Attuazione dell'articolo 11 della legge 24 giugno 2009, n.77

MICROZONAZIONE SISMICA
Livello 3

Regione Emilia-Romagna
Comune di Mirandola
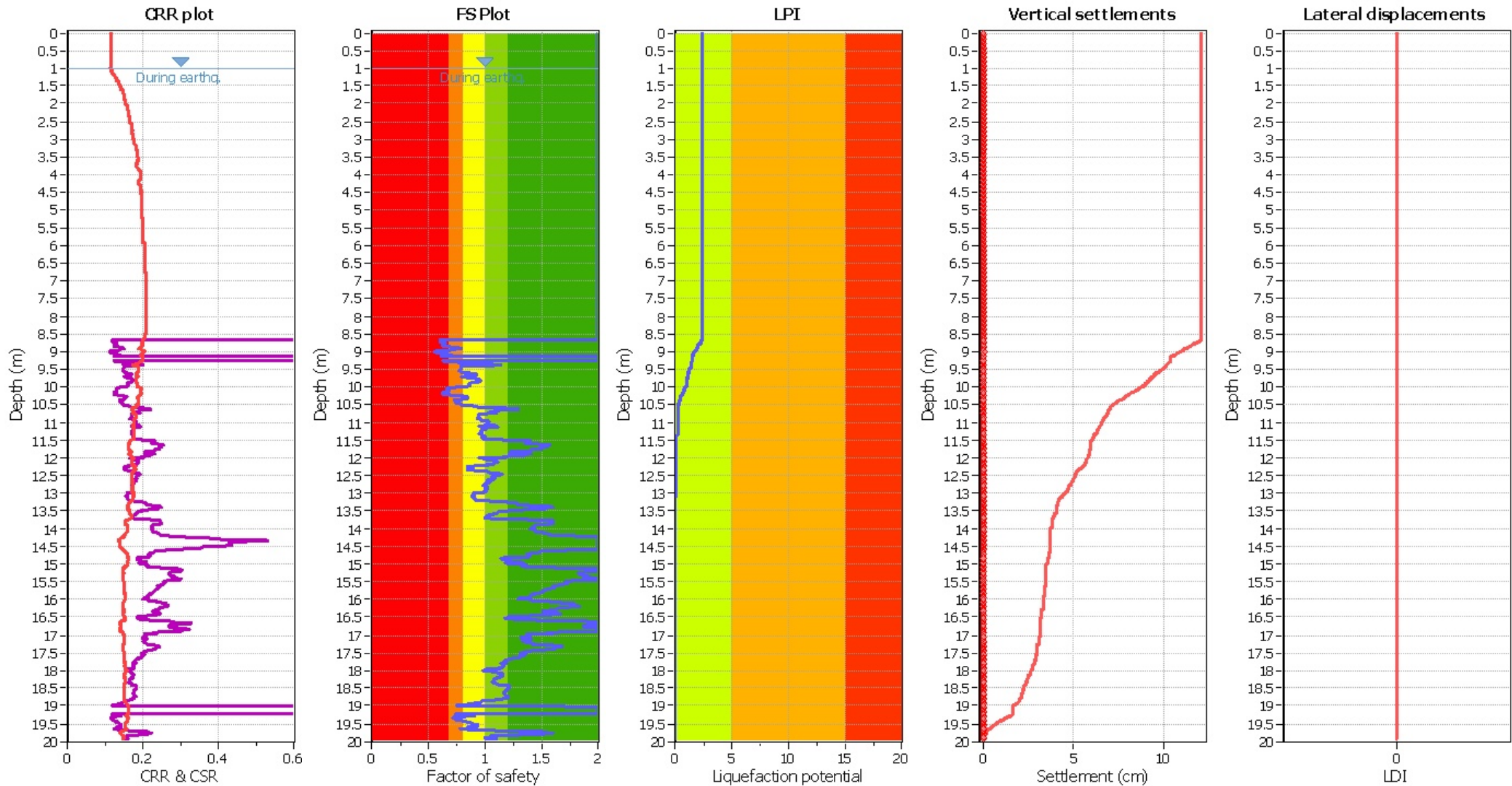
Relazione Illustrativa – Allegato 3
Verifica Potenziale di Liquefazione CPTU MS

Regione	Soggetto realizzatore	Data
Emilia-Romagna	Geotema S.r.l.	02/05/2018

Liquefaction analysis overall plot

CRR plot	FS Plot	LPI	Vertical settlements	Lateral displacements

Input parameters and analysis data

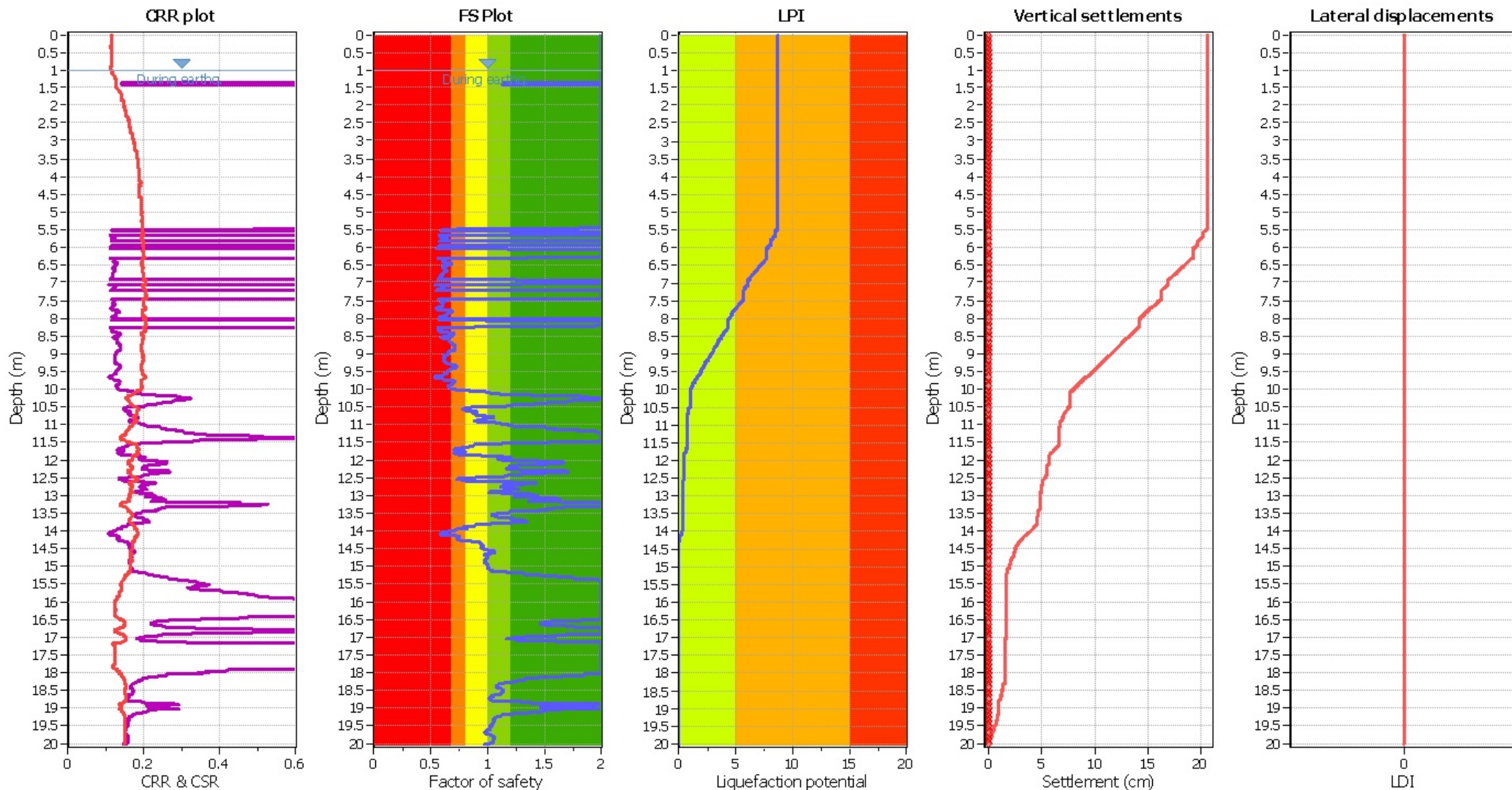|					
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.14	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.21	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	N/A

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

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Liquefaction analysis overall plot

CRR plot	FS Plot	LPI	Vertical settlements	Lateral displacements

Depth (m) axis: 0 to 20

CRR plot — During eartha
FS Plot — During eartho
X-axis CRR plot: CRR & CSR (0, 0.2, 0.4, 0.6)
X-axis FS Plot: Factor of safety (0, 0.5, 1, 1.5, 2)
X-axis LPI: Liquefaction potential (0, 5, 10, 15, 20)
X-axis Vertical settlements: Settlement (cm) (0, 5, 10, 15, 20)
X-axis Lateral displacements: LDI (0)

Input parameters and analysis data

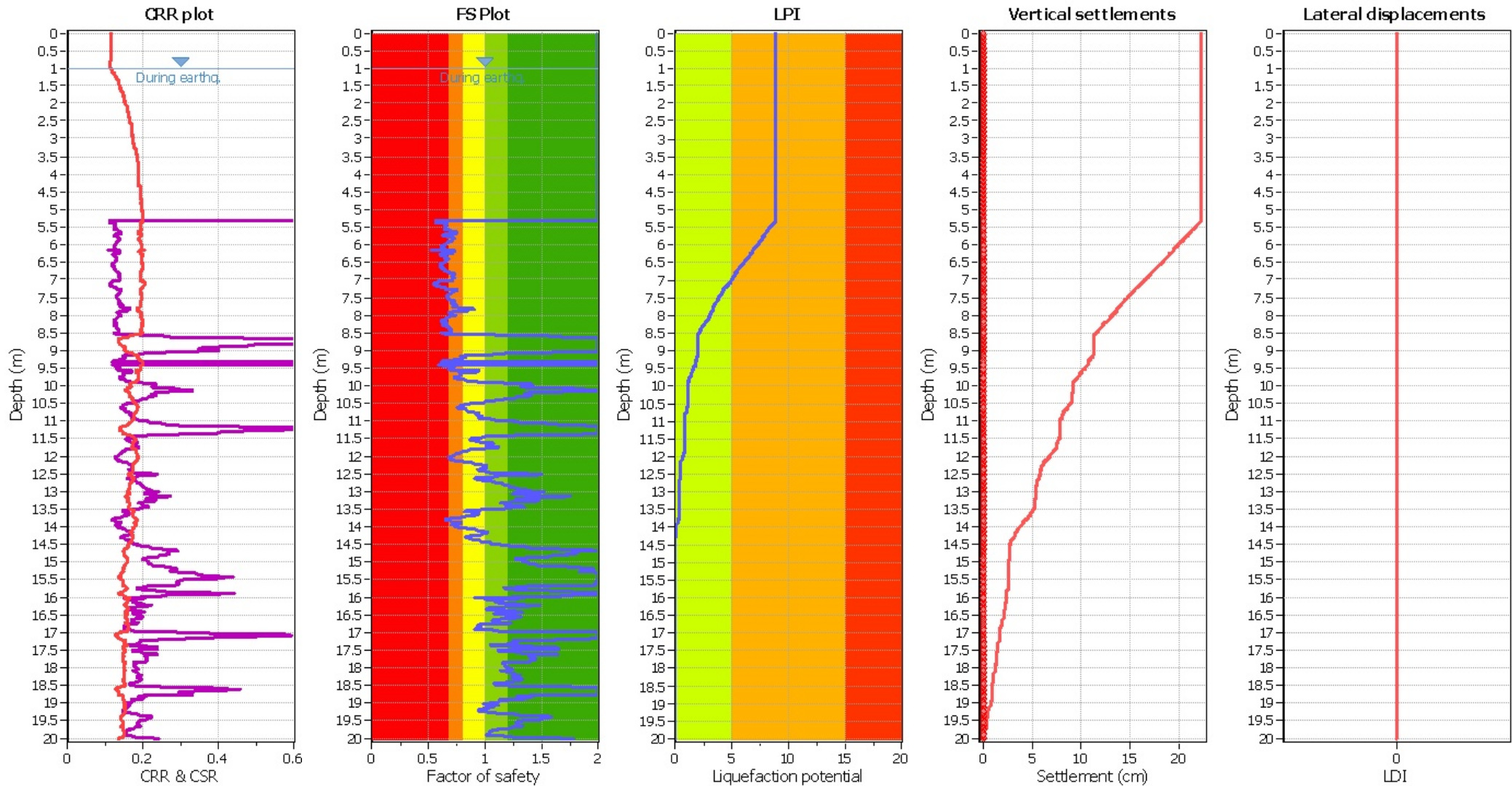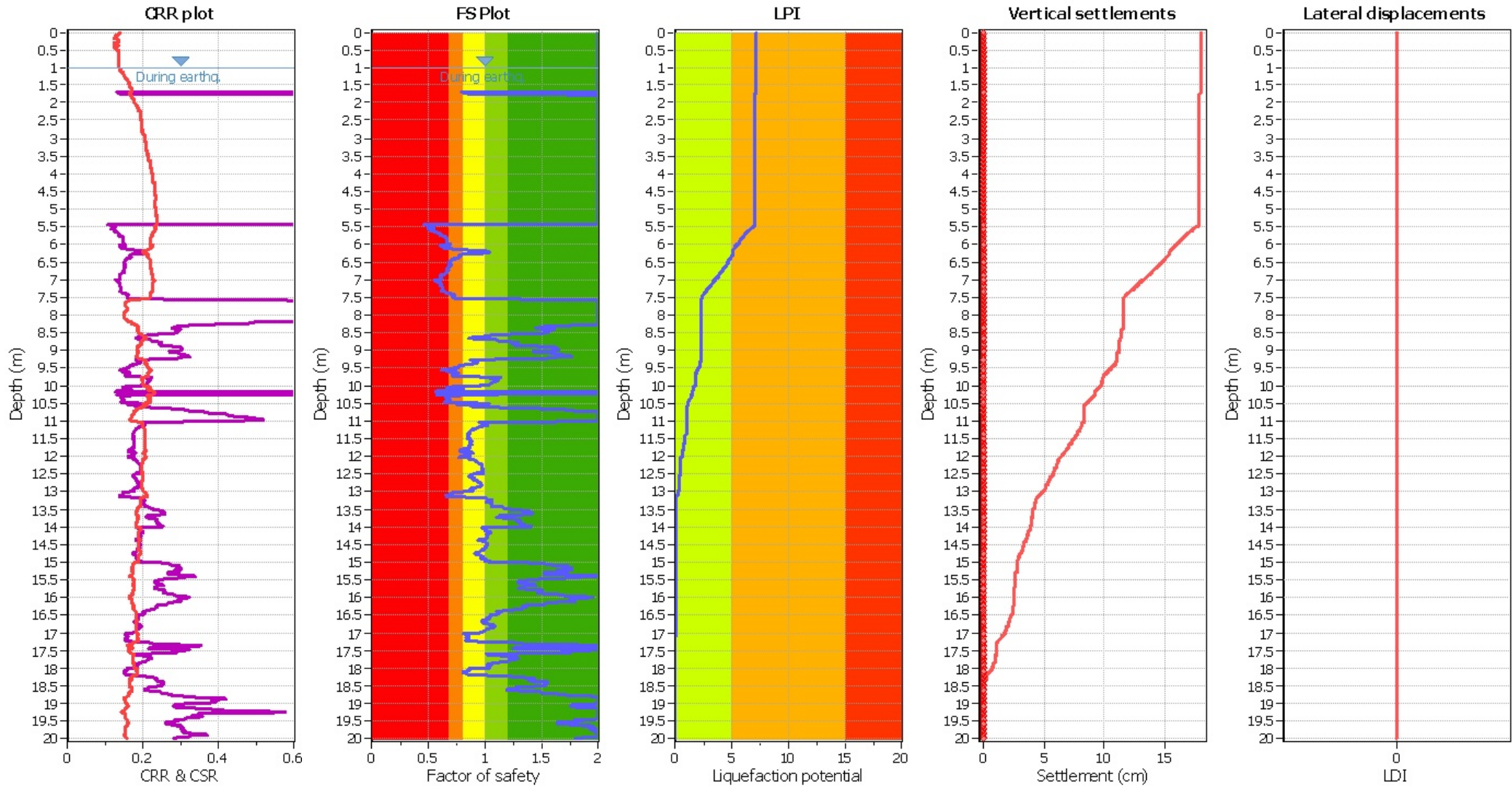|					
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Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	N/A

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LPI color scheme
- Very high risk
- High risk
- Low risk

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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
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- 🟨 Liquefaction and no liq. are equally likely
- 🟩 Unlike to liquefy
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LPI color scheme
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- 🟧 High risk
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Liquefaction analysis overall plot

| CRR plot | FS Plot | LPI | Vertical settlements | Lateral displacements |

Input parameters and analysis data

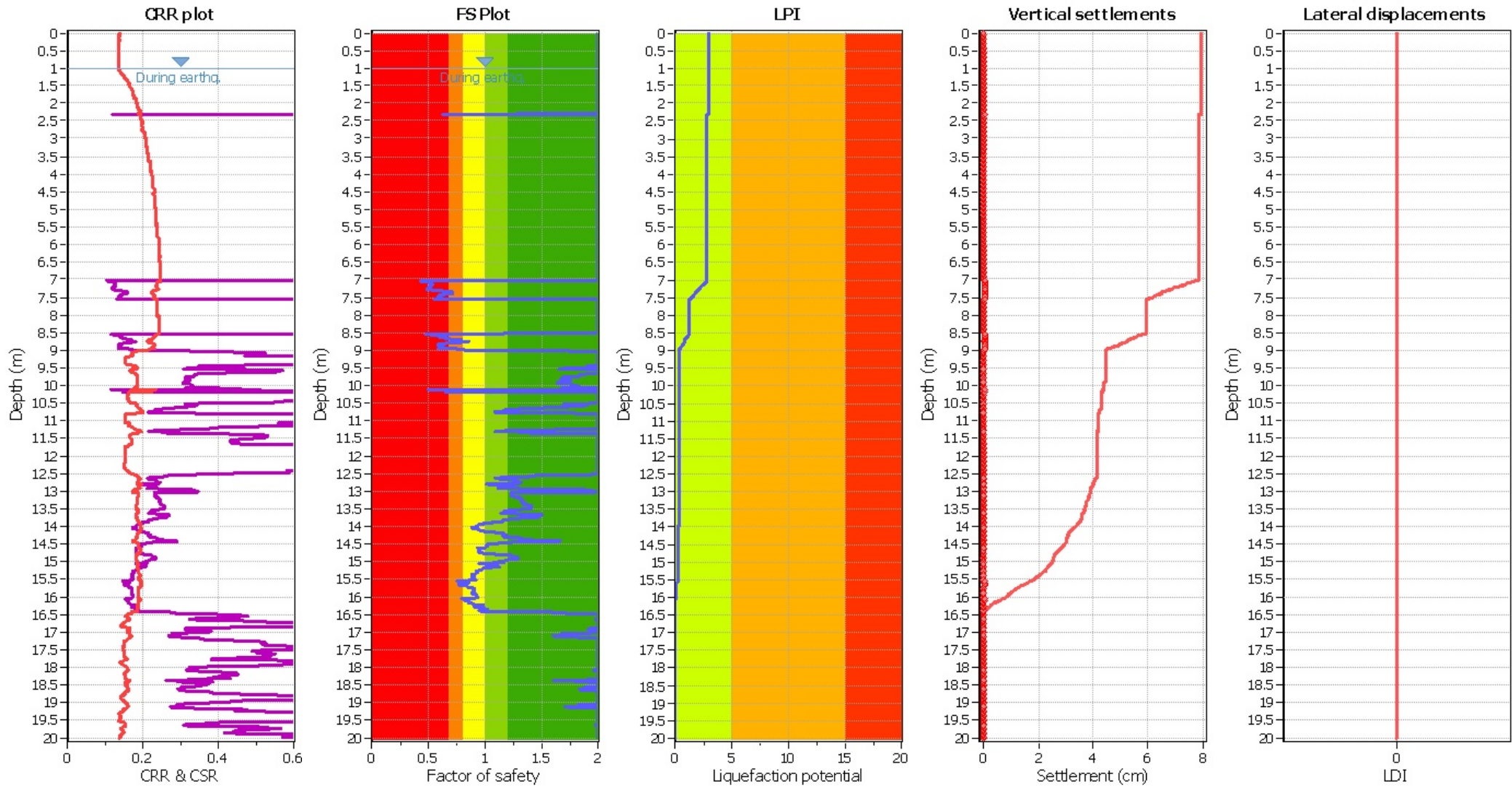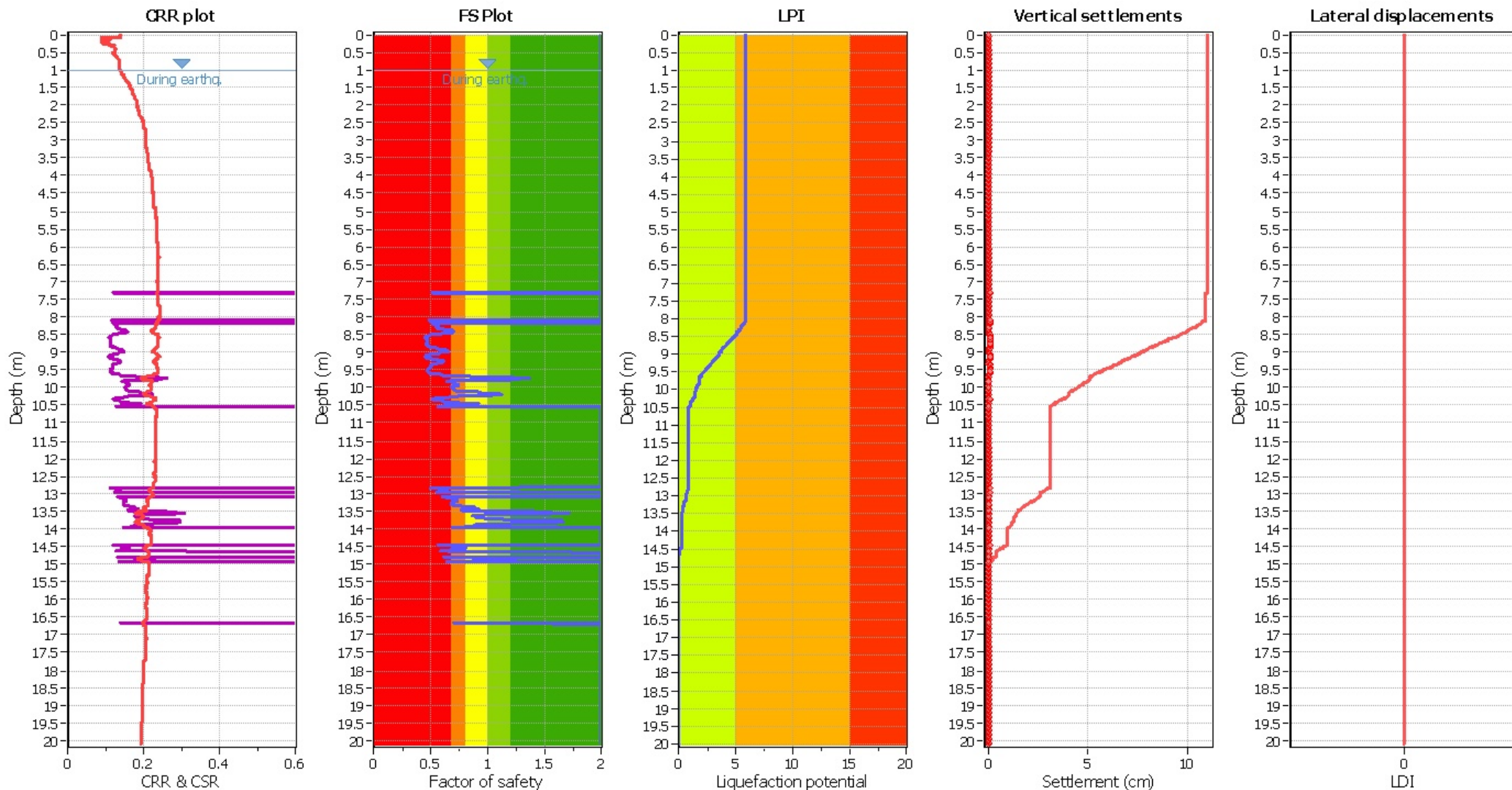|					
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Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.14	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.25	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	N/A

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LPI color scheme

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Liquefaction analysis overall plot

| CRR plot | FS Plot | LPI | Vertical settlements | Lateral displacements |

Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
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Liquefaction analysis overall plot

CRR plot
Depth (m) vs CRR & CSR

FS Plot
Depth (m) vs Factor of safety

LPI
Depth (m) vs Liquefaction potential

Vertical settlements
Depth (m) vs Settlement (cm)

Lateral displacements
Depth (m) vs LDI

During earthq.

Input parameters and analysis data

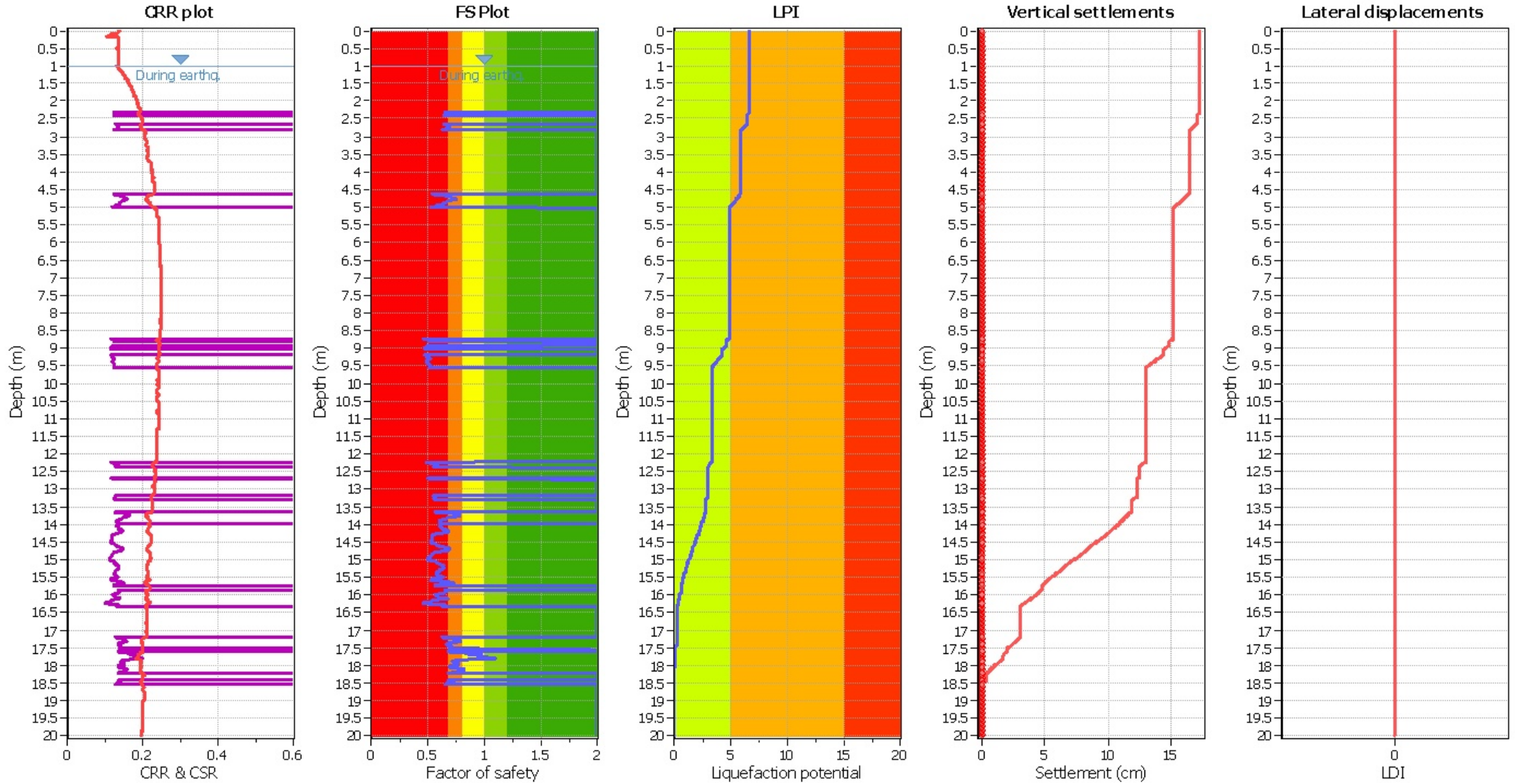|					
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
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Liquefaction analysis overall plot

CRR plot — CRR & CSR

FS Plot — Factor of safety

LPI — Liquefaction potential

Vertical settlements — Settlement (cm)

Lateral displacements — LDI

Input parameters and analysis data

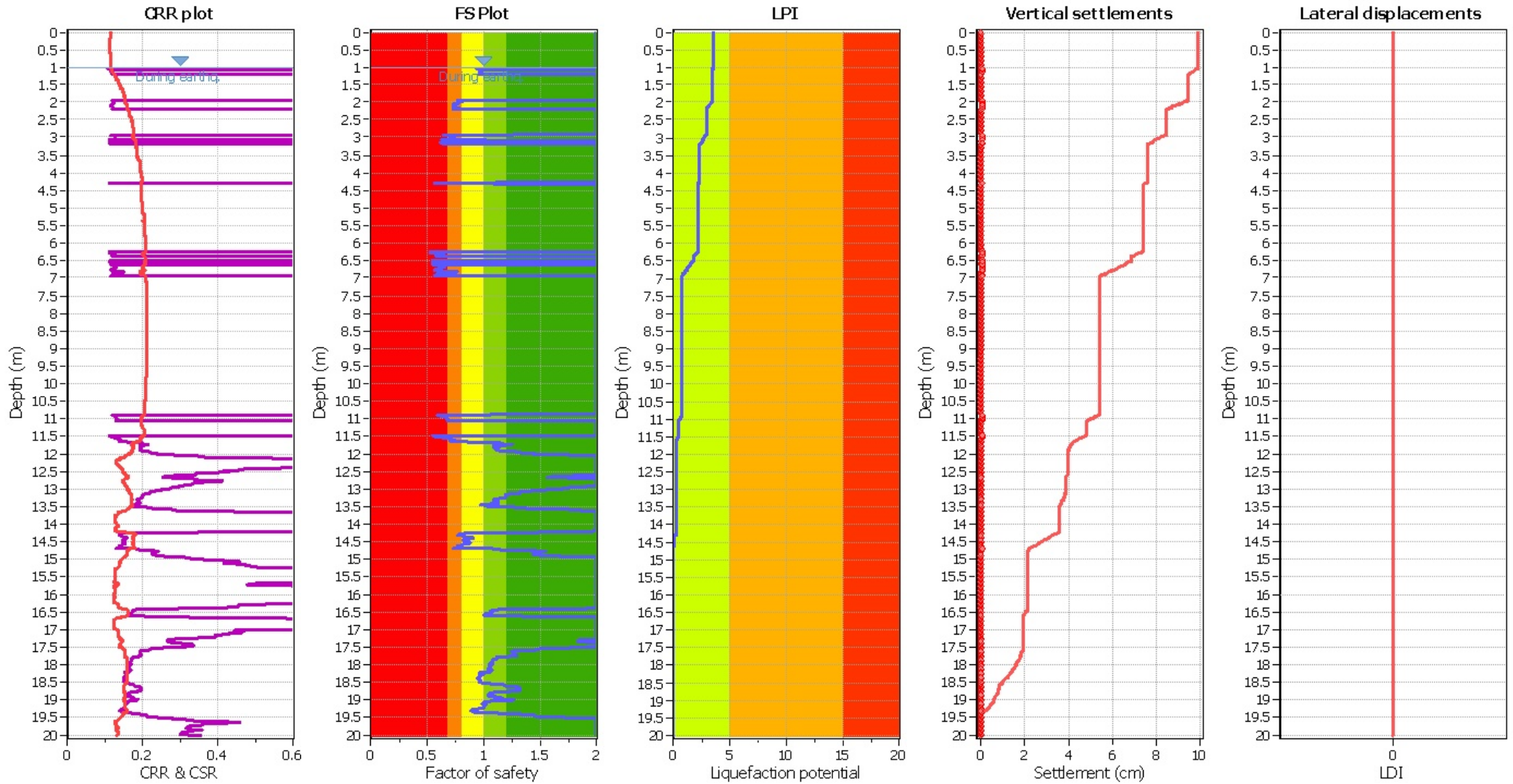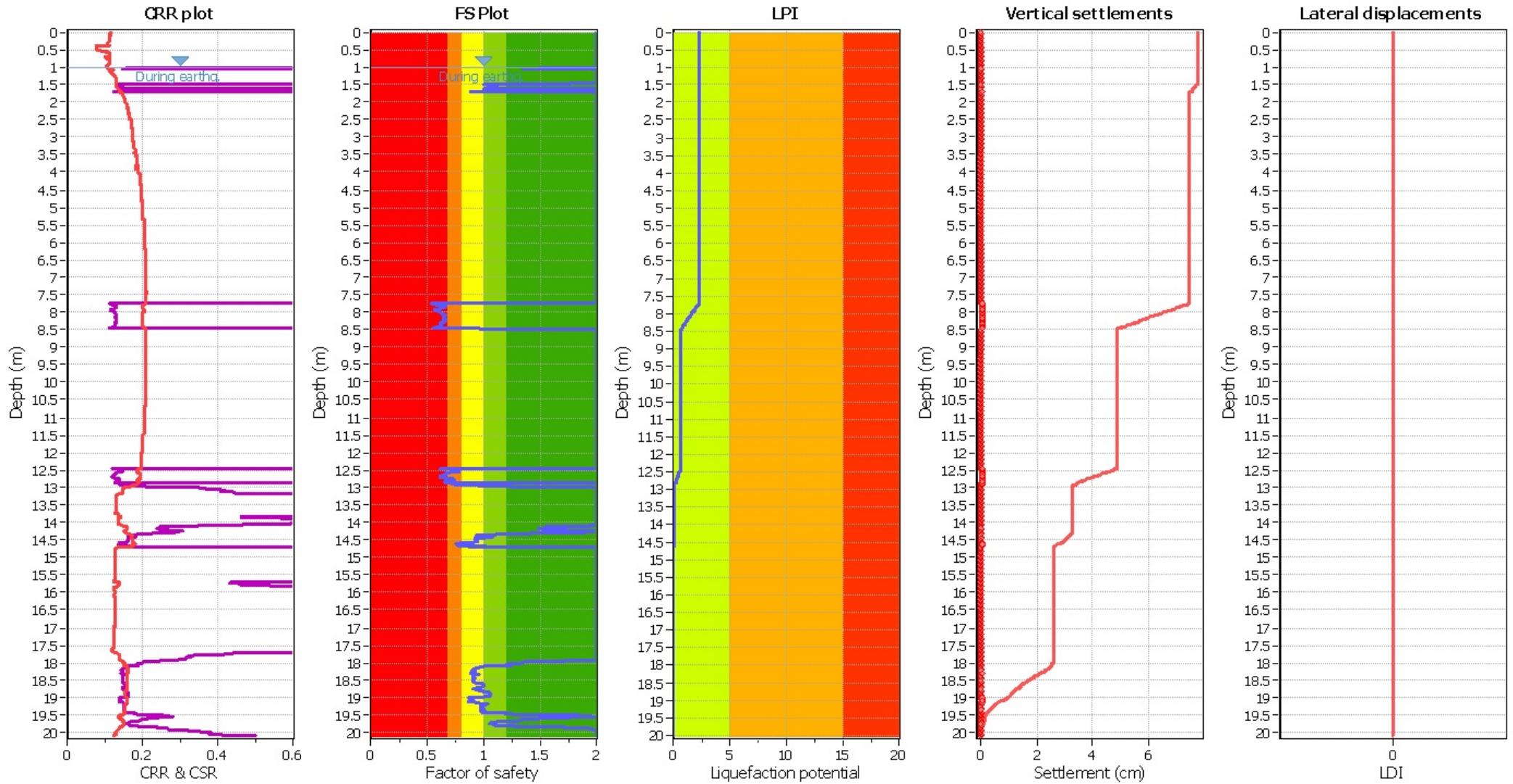|					
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Liquefaction analysis overall plot

| CRR plot | FS Plot | LPI | Vertical settlements | Lateral displacements |

Input parameters and analysis data

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Liquefaction analysis overall plot

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Axis labels: CRR & CSR; Factor of safety; Liquefaction potential; Settlement (cm); LDI

Depth (m)

Input parameters and analysis data

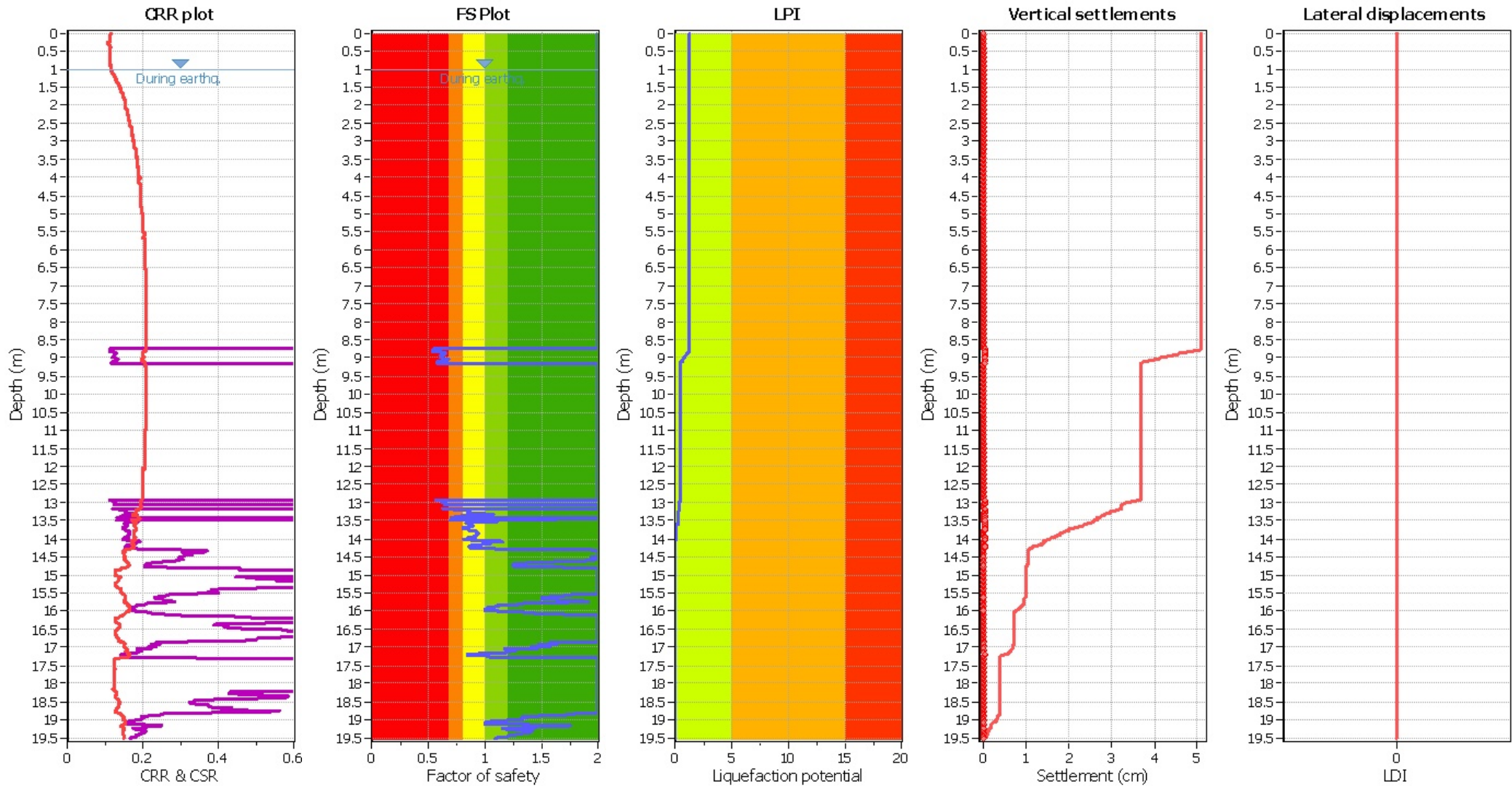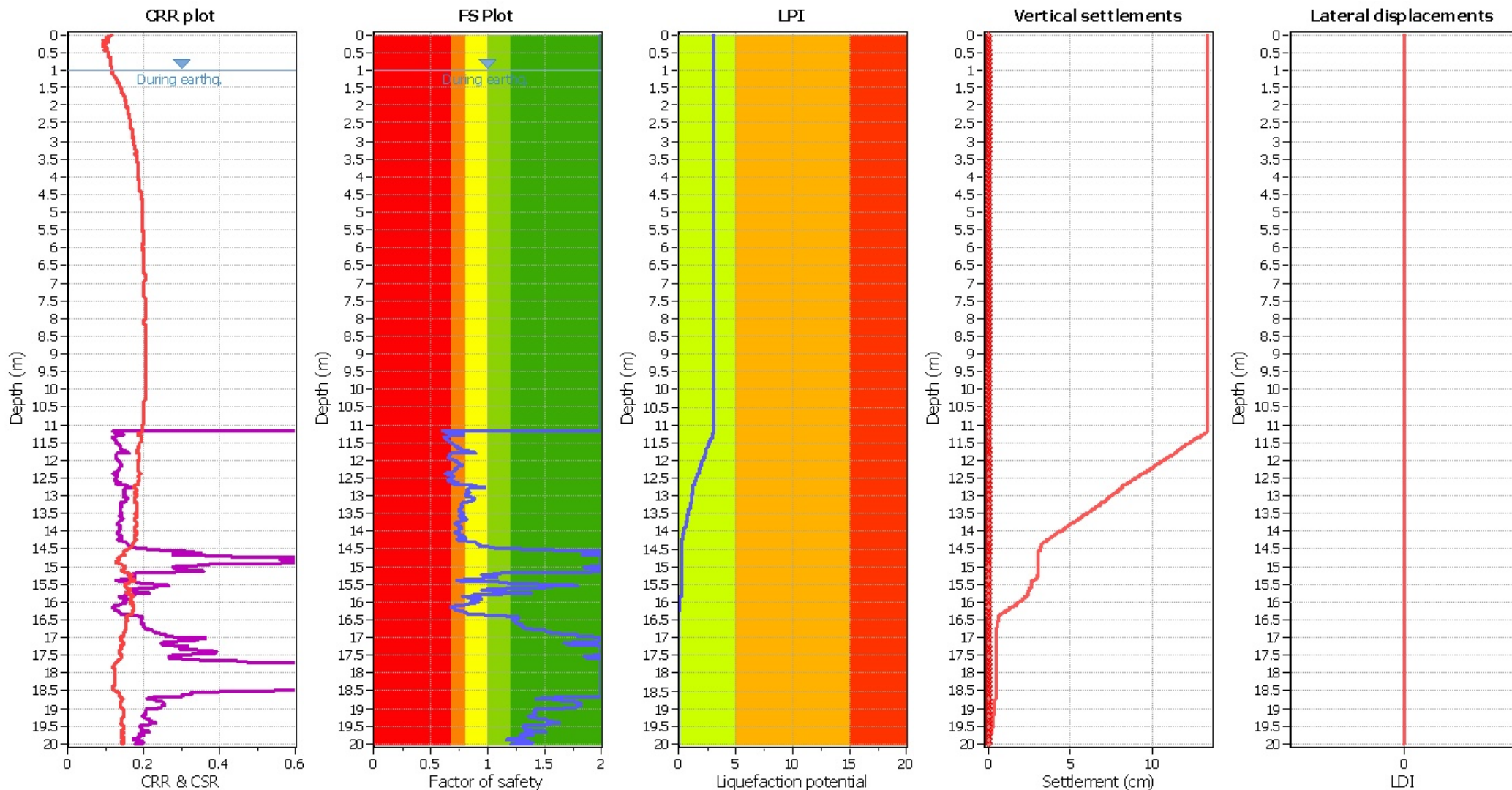|					
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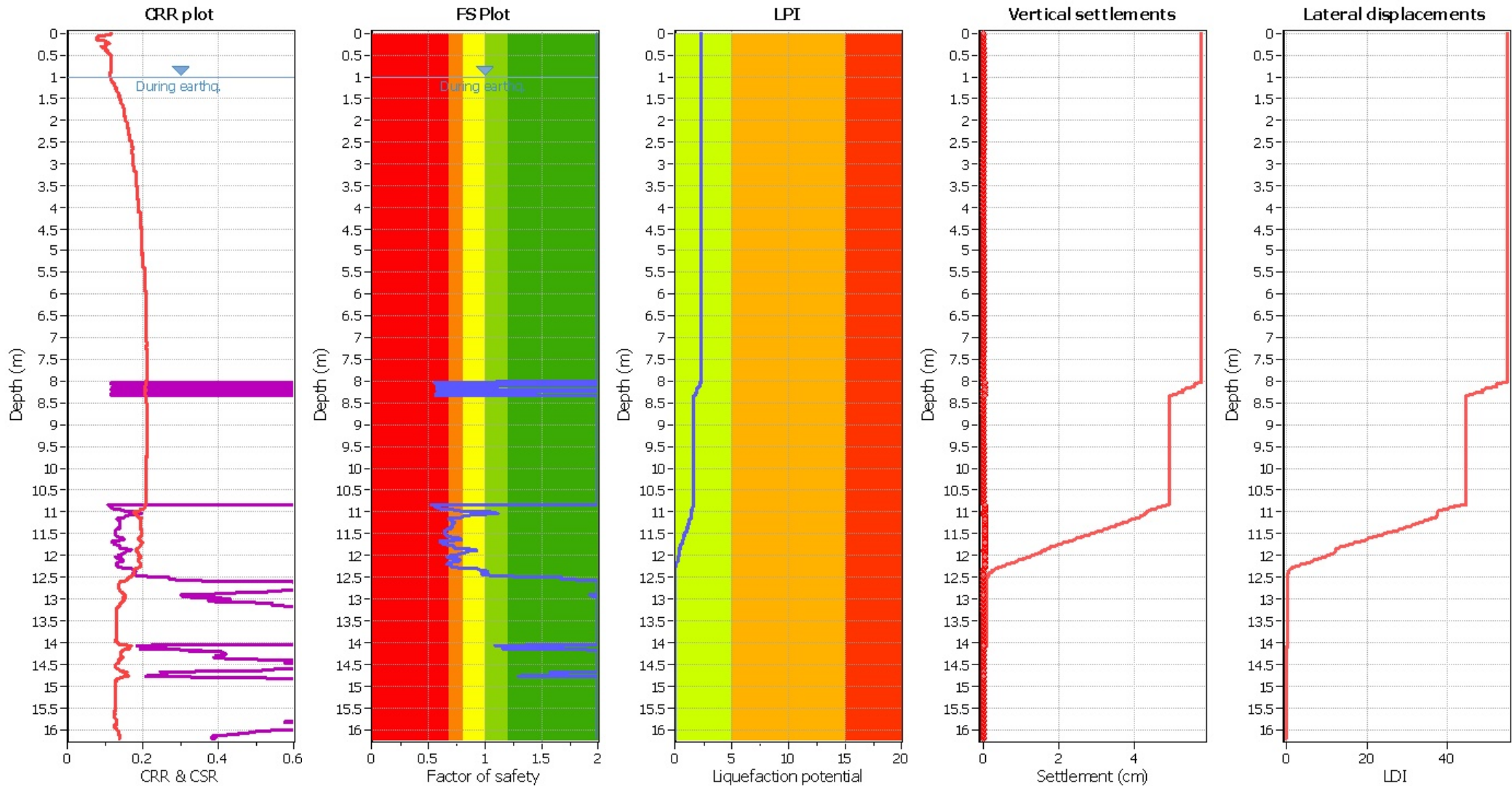|					
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