PROTEZIONE CIVILE
Presidenza del Consiglio dei Ministri
Dipartimento della Protezione Civile

RegioneEmiliaRomagna

CONFERENZA DELLE REGIONI E DELLE PROVINCE AUTONOME

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

MICROZONAZIONE SISMICA

Verifiche liquefazione

Regione Emilia-Romagna

Comune di Parma

Regione	Soggetto realizzatore	Data
Emilia-Romagna	EN GEO S.r.l. ENGINEERING GEOLOGY www.engeo.it Direzione tecnica Dott. Geol. Carlo Caleffi Dott. Geol. Francesco Cerutti Collaboratori Dott. Geol. Matteo Baisi Dott.ssa Alessandra Cantoni Dott. Geol. Alessandro Ferrari Dott.ssa Ing. Giulia Mainardi	Giugno 2018 MS3

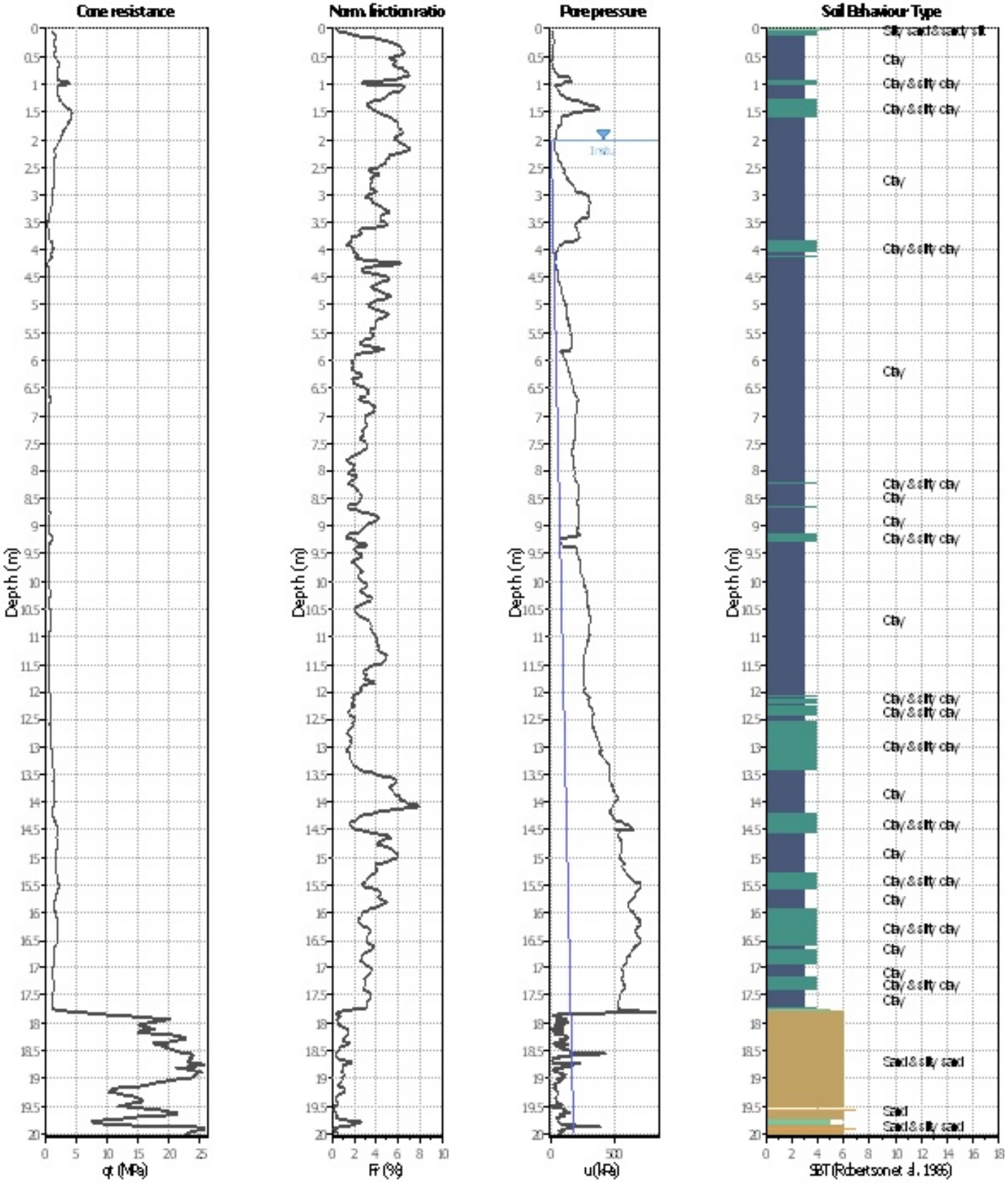
EN GEO S.r.l.
ENGINEERING GEOLOGY
www.engeo.it

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P935

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU1
Total depth: 20.00 m



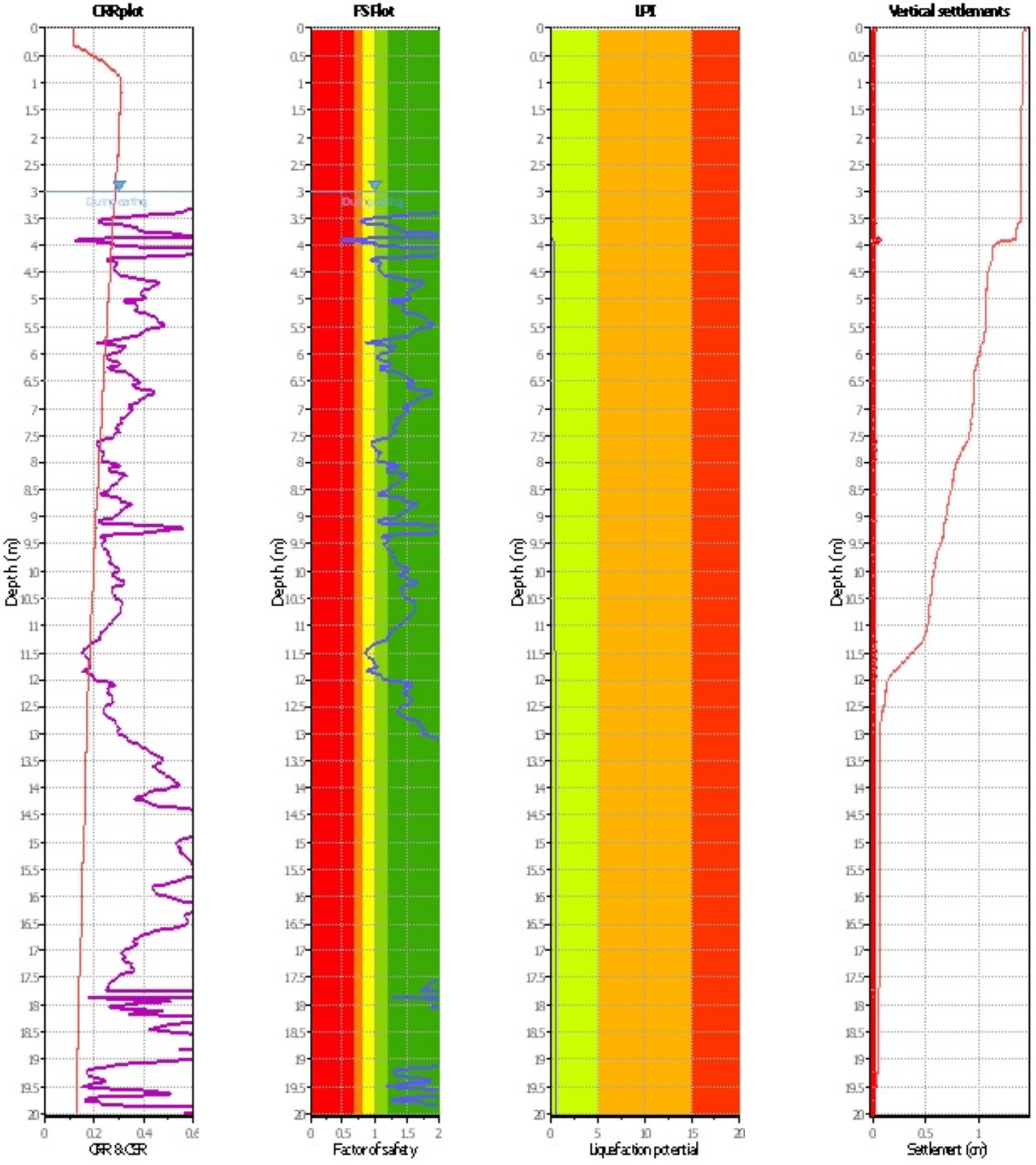
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P935

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU1
Total depth: 20.00 m



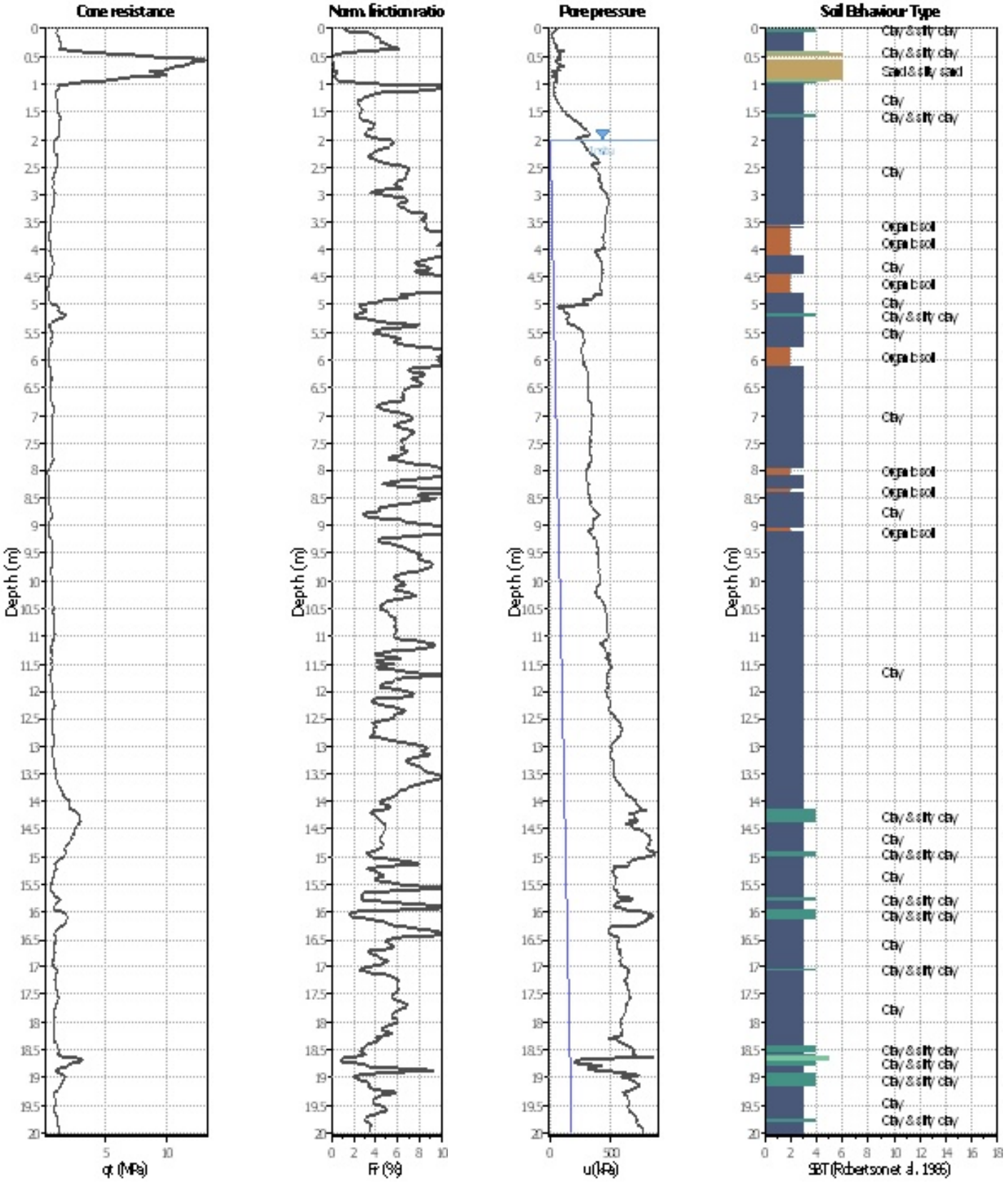
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P957

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU2
Total depth: 20.00 m



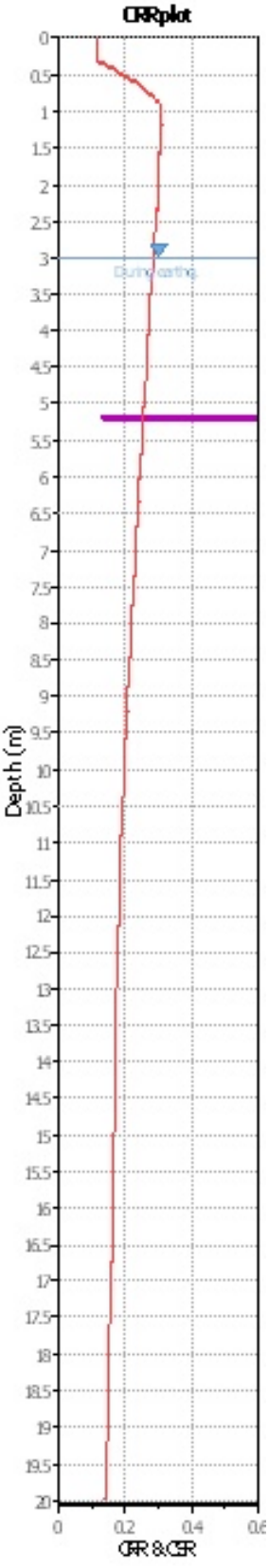
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

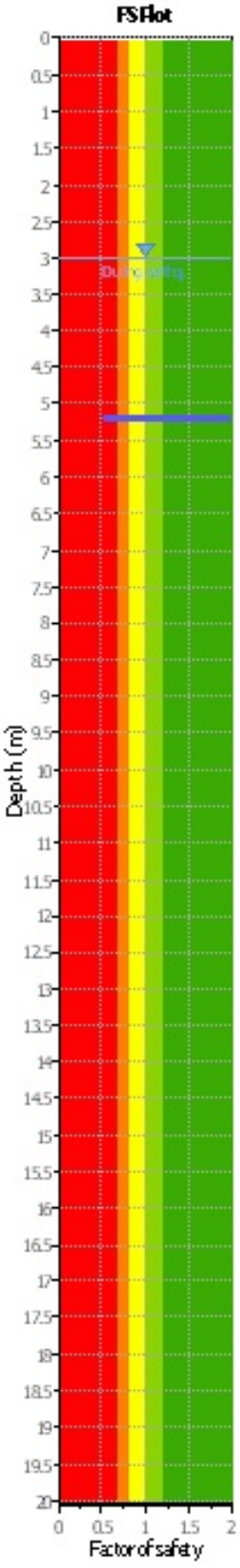
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

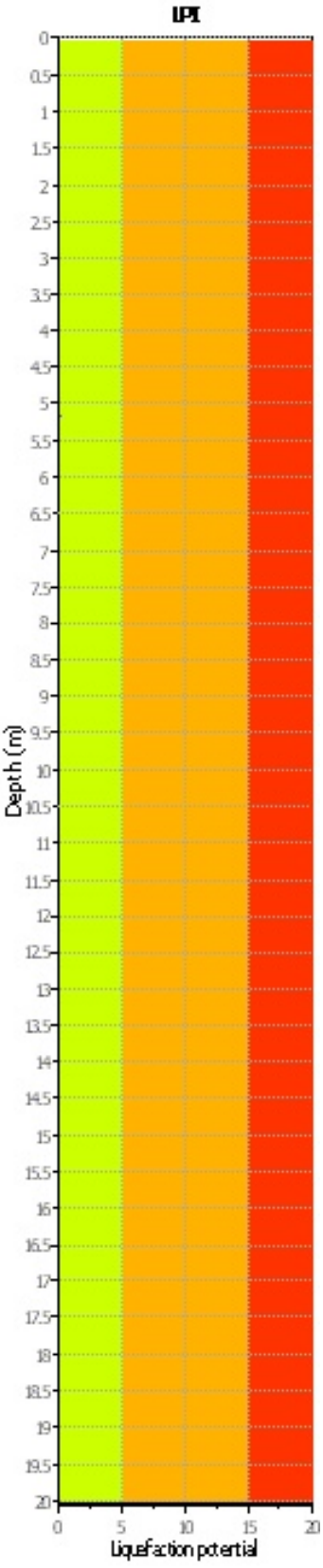
034027P957

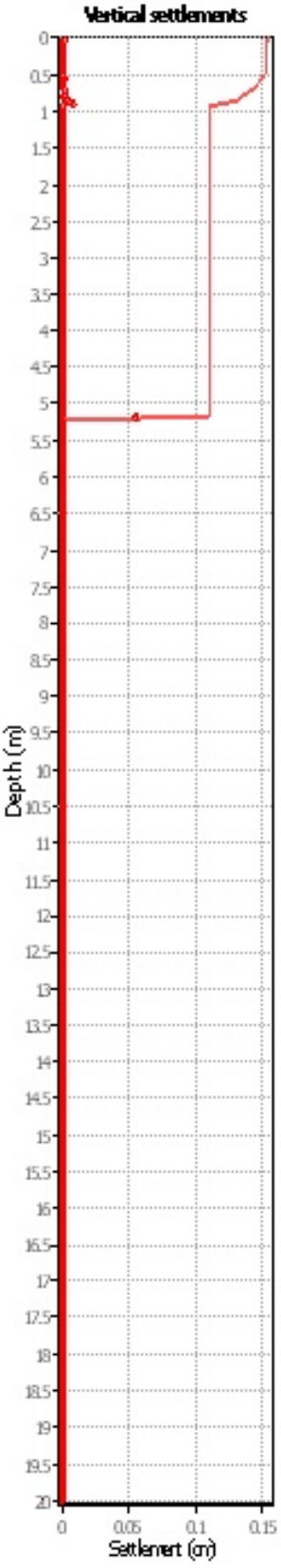
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU2
Total depth: 20.00 m









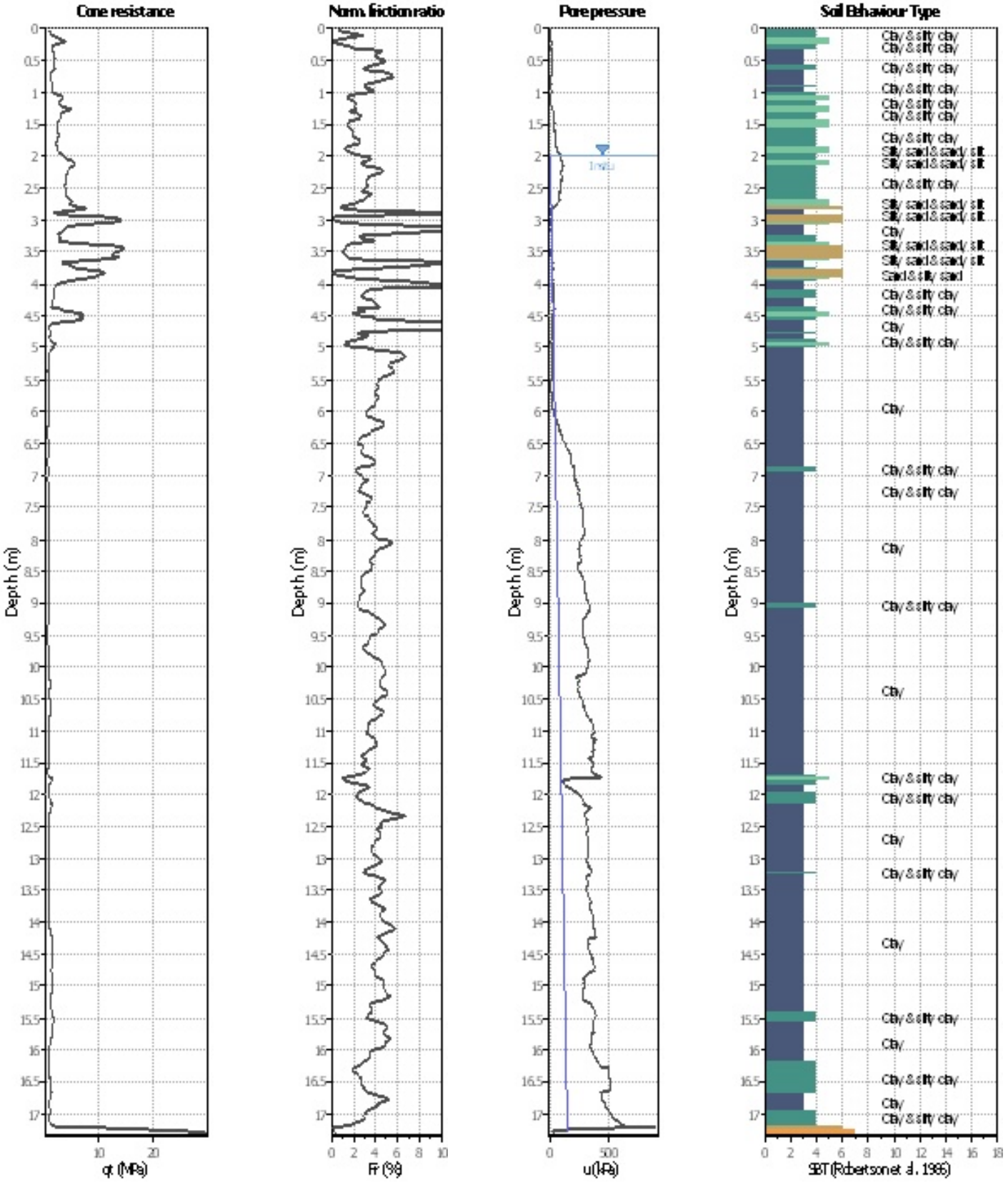
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P936

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU3
Total depth: 17.30 m



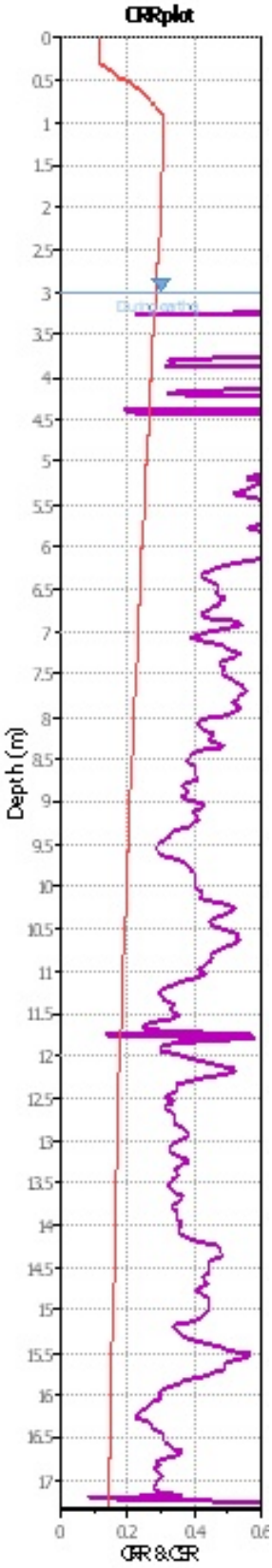
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

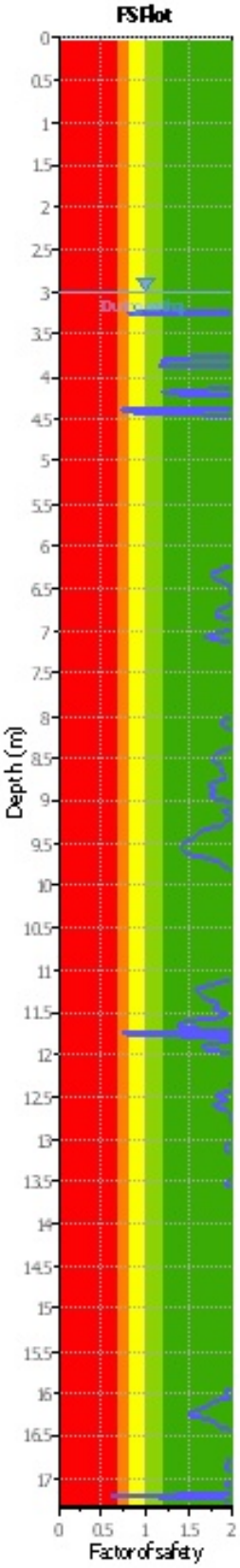
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

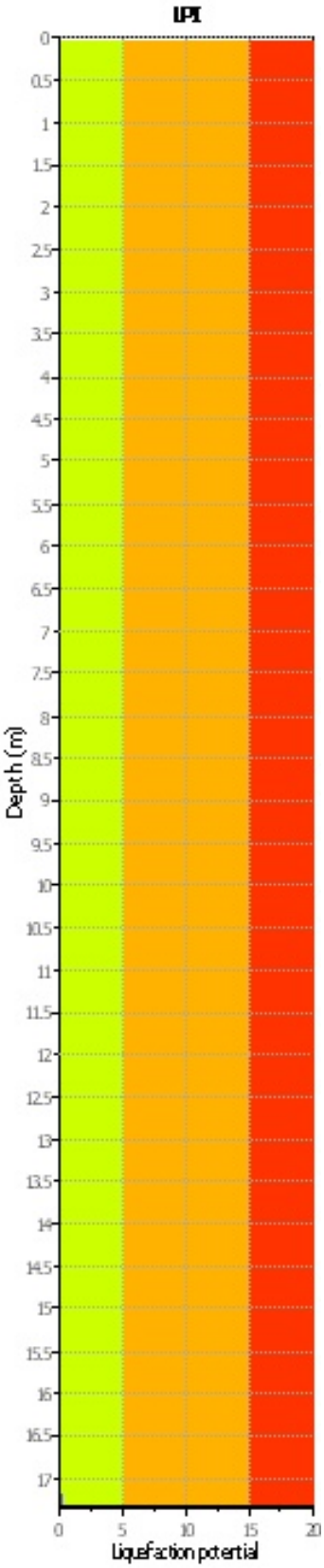
034027P936

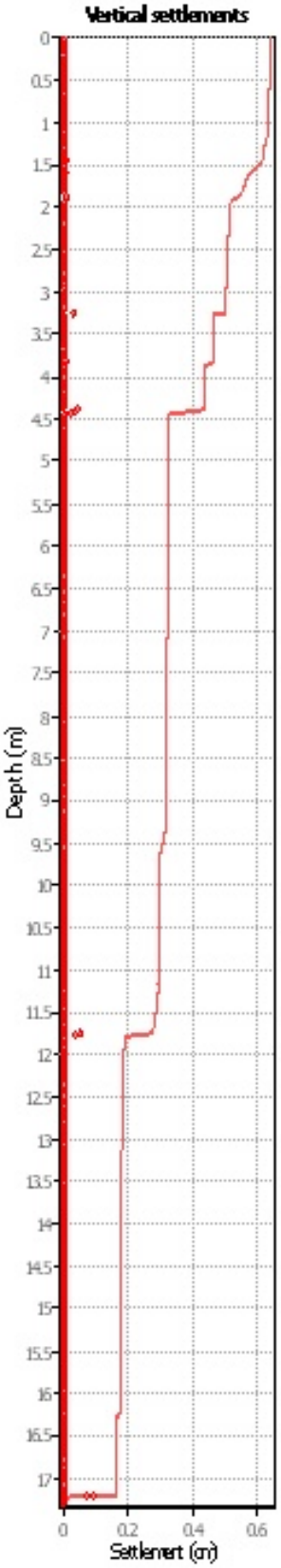
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU3
Total depth: 17.30 m









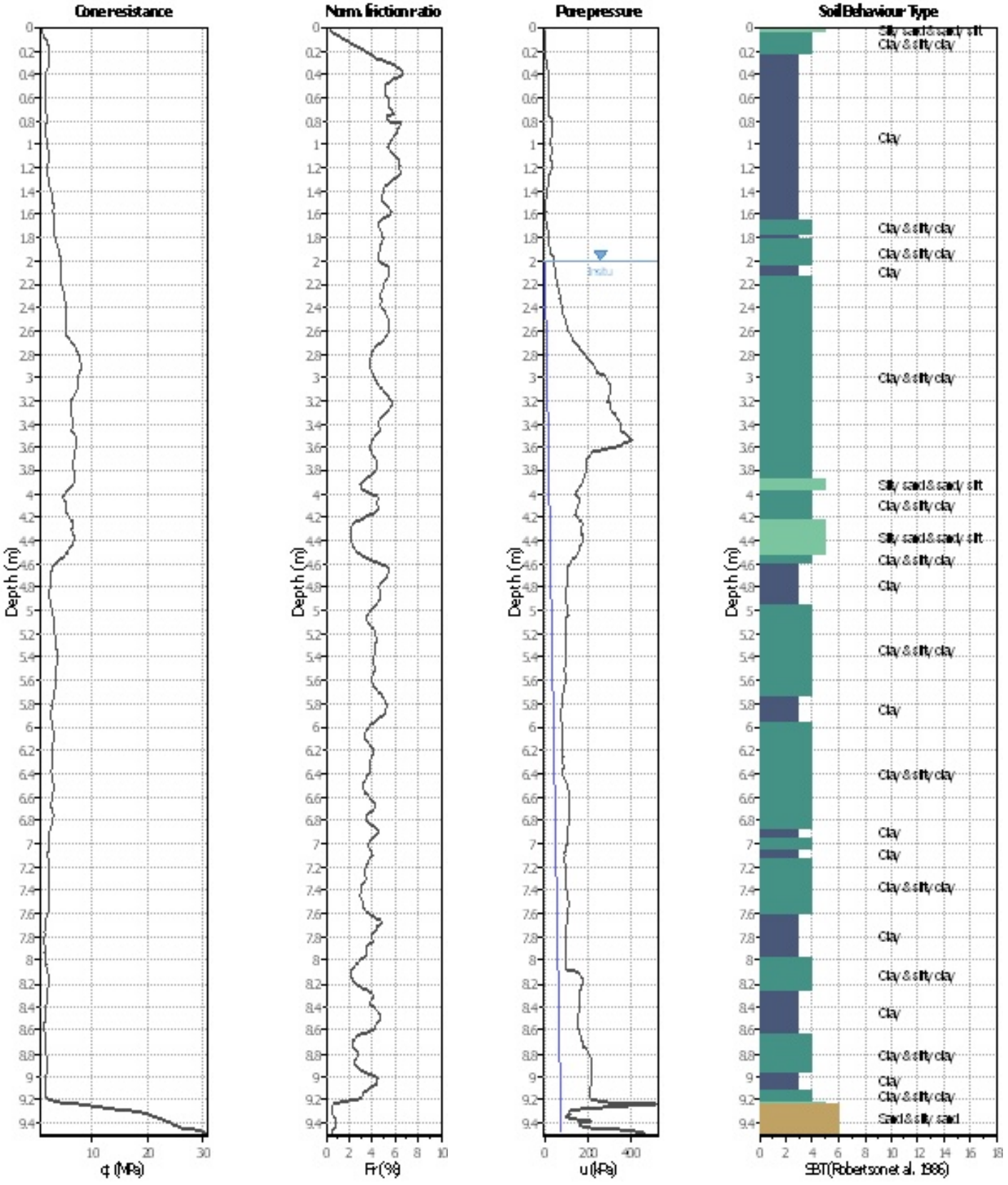
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P937

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU4
Total depth: 9.48 m



Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 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:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P937

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU4
Total depth: 9.48 m

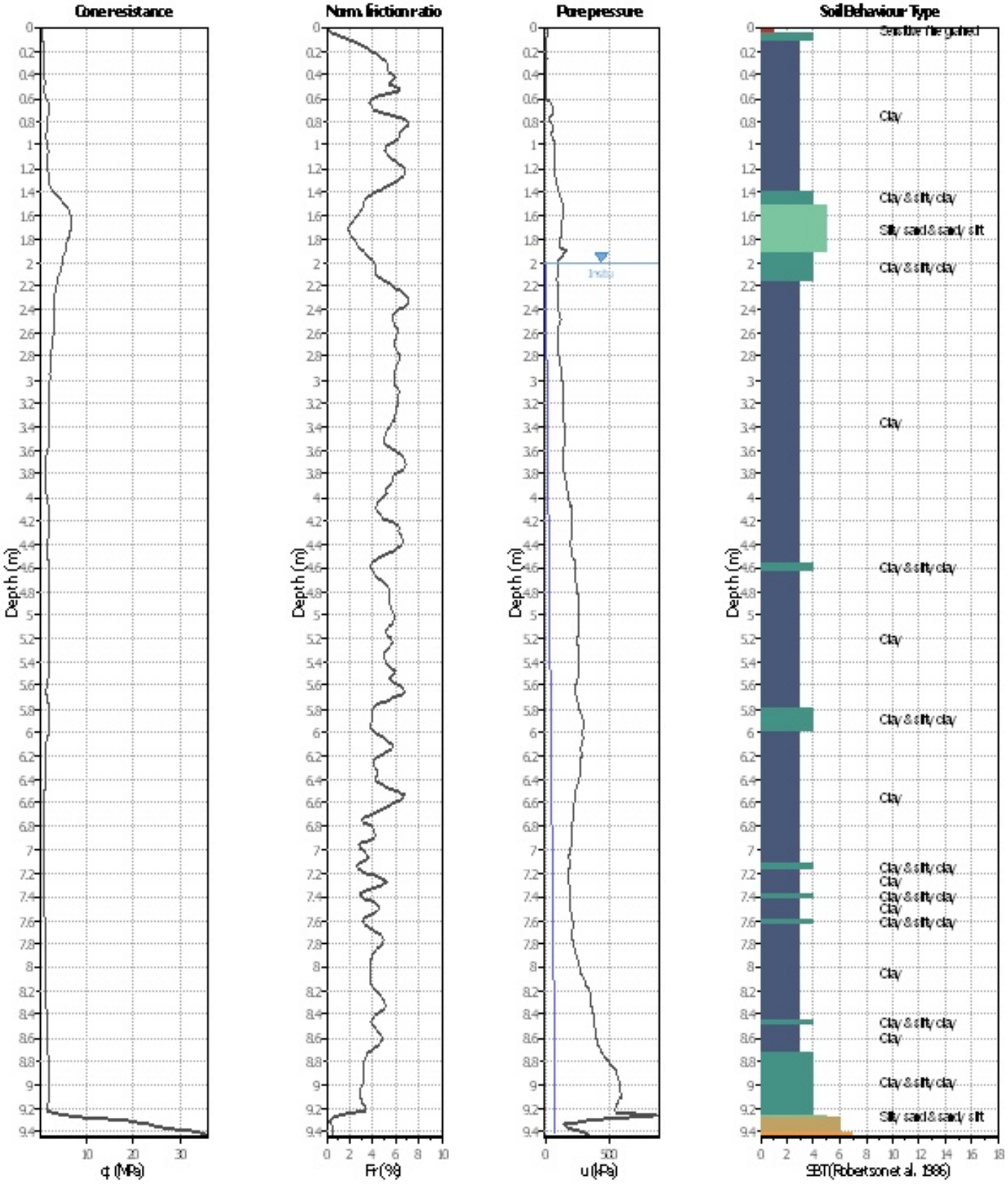
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P938

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU5
Total depth: 9.42 m



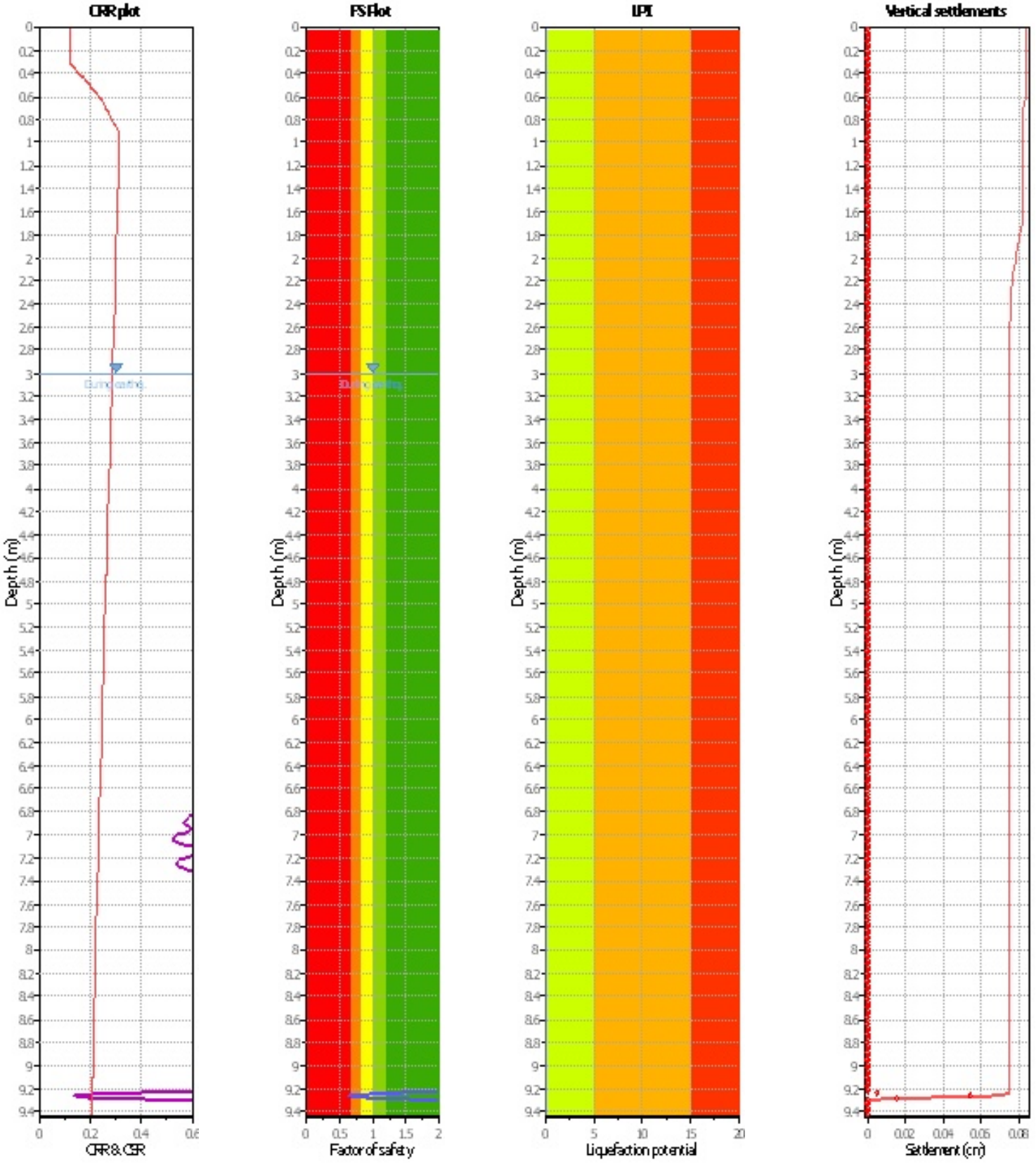
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P938

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU5
Total depth: 9.42 m



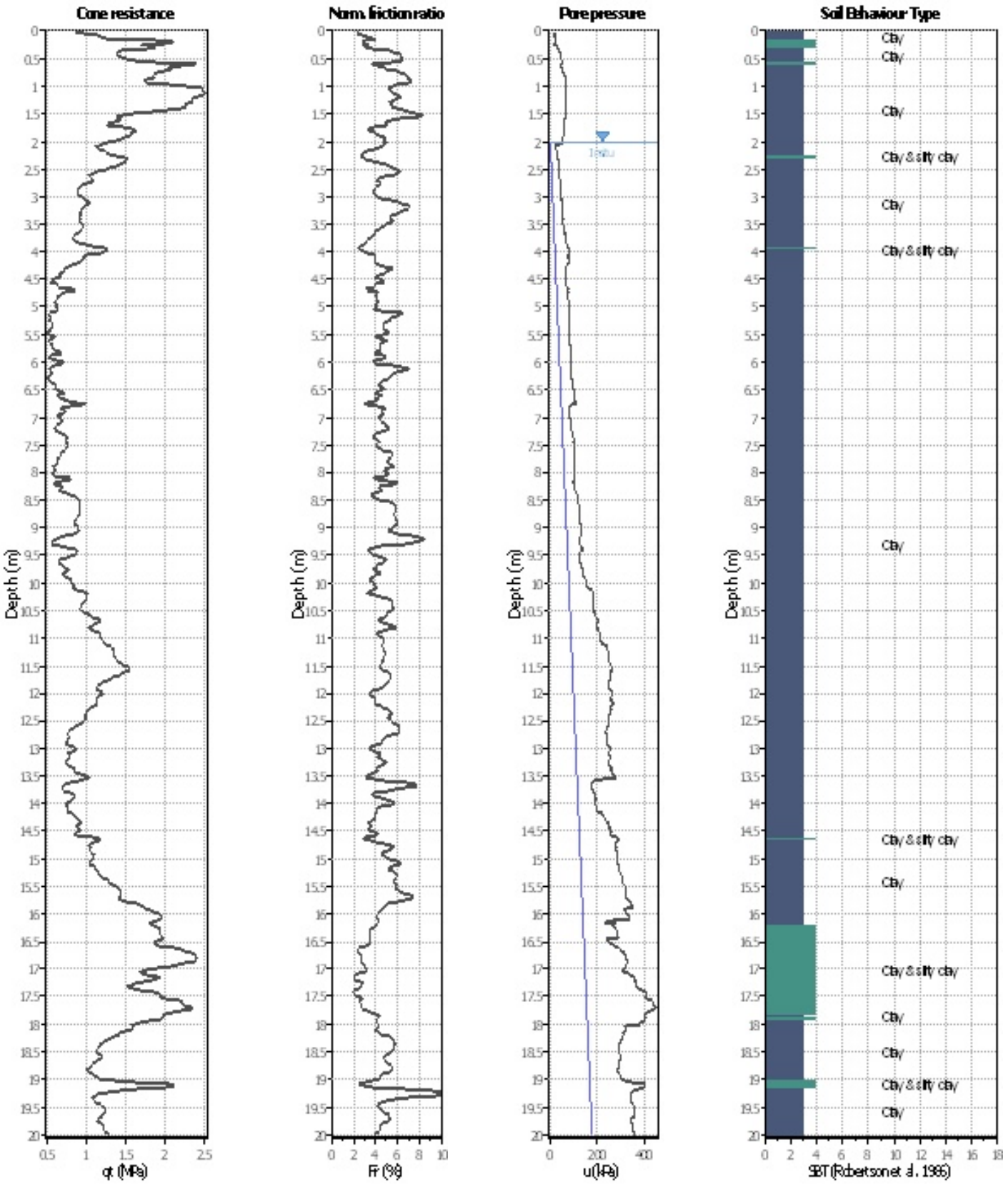
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P939

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU6
Total depth: 20.00 m



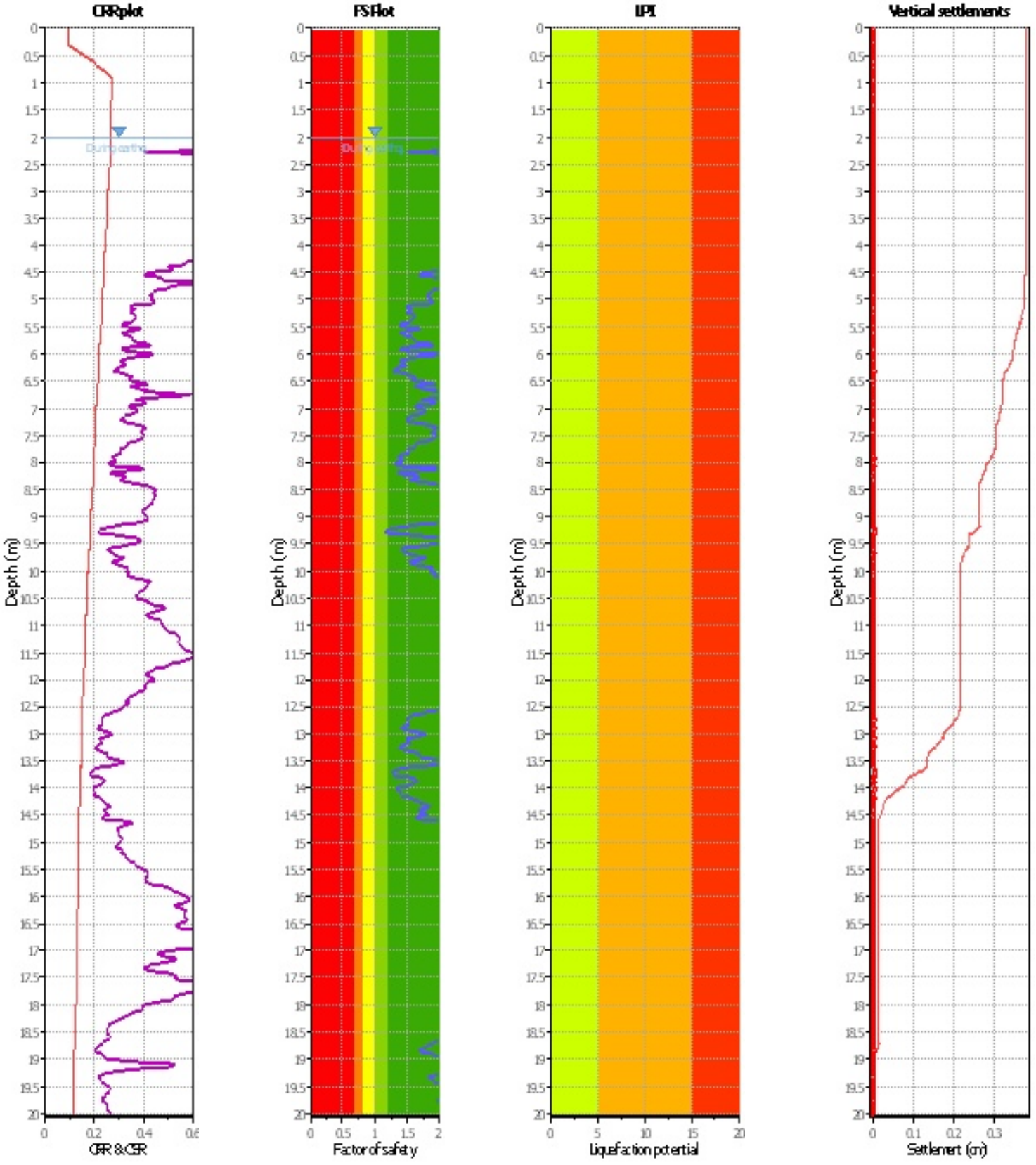
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P939

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU6
Total depth: 20.00 m



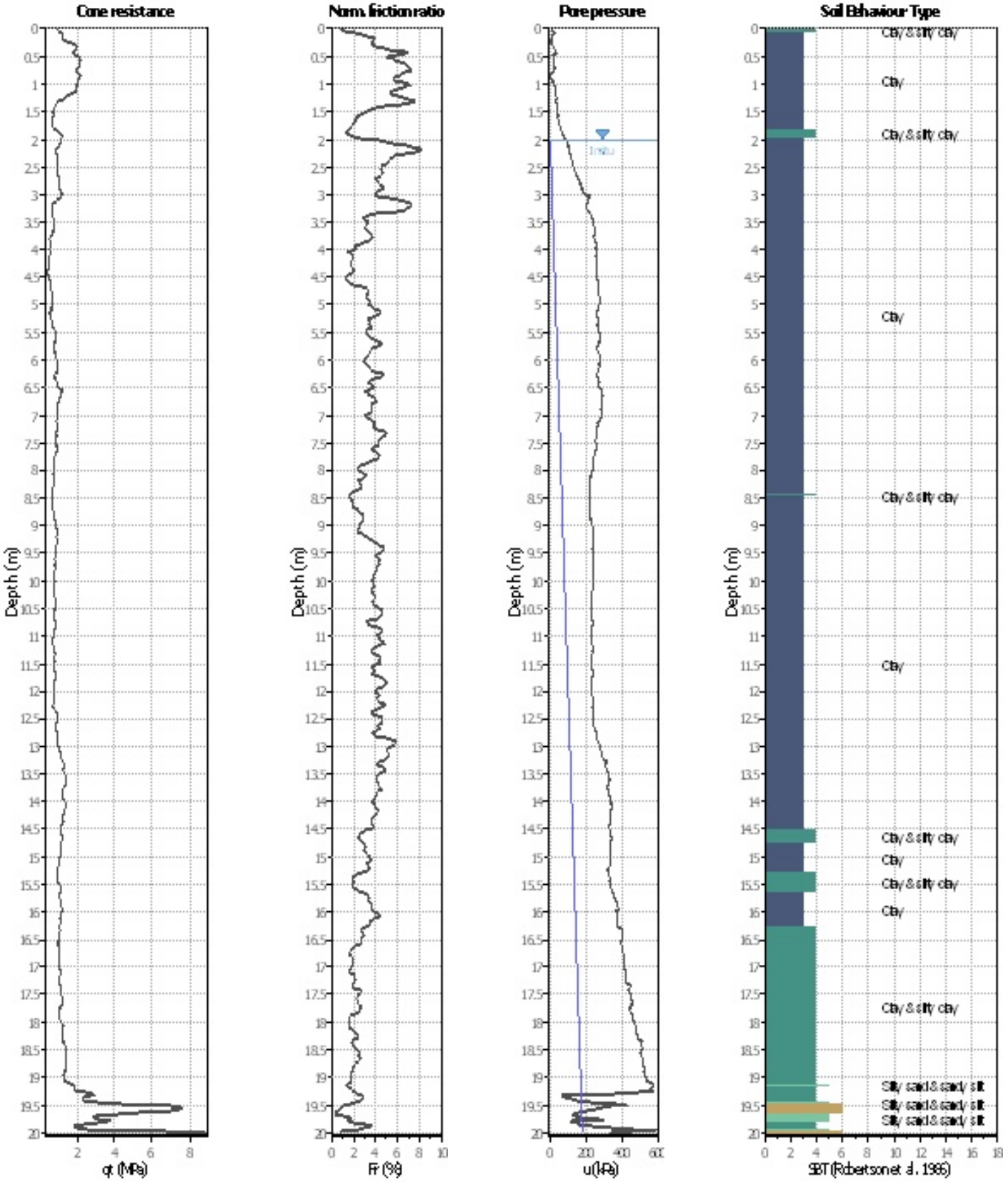
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P940

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU7
Total depth: 20.00 m



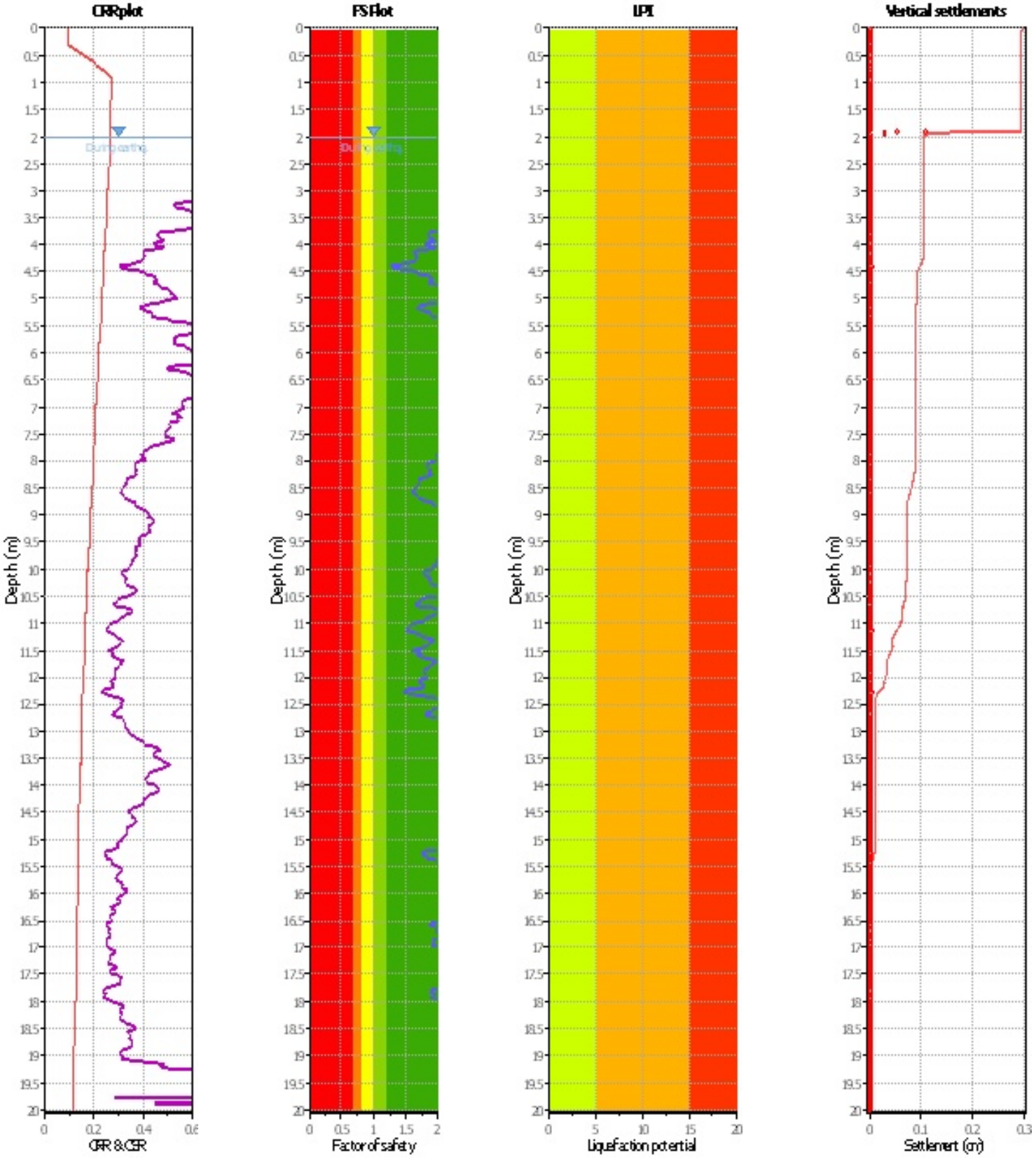
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P940

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU7
Total depth: 20.00 m



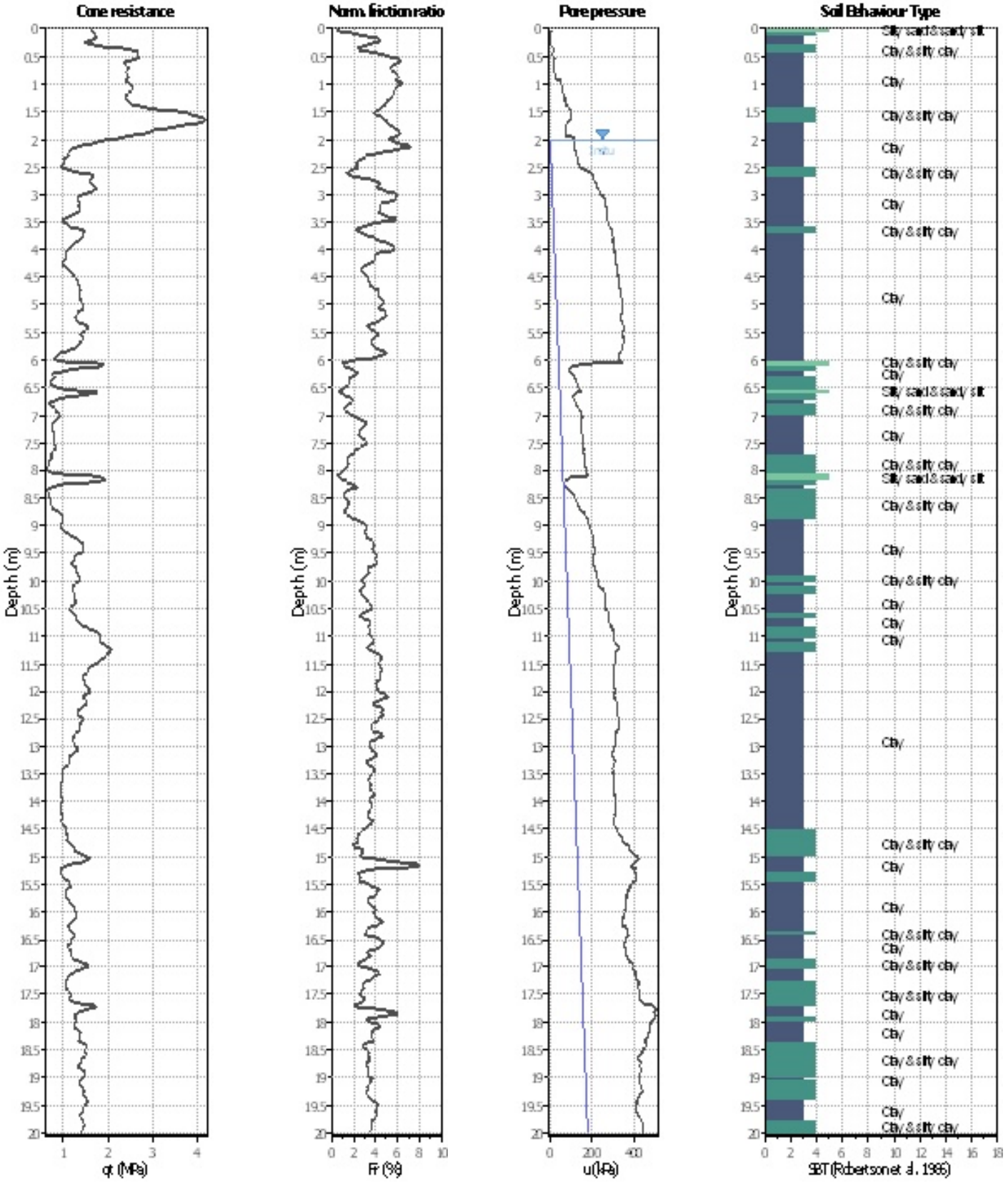
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P941

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU8
Total depth: 20.00 m



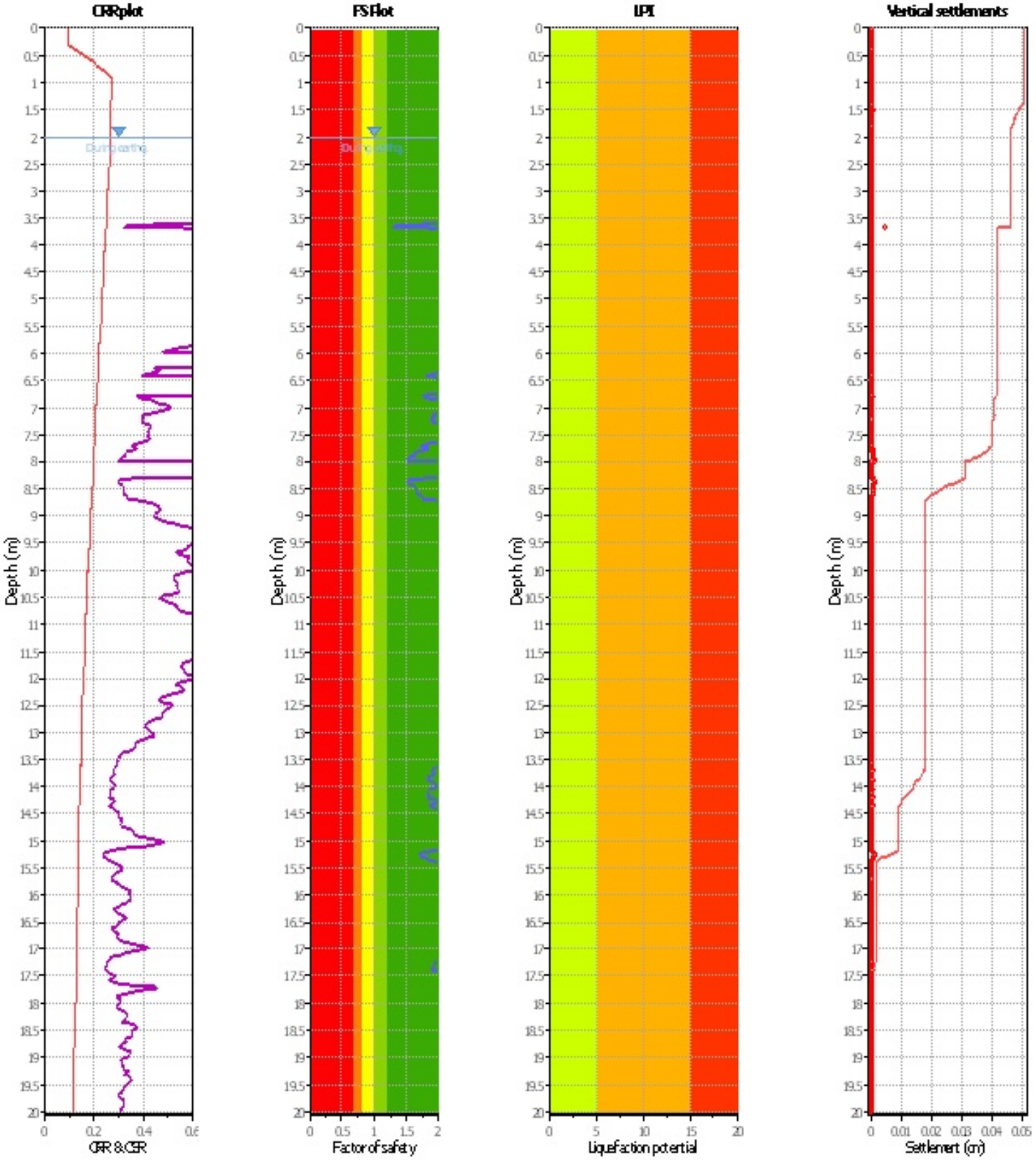
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P941

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU8
Total depth: 20.00 m



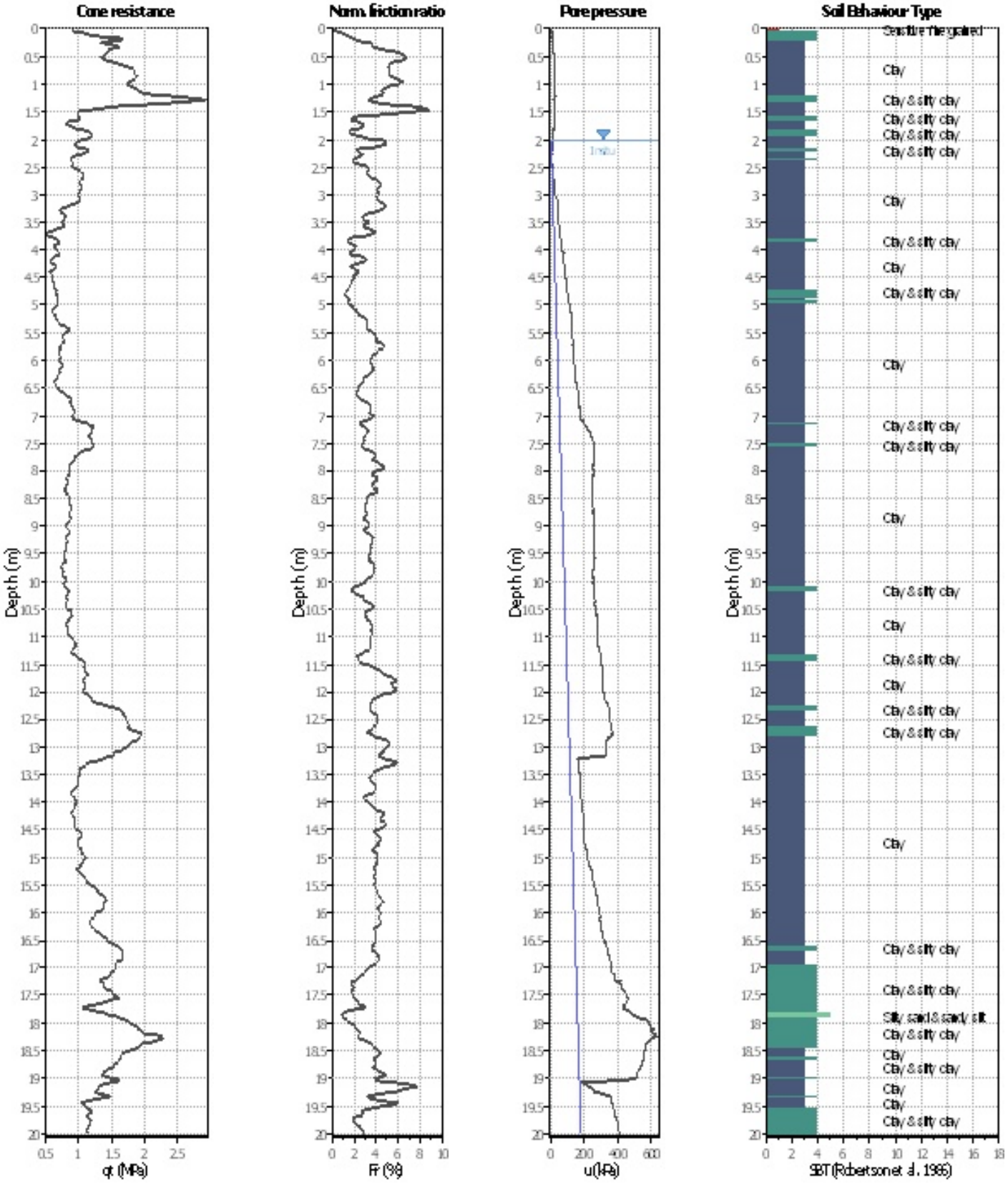
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P942

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU9
Total depth: 20.00 m



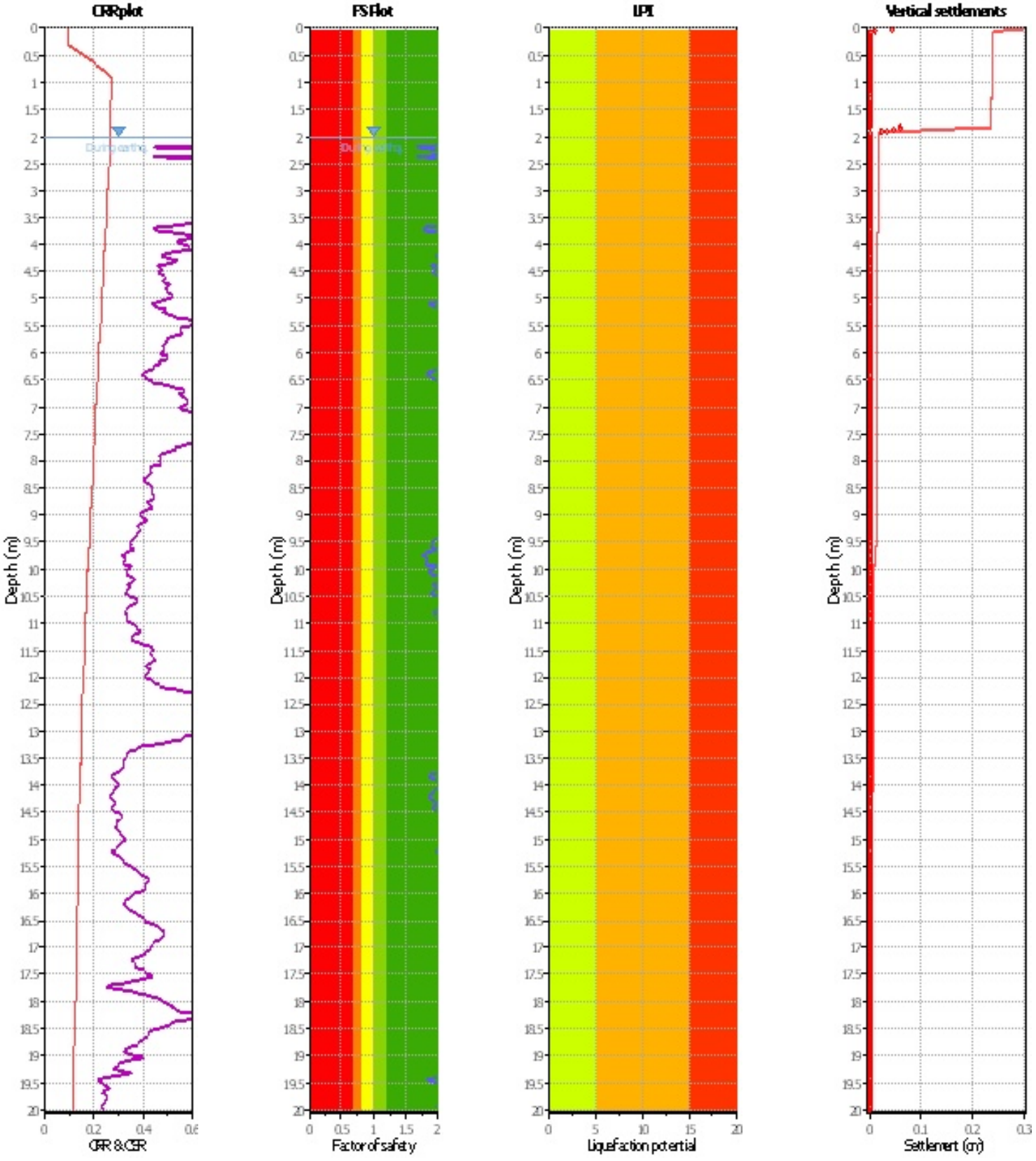
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P942

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU9
Total depth: 20.00 m



Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 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:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

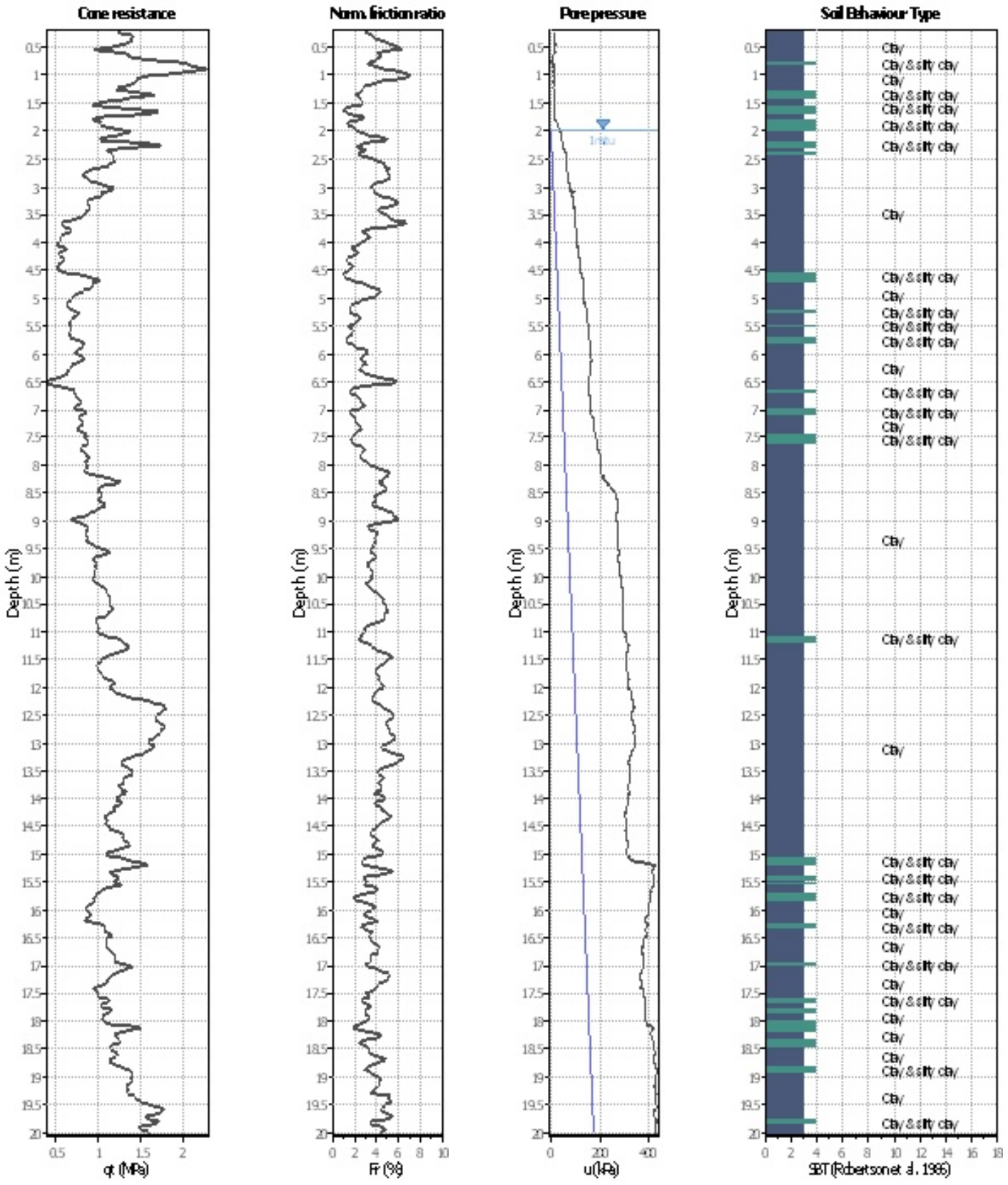
EN GEO S.r.l.
ENGINEERING GEOLOGY
www.engeo.it

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P943

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU10
Total depth: 20.00 m



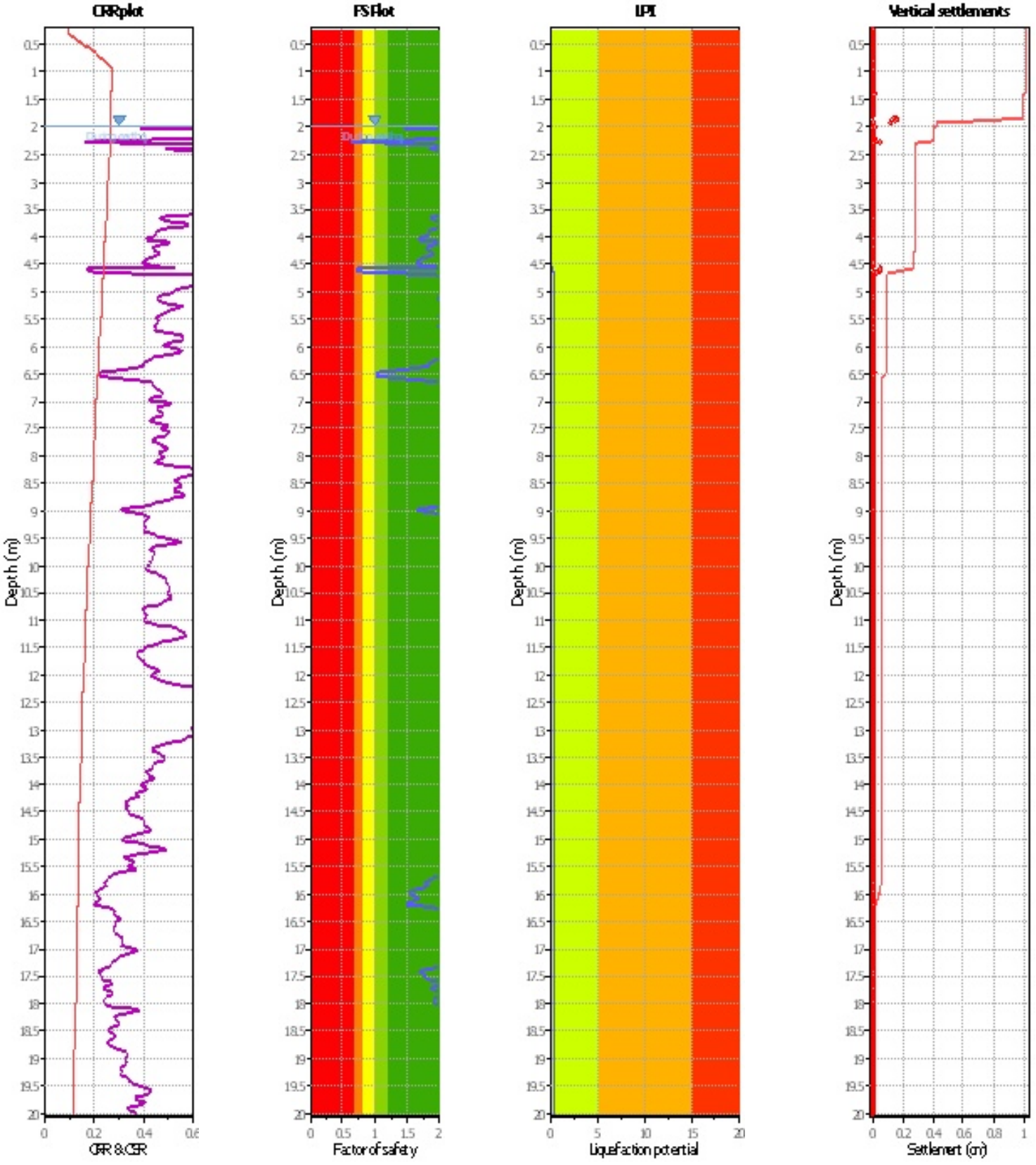
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P943

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU10
Total depth: 20.00 m



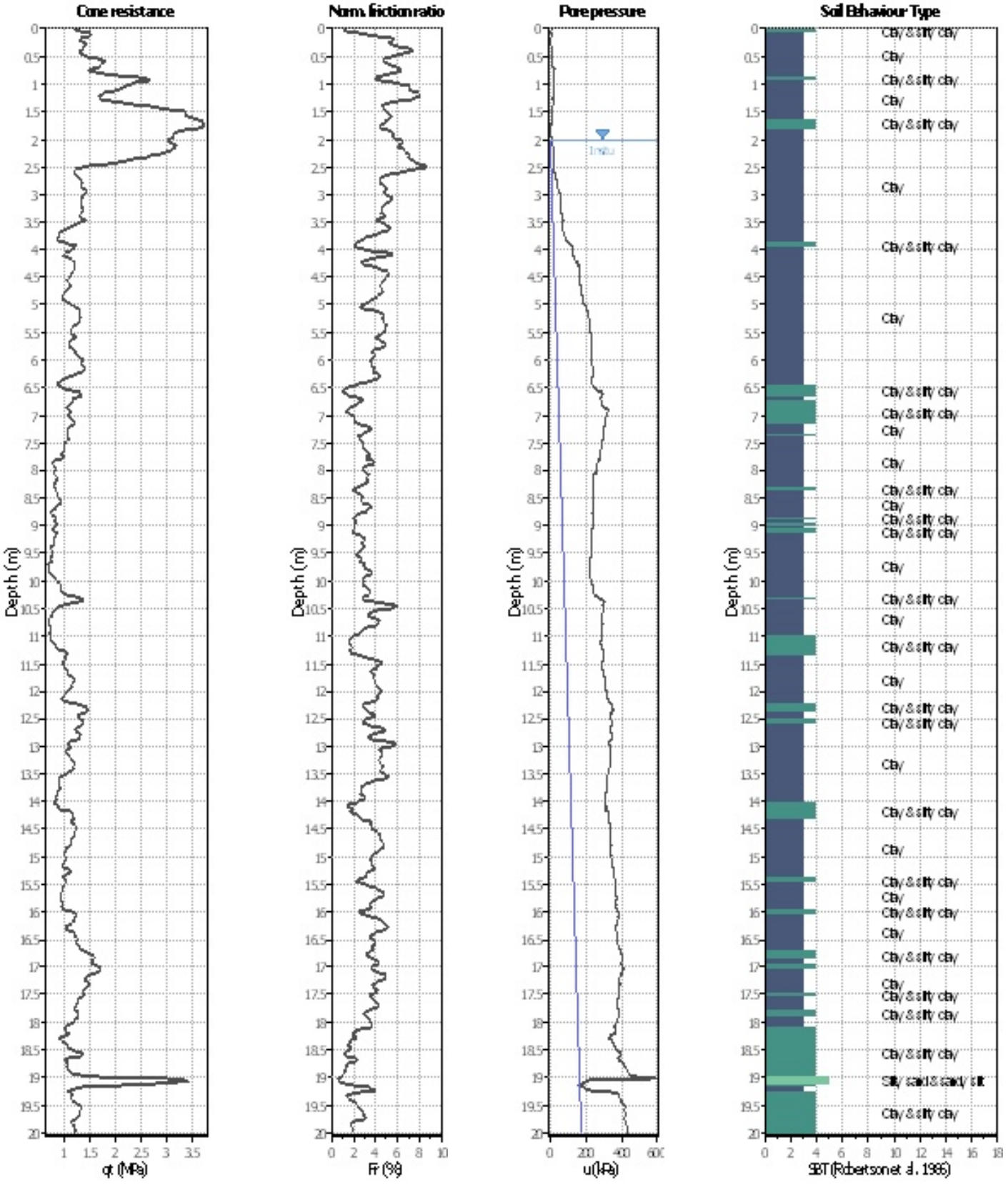
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P944

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU11
Total depth: 20.00 m



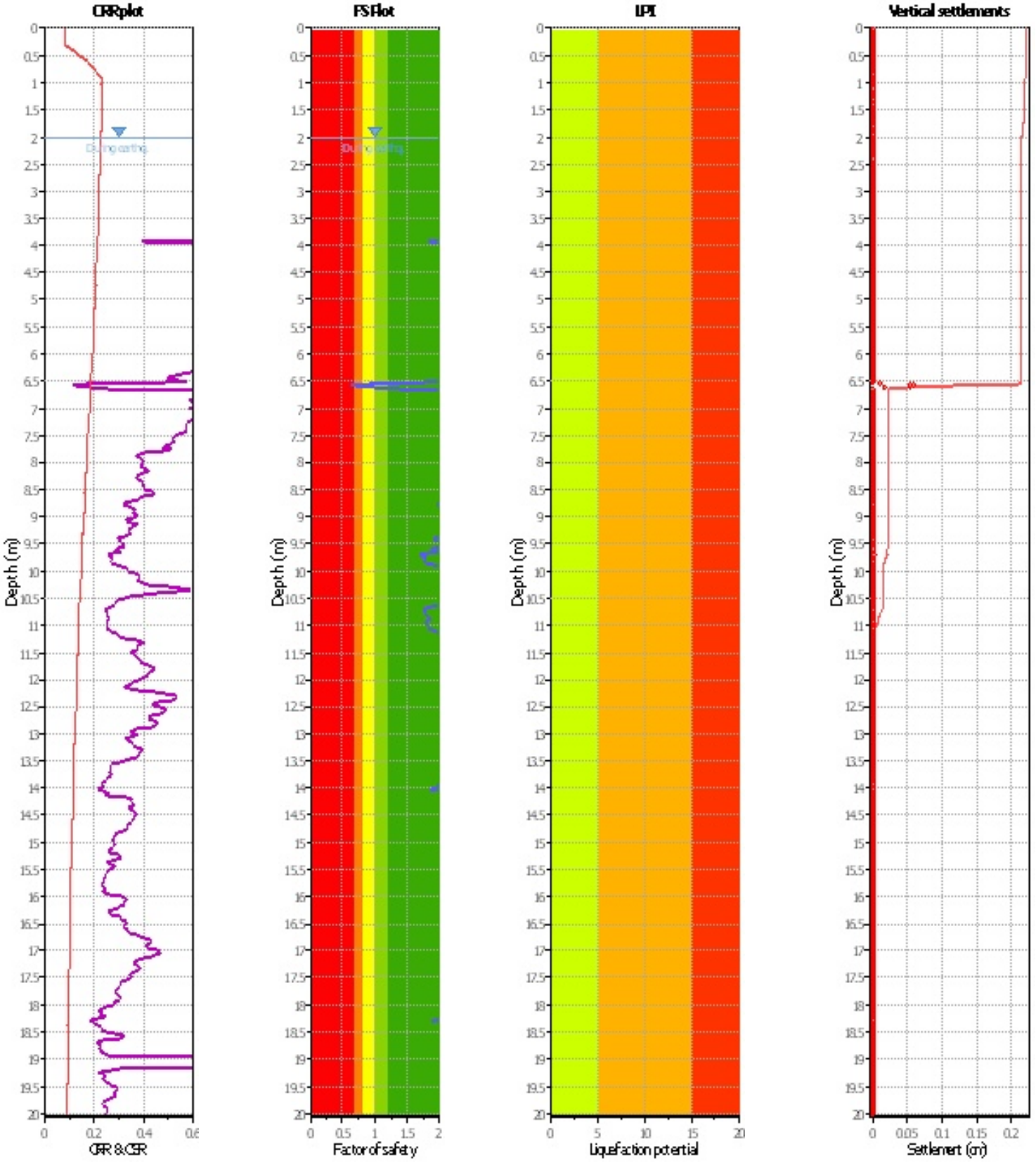
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P944

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU11
Total depth: 20.00 m



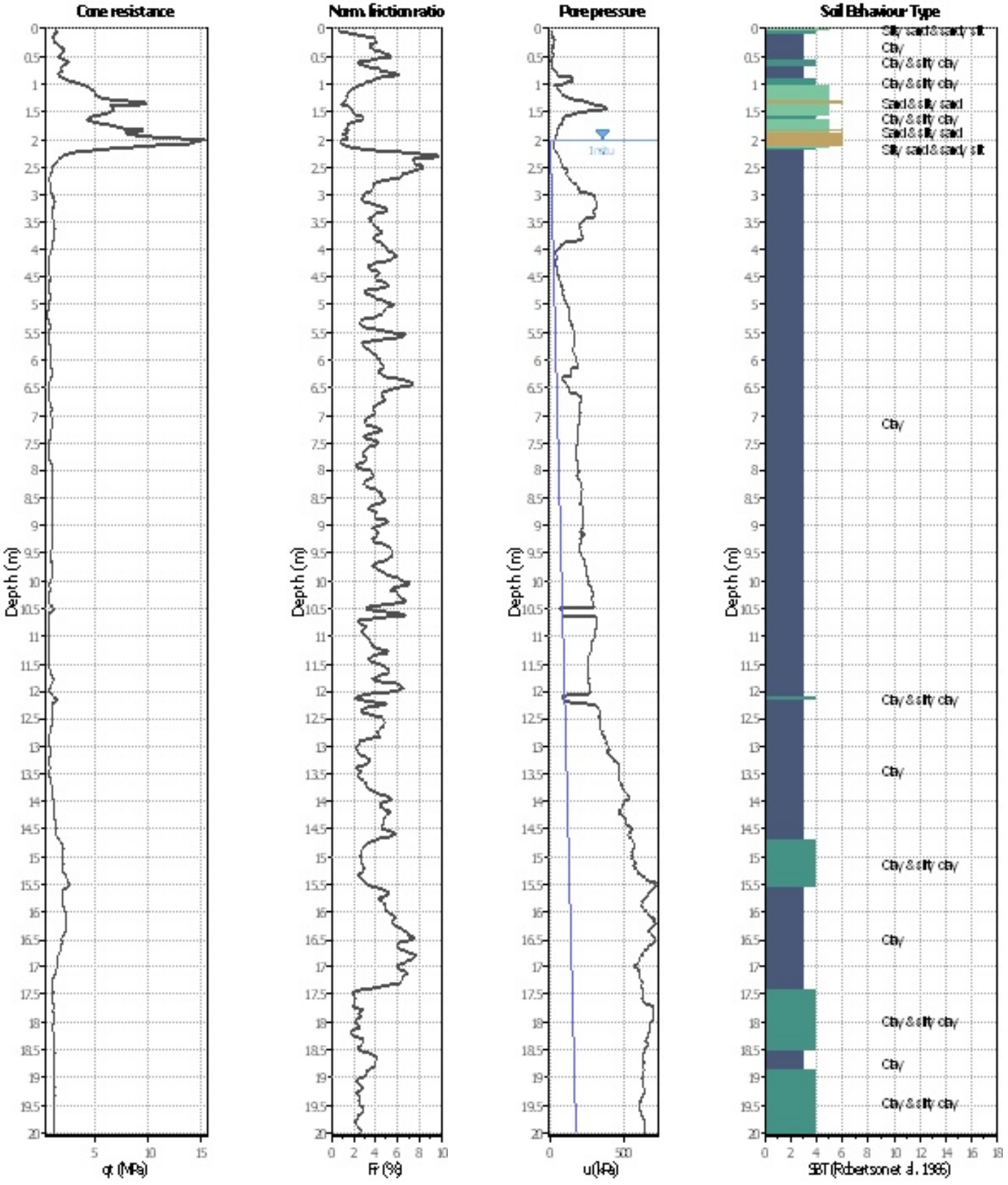
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P945

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU12
Total depth: 20.00 m



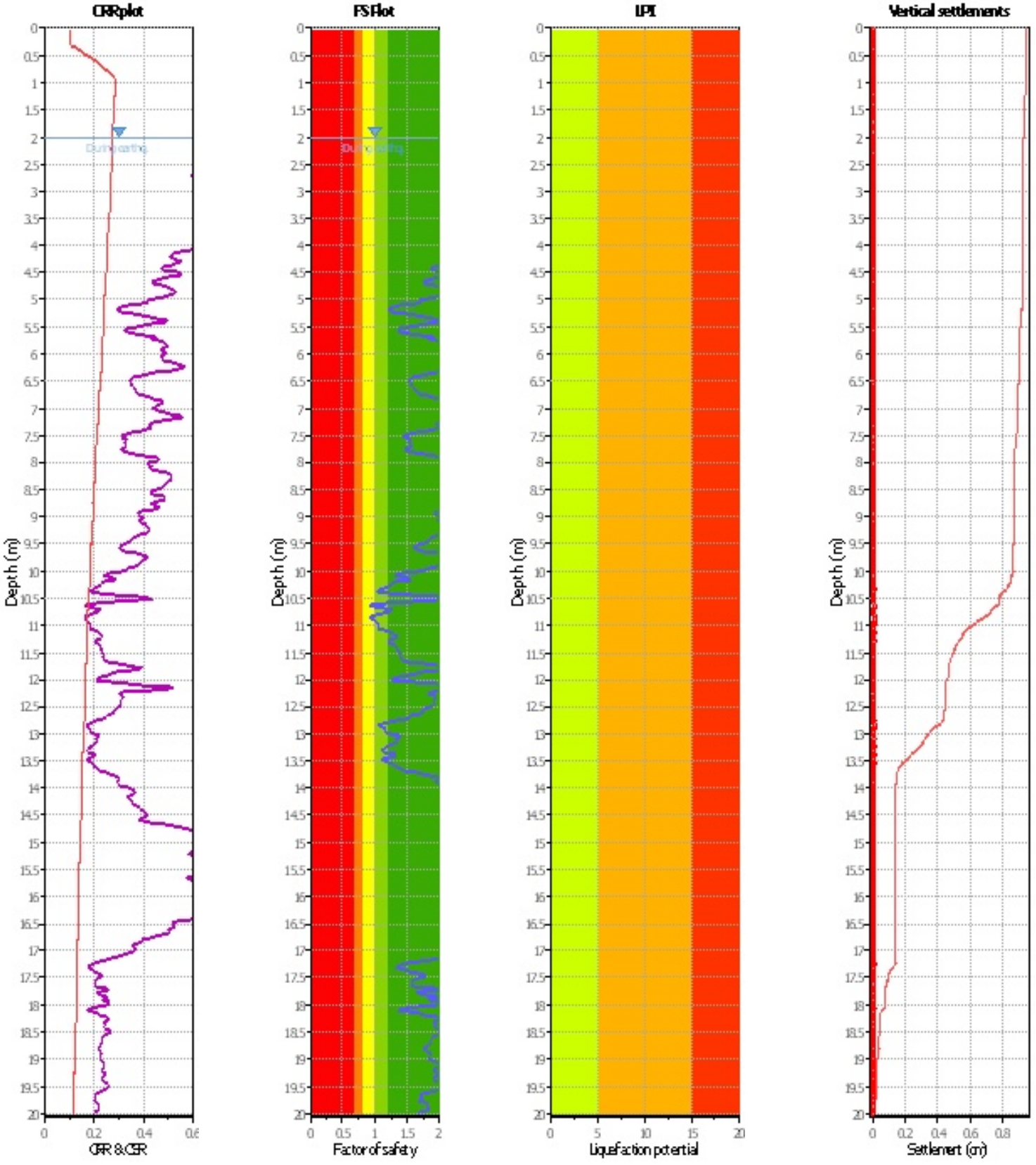
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P945

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU12
Total depth: 20.00 m



Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 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:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

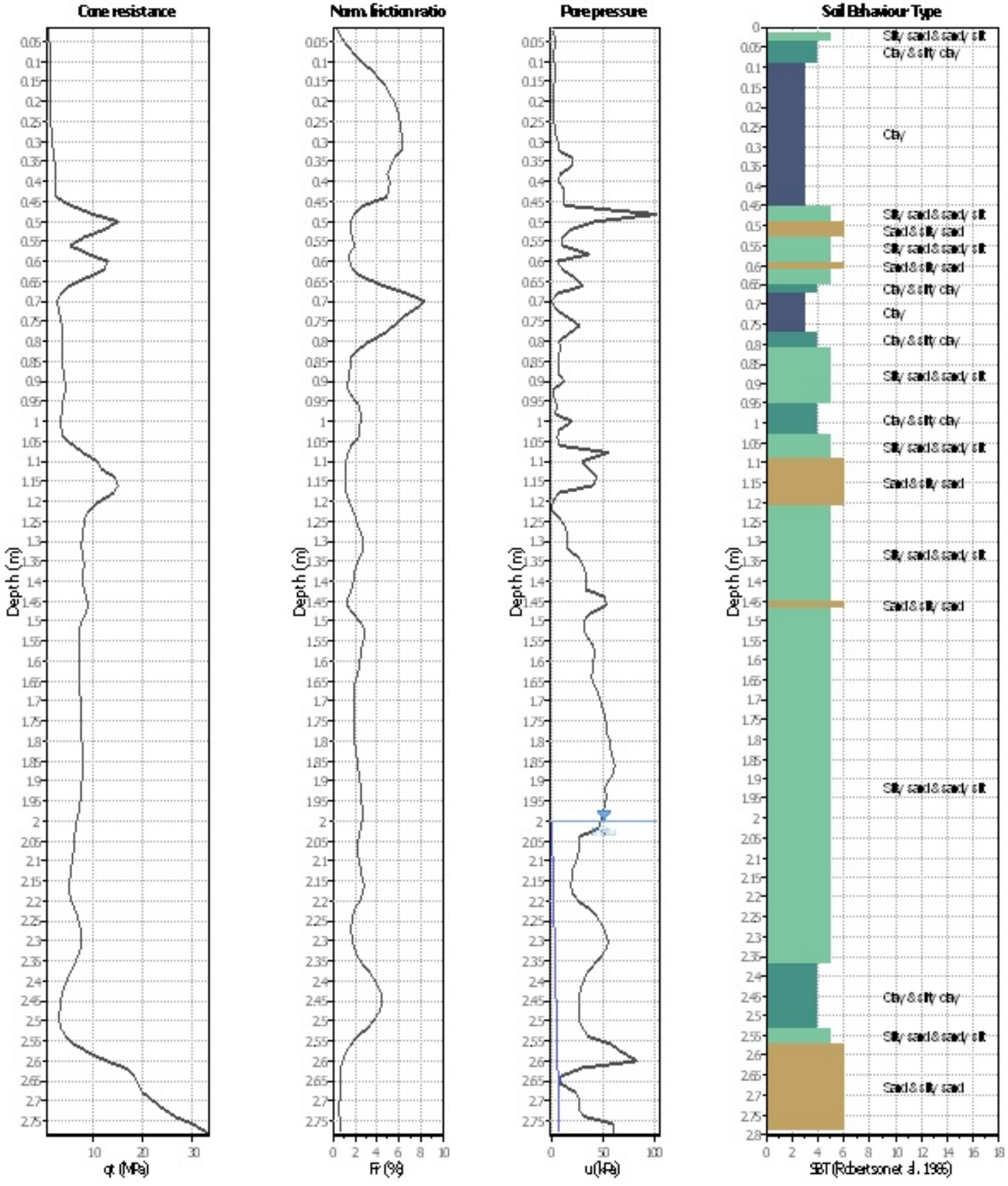
ENGEO S.r.l.
ENGINEERING GEOLOGY
www.engeo.it

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P946

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU13
Total depth: 2.78 m



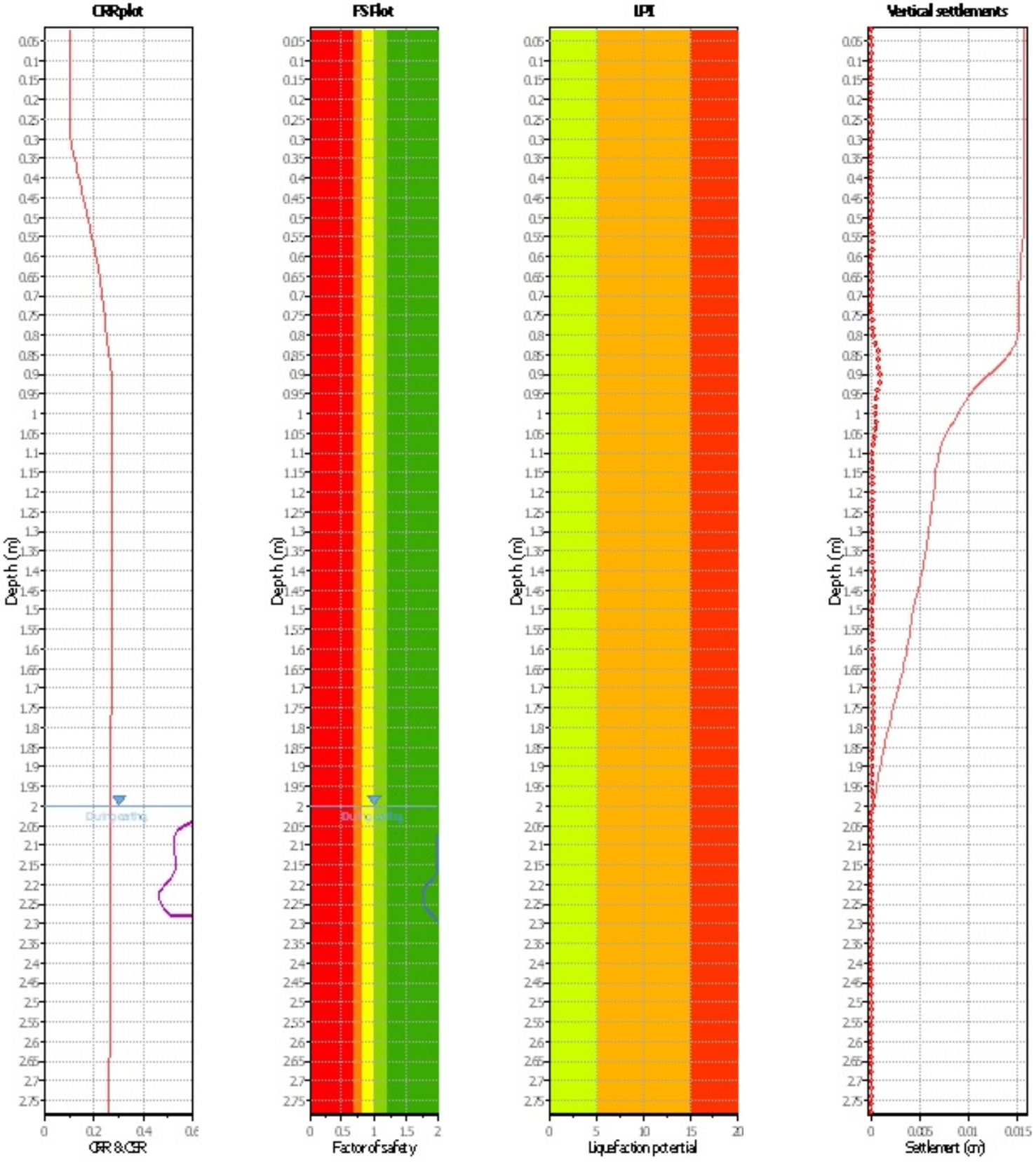
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P946

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU13
Total depth: 2.78 m



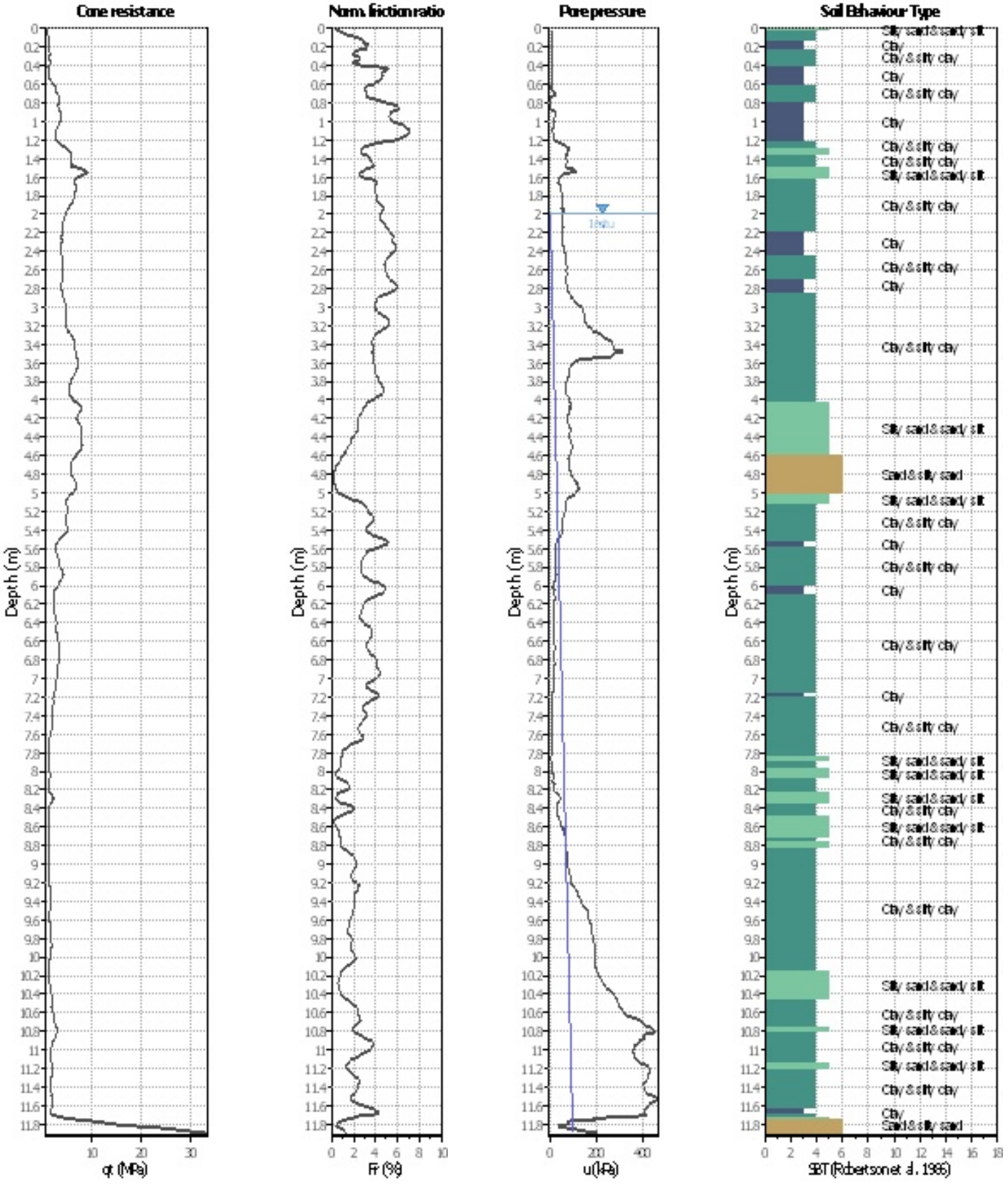
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P947

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU14
Total depth: 11.90 m



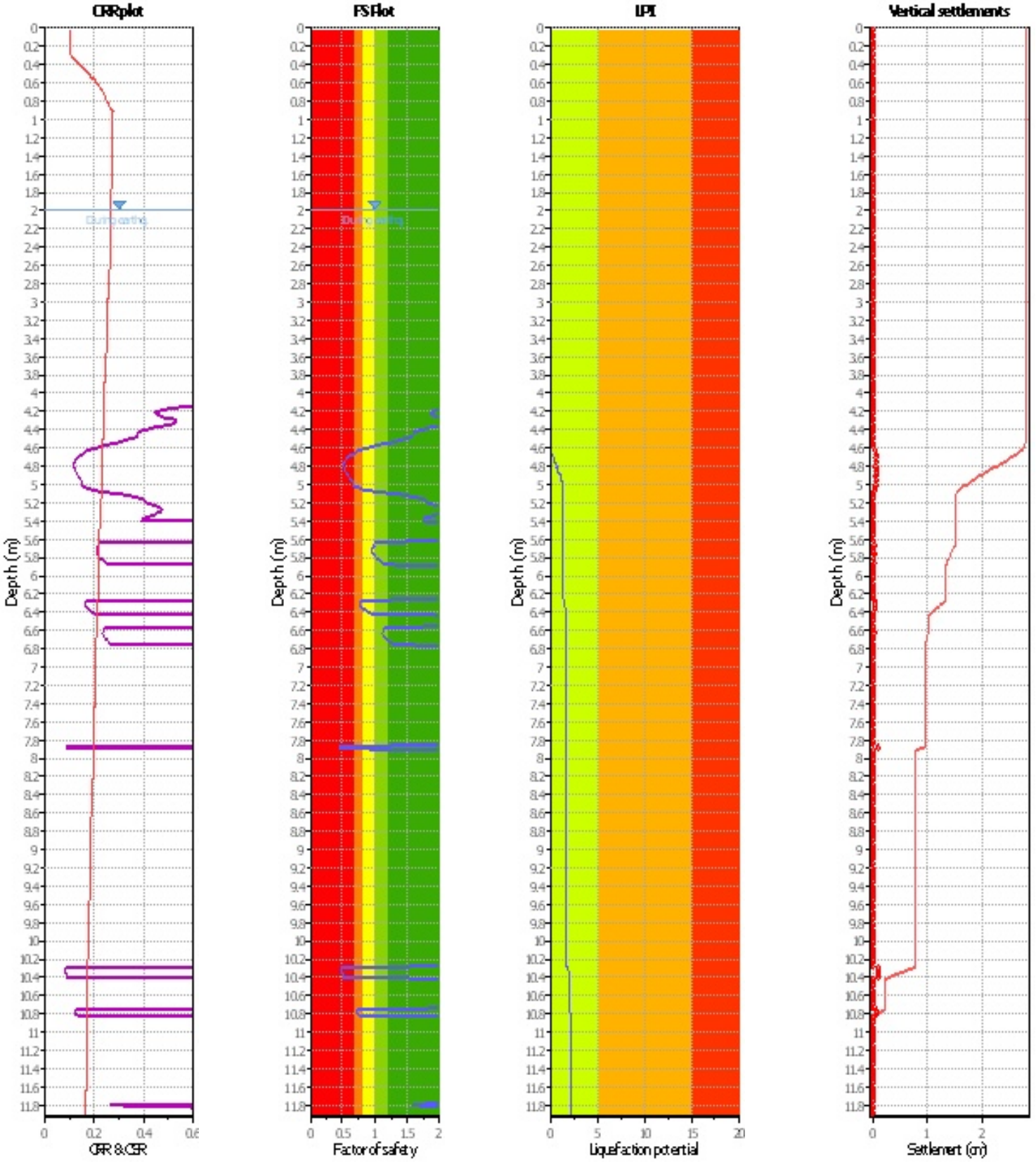
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P947

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU14
Total depth: 11.90 m



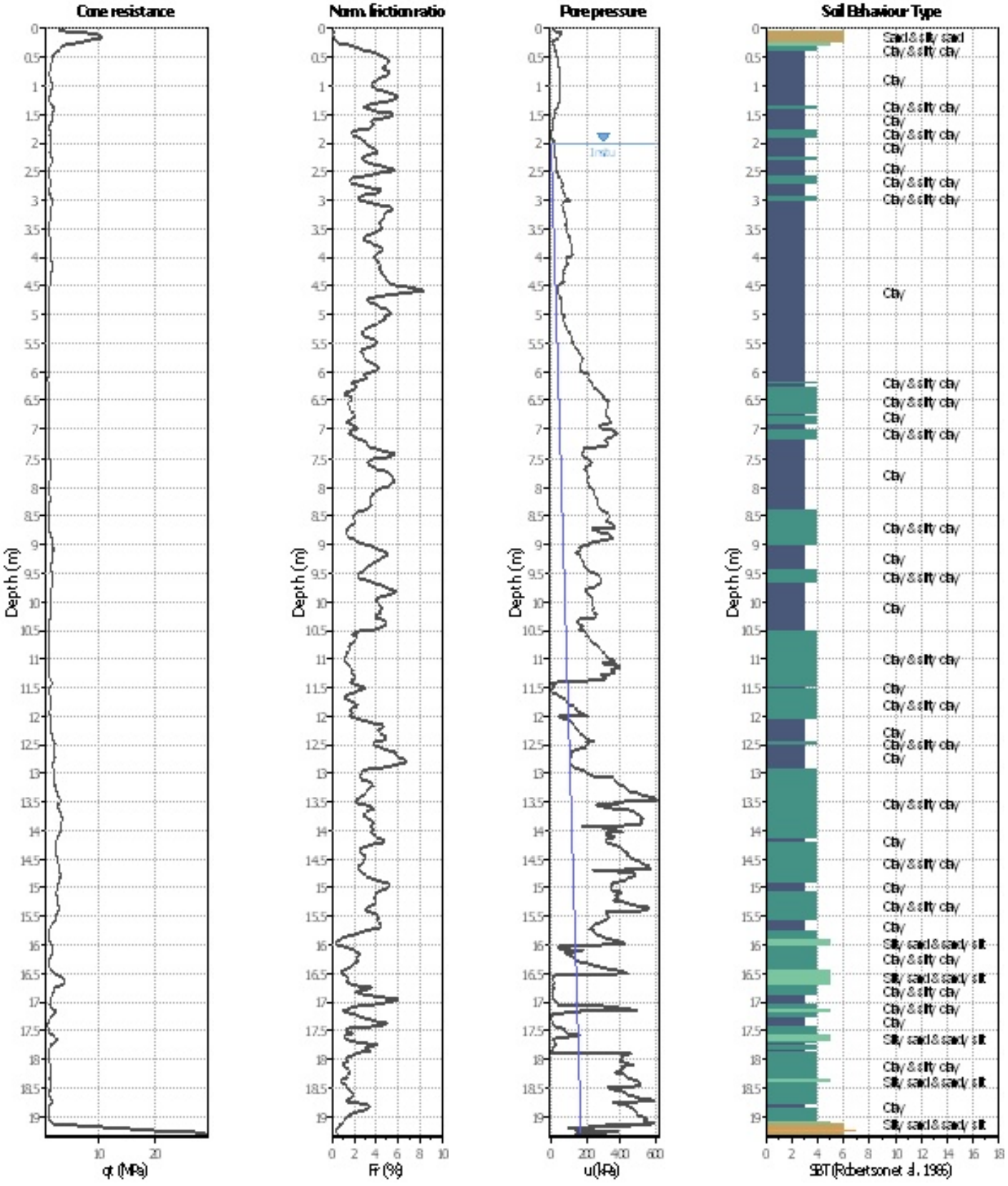
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P948

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU15
Total depth: 19.30 m



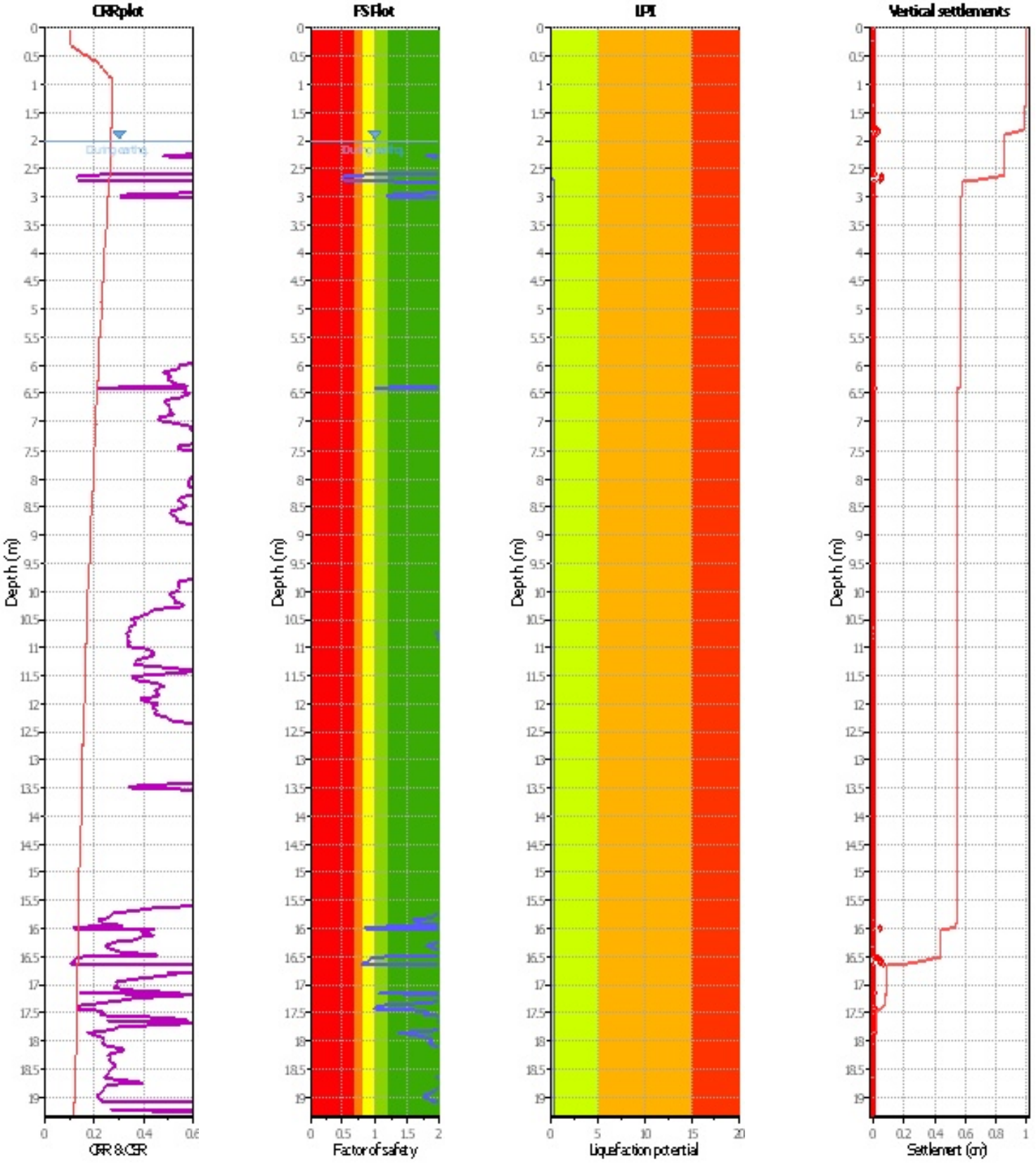
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P948

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU15
Total depth: 19.30 m



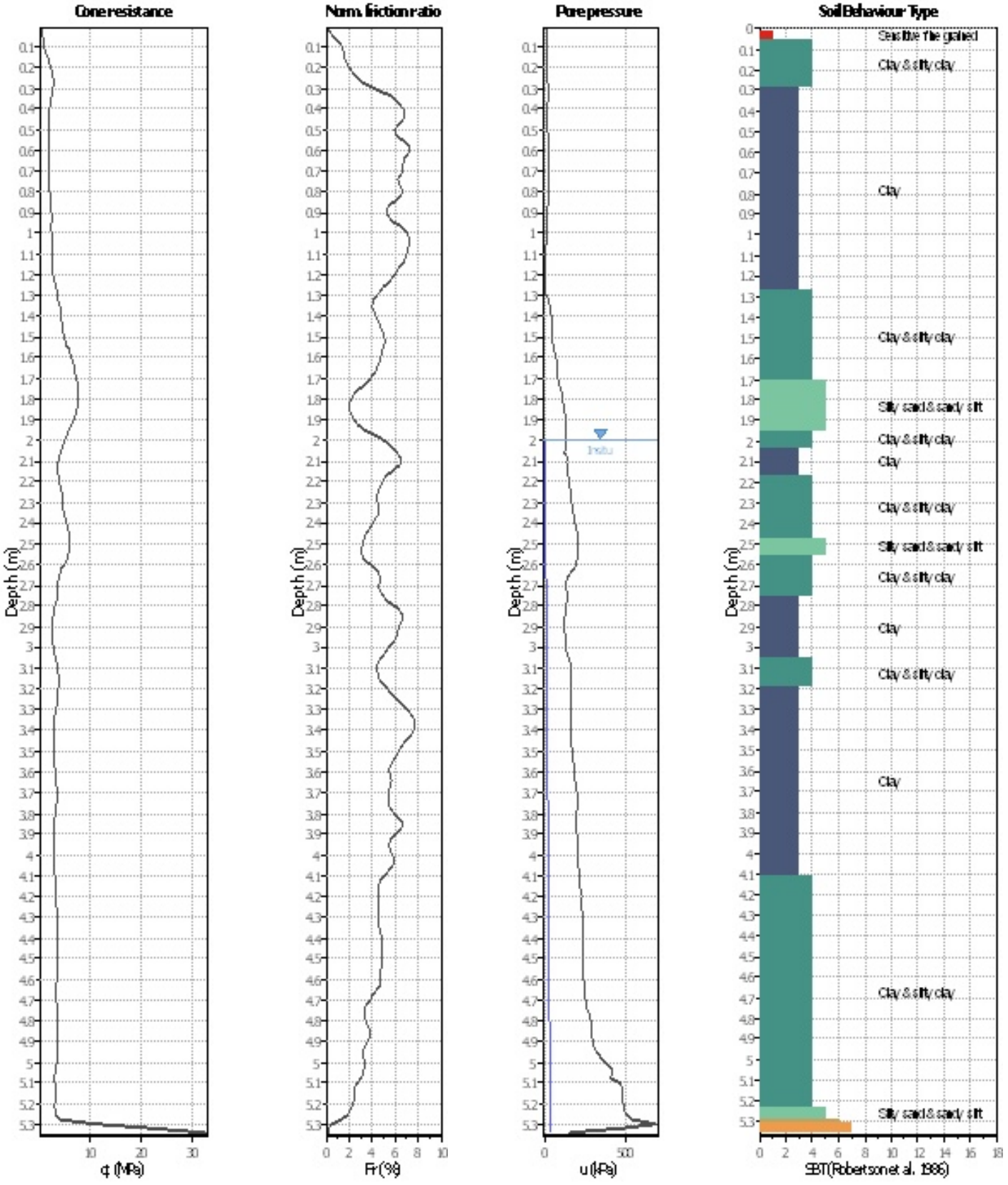
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P949

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU16
Total depth: 5.34 m



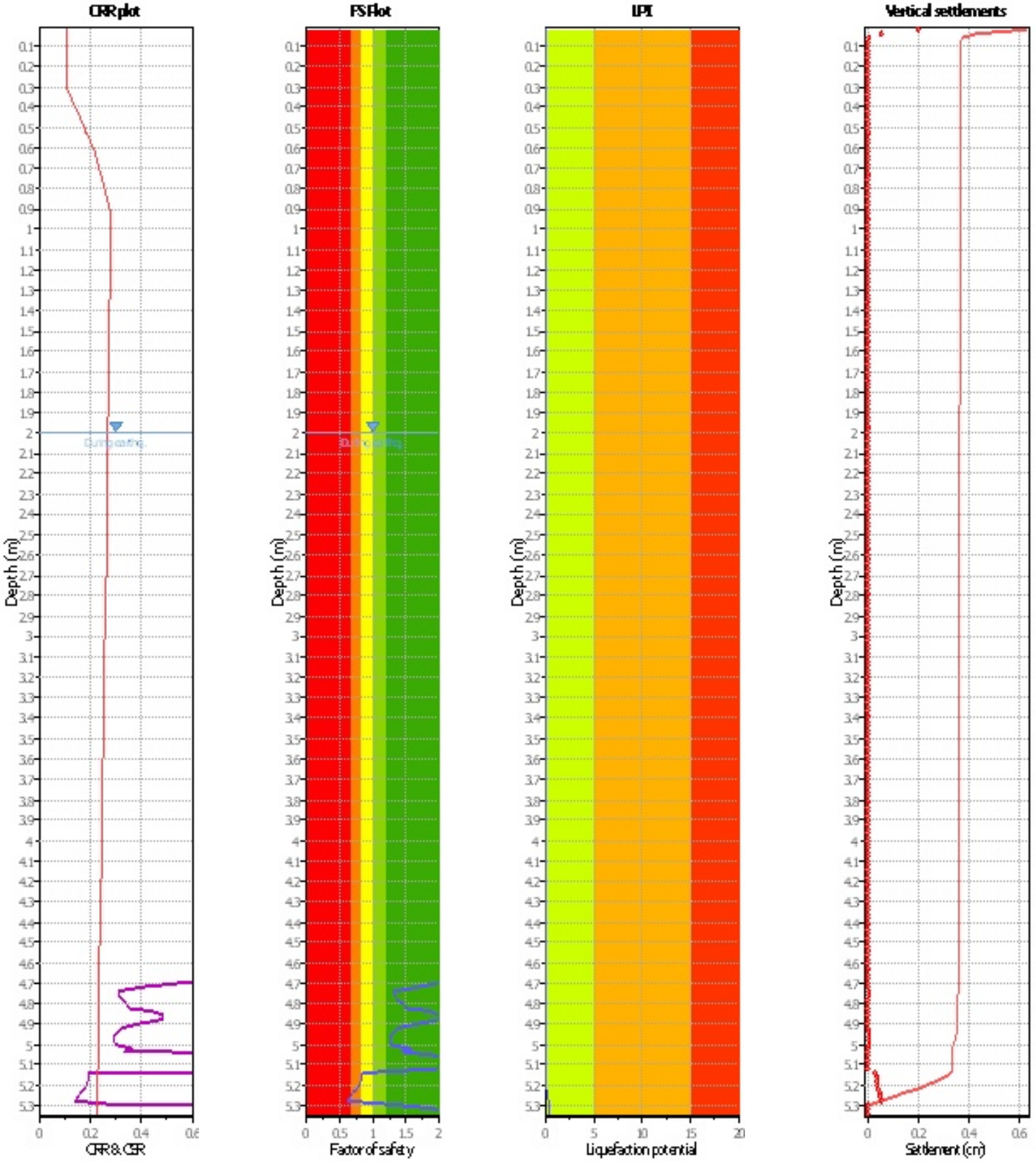
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P949

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU16
Total depth: 5.34 m



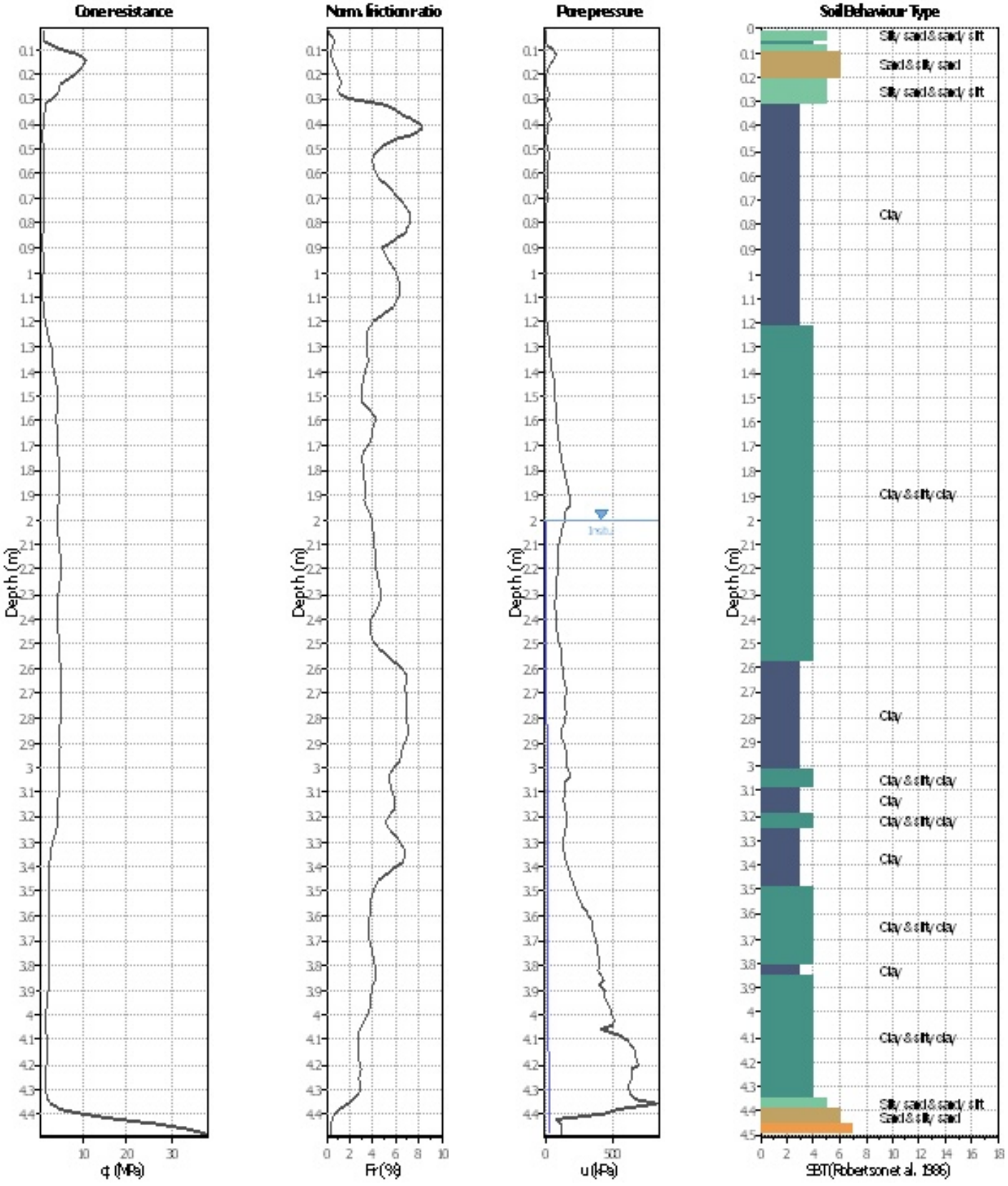
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P950

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU17
Total depth: 4.48 m



Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 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:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

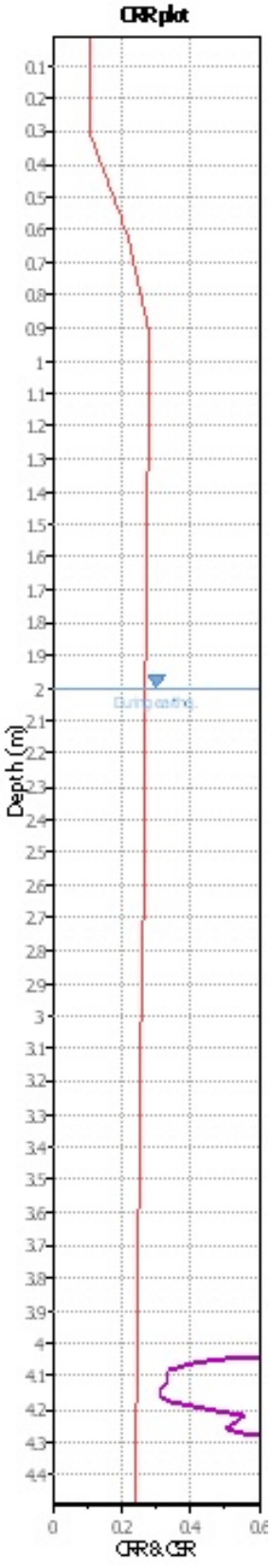
EN GEO S.r.l.
ENGINEERING GEOLOGY
www.engeo.it

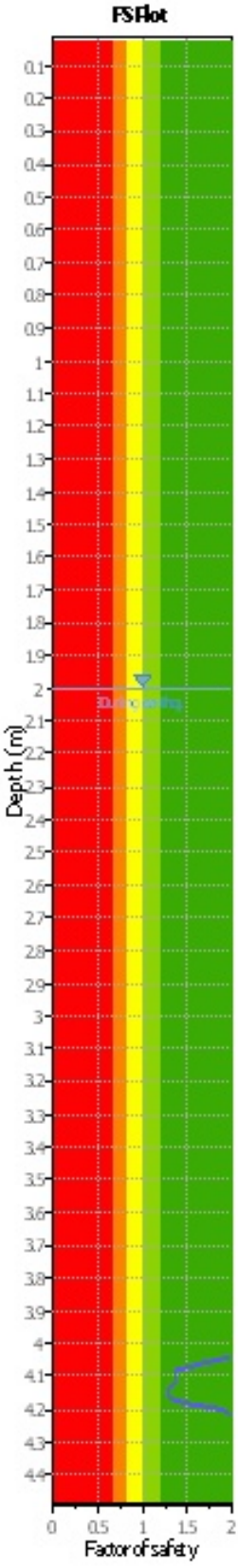
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

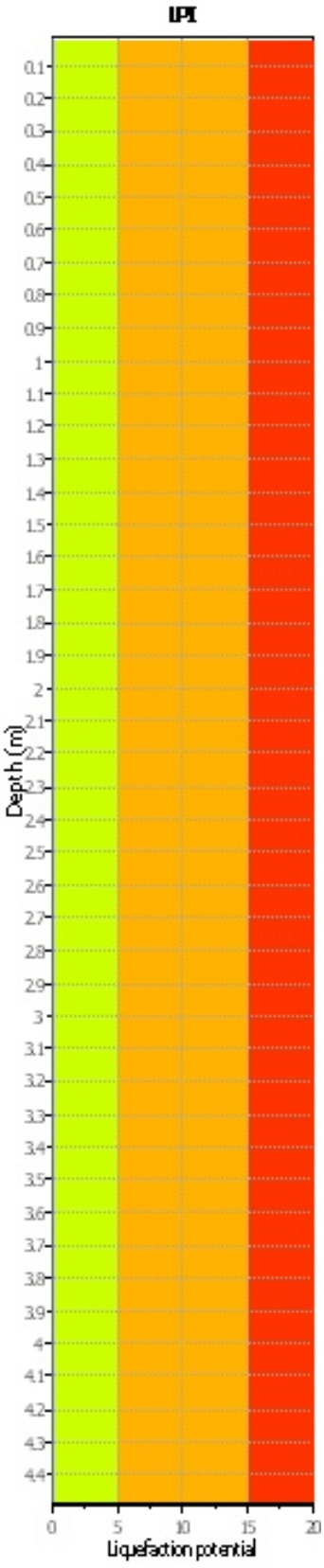
034027P950

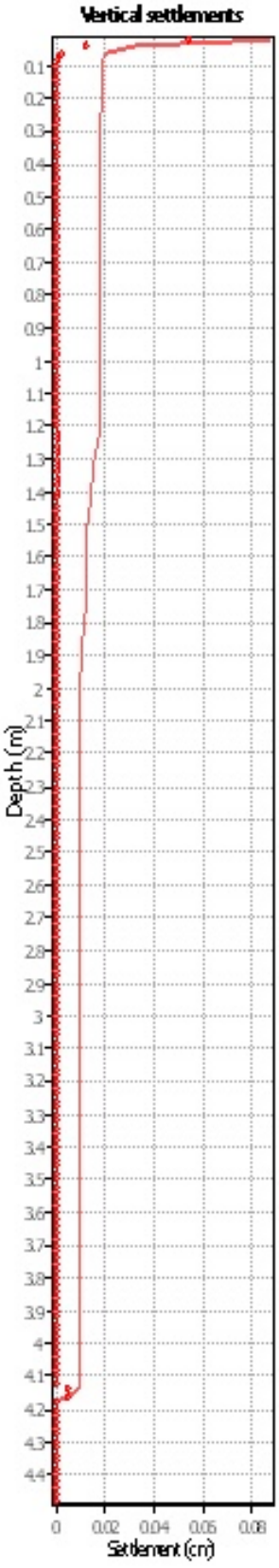
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU17
Total depth: 4.48 m









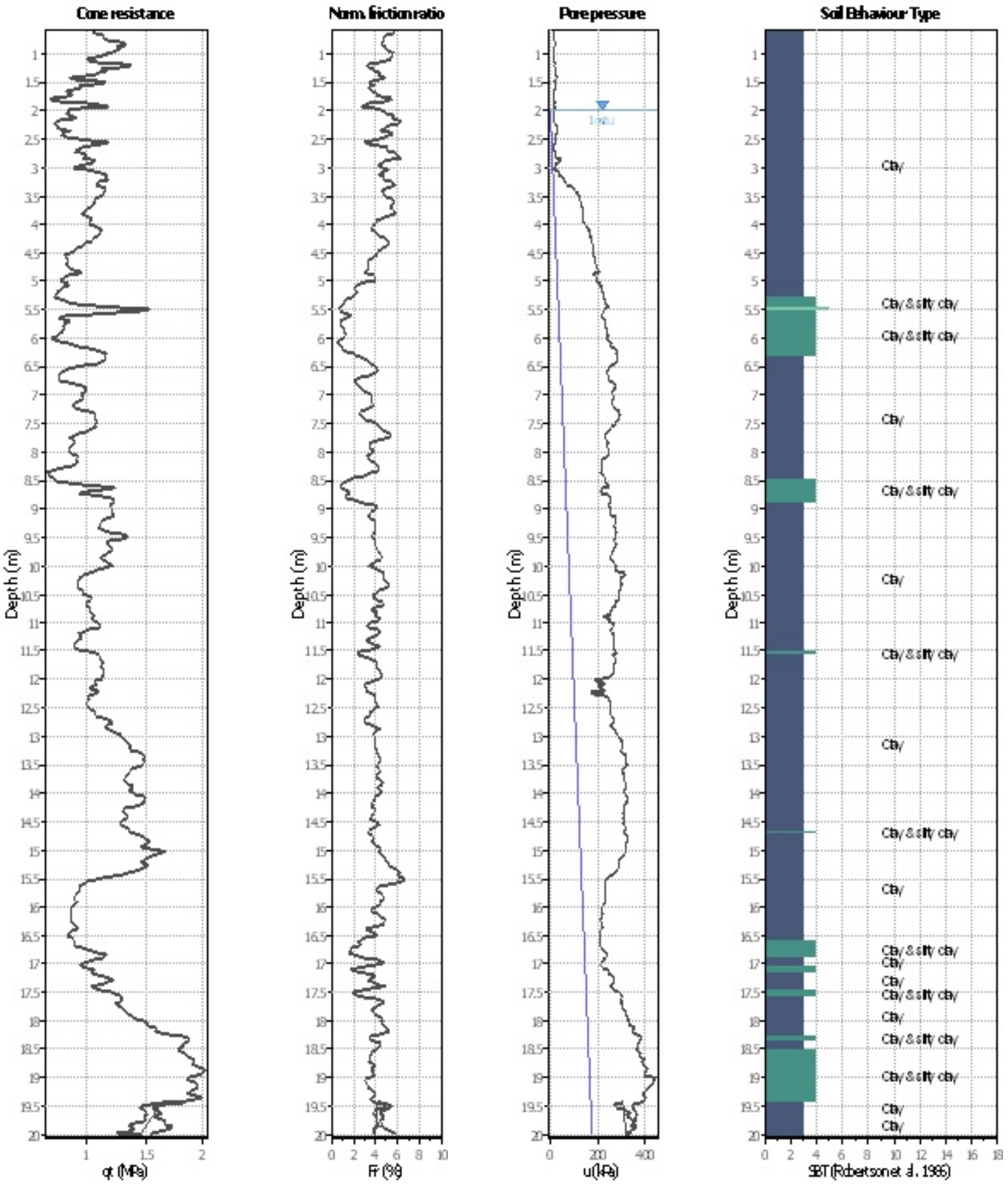
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P951

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU18
Total depth: 20.00 m



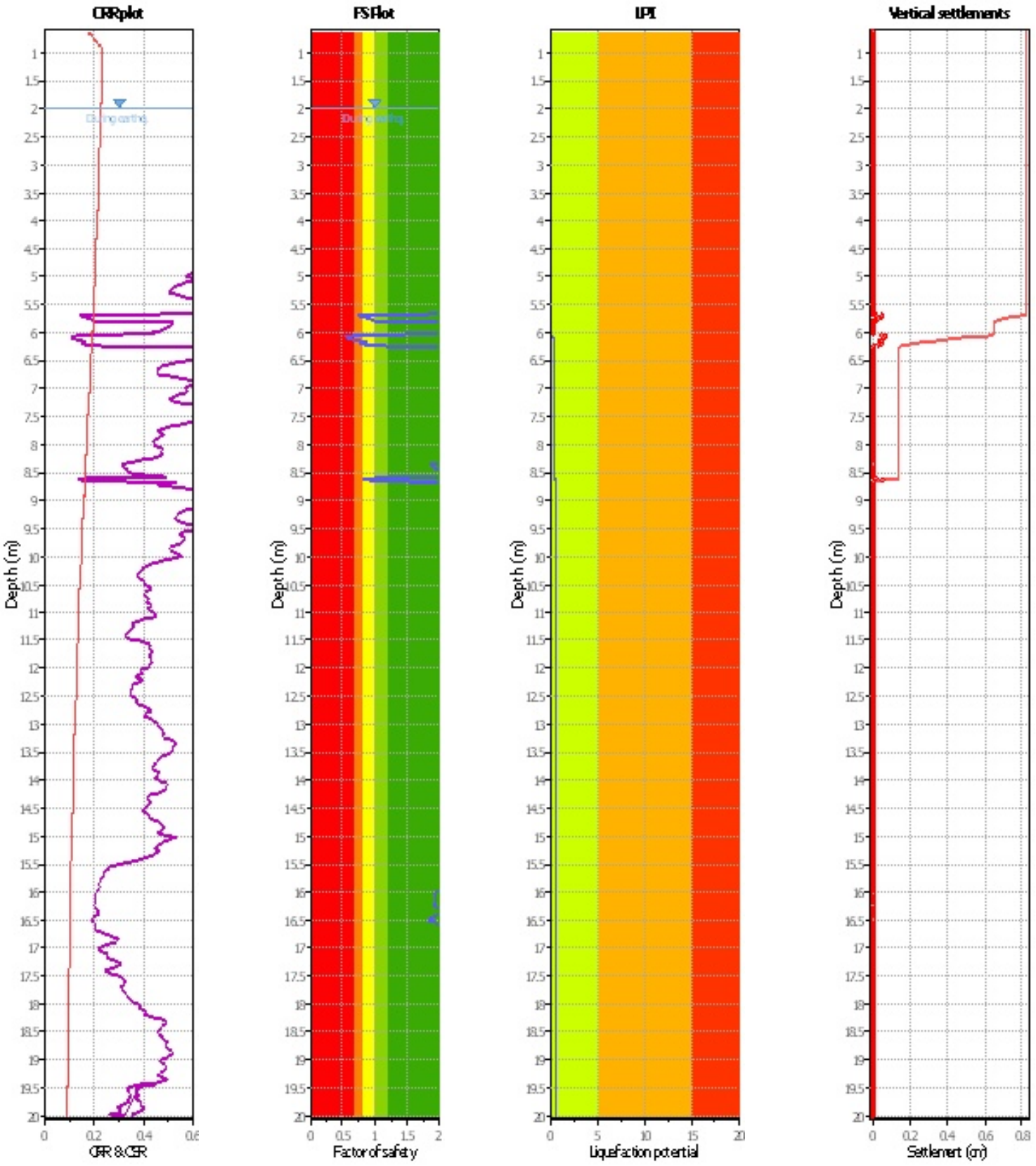
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P951

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU18
Total depth: 20.00 m



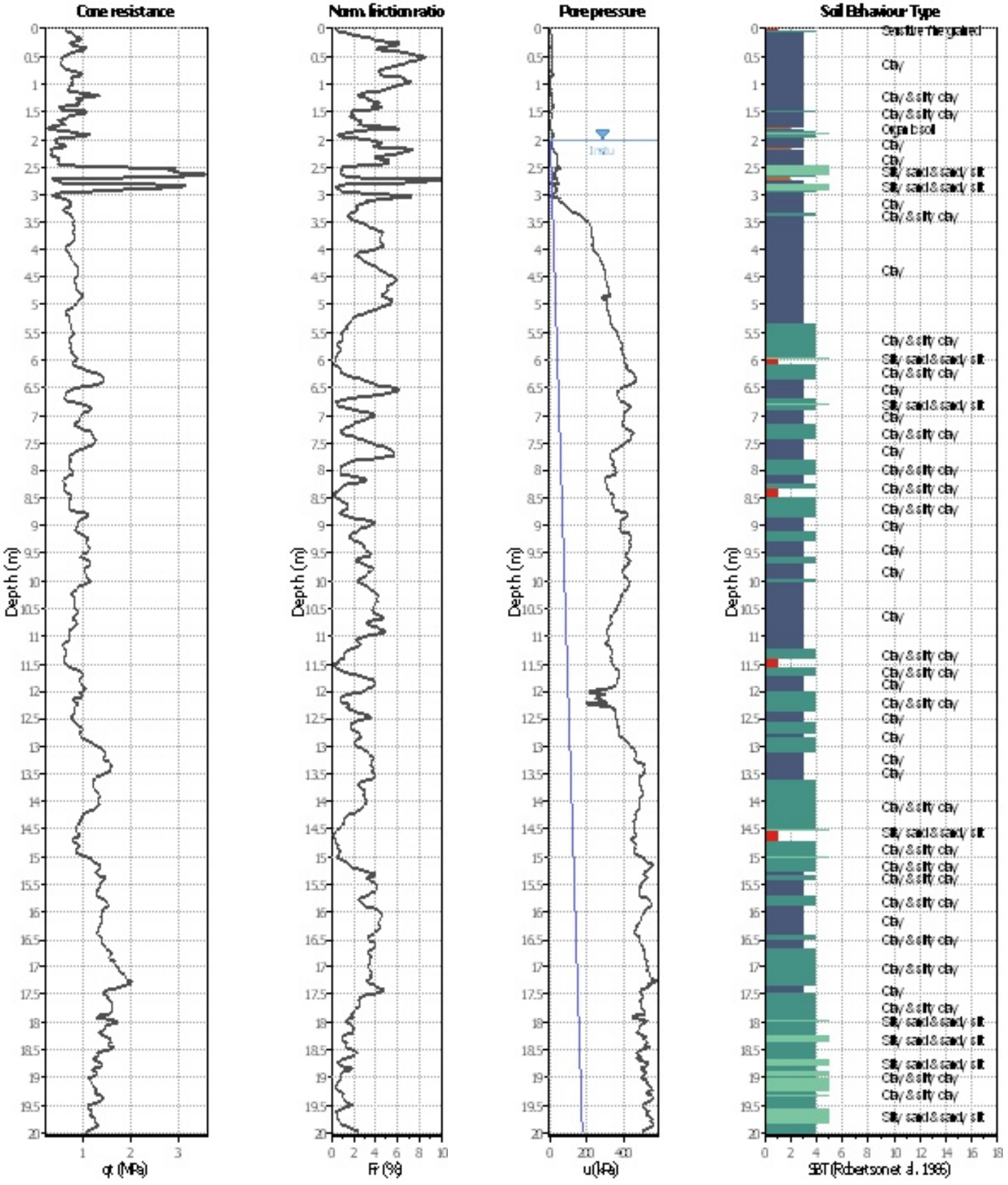
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P952

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU19
Total depth: 20.00 m



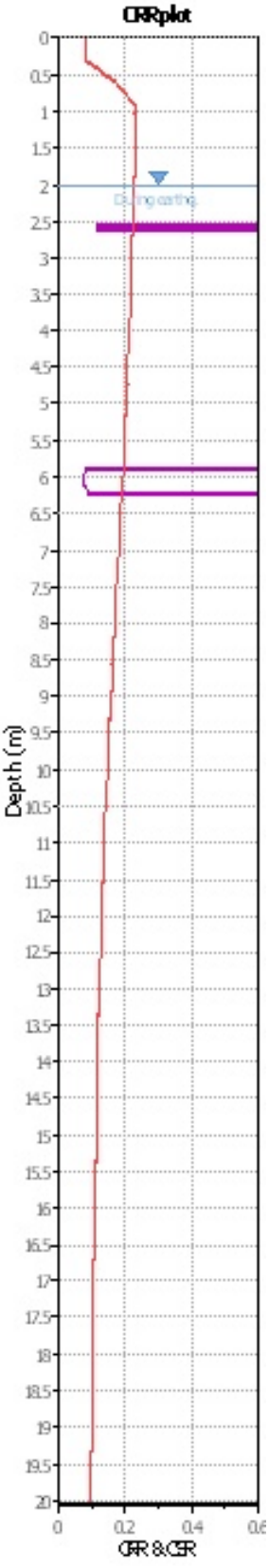
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

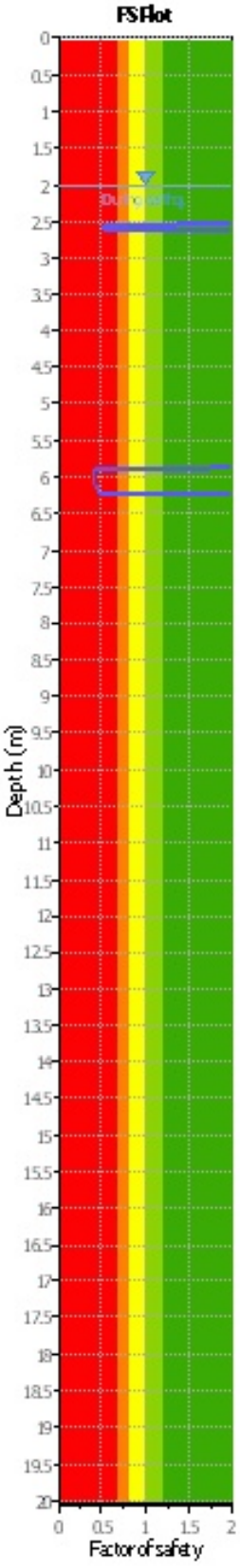
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

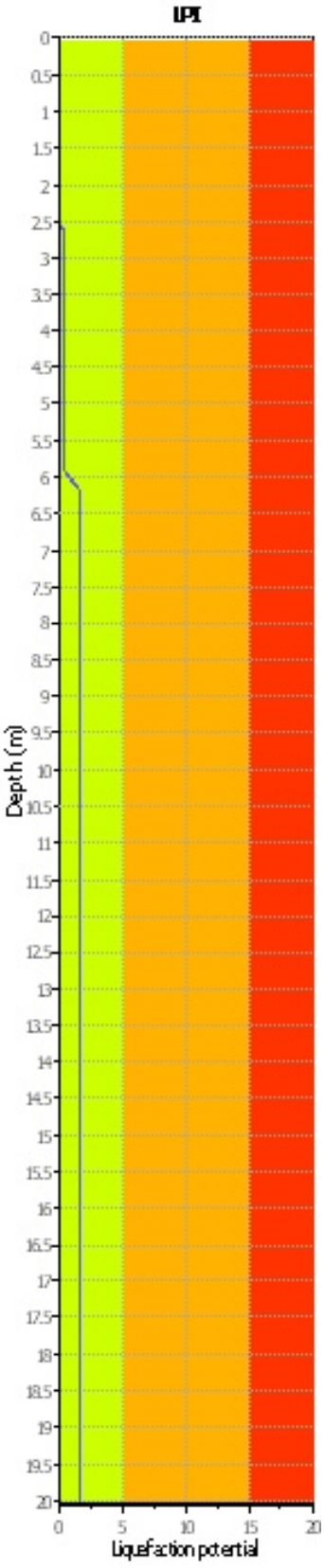
034027P952

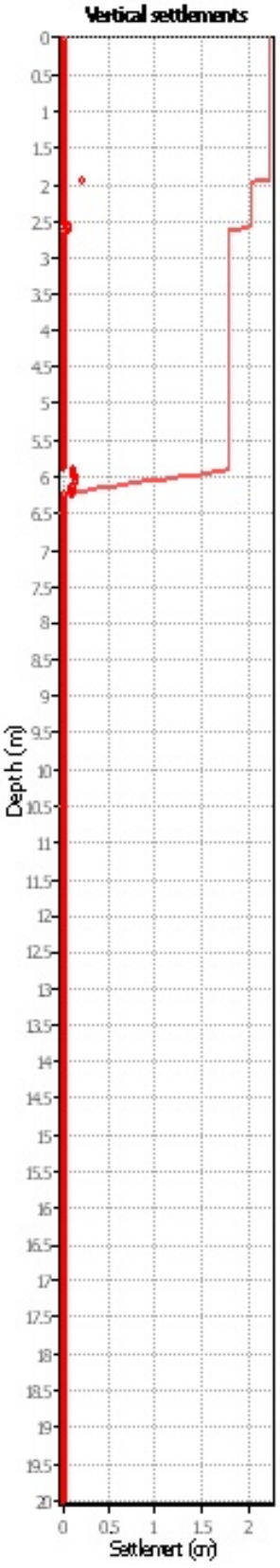
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU19
Total depth: 20.00 m









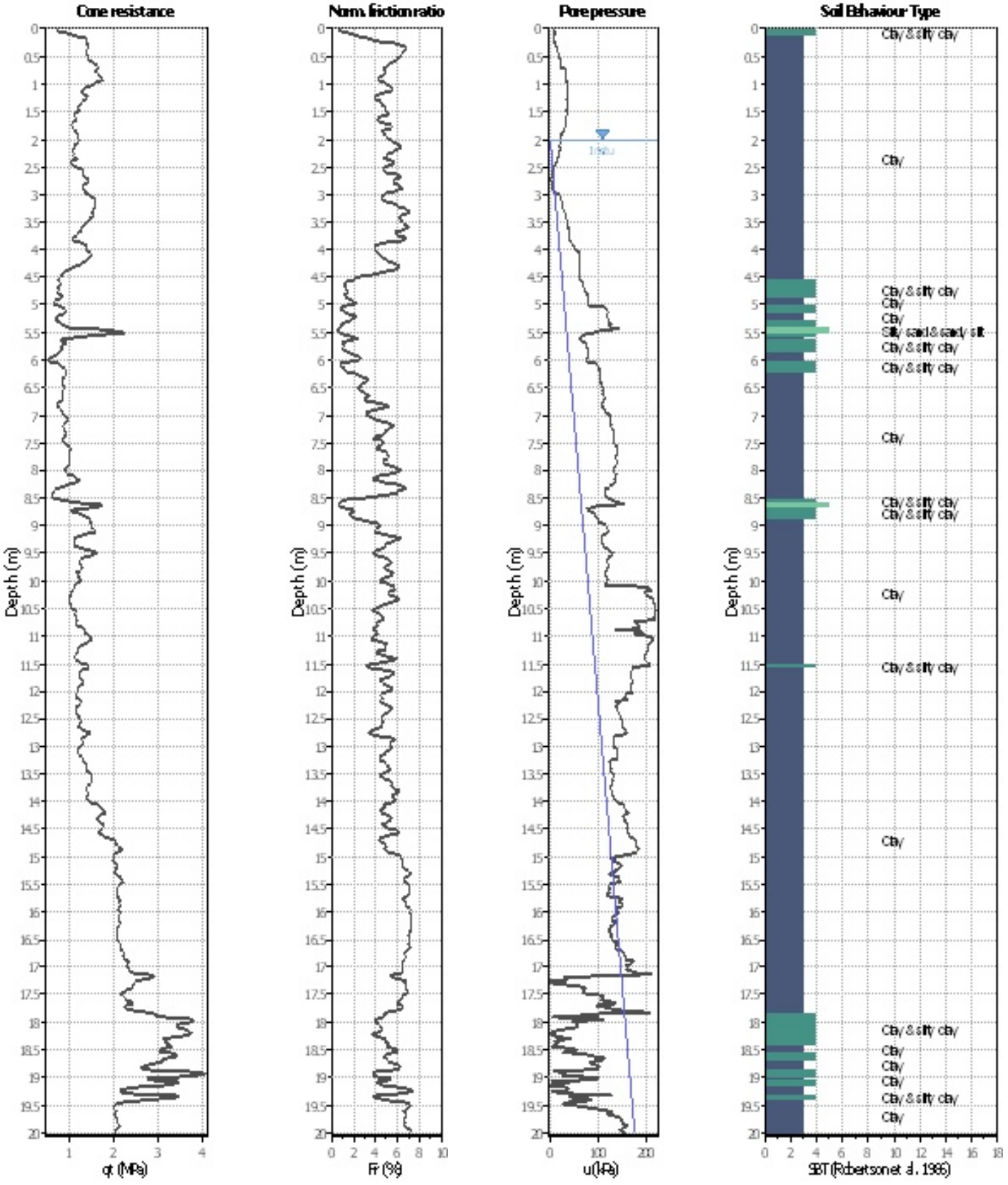
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P953

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU20
Total depth: 20.00 m



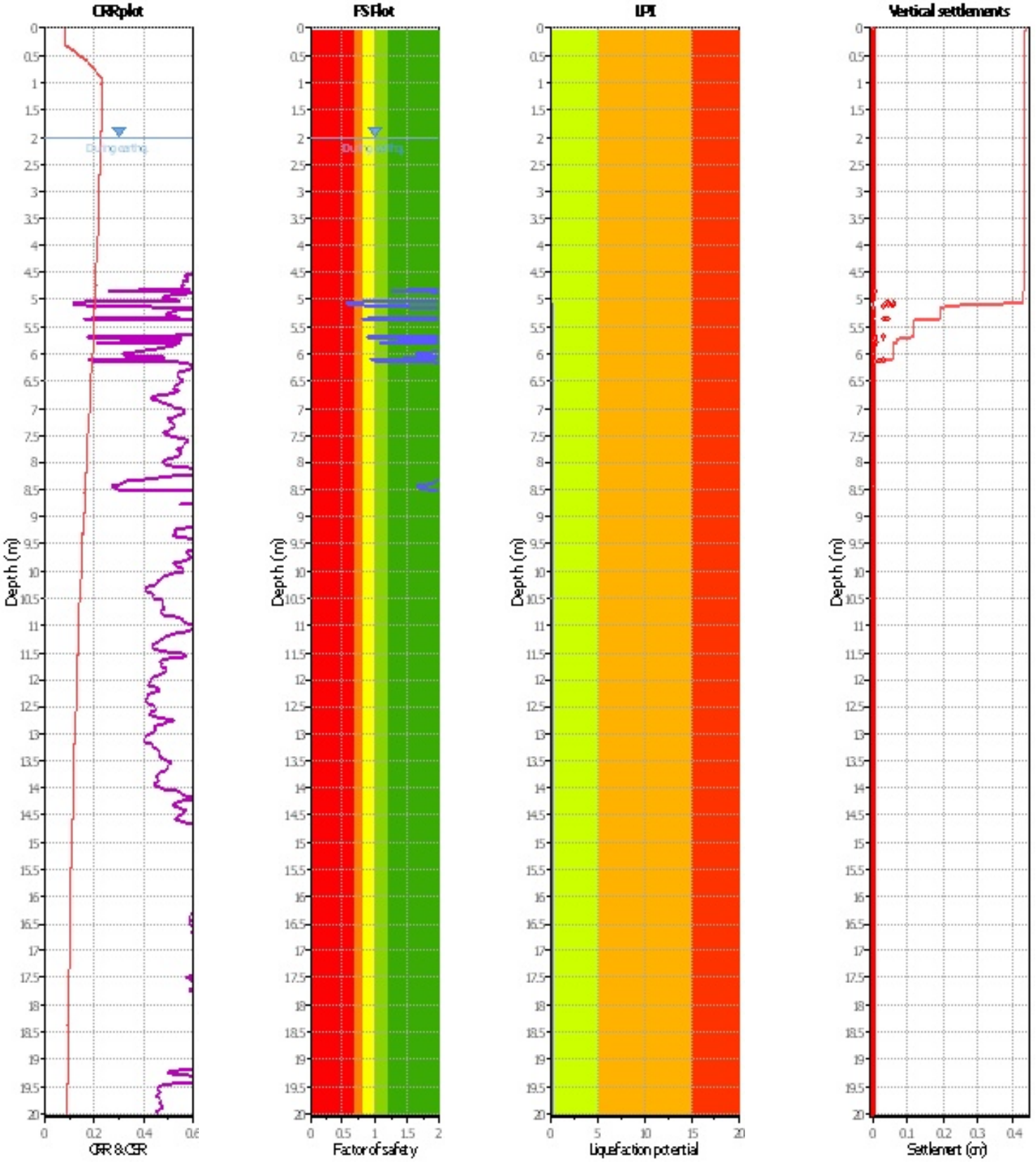
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P953

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU20
Total depth: 20.00 m



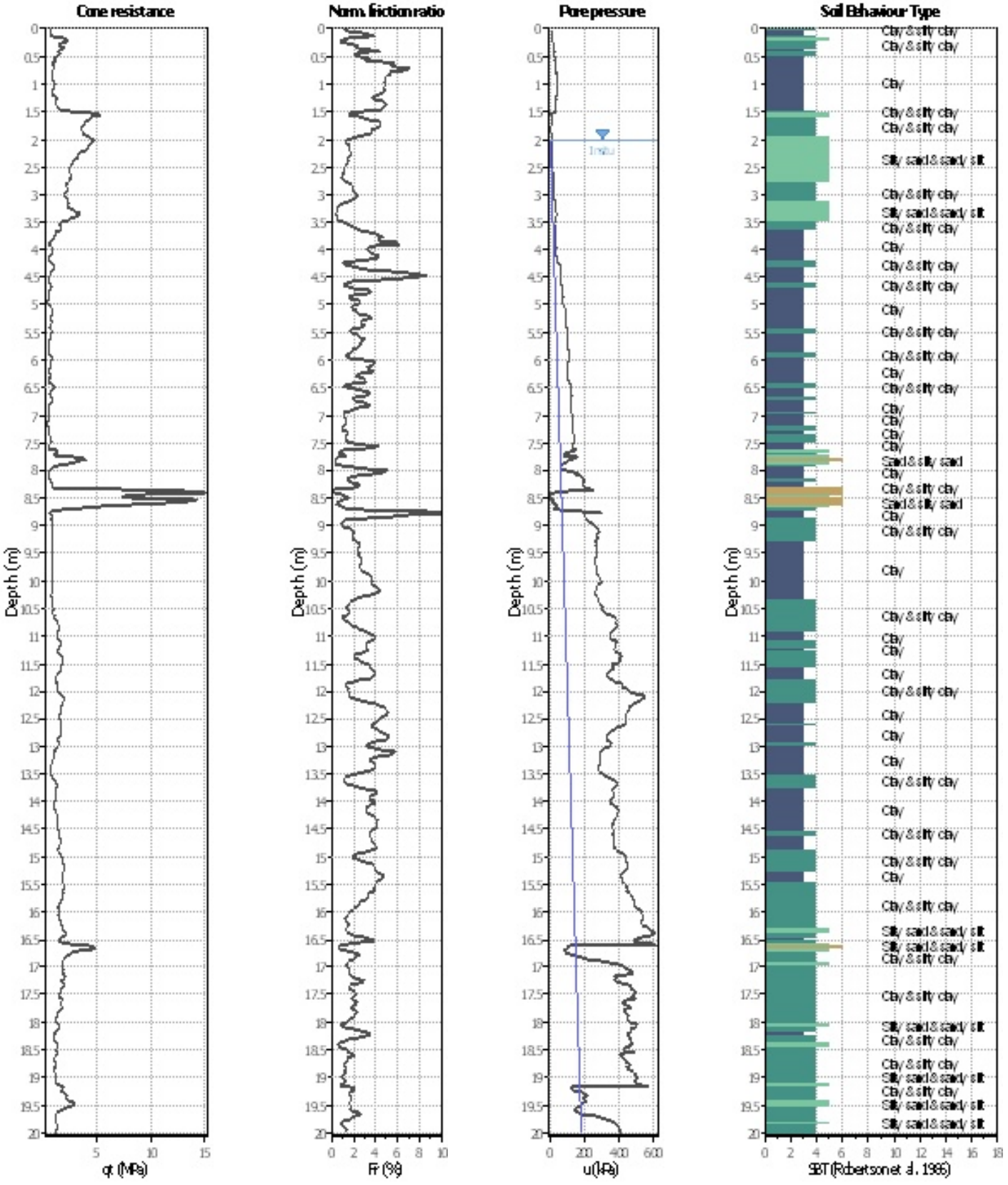
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P954

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU21
Total depth: 20.00 m



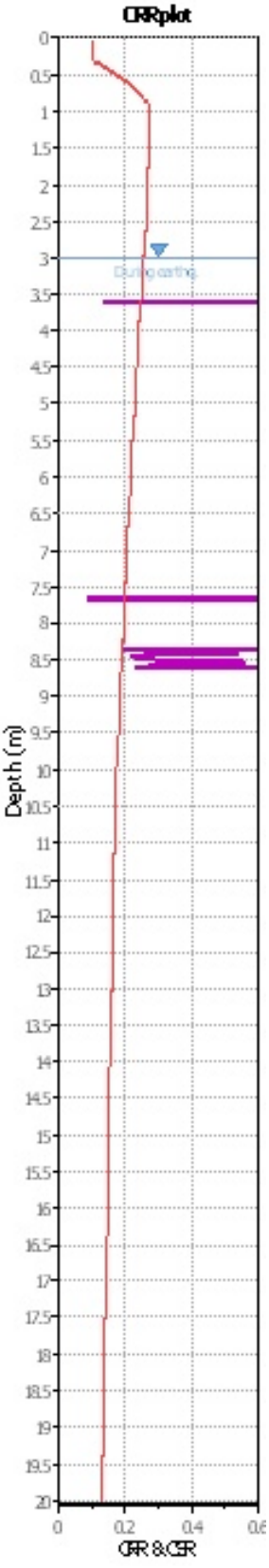
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

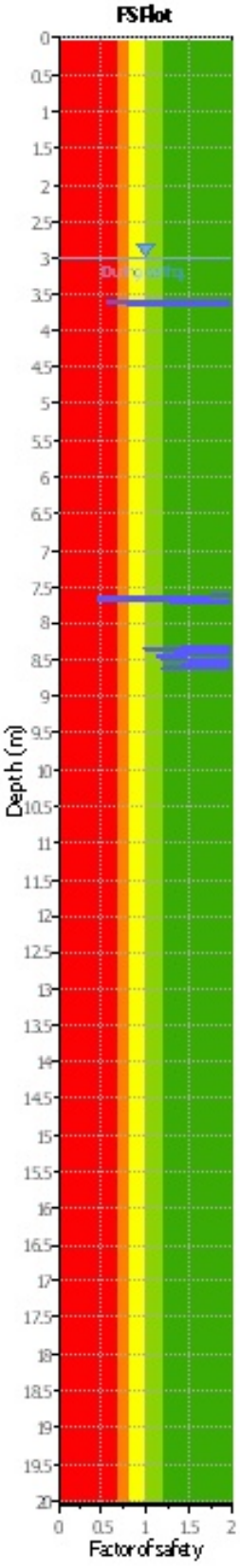
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

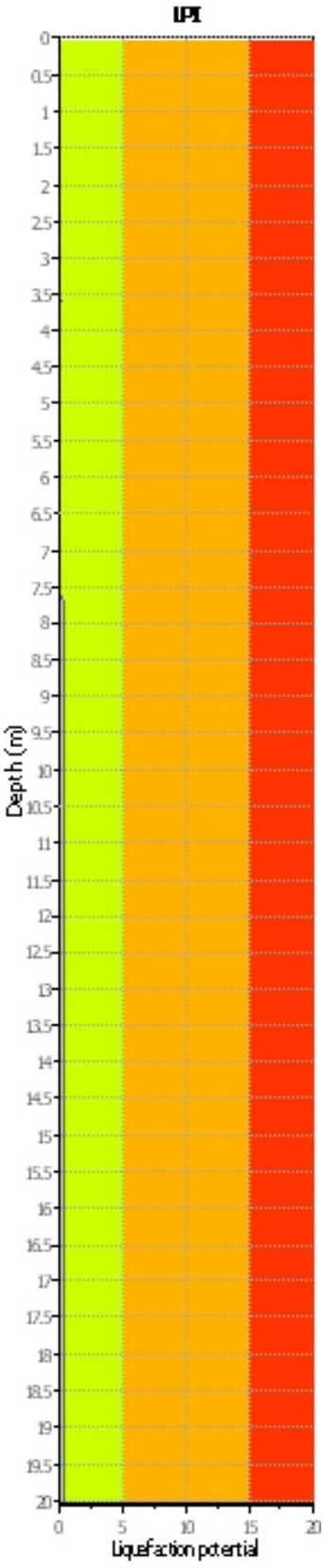
034027P954

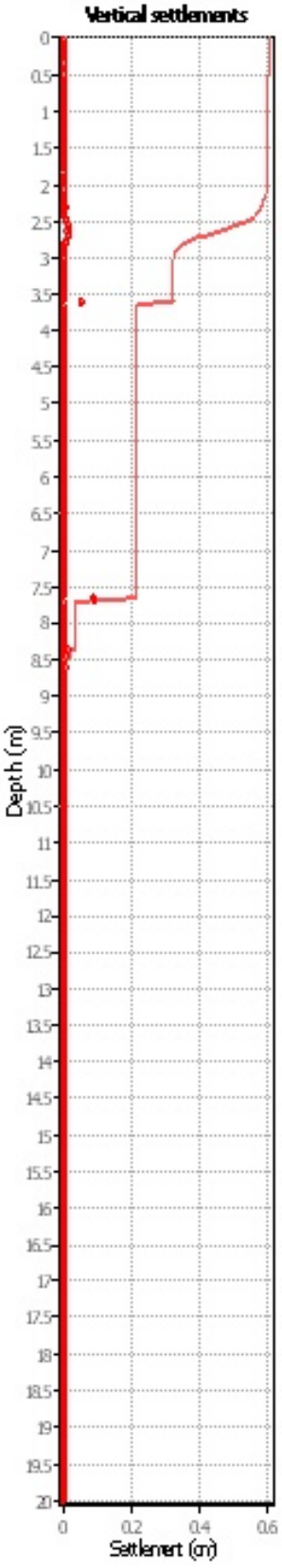
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU21
Total depth: 20.00 m









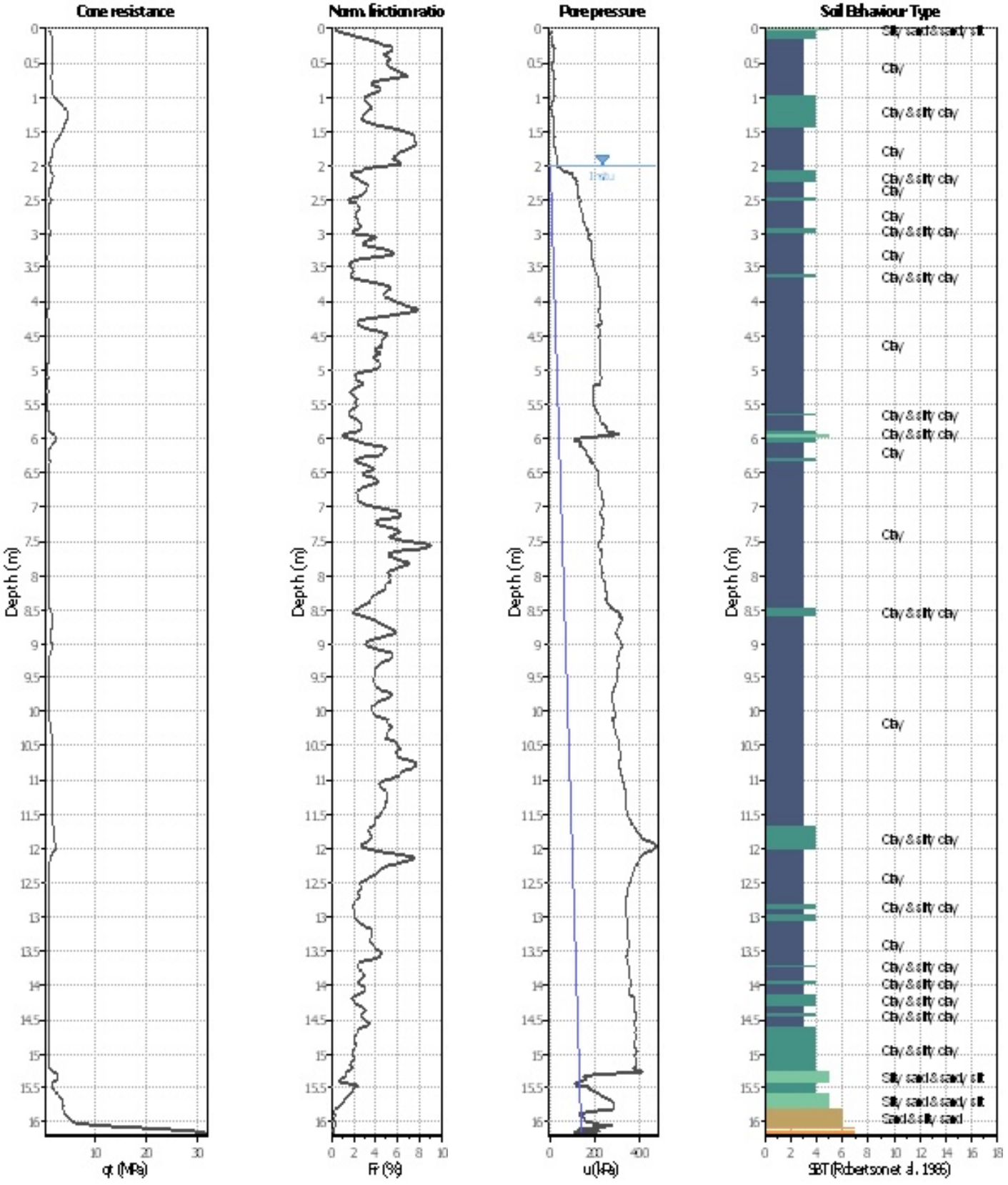
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P955

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU22
Total depth: 16.16 m



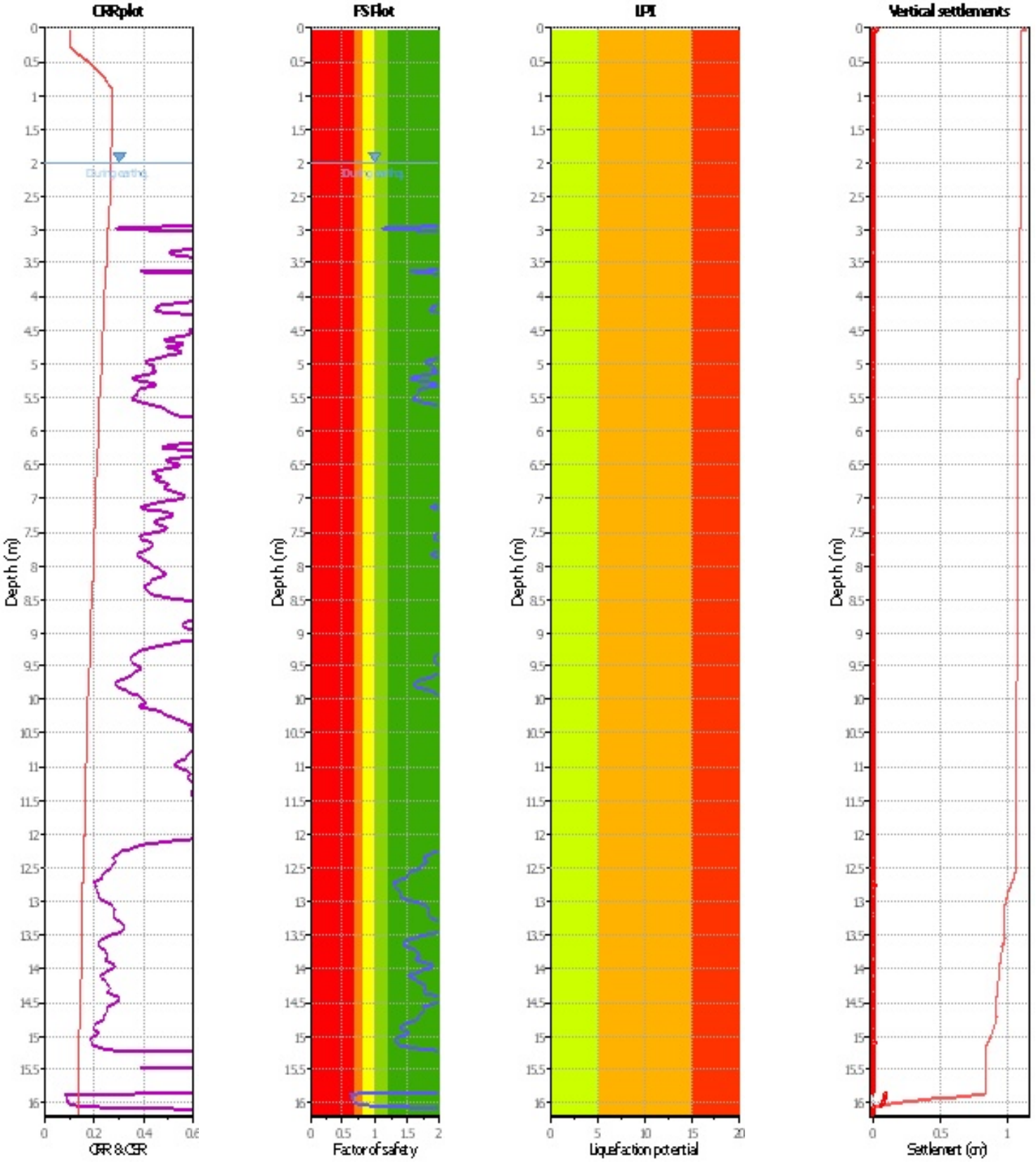
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P955

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU22
Total depth: 16.16 m



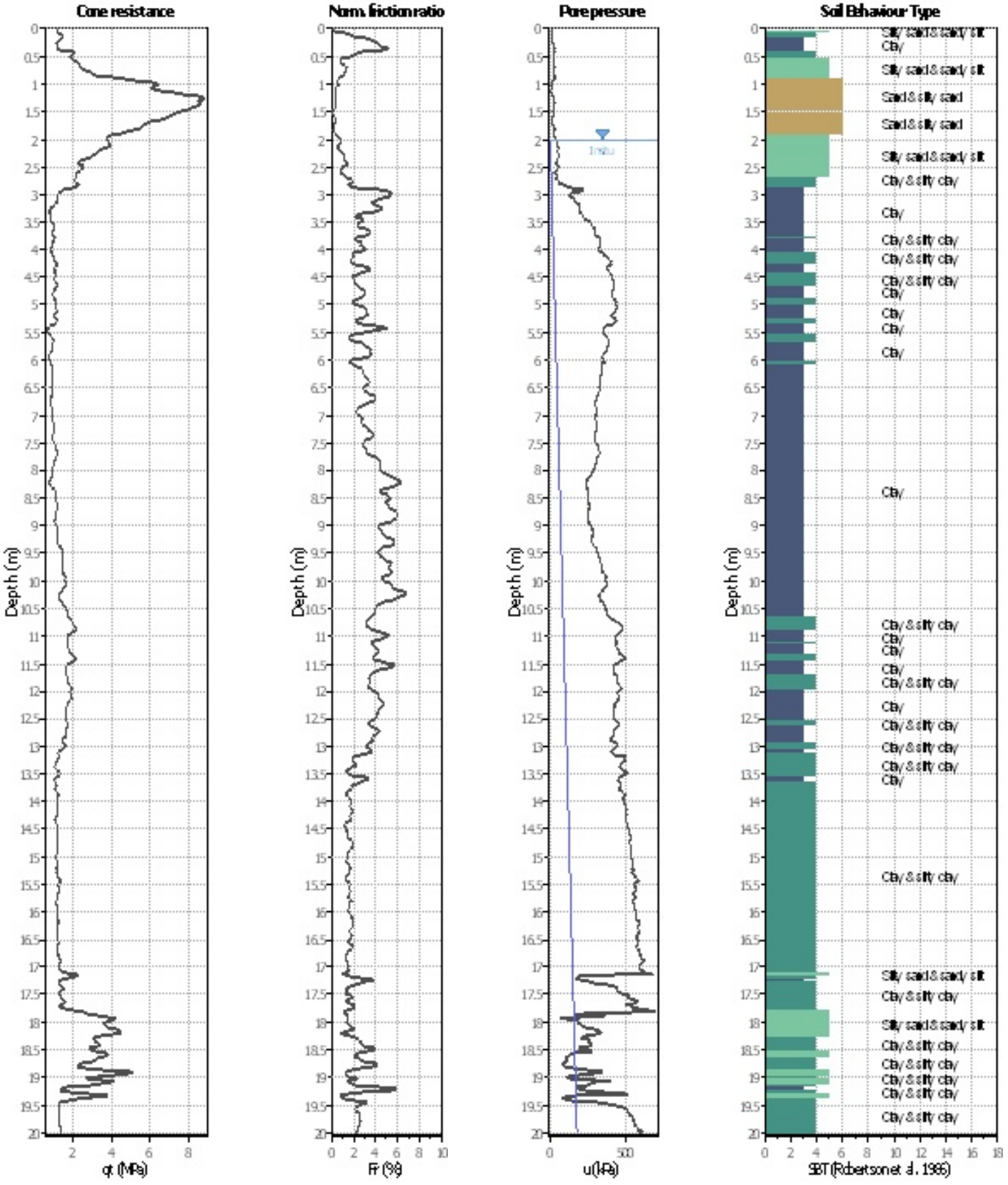
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P956

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU23
Total depth: 20.00 m



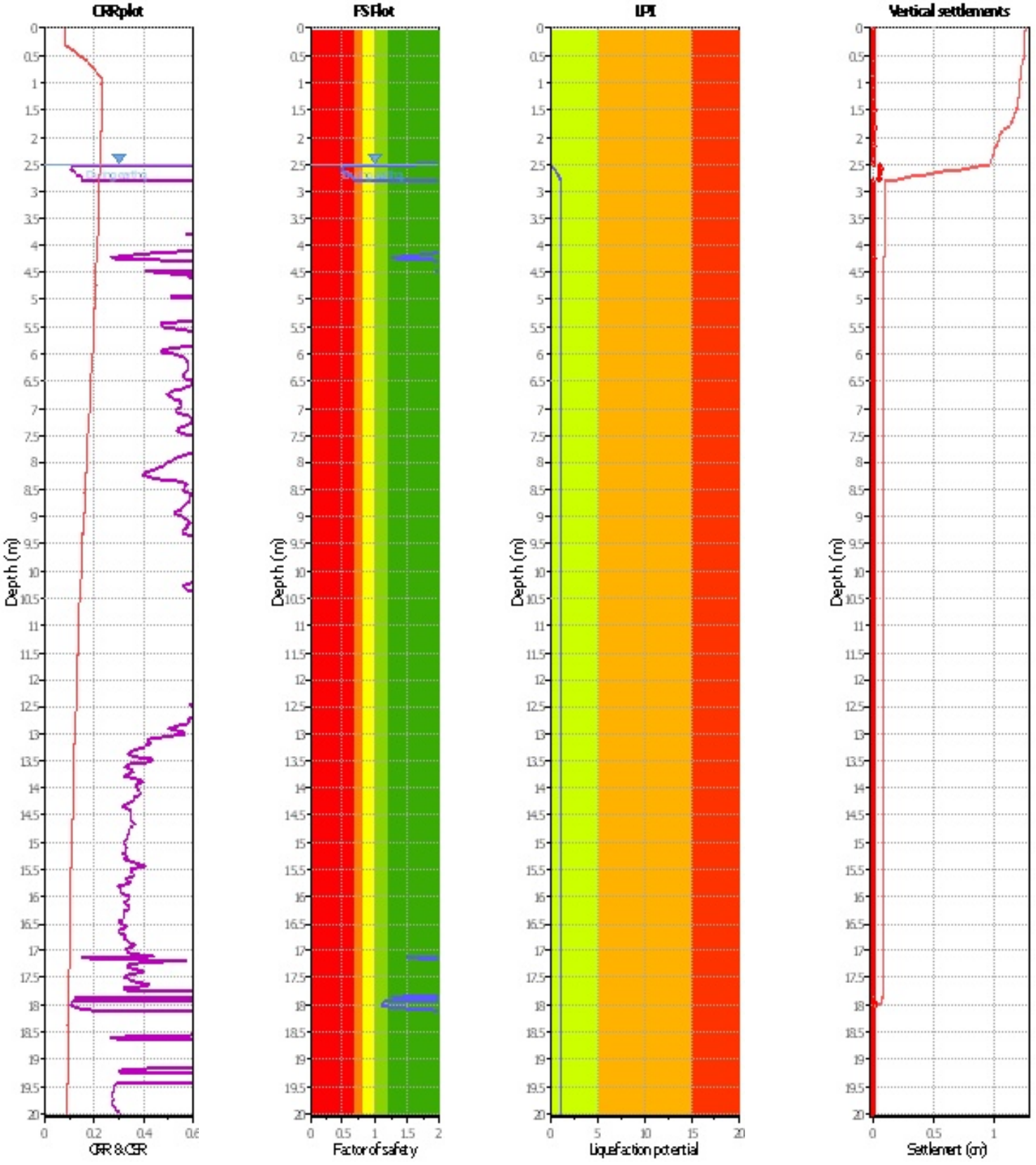
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.50 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P956

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: CPTU23
Total depth: 20.00 m



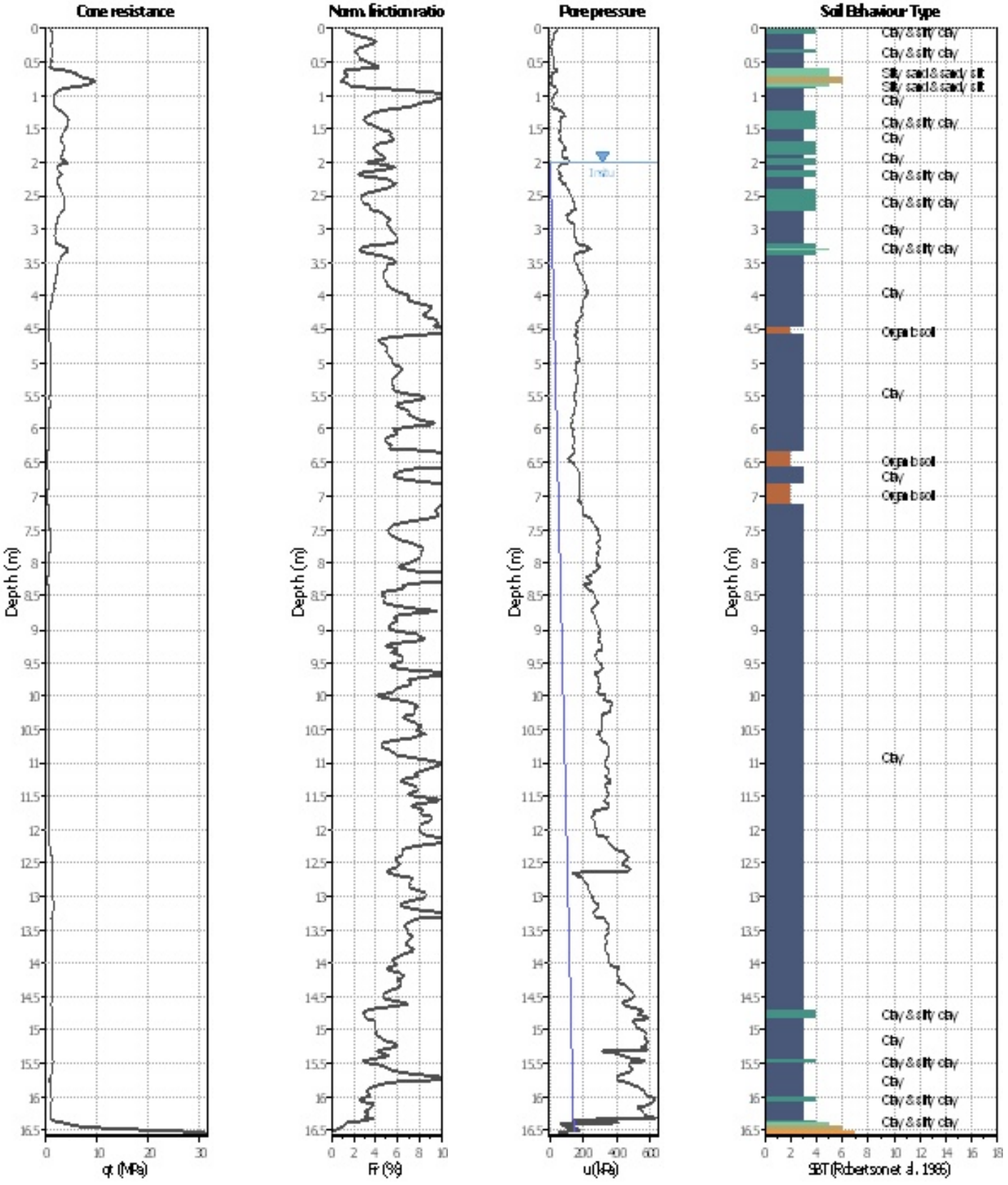
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.50 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P929

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU1
Total depth: 16.54 m



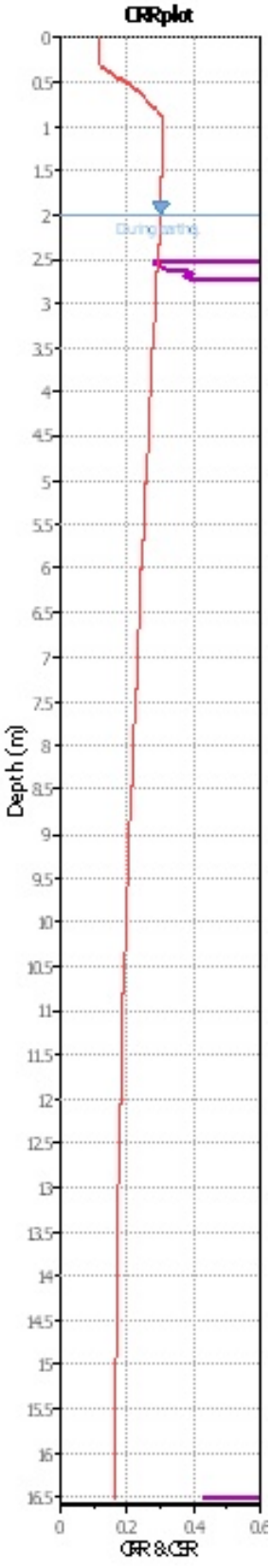
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

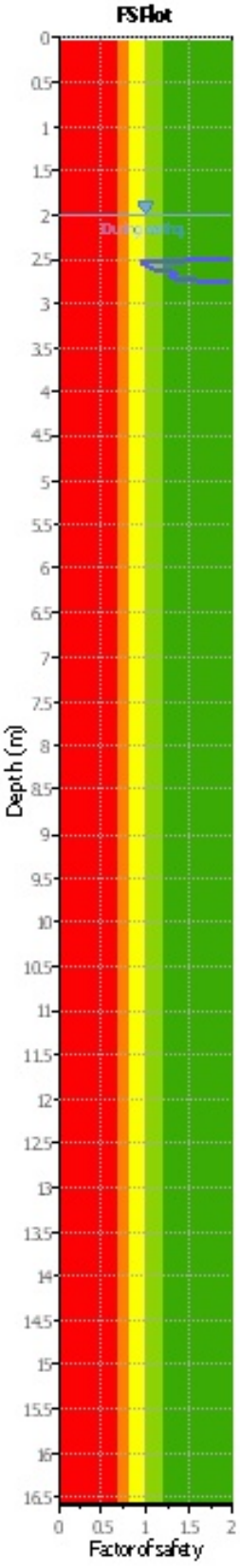
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

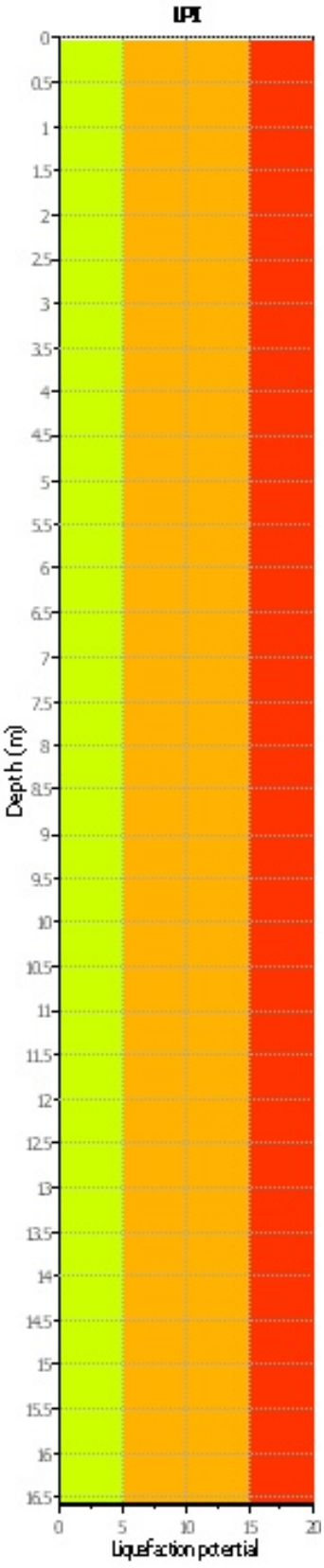
034027P929

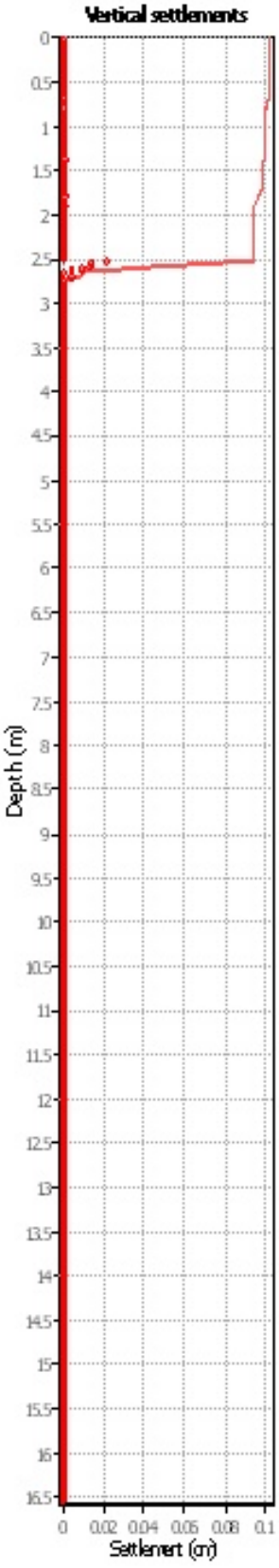
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU1
Total depth: 16.54 m









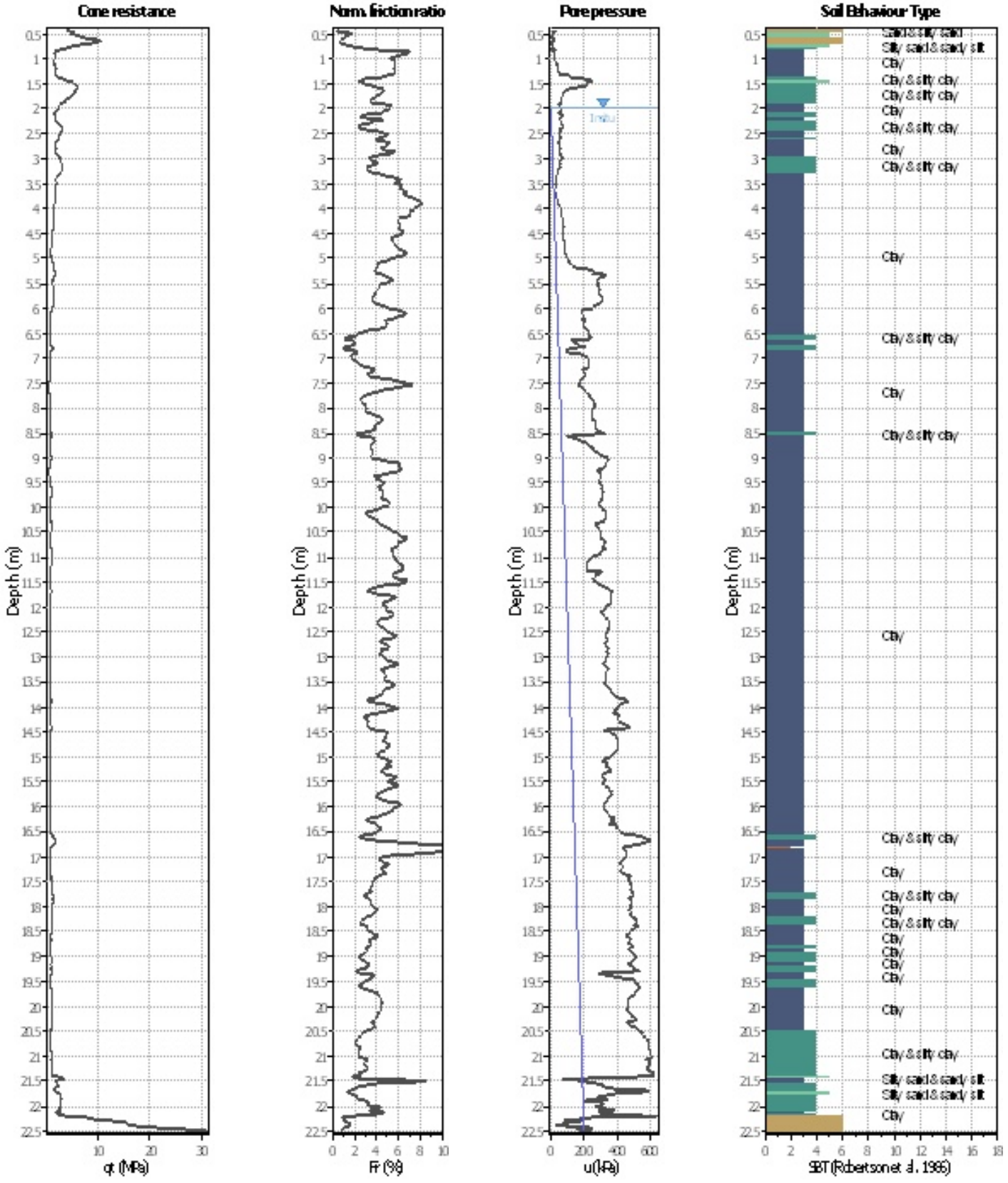
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P930

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU2
Total depth: 22.50 m



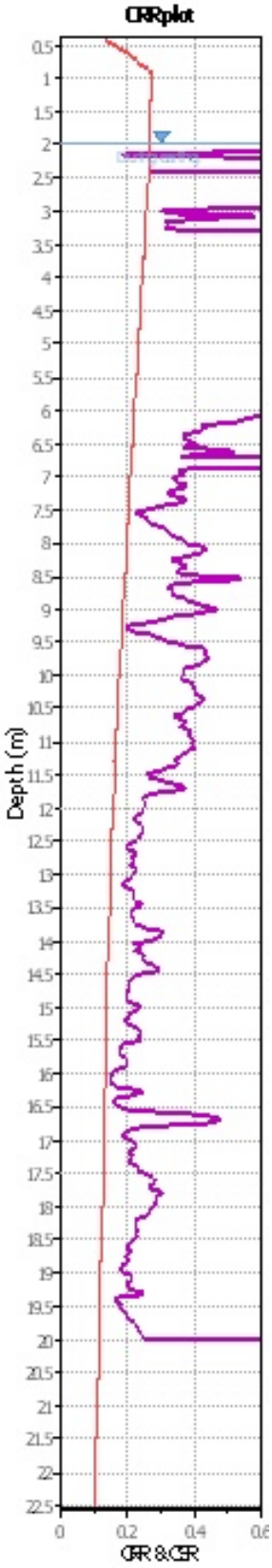
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

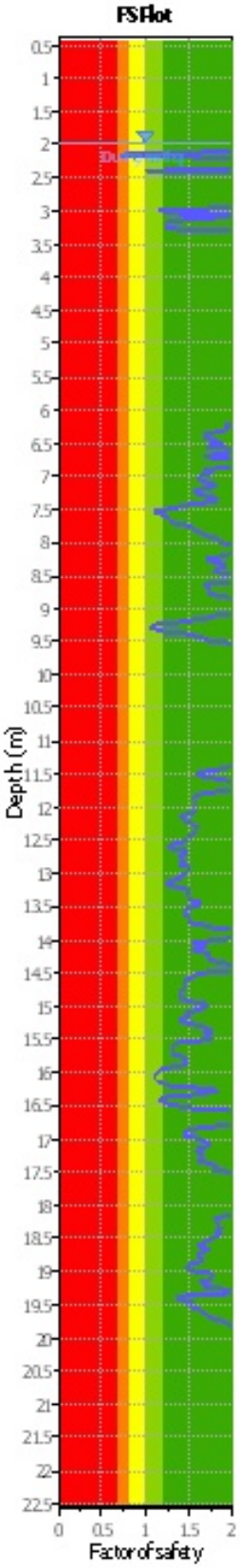
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

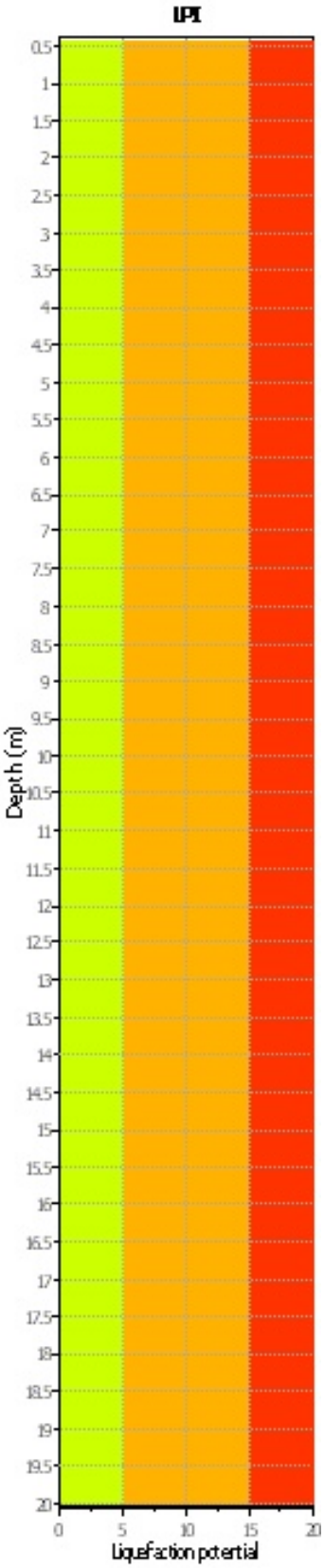
034027P930

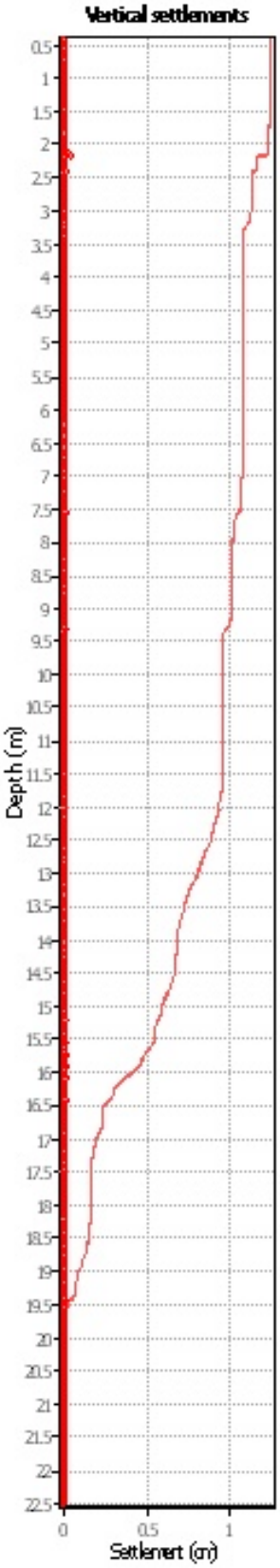
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU2
Total depth: 22.50 m









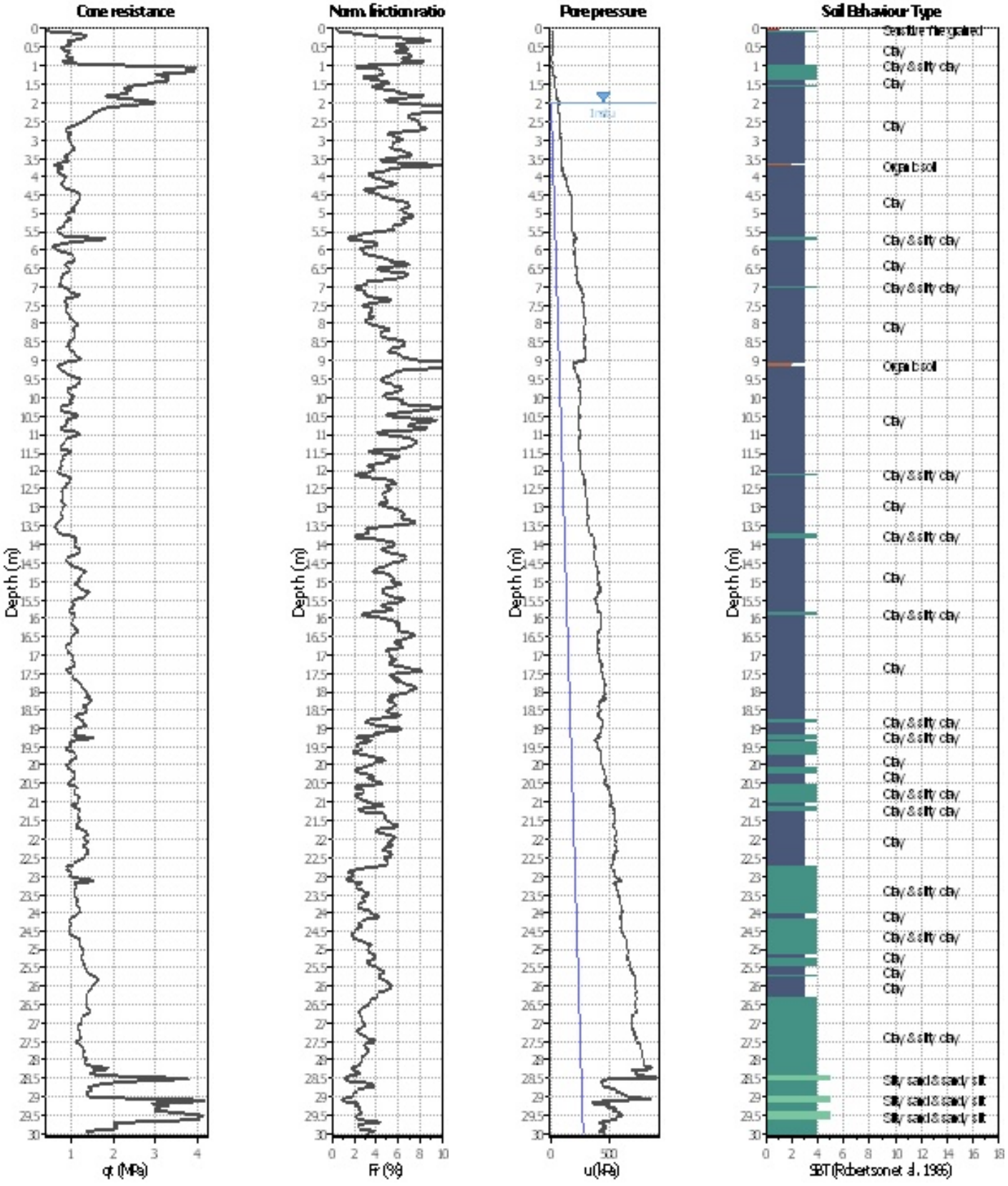
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P931

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU3
Total depth: 30.00 m



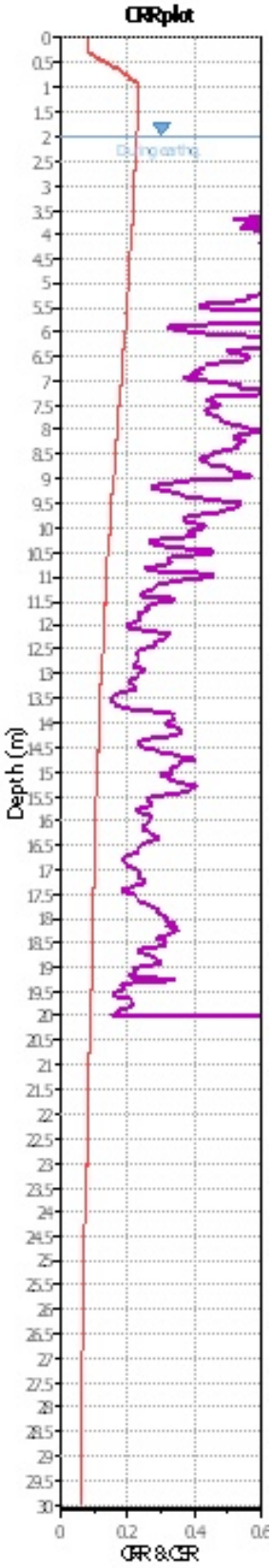
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

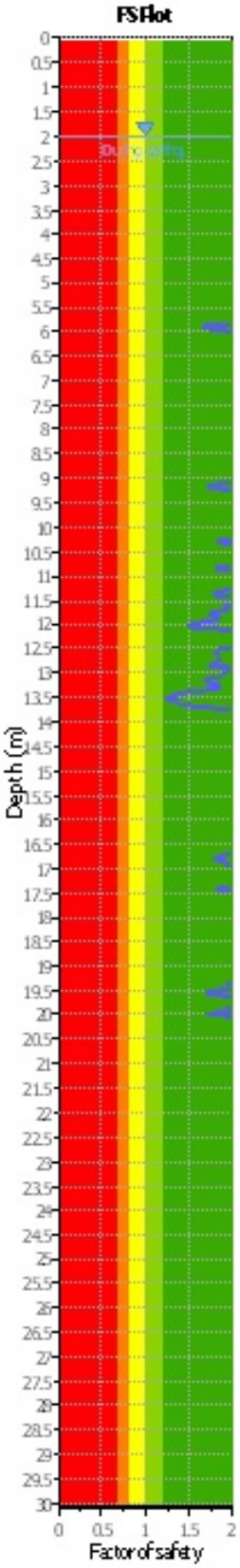
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

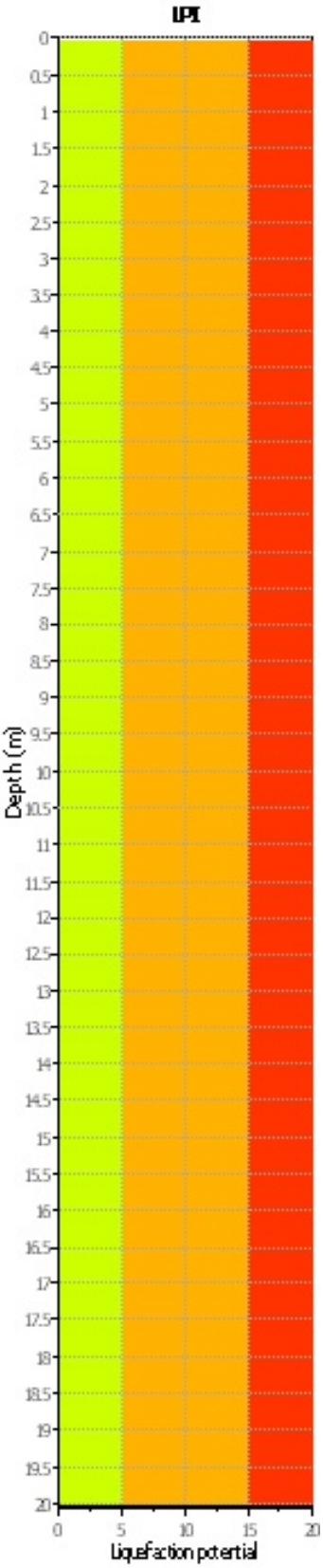
034027P931

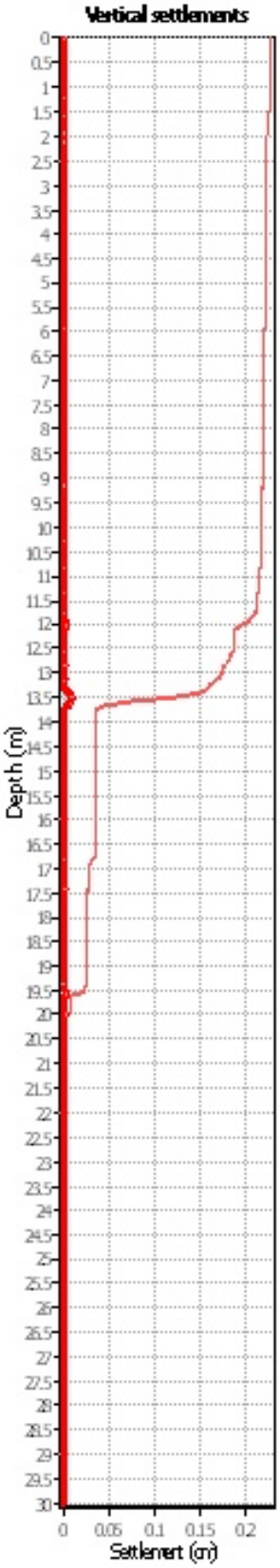
Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU3
Total depth: 30.00 m









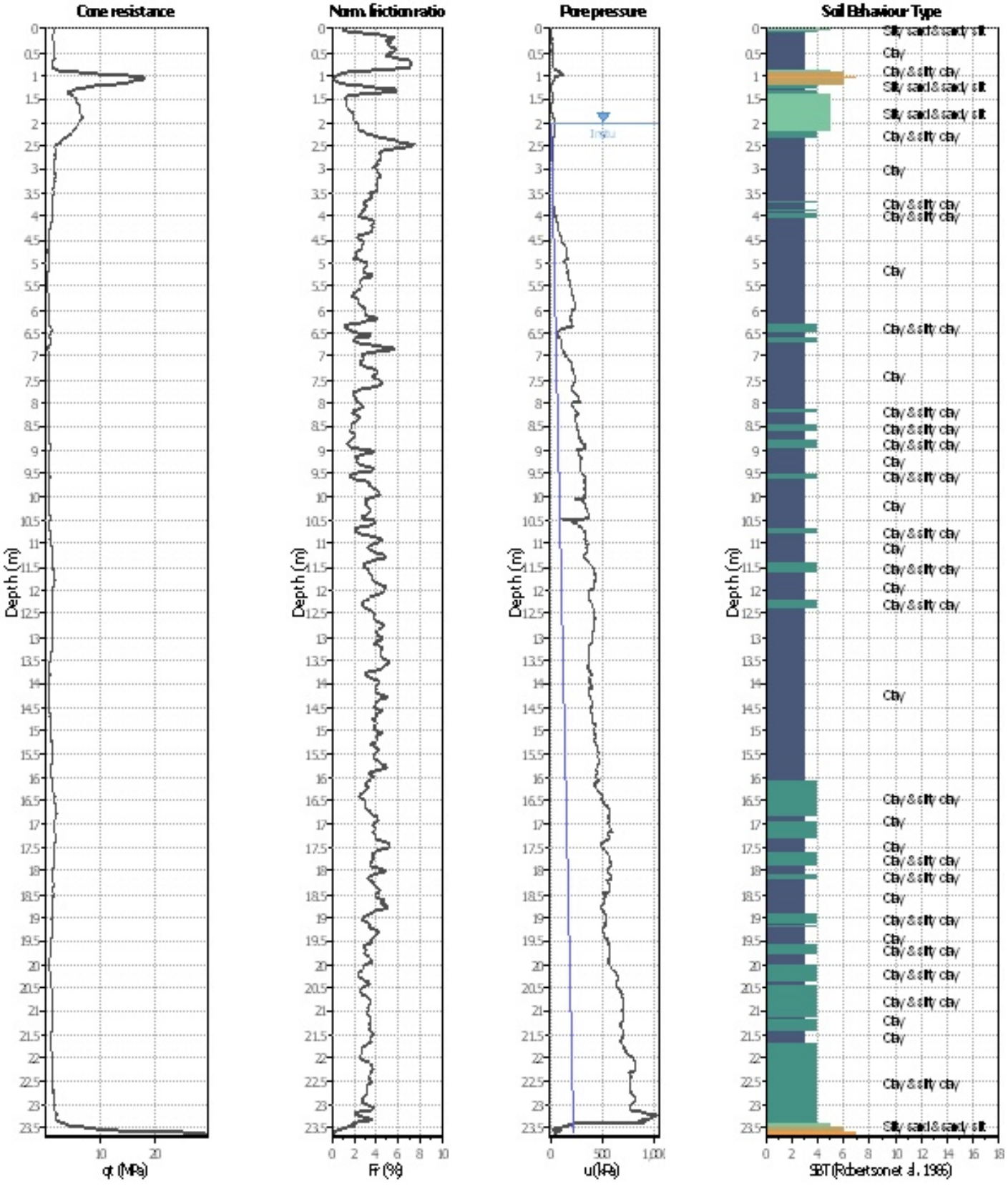
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P932

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU4
Total depth: 23.62 m



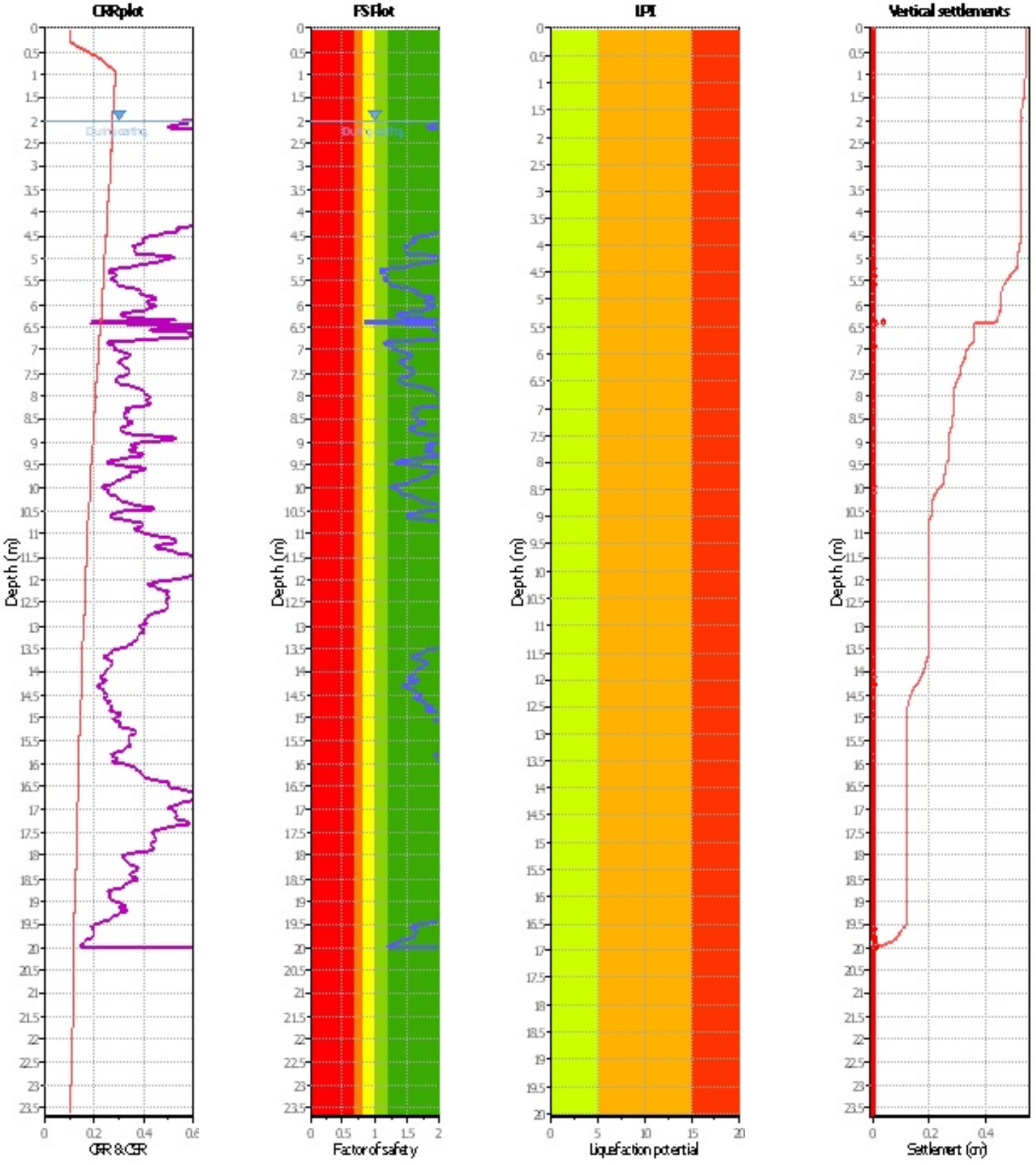
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P932

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU4
Total depth: 23.62 m



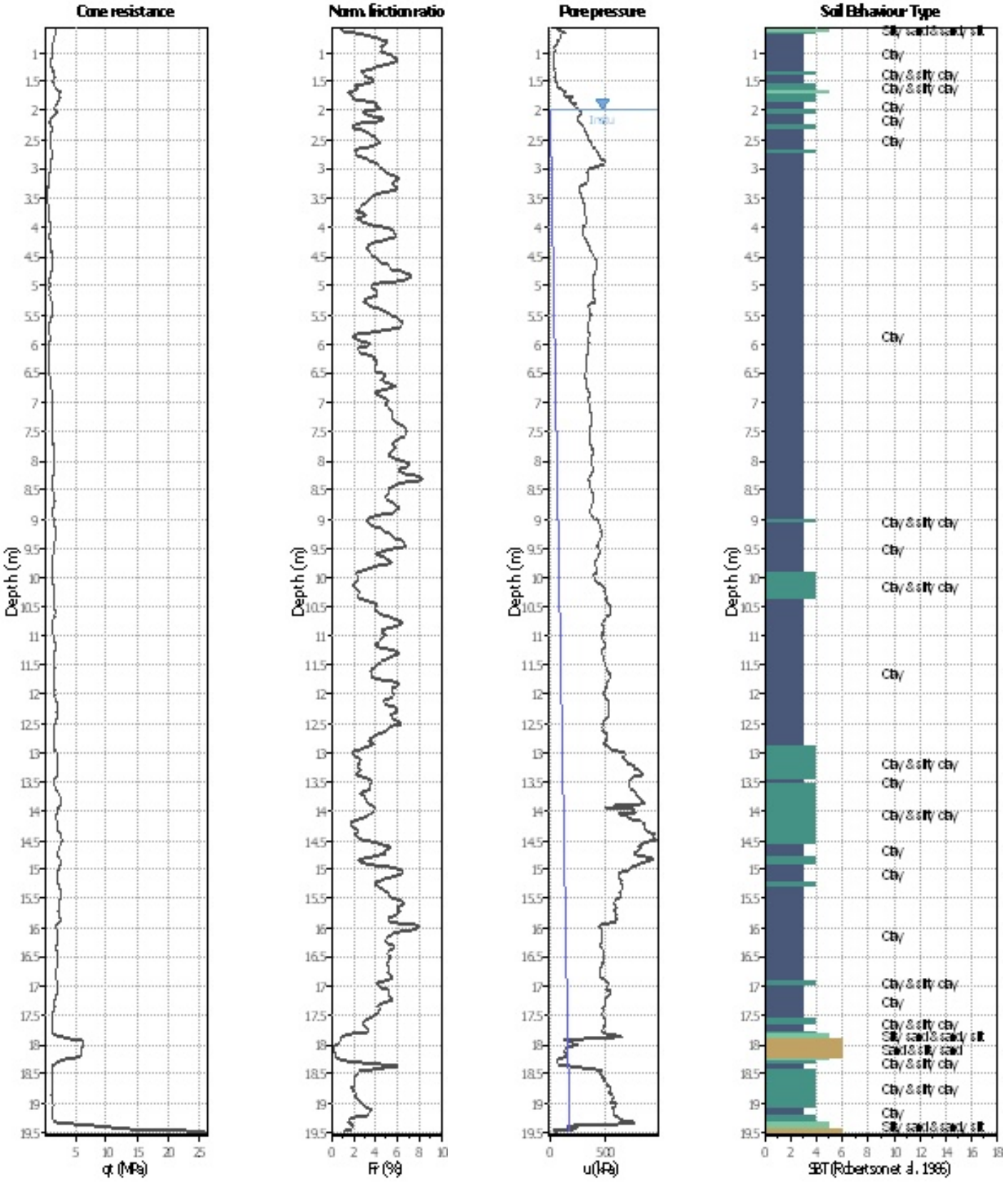
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P933

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU5
Total depth: 19.50 m



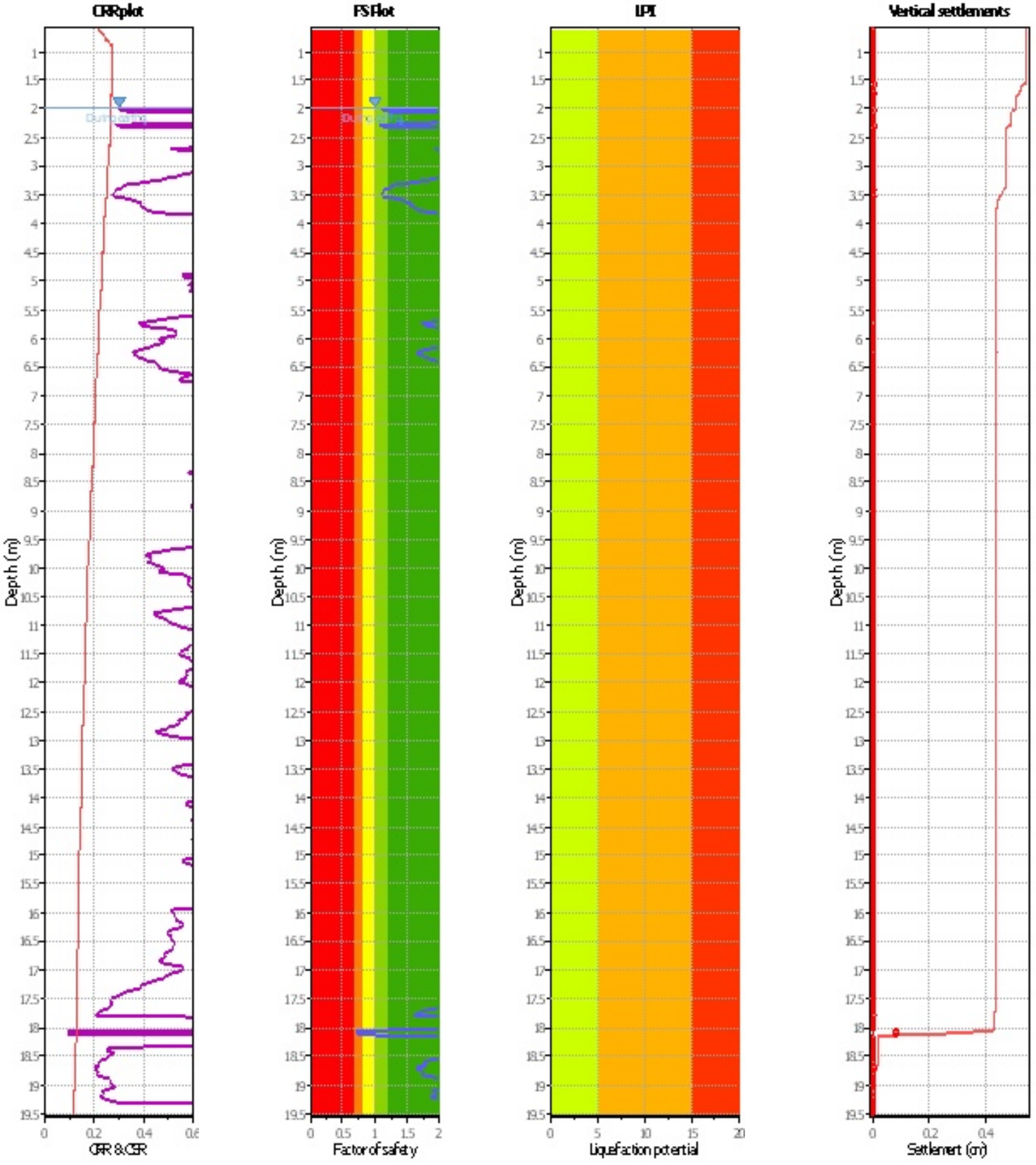
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

034027P933

Project: **Microzonazione sismica 3° Livello**
Location: **Comune di Parma**

CPT: SCPTU5
Total depth: 19.50 m

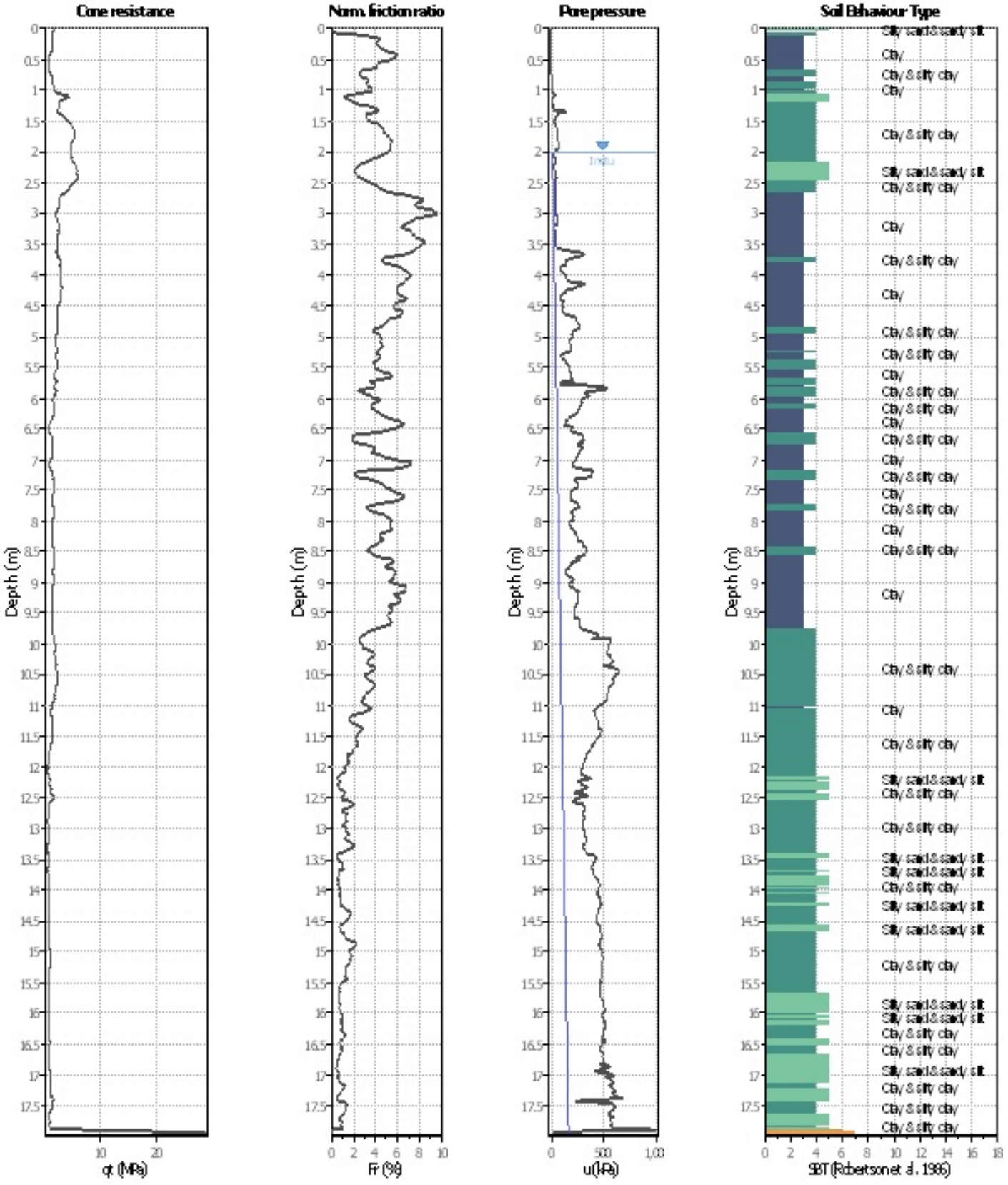


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	No		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: Microzonazione sismica 3° Livello - Indagini Engeo
Location: Comune di Parma

CPT: 034027P991
Total depth: 17.94 m

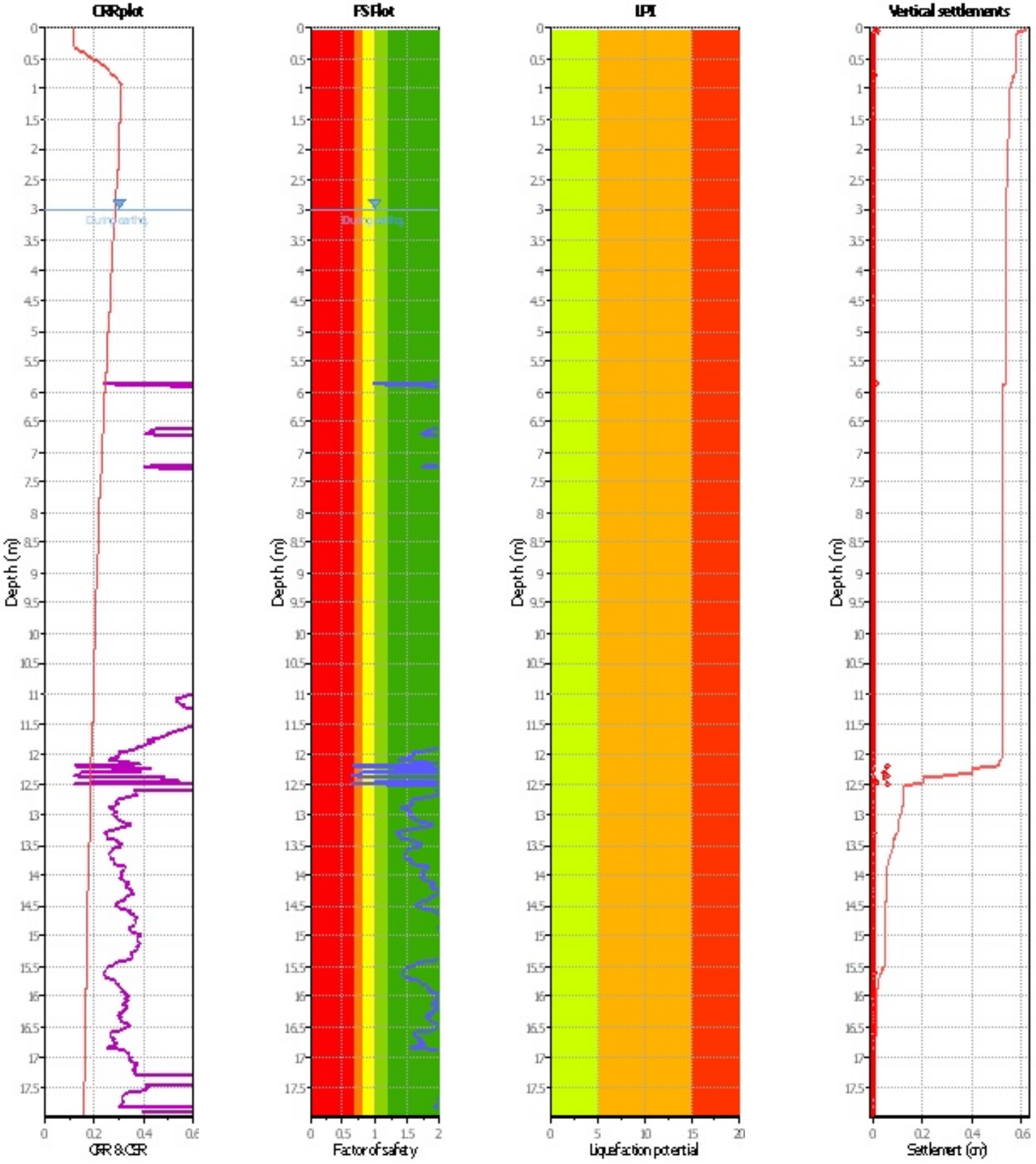


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P991
Total depth: 17.94 m

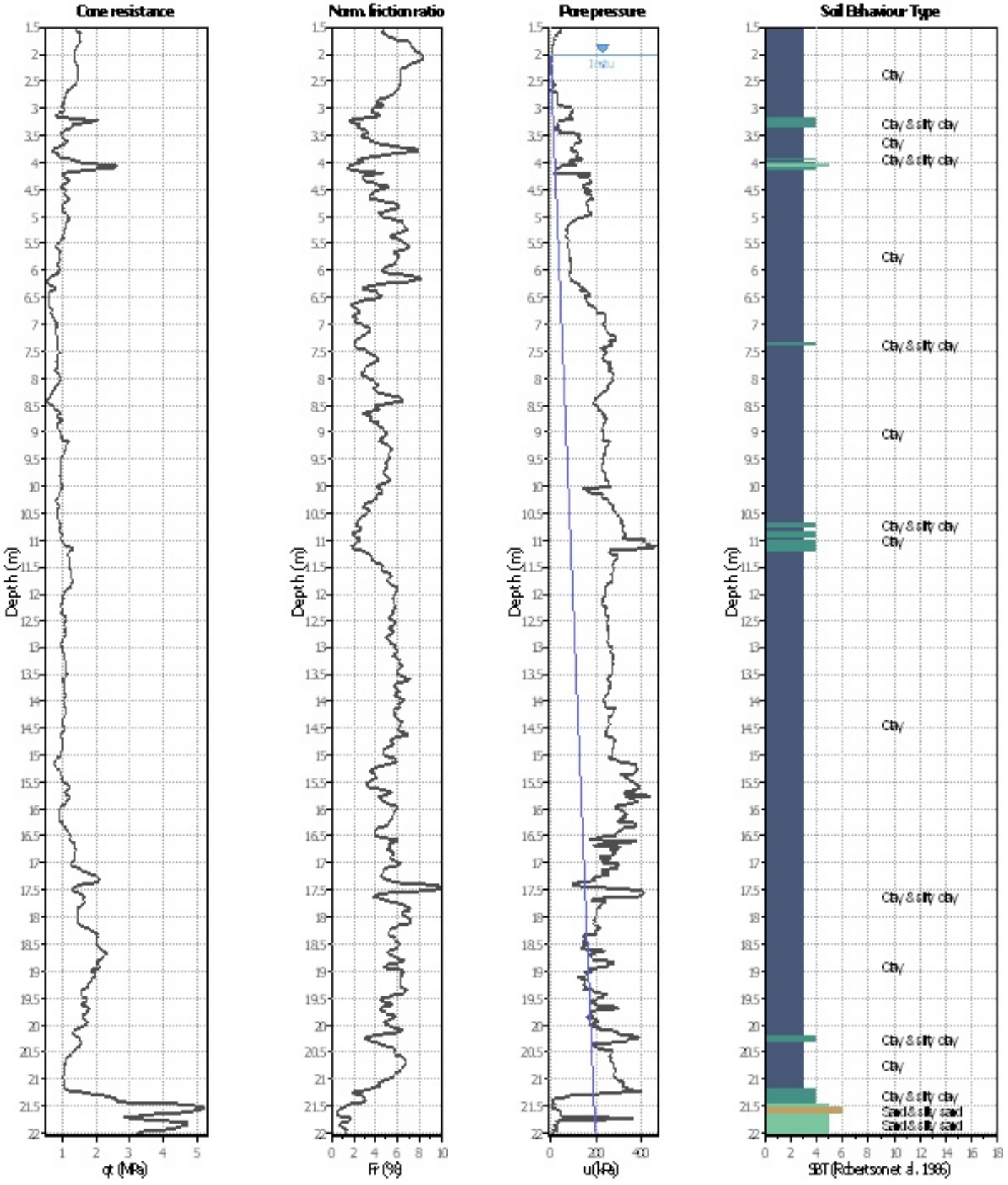


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P990
Total depth: 22.00 m

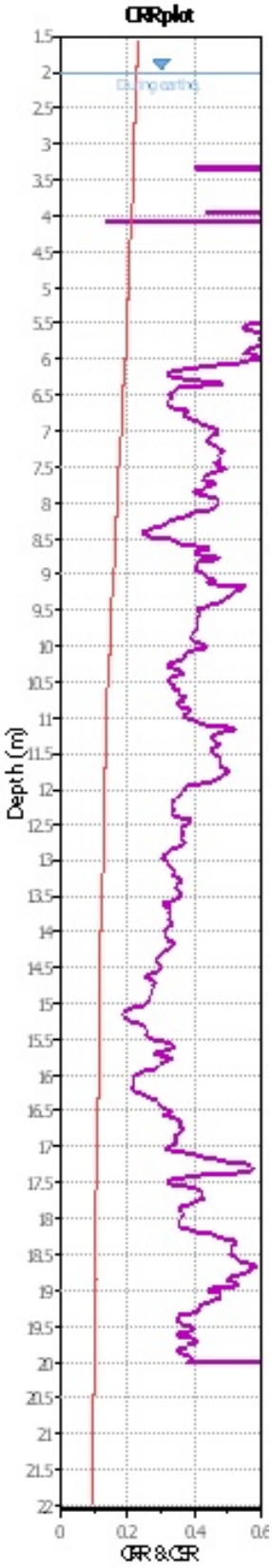


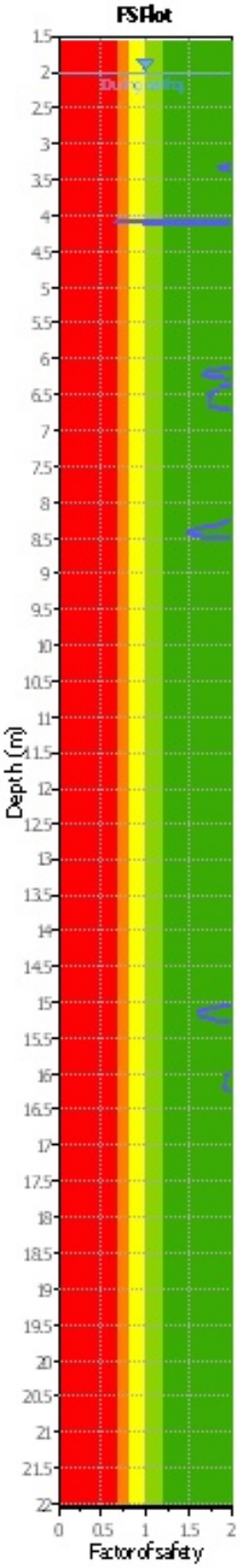
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

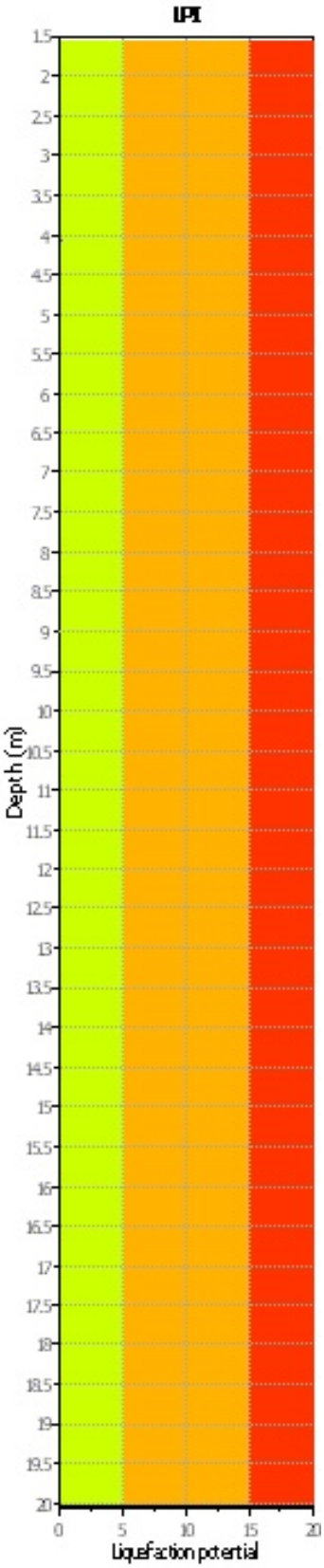
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

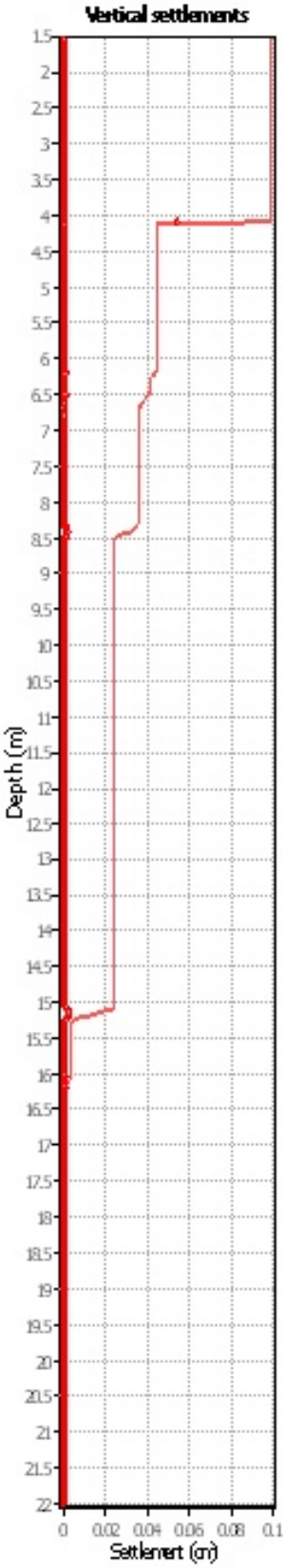
Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P990
Total depth: 22.00 m







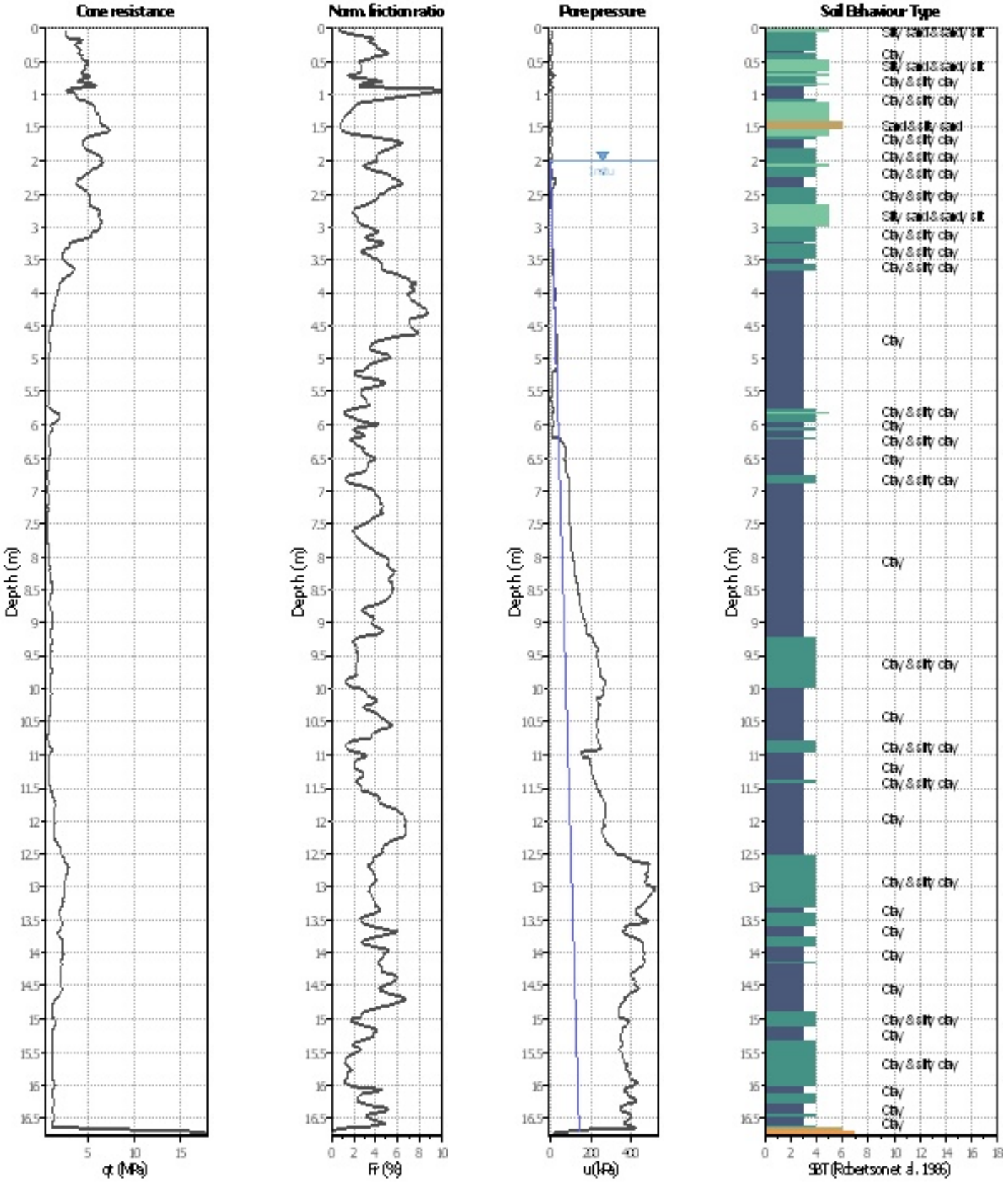


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P992
Total depth: 16.72 m

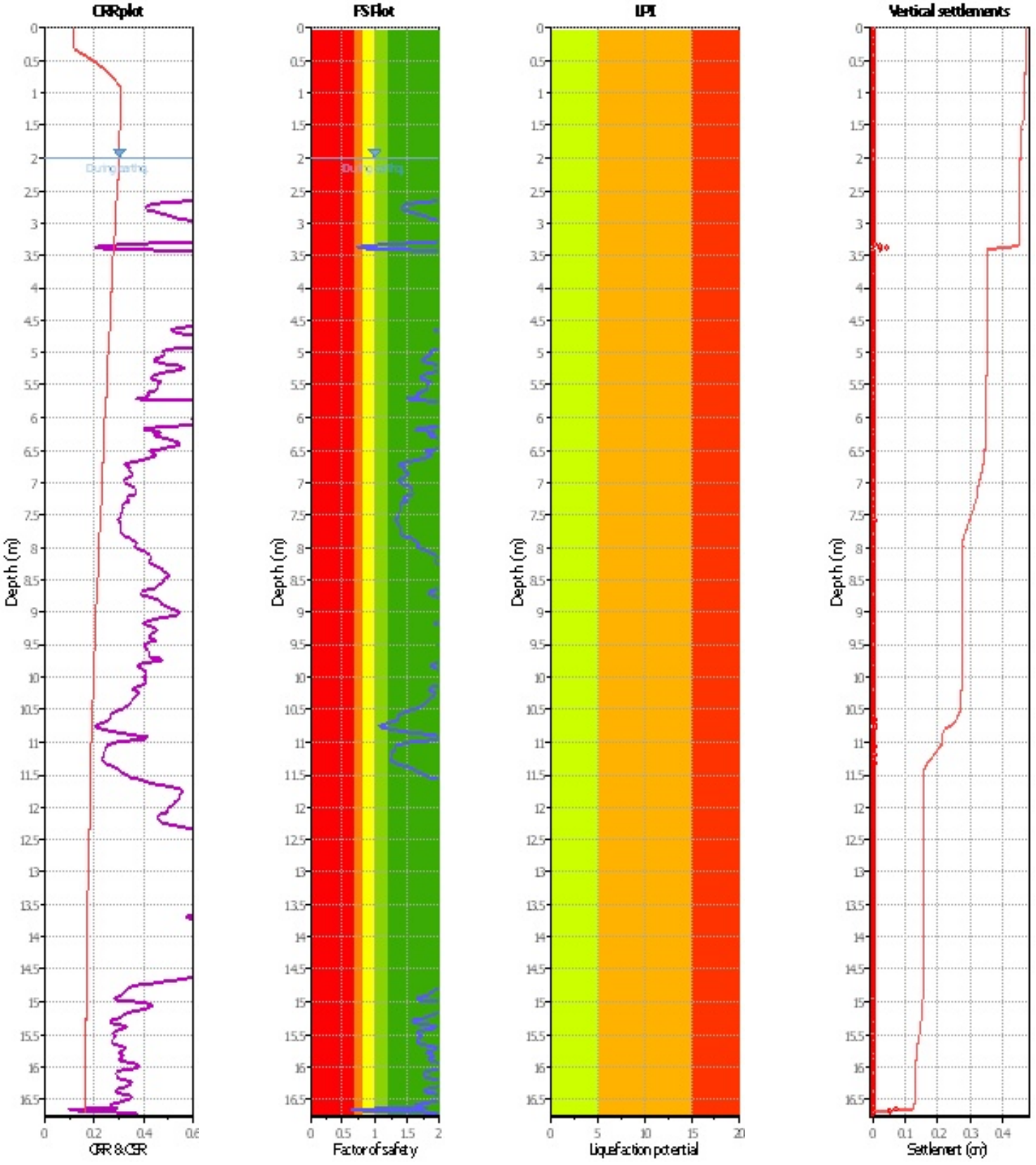


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P992
Total depth: 16.72 m

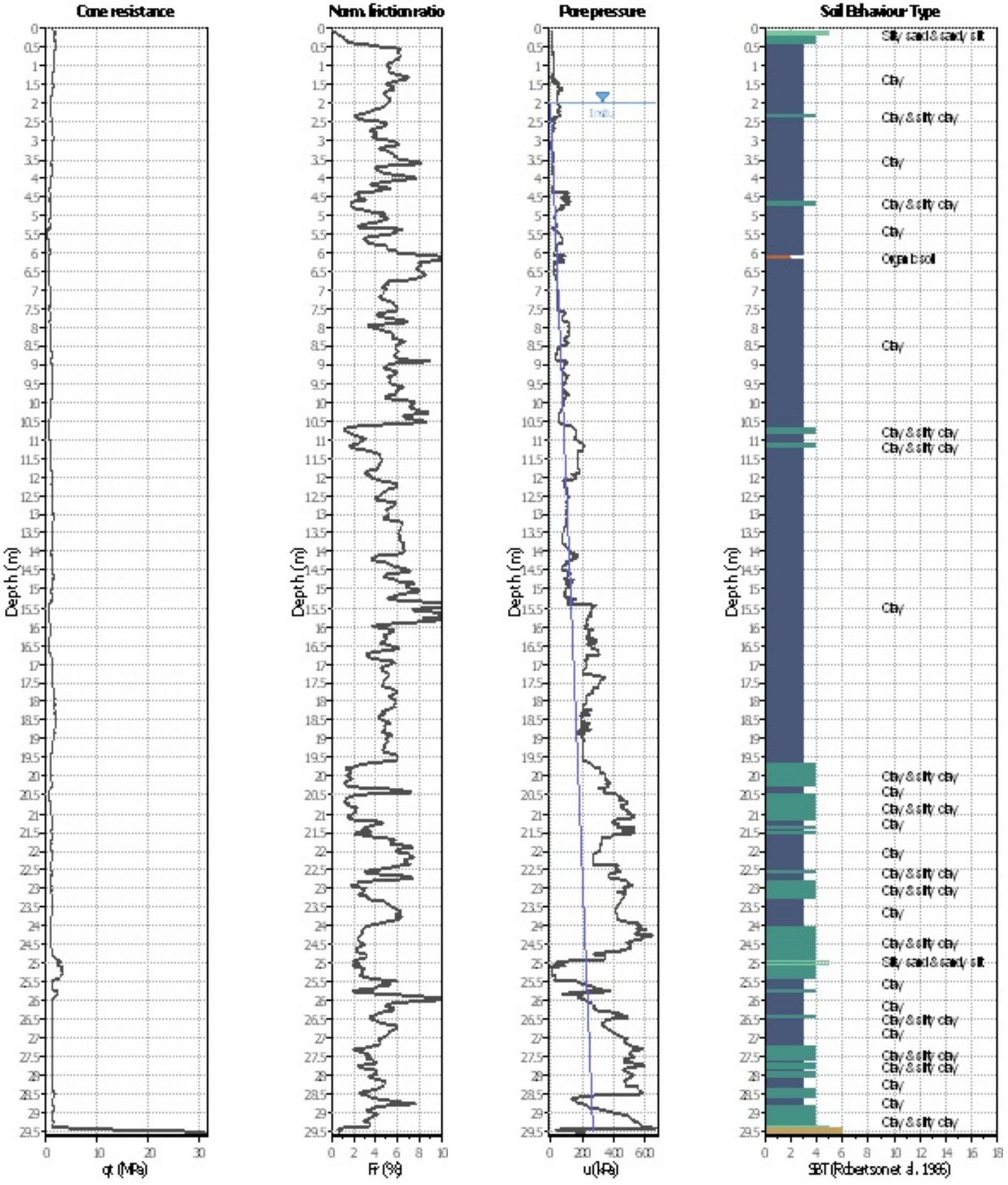


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P983
Total depth: 29.54 m

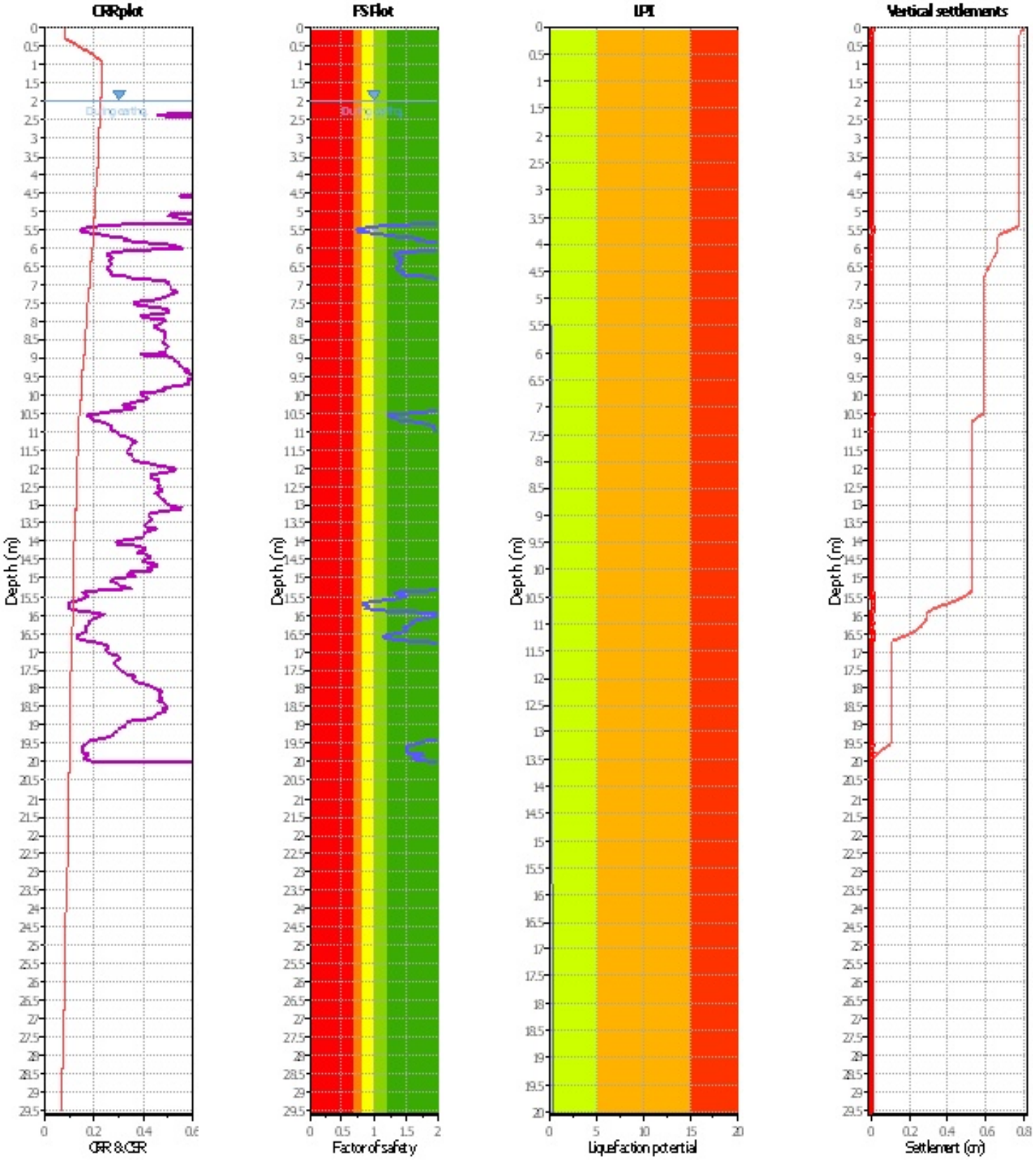


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P983
Total depth: 29.54 m

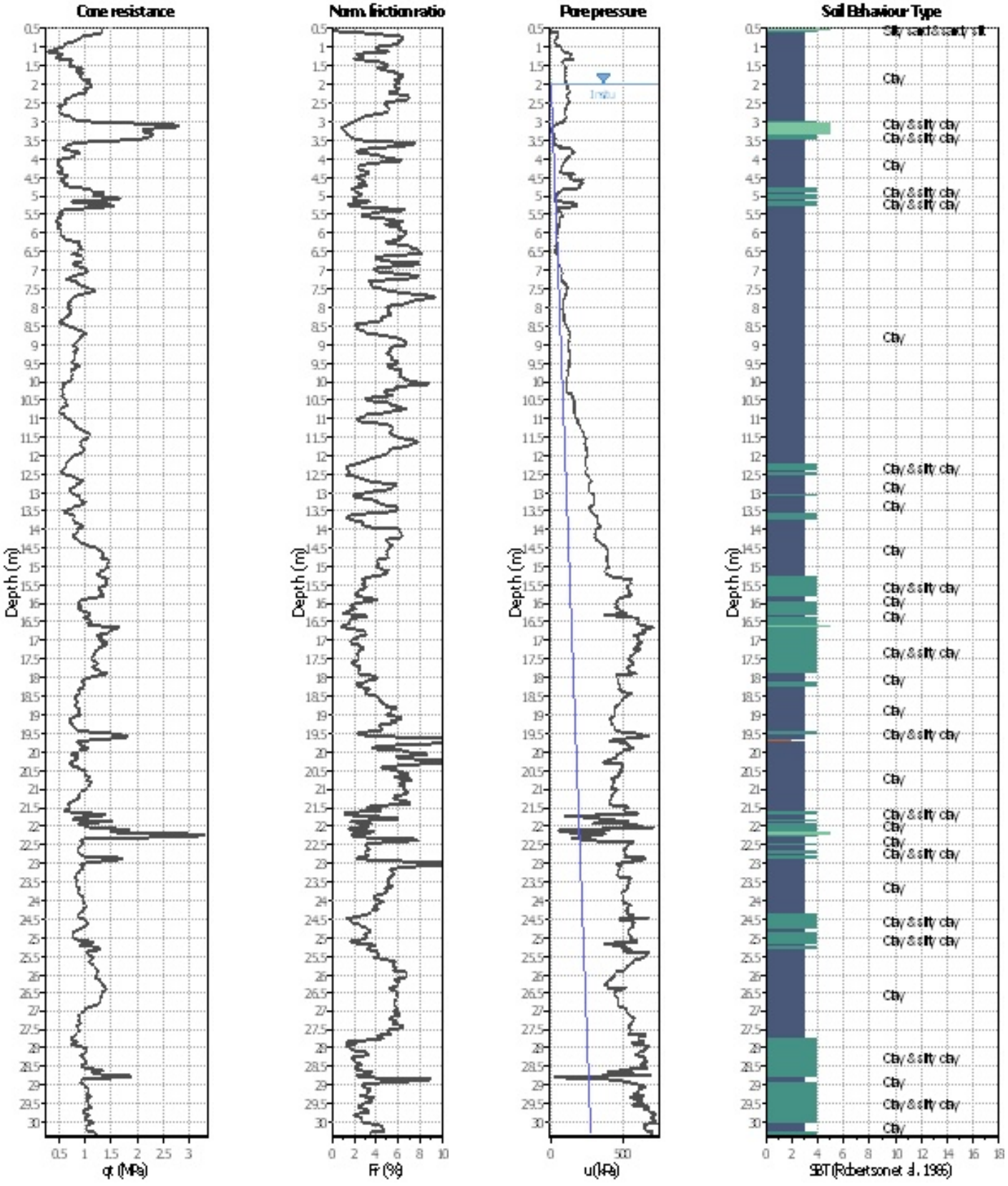


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P981
Total depth: 30.30 m

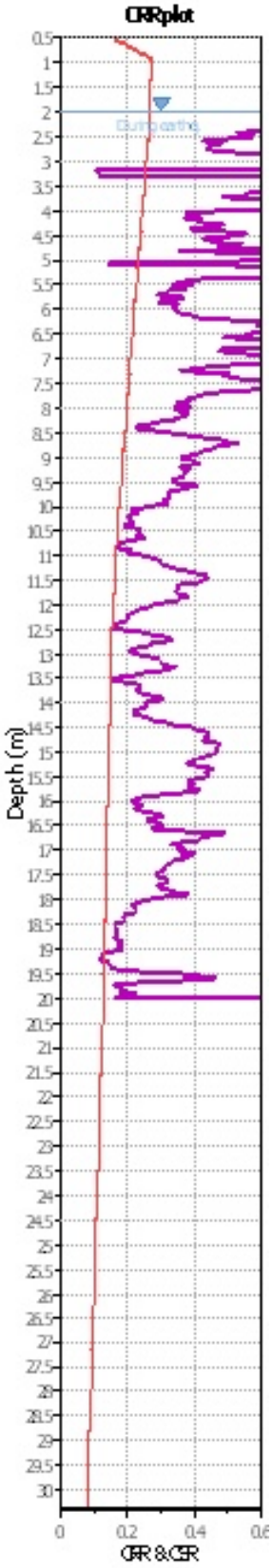


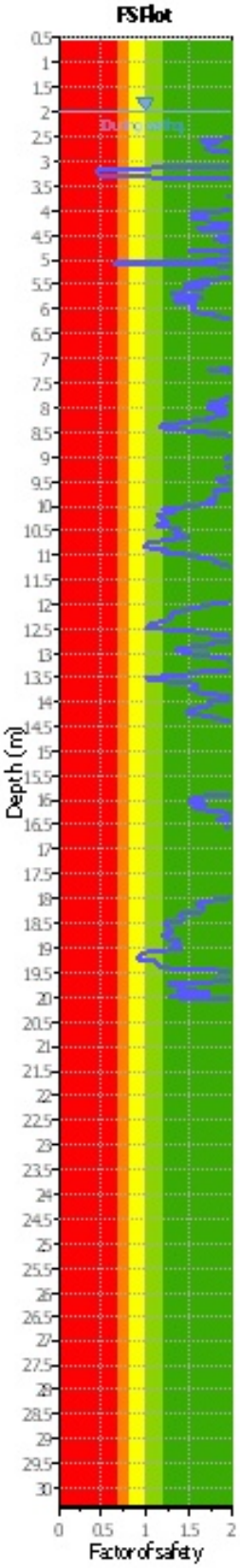
Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

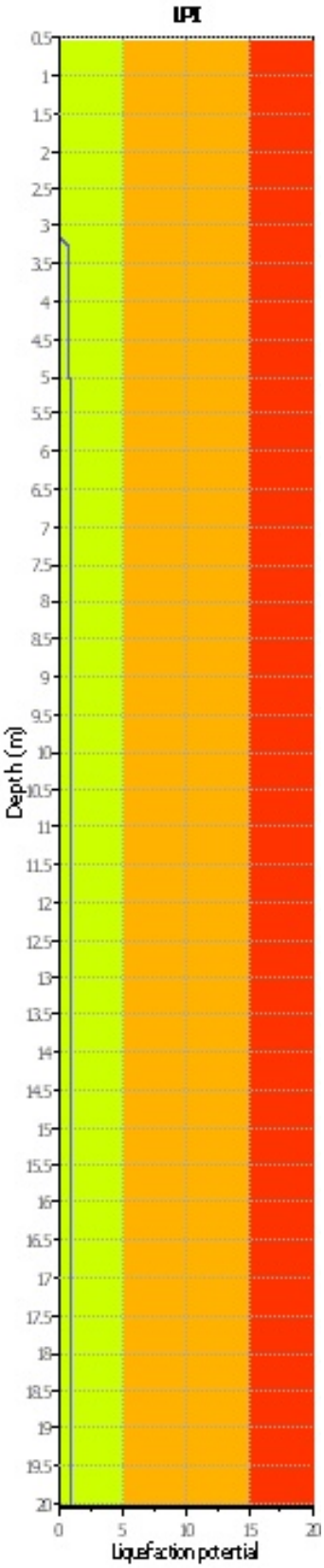
Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

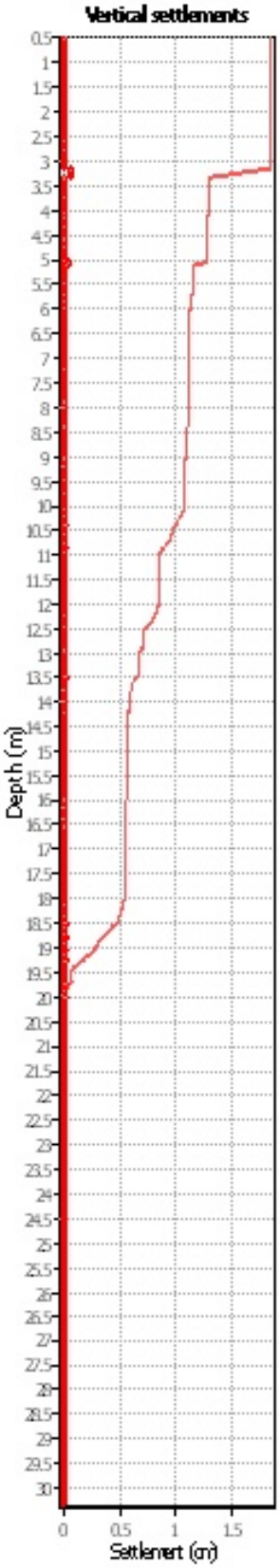
Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P981
Total depth: 30.30 m







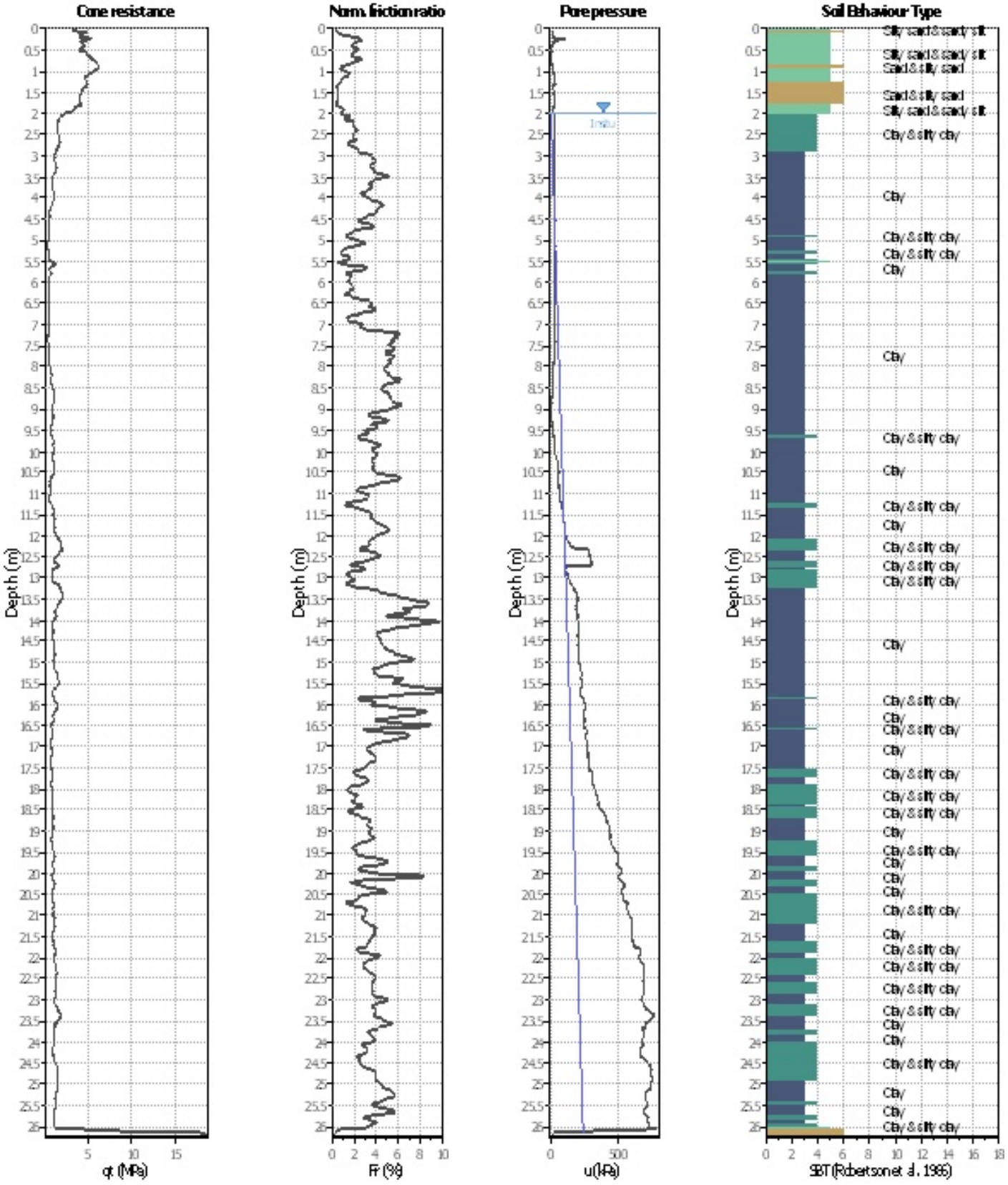


Analysis method:	Robertson (2009)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: Microzonazione sismica 3° Livello - Indagini Engeo
Location: Comune di Parma

CPT: 034027P980
Total depth: 26.18 m

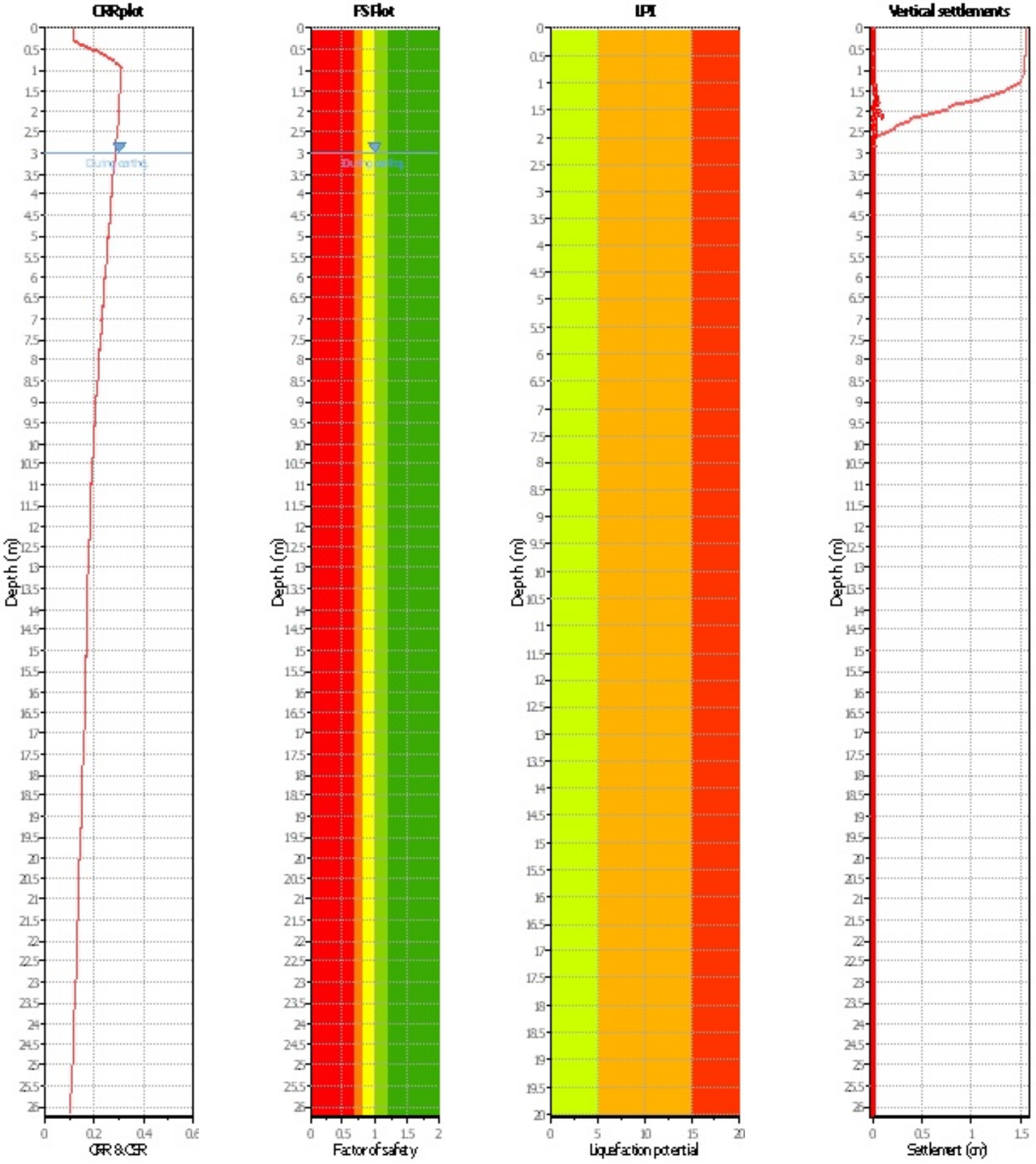


Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project: **Microzonazione sismica 3° Livello - Indagini Engeo**
Location: **Comune di Parma**

CPT: 034027P980
Total depth: 26.18 m



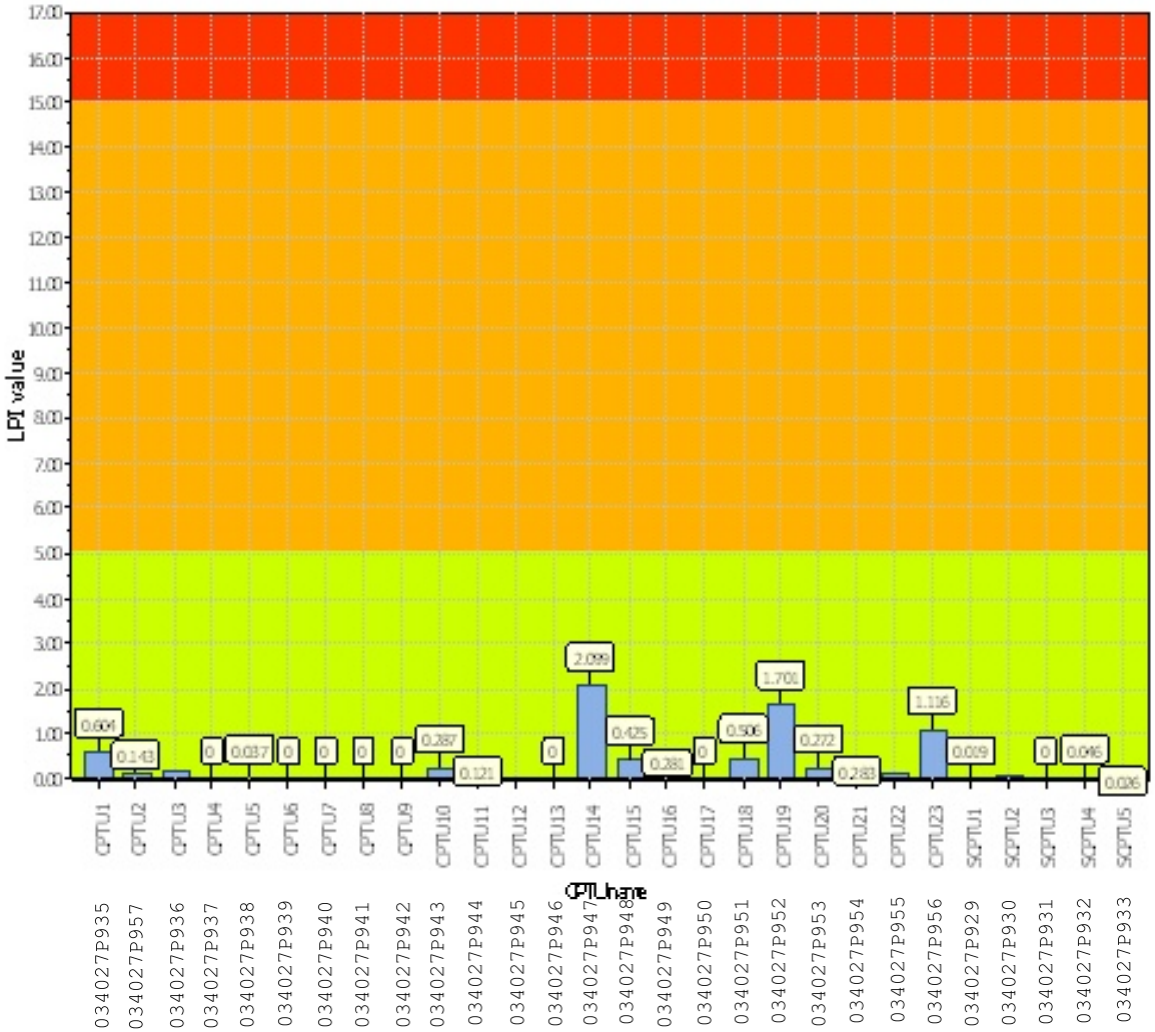
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	3.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	6.14	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.20	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project title : Microzonazione sismica 3° Livello

Location : Comune di Parma

Overall Liquefaction Potential Index report



LPI color scheme

- Very high risk
- High risk
- Low risk

Basic statistics

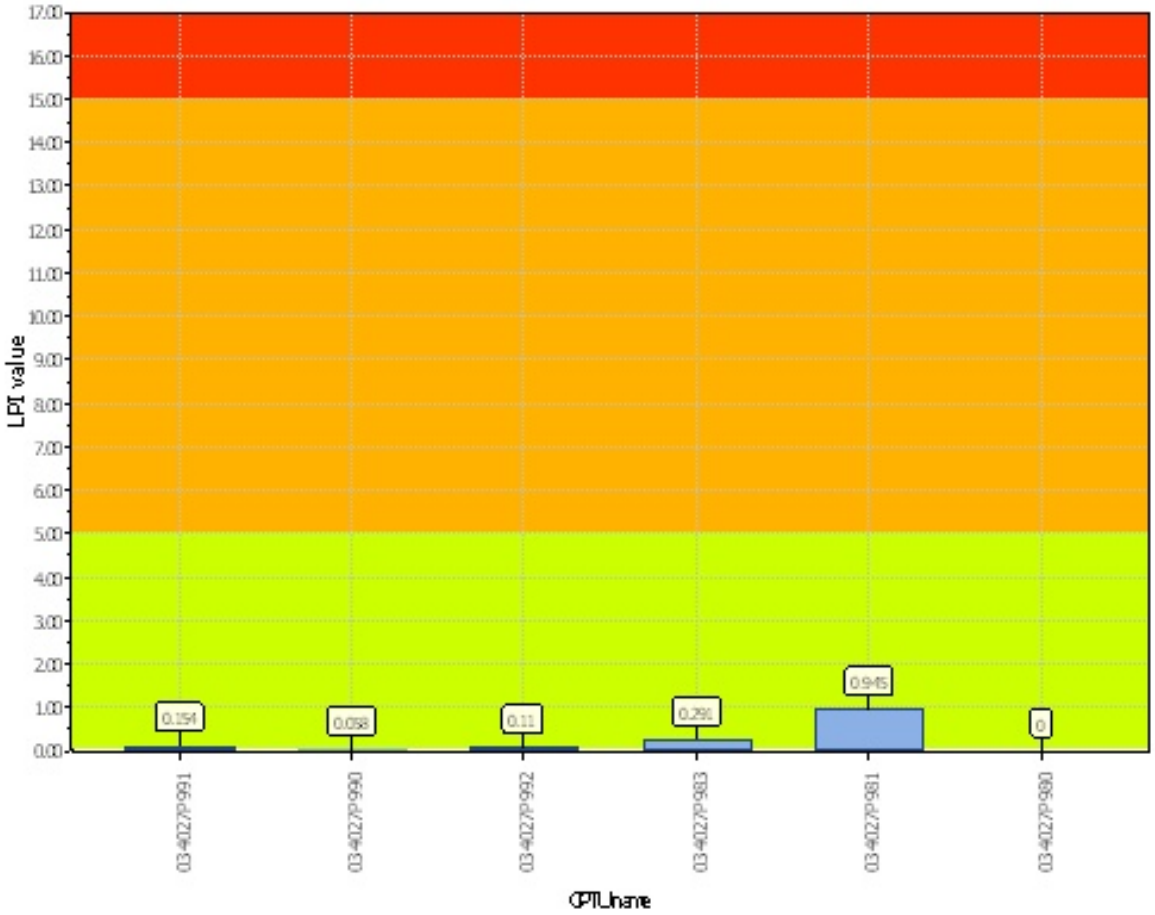
Total CPT number: 28
100.00% low risk
0.00% high risk
0.00% very high risk

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project title : Microzonazione sismica 3° Livello - Indagini Engeo

Location : Comune di Parma

Overall Liquefaction Potential Index report



LPI color scheme

- Very high risk
- High risk
- Low risk

Basic statistics

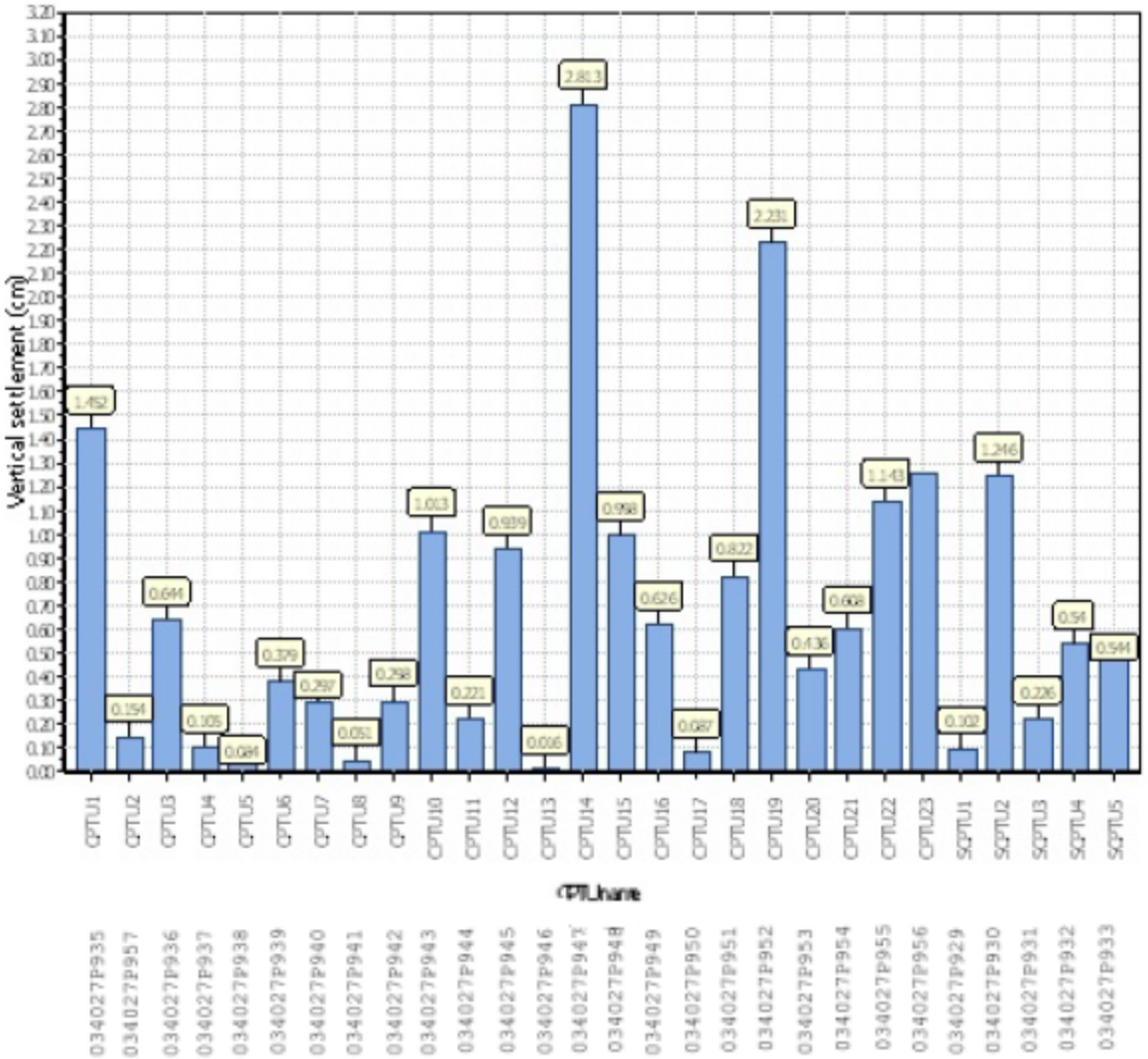
Total CPT number: 6
100.00% low risk
0.00% high risk
0.00% very high risk

Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project title : Microzonazione sismica 3° Livello

Location : Comu

Overall vertical settlements report



Engeo srl
via Adorni, 2
43121 Parma
www.engeo.it

Project title : Microzonazione sismica 3° Livello - Indagini Engeo

Location : Comune di Parma

Overall vertical settlements report