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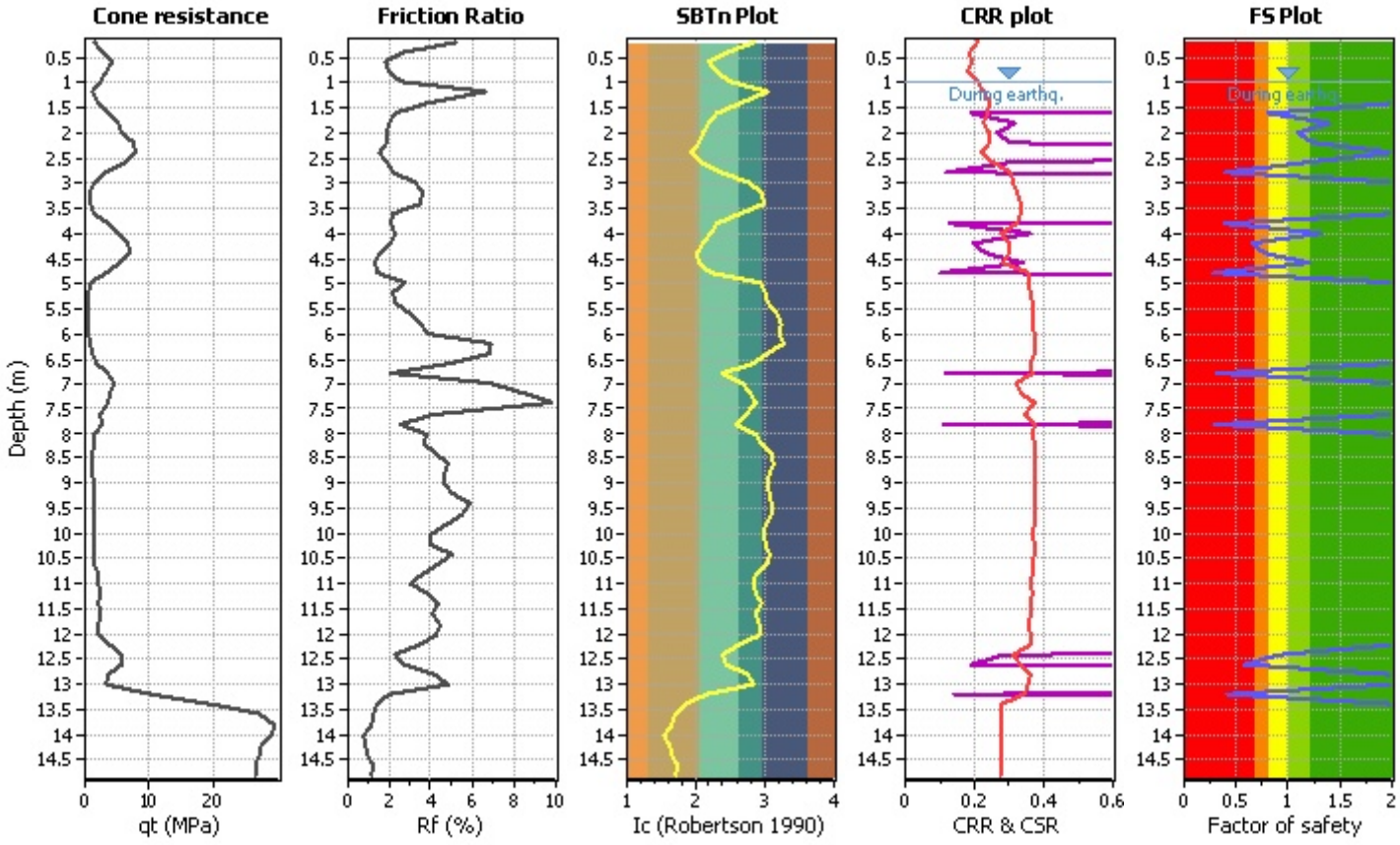
LIQUEFACTION ANALYSIS REPORT

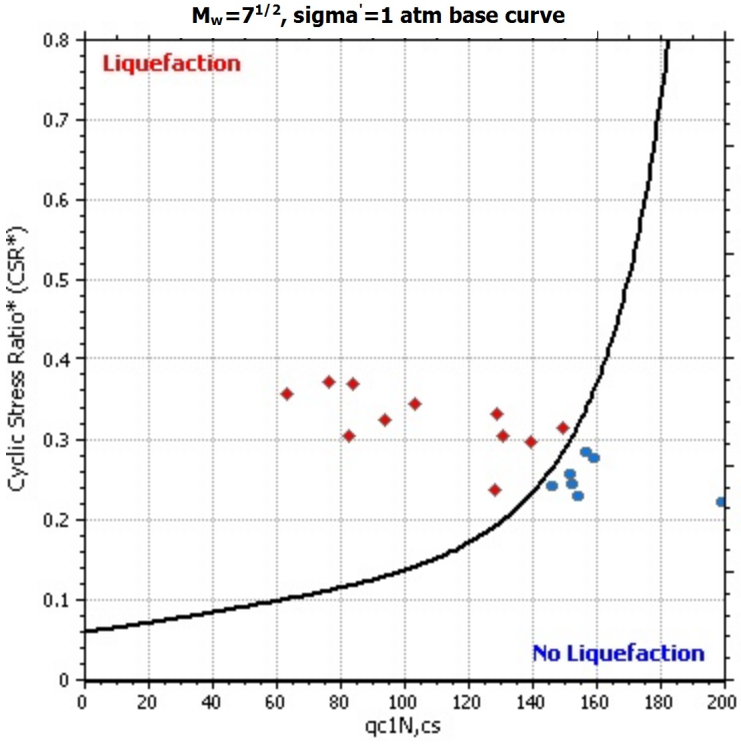
Project title : **Location :**

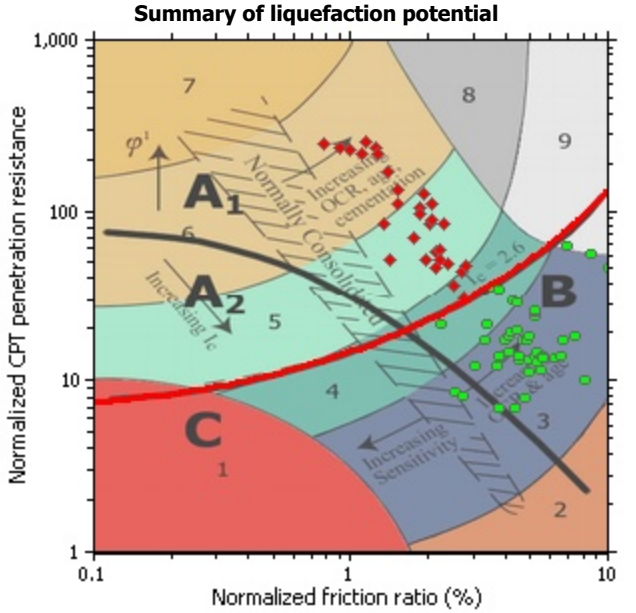
CPT file : P2

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method
Peak ground acceleration:	0.37	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

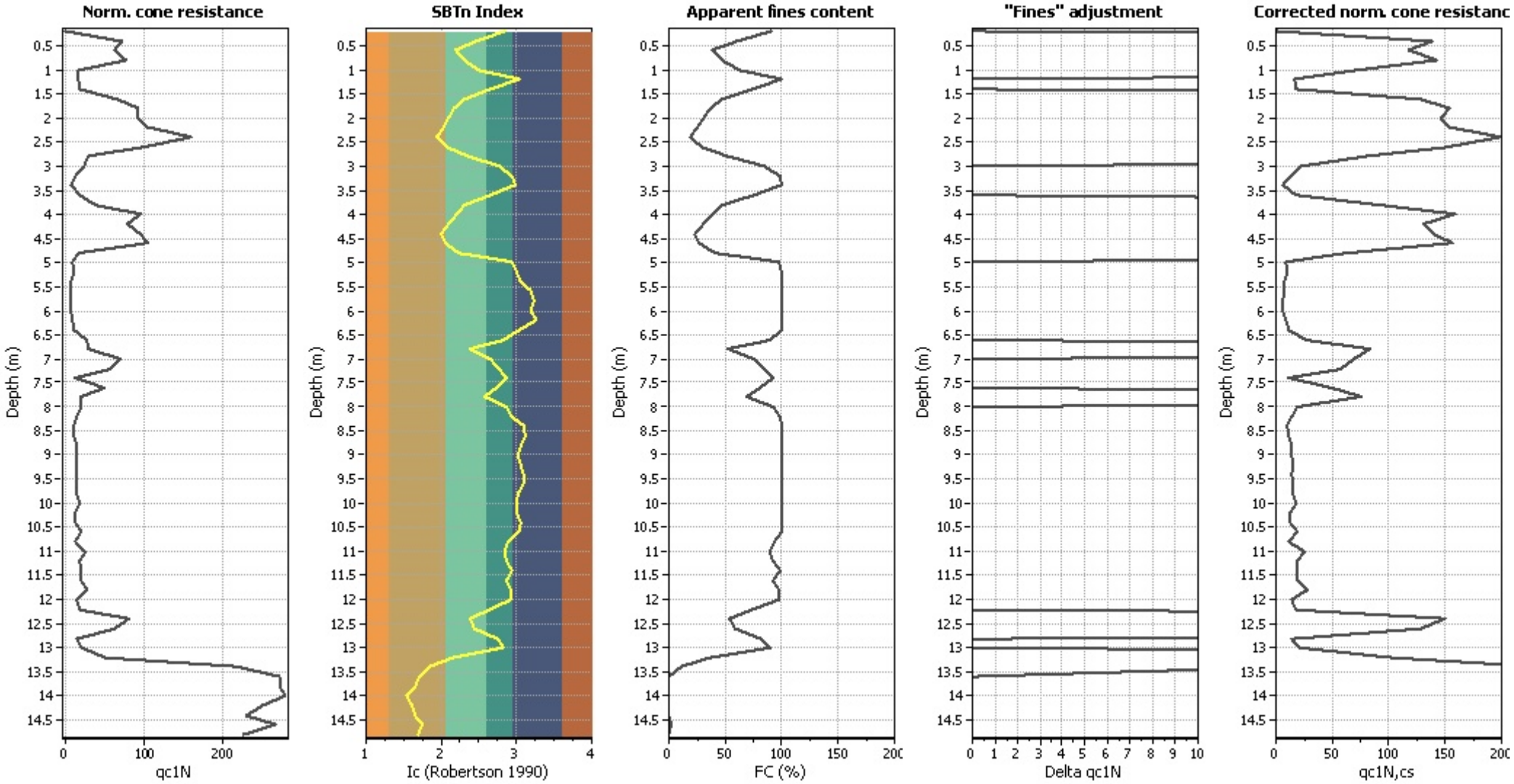






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

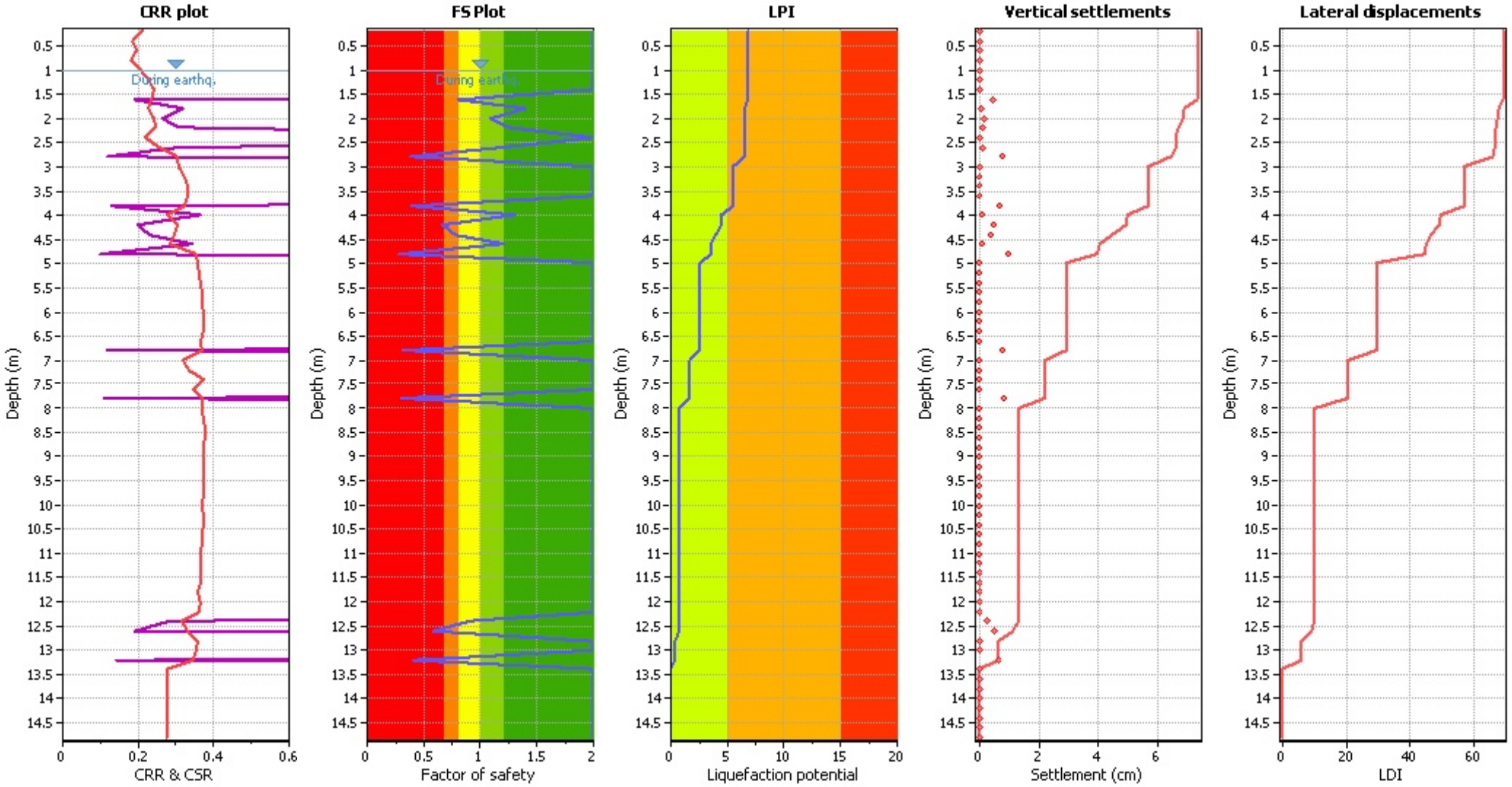
Liquefaction analysis overall plots (intermediate resu



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 m

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 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

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Liquefaction Potential Index calculation data ::

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
0.20	2.00	0.00	9.90	0.20	0.00	0.40	2.00	0.00	9.80	0.20	0.00
0.60	2.00	0.00	9.70	0.20	0.00	0.80	2.00	0.00	9.60	0.20	0.00
1.00	2.00	0.00	9.50	0.20	0.00	1.20	2.00	0.00	9.40	0.20	0.00
1.40	2.00	0.00	9.30	0.20	0.00	1.60	0.81	0.19	9.20	0.20	0.35
1.80	1.39	0.00	9.10	0.20	0.00	2.00	1.09	0.00	9.00	0.20	0.00
2.20	1.25	0.00	8.90	0.20	0.00	2.40	2.00	0.00	8.80	0.20	0.00
2.60	1.17	0.00	8.70	0.20	0.00	2.80	0.39	0.61	8.60	0.20	1.05
3.00	2.00	0.00	8.50	0.20	0.00	3.20	2.00	0.00	8.40	0.20	0.00
3.40	2.00	0.00	8.30	0.20	0.00	3.60	2.00	0.00	8.20	0.20	0.00
3.80	0.40	0.60	8.10	0.20	0.97	4.00	1.31	0.00	8.00	0.20	0.00
4.20	0.66	0.34	7.90	0.20	0.54	4.40	0.78	0.22	7.80	0.20	0.35
4.60	1.21	0.00	7.70	0.20	0.00	4.80	0.29	0.71	7.60	0.20	1.08
5.00	2.00	0.00	7.50	0.20	0.00	5.20	2.00	0.00	7.40	0.20	0.00
5.40	2.00	0.00	7.30	0.20	0.00	5.60	2.00	0.00	7.20	0.20	0.00
5.80	2.00	0.00	7.10	0.20	0.00	6.00	2.00	0.00	7.00	0.20	0.00
6.20	2.00	0.00	6.90	0.20	0.00	6.40	2.00	0.00	6.80	0.20	0.00
6.60	2.00	0.00	6.70	0.20	0.00	6.80	0.32	0.68	6.60	0.20	0.89
7.00	2.00	0.00	6.50	0.20	0.00	7.20	2.00	0.00	6.40	0.20	0.00
7.40	2.00	0.00	6.30	0.20	0.00	7.60	2.00	0.00	6.20	0.20	0.00
7.80	0.30	0.70	6.10	0.20	0.85	8.00	2.00	0.00	6.00	0.20	0.00
8.20	2.00	0.00	5.90	0.20	0.00	8.40	2.00	0.00	5.80	0.20	0.00
8.60	2.00	0.00	5.70	0.20	0.00	8.80	2.00	0.00	5.60	0.20	0.00
9.00	2.00	0.00	5.50	0.20	0.00	9.20	2.00	0.00	5.40	0.20	0.00
9.40	2.00	0.00	5.30	0.20	0.00	9.60	2.00	0.00	5.20	0.20	0.00
9.80	2.00	0.00	5.10	0.20	0.00	10.00	2.00	0.00	5.00	0.20	0.00
10.20	2.00	0.00	4.90	0.20	0.00	10.40	2.00	0.00	4.80	0.20	0.00
10.60	2.00	0.00	4.70	0.20	0.00	10.80	2.00	0.00	4.60	0.20	0.00
11.00	2.00	0.00	4.50	0.20	0.00	11.20	2.00	0.00	4.40	0.20	0.00
11.40	2.00	0.00	4.30	0.20	0.00	11.60	2.00	0.00	4.20	0.20	0.00
11.80	2.00	0.00	4.10	0.20	0.00	12.00	2.00	0.00	4.00	0.20	0.00
12.20	2.00	0.00	3.90	0.20	0.00	12.40	0.91	0.09	3.80	0.20	0.07
12.60	0.58	0.42	3.70	0.20	0.31	12.80	2.00	0.00	3.60	0.20	0.00
13.00	2.00	0.00	3.50	0.20	0.00	13.20	0.41	0.59	3.40	0.20	0.40
13.40	2.00	0.00	3.30	0.20	0.00	13.60	2.00	0.00	3.20	0.20	0.00
13.80	2.00	0.00	3.10	0.20	0.00	14.00	2.00	0.00	3.00	0.20	0.00
14.20	2.00	0.00	2.90	0.20	0.00	14.40	2.00	0.00	2.80	0.20	0.00
14.60	2.00	0.00	2.70	0.20	0.00	14.80	2.00	0.00	2.60	0.20	0.00

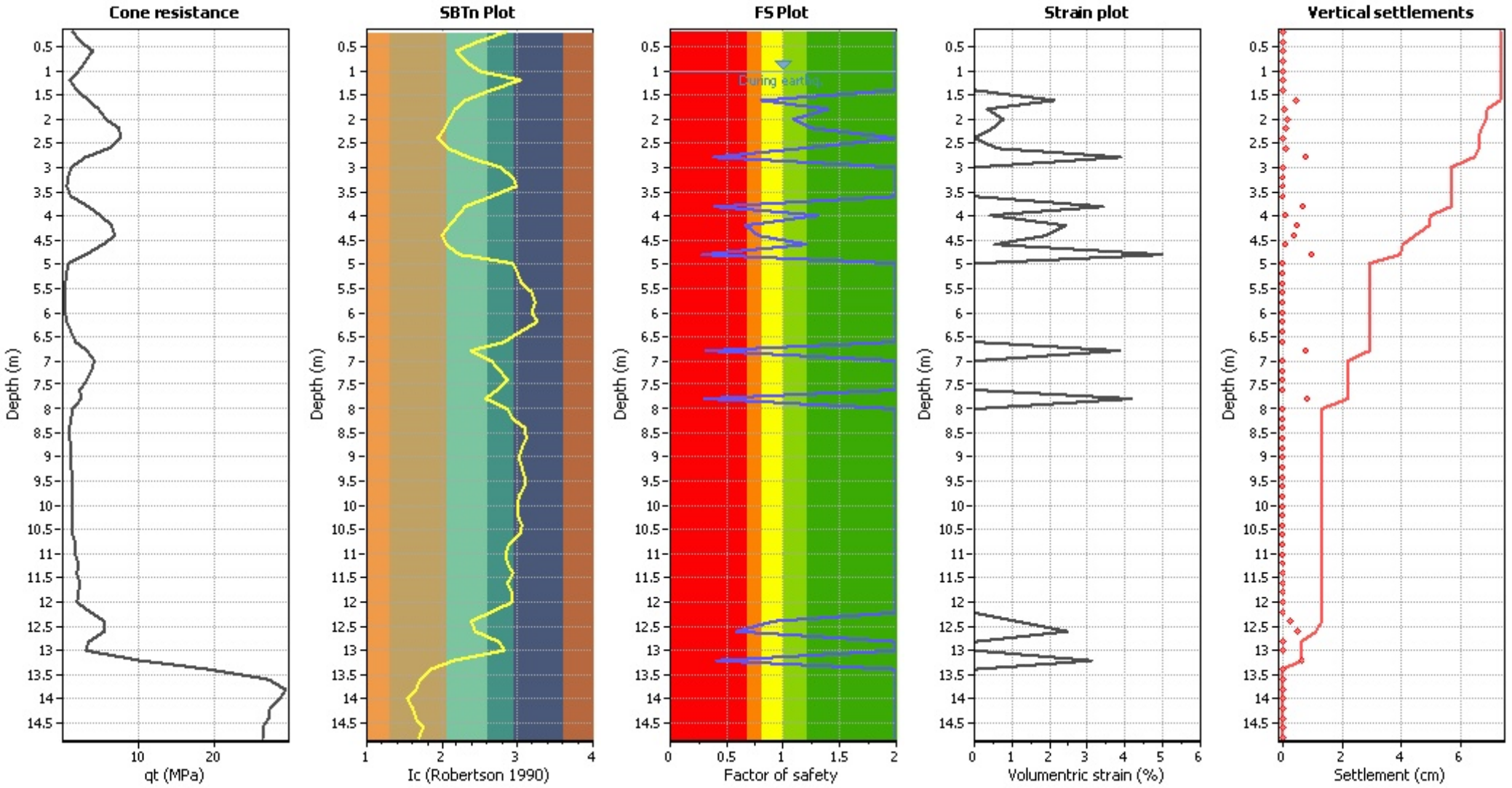
Overall liquefaction potential: 6.85

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (m)
LPI: Liquefaction potential index value for test point

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
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)
1.00	70.89	2.00	0.00	1.00	0.00	1.20	16.78	2.00	0.00	1.00	0.00
1.40	18.46	2.00	0.00	1.00	0.00	1.60	127.85	0.81	2.12	1.00	0.42
1.80	154.09	1.39	0.36	1.00	0.07	2.00	145.95	1.09	0.76	1.00	0.15
2.20	152.45	1.25	0.51	1.00	0.10	2.40	199.07	2.00	0.00	1.00	0.00
2.60	151.68	1.17	0.61	1.00	0.12	2.80	82.49	0.39	3.89	1.00	0.78
3.00	23.49	2.00	0.00	1.00	0.00	3.20	13.42	2.00	0.00	1.00	0.00
3.40	6.71	2.00	0.00	1.00	0.00	3.60	18.26	2.00	0.00	1.00	0.00
3.80	93.98	0.40	3.42	1.00	0.68	4.00	159.19	1.31	0.43	1.00	0.09
4.20	130.82	0.66	2.42	1.00	0.48	4.40	139.19	0.78	1.90	1.00	0.38
4.60	156.85	1.21	0.55	1.00	0.11	4.80	62.92	0.29	5.02	1.00	1.00
5.00	8.77	2.00	0.00	1.00	0.00	5.20	10.06	2.00	0.00	1.00	0.00
5.40	7.14	2.00	0.00	1.00	0.00	5.60	7.05	2.00	0.00	1.00	0.00
5.80	6.96	2.00	0.00	1.00	0.00	6.00	6.87	2.00	0.00	1.00	0.00
6.20	9.42	2.00	0.00	1.00	0.00	6.40	11.86	2.00	0.00	1.00	0.00
6.60	26.62	2.00	0.00	1.00	0.00	6.80	83.63	0.32	3.84	1.00	0.77
7.00	69.33	2.00	0.00	1.00	0.00	7.20	57.39	2.00	0.00	1.00	0.00
7.40	12.12	2.00	0.00	1.00	0.00	7.60	49.51	2.00	0.00	1.00	0.00
7.80	76.19	0.30	4.20	1.00	0.84	8.00	19.66	2.00	0.00	1.00	0.00
8.20	13.79	2.00	0.00	1.00	0.00	8.40	10.27	2.00	0.00	1.00	0.00
8.60	11.27	2.00	0.00	1.00	0.00	8.80	14.45	2.00	0.00	1.00	0.00
9.00	14.29	2.00	0.00	1.00	0.00	9.20	15.22	2.00	0.00	1.00	0.00
9.40	13.99	2.00	0.00	1.00	0.00	9.60	14.90	2.00	0.00	1.00	0.00
9.80	14.74	2.00	0.00	1.00	0.00	10.00	17.71	2.00	0.00	1.00	0.00
10.20	12.40	2.00	0.00	1.00	0.00	10.40	13.30	2.00	0.00	1.00	0.00
10.60	19.23	2.00	0.00	1.00	0.00	10.80	12.04	2.00	0.00	1.00	0.00
11.00	25.83	2.00	0.00	1.00	0.00	11.20	18.71	2.00	0.00	1.00	0.00
11.40	19.51	2.00	0.00	1.00	0.00	11.60	19.33	2.00	0.00	1.00	0.00
11.80	27.82	2.00	0.00	1.00	0.00	12.00	14.23	2.00	0.00	1.00	0.00
12.20	17.85	2.00	0.00	1.00	0.00	12.40	149.48	0.91	1.13	1.00	0.23
12.60	128.55	0.58	2.46	1.00	0.49	12.80	14.60	2.00	0.00	1.00	0.00
13.00	20.88	2.00	0.00	1.00	0.00	13.20	103.27	0.41	3.11	1.00	0.62
13.40	229.50	2.00	0.00	1.00	0.00	13.60	254.00	2.00	0.00	1.00	0.00
13.80	254.00	2.00	0.00	1.00	0.00	14.00	254.00	2.00	0.00	1.00	0.00
14.20	248.57	2.00	0.00	1.00	0.00	14.40	227.60	2.00	0.00	1.00	0.00
14.60	254.00	2.00	0.00	1.00	0.00	14.80	225.23	2.00	0.00	1.00	0.00

Total estimated settlement: 7.34

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

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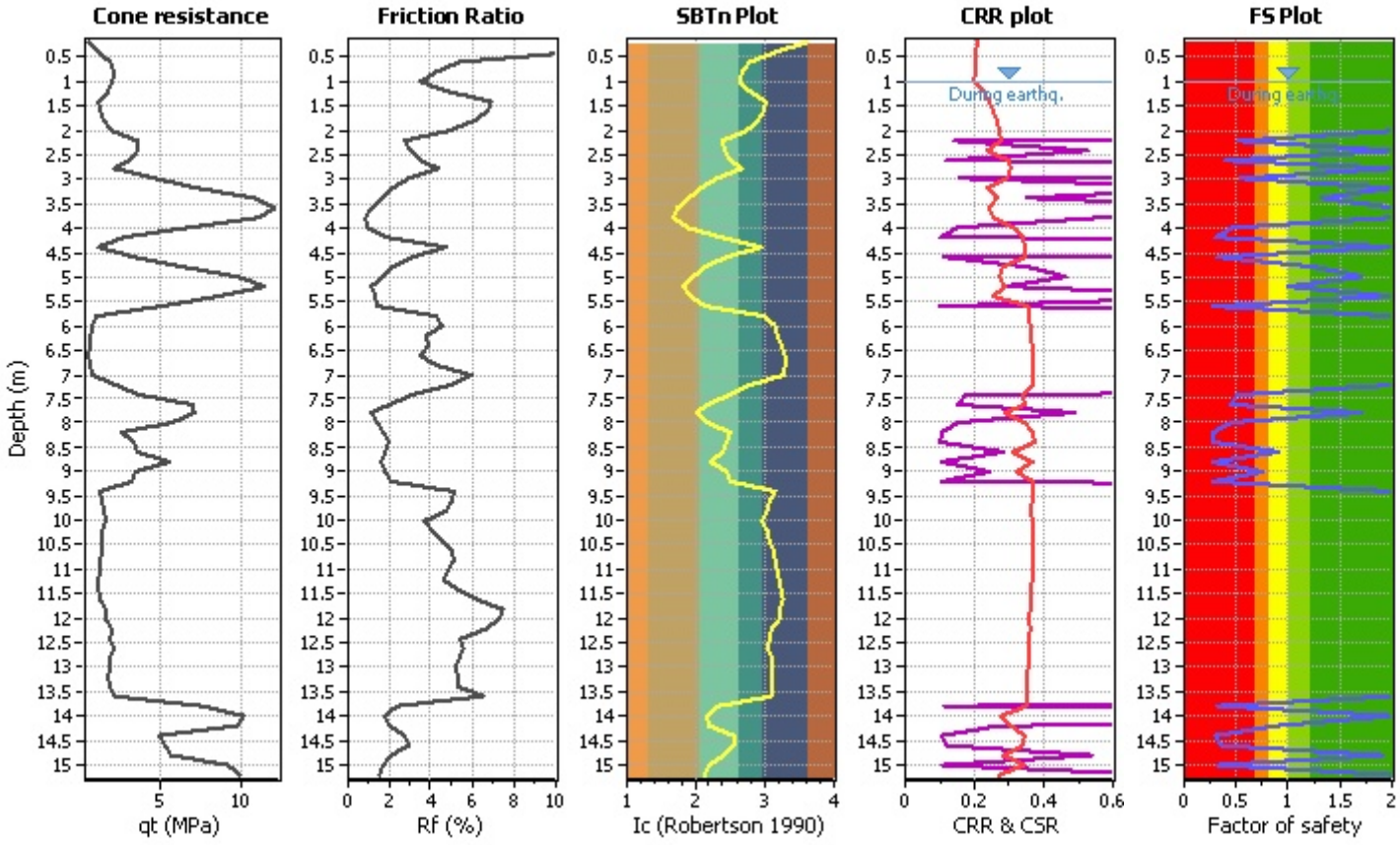
LIQUEFACTION ANALYSIS REPORT

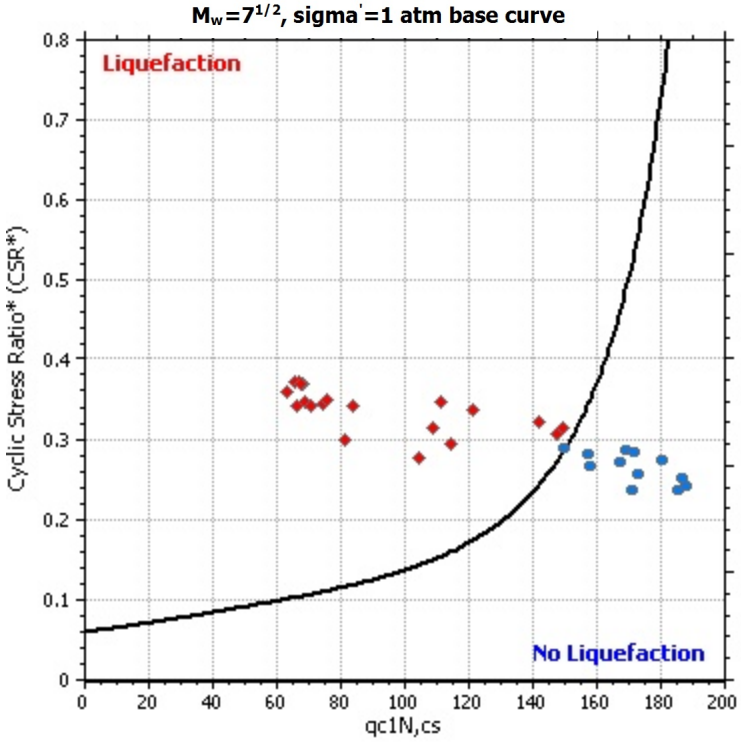
Project title : **Location :**

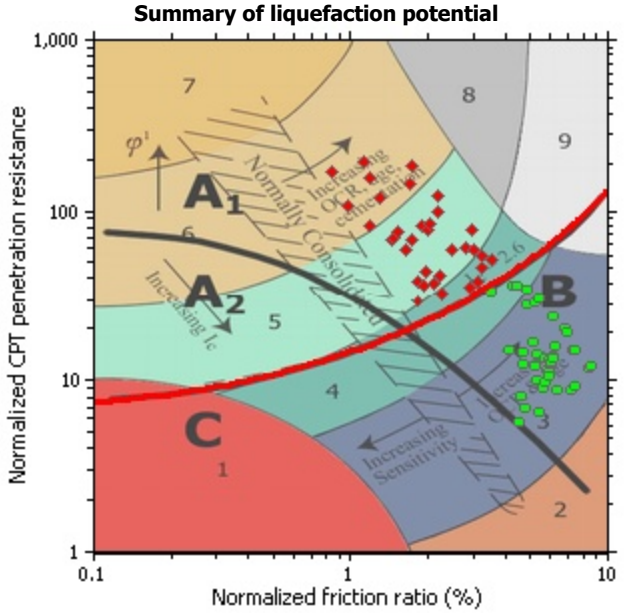
CPT file : P3

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method
Peak ground acceleration:	0.37	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		







Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
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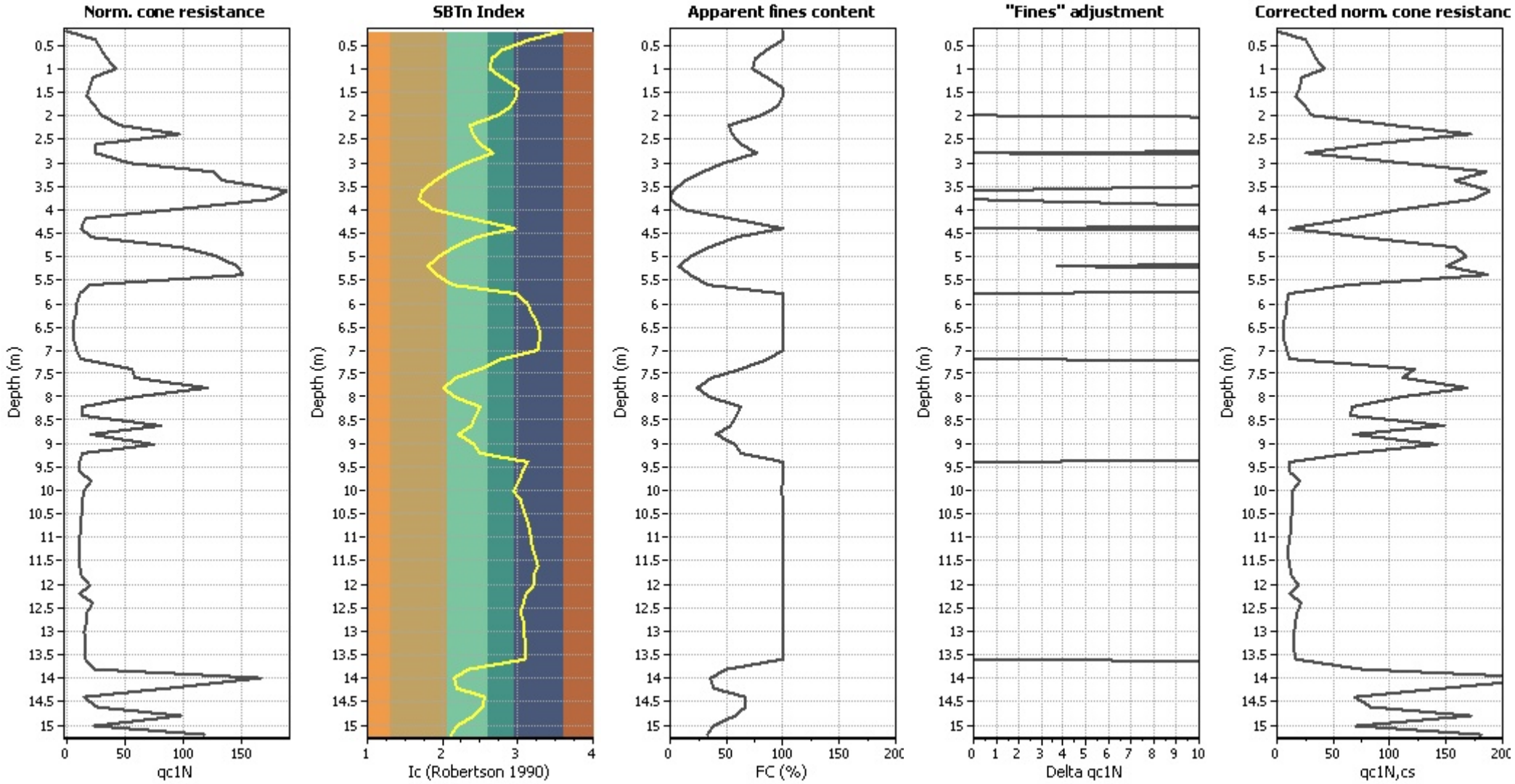
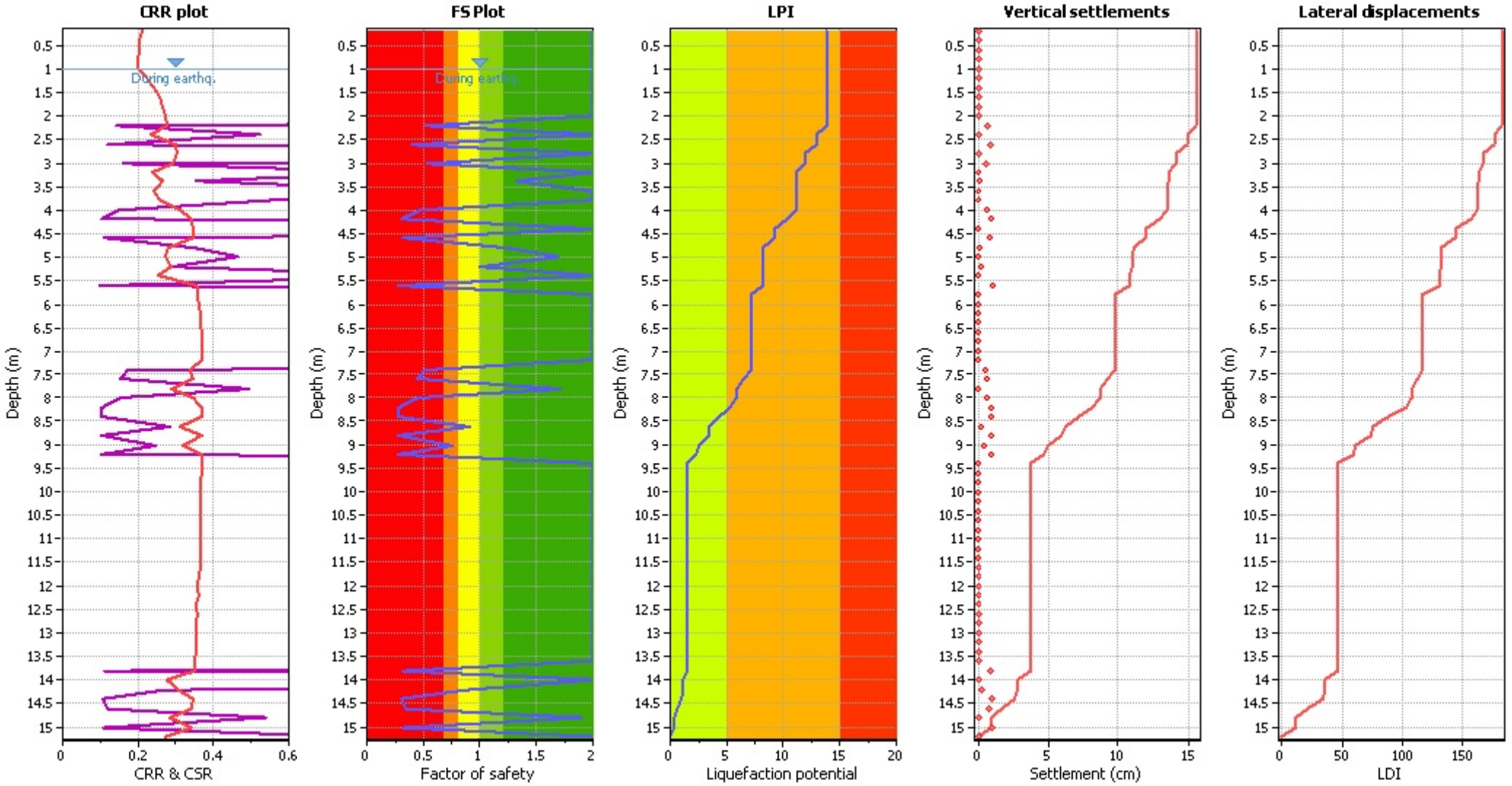
Liquefaction analysis overall plots (intermediate resu



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 m

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 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

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Liquefaction Potential Index calculation data ::

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
0.20	2.00	0.00	9.90	0.20	0.00	0.40	2.00	0.00	9.80	0.20	0.00
0.60	2.00	0.00	9.70	0.20	0.00	0.80	2.00	0.00	9.60	0.20	0.00
1.00	2.00	0.00	9.50	0.20	0.00	1.20	2.00	0.00	9.40	0.20	0.00
1.40	2.00	0.00	9.30	0.20	0.00	1.60	2.00	0.00	9.20	0.20	0.00
1.80	2.00	0.00	9.10	0.20	0.00	2.00	2.00	0.00	9.00	0.20	0.00
2.20	0.52	0.48	8.90	0.20	0.86	2.40	2.00	0.00	8.80	0.20	0.00
2.60	0.39	0.61	8.70	0.20	1.06	2.80	2.00	0.00	8.60	0.20	0.00
3.00	0.54	0.46	8.50	0.20	0.78	3.20	2.00	0.00	8.40	0.20	0.00
3.40	1.32	0.00	8.30	0.20	0.00	3.60	2.00	0.00	8.20	0.20	0.00
3.80	2.00	0.00	8.10	0.20	0.00	4.00	0.48	0.52	8.00	0.20	0.83
4.20	0.31	0.69	7.90	0.20	1.10	4.40	2.00	0.00	7.80	0.20	0.00
4.60	0.32	0.68	7.70	0.20	1.04	4.80	1.24	0.00	7.60	0.20	0.00
5.00	1.71	0.00	7.50	0.20	0.00	5.20	1.00	0.00	7.40	0.20	0.00
5.40	2.00	0.00	7.30	0.20	0.00	5.60	0.28	0.72	7.20	0.20	1.03
5.80	2.00	0.00	7.10	0.20	0.00	6.00	2.00	0.00	7.00	0.20	0.00
6.20	2.00	0.00	6.90	0.20	0.00	6.40	2.00	0.00	6.80	0.20	0.00
6.60	2.00	0.00	6.70	0.20	0.00	6.80	2.00	0.00	6.60	0.20	0.00
7.00	2.00	0.00	6.50	0.20	0.00	7.20	2.00	0.00	6.40	0.20	0.00
7.40	0.52	0.48	6.30	0.20	0.61	7.60	0.45	0.55	6.20	0.20	0.68
7.80	1.72	0.00	6.10	0.20	0.00	8.00	0.44	0.56	6.00	0.20	0.67
8.20	0.28	0.72	5.90	0.20	0.85	8.40	0.28	0.72	5.80	0.20	0.84
8.60	0.91	0.09	5.70	0.20	0.11	8.80	0.29	0.71	5.60	0.20	0.80
9.00	0.76	0.24	5.50	0.20	0.26	9.20	0.28	0.72	5.40	0.20	0.77
9.40	2.00	0.00	5.30	0.20	0.00	9.60	2.00	0.00	5.20	0.20	0.00
9.80	2.00	0.00	5.10	0.20	0.00	10.00	2.00	0.00	5.00	0.20	0.00
10.20	2.00	0.00	4.90	0.20	0.00	10.40	2.00	0.00	4.80	0.20	0.00
10.60	2.00	0.00	4.70	0.20	0.00	10.80	2.00	0.00	4.60	0.20	0.00
11.00	2.00	0.00	4.50	0.20	0.00	11.20	2.00	0.00	4.40	0.20	0.00
11.40	2.00	0.00	4.30	0.20	0.00	11.60	2.00	0.00	4.20	0.20	0.00
11.80	2.00	0.00	4.10	0.20	0.00	12.00	2.00	0.00	4.00	0.20	0.00
12.20	2.00	0.00	3.90	0.20	0.00	12.40	2.00	0.00	3.80	0.20	0.00
12.60	2.00	0.00	3.70	0.20	0.00	12.80	2.00	0.00	3.60	0.20	0.00
13.00	2.00	0.00	3.50	0.20	0.00	13.20	2.00	0.00	3.40	0.20	0.00
13.40	2.00	0.00	3.30	0.20	0.00	13.60	2.00	0.00	3.20	0.20	0.00
13.80	0.32	0.68	3.10	0.20	0.42	14.00	2.00	0.00	3.00	0.20	0.00
14.20	0.89	0.11	2.90	0.20	0.06	14.40	0.31	0.69	2.80	0.20	0.39
14.60	0.35	0.65	2.70	0.20	0.35	14.80	1.90	0.00	2.60	0.20	0.00
15.00	0.31	0.69	2.50	0.20	0.34	15.20	2.00	0.00	2.40	0.20	0.00

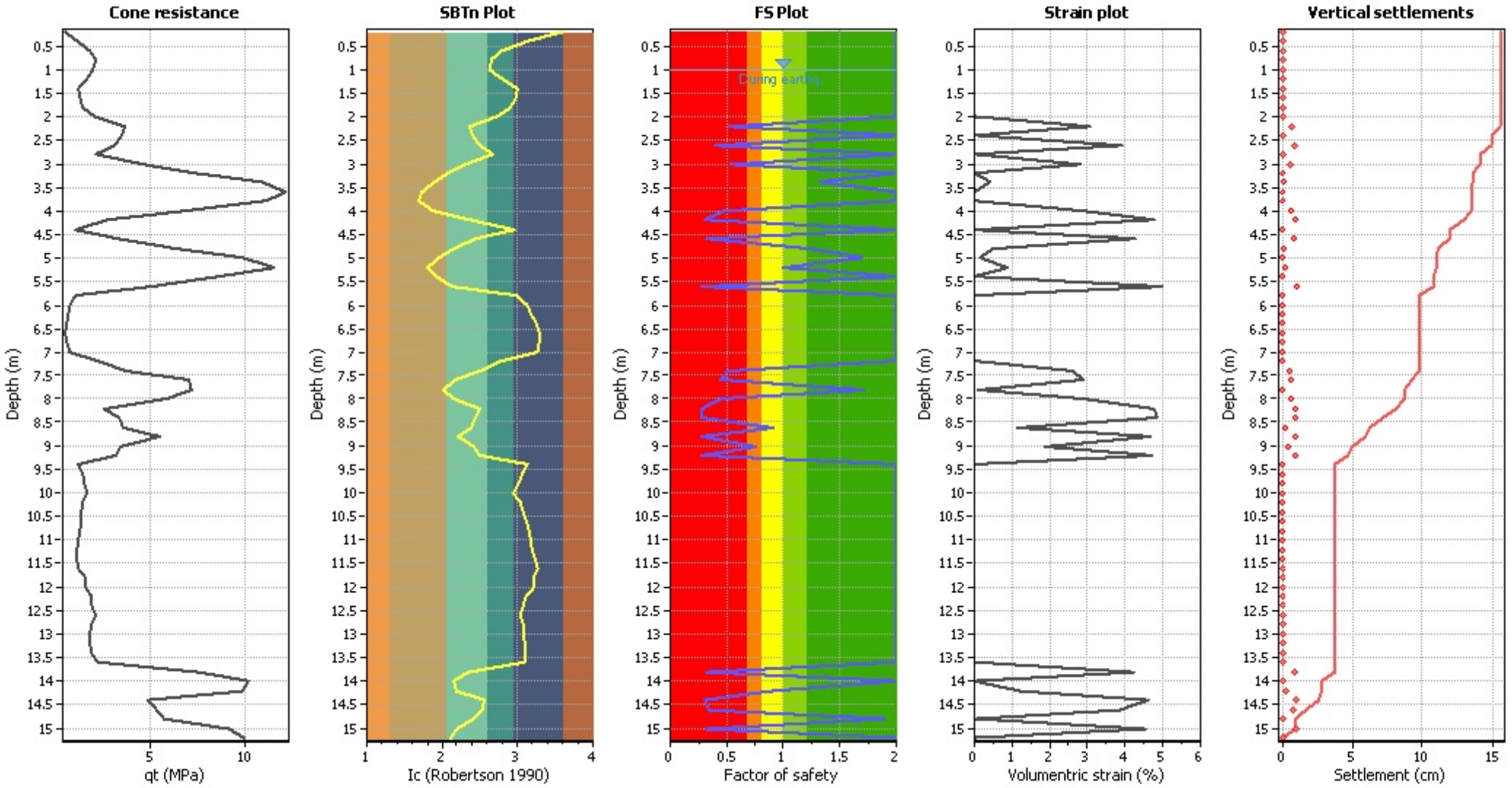
Overall liquefaction potential: 13.84

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (m)
LPI: Liquefaction potential index value for test point

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
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)
1.00	41.94	2.00	0.00	1.00	0.00	1.20	21.81	2.00	0.00	1.00	0.00
1.40	20.13	2.00	0.00	1.00	0.00	1.60	16.78	2.00	0.00	1.00	0.00
1.80	25.17	2.00	0.00	1.00	0.00	2.00	30.20	2.00	0.00	1.00	0.00
2.20	104.41	0.52	3.07	1.00	0.61	2.40	171.16	2.00	0.00	1.00	0.00
2.60	81.53	0.39	3.94	1.00	0.79	2.80	25.17	2.00	0.00	1.00	0.00
3.00	114.27	0.54	2.80	1.00	0.56	3.20	185.43	2.00	0.00	1.00	0.00
3.40	158.05	1.32	0.42	1.00	0.08	3.60	187.93	2.00	0.00	1.00	0.00
3.80	173.28	2.00	0.00	1.00	0.00	4.00	108.97	0.48	2.94	1.00	0.59
4.20	66.30	0.31	4.78	1.00	0.96	4.40	12.06	2.00	0.00	1.00	0.00
4.60	74.64	0.32	4.28	1.00	0.86	4.80	157.64	1.24	0.51	1.00	0.10
5.00	167.45	1.71	0.14	1.00	0.03	5.20	150.22	1.00	0.90	1.00	0.18
5.40	186.99	2.00	0.00	1.00	0.00	5.60	63.02	0.28	5.01	1.00	1.00
5.80	10.57	2.00	0.00	1.00	0.00	6.00	9.15	2.00	0.00	1.00	0.00
6.20	9.04	2.00	0.00	1.00	0.00	6.40	6.41	2.00	0.00	1.00	0.00
6.60	6.34	2.00	0.00	1.00	0.00	6.80	6.27	2.00	0.00	1.00	0.00
7.00	8.63	2.00	0.00	1.00	0.00	7.20	12.11	2.00	0.00	1.00	0.00
7.40	121.50	0.52	2.62	1.00	0.52	7.60	111.54	0.45	2.87	1.00	0.57
7.80	169.46	1.72	0.13	1.00	0.03	8.00	111.14	0.44	2.88	1.00	0.58
8.20	66.67	0.28	4.76	1.00	0.95	8.40	65.60	0.28	4.83	1.00	0.97
8.60	149.21	0.91	1.15	1.00	0.23	8.80	67.90	0.29	4.68	1.00	0.94
9.00	142.15	0.76	1.88	1.00	0.38	9.20	67.26	0.28	4.72	1.00	0.94
9.40	11.61	2.00	0.00	1.00	0.00	9.60	11.49	2.00	0.00	1.00	0.00
9.80	20.63	2.00	0.00	1.00	0.00	10.00	14.32	2.00	0.00	1.00	0.00
10.20	14.19	2.00	0.00	1.00	0.00	10.40	14.06	2.00	0.00	1.00	0.00
10.60	12.93	2.00	0.00	1.00	0.00	10.80	12.82	2.00	0.00	1.00	0.00
11.00	11.73	2.00	0.00	1.00	0.00	11.20	10.65	2.00	0.00	1.00	0.00
11.40	10.56	2.00	0.00	1.00	0.00	11.60	11.42	2.00	0.00	1.00	0.00
11.80	12.26	2.00	0.00	1.00	0.00	12.00	19.68	2.00	0.00	1.00	0.00
12.20	11.11	2.00	0.00	1.00	0.00	12.40	22.13	2.00	0.00	1.00	0.00
12.60	17.33	2.00	0.00	1.00	0.00	12.80	17.19	2.00	0.00	1.00	0.00
13.00	15.24	2.00	0.00	1.00	0.00	13.20	16.02	2.00	0.00	1.00	0.00
13.40	15.89	2.00	0.00	1.00	0.00	13.60	16.64	2.00	0.00	1.00	0.00
13.80	75.65	0.32	4.23	1.00	0.85	14.00	243.30	2.00	0.00	1.00	0.00
14.20	147.50	0.89	1.21	1.00	0.24	14.40	68.61	0.31	4.63	1.00	0.93
14.60	83.82	0.35	3.83	1.00	0.77	14.80	171.94	1.90	0.04	1.00	0.01
15.00	70.45	0.31	4.52	1.00	0.90	15.20	180.58	2.00	0.00	1.00	0.00

Total estimated settlement: 15.55

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

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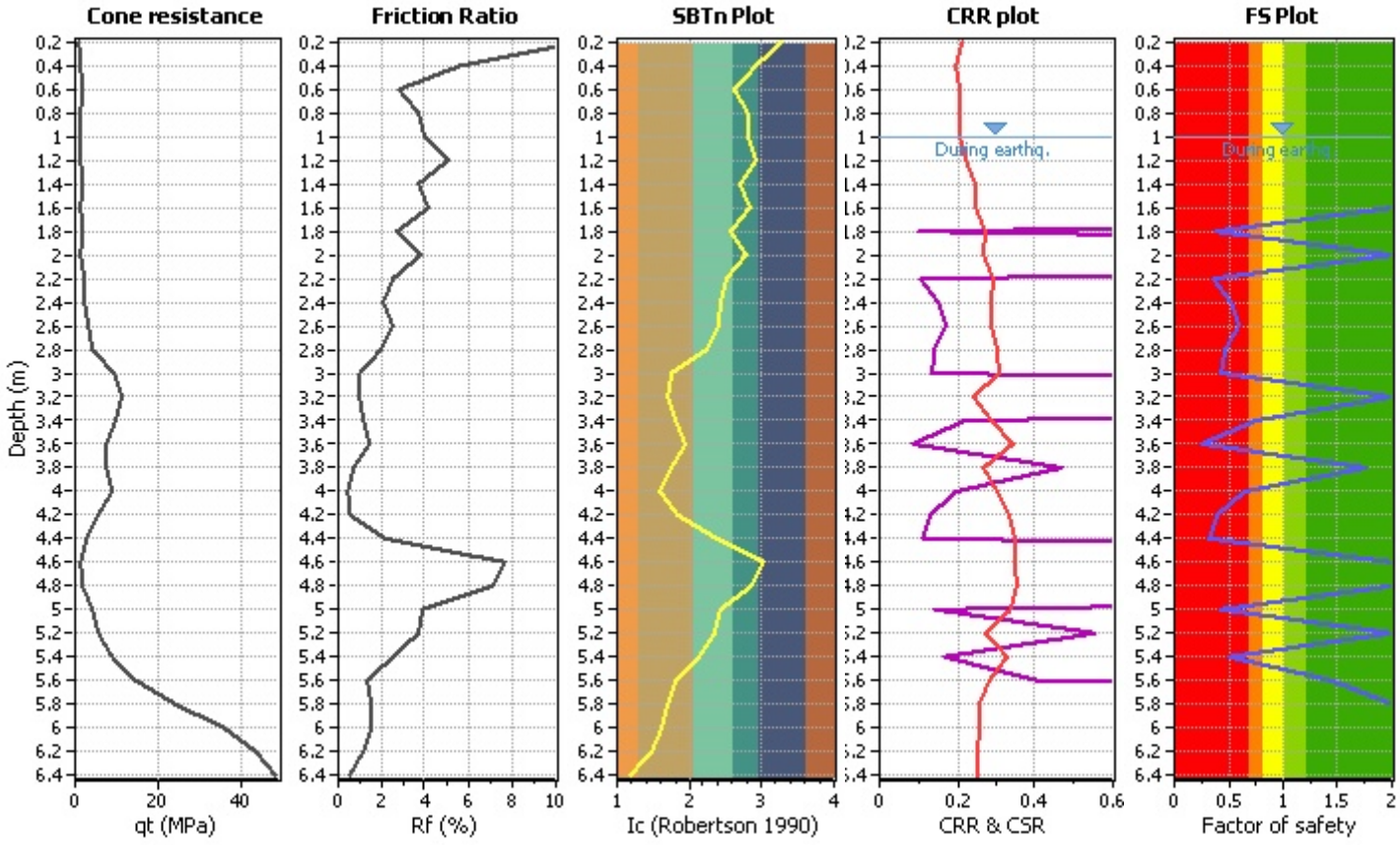
LIQUEFACTION ANALYSIS REPORT

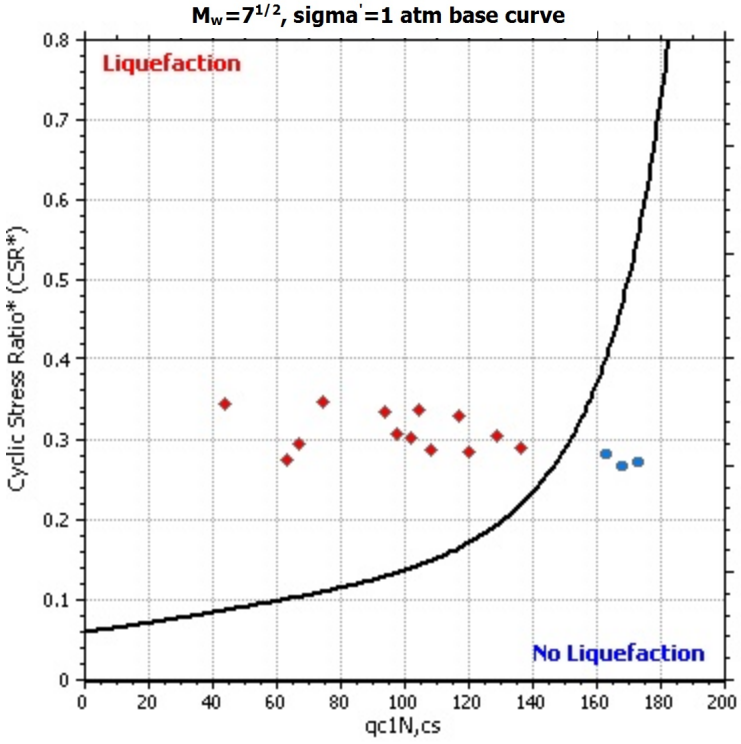
Project title : **Location :**

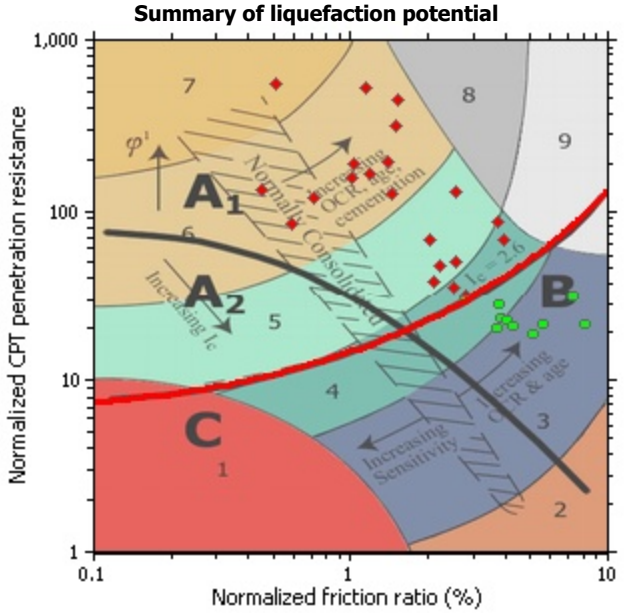
CPT file : P15

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method
Peak ground acceleration:	0.37	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

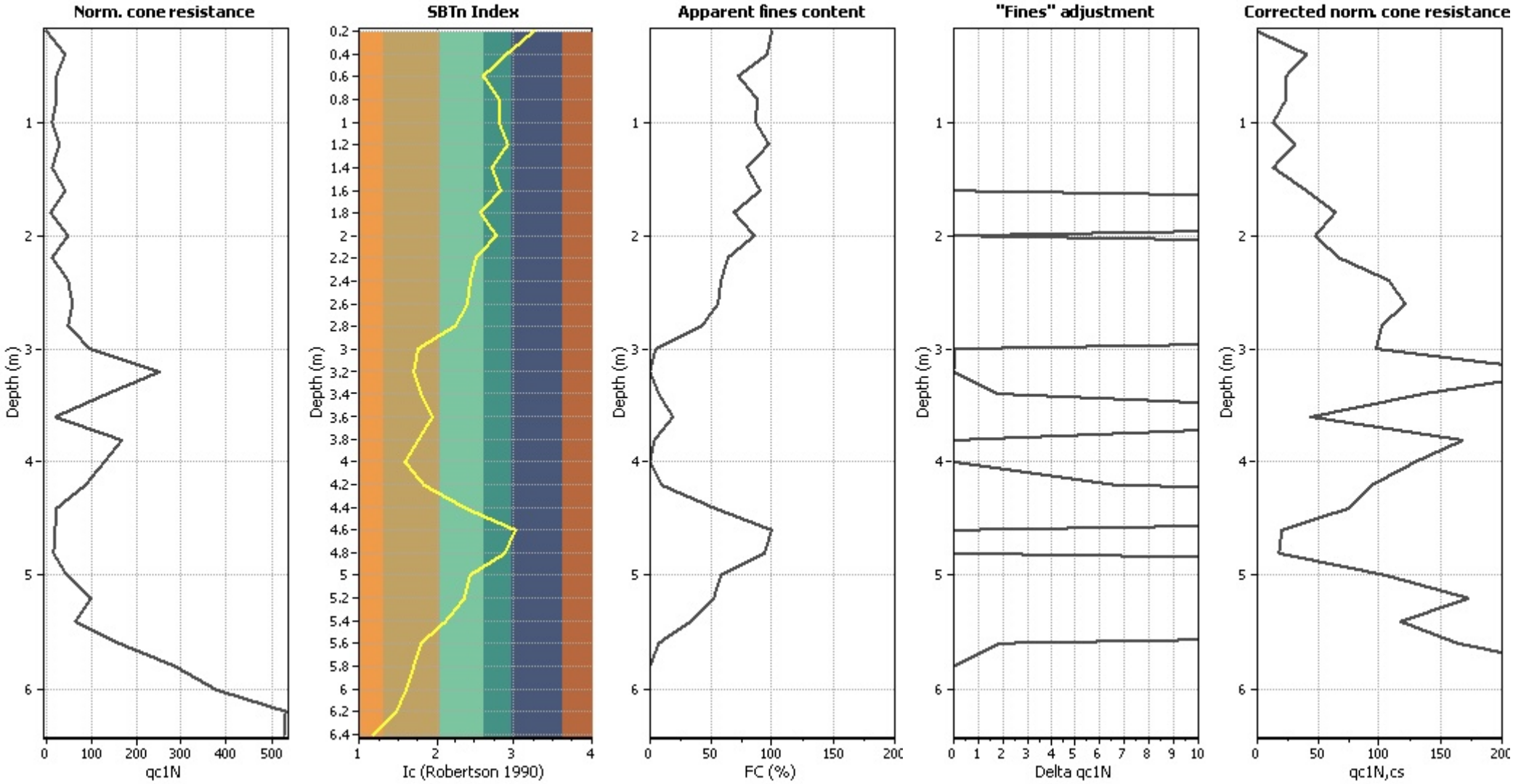






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

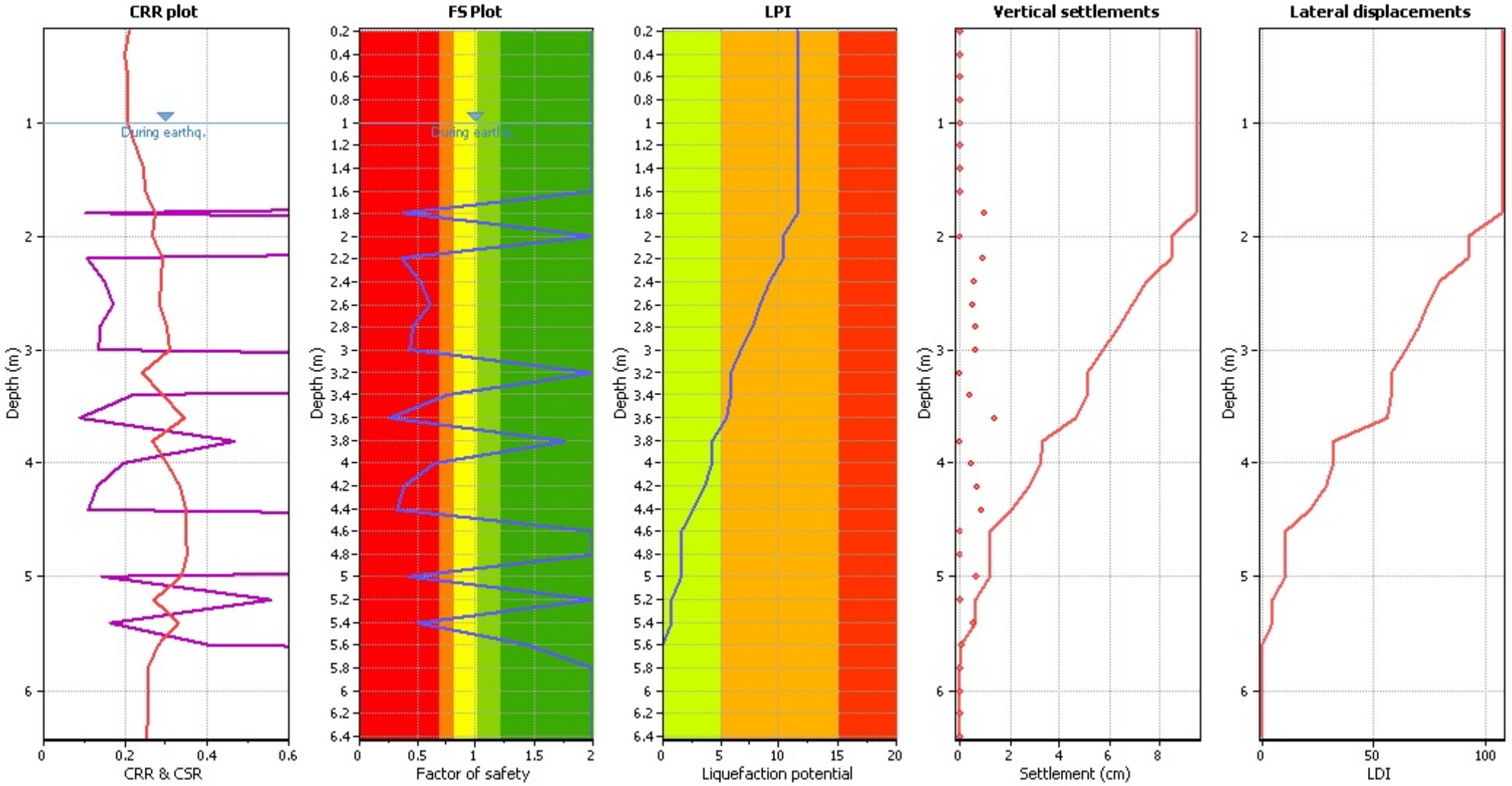
Liquefaction analysis overall plots (intermediate resu



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 m

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 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

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Liquefaction Potential Index calculation data ::

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
0.20	2.00	0.00	9.90	0.20	0.00	0.40	2.00	0.00	9.80	0.20	0.00
0.60	2.00	0.00	9.70	0.20	0.00	0.80	2.00	0.00	9.60	0.20	0.00
1.00	2.00	0.00	9.50	0.20	0.00	1.20	2.00	0.00	9.40	0.20	0.00
1.40	2.00	0.00	9.30	0.20	0.00	1.60	2.00	0.00	9.20	0.20	0.00
1.80	0.37	0.63	9.10	0.20	1.14	2.00	2.00	0.00	9.00	0.20	0.00
2.20	0.36	0.64	8.90	0.20	1.14	2.40	0.52	0.48	8.80	0.20	0.84
2.60	0.60	0.40	8.70	0.20	0.69	2.80	0.46	0.54	8.60	0.20	0.92
3.00	0.44	0.56	8.50	0.20	0.96	3.20	2.00	0.00	8.40	0.20	0.00
3.40	0.76	0.24	8.30	0.20	0.40	3.60	0.26	0.74	8.20	0.20	1.22
3.80	1.76	0.00	8.10	0.20	0.00	4.00	0.64	0.36	8.00	0.20	0.57
4.20	0.39	0.61	7.90	0.20	0.96	4.40	0.32	0.68	7.80	0.20	1.06
4.60	2.00	0.00	7.70	0.20	0.00	4.80	2.00	0.00	7.60	0.20	0.00
5.00	0.43	0.57	7.50	0.20	0.86	5.20	2.00	0.00	7.40	0.20	0.00
5.40	0.50	0.50	7.30	0.20	0.73	5.60	1.44	0.00	7.20	0.20	0.00
5.80	2.00	0.00	7.10	0.20	0.00	6.00	2.00	0.00	7.00	0.20	0.00
6.20	2.00	0.00	6.90	0.20	0.00	6.40	2.00	0.00	6.80	0.20	0.00

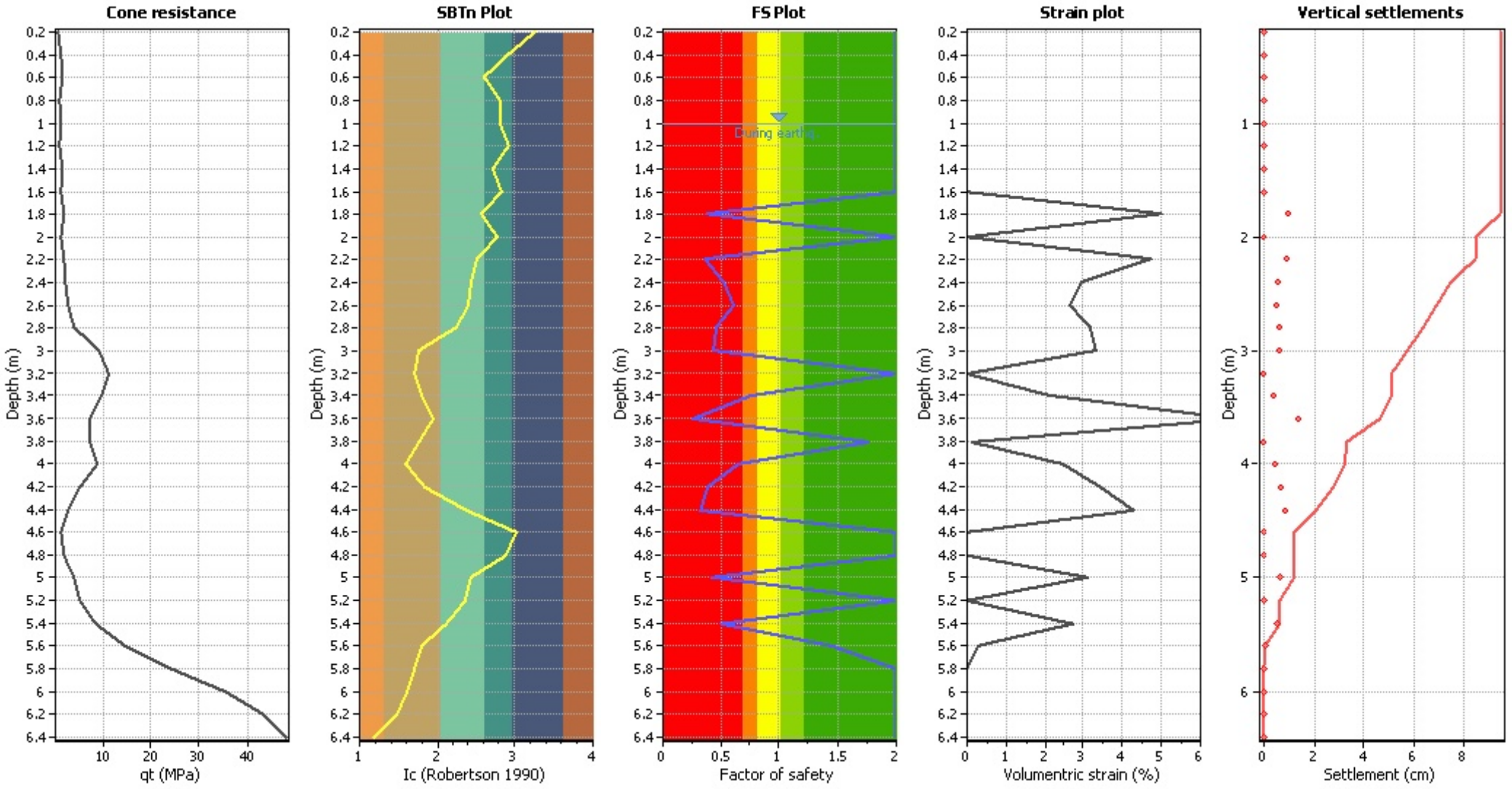
Overall liquefaction potential: 11.51

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (m)
LPI: Liquefaction potential index value for test point

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
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)
1.00	13.42	2.00	0.00	1.00	0.00	1.20	30.20	2.00	0.00	1.00	0.00
1.40	13.42	2.00	0.00	1.00	0.00	1.60	40.27	2.00	0.00	1.00	0.00
1.80	63.39	0.37	4.98	1.00	1.00	2.00	46.98	2.00	0.00	1.00	0.00
2.20	66.80	0.36	4.75	1.00	0.95	2.40	108.18	0.52	2.96	1.00	0.59
2.60	120.20	0.60	2.65	1.00	0.53	2.80	101.69	0.46	3.16	1.00	0.63
3.00	97.37	0.44	3.30	1.00	0.66	3.20	250.24	2.00	0.00	1.00	0.00
3.40	136.48	0.76	2.13	1.00	0.43	3.60	43.58	0.26	6.88	1.00	1.38
3.80	167.87	1.76	0.11	1.00	0.02	4.00	129.06	0.64	2.45	1.00	0.49
4.20	93.57	0.39	3.44	1.00	0.69	4.40	74.31	0.32	4.30	1.00	0.86
4.60	20.69	2.00	0.00	1.00	0.00	4.80	17.53	2.00	0.00	1.00	0.00
5.00	104.32	0.43	3.08	1.00	0.62	5.20	172.92	2.00	0.00	1.00	0.00
5.40	116.58	0.50	2.74	1.00	0.55	5.60	163.07	1.44	0.31	1.00	0.06
5.80	254.00	2.00	0.00	1.00	0.00	6.00	254.00	2.00	0.00	1.00	0.00
6.20	254.00	2.00	0.00	1.00	0.00	6.40	254.00	2.00	0.00	1.00	0.00

Total estimated settlement: 9.45

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

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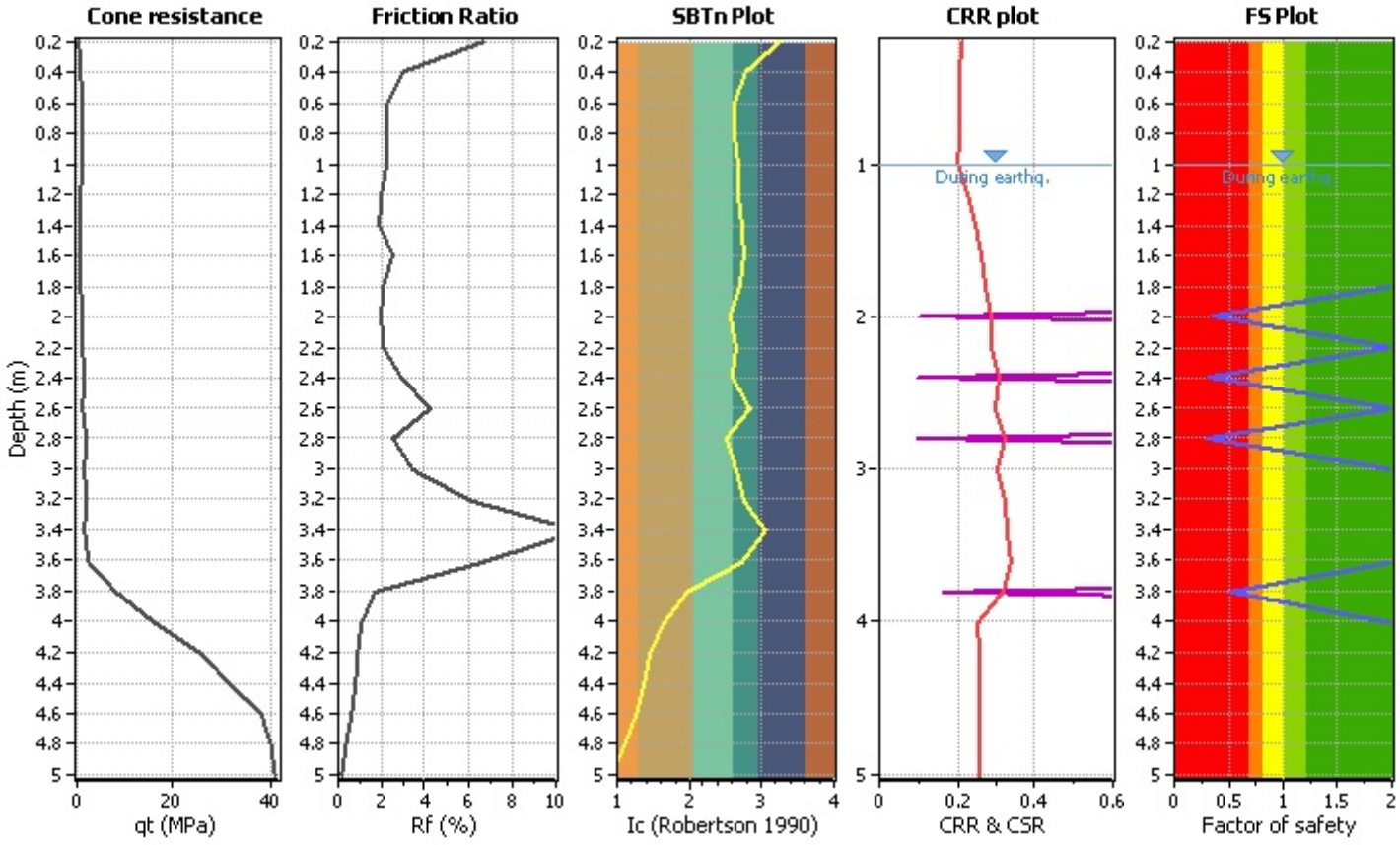
LIQUEFACTION ANALYSIS REPORT

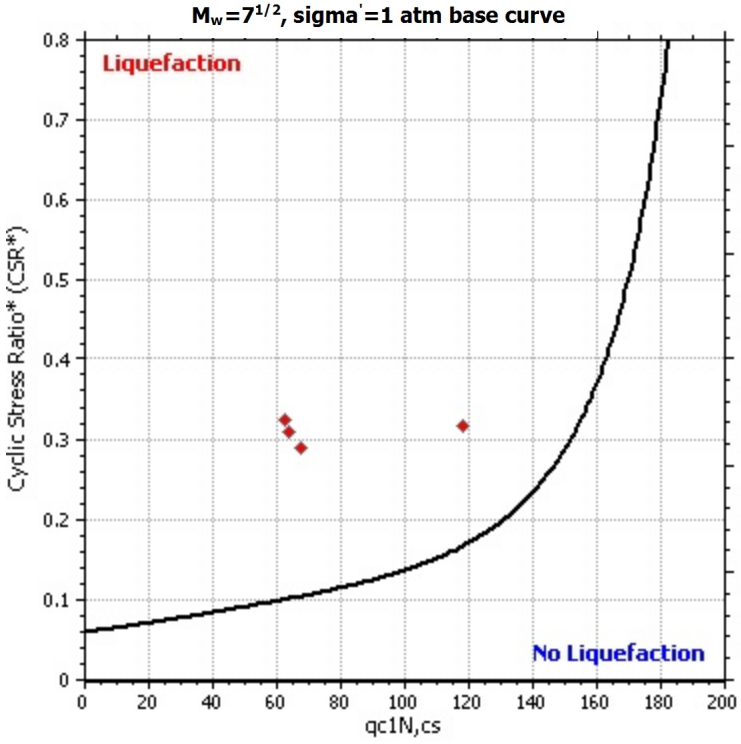
Project title : **Location :**

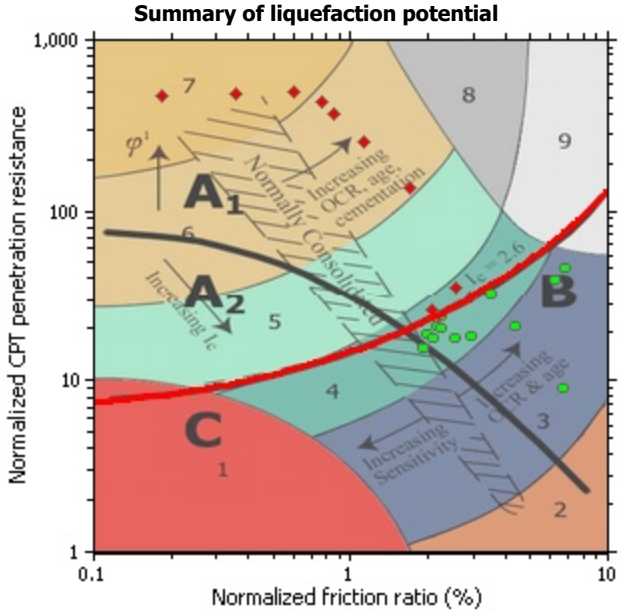
CPT file : P16

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method
Peak ground acceleration:	0.37	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

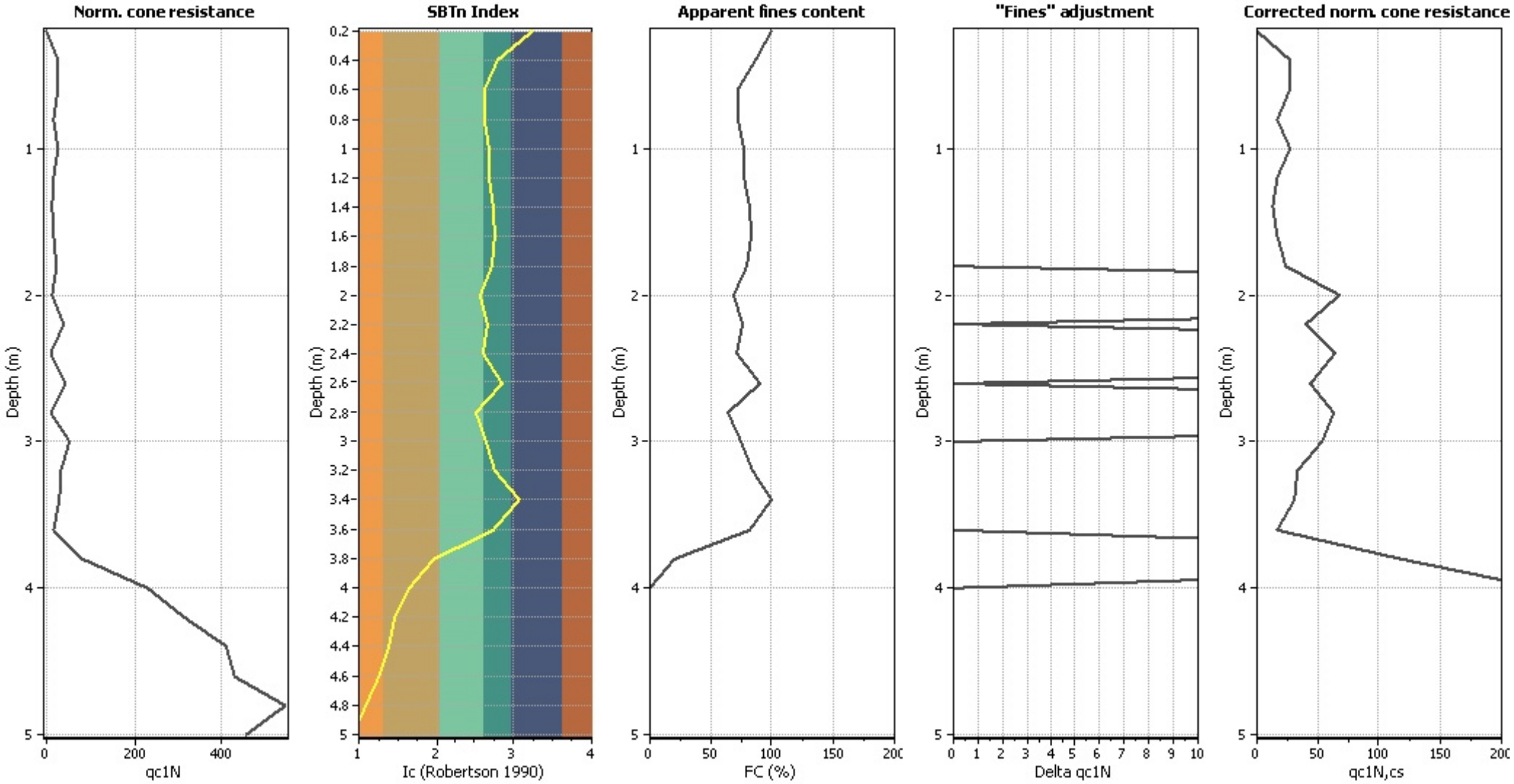






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

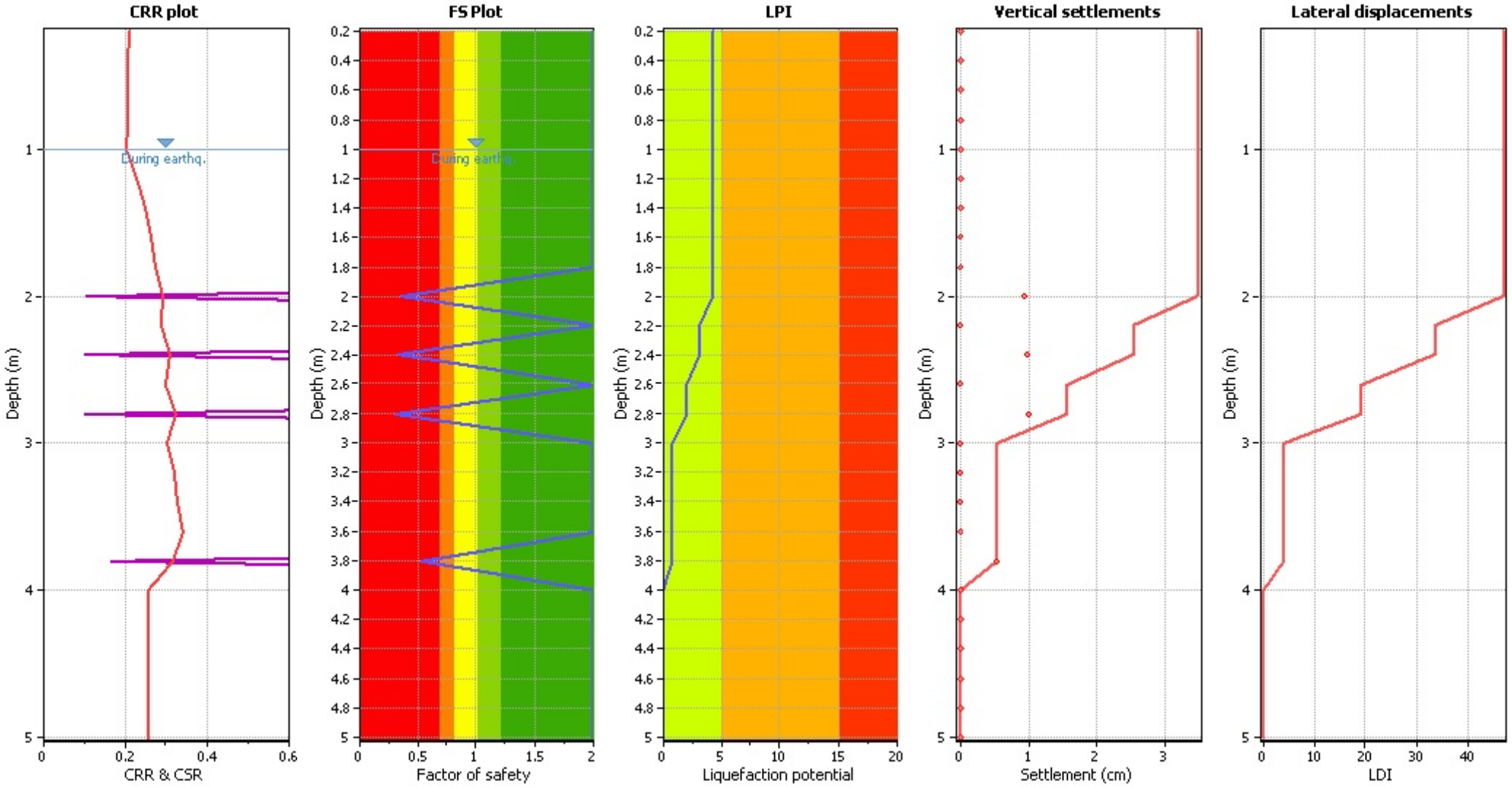
Liquefaction analysis overall plots (intermediate resu



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 m

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 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

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Liquefaction Potential Index calculation data ::

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
0.20	2.00	0.00	9.90	0.20	0.00	0.40	2.00	0.00	9.80	0.20	0.00
0.60	2.00	0.00	9.70	0.20	0.00	0.80	2.00	0.00	9.60	0.20	0.00
1.00	2.00	0.00	9.50	0.20	0.00	1.20	2.00	0.00	9.40	0.20	0.00
1.40	2.00	0.00	9.30	0.20	0.00	1.60	2.00	0.00	9.20	0.20	0.00
1.80	2.00	0.00	9.10	0.20	0.00	2.00	0.36	0.64	9.00	0.20	1.14
2.20	2.00	0.00	8.90	0.20	0.00	2.40	0.33	0.67	8.80	0.20	1.18
2.60	2.00	0.00	8.70	0.20	0.00	2.80	0.31	0.69	8.60	0.20	1.18
3.00	2.00	0.00	8.50	0.20	0.00	3.20	2.00	0.00	8.40	0.20	0.00
3.40	2.00	0.00	8.30	0.20	0.00	3.60	2.00	0.00	8.20	0.20	0.00
3.80	0.53	0.47	8.10	0.20	0.76	4.00	2.00	0.00	8.00	0.20	0.00
4.20	2.00	0.00	7.90	0.20	0.00	4.40	2.00	0.00	7.80	0.20	0.00
4.60	2.00	0.00	7.70	0.20	0.00	4.80	2.00	0.00	7.60	0.20	0.00
5.00	2.00	0.00	7.50	0.20	0.00						

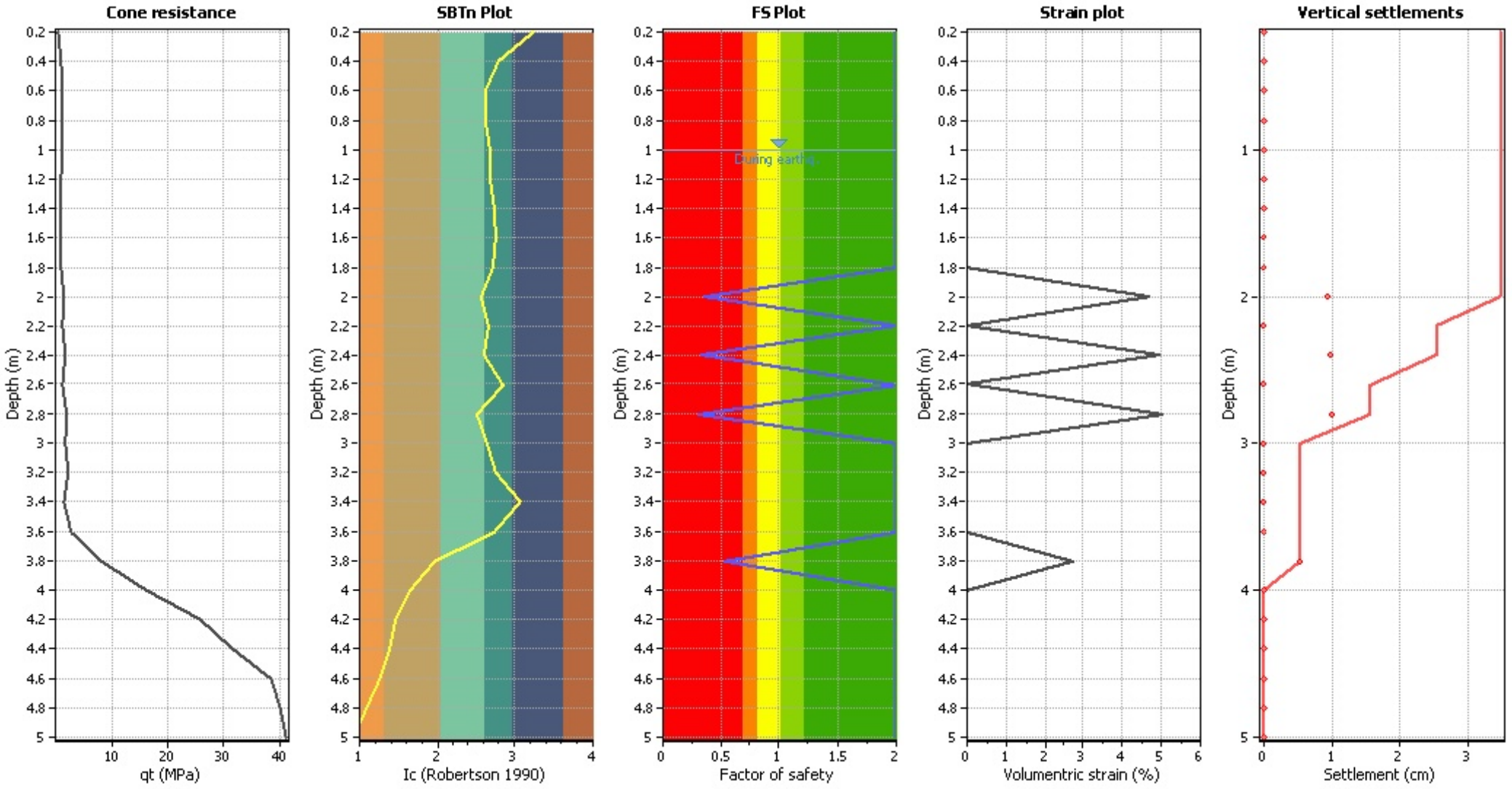
Overall liquefaction potential: 4.27

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (m)
LPI: Liquefaction potential index value for test point

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
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)
1.00	26.84	2.00	0.00	1.00	0.00	1.20	16.78	2.00	0.00	1.00	0.00
1.40	13.42	2.00	0.00	1.00	0.00	1.60	16.78	2.00	0.00	1.00	0.00
1.80	23.49	2.00	0.00	1.00	0.00	2.00	67.71	0.36	4.69	1.00	0.94
2.20	40.27	2.00	0.00	1.00	0.00	2.40	63.75	0.33	4.96	1.00	0.99
2.60	43.62	2.00	0.00	1.00	0.00	2.80	62.55	0.31	5.04	1.00	1.01
3.00	53.64	2.00	0.00	1.00	0.00	3.20	33.56	2.00	0.00	1.00	0.00
3.40	30.20	2.00	0.00	1.00	0.00	3.60	16.78	2.00	0.00	1.00	0.00
3.80	117.90	0.53	2.71	1.00	0.54	4.00	232.43	2.00	0.00	1.00	0.00
4.20	254.00	2.00	0.00	1.00	0.00	4.40	254.00	2.00	0.00	1.00	0.00
4.60	254.00	2.00	0.00	1.00	0.00	4.80	254.00	2.00	0.00	1.00	0.00
5.00	254.00	2.00	0.00	1.00	0.00						

Total estimated settlement: 3.48

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

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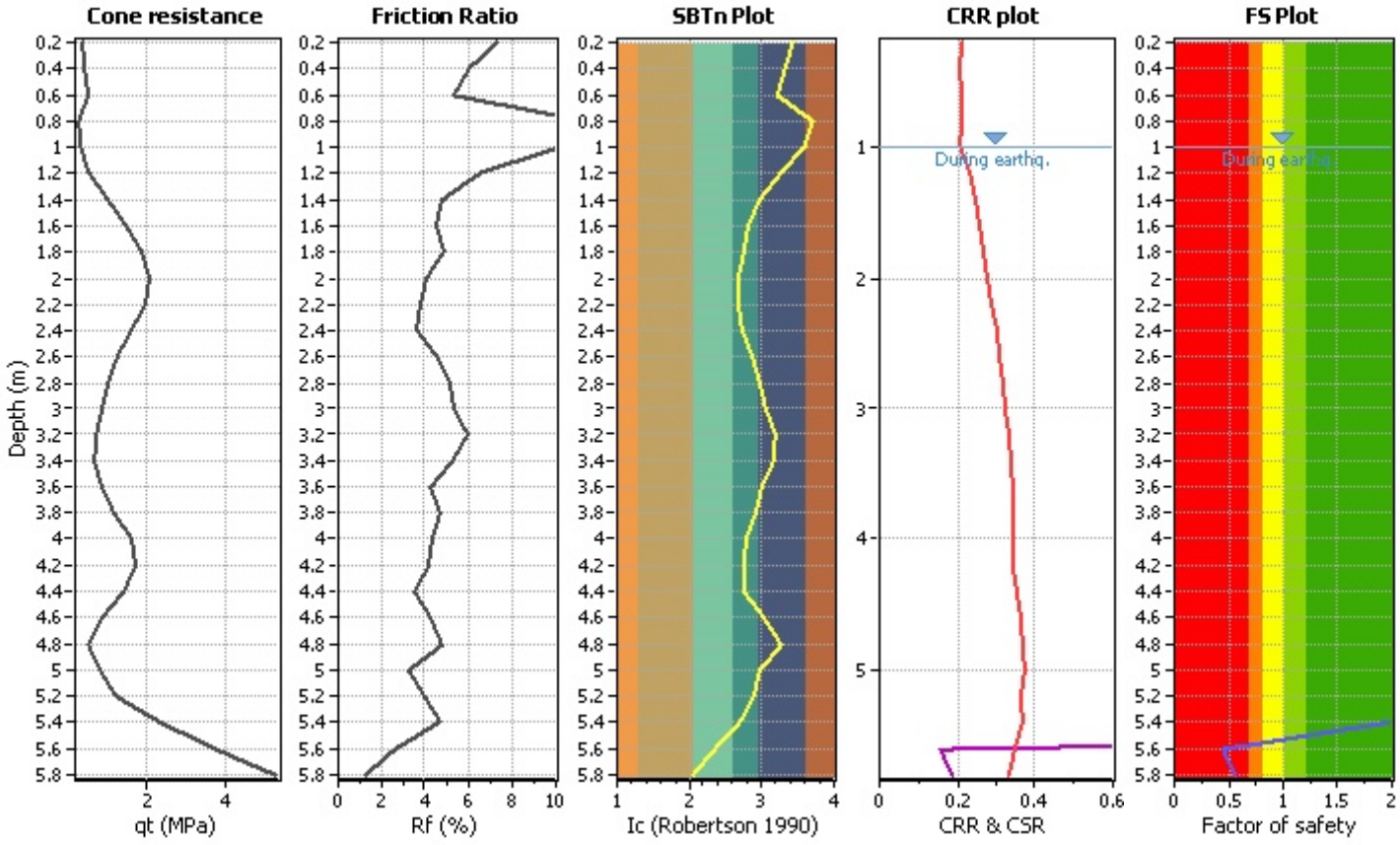
LIQUEFACTION ANALYSIS REPORT

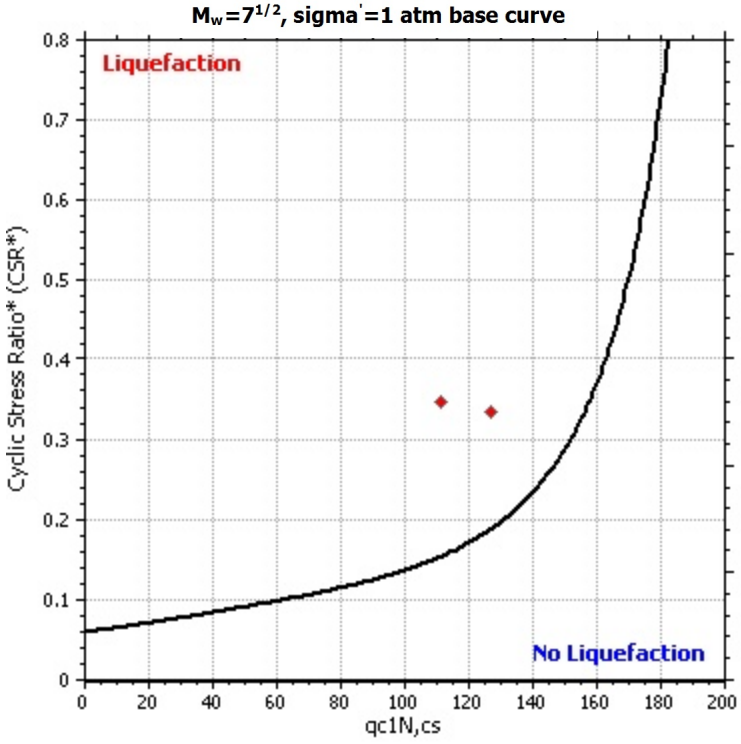
Project title : **Location :**

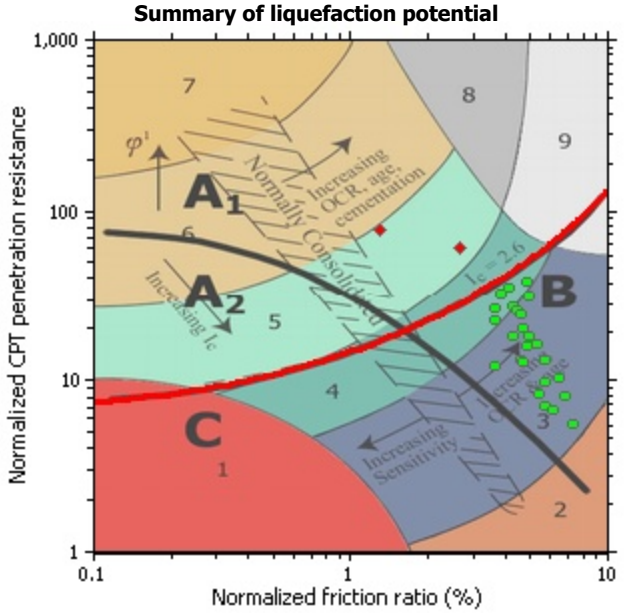
CPT file : P17

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method
Peak ground acceleration:	0.37	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

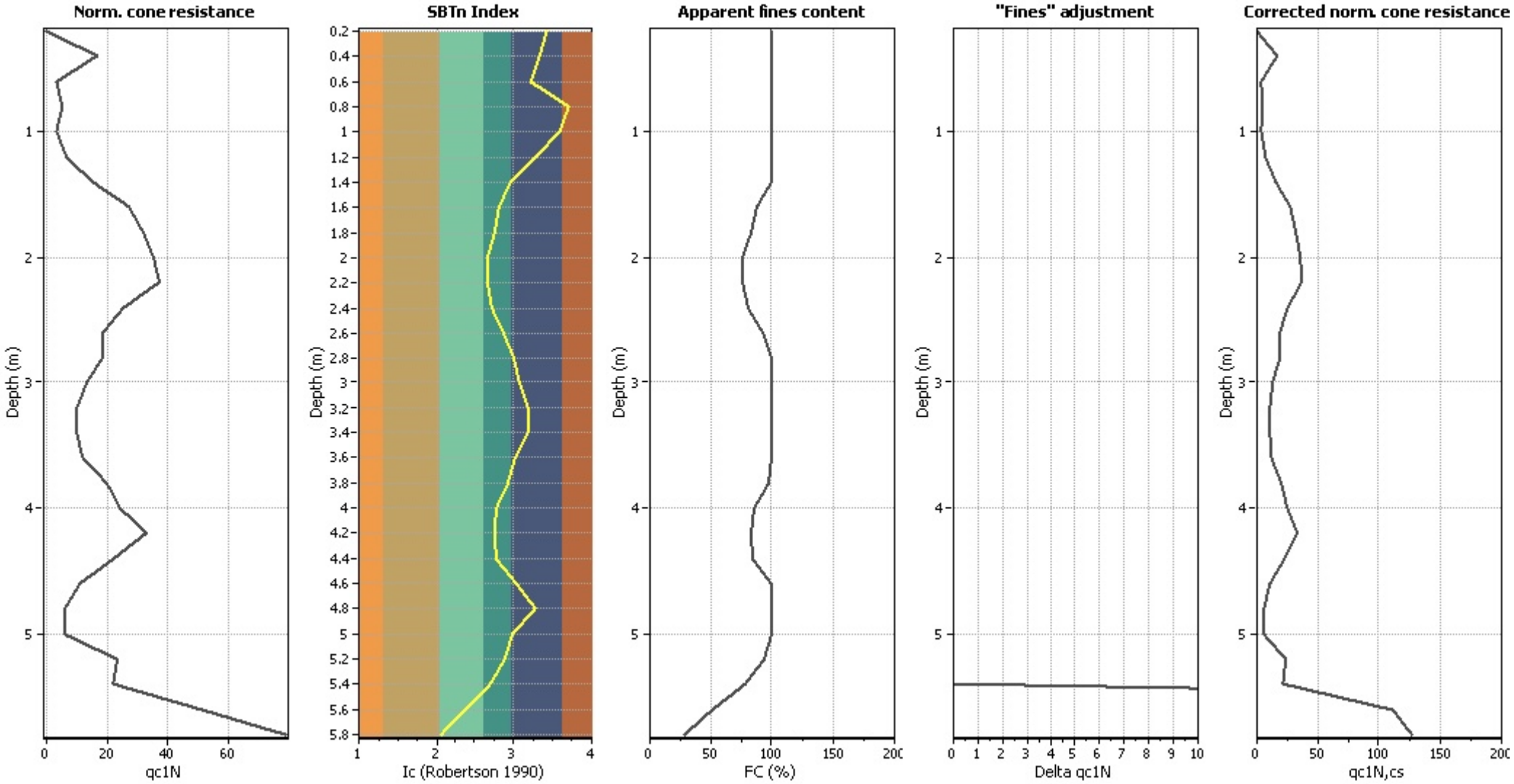






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

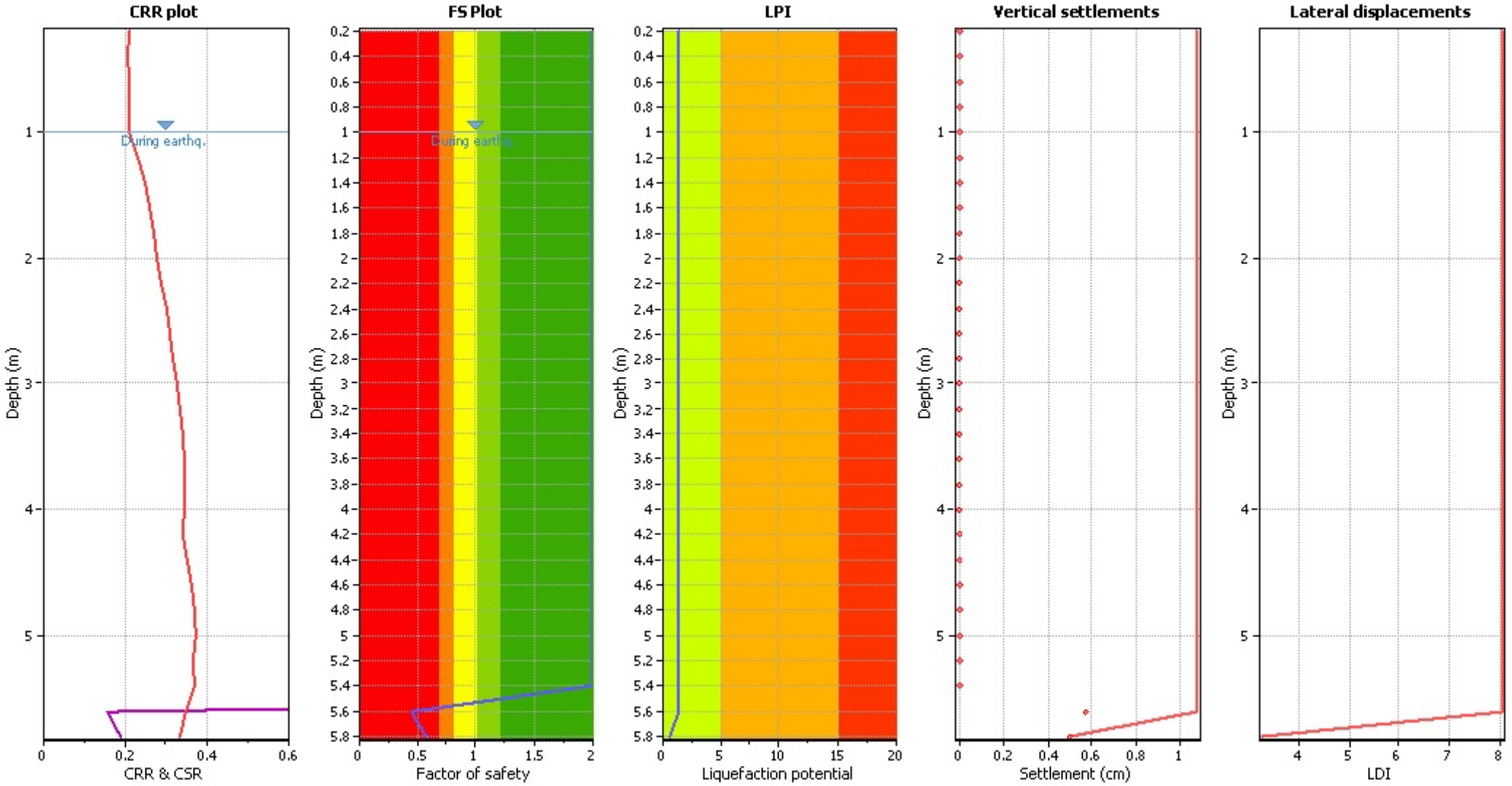
Liquefaction analysis overall plots (intermediate resu



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 m

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 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

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Liquefaction Potential Index calculation data ::

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
0.20	2.00	0.00	9.90	0.20	0.00	0.40	2.00	0.00	9.80	0.20	0.00
0.60	2.00	0.00	9.70	0.20	0.00	0.80	2.00	0.00	9.60	0.20	0.00
1.00	2.00	0.00	9.50	0.20	0.00	1.20	2.00	0.00	9.40	0.20	0.00
1.40	2.00	0.00	9.30	0.20	0.00	1.60	2.00	0.00	9.20	0.20	0.00
1.80	2.00	0.00	9.10	0.20	0.00	2.00	2.00	0.00	9.00	0.20	0.00
2.20	2.00	0.00	8.90	0.20	0.00	2.40	2.00	0.00	8.80	0.20	0.00
2.60	2.00	0.00	8.70	0.20	0.00	2.80	2.00	0.00	8.60	0.20	0.00
3.00	2.00	0.00	8.50	0.20	0.00	3.20	2.00	0.00	8.40	0.20	0.00
3.40	2.00	0.00	8.30	0.20	0.00	3.60	2.00	0.00	8.20	0.20	0.00
3.80	2.00	0.00	8.10	0.20	0.00	4.00	2.00	0.00	8.00	0.20	0.00
4.20	2.00	0.00	7.90	0.20	0.00	4.40	2.00	0.00	7.80	0.20	0.00
4.60	2.00	0.00	7.70	0.20	0.00	4.80	2.00	0.00	7.60	0.20	0.00
5.00	2.00	0.00	7.50	0.20	0.00	5.20	2.00	0.00	7.40	0.20	0.00
5.40	2.00	0.00	7.30	0.20	0.00	5.60	0.45	0.55	7.20	0.20	0.80
5.80	0.57	0.43	7.10	0.20	0.62						

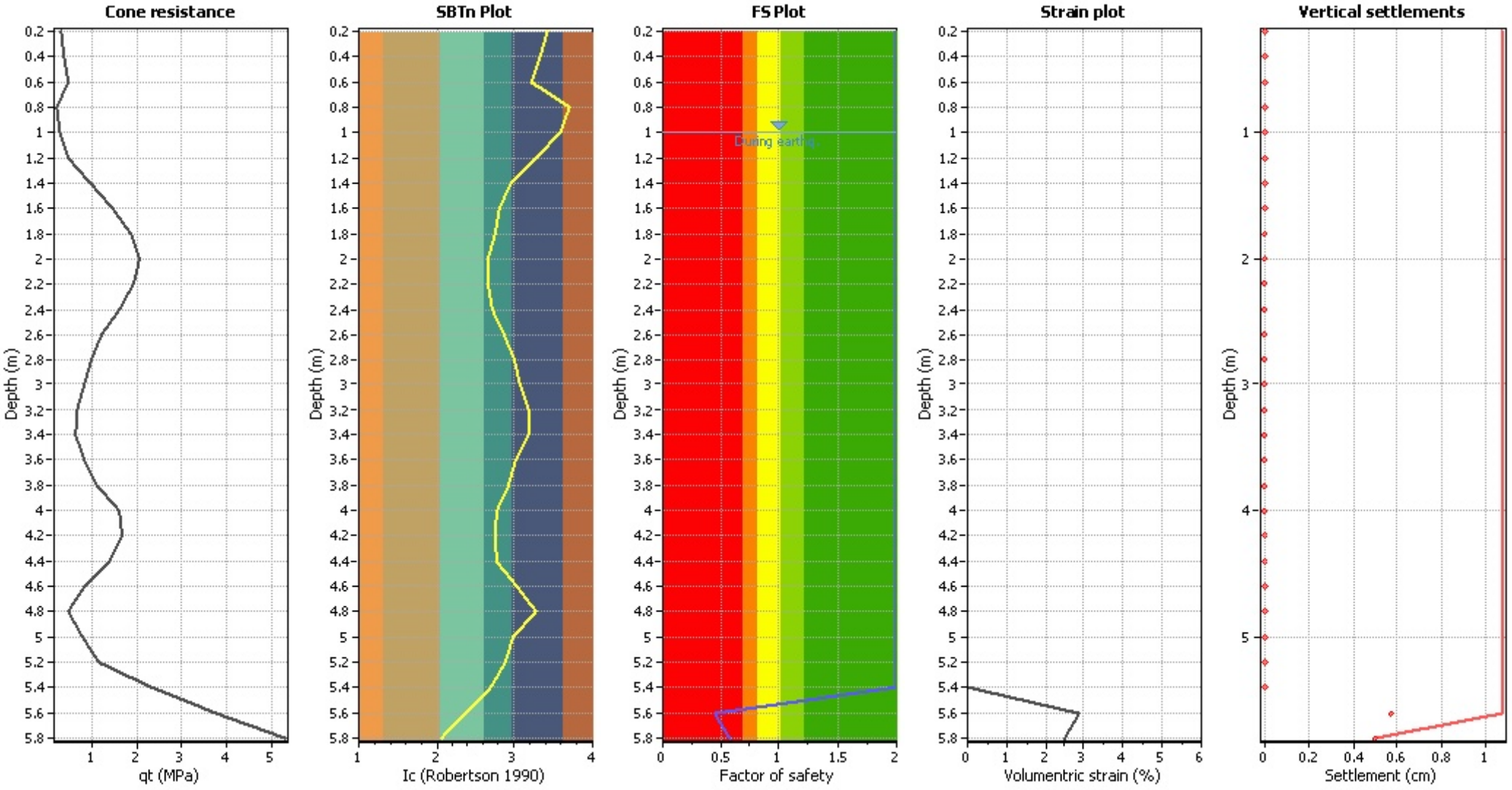
Overall liquefaction potential: 1.41

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (m)
LPI: Liquefaction potential index value for test point

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
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)
1.00	3.36	2.00	0.00	1.00	0.00	1.20	6.71	2.00	0.00	1.00	0.00
1.40	15.10	2.00	0.00	1.00	0.00	1.60	26.84	2.00	0.00	1.00	0.00
1.80	31.88	2.00	0.00	1.00	0.00	2.00	35.23	2.00	0.00	1.00	0.00
2.20	36.91	2.00	0.00	1.00	0.00	2.40	25.17	2.00	0.00	1.00	0.00
2.60	18.46	2.00	0.00	1.00	0.00	2.80	18.46	2.00	0.00	1.00	0.00
3.00	13.42	2.00	0.00	1.00	0.00	3.20	10.07	2.00	0.00	1.00	0.00
3.40	10.07	2.00	0.00	1.00	0.00	3.60	11.74	2.00	0.00	1.00	0.00
3.80	20.13	2.00	0.00	1.00	0.00	4.00	24.42	2.00	0.00	1.00	0.00
4.20	32.71	2.00	0.00	1.00	0.00	4.40	22.02	2.00	0.00	1.00	0.00
4.60	11.13	2.00	0.00	1.00	0.00	4.80	6.35	2.00	0.00	1.00	0.00
5.00	6.24	2.00	0.00	1.00	0.00	5.20	23.41	2.00	0.00	1.00	0.00
5.40	21.69	2.00	0.00	1.00	0.00	5.60	111.56	0.45	2.87	1.00	0.57
5.80	127.06	0.57	2.50	1.00	0.50						

Total estimated settlement: 1.07

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

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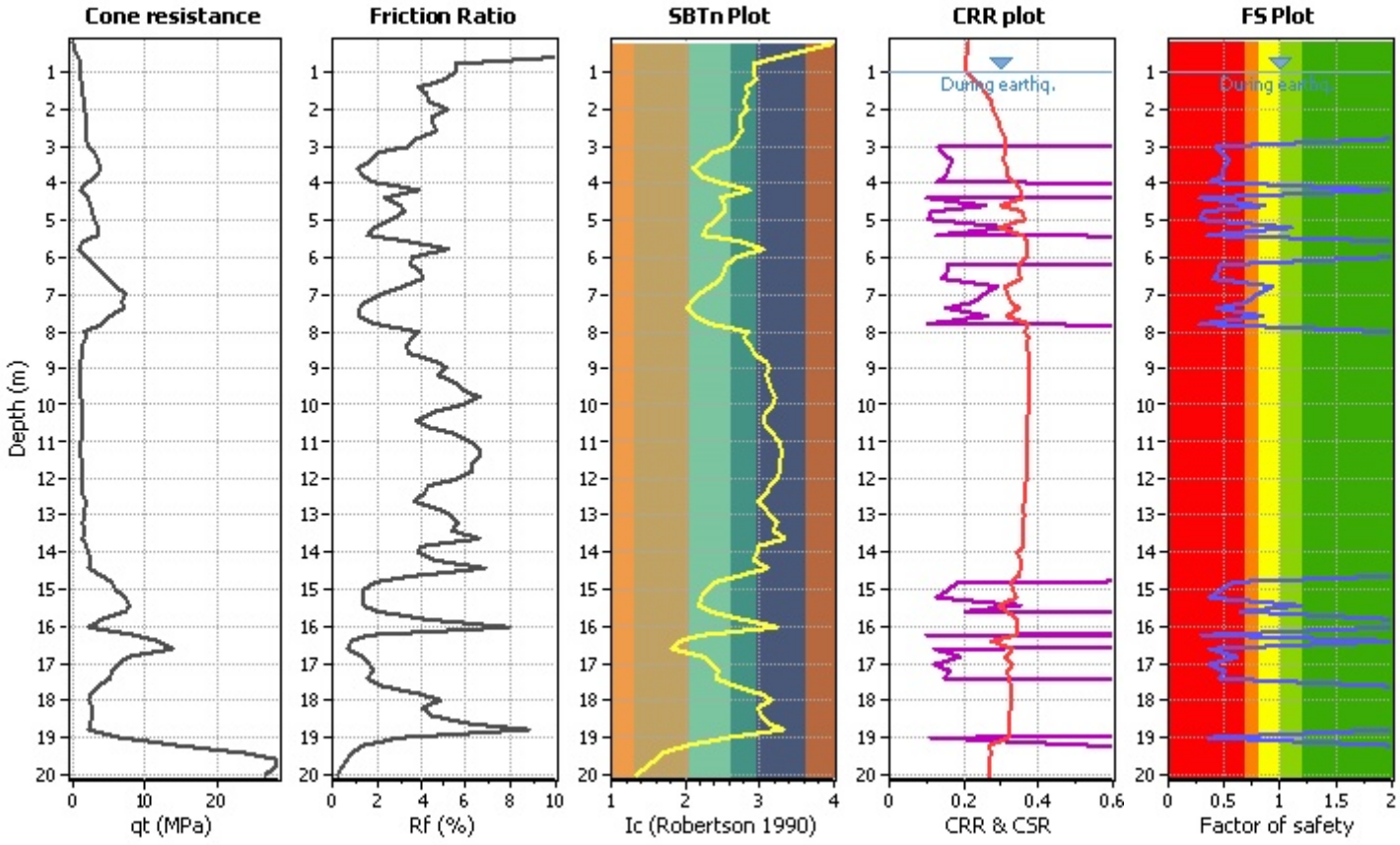
LIQUEFACTION ANALYSIS REPORT

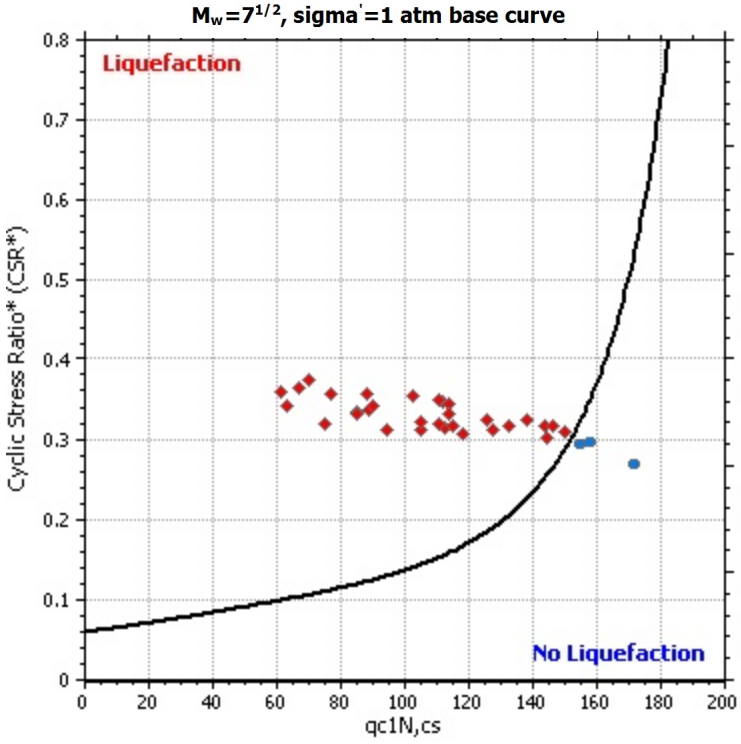
Project title : **Location :**

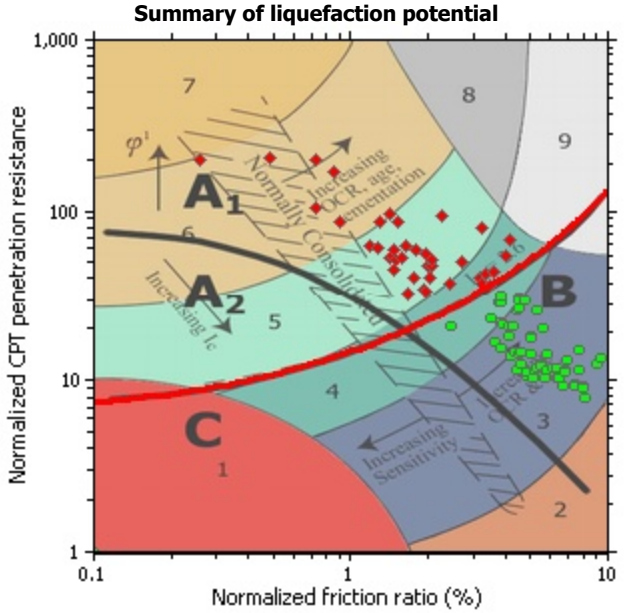
CPT file : P18

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method
Peak ground acceleration:	0.37	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

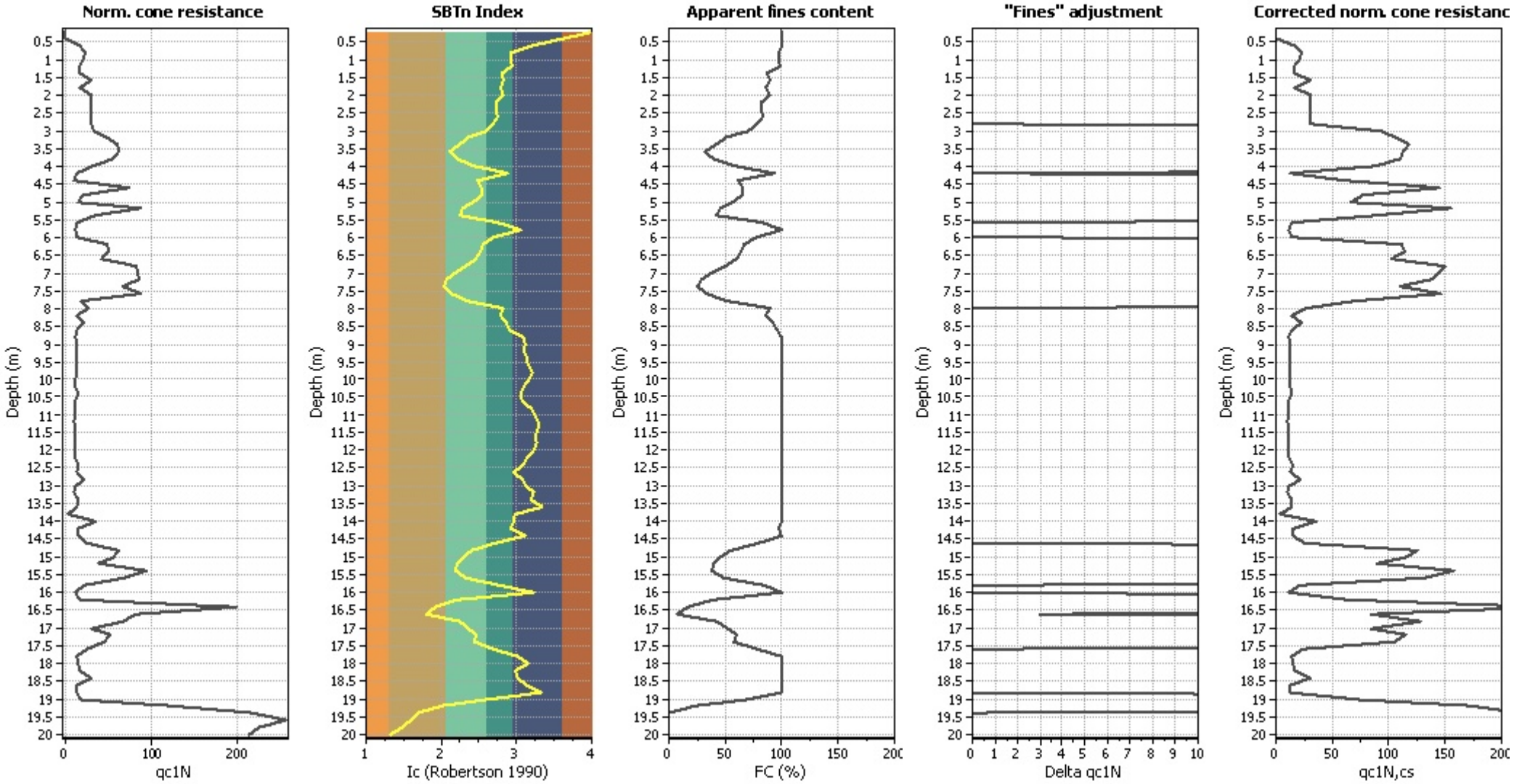






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

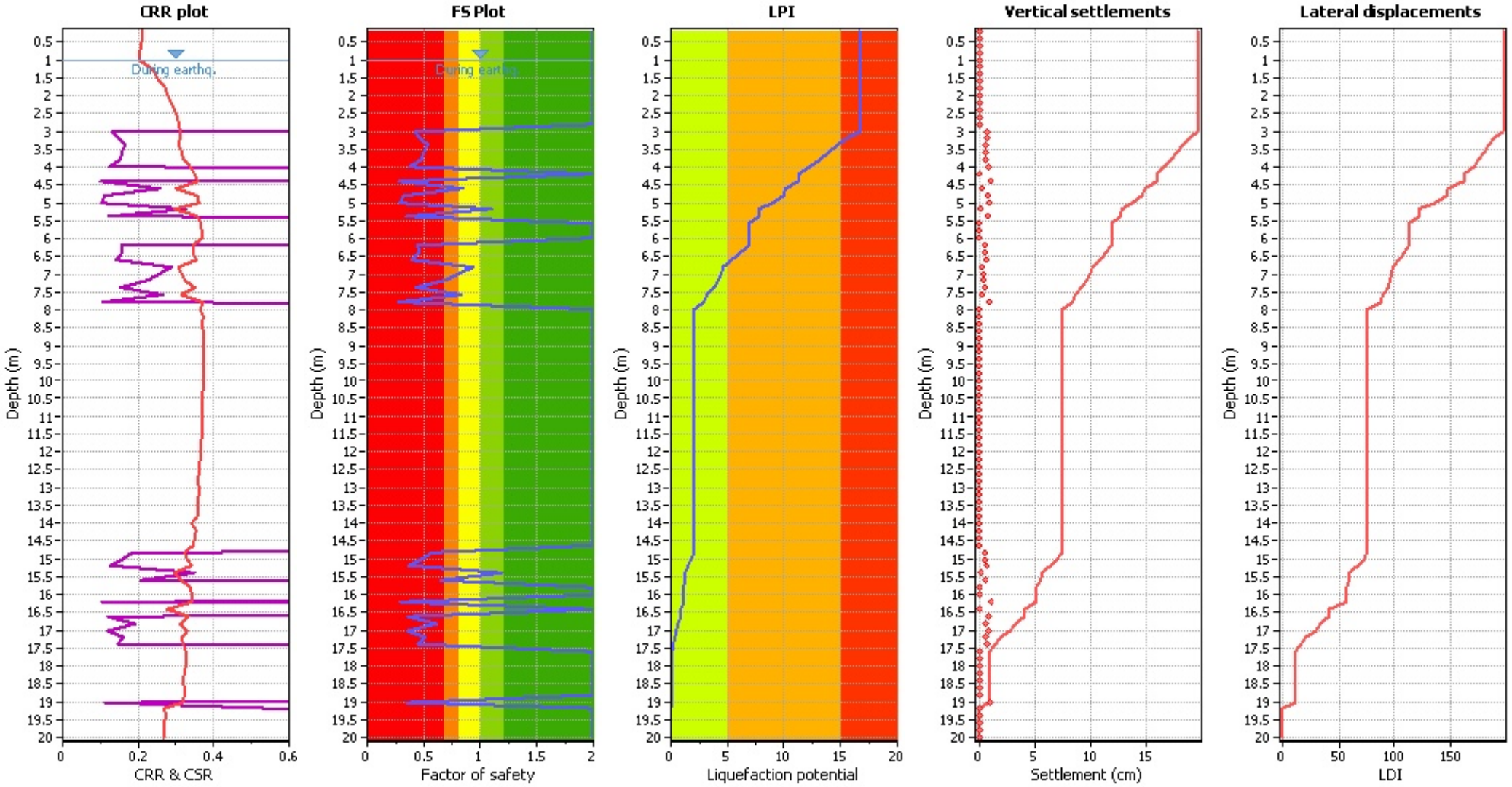
Liquefaction analysis overall plots (intermediate resu



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 m

Liquefaction analysis overall plot



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.37	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	20.00 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

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Liquefaction Potential Index calculation data ::

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
0.20	2.00	0.00	9.90	0.20	0.00	0.40	2.00	0.00	9.80	0.20	0.00
0.60	2.00	0.00	9.70	0.20	0.00	0.80	2.00	0.00	9.60	0.20	0.00
1.00	2.00	0.00	9.50	0.20	0.00	1.20	2.00	0.00	9.40	0.20	0.00
1.40	2.00	0.00	9.30	0.20	0.00	1.60	2.00	0.00	9.20	0.20	0.00
1.80	2.00	0.00	9.10	0.20	0.00	2.00	2.00	0.00	9.00	0.20	0.00
2.20	2.00	0.00	8.90	0.20	0.00	2.40	2.00	0.00	8.80	0.20	0.00
2.60	2.00	0.00	8.70	0.20	0.00	2.80	2.00	0.00	8.60	0.20	0.00
3.00	0.42	0.58	8.50	0.20	0.99	3.20	0.47	0.53	8.40	0.20	0.90
3.40	0.54	0.46	8.30	0.20	0.76	3.60	0.50	0.50	8.20	0.20	0.82
3.80	0.48	0.52	8.10	0.20	0.84	4.00	0.37	0.63	8.00	0.20	1.01
4.20	2.00	0.00	7.90	0.20	0.00	4.40	0.28	0.72	7.80	0.20	1.12
4.60	0.85	0.15	7.70	0.20	0.23	4.80	0.32	0.68	7.60	0.20	1.04
5.00	0.29	0.71	7.50	0.20	1.07	5.20	1.11	0.00	7.40	0.20	0.00
5.40	0.35	0.65	7.30	0.20	0.95	5.60	2.00	0.00	7.20	0.20	0.00
5.80	2.00	0.00	7.10	0.20	0.00	6.00	2.00	0.00	7.00	0.20	0.00
6.20	0.45	0.55	6.90	0.20	0.76	6.40	0.46	0.54	6.80	0.20	0.73
6.60	0.40	0.60	6.70	0.20	0.81	6.80	0.94	0.06	6.60	0.20	0.08
7.00	0.80	0.20	6.50	0.20	0.27	7.20	0.70	0.30	6.40	0.20	0.39
7.40	0.44	0.56	6.30	0.20	0.71	7.60	0.83	0.17	6.20	0.20	0.21
7.80	0.29	0.71	6.10	0.20	0.87	8.00	2.00	0.00	6.00	0.20	0.00
8.20	2.00	0.00	5.90	0.20	0.00	8.40	2.00	0.00	5.80	0.20	0.00
8.60	2.00	0.00	5.70	0.20	0.00	8.80	2.00	0.00	5.60	0.20	0.00
9.00	2.00	0.00	5.50	0.20	0.00	9.20	2.00	0.00	5.40	0.20	0.00
9.40	2.00	0.00	5.30	0.20	0.00	9.60	2.00	0.00	5.20	0.20	0.00
9.80	2.00	0.00	5.10	0.20	0.00	10.00	2.00	0.00	5.00	0.20	0.00
10.20	2.00	0.00	4.90	0.20	0.00	10.40	2.00	0.00	4.80	0.20	0.00
10.60	2.00	0.00	4.70	0.20	0.00	10.80	2.00	0.00	4.60	0.20	0.00
11.00	2.00	0.00	4.50	0.20	0.00	11.20	2.00	0.00	4.40	0.20	0.00
11.40	2.00	0.00	4.30	0.20	0.00	11.60	2.00	0.00	4.20	0.20	0.00
11.80	2.00	0.00	4.10	0.20	0.00	12.00	2.00	0.00	4.00	0.20	0.00
12.20	2.00	0.00	3.90	0.20	0.00	12.40	2.00	0.00	3.80	0.20	0.00
12.60	2.00	0.00	3.70	0.20	0.00	12.80	2.00	0.00	3.60	0.20	0.00
13.00	2.00	0.00	3.50	0.20	0.00	13.20	2.00	0.00	3.40	0.20	0.00
13.40	2.00	0.00	3.30	0.20	0.00	13.60	2.00	0.00	3.20	0.20	0.00
13.80	2.00	0.00	3.10	0.20	0.00	14.00	2.00	0.00	3.00	0.20	0.00
14.20	2.00	0.00	2.90	0.20	0.00	14.40	2.00	0.00	2.80	0.20	0.00
14.60	2.00	0.00	2.70	0.20	0.00	14.80	0.57	0.43	2.60	0.20	0.22
15.00	0.48	0.52	2.50	0.20	0.26	15.20	0.37	0.63	2.40	0.20	0.30
15.40	1.19	0.00	2.30	0.20	0.00	15.60	0.65	0.35	2.20	0.20	0.15
15.80	2.00	0.00	2.10	0.20	0.00	16.00	2.00	0.00	2.00	0.20	0.00
16.20	0.30	0.70	1.90	0.20	0.27	16.40	2.00	0.00	1.80	0.20	0.00
16.60	0.36	0.64	1.70	0.20	0.22	16.80	0.61	0.39	1.60	0.20	0.12
17.00	0.36	0.64	1.50	0.20	0.19	17.20	0.51	0.49	1.40	0.20	0.14
17.40	0.45	0.55	1.30	0.20	0.14	17.60	2.00	0.00	1.20	0.20	0.00
17.80	2.00	0.00	1.10	0.20	0.00	18.00	2.00	0.00	1.00	0.20	0.00
18.20	2.00	0.00	0.90	0.20	0.00	18.40	2.00	0.00	0.80	0.20	0.00
18.60	2.00	0.00	0.70	0.20	0.00	18.80	2.00	0.00	0.60	0.20	0.00
19.00	0.35	0.65	0.50	0.20	0.07	19.20	2.00	0.00	0.40	0.20	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (m)	FS	F_L	w_z	d_z	LPI	Depth (m)	FS	F_L	w_z	d_z	LPI
19.40	2.00	0.00	0.30	0.20	0.00	19.60	2.00	0.00	0.20	0.20	0.00
19.80	2.00	0.00	0.10	0.20	0.00	20.00	2.00	0.00	0.00	0.20	0.00

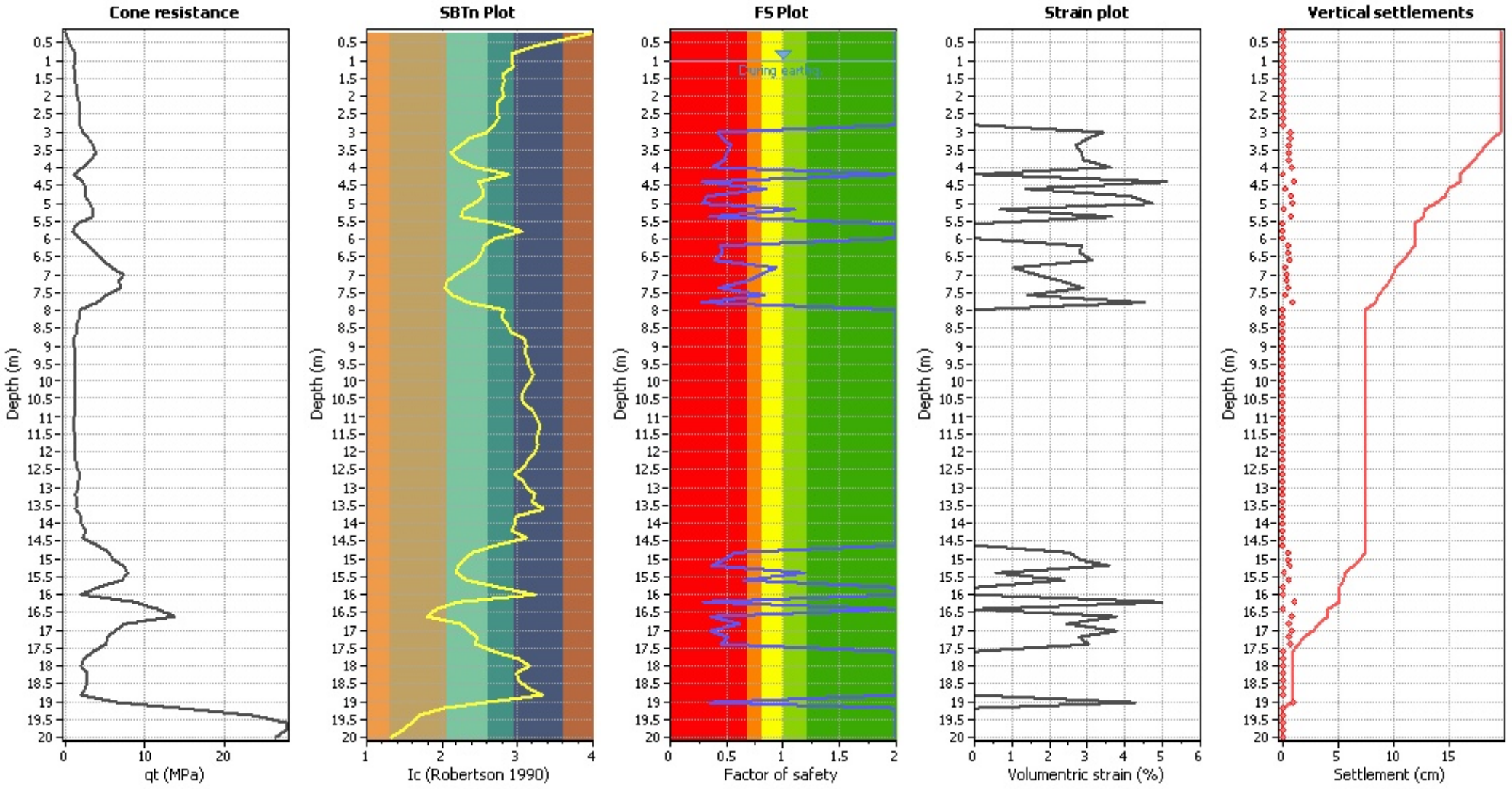
Overall liquefaction potential: 16.62

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (m)
LPI: Liquefaction potential index value for test point

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
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)
1.00	20.13	2.00	0.00	1.00	0.00	1.20	16.78	2.00	0.00	1.00	0.00
1.40	16.78	2.00	0.00	1.00	0.00	1.60	30.20	2.00	0.00	1.00	0.00
1.80	16.78	2.00	0.00	1.00	0.00	2.00	30.20	2.00	0.00	1.00	0.00
2.20	30.20	2.00	0.00	1.00	0.00	2.40	30.20	2.00	0.00	1.00	0.00
2.60	30.20	2.00	0.00	1.00	0.00	2.80	30.20	2.00	0.00	1.00	0.00
3.00	94.11	0.42	3.42	1.00	0.68	3.20	105.23	0.47	3.05	1.00	0.61
3.40	118.06	0.54	2.70	1.00	0.54	3.60	112.43	0.50	2.85	1.00	0.57
3.80	110.84	0.48	2.89	1.00	0.58	4.00	88.68	0.37	3.63	1.00	0.73
4.20	12.90	2.00	0.00	1.00	0.00	4.40	61.55	0.28	5.12	1.00	1.02
4.60	144.61	0.85	1.39	1.00	0.28	4.80	76.80	0.32	4.17	1.00	0.83
5.00	66.85	0.29	4.75	1.00	0.95	5.20	155.14	1.11	0.69	1.00	0.14
5.40	88.16	0.35	3.65	1.00	0.73	5.60	14.04	2.00	0.00	1.00	0.00
5.80	11.10	2.00	0.00	1.00	0.00	6.00	13.62	2.00	0.00	1.00	0.00
6.20	112.18	0.45	2.85	1.00	0.57	6.40	113.79	0.46	2.81	1.00	0.56
6.60	102.79	0.40	3.12	1.00	0.62	6.80	150.17	0.94	1.05	1.00	0.21
7.00	143.76	0.80	1.65	1.00	0.33	7.20	138.00	0.70	2.28	1.00	0.46
7.40	110.72	0.44	2.89	1.00	0.58	7.60	145.96	0.83	1.43	1.00	0.29
7.80	70.12	0.29	4.54	1.00	0.91	8.00	27.51	2.00	0.00	1.00	0.00
8.20	13.77	2.00	0.00	1.00	0.00	8.40	22.52	2.00	0.00	1.00	0.00
8.60	13.46	2.00	0.00	1.00	0.00	8.80	11.12	2.00	0.00	1.00	0.00
9.00	13.17	2.00	0.00	1.00	0.00	9.20	13.04	2.00	0.00	1.00	0.00
9.40	12.90	2.00	0.00	1.00	0.00	9.60	12.76	2.00	0.00	1.00	0.00
9.80	12.63	2.00	0.00	1.00	0.00	10.00	12.50	2.00	0.00	1.00	0.00
10.20	12.38	2.00	0.00	1.00	0.00	10.40	14.30	2.00	0.00	1.00	0.00
10.60	12.15	2.00	0.00	1.00	0.00	10.80	12.04	2.00	0.00	1.00	0.00
11.00	11.92	2.00	0.00	1.00	0.00	11.20	9.84	2.00	0.00	1.00	0.00
11.40	11.70	2.00	0.00	1.00	0.00	11.60	11.60	2.00	0.00	1.00	0.00
11.80	11.49	2.00	0.00	1.00	0.00	12.00	11.40	2.00	0.00	1.00	0.00
12.20	11.30	2.00	0.00	1.00	0.00	12.40	14.96	2.00	0.00	1.00	0.00
12.60	12.97	2.00	0.00	1.00	0.00	12.80	22.14	2.00	0.00	1.00	0.00
13.00	10.92	2.00	0.00	1.00	0.00	13.20	10.83	2.00	0.00	1.00	0.00
13.40	14.36	2.00	0.00	1.00	0.00	13.60	14.25	2.00	0.00	1.00	0.00
13.80	3.50	2.00	0.00	1.00	0.00	14.00	35.58	2.00	0.00	1.00	0.00
14.20	15.67	2.00	0.00	1.00	0.00	14.40	15.54	2.00	0.00	1.00	0.00
14.60	25.88	2.00	0.00	1.00	0.00	14.80	125.72	0.57	2.53	1.00	0.51
15.00	113.92	0.48	2.81	1.00	0.56	15.20	90.24	0.37	3.56	1.00	0.71
15.40	157.99	1.19	0.57	1.00	0.11	15.60	132.58	0.65	2.38	1.00	0.48
15.80	21.38	2.00	0.00	1.00	0.00	16.00	11.30	2.00	0.00	1.00	0.00
16.20	63.23	0.30	4.99	1.00	1.00	16.40	239.29	2.00	0.00	1.00	0.00
16.60	84.88	0.36	3.79	1.00	0.76	16.80	127.79	0.61	2.48	1.00	0.50
17.00	84.83	0.36	3.79	1.00	0.76	17.20	114.99	0.51	2.78	1.00	0.56
17.40	105.30	0.45	3.05	1.00	0.61	17.60	24.87	2.00	0.00	1.00	0.00
17.80	13.70	2.00	0.00	1.00	0.00	18.00	15.17	2.00	0.00	1.00	0.00
18.20	16.63	2.00	0.00	1.00	0.00	18.40	30.73	2.00	0.00	1.00	0.00
18.60	13.35	2.00	0.00	1.00	0.00	18.80	13.27	2.00	0.00	1.00	0.00
19.00	75.05	0.35	4.26	1.00	0.85	19.20	172.13	2.00	0.00	1.00	0.00
19.40	216.69	2.00	0.00	1.00	0.00	19.60	254.00	2.00	0.00	1.00	0.00
19.80	224.66	2.00	0.00	1.00	0.00	20.00	214.03	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)	Depth (m)	$q_{c1N,cs}$	FS	e_v (%)	DF	Settlement (cm)

Total estimated settlement: 19.58

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement