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# APPENDIX C

## Liquefaction Analysis

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**LIQUEFACTION ANALYSIS REPORT**

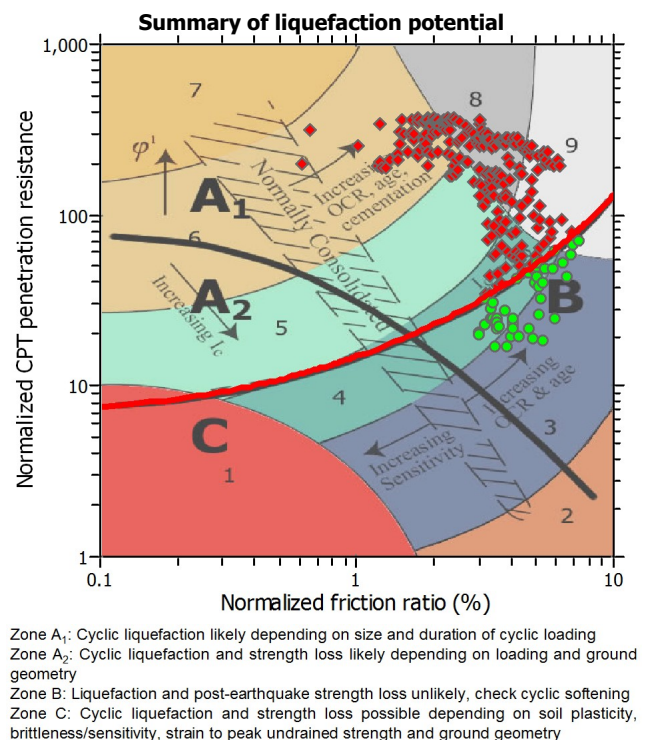
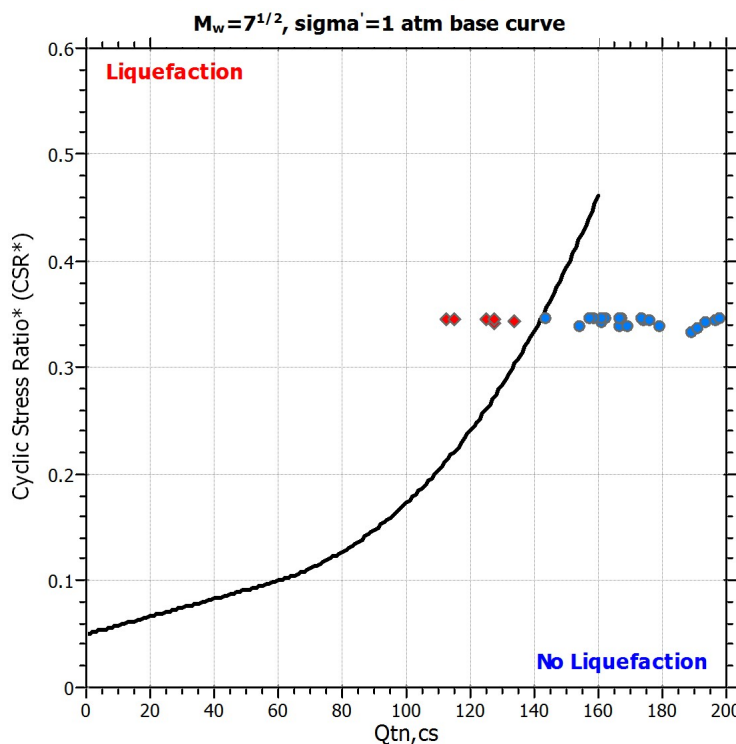
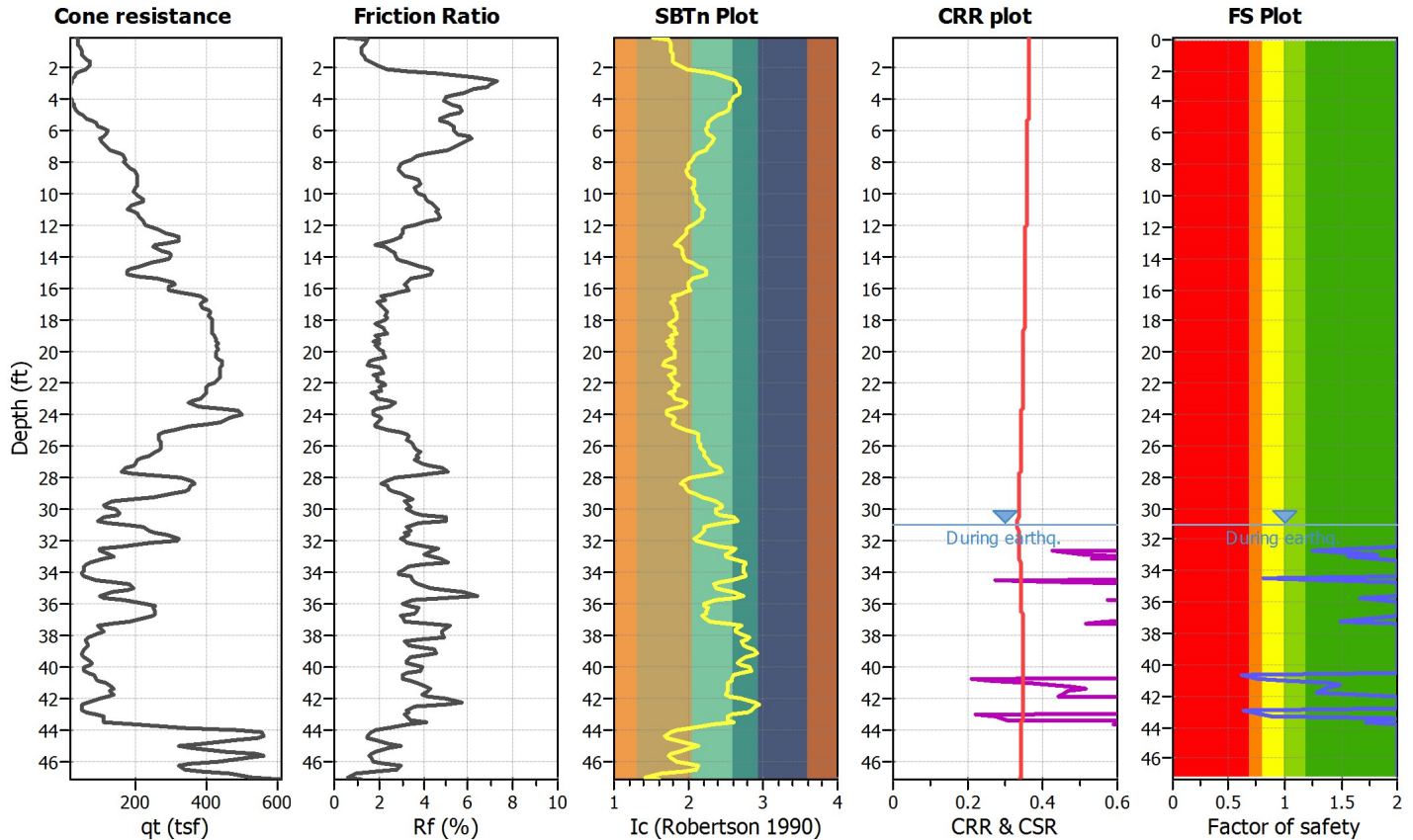
**Project title : Westar Goleta**

**Location : Goleta, California**

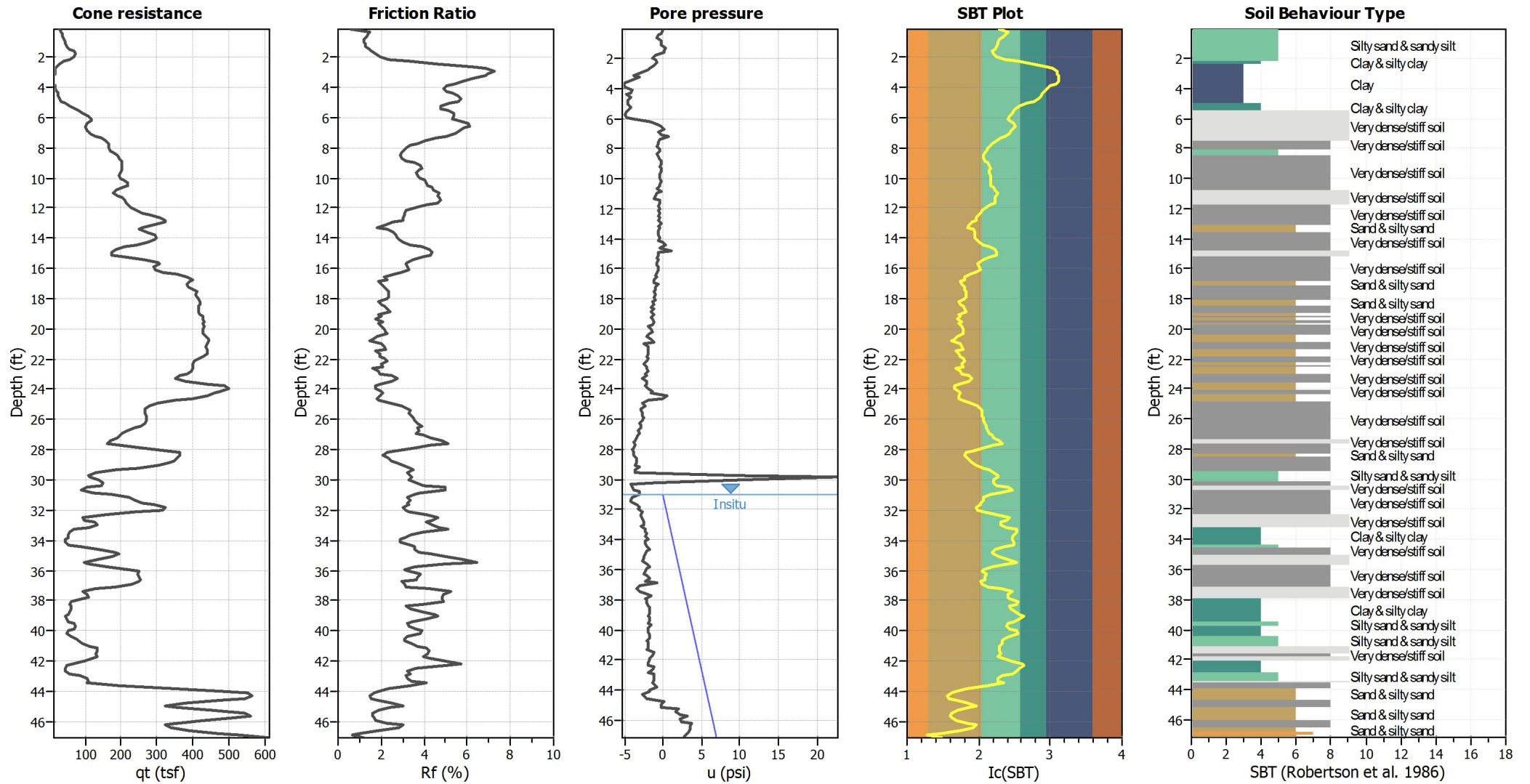
**CPT file : CPT-1**

**Input parameters and analysis data**

Analysis method:	NCEER 1998	G.W.T. (in-situ):	31.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	Robertson & Wride	G.W.T. (earthq.):	31.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.58	Unit weight calculation:	Based on SBT	$K_g$ applied:	No		



### CPT basic interpretation plots



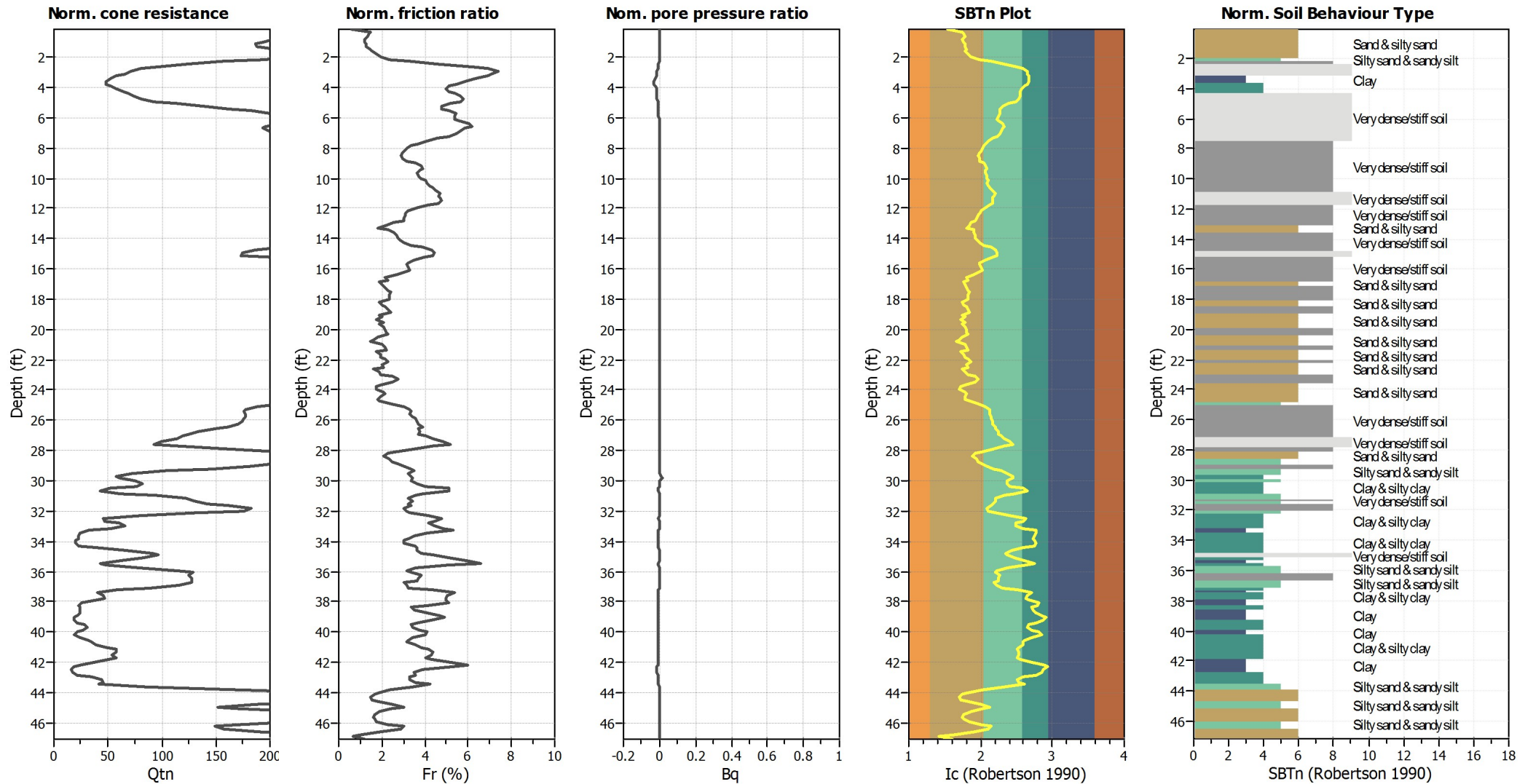
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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)



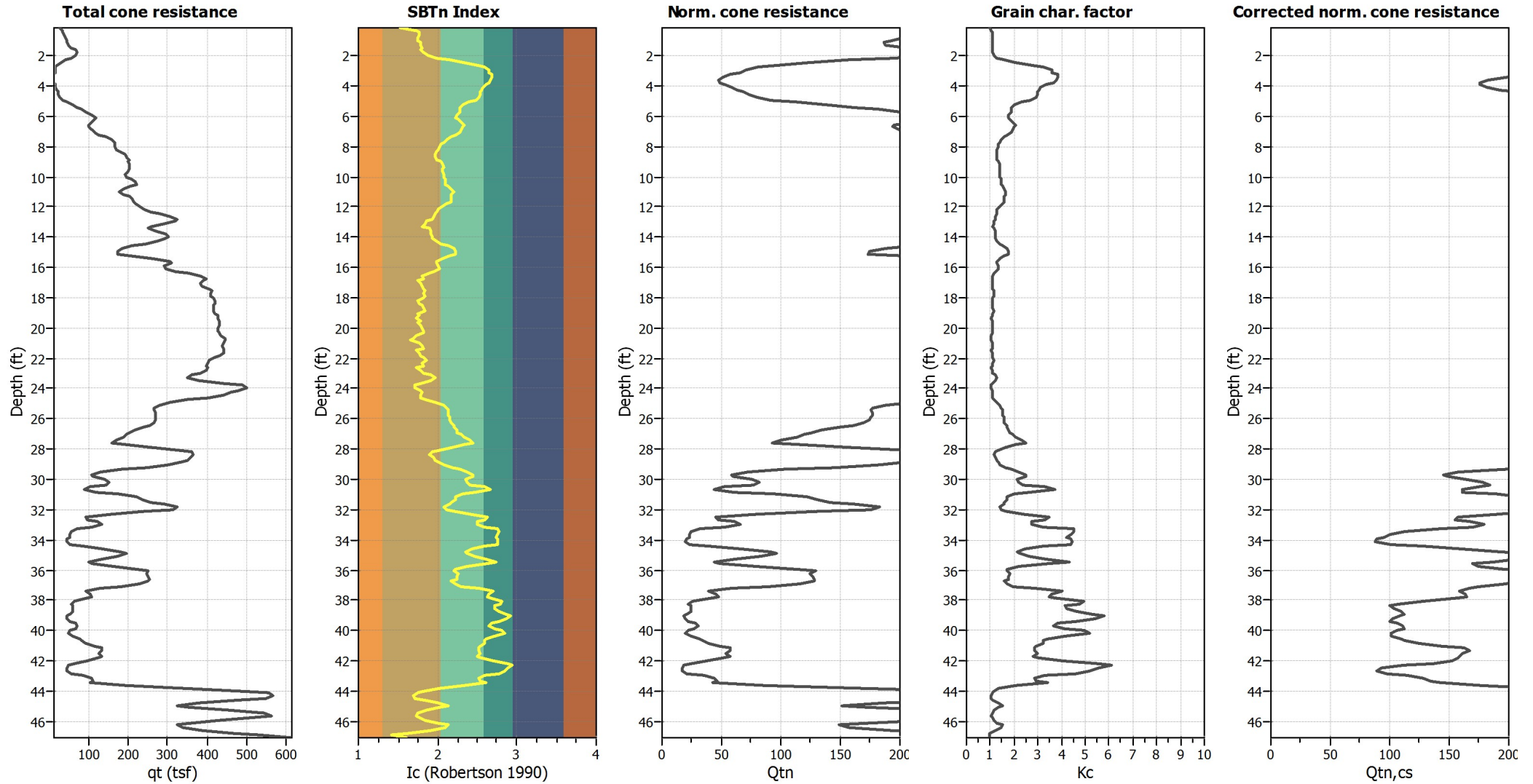
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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

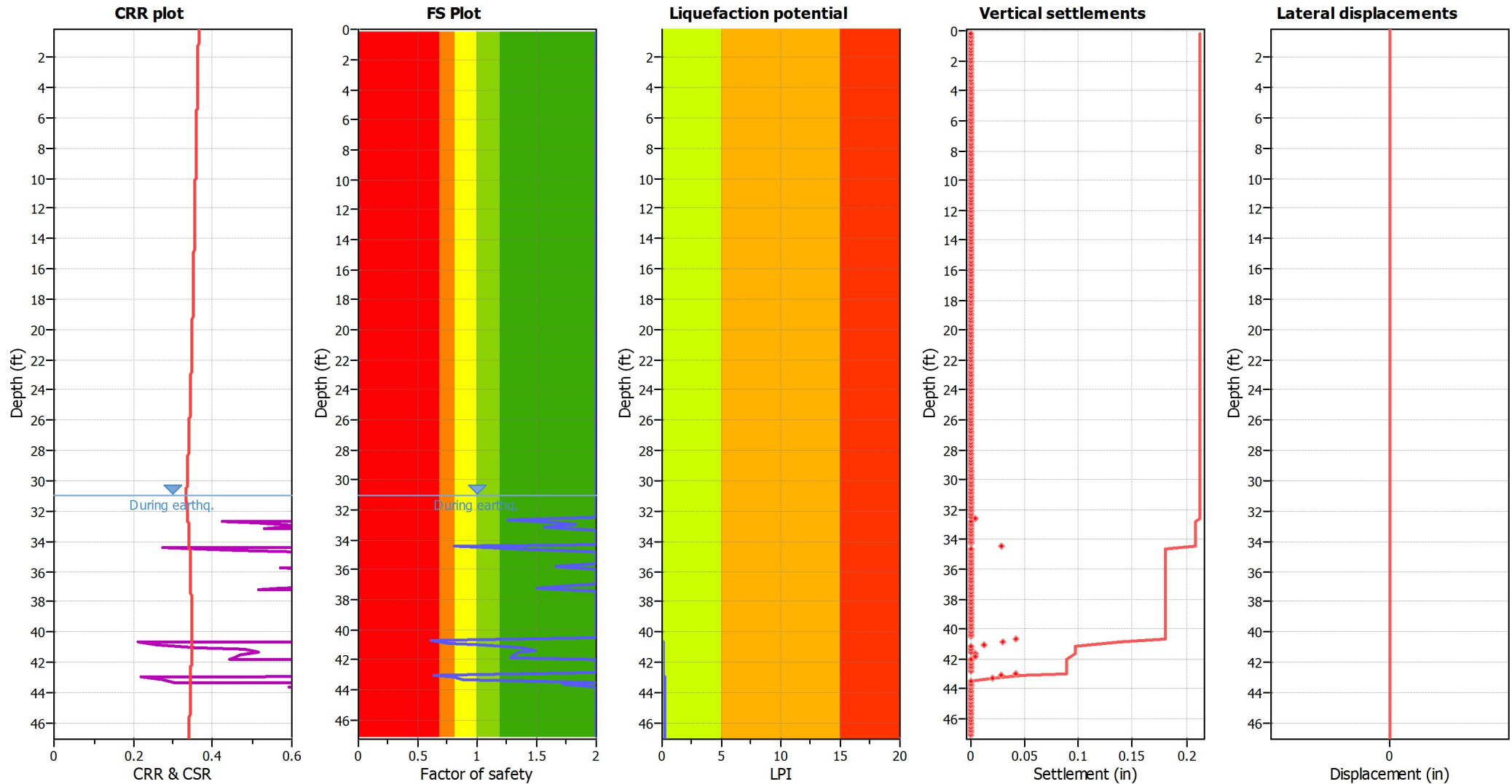
### Liquefaction analysis overall plots (intermediate results)



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{cs}$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

### Liquefaction analysis overall plots



**Input parameters and analysis data**

Analysis method:	NCEER 1998	Depth to water table (earthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

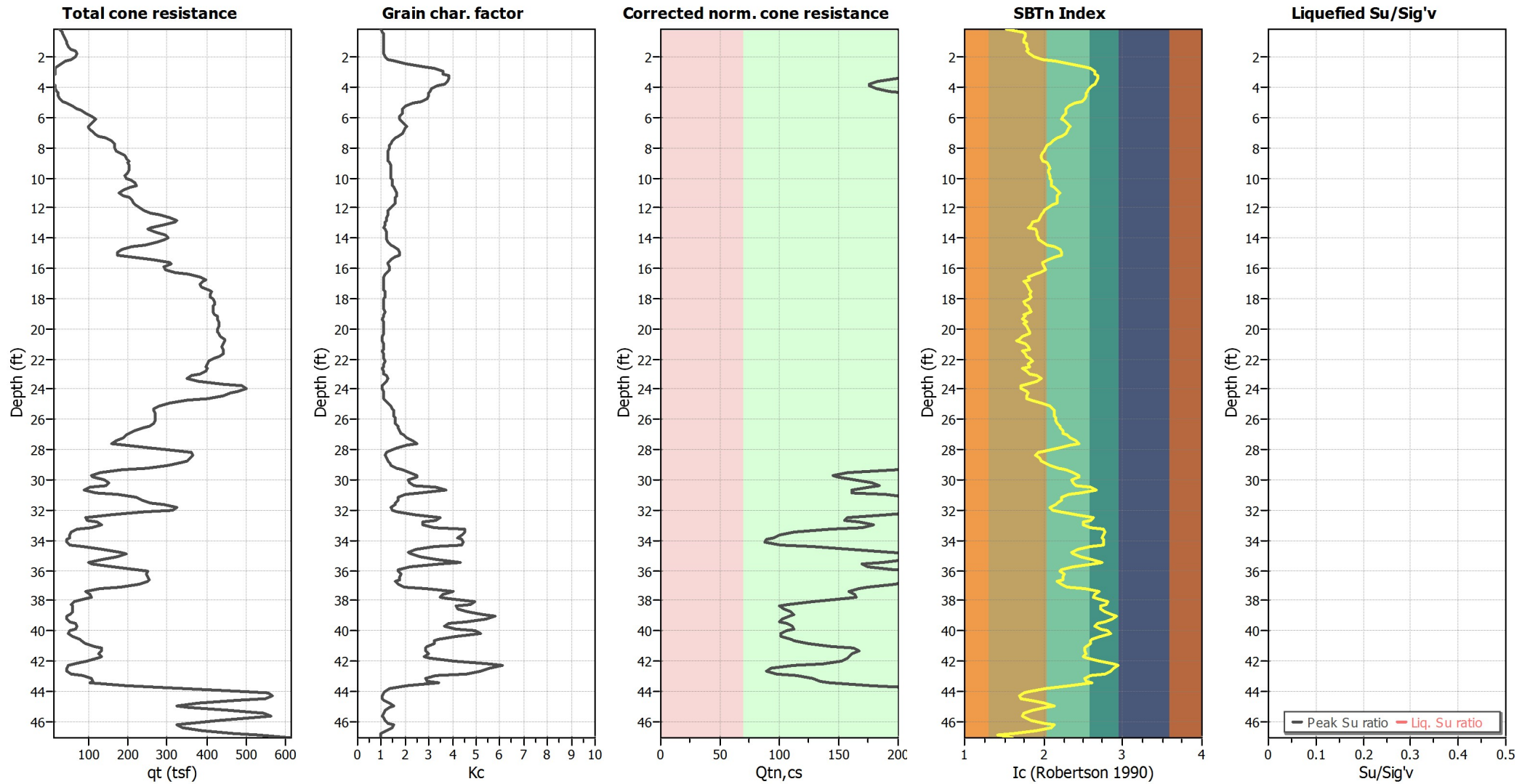
**F.S. color scheme**

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

**LPI color scheme**

- Very high risk
- High risk
- Low risk

### Check for strength loss plots (Robertson (2010))



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>c</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

**LIQUEFACTION ANALYSIS REPORT**

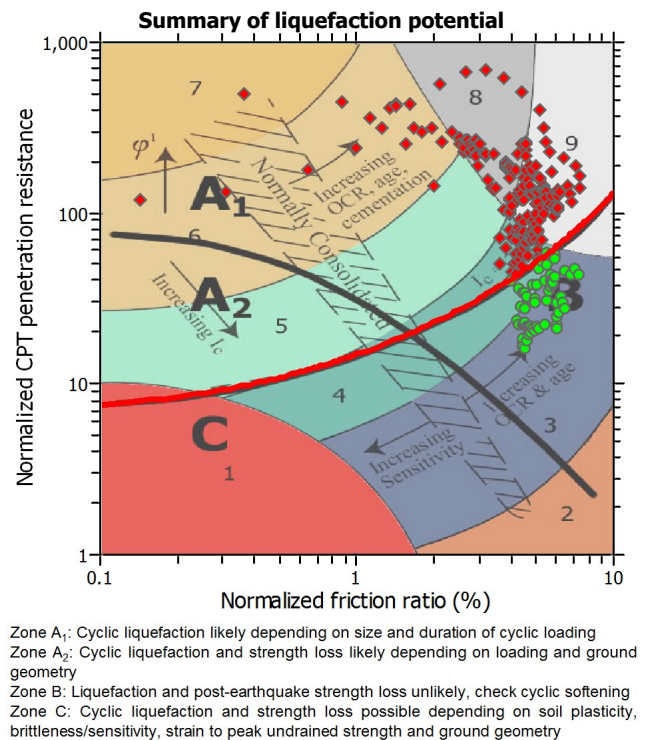
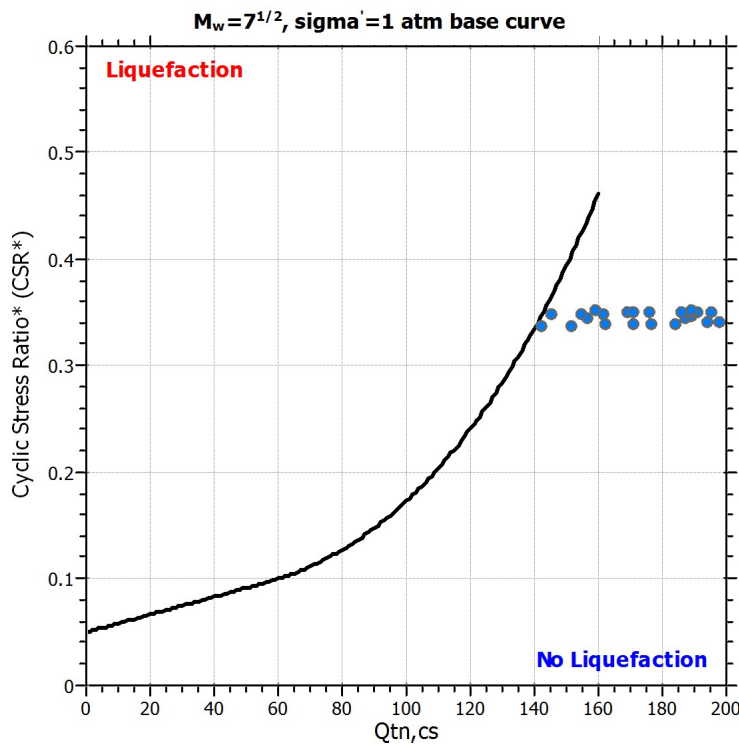
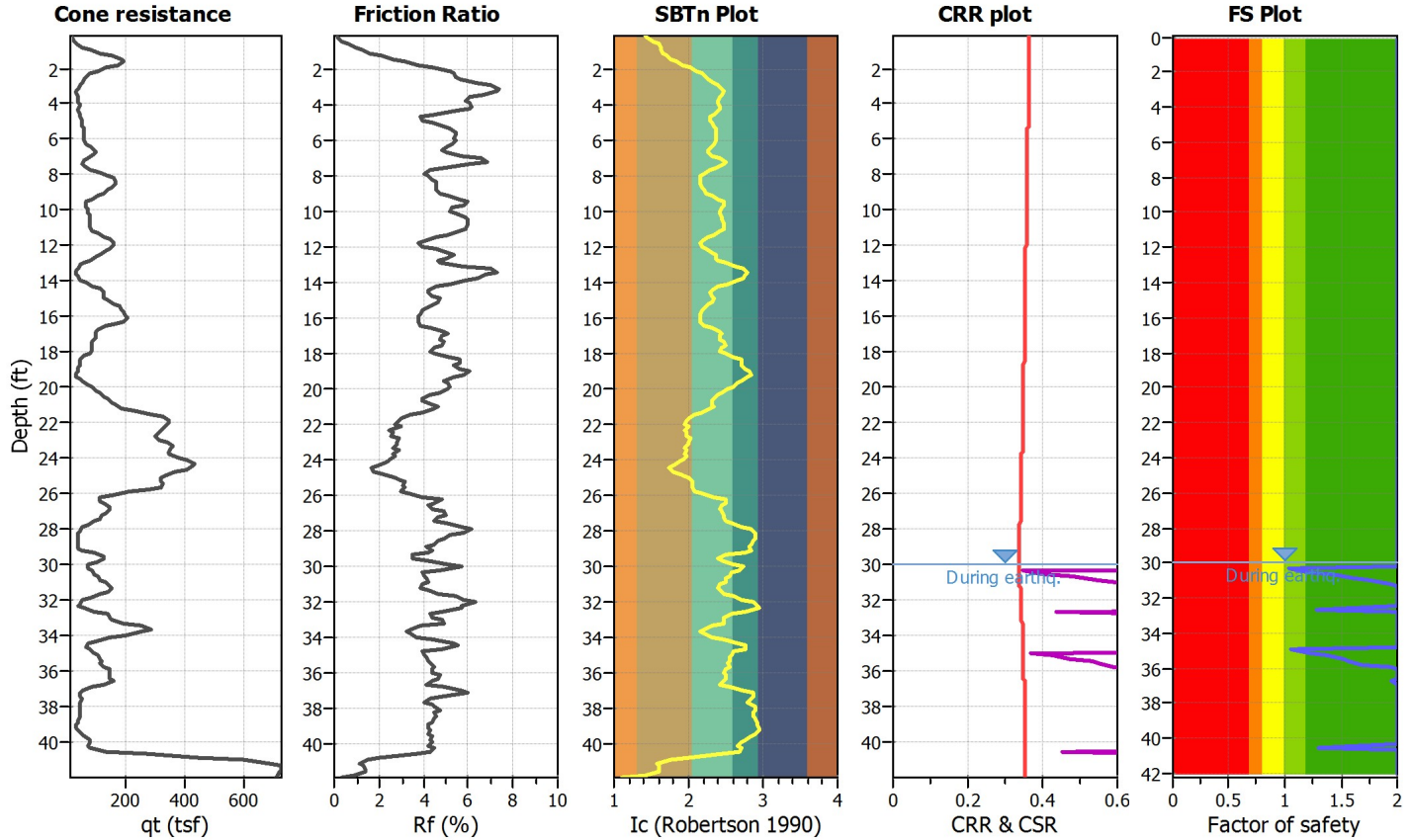
**Project title : Westar Goleta**

**Location : Goleta, California**

**CPT file : CPT-2**

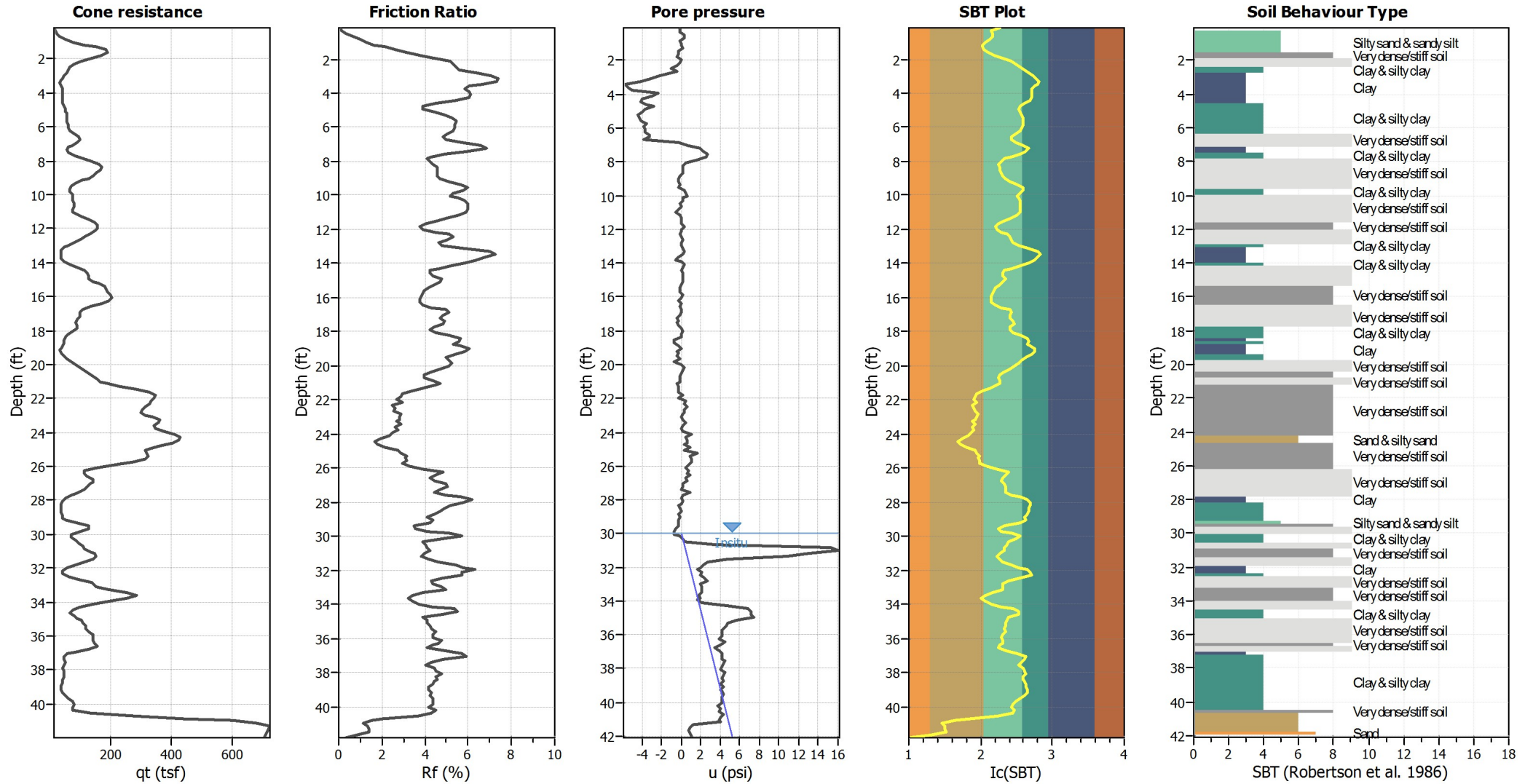
**Input parameters and analysis data**

Analysis method:	NCEER 1998	G.W.T. (in-situ):	30.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	Robertson & Wride	G.W.T. (earthq.):	30.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.58	Unit weight calculation:	Based on SBT	$K_g$ applied:	No		





### CPT basic interpretation plots



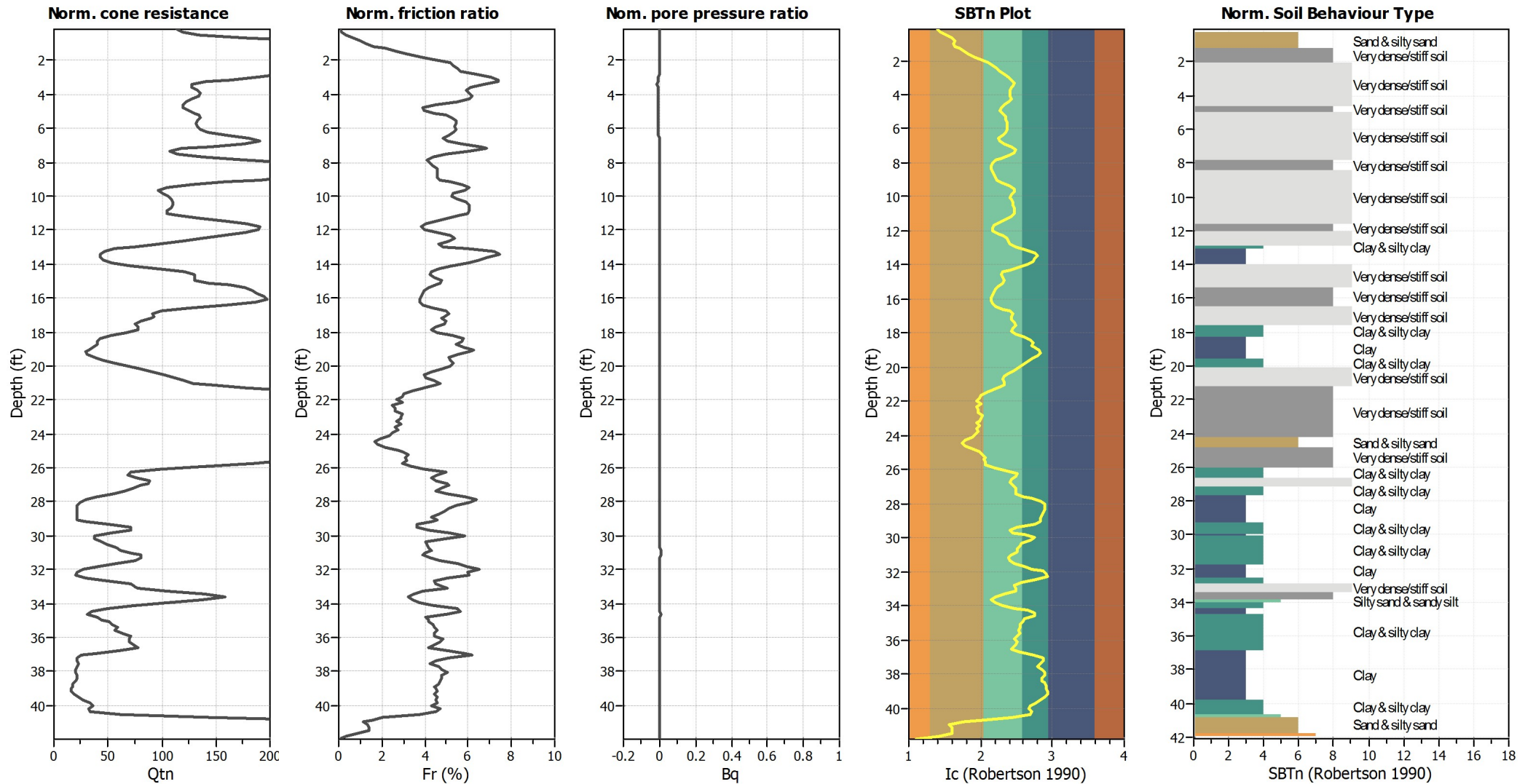
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	30.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_v$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	30.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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)



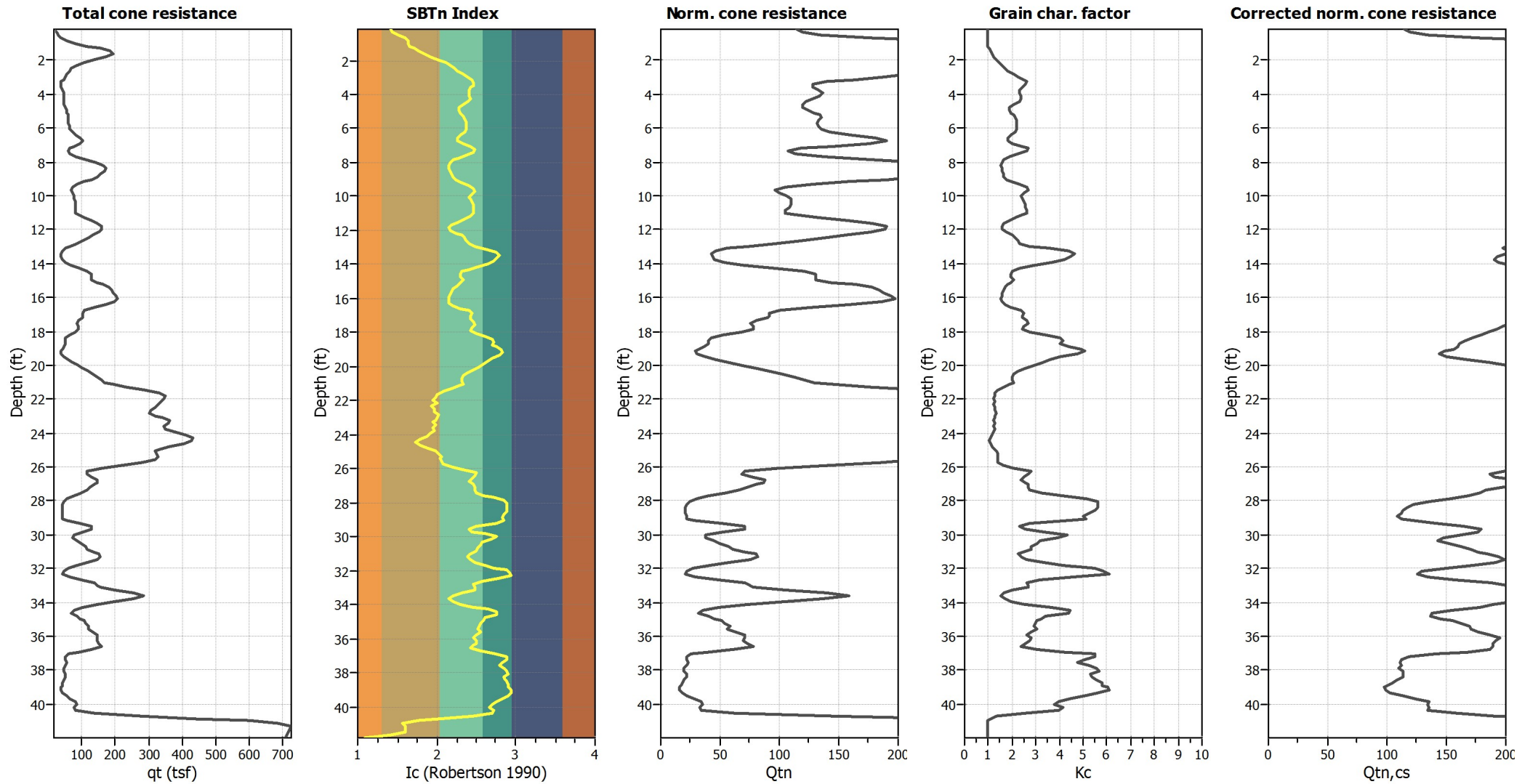
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	30.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	30.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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

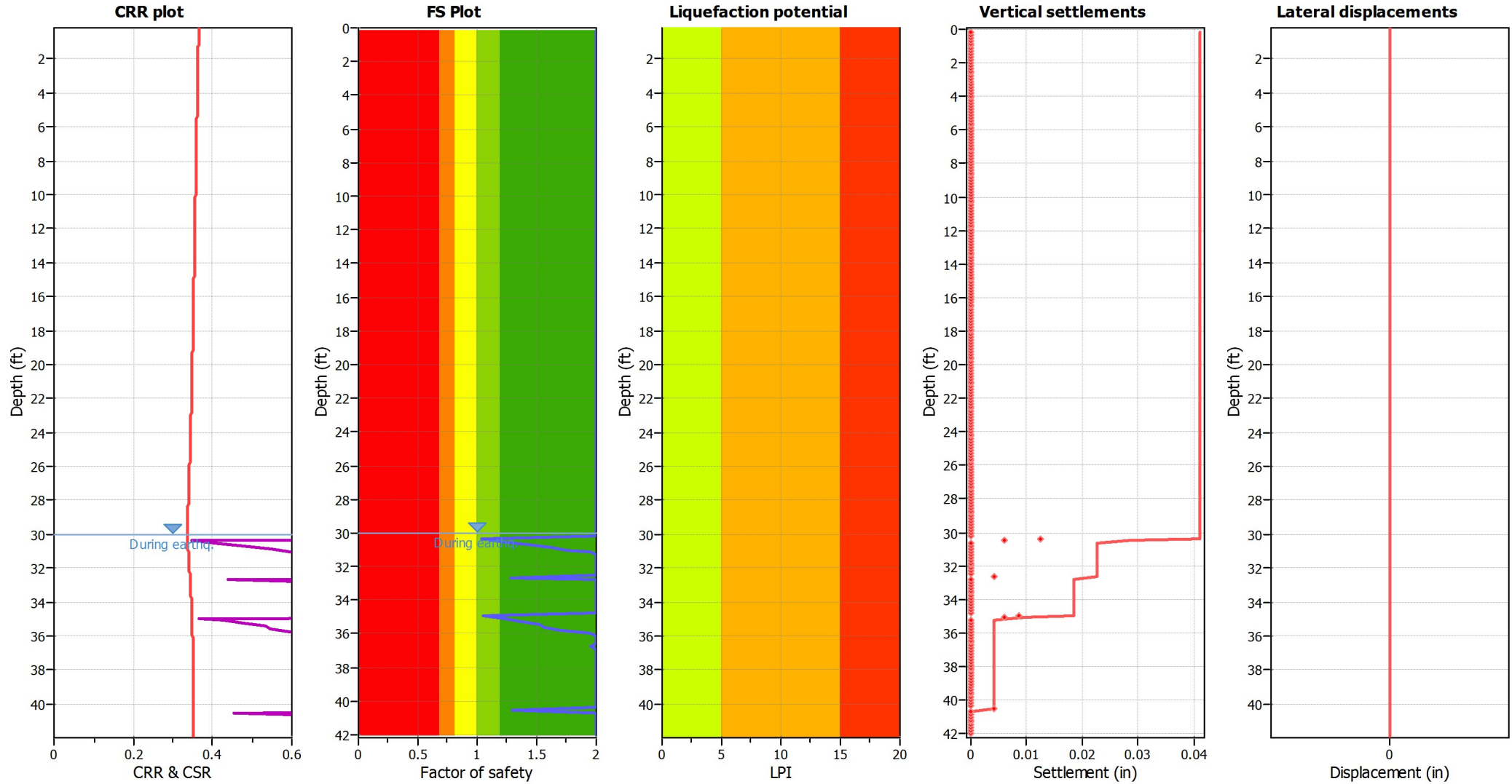
### Liquefaction analysis overall plots (intermediate results)



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	30.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>c</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	30.00 ft	Fill height:	N/A	Limit depth:	N/A

### Liquefaction analysis overall plots



**Input parameters and analysis data**

Analysis method:	NCEER 1998	Depth to water table (erthq.):	30.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	30.00 ft	Fill height:	N/A	Limit depth:	N/A

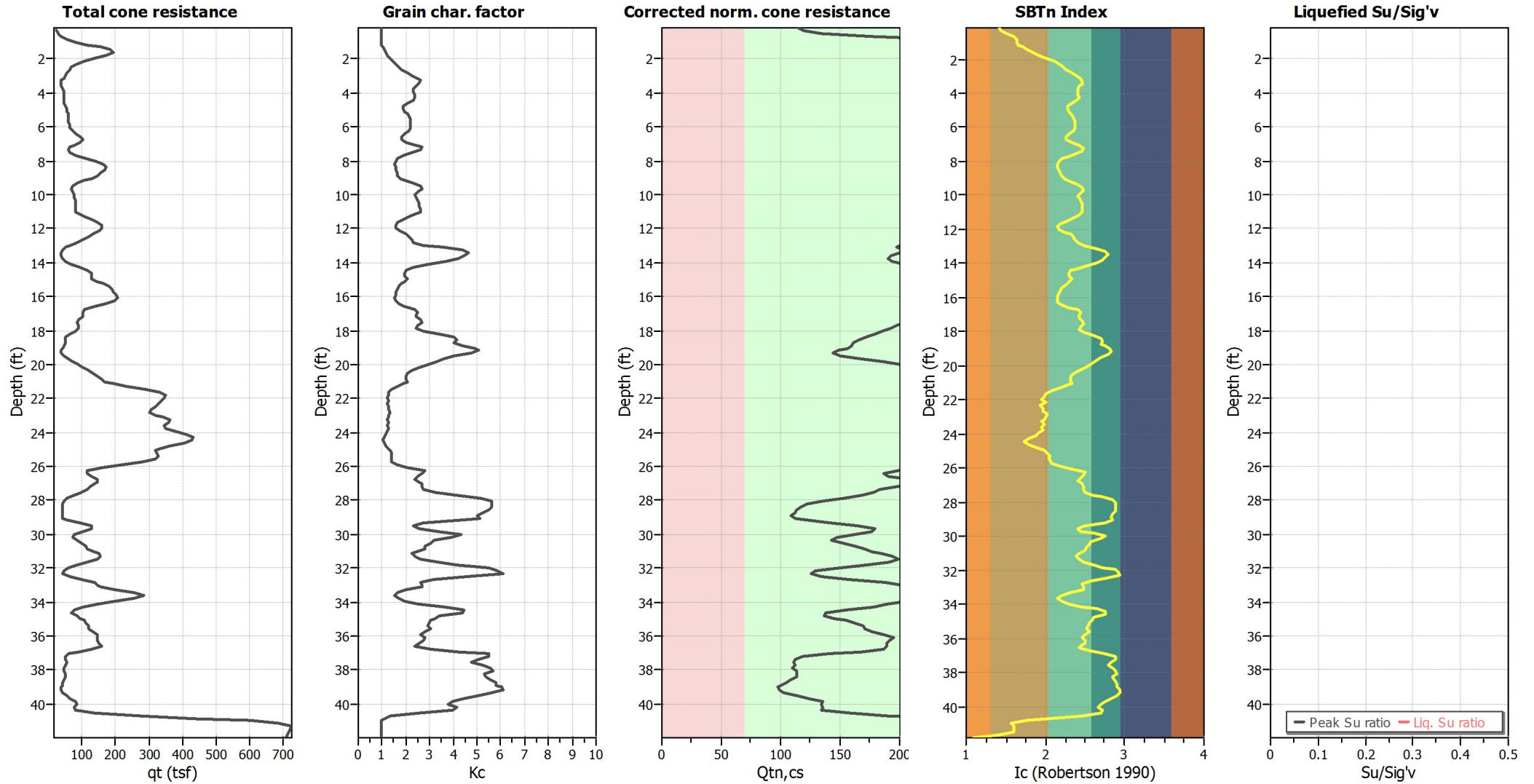
**F.S. color scheme**

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

**LPI color scheme**

- Very high risk
- High risk
- Low risk

### Check for strength loss plots (Robertson (2010))



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	30.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>c</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	30.00 ft	Fill height:	N/A	Limit depth:	N/A

**LIQUEFACTION ANALYSIS REPORT**

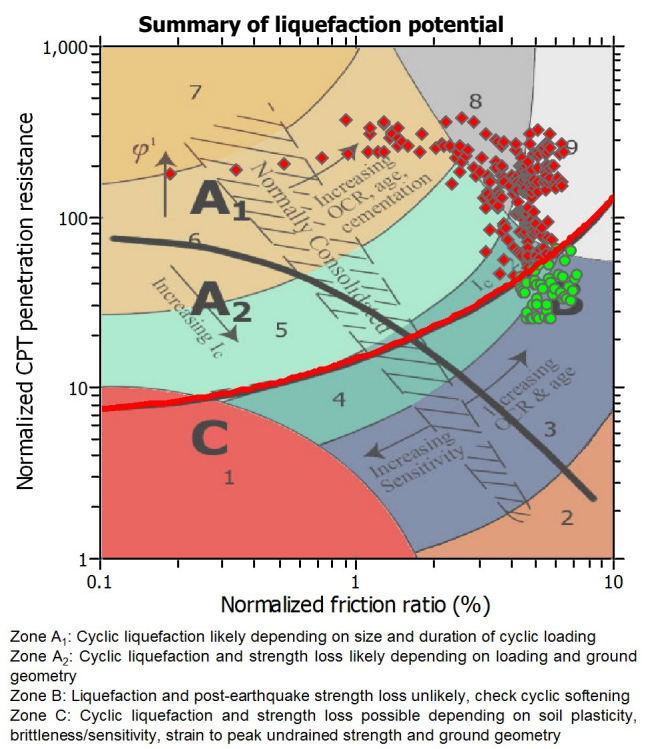
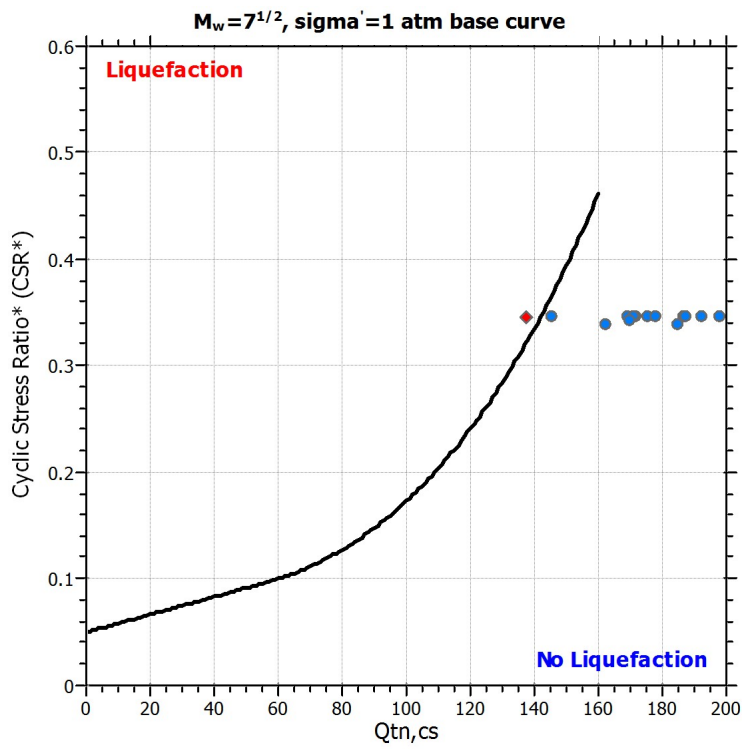
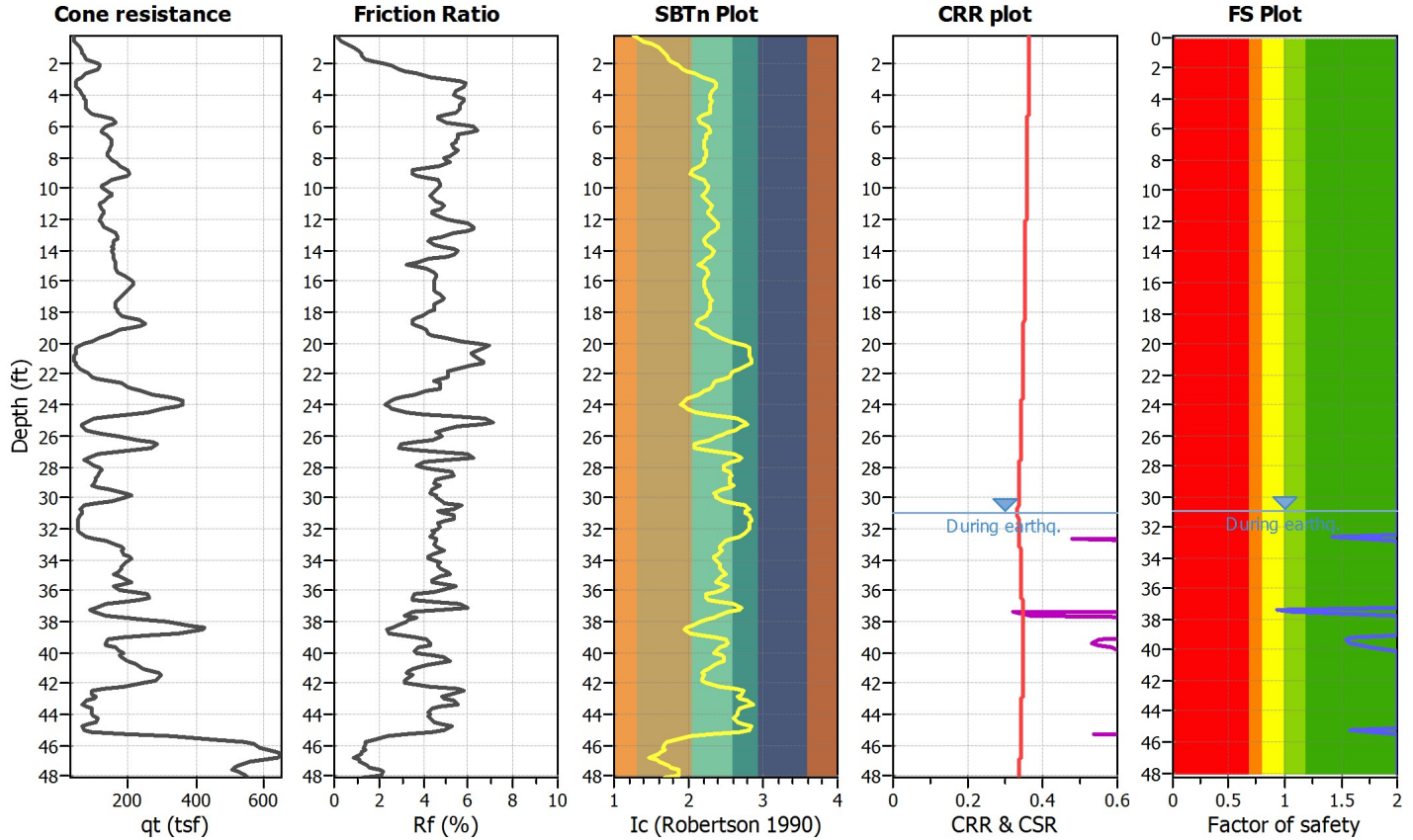
**Project title : Westar Goleta**

**Location : Goleta, California**

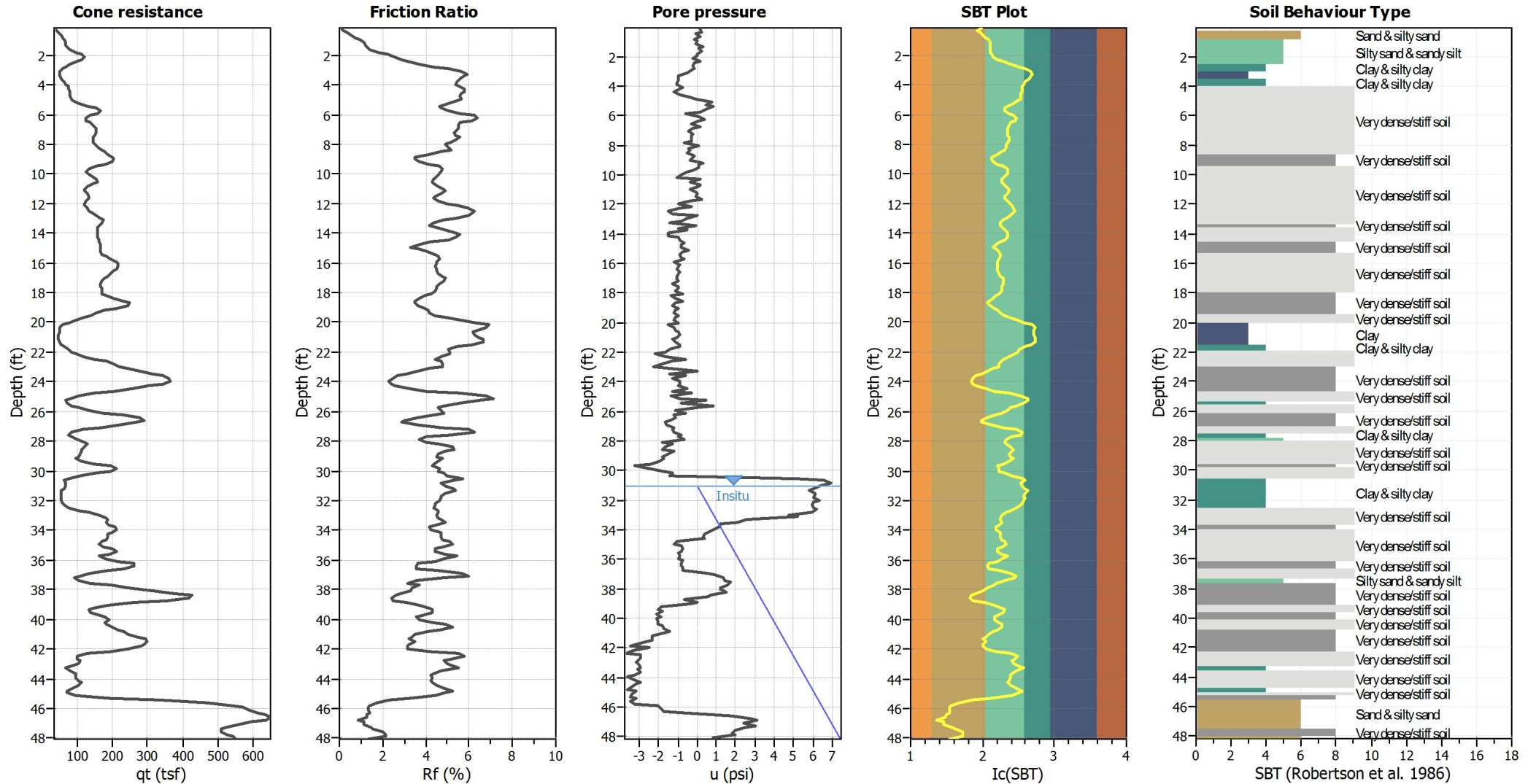
**CPT file : CPT-3**

**Input parameters and analysis data**

Analysis method:	NCEER 1998	G.W.T. (in-situ):	31.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	Robertson & Wride	G.W.T. (earthq.):	31.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.58	Unit weight calculation:	Based on SBT	$K_g$ applied:	No		



### CPT basic interpretation plots



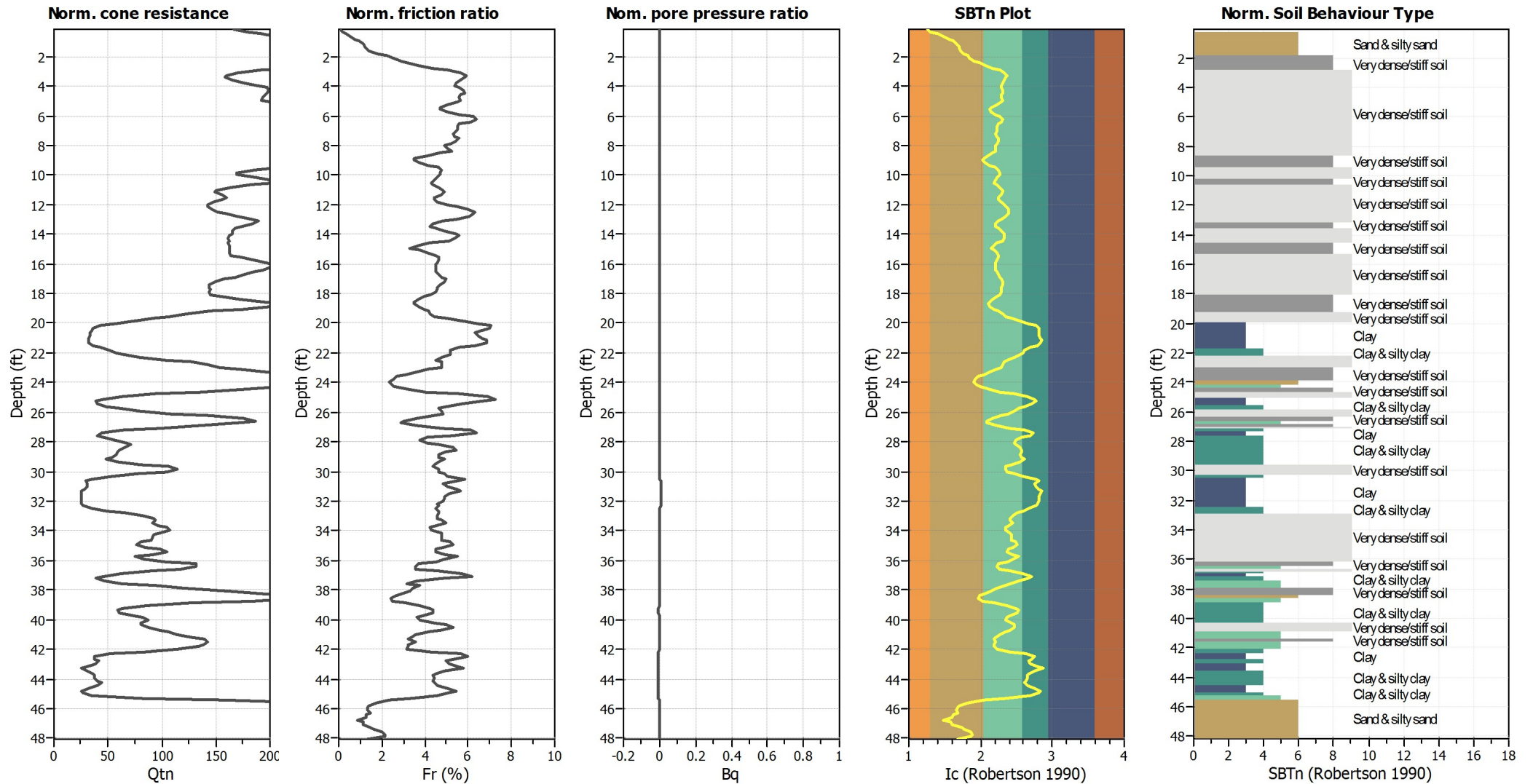
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_v$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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

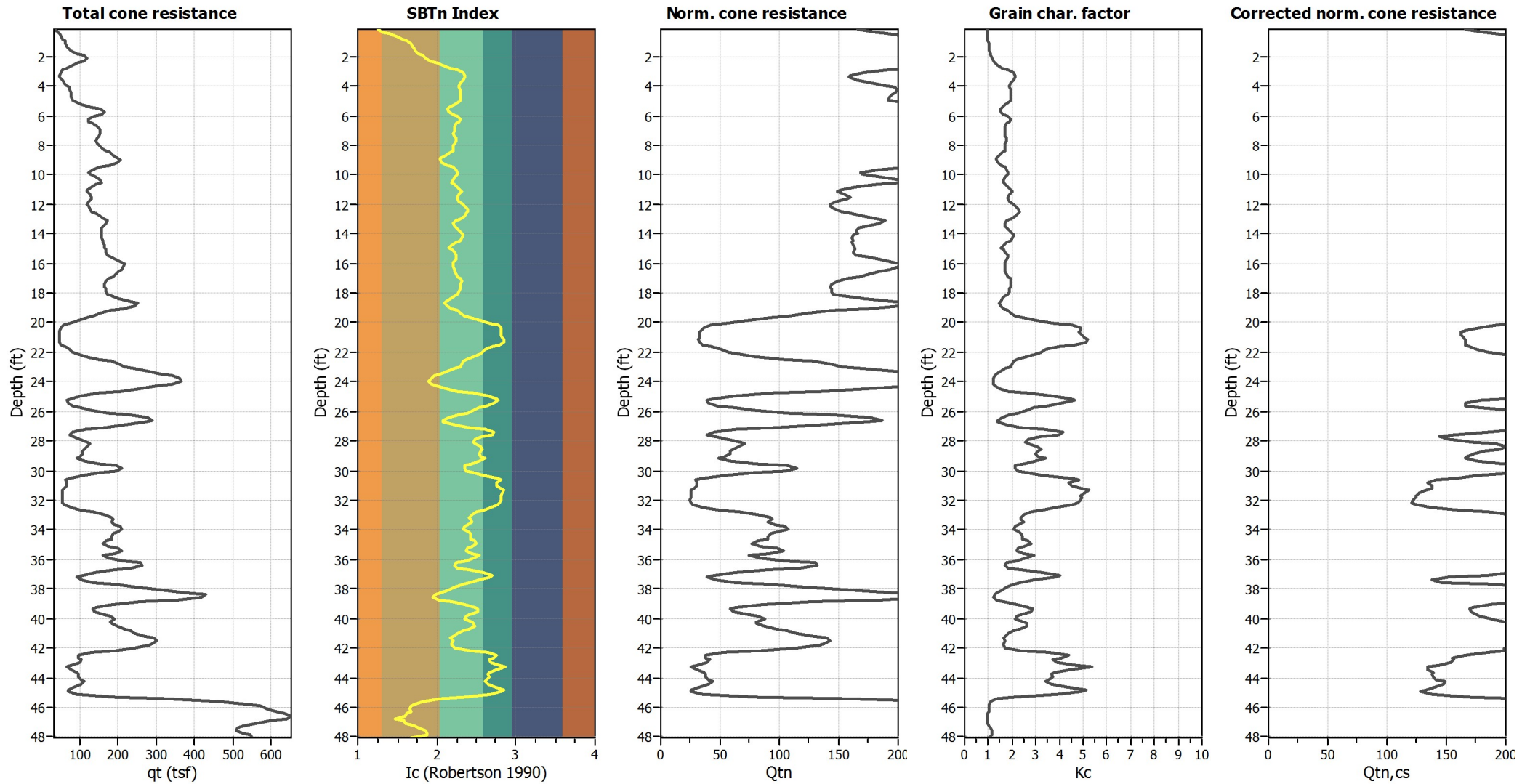
Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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



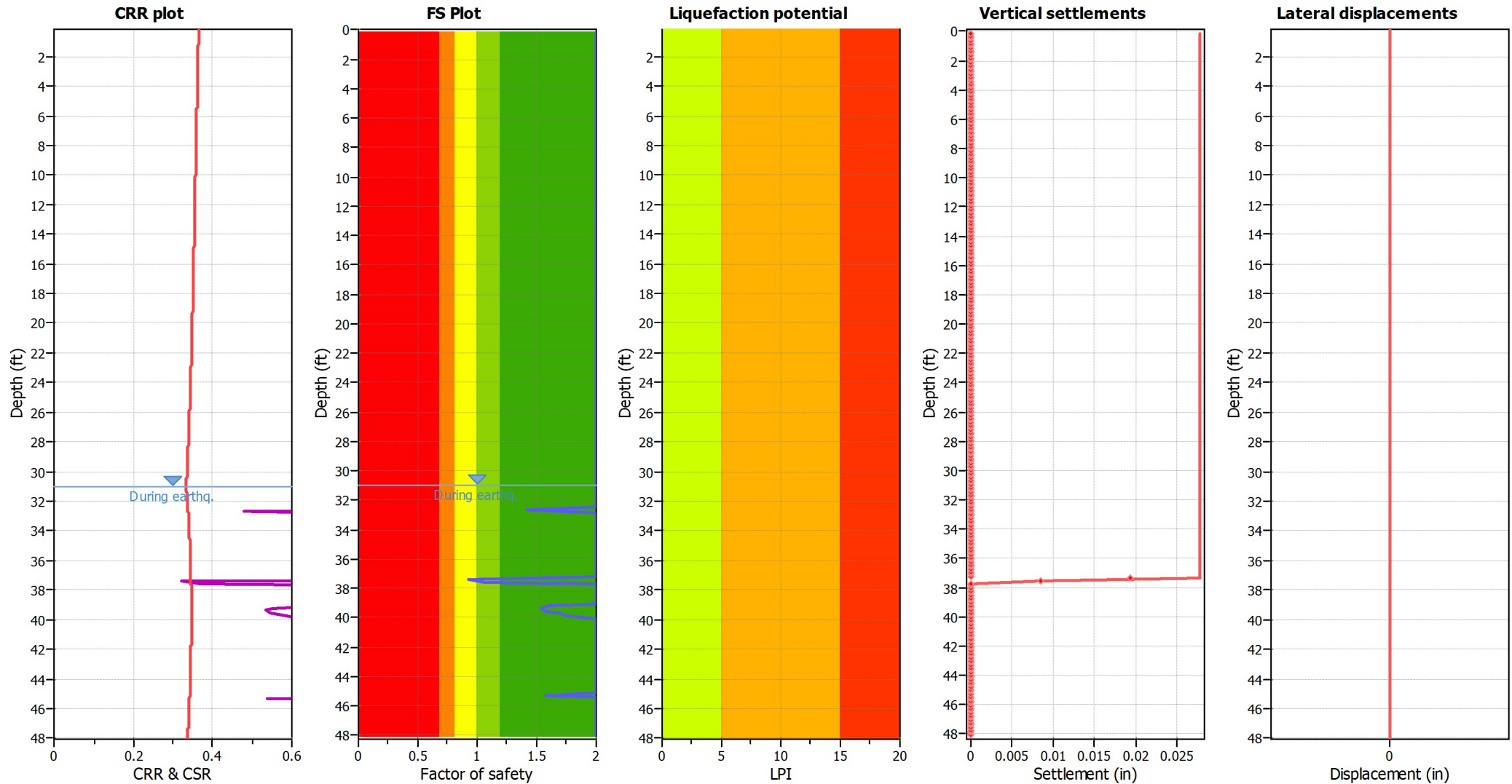
### Liquefaction analysis overall plots (intermediate results)



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_{cs}$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

### Liquefaction analysis overall plots



**Input parameters and analysis data**

Analysis method:	NCEER 1998	Depth to water table (earthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

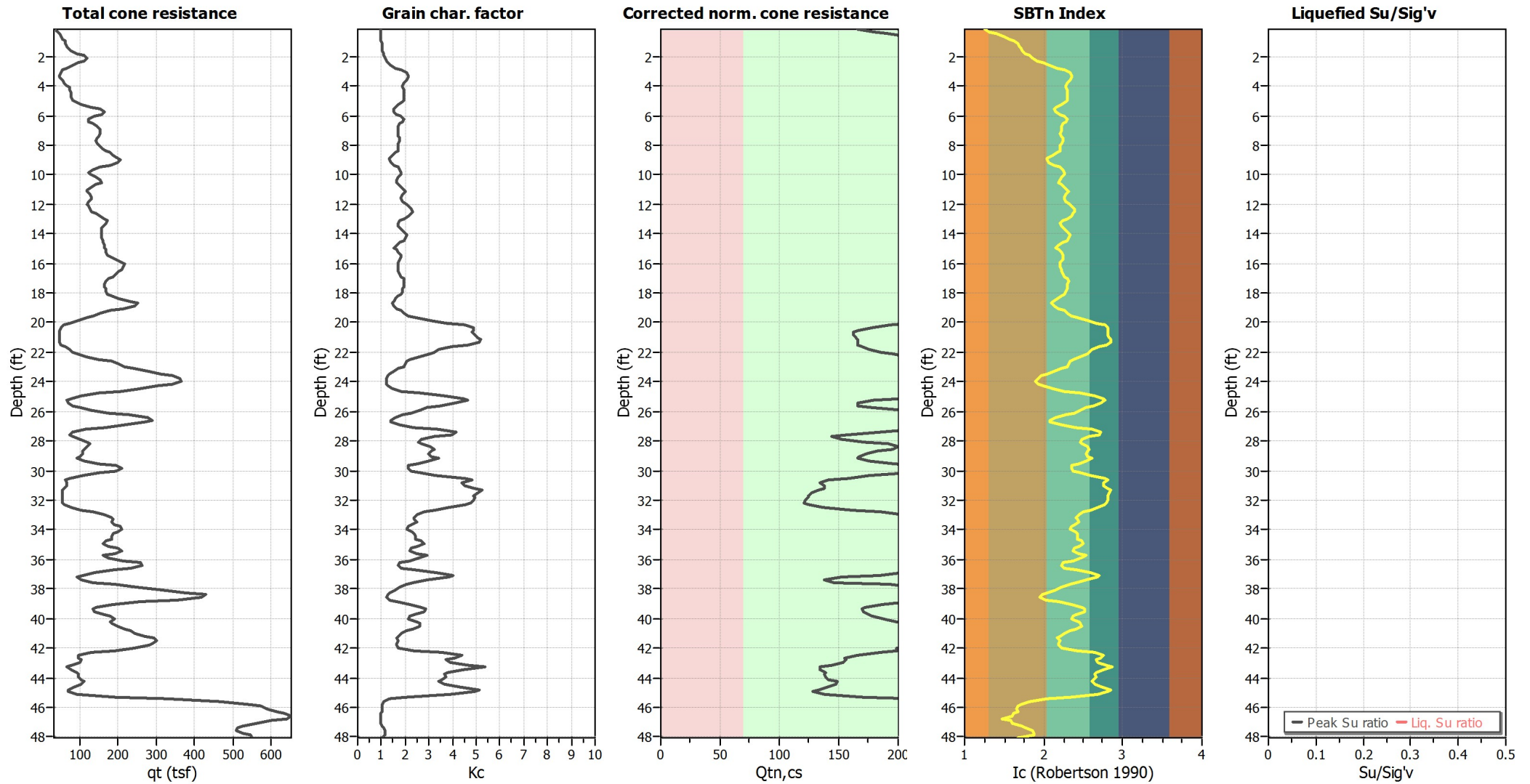
**F.S. color scheme**

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

**LPI color scheme**

- Very high risk
- High risk
- Low risk

### Check for strength loss plots (Robertson (2010))



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	31.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>c</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	31.00 ft	Fill height:	N/A	Limit depth:	N/A

**LIQUEFACTION ANALYSIS REPORT**

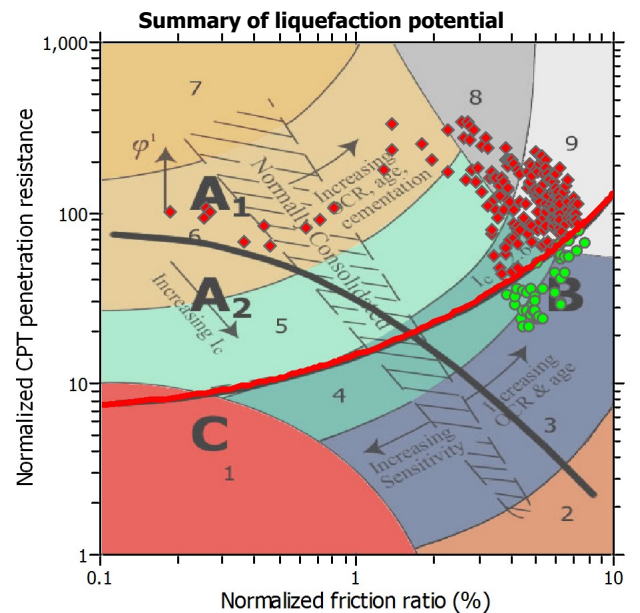
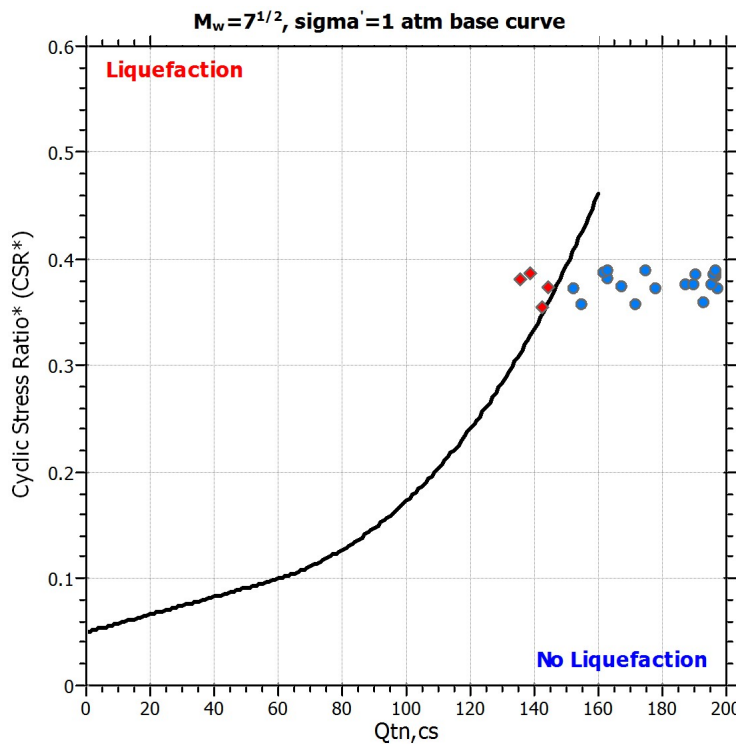
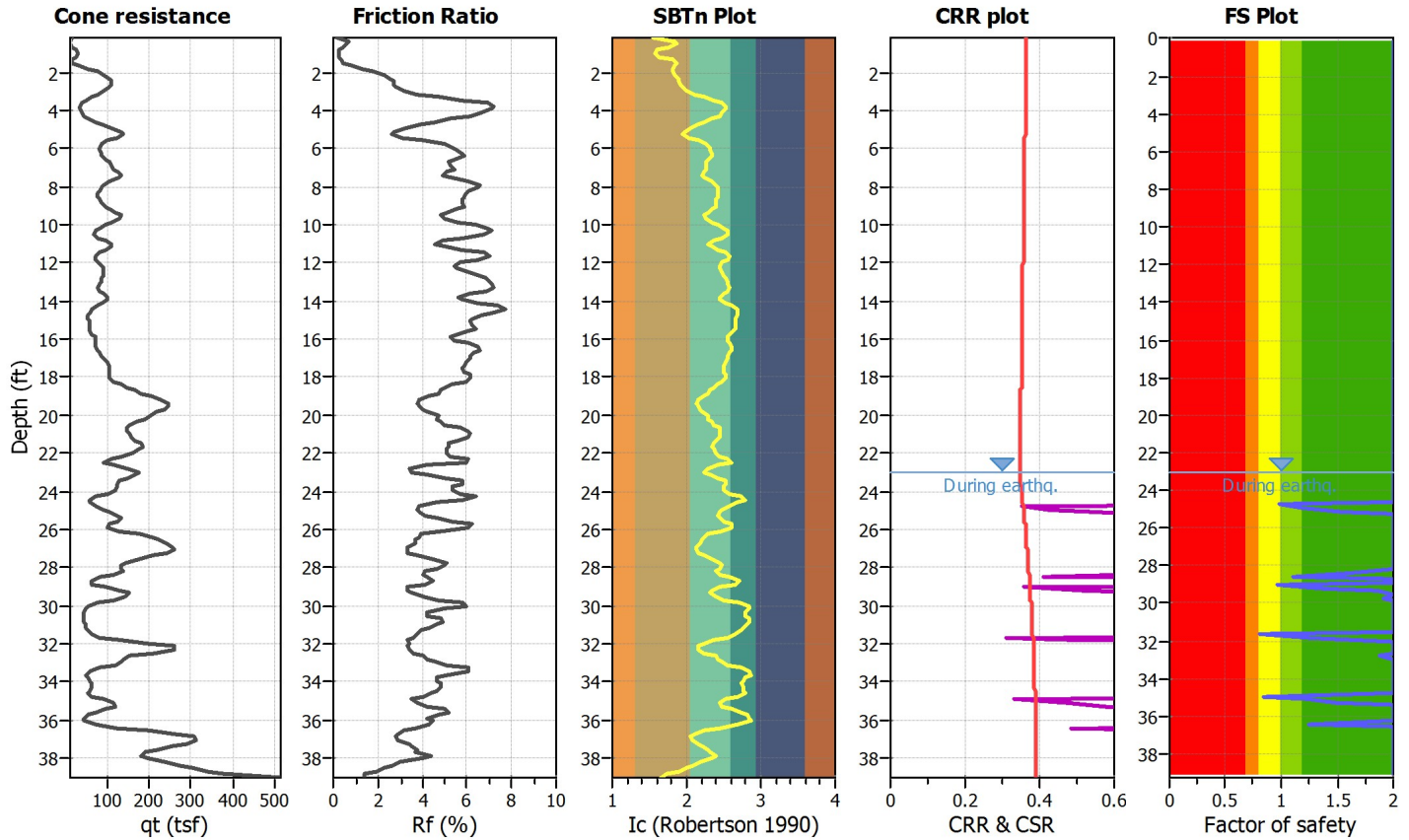
**Project title : Westar Goleta**

**Location : Goleta, California**

**CPT file : CPT-4**

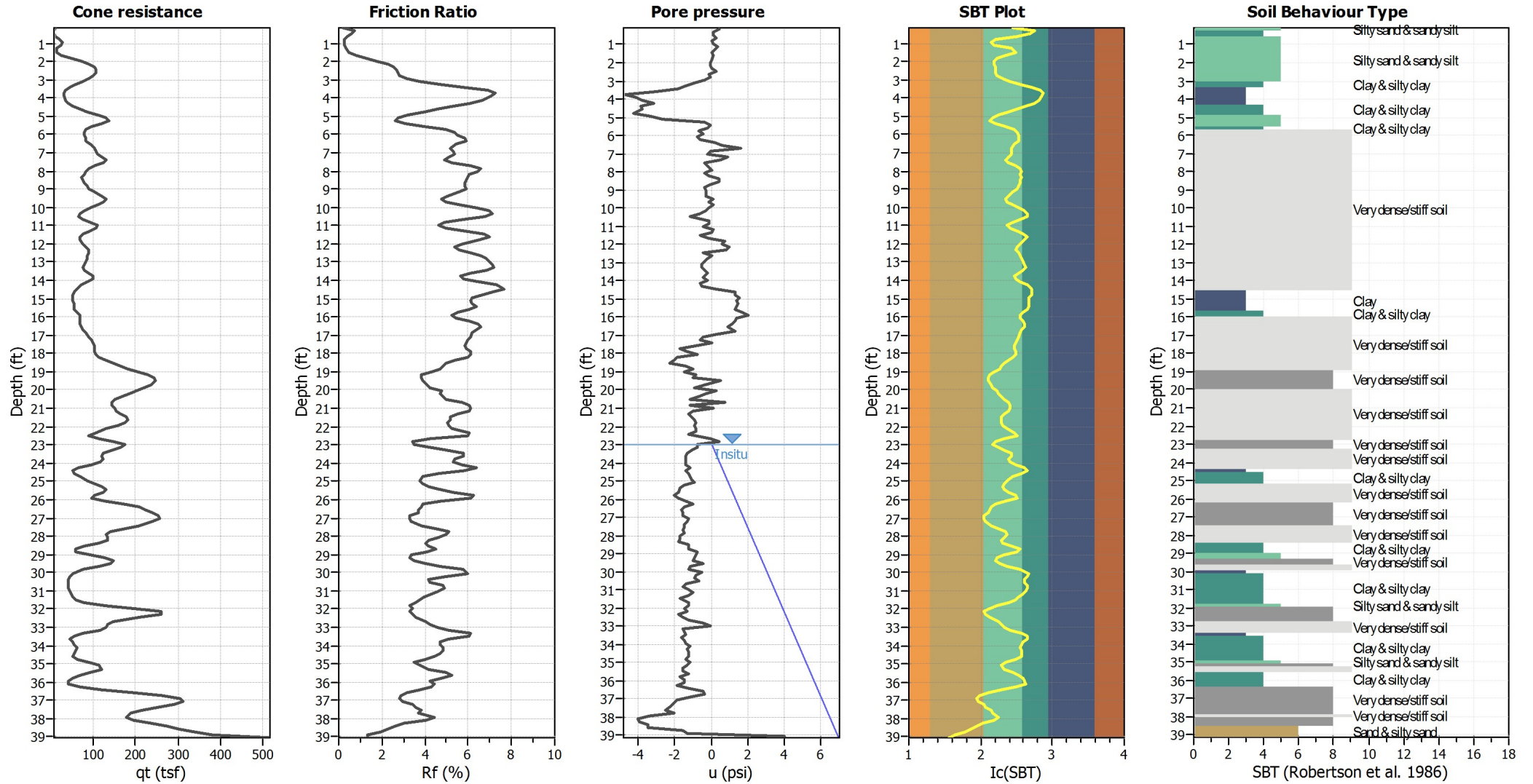
**Input parameters and analysis data**

Analysis method:	NCEER 1998	G.W.T. (in-situ):	23.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	Robertson & Wride	G.W.T. (earthq.):	23.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.40	Ic cut-off value:	Based on SBT	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.58	Unit weight calculation:	Based on SBT	$K_g$ applied:	No		



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
 Zone A<sub>2</sub>: 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



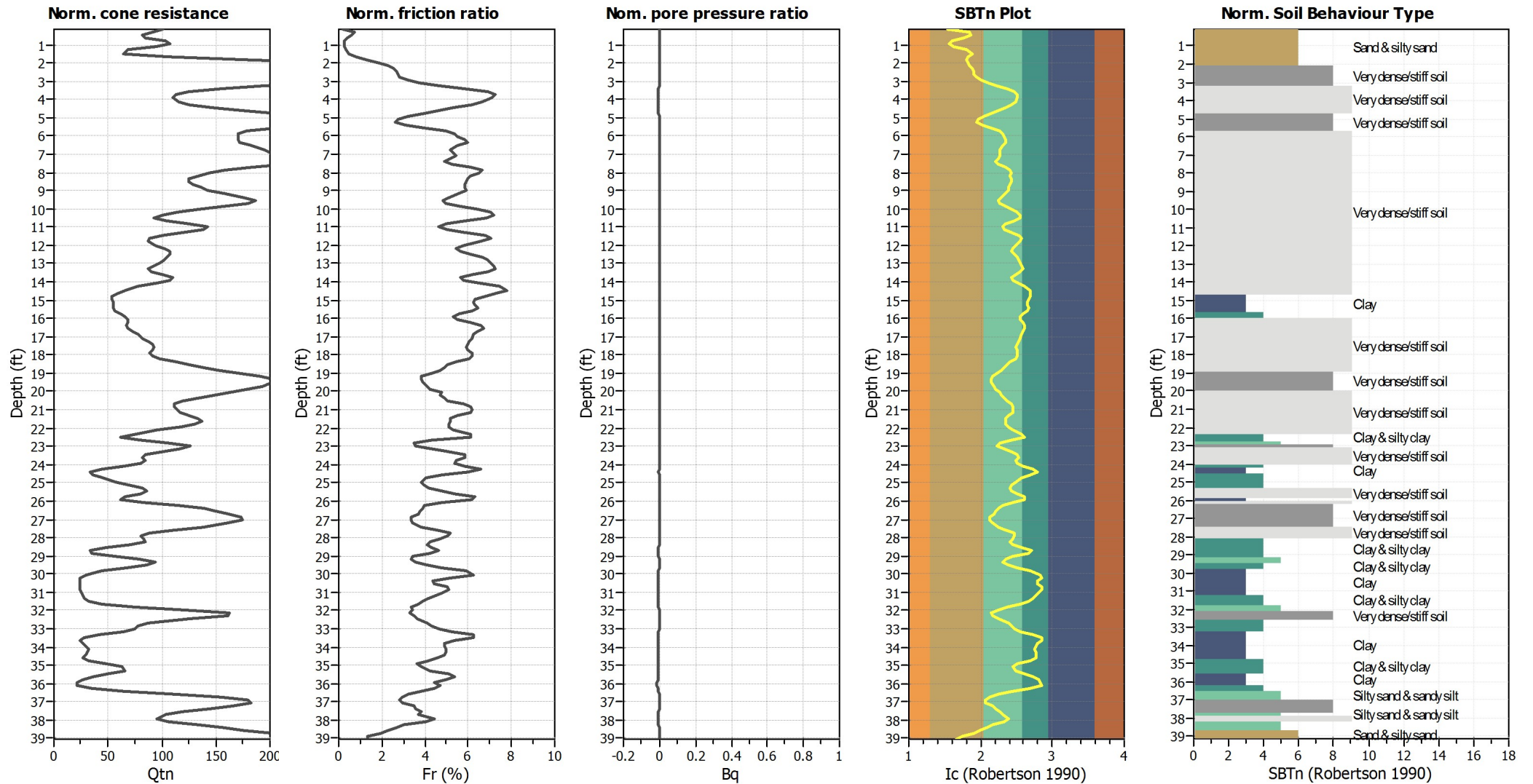
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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)



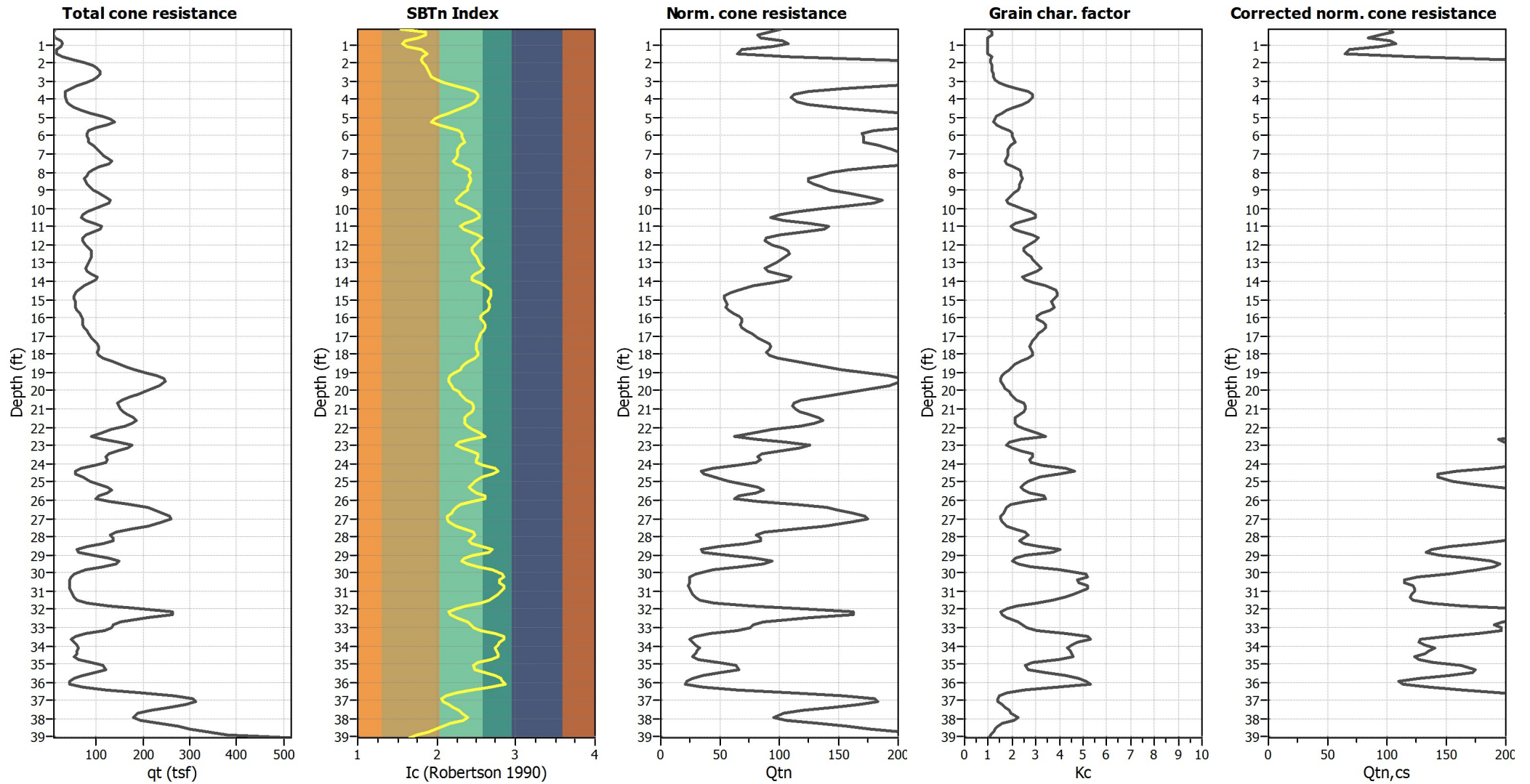
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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

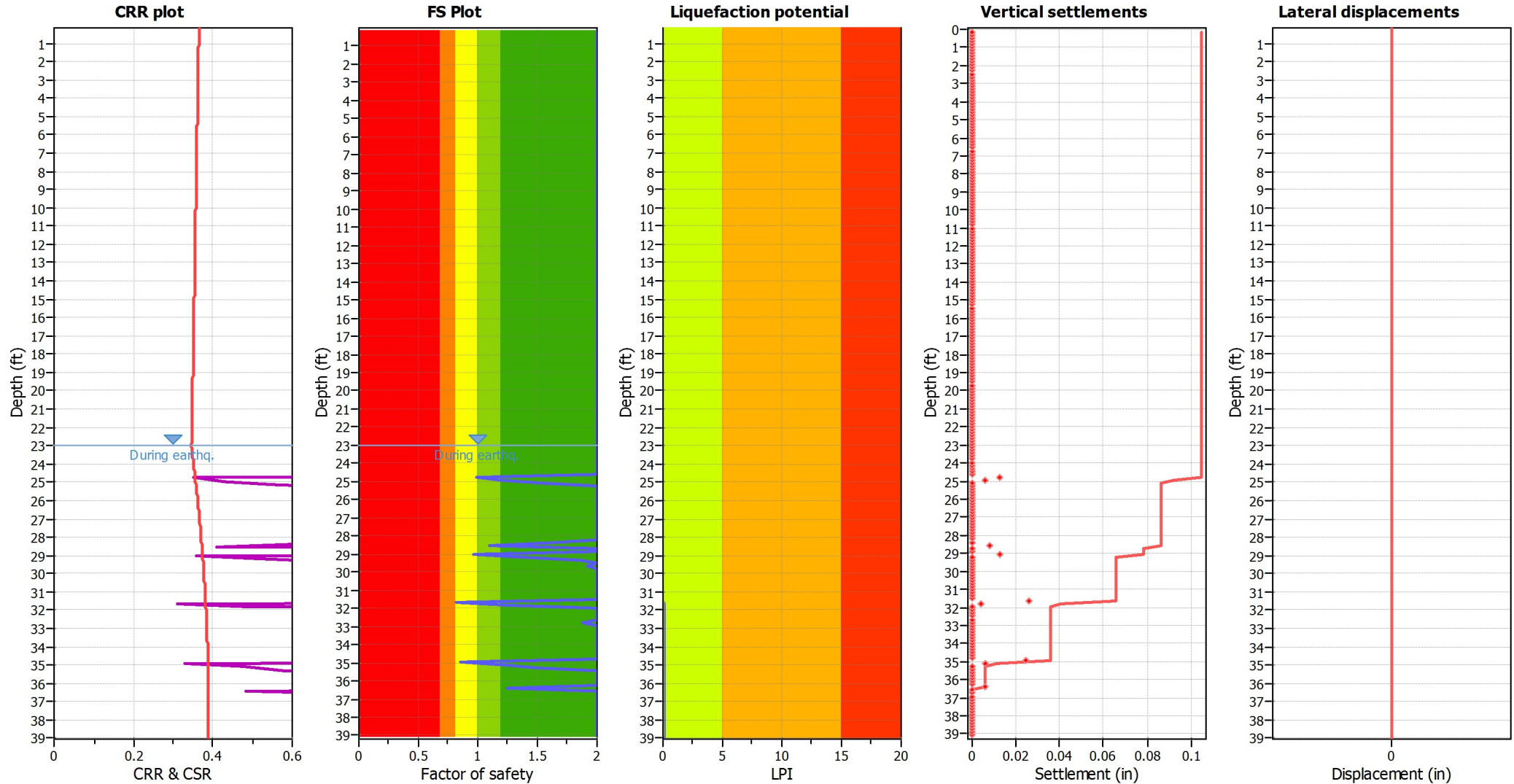
### Liquefaction analysis overall plots (intermediate results)



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_{cs}$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

### Liquefaction analysis overall plots



**Input parameters and analysis data**

Analysis method:	NCEER 1998	Depth to water table (earthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

**F.S. color scheme**

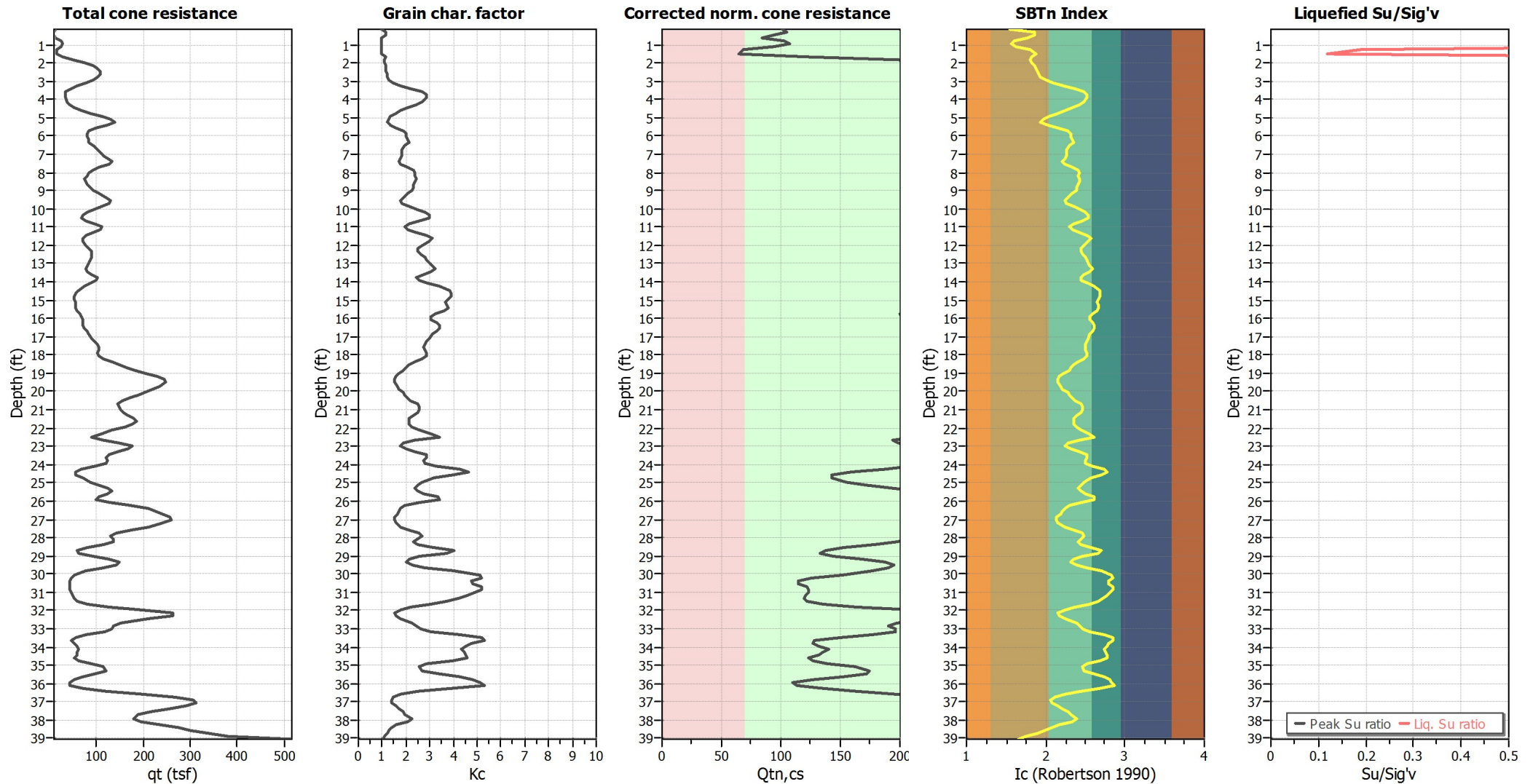
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liquefaction are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk



### Check for strength loss plots (Robertson (2010))



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

**LIQUEFACTION ANALYSIS REPORT**

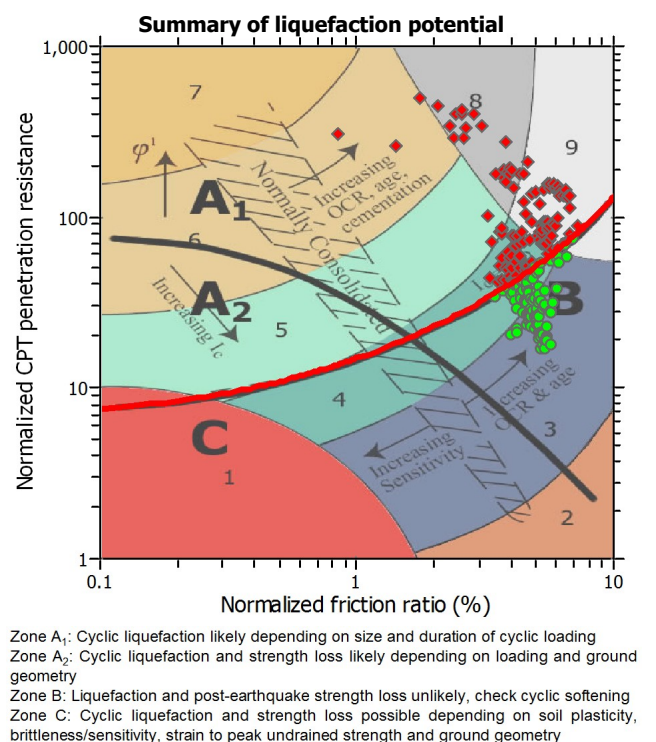
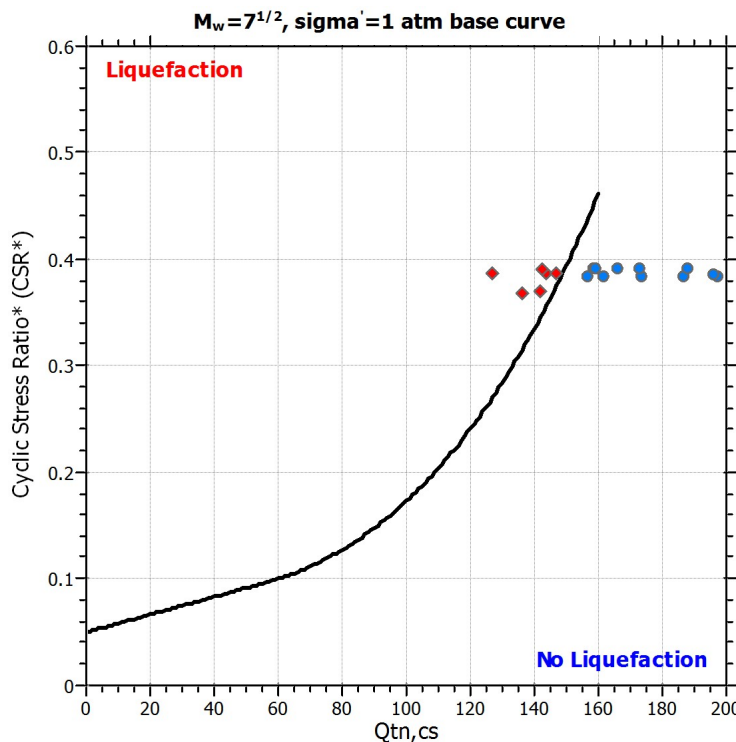
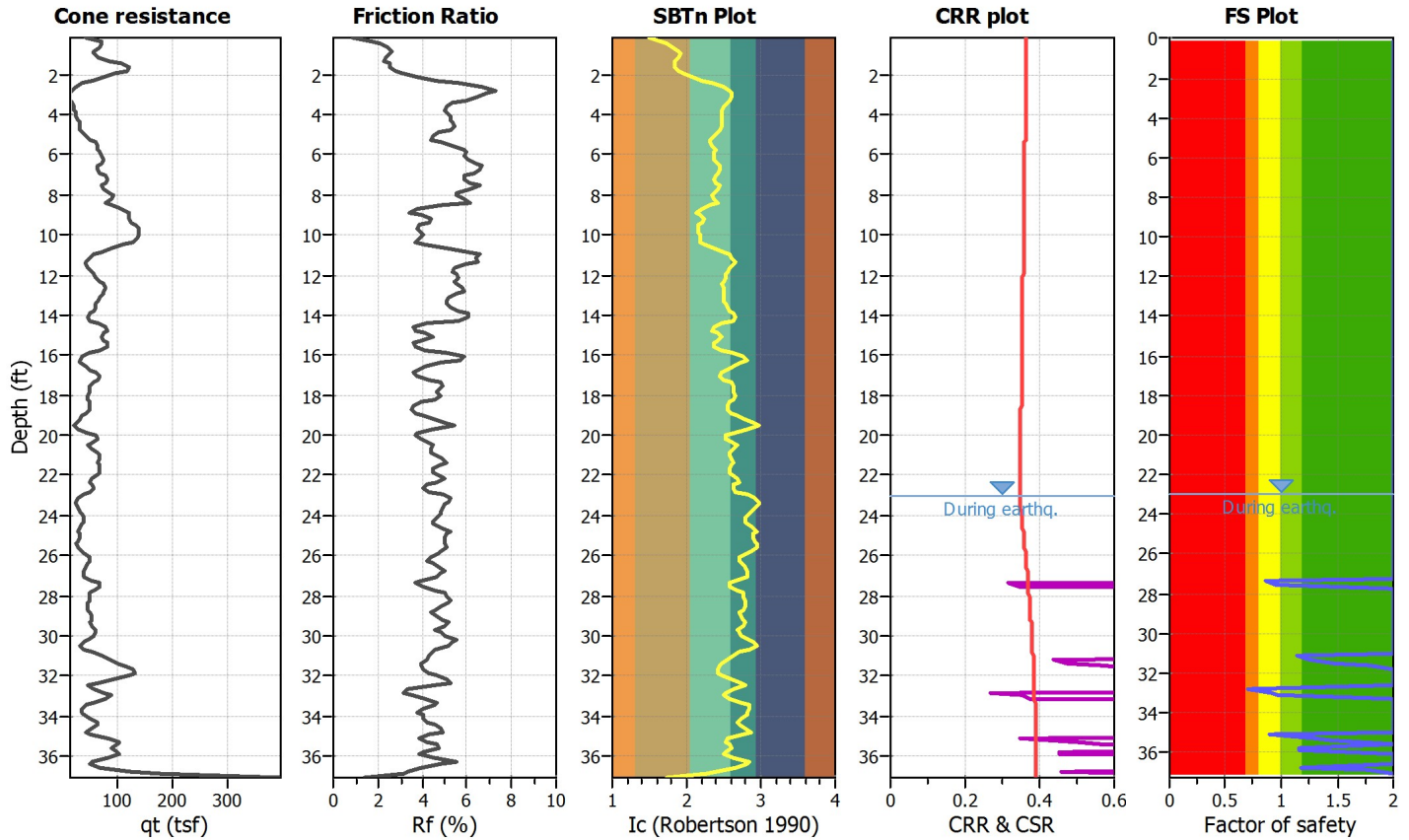
**Project title : Westar Goleta**

**Location : Goleta, California**

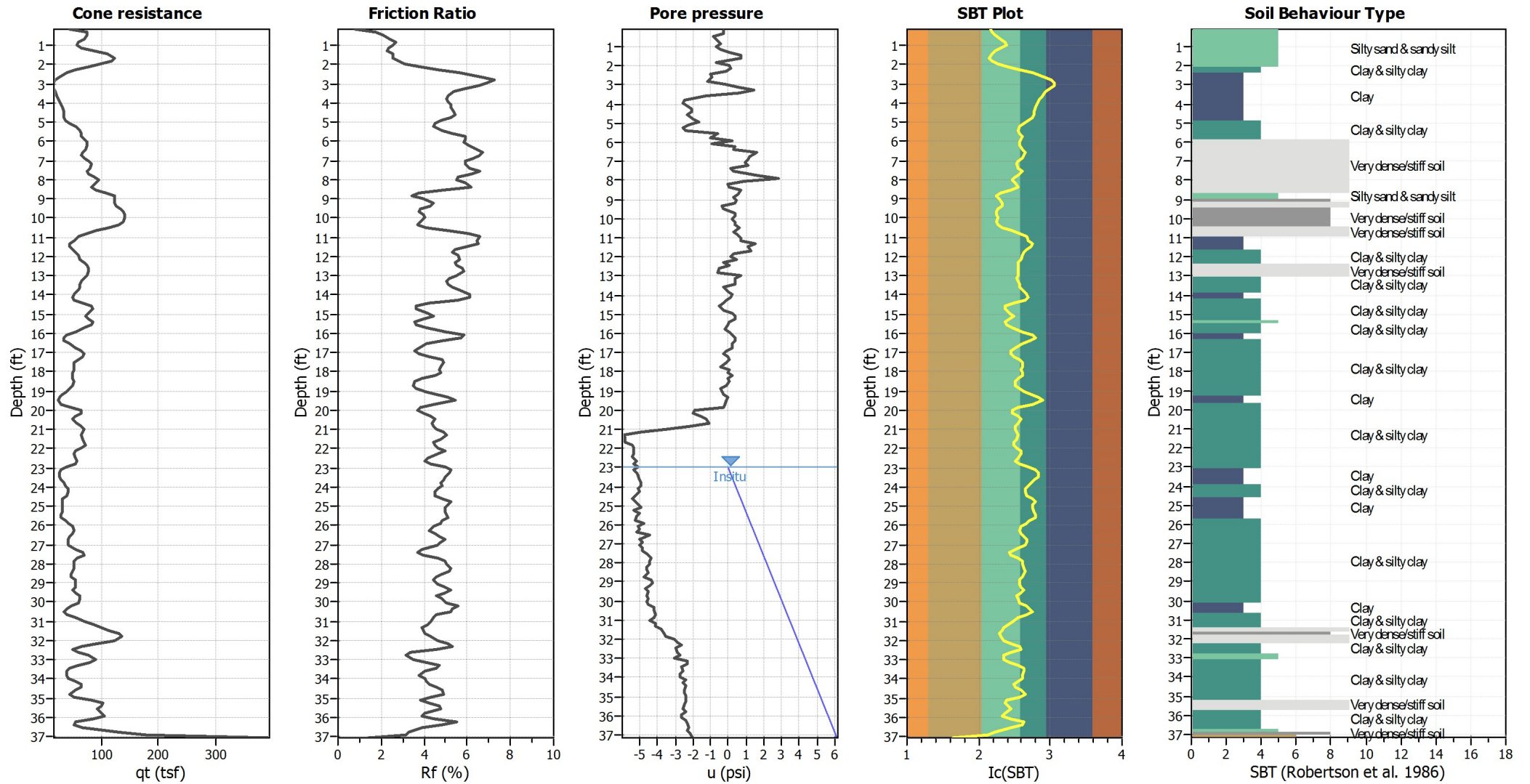
**CPT file : CPT-5**

**Input parameters and analysis data**

Analysis method:	NCEER 1998	G.W.T. (in-situ):	23.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	Robertson & Wride	G.W.T. (earthq.):	23.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	Limit depth:	N/A
Peak ground acceleration:	0.58	Unit weight calculation:	Based on SBT	$K_g$ applied:	No		



### CPT basic interpretation plots



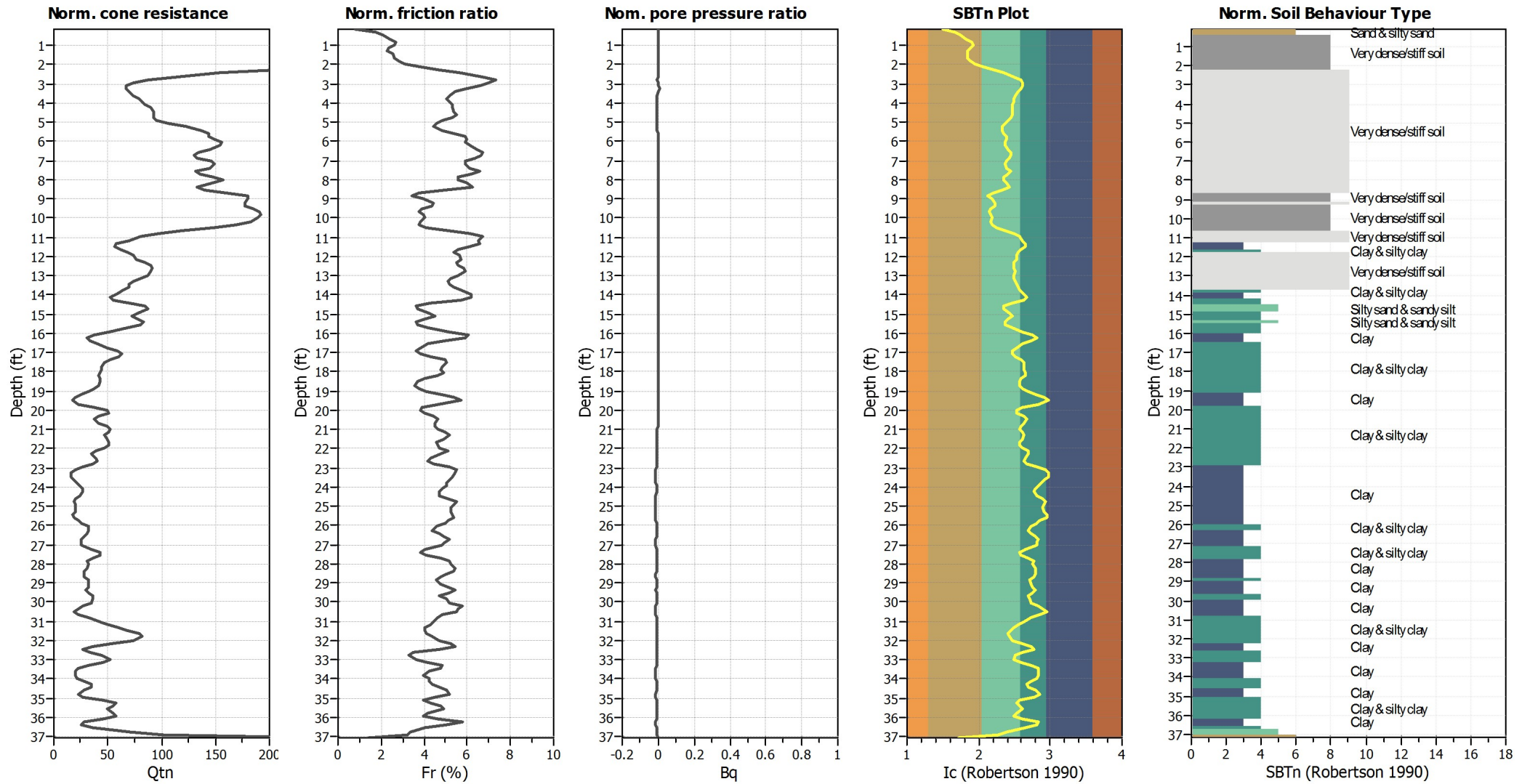
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_v$ applied:	No
Earthquake magnitude $M_w$ :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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)



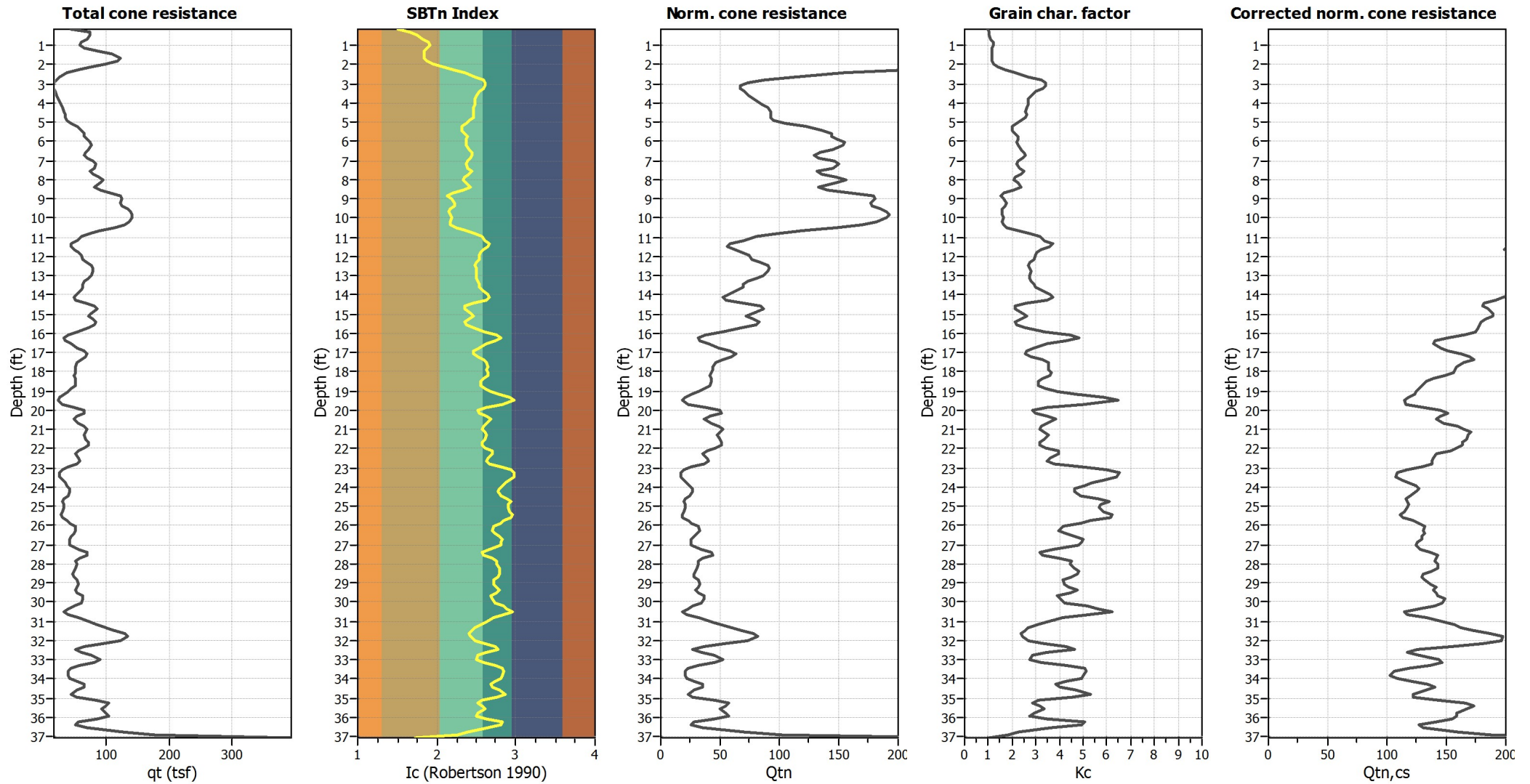
#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

#### 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

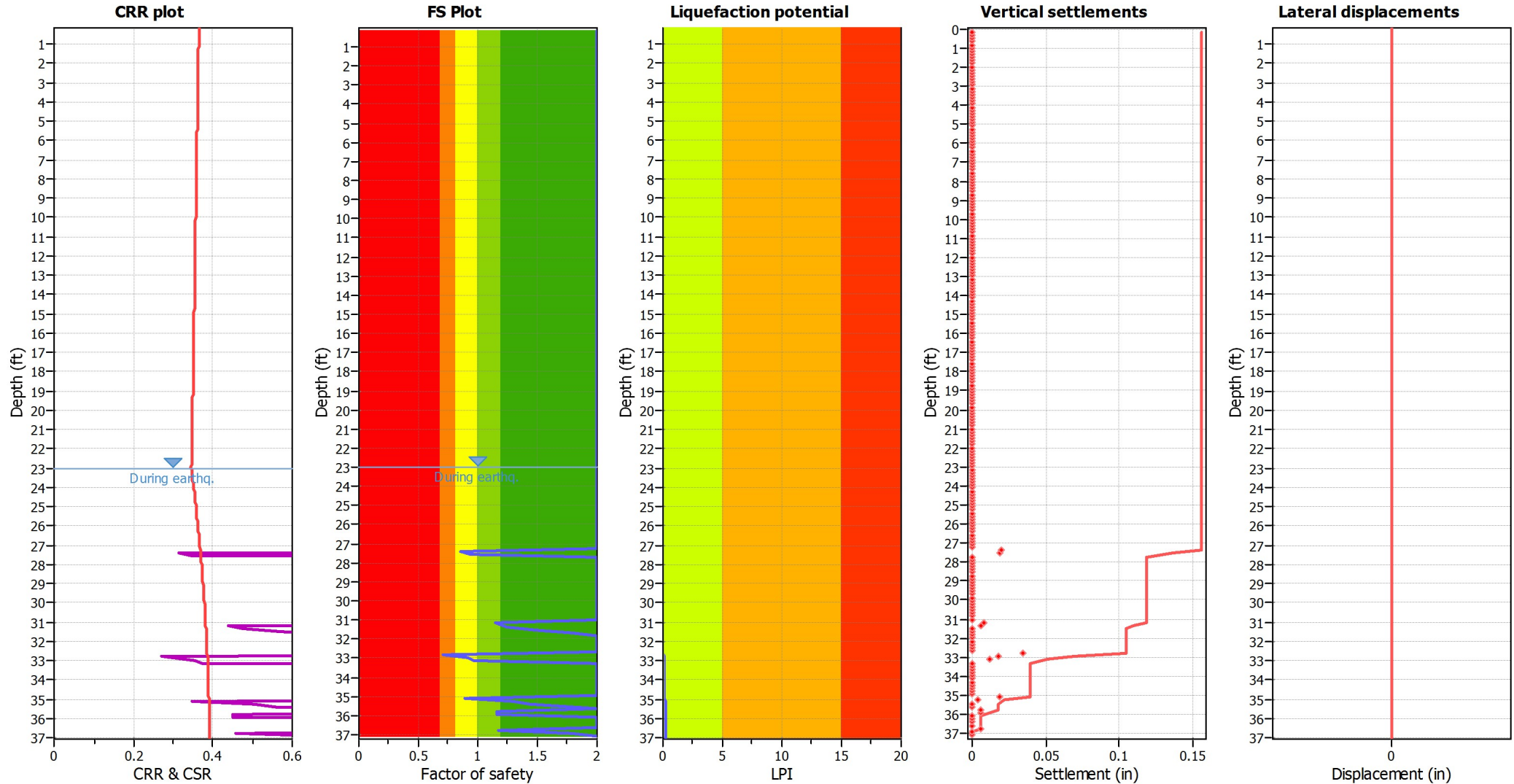
### Liquefaction analysis overall plots (intermediate results)



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

### Liquefaction analysis overall plots



**Input parameters and analysis data**

Analysis method:	NCEER 1998	Depth to water table (earthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A

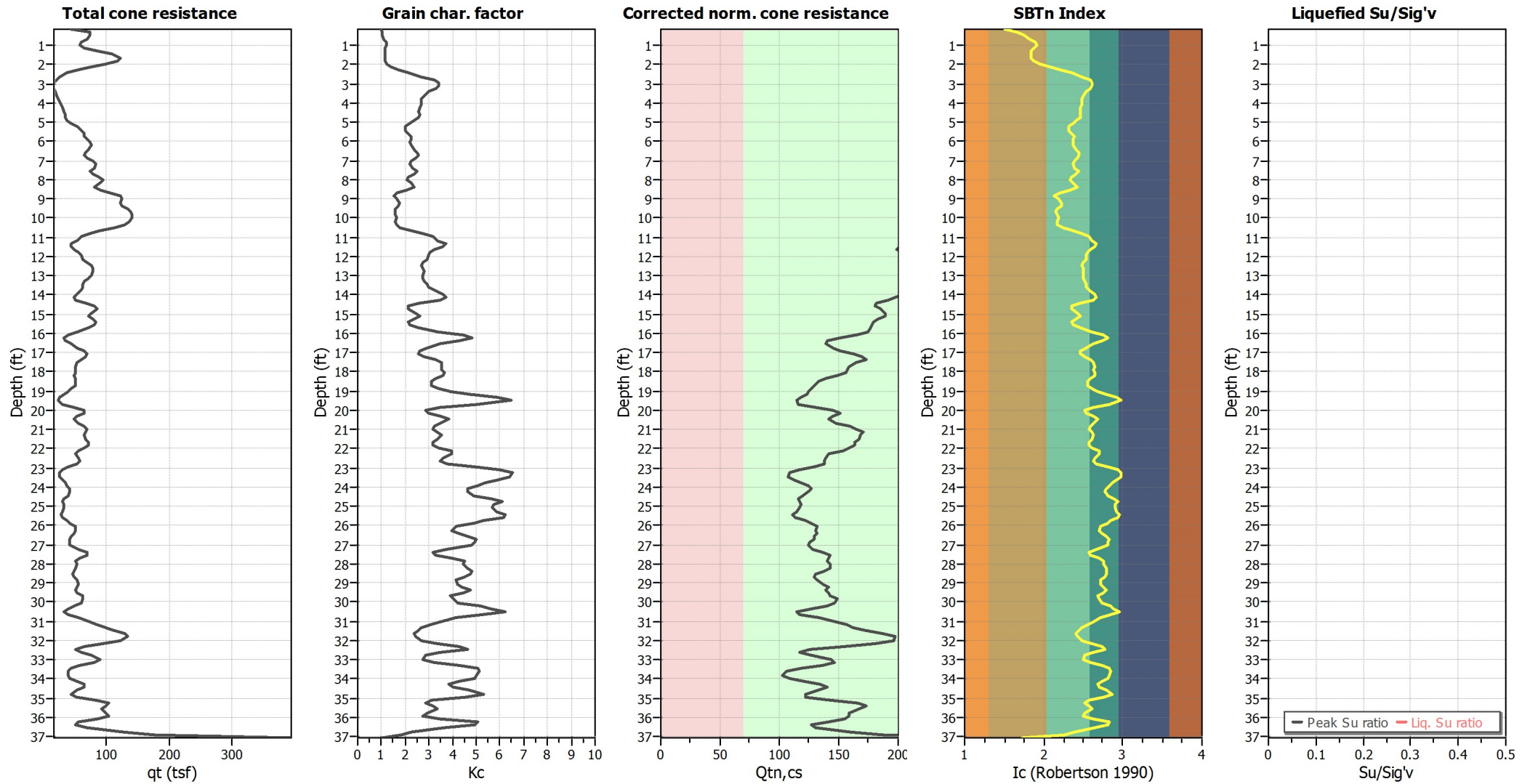
**F.S. color scheme**

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

**LPI color scheme**

- Very high risk
- High risk
- Low risk

### Check for strength loss plots (Robertson (2010))



#### Input parameters and analysis data

Analysis method:	NCEER 1998	Depth to water table (erthq.):	23.00 ft	Fill weight:	N/A
Fines correction method:	Robertson & Wride	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>σ</sub> applied:	No
Earthquake magnitude M <sub>w</sub> :	7.40	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	23.00 ft	Fill height:	N/A	Limit depth:	N/A