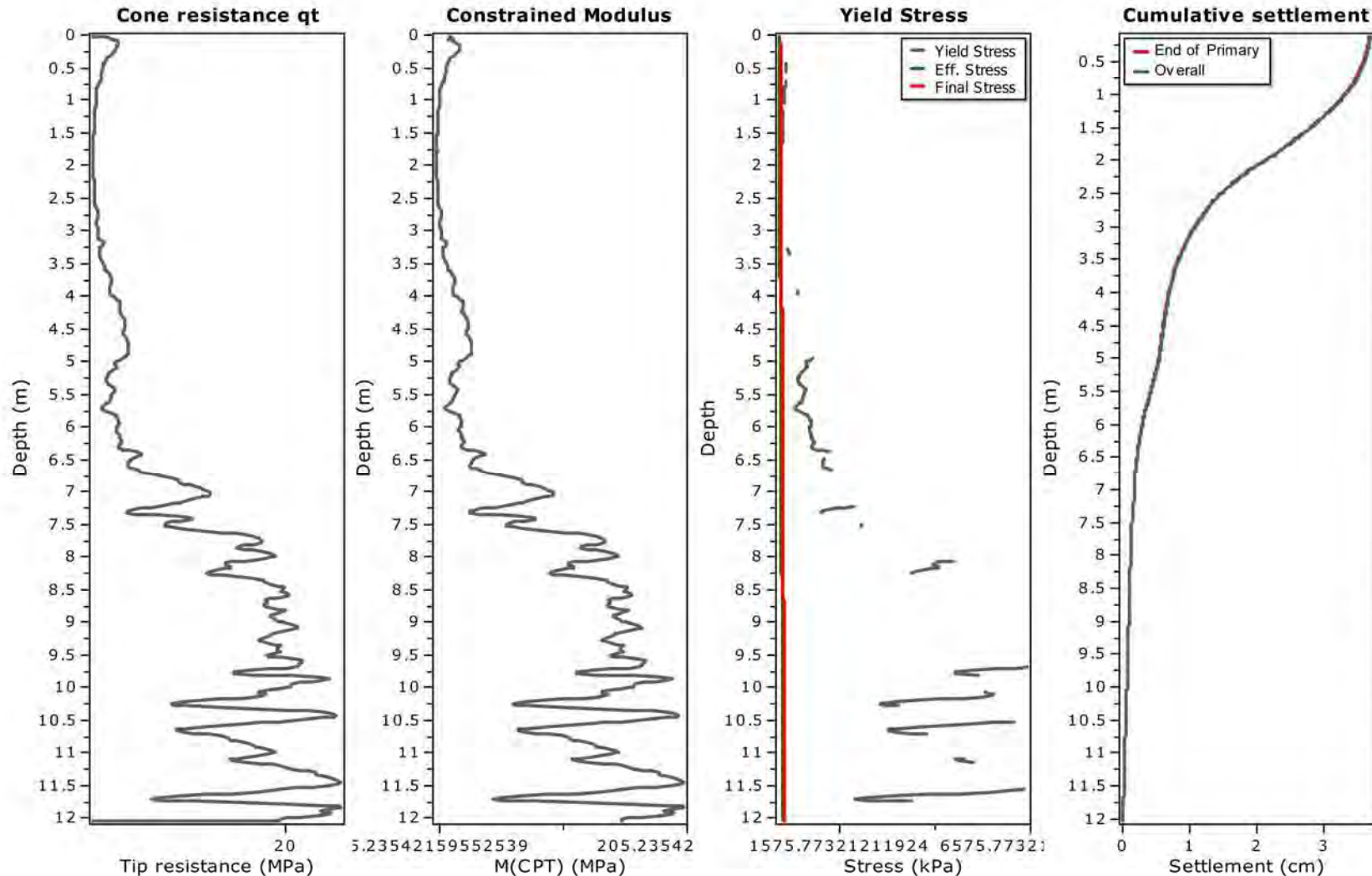


Project: Sunfield Landholding
Location:

CPT: CPT110

Total depth: 12.04 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

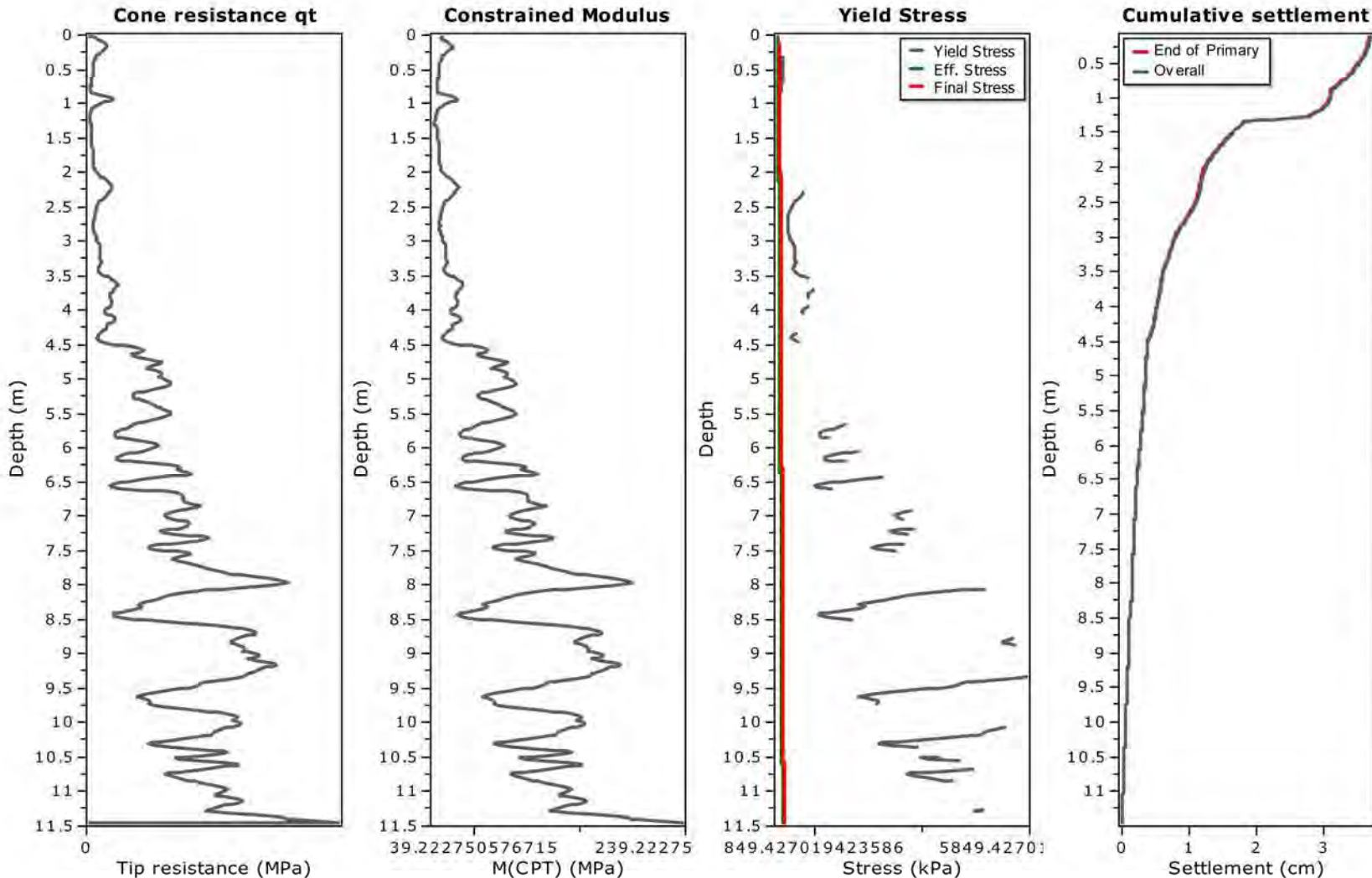


Project: Sunfield Landholding
Location:

CPT: CPT111

Total depth: 11.46 m, Date: 18/07/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

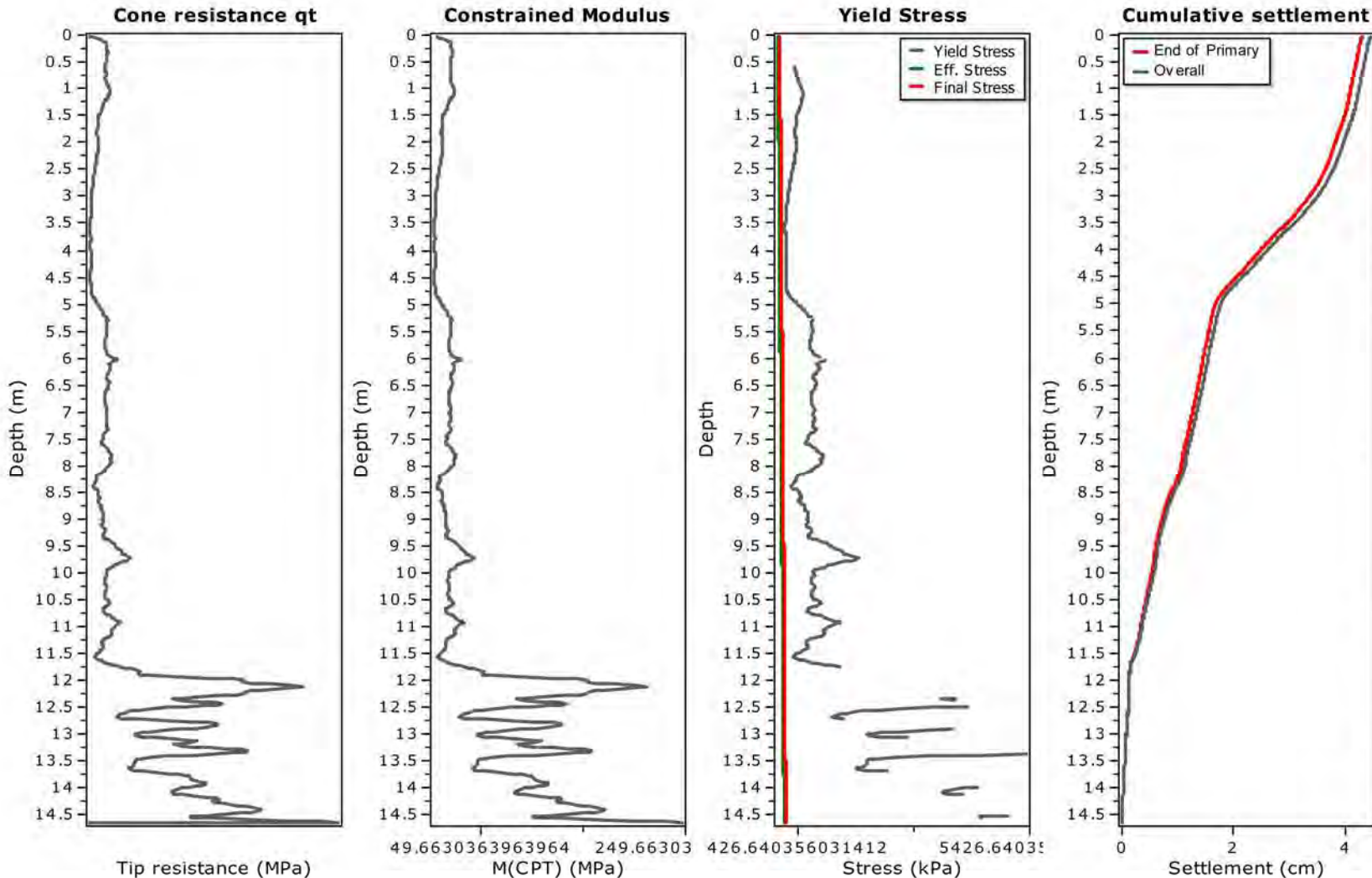
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

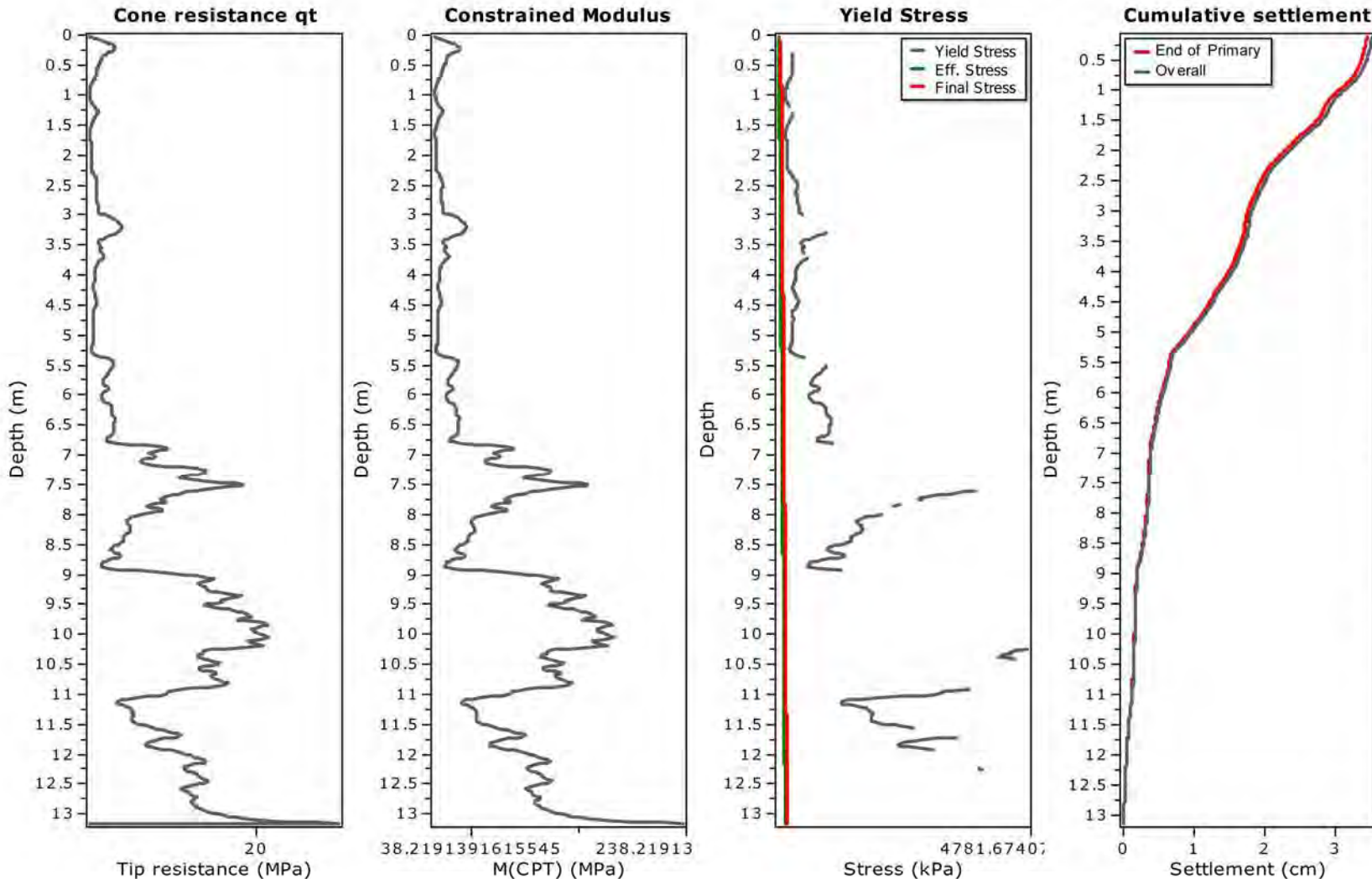
$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding
Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

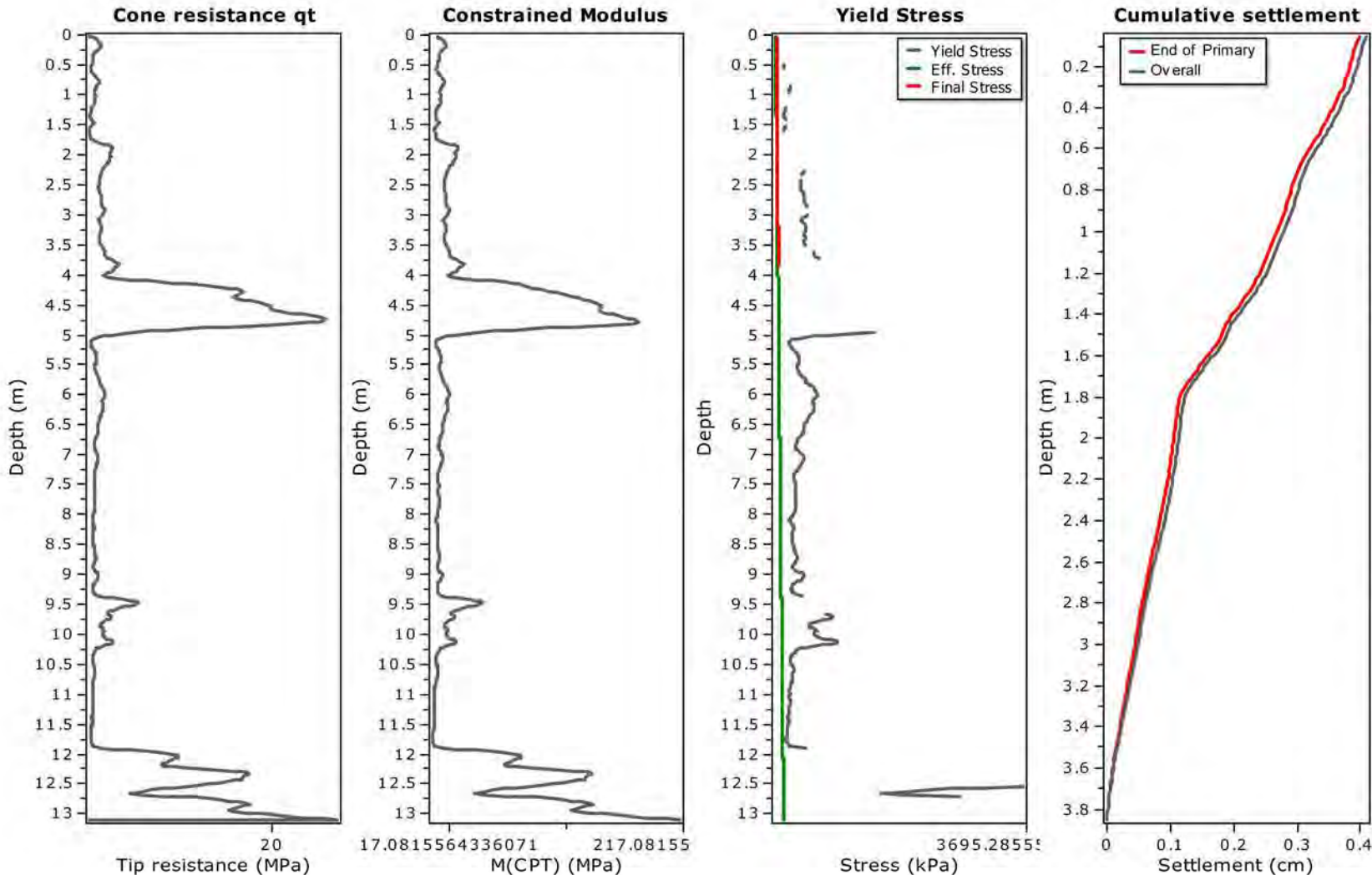
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.05 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

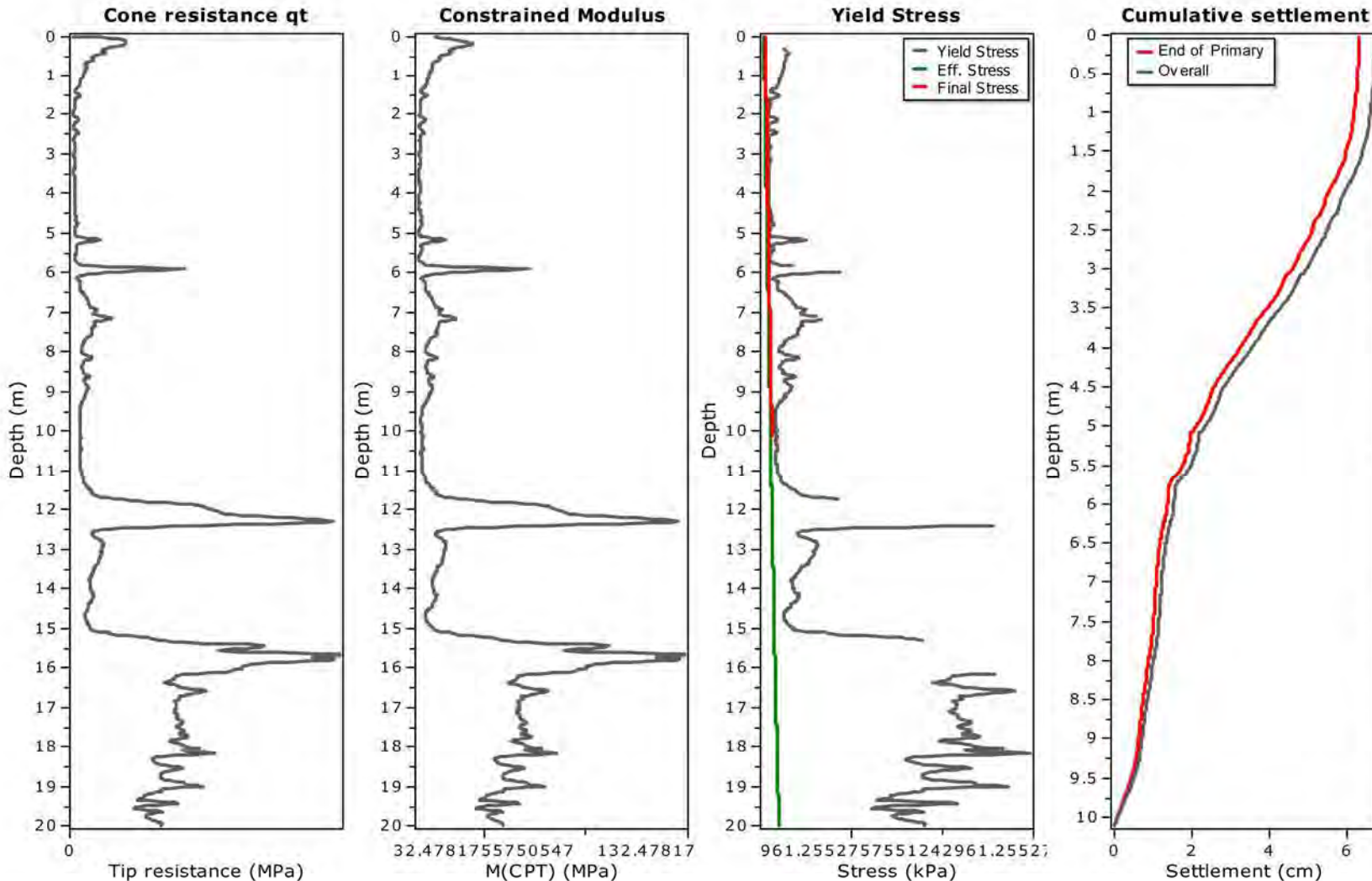


Project: Sunfield Landholding
Location:

CPT: CPT116

Total depth: 20.00 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

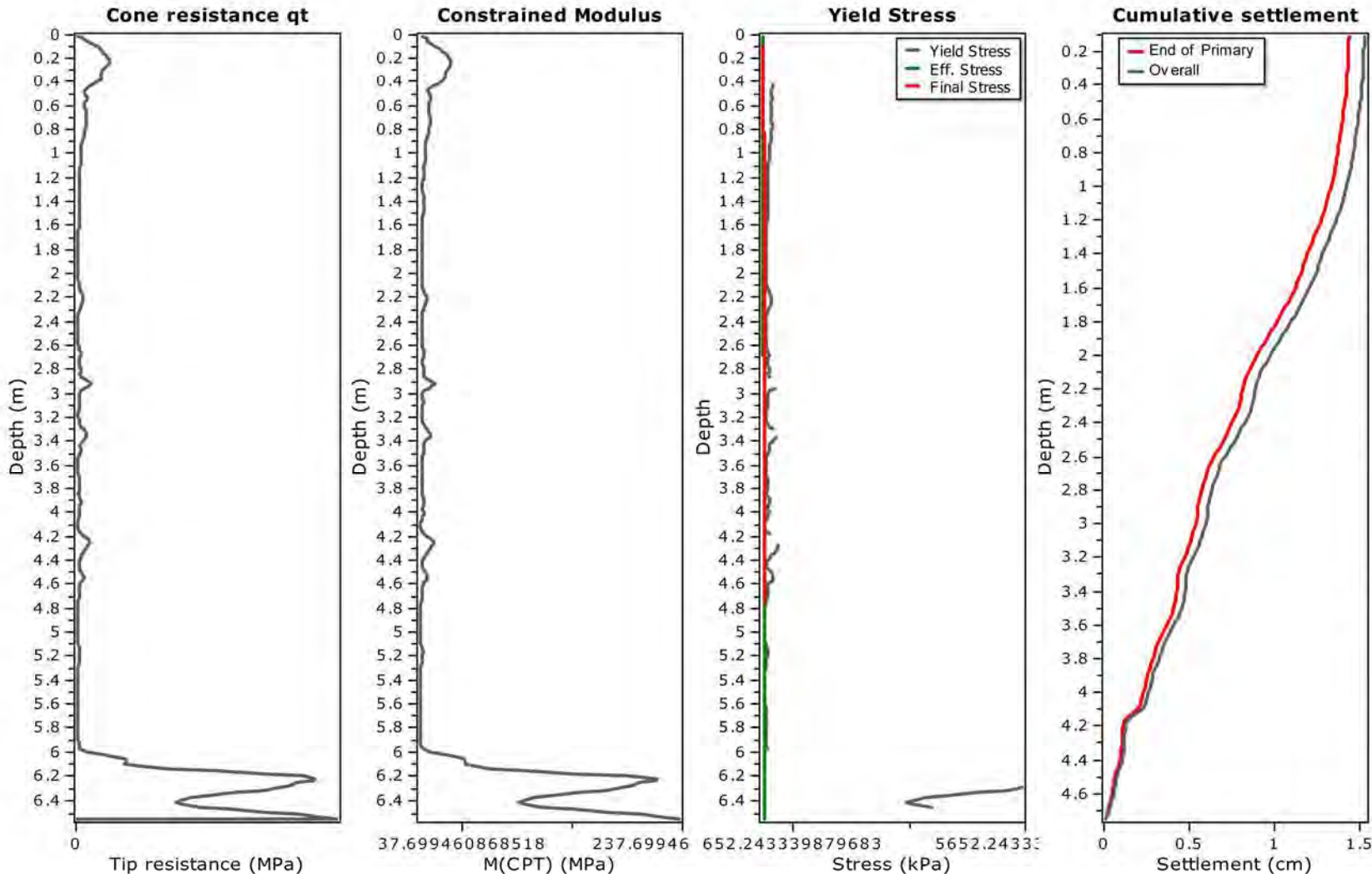
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT119

Total depth: 19.98 m, Date: 31/03/2025

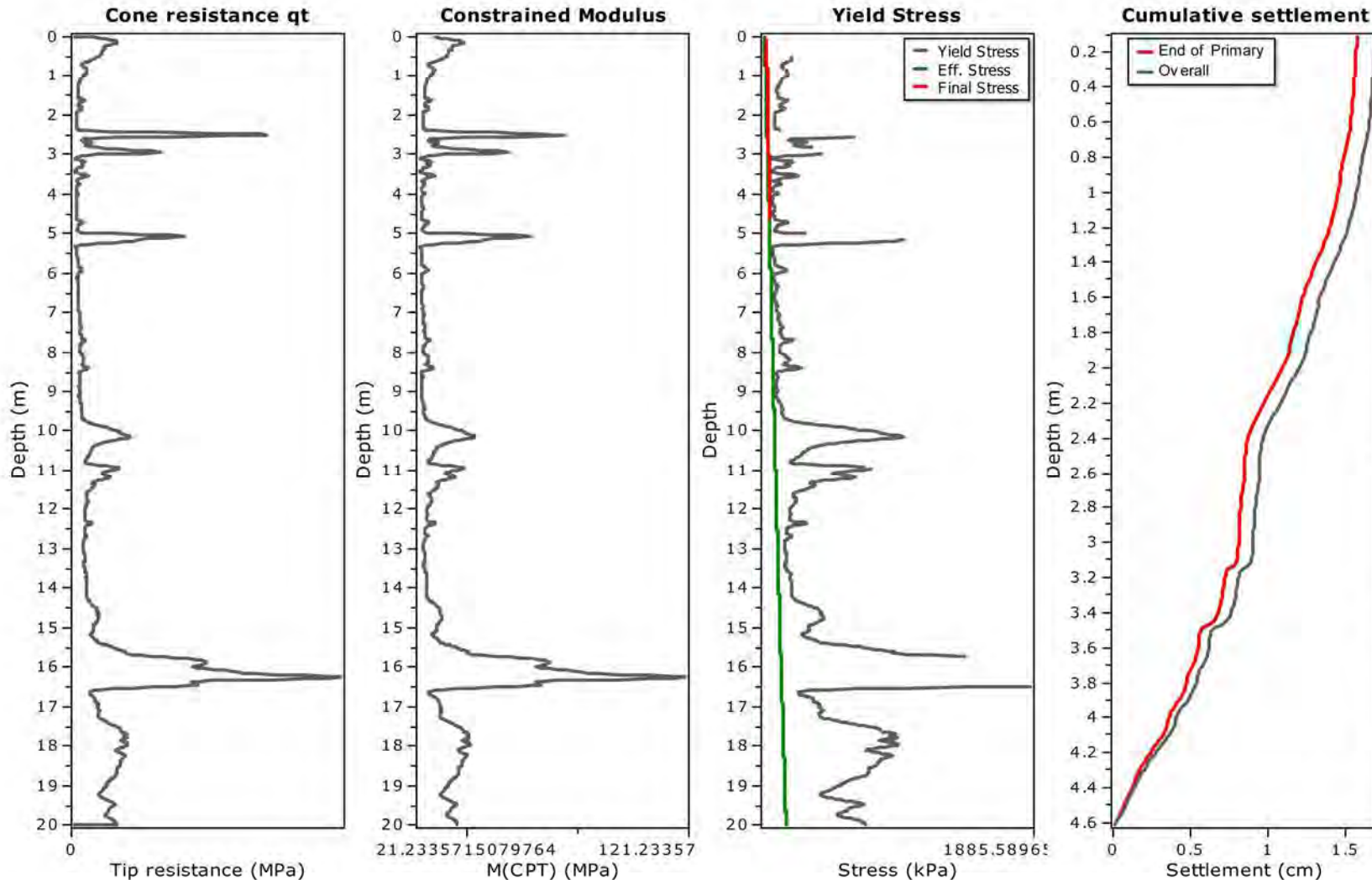
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

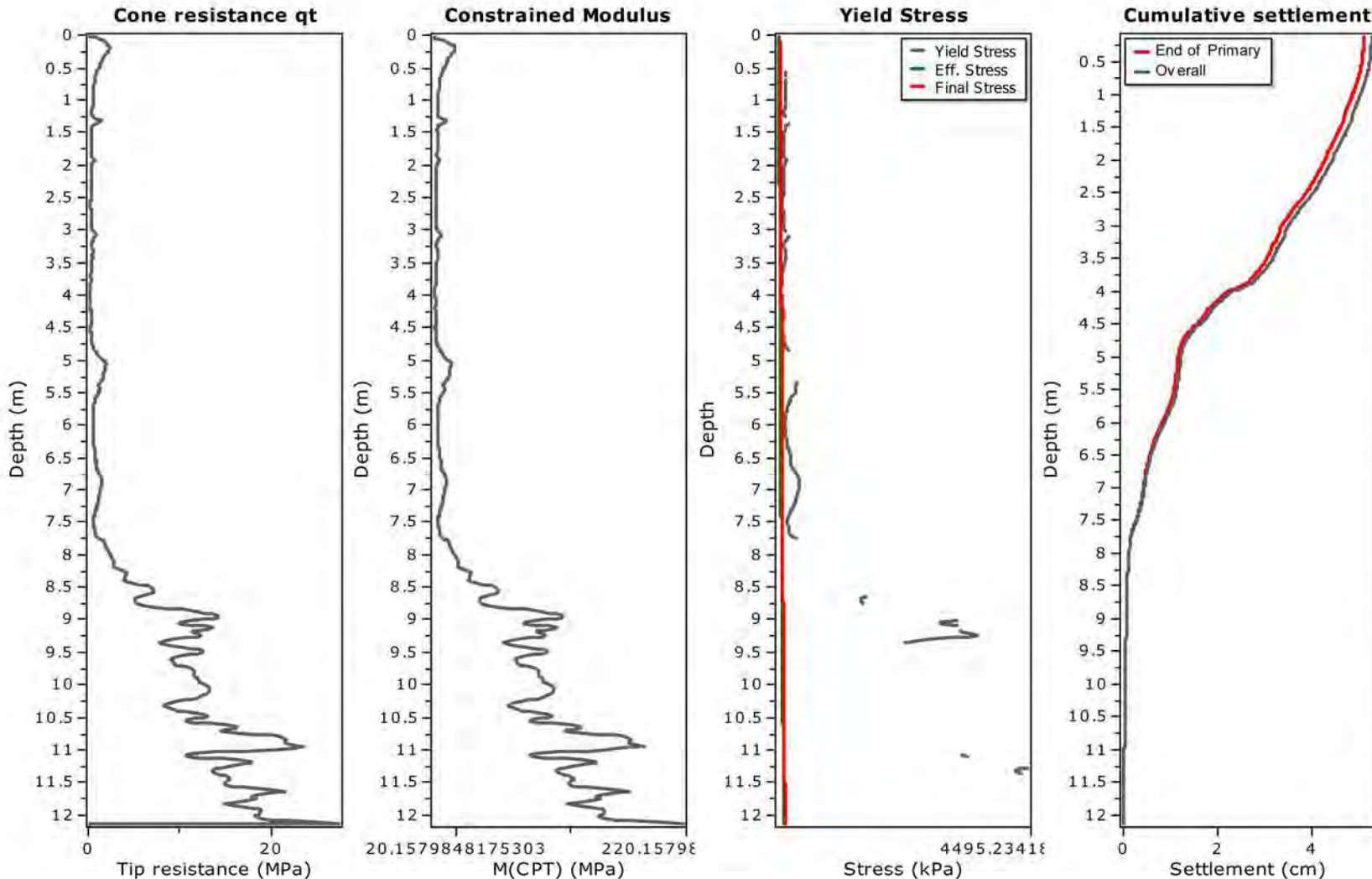
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-0.5}$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 20.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

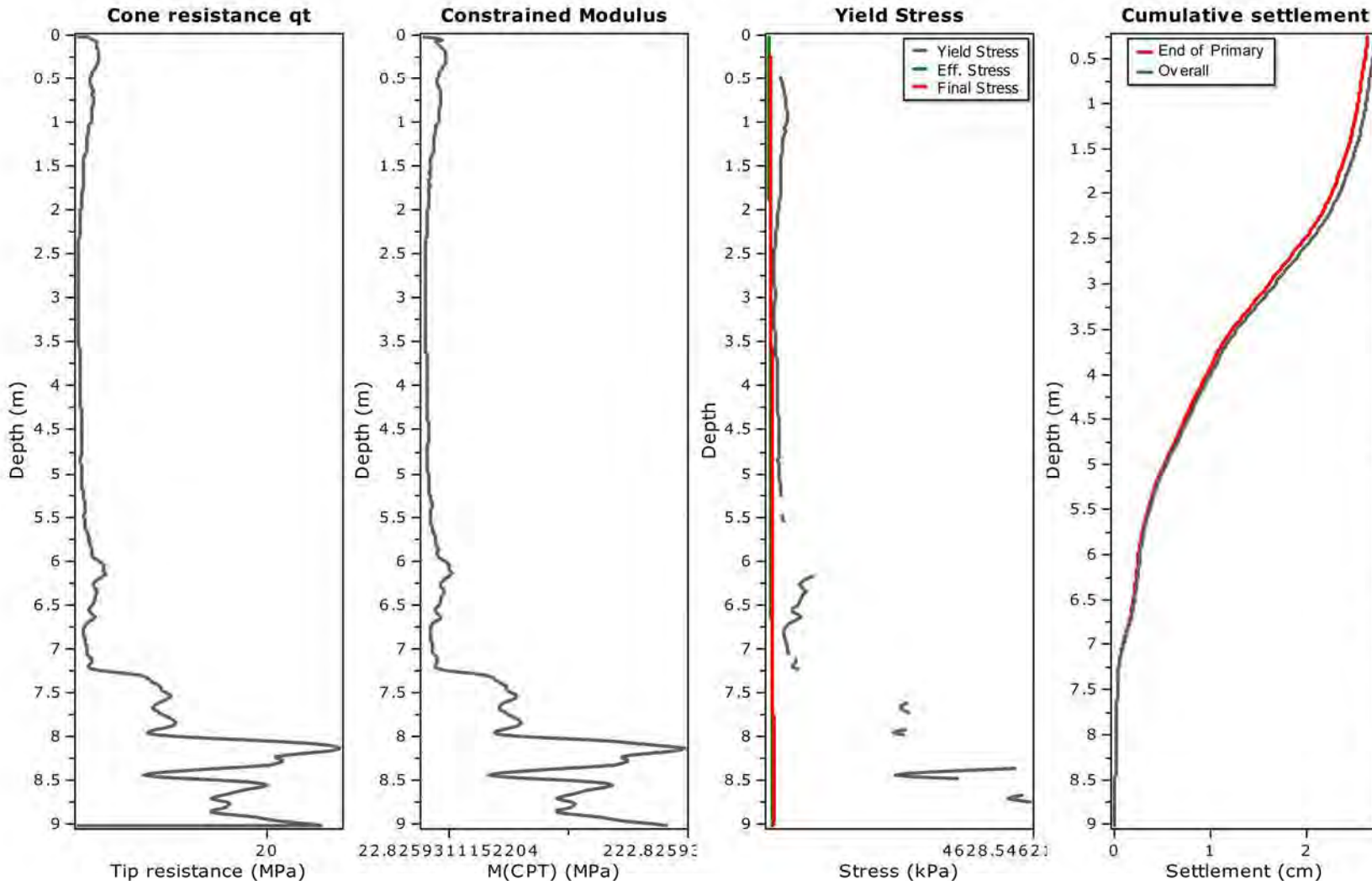
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.25 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

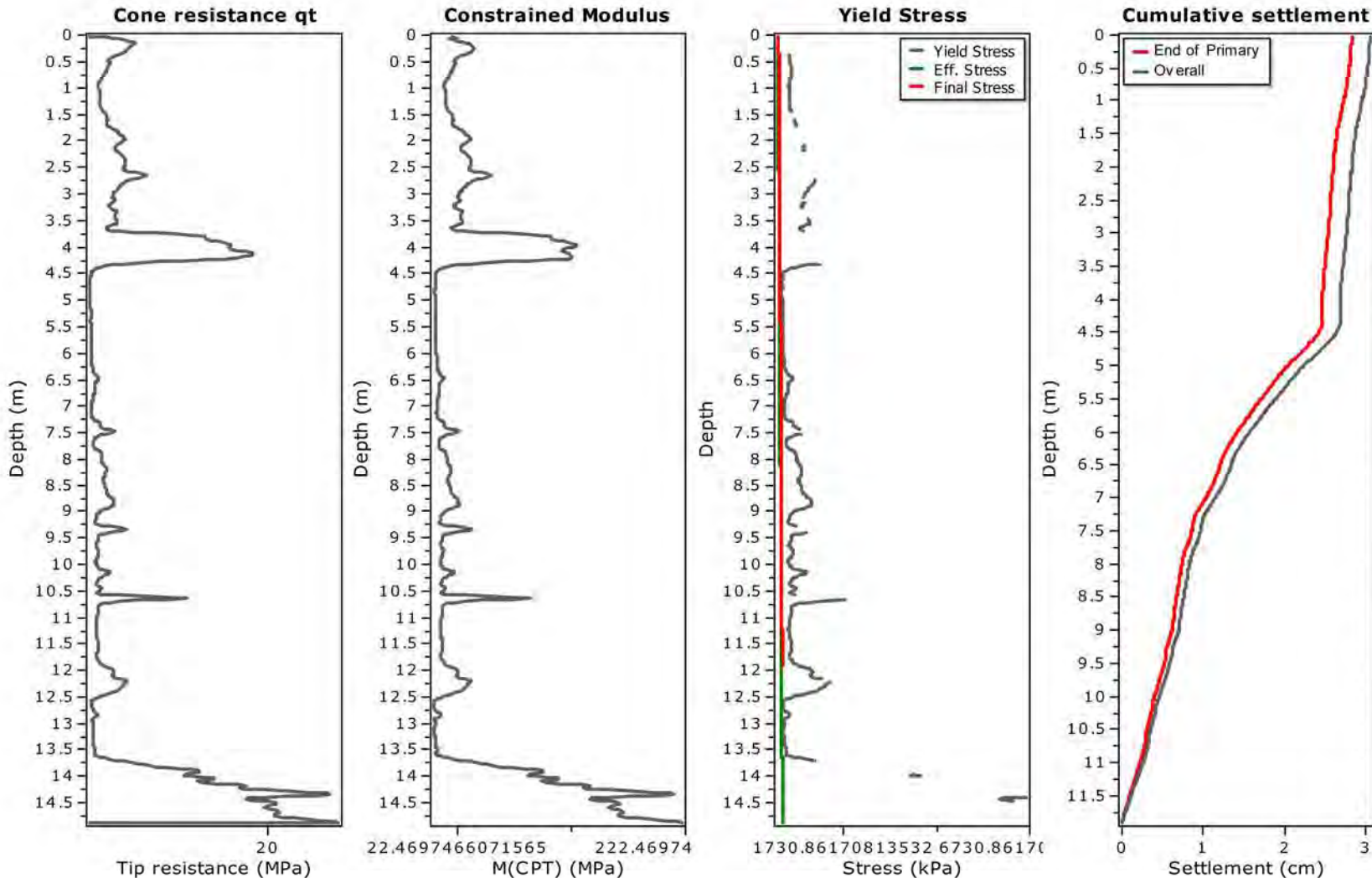
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

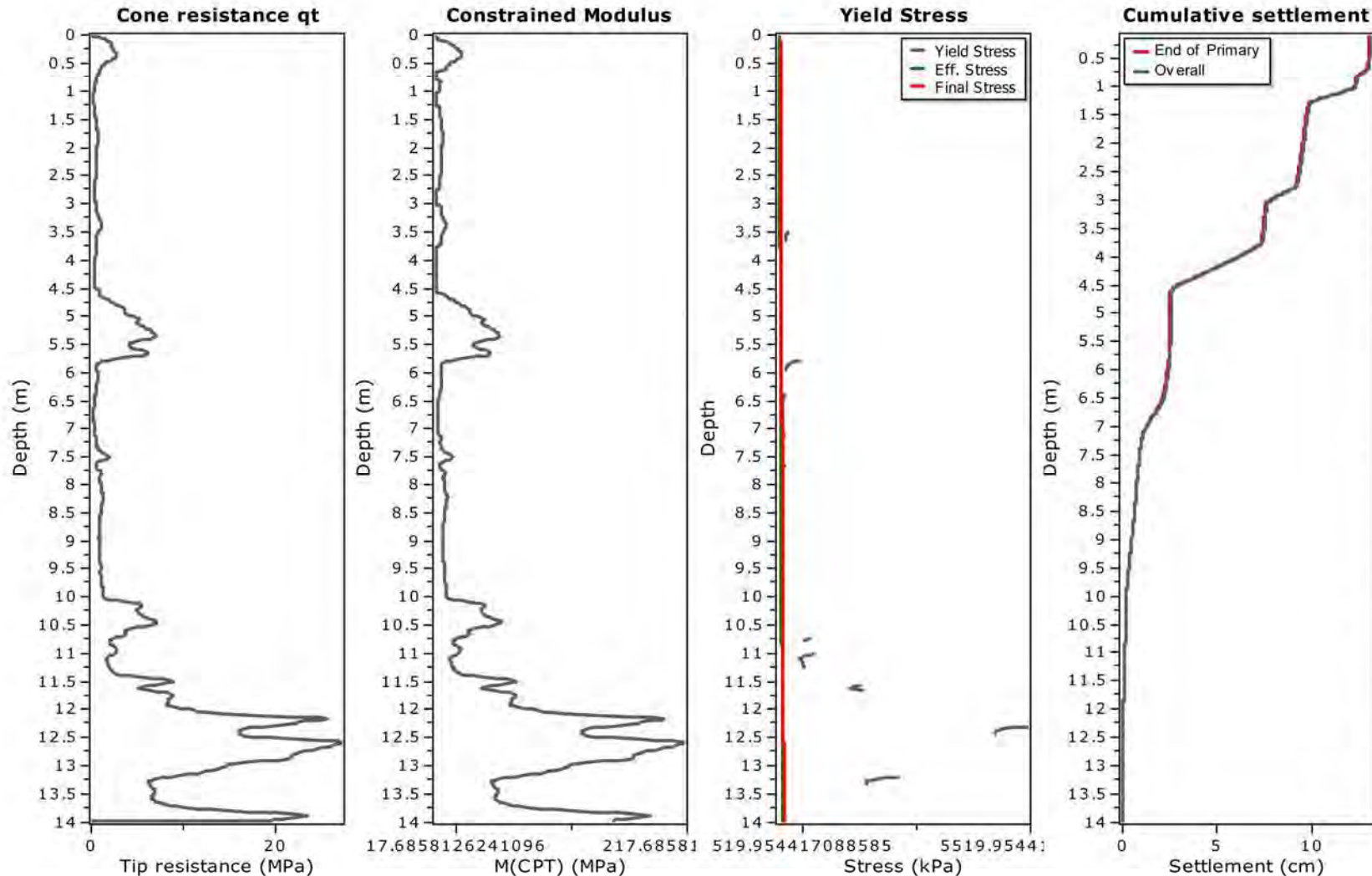
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \quad \lambda$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 20.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

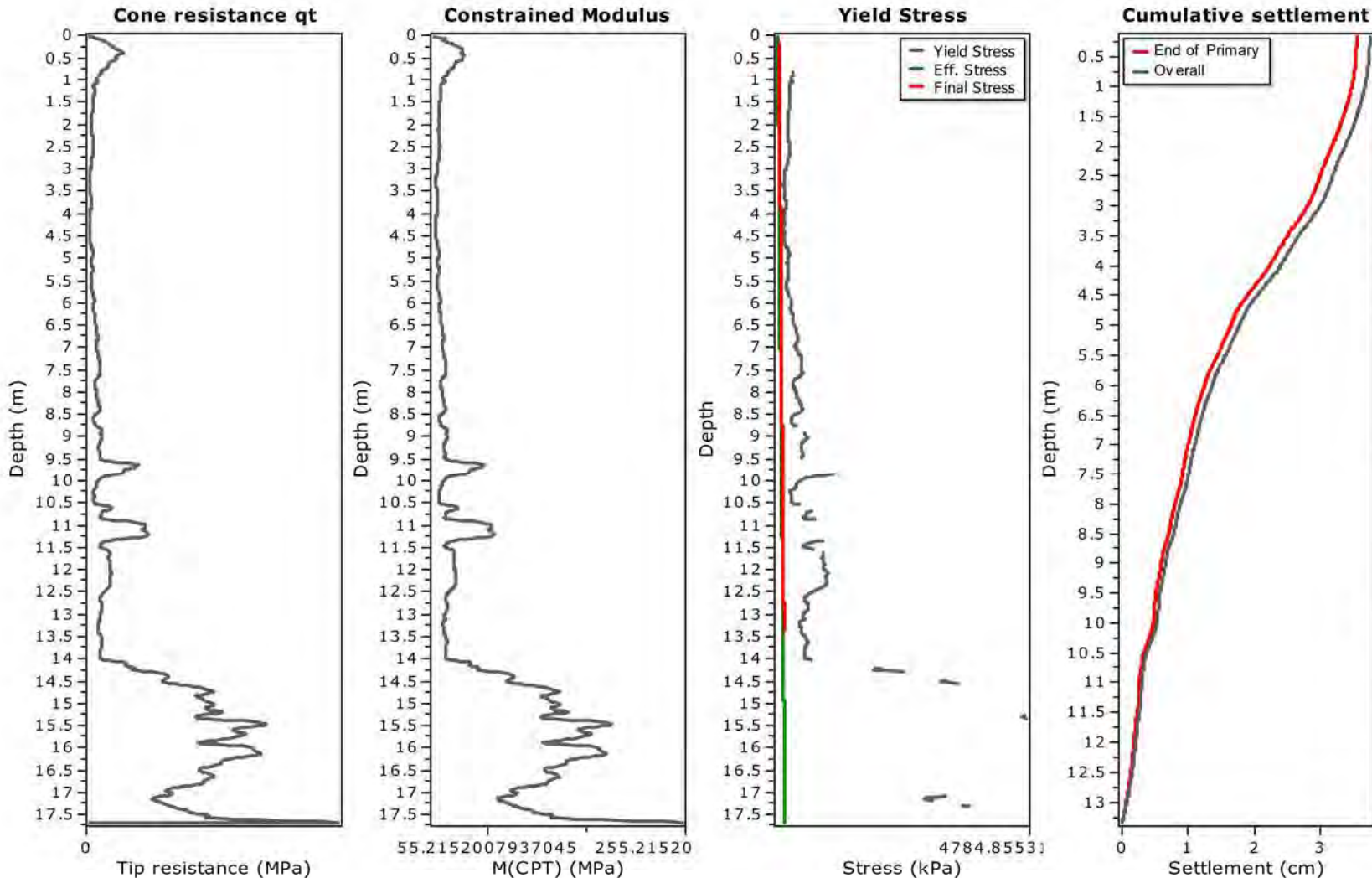
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 20.00 (kPa)
Embedment depth: 0.15 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

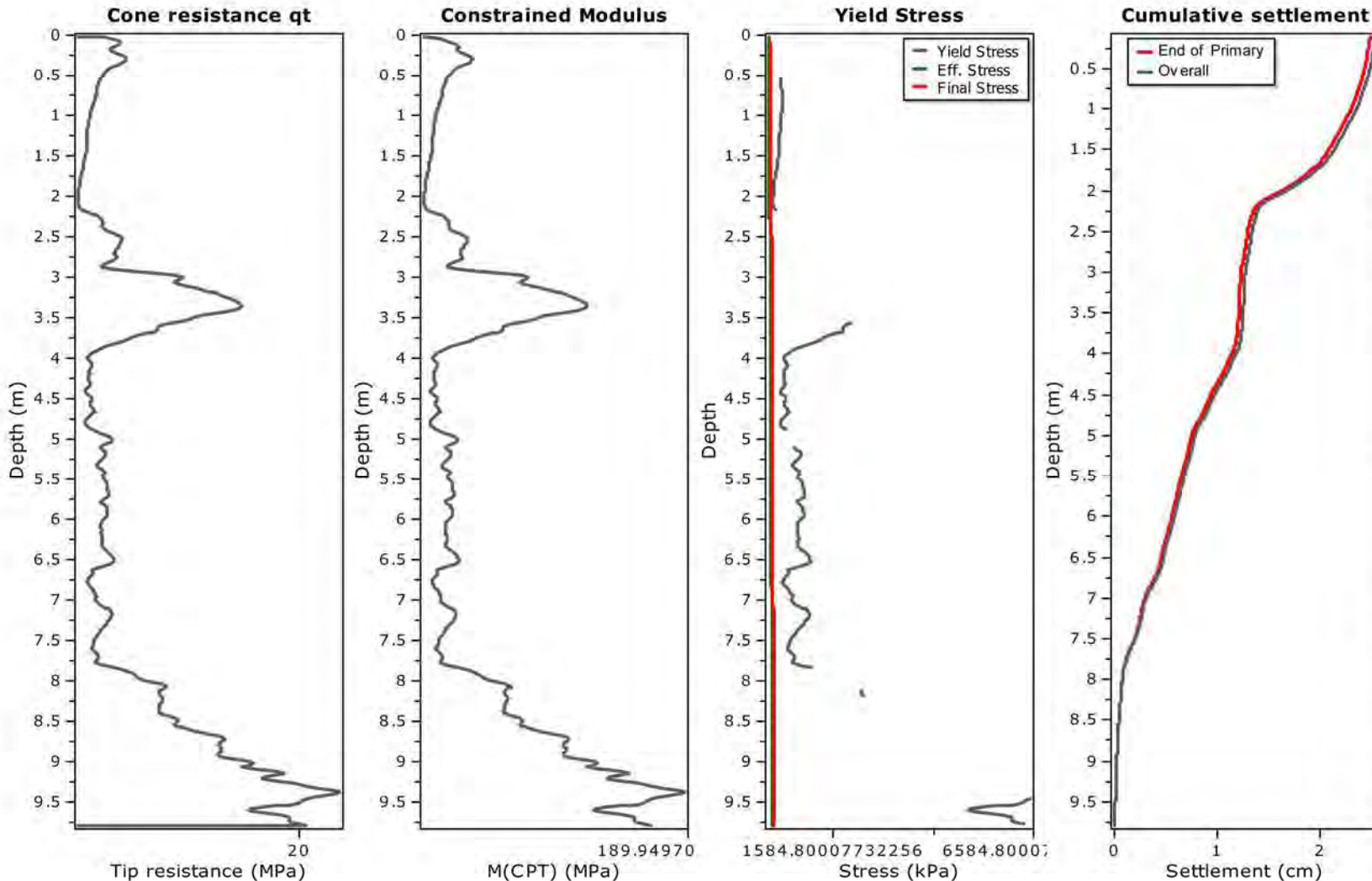
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta z$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

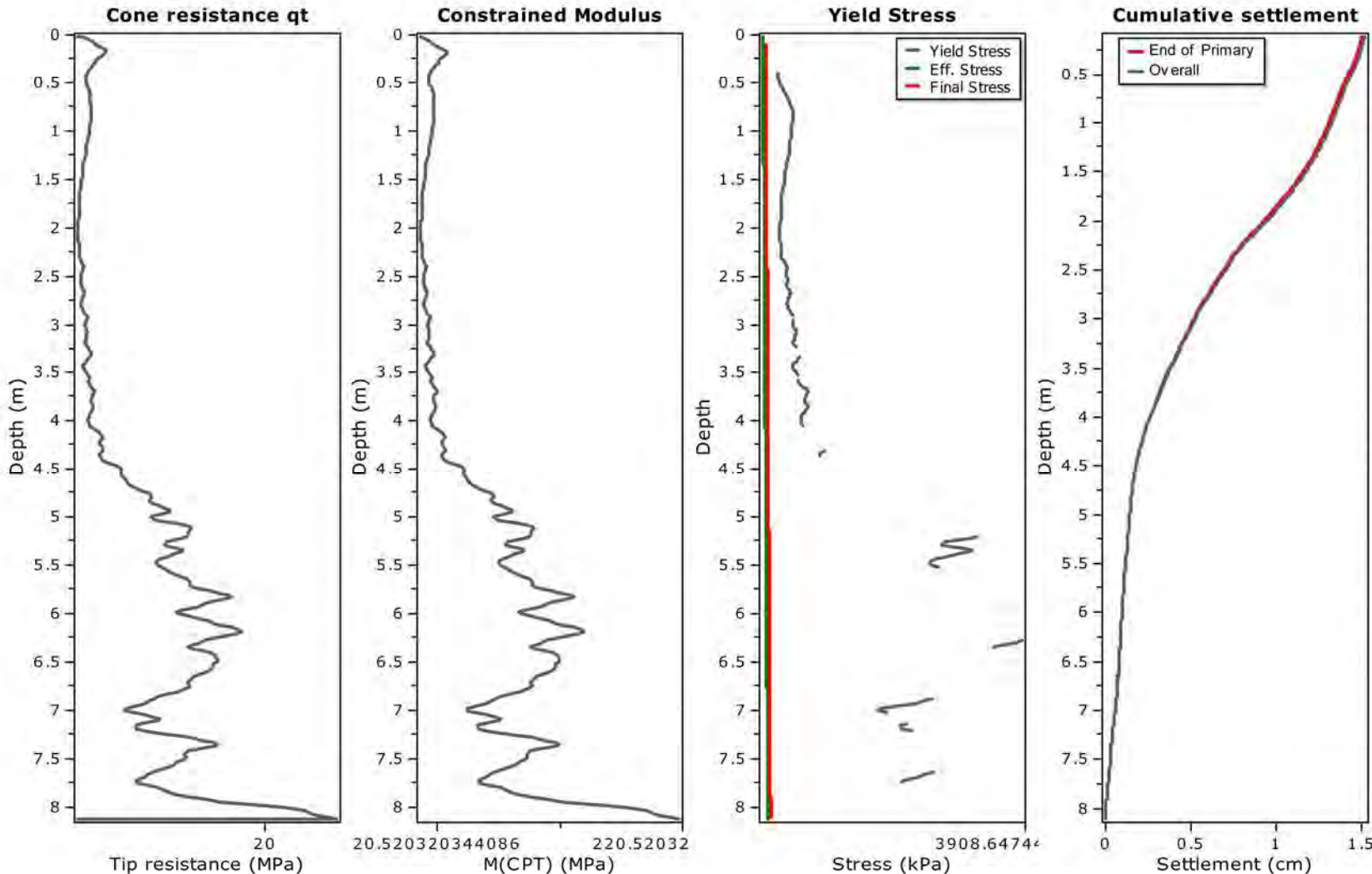
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta z$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

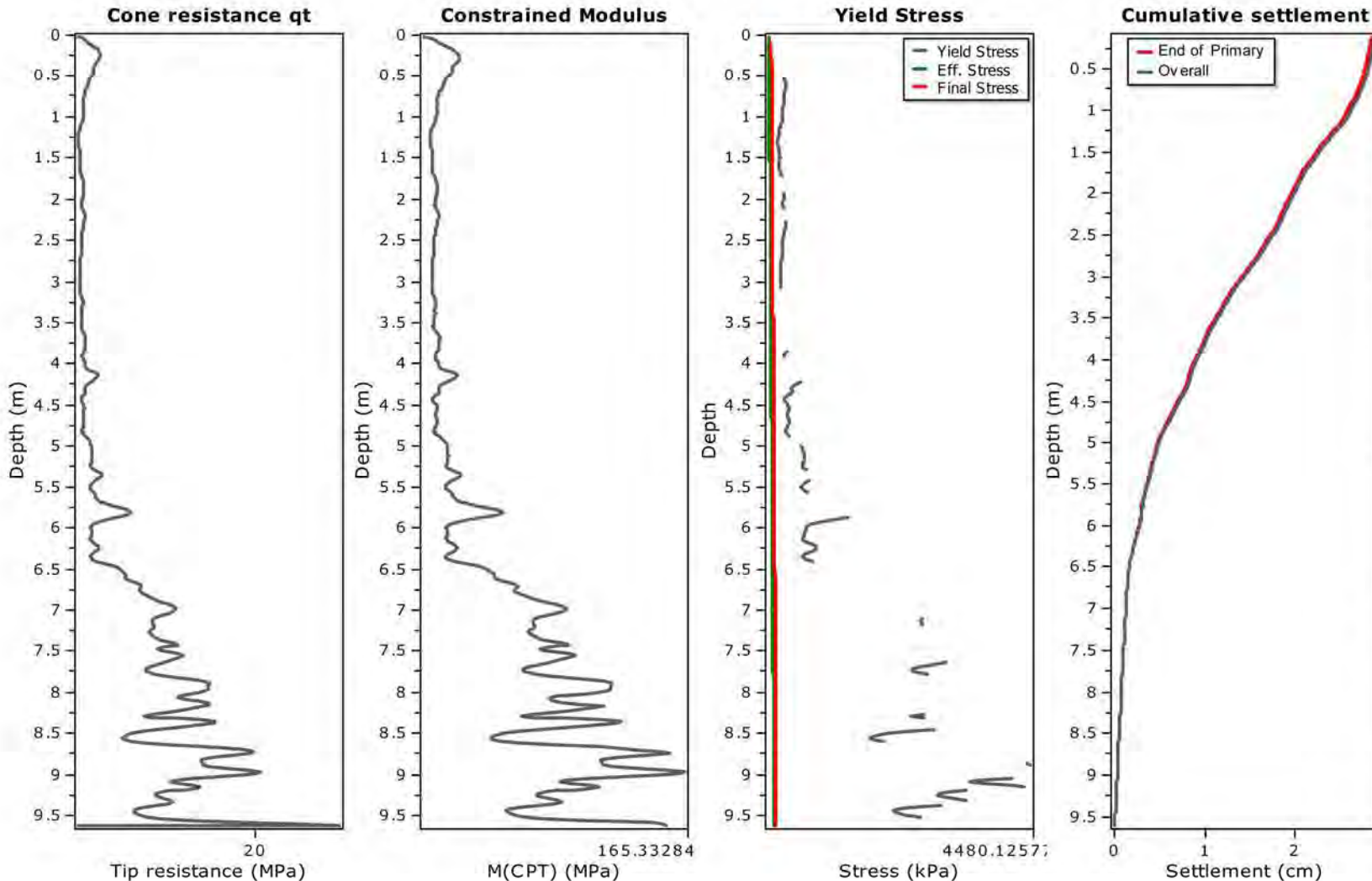


Project: Sunfield Landholding
Location:

CPT: CPT127

Total depth: 9.62 m, Date: 18/07/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

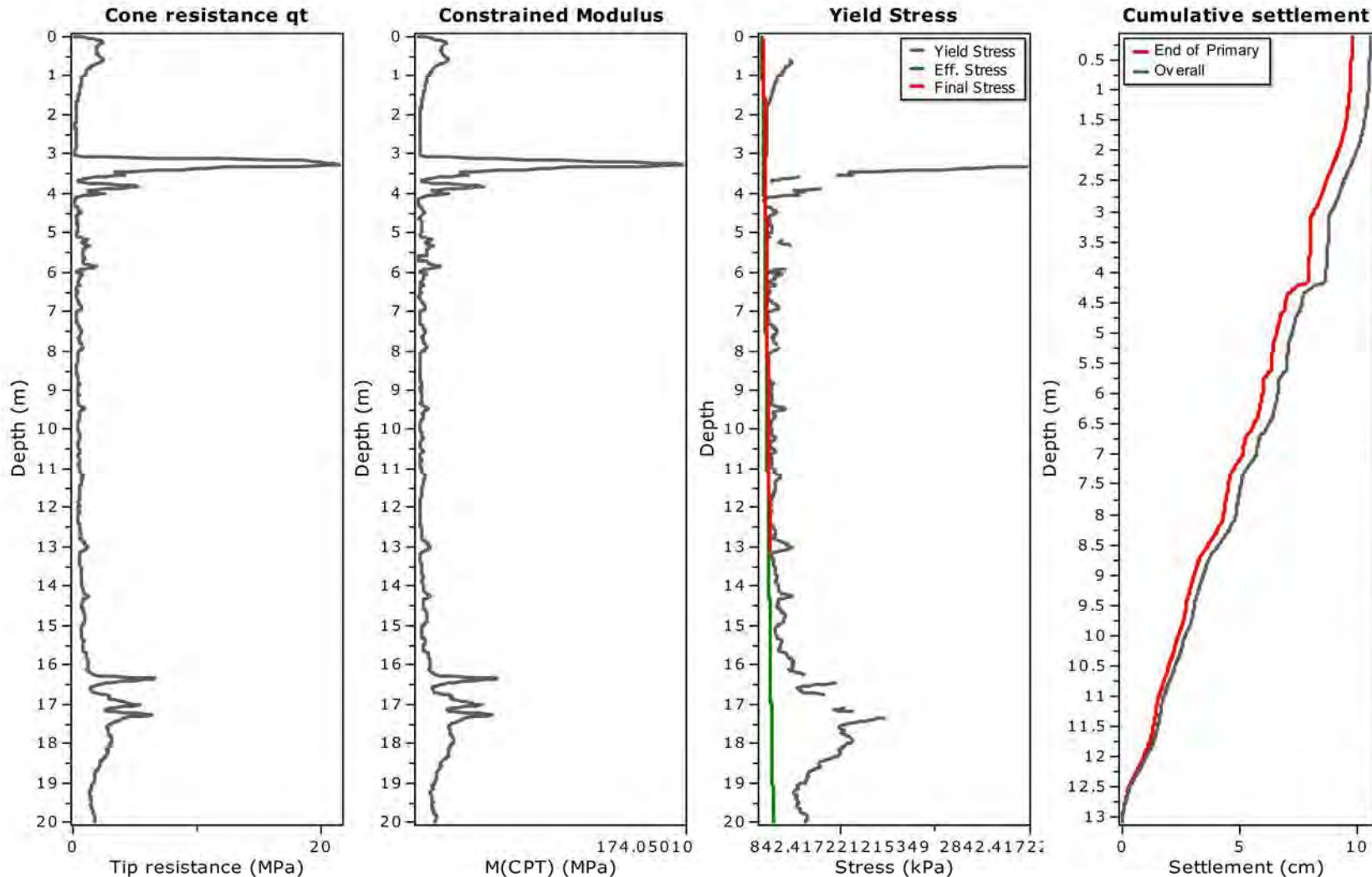


Project: Sunfield Landholding
Location:

CPT: CPT130

Total depth: 19.98 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

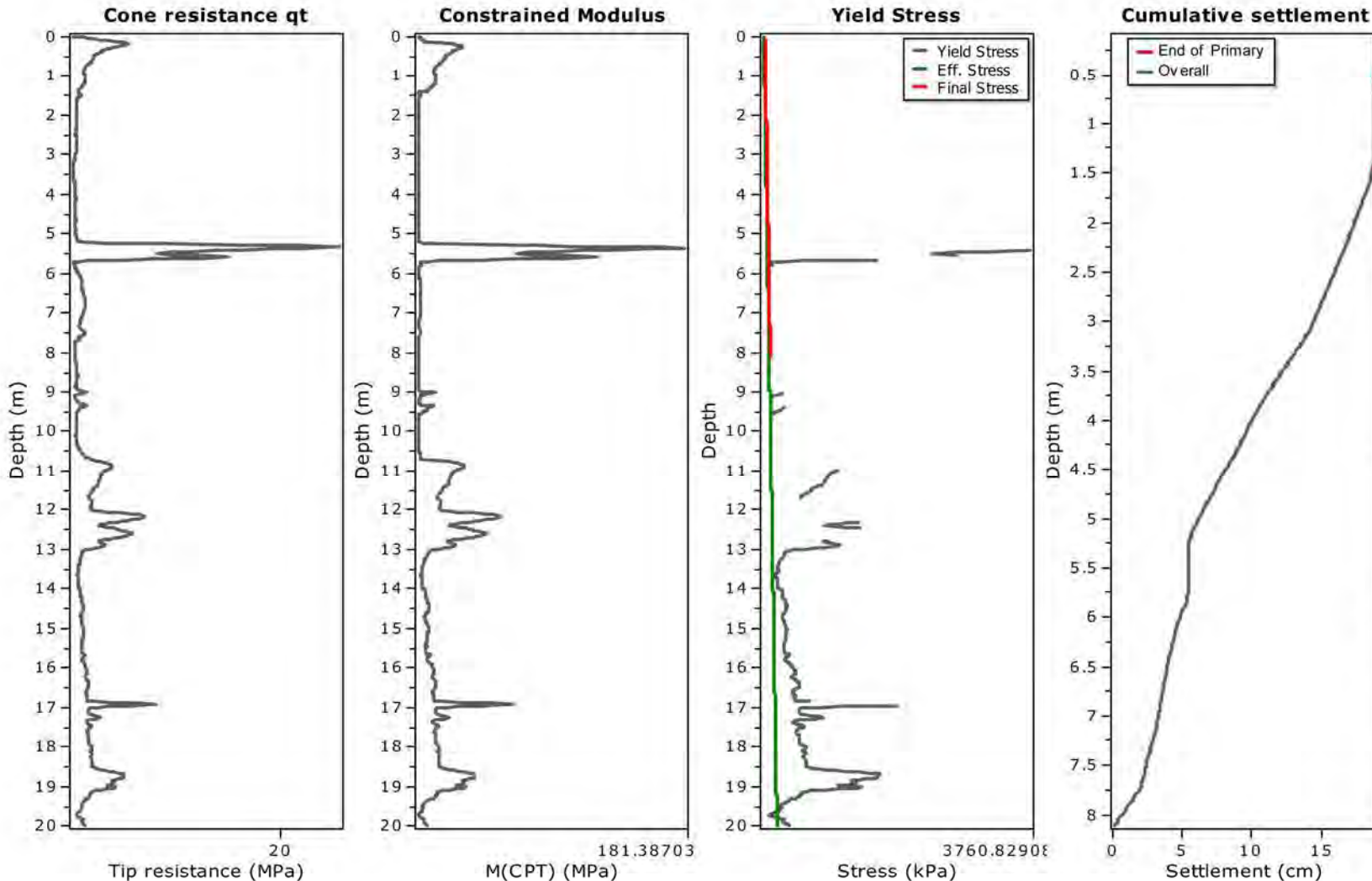
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

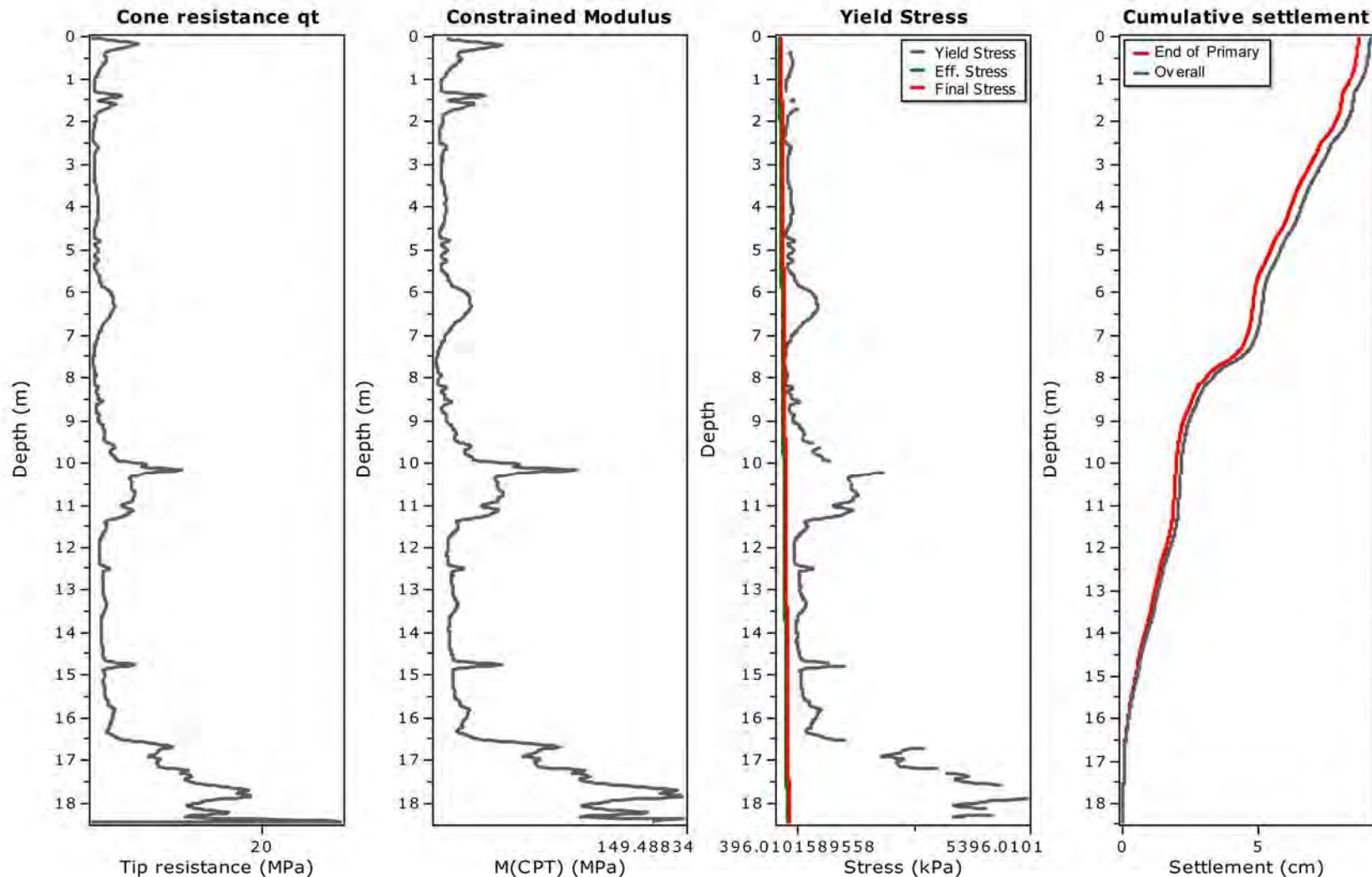
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT133

Total depth: 7.18 m, Date: 18/07/2025

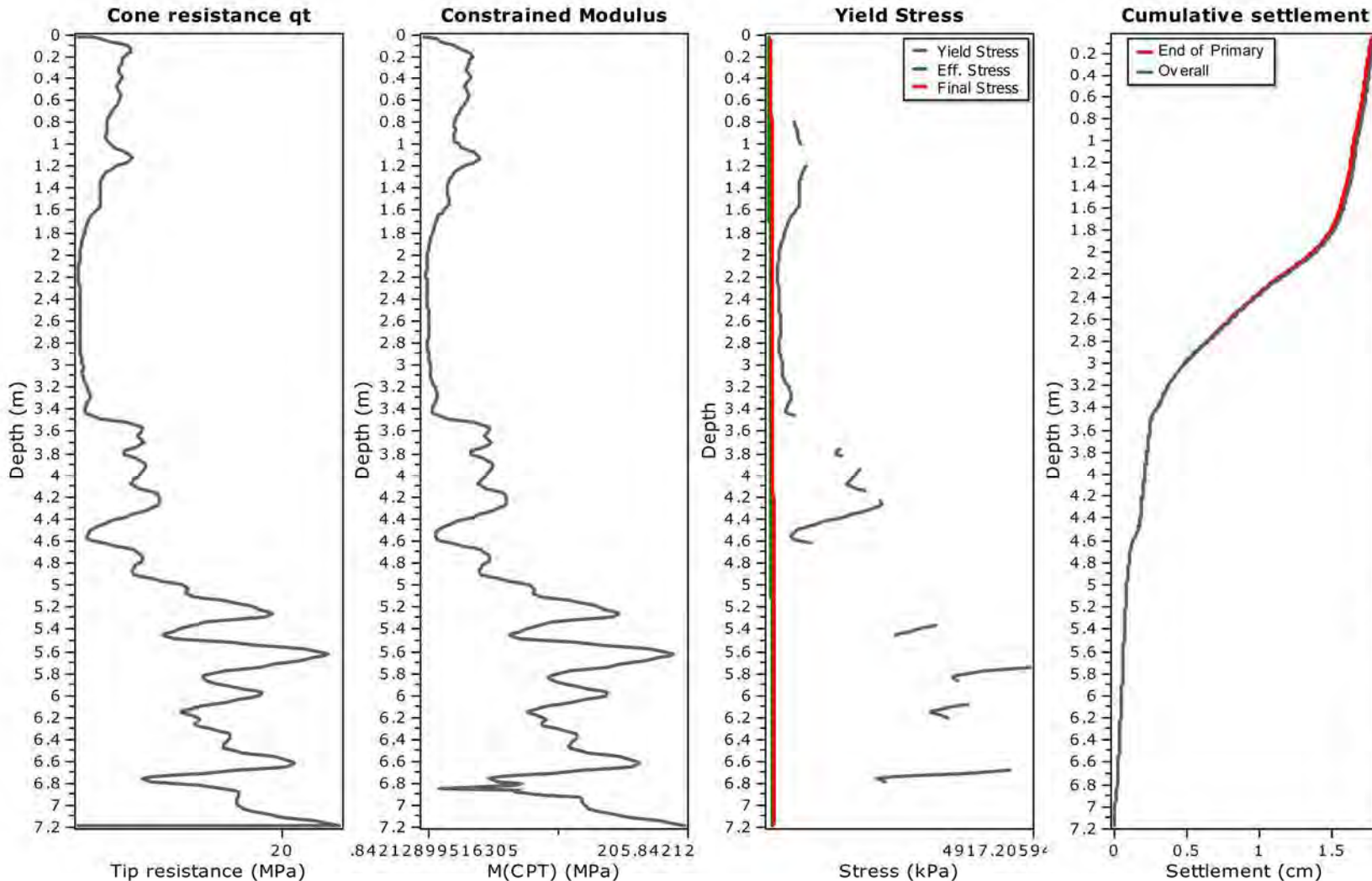
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.05 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

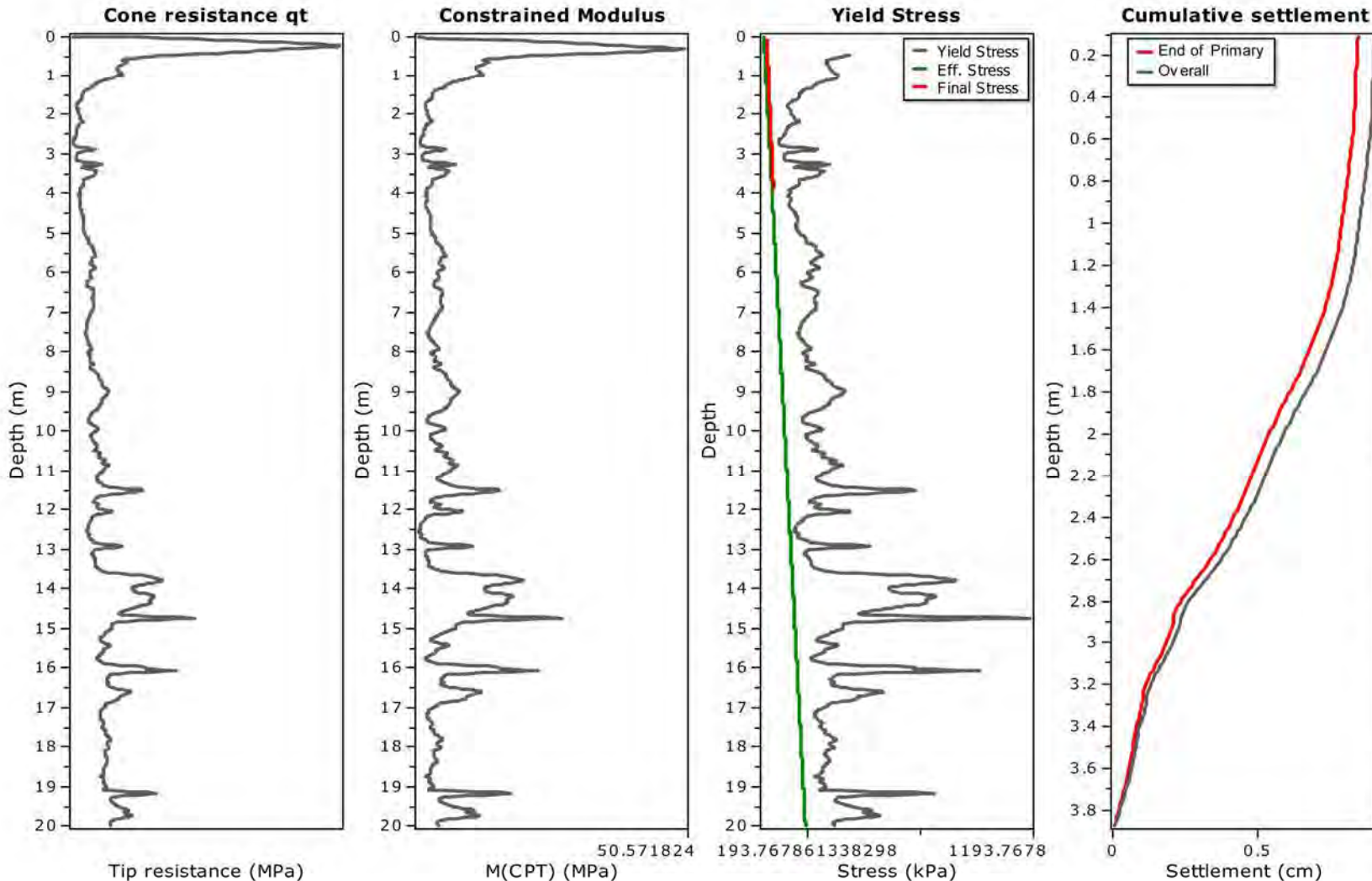
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular

Footing width: 10.00 (m)

L/B: 2.0

Footing pressure: 12.00 (kPa)

Embedment depth: 0.10 (m)

Footing is rigid: Yes

Remove excavation load: No

Apply 20% rule: Yes

Calculate secondary settlements: Yes

Time period for primary consolidation: 6 months

Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

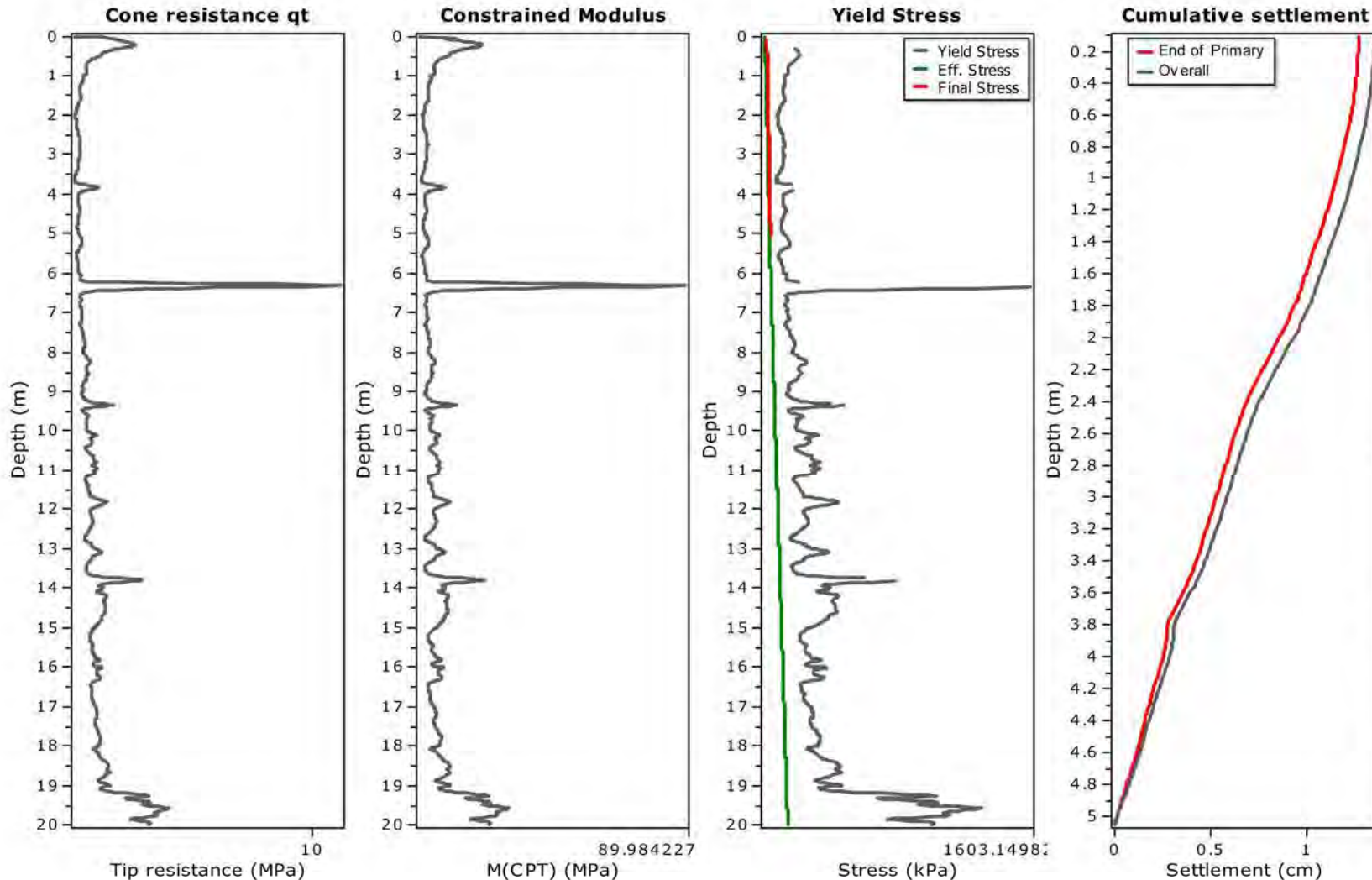


Project: Sunfield Landholding
Location:

CPT: CPT135

Total depth: 19.98 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT136

Total depth: 19.98 m, Date: 31/03/2025

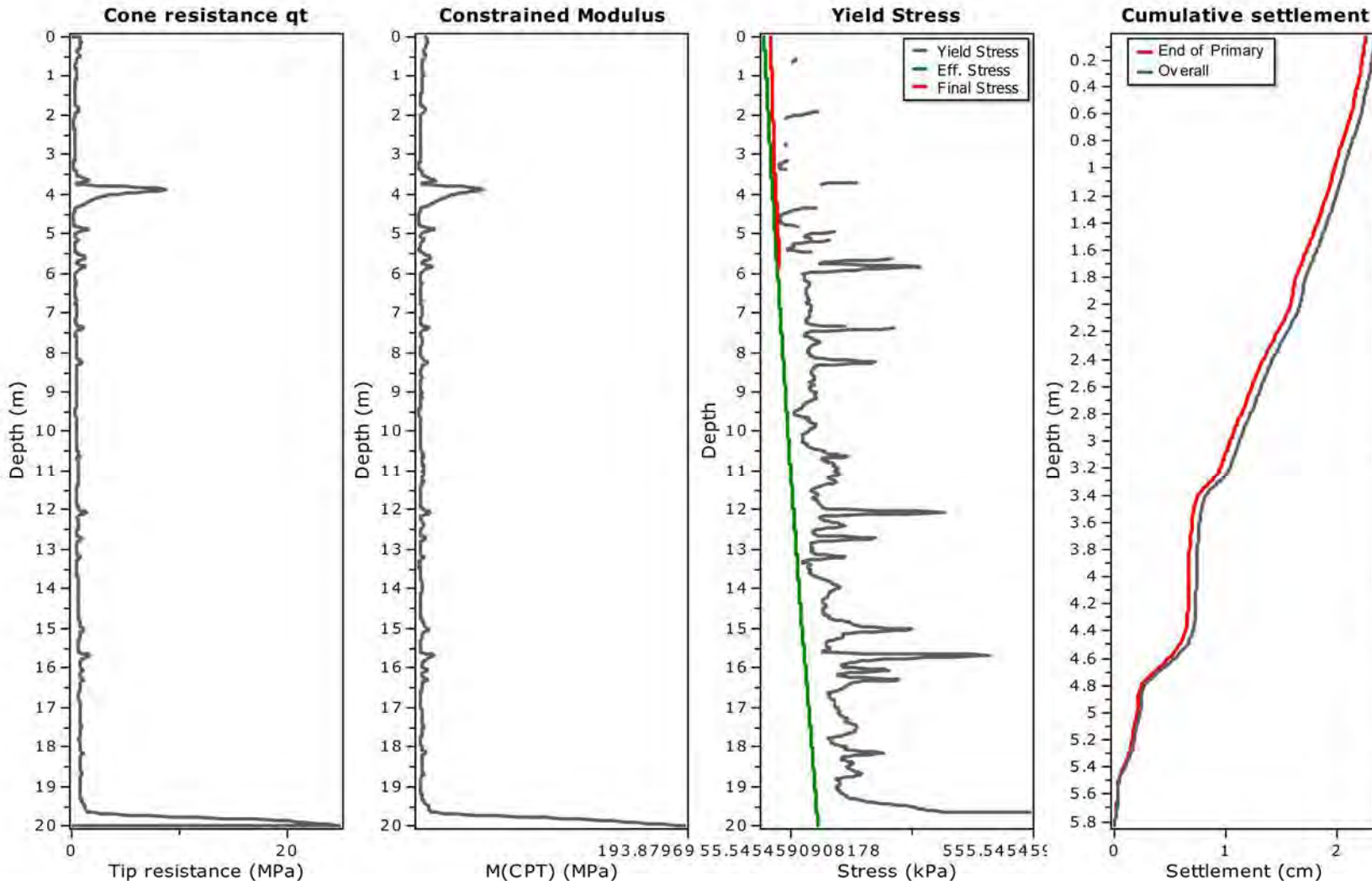
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

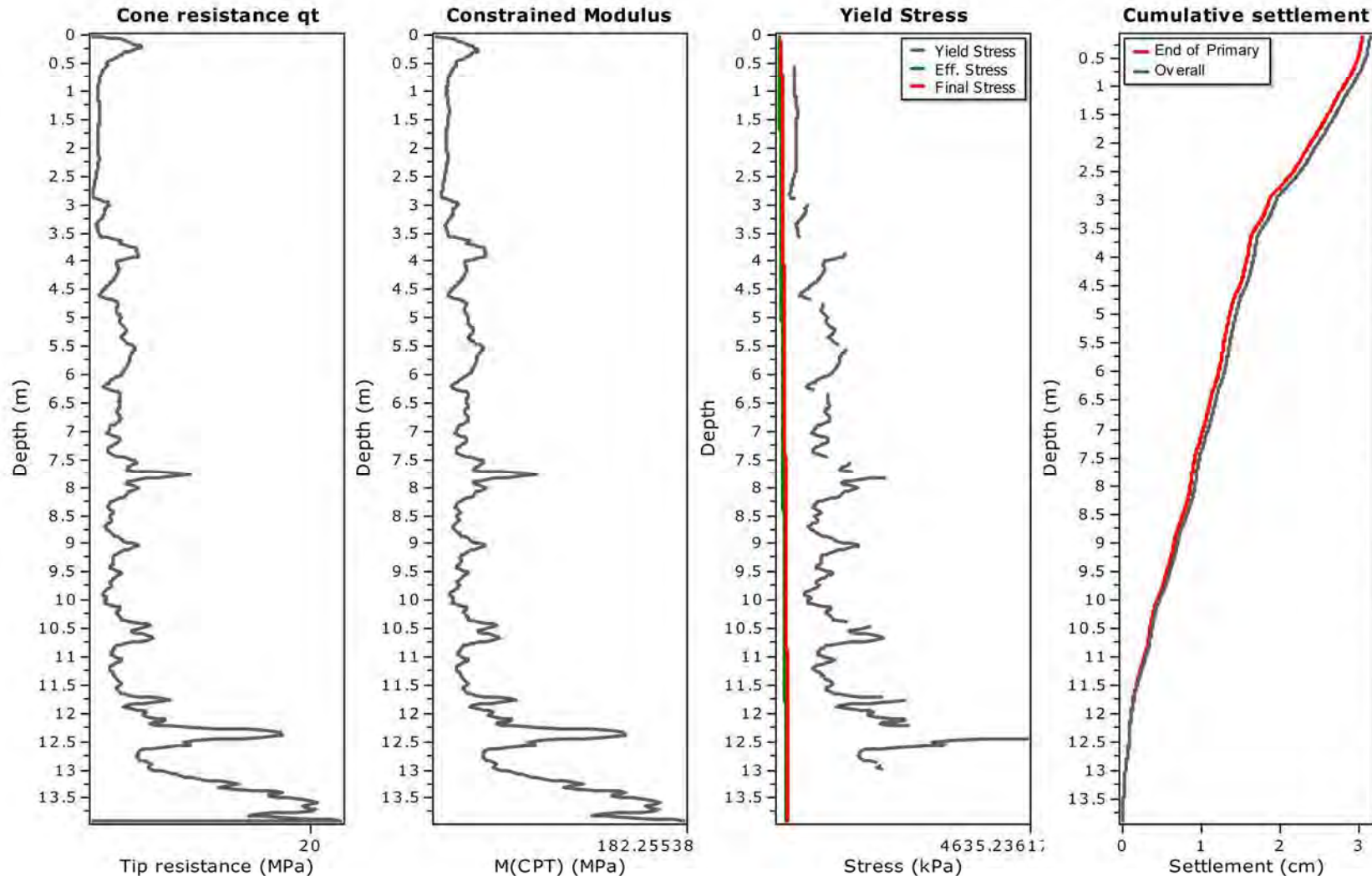
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-n}$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

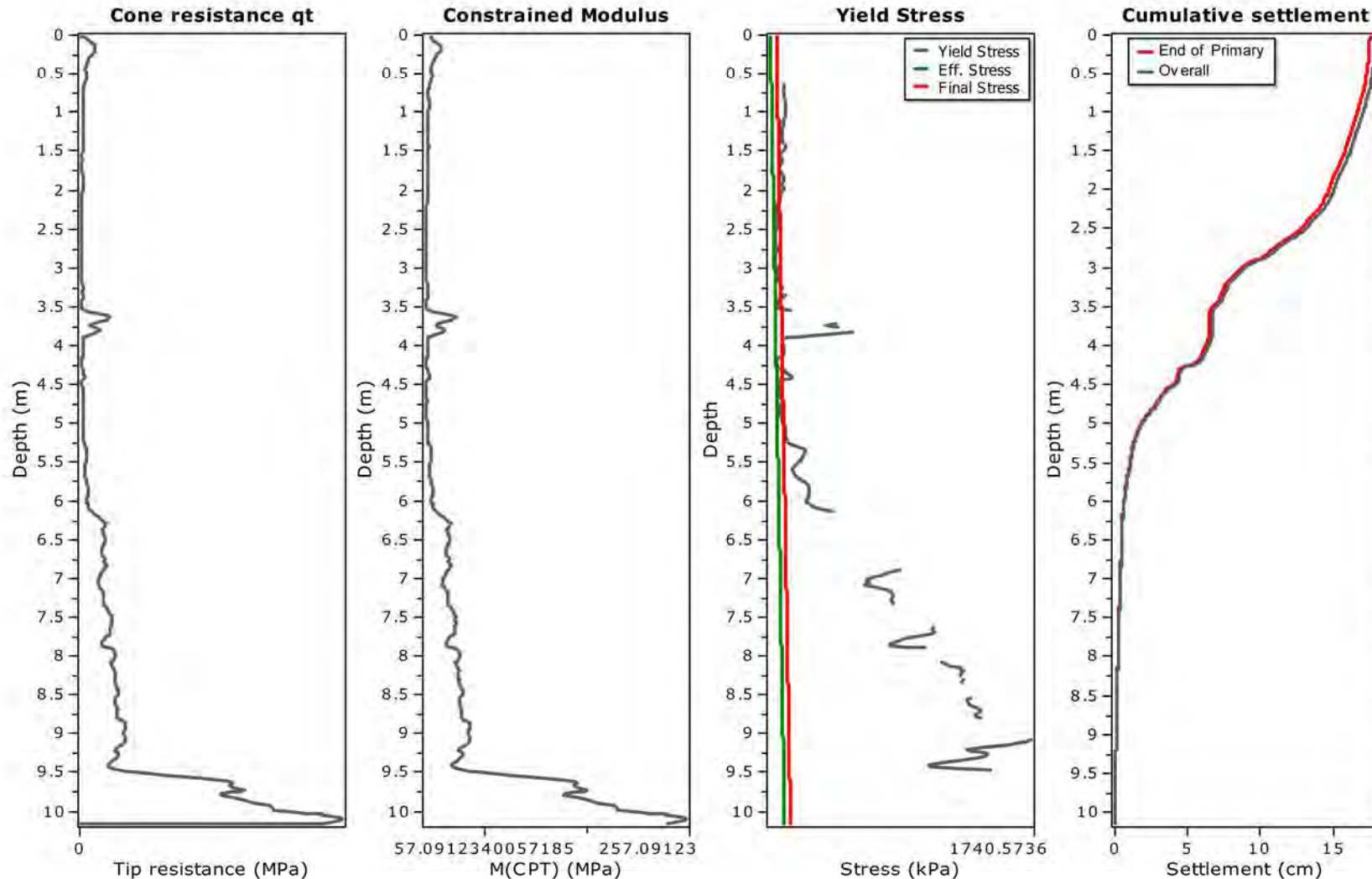
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.00 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

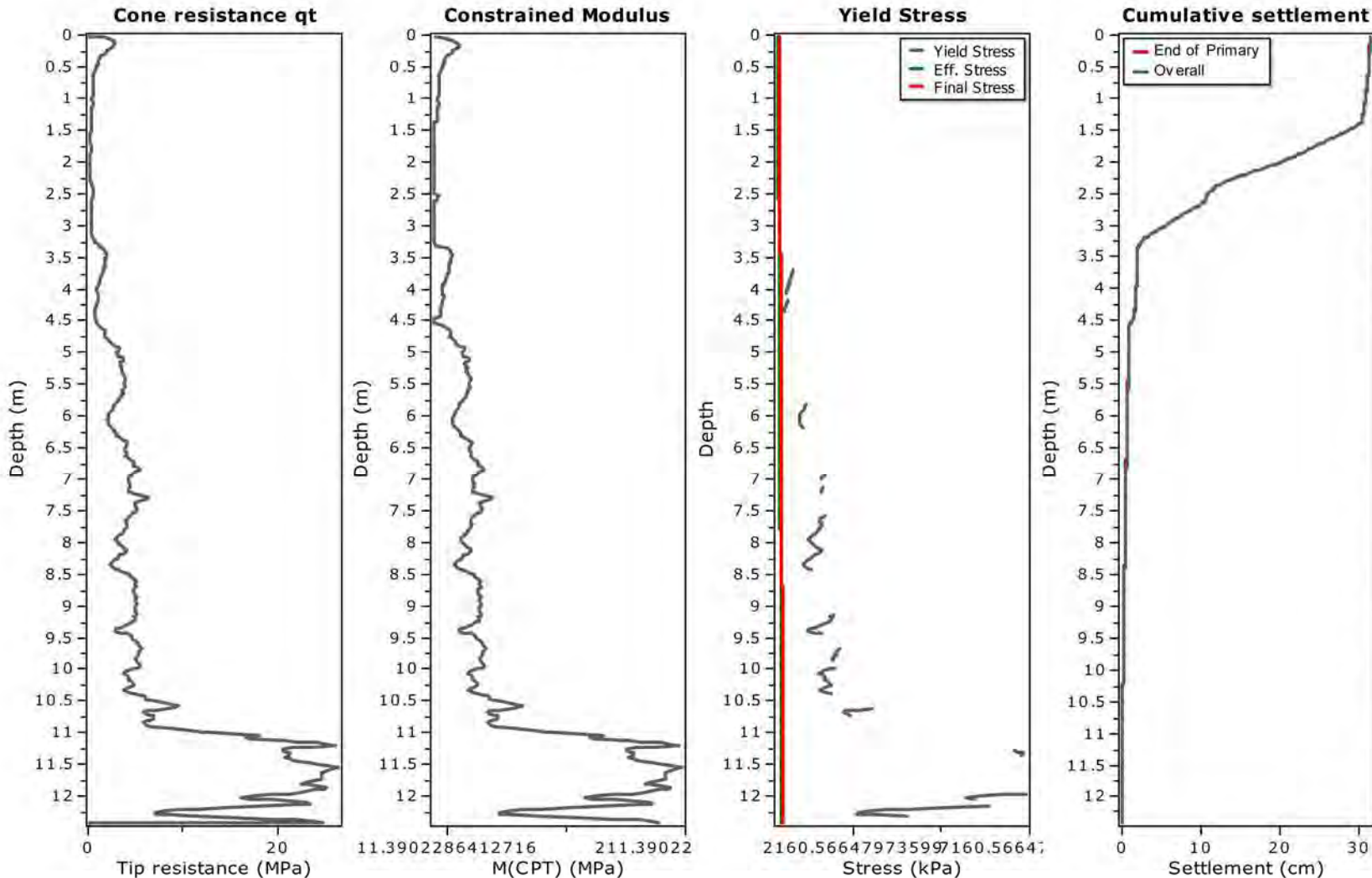
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

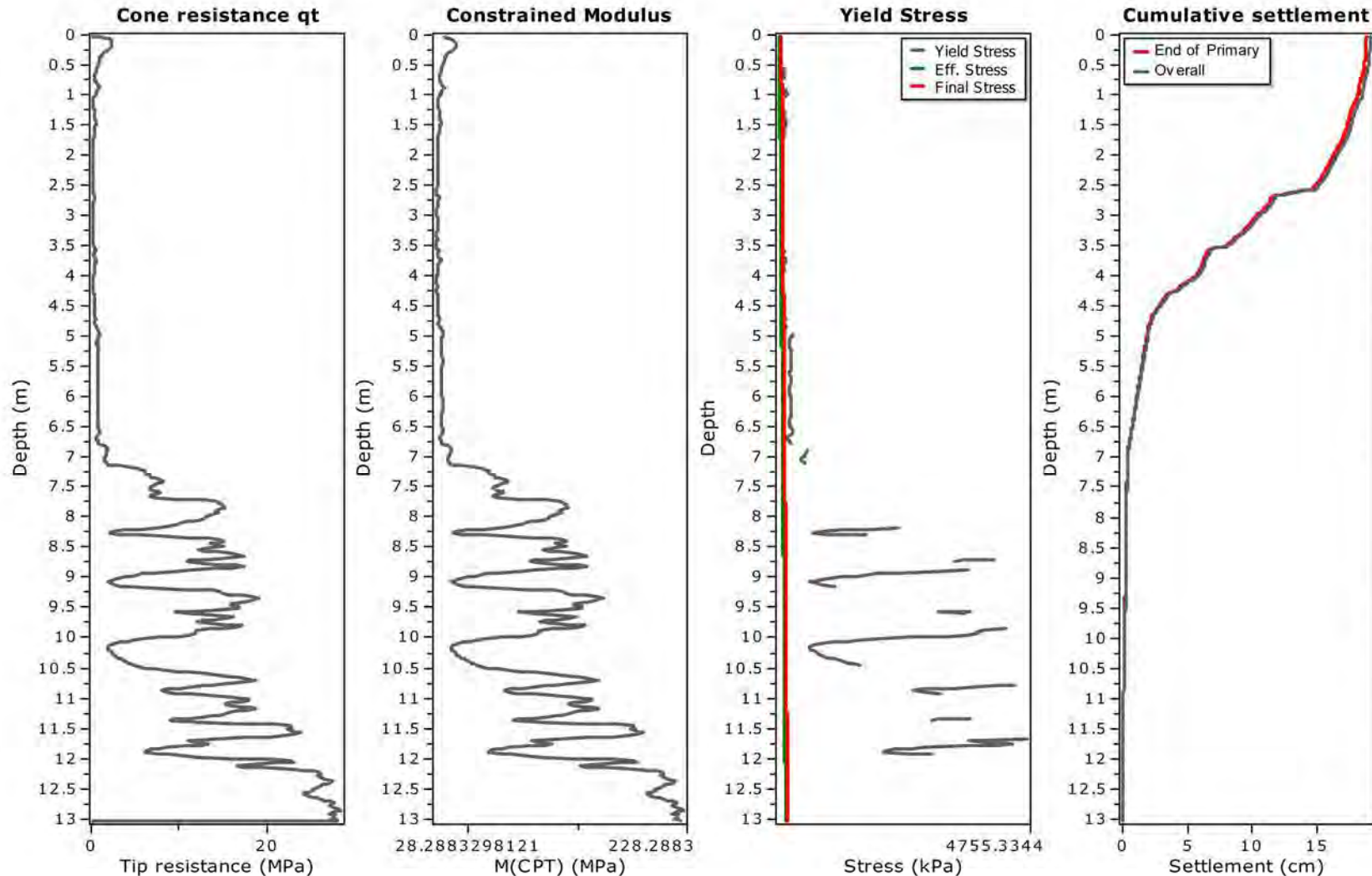
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta$$

where t_p is the duration of primary consolidation

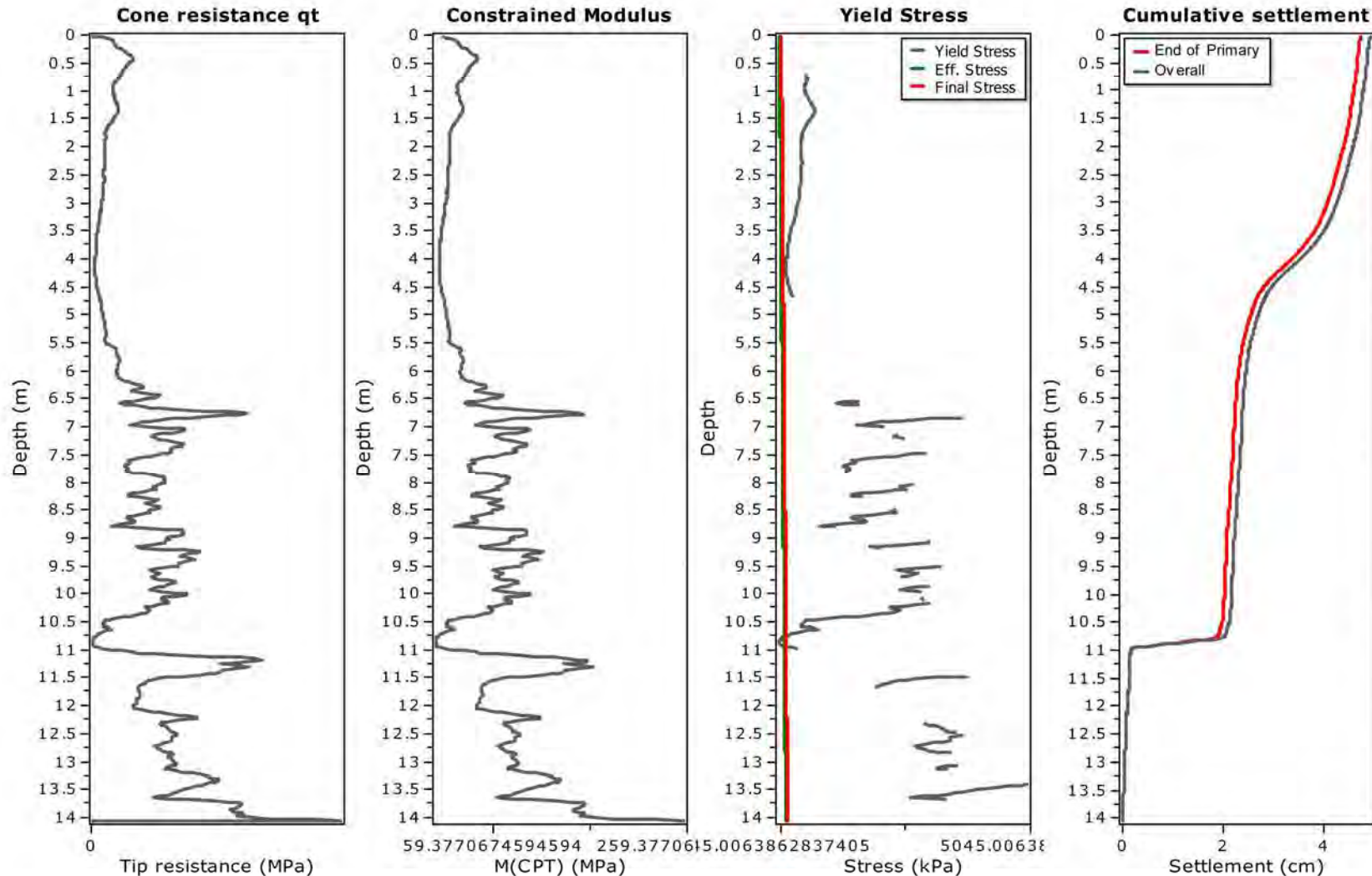


Project: Sunfield Landholding
Location:

CPT: CPT204

Total depth: 14.06 m, Date: 18/07/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

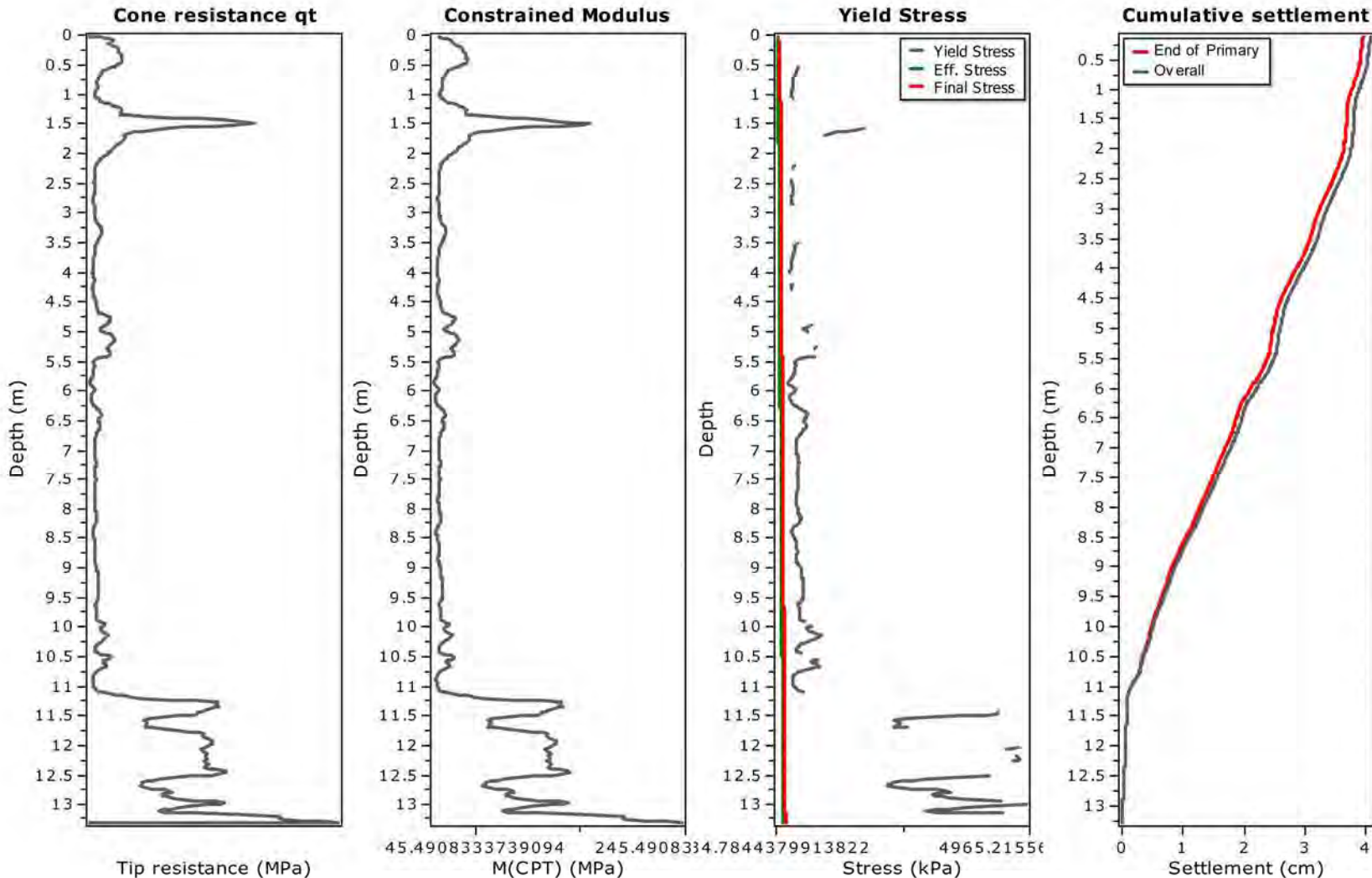
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

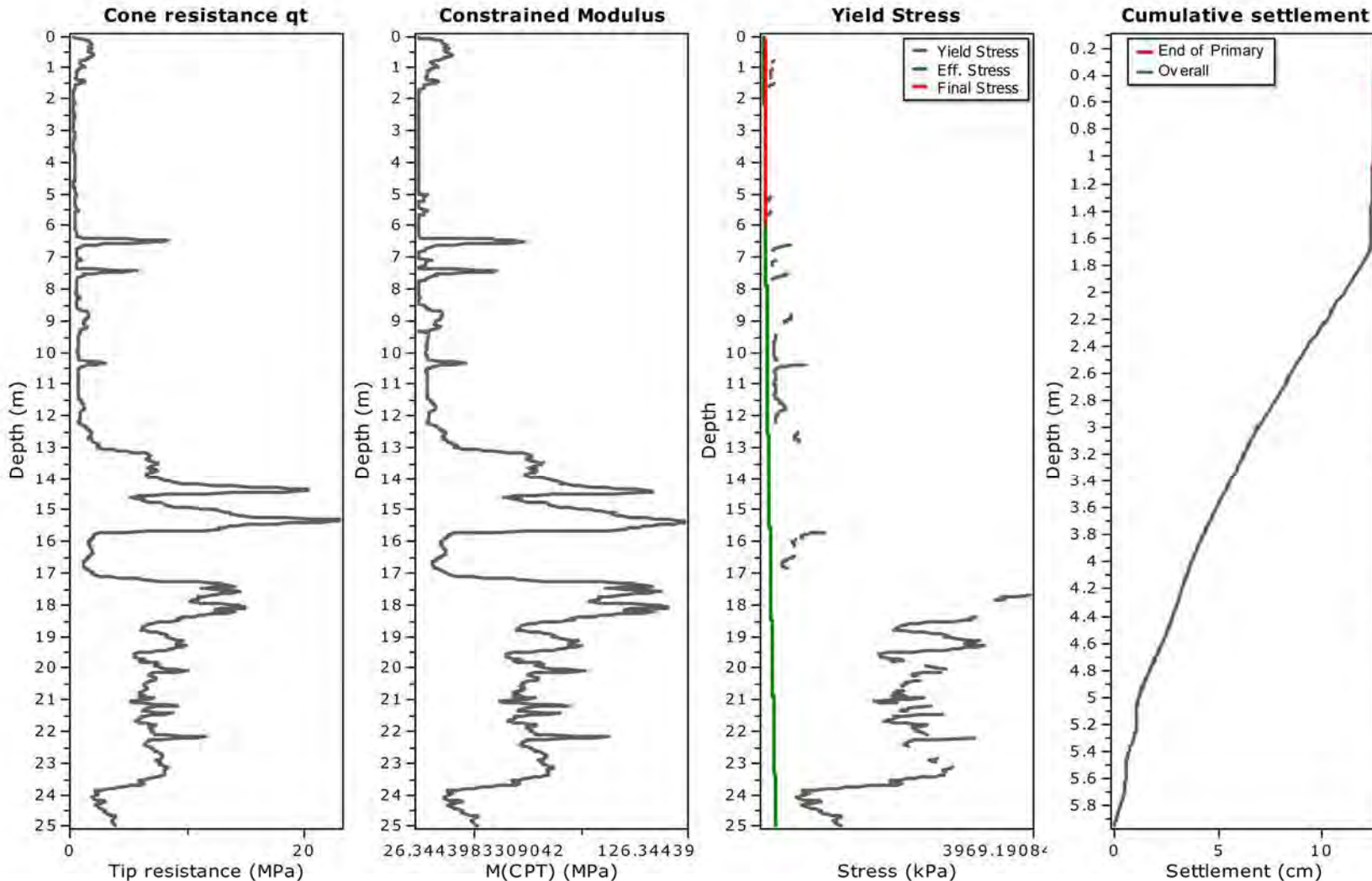


Project: Sunfield Landholding
Location:

CPT: CPT206

Total depth: 24.98 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

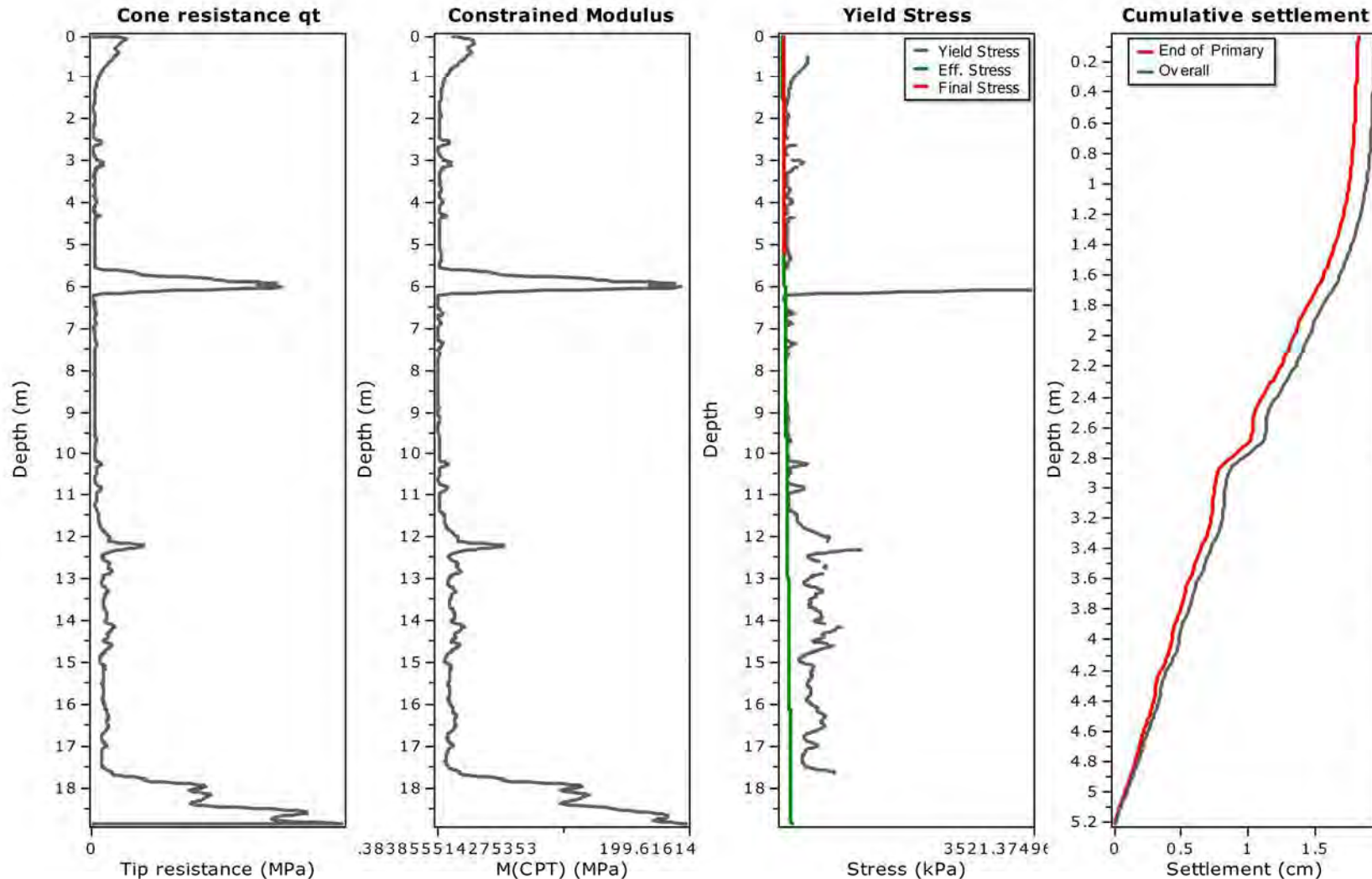
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 10.00 (m)
L/B: 2.0
Footing pressure: 12.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-0.5}$$

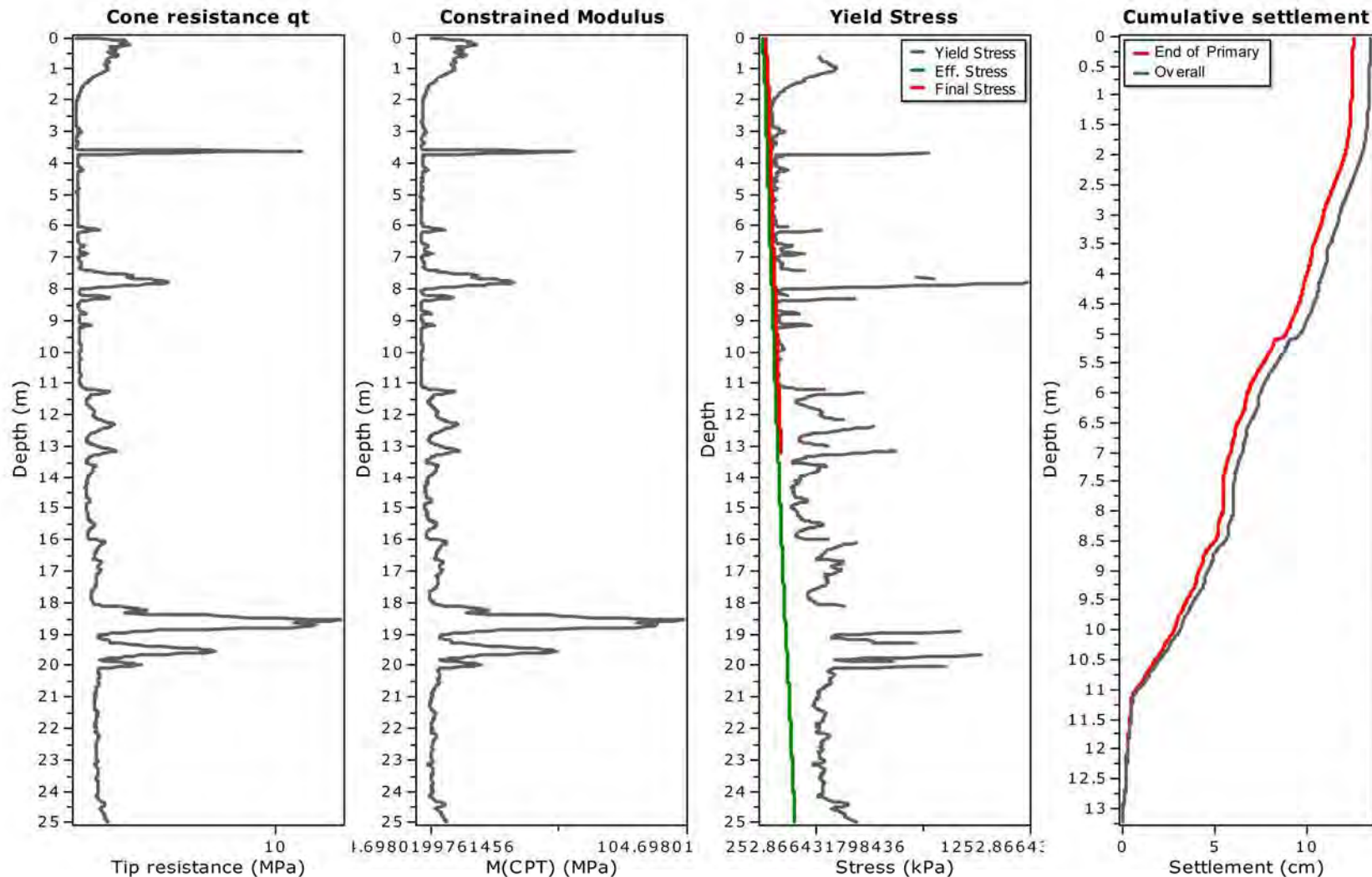
where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT301

Total depth: 7.84 m, Date: 31/03/2025

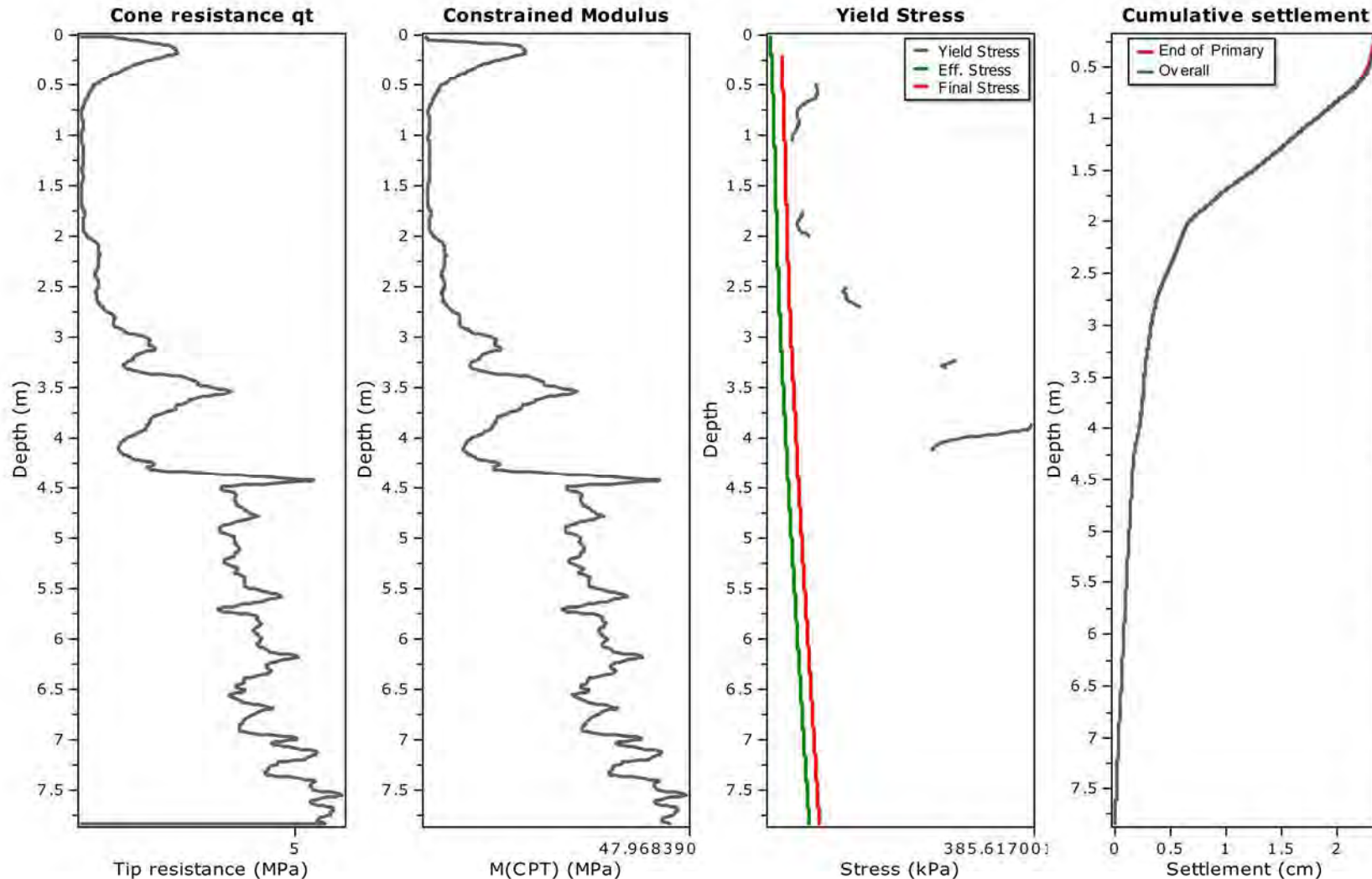
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

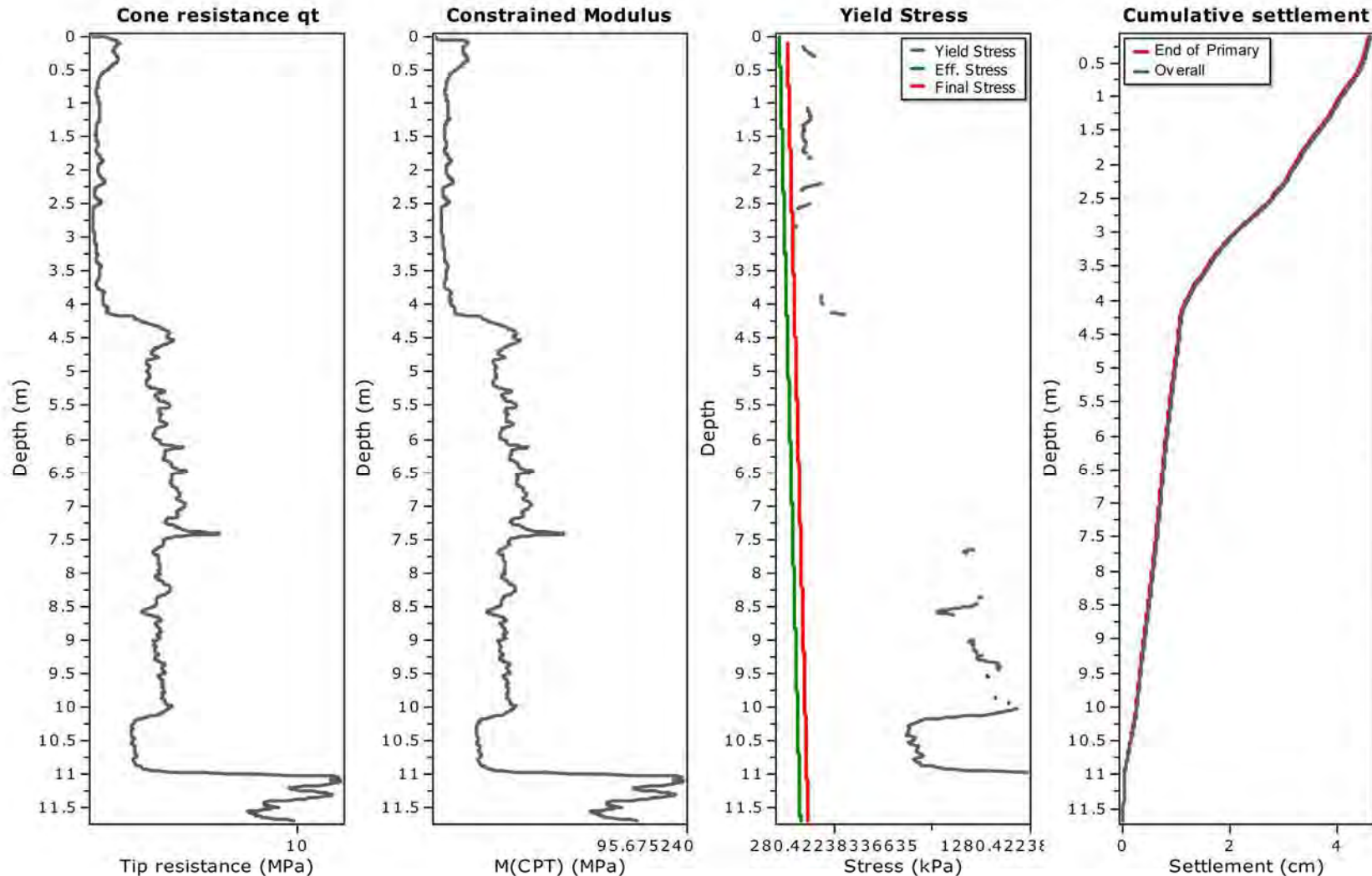
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta z$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

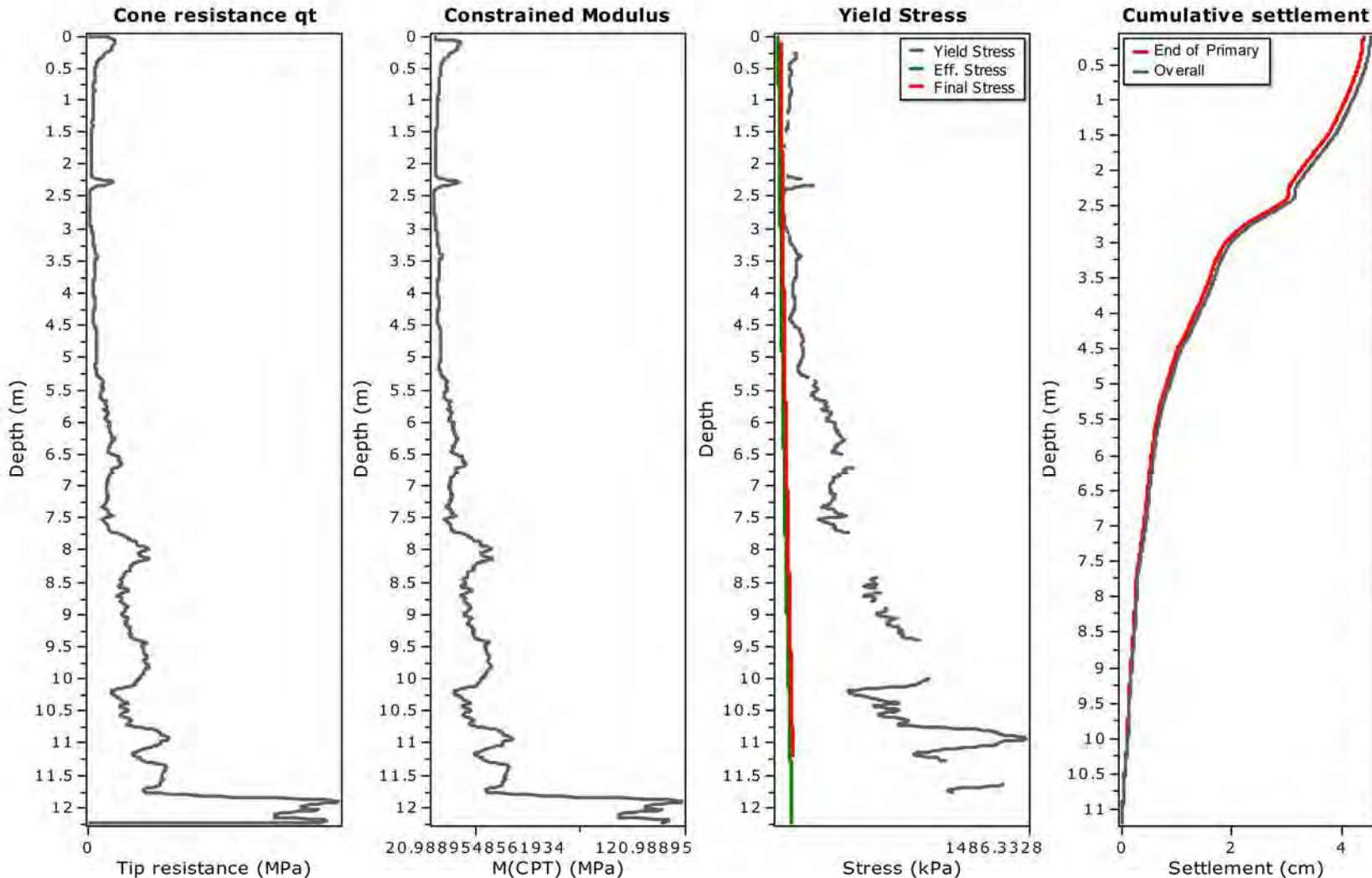
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT304

Total depth: 10.18 m, Date: 18/07/2025

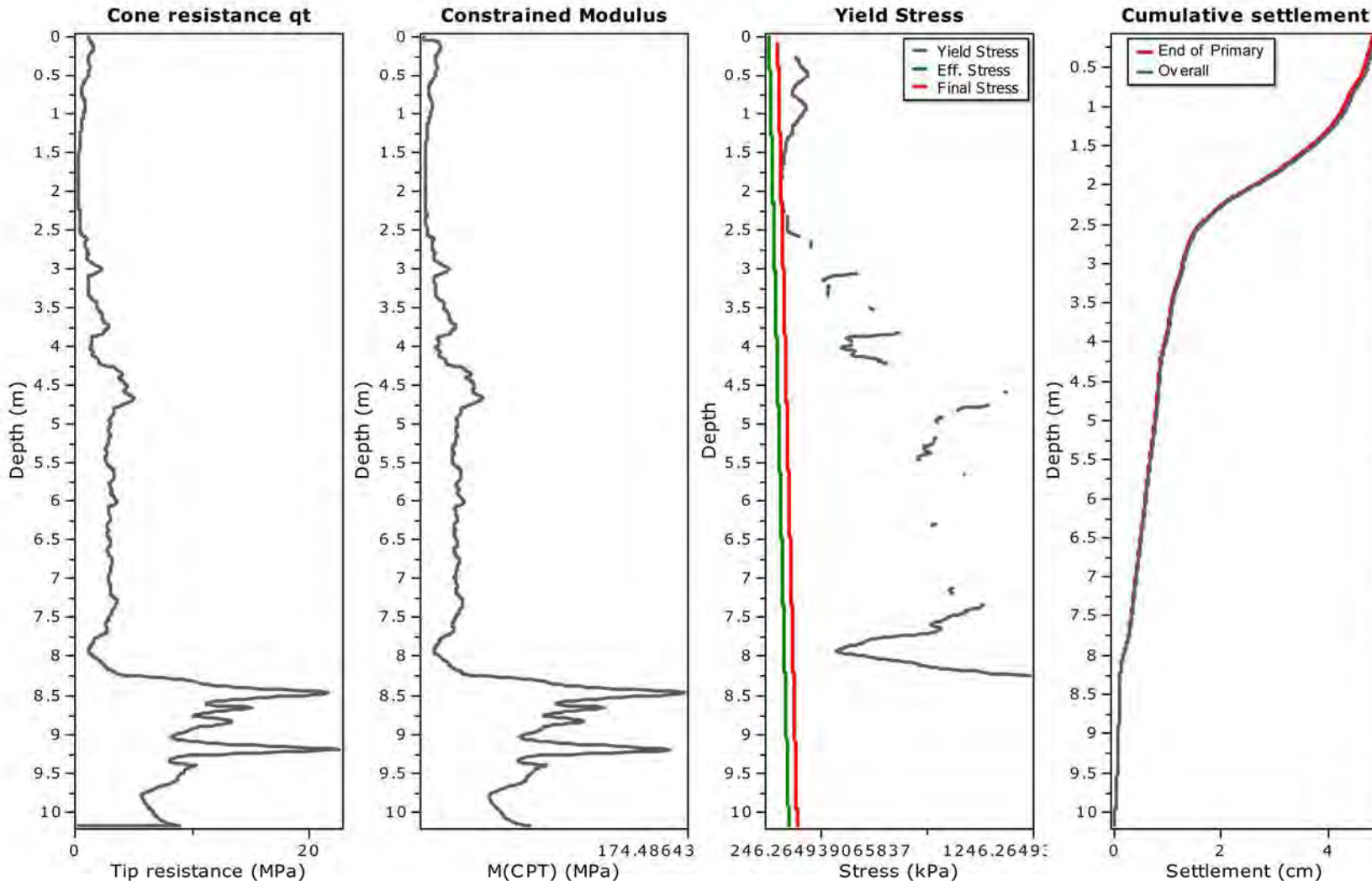
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

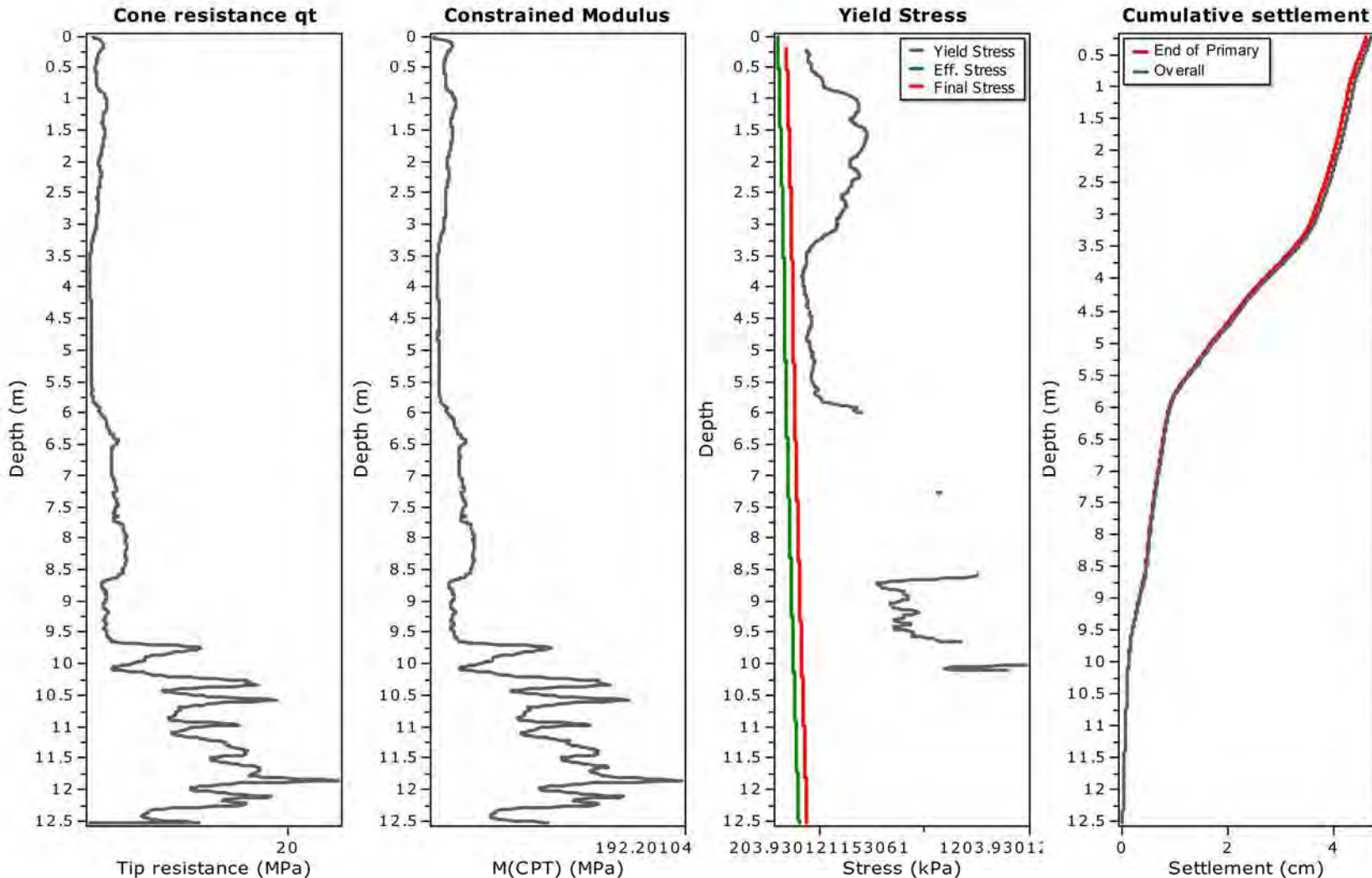
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^{-n}$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.20 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

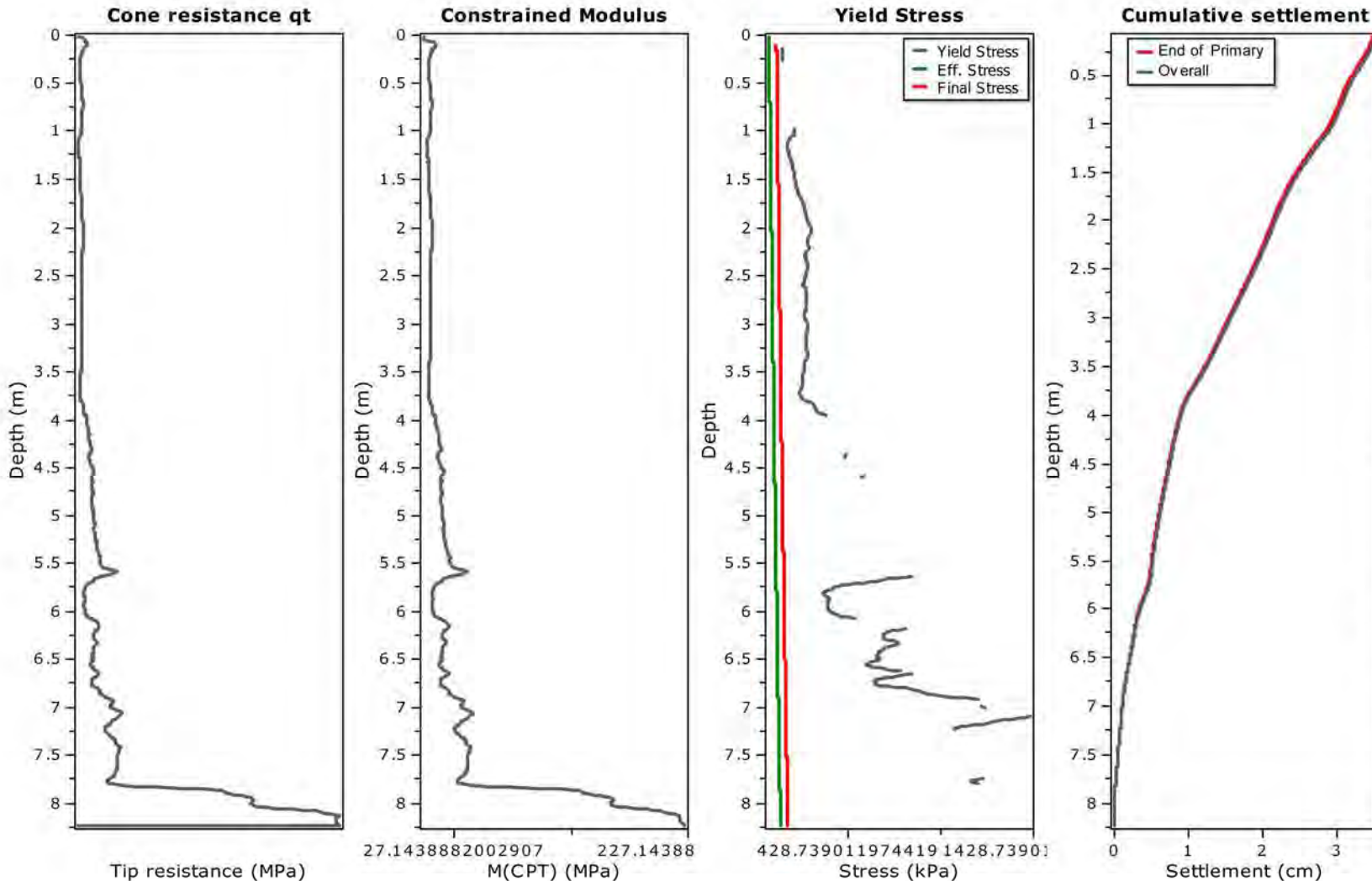
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

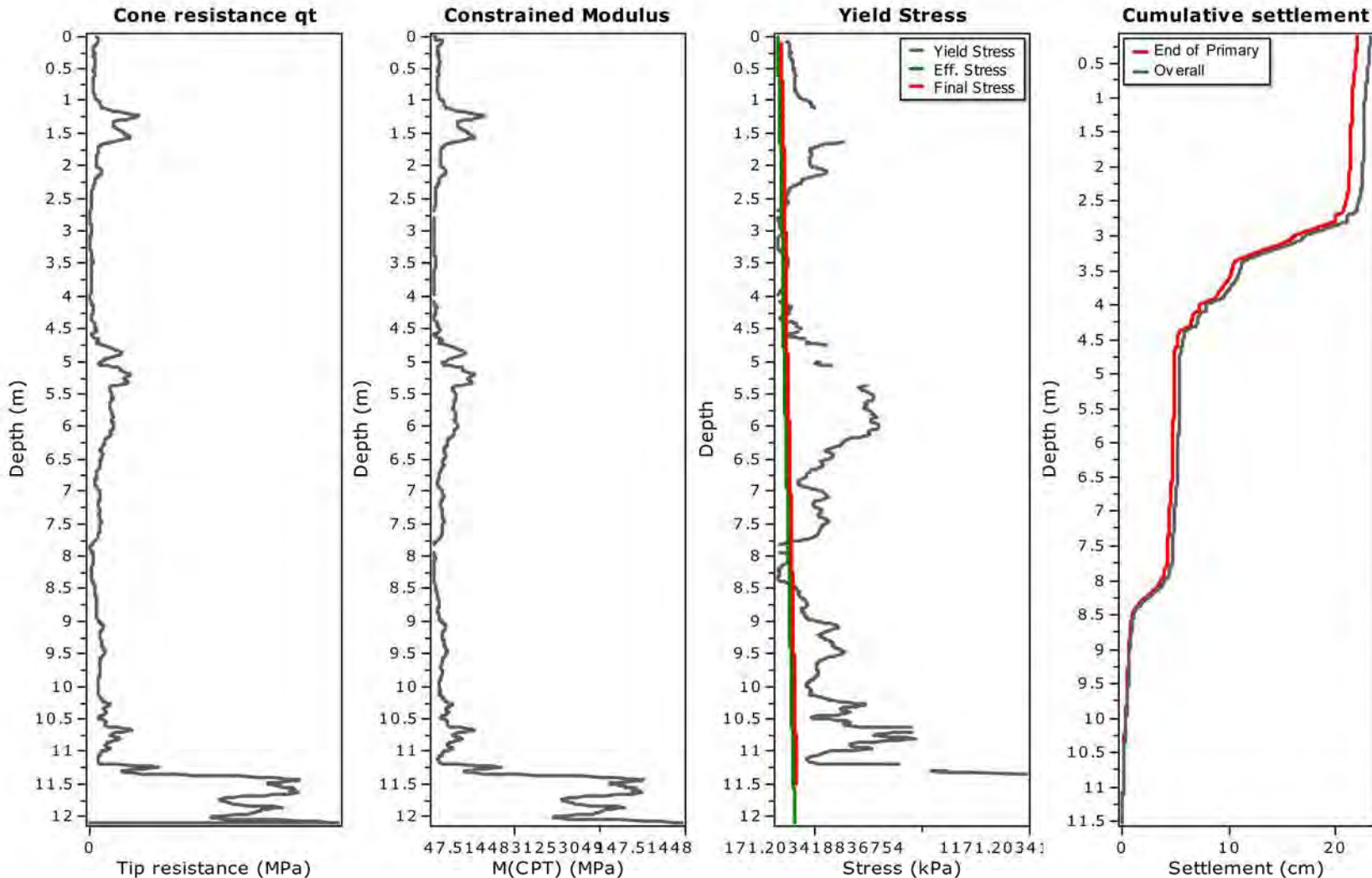
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\omega \times \lambda$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 15.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

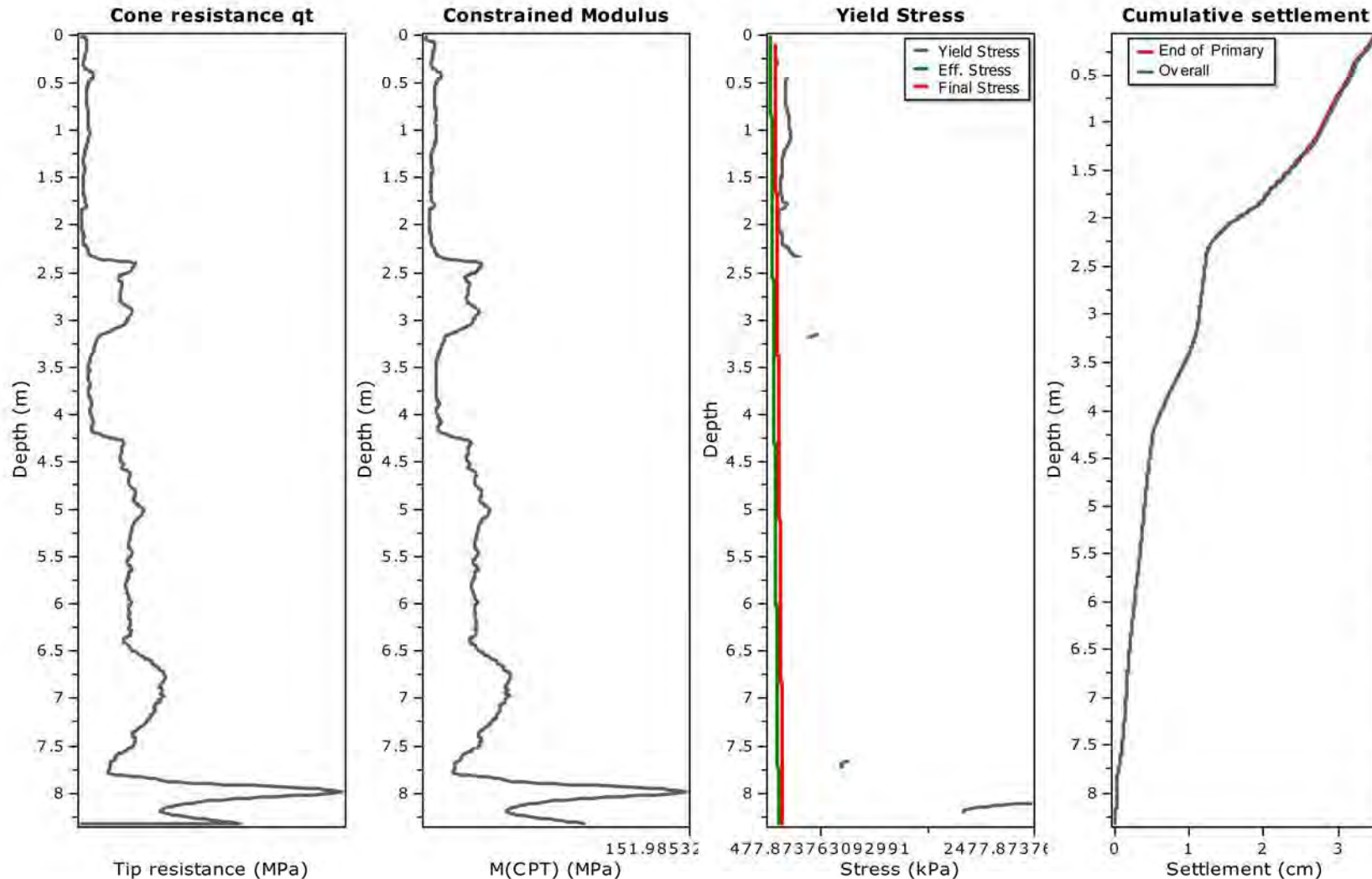
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT401

Total depth: 14.59 m, Date: 31/03/2025

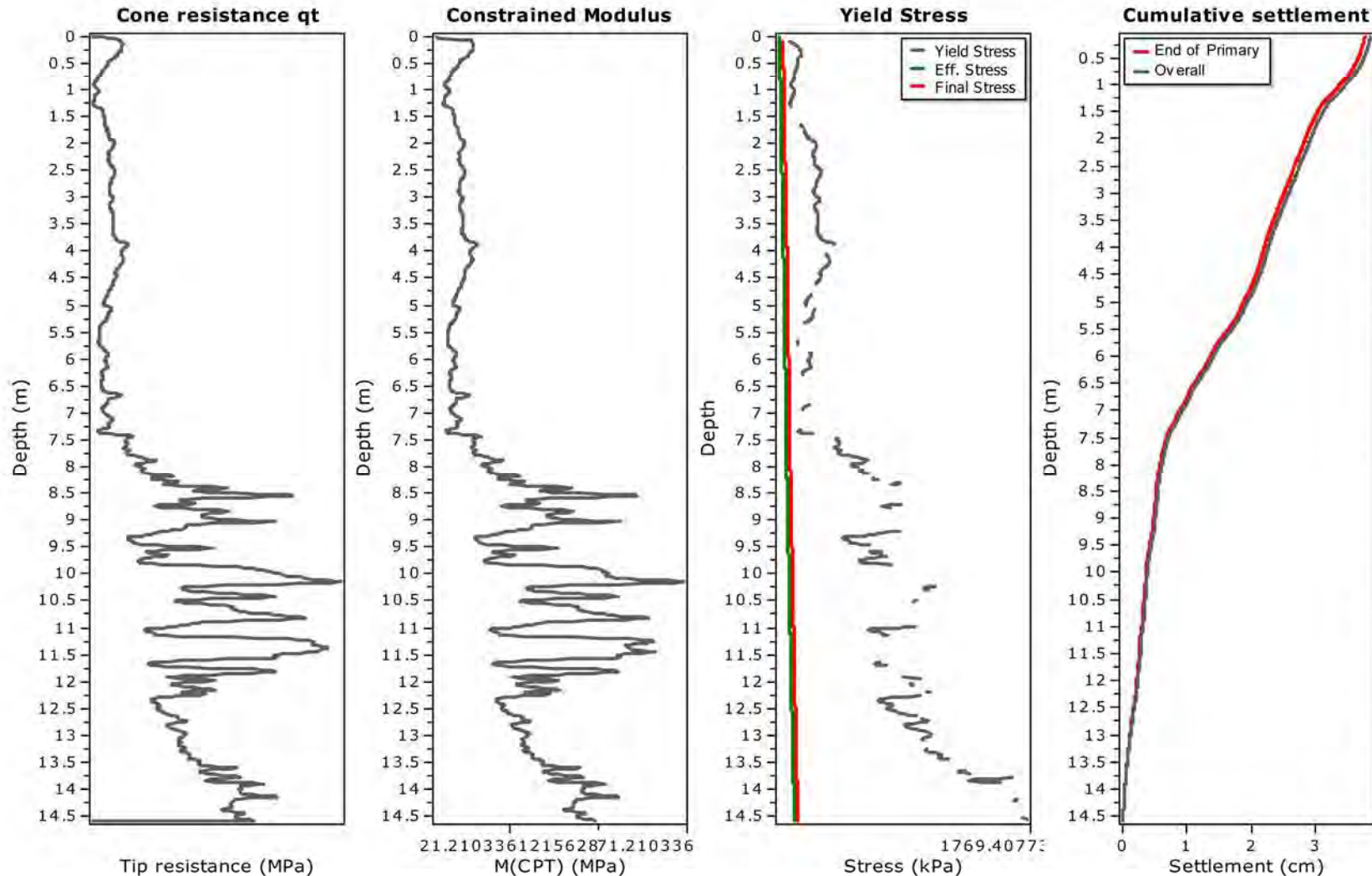
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 25.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

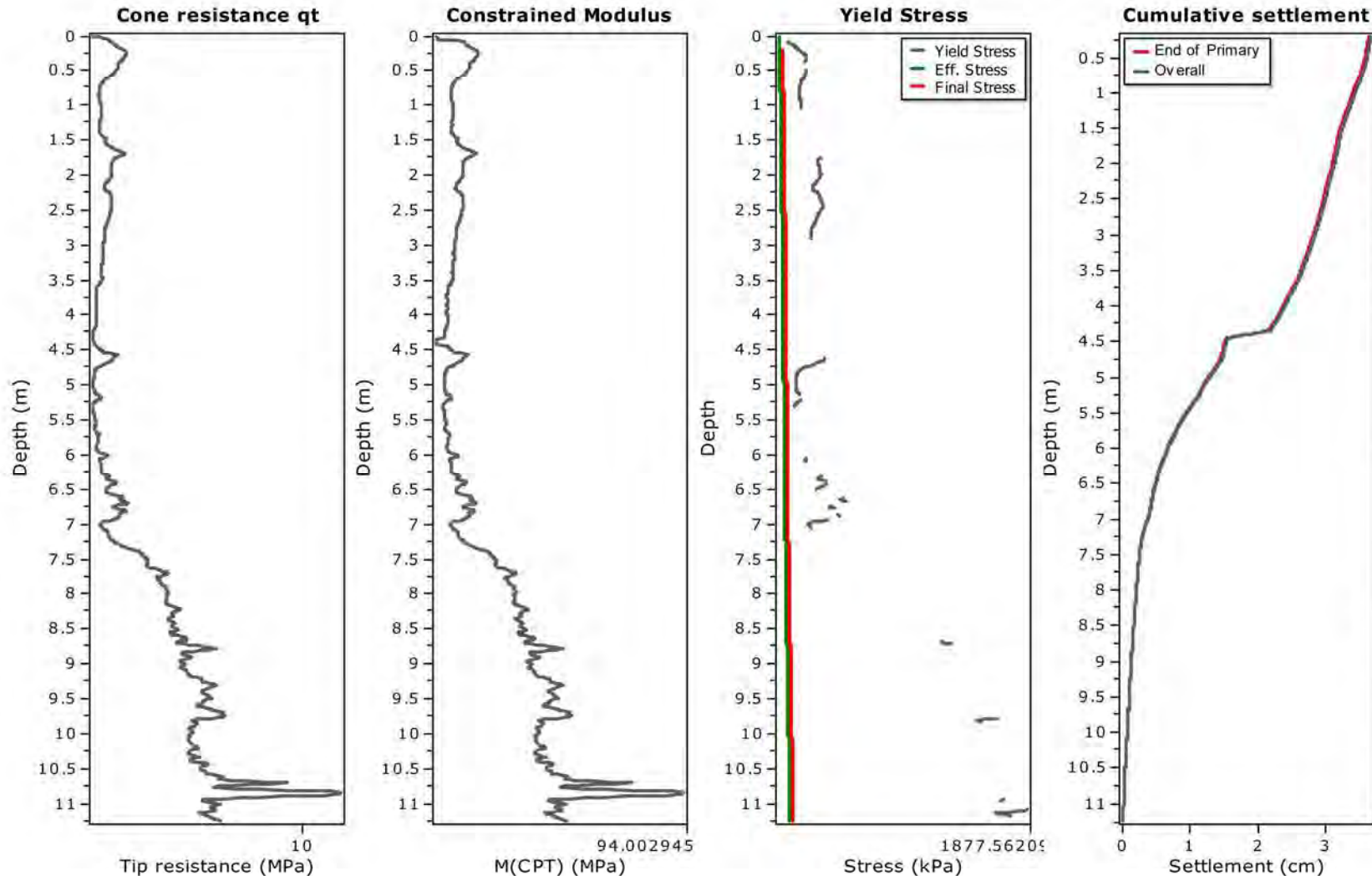
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 25.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

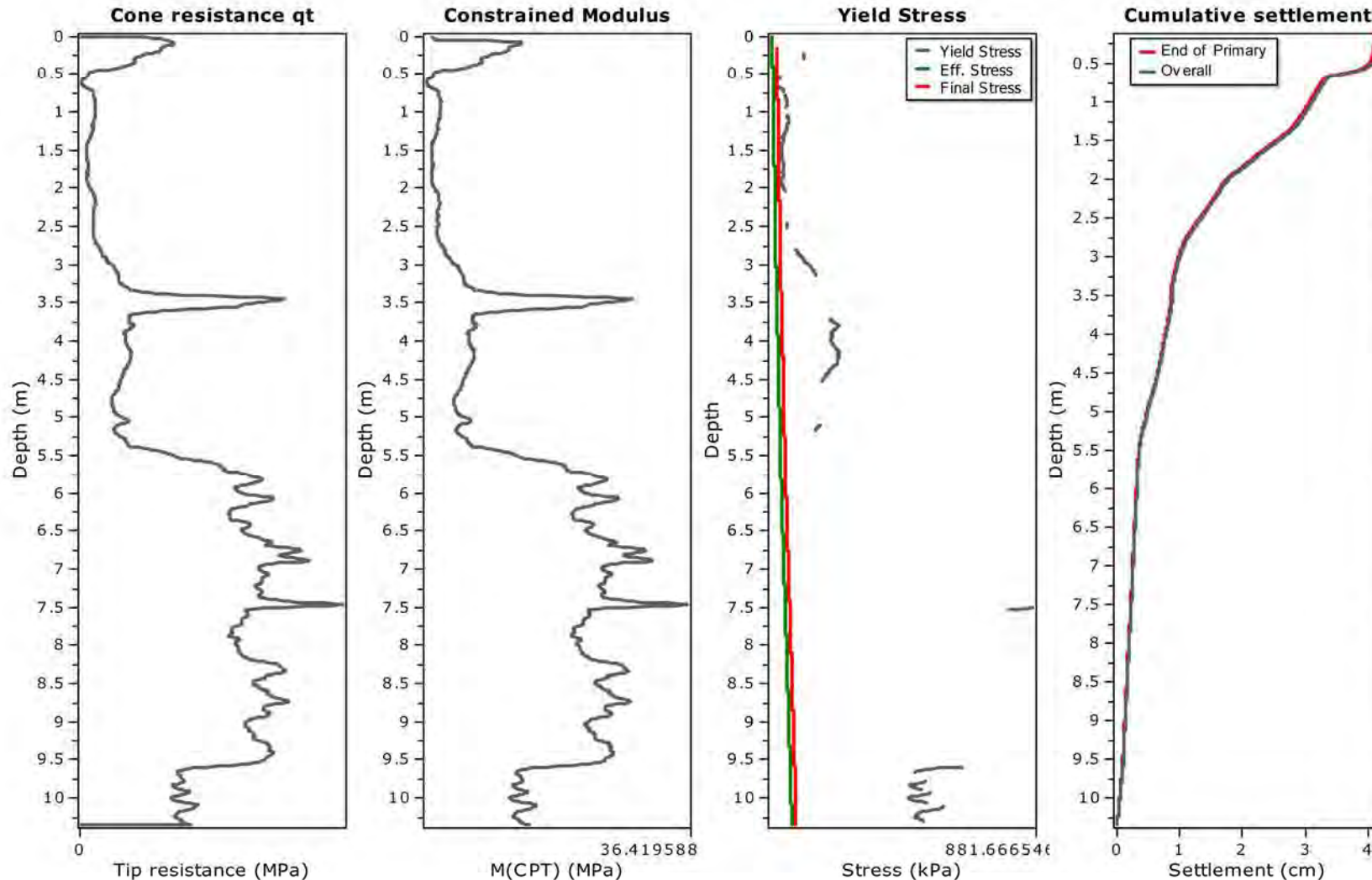
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 15.00 (kPa)
 Embedment depth: 0.15 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

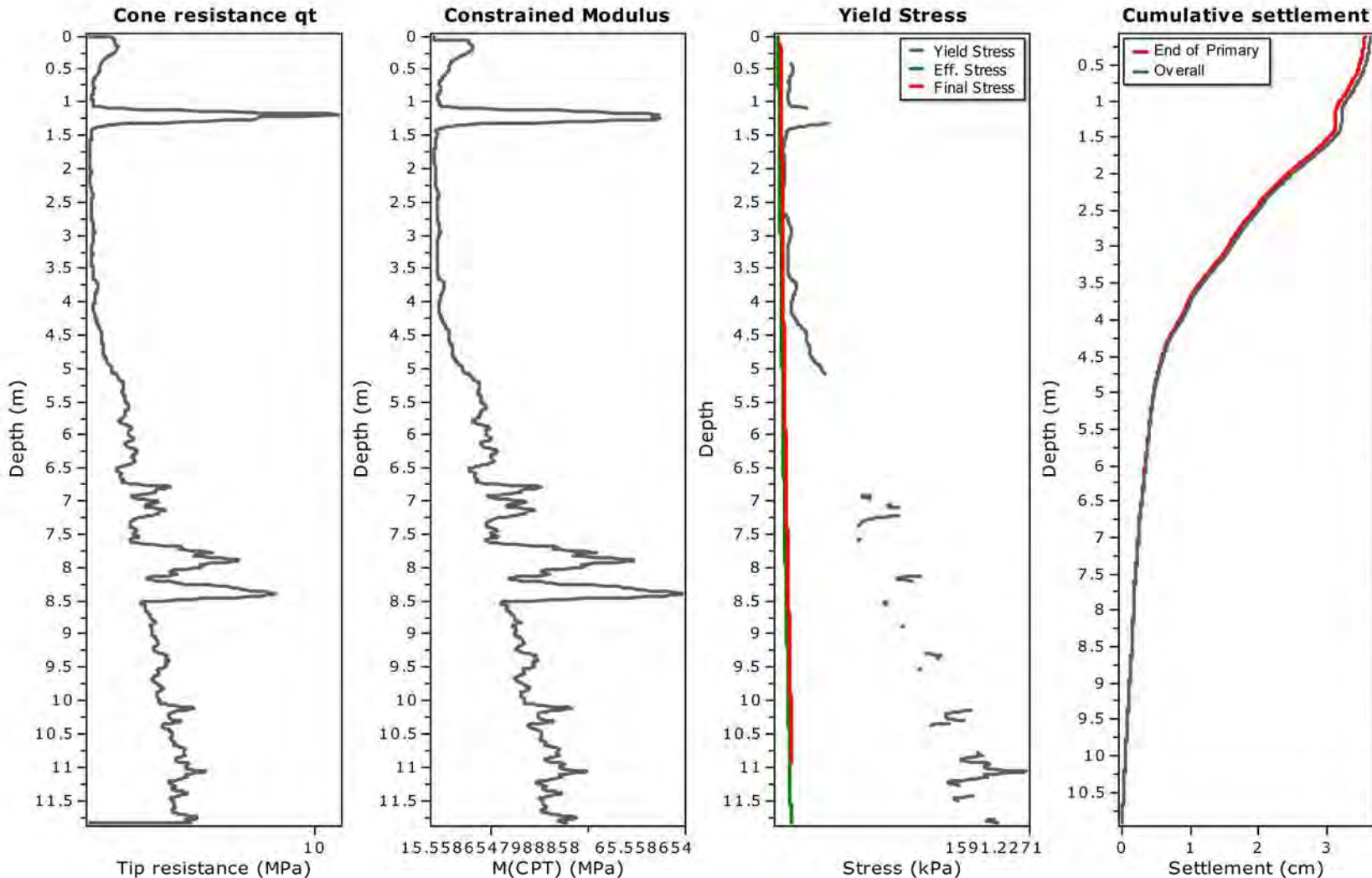
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_c = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

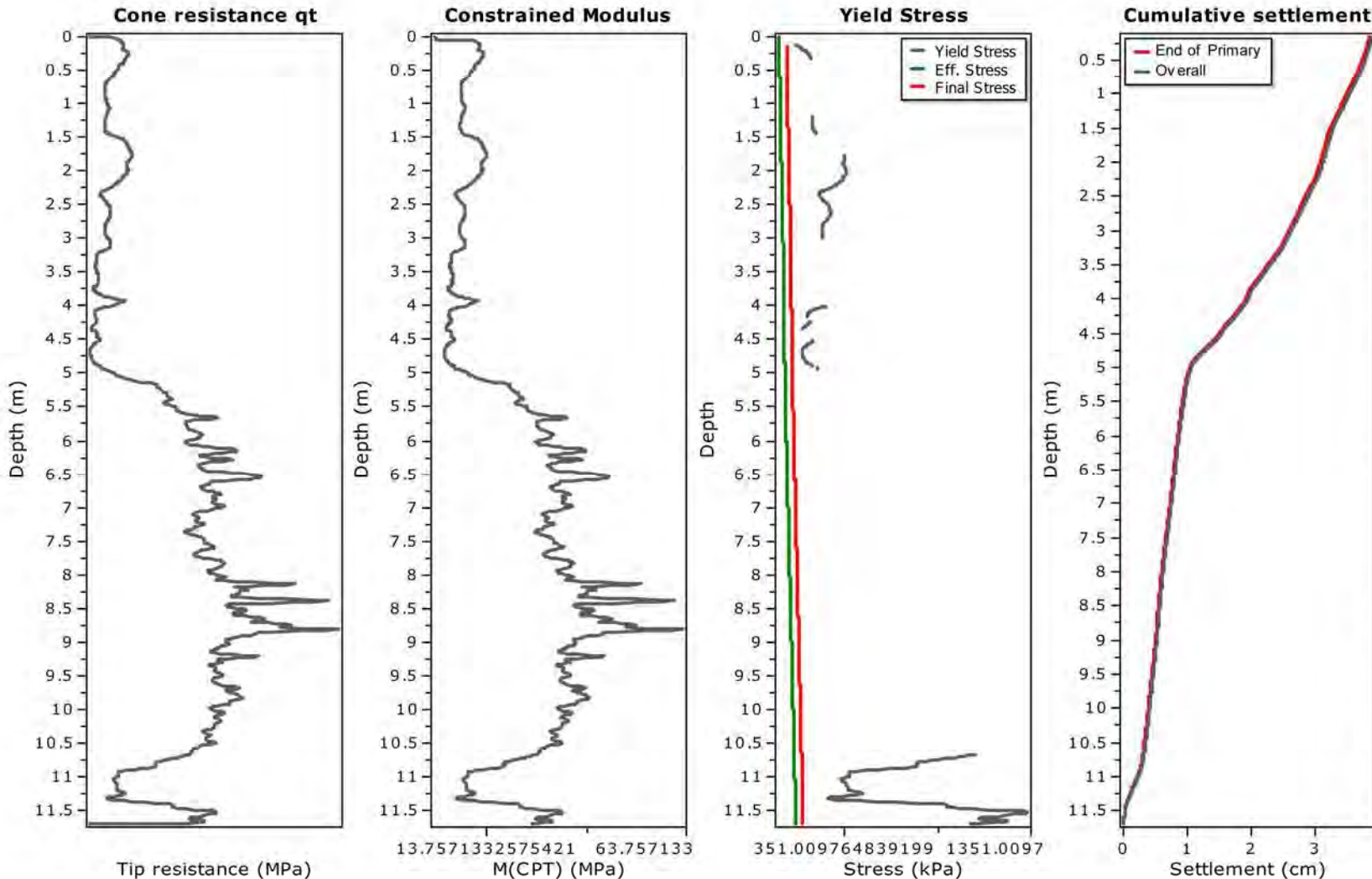
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 40.00 (kPa)
 Embedment depth: 0.15 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT406

Total depth: 10.13 m, Date: 31/03/2025

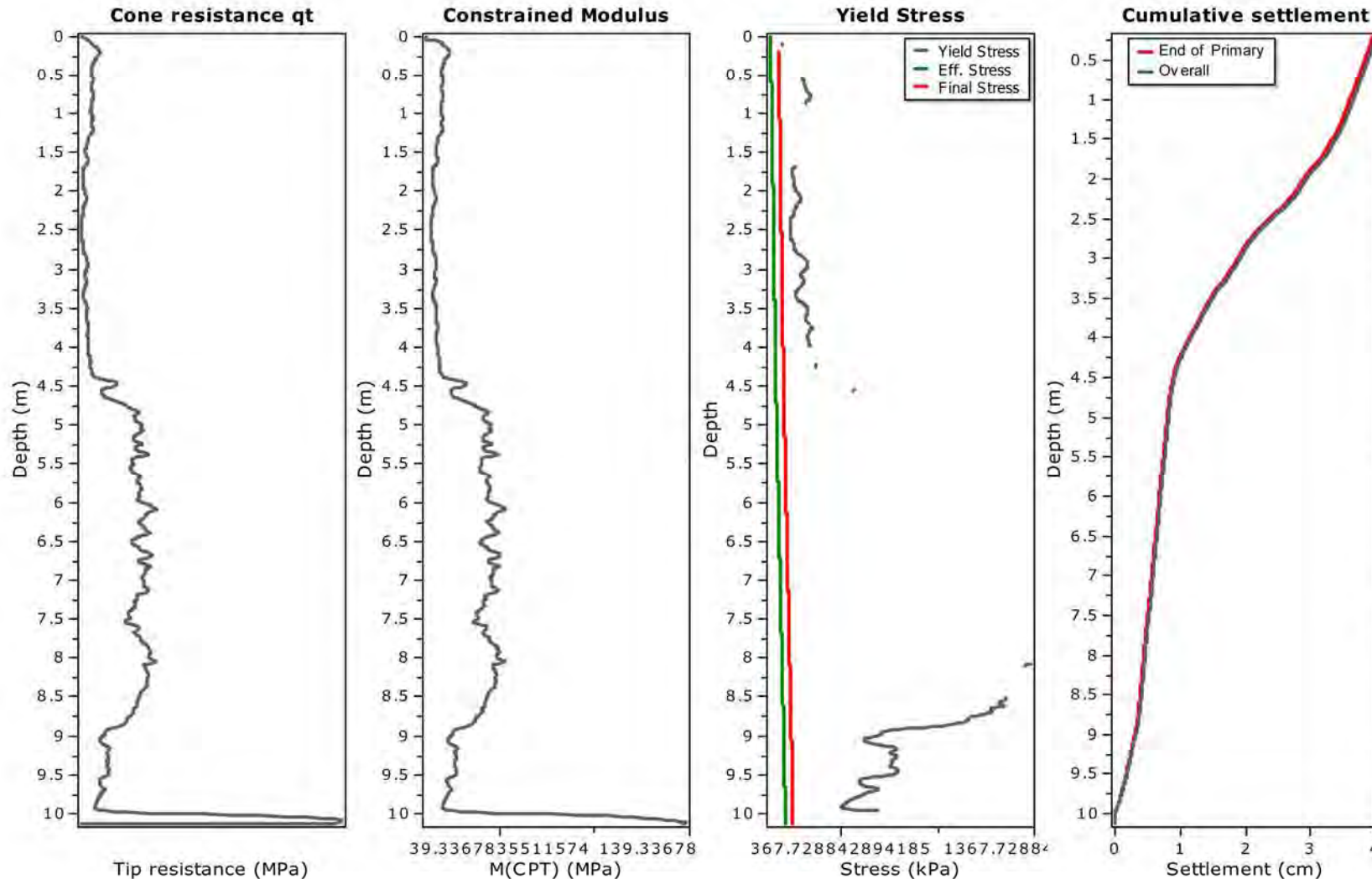
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 40.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

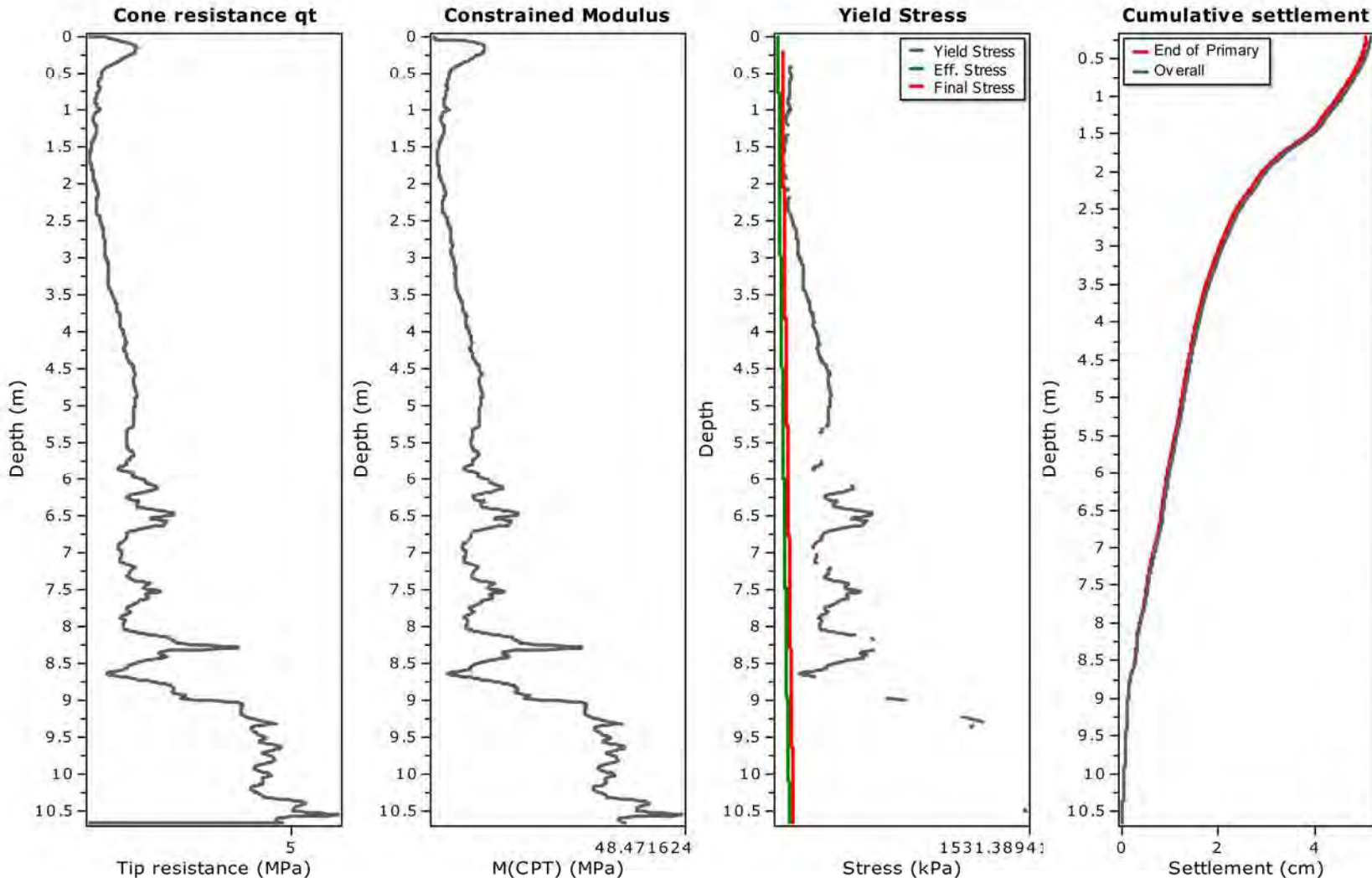
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 25.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

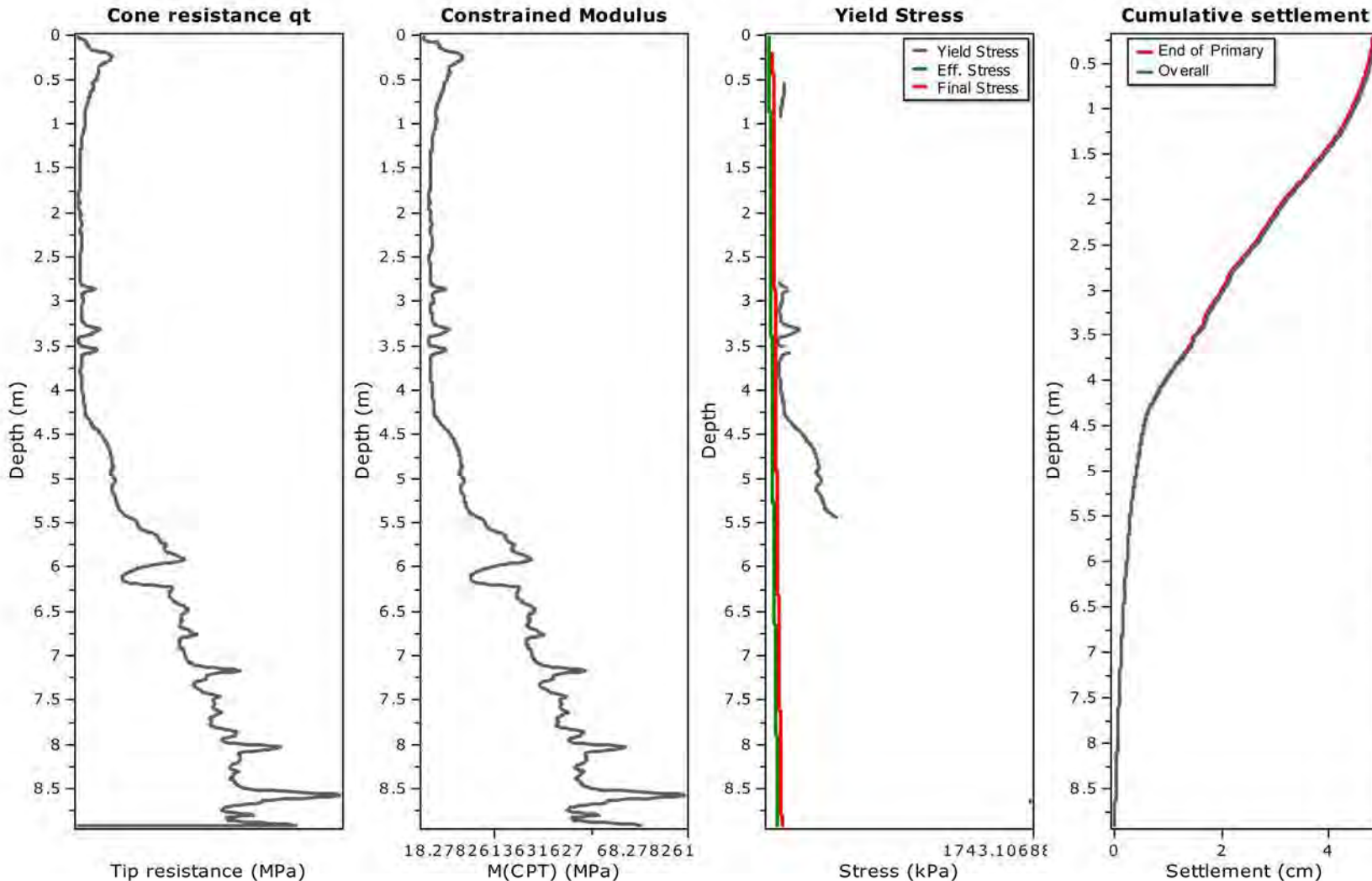
* Secondary (creep) settlement calculation is performed according to the following formula:

$$\psi \times \Delta z$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 25.00 (kPa)
Embedment depth: 0.20 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

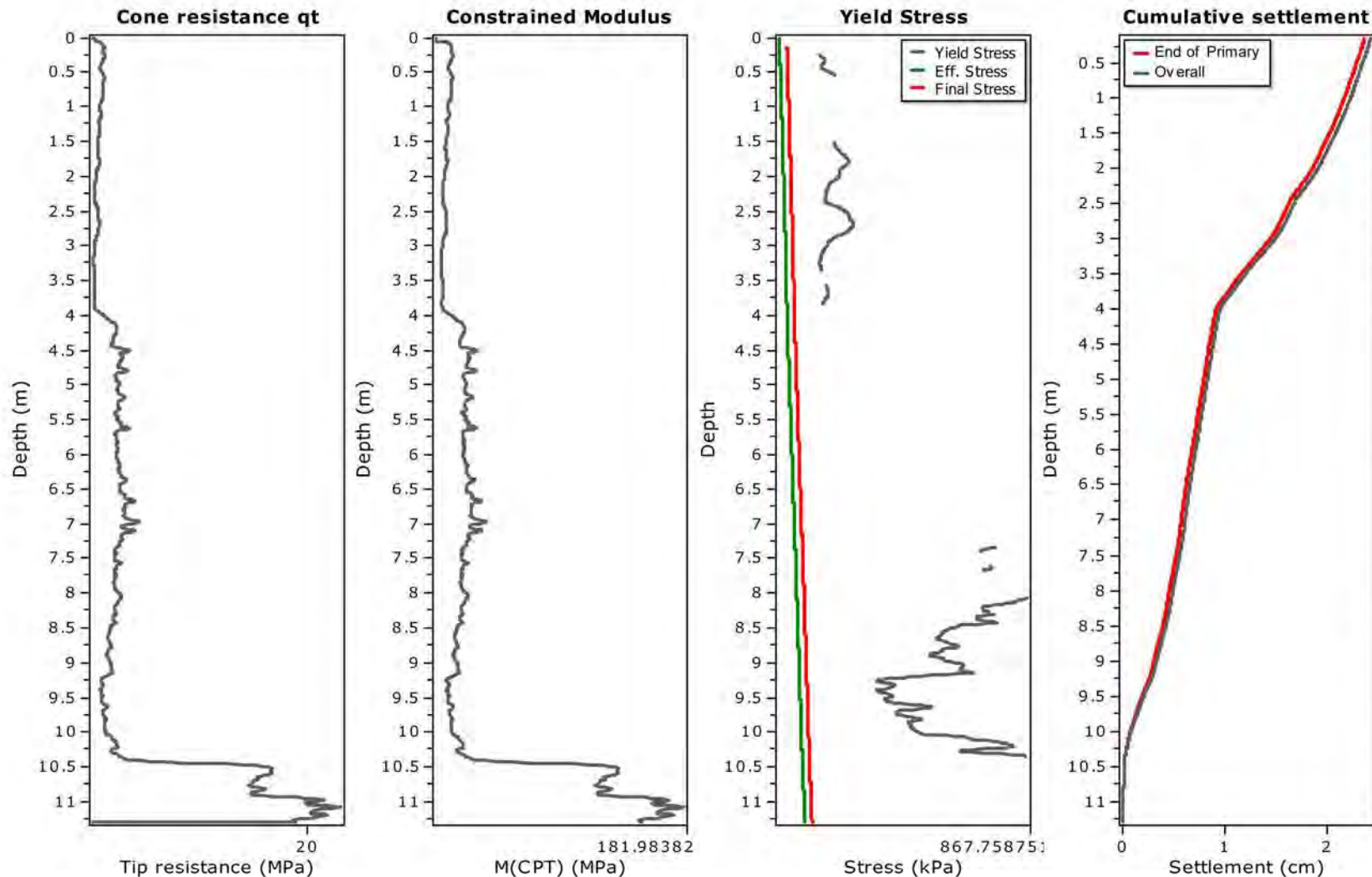
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 25.00 (kPa)
 Embedment depth: 0.15 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

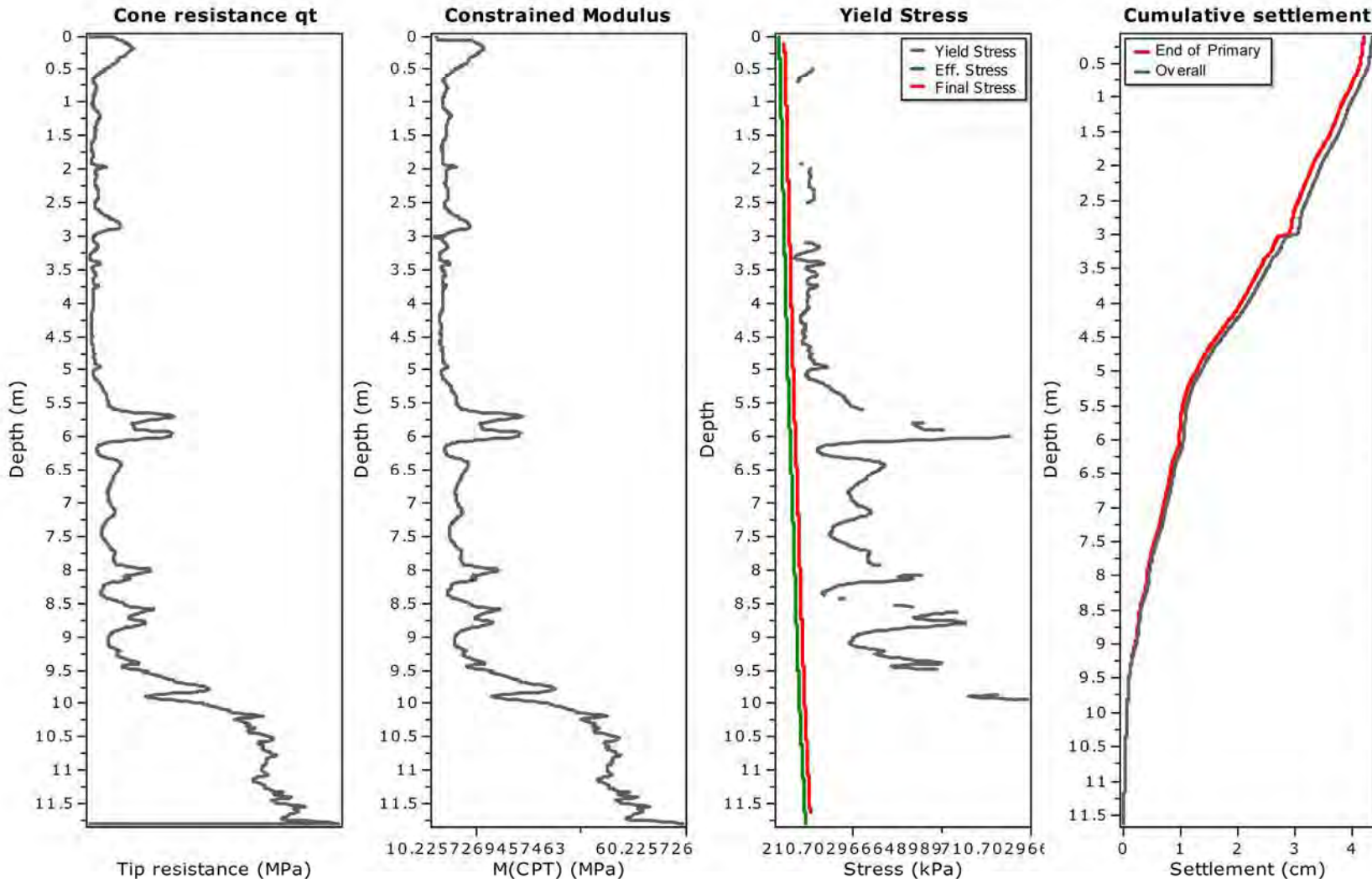
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

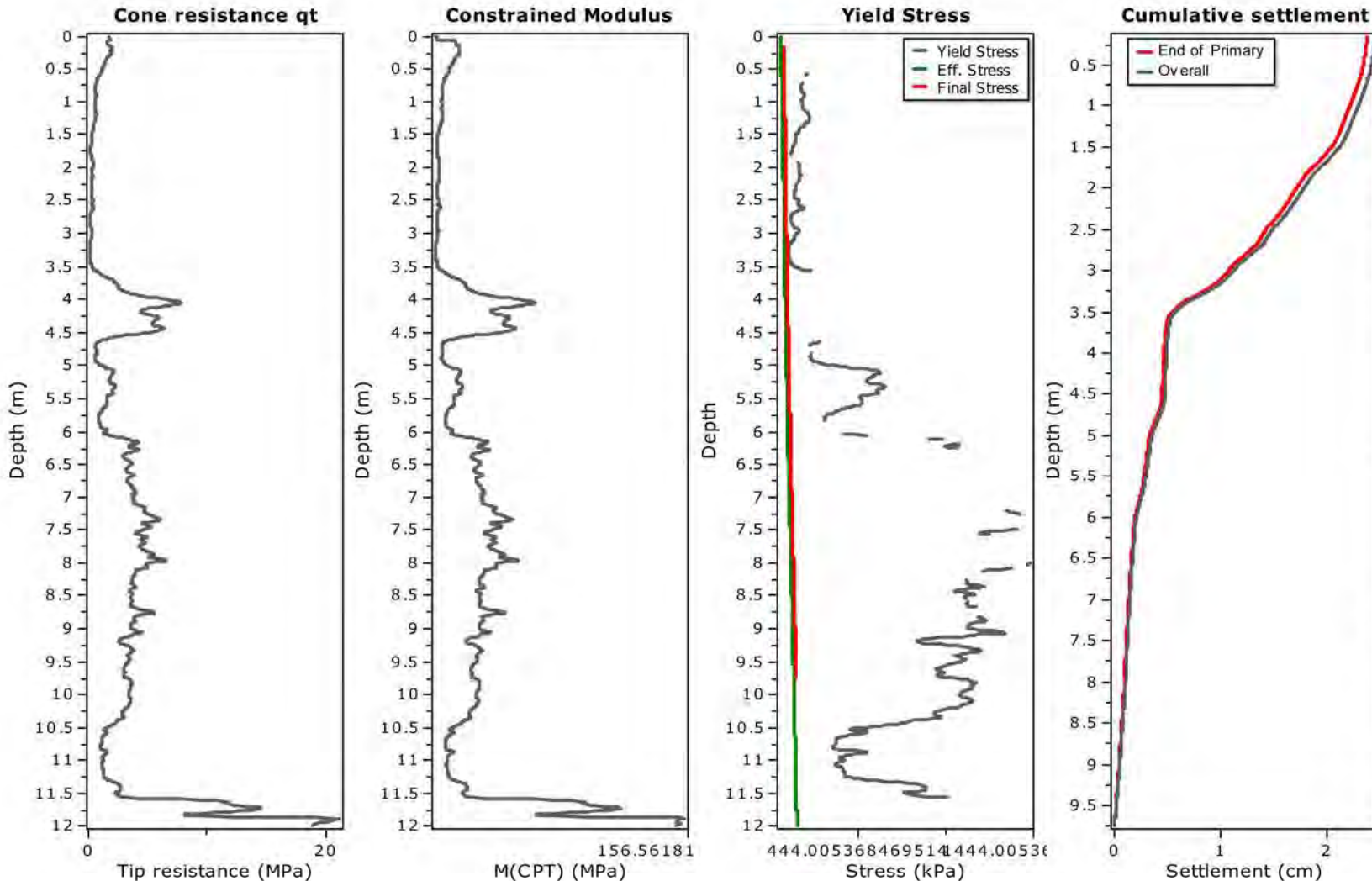


Project: Sunfield Landholding
Location:

CPT: CPT411

Total depth: 11.99 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.15 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

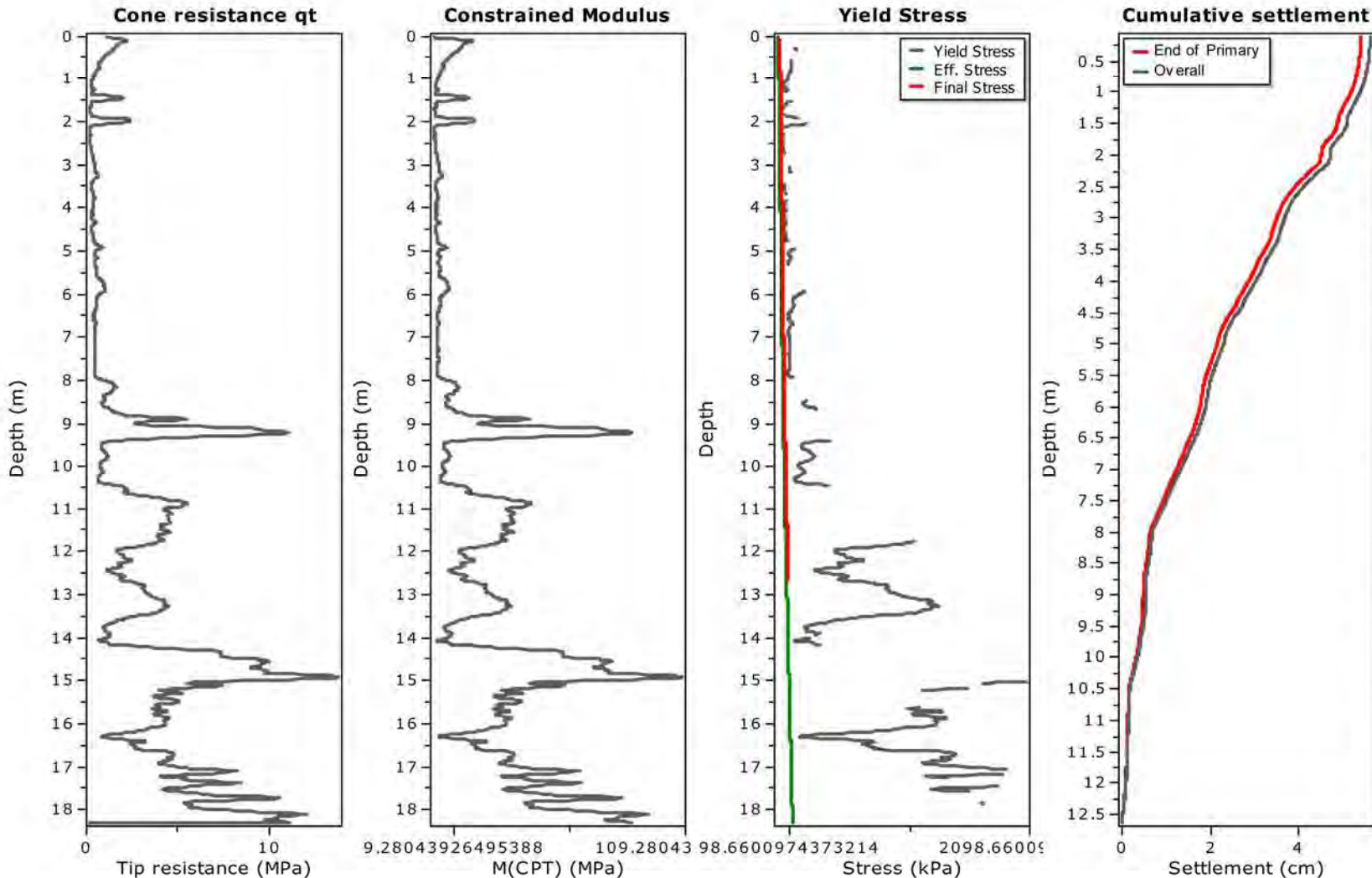
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 180.00 (m)
 L/B: 2.0
 Footing pressure: 15.00 (kPa)
 Embedment depth: 0.10 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: Yes
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

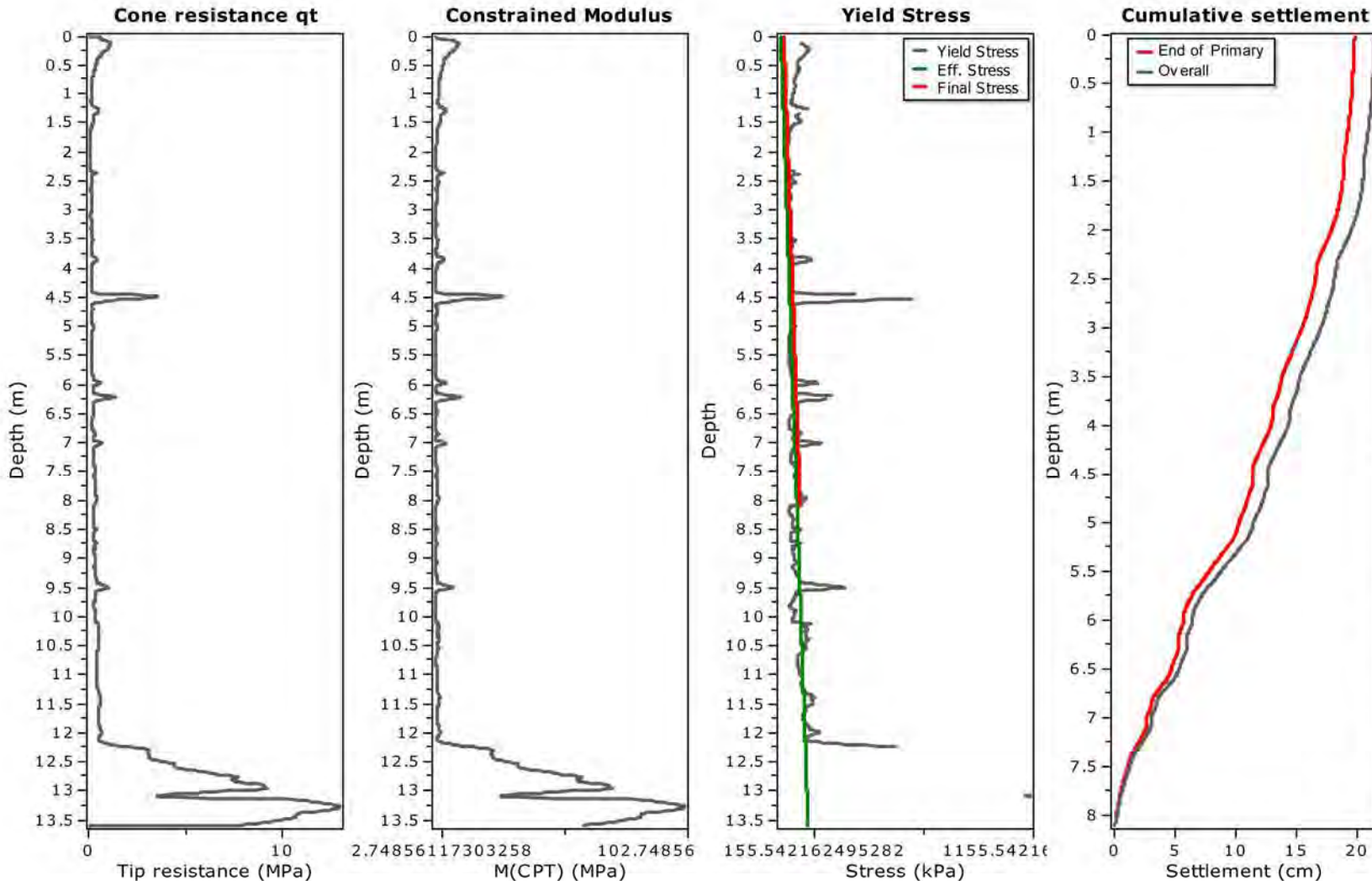
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

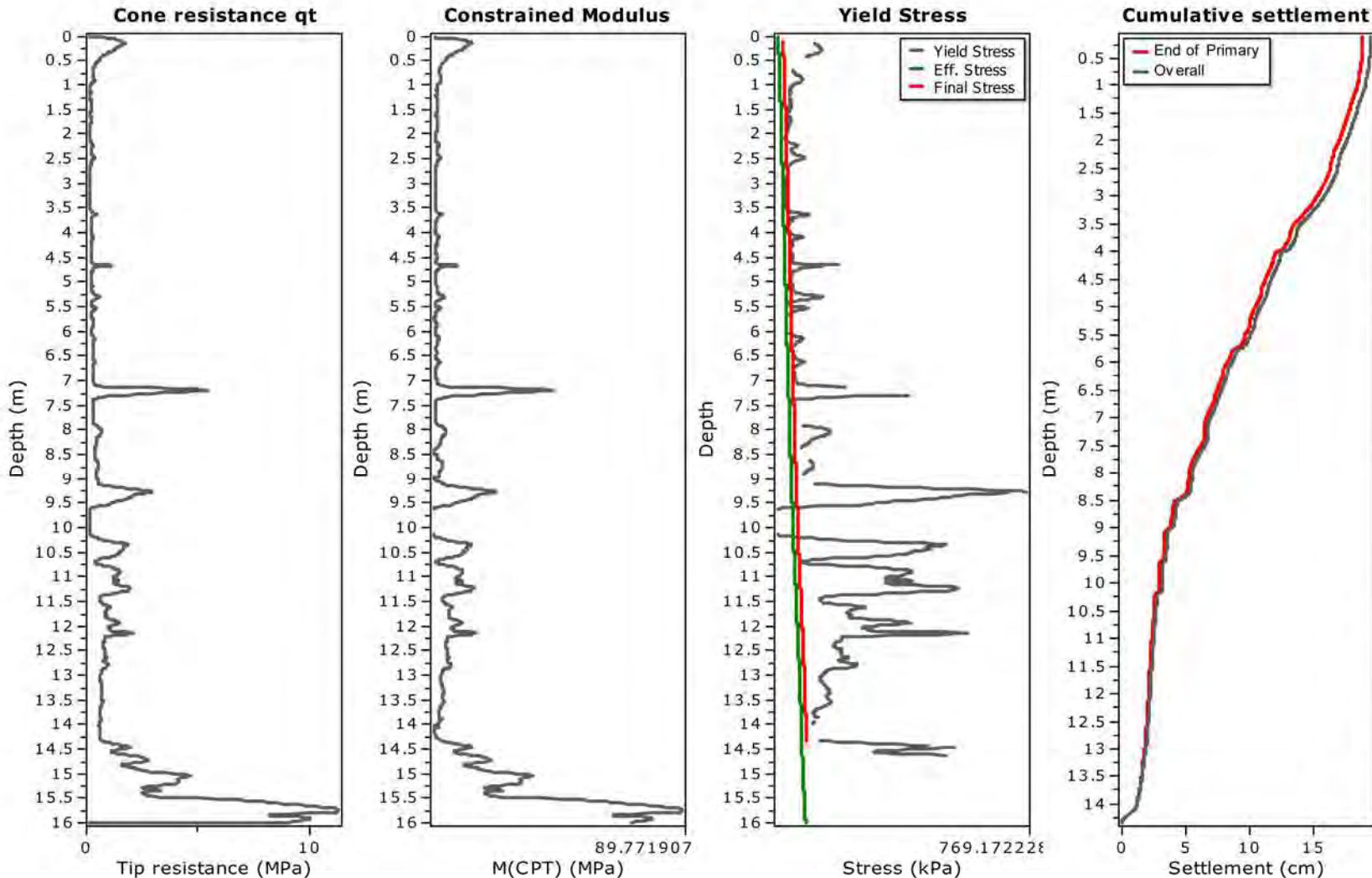


Project: Sunfield Landholding
Location:

CPT: CPT414

Total depth: 16.00 m, Date: 31/03/2025
Surface Elevation: 0.00 m, Est. GWL: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation



Project: Sunfield Landholding

Location:

CPT: CPT415A

Total depth: 15.83 m, Date: 31/03/2025

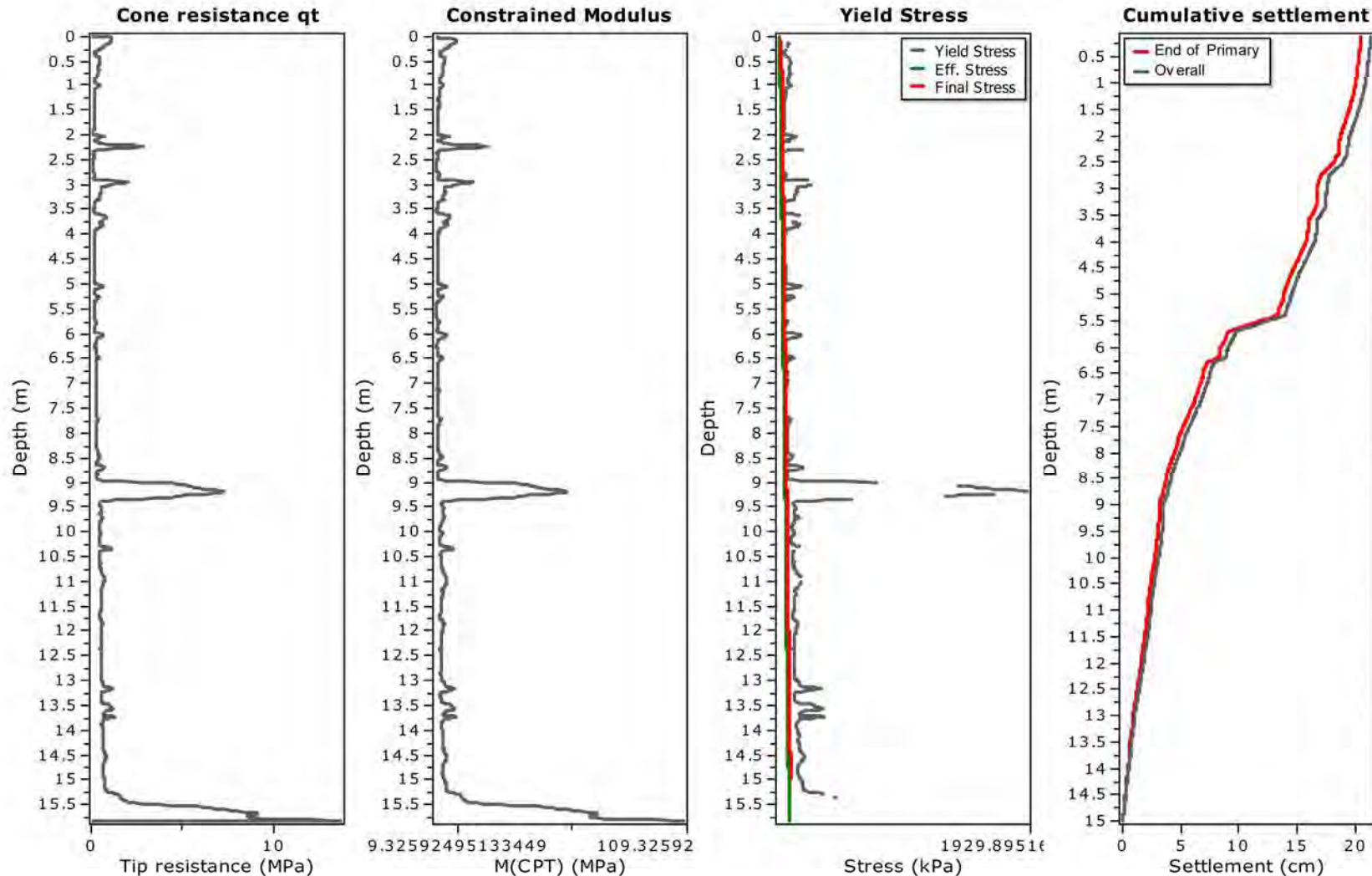
Surface Elevation: 0.00 m, Est. GWL: 0.00 m

Coords: X:0.00, Y:0.00

Cone Type:

Cone Operator:

Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
Footing width: 180.00 (m)
L/B: 2.0
Footing pressure: 15.00 (kPa)
Embedment depth: 0.10 (m)
Footing is rigid: Yes
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta \sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$S_s = S_p \left(\frac{t}{t_p} \right)^n$$

where t_p is the duration of primary consolidation

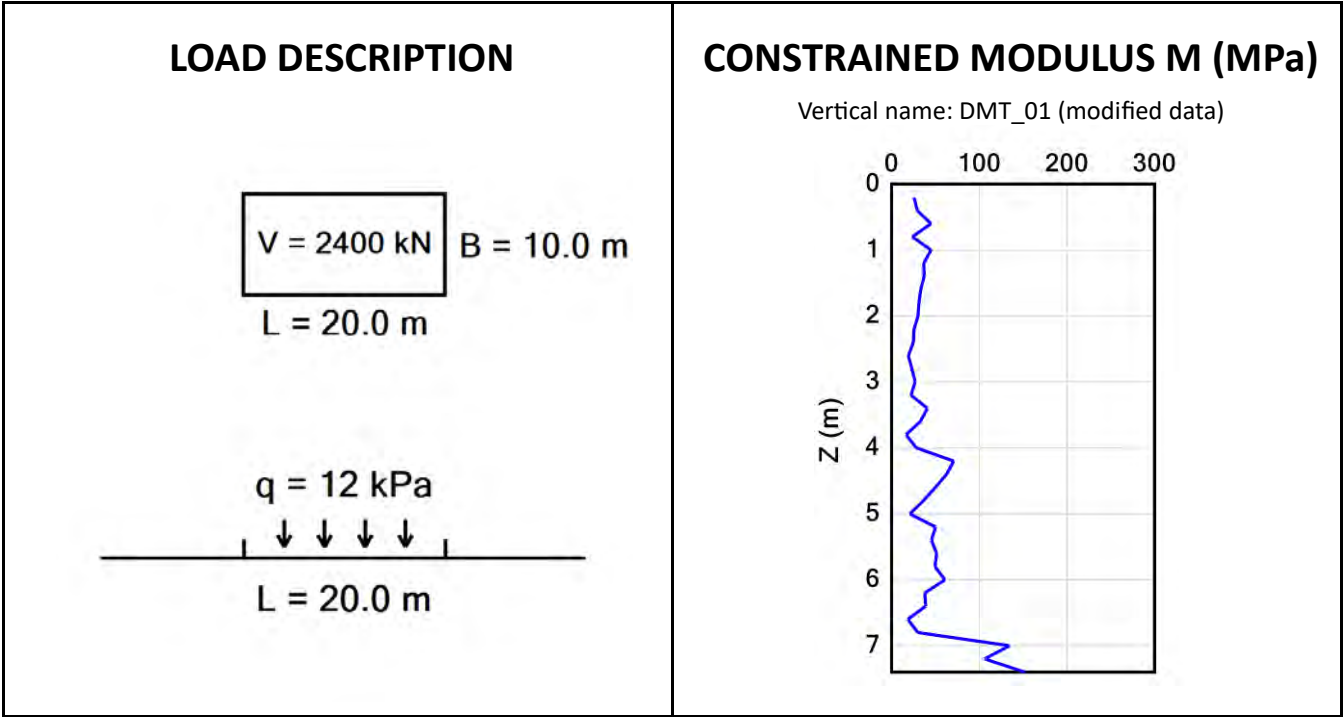
Settlements Calculation

Drill Force NZ

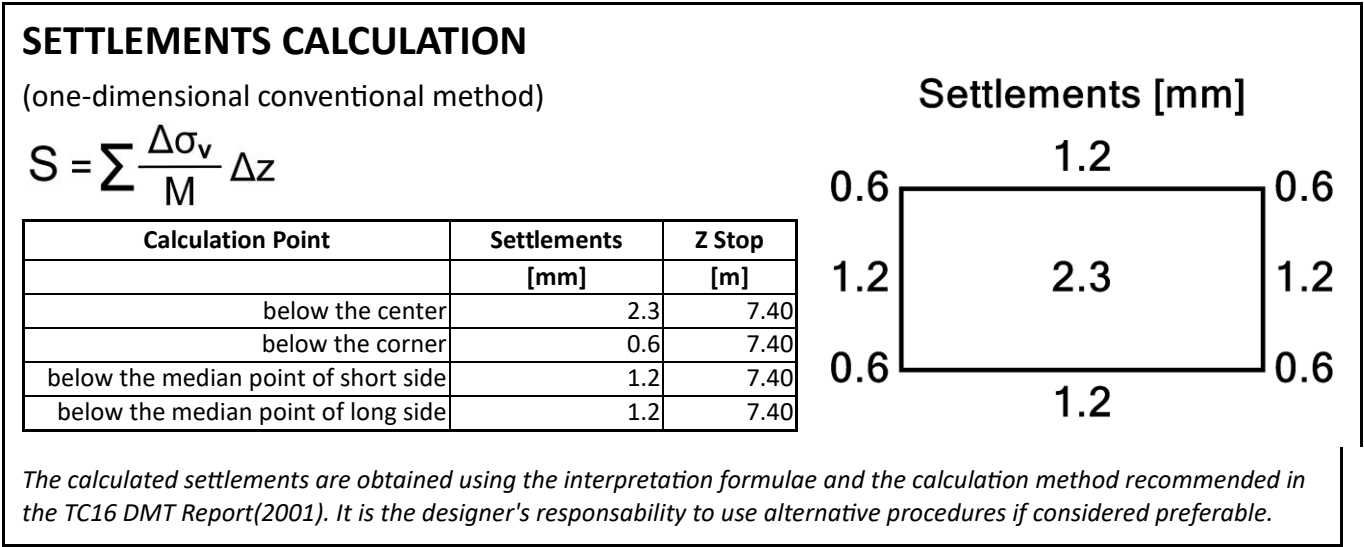
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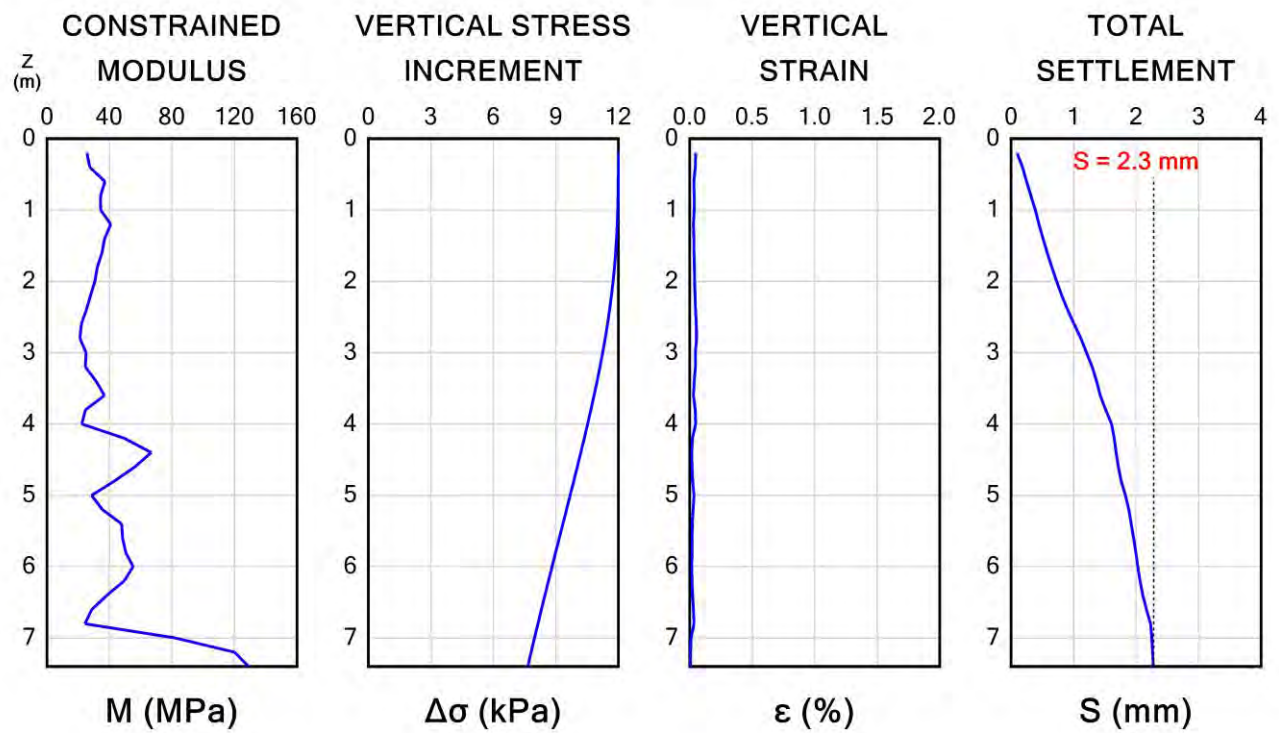
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

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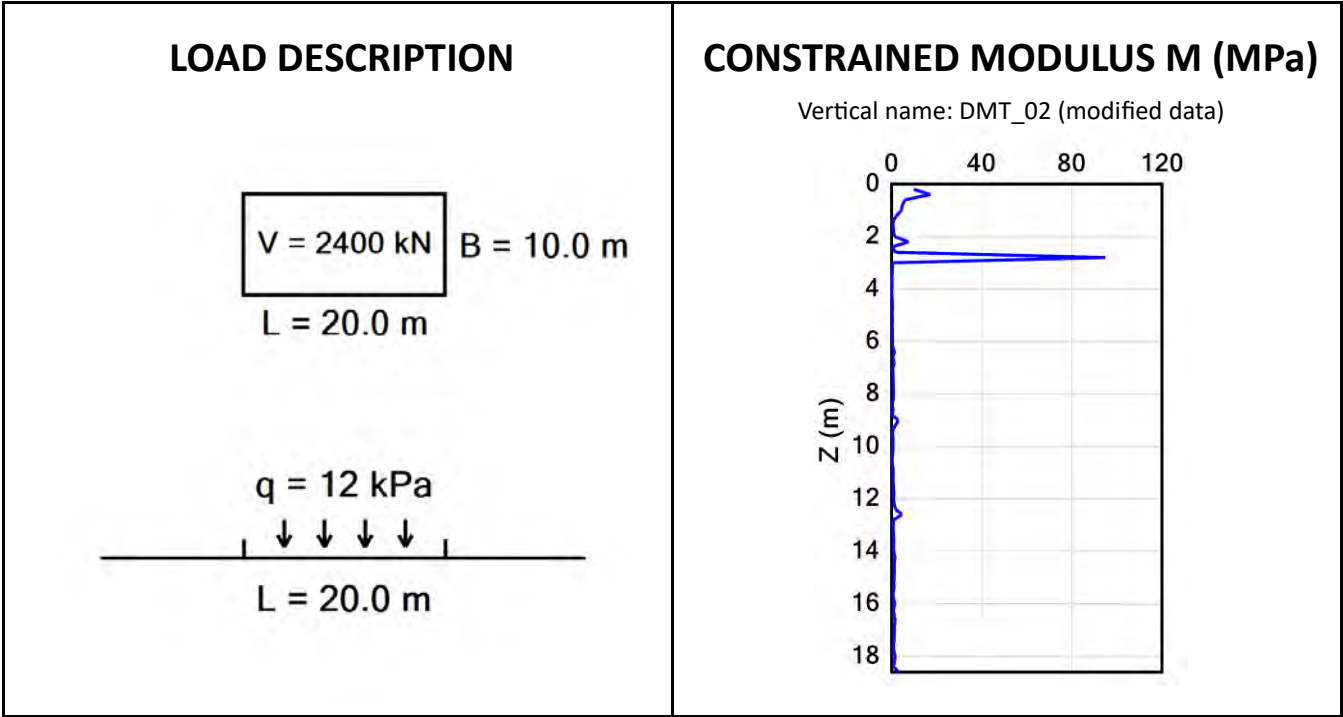
Settlements Calculation

Drill Force NZ

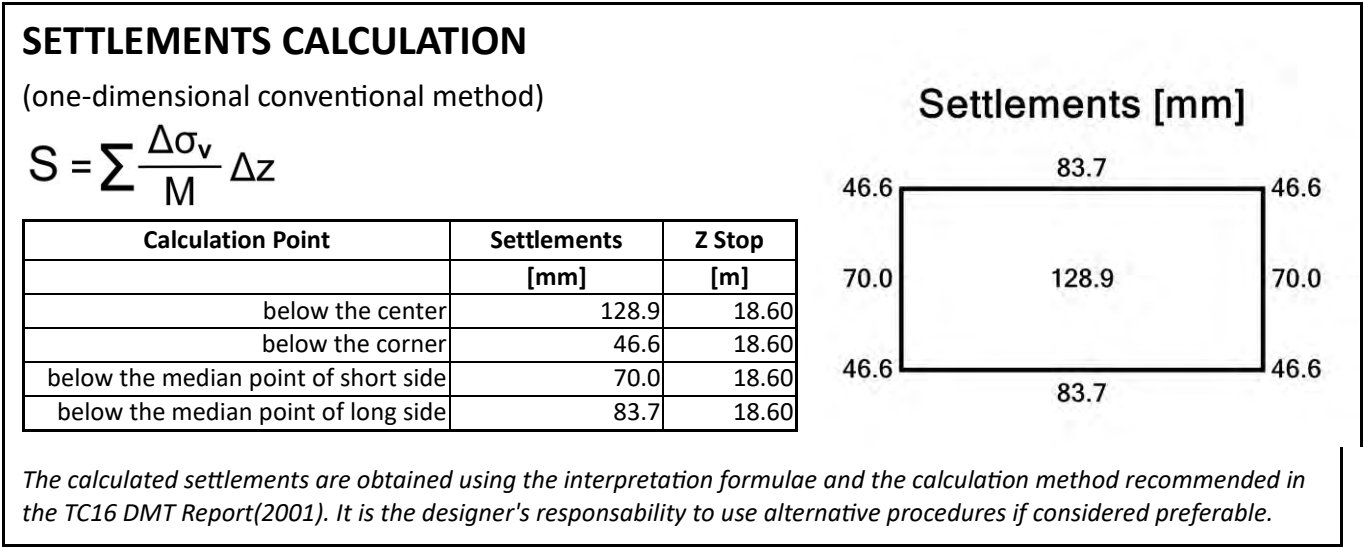
LDE Limited

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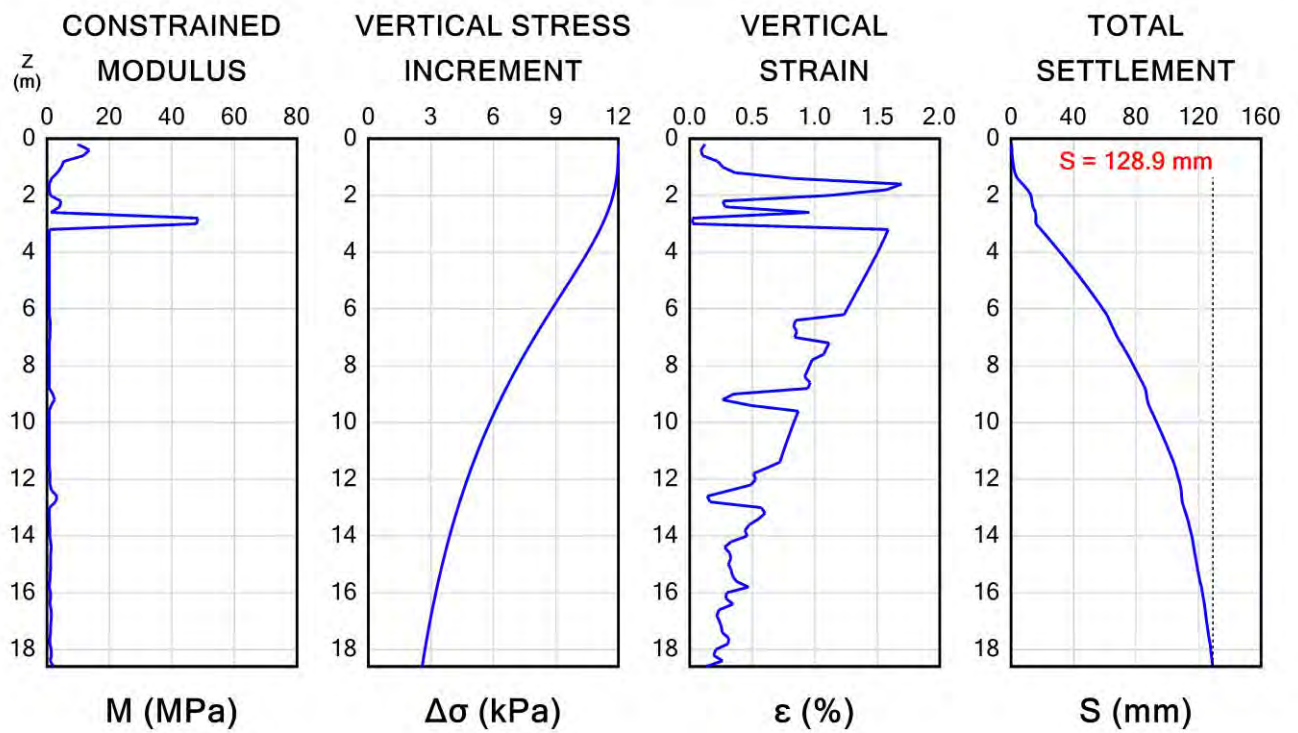
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

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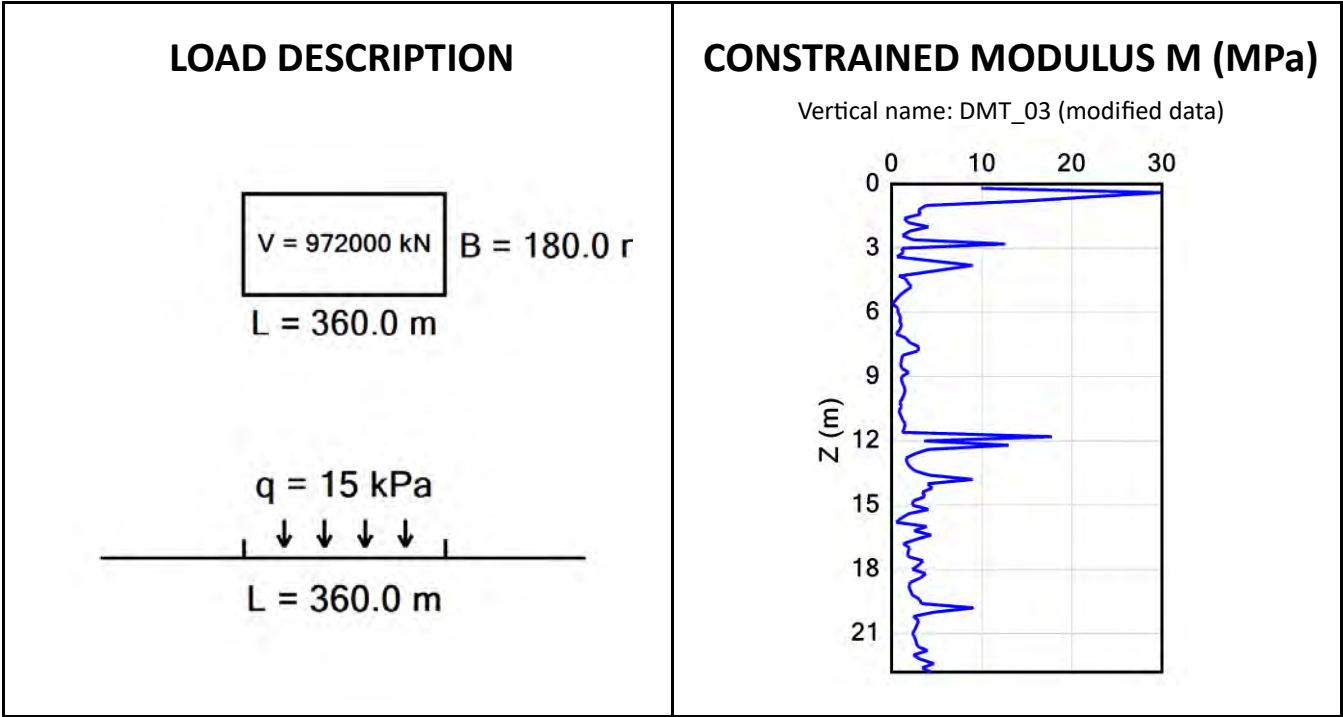
Settlements Calculation

Drill Force NZ

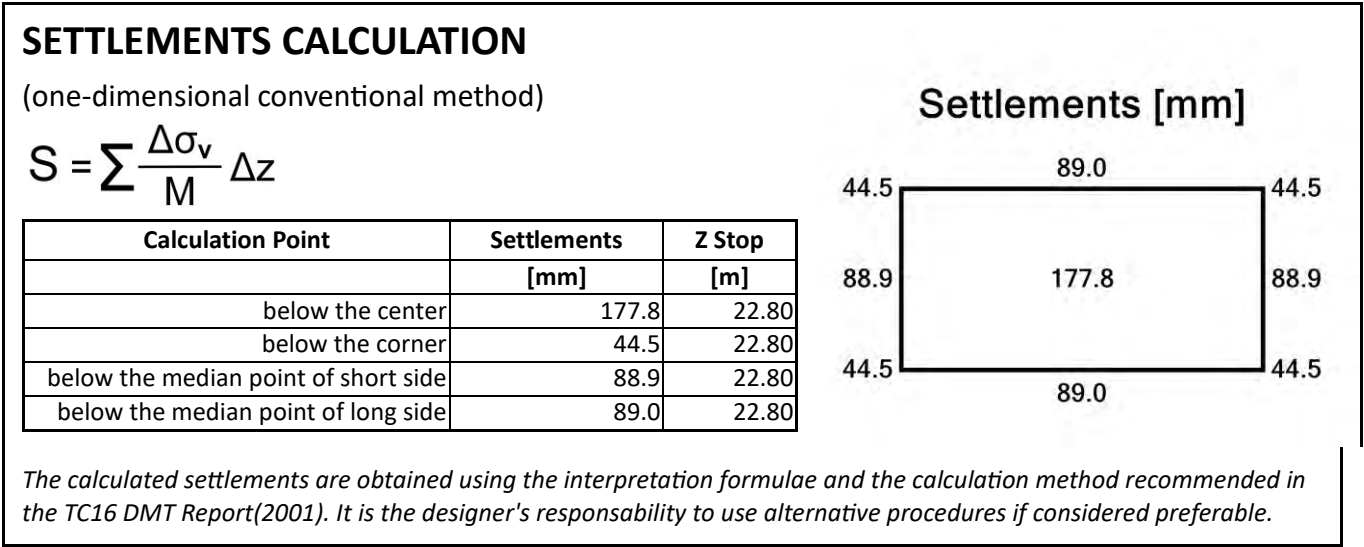
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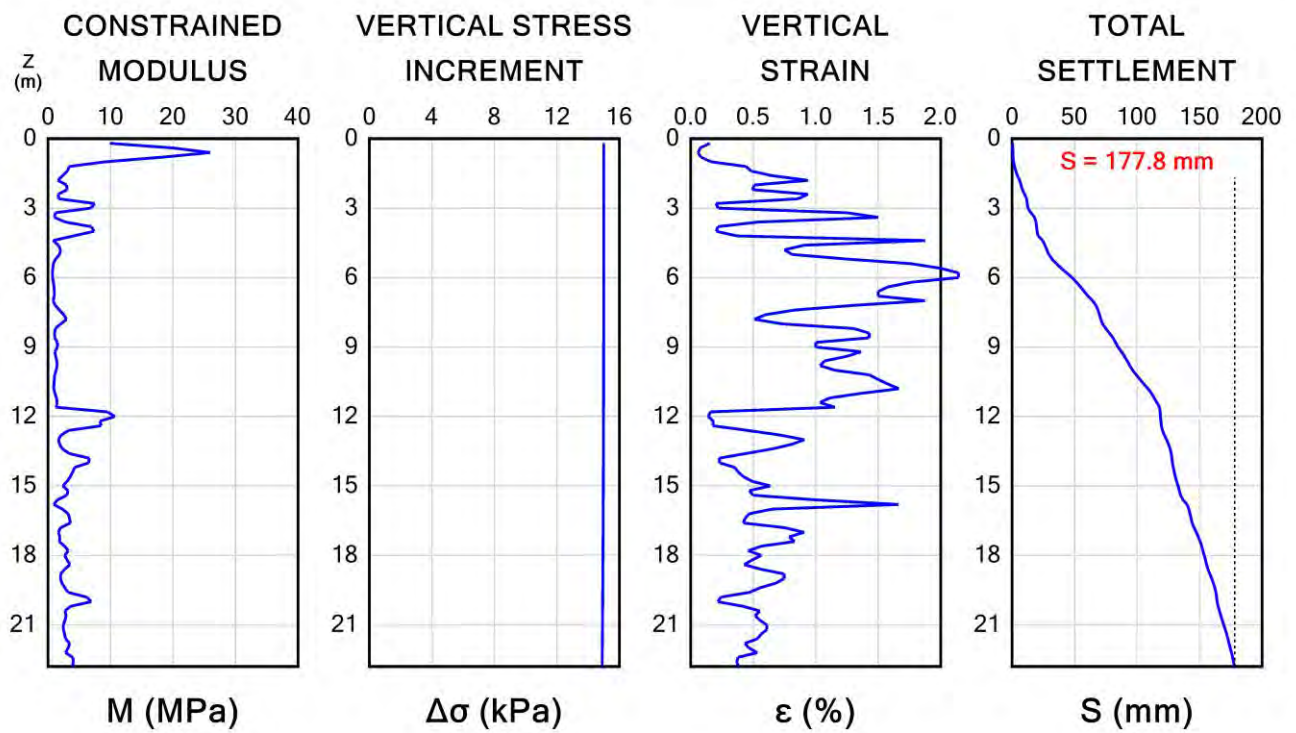
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

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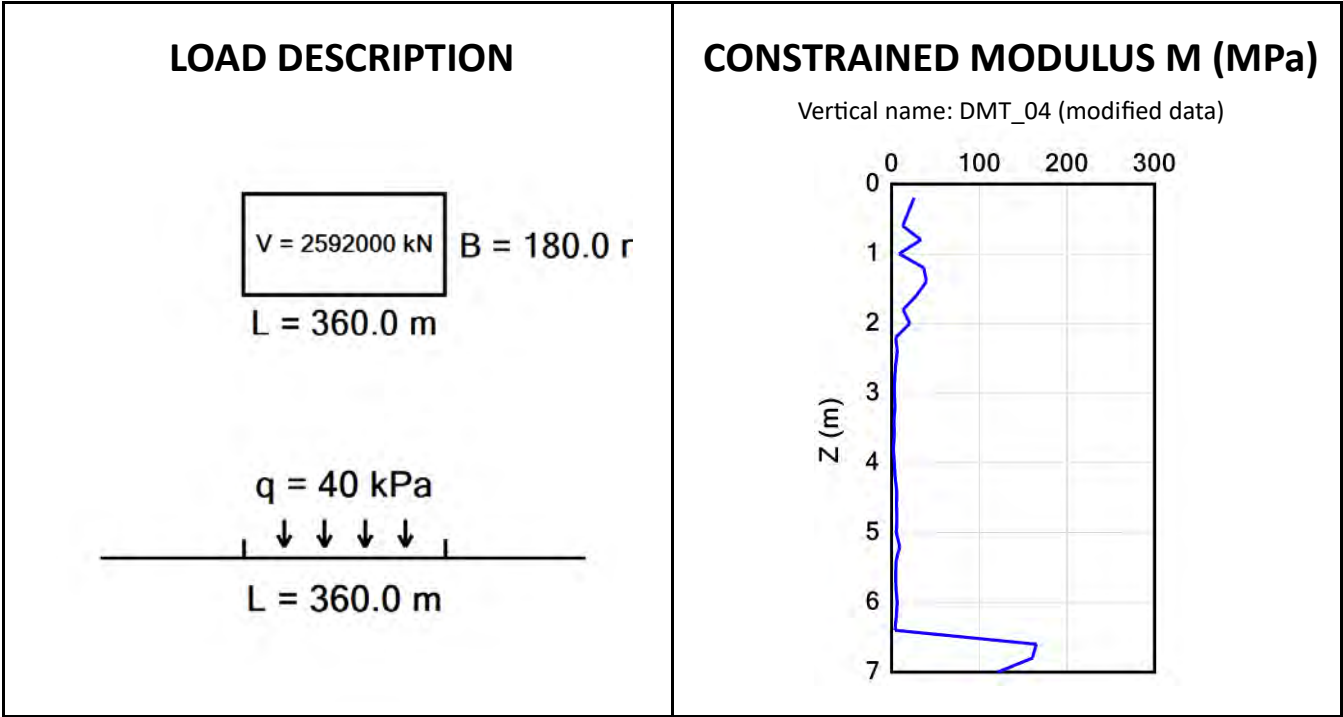
Settlements Calculation

Drill Force NZ

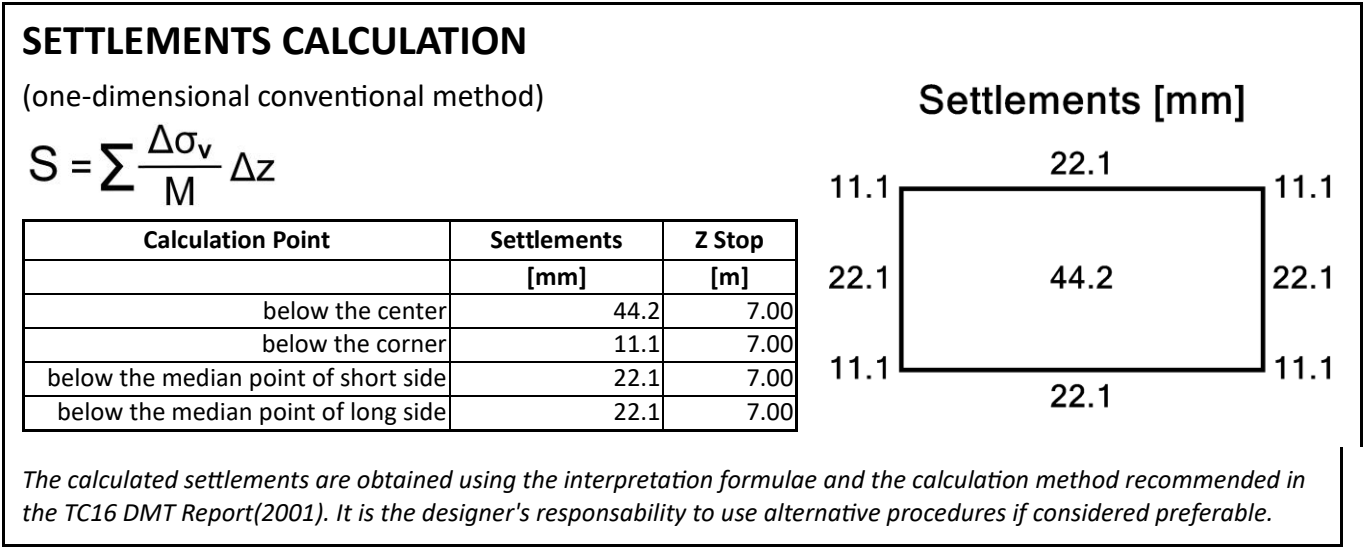
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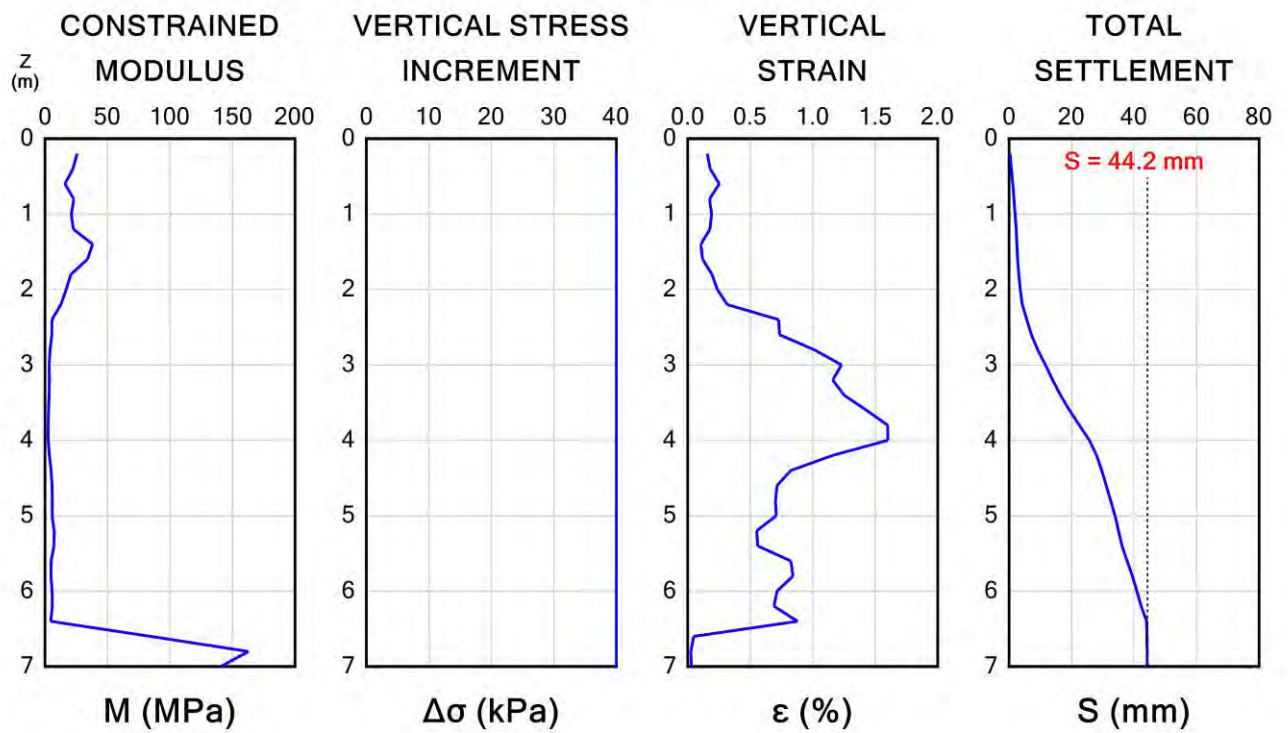
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

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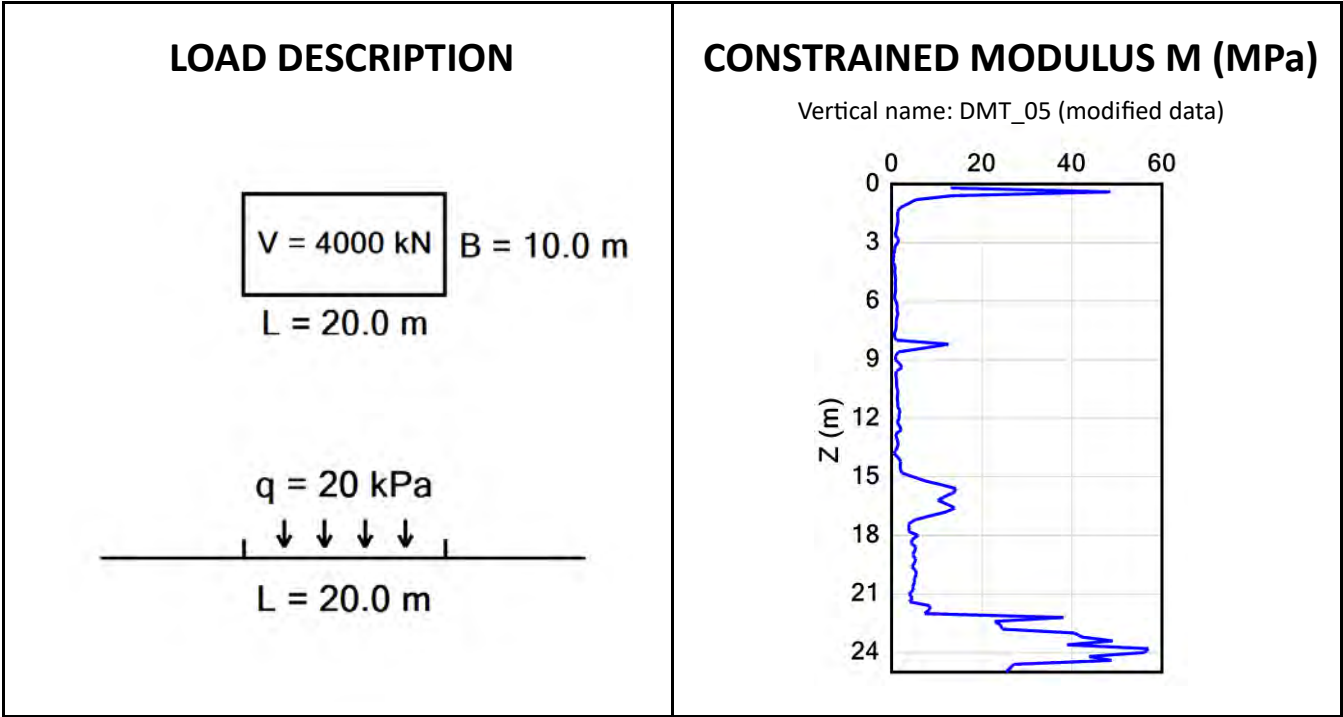
Settlements Calculation

Drill Force NZ

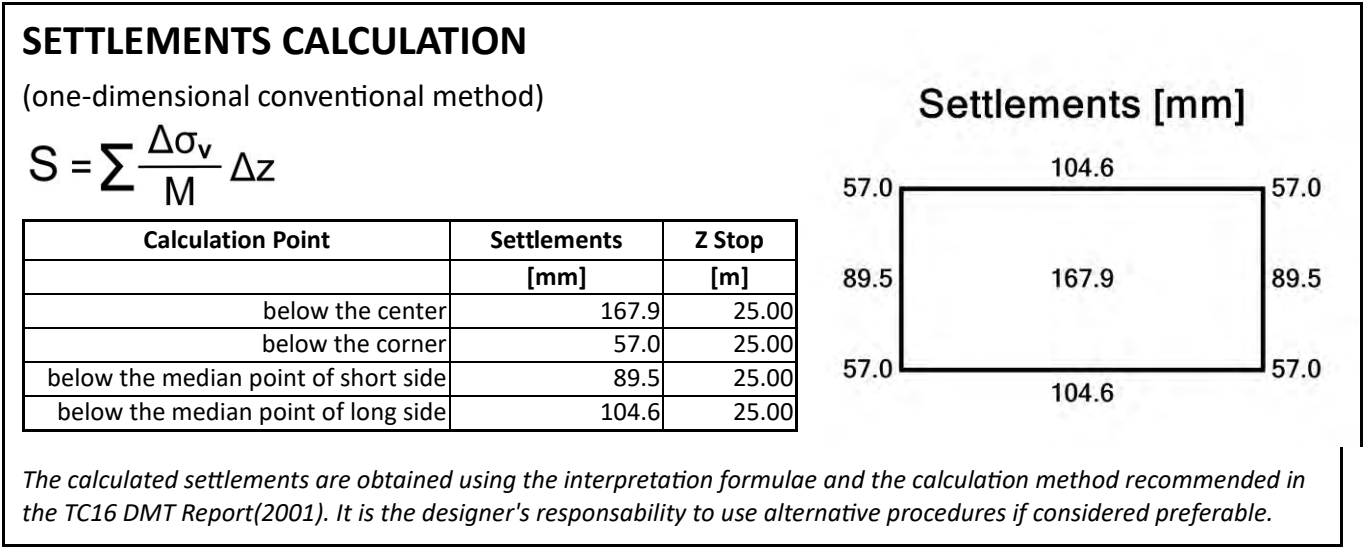
LDE Limited

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Hamlin Rd, Ardmore



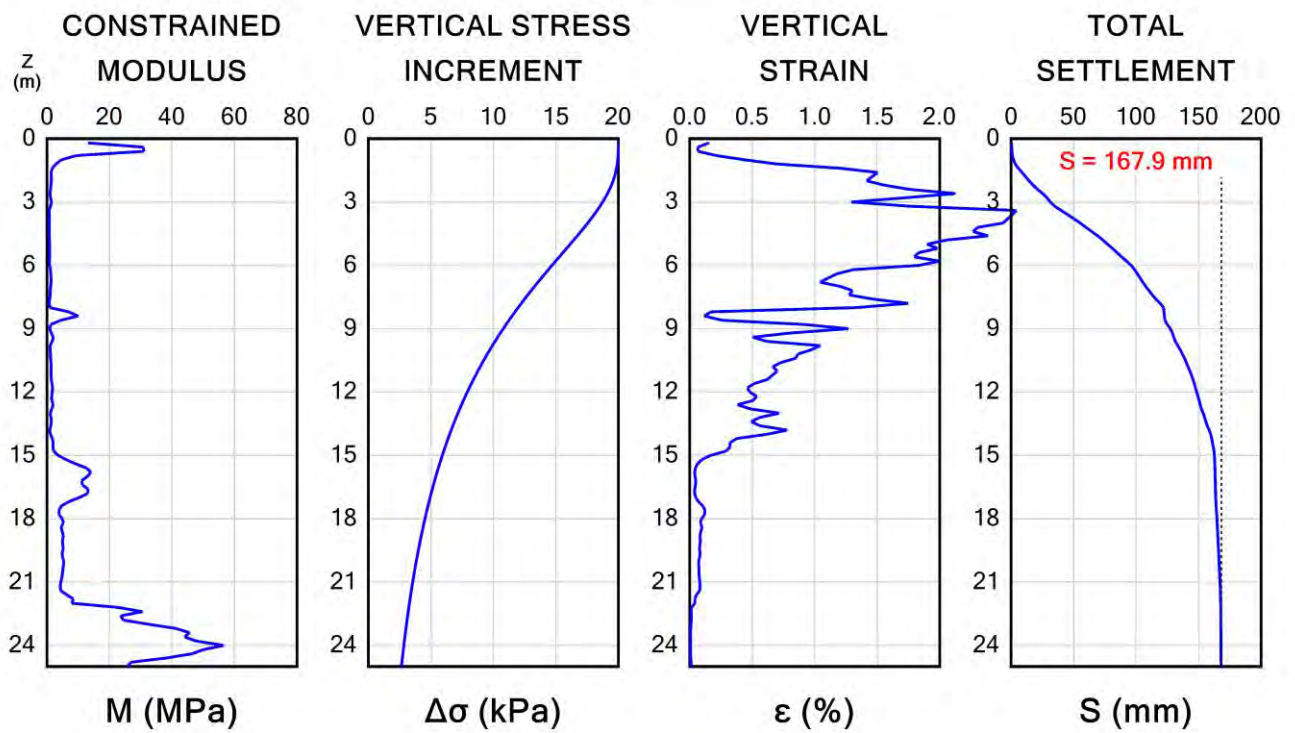
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

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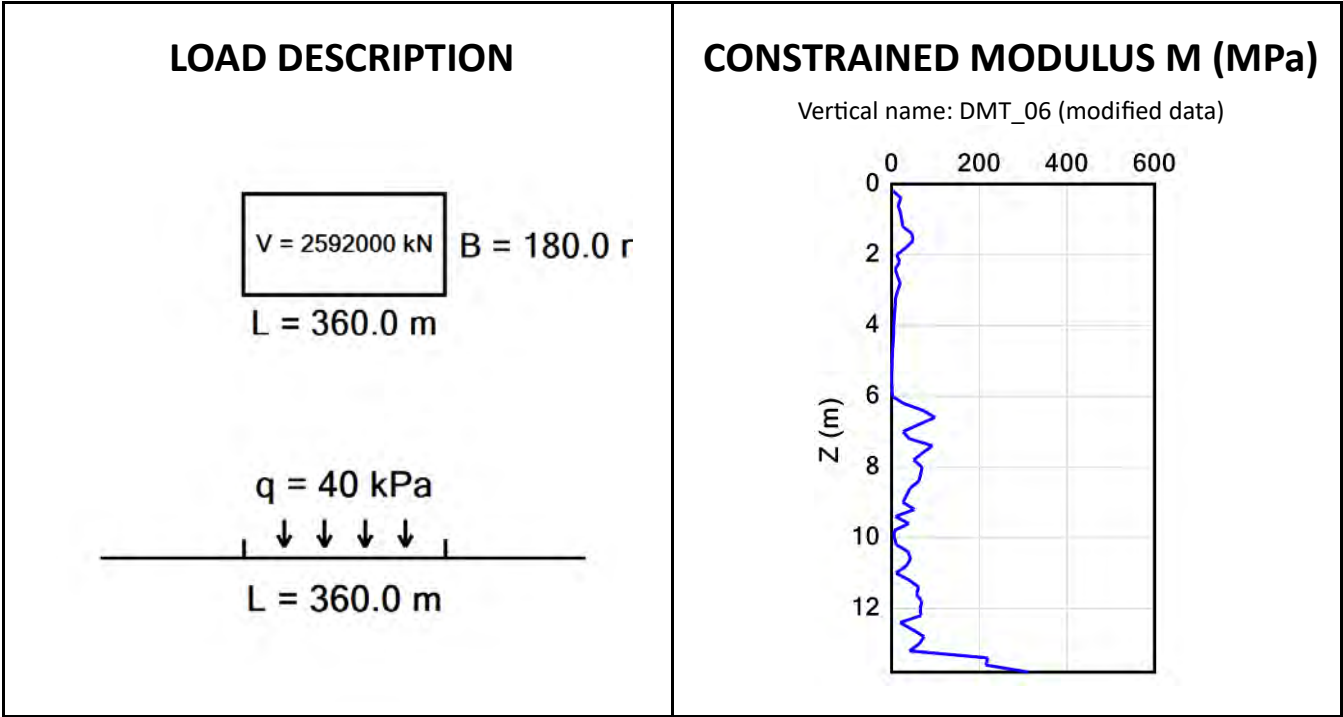
Settlements Calculation

Drill Force NZ

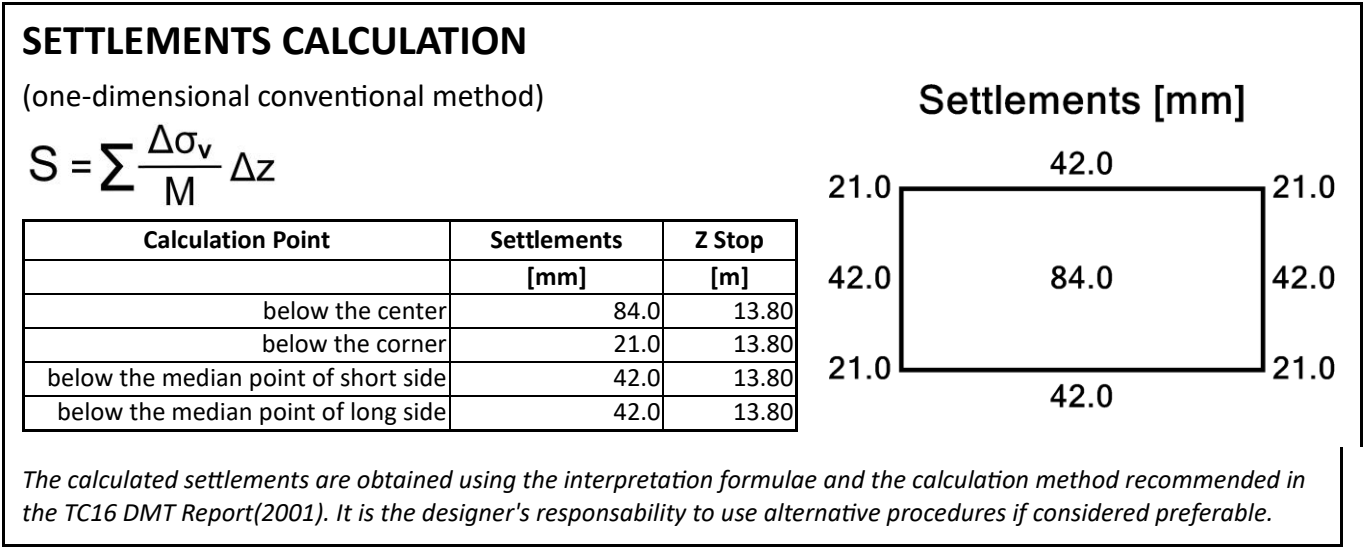
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Hamlin Rd, Ardmore



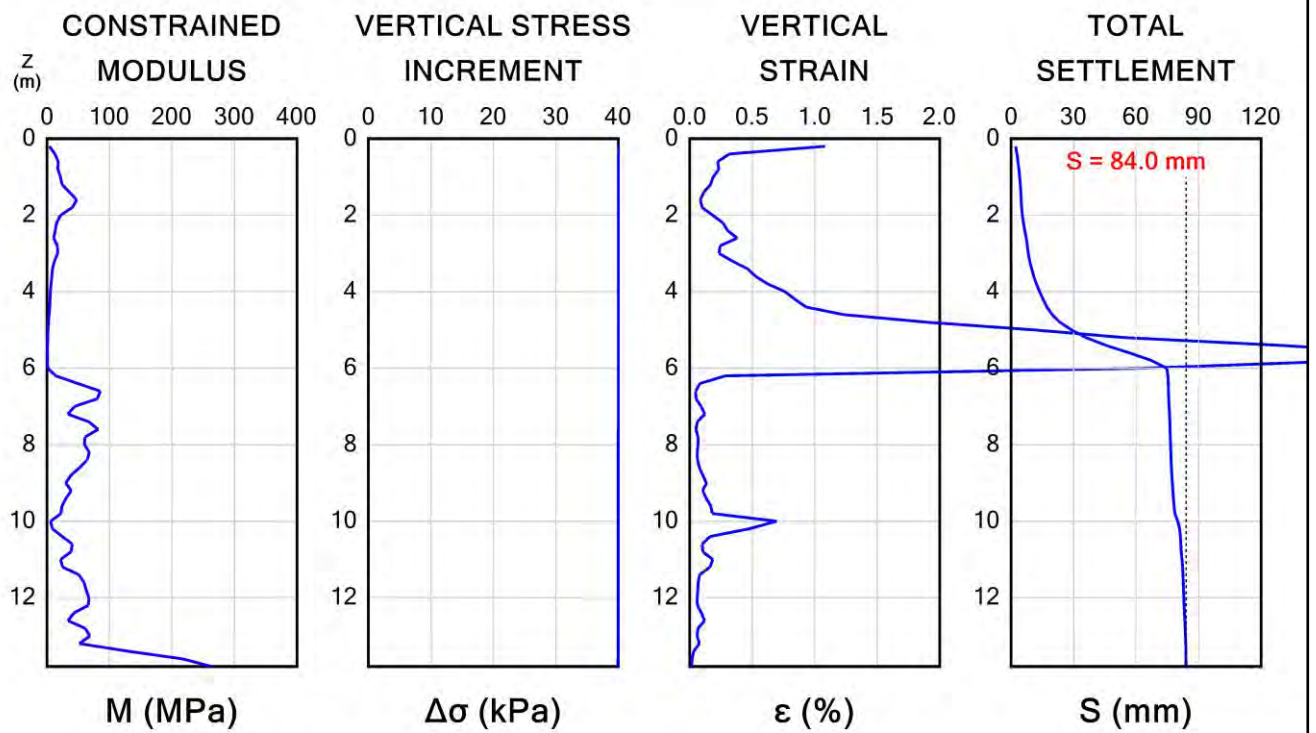
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

Drill Force NZ
LDE Limited

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Hamlin Rd, Ardmore



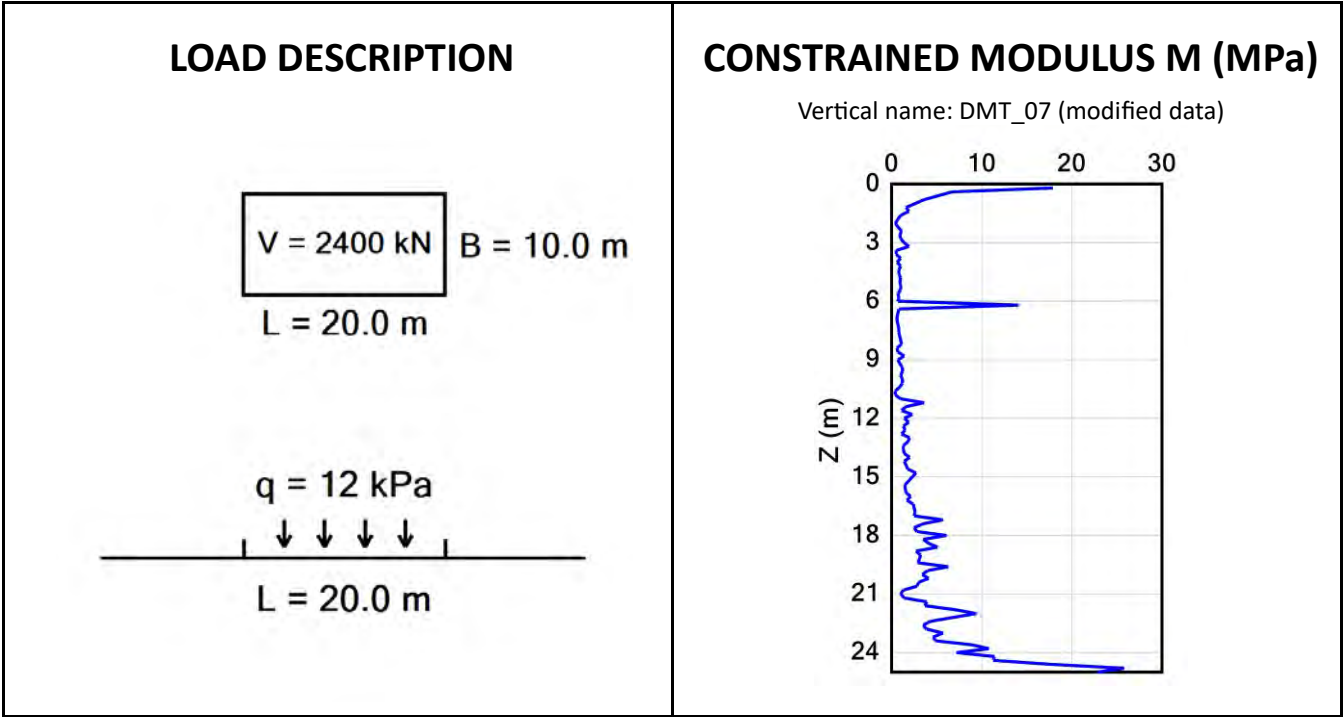
Settlements Calculation

Drill Force NZ

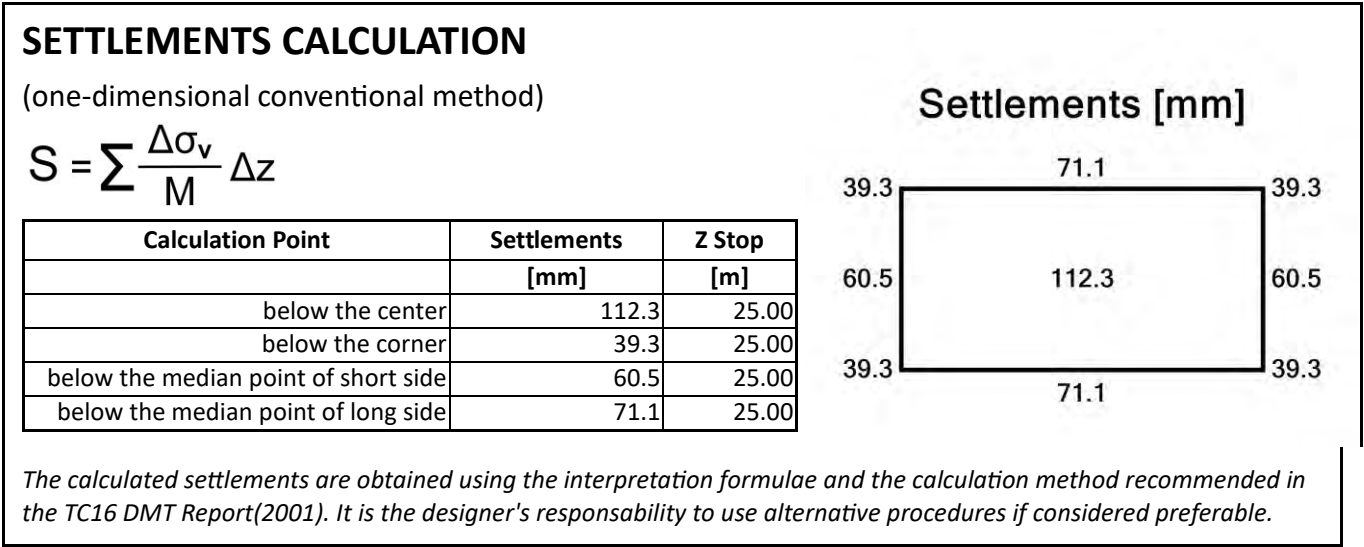
LDE Limited

DF21GE034

Hamlin Rd, Ardmore



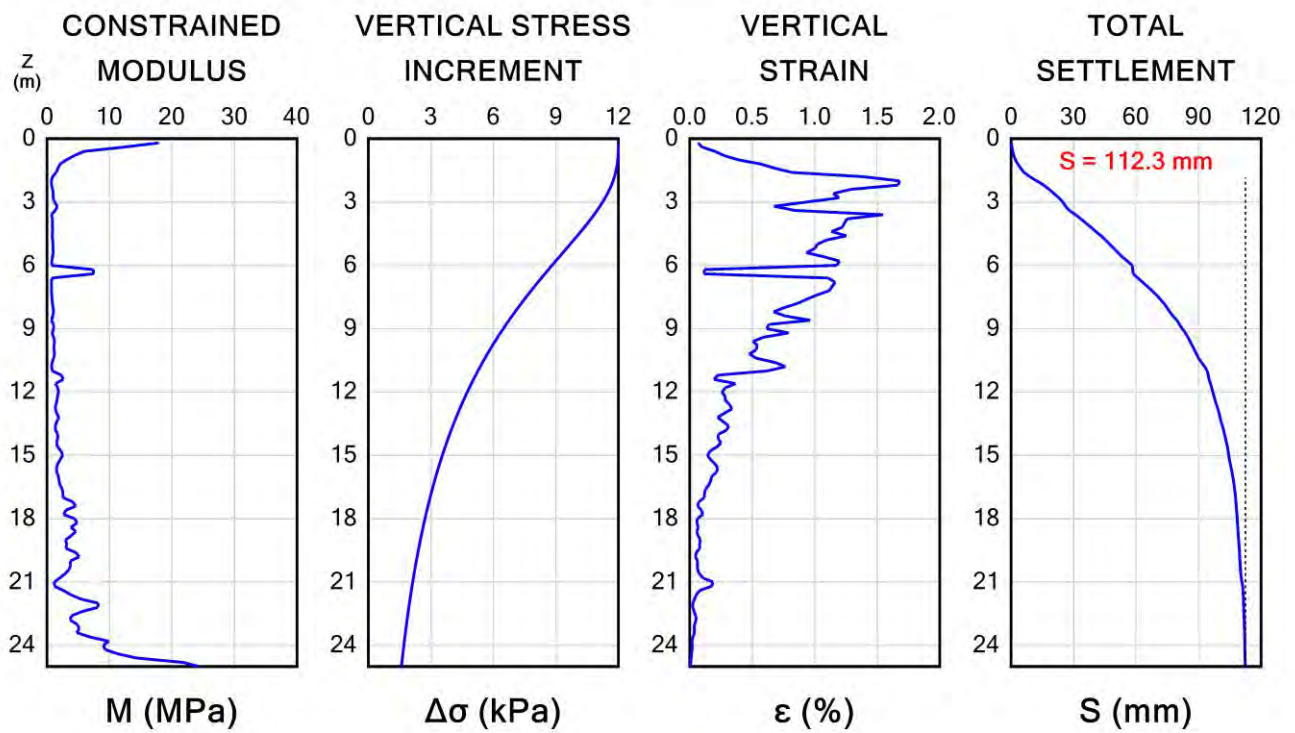
CALCULATION OPTIONS	
Lower limit of Constrained Modulus assigned in the calculation	0.70 MPa
Thickness of calculation layer	0.20 m
End of Calculation	at end of assigned profile



SETTLEMENTS CALCULATION - below the center

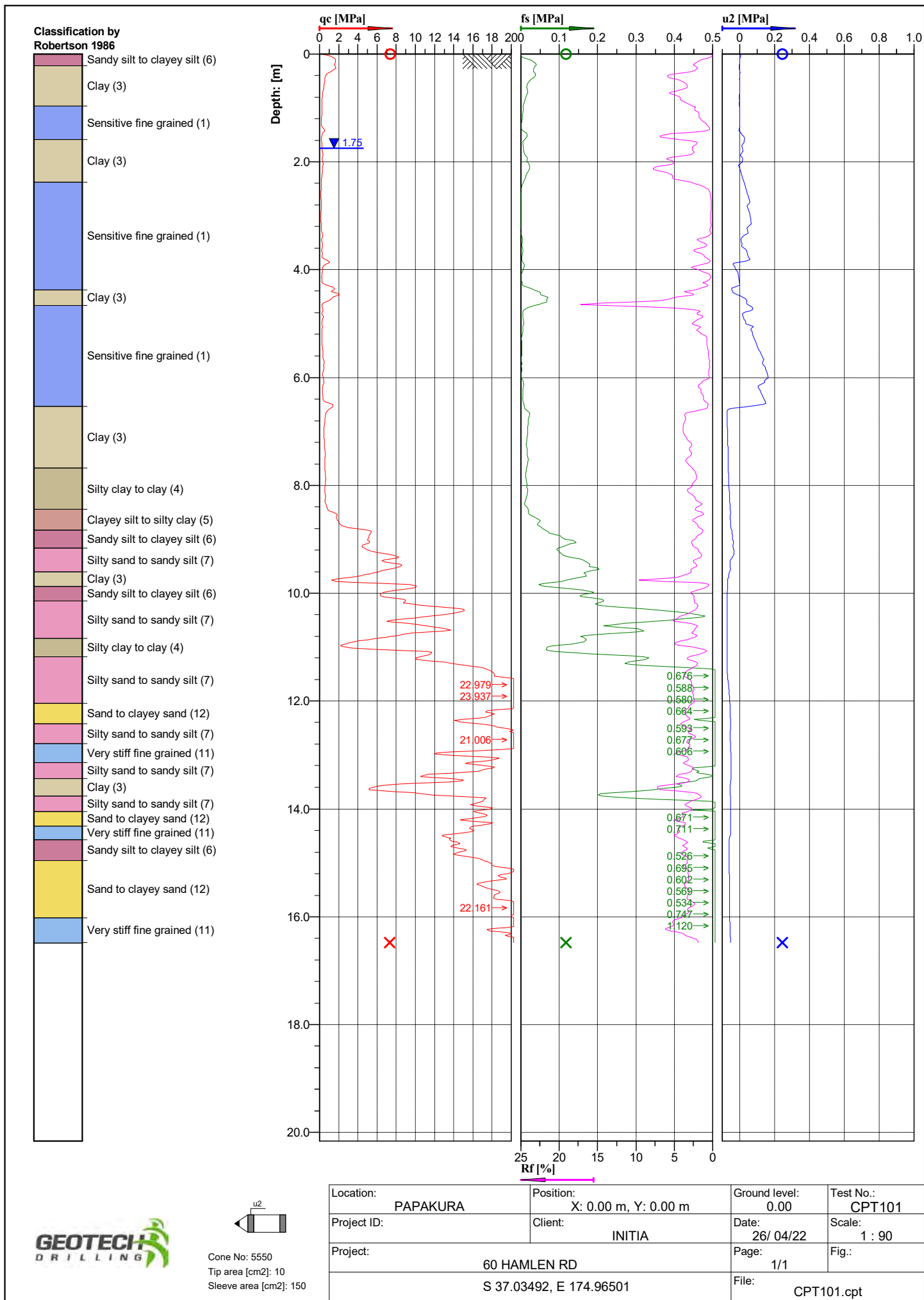
Drill Force NZ
LDE Limited

DF21GE034
Hamlin Rd, Ardmore



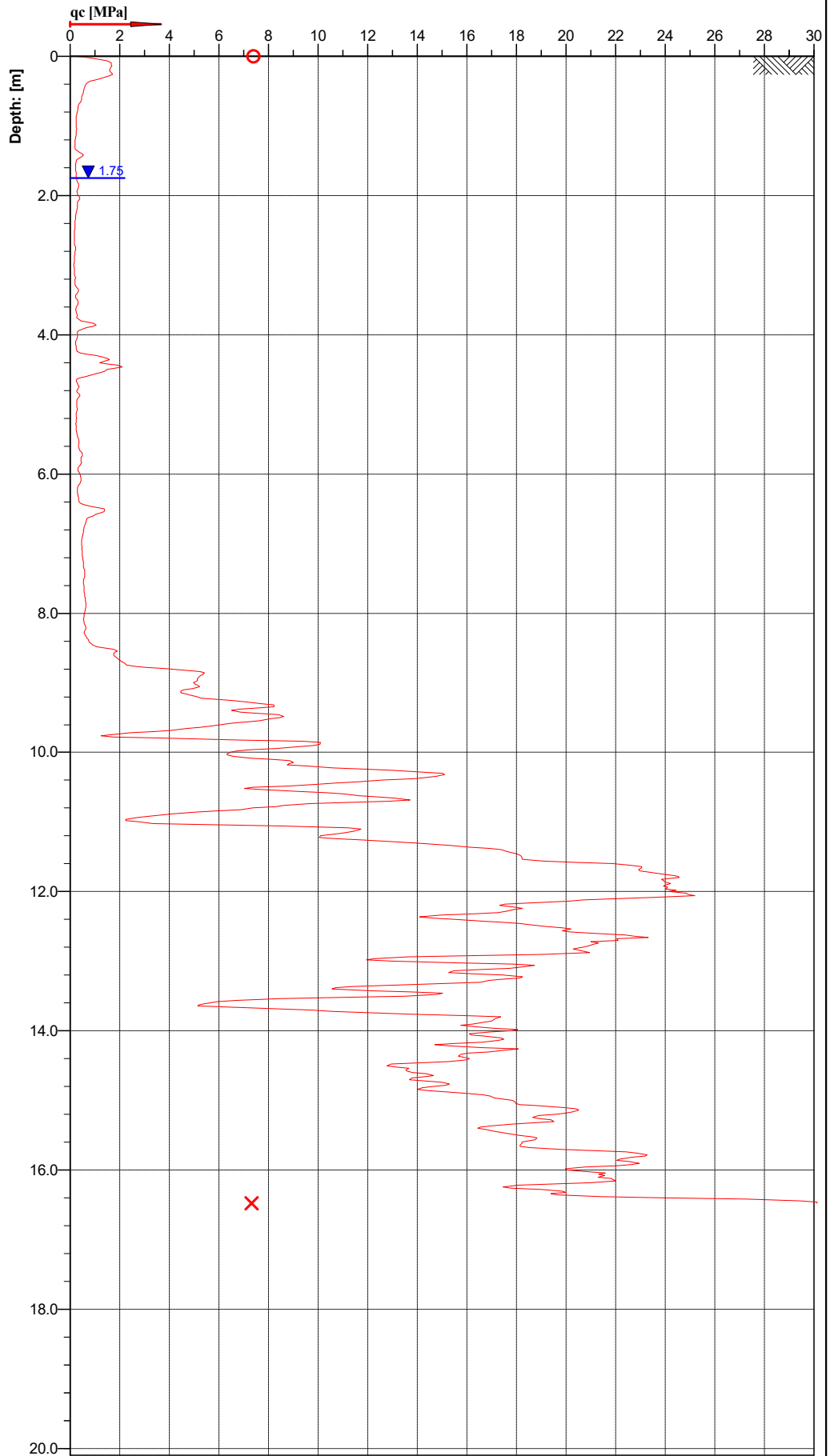
APPENDIX F

SUPPLEMENTARY INFORMATION



**Classification by
Robertson 1986**

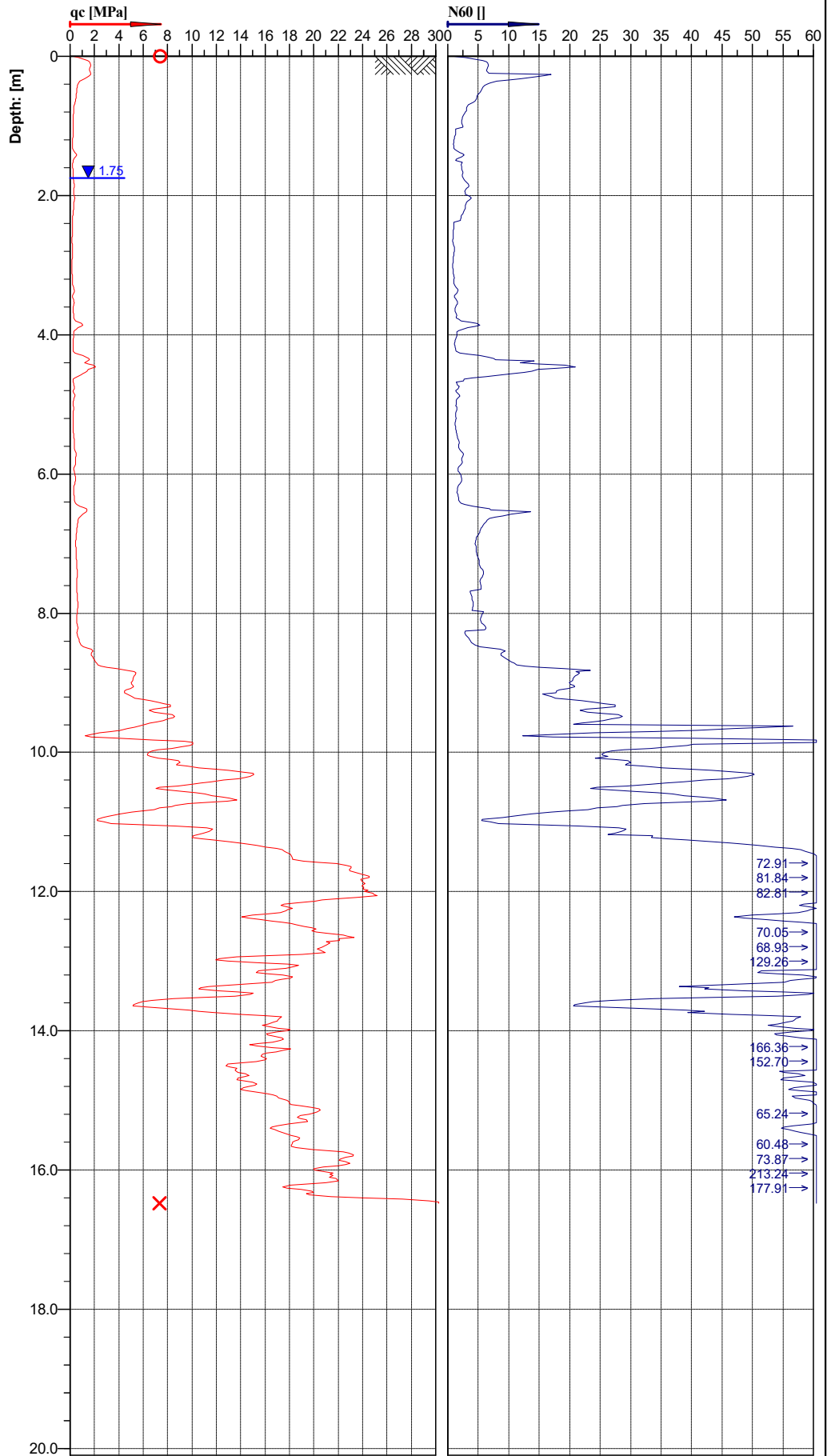
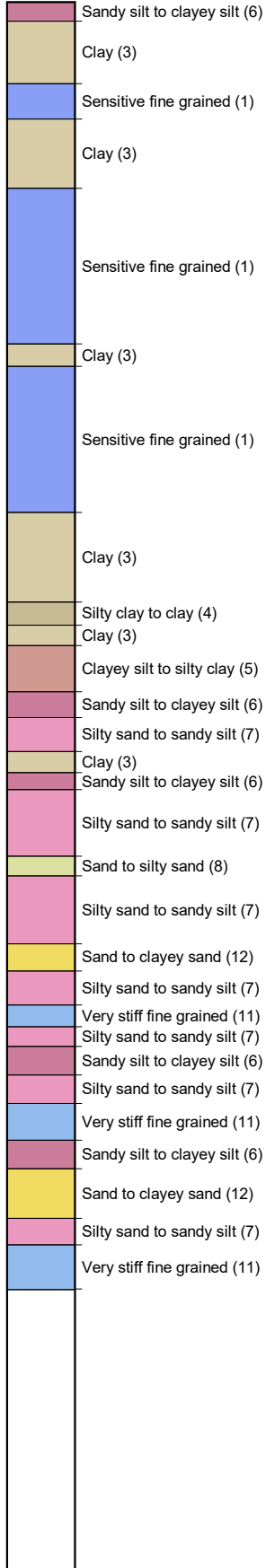
- Sandy silt to clayey silt (6)
- Clay (3)
- Sensitive fine grained (1)
- Clay (3)
- Sensitive fine grained (1)
- Clay (3)
- Sensitive fine grained (1)
- Clay (3)
- Silty clay to clay (4)
- Clay (3)
- Clayey silt to silty clay (5)
- Sandy silt to clayey silt (6)
- Silty sand to sandy silt (7)
- Clay (3)
- Sandy silt to clayey silt (6)
- Silty sand to sandy silt (7)
- Sand to silty sand (8)
- Silty sand to sandy silt (7)
- Sand to clayey sand (12)
- Silty sand to sandy silt (7)
- Very stiff fine grained (11)
- Silty sand to sandy silt (7)
- Sandy silt to clayey silt (6)
- Silty sand to sandy silt (7)
- Very stiff fine grained (11)
- Sandy silt to clayey silt (6)
- Sand to clayey sand (12)
- Silty sand to sandy silt (7)
- Very stiff fine grained (11)



Cone No: 5550
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location:	PAPAKURA	Position:	X: 0.00 m, Y: 0.00 m	Ground level:	0.00	Test No.:	CPT101
Project ID:		Client:	INITIA	Date:	26/ 04/22	Scale:	1 : 87
Project:	60 HAMLEN RD			Page:	1/1	Fig.:	
S 37.03492, E 174.96501				File:	CPT101.cpt		

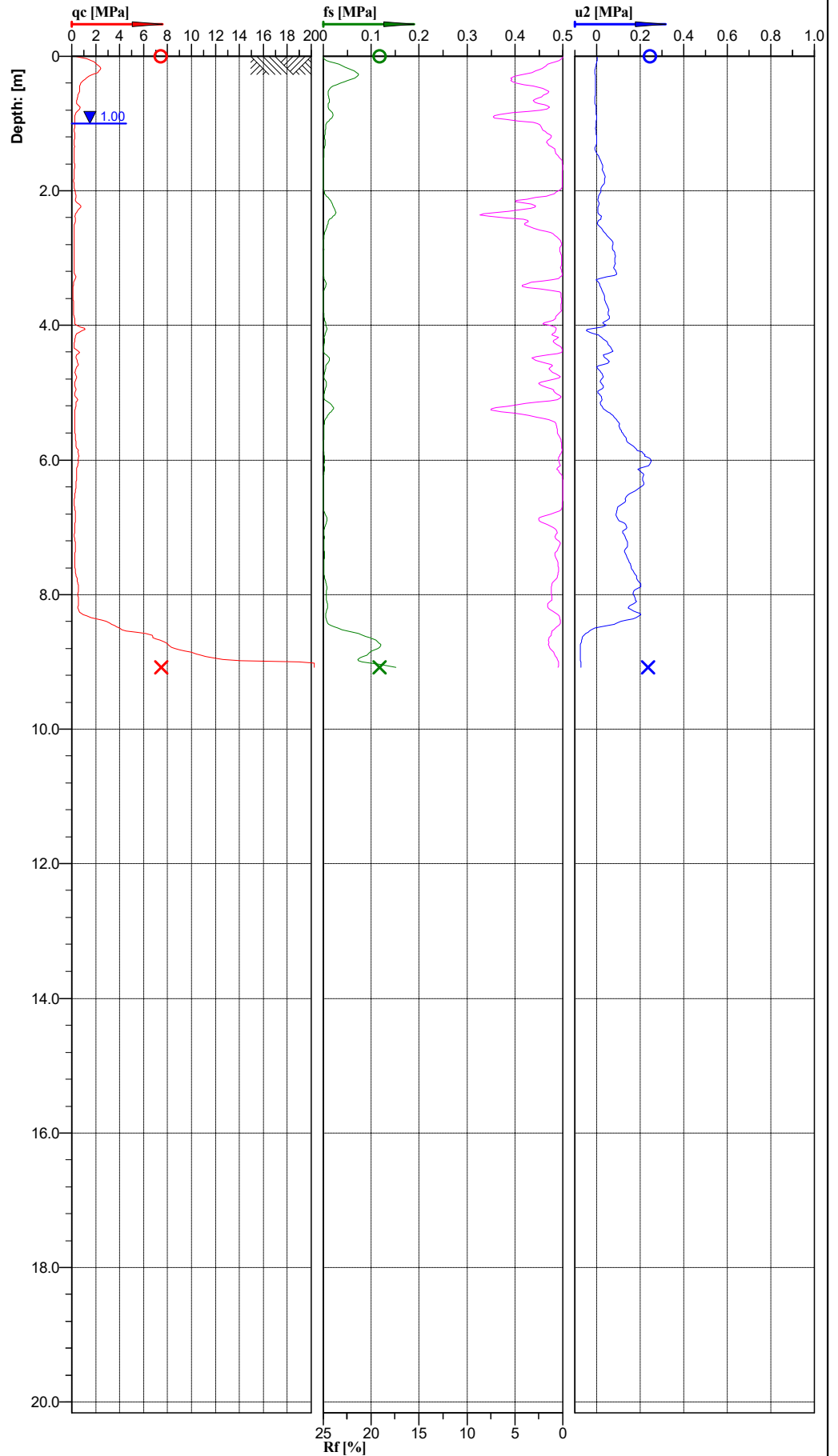
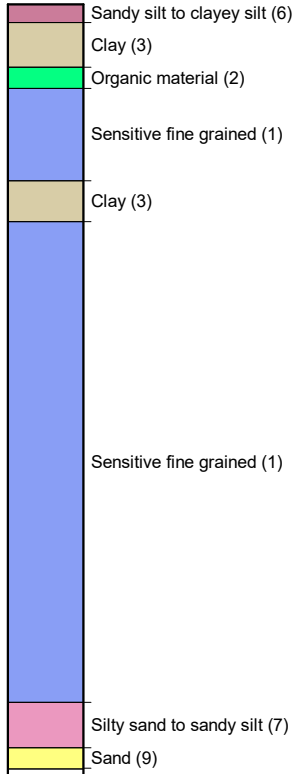
**Classification by
Robertson 1986**



Cone No: 5550
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location:	PAPAKURA	Position:	X: 0.00 m, Y: 0.00 m	Ground level:	0.00	Test No.:	CPT101
Project ID:		Client:	INITIA	Date:	26/ 04/22	Scale:	1 : 87
Project:	60 HAMLEN RD			Page:	1/1	Fig.:	
S 37.03492, E 174.96501				File:	CPT101.cpt		

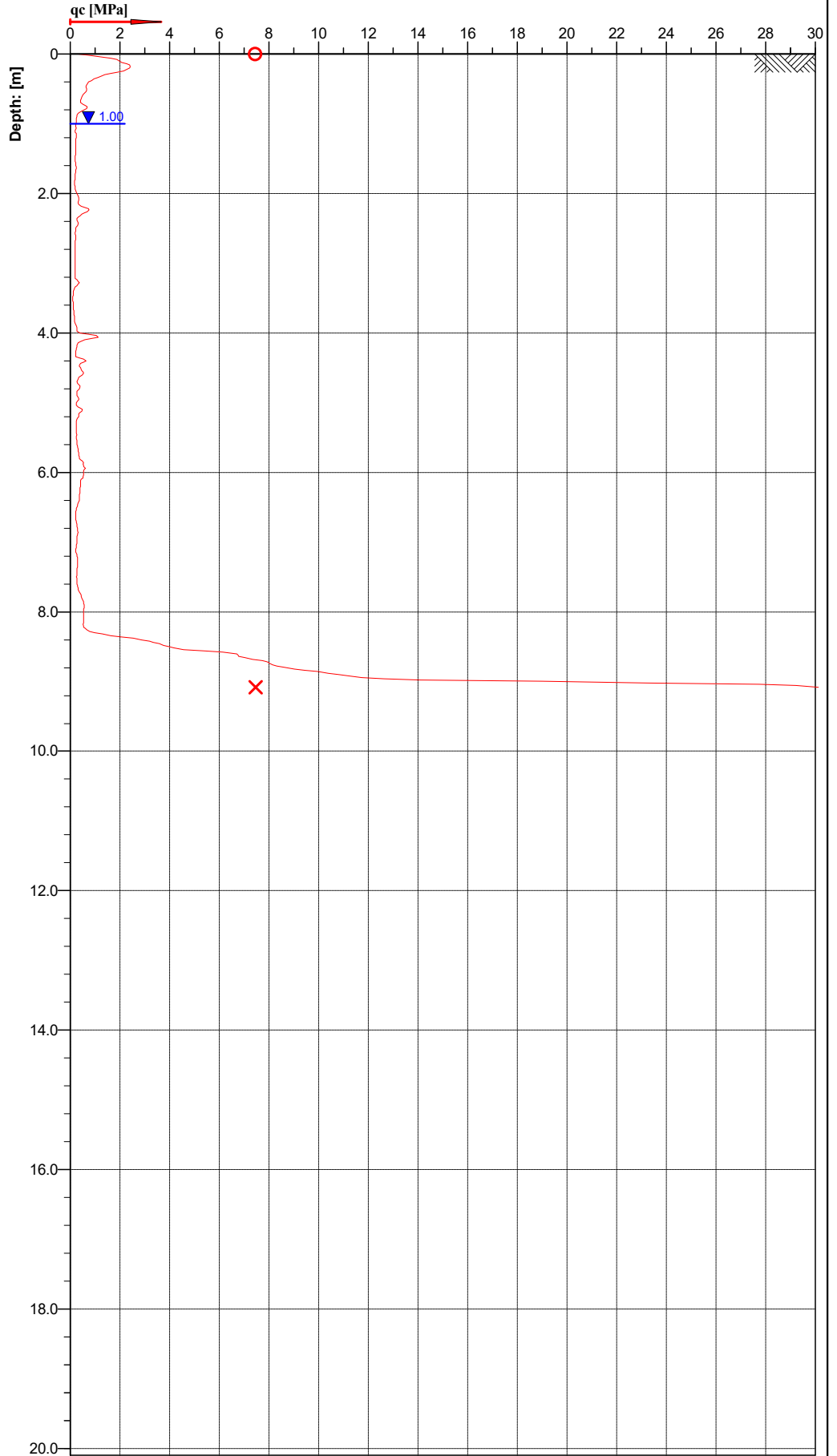
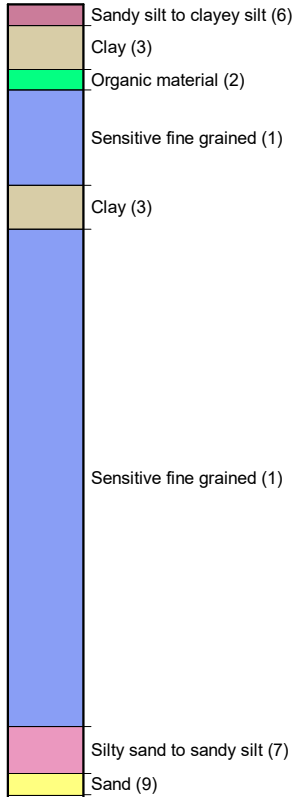
**Classification by
Robertson 1986**



Cone No: 5550
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT102
Project ID:	Client: INITIA	Date: 26/ 04/22	Scale: 1 : 90
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03587, E 174.96552		File: CPT102.cpt	

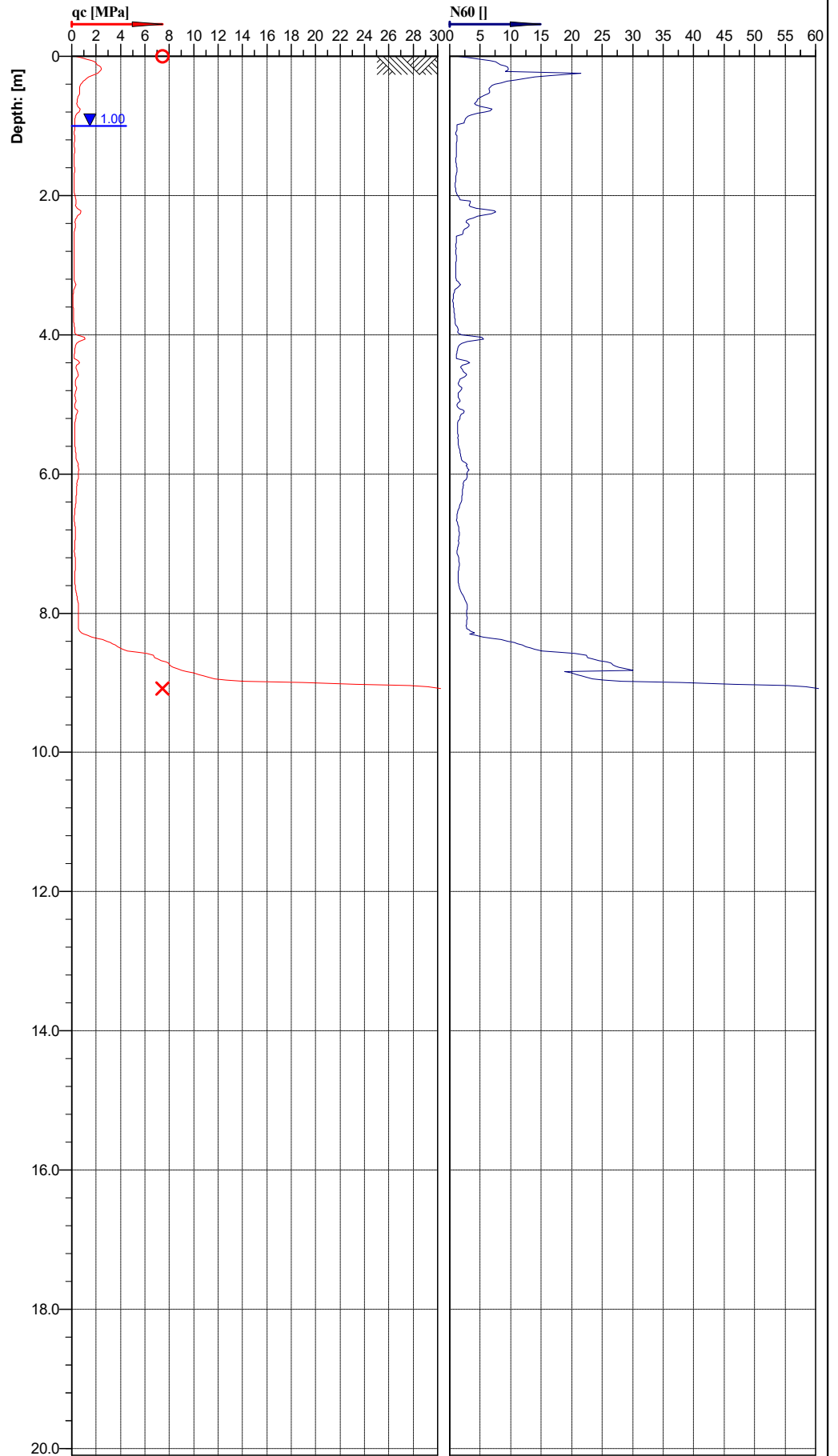
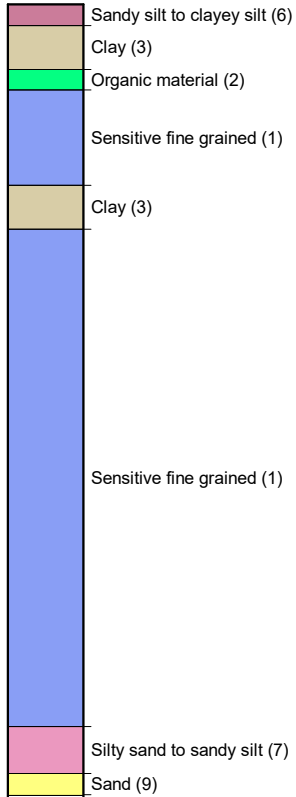
**Classification by
Robertson 1986**



Cone No: 5550
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT102
Project ID:	Client: INITIA	Date: 26/ 04/22	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03587, E 174.96552		File: CPT102.cpt	

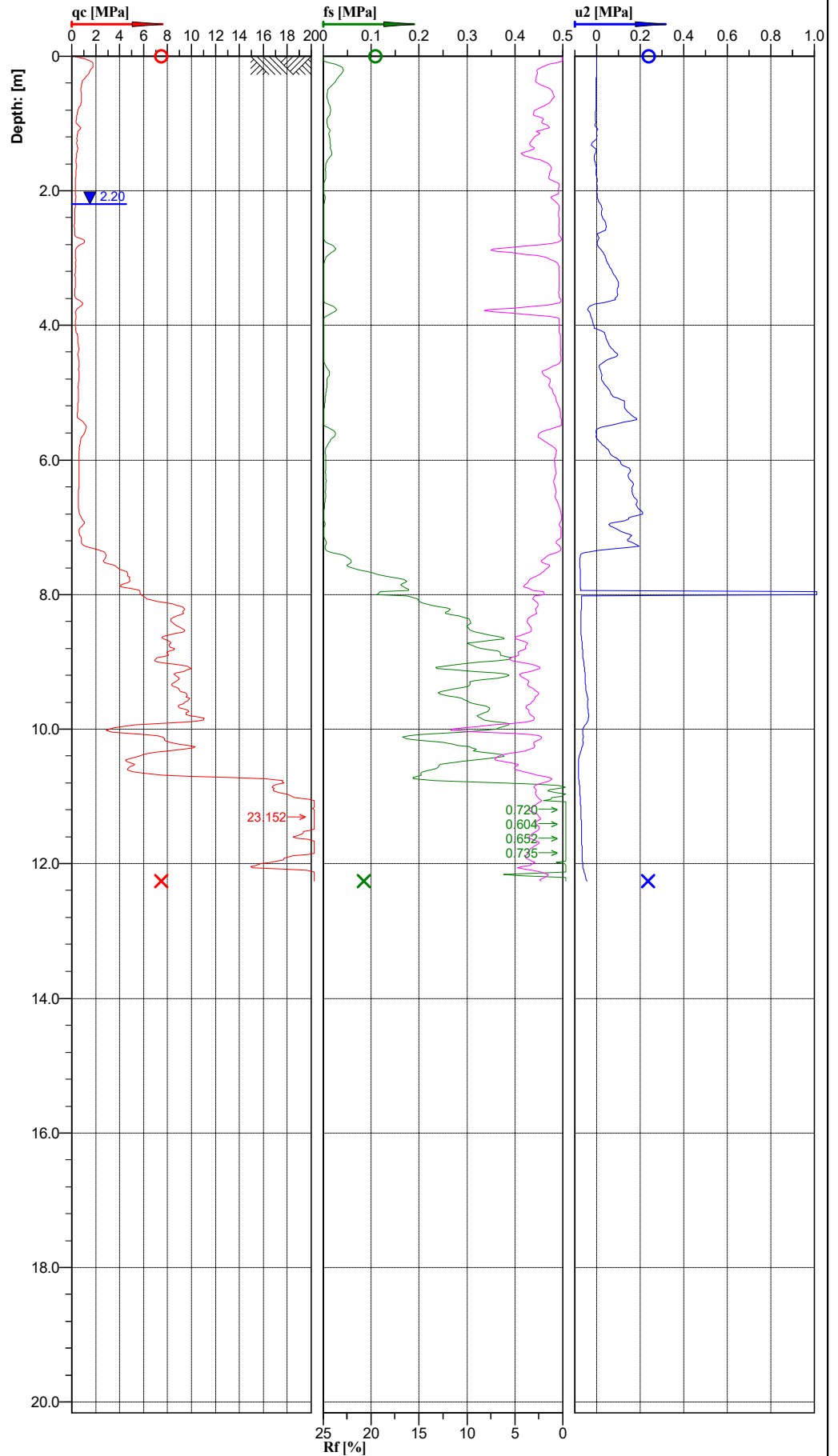
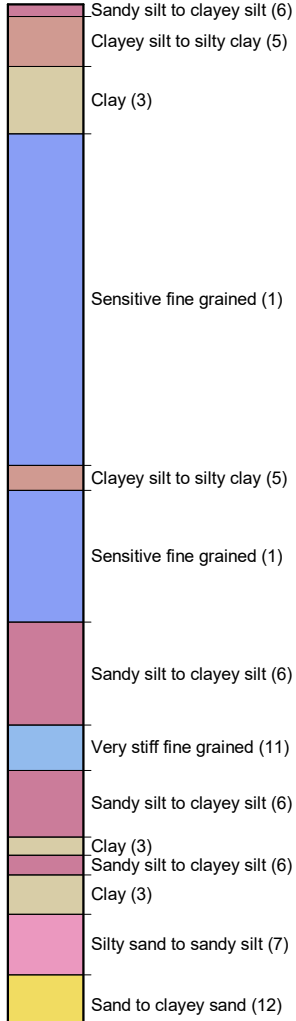
**Classification by
Robertson 1986**



Cone No: 5550
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location:	PAPAKURA	Position:	X: 0.00 m, Y: 0.00 m	Ground level:	0.00	Test No.:	CPT102
Project ID:		Client:	INITIA	Date:	26/ 04/22	Scale:	1 : 87
Project:	60 HAMLEN RD			Page:	1/1	Fig.:	
	S 37.03587, E 174.96552			File:	CPT102.cpt		

**Classification by
Robertson 1986**

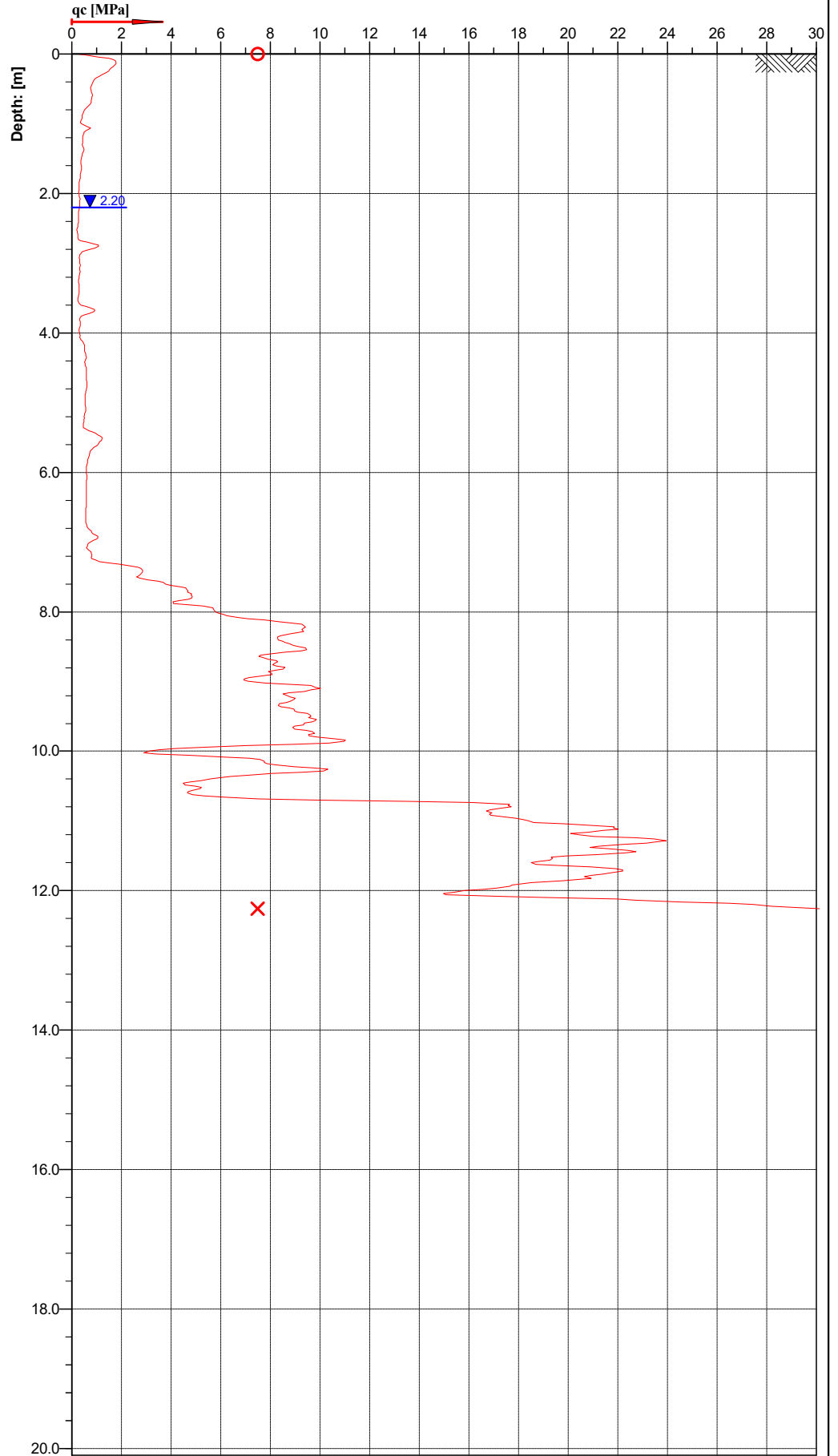


Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT106
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 90
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.96086, E 174.03706		File: CPT106A.cpt	

**Classification by
Robertson 1986**

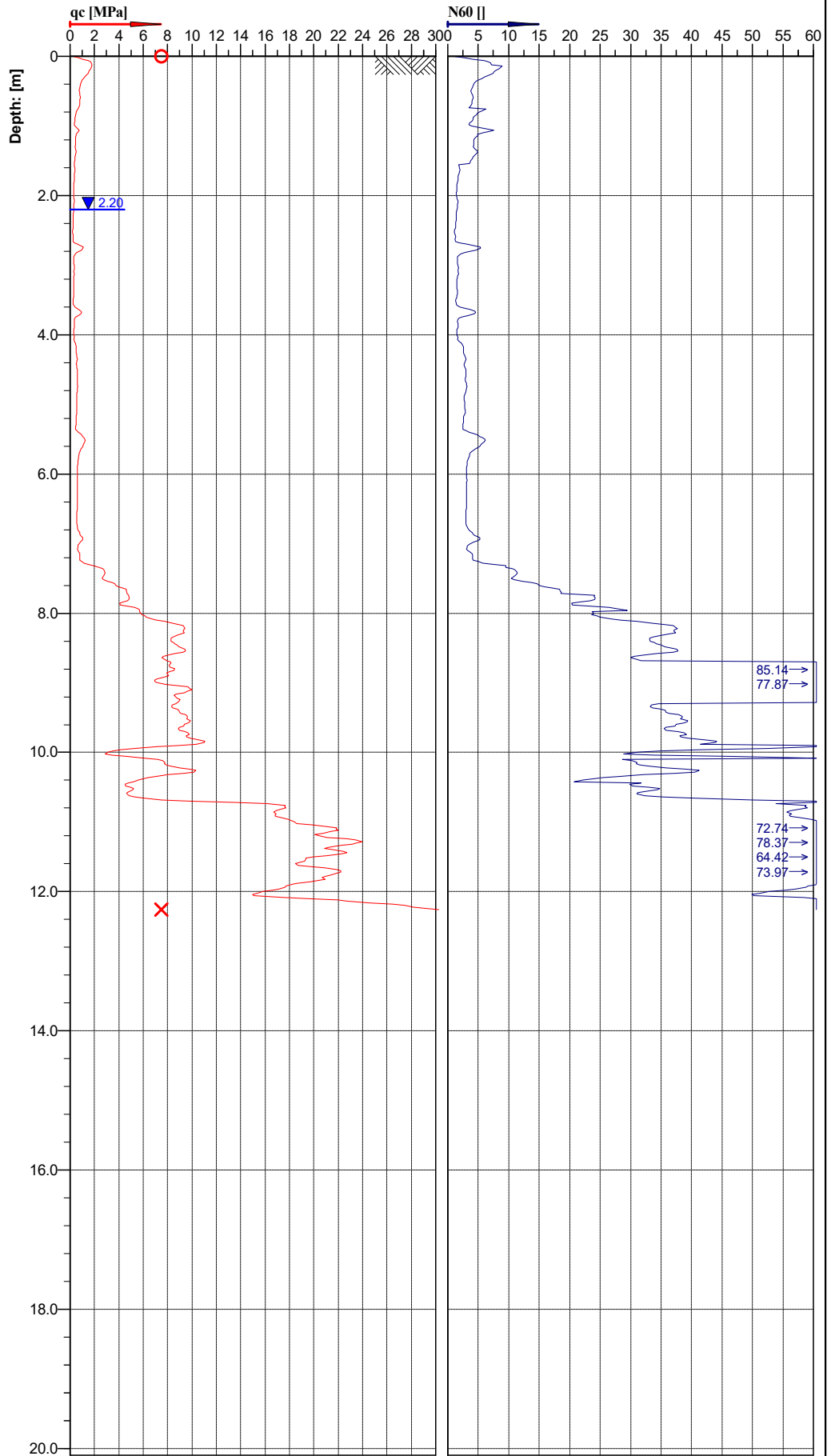
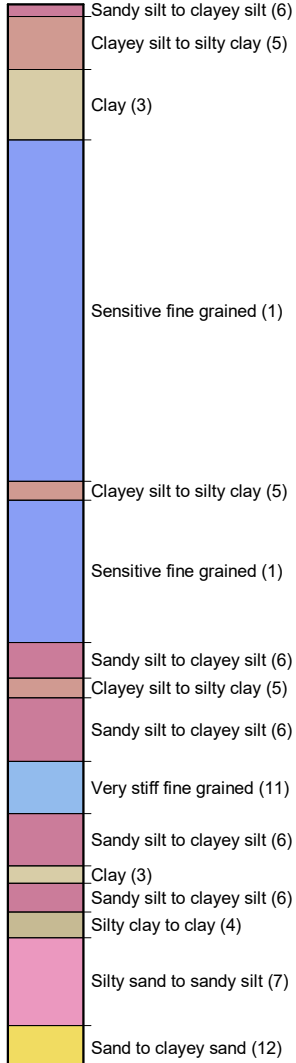
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	Clayey silt to silty clay (5)
	Clay (3)
	Sensitive fine grained (1)
	Clayey silt to silty clay (5)
	Sensitive fine grained (1)
	Sandy silt to clayey silt (6)
	Clayey silt to silty clay (5)
	Sandy silt to clayey silt (6)
	Very stiff fine grained (11)
	Sandy silt to clayey silt (6)
	Clay (3)
	Sandy silt to clayey silt (6)
	Silty clay to clay (4)
	Silty sand to sandy silt (7)
	Sand to clayey sand (12)



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT106
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.96086, E 174.03706		File: CPT106A.cpt	

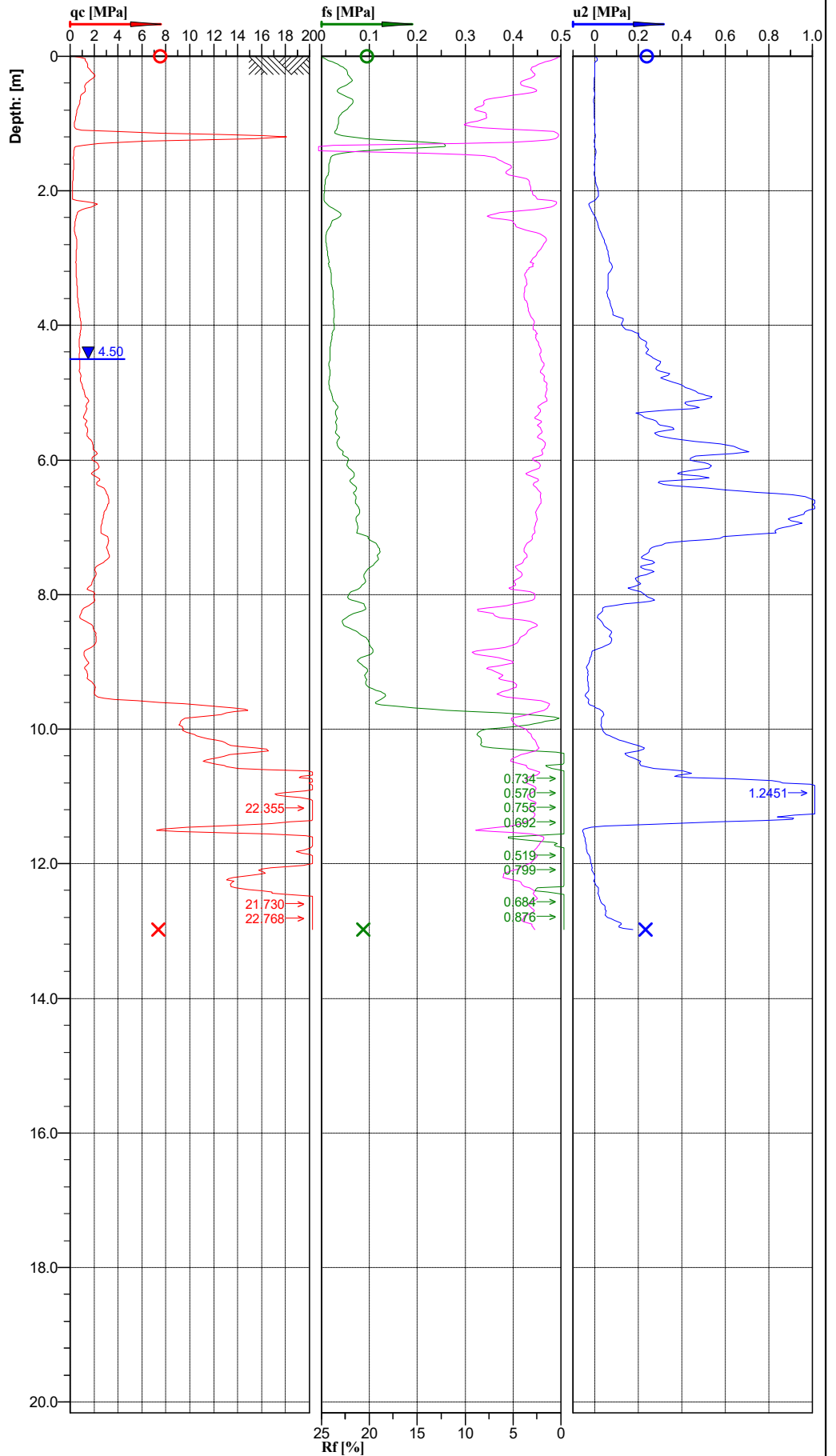
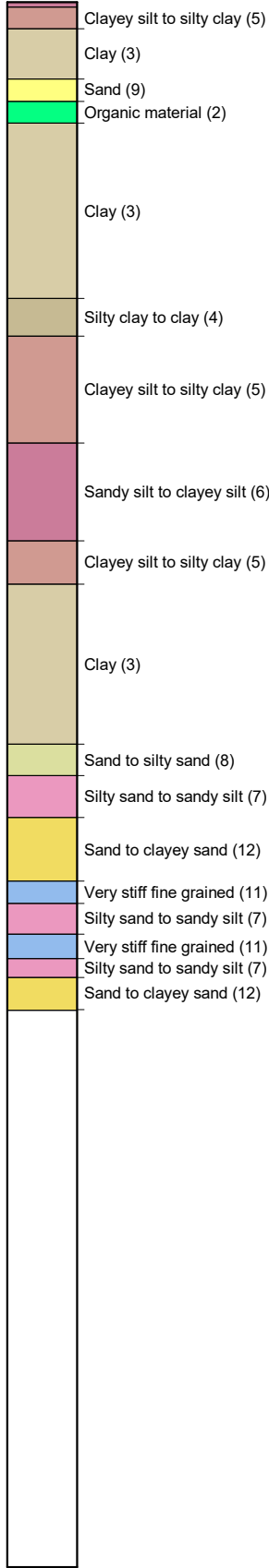
**Classification by
Robertson 1986**



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT106
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.96086, E 174.03706		File: CPT106A.cpt	

**Classification by
Robertson 1986**

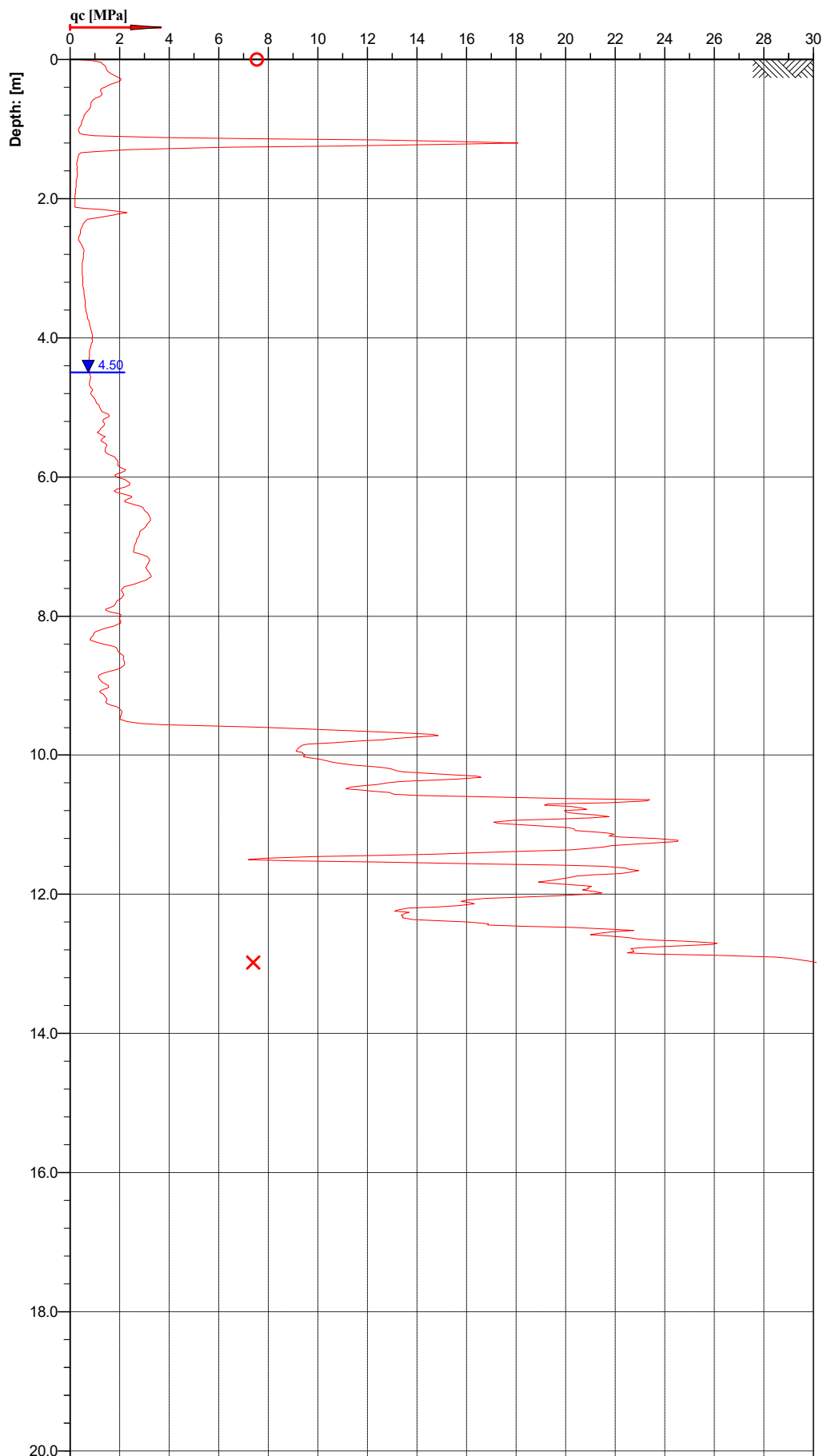


Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CP107
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 90
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03482, E 174.96353		File: CPT07.cpt	

**Classification by
Robertson 1986**

	Clayey silt to silty clay (5)
	Clay (3)
	Sand (9)
	Organic material (2)
	Clay (3)
	Silty clay to clay (4)
	Clayey silt to silty clay (5)
	Sandy silt to clayey silt (6)
	Clayey silt to silty clay (5)
	Clay (3)
	Sand to silty sand (8)
	Silty sand to sandy silt (7)
	Sand to clayey sand (12)
	Very stiff fine grained (11)
	Silty sand to sandy silt (7)
	Very stiff fine grained (11)
	Silty sand to sandy silt (7)
	Sand to clayey sand (12)

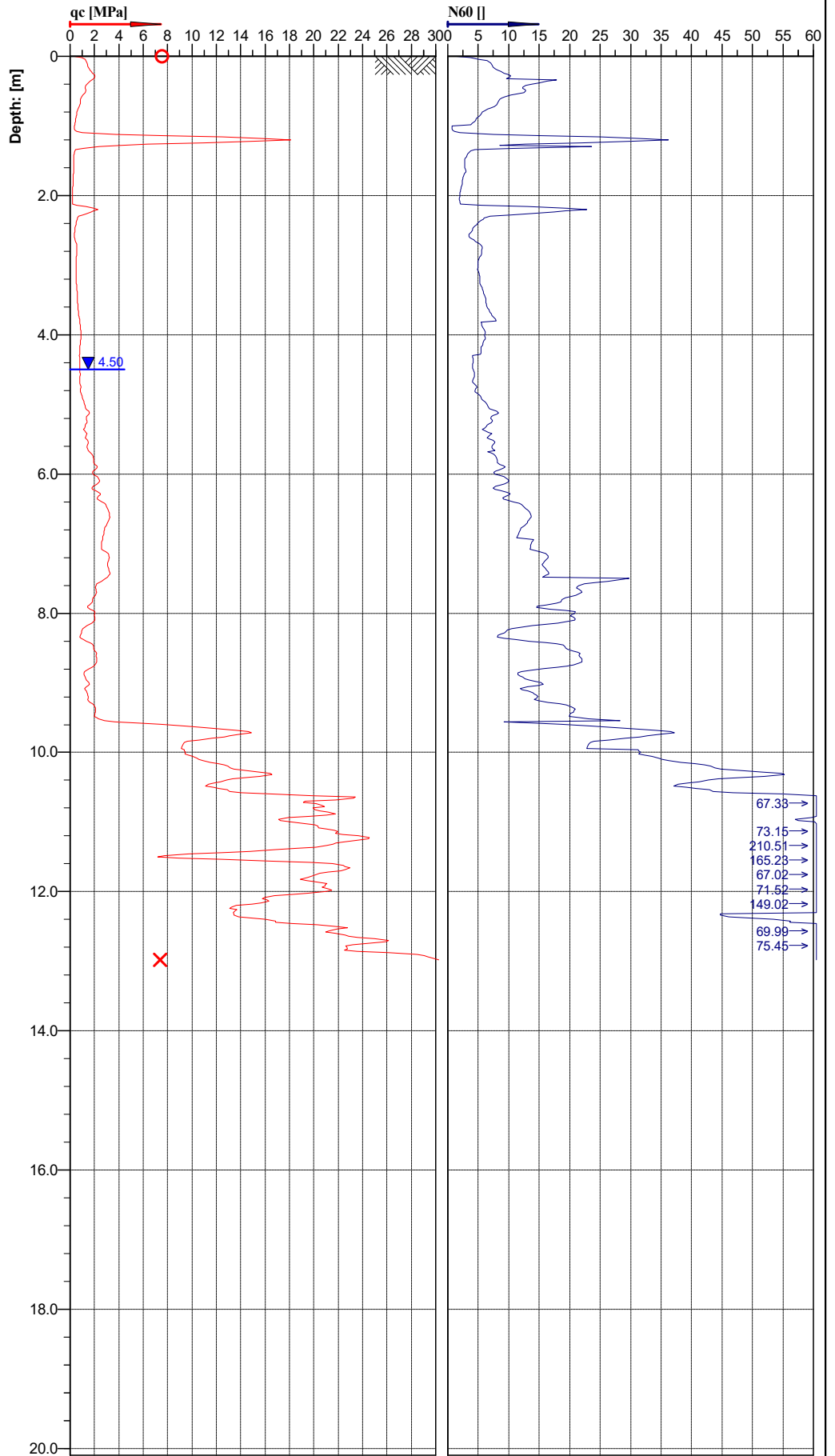


Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location:	PAPAKURA	Position:	X: 0.00 m, Y: 0.00 m	Ground level:	0.00	Test No.:	CP107
Project ID:		Client:	INITIA	Date:	27/04/2022	Scale:	1 : 87
Project:	60 HAMLEN RD			Page:	1/1	Fig.:	
S 37.03482, E 174.96353				File:	CPT07.cpt		

**Classification by
Robertson 1986**

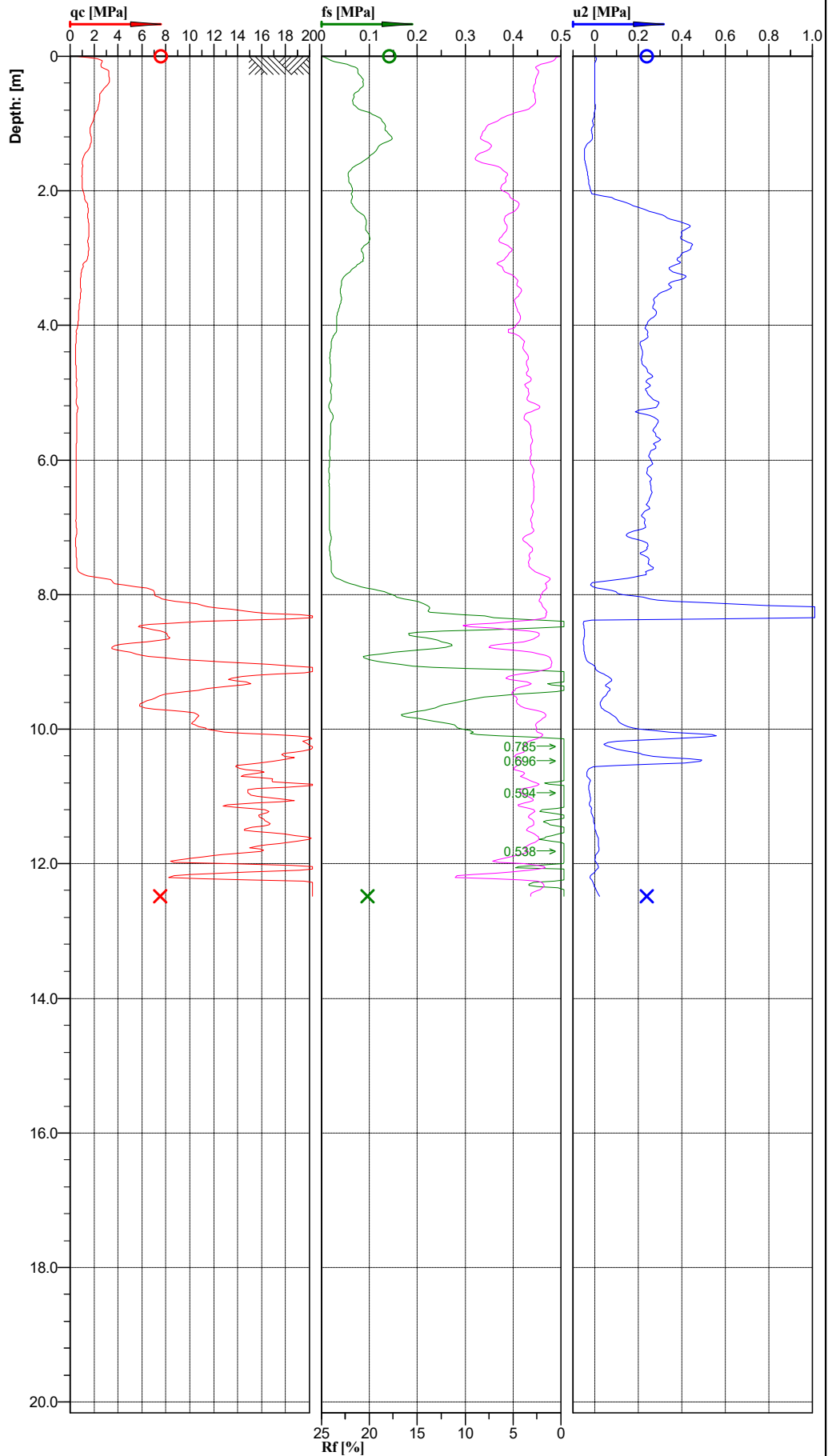
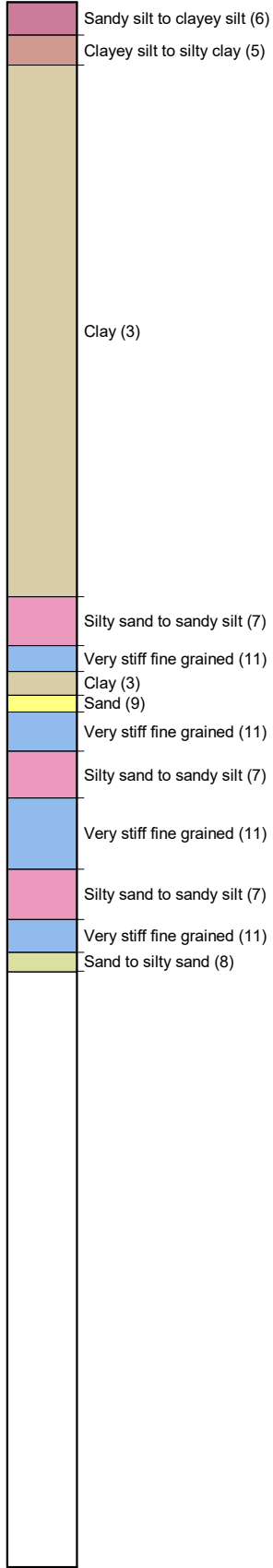
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	Clay (3)
	Organic material (2)
	Clay (3)
	Silty clay to clay (4)
	Clayey silt to silty clay (5)
	Sandy silt to clayey silt (6)
	Clayey silt to silty clay (5)
	Sandy silt to clayey silt (6)
	Clayey silt to silty clay (5)
	Clay (3)
	Clayey silt to silty clay (5)
	Clay (3)
	Very stiff fine grained (11)
	Silty sand to sandy silt (7)
	Very stiff fine grained (11)
	Silty sand to sandy silt (7)
	Sand to clayey sand (12)
	Very stiff fine grained (11)
	Silty sand to sandy silt (7)
	Very stiff fine grained (11)
	Silty sand to sandy silt (7)
	Sand to clayey sand (12)



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CP107
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03482, E 174.96353		File: CPT07.cpt	

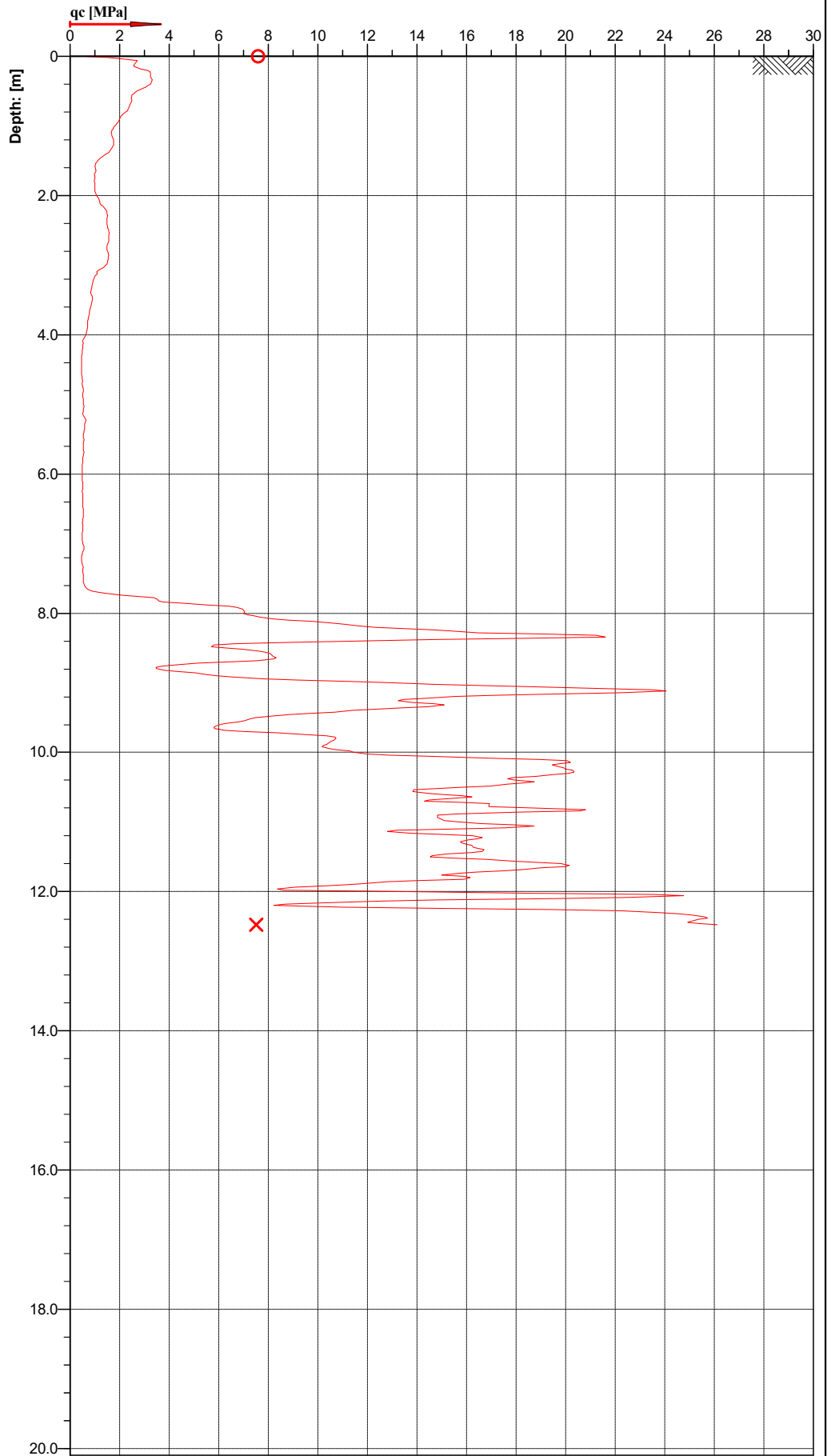
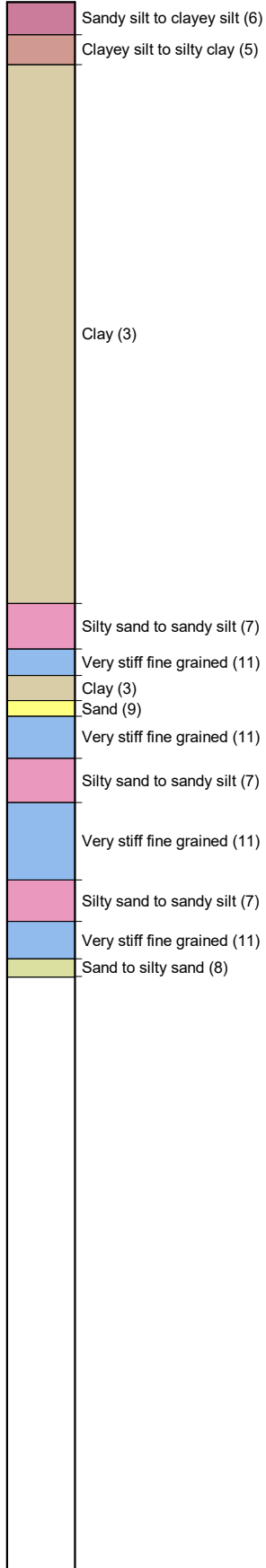
Classification by
Robertson 1986



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT08
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 90
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03563, E 174.96355		File: CPT08.cpt	

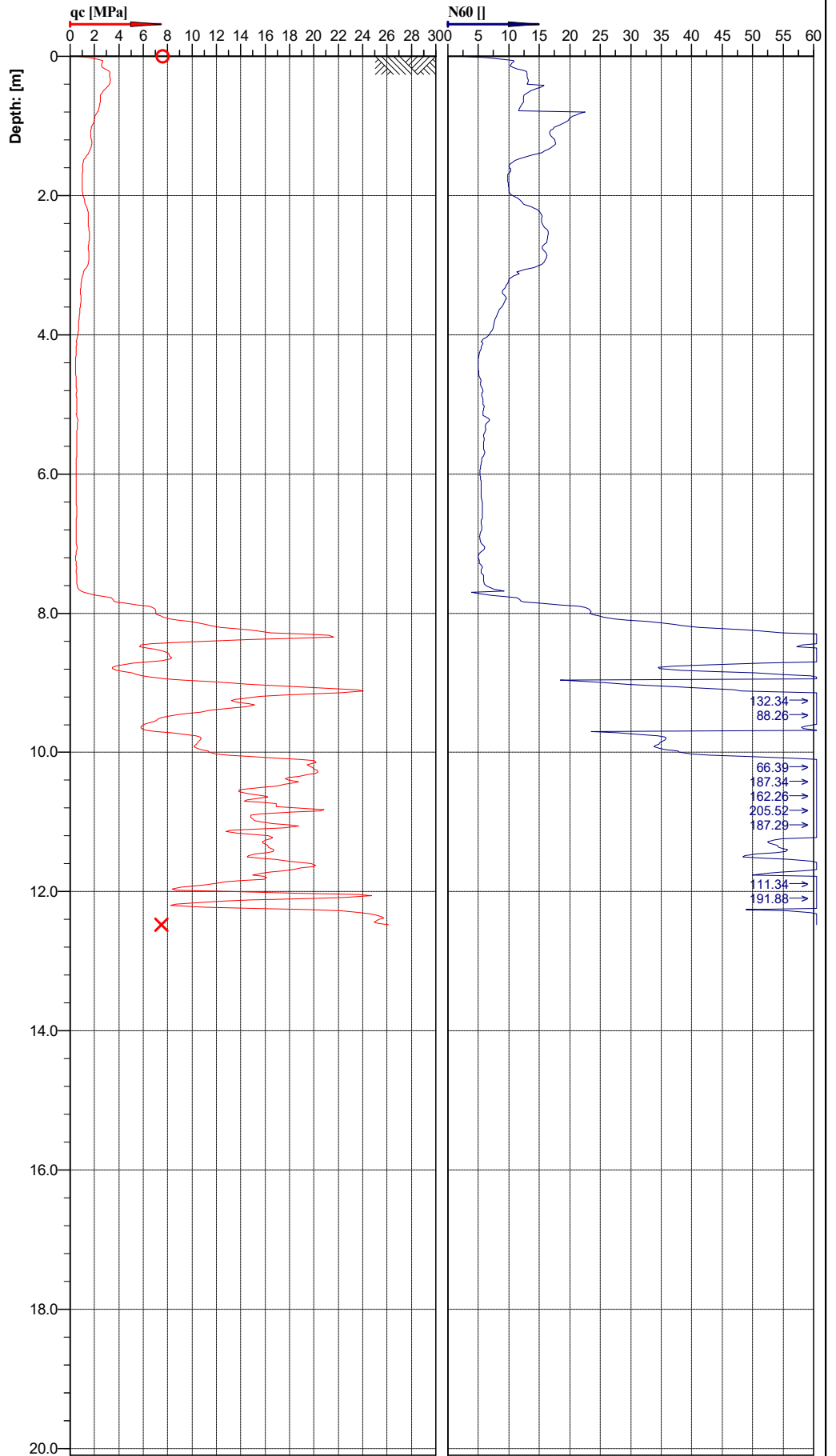
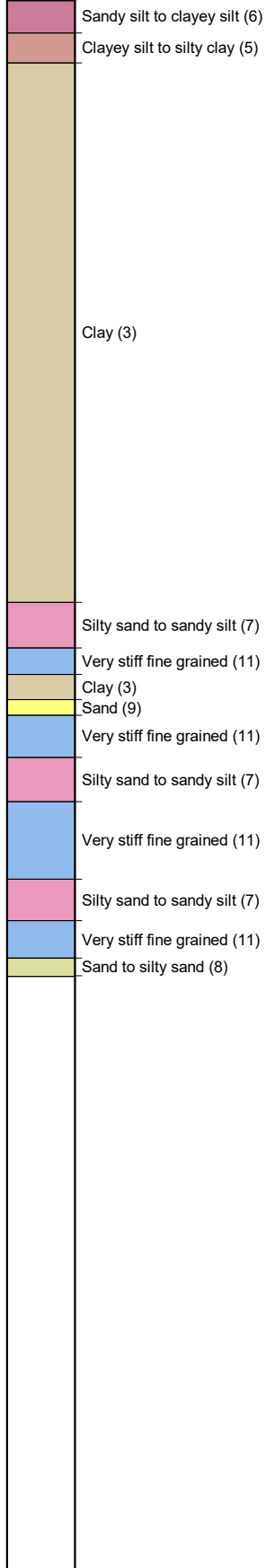
Classification by
Robertson 1986



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT08
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03563, E 174.96355		File: CPT08.cpt	

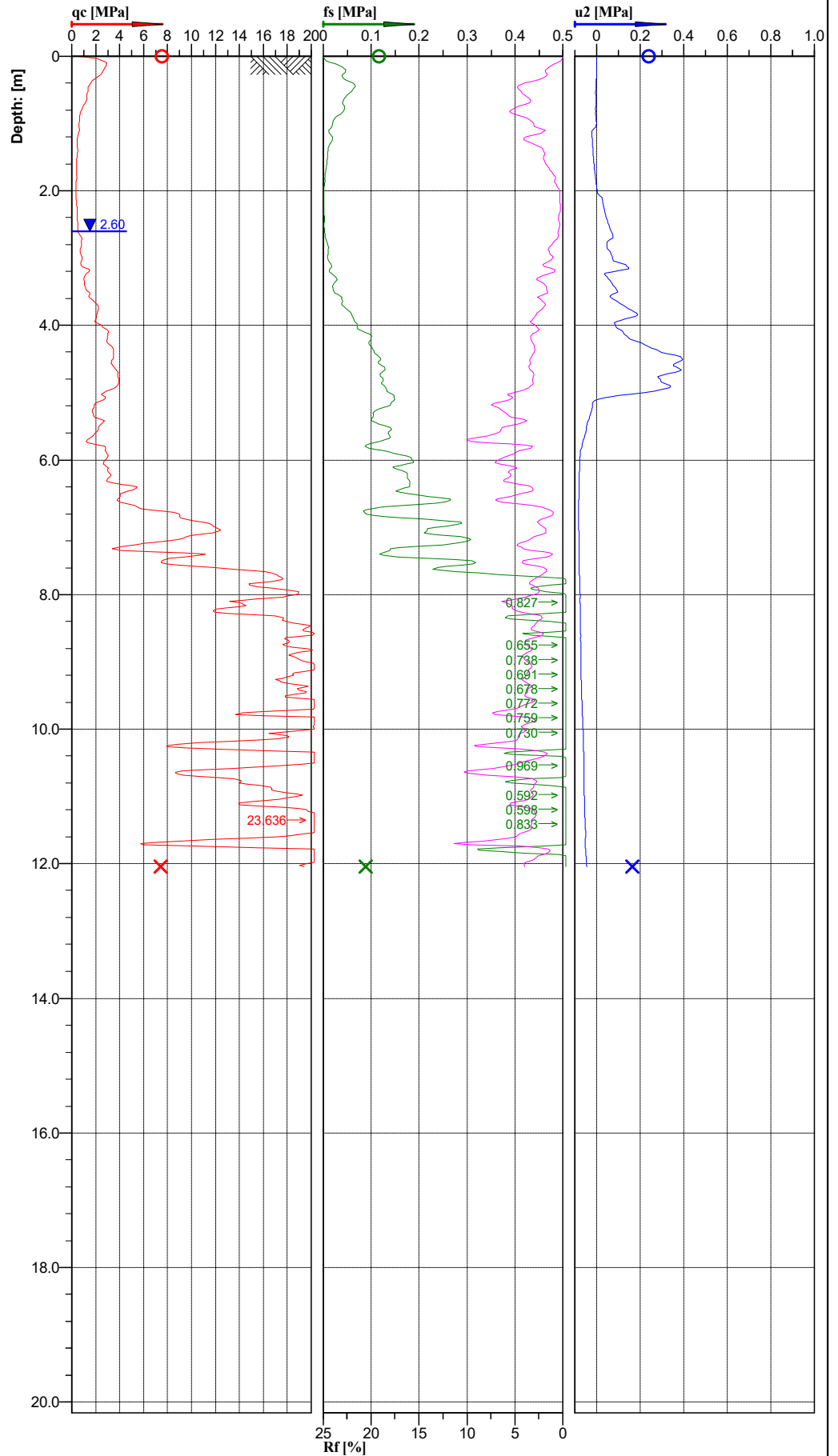
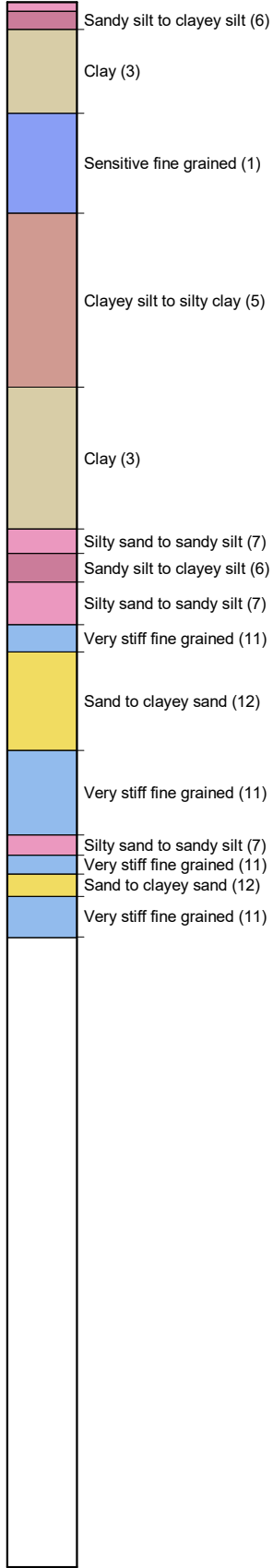
**Classification by
Robertson 1986**



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location:	PAPAKURA	Position:	X: 0.00 m, Y: 0.00 m	Ground level:	0.00	Test No.:	CPT08
Project ID:		Client:	INITIA	Date:	27/04/2022	Scale:	1 : 87
Project:	60 HAMLEN RD			Page:	1/1	Fig.:	
	S 37.03563, E 174.96355			File:	CPT08.cpt		

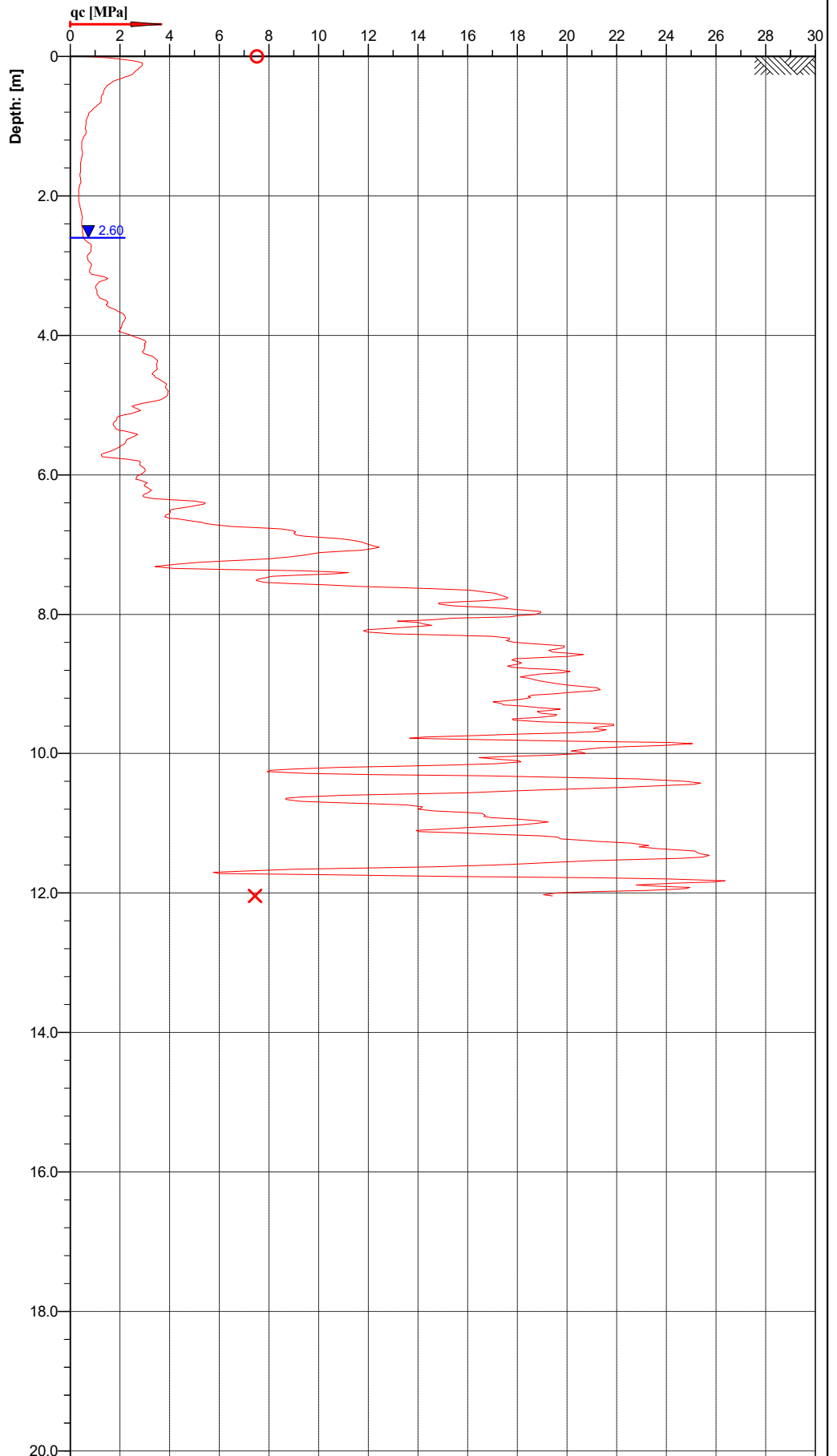
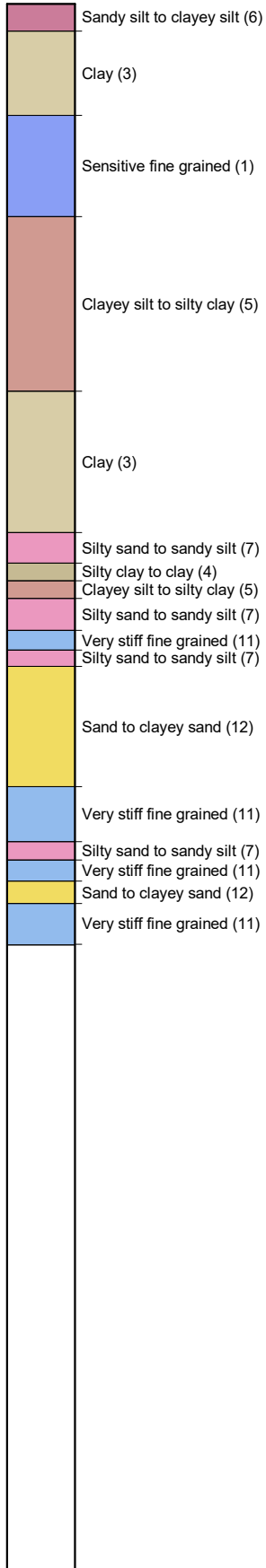
**Classification by
Robertson 1986**



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT110
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 90
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03561, E 174.96187		File: CPT110.cpt	

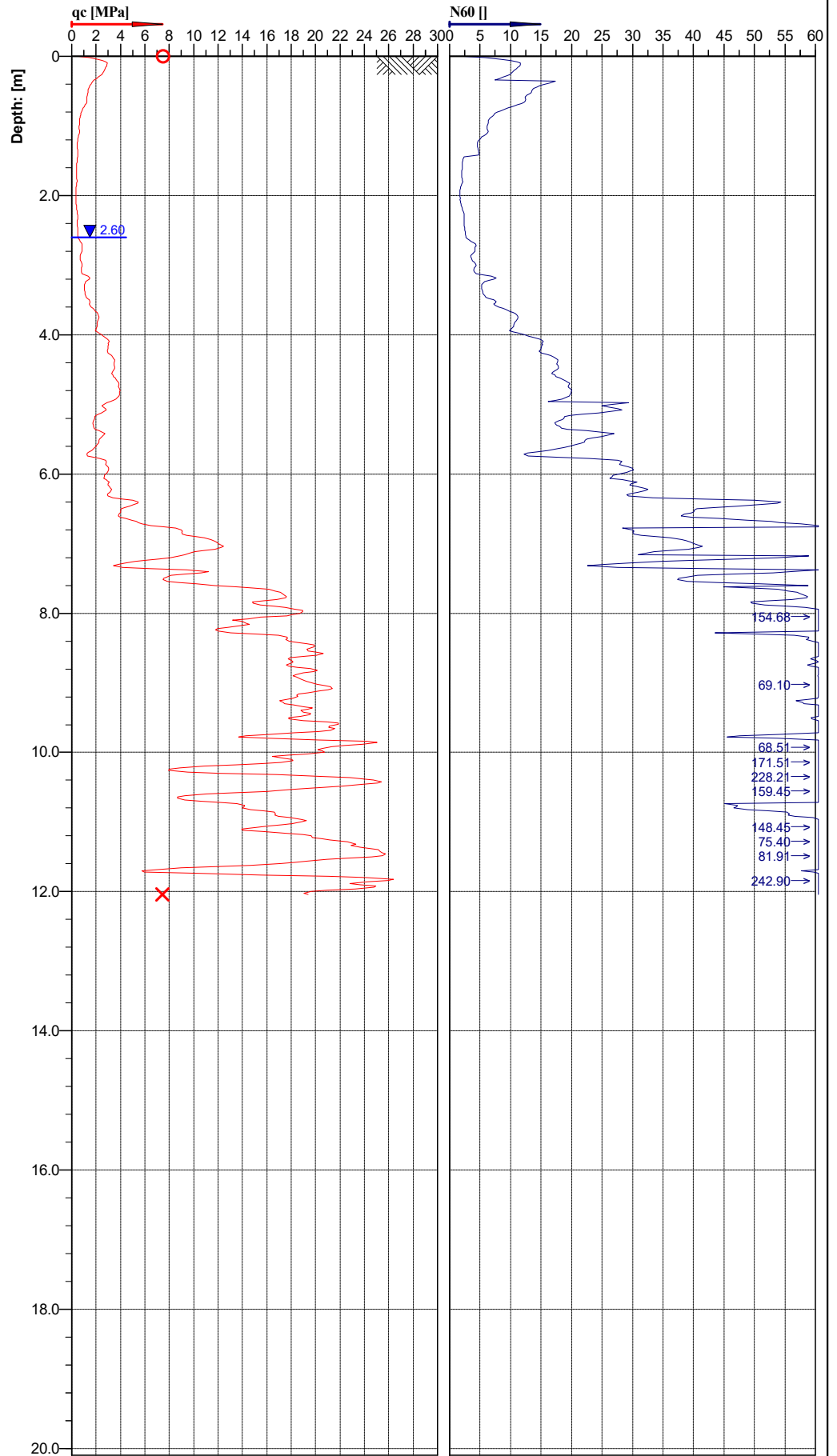
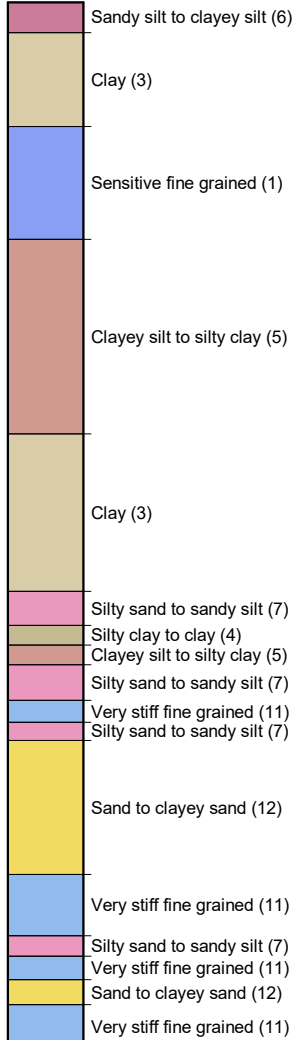
**Classification by
Robertson 1986**



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT110
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03561, E 174.96187		File: CPT110.cpt	

**Classification by
Robertson 1986**



Cone No: 5545
Tip area [cm²]: 10
Sleeve area [cm²]: 150

Location: PAPAKURA	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT110
Project ID:	Client: INITIA	Date: 27/04/2022	Scale: 1 : 87
Project: 60 HAMLEN RD		Page: 1/1	Fig.:
S 37.03561, E 174.96187		File: CPT110.cpt	