

COMUNE DI PECCIOLI



Lavori di realizzazione di nuova viabilità a Fabbrica di Peccioli.

CUP: ...

Committente: Comune di Peccioli

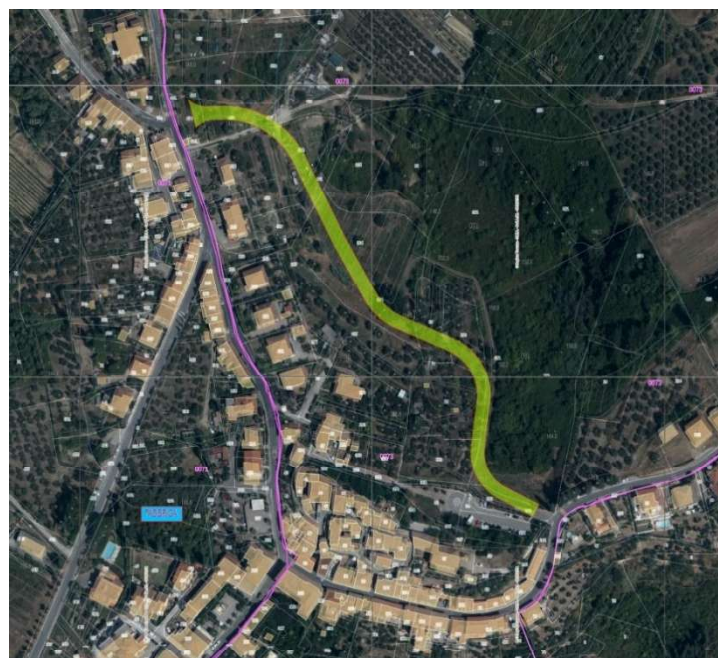
R.U.P.: Arch. Antonio Cortese

Progettisti: Ing. Francesco Donati e Geom. Marco Casati

Coordinatore della Sicurezza: Geom. Simone Sgherri

Progetto Esecutivo

Indagini Geognostiche, Geotecniche e Geofisiche





COMUNE DI PECCIOLI

Aprile 2025

REALIZZAZIONE NUOVA VIABILITA' A FABBRICA DI PECCIOLI



RELAZIONE GEOLOGICA E CARATTERIZZAZIONE GEOTECNICA DEL SOTTOSUOLO

Dott. Geol. Andrea Petresi

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Allegato 1
INDAGINI GEOGNOSTICHE, GEOTECNICHE E GEOFISICHE
Indagini pregresse - Anno 2021

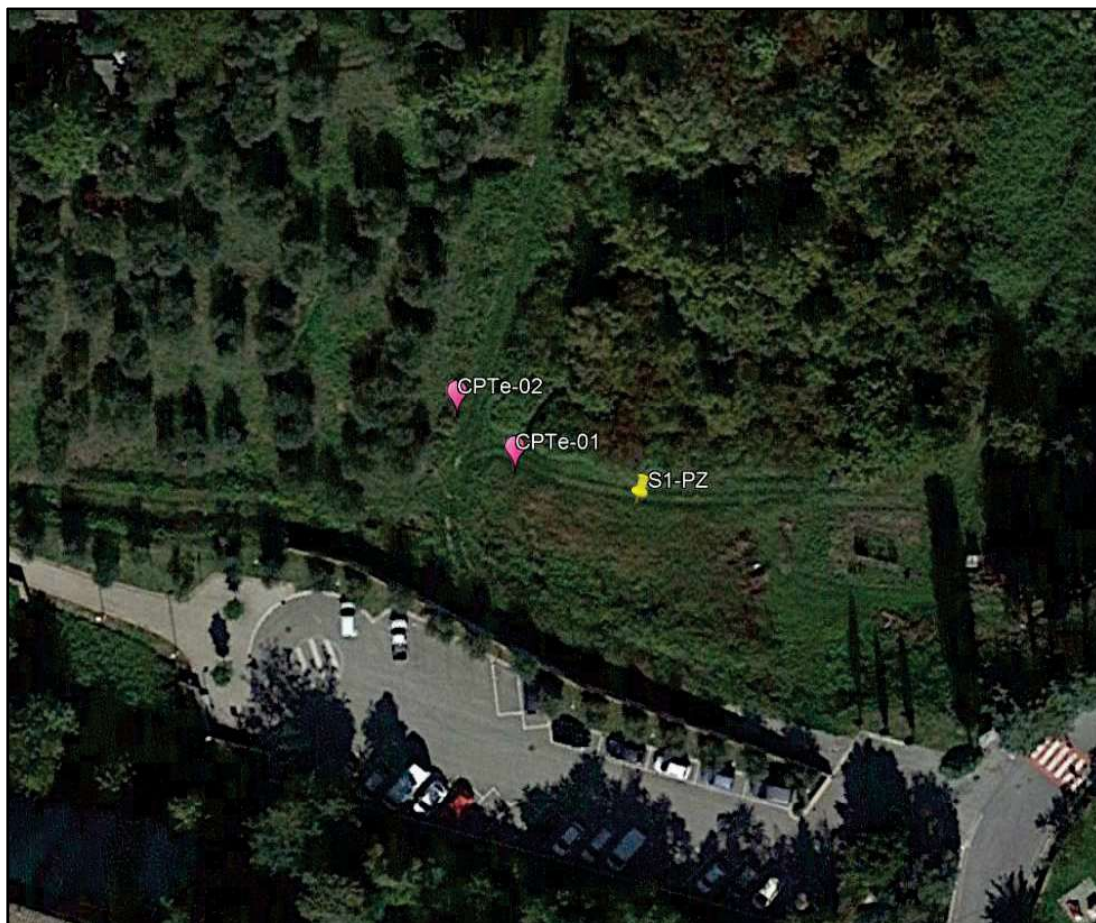
INDAGINI GEOGNOSTICHE, GEOTECNICHE E GEOFISICHE

Relazione Tecnica

COMMITTENTE: COMUNE DI PECCIOLI

OGGETTO: INDAGINI GEOGNOSTICHE, GEOTECNICHE E GEOFISICHE PER LA
COSTRUZIONE DI VIABILITA' DI SERVIZIO

CANTIERE: Fabbrica - Peccioli (PI)



RAPPORTO RELATIVO ALLA CAMPAGNA D'INDAGINE

ESEGUITA DAL 5 AL 12 MAGGIO 2021

BIERREGI s.r.l.

IL RESPONSABILE TECNICO
Dott. Geol. Francesco Rossi

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FIGURE

Fig. 1 : COROGRAFIA (CTR Regione Toscana Foglio 285060)

Fig. 2 : UBICAZIONE INDAGINI (CTR Regione Toscana Foglio 15H04)

ALLEGATI

All. A : LOG STRATIGRAFICO E DOCUMENTAZIONE FOTOGRAFICA DEL SONDAGGIO
GEOGNOSTICO (*Dati forniti dal Geol. Andrea Petresi*)

All. B : ANALISI GEOTECNICHE DI LABORATORIO

All. C : PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA (*Basic Results*)

All. D : PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA
(*Estimated Parameters*)

All. E : PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA (*Elaborati Grafici*)

1. - Premessa

Per incarico ricevuto dal **Comune di Peccioli** e su richiesta del *Geol. Andrea Petresi*, sono state eseguite indagini geognostiche, geotecniche di laboratorio e geofisiche finalizzate alla caratterizzazione del terreno oggetto di progettazione (*COSTRUZIONE DI VIABILITA' DI SERVIZIO*). Nell'area oggetto di studio, sita presso la frazione di Fabbrica nel Comune di Peccioli (PI), sono state eseguite le seguenti indagini:

- n° 1 Sondaggio geognostico a carotaggio continuo attrezzato con piezometro;
- n° 3 Prelievi di campioni indisturbati su cui eseguire analisi di laboratorio;
- n° 2 Prove penetrometriche statiche con punta elettrica (CPTe);

L'area e la relativa ubicazione delle indagini sono riportate rispettivamente in figura 1 (*Corografia*) e in figura 2 (*Ubicazione indagini*).

2. - Sondaggio geognostico

Il sondaggio geognostico è stato eseguito mediante una Sonda COMACCHIO GEO 405. A seguire si riporta schematicamente un quadro riassuntivo delle specifiche del sondaggio eseguito:

Sondaggio n°	Data di esecuzione	Certificato	Profondità (m)	Falda (m)	Coordinate Gauss-Boaga	
					X	Y
S1-PZ	05/05/2021	BHc-079/21	15,00	3,55	1642297,6586	4818731,3074

Nel corso dell'esecuzione del sondaggio, costantemente seguito e diretto da un Geologo di cantiere, sono state effettuate le seguenti operazioni:

- Raccolta in apposite cassette catalogatrici del materiale estratto (totale n. 3);
- Esecuzione di prove S.P.T. standard (totale n. 3);
- Prelievo di campioni indisturbati con fustella Shelby (totale n.3);
- Documentazione fotografica.

Al termine della perforazione, il sondaggio S1-PZ è stato attrezzato con tubo piezometrico fino a fondo foro ($\varnothing = 2''$) per consentire il monitoraggio della falda. In data di esecuzione delle prove penetrometriche (12 Maggio 2021) la falda è risultata livellare alla profondità di -3,55 metri dal piano campagna.

Tutte le informazioni raccolte durante l'esecuzione del sondaggio geognostico sono contenute nel relativo log stratigrafico e documentazione fotografica, riportati

dettagliatamente in allegato (All.A). I dati stratigrafici sono stati forniti dal “*Geol. Andrea Petresi*”.

2.1 - Prove SPT (Standard Penetration Test)

La prova S.P.T. consiste nel registrare il numero di colpi necessari per far penetrare di 45 cm nel terreno a fondo foro un tubo campionatore di dimensioni standard, collegato alla superficie mediante batteria di aste in testa alle quali agisce un maglio del peso di 63.5 kg che cade liberamente da un'altezza di 0.76 m. Durante la prova si misura:

- N_1 = numero di colpi di maglio necessari a provocare l'avanzamento del campionatore per i primi 15 cm, assunti come tratto di “avviamento”;
- N_2 = numero di colpi che provoca la penetrazione del campionatore nei successivi 15 cm;
- N_3 = numero di colpi necessari per gli ultimi 15 cm di avanzamento.

Si assume come resistenza alla penetrazione il valore:

$$N_{SPT} = N_2 + N_3$$

Durante l'esecuzione del sondaggio geognostico sono state eseguite in totale n. 3 prove SPT standard a punta aperta. Di seguito sono riportati i dati raccolti (numero dei colpi):

SONDAGGIO S1-PZ

N° SPT	Profondità d'indagine				N_1	N_2	N_3	N_{SPT}
1	4.70	÷	5.15	m	2	3	3	6
2	7.50	÷	7.95	m	20	26	35	61
3	12.00	÷	12.45	m	25	41	62	103

2.2 - Analisi geotecniche di Laboratorio

Al fine di caratterizzare da un punto di vista geotecnico il terreno investigato, sono state eseguite analisi geotecniche di laboratorio su n. 3 campioni indisturbati. Le analisi geotecniche sono state eseguite dal laboratorio certificato *SOCOTEC ITALIA SRL - Dipartimento di Ferrara*.

Di seguito si indicano sinteticamente le analisi svolte sui campioni raccolti:

TIPO DI PROVA	NORMA	CAMPIONI INDISTURBATI		
		S1C1	S1C2	S1C3
UMIDITA' DI UNA TERRA	UNI EN ISO 17892-1	SI	SI	SI
MASSA VOLUMICA APPARENTE	UNI EN ISO 17892-2	SI	SI	SI
PESO SPECIFICO DEI GRANULI CON PICNOMETRO	UNI EN ISO 17892-3	SI	SI	SI
LIMITI DI ATTERBERG	ASTM D4318 metodo A	SI	SI	SI
ANALISI GRANULOMETRICA (1)	ASTM D 422	SI	SI	SI
PROVA DI TAGLIO DIRETTO	UNI CEN ISO 17892-10	SI	SI	SI
PROVA DI CONSOLIDAZIONE EDOMETRICA	ASTM D 2435 metodo A	-	-	SI
PROVA DI COMPRESSIONE AD ESPANSIONE LATERALE LIBERA	ASTM D 2166-91	-	SI	-
PROVA TRIASSIALE CONSOLIDATA NON DRENATA (CIU)	ASTM D 4767	SI	-	SI

(1) per setacciatura e sedimentazione

Dalle prove sopra riportate sono stati ricavati i seguenti parametri:

CAMPIONI INDISTURBATI	QUOTA PRELIEVO		W	γ	γ_s	LIMITI DI ATTERBERG			GRANULOMETRIA (UNI)				ELL
						LL	LP	IP	Ghiaia	Sabbia	Limo	Argilla	
	da m.	a m.				(%)	(kN/m ³)	(kN/m ³)	(%)	(%)	(%)	(%)	(%)
S1C1	3.00	3.50	19.10	20.10	26.66	36.00	20.00	16.00	1.40	7.60	68.50	22.50	-
S1C2	6.00	6.50	20.20	20.60	27.13	47.00	23.00	24.00	0.40	5.50	63.20	30.80	296.62
S1C3	10.50	11.00	21.90	20.40	26.74	55.00	31.00	24.00	0.20	1.10	52.00	46.70	-

CAMPIONI INDISTURBATI	QUOTA PRELIEVO		PROVA DI CONSOLIDAZIONE EDOMETRICA									TAGLIO DIRETTO		TRIASSIALE CIU			
			Pressione da 196.2 a 392.4 kPa			Pressione da 392.4 a 784.8 kPa			Pressione da 784.8 a 1569.6 kPa			Condizioni di picco		Condizioni a rottura (tensioni efficaci)		Condizioni a rottura (tensioni totali)	
			K	Cv	C alfa	K	Cv	C alfa	K	Cv	C alfa	c'	ϕ'	c'	ϕ'	c	ϕ'
	da m.	a m.	(m/s)	(cm ² /s)	(-)	(m/s)	(cm ² /s)	(-)	(m/s)	(cm ² /s)	(-)	(kPa)	(°)	(kPa)	(°)	(kPa)	(°)
S1C1	3.00	3.50	-	-	-	-	-	-	-	-	-	8.50	31.0	9.30	33.3	29.10	26.5
S1C2	6.00	6.50	-	-	-	-	-	-	-	-	-	54.58	22.0	-	-	-	-
S1C3	10.50	11.00	5.10E-11	9.04E-04	1.13E-04	1.99E-11	4.50E-04	7.56E-04	1.21E-11	4.88E-04	1.00E-03	32.63	16.0	4.00	23.50	5.20	18.40

dove:

- W Umidità naturale
- γ Peso di volume
- γ_s Peso specifico
- Cu Coesione non drenata
- K Permeabilità
- Cv Coefficiente di consolidazione verticale
- c Coesione apparente
- ϕ Angolo di attrito apparente
- c' Coesione consolidata drenata
- ϕ' Angolo di attrito consolidato drenato

Per una visione dettagliata dei grafici e tabulati delle prove di laboratorio effettuate si veda l'All.B.

3 - Prove penetrometriche statiche con punta elettrica (CPTe)

La prova penetrometrica statica elettrica (CPTe) permette di effettuare in continuo, ogni cm di avanzamento la misura dei valori di resistenza alla punta (q_c) e dell'attrito laterale locale (f_s), ottenendo così un maggior dettaglio nel rilievo stratigrafico e nella identificazione del tipo di terreno.

Tutte le prove sono state effettuate mediante un Penetrometro statico/dinamico modello Pagani TG-63/200 da 20 tonn di spinta, con maglio di 63,5 Kg, dalla ditta Bierregi S.r.l. di Lucca (LU).

Come accennato in premessa sono state eseguite n° 2 prove penetrometriche statiche con punta elettrica (CPTe), di cui a seguire si riporta una tabella di sintesi delle specifiche tecniche:

Prova n°	Data di esecuzione	Profondità (m)	Coordinate Gauss-Boaga	
			X	Y
CPTe-01	12/05/2021	9,21	1642276,4314	4818732,5629
CPTe-02	12/05/2021	10,08	1642267,9427	4818741,4750

La falda, misurata direttamente nei perfori al termine delle prove, senza installazione di tubi piezometrici, è risultata livellare alla profondità di -1,45 metri (CPTe-01) e -1,88 metri (CPTe-02) rispetto al piano campagna. La differenza riscontrata è dovuta alla differenza di quota tra le due prove.

Per le caratteristiche tecniche del penetrometro utilizzato e la visione dei tabulati, diagrammi e grafici delle prove si rimanda ai relativi allegati (All.C-D-E).

3.1 - Modalità di esecuzione e acquisizione dei dati

Le prove penetrometriche statiche con punta elettrica permettono di acquisire, durante il movimento continuo di spinta, le grandezze q_c (resistenza di punta) ed f_s (attrito laterale) ad ogni centimetro di profondità. Le prove CPTe differiscono dalle prove penetrometriche statiche con punta meccanica (CPTm) soprattutto per una migliore precisione di lettura e frequenza di campionamento, oltre ad una maggiore precisione e linearità della lettura dove la maggiore sensibilità della misura (0.01 Mpa) è

caratteristica fondamentale nel rilievo dei valori di resistenza di materiali molto soffici (torbe, sabbie o limi molto sciolti, ecc.). La linearità garantisce che i valori letti siano affidabili in tutto il "range" di misura dello strumento. La linearità della strumentazione è garantita dall'elettronica, mentre nella prova meccanica sono probabili starature nei valori estremi (in particolare i valori bassi, di grande importanza geotecnica). Durante l'esecuzione della prova penetrometrica con punta elettrica i dati vengono acquisiti mediante il sistema d'acquisizione **TGAS07B** fornito dalla PAGANI GEOTECHNICAL EQUIPMENT S.R.L. di Piacenza. I dati vengono registrati istantaneamente sulla centralina integrata, collegata al penetrometro. Tale sistema è costituito dai seguenti componenti:

- ✓ TGAS07B → sistema d'acquisizione;
- ✓ ENCODER → misura la profondità e la velocità d'infissione;
- ✓ ALIMENTAZIONE → il sistema viene alimentato elettricamente dalla batteria del penetrometro, tramite una presa montata di serie.

Durante l'infissione vengono visualizzati in continuo, acquisiti e calcolati i seguenti parametri:

- ✓ q_c (Cone tip stress) - resistenza alla punta;
- ✓ f_s (Sleeve resistance) - resistenza unitaria di attrito laterale locale;
- ✓ Inclinazione (tilt);
- ✓ Velocità;
- ✓ Distanza (scostamento dalla verticale).

Le caratteristiche del piezocono sono le seguenti:

Canali di misura:		Dimensioni:	
Resistenza di punta (q_c):	10; 50 o 100 MPa	Angolo di apertura cono:	60°
Attrito laterale (f_s):	0,5 MPa	Diametro:	36 mm
Pressione nei pori (U):	2,5 MPa	Sezione di spinta:	10 cm ²
Inclinazione:	0 - 40°	Superficie laterale:	150 cm ²

3.2 - Elaborazione dei dati

I dati acquisiti in campagna sono stati elaborati con il programma CPeT-IT v.1.7.3.30 della Geologismiki Geotechnical Software.

Il software, a partire dai valori di q_c (cone resistance - resistenza alla punta), f_s (sleeve friction - attrito laterale), permette di ricavare i dettagli stratigrafici dei terreni attraversati e i parametri principali del terreno.

Per la stratigrafia dei terreni viene riportato il grafico di P.K. Robertson et al. 1986 che utilizza i valori non-normalizzati (q_c , f_s e u_2) e il grafico di P.K. Robertson et al. 1990 che utilizza i valori normalizzati (Q_t , F_s), in quanto quest'ultimo tiene conto delle tensioni geostatiche totali ed efficaci. Di seguito si riportano i dati di output ricavati dal software di elaborazione CPeT-IT:

- ✓ grafici delle resistenze
- ✓ grafici di Robertson (SBT plot e SBTn plot);
- ✓ grafici delle resistenze e classificazione SBT;
- ✓ grafici dei parametri normalizzati e classificazione SBTn;
- ✓ grafici dei parametri geomeccanici del terreno;
- ✓ formulario;
- ✓ basic output data (parametri di base per l'elaborazione);
- ✓ estimations (parametri geomeccanici ricavati).

Per maggiori dettagli si rimanda al manuale del software reperibile all'indirizzo internet <http://www.geologismiki.gr/>.

4. - Conclusioni

Sulla base dei dati raccolti sul campo e le elaborazioni eseguite, è stato possibile evidenziare quanto segue:

Il sondaggio geognostico, le analisi geotecniche di laboratorio e le prove penetrometriche statiche con punta elettrica hanno permesso di ricavare la stratigrafia e i parametri geomeccanici del terreno investigato.



Postazione prova CPTe 1



Postazione prova CPTe 2

L'analisi specifica dei dati elaborati rimane comunque a carico del "geologo/ingegnere" responsabile delle indagini; le considerazioni sopra esposte in merito all'elaborazione delle prove e delle analisi effettuate, si devono intendere come mera interpretazione dei risultati ottenuti. Per ulteriori dettagli sulle indagini svolte si rimanda ai relativi allegati (All.A - B - C - D - E).

Lucca, Giugno 2021

BIERREGI srl

*Il Responsabile Tecnico
Dott. Geol. Francesco Rossi*

BIERREGI s.r.l.
IL RESPONSABILE TECNICO
Dott. Geol. Francesco Rossi



FIG.1 - COROGRAFIA

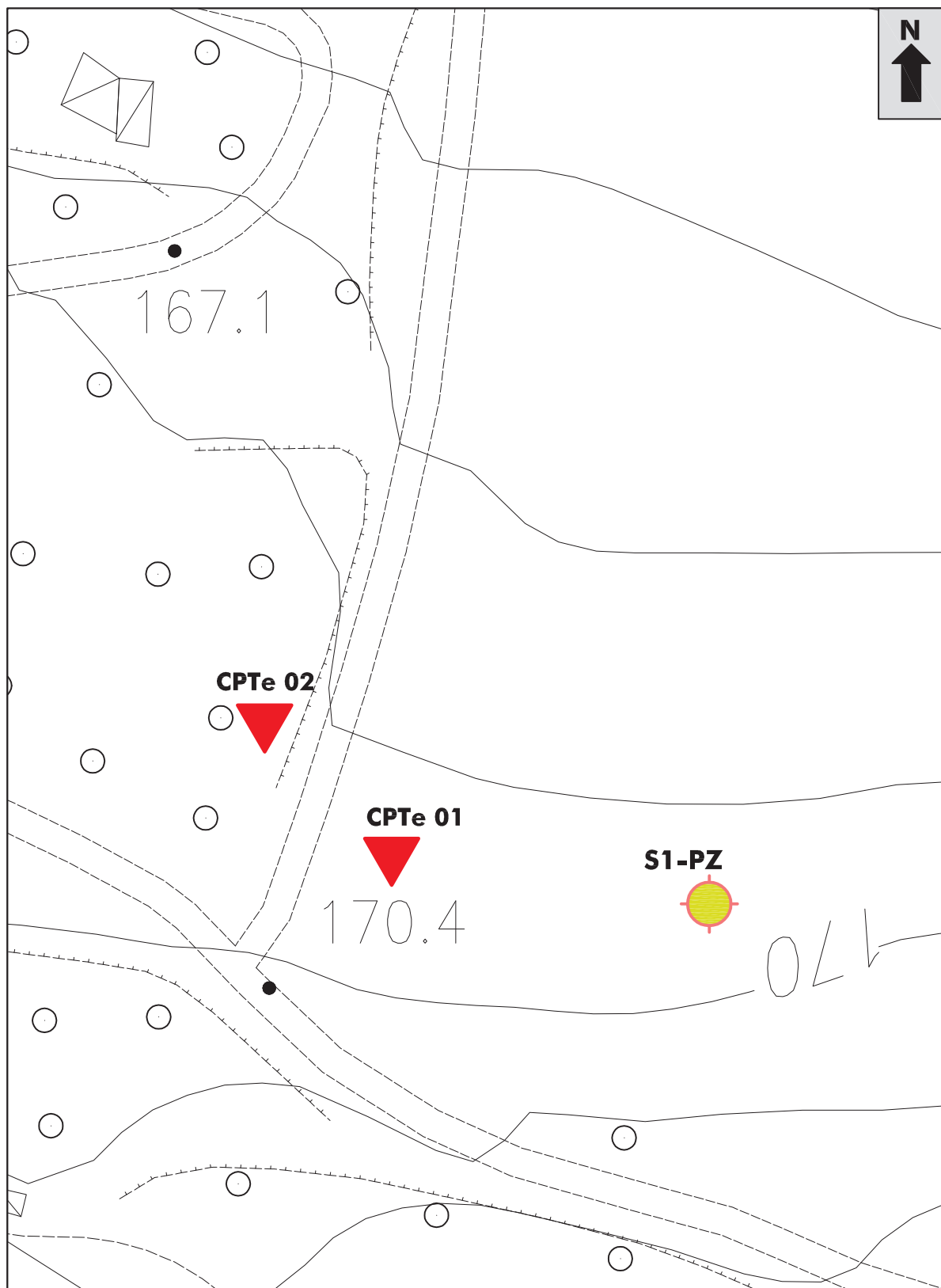
(C.T.R. Regione Toscana - Foglio 285060 - Scala 1:20'000)



- Area oggetto d'indagine

FIG.2 - UBICAZIONE INDAGINI

(C.T.R. Regione Toscana - Foglio 15H04 - Scala 1:400)



S1-PZ
- Sondaggio geognostico
a carotaggio continuo
tubo piezometrico

CPTe 01-02
- Prove penetrometriche statica
con punta elettrica

Log Stratigrafico del Sondaggio Geognostico
(Dati stratigrafici forniti dal Geol. Andrea Petresi)

S1-PZ (BHc-79/21) Profondità 15,00 m

Committente Comune di Peccioli	Profondità raggiunta 15 metri	Quota Ass. P.C. 169 metri	Certificato n°	Pagina
Operatore	Indagine Costruzione viabilità di servizio Fabbrica	Note1		Inizio/Fine Es
Responsabile	Sondaggio 1	Tipo Carotaggio continuo	Tipo Sonda	Coordinate X

Scala (mt)	Litologia	Descrizione	Quota	Parametri geotecnici	S.P.T.	Pocket Test kg/cm ²	Vane Test kg/cm ²	Campioni	Metodo Perforazione	Metodo Stabilizzaz.	Cass. Catalog.	Nota
1		limo sabbioso										
2			2.50									
3		limo argilloso molle						3.00				
4					2-3-3			3.50				
5			5.00		4.70 PA							
6		limo argilloso con sabbia e conchiglie						6.00				
7					20-26-35			6.50				
8		limo sabbioso	7.50		7.50 PA							
9												
10		limo argilloso duro	9.50					10.50				
11					25-41-62			11.00				
12					12.00 PA							
13												
14												
15			15.00									
16												
17												
18												
19												
20												

Campioni: S-Pareti Sottili, O-Osterberg, M-Mazier, R-Rimaneggiato, Rs-Rimaneggiato da SPT

DOCUMENTAZIONE FOTOGRAFICA DEL SONDAGGIO



Figura 1: Postazione Sondaggio



Figura 2: Cassetta n.1 - da 0.00 a 5.00 metri



Figura 3: Cassetta n.2 - da 5.00 a 10.0 metri



Figura 4: Cassetta n.3 - da 10.0 a 15.0 metri

Allegato B

Analisi Geotecniche di Laboratorio

FERRARA DEPARTMENT

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SOCOTEC ITALIA Srl – P.Iva 01872430648

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www.socotec.it

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SCHEDA GENERALE DEL CAMPIONE

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**
 CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**
 CAMPIONE: **S1C1 m 3.00 - 3.50**
 COMMESSA: 22949FE/21
 VERBALE ACC.: 216/21
 DATA CONSEGNA: 14/05/2021

il campione è stato conservato in vasca umida termostatica

alto 3.00	P.P. kPa	T.V. kPa	LUNGHEZZA (cm): 44 GRADO DI QUALITA': AGI Q5 EC 7-3 Q1
	600	-	DESCRIZIONE: limo con argilla debolmente sabbioso grigio con presenza di abbondanti resti conchigliari
	>600	-	W naturale (%) 19.1 γ naturale (Mg/m ³) 2.01 γ secco (Mg/m ³) 1.69 γ immerso (Mg/m ³) 1.06 porosità (%) 37 indice dei vuoti 0.58 grado di saturazione (%) 88 massa specifica (Mg/m ³) 2.666
	540	-	PROVE ESEGUITE Umidità Naturale SI Trassiale UU - Limiti Atterberg SI Trassiale CIU SI Gran. Setacciatura SI Edometria - Gran. Sedimentazione SI Taglio Diretto SI Peso di Volume SI Espansione L.L. - Peso Specifico SI Trassiale Cicl. + C.M. - Analisi Chimica - Colonna Risonante - Taglio Torsionale Cicl. -
NOTE: -			
3.50 basso			

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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UMIDITA' DI UNA TERRA**UNI EN ISO 17892-1****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C1 m 3.00 - 3.50****COMMESSA: 22949FE/21****DURATA PROVE:****20/05-05/06/2021****VERBALE ACC.: 216/21****DATA CONSEGNA:****14/05/2021****GEO - CERT. n°: 0****rev.00 del:****00/01/00**

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso debolmente sabbioso grigio**

cod.bilancia 480 - cod. stufa 567

DETERMINAZIONE**1****2****TARA (g)****322.89****3.24****TERRA UMIDA (g)****677****144.36****TERRA ESSICATA* (g)****620.48****121.69****UMDITA' DETERMINATA (%)****19.0****19.1****UMDITA' CALCOLATA (%)****=****19.1**

* materiale essiccato in stufa a 105 - 110 °C, fino a massa costante.

Io Sperimentatore:

dott. Roberto Bellanova

Il Direttore del Laboratorio terre:

dott. geol. Massimo Romagnoli

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MASSA VOLUMICA APPARENTE**UNI EN ISO 17892-2****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C1 m 3.00 - 3.50****COMMESSA: 22949FE/21****DURATA PROVE:****20/05-05/06/2021****VERBALE ACC.: 216/21****DATA CONSEGNA:****14/05/2021****GEO - CERT. n°: 0****rev.00 del:****00/01/00**

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso debolmente sabbioso grigio**

cod.bilancia 480 - cod. calibro 708

DETERMINAZIONE	1	2
TARA (g)	137.00	136.23
ALTEZZA (cm)	7.64	7.63
DIAMETRO (cm)	3.84	3.84
MASSA LORDA (g)	313.93	314.12
MASSA VOLUMICA (Mg/m ³)	2.01	2.02
MEDIA (Mg/m³)	=	2.01

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

FERRARA DEPARTMENT**Via Annibale Zucchini, 69 – 44122 Ferrara (FE)****Tel.: +39 0532 56771 - Fax.: +39 0532 56119**

SOCOTEC ITALIA Srl – P.Iva 01872430648

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DETERMINAZIONE DEL PESO SPECIFICO CON PICNOMETRO**UNI EN ISO 17892-3**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 20/05-05/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso debolmente sabbioso grigio**

cod.bilancia 480

determinazione picnometro n:	1 (pic. 001)	2 (pic. 002)
terra (g):	19.68	19.74
temperatura (°C):	19.0	19.0
picnometro + acqua (g):	154.85	149.68
picnometro + terra (g):	167.15	162.01
fattore K	1.0002	1.0002
Peso specifico determinato (Mg/m^3):	2.667	2.665

Peso specifico calcolato (Mg/m^3):	2.666
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Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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**SOCOTEC****LIMITI DI ATTERBERG (norma ASTM D4318 metodo A)**

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C1	m 3.00 - 3.50	
COMMESSA:	22949FE/21	DURATA PROVE:	20/05-05/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021
GEO - CERT. n°:	0	rev.00 del:	00/01/00

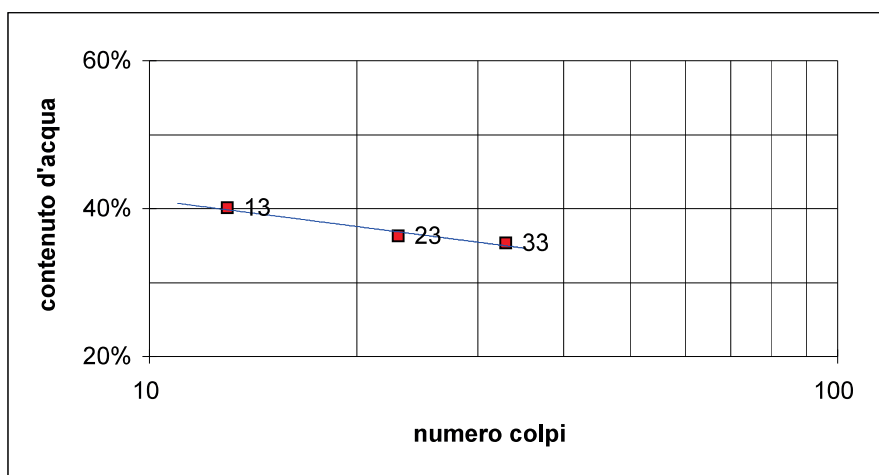
il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso debolmente sabbioso grigio**

codice cucchiaino: 344; codice bilancia: 480; codice stufa: 419

	LIMITE LIQUIDO			LIMITE PLASTICO		UMIDITA'
	1	2	3	1	2	
impasto						
N° colpi	33	23	13			
massa umida+ tara (g)	18.45	18.57	18.41	13.96	13.86	677.00
massa secca+ tara (g)	14.48	14.50	14.06	12.19	12.07	620.48
acqua contenuta (g)	3.97	4.07	4.35	1.77	1.79	56.52
tara (g)	3.24	3.28	3.20	3.22	3.21	322.89
peso secco (g)	11.24	11.22	10.86	8.97	8.86	297.59
contenuto d'acqua	35.3%	36.3%	40.1%	19.7%	20.2%	19.0%

Umidità Naturale	Wn =	19%
Limite Liquido	LL =	36%
Limite Plastico	LP =	20%
Indice Plastico	IP =	16%

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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ANALISI GRANULOMETRICA

(per setacciatura e sedimentazione) norma A.S.T.M. D 422

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**

CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 20/05-05/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/22021

GEO - CERT. n°: 0 rev.00 del: 00/01/00

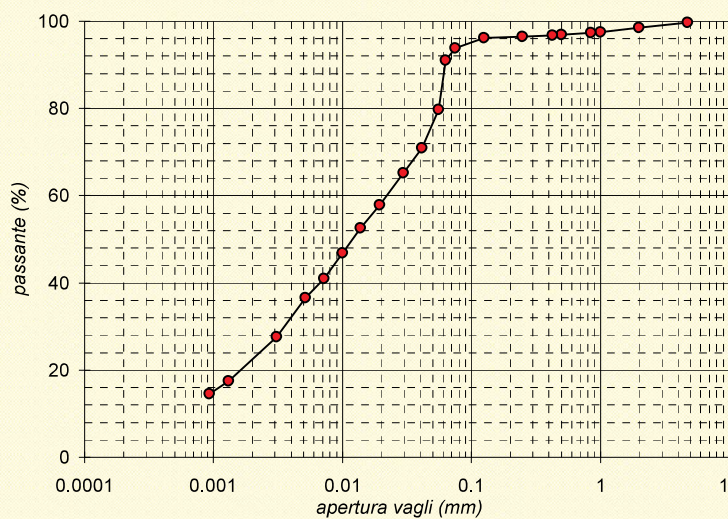
il campione è stato conservato in vasca umida termostatica Codici strumentazione: bilancia 480, vasca 557, stufa 419, densimetro 151H 348, termometro 588, mescolatore 432.

ASPETTO MACROSCOPICO DEL CAMPIONE:

Limo argilloso debolmente sabbioso grigio

codici	vaglio	trattenuto	trattenuto	cum. tratt.	passante
	(mm)	(g)	(%)	(%)	(%)
571	setaccio	4.75	0.89	0.30	99.70
572	setaccio	2	3.33	1.12	98.58
573	setaccio	1	3.23	1.09	97.50
290	setaccio	0.85	0.53	0.18	97.32
291	setaccio	0.5	1.23	0.41	96.91
292	setaccio	0.425	0.35	0.12	96.79
293	setaccio	0.250	0.84	0.28	96.51
282	setaccio	0.125	0.75	0.25	96.25
283	setaccio	0.075	7.27	2.44	93.81
286	setaccio	0.063	8.30	2.79	91.02
-	calcolato	0.0559	33.63	11.30	79.72
-	calcolato	0.0411	25.97	8.73	71.00
-	calcolato	0.0298	17.31	5.82	65.18
-	calcolato	0.0194	21.64	7.27	57.91
-	calcolato	0.0139	15.79	5.31	52.60
-	calcolato	0.0100	17.31	5.82	46.79
-	calcolato	0.0072	17.31	5.82	40.97
-	calcolato	0.0052	12.98	4.36	36.61
-	calcolato	0.0031	26.73	8.98	27.63
-	calcolato	0.0013	30.29	10.18	17.45
-	calcolato	0.0009	8.65	2.91	14.54
-	fondo	43.27	14.54	100.00	0.00
TOTALE		297.59		ϕ max (mm) = 5.3	

Passante effettivo setaccio 0.063 (g) in areometro		50.00
t° C	Tempo (s)	Lettura
19.5	30	31.0
19.5	60	28.0
19.5	120	26.0
19.5	300	23.5
20.5	600	21.5
20.5	1200	19.5
20.5	2400	17.5
20.5	4800	16.0
20	14400	13.0
20	86400	9.5
20	172800	8.5
Rapporti granulometrici		
	USCS	UNI
GHIAIA	> 4,75 mm	> 2,00 mm
	0.3%	1.4%
SABBIA	> 0,075 mm	> 0,063 mm
	5.9%	7.6%
LIMO	> 2 μ	> 2 μ
	71.3%	68.5%
ARGILLA	< 2 μ	< 2 μ
	22.5%	22.5%



Soluzione disperdente preparata al momento

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio
dott. geol. Massimo Romagnol

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)**A.S.T.M. D 4767**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro 12; bilancia 480; trasduttore LVDT 469; celle di carico 573, 470, 471; manometri 940, 691; celle 473, 474, 475; pressa 476.

Macchina: CONTROLS Triax 50 Digital
 Prova: CONSOLIDATA NON DRENATA (CU)
 Dimensioni provini: $\phi \times h = 36,80 \times 76,20$ mm
 Velocità prova: 0.01 mm/min

NATURA DEL CAMPIONE: Limo argilloso debolmente sabbioso grigioPeso specifico (Mg/m^3): 2.674

	PROVINO 1	PROVINO 2	PROVINO 3
umidità iniziale (%)	16.5	16.2	16.3
massa volumica umida iniziale (Mg/m^3)	2.01	2.02	2.04
massa volumica secca iniziale (Mg/m^3)	1.72	1.74	1.75
indice dei vuoti iniziale	0.55	0.54	0.53
grado di saturazione iniziale (%)	80	80	83
umidità finale (%)	18.0	17.4	16.8
massa volumica umida fine cons. (Mg/m^3)	2.13	2.14	2.16
massa volumica secca fine cons. (Mg/m^3)	1.80	1.83	1.85
indice dei vuoti fine cons.	0.48	0.46	0.45
grado di saturazione fine cons. (%)	100	100	100
pressione in cella (kPa)	600	800	1000
contropressione (kPa)	400	400	400
Dimensioni fine consolidazione			
Hc (cm)	7.542	7.524	7.504
Ac (cm^2)	11.261	11.242	11.198
Skempton B	0.96	0.96	0.96
Skempton A	0.1227	0.1265	0.1766
t100 min (Bishop & Henkel)	242	272	290

Il Direttore del Laboratorio terre:
 dott. Massimo Romagnoli

Lo Sperimentatore:
 dott. Roberto Bellanova

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)

A.S.T.M. D 4767

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

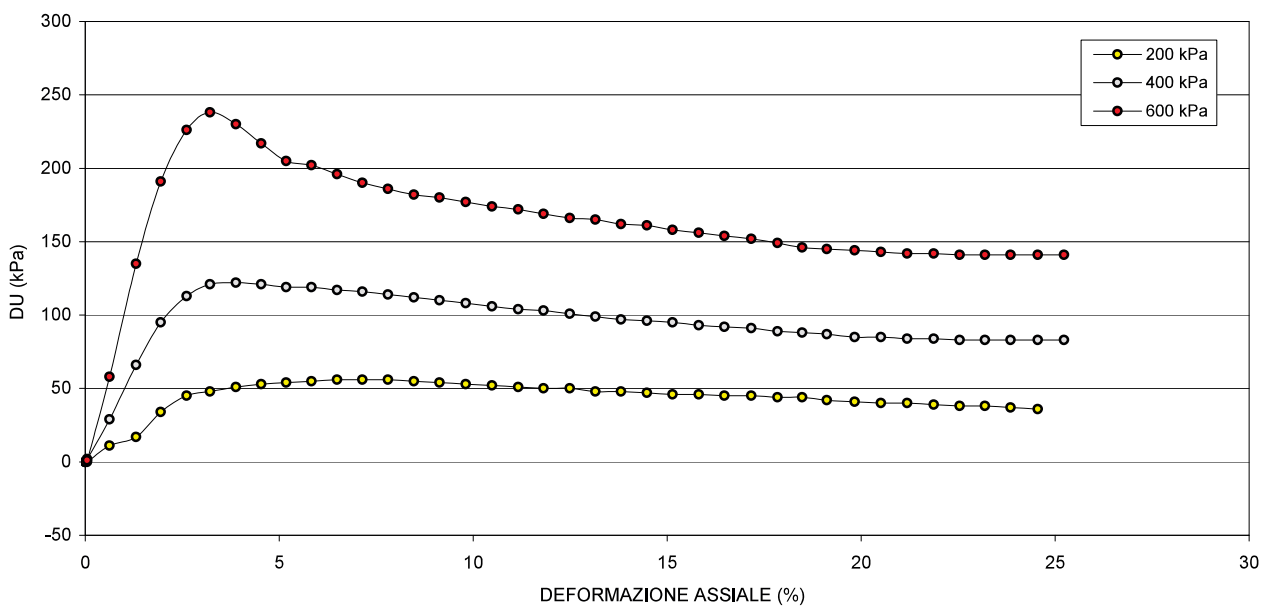
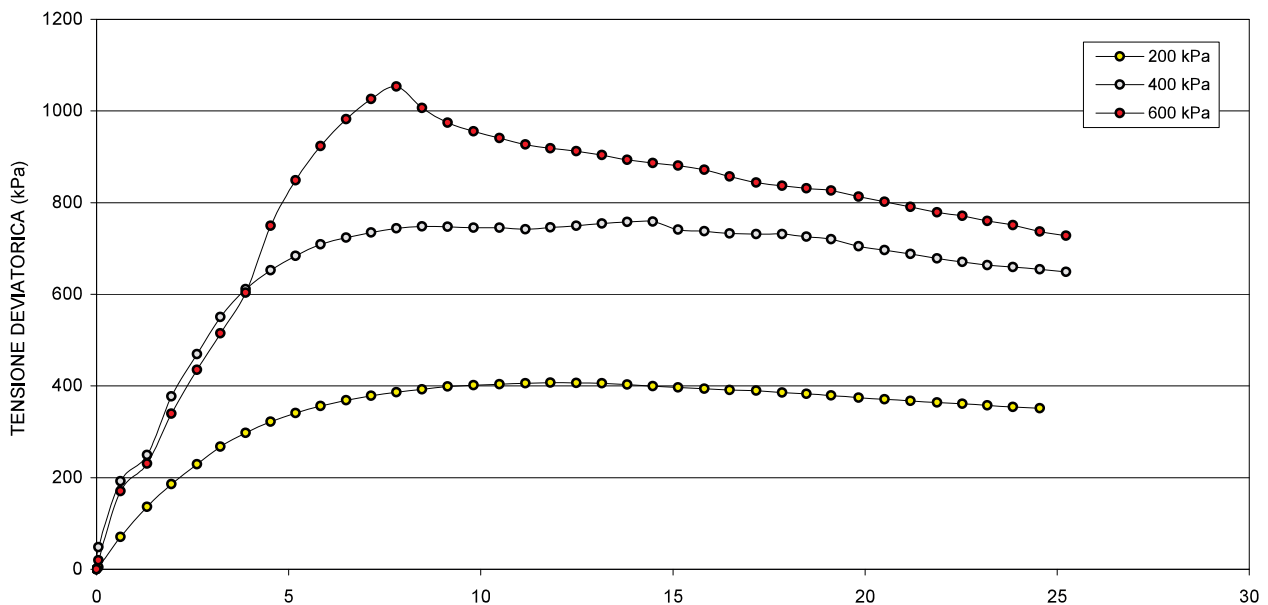
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CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

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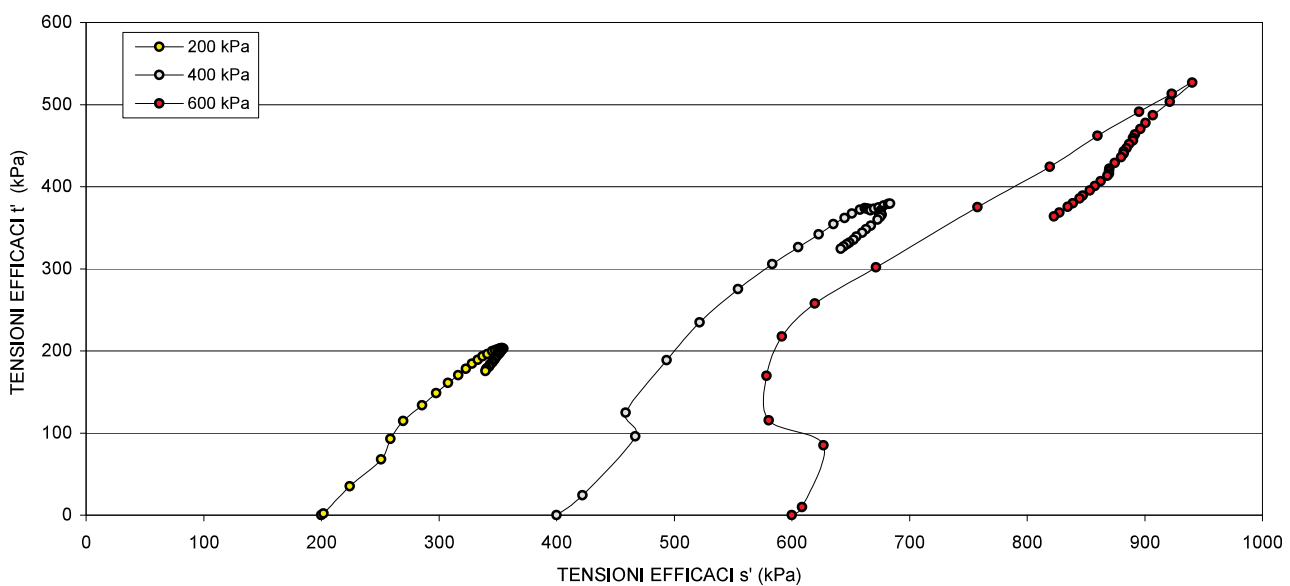
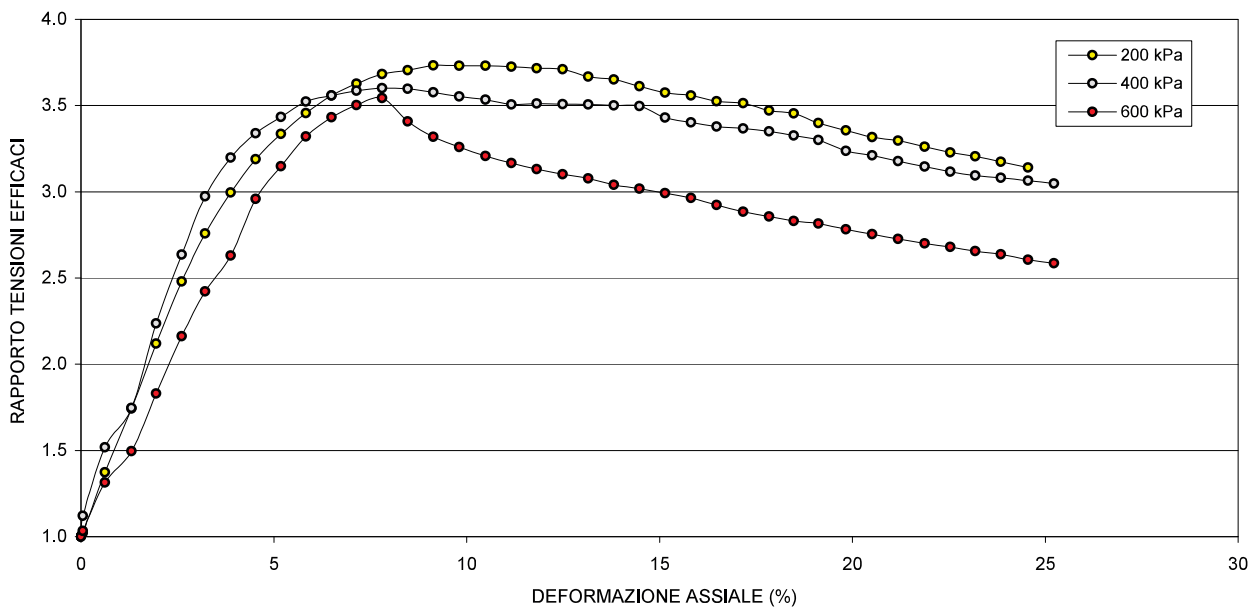
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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)**A.S.T.M. D 4767**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

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TENSIONE DEVIATORICA ($\sigma_1 - \sigma_3$)

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
Def. (%)	Tens. (kPa)	Def. (%)	Tens. (kPa)	Def. (%)	Tens. (kPa)
0.000	0.000	0.000	0.000	0.000	0.000
0.053	3.905	0.053	48.007	0.053	19.547
0.623	70.510	0.623	191.905	0.623	170.129
1.313	135.923	1.313	249.563	1.313	230.641
1.949	185.722	1.949	377.294	1.949	339.133
2.612	229.437	2.612	469.252	2.612	434.944
3.222	267.361	3.222	550.416	3.222	515.017
3.885	297.280	3.885	611.023	3.885	603.160
4.534	321.721	4.534	652.662	4.534	749.814
5.184	340.834	5.184	683.896	5.184	848.691
5.834	356.142	5.834	708.777	5.834	923.690
6.497	368.498	6.497	723.915	6.497	982.403
7.146	378.306	7.146	734.495	7.146	1025.911
7.809	386.411	7.809	744.011	7.809	1053.082
8.472	392.329	8.472	747.942	8.472	1006.521
9.135	398.848	9.135	747.213	9.135	974.076
9.811	401.406	9.811	745.583	9.811	955.390
10.487	404.040	10.487	745.089	10.487	940.553
11.164	406.116	11.164	742.068	11.164	927.180
11.813	407.374	11.813	745.819	11.813	918.352
12.490	406.582	12.490	749.675	12.490	912.092
13.152	405.584	13.152	754.270	13.152	903.632
13.815	402.871	13.815	757.865	13.815	893.424
14.478	399.772	14.478	758.882	14.478	886.094
15.141	396.447	15.141	741.300	15.141	880.514
15.817	393.961	15.817	737.340	15.817	871.994
16.480	391.452	16.480	732.648	16.480	857.370
17.170	389.545	17.170	731.315	17.170	843.857
17.846	385.489	17.846	731.191	17.846	837.115
18.482	382.937	18.482	725.962	18.482	831.285
19.119	379.014	19.119	719.863	19.119	826.385
19.835	374.449	19.835	704.577	19.835	813.056
20.511	370.796	20.511	696.301	20.511	801.584
21.187	367.432	21.187	687.854	21.187	790.894
21.877	364.079	21.877	678.154	21.877	778.533
22.539	360.990	22.539	670.883	22.539	771.097
23.189	357.416	23.189	663.753	23.189	759.760
23.852	354.399	23.852	659.447	23.852	751.162
24.555	350.995	24.555	654.368	24.555	737.089
		25.231	649.036	25.231	727.544

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT
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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767
COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli
CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)
CAMPIONE: S1C1 m 3.00 - 3.50
COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021
VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021
GEO - CERT. n°: rev.00 del:
PRESSIONE INTERSTIZIALE

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
0.000	ΔU. (kPa)	Def. (%)	ΔU. (kPa)	Def. (%)	ΔU. (kPa)
0.000	0.000	0.000	0.001	0.000	0.000
0.053	0.000	0.053	2.000	0.053	1.000
0.623	11.000	0.623	29.000	0.623	58.000
1.313	17.000	1.313	66.000	1.313	135.000
1.949	34.000	1.949	95.000	1.949	191.000
2.612	45.000	2.612	113.000	2.612	226.000
3.222	48.000	3.222	121.000	3.222	238.000
3.885	51.000	3.885	122.000	3.885	230.000
4.534	53.000	4.534	121.000	4.534	217.000
5.184	54.000	5.184	119.000	5.184	205.000
5.834	55.000	5.834	119.000	5.834	202.000
6.497	56.000	6.497	117.000	6.497	196.000
7.146	56.000	7.146	116.000	7.146	190.000
7.809	56.000	7.809	114.000	7.809	186.000
8.472	55.000	8.472	112.000	8.472	182.000
9.135	54.000	9.135	110.000	9.135	180.000
9.811	53.000	9.811	108.000	9.811	177.000
10.487	52.000	10.487	106.000	10.487	174.000
11.164	51.000	11.164	104.000	11.164	172.000
11.813	50.000	11.813	103.000	11.813	169.000
12.490	50.000	12.490	101.000	12.490	166.000
13.152	48.000	13.152	99.000	13.152	165.000
13.815	48.000	13.815	97.000	13.815	162.000
14.478	47.000	14.478	96.000	14.478	161.000
15.141	46.000	15.141	95.000	15.141	158.000
15.817	46.000	15.817	93.000	15.817	156.000
16.480	45.000	16.480	92.000	16.480	154.000
17.170	45.000	17.170	91.000	17.170	152.000
17.846	44.000	17.846	89.000	17.846	149.000
18.482	44.000	18.482	88.000	18.482	146.000
19.119	42.000	19.119	87.000	19.119	145.000
19.835	41.000	19.835	85.000	19.835	144.000
20.511	40.000	20.511	85.000	20.511	143.000
21.187	40.000	21.187	84.000	21.187	142.000
21.877	39.000	21.877	84.000	21.877	142.000
22.539	38.000	22.539	83.000	22.539	141.000
23.189	38.000	23.189	83.000	23.189	141.000
23.852	37.000	23.852	83.000	23.852	141.000
24.555	36.000	24.555	83.000	24.555	141.000
		25.231	83.000	25.231	141.000

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)

A.S.T.M. D 4767

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**

CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

RAPPORTO TENSIONI EFFICACI (σ'_1 / σ'_3)

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
Def. (%)		Def. (%)		Def. (%)	
0.000	1.000	0.000	1.000	0.000	1.000
0.053	1.020	0.053	1.121	0.053	1.033
0.623	1.373	0.623	1.517	0.623	1.314
1.313	1.743	1.313	1.747	1.313	1.496
1.949	2.119	1.949	2.237	1.949	1.829
2.612	2.480	2.612	2.635	2.612	2.163
3.222	2.759	3.222	2.973	3.222	2.423
3.885	2.995	3.885	3.198	3.885	2.630
4.534	3.189	4.534	3.339	4.534	2.958
5.184	3.334	5.184	3.434	5.184	3.149
5.834	3.456	5.834	3.522	5.834	3.321
6.497	3.559	6.497	3.558	6.497	3.432
7.146	3.627	7.146	3.586	7.146	3.502
7.809	3.683	7.809	3.601	7.809	3.544
8.472	3.706	8.472	3.597	8.472	3.408
9.135	3.732	9.135	3.577	9.135	3.319
9.811	3.731	9.811	3.553	9.811	3.259
10.487	3.730	10.487	3.534	10.487	3.208
11.164	3.726	11.164	3.507	11.164	3.166
11.813	3.716	11.813	3.511	11.813	3.131
12.490	3.711	12.490	3.507	12.490	3.102
13.152	3.668	13.152	3.506	13.152	3.077
13.815	3.650	13.815	3.501	13.815	3.040
14.478	3.613	14.478	3.496	14.478	3.018
15.141	3.574	15.141	3.430	15.141	2.992
15.817	3.558	15.817	3.402	15.817	2.964
16.480	3.525	16.480	3.379	16.480	2.922
17.170	3.513	17.170	3.367	17.170	2.884
17.846	3.471	17.846	3.351	17.846	2.856
18.482	3.455	18.482	3.327	18.482	2.831
19.119	3.399	19.119	3.300	19.119	2.816
19.835	3.355	19.835	3.237	19.835	2.783
20.511	3.317	20.511	3.210	20.511	2.754
21.187	3.296	21.187	3.177	21.187	2.727
21.877	3.261	21.877	3.146	21.877	2.700
22.539	3.228	22.539	3.116	22.539	2.680
23.189	3.206	23.189	3.094	23.189	2.655
23.852	3.174	23.852	3.080	23.852	2.637
24.555	3.140	24.555	3.064	24.555	2.606
		25.231	3.047	25.231	2.585

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

Via Annibale Zucchini, 69 – 44122 Ferrara (FE)

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Laboratorio Geotecnico autorizzato con Dec. n. 486 del 20/09/2019, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

**PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767**

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**

CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

STRESS PATH $s' = (\sigma'_1 + \sigma'_3)/2$ $t' = (\sigma'_1 - \sigma'_3)/2$

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
s' (kPa)	t' (kPa)	s' (kPa)	t' (kPa)	s' (kPa)	t' (kPa)
200.000	0.000	399.999	0.000	600.000	0.000
201.953	1.953	422.004	24.004	608.774	9.774
224.255	35.255	466.953	95.953	627.064	85.064
250.962	67.962	458.781	124.781	580.320	115.320
258.861	92.861	493.647	188.647	578.567	169.567
269.719	114.719	521.626	234.626	591.472	217.472
285.680	133.680	554.208	275.208	619.508	257.508
297.640	148.640	583.511	305.511	671.580	301.580
307.860	160.860	605.331	326.331	757.907	374.907
316.417	170.417	622.948	341.948	819.345	424.345
323.071	178.071	635.389	354.389	859.845	461.845
328.249	184.249	644.957	361.957	895.201	491.201
333.153	189.153	651.247	367.247	922.955	512.955
337.206	193.206	658.006	372.006	940.541	526.541
341.165	196.165	661.971	373.971	921.260	503.260
345.424	199.424	663.606	373.606	907.038	487.038
347.703	200.703	664.792	372.792	900.695	477.695
350.020	202.020	666.544	372.544	896.276	470.276
352.058	203.058	667.034	371.034	891.590	463.590
353.687	203.687	669.909	372.909	890.176	459.176
353.291	203.291	673.837	374.837	890.046	456.046
354.792	202.792	678.135	377.135	886.816	451.816
353.436	201.436	681.932	378.932	884.712	446.712
352.886	199.886	683.441	379.441	882.047	443.047
352.224	198.224	675.650	370.650	882.257	440.257
350.981	196.981	675.670	368.670	879.997	435.997
350.726	195.726	674.324	366.324	874.685	428.685
349.772	194.772	674.657	365.657	869.929	421.929
348.745	192.745	676.595	365.595	869.558	418.558
347.469	191.469	674.981	362.981	869.643	415.643
347.507	189.507	672.931	359.931	868.192	413.192
346.224	187.224	667.289	352.289	862.528	406.528
345.398	185.398	663.150	348.150	857.792	400.792
343.716	183.716	659.927	343.927	853.447	395.447
343.040	182.040	655.077	339.077	847.267	389.267
342.495	180.495	652.442	335.442	844.549	385.549
340.708	178.708	648.877	331.877	838.880	379.880
340.200	177.200	646.724	329.724	834.581	375.581
339.497	175.497	644.184	327.184	827.544	368.544
		641.518	324.518	822.772	363.772

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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Laboratorio Geotecnico autorizzato con Dec. n. 486 del 20/09/2019, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)**A.S.T.M. D 4767**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

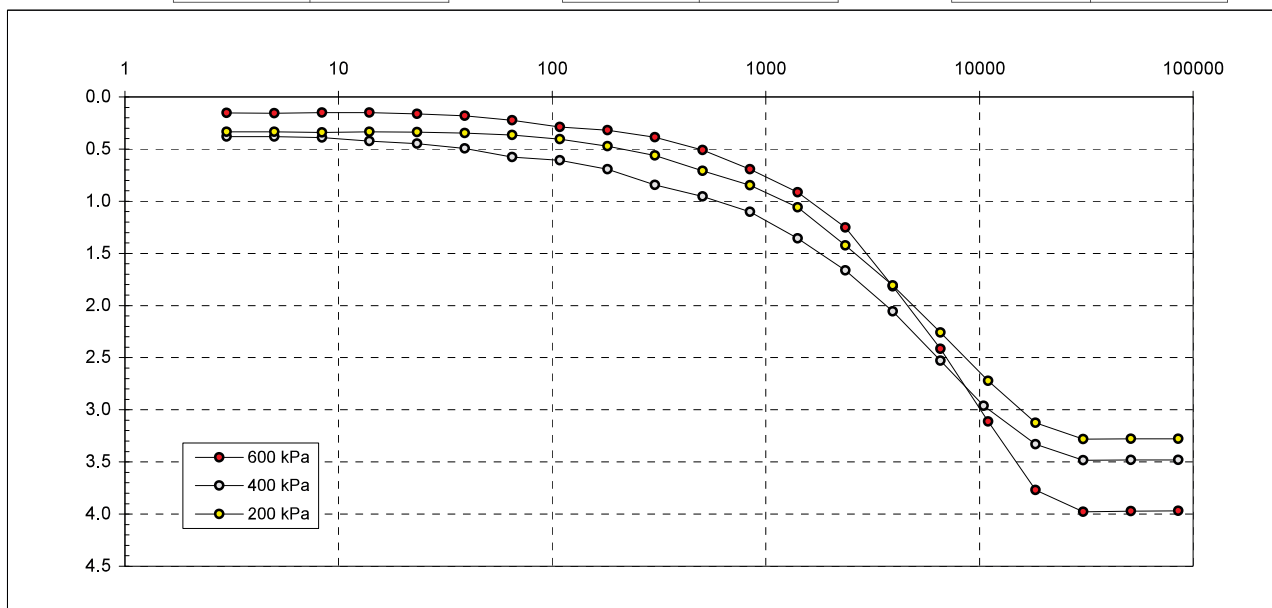
GEO - CERT. n°: rev.00 del:

CONSOLIDAZIONE

PROVINO 1 200 kPa	
Tempo (s)	Vol (cc)
3	0.33
5	0.33
8	0.34
14	0.33
23	0.34
39	0.35
65	0.36
109	0.40
181	0.47
303	0.56
506	0.71
845	0.85
1412	1.06
2357	1.42
3937	1.81
6575	2.26
10979	2.72
18335	3.13
30620	3.28
51136	3.28
85398	3.28

PROVINO 2 400 kPa	
Tempo (s)	Vol (cc)
3	0.38
5	0.38
8	0.39
14	0.42
23	0.45
39	0.49
65	0.58
109	0.61
181	0.69
303	0.84
506	0.95
845	1.10
1412	1.36
2357	1.66
3937	2.06
6575	2.53
10471	2.96
18335	3.33
30620	3.48
51136	3.48
85398	3.48

PROVINO 3 600 kPa	
Tempo (s)	Vol (cc)
3	0.15
5	0.16
8	0.15
14	0.15
23	0.16
39	0.18
65	0.22
109	0.29
181	0.32
303	0.39
506	0.51
845	0.69
1412	0.91
2357	1.25
3937	1.82
6575	2.42
10979	3.11
18335	3.77
30620	3.98
51136	3.97
85398	3.97

Il Direttore del Laboratorio terre:
dott. Massimo RomagnoliLo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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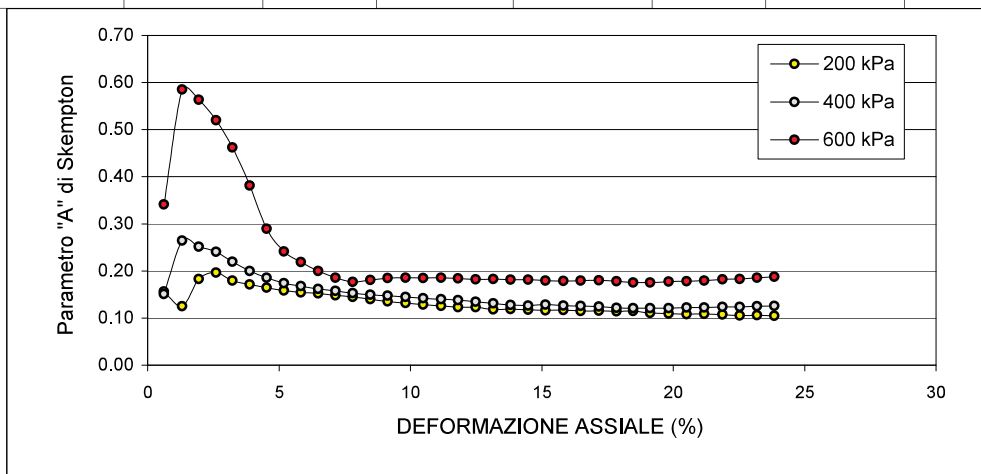
PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)**A.S.T.M. D 4767**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C1 m 3.00 - 3.50**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

PROVINO 1		PROVINO 2		PROVINO 3	
Def. (%)	Skemp. A	Def. (%)	Skemp. A	Def. (%)	Skemp. A
0.623	0.1560	0.623	0.1511	0.623	0.3409
1.313	0.1251	1.313	0.2645	1.313	0.5853
1.949	0.1831	1.949	0.2518	1.949	0.5632
2.612	0.1961	2.612	0.2408	2.612	0.5196
3.222	0.1795	3.222	0.2198	3.222	0.4621
3.885	0.1716	3.885	0.1997	3.885	0.3813
4.534	0.1647	4.534	0.1854	4.534	0.2894
5.184	0.1584	5.184	0.1740	5.184	0.2415
5.834	0.1544	5.834	0.1679	5.834	0.2187
6.497	0.1520	6.497	0.1616	6.497	0.1995
7.146	0.1480	7.146	0.1579	7.146	0.1852
7.809	0.1449	7.809	0.1532	7.809	0.1766
8.472	0.1402	8.472	0.1497	8.472	0.1808
9.135	0.1354	9.135	0.1472	9.135	0.1848
9.811	0.1320	9.811	0.1449	9.811	0.1853
10.487	0.1287	10.487	0.1423	10.487	0.1850
11.164	0.1256	11.164	0.1401	11.164	0.1855
11.813	0.1227	11.813	0.1381	11.813	0.1840
12.490	0.1230	12.490	0.1347	12.490	0.1820
13.152	0.1183	13.152	0.1313	13.152	0.1826
13.815	0.1191	13.815	0.1280	13.815	0.1813
14.478	0.1176	14.478	0.1265	14.478	0.1817
15.141	0.1160	15.141	0.1282	15.141	0.1794
15.817	0.1168	15.817	0.1261	15.817	0.1789
16.480	0.1150	16.480	0.1256	16.480	0.1796
17.170	0.1155	17.170	0.1244	17.170	0.1801
17.846	0.1141	17.846	0.1217	17.846	0.1780
18.482	0.1149	18.482	0.1212	18.482	0.1756
19.119	0.1108	19.119	0.1209	19.119	0.1755
19.835	0.1095	19.835	0.1206	19.835	0.1771
20.511	0.1079	20.511	0.1221	20.511	0.1784
21.187	0.1089	21.187	0.1221	21.187	0.1795
21.877	0.1071	21.877	0.1239	21.877	0.1824
22.539	0.1053	22.539	0.1237	22.539	0.1829
23.189	0.1063	23.189	0.1250	23.189	0.1856
23.852	0.1044	23.852	0.1259	23.852	0.1877

Il Direttore del Laboratorio terre:
dott. Massimo RomagnoliLo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C1**

COMMESSA: 22949FE/21

DURATA PROVE:

25/05-15/06/2021

VERBALE ACC.: 216/21

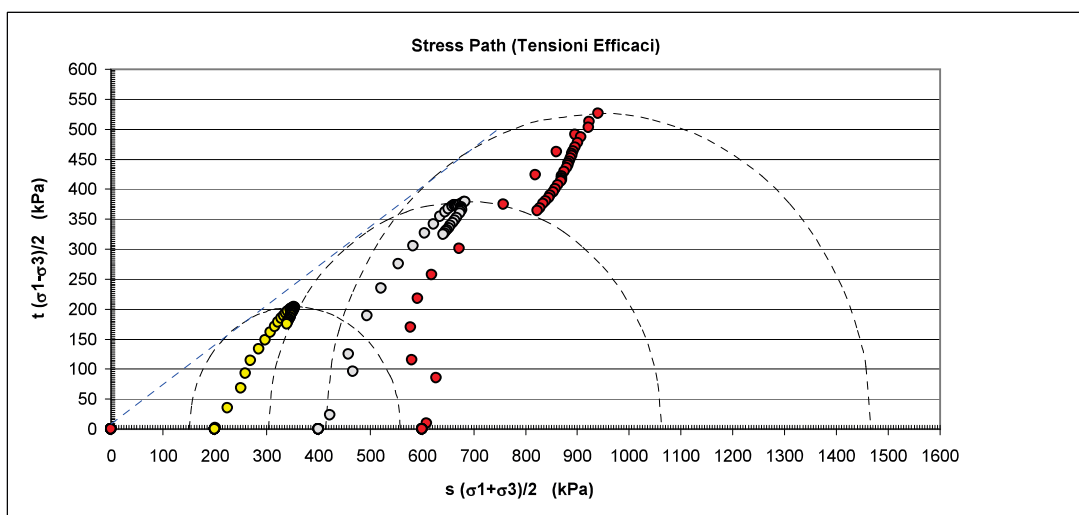
DATA CONSEGNA:

14/05/2021

Il presente elaborato non è parte del certificato di prova cui è allegato, è solo un'interpretazione soggettiva dei risultati di prova.

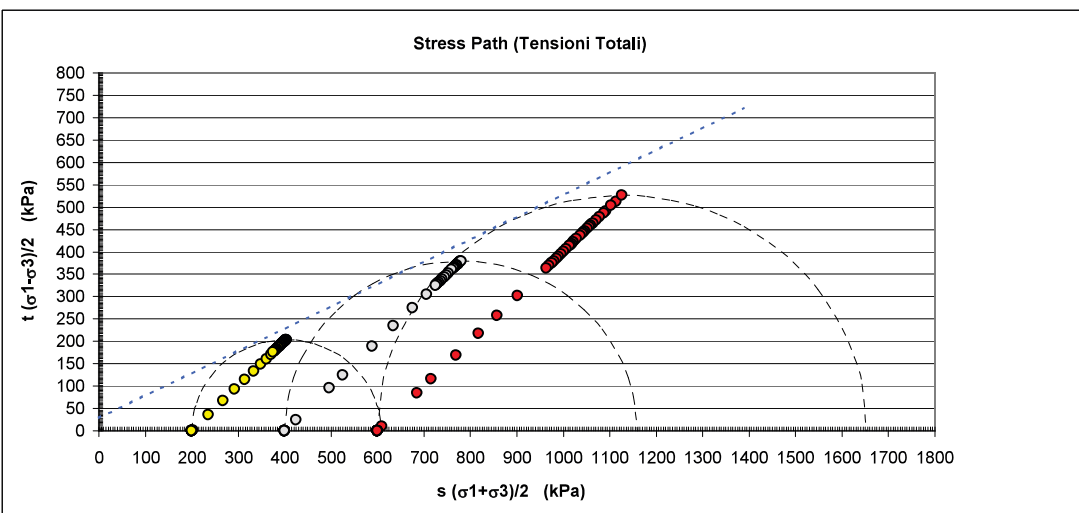
CONDIZIONI A ROTTURA (TENSIONI EFFICACI)

sforzo deviatorico (kPa)	407	759	1053
deformazione (%)	17.2	18.5	7.8
tensione efficace s' (kPa)	354	683	941
tensione efficace t' (kPa)	204	379	527
c' (kPa):	9.3	ϕ' (°):	33.3



CONDIZIONI A ROTTURA (TENSIONI TOTALI)

sforzo deviatorico (kPa)	407	759	1053
deformazione (%)	17.2	18.5	7.8
tensione totale s (kPa)	403.7	779.4	1126.5
tensione efficace t (kPa)	203.7	379.4	526.5
c (kPa):	29.1	ϕ (°):	26.5



FERRARA DEPARTMENT

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**
 CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**
 CAMPIONE: **S1C1 m 3.00 - 3.50**
 COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021
 VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021
 GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro 12; bilancia 480; trasduttori LVDT 540, 540, 543, 544; SG 539, 542.

Macchina: CONTROLS T206 Electronic/T207 Digital

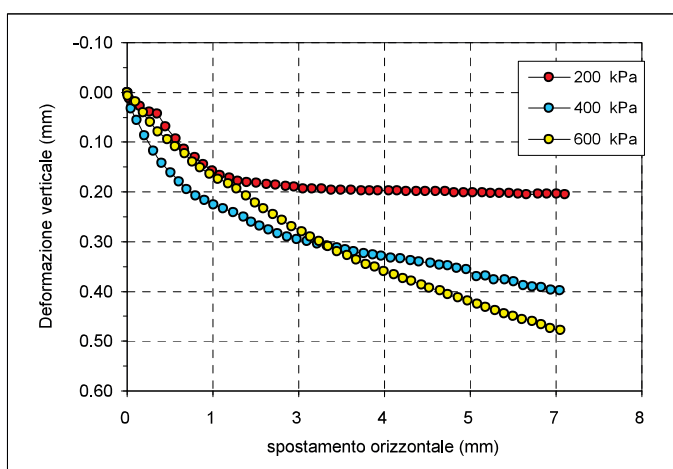
Prova: CONSOLIDATA DRENATA

Dimensioni provino: $\phi \times h = 60 \times 20$ mm

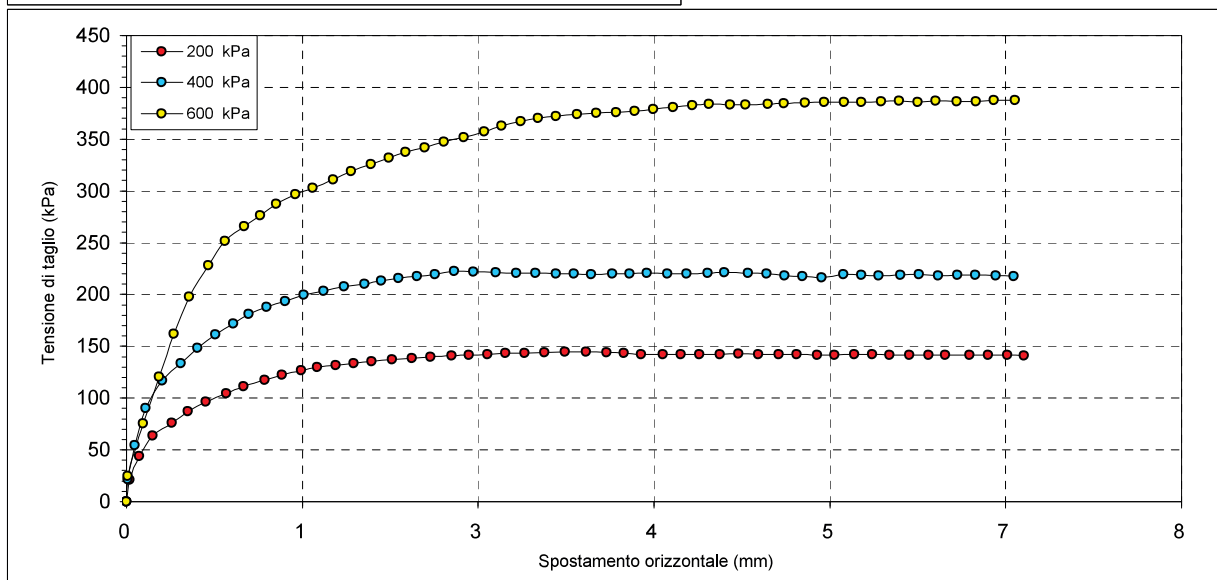
Velocità prova: 0,004 mm/min

NATURA DEL CAMPIONE:

Limo argilloso debolmente sabbioso grigio



	PROVINO 1	PROVINO 2	PROVINO 3
σ_v (kPa)	200	400	600
W ini (%)	19.0	19.1	19.3
γ ini (Mg/m ³)	2.10	2.11	2.11
γ_d ini (Mg/m ³)	1.77	1.77	1.77
S ini (%)	99	101	102
W fin (%)	16.0	13.7	12.3
γ fin (Mg/m ³)	2.17	2.22	2.25
γ_d fin (Mg/m ³)	1.87	1.95	2.00
S fin (%)	100	100	100
G (Mg/m ³)	2.666		
H fine cons (mm)	19.632	19.470	19.264



Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

FERRARA DEPARTMENT

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C1 m 3.00 - 3.50		
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021
GEO - CERT. n°:		rev.00 del:	

PROVINO 1 200 kPa			PROVINO 2 400 kPa			PROVINO 3 600 kPa		
Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.026	20.750	0.012	0.009	21.389	0.001	0.011	25.028	0.007
0.101	44.028	0.022	0.063	54.528	0.033	0.131	75.528	0.019
0.206	63.944	0.028	0.151	90.167	0.056	0.254	120.750	0.040
0.356	76.028	0.039	0.282	116.944	0.087	0.370	162.222	0.060
0.480	87.083	0.043	0.423	133.694	0.117	0.491	197.556	0.079
0.620	96.389	0.068	0.555	148.139	0.142	0.641	228.028	0.094
0.782	104.583	0.093	0.694	161.333	0.161	0.770	251.528	0.108
0.914	111.417	0.113	0.834	171.667	0.179	0.921	265.500	0.123
1.082	117.556	0.130	0.958	181.250	0.195	1.048	276.500	0.139
1.218	122.500	0.145	1.097	187.972	0.207	1.173	287.639	0.151
1.367	126.889	0.157	1.240	193.222	0.216	1.323	296.556	0.164
1.491	129.583	0.166	1.384	199.750	0.225	1.457	302.972	0.174
1.638	131.806	0.172	1.543	203.583	0.233	1.618	310.972	0.183
1.777	133.722	0.178	1.699	207.556	0.241	1.757	318.833	0.194
1.917	135.611	0.180	1.862	210.278	0.250	1.910	325.833	0.208
2.075	137.250	0.182	1.989	213.000	0.260	2.051	331.861	0.222
2.231	138.667	0.185	2.126	215.750	0.268	2.181	337.389	0.233
2.378	139.861	0.186	2.270	217.889	0.276	2.334	341.806	0.245
2.544	140.806	0.188	2.413	219.722	0.284	2.483	347.556	0.257
2.675	141.583	0.190	2.561	222.222	0.290	2.639	351.722	0.269
2.822	142.333	0.193	2.714	222.194	0.295	2.796	357.389	0.280
2.964	143.306	0.193	2.886	221.056	0.299	2.930	362.972	0.290
3.113	143.472	0.194	3.048	220.500	0.304	3.081	367.028	0.299
3.268	143.917	0.196	3.195	220.694	0.308	3.217	370.333	0.309
3.428	144.389	0.196	3.359	220.028	0.312	3.359	372.056	0.319
3.594	144.583	0.196	3.497	220.167	0.315	3.524	373.667	0.327
3.751	144.167	0.197	3.634	219.500	0.319	3.670	375.167	0.336
3.886	143.389	0.197	3.798	220.222	0.323	3.828	375.889	0.345
4.025	142.306	0.197	3.935	220.111	0.326	3.971	377.333	0.351
4.191	141.944	0.197	4.067	220.889	0.329	4.116	378.833	0.359
4.332	142.250	0.197	4.228	220.361	0.332	4.272	380.611	0.366
4.476	142.278	0.198	4.377	219.944	0.334	4.423	382.333	0.373
4.636	142.056	0.198	4.543	220.528	0.337	4.555	383.583	0.379
4.781	142.556	0.198	4.673	221.139	0.340	4.719	383.139	0.386
4.940	142.444	0.199	4.859	220.694	0.343	4.837	383.306	0.393
5.099	142.444	0.199	5.005	219.778	0.346	5.014	383.778	0.398
5.240	142.028	0.201	5.141	218.028	0.348	5.140	384.500	0.406
5.397	141.750	0.201	5.282	217.306	0.353	5.303	385.000	0.412
5.533	141.556	0.201	5.436	216.278	0.355	5.453	385.944	0.418
5.691	141.889	0.201	5.604	219.500	0.370	5.607	385.556	0.425
5.829	141.944	0.202	5.746	218.694	0.369	5.743	385.611	0.432
5.965	141.778	0.202	5.879	218.361	0.376	5.898	386.389	0.438
6.118	141.472	0.203	6.047	219.056	0.376	6.039	386.889	0.444
6.269	141.417	0.204	6.196	219.306	0.380	6.184	386.750	0.449
6.397	141.583	0.205	6.345	218.278	0.388	6.323	386.722	0.456
6.587	141.833	0.204	6.496	218.583	0.390	6.490	386.139	0.460
6.732	141.778	0.204	6.636	218.722	0.392	6.640	386.167	0.466
6.884	141.306	0.204	6.794	218.167	0.397	6.780	387.306	0.474
7.017	141.194	0.205	6.934	217.556	0.398	6.944	387.528	0.478

Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C1	m 3.00 - 3.50	
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021
GEO - CERT. n°:		rev.00 del:	

Consolidazione Provino 1

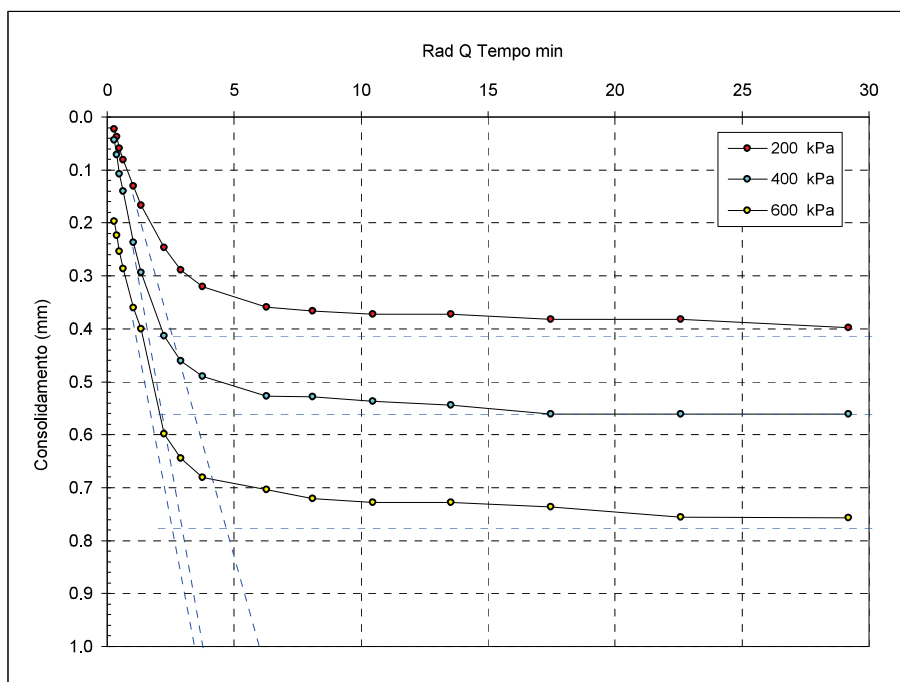
200 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.023
0.14	0.037
0.23	0.059
0.39	0.081
1.08	0.130
1.81	0.167
5.05	0.246
8.44	0.289
14.09	0.321
39.29	0.359
65.61	0.366
109.58	0.372
182.98	0.372
305.58	0.382
510.33	0.382
852.27	0.398

Consolidazione Provino 2

400 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.043
0.14	0.071
0.23	0.107
0.39	0.140
1.08	0.238
1.81	0.294
5.05	0.414
8.44	0.461
14.09	0.490
39.29	0.527
65.61	0.529
109.58	0.537
182.98	0.544
305.58	0.561
510.33	0.561
852.27	0.561

Consolidazione Provino 3

600 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.198
0.14	0.223
0.23	0.254
0.39	0.287
1.08	0.361
1.81	0.400
5.05	0.599
8.44	0.645
14.09	0.681
39.29	0.704
65.61	0.721
109.58	0.727
182.98	0.727
305.58	0.737
510.33	0.755
852.27	0.756



t_{100} min
(Bishop ed Henkel)

Provino 1

6.6

Provino 2

4.6

Provino 3

6.5

Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

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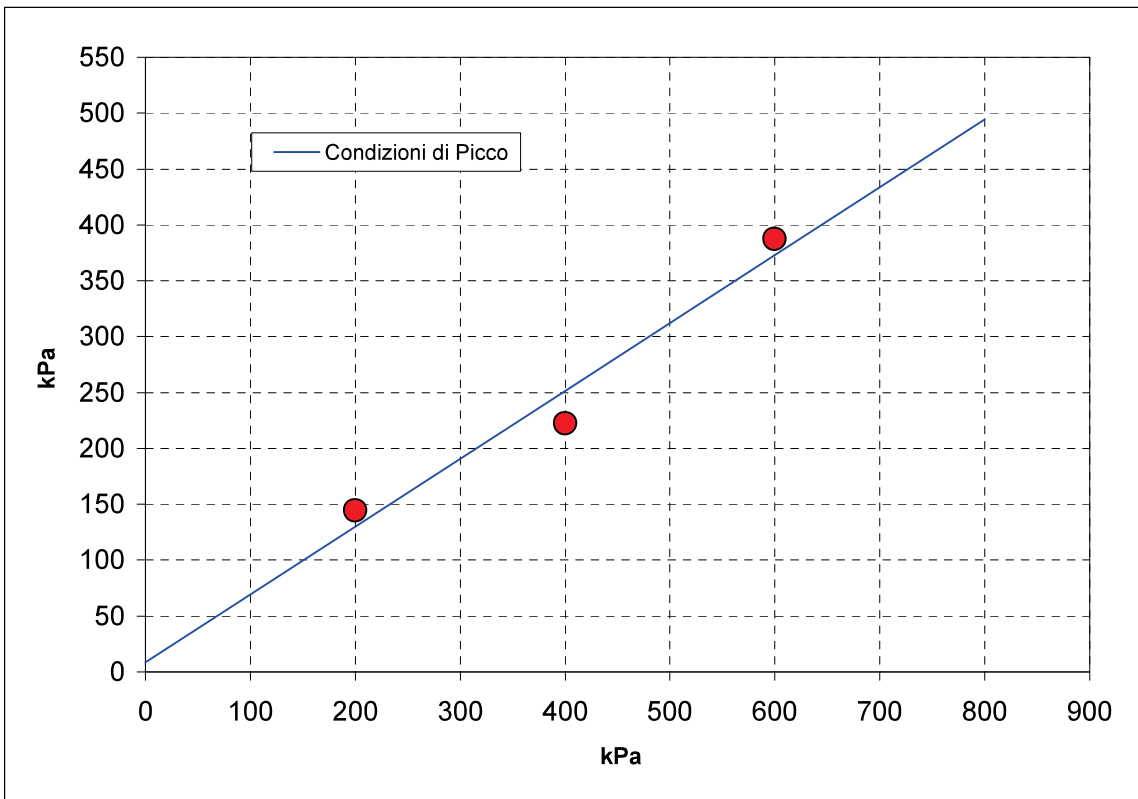
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PROVA DI TAGLIO DIRETTO (norma ASTM D 3080)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C1		
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021

Il presente elaborato non è parte del certificato di prova cui è allegato, è solo un'interpretazione soggettiva dei risultati di prova.

	PROVINO 1	PROVINO 2	PROVINO 3
Pressione verticale (kPa)	200	400	600
Tensione di taglio (kPa)	144.58	222.22	387.53
Condizioni di Picco	Coesione: 8.5 kPa Angolo di attrito: 31°		



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SCHEDA GENERALE DEL CAMPIONE

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**
 CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**
 CAMPIONE: **S1C2 m 6.00 - 6.50**
 COMMESSA: 22949FE/21
 VERBALE ACC.: 216/21
 DATA CONSEGNA: 14/05/2021

il campione è stato conservato in vasca umida termostatica

alto 6.00	P.P. kPa	T.V. kPa	LUNGHEZZA (cm): 52 GRADO DI QUALITA': AGI Q5 EC 7-3 Q1
	130	-	DESCRIZIONE: 0-14 rimaneggiato, 14-20 argilla debolmente limosa grigio scuro, 20-52 argilla sabbiosa debolmente limosa grigio scuro
	>600	-	W naturale (%) 20.2 γ naturale (Mg/m ³) 2.06 γ secco (Mg/m ³) 1.71 γ immerso (Mg/m ³) 1.08 porosità (%) 37 indice dei vuoti 0.59 grado di saturazione (%) 94 massa specifica (Mg/m ³) 2.713
	520	-	PROVE ESEGUITE Umidità Naturale SI Trassiale UU - Limiti Atterberg SI Trassiale CIU - Gran. Setacciatura SI Edometria - Gran. Sedimentazione SI Taglio Diretto SI Peso di Volume SI Espansione L.L. SI Peso Specifico SI Trassiale Cicl. + C.M. - Analisi Chimica - Colonna Risonante - Taglio Torsionale Cicl. -
6.50 basso			NOTE: -

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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UMIDITA' DI UNA TERRA**UNI EN ISO 17892-1****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C2 m 6.00 - 6.50****COMMESSA: 22949FE/21****DURATA PROVE:****21/05-05/06/2021****VERBALE ACC.: 216/21****DATA CONSEGNA:****14/05/2021****GEO - CERT. n°: 0****rev.00 del:****00/01/00**

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente sabbioso grigio scuro**

cod.bilancia 480 - cod. stufa 567

DETERMINAZIONE	1	2
TARA (g)	323.13	3.26
TERRA UMIDA (g)	566.32	131.36
TERRA ESSICATA* (g)	525.64	109.74
UMDITA' DETERMINATA (%)	20.1	20.3
UMDITA' CALCOLATA (%)	=	20.2

* materiale essiccato in stufa a 105 - 110 °C, fino a massa costante.

Io Sperimentatore:

dott. Roberto Bellanova

Il Direttore del Laboratorio terre:

dott. geol. Massimo Romagnoli

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MASSA VOLUMICA APPARENTE**UNI EN ISO 17892-2****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C2 m 6.00 - 6.50****COMMESSA: 22949FE/21****DURATA PROVE:****21/05-05/06/2021****VERBALE ACC.: 216/21****DATA CONSEGNA:****14/05/2021****GEO - CERT. n°: 0****rev.00 del:****00/01/00**

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente sabbioso grigio scuro**

cod.bilancia 480 - cod. calibro 708

DETERMINAZIONE	1	2
TARA (g)	42.69	42.69
ALTEZZA (cm)	2.01	2.01
DIAMETRO (cm)	5.99	5.99
MASSA LORDA (g)	158.57	159.64
MASSA VOLUMICA (Mg/m ³)	2.05	2.07
MEDIA (Mg/m³)	=	2.06

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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DETERMINAZIONE DEL PESO SPECIFICO CON PICNOMETRO**UNI EN ISO 17892-3****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C2 m 6.00 - 6.50**

COMMESSA: 22949FE/21 DURATA PROVE: 21/05-05/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente sabbioso grigio scuro**

cod.bilancia 480

determinazione picnometro n:	1 (pic. 001)	2 (pic. 002)
terra (g):	19.47	19.70
temperatura (°C):	23.0	23.0
picnometro + acqua (g):	145.62	149.68
picnometro + terra (g):	157.92	162.12
fattore K	0.9993	0.9993
Peso specifico determinato (Mg/m^3):	2.714	2.712

Peso specifico calcolato (Mg/m^3):	2.713
--	--------------

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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LIMITI DI ATTERBERG (norma ASTM D4318 metodo A)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli				
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)				
CAMPIONE:	S1C2	m 6.00 - 6.50			
COMMESSA:	22949FE/21	DURATA PROVE:	21/05-05/06/2021		
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021		
GEO - CERT. n°:	0	rev.00 del:	00/01/00		

il campione è stato conservato in vasca umida termostatica

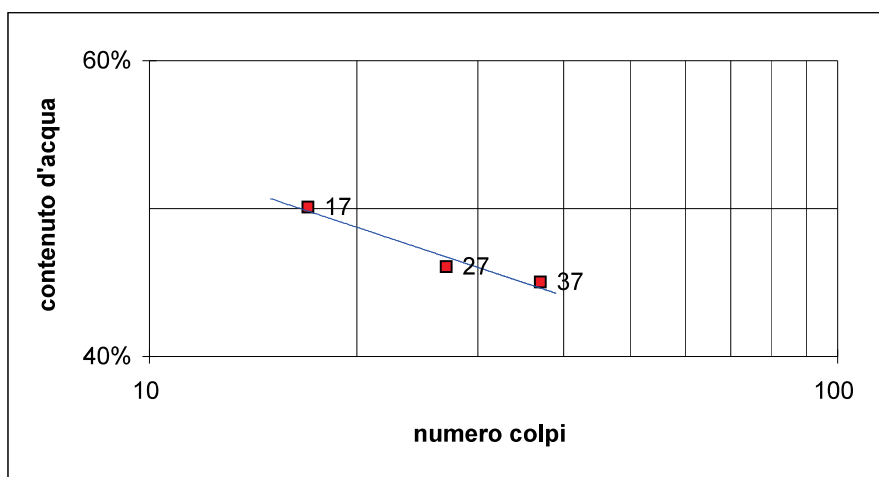
ASPETTO MACROSCOPICO DEL CAMPIONE:

Limo con argilla debolmente sabbioso grigio scuro

codice cucchiaino: 344; codice bilancia: 480; codice stufa: 419

	LIMITE LIQUIDO			LIMITE PLASTICO		UMIDITA'
	1	2	3	1	2	
impasto						
N° colpi	37	27	17			
massa umida+ tara (g)	24.51	24.50	24.72	15.01	14.88	566.32
massa secca+ tara (g)	17.90	17.79	17.54	12.79	12.70	525.64
acqua contenuta (g)	6.61	6.71	7.18	2.22	2.18	40.68
tara (g)	3.22	3.22	3.21	3.20	3.18	323.13
peso secco (g)	14.68	14.57	14.33	9.59	9.52	202.51
contenuto d'acqua	45.0%	46.1%	50.1%	23.1%	22.9%	20.1%

Umidità Naturale	Wn =	20%
Limite Liquido	LL =	47%
Limite Plastico	LP =	23%
Indice Plastico	IP =	24%



Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
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PROVA DI COMPRESSIONE AD ESPANSIONE LATERALE LIBERA norma ASTM D 2166-91

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C2	m 6.00 - 6.50	
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021
GEO - CERT. n°:		rev.0 del:	

Codici strumentazione: 419 - 536 - 537 - 929 - 708

il campione è stato conservato in vasca umida termostatica

NATURA DEL CAMPIONE:

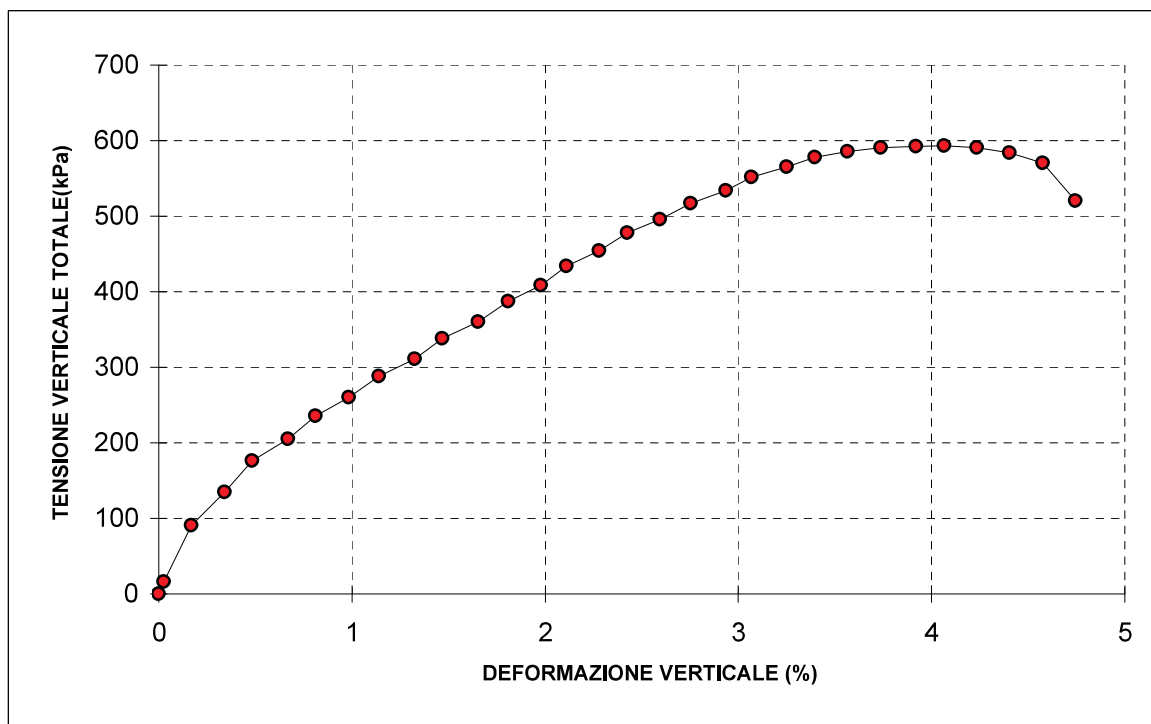
Limo con argilla debolmente sabbioso grigio scuro

Velocità della pressa:	0,76 mm/min
CARATTERISTICHE DEL PROVINO	
Dimensioni provino :	$h \times \phi = 76,2 \times 38,1 \text{ mm}$
Umidità naturale (%):	20.7
Massa volumica apparente umida (Mg/m^3):	2.12
Massa volumica apparente secca (Mg/m^3):	1.76
CONDIZIONI A ROTTURA*	
Tensione verticale totale (kPa):	593.23

* carico di rottura corrispondente allo sforzo massimo



def.vertic. (%)	tens.vertic. (kPa)
0.00	0.00
0.03	16.49
0.17	90.28
0.34	134.79
0.49	175.98
0.67	204.68
0.81	235.86
0.98	260.12
1.14	288.33
1.32	311.15
1.47	338.33
1.65	360.53
1.81	386.98
1.98	408.62
2.11	434.22
2.28	454.13
2.43	477.60
2.60	496.15
2.75	517.23
2.94	533.48
3.07	551.78
3.25	565.13
3.40	577.88
3.57	585.59
3.74	590.77
3.92	592.66
4.06	593.23
4.23	590.80
4.40	583.76
4.58	569.97
4.75	520.03

Il Direttore del Laboratorio terre:
dott. geol. Massimo RomagnoliLo Sperimentatore:
dott. Roberto Bellanova

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**
 CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**
 CAMPIONE: **S1C2 m 6.00 - 6.50**
 COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021
 VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021
 GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro 12; bilancia 480; trasduttori LVDT 540, 540, 543, 544; SG 539, 542.

Macchina: CONTROLS T206 Electronic/T207 Digital

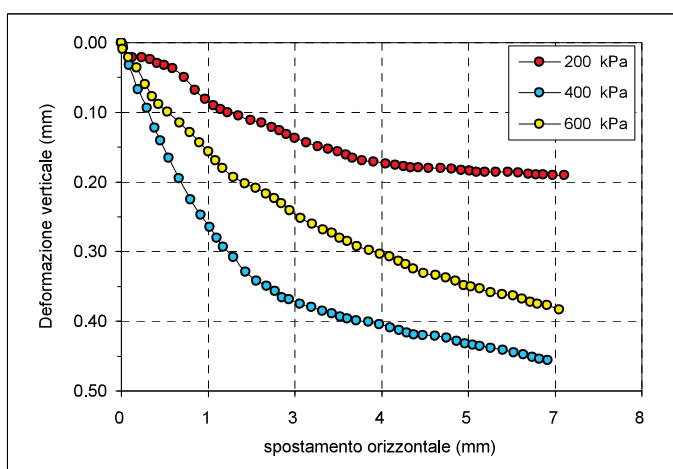
Prova: CONSOLIDATA DRENATA

Dimensioni provino: $\phi \times h = 60 \times 20$ mm

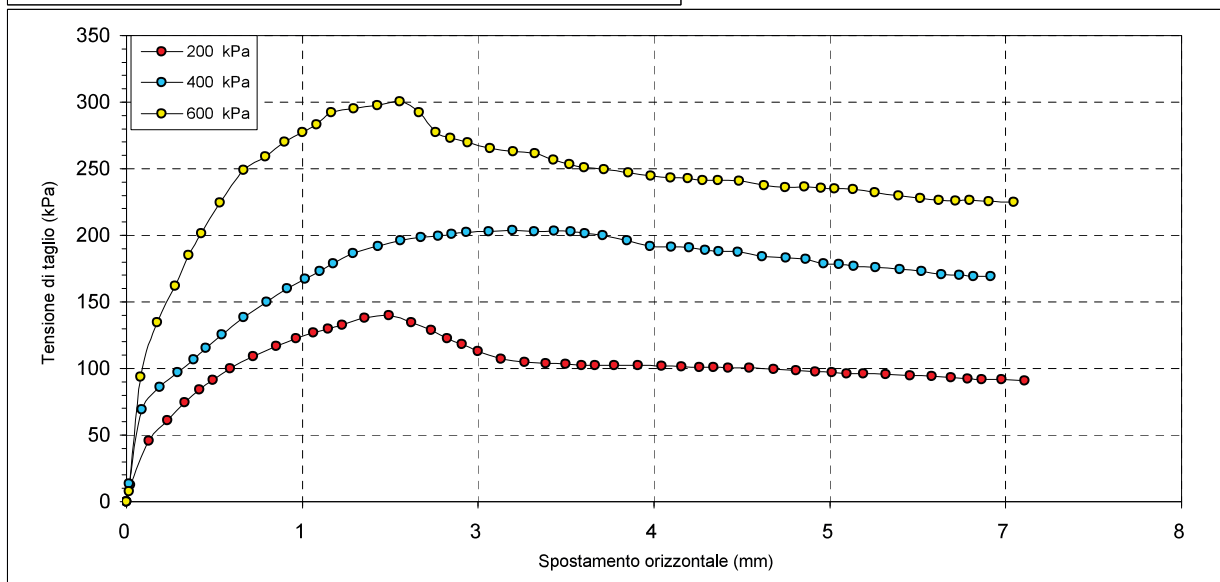
Velocità prova: 0,004 mm/min

NATURA DEL CAMPIONE:

Limo con argilla debolmente sabbioso grigio



	PROVINO 1	PROVINO 2	PROVINO 3
σ_v (kPa)	200	400	600
W ini (%)	20.1	20.3	20.7
γ ini (Mg/m ³)	2.01	2.01	2.02
γ_d ini (Mg/m ³)	1.67	1.67	1.68
S ini (%)	87	88	91
W fin (%)	21.6	19.9	18.7
γ fin (Mg/m ³)	2.08	2.11	2.13
γ_d fin (Mg/m ³)	1.71	1.76	1.80
S fin (%)	100	100	100
G (Mg/m ³)	2.713		
H fine cons (mm)	19.504	19.470	19.264



Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C2 m 6.00 - 6.50		
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/22021
GEO - CERT. n°:	rev.00 del:		

PROVINO 1 200 kPa			PROVINO 2 400 kPa			PROVINO 3 600 kPa		
Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.028	12.379	0.007	0.019	13.440	0.003	0.019	7.781	0.009
0.175	45.624	0.021	0.121	69.321	0.032	0.109	93.724	0.021
0.321	61.186	0.021	0.262	86.297	0.067	0.240	134.751	0.036
0.455	74.626	0.024	0.402	97.261	0.094	0.378	161.984	0.050
0.571	84.175	0.029	0.525	106.810	0.122	0.486	184.973	0.077
0.675	91.249	0.032	0.620	115.299	0.141	0.585	201.596	0.088
0.811	100.091	0.037	0.747	125.555	0.165	0.729	224.585	0.099
0.991	109.286	0.050	0.916	138.641	0.195	0.918	248.988	0.115
1.170	116.713	0.068	1.097	149.959	0.225	1.087	259.245	0.129
1.324	122.372	0.081	1.257	159.862	0.247	1.236	270.209	0.143
1.461	126.970	0.090	1.397	167.289	0.265	1.377	277.636	0.156
1.574	129.799	0.096	1.513	173.302	0.280	1.488	283.295	0.169
1.688	132.629	0.100	1.617	178.607	0.293	1.602	292.137	0.180
1.859	137.934	0.105	1.772	186.388	0.308	1.777	294.966	0.193
2.051	140.056	0.111	1.965	192.047	0.329	1.961	297.796	0.202
2.225	134.751	0.115	2.143	195.937	0.342	2.134	300.272	0.209
2.380	128.738	0.121	2.302	198.766	0.349	2.289	292.137	0.217
2.509	122.726	0.126	2.436	199.474	0.357	2.419	277.283	0.223
2.621	118.128	0.131	2.541	200.888	0.366	2.532	273.039	0.231
2.748	113.177	0.137	2.657	202.303	0.369	2.666	269.502	0.241
2.929	107.164	0.143	2.830	202.657	0.375	2.841	265.258	0.252
3.113	105.042	0.149	3.015	204.072	0.380	3.024	263.136	0.260
3.279	103.981	0.153	3.189	203.010	0.385	3.191	261.721	0.268
3.431	103.274	0.156	3.340	203.364	0.389	3.336	256.769	0.273
3.556	102.566	0.161	3.473	203.010	0.393	3.460	253.233	0.280
3.664	102.213	0.165	3.580	201.596	0.396	3.577	251.111	0.285
3.814	102.213	0.169	3.721	200.181	0.399	3.731	249.342	0.292
3.999	102.213	0.171	3.911	196.291	0.401	3.923	247.220	0.298
4.185	101.859	0.174	4.092	192.047	0.404	4.100	244.744	0.303
4.340	101.505	0.176	4.257	191.339	0.409	4.254	243.330	0.307
4.477	101.152	0.177	4.400	190.632	0.413	4.389	242.976	0.313
4.588	100.798	0.179	4.521	188.863	0.416	4.505	241.208	0.318
4.705	100.444	0.179	4.630	188.156	0.419	4.623	241.208	0.324
4.868	100.444	0.180	4.780	187.449	0.420	4.789	240.854	0.331
5.057	99.383	0.180	4.969	183.912	0.421	4.981	237.317	0.334
5.234	98.322	0.181	5.153	183.205	0.424	5.146	236.256	0.337
5.385	97.615	0.183	5.310	182.144	0.428	5.299	236.610	0.342
5.516	96.907	0.184	5.447	178.960	0.432	5.427	235.549	0.348
5.627	96.200	0.186	5.567	178.253	0.434	5.536	235.195	0.350
5.761	96.200	0.186	5.682	176.838	0.436	5.678	234.488	0.353
5.936	95.493	0.186	5.855	175.777	0.438	5.851	232.012	0.358
6.126	94.785	0.186	6.042	174.363	0.441	6.035	229.890	0.361
6.292	94.078	0.187	6.214	172.948	0.445	6.202	227.768	0.363
6.446	93.371	0.188	6.371	170.826	0.448	6.349	226.353	0.368
6.574	92.310	0.189	6.508	170.119	0.451	6.478	225.999	0.372
6.686	91.956	0.189	6.620	169.058	0.454	6.589	226.353	0.375
6.838	91.602	0.190	6.752	169.058	0.456	6.741	225.292	0.377
7.022	90.895	0.190				6.937	224.938	0.383

Il Direttore del Laboratorio terre:

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C2	m 6.00 - 6.50	
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021
GEO - CERT. n°:		rev.00 del:	

Consolidazione Provino 1

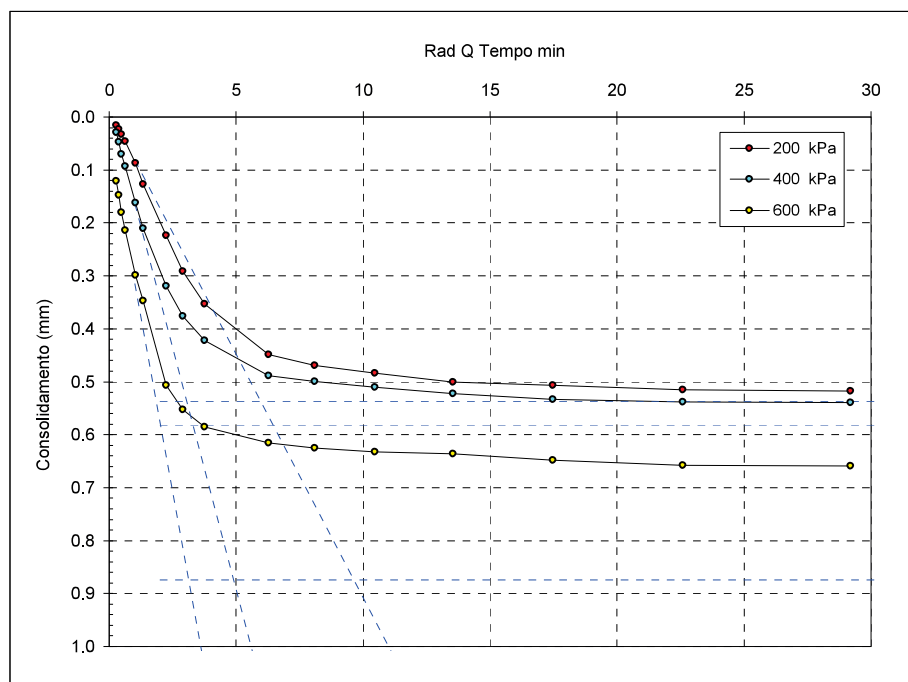
200 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.016
0.14	0.023
0.23	0.033
0.39	0.046
1.08	0.087
1.81	0.127
5.05	0.224
8.44	0.292
14.09	0.353
39.29	0.449
65.61	0.469
109.58	0.484
182.98	0.500
305.58	0.507
510.33	0.515
852.27	0.517

Consolidazione Provino 2

400 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.030
0.14	0.047
0.23	0.070
0.39	0.093
1.08	0.162
1.81	0.211
5.05	0.319
8.44	0.377
14.09	0.422
39.29	0.488
65.61	0.499
109.58	0.510
182.98	0.522
305.58	0.534
510.33	0.538
852.27	0.539

Consolidazione Provino 3

600 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.120
0.14	0.147
0.23	0.181
0.39	0.214
1.08	0.299
1.81	0.347
5.05	0.506
8.44	0.553
14.09	0.586
39.29	0.616
65.61	0.625
109.58	0.632
182.98	0.636
305.58	0.649
510.33	0.658
852.27	0.659



t_{100} min
(Bishop ed Henkel)

Provino 1

35.6

Provino 2

10.9

Provino 3

9.7

Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

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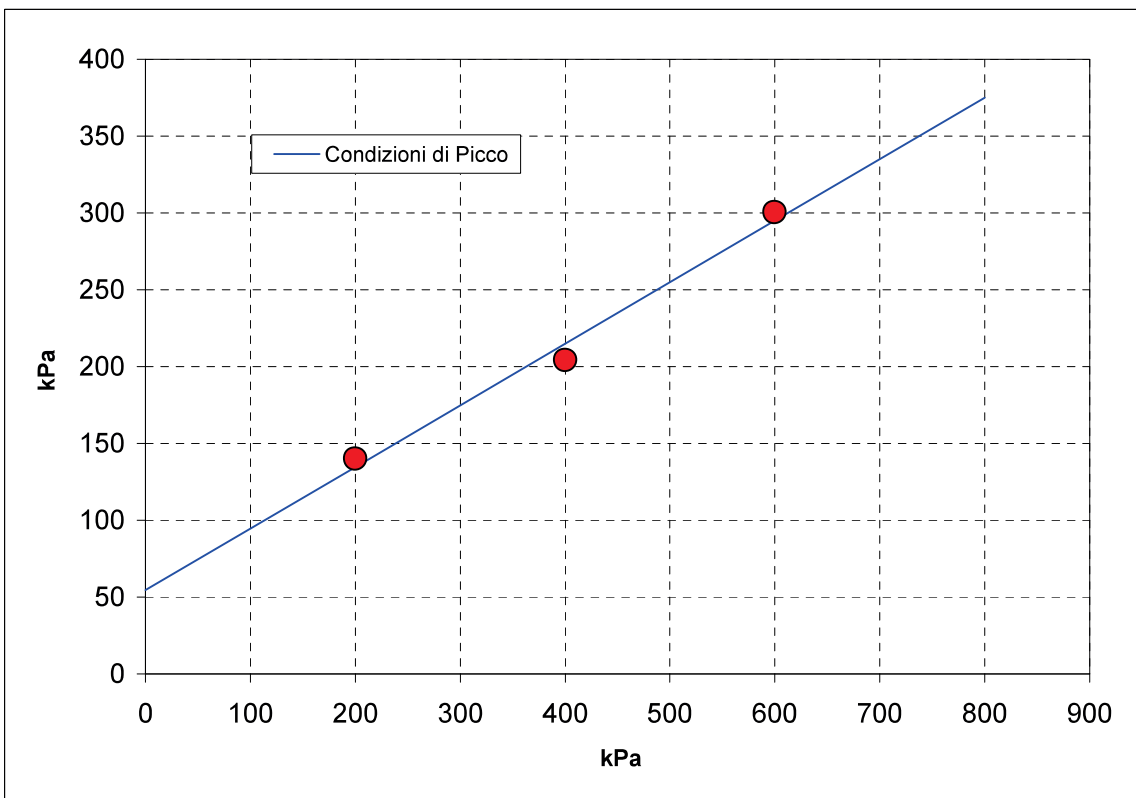
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PROVA DI TAGLIO DIRETTO (norma ASTM D 3080)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C2		
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021

Il presente elaborato non è parte del certificato di prova cui è allegato, è solo un'interpretazione soggettiva dei risultati di prova.

	PROVINO 1	PROVINO 2	PROVINO 3
Pressione verticale (kPa)	200	400	600
Tensione di taglio (kPa)	140.06	204.07	300.27
Condizioni di Picco	Coesione: 54.58 kPa		Angolo di attrito: 22°



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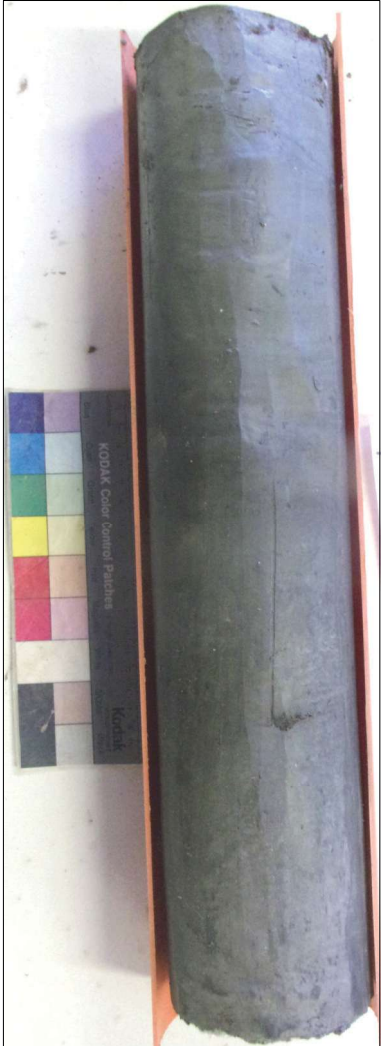
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SCHEDA GENERALE DEL CAMPIONE

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**
 CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**
 CAMPIONE: **S1C3 m 10.50 - 11.00**
 COMMESSA: 22949FE/21
 VERBALE ACC.: 216/21
 DATA CONSEGNA: 14/05/21

il campione è stato conservato in vasca umida termostatica

alto 10.50	P.P. kPa	T.V. kPa	LUNGHEZZA (cm): 43 GRADO DI QUALITA': AGI Q5 EC 7-3 Q1
	500	-	DESCRIZIONE: limo con argilla grigio
	>600	-	W naturale (%) 21.9 γ naturale (Mg/m ³) 2.04 γ secco (Mg/m ³) 1.68 γ immerso (Mg/m ³) 1.05 porosità (%) 37 indice dei vuoti 0.60 grado di saturazione (%) 98 massa specifica (Mg/m ³) 2.674
			PROVE ESEGUITE Umidità Naturale SI Trassiale UU - Limiti Atterberg SI Trassiale CIU SI Gran. Setacciatura SI Edometria SI Gran. Sedimentazione SI Taglio Diretto SI Peso di Volume SI Espansione L.L. - Peso Specifico SI Trassiale Cicl. + C.M. - Analisi Chimica - Colonna Risonante - Taglio Torsionale Cicl. -
			NOTE: -
11.00 basso			

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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UMIDITA' DI UNA TERRA**UNI EN ISO 17892-1****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C3 m 10.50 - 11.00****COMMESSA: 22949FE/21****DURATA PROVE:****25/05-15/06/2021****VERBALE ACC.: 216/21****DATA CONSEGNA:****14/05/21****GEO - CERT. n°: 0****rev.00 del:****00/01/00**

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla grigio**

cod.bilancia 480 - cod. stufa 567

DETERMINAZIONE**1****2****TARA (g)****310.81****3.23****TERRA UMIDA (g)****658.81****114.26****TERRA ESSICATA* (g)****597.57****93.9****UMDITA' DETERMINATA (%)****21.4****22.5****UMDITA' CALCOLATA (%)****=****21.9**

* materiale essiccato in stufa a 105 - 110 °C, fino a massa costante.

Io Sperimentatore:

dott. Roberto Bellanova

Il Direttore del Laboratorio terre:

dott. geol. Massimo Romagnoli

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Laboratorio Geotecnico autorizzato con Dec. n. 486 del 20/09/2019, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

MASSA VOLUMICA APPARENTE**UNI EN ISO 17892-2****COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli****CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)****CAMPIONE: S1C3 m 10.50 - 11.00****COMMESSA: 22949FE/21****DURATA PROVE:****25/05-15/06/2021****VERBALE ACC.: 216/21****DATA CONSEGNA:****14/05/21****GEO - CERT. n°: 0****rev.00 del:****00/01/00**

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla grigio**

cod.bilancia 480 - cod. calibro 708

DETERMINAZIONE	1	2
TARA (g)	104.75	104.34
ALTEZZA (cm)	7.63	7.63
DIAMETRO (cm)	3.77	3.77
MASSA LORDA (g)	277.87	279.12
MASSA VOLUMICA (Mg/m ³)	2.03	2.05
MEDIA (Mg/m³)	=	2.04

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Massimo Romagnoli

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DETERMINAZIONE DEL PESO SPECIFICO CON PICNOMETRO**UNI EN ISO 17892-3**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/21

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla grigio**

cod.bilancia 480

determinazione picnometro n:	1 (pic. 001)	2 (pic. 002)
terra (g):	19.86	20.01
temperatura (°C):	21.0	21.5
picnometro + acqua (g):	144.67	145.66
picnometro + terra (g):	157.12	158.17
fattore K	0.9998	0.9998
Peso specifico determinato (Mg/m ³):	2.680	2.667

Peso specifico calcolato (Mg/m ³):	2.674
--	--------------

Io Sperimentatore:
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**SOCOTEC****LIMITI DI ATTERBERG (norma ASTM D4318 metodo A)**

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli				
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)				
CAMPIONE:	S1C3	m 10.50 - 11.00			
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021		
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/21		
GEO - CERT. n°:	0	rev.00 del:	00/01/00		

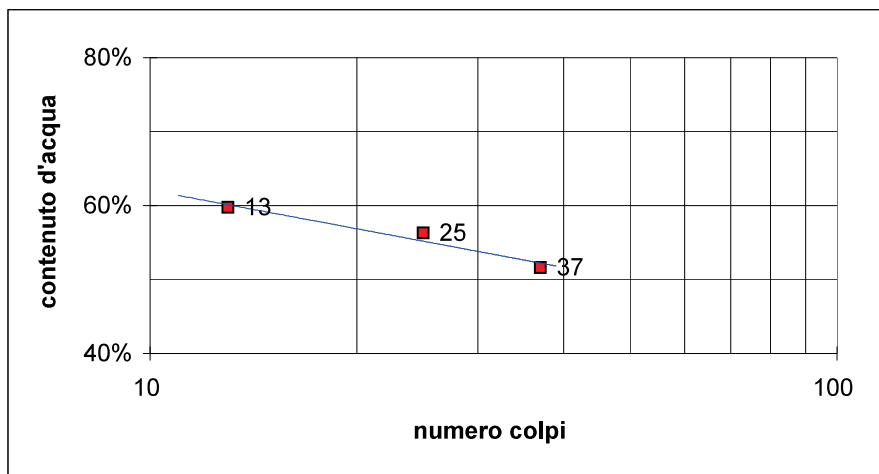
il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla grigio**

codice cucchiaino: 344; codice bilancia: 480; codice stufa: 419

	LIMITE LIQUIDO			LIMITE PLASTICO		UMIDITA'
	1	2	3	1	2	
impasto						
N° colpi	37	25	13			
massa umida+ tara (g)	21.58	21.64	21.42	13.76	13.55	658.81
massa secca+ tara (g)	15.34	15.01	14.63	11.25	11.09	597.57
acqua contenuta (g)	6.24	6.63	6.79	2.51	2.46	61.24
tara (g)	3.24	3.22	3.26	3.29	3.24	310.81
peso secco (g)	12.10	11.79	11.37	7.96	7.85	286.76
contenuto d'acqua	51.6%	56.2%	59.7%	31.5%	31.3%	21.4%

Umidità Naturale	Wn =	21%
Limite Liquido	LL =	55%
Limite Plastico	LP =	31%
Indice Plastico	IP =	24%

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
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ANALISI GRANULOMETRICA

(per setacciatura e sedimentazione) norma A.S.T.M. D 422

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/21

GEO - CERT. n°: 0 rev.00 del: 00/01/00

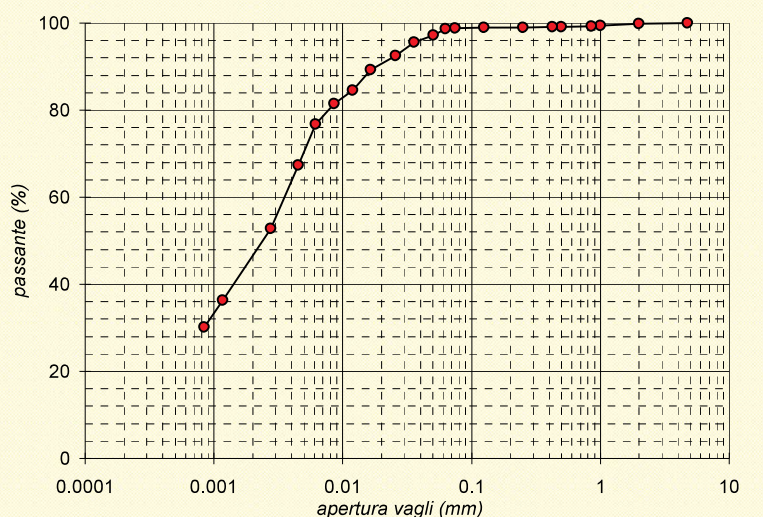
Il campione è stato conservato in vasca umida termostatica Codici strumentazione: bilancia 480, vasca 557, stufa 419, densimetro 151H 348, termometro 588, mescolatore 432.

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla grigio**

codici		vaglio (mm)	trattenuto (g)	trattenuto (%)	cum. tratt. (%)	passante (%)
571	setaccio	4.75	0.00	0.00	0.00	100.00
572	setaccio	2	0.56	0.20	0.20	99.80
573	setaccio	1	1.10	0.38	0.58	99.42
290	setaccio	0.85	0.29	0.10	0.68	99.32
291	setaccio	0.5	0.46	0.16	0.84	99.16
292	setaccio	0.425	0.12	0.04	0.88	99.12
293	setaccio	0.250	0.29	0.10	0.98	99.02
282	setaccio	0.125	0.33	0.12	1.10	98.90
283	setaccio	0.075	0.32	0.11	1.21	98.79
286	setaccio	0.063	0.15	0.05	1.26	98.74
-	calcolato	0.0505	4.51	1.57	2.84	97.16
-	calcolato	0.0360	4.51	1.57	4.41	95.59
-	calcolato	0.0258	9.02	3.15	7.55	92.45
-	calcolato	0.0166	9.02	3.15	10.70	89.30
-	calcolato	0.0119	13.53	4.72	15.42	84.58
-	calcolato	0.0086	9.02	3.15	18.56	81.44
-	calcolato	0.0062	13.53	4.72	23.28	76.72
-	calcolato	0.0045	27.06	9.44	32.71	67.29
-	calcolato	0.0028	41.37	14.43	47.14	52.86
-	calcolato	0.0012	47.23	16.47	63.61	36.39
-	calcolato	0.0008	18.03	6.29	69.90	30.10
-	calcolato	fondo	86.32	30.10	100.00	0.00
TOTALE			286.76		ϕ max (mm) = 2.3	

Passante effettivo setaccio 0.063 (g) in areometro		50.01
t° C	Tempo (s)	Letture
25	30	33.5
25	60	33.0
25	120	32.0
25	300	31.0
25	600	29.5
25	1200	28.5
25	2400	27.0
25	4800	24.0
24.5	14400	19.5
26	86400	14.0
26	172800	12.0
Rapporti granulometrici		
	USCS	UNI
GHIAIA	> 4,75 mm	> 2,00 mm
	0.0%	0.2%
SABBIA	> 0,075 mm	> 0,063 mm
	1.2%	1.1%
LIMO	> 2 μ	> 2 μ
	52.1%	52.0%
ARGILLA	< 2 μ	< 2 μ
	46.7%	46.7%

Soluzione disperdente preparata al momento

Io Sperimentatore:
dott. Roberto BellanoveIl Direttore del Laboratorio
dott. geol. Massimo Romagnol

FERRARA DEPARTMENT

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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21

DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21

DATA CONSEGNA: 14/05/21

GEO - CERT. n°: rev.00 del:

edometro n: Ed 15

bilancia cod. 480 - calibro cod. 708 - trasduttore cod. 902

NATURA DEL CAMPIONE:

Limo con argilla grigio

Dp	DH	epsilon	e	e (t100)	av	mv	M
(kPa)	(mm)	(%)			(cm ² /daN)	(cm ² /daN)	(MPa)
12.3	0.003	0.02	0.584	0.584			
24.5	0.014	0.07	0.583	0.583	0.007	0.004	22.50
49.1	0.052	0.26	0.580	0.580	0.012	0.008	12.87
98.1	0.095	0.48	0.577	0.577	0.007	0.004	22.76
196.2	0.180	0.90	0.570	0.571	0.007	0.004	23.03
392.4	0.406	2.03	0.552	0.552	0.009	0.006	17.41
784.8	0.760	3.80	0.524	0.526	0.007	0.005	22.14
1569.6	1.159	5.80	0.493	0.495	0.004	0.003	39.37
392.4	0.775	3.87	0.523	0.522			
98.1	0.313	1.56	0.560	0.558			

Dati provino

Altezza provino (mm)

Umidità (%):

Massa volumica apparente (Mg/m³):Massa volumica apparente secca (Mg/m³):

Indice dei vuoti:

Grado di Saturazione (%):

Massa volumica reale (Mg/m³)

Iniziale

20.000

21.4

2.05

1.69

0.58

98

2.67

Finale

19.687

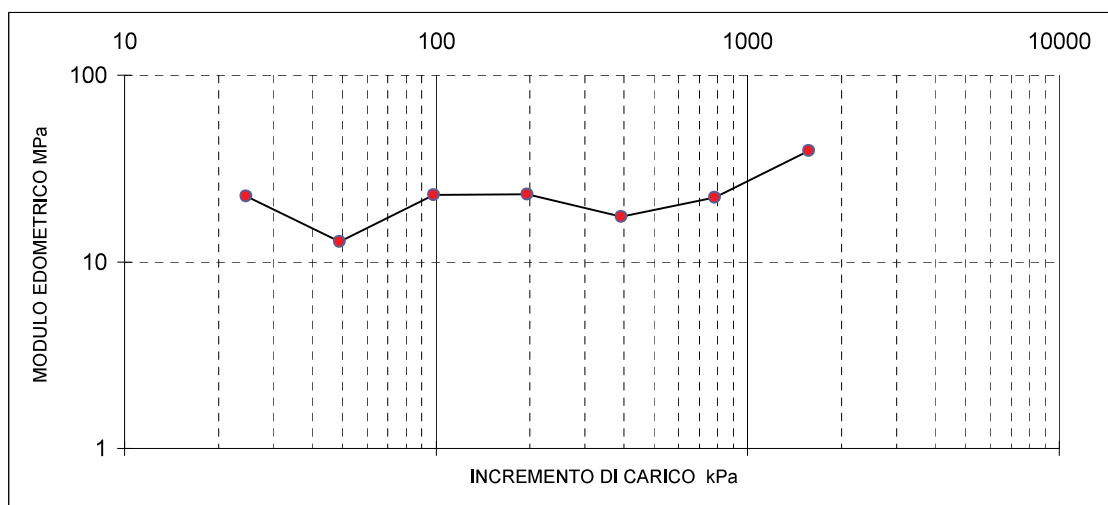
20.9

2.07

1.71

0.56

100

Il Direttore del Laboratorio terre:
dott. Massimo RomagnoliIo Sperimentatore:
dott. Roberto Bellanova

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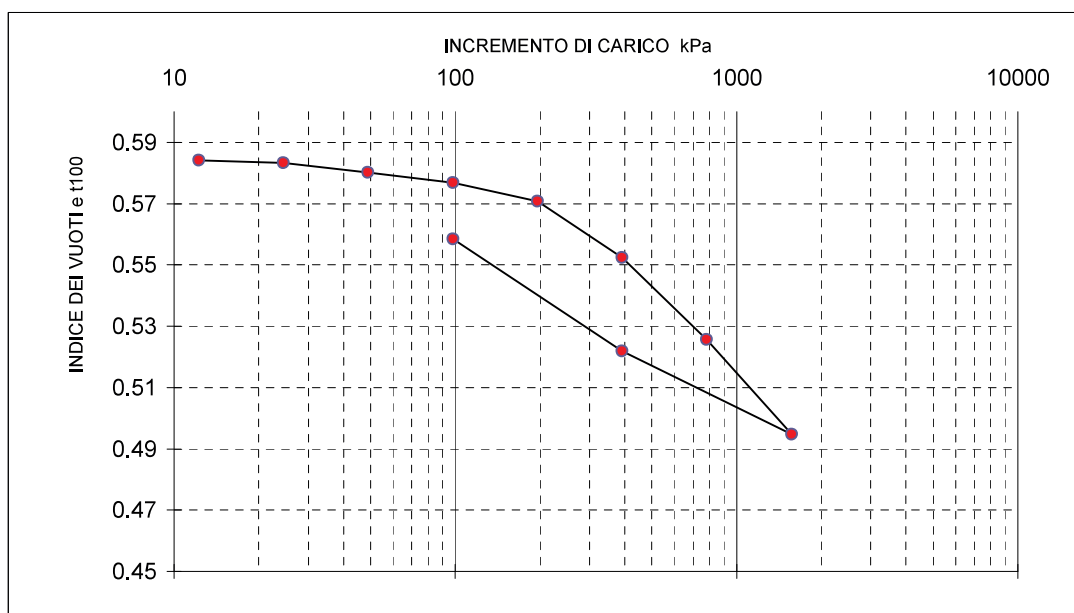
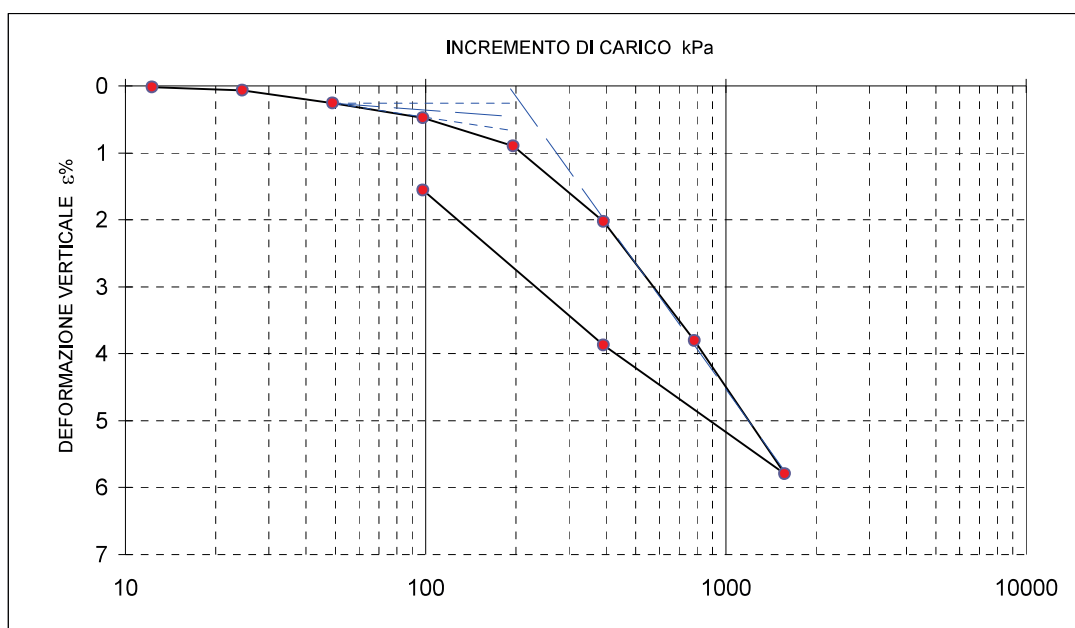
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rev.00 del:

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tempo (minuti)	cedimenti (mm) agli incrementi di carico (kPa)					
	12.3	24.5	49.1	98.1	196.2	392.4
0.08	0.003	0.011	0.045	0.074	0.126	0.236
0.14	0.003	0.012	0.047	0.077	0.132	0.245
0.23	0.003	0.014	0.049	0.081	0.139	0.252
0.39	0.003	0.014	0.051	0.085	0.144	0.261
1.08			0.052	0.089	0.155	0.280
1.81			0.052	0.090	0.158	0.290
5.05			0.052	0.093	0.166	0.317
8.44			0.052	0.095	0.172	0.331
14.09			0.052	0.095	0.175	0.348
39.29					0.177	0.379
65.61					0.177	0.393
109.58					0.180	0.399
182.98					0.180	0.404
305.58						0.404
510.33						0.405
852.27						0.405
1423.30						0.406

tempo (minuti)	cedimenti (mm) agli incrementi di carico (kPa)					
	784.8	1569.6	392.4	98.1		
0.08	0.470	0.827	1.116	0.743		
0.14	0.479	0.835	1.109	0.735		
0.23	0.490	0.846	1.098	0.725		
0.39	0.499	0.857	1.084	0.718		
1.08	0.521	0.883	1.057	0.691		
1.81	0.537	0.903	1.041	0.679		
5.05	0.574	0.952	0.989	0.637		
8.44	0.602	0.985	0.957	0.610		
14.09	0.634	1.025	0.922	0.577		
39.29	0.696	1.097	0.842	0.489		
65.61	0.722	1.122	0.811	0.437		
109.58	0.730	1.131	0.791	0.391		
182.98	0.736	1.137	0.782	0.352		
305.58	0.747	1.147	0.778	0.330		
510.33	0.754	1.150	0.775	0.320		
852.27	0.756	1.155		0.316		
1423.30	0.760	1.159		0.313		

Il Direttore del Laboratorio terre:
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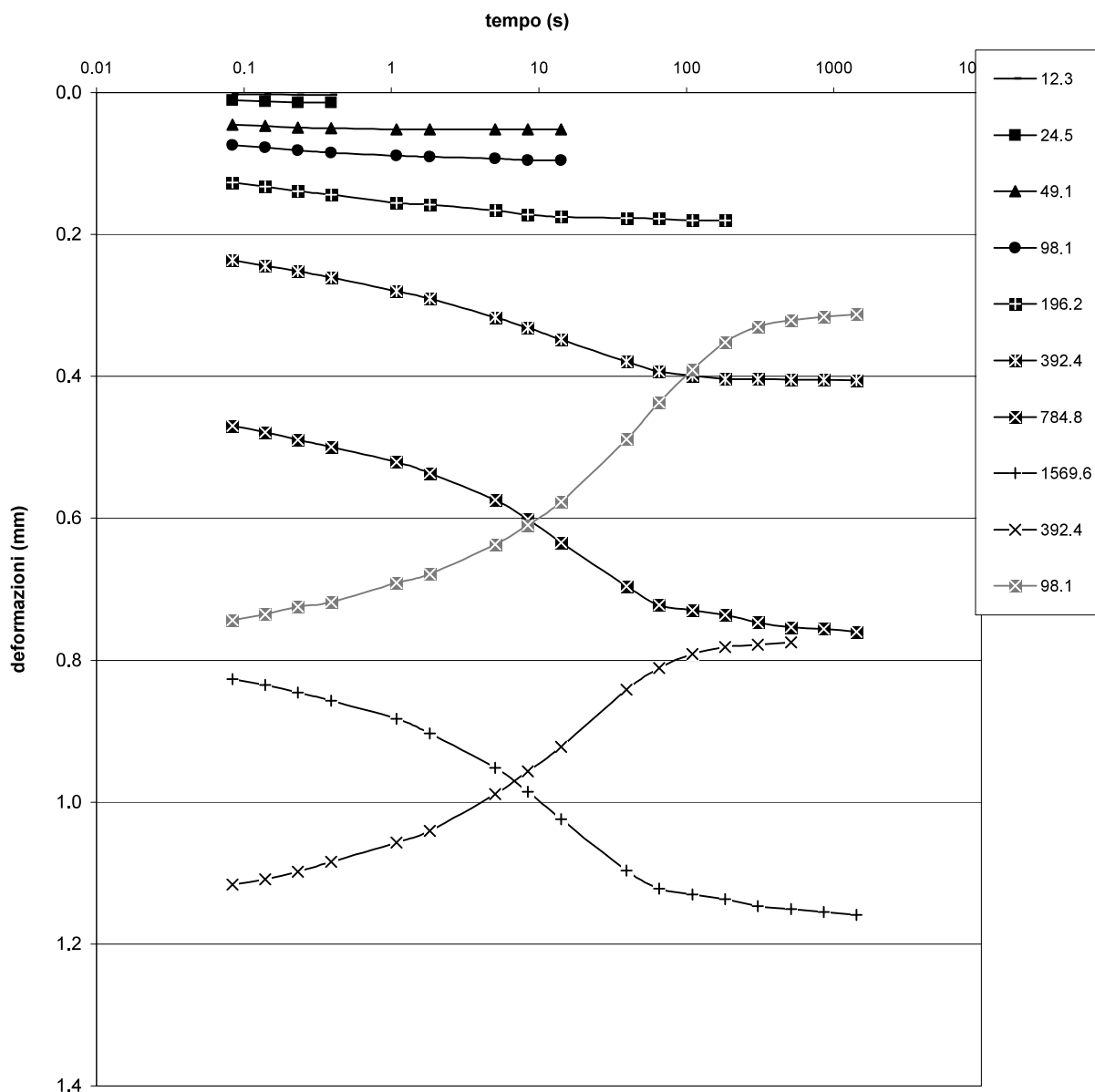
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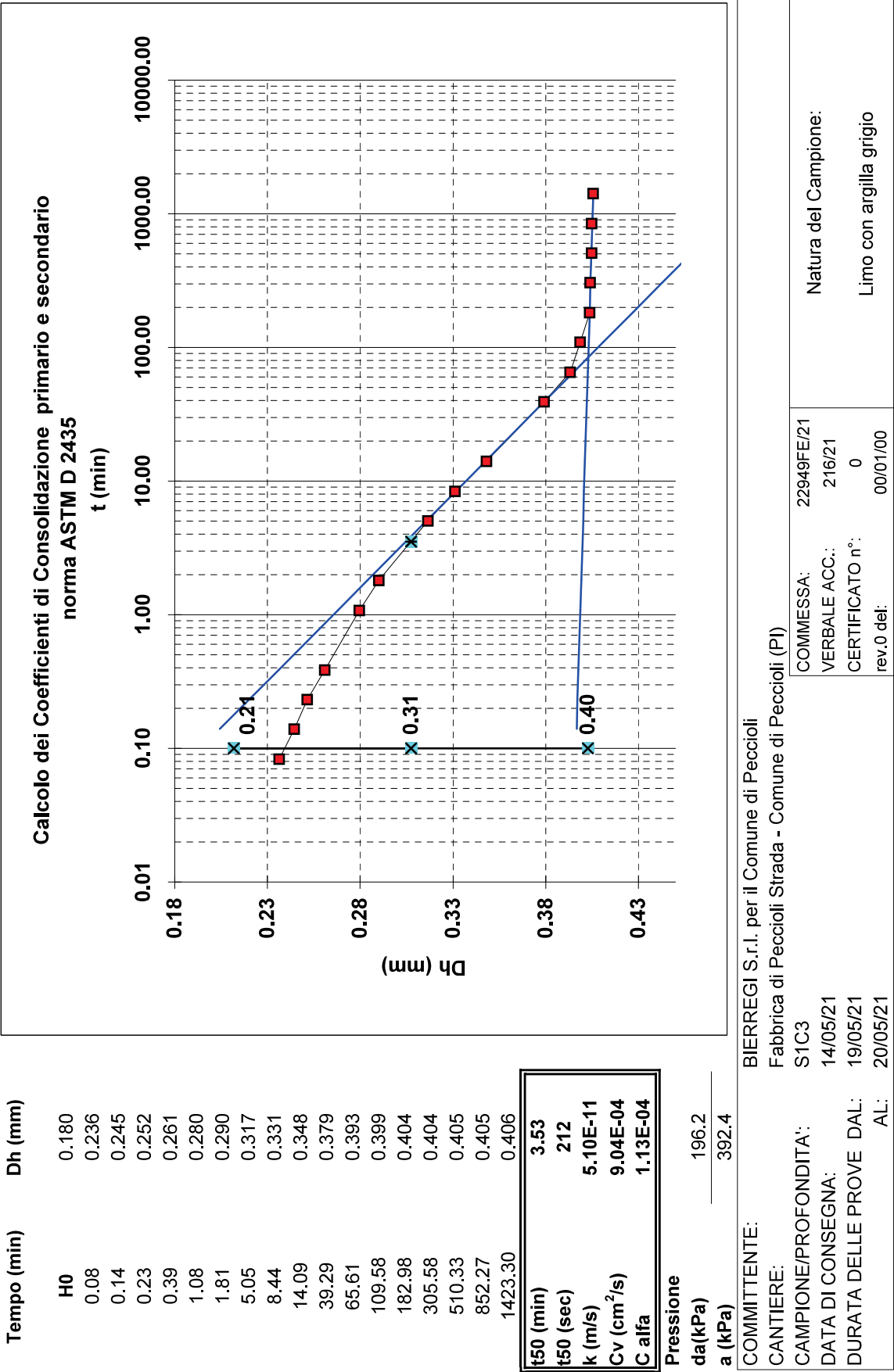
PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE:** Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE:** S1C3 m 10.50 - 11.00**COMMESSA:** 22949FE/21**DURATA PROVE:** 25/05-15/06/2021**VERBALE ACC.:** 216/21**DATA CONSEGNA:** 14/05/21**GEO - CERT. n°:** rev.00 del:Il Direttore del Laboratorio terre:
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dott. Roberto Bellanova

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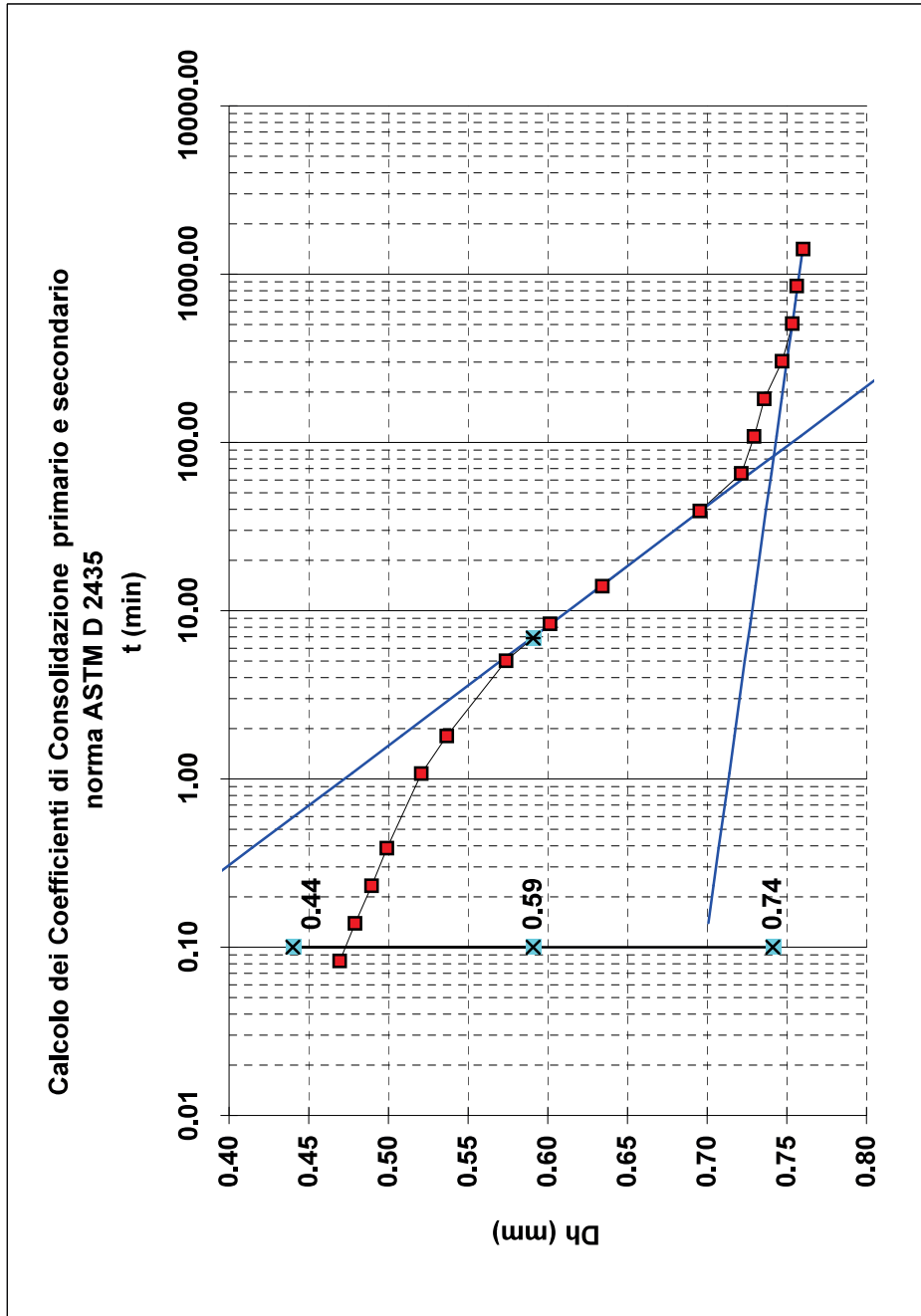
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Tempo (min)

H0

0.406
0.08
0.14
0.23
0.39
1.08
1.81
5.05
8.44
14.09
39.29
65.61
109.58
182.98
305.58
510.33
852.27
1423.30

ts50 (min)	6.88
ts50 (sec)	413
k (m/s)	1.99E-11
Cv (cm ² /s)	4.50E-04
C alfa	7.56E-04

Pressione

da(kPa)

a (kPa)

392.4

784.8

COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli

CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)

CAMPIONE/PROFONDITA': S1C3

DATA DI CONSEGNA: 14/05/21

DURATA DELLE PROVE DAL: 20/05/21

AL: 21/05/21

COMMESSA: 22949FE/21

VERBALE ACC.: 216/21

CERTIFICATO n°: 0

rev.0 del: 00/01/00

Natura del Campione:

Limo con argilla grigio

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Io Sperimentatore:
dott. Roberto Bellanova

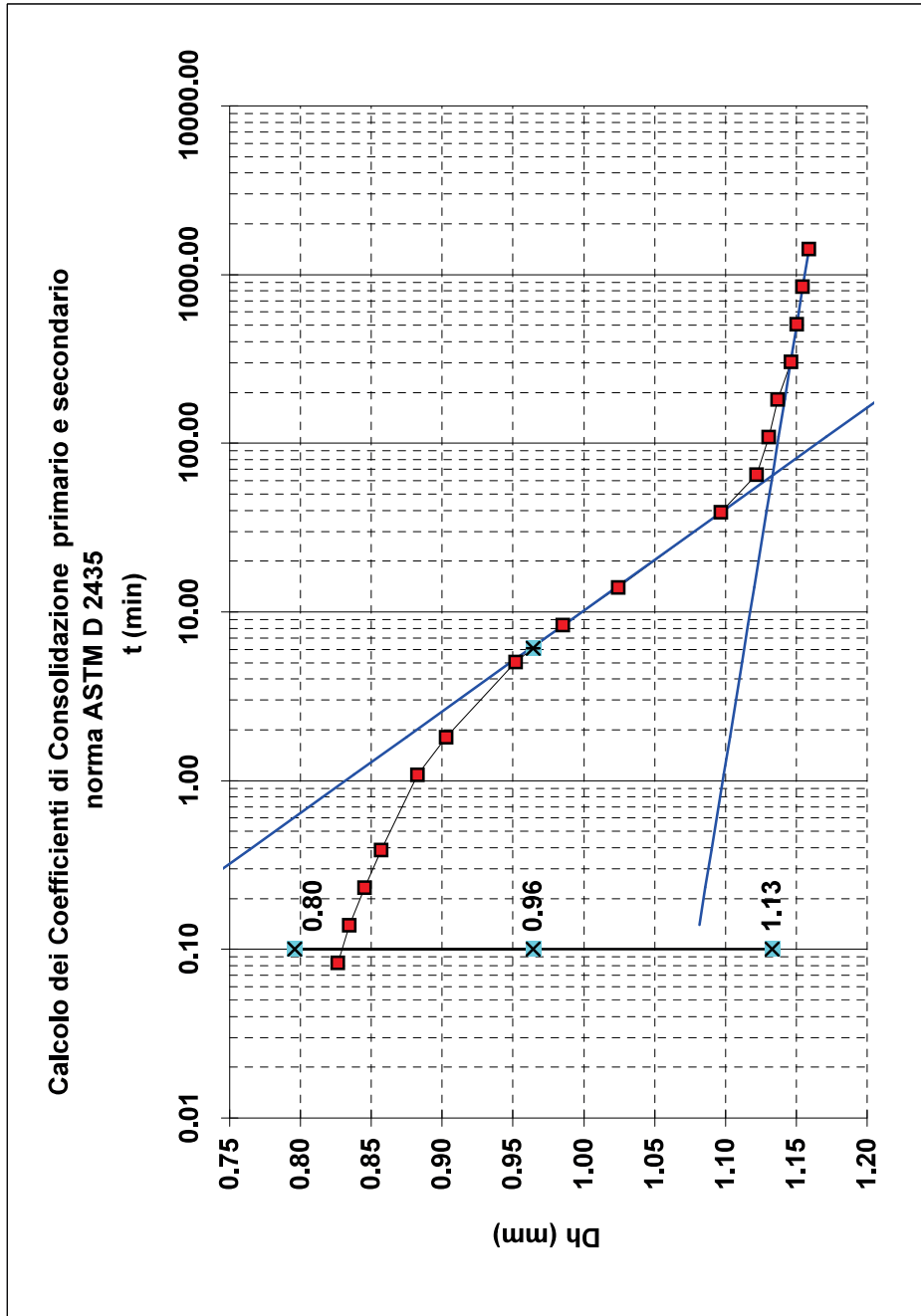
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Tempo (min) Dh (mm)

H0	0.760
0.08	0.827
0.14	0.835
0.23	0.846
0.39	0.857
1.08	0.883
1.81	0.903
5.05	0.952
8.44	0.985
14.09	1.025
39.29	1.097
65.61	1.122
109.58	1.131
182.98	1.137
305.58	1.147
510.33	1.150
852.27	1.155
1423.30	1.159

ts50 (min)	6.11
ts50 (sec)	366
k (m/s)	1.21E-11
Cv (cm ² /s)	4.88E-04
C alfa	1.00E-03

Pressione

da(kPa)	784.8
a (kPa)	1569.6

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)
CAMPIONE/PROFONDITA':	S1C3
DATA DI CONSEGNA:	14/05/21
DURATA DELLE PROVE DAL:	21/05/21
AL:	22/05/21
COMMESSA:	22949FE/21
VERBALE ACC.:	216/21
CERTIFICATO n°:	0
rev.0 del:	00/01/00
Natura del Campione:	Limo con argilla grigio

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Io Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT**Via Annibale Zucchini, 69 – 44122 Ferrara (FE)****Tel.: +39 0532 56771 - Fax.: +39 0532 56119**

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro 12; bilancia 480; trasduttore LVDT 469; celle di carico 573, 470, 471; manometri 940, 691; celle 473, 474, 475; pressa 476.

Macchina: CONTROLS Triax 50 Digital
 Prova: CONSOLIDATA NON DRENATA (CU)
 Dimensioni provini: $\phi \times h = 36,80 \times 76,20$ mm
 Velocità prova: 0.01 mm/min

NATURA DEL CAMPIONE: **Limo con argilla grigio**Peso specifico (Mg/m^3): 2.674

	PROVINO 1	PROVINO 2	PROVINO 3
umidità iniziale (%)	16.5	16.2	16.3
massa volumica umida iniziale (Mg/m^3)	2.03	2.05	1.97
massa volumica secca iniziale (Mg/m^3)	1.74	1.77	1.69
indice dei vuoti iniziale	0.53	0.51	0.58
grado di saturazione iniziale (%)	83	84	75
umidità finale (%)	18.6	17.7	18.0
massa volumica umida fine cons. (Mg/m^3)	2.12	2.14	2.13
massa volumica secca fine cons. (Mg/m^3)	1.79	1.81	1.80
indice dei vuoti fine cons.	0.50	0.47	0.48
grado di saturazione fine cons. (%)	100	100	100
pressione in cella (kPa)	600	800	1000
contropressione (kPa)	400	400	400
Dimensioni fine consolidazione			
Hc (cm)	7.594	7.585	7.489
Ac (cm^2)	11.067	11.029	11.151
Skempton B	0.96	0.98	0.96
Skempton A	0.3121	0.2890	0.3218
t100 min (Bishop & Henkel)	452	397	206

Il Direttore del Laboratorio terre:
 dott. Massimo Romagnoli

Lo Sperimentatore:
 dott. Roberto Bellanova

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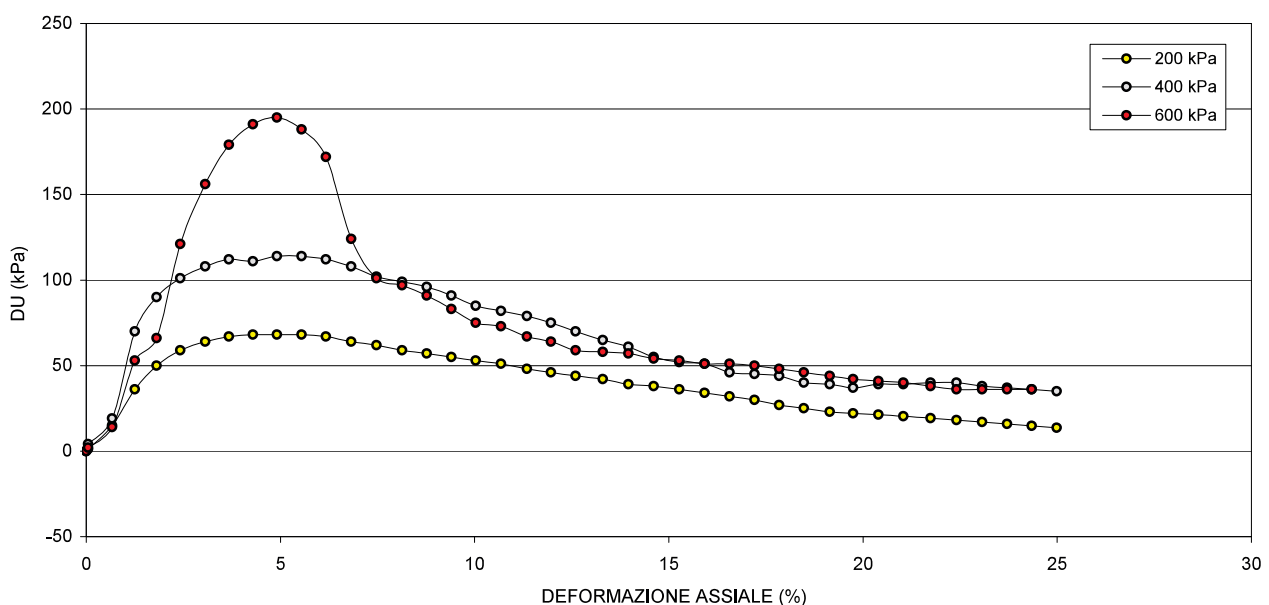
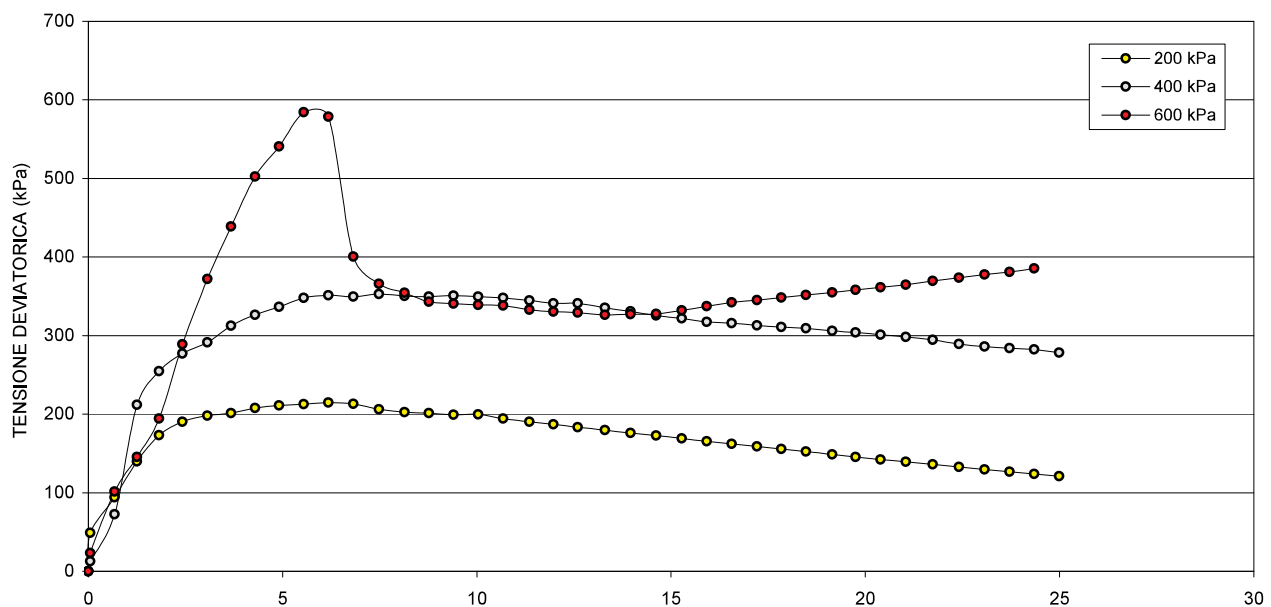
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COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

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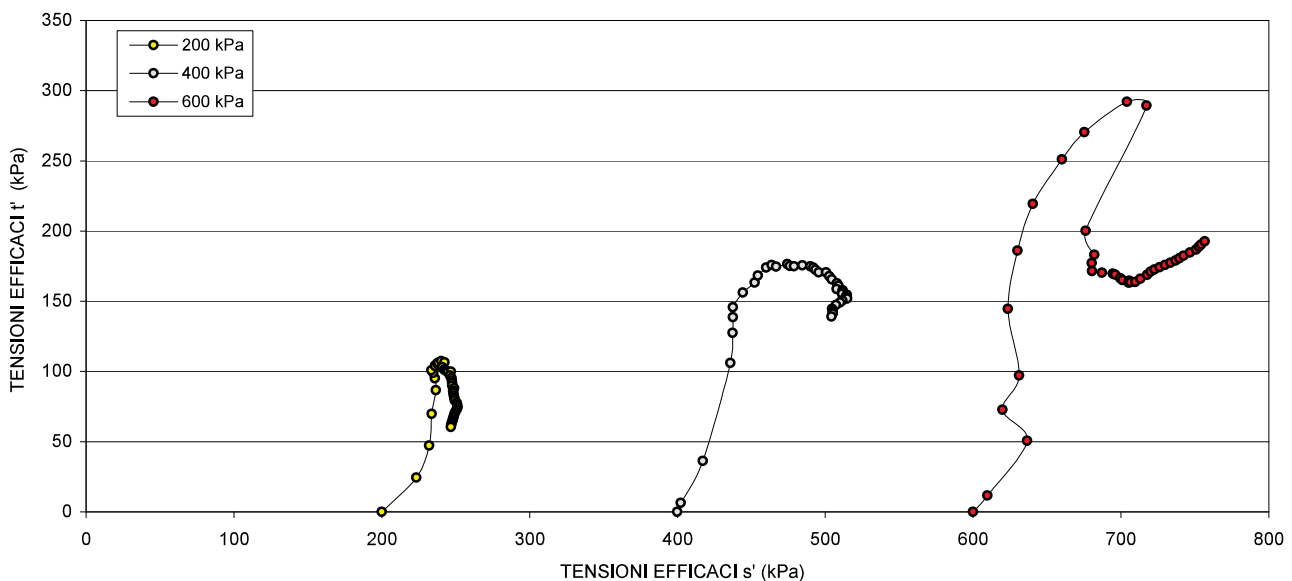
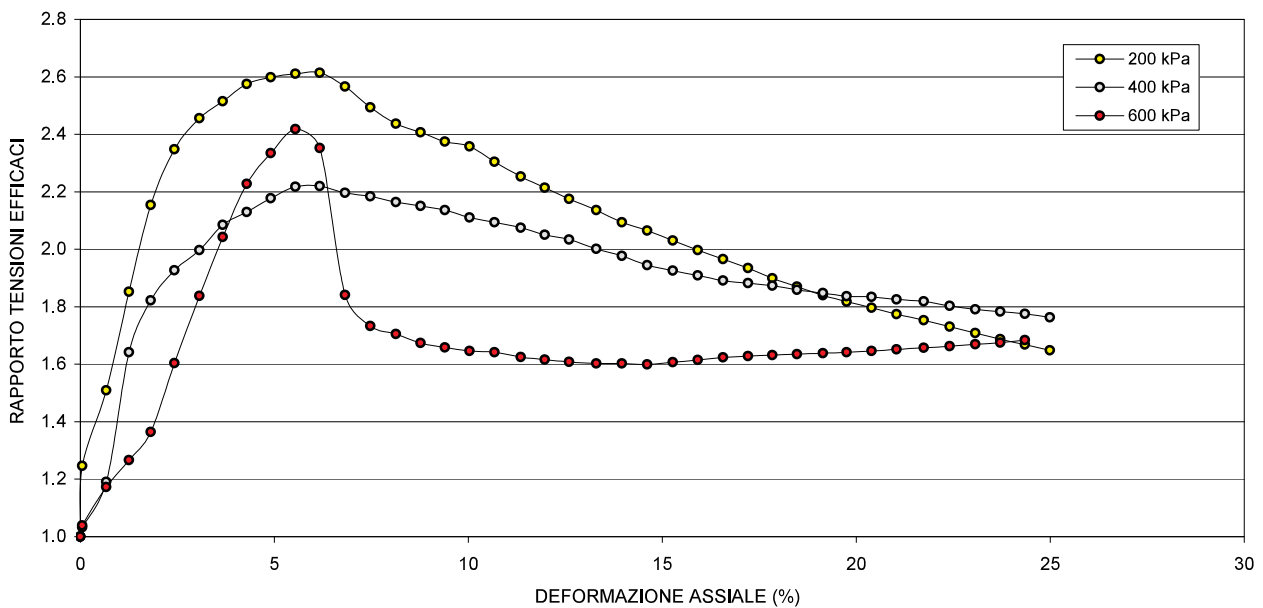
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COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

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A.S.T.M. D 4767**

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**

CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

TENSIONE DEVIATORICA ($\sigma_1 - \sigma_3$)

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
Def. (%)	Tens. (kPa)	Def. (%)	Tens. (kPa)	Def. (%)	Tens. (kPa)
0.000	0.000	0.000	0.000	0.000	0.000
0.053	48.948	0.053	12.596	0.053	23.393
0.672	94.239	0.672	72.408	0.672	101.277
1.251	139.730	1.251	211.837	1.251	145.584
1.817	173.085	1.817	254.777	1.817	194.320
2.423	190.091	2.423	277.092	2.423	288.938
3.068	197.943	3.068	291.255	3.068	372.127
3.674	201.407	3.674	312.405	3.674	438.821
4.293	207.896	4.293	326.538	4.293	502.260
4.911	210.933	4.911	336.755	4.911	540.625
5.544	212.604	5.544	348.134	5.544	584.212
6.176	214.657	6.176	351.419	6.176	578.620
6.821	213.013	6.821	349.425	6.821	400.419
7.479	206.073	7.479	352.912	7.479	365.978
8.138	202.615	8.138	350.234	8.138	354.477
8.770	201.221	8.770	349.727	8.770	343.039
9.402	199.254	9.402	351.000	9.402	340.581
10.034	199.571	10.034	349.775	10.034	339.093
10.679	194.346	10.679	347.834	10.679	338.103
11.350	190.402	11.350	344.897	11.350	333.017
11.969	186.925	11.969	341.212	11.969	330.297
12.601	183.293	12.601	340.981	12.601	329.180
13.299	179.557	13.299	335.507	13.299	326.396
13.958	176.017	13.958	331.009	13.958	327.081
14.616	172.587	14.616	325.689	14.616	327.488
15.274	169.036	15.274	322.026	15.274	332.180
15.920	165.546	15.920	317.210	15.920	337.342
16.565	162.240	16.565	315.608	16.565	342.235
17.210	158.816	17.210	313.017	17.210	345.305
17.842	155.451	17.842	310.777	17.842	348.490
18.474	152.192	18.474	309.273	18.474	351.731
19.146	148.747	19.146	305.992	19.146	354.851
19.751	145.530	19.751	303.773	19.751	357.950
20.396	142.345	20.396	301.042	20.396	361.354
21.042	139.194	21.042	298.101	21.042	364.656
21.740	136.054	21.740	294.614	21.740	369.504
22.411	132.854	22.411	289.272	22.411	373.639
23.069	129.641	23.069	286.190	23.069	377.644
23.715	126.624	23.715	284.136	23.715	380.770
24.347	123.729	24.347	282.262	24.347	385.417
24.992	120.844	24.992	278.358		

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**

CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

PRESSIONE INTERSTIZIALE

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
0.000	ΔU. (kPa)	Def. (%)	ΔU. (kPa)	Def. (%)	ΔU. (kPa)
0.000	0.000	0.000	0.001	0.000	0.000
0.053	1.000	0.053	4.000	0.053	2.000
0.672	15.000	0.672	19.000	0.672	14.000
1.251	36.000	1.251	70.000	1.251	53.000
1.817	50.000	1.817	90.000	1.817	66.000
2.423	59.000	2.423	101.000	2.423	121.000
3.068	64.000	3.068	108.000	3.068	156.000
3.674	67.000	3.674	112.000	3.674	179.000
4.293	68.000	4.293	111.000	4.293	191.000
4.911	68.000	4.911	114.000	4.911	195.000
5.544	68.000	5.544	114.000	5.544	188.000
6.176	67.000	6.176	112.000	6.176	172.000
6.821	64.000	6.821	108.000	6.821	124.000
7.479	62.000	7.479	102.000	7.479	101.000
8.138	59.000	8.138	99.000	8.138	97.000
8.770	57.000	8.770	96.000	8.770	91.000
9.402	55.000	9.402	91.000	9.402	83.000
10.034	53.000	10.034	85.000	10.034	75.000
10.679	51.000	10.679	82.000	10.679	73.000
11.350	48.000	11.350	79.000	11.350	67.000
11.969	46.000	11.969	75.000	11.969	64.000
12.601	44.000	12.601	70.000	12.601	59.000
13.299	42.000	13.299	65.000	13.299	58.000
13.958	39.000	13.958	61.000	13.958	57.000
14.616	38.000	14.616	55.000	14.616	54.000
15.274	36.000	15.274	52.000	15.274	53.000
15.920	34.000	15.920	51.000	15.920	51.000
16.565	32.000	16.565	46.000	16.565	51.000
17.210	30.000	17.210	45.000	17.210	50.000
17.842	27.000	17.842	44.000	17.842	48.000
18.474	25.000	18.474	40.000	18.474	46.000
19.146	23.000	19.146	39.000	19.146	44.000
19.751	22.000	19.751	37.000	19.751	42.000
20.396	21.300	20.396	39.000	20.396	41.000
21.042	20.300	21.042	39.000	21.042	40.000
21.740	19.200	21.740	40.000	21.740	38.000
22.411	18.100	22.411	40.000	22.411	36.000
23.069	17.000	23.069	38.000	23.069	36.000
23.715	15.900	23.715	37.000	23.715	36.000
24.347	14.800	24.347	36.000	24.347	36.000
24.992	13.700	24.992	35.000		

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

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Laboratorio Geotecnico autorizzato con Dec. n. 486 del 20/09/2019 , art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767
COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli
CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)
CAMPIONE: S1C3 m 10.50 - 11.00
COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021
VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021
GEO - CERT. n°: rev.00 del:
RAPPORTO TENSIONI EFFICACI (σ'_1 / σ'_3)

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
Def. (%)		Def. (%)		Def. (%)	
0.000	1.000	0.000	1.000	0.000	1.000
0.053	1.246	0.053	1.032	0.053	1.039
0.672	1.509	0.672	1.190	0.672	1.173
1.251	1.852	1.251	1.642	1.251	1.266
1.817	2.154	1.817	1.822	1.817	1.364
2.423	2.348	2.423	1.927	2.423	1.603
3.068	2.455	3.068	1.997	3.068	1.838
3.674	2.514	3.674	2.085	3.674	2.042
4.293	2.575	4.293	2.130	4.293	2.228
4.911	2.598	4.911	2.177	4.911	2.335
5.544	2.611	5.544	2.217	5.544	2.418
6.176	2.614	6.176	2.220	6.176	2.352
6.821	2.566	6.821	2.197	6.821	1.841
7.479	2.493	7.479	2.184	7.479	1.733
8.138	2.437	8.138	2.164	8.138	1.705
8.770	2.407	8.770	2.150	8.770	1.674
9.402	2.374	9.402	2.136	9.402	1.659
10.034	2.358	10.034	2.110	10.034	1.646
10.679	2.304	10.679	2.094	10.679	1.642
11.350	2.253	11.350	2.074	11.350	1.625
11.969	2.214	11.969	2.050	11.969	1.616
12.601	2.175	12.601	2.033	12.601	1.608
13.299	2.136	13.299	2.002	13.299	1.602
13.958	2.093	13.958	1.976	13.958	1.602
14.616	2.065	14.616	1.944	14.616	1.600
15.274	2.031	15.274	1.925	15.274	1.607
15.920	1.997	15.920	1.909	15.920	1.614
16.565	1.966	16.565	1.892	16.565	1.623
17.210	1.934	17.210	1.882	17.210	1.628
17.842	1.899	17.842	1.873	17.842	1.631
18.474	1.870	18.474	1.859	18.474	1.635
19.146	1.840	19.146	1.848	19.146	1.638
19.751	1.818	19.751	1.837	19.751	1.641
20.396	1.797	20.396	1.834	20.396	1.646
21.042	1.775	21.042	1.826	21.042	1.651
21.740	1.753	21.740	1.818	21.740	1.657
22.411	1.730	22.411	1.804	22.411	1.662
23.069	1.708	23.069	1.791	23.069	1.670
23.715	1.688	23.715	1.783	23.715	1.675
24.347	1.668	24.347	1.775	24.347	1.683
24.992	1.649	24.992	1.763		

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767

COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**

CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**

CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

STRESS PATH $s' = (\sigma'_1 + \sigma'_3)/2$ $t' = (\sigma'_1 - \sigma'_3)/2$

PROVINO 1 200 kPa		PROVINO 2 400 kPa		PROVINO 3 600 kPa	
s' (kPa)	t' (kPa)	s' (kPa)	t' (kPa)	s' (kPa)	t' (kPa)
200.000	0.000	399.999	0.000	600.000	0.000
223.474	24.474	402.298	6.298	609.697	11.697
232.119	47.119	417.204	36.204	636.639	50.639
233.865	69.865	435.919	105.919	619.792	72.792
236.542	86.542	437.388	127.388	631.160	97.160
236.046	95.046	437.546	138.546	623.469	144.469
234.972	98.972	437.628	145.628	630.063	186.063
233.703	100.703	444.202	156.202	640.410	219.410
235.948	103.948	452.269	163.269	660.130	251.130
237.467	105.467	454.378	168.378	675.313	270.313
238.302	106.302	460.067	174.067	704.106	292.106
240.329	107.329	463.710	175.710	717.310	289.310
242.506	106.506	466.712	174.712	676.210	200.210
241.037	103.037	474.456	176.456	681.989	182.989
242.307	101.307	476.117	175.117	680.239	177.239
243.610	100.610	478.863	174.863	680.519	171.519
244.627	99.627	484.500	175.500	687.291	170.291
246.785	99.785	489.888	174.888	694.546	169.546
246.173	97.173	491.917	173.917	696.051	169.051
247.201	95.201	493.449	172.449	699.508	166.508
247.463	93.463	495.606	170.606	701.149	165.149
247.646	91.646	500.491	170.491	705.590	164.590
247.779	89.779	502.754	167.754	705.198	163.198
249.009	88.009	504.505	165.505	706.540	163.540
248.294	86.294	507.845	162.845	709.744	163.744
248.518	84.518	509.013	161.013	713.090	166.090
248.773	82.773	507.605	158.605	717.671	168.671
249.120	81.120	511.804	157.804	720.118	171.118
249.408	79.408	511.509	156.509	722.653	172.653
250.725	77.725	511.388	155.388	726.245	174.245
251.096	76.096	514.636	154.636	729.865	175.865
251.373	74.373	513.996	152.996	733.426	177.426
250.765	72.765	514.886	151.886	736.975	178.975
249.873	71.173	511.521	150.521	739.677	180.677
249.297	69.597	510.050	149.050	742.328	182.328
248.827	68.027	507.307	147.307	746.752	184.752
248.327	66.427	504.636	144.636	750.820	186.820
247.821	64.821	505.095	143.095	752.822	188.822
247.412	63.312	505.068	142.068	754.385	190.385
247.065	61.865	505.131	141.131	756.709	192.709
246.722	60.422	504.179	139.179		

Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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Laboratorio Geotecnico autorizzato con Dec. n. 486 del 20/09/2019, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)
A.S.T.M. D 4767
COMMITTENTE: BIERREGI S.r.l. per il Comune di Peccioli
CANTIERE: Fabbrica di Peccioli Strada - Comune di Peccioli (PI)
CAMPIONE: S1C3 m 10.50 - 11.00
COMMESSA: 22949FE/21 **DURATA PROVE:** 25/05-15/06/2021

VERBALE ACC.: 216/21 **DATA CONSEGNA:** 14/05/2021

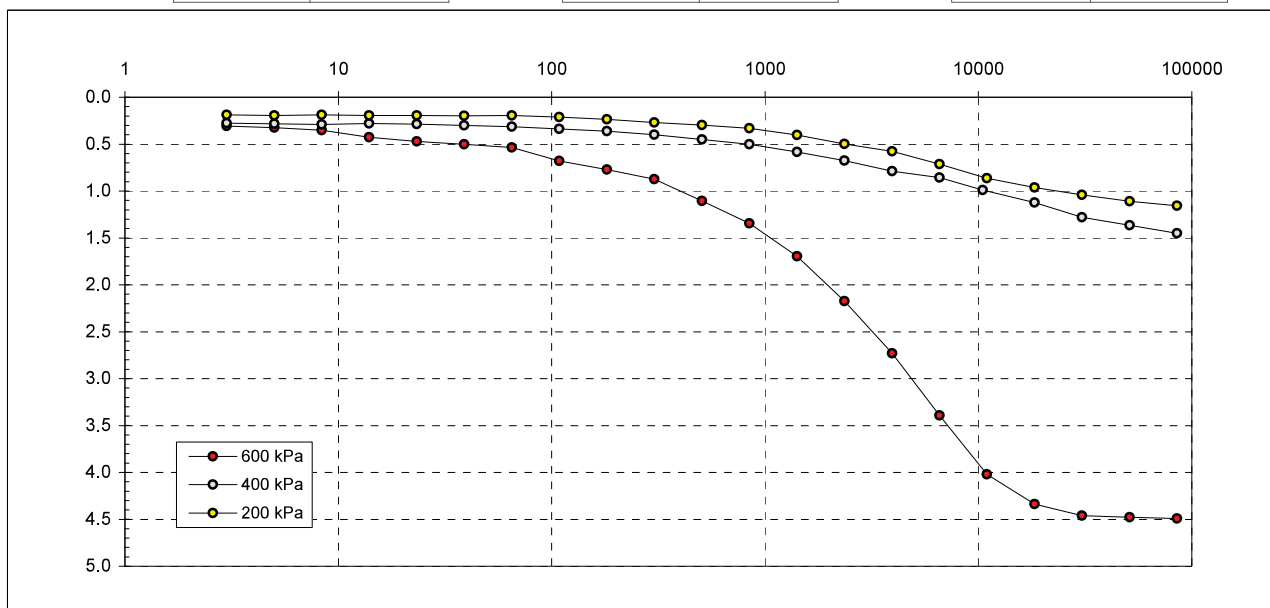
GEO - CERT. n°: rev.00 del:

CONSOLIDAZIONE

PROVINO 1 200 kPa	
Tempo (s)	Vol (cc)
3	0.19
5	0.19
8	0.19
14	0.19
23	0.19
39	0.20
65	0.19
109	0.21
181	0.24
303	0.27
506	0.30
845	0.33
1412	0.40
2357	0.50
3937	0.58
6575	0.71
10979	0.86
18335	0.96
30620	1.04
51136	1.11
85398	1.16

PROVINO 2 400 kPa	
Tempo (s)	Vol (cc)
3	0.28
5	0.28
8	0.29
14	0.28
23	0.29
39	0.30
65	0.31
109	0.34
181	0.36
303	0.40
506	0.45
845	0.50
1412	0.58
2357	0.68
3937	0.79
6575	0.86
10471	0.99
18335	1.12
30620	1.28
51136	1.37
85398	1.45

PROVINO 3 600 kPa	
Tempo (s)	Vol (cc)
3	0.31
5	0.33
8	0.35
14	0.43
23	0.47
39	0.50
65	0.54
109	0.68
181	0.77
303	0.87
506	1.11
845	1.35
1412	1.69
2357	2.17
3937	2.73
6575	3.39
10979	4.02
18335	4.34
30620	4.46
51136	4.48
85398	4.49


Il Direttore del Laboratorio terre:
dott. Massimo Romagnoli

Lo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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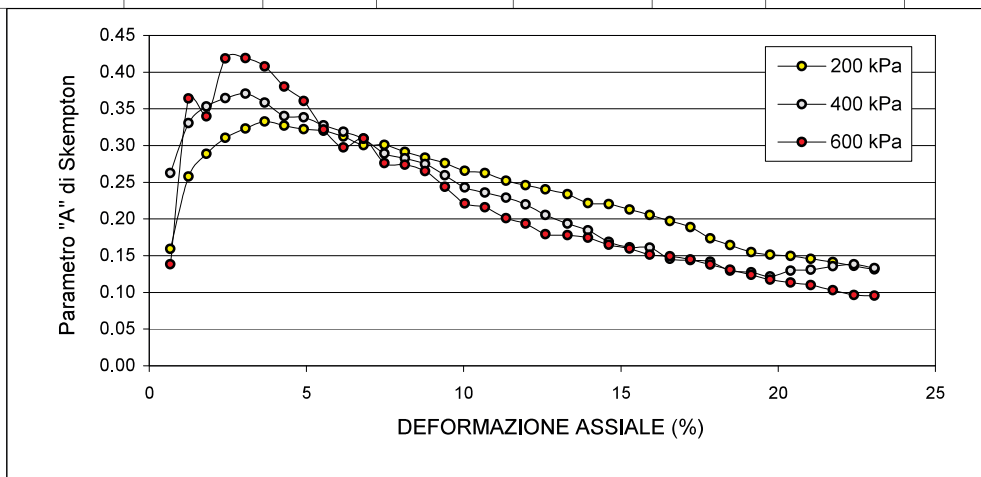
PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)**A.S.T.M. D 4767**COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

PROVINO 1		PROVINO 2		PROVINO 3	
Def. (%)	Skemp. A	Def. (%)	Skemp. A	Def. (%)	Skemp. A
0.672	0.1592	0.672	0.2624	0.672	0.1382
1.251	0.2576	1.251	0.3304	1.251	0.3641
1.817	0.2889	1.817	0.3533	1.817	0.3396
2.423	0.3104	2.423	0.3645	2.423	0.4188
3.068	0.3233	3.068	0.3708	3.068	0.4192
3.674	0.3327	3.674	0.3585	3.674	0.4079
4.293	0.3271	4.293	0.3399	4.293	0.3803
4.911	0.3224	4.911	0.3385	4.911	0.3607
5.544	0.3198	5.544	0.3275	5.544	0.3218
6.176	0.3121	6.176	0.3187	6.176	0.2973
6.821	0.3005	6.821	0.3091	6.821	0.3097
7.479	0.3009	7.479	0.2890	7.479	0.2760
8.138	0.2912	8.138	0.2827	8.138	0.2736
8.770	0.2833	8.770	0.2745	8.770	0.2653
9.402	0.2760	9.402	0.2593	9.402	0.2437
10.034	0.2656	10.034	0.2430	10.034	0.2212
10.679	0.2624	10.679	0.2357	10.679	0.2159
11.350	0.2521	11.350	0.2291	11.350	0.2012
11.969	0.2461	11.969	0.2198	11.969	0.1938
12.601	0.2401	12.601	0.2053	12.601	0.1792
13.299	0.2339	13.299	0.1937	13.299	0.1777
13.958	0.2216	13.958	0.1843	13.958	0.1743
14.616	0.2202	14.616	0.1689	14.616	0.1649
15.274	0.2130	15.274	0.1615	15.274	0.1596
15.920	0.2054	15.920	0.1608	15.920	0.1512
16.565	0.1972	16.565	0.1458	16.565	0.1490
17.210	0.1889	17.210	0.1438	17.210	0.1448
17.842	0.1737	17.842	0.1416	17.842	0.1377
18.474	0.1643	18.474	0.1293	18.474	0.1308
19.146	0.1546	19.146	0.1275	19.146	0.1240
19.751	0.1512	19.751	0.1218	19.751	0.1173
20.396	0.1496	20.396	0.1296	20.396	0.1135
21.042	0.1458	21.042	0.1308	21.042	0.1097
21.740	0.1411	21.740	0.1358	21.740	0.1028
22.411	0.1362	22.411	0.1383	22.411	0.0963
23.069	0.1311	23.069	0.1328	23.069	0.0953

Il Direttore del Laboratorio terre:
dott. Massimo RomagnoliLo Sperimentatore:
dott. Roberto Bellanova

FERRARA DEPARTMENT

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Headquarters: Via Bariola, 101-103 - 20020 Lainate (MI)

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Laboratorio Geotecnico autorizzato con Dec. n. 486 del 20/09/2019, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

PROVA TRIASSIALE - CONSOLIDATA NON DRENATA (CU)COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3**

COMMESSA: 22949FE/21

DURATA PROVE:

25/05-15/06/2021

VERBALE ACC.: 216/21

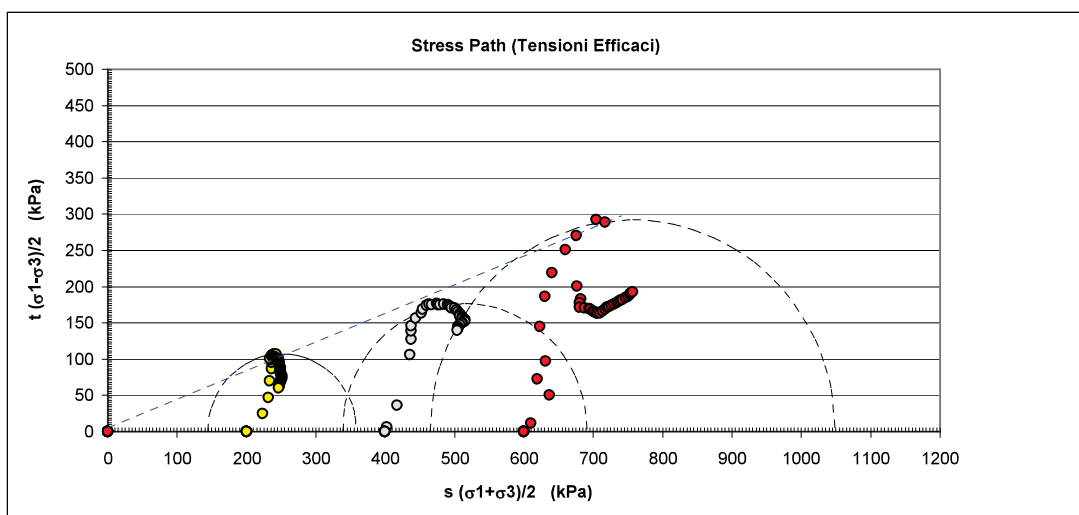
DATA CONSEGNA:

14/05/2021

Il presente elaborato non è parte del certificato di prova cui è allegato, è solo un'interpretazione soggettiva dei risultati di prova.

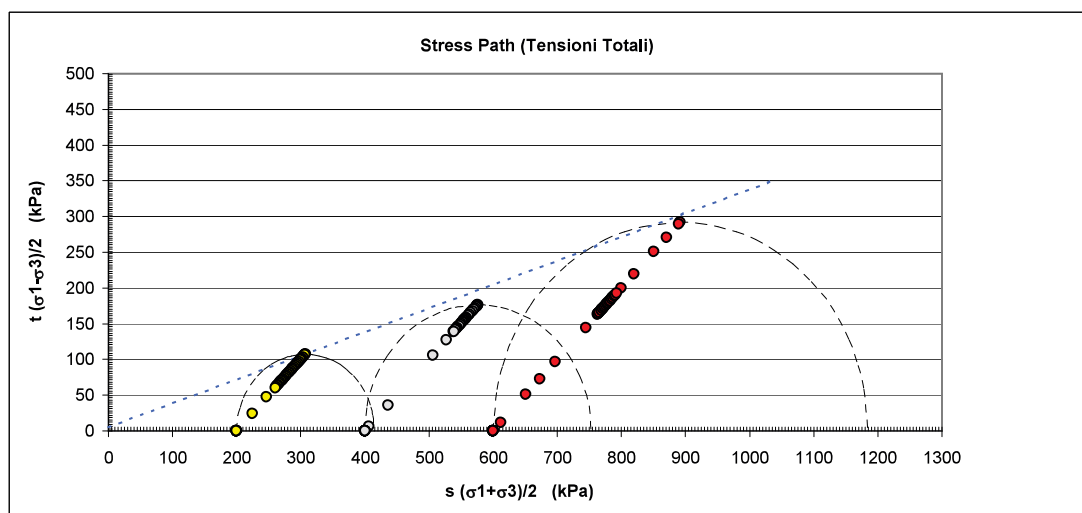
CONDIZIONI A ROTTURA (TENSIONI EFFICACI)

sforzo deviatorico (kPa)	215	353	584
deformazione (%)	6.2	12.6	5.5
tensione efficace s' (kPa)	240	474	704
tensione efficace t' (kPa)	107	176	292
c' (kPa):	4.0	ϕ' (°):	23.5



CONDIZIONI A ROTTURA (TENSIONI TOTALI)

sforzo deviatorico (kPa)	215	353	584
deformazione (%)	6.2	12.6	5.5
tensione totale s (kPa)	307.3	576.5	892.1
tensione efficace t (kPa)	107.3	176.5	292.1
c (kPa):	5.2	ϕ' (°):	18.4



FERRARA DEPARTMENT

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro 12; bilancia 480; trasduttori LVDT 540, 540, 543, 544; SG 539, 542.

Macchina: CONTROLS T206 Electronic/T207 Digital

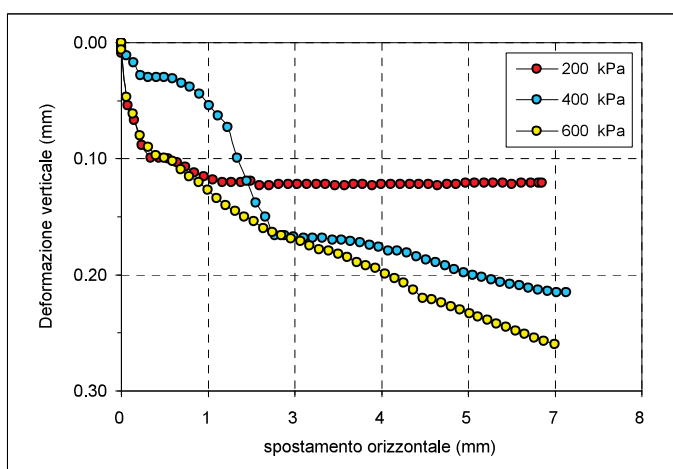
Prova: CONSOLIDATA DRENATA

Dimensioni provino: $\phi \times h = 60 \times 20$ mm

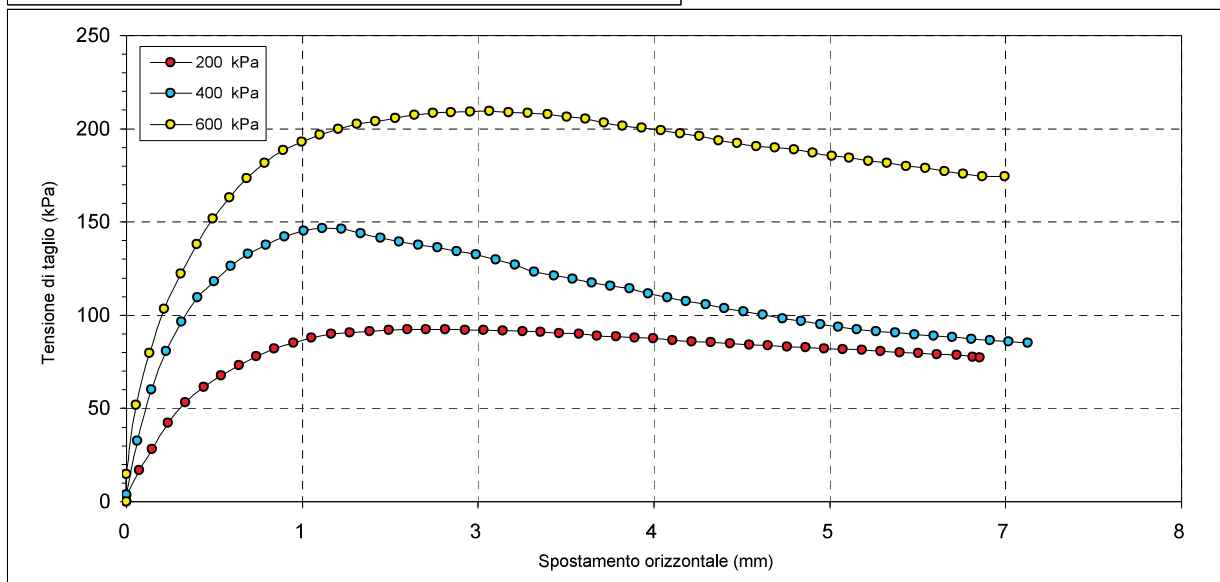
Velocità prova: 0,004 mm/min

NATURA DEL CAMPIONE:

Limo con argilla grigio



	PROVINO 1	PROVINO 2	PROVINO 3
σ_v (kPa)	200	400	600
W ini (%)	21.4	22.5	25.6
γ ini (Mg/m ³)	1.98	2.00	1.97
γ_d ini (Mg/m ³)	1.63	1.63	1.57
S ini (%)	89	94	97
W fin (%)	22.2	19.6	20.3
γ fin (Mg/m ³)	2.05	2.10	2.09
γ_d fin (Mg/m ³)	1.68	1.75	1.73
S fin (%)	100	100	100
G (Mg/m ³)	2.674		
H fine cons (mm)	19.518	19.358	19.193



Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

PROVINO 1 200 kPa			PROVINO 2 400 kPa			PROVINO 3 600 kPa		
Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.001	2.936	0.009	0.001	3.918	0.004	0.001	14.819	0.006
0.099	16.906	0.054	0.084	32.727	0.011	0.077	51.990	0.047
0.199	28.330	0.067	0.196	59.940	0.017	0.179	79.825	0.061
0.323	42.300	0.088	0.309	80.854	0.028	0.297	103.203	0.080
0.462	53.370	0.099	0.429	96.615	0.030	0.424	122.301	0.090
0.603	61.398	0.099	0.555	109.574	0.030	0.549	138.182	0.097
0.740	67.800	0.100	0.684	118.283	0.030	0.675	151.869	0.099
0.879	73.034	0.103	0.816	126.299	0.031	0.807	163.257	0.102
1.018	77.880	0.107	0.951	132.929	0.035	0.942	173.514	0.109
1.156	81.982	0.112	1.089	137.690	0.038	1.080	181.719	0.115
1.306	85.307	0.115	1.237	142.060	0.044	1.227	188.510	0.120
1.448	87.995	0.118	1.385	145.134	0.054	1.370	193.037	0.127
1.603	89.834	0.120	1.533	146.490	0.063	1.510	196.927	0.134
1.747	90.647	0.120	1.679	146.369	0.073	1.654	199.827	0.140
1.900	91.249	0.120	1.831	143.959	0.099	1.802	202.657	0.145
2.051	91.921	0.119	1.984	141.578	0.119	1.948	203.930	0.150
2.194	92.274	0.123	2.132	139.257	0.138	2.099	205.805	0.154
2.343	92.522	0.123	2.284	137.751	0.150	2.253	207.325	0.160
2.492	92.416	0.122	2.430	136.184	0.166	2.396	208.422	0.163
2.646	92.168	0.122	2.582	134.375	0.166	2.539	208.669	0.166
2.793	91.885	0.122	2.733	132.417	0.167	2.687	209.235	0.169
2.942	91.567	0.122	2.888	129.885	0.168	2.839	209.341	0.171
3.096	91.284	0.122	3.037	127.173	0.168	2.986	208.917	0.175
3.236	90.895	0.122	3.188	123.135	0.168	3.138	208.492	0.178
3.384	90.435	0.123	3.343	121.206	0.170	3.291	207.644	0.179
3.537	89.869	0.123	3.486	119.398	0.170	3.442	206.300	0.182
3.678	89.056	0.122	3.635	117.590	0.171	3.585	205.203	0.185
3.826	88.490	0.122	3.784	115.842	0.172	3.732	203.435	0.189
3.975	87.889	0.123	3.931	114.305	0.174	3.878	201.419	0.192
4.117	87.429	0.122	4.077	111.683	0.176	4.029	200.535	0.194
4.267	86.686	0.122	4.228	109.453	0.179	4.179	199.085	0.199
4.419	86.014	0.122	4.374	107.494	0.179	4.330	197.529	0.203
4.570	85.378	0.122	4.526	105.777	0.181	4.476	196.220	0.207
4.716	84.812	0.122	4.675	103.757	0.184	4.627	193.780	0.213
4.868	84.246	0.122	4.825	102.070	0.187	4.773	192.329	0.220
5.013	83.680	0.123	4.975	100.171	0.189	4.921	190.703	0.221
5.165	83.220	0.122	5.127	98.333	0.192	5.069	189.818	0.224
5.308	82.725	0.122	5.273	96.676	0.195	5.220	188.757	0.227
5.453	82.159	0.121	5.422	94.958	0.198	5.362	187.060	0.230
5.599	81.629	0.121	5.563	93.662	0.200	5.513	185.610	0.233
5.748	81.240	0.121	5.711	92.517	0.202	5.649	184.336	0.236
5.896	80.568	0.121	5.858	91.432	0.204	5.797	182.851	0.239
6.045	80.072	0.121	6.007	90.588	0.206	5.945	181.578	0.242
6.188	79.719	0.122	6.160	89.654	0.208	6.094	180.092	0.245
6.336	79.153	0.121	6.308	88.991	0.209	6.245	178.925	0.248
6.488	78.481	0.121	6.452	88.117	0.211	6.393	177.263	0.251
6.614	77.774	0.121	6.602	87.213	0.213	6.538	175.742	0.254
6.668	77.208	0.121	6.751	86.460	0.214	6.690	174.575	0.257
			6.895	85.827	0.215	6.864	174.398	0.260
			7.045	85.103	0.215			

Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)COMMITTENTE: **BIERREGI S.r.l. per il Comune di Peccioli**CANTIERE: **Fabbrica di Peccioli Strada - Comune di Peccioli (PI)**CAMPIONE: **S1C3 m 10.50 - 11.00**

COMMESSA: 22949FE/21 DURATA PROVE: 25/05-15/06/2021

VERBALE ACC.: 216/21 DATA CONSEGNA: 14/05/2021

GEO - CERT. n°: rev.00 del:

Consolidazione Provino 1

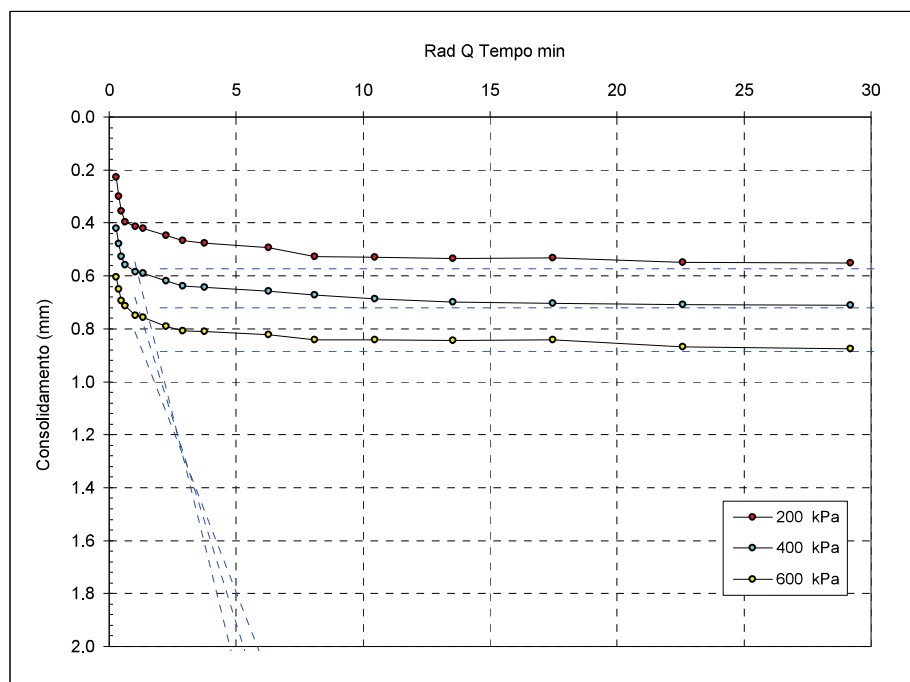
200 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.227
0.14	0.299
0.23	0.354
0.39	0.397
1.08	0.414
1.81	0.421
5.05	0.447
8.44	0.466
14.09	0.476
39.29	0.494
65.61	0.527
109.58	0.531
182.98	0.534
305.58	0.533
510.33	0.550
852.27	0.553

Consolidazione Provino 2

400 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.421
0.14	0.480
0.23	0.527
0.39	0.558
1.08	0.584
1.81	0.591
5.05	0.620
8.44	0.638
14.09	0.643
39.29	0.659
65.61	0.673
109.58	0.686
182.98	0.700
305.58	0.703
510.33	0.708
852.27	0.712

Consolidazione Provino 3

600 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.604
0.14	0.651
0.23	0.693
0.39	0.714
1.08	0.751
1.81	0.758
5.05	0.791
8.44	0.809
14.09	0.810
39.29	0.823
65.61	0.841
109.58	0.842
182.98	0.843
305.58	0.842
510.33	0.869
852.27	0.874


 t_{100} min
(Bishop ed Henkel)

Provino 1

1.1

Provino 2

1.3

Provino 3

1.7

Il Direttore del Laboratorio terre:

dott.geol. Massimo Romagnoli

Io Sperimentatore:

dott. Roberto Bellanova

FERRARA DEPARTMENT

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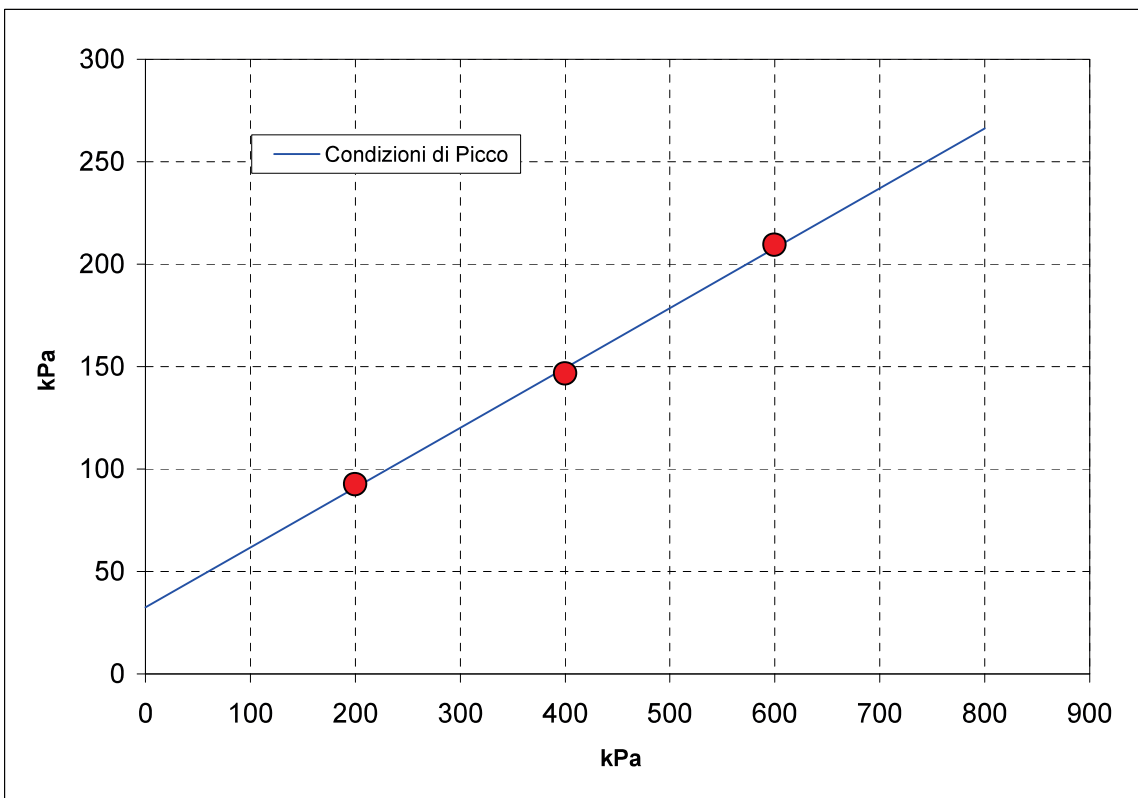
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PROVA DI TAGLIO DIRETTO (norma ASTM D 3080)

COMMITTENTE:	BIERREGI S.r.l. per il Comune di Peccioli		
CANTIERE:	Fabbrica di Peccioli Strada - Comune di Peccioli (PI)		
CAMPIONE:	S1C3		
COMMESSA:	22949FE/21	DURATA PROVE:	25/05-15/06/2021
VERBALE ACC.:	216/21	DATA CONSEGNA:	14/05/2021

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	PROVINO 1	PROVINO 2	PROVINO 3
Pressione verticale (kPa)	200	400	600
Tensione di taglio (kPa)	92.52	146.49	209.34
Condizioni di Picco	Coesione: 32.63 kPa		Angolo di attrito: 16°



Prove Penetrometriche Statiche con Punta Elettrica

Basic Results

CPTe 01 FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	lc	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data**Basic output data**

Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_v	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.020	0.00	0.00	0.020	0.00	1	19.00	0.38	0.00	0.38	51.63	0.00	0.00	0	0.00	0.00
0.04	0.110	0.00	0.00	0.110	0.00	1	19.00	0.76	0.00	0.76	143.74	0.00	0.00	0	0.00	0.00
0.06	0.310	0.00	0.00	0.310	0.00	1	19.00	1.14	0.00	1.14	270.93	0.00	0.00	0	0.00	0.00
0.08	0.410	0.00	0.00	0.410	0.00	1	19.00	1.52	0.00	1.52	268.74	0.00	0.00	0	0.00	0.00
0.10	0.510	0.05	0.00	0.510	0.01	1	13.73	1.79	0.00	1.79	283.17	0.01	0.00	0	1.91	53.22
0.12	0.600	0.09	0.00	0.600	0.02	1	13.73	2.07	0.00	2.07	288.94	0.02	0.00	0	1.85	52.57
0.14	0.710	0.09	0.00	0.710	0.01	1	13.73	2.34	0.00	2.34	301.90	0.01	0.00	0	1.85	55.98
0.16	0.950	0.05	0.00	0.950	0.01	1	13.73	2.62	0.00	2.62	361.77	0.01	0.00	0	1.91	76.43
0.18	0.730	0.96	0.00	0.730	0.13	1	13.73	2.89	0.00	2.89	251.30	0.13	0.00	6	1.81	48.82
0.20	0.830	0.77	0.00	0.830	0.09	1	13.73	3.17	0.00	3.17	260.99	0.09	0.00	0	1.78	50.48
0.22	1.050	2.46	0.00	1.050	0.23	5	14.04	3.45	0.00	3.45	303.72	0.24	0.00	6	1.77	62.72
0.24	1.140	4.51	0.00	1.140	0.40	5	14.77	3.74	0.00	3.74	303.84	0.40	0.00	6	1.83	68.13
0.26	1.250	7.61	0.00	1.250	0.61	5	15.41	4.04	0.00	4.04	308.10	0.61	0.00	6	1.88	76.47
0.28	1.250	15.45	0.00	1.250	1.24	4	16.22	4.37	0.00	4.37	285.25	1.24	0.00	6	2.02	87.33
0.30	1.180	19.59	0.00	1.180	1.66	4	16.47	4.69	0.00	4.69	250.33	1.67	0.00	5	2.11	86.23
0.32	1.220	23.83	0.00	1.220	1.95	4	16.71	5.03	0.00	5.03	241.61	1.96	0.00	5	2.14	89.29
0.34	1.210	28.34	0.00	1.210	2.34	4	16.91	5.37	0.00	5.37	224.52	2.35	0.00	5	2.20	90.19
0.36	1.260	35.45	0.00	1.260	2.81	3	17.18	5.71	0.00	5.71	219.76	2.83	0.00	5	2.24	94.64
0.38	1.250	38.04	0.00	1.250	3.04	3	17.26	6.05	0.00	6.05	205.53	3.06	0.00	5	2.27	93.91
0.40	1.250	42.69	0.00	1.250	3.42	3	17.39	6.40	0.00	6.40	194.32	3.43	0.00	5	2.31	93.78
0.42	1.260	49.85	0.00	1.260	3.96	3	17.57	6.75	0.00	6.75	185.67	3.98	0.00	4	2.35	95.10
0.44	1.400	54.99	0.00	1.400	3.93	3	17.73	7.10	0.00	7.10	196.08	3.95	0.00	4	2.34	100.05
0.46	1.500	60.10	0.00	1.500	4.01	3	17.86	7.46	0.00	7.46	200.07	4.03	0.00	9	2.33	103.18
0.48	1.470	63.60	0.00	1.470	4.33	3	17.91	7.82	0.00	7.82	187.02	4.35	0.00	9	2.37	100.75
0.50	1.520	66.93	0.00	1.520	4.40	3	17.98	8.18	0.00	8.18	184.87	4.43	0.00	9	2.37	101.17
0.52	1.510	67.43	0.00	1.510	4.47	3	17.99	8.54	0.00	8.54	175.86	4.49	0.00	9	2.38	98.40
0.54	1.430	67.80	0.00	1.430	4.74	3	17.98	8.90	0.00	8.90	159.73	4.77	0.00	9	2.42	93.23
0.56	1.440	69.89	0.00	1.440	4.85	3	18.01	9.26	0.00	9.26	154.55	4.88	0.00	9	2.43	91.99
0.58	1.420	70.26	0.00	1.420	4.95	3	18.01	9.62	0.00	9.62	146.65	4.98	0.00	9	2.45	89.22
0.60	1.440	70.67	0.00	1.440	4.91	3	18.03	9.98	0.00	9.98	143.32	4.94	0.00	9	2.45	87.99
0.62	1.480	72.13	0.00	1.480	4.87	3	18.06	10.34	0.00	10.34	142.15	4.91	0.00	9	2.45	87.82
0.64	1.620	75.68	0.00	1.620	4.67	3	18.15	10.70	0.00	10.70	150.38	4.70	0.00	9	2.42	91.58
0.66	1.740	75.41	0.00	1.740	4.33	3	18.17	11.06	0.00	11.06	156.26	4.36	0.00	9	2.39	93.44
0.68	1.850	69.94	0.00	1.850	3.78	3	18.11	11.43	0.00	11.43	160.89	3.80	0.00	4	2.34	93.39
0.70	1.940	69.07	0.00	1.940	3.56	3	18.11	11.79	0.00	11.79	163.55	3.58	0.00	5	2.32	94.03
0.72	1.970	71.85	0.00	1.970	3.65	3	18.16	12.15	0.00	12.15	161.11	3.67	0.00	5	2.33	93.99
0.74	1.960	76.27	0.00	1.960	3.89	3	18.23	12.52	0.00	12.52	155.59	3.92	0.00	4	2.35	93.23
0.76	1.920	82.56	0.00	1.920	4.30	3	18.31	12.88	0.00	12.88	148.04	4.33	0.00	9	2.39	91.99
0.78	1.900	87.84	0.00	1.900	4.62	3	18.38	13.25	0.00	13.25	142.40	4.66	0.00	9	2.42	90.99
0.80	1.840	94.50	0.00	1.840	5.14	3	18.45	13.62	0.00	13.62	134.11	5.17	0.00	9	2.46	88.66
0.82	1.740	100.92	0.00	1.740	5.80	3	18.51	13.99	0.00	13.99	123.39	5.85	0.00	9	2.51	85.37
0.84	1.650	105.52	0.00	1.650	6.40	3	18.54	14.36	0.00	14.36	113.91	6.45	0.00	9	2.56	81.93
0.86	1.580	110.35	0.00	1.580	6.98	3	18.57	14.73	0.00	14.73	106.26	7.05	0.00	9	2.60	79.09
0.88	1.490	114.77	0.00	1.490	7.70	3	18.60	15.10	0.00	15.10	97.66	7.78	0.00	9	2.64	75.51
0.90	1.410	114.54	0.00	1.410	8.12	3	18.57	15.47	0.00	15.47	90.12	8.21	0.00	9	2.68	71.59

In situ data			Basic output data								CPTe 01					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	1.330	116.64	0.00	1.330	8.77	3	18.57	15.85	0.00	15.85	82.94	8.88	0.00	9	2.72	68.01
0.94	1.300	113.04	0.00	1.300	8.70	3	18.53	16.22	0.00	16.22	79.17	8.81	0.00	9	2.72	65.44
0.96	1.280	109.35	0.00	1.280	8.54	3	18.48	16.59	0.00	16.59	76.17	8.66	0.00	9	2.73	63.27
0.98	1.240	101.74	0.00	1.240	8.20	3	18.39	16.95	0.00	16.95	72.14	8.32	0.00	9	2.73	60.09
1.00	1.220	93.68	0.00	1.220	7.68	3	18.29	17.32	0.00	17.32	69.44	7.79	0.00	3	2.72	57.57
1.02	1.180	88.03	0.00	1.180	7.46	3	18.20	17.69	0.00	17.69	65.72	7.57	0.00	3	2.72	54.78
1.04	1.220	82.88	0.00	1.220	6.79	3	18.15	18.05	0.00	18.05	66.60	6.90	0.00	3	2.69	54.55
1.06	1.340	74.22	0.00	1.340	5.54	3	18.05	18.41	0.00	18.41	71.79	5.62	0.00	4	2.62	56.13
1.08	1.410	70.44	0.00	1.410	5.00	3	18.01	18.77	0.00	18.77	74.12	5.06	0.00	4	2.58	56.77
1.10	1.440	68.89	0.00	1.440	4.78	3	18.00	19.13	0.00	19.13	74.27	4.85	0.00	4	2.57	56.60
1.12	1.440	68.89	0.00	1.440	4.78	3	18.00	19.49	0.00	19.49	72.88	4.85	0.00	4	2.57	55.87
1.14	1.470	59.46	0.00	1.470	4.04	3	17.83	19.85	0.00	19.85	73.07	4.10	0.00	4	2.52	54.58
1.16	1.450	69.85	0.00	1.450	4.82	3	18.01	20.21	0.00	20.21	70.76	4.89	0.00	4	2.58	54.86
1.18	1.410	76.91	0.00	1.410	5.45	3	18.12	20.57	0.00	20.57	67.55	5.54	0.00	4	2.62	53.99
1.20	1.340	82.51	0.00	1.340	6.16	3	18.18	20.93	0.00	20.93	63.02	6.26	0.00	3	2.67	52.06
1.22	1.250	89.89	0.00	1.250	7.19	3	18.25	21.30	0.00	21.30	57.70	7.32	0.00	3	2.74	49.65
1.24	1.180	95.54	0.00	1.180	8.10	3	18.30	21.66	0.00	21.66	53.47	8.25	0.00	3	2.79	47.54
1.26	1.120	97.05	0.00	1.120	8.67	3	18.29	22.03	0.00	22.03	49.85	8.84	0.00	3	2.83	45.33
1.28	1.090	92.26	0.00	1.090	8.46	3	18.23	22.39	0.00	22.39	47.68	8.64	0.00	3	2.83	43.51
1.30	1.080	86.48	0.00	1.080	8.01	3	18.15	22.76	0.00	22.76	46.46	8.18	0.00	3	2.82	42.22
1.32	1.010	80.05	0.00	1.010	7.93	3	18.03	23.12	0.00	23.12	42.69	8.11	0.00	3	2.84	39.24
1.34	0.920	72.03	0.00	0.920	7.83	3	17.88	23.48	0.00	23.48	38.19	8.03	0.00	3	2.86	35.71
1.36	0.860	66.07	0.00	0.860	7.68	3	17.75	23.83	0.00	23.83	35.09	7.90	0.00	3	2.88	33.13
1.38	0.820	60.23	0.00	0.820	7.35	3	17.63	24.18	0.00	24.18	32.91	7.57	0.00	3	2.88	31.17
1.40	0.790	54.22	0.00	0.790	6.86	3	17.49	24.53	0.00	24.53	31.20	7.08	0.00	3	2.88	29.50
1.42	0.730	44.61	0.00	0.730	6.11	3	17.24	24.88	0.00	24.88	28.34	6.33	0.00	3	2.87	26.75
1.44	0.730	38.14	0.00	0.730	5.22	3	17.06	25.22	0.00	25.22	27.94	5.41	0.00	3	2.84	25.84
1.46	0.780	31.80	0.00	0.780	4.08	3	16.87	25.56	0.00	25.56	29.51	4.22	0.00	4	2.76	26.23
1.48	0.890	25.29	0.00	0.890	2.84	3	16.66	25.90	0.00	25.90	33.37	2.93	0.00	4	2.64	27.85
1.50	0.990	19.18	0.00	0.990	1.94	4	16.38	26.22	0.00	26.22	36.75	1.99	0.00	4	2.52	28.94
1.52	1.010	15.90	0.00	1.010	1.57	4	16.17	26.55	0.00	26.55	37.04	1.62	0.00	5	2.47	28.53
1.54	0.900	15.99	0.00	0.900	1.78	4	16.14	26.87	0.00	26.87	32.49	1.83	0.00	4	2.54	25.93
1.56	0.780	13.40	0.00	0.780	1.72	3	15.88	27.19	0.00	27.19	27.69	1.78	0.00	4	2.58	22.60
1.58	0.710	10.62	0.00	0.710	1.50	3	15.57	27.50	0.00	27.50	24.81	1.56	0.00	4	2.58	20.35
1.60	0.670	6.38	0.00	0.670	0.95	4	14.97	27.81	0.00	27.81	23.09	0.99	0.00	5	2.52	18.40
1.62	0.730	5.24	0.00	0.730	0.72	4	14.77	28.10	0.00	28.10	24.98	0.75	0.00	5	2.44	19.22
1.64	0.790	4.01	0.00	0.790	0.51	4	14.50	28.39	0.00	28.39	26.82	0.53	0.00	5	2.37	19.97
1.66	0.930	2.73	0.00	0.930	0.29	5	14.12	28.68	0.00	28.68	31.43	0.30	0.00	5	2.24	22.09
1.68	1.140	3.55	0.00	1.140	0.31	5	14.50	28.96	0.00	28.96	38.36	0.32	0.00	5	2.18	26.25
1.70	1.250	7.11	0.00	1.250	0.57	5	15.33	29.27	0.00	29.27	41.71	0.58	0.00	5	2.23	29.39
1.72	1.330	12.21	0.00	1.330	0.92	4	15.98	29.58	0.00	29.58	43.96	0.94	0.00	5	2.30	31.99
1.74	1.370	18.59	0.00	1.370	1.36	4	16.47	29.91	0.00	29.91	44.80	1.39	0.00	5	2.37	33.83
1.76	1.400	34.63	0.00	1.400	2.47	4	17.19	30.25	0.00	30.25	45.28	2.53	0.00	4	2.50	36.46
1.78	1.430	38.18	0.00	1.430	2.67	4	17.31	30.59	0.00	30.59	45.74	2.73	0.00	4	2.52	37.17
1.80	1.450	45.29	0.00	1.450	3.12	3	17.52	30.94	0.00	30.94	45.86	3.19	0.00	4	2.56	38.00
1.82	1.490	48.20	0.00	1.490	3.23	3	17.60	31.30	0.00	31.30	46.61	3.30	0.00	4	2.56	38.76
1.84	1.490	51.26	0.00	1.490	3.44	3	17.67	31.65	0.00	31.65	46.08	3.51	0.00	4	2.58	38.72
1.86	1.330	61.51	0.00	1.330	4.62	3	17.84	32.00	0.00	32.00	40.56	4.74	0.00	4	2.69	35.88
1.88	1.220	60.78	0.00	1.220	4.98	3	17.79	32.36	0.00	32.36	36.70	5.12	0.00	3	2.74	33.18
1.90	1.130	59.55	0.00	1.130	5.27	3	17.74	32.72	0.00	32.72	33.54	5.43	0.00	3	2.78	30.89
1.92	1.040	59.96	0.00	1.040	5.77	3	17.71	33.07	0.00	33.07	30.45	5.95	0.00	3	2.83	28.71
1.94	1.270	60.19	0.00	1.270	4.74	3	17.79	33.43	0.00	33.43	37.00	4.87	0.00	3	2.73	33.34
1.96	1.220	56.54	0.00	1.220	4.63	3	17.71	33.78	0.00	33.78	35.12	4.77	0.00	3	2.73	31.79
1.98	1.190	49.75	0.00	1.190	4.18	3	17.55	34.13	0.00	34.13	33.87	4.30	0.00	4	2.72	30.48
2.00	0.880	43.42	0.00	0.880	4.93	3	17.28	34.48	0.00	34.48	24.52	5.14	0.00	3	2.85	23.38

In situ data			Basic output data								CPTe 01					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	0.780	40.46	0.00	0.780	5.19	3	17.15	34.82	0.00	34.82	21.40	5.43	0.00	3	2.91	20.85
2.04	0.850	27.75	0.00	0.850	3.26	3	16.75	35.16	0.00	35.16	23.18	3.41	0.00	4	2.77	21.35
2.06	0.860	21.10	0.00	0.860	2.45	3	16.44	35.49	0.00	35.49	23.23	2.56	0.00	4	2.70	20.84
2.08	0.850	16.17	0.00	0.850	1.90	3	16.13	35.81	0.00	35.81	22.73	1.99	0.00	4	2.65	20.02
2.10	0.850	16.17	0.00	0.850	1.90	3	16.13	36.14	0.00	36.14	22.52	1.99	0.00	4	2.65	19.88
2.12	0.850	16.17	0.00	0.850	1.90	3	16.13	36.46	0.00	36.46	22.31	1.99	0.00	4	2.65	19.74
2.14	0.850	16.10	0.00	0.850	1.89	3	16.12	36.78	0.00	36.78	22.11	1.98	0.00	4	2.65	19.59
2.16	0.860	16.60	0.00	0.860	1.93	3	16.16	37.10	0.00	37.10	22.18	2.02	0.00	4	2.66	19.70
2.18	0.910	16.69	0.00	0.910	1.83	4	16.19	37.43	0.00	37.43	23.31	1.91	0.00	4	2.63	20.52
2.20	1.040	16.24	0.00	1.040	1.56	4	16.21	37.75	0.00	37.75	26.55	1.62	0.00	4	2.55	22.73
2.22	1.130	16.92	0.00	1.130	1.50	4	16.29	38.08	0.00	38.08	28.68	1.55	0.00	5	2.52	24.28
2.24	1.240	17.24	0.00	1.240	1.39	4	16.35	38.40	0.00	38.40	31.29	1.43	0.00	5	2.47	26.10
2.26	1.320	17.29	0.00	1.320	1.31	4	16.37	38.73	0.00	38.73	33.08	1.35	0.00	5	2.44	27.33
2.28	1.320	17.57	0.00	1.320	1.33	4	16.39	39.06	0.00	39.06	32.80	1.37	0.00	5	2.45	27.20
2.30	1.280	19.59	0.00	1.280	1.53	4	16.50	39.39	0.00	39.39	31.50	1.58	0.00	5	2.49	26.58
2.32	1.240	29.98	0.00	1.240	2.42	4	16.98	39.73	0.00	39.73	30.21	2.50	0.00	4	2.61	26.62
2.34	1.210	39.59	0.00	1.210	3.27	3	17.29	40.07	0.00	40.07	29.20	3.38	0.00	4	2.69	26.54
2.36	1.130	55.45	0.00	1.130	4.91	3	17.65	40.42	0.00	40.42	26.96	5.09	0.00	3	2.82	25.66
2.38	1.160	64.15	0.00	1.160	5.53	3	17.83	40.78	0.00	40.78	27.45	5.73	0.00	3	2.85	26.38
2.40	1.190	66.16	0.00	1.190	5.56	3	17.88	41.14	0.00	41.14	27.93	5.76	0.00	3	2.84	26.83
2.42	1.210	68.02	0.00	1.210	5.62	3	17.92	41.49	0.00	41.49	28.16	5.82	0.00	3	2.84	27.07
2.44	1.300	63.33	0.00	1.300	4.87	3	17.86	41.85	0.00	41.85	30.06	5.03	0.00	3	2.79	28.36
2.46	1.450	52.94	0.00	1.450	3.65	3	17.70	42.21	0.00	42.21	33.36	3.76	0.00	4	2.68	30.37
2.48	1.520	44.01	0.00	1.520	2.90	4	17.50	42.56	0.00	42.56	34.72	2.98	0.00	4	2.61	30.91
2.50	1.480	35.95	0.00	1.480	2.43	4	17.26	42.90	0.00	42.90	33.50	2.50	0.00	4	2.57	29.54
2.52	1.410	33.17	0.00	1.410	2.35	4	17.15	43.25	0.00	43.25	31.60	2.43	0.00	4	2.58	27.99
2.54	1.170	25.29	0.00	1.170	2.16	4	16.76	43.58	0.00	43.58	25.84	2.25	0.00	4	2.63	23.24
2.56	1.100	20.87	0.00	1.100	1.90	4	16.52	43.92	0.00	43.92	24.05	1.98	0.00	4	2.62	21.60
2.58	1.030	15.40	0.00	1.030	1.50	4	16.14	44.24	0.00	44.24	22.28	1.56	0.00	4	2.59	19.87
2.60	0.910	10.16	0.00	0.910	1.12	4	15.62	44.56	0.00	44.56	19.42	1.17	0.00	4	2.58	17.27
2.62	0.870	7.84	0.00	0.870	0.90	4	15.30	44.86	0.00	44.86	18.39	0.95	0.00	5	2.56	16.26
2.64	0.890	5.83	0.00	0.890	0.66	4	14.97	45.16	0.00	45.16	18.71	0.69	0.00	5	2.50	16.25
2.66	0.950	4.65	0.00	0.950	0.49	4	14.74	45.46	0.00	45.46	19.90	0.51	0.00	5	2.43	16.95
2.68	0.970	4.01	0.00	0.970	0.41	4	14.57	45.75	0.00	45.75	20.20	0.43	0.00	5	2.40	17.08
2.70	1.030	3.37	0.00	1.030	0.33	5	14.40	46.04	0.00	46.04	21.37	0.34	0.00	5	2.34	17.82
2.72	1.080	4.92	0.00	1.080	0.46	5	14.85	46.34	0.00	46.34	22.31	0.48	0.00	5	2.37	18.79
2.74	1.090	7.75	0.00	1.090	0.71	4	15.38	46.64	0.00	46.64	22.37	0.74	0.00	5	2.44	19.26
2.76	1.130	13.30	0.00	1.130	1.18	4	16.01	46.96	0.00	46.96	23.06	1.23	0.00	5	2.53	20.37
2.78	1.140	17.95	0.00	1.140	1.57	4	16.36	47.28	0.00	47.28	23.11	1.64	0.00	4	2.59	20.79
2.80	1.080	22.69	0.00	1.080	2.10	4	16.61	47.62	0.00	47.62	21.68	2.20	0.00	4	2.67	20.01
2.82	0.970	19.87	0.00	0.970	2.05	3	16.41	47.94	0.00	47.94	19.23	2.15	0.00	4	2.71	17.93
2.84	1.020	17.31	0.00	1.020	1.70	4	16.28	48.27	0.00	48.27	20.13	1.78	0.00	4	2.65	18.49
2.86	1.090	16.45	0.00	1.090	1.51	4	16.24	48.60	0.00	48.60	21.43	1.58	0.00	4	2.60	19.45
2.88	1.060	17.81	0.00	1.060	1.68	4	16.32	48.92	0.00	48.92	20.67	1.76	0.00	4	2.64	18.96
2.90	0.920	15.81	0.00	0.920	1.72	4	16.13	49.25	0.00	49.25	17.68	1.82	0.00	4	2.69	16.49
2.92	0.900	13.08	0.00	0.900	1.45	4	15.91	49.57	0.00	49.57	17.16	1.54	0.00	4	2.67	15.90
2.94	0.960	10.25	0.00	0.960	1.07	4	15.65	49.88	0.00	49.88	18.25	1.13	0.00	4	2.59	16.55
2.96	1.180	7.52	0.00	1.180	0.64	4	15.37	50.19	0.00	50.19	22.51	0.67	0.00	5	2.42	19.55
2.98	1.620	9.25	0.00	1.620	0.57	5	15.73	50.50	0.00	50.50	31.08	0.59	0.00	5	2.28	26.09
3.00	1.780	9.93	0.00	1.780	0.56	5	15.85	50.82	0.00	50.82	34.03	0.57	0.00	5	2.24	28.34
3.02	1.660	9.43	0.00	1.660	0.57	5	15.76	51.13	0.00	51.13	31.47	0.59	0.00	5	2.27	26.46
3.04	1.440	8.25	0.00	1.440	0.57	5	15.56	51.44	0.00	51.44	26.99	0.59	0.00	5	2.33	23.06
3.06	1.290	5.42	0.00	1.290	0.42	5	15.03	51.75	0.00	51.75	23.93	0.44	0.00	5	2.32	20.45
3.08	1.560	4.65	0.00	1.560	0.30	5	14.93	52.05	0.00	52.05	28.97	0.31	0.00	5	2.21	24.07
3.10	1.560	4.65	0.00	1.560	0.30	5	14.93	52.35	0.00	52.35	28.80	0.31	0.00	5	2.21	23.98

In situ data		Basic output data										CPTe 01				
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	2.200	9.02	0.00	2.200	0.41	5	15.82	52.65	0.00	52.65	40.78	0.42	0.00	5	2.12	33.31
3.14	2.280	8.52	0.00	2.280	0.37	5	15.77	52.97	0.00	52.97	42.04	0.38	0.00	5	2.10	34.19
3.16	2.070	4.65	0.00	2.070	0.22	5	15.03	53.27	0.00	53.27	37.86	0.23	0.00	6	2.07	30.64
3.18	1.450	3.60	0.00	1.450	0.25	5	14.60	53.57	0.00	53.57	26.07	0.26	0.00	5	2.22	21.92
3.20	1.240	3.92	0.00	1.240	0.32	5	14.64	53.86	0.00	53.86	22.02	0.33	0.00	5	2.31	18.96
3.22	1.080	3.01	0.00	1.080	0.28	5	14.28	54.15	0.00	54.15	18.95	0.29	0.00	5	2.36	16.49
3.24	1.050	3.01	0.00	1.050	0.29	5	14.27	54.43	0.00	54.43	18.29	0.30	0.00	5	2.37	16.00
3.26	1.260	3.01	0.00	1.260	0.24	5	14.34	54.72	0.00	54.72	22.03	0.25	0.00	5	2.28	18.89
3.28	1.620	3.01	0.00	1.620	0.19	5	14.44	55.01	0.00	55.01	28.45	0.19	0.00	5	2.15	23.75
3.30	1.710	3.01	0.00	1.710	0.18	5	14.46	55.30	0.00	55.30	29.92	0.18	0.00	5	2.13	24.88
3.32	1.740	3.01	0.00	1.740	0.17	5	14.47	55.59	0.00	55.59	30.30	0.18	0.00	5	2.12	25.20
3.34	1.690	3.01	0.00	1.690	0.18	5	14.46	55.87	0.00	55.87	29.25	0.18	0.00	5	2.14	24.45
3.36	1.540	15.86	0.00	1.540	1.03	4	16.33	56.19	0.00	56.19	26.41	1.07	0.00	5	2.44	23.64
3.38	1.280	21.78	0.00	1.280	1.70	4	16.63	56.52	0.00	56.52	21.65	1.78	0.00	4	2.62	20.16
3.40	1.110	18.41	0.00	1.110	1.66	4	16.38	56.85	0.00	56.85	18.52	1.75	0.00	4	2.67	17.45
3.42	1.130	14.40	0.00	1.130	1.27	4	16.10	57.18	0.00	57.18	18.76	1.34	0.00	4	2.60	17.45
3.44	1.490	17.31	0.00	1.490	1.16	4	16.42	57.50	0.00	57.50	24.91	1.21	0.00	5	2.48	22.61
3.46	2.000	18.09	0.00	2.000	0.90	5	16.58	57.84	0.00	57.84	33.58	0.93	0.00	5	2.33	29.53
3.48	1.990	16.77	0.00	1.990	0.84	5	16.50	58.17	0.00	58.17	33.21	0.87	0.00	5	2.32	29.18
3.50	2.040	15.22	0.00	2.040	0.75	5	16.39	58.49	0.00	58.49	33.88	0.77	0.00	5	2.28	29.61
3.52	2.010	15.49	0.00	2.010	0.77	5	16.41	58.82	0.00	58.82	33.17	0.79	0.00	5	2.30	29.12
3.54	2.000	14.40	0.00	2.000	0.72	5	16.32	59.15	0.00	59.15	32.81	0.74	0.00	5	2.29	28.79
3.56	1.870	16.68	0.00	1.870	0.89	5	16.47	59.48	0.10	59.38	30.49	0.92	0.00	5	2.36	27.15
3.58	1.760	16.36	0.00	1.760	0.93	5	16.42	59.81	0.29	59.51	28.57	0.96	0.00	5	2.39	25.61
3.60	1.630	17.22	0.00	1.630	1.06	4	16.45	60.13	0.49	59.64	26.32	1.10	0.00	5	2.44	23.86
3.62	1.630	20.46	0.00	1.630	1.26	4	16.65	60.47	0.69	59.78	26.26	1.30	0.00	5	2.48	23.99
3.64	1.310	21.19	0.00	1.310	1.62	4	16.60	60.80	0.88	59.92	20.85	1.70	0.00	4	2.62	19.58
3.66	1.310	20.69	0.00	1.310	1.58	4	16.58	61.13	1.08	60.05	20.80	1.66	0.00	4	2.61	19.52
3.68	1.210	18.95	0.00	1.210	1.57	4	16.44	61.46	1.28	60.19	19.08	1.65	0.00	4	2.64	18.02
3.70	1.080	16.58	0.00	1.080	1.54	4	16.25	61.79	1.47	60.32	16.88	1.63	0.00	4	2.68	16.06
3.72	0.960	12.21	0.00	0.960	1.27	4	15.85	62.11	1.67	60.44	14.86	1.36	0.00	4	2.69	14.15
3.74	0.880	5.70	0.00	0.880	0.65	4	14.94	62.41	1.86	60.55	13.50	0.70	0.00	4	2.60	12.65
3.76	1.240	2.55	0.00	1.240	0.21	5	14.15	62.70	2.06	60.64	19.41	0.22	0.00	5	2.30	17.20
3.78	1.490	5.70	0.00	1.490	0.38	5	15.14	63.00	2.26	60.74	23.49	0.40	0.00	5	2.30	20.82
3.80	1.450	11.89	0.00	1.450	0.82	5	15.98	63.32	2.45	60.86	22.78	0.86	0.00	5	2.44	20.74
3.82	1.490	14.03	0.00	1.490	0.94	4	16.18	63.64	2.65	60.99	23.39	0.98	0.00	5	2.46	21.37
3.84	1.390	15.72	0.00	1.390	1.13	4	16.28	63.97	2.84	61.12	21.70	1.19	0.00	5	2.52	20.07
3.86	1.480	20.82	0.00	1.480	1.41	4	16.63	64.30	3.04	61.26	23.11	1.47	0.00	4	2.55	21.49
3.88	1.800	21.60	0.00	1.800	1.20	4	16.75	64.63	3.24	61.39	28.27	1.24	0.00	5	2.44	25.78
3.90	2.080	25.15	0.00	2.080	1.21	5	16.98	64.97	3.43	61.54	32.75	1.25	0.00	5	2.39	29.61
3.92	2.010	28.66	0.00	2.010	1.43	4	17.12	65.31	3.63	61.68	31.53	1.47	0.00	5	2.44	28.79
3.94	1.600	22.46	0.00	1.600	1.40	4	16.75	65.65	3.83	61.82	24.82	1.46	0.00	5	2.52	23.00
3.96	1.280	18.77	0.00	1.280	1.47	4	16.46	65.98	4.02	61.96	19.59	1.55	0.00	4	2.62	18.48
3.98	1.160	10.52	0.00	1.160	0.91	4	15.75	66.30	4.22	62.08	17.62	0.96	0.00	5	2.56	16.44
4.00	1.110	6.06	0.00	1.110	0.55	4	15.10	66.60	4.41	62.19	16.78	0.58	0.00	5	2.48	15.46
4.02	1.110	5.92	0.00	1.110	0.53	4	15.07	66.91	4.61	62.29	16.74	0.57	0.00	5	2.48	15.42
4.04	1.600	5.74	0.00	1.600	0.36	5	15.18	67.21	4.81	62.40	24.56	0.37	0.00	5	2.27	21.81
4.06	2.150	9.48	0.00	2.150	0.44	5	15.87	67.52	5.00	62.52	33.31	0.46	0.00	5	2.19	29.14
4.08	2.520	12.21	0.00	2.520	0.48	5	16.22	67.85	5.20	62.65	39.14	0.50	0.00	5	2.14	33.99
4.10	2.520	12.26	0.00	2.520	0.49	5	16.23	68.17	5.40	62.77	39.06	0.50	0.00	5	2.15	33.95
4.12	2.520	12.26	0.00	2.520	0.49	5	16.23	68.49	5.59	62.90	38.97	0.50	0.00	5	2.15	33.90
4.14	2.290	12.26	0.00	2.290	0.54	5	16.19	68.82	5.79	63.03	35.24	0.55	0.00	5	2.20	30.97
4.16	1.760	11.73	0.00	1.760	0.67	5	16.04	69.14	5.98	63.16	26.77	0.69	0.00	5	2.34	24.13
4.18	1.610	14.69	0.00	1.610	0.91	5	16.26	69.46	6.18	63.28	24.34	0.95	0.00	5	2.44	22.32
4.20	1.450	19.07	0.00	1.450	1.32	4	16.52	69.79	6.38	63.42	21.76	1.38	0.00	4	2.55	20.38

In situ data				Basic output data							CPTe 01					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	1.310	21.50	0.00	1.310	1.64	4	16.62	70.12	6.57	63.55	19.51	1.73	-0.01	4	2.64	18.55
4.24	1.330	24.47	0.00	1.330	1.84	4	16.78	70.46	6.77	63.69	19.78	1.94	-0.01	4	2.66	18.88
4.26	1.380	24.60	0.00	1.380	1.78	4	16.80	70.79	6.97	63.83	20.51	1.88	-0.01	4	2.64	19.52
4.28	1.730	23.24	0.00	1.730	1.34	4	16.82	71.13	7.16	63.97	25.93	1.40	0.00	5	2.50	24.07
4.30	2.510	24.51	0.00	2.510	0.98	5	17.02	71.47	7.36	64.11	38.04	1.01	0.00	5	2.29	34.11
4.32	3.210	23.87	0.00	3.210	0.74	5	17.08	71.81	7.55	64.26	48.84	0.76	0.00	5	2.14	42.75
4.34	3.430	17.68	0.00	3.430	0.52	5	16.76	72.15	7.75	64.40	52.14	0.53	0.00	6	2.05	44.93
4.36	3.390	7.20	0.00	3.390	0.21	6	15.73	72.47	7.95	64.52	51.41	0.22	0.00	6	1.92	43.38
4.38	3.350	5.42	0.00	3.350	0.16	6	15.40	72.78	8.14	64.64	50.70	0.17	0.00	6	1.89	42.64
4.40	3.350	5.19	0.00	3.350	0.15	6	15.35	73.09	8.34	64.75	50.61	0.16	0.00	6	1.89	42.56
4.42	3.310	4.92	0.00	3.310	0.15	6	15.28	73.39	8.53	64.86	49.90	0.15	0.00	6	1.89	42.01
4.44	3.080	5.10	0.00	3.080	0.17	6	15.29	73.70	8.73	64.97	46.27	0.17	0.00	6	1.93	39.24
4.46	2.590	7.97	0.00	2.590	0.31	5	15.74	74.01	8.93	65.08	38.66	0.32	0.00	6	2.07	33.58
4.48	2.200	9.75	0.00	2.200	0.44	5	15.91	74.33	9.12	65.21	32.60	0.46	0.00	5	2.19	28.90
4.50	1.840	10.98	0.00	1.840	0.60	5	15.98	74.65	9.32	65.33	27.02	0.62	-0.01	5	2.32	24.45
4.52	1.600	12.48	0.00	1.600	0.78	5	16.07	74.97	9.52	65.45	23.30	0.82	-0.01	5	2.42	21.45
4.54	1.480	14.99	0.00	1.480	1.01	4	16.25	75.29	9.71	65.58	21.42	1.07	-0.01	5	2.50	19.99
4.56	1.310	22.28	0.00	1.310	1.70	4	16.66	75.62	9.91	65.72	18.78	1.80	-0.01	4	2.66	17.99
4.58	1.120	28.29	0.00	1.120	2.53	3	16.88	75.96	10.10	65.86	15.85	2.71	-0.01	4	2.81	15.56
4.60	0.960	27.25	0.00	0.960	2.84	3	16.77	76.30	10.30	66.00	13.39	3.08	-0.01	3	2.90	13.33
4.62	0.870	27.11	0.00	0.870	3.12	3	16.73	76.63	10.50	66.14	12.00	3.42	-0.01	3	2.97	12.00
4.64	0.930	27.52	0.00	0.930	2.96	3	16.77	76.97	10.69	66.27	12.87	3.23	-0.01	3	2.93	12.86
4.66	1.030	28.93	0.00	1.030	2.81	3	16.87	77.30	10.89	66.42	14.34	3.04	-0.01	3	2.88	14.22
4.68	1.070	24.83	0.00	1.070	2.32	3	16.71	77.64	11.09	66.55	14.91	2.50	-0.01	4	2.82	14.65
4.70	1.020	19.09	0.00	1.020	1.87	4	16.39	77.97	11.28	66.69	14.13	2.03	-0.01	4	2.79	13.81
4.72	0.940	13.49	0.00	0.940	1.44	4	15.96	78.29	11.48	66.81	12.90	1.57	-0.01	4	2.76	12.57
4.74	1.030	12.62	0.00	1.030	1.23	4	15.92	78.61	11.67	66.93	14.21	1.33	-0.01	4	2.69	13.71
4.76	1.140	7.97	0.00	1.140	0.70	4	15.43	78.92	11.87	67.05	15.83	0.75	-0.01	5	2.54	14.92
4.78	1.140	8.38	0.00	1.140	0.74	4	15.48	79.23	12.07	67.16	15.79	0.79	-0.01	5	2.55	14.92
4.80	1.130	12.99	0.00	1.130	1.15	4	15.98	79.54	12.26	67.28	15.61	1.24	-0.01	4	2.64	14.96
4.82	2.020	17.95	0.00	2.020	0.89	5	16.58	79.87	12.46	67.41	28.78	0.93	-0.01	5	2.37	26.44
4.84	2.590	23.83	0.00	2.590	0.92	5	17.00	80.21	12.65	67.55	37.15	0.95	-0.01	5	2.28	33.72
4.86	3.110	29.84	0.00	3.110	0.96	5	17.33	80.55	12.85	67.70	44.75	0.98	0.00	5	2.22	40.30
4.88	3.590	37.50	0.00	3.590	1.04	5	17.65	80.91	13.05	67.86	51.71	1.07	0.00	5	2.19	46.39
4.90	3.520	37.68	0.00	3.520	1.07	5	17.65	81.26	13.24	68.02	50.56	1.10	0.00	5	2.21	45.47
4.92	3.690	32.85	0.00	3.690	0.89	5	17.51	81.61	13.44	68.17	52.93	0.91	0.00	5	2.15	47.23
4.94	3.490	28.48	0.00	3.490	0.82	5	17.32	81.96	13.64	68.32	49.88	0.84	0.00	5	2.15	44.55
4.96	3.430	17.91	0.00	3.430	0.52	5	16.78	82.29	13.83	68.46	48.90	0.53	0.00	6	2.07	43.17
4.98	3.270	12.85	0.00	3.270	0.39	5	16.38	82.62	14.03	68.60	46.47	0.40	0.00	6	2.03	40.86
5.00	3.100	9.39	0.00	3.100	0.30	5	16.00	82.95	14.22	68.72	43.90	0.31	0.00	6	2.01	38.53
5.02	2.930	8.98	0.00	2.930	0.31	5	15.93	83.27	14.42	68.84	41.35	0.32	-0.01	6	2.04	36.44
5.04	2.650	9.98	0.00	2.650	0.38	5	16.01	83.59	14.62	68.97	37.21	0.39	-0.01	5	2.11	33.15
5.06	2.670	13.30	0.00	2.670	0.50	5	16.34	83.91	14.81	69.10	37.43	0.51	-0.01	5	2.16	33.57
5.08	2.740	20.64	0.00	2.740	0.75	5	16.86	84.24	15.01	69.23	38.36	0.78	-0.01	5	2.23	34.77
5.10	2.810	26.88	0.00	2.810	0.96	5	17.17	84.59	15.21	69.38	39.28	0.99	-0.01	5	2.27	35.83
5.12	2.810	36.88	0.00	2.810	1.31	5	17.53	84.93	15.40	69.53	39.19	1.35	-0.01	5	2.34	36.14
5.14	3.200	36.86	0.00	3.200	1.15	5	17.58	85.29	15.60	69.69	44.70	1.18	-0.01	5	2.26	40.80
5.16	3.080	56.22	0.00	3.080	1.83	5	18.05	85.65	15.79	69.85	42.87	1.88	-0.01	5	2.39	39.86
5.18	2.720	71.90	0.00	2.720	2.64	4	18.29	86.01	15.99	70.02	37.62	2.73	-0.01	4	2.53	35.67
5.20	2.290	86.34	0.00	2.290	3.77	4	18.43	86.38	16.19	70.19	31.39	3.92	-0.01	4	2.69	30.41
5.22	1.930	92.08	0.00	1.930	4.77	3	18.44	86.75	16.38	70.36	26.20	5.00	-0.01	3	2.81	25.81
5.24	1.690	79.55	0.00	1.690	4.71	3	18.22	87.11	16.58	70.53	22.72	4.96	-0.01	3	2.86	22.51
5.26	1.570	66.57	0.00	1.570	4.24	3	17.99	87.47	16.78	70.70	20.97	4.49	-0.01	3	2.85	20.77
5.28	1.530	61.24	0.00	1.530	4.00	3	17.88	87.83	16.97	70.86	20.35	4.25	-0.01	3	2.85	20.14
5.30	1.430	60.01	0.00	1.430	4.20	3	17.83	88.19	17.17	71.02	18.89	4.47	-0.01	3	2.88	18.79

In situ data				Basic output data								CPTe 01				
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	1.670	55.81	0.00	1.670	3.34	3	17.81	88.55	17.36	71.18	22.22	3.53	-0.01	4	2.77	21.78
5.34	1.980	57.68	0.00	1.980	2.91	4	17.91	88.90	17.56	71.34	26.51	3.05	-0.01	4	2.67	25.67
5.36	2.350	59.78	0.00	2.350	2.54	4	18.02	89.26	17.76	71.51	31.62	2.64	-0.01	4	2.58	30.25
5.38	2.260	51.53	0.00	2.260	2.28	4	17.84	89.62	17.95	71.67	30.28	2.37	-0.01	4	2.57	28.94
5.40	1.970	40.41	0.00	1.970	2.05	4	17.50	89.97	18.15	71.82	26.18	2.15	-0.01	4	2.59	25.09
5.42	1.770	32.80	0.00	1.770	1.85	4	17.22	90.32	18.34	71.97	23.34	1.95	-0.01	4	2.60	22.42
5.44	1.540	28.25	0.00	1.540	1.83	4	17.00	90.66	18.54	72.12	20.10	1.95	-0.01	4	2.65	19.43
5.46	1.520	28.98	0.00	1.520	1.91	4	17.02	91.00	18.74	72.26	19.78	2.03	-0.01	4	2.67	19.16
5.48	1.560	33.26	0.00	1.560	2.13	4	17.19	91.34	18.93	72.41	20.28	2.26	-0.01	4	2.69	19.70
5.50	1.630	43.01	0.00	1.630	2.64	4	17.50	91.69	19.13	72.56	21.20	2.80	-0.01	4	2.72	20.69
5.52	1.550	51.30	0.00	1.550	3.31	3	17.69	92.04	19.33	72.72	20.05	3.52	-0.01	4	2.80	19.76
5.54	1.630	52.53	0.00	1.630	3.22	3	17.73	92.40	19.52	72.88	21.10	3.42	-0.01	4	2.78	20.73
5.56	1.530	60.96	0.00	1.530	3.98	3	17.88	92.76	19.72	73.04	19.68	4.24	-0.01	3	2.86	19.52
5.58	1.350	67.98	0.00	1.350	5.04	3	17.96	93.11	19.91	73.20	17.17	5.41	-0.02	3	2.97	17.17
5.60	1.180	70.44	0.00	1.180	5.97	3	17.95	93.47	20.11	73.36	14.81	6.48	-0.02	3	3.07	14.81
5.62	1.100	74.45	0.00	1.100	6.77	3	17.98	93.83	20.31	73.53	13.68	7.40	-0.02	3	3.13	13.68
5.64	0.990	73.95	0.00	0.990	7.47	3	17.93	94.19	20.50	73.69	12.16	8.26	-0.02	3	3.20	12.16
5.66	1.000	67.25	0.00	1.000	6.73	3	17.83	94.55	20.70	73.85	12.26	7.43	-0.02	3	3.17	12.26
5.68	1.100	55.81	0.00	1.100	5.07	3	17.65	94.90	20.90	74.01	13.58	5.55	-0.02	3	3.05	13.58
5.70	1.150	46.70	0.00	1.150	4.06	3	17.46	95.25	21.09	74.16	14.22	4.43	-0.02	3	2.98	14.22
5.72	1.200	41.55	0.00	1.200	3.46	3	17.34	95.60	21.29	74.31	14.86	3.76	-0.02	3	2.92	14.85
5.74	1.410	41.14	0.00	1.410	2.92	3	17.40	95.95	21.48	74.46	17.65	3.13	-0.02	4	2.81	17.43
5.76	1.360	43.74	0.00	1.360	3.22	3	17.45	96.30	21.68	74.62	16.94	3.46	-0.02	3	2.85	16.81
5.78	1.440	48.07	0.00	1.440	3.34	3	17.58	96.65	21.88	74.77	17.97	3.58	-0.02	3	2.84	17.81
5.80	1.310	44.88	0.00	1.310	3.43	3	17.47	97.00	22.07	74.93	16.19	3.70	-0.02	3	2.88	16.13
5.82	1.150	44.38	0.00	1.150	3.86	3	17.40	97.35	22.27	75.08	14.02	4.22	-0.02	3	2.97	14.02
5.84	1.010	50.62	0.00	1.010	5.01	3	17.51	97.70	22.46	75.23	12.13	5.55	-0.02	3	3.09	12.13
5.86	0.990	52.40	0.00	0.990	5.29	3	17.54	98.05	22.66	75.38	11.83	5.87	-0.03	3	3.11	11.83
5.88	1.020	54.45	0.00	1.020	5.34	3	17.59	98.40	22.86	75.54	12.20	5.91	-0.02	3	3.11	12.20
5.90	1.160	53.17	0.00	1.160	4.58	3	17.62	98.75	23.05	75.70	14.02	5.01	-0.02	3	3.01	14.02
5.92	1.230	48.84	0.00	1.230	3.97	3	17.54	99.10	23.25	75.85	14.91	4.32	-0.02	3	2.95	14.91
5.94	1.400	36.40	0.00	1.400	2.60	4	17.25	99.45	23.45	76.00	17.11	2.80	-0.02	4	2.79	16.89
5.96	1.730	37.18	0.00	1.730	2.15	4	17.36	99.79	23.64	76.15	21.41	2.28	-0.01	4	2.67	20.86
5.98	1.640	40.60	0.00	1.640	2.48	4	17.44	100.14	23.84	76.30	20.18	2.64	-0.02	4	2.72	19.78
6.00	1.540	41.87	0.00	1.540	2.72	4	17.45	100.49	24.03	76.46	18.83	2.91	-0.02	4	2.77	18.55
6.02	1.320	42.05	0.00	1.320	3.19	3	17.40	100.84	24.23	76.61	15.91	3.45	-0.02	3	2.87	15.84
6.04	1.400	42.65	0.00	1.400	3.05	3	17.43	101.19	24.43	76.76	16.92	3.28	-0.02	3	2.84	16.79
6.06	1.560	46.29	0.00	1.560	2.97	4	17.57	101.54	24.62	76.92	18.96	3.17	-0.02	4	2.79	18.72
6.08	2.000	49.66	0.00	2.000	2.48	4	17.75	101.89	24.82	77.07	24.63	2.62	-0.01	4	2.66	24.00
6.10	2.120	49.57	0.00	2.120	2.34	4	17.77	102.25	25.02	77.23	26.13	2.46	-0.01	4	2.62	25.37
6.12	2.120	49.57	0.00	2.120	2.34	4	17.77	102.60	25.21	77.39	26.07	2.46	-0.01	4	2.62	25.32
6.14	2.550	45.96	0.00	2.550	1.80	4	17.75	102.96	25.41	77.55	31.55	1.88	-0.01	5	2.49	30.27
6.16	2.500	47.52	0.00	2.500	1.90	4	17.78	103.31	25.60	77.71	30.84	1.98	-0.01	4	2.51	29.66
6.18	2.240	53.22	0.00	2.240	2.38	4	17.87	103.67	25.80	77.87	27.43	2.49	-0.01	4	2.61	26.64
6.20	2.210	59.60	0.00	2.210	2.70	4	17.99	104.03	26.00	78.03	26.99	2.83	-0.01	4	2.65	26.31
6.22	2.310	72.63	0.00	2.310	3.14	4	18.24	104.39	26.19	78.20	28.20	3.29	-0.01	4	2.67	27.57
6.24	2.430	76.50	0.00	2.430	3.15	4	18.32	104.76	26.39	78.37	29.67	3.29	-0.01	4	2.66	28.96
6.26	2.670	81.19	0.00	2.670	3.04	4	18.42	105.13	26.59	78.54	32.66	3.17	-0.01	4	2.61	31.76
6.28	2.750	74.54	0.00	2.750	2.71	4	18.34	105.49	26.78	78.71	33.60	2.82	-0.01	4	2.57	32.57
6.30	2.780	73.63	0.00	2.780	2.65	4	18.33	105.86	26.98	78.88	33.90	2.75	-0.01	4	2.56	32.84
6.32	2.720	75.95	0.00	2.720	2.79	4	18.35	106.23	27.17	79.05	33.06	2.91	-0.01	4	2.59	32.11
6.34	2.530	77.09	0.00	2.530	3.05	4	18.34	106.60	27.37	79.23	30.59	3.18	-0.01	4	2.64	29.84
6.36	2.400	70.58	0.00	2.400	2.94	4	18.22	106.96	27.57	79.39	28.88	3.08	-0.01	4	2.65	28.21
6.38	2.240	68.16	0.00	2.240	3.04	4	18.15	107.32	27.76	79.56	26.81	3.20	-0.01	4	2.68	26.26
6.40	2.010	69.16	0.00	2.010	3.44	4	18.13	107.69	27.96	79.73	23.86	3.64	-0.01	4	2.75	23.53

In situ data			Basic output data										CPTe 01			
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.740	66.20	0.00	1.740	3.80	3	18.02	108.05	28.15	79.89	20.43	4.06	-0.02	3	2.83	20.28
6.44	1.540	64.97	0.00	1.540	4.22	3	17.95	108.41	28.35	80.06	17.88	4.54	-0.02	3	2.91	17.87
6.46	1.500	62.10	0.00	1.500	4.14	3	17.89	108.76	28.55	80.22	17.34	4.46	-0.02	3	2.91	17.34
6.48	1.450	63.10	0.00	1.450	4.35	3	17.90	109.12	28.74	80.38	16.68	4.71	-0.02	3	2.94	16.68
6.50	1.430	61.37	0.00	1.430	4.29	3	17.86	109.48	28.94	80.54	16.40	4.65	-0.02	3	2.94	16.40
6.52	1.560	58.27	0.00	1.560	3.74	3	17.83	109.84	29.14	80.70	17.97	4.02	-0.02	3	2.87	17.91
6.54	1.650	56.50	0.00	1.650	3.42	3	17.82	110.19	29.33	80.86	19.04	3.67	-0.02	3	2.83	18.91
6.56	1.700	53.58	0.00	1.700	3.15	4	17.77	110.55	29.53	81.02	19.62	3.37	-0.02	4	2.80	19.43
6.58	1.700	51.80	0.00	1.700	3.05	4	17.73	110.90	29.72	81.18	19.58	3.26	-0.02	4	2.79	19.38
6.60	1.660	46.75	0.00	1.660	2.82	4	17.60	111.26	29.92	81.34	19.04	3.02	-0.02	4	2.78	18.84
6.62	1.780	41.64	0.00	1.780	2.34	4	17.50	111.61	30.12	81.49	20.47	2.50	-0.02	4	2.70	20.14
6.64	1.870	42.24	0.00	1.870	2.26	4	17.53	111.96	30.31	81.64	21.53	2.40	-0.02	4	2.68	21.15
6.66	1.860	42.15	0.00	1.860	2.27	4	17.53	112.31	30.51	81.80	21.37	2.41	-0.02	4	2.68	20.99
6.68	1.770	46.88	0.00	1.770	2.65	4	17.63	112.66	30.71	81.96	20.22	2.83	-0.02	4	2.74	19.96
6.70	1.740	52.35	0.00	1.740	3.01	4	17.75	113.01	30.90	82.11	19.81	3.22	-0.02	4	2.78	19.62
6.72	1.800	56.82	0.00	1.800	3.16	4	17.86	113.37	31.10	82.27	20.50	3.37	-0.02	4	2.78	20.30
6.74	1.640	61.37	0.00	1.640	3.74	3	17.91	113.73	31.29	82.44	18.51	4.02	-0.02	3	2.86	18.45
6.76	1.460	58.91	0.00	1.460	4.03	3	17.82	114.09	31.49	82.60	16.30	4.38	-0.02	3	2.93	16.30
6.78	1.350	58.73	0.00	1.350	4.35	3	17.79	114.44	31.69	82.76	14.93	4.75	-0.03	3	2.98	14.93
6.80	1.250	58.91	0.00	1.250	4.71	3	17.76	114.80	31.88	82.92	13.69	5.19	-0.03	3	3.03	13.69
6.82	1.030	62.33	0.00	1.030	6.05	3	17.75	115.15	32.08	83.07	11.01	6.81	-0.04	3	3.18	11.01
6.84	0.960	56.95	0.00	0.960	5.93	3	17.62	115.51	32.27	83.23	10.15	6.74	-0.04	3	3.20	10.15
6.86	0.870	53.35	0.00	0.870	6.13	3	17.51	115.86	32.47	83.39	9.04	7.07	-0.04	3	3.26	9.04
6.88	0.830	49.48	0.00	0.830	5.96	3	17.40	116.21	32.67	83.54	8.54	6.93	-0.05	3	3.27	8.54
6.90	0.760	43.79	0.00	0.760	5.76	3	17.23	116.55	32.86	83.69	7.69	6.81	-0.05	3	3.30	7.69
6.92	0.750	36.31	0.00	0.750	4.84	3	17.01	116.89	33.06	83.83	7.55	5.74	-0.05	3	3.26	7.55
6.94	0.800	29.30	0.00	0.800	3.66	3	16.79	117.23	33.26	83.97	8.13	4.29	-0.05	3	3.16	8.13
6.96	0.860	23.60	0.00	0.860	2.74	3	16.57	117.56	33.45	84.11	8.83	3.18	-0.05	3	3.06	8.83
6.98	1.010	19.50	0.00	1.010	1.93	4	16.41	117.89	33.65	84.24	10.59	2.19	-0.04	4	2.90	10.58
7.00	1.080	15.76	0.00	1.080	1.46	4	16.19	118.22	33.84	84.37	11.40	1.64	-0.04	4	2.81	11.33
7.02	1.040	15.13	0.00	1.040	1.45	4	16.13	118.54	34.04	84.50	10.91	1.64	-0.04	4	2.83	10.85
7.04	0.970	18.54	0.00	0.970	1.91	4	16.34	118.86	34.24	84.63	10.06	2.18	-0.04	3	2.92	10.06
7.06	0.960	21.37	0.00	0.960	2.23	3	16.49	119.19	34.43	84.76	9.92	2.54	-0.04	3	2.96	9.92
7.08	0.940	24.69	0.00	0.940	2.63	3	16.65	119.53	34.63	84.90	9.66	3.01	-0.04	3	3.01	9.66
7.10	0.930	26.06	0.00	0.930	2.80	3	16.71	119.86	34.83	85.03	9.53	3.22	-0.04	3	3.03	9.53
7.12	0.930	26.06	0.00	0.930	2.80	3	16.71	120.19	35.02	85.17	9.51	3.22	-0.04	3	3.03	9.51
7.14	0.980	26.06	0.00	0.980	2.66	3	16.73	120.53	35.22	85.31	10.07	3.03	-0.04	3	3.00	10.07
7.16	1.050	22.55	0.00	1.050	2.15	4	16.59	120.86	35.41	85.45	10.87	2.43	-0.04	3	2.92	10.87
7.18	1.100	22.46	0.00	1.100	2.04	4	16.60	121.19	35.61	85.58	11.44	2.29	-0.04	4	2.88	11.42
7.20	1.170	21.05	0.00	1.170	1.80	4	16.55	121.52	35.81	85.72	12.23	2.01	-0.03	4	2.83	12.18
7.22	1.220	21.37	0.00	1.220	1.75	4	16.59	121.85	36.00	85.85	12.79	1.95	-0.03	4	2.81	12.72
7.24	1.340	23.56	0.00	1.340	1.76	4	16.73	122.19	36.20	85.99	14.16	1.93	-0.03	4	2.77	14.05
7.26	1.610	29.25	0.00	1.610	1.82	4	17.05	122.53	36.40	86.13	17.27	1.97	-0.02	4	2.70	17.07
7.28	1.610	29.57	0.00	1.610	1.84	4	17.07	122.87	36.59	86.28	17.24	1.99	-0.02	4	2.70	17.04
7.30	1.580	34.17	0.00	1.580	2.16	4	17.23	123.21	36.79	86.42	16.86	2.35	-0.03	4	2.75	16.71
7.32	1.530	42.28	0.00	1.530	2.76	4	17.46	123.56	36.98	86.58	16.25	3.01	-0.03	4	2.83	16.18
7.34	1.390	53.08	0.00	1.390	3.82	3	17.68	123.91	37.18	86.73	14.60	4.19	-0.03	3	2.95	14.60
7.36	1.270	54.04	0.00	1.270	4.26	3	17.67	124.27	37.38	86.89	13.19	4.72	-0.03	3	3.02	13.19
7.38	1.200	54.77	0.00	1.200	4.56	3	17.66	124.62	37.57	87.05	12.35	5.09	-0.03	3	3.06	12.35
7.40	1.350	56.95	0.00	1.350	4.22	3	17.75	124.97	37.77	87.21	14.05	4.65	-0.03	3	2.99	14.05
7.42	1.570	57.59	0.00	1.570	3.67	3	17.82	125.33	37.96	87.37	16.54	3.99	-0.03	3	2.90	16.53
7.44	1.860	54.26	0.00	1.860	2.92	4	17.82	125.69	38.16	87.53	19.81	3.13	-0.02	4	2.77	19.68
7.46	1.800	47.02	0.00	1.800	2.61	4	17.64	126.04	38.36	87.68	19.09	2.81	-0.02	4	2.76	18.95
7.48	1.620	36.63	0.00	1.620	2.26	4	17.31	126.39	38.55	87.84	17.00	2.45	-0.03	4	2.76	16.89
7.50	1.410	32.26	0.00	1.410	2.29	4	17.12	126.73	38.75	87.98	14.59	2.51	-0.03	4	2.82	14.53

In situ data				Basic output data								CPTe 01				
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	1.250	26.88	0.00	1.250	2.15	4	16.86	127.07	38.95	88.12	12.74	2.39	-0.03	4	2.86	12.71
7.54	1.140	22.96	0.00	1.140	2.01	4	16.64	127.40	39.14	88.26	11.47	2.27	-0.04	4	2.88	11.46
7.56	0.950	15.22	0.00	0.950	1.60	4	16.10	127.73	39.34	88.39	9.30	1.85	-0.05	4	2.91	9.30
7.58	0.870	14.22	0.00	0.870	1.63	4	15.99	128.05	39.53	88.51	8.38	1.92	-0.05	3	2.96	8.38
7.60	0.820	14.03	0.00	0.820	1.71	3	15.95	128.37	39.73	88.64	7.80	2.03	-0.06	3	3.00	7.80
7.62	0.810	11.94	0.00	0.810	1.47	4	15.76	128.68	39.93	88.76	7.68	1.75	-0.06	3	2.97	7.68
7.64	0.810	8.66	0.00	0.810	1.07	4	15.39	128.99	40.12	88.87	7.66	1.27	-0.06	4	2.91	7.66
7.66	0.850	6.61	0.00	0.850	0.78	4	15.10	129.30	40.32	88.98	8.10	0.92	-0.06	4	2.82	8.07
7.68	0.890	5.47	0.00	0.890	0.61	4	14.90	129.60	40.52	89.08	8.54	0.72	-0.05	4	2.76	8.48
7.70	0.910	5.15	0.00	0.910	0.57	4	14.84	129.89	40.71	89.18	8.75	0.66	-0.05	4	2.74	8.68
7.72	0.970	5.33	0.00	0.970	0.55	4	14.90	130.19	40.91	89.28	9.41	0.63	-0.05	4	2.70	9.33
7.74	1.030	4.69	0.00	1.030	0.46	4	14.78	130.49	41.10	89.38	10.06	0.52	-0.05	4	2.64	9.95
7.76	2.050	3.50	0.00	2.050	0.17	5	14.70	130.78	41.30	89.48	21.45	0.18	-0.02	5	2.20	20.83
7.78	3.530	3.50	0.00	3.530	0.10	0	14.91	131.08	41.50	89.58	37.94	0.10	-0.01	6	1.92	36.42
7.80	4.190	10.93	0.00	4.190	0.26	6	16.29	131.39	41.69	89.70	45.25	0.27	-0.01	6	1.94	43.49
7.82	4.590	29.25	0.00	4.590	0.64	5	17.46	131.73	41.89	89.84	49.62	0.66	-0.01	6	2.07	47.96
7.84	5.080	57.32	0.00	5.080	1.13	5	18.27	132.09	42.08	90.01	54.97	1.16	-0.01	5	2.16	53.37
7.86	5.270	78.41	0.00	5.270	1.49	5	18.64	132.47	42.28	90.18	56.97	1.53	-0.01	5	2.22	55.47
7.88	5.460	100.01	0.00	5.460	1.83	5	18.94	132.84	42.48	90.37	58.95	1.88	-0.01	5	2.27	57.54
7.90	5.630	119.28	0.00	5.630	2.12	5	19.15	133.22	42.67	90.55	60.70	2.17	-0.01	5	2.30	59.35
7.92	5.960	148.81	0.00	5.960	2.50	5	19.43	133.61	42.87	90.74	64.21	2.55	-0.01	5	2.33	62.88
7.94	6.140	157.33	0.00	6.140	2.56	5	19.50	134.00	43.07	90.94	66.05	2.62	-0.01	5	2.33	64.70
7.96	6.220	161.65	0.00	6.220	2.60	5	19.54	134.39	43.26	91.13	66.78	2.66	-0.01	5	2.33	65.45
7.98	7.000	168.26	0.00	7.000	2.40	5	19.63	134.79	43.46	91.33	75.17	2.45	-0.01	5	2.27	73.56
8.00	7.440	173.87	0.00	7.440	2.34	5	19.69	135.18	43.65	91.52	79.81	2.38	-0.01	5	2.24	78.07
8.02	8.030	168.94	0.00	8.030	2.10	5	19.69	135.57	43.85	91.72	86.07	2.14	-0.01	5	2.19	84.08
8.04	8.610	182.07	0.00	8.610	2.11	5	19.80	135.97	44.05	91.92	92.19	2.15	-0.01	5	2.17	90.06
8.06	8.740	180.79	0.00	8.740	2.07	5	19.80	136.36	44.24	92.12	93.40	2.10	-0.01	5	2.16	91.26
8.08	8.900	170.77	0.00	8.900	1.92	5	19.74	136.76	44.44	92.32	94.92	1.95	-0.01	5	2.13	92.73
8.10	9.160	173.09	0.00	9.160	1.89	5	19.77	137.15	44.64	92.52	97.53	1.92	0.00	5	2.12	95.30
8.12	9.160	173.09	0.00	9.160	1.89	5	19.77	137.55	44.83	92.72	97.31	1.92	0.00	5	2.12	95.15
8.14	11.820	173.09	0.00	11.820	1.46	6	19.86	137.95	45.03	92.92	125.73	1.48	0.00	6	1.96	122.48
8.16	12.680	177.97	0.00	12.680	1.40	6	19.92	138.34	45.22	93.12	134.68	1.42	0.00	6	1.93	131.18
8.18	12.730	207.22	0.00	12.730	1.63	6	20.10	138.74	45.42	93.32	134.92	1.65	0.00	6	1.97	131.68
8.20	11.590	234.96	0.00	11.590	2.03	5	20.21	139.15	45.62	93.53	122.43	2.05	0.00	5	2.07	119.88
8.22	14.110	263.53	0.00	14.110	1.87	6	20.41	139.56	45.81	93.74	149.03	1.89	0.00	6	1.99	145.73
8.24	16.440	276.52	0.00	16.440	1.68	6	20.53	139.97	46.01	93.96	173.48	1.70	0.00	6	1.91	169.47
8.26	18.160	253.23	0.00	18.160	1.39	6	20.47	140.38	46.21	94.17	191.35	1.41	0.00	6	1.82	186.70
8.28	18.430	250.50	0.00	18.430	1.36	6	20.46	140.79	46.40	94.38	193.77	1.37	0.00	6	1.81	189.19
8.30	17.860	237.20	0.00	17.860	1.33	6	20.38	141.19	46.60	94.60	187.31	1.34	0.00	6	1.81	183.06
8.32	18.070	207.85	0.00	18.070	1.15	6	20.24	141.60	46.79	94.80	189.11	1.16	0.00	6	1.76	184.80
8.34	17.700	200.79	0.00	17.700	1.13	6	20.19	142.00	46.99	95.01	184.80	1.14	0.00	6	1.76	180.77
8.36	17.240	212.64	0.00	17.240	1.23	6	20.24	142.41	47.19	95.22	179.56	1.24	0.00	6	1.80	175.92
8.38	16.830	205.26	0.00	16.830	1.22	6	20.19	142.81	47.38	95.43	174.87	1.23	0.00	6	1.80	171.49
8.40	16.210	194.19	0.00	16.210	1.20	6	20.12	143.21	47.58	95.64	168.00	1.21	0.00	6	1.81	164.93
8.42	15.700	202.39	0.00	15.700	1.29	6	20.15	143.62	47.77	95.84	162.31	1.30	0.00	6	1.84	159.57
8.44	15.470	206.94	0.00	15.470	1.34	6	20.17	144.02	47.97	96.05	159.56	1.35	0.00	6	1.86	157.05
8.46	16.040	195.23	0.00	16.040	1.22	6	20.12	144.42	48.17	96.26	165.14	1.23	0.00	6	1.82	162.58
8.48	16.780	199.11	0.00	16.780	1.19	6	20.16	144.83	48.36	96.46	172.45	1.20	0.00	6	1.80	169.88
8.50	17.720	200.43	0.00	17.720	1.13	6	20.19	145.23	48.56	96.67	181.80	1.14	0.00	6	1.76	179.18
8.52	17.650	204.71	0.00	17.650	1.16	6	20.21	145.63	48.76	96.88	180.69	1.17	0.00	6	1.77	178.26
8.54	17.500	218.11	0.00	17.500	1.25	6	20.28	146.04	48.95	97.09	178.75	1.26	0.00	6	1.80	176.56
8.56	16.330	216.74	0.00	16.330	1.33	6	20.25	146.44	49.15	97.30	166.33	1.34	0.00	6	1.84	164.52
8.58	16.150	212.96	0.00	16.150	1.32	6	20.22	146.85	49.34	97.50	164.13	1.33	0.00	6	1.84	162.48
8.60	16.520	218.33	0.00	16.520	1.32	6	20.26	147.25	49.54	97.71	167.56	1.33	0.00	6	1.84	166.01

In situ data			Basic output data										CPTe 01			
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	16.700	227.63	0.00	16.700	1.36	6	20.31	147.66	49.74	97.92	169.04	1.38	0.00	6	1.84	167.63
8.64	16.990	235.74	0.00	16.990	1.39	6	20.36	148.07	49.93	98.13	171.62	1.40	0.00	6	1.84	170.34
8.66	16.230	225.44	0.00	16.230	1.39	6	20.29	148.47	50.13	98.34	163.52	1.40	0.00	6	1.86	162.46
8.68	15.400	216.38	0.00	15.400	1.41	6	20.22	148.88	50.33	98.55	154.75	1.42	0.00	6	1.88	153.89
8.70	14.900	238.02	0.00	14.900	1.60	6	20.32	149.28	50.52	98.76	149.36	1.61	0.00	6	1.93	148.68
8.72	16.420	305.13	0.00	16.420	1.86	6	20.64	149.69	50.72	98.98	164.39	1.88	0.00	6	1.95	163.78
8.74	19.460	321.40	0.00	19.460	1.65	6	20.77	150.11	50.91	99.19	194.67	1.66	0.00	6	1.86	194.05
8.76	21.020	333.56	0.00	21.020	1.59	6	20.84	150.53	51.11	99.42	209.92	1.60	0.00	6	1.83	209.43
8.78	20.550	338.71	0.00	20.550	1.65	6	20.85	150.94	51.31	99.64	204.74	1.66	0.00	6	1.85	204.44
8.80	18.740	335.98	0.00	18.740	1.79	6	20.80	151.36	51.50	99.86	186.15	1.81	0.00	6	1.90	186.05
8.82	15.630	321.71	0.00	15.630	2.06	5	20.68	151.77	51.70	100.07	154.67	2.08	0.00	5	2.00	154.71
8.84	12.550	300.03	0.00	12.550	2.39	5	20.52	152.18	51.89	100.29	123.62	2.42	0.00	5	2.11	123.73
8.86	8.960	265.86	0.00	8.960	2.97	5	20.25	152.59	52.09	100.50	87.64	3.02	-0.01	5	2.28	87.74
8.88	7.840	295.15	0.00	7.840	3.76	4	20.32	153.00	52.29	100.71	76.33	3.84	-0.01	4	2.40	76.43
8.90	7.060	331.56	0.00	7.060	4.70	4	20.41	153.40	52.48	100.92	68.44	4.80	-0.01	4	2.51	68.53
8.92	7.860	344.18	0.00	7.860	4.38	4	20.50	153.81	52.68	101.13	76.20	4.47	-0.01	4	2.45	76.34
8.94	8.550	343.13	0.00	8.550	4.01	4	20.53	154.22	52.88	101.35	82.84	4.09	-0.01	4	2.40	83.05
8.96	9.480	345.50	0.00	9.480	3.64	5	20.57	154.64	53.07	101.56	91.82	3.70	-0.01	5	2.34	92.12
8.98	10.440	352.24	0.00	10.440	3.37	5	20.63	155.05	53.27	101.78	101.05	3.42	-0.01	5	2.28	101.46
9.00	11.830	353.56	0.00	11.830	2.99	5	20.69	155.46	53.46	102.00	114.46	3.03	0.00	5	2.21	115.04
9.02	12.400	345.95	0.00	12.400	2.79	5	20.68	155.87	53.66	102.21	119.79	2.83	0.00	5	2.17	120.50
9.04	12.740	351.83	0.00	12.740	2.76	5	20.71	156.29	53.86	102.43	122.85	2.80	0.00	5	2.16	123.66
9.06	13.640	368.01	0.00	13.640	2.70	5	20.79	156.70	54.05	102.65	131.35	2.73	0.00	5	2.14	132.33
9.08	15.500	456.40	0.00	15.500	2.94	5	21.08	157.12	54.25	102.88	149.14	2.97	0.00	5	2.13	150.36
9.10	18.010	492.76	0.00	18.010	2.74	5	21.23	157.55	54.45	103.10	173.15	2.76	0.00	5	2.07	174.81
9.12	18.010	492.76	0.00	18.010	2.74	5	21.23	157.97	54.64	103.33	172.77	2.76	0.00	5	2.07	174.54
9.14	21.990	492.59	0.00	21.990	2.24	6	21.30	158.40	54.84	103.56	210.81	2.26	0.00	6	1.94	213.47
9.16	30.200	497.26	0.00	30.200	1.65	6	21.44	158.83	55.03	103.79	289.44	1.66	0.00	6	1.75	294.11
9.18	38.940	609.35	0.00	38.940	1.56	6	21.58	159.26	55.23	104.03	372.79	1.57	0.00	6	1.67	379.64
9.20	41.490	700.29	0.00	41.490	1.69	6	21.58	159.69	55.43	104.26	396.41	1.69	0.00	6	1.69	404.01

CPTe 02 FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	lc	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data**Basic output data**

Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_v	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.050	0.00	0.00	0.050	0.00	1	19.00	0.38	0.00	0.38	130.58	0.00	0.00	0	0.00	0.00
0.04	0.350	0.05	0.00	0.350	0.01	1	13.73	0.71	0.00	0.71	493.81	0.01	0.00	0	1.84	55.16
0.06	0.600	0.05	0.00	0.600	0.01	1	13.73	0.98	0.00	0.98	609.99	0.01	0.00	0	1.81	74.99
0.08	0.750	0.05	0.00	0.750	0.01	1	13.73	1.26	0.00	1.26	595.80	0.01	0.00	0	1.82	83.05
0.10	0.860	0.09	0.00	0.860	0.01	1	13.73	1.53	0.00	1.53	560.58	0.01	0.00	0	1.77	75.23
0.12	1.000	0.09	0.00	1.000	0.01	0	13.73	1.81	0.00	1.81	552.69	0.01	0.00	0	1.77	80.28
0.14	1.070	0.05	0.00	1.070	0.00	0	13.73	2.08	0.00	2.08	513.24	0.00	0.00	0	1.86	94.53
0.16	1.120	0.27	0.00	1.120	0.02	0	13.73	2.36	0.00	2.36	474.50	0.02	0.00	0	1.67	70.67
0.18	1.160	1.18	0.00	1.160	0.10	5	13.73	2.63	0.00	2.63	440.05	0.10	0.00	6	1.65	67.87
0.20	1.230	6.20	0.00	1.230	0.50	5	15.17	2.93	0.00	2.93	419.44	0.51	0.00	6	1.80	83.10
0.22	1.420	12.44	0.00	1.420	0.88	4	16.02	3.24	0.00	3.24	436.73	0.88	0.00	6	1.87	100.07
0.24	1.590	15.54	0.00	1.590	0.98	4	16.32	3.57	0.00	3.57	444.47	0.98	0.00	6	1.88	106.81
0.26	1.780	16.68	0.00	1.780	0.94	5	16.45	3.90	0.00	3.90	455.72	0.94	0.00	6	1.86	110.45
0.28	2.280	19.14	0.00	2.280	0.84	5	16.70	4.23	0.00	4.23	538.03	0.84	0.00	6	1.79	124.20
0.30	2.820	25.20	0.00	2.820	0.89	5	17.10	4.57	0.00	4.57	616.15	0.90	0.00	6	1.76	142.49
0.32	3.320	32.08	0.00	3.320	0.97	5	17.44	4.92	0.00	4.92	674.35	0.97	0.00	6	1.75	157.38
0.34	3.510	35.99	0.00	3.510	1.03	5	17.59	5.27	0.00	5.27	665.40	1.03	0.00	6	1.76	162.41
0.36	3.810	36.09	0.00	3.810	0.95	5	17.63	5.62	0.00	5.62	676.98	0.95	0.00	6	1.73	165.19
0.38	4.020	42.56	0.00	4.020	1.06	5	17.84	5.97	0.00	5.97	671.85	1.06	0.00	6	1.75	172.95
0.40	4.090	43.38	0.00	4.090	1.06	5	17.86	6.33	0.00	6.33	644.96	1.06	0.00	6	1.76	171.48
0.42	4.080	45.93	0.00	4.080	1.13	5	17.93	6.69	0.00	6.69	608.87	1.13	0.00	6	1.78	170.07
0.44	4.280	43.01	0.00	4.280	1.00	5	17.87	7.05	0.00	7.05	606.25	1.01	0.00	6	1.74	168.17
0.46	4.340	40.91	0.00	4.340	0.94	5	17.82	7.40	0.00	7.40	585.09	0.94	0.00	6	1.73	164.32
0.48	4.560	43.19	0.00	4.560	0.95	5	17.90	7.76	0.00	7.76	586.46	0.95	0.00	6	1.73	167.83
0.50	4.440	47.84	0.00	4.440	1.08	5	18.01	8.12	0.00	8.12	545.64	1.08	0.00	6	1.77	166.40
0.52	4.440	50.67	0.00	4.440	1.14	5	18.07	8.48	0.00	8.48	522.38	1.14	0.00	6	1.79	165.70
0.54	4.540	58.14	0.00	4.540	1.28	5	18.24	8.85	0.00	8.85	512.16	1.28	0.00	6	1.82	170.19
0.56	4.450	68.12	0.00	4.450	1.53	5	18.42	9.21	0.00	9.21	481.93	1.53	0.00	6	1.87	172.57
0.58	4.320	78.41	0.00	4.320	1.82	5	18.57	9.59	0.00	9.59	449.69	1.82	0.00	6	1.93	172.21
0.60	4.320	87.94	0.00	4.320	2.04	5	18.70	9.96	0.00	9.96	432.80	2.04	0.00	6	1.96	173.74
0.62	4.120	105.29	0.00	4.120	2.56	4	18.89	10.34	0.00	10.34	397.62	2.56	0.00	5	2.04	173.30
0.64	4.010	118.78	0.00	4.010	2.96	4	19.02	10.72	0.00	10.72	373.24	2.97	0.00	8	2.09	172.41
0.66	3.970	130.67	0.00	3.970	3.29	4	19.12	11.10	0.00	11.10	356.75	3.30	0.00	8	2.13	172.16
0.68	3.850	146.53	0.00	3.850	3.81	4	19.24	11.48	0.00	11.48	334.33	3.82	0.00	8	2.19	170.62
0.70	3.730	161.24	0.00	3.730	4.32	4	19.34	11.87	0.00	11.87	313.30	4.34	0.00	9	2.24	168.18
0.72	3.570	171.22	0.00	3.570	4.80	4	19.39	12.26	0.00	12.26	290.30	4.81	0.00	9	2.28	163.11
0.74	3.450	187.03	0.00	3.450	5.42	3	19.48	12.64	0.00	12.64	271.84	5.44	0.00	9	2.33	159.55
0.76	3.370	194.60	0.00	3.370	5.77	3	19.52	13.03	0.00	13.03	257.54	5.80	0.00	9	2.36	155.88
0.78	3.280	204.12	0.00	3.280	6.22	3	19.56	13.43	0.00	13.43	243.30	6.25	0.00	9	2.39	152.25
0.80	3.240	209.50	0.00	3.240	6.47	3	19.59	13.82	0.00	13.82	233.48	6.49	0.00	9	2.41	149.26
0.82	3.240	210.91	0.00	3.240	6.51	3	19.59	14.21	0.00	14.21	227.02	6.54	0.00	9	2.42	146.82
0.84	3.210	217.06	0.00	3.210	6.76	3	19.62	14.60	0.00	14.60	218.84	6.79	0.00	9	2.43	144.36
0.86	3.190	221.20	0.00	3.190	6.93	3	19.64	14.99	0.00	14.99	211.74	6.97	0.00	9	2.45	141.91
0.88	3.180	214.19	0.00	3.180	6.74	3	19.61	15.39	0.00	15.39	205.67	6.77	0.00	9	2.44	138.21
0.90	3.090	213.37	0.00	3.090	6.91	3	19.59	15.78	0.00	15.78	194.83	6.94	0.00	9	2.46	133.34

In situ data			Basic output data								CPTe 02					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	2.870	208.26	0.00	2.870	7.26	3	19.53	16.17	0.00	16.17	176.50	7.30	0.00	9	2.50	124.42
0.94	2.700	203.85	0.00	2.700	7.55	3	19.49	16.56	0.00	16.56	162.05	7.60	0.00	9	2.53	117.12
0.96	2.590	195.60	0.00	2.590	7.55	3	19.42	16.95	0.00	16.95	151.82	7.60	0.00	9	2.54	111.20
0.98	2.490	189.99	0.00	2.490	7.63	3	19.37	17.34	0.00	17.34	142.63	7.68	0.00	9	2.55	106.02
1.00	2.360	174.05	0.00	2.360	7.38	3	19.25	17.72	0.00	17.72	132.17	7.43	0.00	9	2.56	98.97
1.02	2.280	170.36	0.00	2.280	7.47	3	19.21	18.11	0.00	18.11	124.93	7.53	0.00	9	2.57	94.87
1.04	2.230	166.53	0.00	2.230	7.47	3	19.18	18.49	0.00	18.49	119.61	7.53	0.00	9	2.58	91.68
1.06	2.220	162.16	0.00	2.220	7.30	3	19.15	18.87	0.00	18.87	116.63	7.37	0.00	9	2.58	89.61
1.08	2.270	152.31	0.00	2.270	6.71	3	19.08	19.25	0.00	19.25	116.90	6.77	0.00	9	2.55	88.61
1.10	2.330	148.72	0.00	2.330	6.38	3	19.07	19.64	0.00	19.64	117.66	6.44	0.00	9	2.54	88.56
1.12	2.330	148.72	0.00	2.330	6.38	3	19.07	20.02	0.00	20.02	115.40	6.44	0.00	9	2.54	87.37
1.14	2.400	145.73	0.00	2.400	6.07	3	19.05	20.40	0.00	20.40	116.66	6.12	0.00	9	2.52	87.66
1.16	2.390	146.41	0.00	2.390	6.13	3	19.06	20.78	0.00	20.78	114.02	6.18	0.00	9	2.53	86.36
1.18	2.370	147.42	0.00	2.370	6.22	3	19.06	21.16	0.00	21.16	111.00	6.28	0.00	9	2.54	84.87
1.20	2.300	147.29	0.00	2.300	6.40	3	19.05	21.54	0.00	21.54	105.77	6.46	0.00	9	2.56	82.06
1.22	2.190	147.53	0.00	2.190	6.74	3	19.03	21.92	0.00	21.92	98.90	6.80	0.00	9	2.59	78.33
1.24	2.160	151.36	0.00	2.160	7.01	3	19.06	22.30	0.00	22.30	95.85	7.08	0.00	9	2.61	76.95
1.26	2.120	151.31	0.00	2.120	7.14	3	19.05	22.68	0.00	22.68	92.46	7.21	0.00	9	2.62	75.00
1.28	2.010	148.31	0.00	2.010	7.38	3	19.01	23.07	0.00	23.07	86.14	7.46	0.00	9	2.65	71.09
1.30	1.860	147.21	0.00	1.860	7.91	3	18.97	23.44	0.00	23.44	78.34	8.02	0.00	9	2.69	66.36
1.32	1.710	148.53	0.00	1.710	8.69	3	18.95	23.82	0.00	23.82	70.78	8.81	0.00	9	2.74	61.80
1.34	1.560	146.48	0.00	1.560	9.39	3	18.89	24.20	0.00	24.20	63.46	9.54	0.00	9	2.79	56.99
1.36	1.370	139.60	0.00	1.370	10.19	3	18.79	24.58	0.00	24.58	54.74	10.38	0.00	3	2.85	50.92
1.38	1.270	132.08	0.00	1.270	10.40	3	18.70	24.95	0.00	24.95	49.90	10.61	0.00	3	2.88	47.15
1.40	1.290	117.60	0.00	1.290	9.12	3	18.57	25.32	0.00	25.32	49.94	9.30	0.00	3	2.84	46.29
1.42	1.370	89.94	0.00	1.370	6.56	3	18.28	25.69	0.00	25.69	52.32	6.69	0.00	3	2.73	45.85
1.44	1.450	73.58	0.00	1.450	5.07	3	18.07	26.05	0.00	26.05	54.65	5.17	0.00	4	2.65	45.94
1.46	1.530	58.96	0.00	1.530	3.85	3	17.84	26.41	0.00	26.41	56.93	3.92	0.00	4	2.56	45.90
1.48	1.720	43.60	0.00	1.720	2.53	4	17.54	26.77	0.00	26.77	63.26	2.57	0.00	5	2.42	47.68
1.50	1.920	39.05	0.00	1.920	2.03	4	17.45	27.11	0.00	27.11	69.81	2.06	0.00	5	2.34	50.61
1.52	2.200	33.31	0.00	2.200	1.51	4	17.32	27.46	0.00	27.46	79.11	1.53	0.00	5	2.23	54.55
1.54	2.260	32.35	0.00	2.260	1.43	5	17.30	27.81	0.00	27.81	80.27	1.45	0.00	5	2.21	55.07
1.56	1.960	42.37	0.00	1.960	2.16	4	17.56	28.16	0.00	28.16	68.61	2.19	0.00	5	2.36	50.67
1.58	1.730	50.44	0.00	1.730	2.92	4	17.71	28.51	0.00	28.51	59.68	2.96	0.00	4	2.47	46.72
1.60	1.650	54.31	0.00	1.650	3.29	3	17.78	28.87	0.00	28.87	56.16	3.35	0.00	4	2.52	45.09
1.62	1.680	55.49	0.00	1.680	3.30	3	17.81	29.22	0.00	29.22	56.49	3.36	0.00	4	2.52	45.44
1.64	1.680	62.33	0.00	1.680	3.71	3	17.94	29.58	0.00	29.58	55.79	3.78	0.00	4	2.55	45.70
1.66	1.670	62.15	0.00	1.670	3.72	3	17.93	29.94	0.00	29.94	54.78	3.79	0.00	4	2.56	45.07
1.68	1.650	62.83	0.00	1.650	3.81	3	17.94	30.30	0.00	30.30	53.46	3.88	0.00	4	2.57	44.33
1.70	1.590	65.88	0.00	1.590	4.14	3	17.98	30.66	0.00	30.66	50.86	4.22	0.00	4	2.60	42.96
1.72	1.560	68.34	0.00	1.560	4.38	3	18.02	31.02	0.00	31.02	49.29	4.47	0.00	4	2.63	42.14
1.74	1.560	74.54	0.00	1.560	4.78	3	18.12	31.38	0.00	31.38	48.71	4.88	0.00	4	2.65	42.22
1.76	1.540	81.69	0.00	1.540	5.30	3	18.22	31.74	0.00	31.74	47.51	5.42	0.00	3	2.69	41.89
1.78	1.570	83.83	0.00	1.570	5.34	3	18.26	32.11	0.00	32.11	47.90	5.45	0.00	3	2.69	42.27
1.80	1.630	83.06	0.00	1.630	5.10	3	18.26	32.47	0.00	32.47	49.19	5.20	0.00	4	2.67	43.10
1.82	1.740	78.09	0.00	1.740	4.49	3	18.21	32.84	0.00	32.84	51.99	4.57	0.00	4	2.62	44.64
1.84	1.720	63.42	0.00	1.720	3.69	3	17.97	33.20	0.00	33.20	50.81	3.76	0.00	4	2.57	42.83
1.86	1.720	53.95	0.00	1.720	3.14	4	17.78	33.56	0.00	33.56	50.26	3.20	0.00	4	2.53	41.74
1.88	1.730	48.07	0.00	1.730	2.78	4	17.65	33.91	0.00	33.91	50.02	2.83	0.00	4	2.50	41.10
1.90	1.790	35.81	0.00	1.790	2.00	4	17.33	34.26	0.00	34.26	51.25	2.04	0.00	5	2.41	40.67
1.92	1.870	30.16	0.00	1.870	1.61	4	17.15	34.60	0.00	34.60	53.04	1.64	0.00	5	2.35	41.14
1.94	1.890	30.12	0.00	1.890	1.59	4	17.15	34.95	0.00	34.95	53.08	1.62	0.00	5	2.34	41.21
1.96	1.830	47.93	0.00	1.830	2.62	4	17.67	35.30	0.00	35.30	50.85	2.67	0.00	4	2.48	41.75
1.98	1.810	59.19	0.00	1.810	3.27	4	17.91	35.65	0.00	35.65	49.77	3.34	0.00	4	2.54	41.98
2.00	1.780	68.84	0.00	1.780	3.87	3	18.08	36.01	0.00	36.01	48.43	3.95	0.00	4	2.59	41.77

In situ data			Basic output data								CPTe 02					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	1.780	76.77	0.00	1.780	4.31	3	18.20	36.38	0.00	36.38	47.93	4.40	0.00	4	2.62	41.93
2.04	1.750	89.76	0.00	1.750	5.13	3	18.38	36.74	0.00	36.74	46.63	5.24	0.00	4	2.68	41.73
2.06	1.760	98.51	0.00	1.760	5.60	3	18.48	37.11	0.00	37.11	46.42	5.72	0.00	3	2.71	42.01
2.08	1.720	104.57	0.00	1.720	6.08	3	18.54	37.48	0.00	37.48	44.89	6.22	0.00	3	2.74	41.17
2.10	1.690	107.71	0.00	1.690	6.37	3	18.57	37.85	0.00	37.85	43.64	6.52	0.00	3	2.76	40.42
2.12	1.690	107.71	0.00	1.690	6.37	3	18.57	38.23	0.00	38.23	43.21	6.52	0.00	3	2.76	40.09
2.14	1.620	96.41	0.00	1.620	5.95	3	18.43	38.59	0.00	38.59	40.97	6.10	0.00	3	2.76	37.98
2.16	1.680	93.31	0.00	1.680	5.55	3	18.40	38.96	0.00	38.96	42.12	5.69	0.00	3	2.73	38.65
2.18	1.660	93.77	0.00	1.660	5.65	3	18.41	39.33	0.00	39.33	41.21	5.79	0.00	3	2.74	38.00
2.20	1.620	94.91	0.00	1.620	5.86	3	18.41	39.70	0.00	39.70	39.81	6.01	0.00	3	2.76	37.03
2.22	1.540	95.86	0.00	1.540	6.22	3	18.40	40.07	0.00	40.07	37.44	6.39	0.00	3	2.79	35.27
2.24	1.530	95.00	0.00	1.530	6.21	3	18.39	40.44	0.00	40.44	36.84	6.38	0.00	3	2.80	34.78
2.26	1.490	92.81	0.00	1.490	6.23	3	18.35	40.80	0.00	40.80	35.52	6.40	0.00	3	2.81	33.68
2.28	1.420	90.62	0.00	1.420	6.38	3	18.31	41.17	0.00	41.17	33.49	6.57	0.00	3	2.83	32.03
2.30	1.440	84.93	0.00	1.440	5.90	3	18.24	41.53	0.00	41.53	33.67	6.07	0.00	3	2.81	31.96
2.32	1.450	74.45	0.00	1.450	5.13	3	18.09	41.90	0.00	41.90	33.61	5.29	0.00	3	2.77	31.53
2.34	1.470	70.62	0.00	1.470	4.80	3	18.03	42.26	0.00	42.26	33.79	4.95	0.00	3	2.75	31.51
2.36	1.500	66.57	0.00	1.500	4.44	3	17.97	42.62	0.00	42.62	34.20	4.57	0.00	4	2.72	31.63
2.38	1.430	56.22	0.00	1.430	3.93	3	17.76	42.97	0.00	42.97	32.28	4.05	0.00	4	2.71	29.73
2.40	1.310	51.53	0.00	1.310	3.93	3	17.63	43.33	0.00	43.33	29.23	4.07	0.00	4	2.74	27.23
2.42	1.310	45.93	0.00	1.310	3.51	3	17.49	43.68	0.00	43.68	28.99	3.63	0.00	4	2.71	26.77
2.44	1.300	45.47	0.00	1.300	3.50	3	17.48	44.03	0.00	44.03	28.53	3.62	0.00	4	2.71	26.40
2.46	1.170	53.03	0.00	1.170	4.53	3	17.62	44.38	0.00	44.38	25.36	4.71	0.00	3	2.82	24.27
2.48	1.140	54.40	0.00	1.140	4.77	3	17.64	44.73	0.00	44.73	24.49	4.97	0.00	3	2.84	23.62
2.50	1.160	51.21	0.00	1.160	4.41	3	17.57	45.08	0.00	45.08	24.73	4.59	0.00	3	2.82	23.69
2.52	1.090	52.81	0.00	1.090	4.84	3	17.58	45.44	0.00	45.44	22.99	5.06	0.00	3	2.86	22.35
2.54	1.060	49.89	0.00	1.060	4.71	3	17.51	45.79	0.00	45.79	22.15	4.92	0.00	3	2.87	21.56
2.56	1.000	44.15	0.00	1.000	4.42	3	17.34	46.13	0.00	46.13	20.68	4.63	0.00	3	2.87	20.16
2.58	1.020	33.40	0.00	1.020	3.27	3	17.03	46.48	0.00	46.48	20.95	3.43	0.00	4	2.79	19.96
2.60	0.990	28.02	0.00	0.990	2.83	3	16.82	46.81	0.00	46.81	20.15	2.97	0.00	4	2.77	19.08
2.62	1.000	23.74	0.00	1.000	2.37	3	16.63	47.15	0.00	47.15	20.21	2.49	0.00	4	2.72	18.92
2.64	0.950	24.06	0.00	0.950	2.53	3	16.63	47.48	0.00	47.48	19.01	2.67	0.00	4	2.76	17.99
2.66	0.940	21.00	0.00	0.940	2.23	3	16.47	47.81	0.00	47.81	18.66	2.35	0.00	4	2.74	17.56
2.68	1.060	16.54	0.00	1.060	1.56	4	16.24	48.14	0.00	48.14	21.02	1.63	0.00	4	2.62	19.12
2.70	1.310	13.40	0.00	1.310	1.02	4	16.08	48.46	0.00	48.46	26.03	1.06	0.00	5	2.45	22.67
2.72	1.700	12.26	0.00	1.700	0.72	5	16.07	48.78	0.00	48.78	33.85	0.74	0.00	5	2.29	28.26
2.74	1.760	14.12	0.00	1.760	0.80	5	16.25	49.10	0.00	49.10	34.84	0.83	0.00	5	2.30	29.21
2.76	1.710	17.27	0.00	1.710	1.01	5	16.47	49.43	0.00	49.43	33.59	1.04	0.00	5	2.36	28.66
2.78	1.630	21.32	0.00	1.630	1.31	4	16.69	49.76	0.00	49.76	31.75	1.35	0.00	5	2.44	27.67
2.80	1.610	25.06	0.00	1.610	1.56	4	16.88	50.10	0.00	50.10	31.14	1.61	0.00	5	2.48	27.50
2.82	1.450	26.24	0.00	1.450	1.81	4	16.89	50.44	0.00	50.44	27.75	1.87	0.00	4	2.55	25.01
2.84	1.340	30.75	0.00	1.340	2.29	4	17.04	50.78	0.00	50.78	25.39	2.39	0.00	4	2.64	23.42
2.86	1.270	33.12	0.00	1.270	2.61	3	17.11	51.12	0.00	51.12	23.84	2.72	0.00	4	2.69	22.32
2.88	1.270	34.17	0.00	1.270	2.69	3	17.14	51.46	0.00	51.46	23.68	2.80	0.00	4	2.70	22.23
2.90	1.270	34.49	0.00	1.270	2.72	3	17.15	51.81	0.00	51.81	23.51	2.83	0.00	4	2.70	22.12
2.92	1.250	36.36	0.00	1.250	2.91	3	17.21	52.15	0.00	52.15	22.97	3.04	0.00	4	2.73	21.75
2.94	1.260	34.72	0.00	1.260	2.76	3	17.16	52.49	0.00	52.49	23.00	2.88	0.00	4	2.71	21.72
2.96	1.230	32.39	0.00	1.230	2.63	3	17.07	52.83	0.00	52.83	22.28	2.75	0.00	4	2.71	21.05
2.98	1.250	33.26	0.00	1.250	2.66	3	17.10	53.18	0.00	53.18	22.51	2.78	0.00	4	2.71	21.27
3.00	1.240	38.09	0.00	1.240	3.07	3	17.26	53.52	0.00	53.52	22.17	3.21	0.00	4	2.75	21.17
3.02	1.330	37.54	0.00	1.330	2.82	3	17.27	53.87	0.00	53.87	23.69	2.94	0.00	4	2.71	22.41
3.04	1.460	32.49	0.00	1.460	2.23	4	17.14	54.21	0.00	54.21	25.93	2.31	0.00	4	2.62	24.03
3.06	1.650	30.62	0.00	1.650	1.86	4	17.12	54.55	0.00	54.55	29.25	1.92	0.00	4	2.54	26.61
3.08	1.560	32.53	0.00	1.560	2.09	4	17.16	54.89	0.00	54.89	27.42	2.16	0.00	4	2.59	25.26
3.10	1.540	32.08	0.00	1.540	2.08	4	17.14	55.24	0.00	55.24	26.88	2.16	0.00	4	2.59	24.82

In situ data				Basic output data							CPTe 02					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	1.540	32.08	0.00	1.540	2.08	4	17.14	55.58	0.00	55.58	26.71	2.16	0.00	4	2.59	24.69
3.14	1.810	30.48	0.00	1.810	1.68	4	17.15	55.92	0.00	55.92	31.37	1.74	0.00	5	2.49	28.36
3.16	1.850	30.48	0.00	1.850	1.65	4	17.15	56.27	0.00	56.27	31.88	1.70	0.00	5	2.48	28.79
3.18	1.560	34.03	0.00	1.560	2.18	4	17.22	56.61	0.00	56.61	26.56	2.26	0.00	4	2.61	24.68
3.20	1.350	39.18	0.00	1.350	2.90	3	17.32	56.95	0.00	56.95	22.70	3.03	0.00	4	2.73	21.69
3.22	1.280	42.42	0.00	1.280	3.31	3	17.39	57.30	0.00	57.30	21.34	3.47	0.00	4	2.78	20.63
3.24	1.140	37.04	0.00	1.140	3.25	3	17.19	57.65	0.00	57.65	18.78	3.42	0.00	3	2.82	18.30
3.26	1.180	27.79	0.00	1.180	2.36	4	16.88	57.99	0.00	57.99	19.35	2.48	0.00	4	2.73	18.52
3.28	1.540	22.60	0.00	1.540	1.47	4	16.74	58.32	0.00	58.32	25.41	1.53	0.00	5	2.53	23.33
3.30	2.300	22.46	0.00	2.300	0.98	5	16.89	58.66	0.00	58.66	38.21	1.00	0.00	5	2.30	33.51
3.32	2.670	23.92	0.00	2.670	0.90	5	17.02	59.00	0.00	59.00	44.26	0.92	0.00	5	2.23	38.33
3.34	2.640	24.19	0.00	2.640	0.92	5	17.02	59.34	0.00	59.34	43.49	0.94	0.00	5	2.24	37.81
3.36	2.230	34.72	0.00	2.230	1.56	4	17.38	59.68	0.00	59.68	36.36	1.60	0.00	5	2.42	32.81
3.38	2.050	40.96	0.00	2.050	2.00	4	17.53	60.03	0.00	60.03	33.15	2.06	0.00	4	2.51	30.49
3.40	1.920	50.80	0.00	1.920	2.65	4	17.76	60.39	0.00	60.39	30.80	2.73	0.00	4	2.60	28.88
3.42	2.060	60.73	0.00	2.060	2.95	4	17.99	60.75	0.00	60.75	32.91	3.04	0.00	4	2.61	30.93
3.44	2.710	64.52	0.00	2.710	2.38	4	18.16	61.11	0.00	61.11	43.35	2.44	0.00	5	2.47	39.68
3.46	2.670	68.75	0.00	2.670	2.57	4	18.23	61.47	0.00	61.47	42.43	2.64	0.00	4	2.49	39.08
3.48	2.260	75.86	0.00	2.260	3.36	4	18.28	61.84	0.00	61.84	35.55	3.45	0.00	4	2.62	33.56
3.50	1.990	76.18	0.00	1.990	3.83	3	18.24	62.20	0.00	62.20	30.99	3.95	0.00	4	2.70	29.70
3.52	1.980	77.32	0.00	1.980	3.91	3	18.25	62.57	0.00	62.57	30.65	4.03	0.00	4	2.71	29.43
3.54	2.050	78.64	0.00	2.050	3.84	3	18.28	62.93	0.00	62.93	31.57	3.96	0.00	4	2.69	30.26
3.56	2.110	76.45	0.00	2.110	3.62	4	18.26	63.30	0.10	63.20	32.38	3.74	0.00	4	2.67	30.92
3.58	2.110	72.31	0.00	2.110	3.43	4	18.20	63.66	0.29	63.37	32.29	3.53	0.00	4	2.66	30.77
3.60	2.080	68.80	0.00	2.080	3.31	4	18.14	64.03	0.49	63.54	31.73	3.41	0.00	4	2.65	30.22
3.62	2.190	68.57	0.00	2.190	3.13	4	18.15	64.39	0.69	63.70	33.37	3.23	0.00	4	2.62	31.62
3.64	2.050	64.24	0.00	2.050	3.13	4	18.05	64.75	0.88	63.87	31.08	3.24	0.00	4	2.64	29.58
3.66	1.830	54.49	0.00	1.830	2.98	4	17.82	65.11	1.08	64.03	27.56	3.09	0.00	4	2.67	26.35
3.68	1.680	46.88	0.00	1.680	2.79	4	17.61	65.46	1.28	64.19	25.15	2.90	0.00	4	2.68	24.11
3.70	1.580	42.74	0.00	1.580	2.71	4	17.48	65.81	1.47	64.34	23.53	2.82	0.00	4	2.70	22.61
3.72	1.430	40.28	0.00	1.430	2.82	3	17.38	66.16	1.67	64.49	21.15	2.95	0.00	4	2.74	20.48
3.74	1.440	36.09	0.00	1.440	2.51	4	17.25	66.51	1.86	64.64	21.25	2.63	0.00	4	2.71	20.48
3.76	1.440	36.04	0.00	1.440	2.50	4	17.25	66.85	2.06	64.79	21.19	2.62	0.00	4	2.71	20.43
3.78	1.610	42.42	0.00	1.610	2.63	4	17.48	67.20	2.26	64.94	23.76	2.75	0.00	4	2.69	22.81
3.80	2.040	49.02	0.00	2.040	2.40	4	17.74	67.55	2.45	65.10	30.30	2.49	0.00	4	2.58	28.61
3.82	3.340	48.57	0.00	3.340	1.45	5	17.92	67.91	2.65	65.26	50.14	1.48	0.00	5	2.29	45.14
3.84	4.600	50.21	0.00	4.600	1.09	5	18.08	68.27	2.84	65.42	69.27	1.11	0.00	5	2.11	60.63
3.86	4.870	61.46	0.00	4.870	1.26	5	18.33	68.63	3.04	65.59	73.20	1.28	0.00	5	2.13	64.31
3.88	5.120	86.75	0.00	5.120	1.69	5	18.75	69.01	3.24	65.77	76.80	1.72	0.00	5	2.19	68.21
3.90	5.200	121.88	0.00	5.200	2.34	5	19.15	69.39	3.43	65.95	77.79	2.38	0.00	5	2.28	70.12
3.92	5.150	137.10	0.00	5.150	2.66	5	19.28	69.77	3.63	66.14	76.81	2.70	0.00	5	2.32	69.73
3.94	5.060	149.72	0.00	5.060	2.96	4	19.37	70.16	3.83	66.33	75.22	3.00	0.00	5	2.36	68.74
3.96	4.150	165.89	0.00	4.150	4.00	4	19.41	70.55	4.02	66.53	61.32	4.07	0.00	4	2.50	57.40
3.98	3.560	172.04	0.00	3.560	4.83	4	19.40	70.94	4.22	66.72	52.30	4.93	0.00	4	2.61	49.76
4.00	3.050	172.86	0.00	3.050	5.67	3	19.34	71.32	4.41	66.91	44.52	5.80	0.00	3	2.70	43.00
4.02	2.710	170.68	0.00	2.710	6.30	3	19.28	71.71	4.61	67.10	39.32	6.47	0.00	3	2.77	38.38
4.04	2.350	155.64	0.00	2.350	6.62	3	19.12	72.09	4.81	67.29	33.85	6.83	0.00	3	2.83	33.35
4.06	2.310	149.26	0.00	2.310	6.46	3	19.07	72.47	5.00	67.47	33.16	6.67	0.00	3	2.83	32.67
4.08	2.360	144.89	0.00	2.360	6.14	3	19.04	72.85	5.20	67.66	33.81	6.33	0.00	3	2.81	33.20
4.10	2.320	144.80	0.00	2.320	6.24	3	19.03	73.24	5.40	67.84	33.12	6.44	0.00	3	2.82	32.58
4.12	2.320	144.80	0.00	2.320	6.24	3	19.03	73.62	5.59	68.02	33.02	6.45	0.00	3	2.82	32.50
4.14	2.360	108.03	0.00	2.360	4.58	3	18.70	73.99	5.79	68.20	33.52	4.73	0.00	4	2.72	32.53
4.16	2.370	103.20	0.00	2.370	4.35	3	18.65	74.36	5.98	68.38	33.57	4.50	0.00	4	2.71	32.52
4.18	2.280	100.10	0.00	2.280	4.39	3	18.60	74.74	6.18	68.56	32.17	4.54	0.00	4	2.72	31.24
4.20	2.160	98.69	0.00	2.160	4.57	3	18.57	75.11	6.38	68.73	30.33	4.73	0.00	3	2.75	29.59

In situ data			Basic output data										CPTe 02			
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	1.940	95.68	0.00	1.940	4.93	3	18.49	75.48	6.57	68.91	27.06	5.13	0.00	3	2.81	26.62
4.24	1.840	93.77	0.00	1.840	5.10	3	18.45	75.85	6.77	69.08	25.54	5.32	0.00	3	2.84	25.22
4.26	1.980	94.68	0.00	1.980	4.78	3	18.48	76.22	6.97	69.25	27.49	4.97	0.00	3	2.80	27.00
4.28	2.340	90.85	0.00	2.340	3.88	4	18.50	76.59	7.16	69.43	32.60	4.01	0.00	4	2.69	31.53
4.30	2.340	83.24	0.00	2.340	3.56	4	18.40	76.96	7.36	69.60	32.52	3.68	0.00	4	2.66	31.35
4.32	2.260	78.23	0.00	2.260	3.46	4	18.32	77.32	7.55	69.77	31.28	3.58	0.00	4	2.67	30.19
4.34	2.000	76.82	0.00	2.000	3.84	3	18.25	77.69	7.75	69.94	27.49	4.00	0.00	4	2.74	26.79
4.36	1.840	75.91	0.00	1.840	4.13	3	18.20	78.05	7.95	70.11	25.13	4.31	0.00	3	2.79	24.66
4.38	1.740	73.81	0.00	1.740	4.24	3	18.15	78.41	8.14	70.27	23.64	4.44	0.00	3	2.81	23.29
4.40	1.650	70.58	0.00	1.650	4.28	3	18.08	78.78	8.34	70.44	22.31	4.49	-0.01	3	2.83	22.03
4.42	1.630	71.67	0.00	1.630	4.40	3	18.09	79.14	8.53	70.60	21.97	4.62	-0.01	3	2.85	21.74
4.44	1.430	69.21	0.00	1.430	4.84	3	18.00	79.50	8.73	70.77	19.08	5.12	-0.01	3	2.92	19.07
4.46	1.530	65.15	0.00	1.530	4.26	3	17.96	79.86	8.93	70.93	20.44	4.49	-0.01	3	2.86	20.27
4.48	1.660	61.74	0.00	1.660	3.72	3	17.92	80.22	9.12	71.09	22.22	3.91	-0.01	3	2.80	21.85
4.50	1.790	56.31	0.00	1.790	3.15	4	17.85	80.57	9.32	71.25	23.99	3.29	-0.01	4	2.73	23.39
4.52	1.860	55.13	0.00	1.860	2.96	4	17.84	80.93	9.52	71.41	24.91	3.10	-0.01	4	2.70	24.20
4.54	1.820	54.77	0.00	1.820	3.01	4	17.82	81.29	9.71	71.58	24.29	3.15	-0.01	4	2.71	23.64
4.56	1.820	56.68	0.00	1.820	3.11	4	17.86	81.64	9.91	71.74	24.23	3.26	-0.01	4	2.72	23.62
4.58	1.760	56.95	0.00	1.760	3.24	4	17.85	82.00	10.10	71.90	23.34	3.39	-0.01	4	2.74	22.82
4.60	1.700	60.32	0.00	1.700	3.55	3	17.91	82.36	10.30	72.06	22.45	3.73	-0.01	4	2.78	22.05
4.62	1.730	67.84	0.00	1.730	3.92	3	18.05	82.72	10.50	72.22	22.81	4.12	-0.01	3	2.80	22.47
4.64	1.610	72.95	0.00	1.610	4.53	3	18.11	83.08	10.69	72.39	21.09	4.78	-0.01	3	2.87	20.95
4.66	1.630	71.58	0.00	1.630	4.39	3	18.09	83.44	10.89	72.55	21.32	4.63	-0.01	3	2.86	21.14
4.68	1.730	66.29	0.00	1.730	3.83	3	18.02	83.80	11.09	72.72	22.64	4.03	-0.01	3	2.80	22.30
4.70	1.880	62.47	0.00	1.880	3.32	4	17.99	84.16	11.28	72.88	24.64	3.48	-0.01	4	2.73	24.08
4.72	1.990	61.37	0.00	1.990	3.08	4	17.99	84.52	11.48	73.05	26.09	3.22	-0.01	4	2.69	25.38
4.74	1.880	57.45	0.00	1.880	3.06	4	17.89	84.88	11.67	73.21	24.52	3.20	-0.01	4	2.71	23.91
4.76	1.820	55.04	0.00	1.820	3.02	4	17.83	85.24	11.87	73.37	23.64	3.17	-0.01	4	2.72	23.09
4.78	2.160	54.49	0.00	2.160	2.52	4	17.88	85.60	12.07	73.53	28.21	2.63	-0.01	4	2.61	27.21
4.80	2.820	54.08	0.00	2.820	1.92	4	17.98	85.96	12.26	73.69	37.10	1.98	0.00	5	2.45	35.12
4.82	2.990	53.54	0.00	2.990	1.79	5	17.99	86.31	12.46	73.86	39.32	1.84	0.00	5	2.41	37.08
4.84	2.950	61.05	0.00	2.950	2.07	4	18.13	86.68	12.65	74.02	38.68	2.13	0.00	5	2.46	36.68
4.86	2.710	68.02	0.00	2.710	2.51	4	18.22	87.04	12.85	74.19	35.35	2.59	0.00	4	2.54	33.84
4.88	2.010	70.58	0.00	2.010	3.51	4	18.15	87.40	13.05	74.36	25.86	3.67	-0.01	4	2.73	25.31
4.90	1.680	74.08	0.00	1.680	4.41	3	18.14	87.77	13.24	74.52	21.37	4.65	-0.01	3	2.86	21.21
4.92	1.390	84.84	0.00	1.390	6.10	3	18.22	88.13	13.44	74.69	17.43	6.52	-0.01	3	3.02	17.43
4.94	1.300	90.90	0.00	1.300	6.99	3	18.28	88.50	13.64	74.86	16.18	7.50	-0.01	3	3.08	16.18
4.96	1.260	84.75	0.00	1.260	6.73	3	18.18	88.86	13.83	75.03	15.61	7.24	-0.01	3	3.08	15.61
4.98	1.340	67.48	0.00	1.340	5.04	3	17.95	89.22	14.03	75.19	16.63	5.40	-0.01	3	2.98	16.63
5.00	1.460	61.69	0.00	1.460	4.23	3	17.87	89.58	14.22	75.35	18.19	4.50	-0.01	3	2.90	18.14
5.02	1.790	52.03	0.00	1.790	2.91	4	17.76	89.93	14.42	75.51	22.51	3.06	-0.01	4	2.73	22.05
5.04	2.130	34.72	0.00	2.130	1.63	4	17.36	90.28	14.62	75.67	26.96	1.70	-0.01	4	2.52	25.83
5.06	2.060	29.57	0.00	2.060	1.44	4	17.16	90.63	14.81	75.81	25.98	1.50	-0.01	5	2.50	24.86
5.08	1.920	30.44	0.00	1.920	1.59	4	17.17	90.97	15.01	75.96	24.08	1.66	-0.01	4	2.55	23.17
5.10	1.940	32.90	0.00	1.940	1.70	4	17.26	91.32	15.21	76.11	24.29	1.78	-0.01	4	2.56	23.41
5.12	1.940	32.90	0.00	1.940	1.70	4	17.26	91.66	15.40	76.26	24.24	1.78	-0.01	4	2.56	23.37
5.14	2.300	34.90	0.00	2.300	1.52	4	17.39	92.01	15.60	76.41	28.90	1.58	-0.01	5	2.48	27.62
5.16	2.320	47.48	0.00	2.320	2.05	4	17.75	92.36	15.79	76.57	29.09	2.13	-0.01	4	2.55	28.02
5.18	2.040	53.95	0.00	2.040	2.64	4	17.85	92.72	15.99	76.73	25.38	2.77	-0.01	4	2.66	24.73
5.20	1.680	60.46	0.00	1.680	3.60	3	17.91	93.08	16.19	76.89	20.64	3.81	-0.01	3	2.81	20.42
5.22	1.420	63.97	0.00	1.420	4.50	3	17.91	93.44	16.38	77.05	17.22	4.82	-0.01	3	2.93	17.22
5.24	1.190	57.55	0.00	1.190	4.84	3	17.72	93.79	16.58	77.21	14.20	5.25	-0.02	3	3.02	14.20
5.26	1.190	52.03	0.00	1.190	4.37	3	17.60	94.14	16.78	77.37	14.16	4.75	-0.02	3	3.00	14.16
5.28	1.110	45.93	0.00	1.110	4.14	3	17.43	94.49	16.97	77.52	13.10	4.52	-0.02	3	3.01	13.10
5.30	1.500	34.17	0.00	1.500	2.28	4	17.21	94.84	17.17	77.67	18.09	2.43	-0.01	4	2.74	17.79

In situ data				Basic output data								CPTe 02				
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	1.710	27.84	0.00	1.710	1.63	4	17.02	95.18	17.36	77.82	20.75	1.72	-0.01	4	2.61	20.15
5.34	1.870	24.88	0.00	1.870	1.33	4	16.93	95.52	17.56	77.96	22.76	1.40	-0.01	5	2.53	21.94
5.36	1.750	28.52	0.00	1.750	1.63	4	17.06	95.86	17.76	78.10	21.18	1.72	-0.01	4	2.60	20.56
5.38	1.510	32.67	0.00	1.510	2.16	4	17.16	96.20	17.95	78.25	18.07	2.31	-0.01	4	2.73	17.75
5.40	1.190	42.56	0.00	1.190	3.58	3	17.37	96.55	18.15	78.40	13.95	3.89	-0.02	3	2.95	13.95
5.42	1.060	49.16	0.00	1.060	4.64	3	17.49	96.90	18.34	78.55	12.26	5.10	-0.02	3	3.06	12.26
5.44	1.070	53.44	0.00	1.070	4.99	3	17.59	97.25	18.54	78.71	12.36	5.49	-0.02	3	3.08	12.36
5.46	1.090	53.44	0.00	1.090	4.90	3	17.60	97.60	18.74	78.86	12.58	5.38	-0.02	3	3.07	12.58
5.48	1.240	48.75	0.00	1.240	3.93	3	17.54	97.95	18.93	79.02	14.45	4.27	-0.02	3	2.96	14.45
5.50	1.210	44.29	0.00	1.210	3.66	3	17.42	98.30	19.13	79.17	14.04	3.98	-0.02	3	2.95	14.04
5.52	1.150	41.78	0.00	1.150	3.63	3	17.33	98.65	19.33	79.32	13.25	3.97	-0.02	3	2.97	13.25
5.54	1.150	33.81	0.00	1.150	2.94	3	17.09	98.99	19.52	79.47	13.23	3.22	-0.02	3	2.92	13.23
5.56	1.260	27.20	0.00	1.260	2.16	4	16.88	99.33	19.72	79.61	14.58	2.34	-0.02	4	2.80	14.44
5.58	1.490	22.55	0.00	1.490	1.51	4	16.72	99.67	19.91	79.75	17.43	1.62	-0.01	4	2.66	17.05
5.60	1.580	20.82	0.00	1.580	1.32	4	16.66	100.00	20.11	79.89	18.53	1.41	-0.01	4	2.60	18.04
5.62	1.470	27.93	0.00	1.470	1.90	4	16.97	100.34	20.31	80.03	17.11	2.04	-0.01	4	2.72	16.83
5.64	1.530	35.54	0.00	1.530	2.32	4	17.26	100.68	20.50	80.18	17.83	2.49	-0.01	4	2.75	17.58
5.66	1.840	39.27	0.00	1.840	2.13	4	17.44	101.03	20.70	80.33	21.65	2.26	-0.01	4	2.66	21.20
5.68	2.350	39.00	0.00	2.350	1.66	4	17.53	101.38	20.90	80.48	27.94	1.73	-0.01	5	2.51	27.02
5.70	2.380	44.29	0.00	2.380	1.86	4	17.68	101.73	21.09	80.64	28.25	1.94	-0.01	4	2.53	27.38
5.72	2.370	50.48	0.00	2.370	2.13	4	17.83	102.09	21.29	80.80	28.07	2.23	-0.01	4	2.57	27.29
5.74	2.190	53.58	0.00	2.190	2.45	4	17.87	102.44	21.48	80.96	25.79	2.57	-0.01	4	2.63	25.21
5.76	2.150	54.81	0.00	2.150	2.55	4	17.89	102.80	21.68	81.12	25.24	2.68	-0.01	4	2.65	24.72
5.78	2.050	53.49	0.00	2.050	2.61	4	17.84	103.16	21.88	81.28	23.95	2.75	-0.01	4	2.68	23.51
5.80	2.200	53.67	0.00	2.200	2.44	4	17.87	103.52	22.07	81.44	25.74	2.56	-0.01	4	2.63	25.19
5.82	2.020	56.22	0.00	2.020	2.78	4	17.89	103.87	22.27	81.60	23.48	2.93	-0.01	4	2.70	23.10
5.84	1.840	55.59	0.00	1.840	3.02	4	17.84	104.23	22.46	81.77	21.23	3.20	-0.01	4	2.76	20.98
5.86	1.640	49.98	0.00	1.640	3.05	4	17.68	104.59	22.66	81.92	18.74	3.26	-0.01	4	2.80	18.59
5.88	1.650	50.03	0.00	1.650	3.03	4	17.68	104.94	22.86	82.08	18.82	3.24	-0.01	4	2.80	18.66
5.90	1.640	47.07	0.00	1.640	2.87	4	17.61	105.29	23.05	82.24	18.66	3.07	-0.02	4	2.79	18.49
5.92	1.530	44.24	0.00	1.530	2.89	4	17.51	105.64	23.25	82.39	17.29	3.11	-0.02	4	2.82	17.17
5.94	1.570	43.92	0.00	1.570	2.80	4	17.51	105.99	23.45	82.55	17.74	3.00	-0.02	4	2.80	17.59
5.96	1.480	44.20	0.00	1.480	2.99	3	17.50	106.34	23.64	82.70	16.61	3.22	-0.02	3	2.84	16.52
5.98	1.930	40.05	0.00	1.930	2.08	4	17.48	106.69	23.84	82.85	22.01	2.20	-0.01	4	2.65	21.59
6.00	2.090	38.04	0.00	2.090	1.82	4	17.46	107.04	24.03	83.01	23.89	1.92	-0.01	4	2.58	23.34
6.02	1.990	36.09	0.00	1.990	1.81	4	17.38	107.39	24.23	83.16	22.64	1.92	-0.01	4	2.60	22.16
6.04	1.920	33.81	0.00	1.920	1.76	4	17.29	107.74	24.43	83.31	21.75	1.87	-0.01	4	2.61	21.30
6.06	1.920	37.22	0.00	1.920	1.94	4	17.40	108.08	24.62	83.46	21.71	2.05	-0.01	4	2.63	21.30
6.08	2.010	44.42	0.00	2.010	2.21	4	17.62	108.43	24.82	83.62	22.74	2.34	-0.01	4	2.65	22.34
6.10	1.920	46.20	0.00	1.920	2.41	4	17.65	108.79	25.02	83.77	21.62	2.55	-0.01	4	2.69	21.30
6.12	1.920	46.20	0.00	1.920	2.41	4	17.65	109.14	25.21	83.93	21.58	2.55	-0.01	4	2.69	21.26
6.14	1.550	47.98	0.00	1.550	3.10	3	17.61	109.49	25.41	84.08	17.13	3.33	-0.02	3	2.84	17.05
6.16	1.440	57.45	0.00	1.440	3.99	3	17.79	109.85	25.60	84.24	15.79	4.32	-0.02	3	2.93	15.79
6.18	1.570	58.68	0.00	1.570	3.74	3	17.85	110.20	25.80	84.40	17.30	4.02	-0.02	3	2.88	17.27
6.20	1.660	55.13	0.00	1.660	3.32	3	17.79	110.56	26.00	84.56	18.32	3.56	-0.02	3	2.83	18.23
6.22	1.790	50.30	0.00	1.790	2.81	4	17.72	110.92	26.19	84.72	19.82	3.00	-0.02	4	2.76	19.64
6.24	1.680	52.85	0.00	1.680	3.15	4	17.75	111.27	26.39	84.88	18.48	3.37	-0.02	4	2.81	18.37
6.26	1.550	53.31	0.00	1.550	3.44	3	17.73	111.63	26.59	85.04	16.91	3.71	-0.02	3	2.87	16.87
6.28	1.370	49.39	0.00	1.370	3.61	3	17.59	111.98	26.78	85.20	14.77	3.93	-0.02	3	2.93	14.77
6.30	1.300	48.66	0.00	1.300	3.74	3	17.56	112.33	26.98	85.35	13.92	4.10	-0.02	3	2.96	13.92
6.32	1.440	50.39	0.00	1.440	3.50	3	17.64	112.68	27.17	85.51	15.52	3.80	-0.02	3	2.90	15.52
6.34	1.630	48.61	0.00	1.630	2.98	4	17.64	113.03	27.37	85.66	17.71	3.20	-0.02	4	2.82	17.61
6.36	1.610	48.89	0.00	1.610	3.04	4	17.64	113.39	27.57	85.82	17.44	3.27	-0.02	3	2.83	17.36
6.38	1.520	48.89	0.00	1.520	3.22	3	17.62	113.74	27.76	85.98	16.36	3.48	-0.02	3	2.86	16.32
6.40	1.250	50.94	0.00	1.250	4.08	3	17.59	114.09	27.96	86.13	13.19	4.48	-0.02	3	3.00	13.19

In situ data				Basic output data								CPTe 02				
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.200	49.89	0.00	1.200	4.16	3	17.56	114.44	28.15	86.29	12.58	4.60	-0.03	3	3.03	12.58
6.44	1.160	48.25	0.00	1.160	4.16	3	17.50	114.79	28.35	86.44	12.09	4.62	-0.03	3	3.04	12.09
6.46	1.130	42.24	0.00	1.130	3.74	3	17.34	115.14	28.55	86.59	11.72	4.16	-0.03	3	3.02	11.72
6.48	1.070	40.32	0.00	1.070	3.77	3	17.27	115.49	28.74	86.74	11.00	4.22	-0.03	3	3.05	11.00
6.50	0.890	39.73	0.00	0.890	4.46	3	17.18	115.83	28.94	86.89	8.91	5.13	-0.04	3	3.17	8.91
6.52	0.720	41.19	0.00	0.720	5.72	3	17.14	116.17	29.14	87.04	6.94	6.82	-0.05	3	3.34	6.94
6.54	0.720	31.89	0.00	0.720	4.43	3	16.84	116.51	29.33	87.18	6.92	5.28	-0.05	3	3.27	6.92
6.56	0.820	26.84	0.00	0.820	3.27	3	16.70	116.85	29.53	87.32	8.05	3.82	-0.04	3	3.13	8.05
6.58	1.190	21.28	0.00	1.190	1.79	4	16.57	117.18	29.72	87.46	12.27	1.98	-0.03	4	2.83	12.22
6.60	1.540	15.22	0.00	1.540	0.99	4	16.29	117.51	29.92	87.59	16.24	1.07	-0.02	4	2.59	15.98
6.62	1.620	13.67	0.00	1.620	0.84	5	16.18	117.83	30.12	87.71	17.13	0.91	-0.02	5	2.54	16.81
6.64	1.820	13.53	0.00	1.820	0.74	5	16.21	118.16	30.31	87.84	19.37	0.80	-0.02	5	2.46	18.96
6.66	2.050	23.65	0.00	2.050	1.15	5	16.90	118.49	30.51	87.98	21.95	1.22	-0.02	5	2.51	21.53
6.68	2.120	31.48	0.00	2.120	1.48	4	17.24	118.83	30.71	88.13	22.71	1.57	-0.02	4	2.55	22.33
6.70	2.090	36.81	0.00	2.090	1.76	4	17.42	119.18	30.90	88.28	22.33	1.87	-0.02	4	2.60	22.00
6.72	2.630	43.01	0.00	2.630	1.64	5	17.69	119.53	31.10	88.43	28.39	1.71	-0.01	5	2.49	27.85
6.74	2.680	42.01	0.00	2.680	1.57	5	17.67	119.89	31.29	88.59	28.90	1.64	-0.01	5	2.48	28.34
6.76	2.760	41.69	0.00	2.760	1.51	5	17.67	120.24	31.49	88.75	29.74	1.58	-0.01	5	2.46	29.15
6.78	2.840	43.06	0.00	2.840	1.52	5	17.72	120.59	31.69	88.91	30.59	1.58	-0.01	5	2.45	29.97
6.80	2.790	45.11	0.00	2.790	1.62	5	17.76	120.95	31.88	89.06	29.97	1.69	-0.01	5	2.47	29.40
6.82	2.530	50.76	0.00	2.530	2.01	4	17.86	121.30	32.08	89.23	27.00	2.11	-0.01	4	2.56	26.60
6.84	2.090	56.50	0.00	2.090	2.70	4	17.91	121.66	32.27	89.39	22.02	2.87	-0.02	4	2.71	21.84
6.86	1.710	59.64	0.00	1.710	3.49	3	17.90	122.02	32.47	89.55	17.73	3.76	-0.02	3	2.86	17.70
6.88	1.370	62.42	0.00	1.370	4.56	3	17.86	122.38	32.67	89.71	13.91	5.00	-0.03	3	3.02	13.91
6.90	1.080	58.18	0.00	1.080	5.39	3	17.69	122.73	32.86	89.87	10.65	6.08	-0.03	3	3.16	10.65
6.92	1.170	56.18	0.00	1.170	4.80	3	17.68	123.09	33.06	90.03	11.63	5.37	-0.03	3	3.10	11.63
6.94	1.930	50.48	0.00	1.930	2.62	4	17.75	123.44	33.26	90.18	20.03	2.79	-0.02	4	2.74	19.90
6.96	2.780	41.14	0.00	2.780	1.48	5	17.66	123.79	33.45	90.34	29.40	1.55	-0.01	5	2.45	28.90
6.98	2.860	44.92	0.00	2.860	1.57	5	17.77	124.15	33.65	90.50	30.23	1.64	-0.01	5	2.46	29.73
7.00	2.630	52.44	0.00	2.630	1.99	4	17.91	124.51	33.84	90.66	27.64	2.09	-0.01	4	2.55	27.28
7.02	2.270	52.85	0.00	2.270	2.33	4	17.87	124.86	34.04	90.82	23.62	2.46	-0.02	4	2.65	23.40
7.04	2.180	49.89	0.00	2.180	2.29	4	17.78	125.22	34.24	90.98	22.58	2.43	-0.02	4	2.66	22.39
7.06	2.080	50.07	0.00	2.080	2.41	4	17.77	125.58	34.43	91.14	21.44	2.56	-0.02	4	2.69	21.29
7.08	2.000	62.65	0.00	2.000	3.13	4	18.01	125.94	34.63	91.31	20.53	3.34	-0.02	4	2.78	20.44
7.10	2.070	64.93	0.00	2.070	3.14	4	18.07	126.30	34.83	91.47	21.25	3.34	-0.02	4	2.76	21.15
7.12	2.070	64.93	0.00	2.070	3.14	4	18.07	126.66	35.02	91.64	21.21	3.34	-0.02	4	2.76	21.11
7.14	1.980	66.25	0.00	1.980	3.35	4	18.07	127.02	35.22	91.80	20.18	3.58	-0.02	4	2.80	20.12
7.16	1.980	61.65	0.00	1.980	3.11	4	17.99	127.38	35.41	91.97	20.14	3.33	-0.02	4	2.78	20.07
7.18	1.880	62.28	0.00	1.880	3.31	4	17.98	127.74	35.61	92.13	19.02	3.55	-0.02	3	2.82	18.97
7.20	1.950	60.92	0.00	1.950	3.12	4	17.97	128.10	35.81	92.29	19.74	3.34	-0.02	4	2.79	19.68
7.22	2.110	65.34	0.00	2.110	3.10	4	18.08	128.46	36.00	92.46	21.43	3.30	-0.02	4	2.76	21.34
7.24	2.050	73.95	0.00	2.050	3.61	4	18.21	128.82	36.20	92.63	20.74	3.85	-0.02	3	2.81	20.69
7.26	2.040	74.54	0.00	2.040	3.65	3	18.22	129.19	36.40	92.79	20.59	3.90	-0.02	3	2.82	20.55
7.28	1.890	70.17	0.00	1.890	3.71	3	18.12	129.55	36.59	92.96	18.94	3.99	-0.02	3	2.85	18.91
7.30	1.740	66.48	0.00	1.740	3.82	3	18.03	129.91	36.79	93.13	17.29	4.13	-0.02	3	2.89	17.29
7.32	1.830	66.89	0.00	1.830	3.66	3	18.05	130.27	36.98	93.29	18.22	3.94	-0.02	3	2.86	18.20
7.34	1.850	62.51	0.00	1.850	3.38	4	17.98	130.63	37.18	93.45	18.40	3.64	-0.02	3	2.83	18.37
7.36	1.850	56.00	0.00	1.850	3.03	4	17.85	130.99	37.38	93.62	18.36	3.26	-0.02	4	2.81	18.32
7.38	1.630	50.16	0.00	1.630	3.08	3	17.68	131.35	37.57	93.77	15.98	3.35	-0.03	3	2.86	15.97
7.40	1.490	43.33	0.00	1.490	2.91	3	17.48	131.70	37.77	93.93	14.46	3.19	-0.03	3	2.88	14.46
7.42	1.460	37.27	0.00	1.460	2.55	4	17.30	132.04	37.96	94.08	14.12	2.81	-0.03	4	2.86	14.10
7.44	1.640	36.31	0.00	1.640	2.21	4	17.31	132.39	38.16	94.23	16.00	2.41	-0.03	4	2.78	15.96
7.46	1.740	39.82	0.00	1.740	2.29	4	17.44	132.74	38.36	94.38	17.03	2.48	-0.02	4	2.76	16.98
7.48	1.640	41.55	0.00	1.640	2.53	4	17.46	133.09	38.55	94.53	15.94	2.76	-0.03	4	2.81	15.91
7.50	1.730	45.74	0.00	1.730	2.64	4	17.60	133.44	38.75	94.69	16.86	2.86	-0.02	4	2.80	16.83

In situ data			Basic output data										CPTe 02			
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	1.870	48.07	0.00	1.870	2.57	4	17.68	133.79	38.95	94.85	18.31	2.77	-0.02	4	2.76	18.26
7.54	1.590	49.21	0.00	1.590	3.09	3	17.65	134.14	39.14	95.00	15.32	3.38	-0.03	3	2.88	15.32
7.56	1.580	46.15	0.00	1.580	2.92	4	17.57	134.50	39.34	95.16	15.19	3.19	-0.03	3	2.87	15.18
7.58	1.480	42.37	0.00	1.480	2.86	4	17.45	134.85	39.53	95.31	14.11	3.15	-0.03	3	2.89	14.11
7.60	1.500	41.42	0.00	1.500	2.76	4	17.43	135.19	39.73	95.46	14.30	3.03	-0.03	3	2.87	14.29
7.62	1.390	44.70	0.00	1.390	3.22	3	17.49	135.54	39.93	95.62	13.12	3.56	-0.03	3	2.94	13.12
7.64	1.350	47.43	0.00	1.350	3.51	3	17.54	135.89	40.12	95.77	12.68	3.91	-0.03	3	2.98	12.68
7.66	1.280	46.61	0.00	1.280	3.64	3	17.50	136.24	40.32	95.92	11.92	4.08	-0.04	3	3.01	11.92
7.68	1.490	46.66	0.00	1.490	3.13	3	17.56	136.59	40.52	96.08	14.09	3.45	-0.03	3	2.91	14.09
7.70	1.420	44.70	0.00	1.420	3.15	3	17.49	136.94	40.71	96.23	13.33	3.48	-0.03	3	2.93	13.33
7.72	1.370	46.02	0.00	1.370	3.36	3	17.51	137.29	40.91	96.39	12.79	3.73	-0.03	3	2.97	12.79
7.74	1.360	53.76	0.00	1.360	3.95	3	17.69	137.65	41.10	96.54	12.66	4.40	-0.03	3	3.01	12.66
7.76	1.440	51.21	0.00	1.440	3.56	3	17.66	138.00	41.30	96.70	13.46	3.93	-0.03	3	2.96	13.46
7.78	1.320	52.67	0.00	1.320	3.99	3	17.65	138.35	41.50	96.86	12.20	4.46	-0.04	3	3.03	12.20
7.80	0.990	54.90	0.00	0.990	5.55	3	17.59	138.70	41.69	97.01	8.78	6.45	-0.05	3	3.24	8.78
7.82	0.890	49.75	0.00	0.890	5.59	3	17.44	139.05	41.89	97.16	7.73	6.62	-0.06	3	3.29	7.73
7.84	0.910	43.24	0.00	0.910	4.75	3	17.28	139.40	42.08	97.31	7.92	5.61	-0.05	3	3.24	7.92
7.86	1.360	42.83	0.00	1.360	3.15	3	17.43	139.75	42.28	97.46	12.52	3.51	-0.03	3	2.96	12.52
7.88	1.510	43.38	0.00	1.510	2.87	4	17.48	140.09	42.48	97.62	14.03	3.17	-0.03	3	2.89	14.03
7.90	1.570	40.55	0.00	1.570	2.58	4	17.42	140.44	42.67	97.77	14.62	2.84	-0.03	4	2.85	14.62
7.92	1.450	40.14	0.00	1.450	2.77	4	17.38	140.79	42.87	97.92	13.37	3.07	-0.03	3	2.90	13.37
7.94	1.310	39.46	0.00	1.310	3.01	3	17.32	141.14	43.07	98.07	11.92	3.38	-0.04	3	2.96	11.92
7.96	1.110	41.01	0.00	1.110	3.69	3	17.30	141.48	43.26	98.22	9.86	4.23	-0.04	3	3.09	9.86
7.98	1.120	42.87	0.00	1.120	3.83	3	17.35	141.83	43.46	98.37	9.94	4.38	-0.04	3	3.10	9.94
8.00	0.980	40.73	0.00	0.980	4.16	3	17.24	142.18	43.65	98.52	8.50	4.86	-0.05	3	3.18	8.50
8.02	1.260	43.01	0.00	1.260	3.41	3	17.40	142.52	43.85	98.67	11.33	3.85	-0.04	3	3.02	11.33
8.04	1.200	37.73	0.00	1.200	3.14	3	17.23	142.87	44.05	98.82	10.70	3.57	-0.04	3	3.02	10.70
8.06	0.900	34.13	0.00	0.900	3.79	3	17.01	143.21	44.24	98.97	7.65	4.51	-0.06	3	3.19	7.65
8.08	0.700	27.79	0.00	0.700	3.97	3	16.68	143.55	44.44	99.11	5.61	4.99	-0.08	3	3.33	5.61
8.10	0.700	27.79	0.00	0.700	3.97	3	16.68	143.88	44.64	99.24	5.60	5.00	-0.08	3	3.33	5.60
8.12	0.630	10.66	0.00	0.630	1.69	3	15.53	144.20	44.83	99.37	4.89	2.19	-0.09	3	3.19	4.89
8.14	0.670	8.56	0.00	0.670	1.28	3	15.30	144.51	45.03	99.48	5.28	1.63	-0.09	3	3.10	5.28
8.16	0.730	8.05	0.00	0.730	1.10	4	15.27	144.81	45.22	99.59	5.88	1.38	-0.08	3	3.02	5.88
8.18	0.830	9.05	0.00	0.830	1.09	4	15.45	145.12	45.42	99.70	6.87	1.32	-0.07	4	2.95	6.87
8.20	1.110	9.05	0.00	1.110	0.82	4	15.56	145.43	45.62	99.81	9.66	0.94	-0.05	4	2.76	9.66
8.22	1.180	9.05	0.00	1.180	0.77	4	15.59	145.74	45.81	99.93	10.35	0.88	-0.04	4	2.72	10.35
8.24	1.160	9.05	0.00	1.160	0.78	4	15.58	146.05	46.01	100.05	10.13	0.89	-0.05	4	2.73	10.14
8.26	1.210	9.05	0.00	1.210	0.75	4	15.59	146.37	46.21	100.16	10.62	0.85	-0.04	4	2.70	10.62
8.28	1.250	9.05	0.00	1.250	0.72	4	15.61	146.68	46.40	100.28	11.00	0.82	-0.04	4	2.68	11.01
8.30	1.440	11.07	0.00	1.440	0.77	5	15.89	146.99	46.60	100.40	12.88	0.86	-0.04	4	2.63	12.88
8.32	1.510	13.90	0.00	1.510	0.92	4	16.17	147.32	46.79	100.52	13.56	1.02	-0.03	4	2.64	13.56
8.34	1.550	18.45	0.00	1.550	1.19	4	16.51	147.65	46.99	100.66	13.93	1.32	-0.03	4	2.68	13.94
8.36	1.480	20.09	0.00	1.480	1.36	4	16.59	147.98	47.19	100.79	13.22	1.51	-0.04	4	2.73	13.22
8.38	1.440	24.83	0.00	1.440	1.72	4	16.82	148.31	47.38	100.93	12.80	1.92	-0.04	4	2.80	12.80
8.40	1.510	33.17	0.00	1.510	2.20	4	17.17	148.65	47.58	101.08	13.47	2.44	-0.03	4	2.84	13.47
8.42	1.470	34.54	0.00	1.470	2.35	4	17.21	149.00	47.77	101.22	13.05	2.61	-0.04	4	2.87	13.05
8.44	1.550	33.67	0.00	1.550	2.17	4	17.20	149.34	47.97	101.37	13.82	2.40	-0.03	4	2.83	13.82
8.46	1.460	33.26	0.00	1.460	2.28	4	17.16	149.69	48.17	101.52	12.91	2.54	-0.04	4	2.86	12.91
8.48	1.370	30.75	0.00	1.370	2.24	4	17.05	150.03	48.36	101.67	12.00	2.52	-0.04	3	2.89	12.00
8.50	1.310	30.03	0.00	1.310	2.29	4	17.01	150.37	48.56	101.81	11.39	2.59	-0.04	3	2.91	11.39
8.52	1.350	29.11	0.00	1.350	2.16	4	16.98	150.71	48.76	101.95	11.76	2.43	-0.04	3	2.89	11.76
8.54	1.670	26.84	0.00	1.670	1.61	4	16.97	151.05	48.95	102.10	14.88	1.77	-0.03	4	2.73	14.90
8.56	1.840	21.64	0.00	1.840	1.18	4	16.76	151.38	49.15	102.24	16.52	1.28	-0.03	4	2.61	16.55
8.58	1.860	20.91	0.00	1.860	1.12	5	16.72	151.72	49.34	102.37	16.69	1.22	-0.03	4	2.60	16.73
8.60	2.070	27.75	0.00	2.070	1.34	4	17.09	152.06	49.54	102.52	18.71	1.45	-0.03	4	2.59	18.76

In situ data				Basic output data							CPTe 02					
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	2.040	36.40	0.00	2.040	1.78	4	17.40	152.41	49.74	102.67	18.39	1.93	-0.03	4	2.67	18.42
8.64	2.040	40.82	0.00	2.040	2.00	4	17.53	152.76	49.93	102.82	18.35	2.16	-0.03	4	2.70	18.39
8.66	2.070	49.34	0.00	2.070	2.38	4	17.75	153.11	50.13	102.98	18.61	2.57	-0.03	4	2.74	18.64
8.68	1.920	54.45	0.00	1.920	2.84	4	17.84	153.47	50.33	103.14	17.13	3.08	-0.03	4	2.81	17.14
8.70	2.000	55.27	0.00	2.000	2.76	4	17.87	153.82	50.52	103.30	17.87	2.99	-0.03	4	2.79	17.89
8.72	2.040	57.86	0.00	2.040	2.84	4	17.93	154.18	50.72	103.46	18.23	3.07	-0.03	4	2.79	18.25
8.74	2.050	58.91	0.00	2.050	2.87	4	17.95	154.54	50.91	103.63	18.29	3.11	-0.03	4	2.79	18.31
8.76	2.150	56.13	0.00	2.150	2.61	4	17.91	154.90	51.11	103.79	19.22	2.81	-0.03	4	2.75	19.26
8.78	2.200	57.00	0.00	2.200	2.59	4	17.94	155.26	51.31	103.95	19.67	2.79	-0.03	4	2.74	19.71
8.80	2.150	54.81	0.00	2.150	2.55	4	17.89	155.62	51.50	104.11	19.16	2.75	-0.03	4	2.74	19.20
8.82	2.250	57.14	0.00	2.250	2.54	4	17.95	155.97	51.70	104.28	20.08	2.73	-0.02	4	2.73	20.13
8.84	2.230	58.14	0.00	2.230	2.61	4	17.97	156.33	51.89	104.44	19.86	2.80	-0.03	4	2.74	19.90
8.86	2.190	59.09	0.00	2.190	2.70	4	17.98	156.69	52.09	104.60	19.44	2.91	-0.03	4	2.75	19.48
8.88	2.200	62.56	0.00	2.200	2.84	4	18.05	157.05	52.29	104.77	19.50	3.06	-0.03	4	2.77	19.54
8.90	2.280	65.52	0.00	2.280	2.87	4	18.11	157.42	52.48	104.93	20.23	3.09	-0.02	4	2.76	20.27
8.92	2.330	63.83	0.00	2.330	2.74	4	18.09	157.78	52.68	105.10	20.67	2.94	-0.02	4	2.74	20.73
8.94	2.290	66.29	0.00	2.290	2.89	4	18.13	158.14	52.88	105.26	20.25	3.11	-0.02	4	2.76	20.30
8.96	2.280	70.89	0.00	2.280	3.11	4	18.21	158.50	53.07	105.43	20.12	3.34	-0.03	4	2.78	20.16
8.98	2.310	68.66	0.00	2.310	2.97	4	18.17	158.87	53.27	105.60	20.37	3.19	-0.02	4	2.76	20.42
9.00	2.370	65.15	0.00	2.370	2.75	4	18.12	159.23	53.46	105.77	20.90	2.95	-0.02	4	2.73	20.97
9.02	2.190	65.70	0.00	2.190	3.00	4	18.10	159.59	53.66	105.93	19.17	3.24	-0.03	4	2.79	19.21
9.04	1.960	65.61	0.00	1.960	3.35	4	18.06	159.95	53.86	106.10	16.97	3.64	-0.03	3	2.86	16.97
9.06	1.830	66.07	0.00	1.830	3.61	3	18.04	160.31	54.05	106.26	15.71	3.96	-0.03	3	2.91	15.71
9.08	1.650	67.57	0.00	1.650	4.10	3	18.03	160.68	54.25	106.43	13.99	4.54	-0.04	3	2.99	13.99
9.10	1.650	67.57	0.00	1.650	4.10	3	18.03	161.04	54.45	106.59	13.97	4.54	-0.04	3	2.99	13.97
9.12	1.680	73.63	0.00	1.680	4.38	3	18.13	161.40	54.64	106.76	14.23	4.85	-0.04	3	3.00	14.23
9.14	1.670	74.59	0.00	1.670	4.47	3	18.14	161.76	54.84	106.92	14.11	4.95	-0.04	3	3.01	14.11
9.16	1.730	66.52	0.00	1.730	3.85	3	18.03	162.12	55.03	107.09	14.64	4.24	-0.04	3	2.95	14.64
9.18	1.830	58.37	0.00	1.830	3.19	4	17.90	162.48	55.23	107.25	15.55	3.50	-0.03	3	2.88	15.55
9.20	1.930	49.57	0.00	1.930	2.57	4	17.73	162.84	55.43	107.41	16.45	2.81	-0.03	4	2.80	16.49
9.22	2.060	49.94	0.00	2.060	2.42	4	17.76	163.19	55.62	107.57	17.63	2.63	-0.03	4	2.76	17.69
9.24	2.240	54.58	0.00	2.240	2.44	4	17.90	163.55	55.82	107.73	19.27	2.63	-0.03	4	2.73	19.36
9.26	2.280	59.23	0.00	2.280	2.60	4	18.00	163.91	56.02	107.89	19.61	2.80	-0.03	4	2.74	19.69
9.28	2.070	61.78	0.00	2.070	2.98	4	18.01	164.27	56.21	108.06	17.64	3.24	-0.03	4	2.82	17.67
9.30	1.930	63.92	0.00	1.930	3.31	4	18.02	164.63	56.41	108.22	16.31	3.62	-0.03	3	2.87	16.31
9.32	1.770	70.21	0.00	1.770	3.97	3	18.10	164.99	56.60	108.39	14.81	4.37	-0.04	3	2.96	14.81
9.34	1.650	68.66	0.00	1.650	4.16	3	18.04	165.35	56.80	108.55	13.68	4.62	-0.04	3	3.00	13.68
9.36	1.590	66.57	0.00	1.590	4.19	3	18.00	165.71	57.00	108.71	13.10	4.67	-0.04	3	3.02	13.10
9.38	1.670	58.91	0.00	1.670	3.53	3	17.87	166.07	57.19	108.88	13.81	3.92	-0.04	3	2.95	13.81
9.40	1.700	53.63	0.00	1.700	3.15	4	17.77	166.42	57.39	109.04	14.06	3.50	-0.04	3	2.92	14.06
9.42	1.740	49.71	0.00	1.740	2.86	4	17.69	166.78	57.58	109.19	14.41	3.16	-0.04	3	2.88	14.41
9.44	1.870	46.70	0.00	1.870	2.50	4	17.65	167.13	57.78	109.35	15.57	2.74	-0.03	4	2.82	15.60
9.46	1.790	44.47	0.00	1.790	2.48	4	17.58	167.48	57.98	109.51	14.82	2.74	-0.04	4	2.83	14.84
9.48	1.720	42.97	0.00	1.720	2.50	4	17.52	167.84	58.17	109.66	14.15	2.77	-0.04	4	2.85	14.16
9.50	1.610	43.42	0.00	1.610	2.70	4	17.51	168.19	58.37	109.82	13.13	3.01	-0.04	3	2.90	13.13
9.52	1.570	45.06	0.00	1.570	2.87	4	17.54	168.54	58.57	109.97	12.74	3.22	-0.04	3	2.93	12.74
9.54	1.520	47.98	0.00	1.520	3.16	3	17.60	168.89	58.76	110.13	12.27	3.55	-0.04	3	2.97	12.27
9.56	1.570	57.64	0.00	1.570	3.67	3	17.82	169.24	58.96	110.28	12.70	4.11	-0.04	3	2.99	12.70
9.58	1.760	57.18	0.00	1.760	3.25	4	17.86	169.60	59.15	110.45	14.40	3.60	-0.04	3	2.91	14.40
9.60	2.860	51.62	0.00	2.860	1.80	5	17.93	169.96	59.35	110.61	24.32	1.92	-0.02	4	2.57	24.61
9.62	3.640	49.34	0.00	3.640	1.36	5	17.97	170.32	59.55	110.77	31.32	1.42	-0.02	5	2.40	31.91
9.64	4.780	45.88	0.00	4.780	0.96	5	17.99	170.68	59.74	110.93	41.55	1.00	-0.01	5	2.21	42.66
9.66	7.120	48.61	0.00	7.120	0.68	6	18.21	171.04	59.94	111.10	62.55	0.70	-0.01	6	1.97	64.85
9.68	8.980	56.31	0.00	8.980	0.63	6	18.47	171.41	60.14	111.27	79.16	0.64	-0.01	6	1.86	82.49
9.70	10.220	74.95	0.00	10.220	0.73	6	18.84	171.78	60.33	111.45	90.16	0.75	-0.01	6	1.85	94.03

In situ data			Basic output data											CPTe 02		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
9.72	9.950	107.66	0.00	9.950	1.08	6	19.25	172.17	60.53	111.64	87.59	1.10	-0.01	6	1.97	90.97
9.74	9.280	137.32	0.00	9.280	1.48	5	19.50	172.55	60.72	111.83	81.44	1.51	-0.01	5	2.08	84.22
9.76	10.100	151.18	0.00	10.100	1.50	5	19.65	172.95	60.92	112.03	88.61	1.52	-0.01	5	2.06	91.78
9.78	11.140	157.83	0.00	11.140	1.42	6	19.73	173.34	61.12	112.23	97.72	1.44	-0.01	6	2.01	101.49
9.80	13.900	155.87	0.00	13.900	1.12	6	19.81	173.74	61.31	112.42	122.09	1.14	0.00	6	1.87	127.68
9.82	16.730	171.18	0.00	16.730	1.02	6	19.98	174.14	61.51	112.63	147.00	1.03	0.00	6	1.78	154.45
9.84	19.760	187.17	0.00	19.760	0.95	6	20.15	174.54	61.70	112.83	173.58	0.96	0.00	6	1.70	183.16
9.86	21.190	211.14	0.00	21.190	1.00	6	20.32	174.94	61.90	113.04	185.91	1.00	0.00	6	1.70	196.38
9.88	23.250	245.72	0.00	23.250	1.06	6	20.53	175.35	62.10	113.25	203.74	1.06	0.00	6	1.69	215.49
9.90	24.160	281.80	0.00	24.160	1.17	6	20.70	175.76	62.29	113.47	211.37	1.17	0.00	6	1.71	223.52
9.92	25.160	330.83	0.00	25.160	1.31	6	20.90	176.18	62.49	113.69	219.75	1.32	0.00	6	1.74	232.25
9.94	27.610	369.74	0.00	27.610	1.34	6	21.06	176.60	62.69	113.92	240.82	1.35	0.00	6	1.72	254.97
9.96	30.160	423.46	0.00	30.160	1.40	6	21.25	177.03	62.88	114.14	262.68	1.41	0.00	6	1.71	278.45
9.98	32.170	469.75	0.00	32.170	1.46	6	21.40	177.45	63.08	114.38	279.72	1.47	0.00	6	1.71	296.82
10.00	33.140	479.82	0.00	33.140	1.45	6	21.43	177.88	63.27	114.61	287.61	1.46	0.00	6	1.70	305.63
10.02	33.530	479.09	0.00	33.530	1.43	6	21.43	178.31	63.47	114.84	290.42	1.44	0.00	6	1.69	309.01
10.04	32.840	470.43	0.00	32.840	1.43	6	21.41	178.74	63.67	115.07	283.83	1.44	0.00	6	1.70	302.17
10.06	31.000	452.39	0.00	31.000	1.46	6	21.34	179.17	63.86	115.30	267.30	1.47	0.00	6	1.72	284.48
10.08	27.340	433.62	0.00	27.340	1.59	6	21.24	179.59	64.06	115.53	235.09	1.60	0.00	6	1.78	249.54

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Estimated Parameters

CPTe 01 FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data**Estimations**

Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.020	0.00	0	0.0E+00	0	0.02	0	0	0.01	0.02	0.00	0.00
0.04	0.110	0.00	0	0.0E+00	0	0.10	0	0	0.08	0.10	0.00	0.00
0.06	0.310	0.00	0	0.0E+00	0	0.28	0	0	0.22	0.28	0.00	0.00
0.08	0.410	0.00	0	0.0E+00	0	0.37	0	0	0.29	0.37	0.00	0.00
0.10	0.510	0.05	0	0.0E+00	1	5.16	0	0	4.12	5.16	0.00	0.00
0.12	0.600	0.09	0	0.0E+00	1	5.60	0	0	4.47	5.60	0.00	0.00
0.14	0.710	0.09	0	0.0E+00	2	6.63	0	0	5.29	6.63	0.00	0.00
0.16	0.950	0.05	0	0.0E+00	2	9.54	0	0	7.61	9.54	0.00	0.00
0.18	0.730	0.96	6	2.7E-05	2	6.51	37	36	5.19	6.51	0.00	0.00
0.20	0.830	0.77	0	0.0E+00	2	7.06	0	0	5.63	7.06	0.00	0.00
0.22	1.050	2.46	6	3.6E-05	2	8.90	42	37	7.10	8.90	0.00	0.00
0.24	1.140	4.51	6	2.5E-05	3	10.38	44	38	8.28	10.38	0.00	0.00
0.26	1.250	7.61	6	1.7E-05	3	12.10	47	38	9.66	12.10	0.00	0.00
0.28	1.250	15.45	6	6.7E-06	3	14.39	50	39	11.48	14.39	0.00	0.00
0.30	1.180	19.59	5	3.6E-06	3	15.22	50	39	12.14	15.22	0.00	0.00
0.32	1.220	23.83	5	2.7E-06	4	16.51	51	39	13.17	16.51	0.00	0.00
0.34	1.210	28.34	5	1.9E-06	4	17.52	51	39	13.98	17.52	0.00	0.00
0.36	1.260	35.45	5	1.4E-06	4	17.56	52	39	15.39	19.29	0.00	0.00
0.38	1.250	38.04	5	1.1E-06	4	17.42	52	39	15.82	19.82	0.00	0.00
0.40	1.250	42.69	5	8.6E-07	4	17.41	52	39	16.60	20.80	0.00	0.00
0.42	1.260	49.85	4	6.3E-07	4	17.55	0	0	17.71	22.20	89.52	31.38
0.44	1.400	54.99	4	7.1E-07	5	19.50	0	0	19.28	24.16	99.49	33.02
0.46	1.500	60.10	9	7.2E-07	5	20.90	0	0	20.62	25.84	106.61	34.05
0.48	1.470	63.60	9	5.7E-07	5	20.47	0	0	21.05	26.38	104.44	33.25
0.50	1.520	66.93	9	5.5E-07	5	21.17	0	0	21.90	27.45	107.99	33.39
0.52	1.510	67.43	9	5.0E-07	5	21.02	0	0	22.09	27.69	107.25	32.47
0.54	1.430	67.80	9	3.9E-07	5	19.90	0	0	21.86	27.40	101.51	30.76
0.56	1.440	69.89	9	3.6E-07	5	20.03	0	0	22.34	27.99	102.20	30.36
0.58	1.420	70.26	9	3.3E-07	5	19.75	0	0	22.44	28.12	100.74	29.44
0.60	1.440	70.67	9	3.3E-07	5	20.02	0	0	22.78	28.55	102.14	29.04
0.62	1.480	72.13	9	3.3E-07	5	20.58	0	0	23.36	29.28	104.98	28.98
0.64	1.620	75.68	9	3.9E-07	6	22.53	0	0	24.75	31.03	114.95	30.22
0.66	1.740	75.41	9	4.9E-07	6	24.21	0	0	25.57	32.05	123.50	30.84
0.68	1.850	69.94	4	6.8E-07	6	25.74	0	0	25.66	32.16	131.33	30.82
0.70	1.940	69.07	5	7.9E-07	6	26.99	52	39	26.17	32.81	0.00	0.00
0.72	1.970	71.85	5	7.4E-07	7	27.41	52	39	26.85	33.66	0.00	0.00
0.74	1.960	76.27	4	6.3E-07	7	27.26	0	0	27.53	34.51	139.11	30.76
0.76	1.920	82.56	9	4.8E-07	7	26.70	0	0	28.27	35.43	136.22	30.36
0.78	1.900	87.84	9	4.0E-07	7	26.41	0	0	28.96	36.30	134.77	30.03
0.80	1.840	94.50	9	3.0E-07	7	25.57	0	0	29.60	37.10	130.46	29.26
0.82	1.740	100.92	9	2.1E-07	7	24.16	0	0	29.88	37.44	123.29	28.17
0.84	1.650	105.52	9	1.5E-07	6	22.90	0	0	29.96	37.55	116.83	27.04
0.86	1.580	110.35	9	1.1E-07	6	21.91	0	0	30.16	37.80	111.80	26.10
0.88	1.490	114.77	9	8.2E-08	6	20.65	0	0	0.00	37.77	105.35	24.92
0.90	1.410	114.54	9	6.5E-08	6	19.52	0	0	0.00	37.22	99.61	23.63
0.92	1.330	116.64	9	4.9E-08	6	18.40	0	0	0.00	36.91	93.87	22.44
0.94	1.300	113.04	9	4.7E-08	6	17.97	0	0	0.00	36.40	91.70	21.60

In situ data			Estimations					CPTe 01				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.280	109.35	9	4.6E-08	6	17.69	0	0	0.00	35.96	90.24	20.88
0.98	1.240	101.74	9	4.6E-08	5	17.12	0	0	0.00	34.82	87.36	19.83
1.00	1.220	93.68	3	4.9E-08	5	16.84	0	0	0.00	33.78	85.91	19.00
1.02	1.180	88.03	3	4.8E-08	5	16.27	0	0	0.00	32.82	83.02	18.08
1.04	1.220	82.88	3	5.9E-08	5	16.83	0	0	0.00	32.67	85.85	18.00
1.06	1.340	74.22	4	1.0E-07	5	18.50	0	0	0.00	32.63	94.40	18.52
1.08	1.410	70.44	4	1.3E-07	6	19.48	0	0	26.16	32.78	99.37	18.73
1.10	1.440	68.89	4	1.4E-07	6	19.89	0	0	26.27	32.93	101.49	18.68
1.12	1.440	68.89	4	1.4E-07	6	19.89	0	0	26.39	33.08	101.46	18.44
1.14	1.470	59.46	4	1.9E-07	6	20.30	0	0	25.40	31.83	103.58	18.01
1.16	1.450	69.85	4	1.3E-07	6	20.02	0	0	26.83	33.62	102.13	18.10
1.18	1.410	76.91	4	9.6E-08	6	19.45	0	0	0.00	34.59	99.25	17.82
1.20	1.340	82.51	3	6.7E-08	6	18.47	0	0	0.00	35.00	94.22	17.18
1.22	1.250	89.89	3	4.3E-08	5	17.20	0	0	0.00	35.40	87.76	16.39
1.24	1.180	95.54	3	3.0E-08	5	16.22	0	0	0.00	35.64	82.74	15.69
1.26	1.120	97.05	3	2.3E-08	5	15.37	0	0	0.00	35.37	78.43	14.96
1.28	1.090	92.26	3	2.2E-08	5	14.95	0	0	0.00	34.57	76.26	14.36
1.30	1.080	86.48	3	2.4E-08	5	14.80	0	0	0.00	33.82	75.52	13.93
1.32	1.010	80.05	3	2.1E-08	5	13.82	0	0	0.00	32.30	70.49	12.95
1.34	0.920	72.03	3	1.8E-08	4	12.55	0	0	0.00	30.26	64.04	11.78
1.36	0.860	66.07	3	1.6E-08	4	11.71	0	0	0.00	28.82	59.73	10.93
1.38	0.820	60.23	3	1.5E-08	4	11.14	0	0	0.00	27.58	56.84	10.28
1.40	0.790	54.22	3	1.6E-08	4	10.72	0	0	0.00	26.38	54.68	9.74
1.42	0.730	44.61	3	1.7E-08	3	9.87	0	0	0.00	24.15	50.37	8.83
1.44	0.730	38.14	3	2.1E-08	3	9.87	0	0	0.00	23.05	50.34	8.53
1.46	0.780	31.80	4	3.7E-08	3	10.56	0	0	0.00	22.34	53.89	8.65
1.48	0.890	25.29	4	8.7E-08	4	12.10	0	0	0.00	21.89	61.72	9.19
1.50	0.990	19.18	4	2.0E-07	4	13.49	0	0	16.79	21.04	68.84	9.55
1.52	1.010	15.90	5	2.8E-07	4	13.77	29	34	16.12	20.20	0.00	0.00
1.54	0.900	15.99	4	1.8E-07	3	12.22	0	0	15.54	19.48	62.37	8.56
1.56	0.780	13.40	4	1.3E-07	3	10.54	0	0	14.12	17.70	53.77	7.46
1.58	0.710	10.62	4	1.3E-07	3	9.55	0	0	12.89	16.15	48.75	6.72
1.60	0.670	6.38	5	2.0E-07	3	8.99	23	32	11.20	14.03	0.00	0.00
1.62	0.730	5.24	5	3.3E-07	3	9.83	23	32	11.14	13.96	0.00	0.00
1.64	0.790	4.01	5	5.8E-07	3	10.66	24	32	10.93	13.70	0.00	0.00
1.66	0.930	2.73	5	1.4E-06	3	12.62	25	32	11.02	13.81	0.00	0.00
1.68	1.140	3.55	5	2.2E-06	3	15.71	27	33	12.54	15.71	0.00	0.00
1.70	1.250	7.11	5	1.5E-06	4	17.09	29	34	14.79	18.53	0.00	0.00
1.72	1.330	12.21	5	9.2E-07	4	18.21	30	34	17.16	21.50	0.00	0.00
1.74	1.370	18.59	5	5.6E-07	5	18.76	31	34	19.38	24.29	0.00	0.00
1.76	1.400	34.63	4	2.2E-07	5	19.18	0	0	23.47	29.41	97.84	12.03
1.78	1.430	38.18	4	2.0E-07	5	19.59	0	0	24.44	30.63	99.96	12.27
1.80	1.450	45.29	4	1.5E-07	6	19.87	0	0	26.01	32.60	101.36	12.54
1.82	1.490	48.20	4	1.5E-07	6	20.42	0	0	26.87	33.68	104.19	12.79
1.84	1.490	51.26	4	1.3E-07	6	20.42	0	0	27.51	34.47	104.17	12.78
1.86	1.330	61.51	4	5.8E-08	6	18.17	0	0	0.00	35.44	92.71	11.84
1.88	1.220	60.78	3	4.1E-08	5	16.63	0	0	0.00	34.44	84.83	10.95
1.90	1.130	59.55	3	3.1E-08	5	15.36	0	0	0.00	33.48	78.38	10.19
1.92	1.040	59.96	3	2.2E-08	5	14.10	0	0	0.00	32.77	71.92	9.48
1.94	1.270	60.19	3	4.6E-08	5	17.31	0	0	0.00	35.11	88.33	11.00
1.96	1.220	56.54	3	4.4E-08	5	16.61	0	0	0.00	34.04	84.73	10.49
1.98	1.190	49.75	4	4.9E-08	5	16.18	0	0	0.00	32.46	82.56	10.06
2.00	0.880	43.42	3	1.9E-08	4	11.84	0	0	0.00	28.23	60.39	7.72
2.02	0.780	40.46	3	1.3E-08	4	10.43	0	0	0.00	26.61	53.23	6.88
2.04	0.850	27.75	4	3.5E-08	4	11.41	0	0	0.00	24.36	58.20	7.04

In situ data				Estimations					CPTe 01			
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	0.860	21.10	4	5.6E-08	4	11.54	0	0	0.00	22.60	58.89	6.88
2.08	0.850	16.17	4	8.0E-08	3	11.40	0	0	0.00	20.93	58.16	6.61
2.10	0.850	16.17	4	7.9E-08	3	11.39	0	0	0.00	20.99	58.13	6.56
2.12	0.850	16.17	4	7.8E-08	3	11.39	0	0	0.00	21.05	58.11	6.51
2.14	0.850	16.10	4	7.7E-08	4	11.39	0	0	0.00	21.09	58.09	6.47
2.16	0.860	16.60	4	7.5E-08	4	11.52	0	0	0.00	21.41	58.78	6.50
2.18	0.910	16.69	4	9.1E-08	4	12.22	0	0	0.00	21.92	62.33	6.77
2.20	1.040	16.24	4	1.6E-07	4	14.03	0	0	18.21	22.83	71.59	7.50
2.22	1.130	16.92	5	2.0E-07	4	15.29	26	33	18.99	23.81	0.00	0.00
2.24	1.240	17.24	5	2.7E-07	5	16.82	27	33	19.75	24.75	0.00	0.00
2.26	1.320	17.29	5	3.4E-07	5	17.94	28	33	20.24	25.36	0.00	0.00
2.28	1.320	17.57	5	3.3E-07	5	17.93	28	33	20.38	25.54	0.00	0.00
2.30	1.280	19.59	5	2.4E-07	5	17.37	28	33	20.83	26.11	0.00	0.00
2.32	1.240	29.98	4	1.1E-07	5	16.80	0	0	0.00	29.34	85.73	8.79
2.34	1.210	39.59	4	5.9E-08	5	16.38	0	0	0.00	31.84	83.57	8.76
2.36	1.130	55.45	3	2.4E-08	5	15.25	0	0	0.00	34.91	77.83	8.47
2.38	1.160	64.15	3	2.0E-08	5	15.67	0	0	0.00	37.10	79.94	8.71
2.40	1.190	66.16	3	2.0E-08	6	16.08	0	0	0.00	37.90	82.06	8.85
2.42	1.210	68.02	3	2.0E-08	6	16.36	0	0	0.00	38.58	83.46	8.93
2.44	1.300	63.33	3	3.0E-08	6	17.61	0	0	0.00	38.57	89.87	9.36
2.46	1.450	52.94	4	6.5E-08	6	19.71	0	0	0.00	37.65	100.56	10.02
2.48	1.520	44.01	4	1.1E-07	6	20.68	0	0	0.00	36.04	105.53	10.20
2.50	1.480	35.95	4	1.4E-07	6	20.12	0	0	26.82	33.61	102.65	9.75
2.52	1.410	33.17	4	1.3E-07	6	19.13	0	0	25.83	32.37	97.63	9.24
2.54	1.170	25.29	4	9.3E-08	5	15.77	0	0	0.00	28.19	80.46	7.67
2.56	1.100	20.87	4	9.8E-08	4	14.79	0	0	0.00	26.19	75.43	7.13
2.58	1.030	15.40	4	1.2E-07	4	13.80	0	0	18.84	23.62	70.41	6.56
2.60	0.910	10.16	4	1.3E-07	4	12.12	0	0	16.27	20.40	61.82	5.70
2.62	0.870	7.84	5	1.5E-07	3	11.55	22	31	15.10	18.92	0.00	0.00
2.64	0.890	5.83	5	2.3E-07	3	11.83	22	31	14.29	17.91	0.00	0.00
2.66	0.950	4.65	5	3.8E-07	3	12.66	22	31	14.03	17.59	0.00	0.00
2.68	0.970	4.01	5	4.7E-07	3	12.94	22	31	13.80	17.29	0.00	0.00
2.70	1.030	3.37	5	6.7E-07	3	13.78	23	31	13.75	17.23	0.00	0.00
2.72	1.080	4.92	5	5.5E-07	4	14.47	23	32	14.97	18.77	0.00	0.00
2.74	1.090	7.75	5	3.4E-07	4	14.61	23	32	16.52	20.70	0.00	0.00
2.76	1.130	13.30	5	1.9E-07	4	15.16	24	32	19.07	23.90	0.00	0.00
2.78	1.140	17.95	4	1.2E-07	4	15.30	0	0	20.77	26.03	78.05	6.86
2.80	1.080	22.69	4	6.7E-08	5	14.45	0	0	0.00	27.41	73.74	6.60
2.82	0.970	19.87	4	5.3E-08	4	12.91	0	0	0.00	25.56	65.86	5.92
2.84	1.020	17.31	4	7.9E-08	4	13.60	0	0	0.00	25.04	69.41	6.10
2.86	1.090	16.45	4	1.1E-07	4	14.58	0	0	0.00	25.28	74.39	6.42
2.88	1.060	17.81	4	8.6E-08	4	14.16	0	0	0.00	25.67	72.22	6.26
2.90	0.920	15.81	4	5.8E-08	4	12.19	0	0	0.00	23.78	62.20	5.44
2.92	0.900	13.08	4	6.9E-08	4	11.91	0	0	0.00	22.49	60.75	5.25
2.94	0.960	10.25	4	1.2E-07	4	12.74	0	0	17.27	21.64	65.01	5.46
2.96	1.180	7.52	5	4.1E-07	4	15.82	24	32	17.29	21.67	0.00	0.00
2.98	1.620	9.25	5	1.1E-06	5	21.97	27	33	20.22	25.34	0.00	0.00
3.00	1.780	9.93	5	1.4E-06	6	24.21	28	34	21.25	26.64	0.00	0.00
3.02	1.660	9.43	5	1.1E-06	5	22.52	27	33	20.56	25.77	0.00	0.00
3.04	1.440	8.25	5	7.4E-07	5	19.44	26	33	19.06	23.88	0.00	0.00
3.06	1.290	5.42	5	7.7E-07	4	17.34	24	32	16.89	21.16	0.00	0.00
3.08	1.560	4.65	5	1.8E-06	5	21.11	26	33	17.68	22.16	0.00	0.00
3.10	1.560	4.65	5	1.8E-06	5	21.11	26	33	17.72	22.20	0.00	0.00
3.12	2.200	9.02	5	3.2E-06	6	28.39	31	34	22.66	28.39	0.00	0.00
3.14	2.280	8.52	5	3.8E-06	7	28.49	31	34	22.73	28.49	0.00	0.00

In situ data				Estimations					CPTe 01			
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	2.070	4.65	6	4.6E-06	6	24.89	30	34	19.86	24.89	0.00	0.00
3.18	1.450	3.60	5	1.6E-06	5	19.55	25	32	16.69	20.92	0.00	0.00
3.20	1.240	3.92	5	8.3E-07	4	16.61	23	32	15.94	19.98	0.00	0.00
3.22	1.080	3.01	5	6.2E-07	4	14.36	22	31	14.54	18.22	0.00	0.00
3.24	1.050	3.01	5	5.5E-07	4	13.94	21	31	14.41	18.05	0.00	0.00
3.26	1.260	3.01	5	1.1E-06	4	16.87	23	32	15.51	19.44	0.00	0.00
3.28	1.620	3.01	5	2.5E-06	5	21.55	26	33	17.19	21.55	0.00	0.00
3.30	1.710	3.01	5	3.0E-06	5	22.07	27	33	17.61	22.07	0.00	0.00
3.32	1.740	3.01	5	3.2E-06	5	22.26	27	33	17.76	22.26	0.00	0.00
3.34	1.690	3.01	5	2.8E-06	5	22.03	26	33	17.58	22.03	0.00	0.00
3.36	1.540	15.86	5	3.4E-07	6	20.77	26	33	23.42	29.35	0.00	0.00
3.38	1.280	21.78	4	9.9E-08	5	17.13	0	0	0.00	30.30	87.39	6.65
3.40	1.110	18.41	4	7.1E-08	5	14.74	0	0	0.00	27.70	75.22	5.76
3.42	1.130	14.40	4	1.1E-07	5	15.02	0	0	0.00	26.12	76.63	5.76
3.44	1.490	17.31	5	2.5E-07	6	20.05	25	32	23.91	29.96	0.00	0.00
3.46	2.000	18.09	5	7.6E-07	7	27.19	29	34	26.55	33.27	0.00	0.00
3.48	1.990	16.77	5	8.2E-07	7	27.05	29	34	26.04	32.64	0.00	0.00
3.50	2.040	15.22	5	1.0E-06	7	27.74	29	34	25.66	32.16	0.00	0.00
3.52	2.010	15.49	5	9.3E-07	7	27.32	29	34	25.70	32.20	0.00	0.00
3.54	2.000	14.40	5	1.0E-06	6	27.17	29	34	25.24	31.64	0.00	0.00
3.56	1.870	16.68	5	6.2E-07	6	25.35	28	33	25.68	32.18	0.00	0.00
3.58	1.760	16.36	5	5.0E-07	6	23.80	27	33	25.09	31.45	0.00	0.00
3.60	1.630	17.22	5	3.4E-07	6	21.98	26	33	24.85	31.14	0.00	0.00
3.62	1.630	20.46	5	2.6E-07	6	21.97	26	33	26.05	32.65	0.00	0.00
3.64	1.310	21.19	4	1.0E-07	5	17.49	0	0	0.00	30.89	89.23	6.46
3.66	1.310	20.69	4	1.0E-07	5	17.48	0	0	0.00	30.70	89.20	6.44
3.68	1.210	18.95	4	8.4E-08	5	16.08	0	0	0.00	29.26	82.04	5.94
3.70	1.080	16.58	4	6.4E-08	5	14.25	0	0	0.00	27.25	72.73	5.30
3.72	0.960	12.21	4	6.2E-08	4	12.57	0	0	0.00	24.22	64.14	4.67
3.74	0.880	5.70	4	1.2E-07	3	10.34	0	0	15.72	19.70	58.40	4.17
3.76	1.240	2.55	5	9.0E-07	4	16.48	22	31	15.61	19.57	0.00	0.00
3.78	1.490	5.70	5	8.9E-07	5	19.98	24	32	18.93	23.73	0.00	0.00
3.80	1.450	11.89	5	3.4E-07	5	19.41	24	32	21.95	27.51	0.00	0.00
3.82	1.490	14.03	5	3.0E-07	5	19.97	25	32	23.08	28.93	0.00	0.00
3.84	1.390	15.72	5	1.9E-07	5	18.56	24	32	23.28	29.18	0.00	0.00
3.86	1.480	20.82	4	1.6E-07	6	19.82	0	0	25.63	32.13	101.12	7.09
3.88	1.800	21.60	5	3.4E-07	6	24.30	27	33	27.48	34.45	0.00	0.00
3.90	2.080	25.15	5	4.8E-07	7	28.21	29	34	29.96	37.55	0.00	0.00
3.92	2.010	28.66	5	3.3E-07	7	27.23	29	34	30.83	38.63	0.00	0.00
3.94	1.600	22.46	5	1.9E-07	6	21.48	26	33	26.89	33.70	0.00	0.00
3.96	1.280	18.77	4	1.0E-07	5	17.00	0	0	0.00	29.98	86.72	6.10
3.98	1.160	10.52	5	1.5E-07	4	15.31	22	31	19.97	25.03	0.00	0.00
4.00	1.110	6.06	5	2.5E-07	4	14.61	21	31	17.41	21.82	0.00	0.00
4.02	1.110	5.92	5	2.6E-07	4	14.60	21	31	17.34	21.73	0.00	0.00
4.04	1.600	5.74	5	1.1E-06	5	21.46	25	32	19.61	24.58	0.00	0.00
4.06	2.150	9.48	5	2.0E-06	7	29.98	29	34	23.92	29.98	0.00	0.00
4.08	2.520	12.21	5	2.7E-06	7	33.36	31	34	26.62	33.36	0.00	0.00
4.10	2.520	12.26	5	2.7E-06	7	33.41	31	34	26.66	33.41	0.00	0.00
4.12	2.520	12.26	5	2.7E-06	7	33.43	31	34	26.67	33.43	0.00	0.00
4.14	2.290	12.26	5	1.8E-06	7	31.10	30	34	25.88	32.44	0.00	0.00
4.16	1.760	11.73	5	6.8E-07	6	23.67	26	33	23.56	29.53	0.00	0.00
4.18	1.610	14.69	5	3.5E-07	6	21.57	25	32	24.21	30.35	0.00	0.00
4.20	1.450	19.07	4	1.6E-07	6	19.32	0	0	25.14	31.51	98.59	6.72
4.22	1.310	21.50	4	8.4E-08	5	17.36	0	0	0.00	31.64	88.56	6.12
4.24	1.330	24.47	4	7.2E-08	6	17.63	0	0	0.00	33.02	89.97	6.23

In situ data				Estimations				CPTe 01				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	1.380	24.60	4	8.3E-08	6	18.33	0	0	0.00	33.46	93.51	6.44
4.28	1.730	23.24	5	2.3E-07	6	23.22	26	33	28.09	35.21	0.00	0.00
4.30	2.510	24.51	5	9.8E-07	8	34.14	31	34	31.84	39.91	0.00	0.00
4.32	3.210	23.87	5	2.7E-06	10	42.64	35	36	34.02	42.64	0.00	0.00
4.34	3.430	17.68	6	5.4E-06	10	40.36	36	36	32.20	40.36	0.00	0.00
4.36	3.390	7.20	6	1.4E-05	9	33.76	35	36	26.94	33.76	0.00	0.00
4.38	3.350	5.42	6	1.6E-05	8	32.37	35	36	25.83	32.37	0.00	0.00
4.40	3.350	5.19	6	1.6E-05	8	32.22	35	36	25.71	32.22	0.00	0.00
4.42	3.310	4.92	6	1.6E-05	8	31.89	35	35	25.45	31.89	0.00	0.00
4.44	3.080	5.10	6	1.2E-05	8	31.14	33	35	24.85	31.14	0.00	0.00
4.46	2.590	7.97	6	4.5E-06	7	31.27	31	34	24.95	31.27	0.00	0.00
4.48	2.200	9.75	5	1.9E-06	7	30.78	29	34	24.56	30.78	0.00	0.00
4.50	1.840	10.98	5	8.2E-07	6	24.71	26	33	23.79	29.82	0.00	0.00
4.52	1.600	12.48	5	3.9E-07	6	21.35	25	32	23.47	29.41	0.00	0.00
4.54	1.480	14.99	5	2.2E-07	6	19.67	24	32	24.00	30.08	0.00	0.00
4.56	1.310	22.28	4	7.2E-08	5	17.28	0	0	0.00	32.33	88.17	5.94
4.58	1.120	28.29	4	2.5E-08	5	14.62	0	0	0.00	33.18	74.57	5.13
4.60	0.960	27.25	3	1.4E-08	5	11.78	0	0	0.00	31.37	63.12	4.40
4.62	0.870	27.11	3	8.7E-09	4	9.52	0	0	0.00	30.51	56.67	3.96
4.64	0.930	27.52	3	1.1E-08	5	10.97	0	0	0.00	31.22	60.93	4.24
4.66	1.030	28.93	3	1.6E-08	5	13.34	0	0	0.00	32.70	68.05	4.69
4.68	1.070	24.83	4	2.5E-08	5	13.89	0	0	0.00	31.59	70.88	4.83
4.70	1.020	19.09	4	3.1E-08	5	13.01	0	0	0.00	28.85	67.29	4.56
4.72	0.940	13.49	4	3.6E-08	4	10.83	0	0	0.00	25.58	61.55	4.15
4.74	1.030	12.62	4	5.9E-08	4	13.04	0	0	0.00	25.88	67.96	4.52
4.76	1.140	7.97	5	1.7E-07	4	14.86	21	31	19.10	23.94	0.00	0.00
4.78	1.140	8.38	5	1.5E-07	4	14.85	21	31	19.33	24.23	0.00	0.00
4.80	1.130	12.99	4	8.2E-08	5	14.71	0	0	0.00	26.89	75.03	4.94
4.82	2.020	17.95	5	5.7E-07	7	27.16	27	33	27.89	34.96	0.00	0.00
4.84	2.590	23.83	5	1.0E-06	8	35.14	31	34	32.40	40.61	0.00	0.00
4.86	3.110	29.84	5	1.5E-06	10	42.41	34	35	36.40	45.62	0.00	0.00
4.88	3.590	37.50	5	1.9E-06	11	50.81	36	36	40.54	50.81	0.00	0.00
4.90	3.520	37.68	5	1.8E-06	11	48.14	36	36	40.40	50.63	0.00	0.00
4.92	3.690	32.85	5	2.6E-06	11	49.32	37	36	39.35	49.32	0.00	0.00
4.94	3.490	28.48	5	2.6E-06	10	46.66	36	36	37.23	46.66	0.00	0.00
4.96	3.430	17.91	6	4.7E-06	10	41.20	35	36	32.87	41.20	0.00	0.00
4.98	3.270	12.85	6	5.9E-06	9	37.68	34	35	30.07	37.68	0.00	0.00
5.00	3.100	9.39	6	6.7E-06	8	34.82	33	35	27.78	34.82	0.00	0.00
5.02	2.930	8.98	6	5.7E-06	8	33.90	32	35	27.04	33.90	0.00	0.00
5.04	2.650	9.98	5	3.4E-06	8	33.46	31	34	26.70	33.46	0.00	0.00
5.06	2.670	13.30	5	2.5E-06	8	35.68	31	34	28.46	35.68	0.00	0.00
5.08	2.740	20.64	5	1.5E-06	9	37.18	32	35	31.95	40.04	0.00	0.00
5.10	2.810	26.88	5	1.1E-06	9	38.16	32	35	34.59	43.35	0.00	0.00
5.12	2.810	36.88	5	6.8E-07	9	38.15	32	35	37.95	47.57	0.00	0.00
5.14	3.200	36.86	5	1.2E-06	10	43.61	34	35	39.37	49.34	0.00	0.00
5.16	3.080	56.22	5	4.8E-07	11	41.92	34	35	44.51	55.79	0.00	0.00
5.18	2.720	71.90	4	1.8E-07	10	36.88	0	0	46.81	58.67	188.14	11.77
5.20	2.290	86.34	4	6.0E-08	10	30.85	0	0	0.00	59.80	157.40	10.04
5.22	1.930	92.08	3	2.5E-08	9	25.81	0	0	0.00	58.52	131.66	8.52
5.24	1.690	79.55	3	1.9E-08	8	22.44	0	0	0.00	53.65	114.49	7.43
5.26	1.570	66.57	3	1.9E-08	7	20.76	0	0	0.00	49.46	105.89	6.85
5.28	1.530	61.24	3	2.0E-08	7	20.19	0	0	0.00	47.76	103.01	6.65
5.30	1.430	60.01	3	1.5E-08	7	18.79	0	0	0.00	46.60	95.84	6.20
5.32	1.670	55.81	4	3.4E-08	7	22.14	0	0	0.00	47.47	112.96	7.19
5.34	1.980	57.68	4	6.7E-08	8	26.48	0	0	0.00	50.31	135.08	8.47

In situ data				Estimations				CPTe 01				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	2.350	59.78	4	1.3E-07	9	31.65	0	0	42.57	53.35	161.48	9.98
5.38	2.260	51.53	4	1.4E-07	9	30.39	0	0	40.13	50.30	155.03	9.55
5.40	1.970	40.41	4	1.2E-07	8	26.32	0	0	35.77	44.83	134.29	8.28
5.42	1.770	32.80	4	1.1E-07	7	23.52	0	0	0.00	40.82	119.98	7.40
5.44	1.540	28.25	4	7.7E-08	6	20.29	0	0	0.00	37.54	103.52	6.41
5.46	1.520	28.98	4	7.0E-08	6	20.01	0	0	0.00	37.72	102.07	6.32
5.48	1.560	33.26	4	6.1E-08	7	20.56	0	0	0.00	39.65	104.90	6.50
5.50	1.630	43.01	4	4.7E-08	7	21.54	0	0	0.00	43.57	109.88	6.83
5.52	1.550	51.30	4	2.7E-08	7	20.41	0	0	0.00	45.57	104.14	6.52
5.54	1.630	52.53	4	3.2E-08	7	21.53	0	0	0.00	46.60	109.83	6.84
5.56	1.530	60.96	3	1.9E-08	7	20.12	0	0	0.00	48.21	102.66	6.44
5.58	1.350	67.98	3	8.5E-09	7	17.60	0	0	0.00	48.53	89.78	5.67
5.60	1.180	70.44	3	4.2E-09	6	15.21	0	0	0.00	47.63	77.61	4.89
5.62	1.100	74.45	3	2.7E-09	6	13.77	0	0	0.00	47.82	71.87	4.52
5.64	0.990	73.95	3	1.7E-09	6	10.89	0	0	0.00	46.52	63.99	4.01
5.66	1.000	67.25	3	2.1E-09	6	11.10	0	0	0.00	45.08	64.68	4.05
5.68	1.100	55.81	3	4.7E-09	6	13.65	0	0	0.00	43.21	71.79	4.48
5.70	1.150	46.70	3	8.1E-09	6	14.77	0	0	0.00	41.08	75.34	4.69
5.72	1.200	41.55	3	1.2E-08	6	15.46	0	0	0.00	39.93	78.89	4.90
5.74	1.410	41.14	4	2.5E-08	6	18.40	0	0	0.00	41.65	93.86	5.75
5.76	1.360	43.74	3	1.9E-08	6	17.69	0	0	0.00	42.10	90.26	5.55
5.78	1.440	48.07	3	2.1E-08	7	18.81	0	0	0.00	44.15	95.95	5.88
5.80	1.310	44.88	3	1.5E-08	6	16.98	0	0	0.00	42.09	86.64	5.32
5.82	1.150	44.38	3	8.6E-09	6	14.74	0	0	0.00	40.56	75.19	4.63
5.84	1.010	50.62	3	3.6E-09	6	11.06	0	0	0.00	41.13	65.16	4.00
5.86	0.990	52.40	3	3.0E-09	6	10.55	0	0	0.00	41.46	63.71	3.90
5.88	1.020	54.45	3	3.2E-09	6	11.24	0	0	0.00	42.37	65.83	4.03
5.90	1.160	53.17	3	6.2E-09	6	14.86	0	0	0.00	43.41	75.80	4.63
5.92	1.230	48.84	3	9.5E-09	6	15.83	0	0	0.00	42.79	80.78	4.92
5.94	1.400	36.40	4	2.9E-08	6	18.21	0	0	0.00	40.27	92.90	5.57
5.96	1.730	37.18	4	7.0E-08	7	22.82	0	0	0.00	43.01	116.44	6.88
5.98	1.640	40.60	4	4.7E-08	7	21.56	0	0	0.00	43.62	109.99	6.53
6.00	1.540	41.87	4	3.4E-08	7	20.15	0	0	0.00	43.33	102.82	6.12
6.02	1.320	42.05	3	1.7E-08	6	17.07	0	0	0.00	41.63	87.08	5.23
6.04	1.400	42.65	3	2.1E-08	7	18.18	0	0	0.00	42.53	92.77	5.54
6.06	1.560	46.29	4	2.9E-08	7	20.42	0	0	0.00	45.02	104.18	6.18
6.08	2.000	49.66	4	7.6E-08	8	26.57	0	0	0.00	49.29	135.58	7.92
6.10	2.120	49.57	4	9.8E-08	9	28.25	0	0	0.00	50.07	144.13	8.37
6.12	2.120	49.57	4	9.7E-08	9	28.24	0	0	0.00	50.11	144.10	8.36
6.14	2.550	45.96	5	2.5E-07	9	34.26	29	34	41.00	51.39	0.00	0.00
6.16	2.500	47.52	4	2.1E-07	9	33.55	0	0	41.26	51.71	171.19	9.79
6.18	2.240	53.22	4	1.1E-07	9	29.91	0	0	0.00	52.15	152.59	8.79
6.20	2.210	59.60	4	8.1E-08	9	29.48	0	0	0.00	54.01	150.43	8.68
6.22	2.310	72.63	4	6.8E-08	10	30.88	0	0	0.00	58.50	157.54	9.10
6.24	2.430	76.50	4	7.6E-08	10	32.55	0	0	0.00	60.40	166.09	9.56
6.26	2.670	81.19	4	1.0E-07	11	35.91	0	0	0.00	63.23	183.21	10.48
6.28	2.750	74.54	4	1.4E-07	11	37.02	0	0	49.38	61.89	188.89	10.75
6.30	2.780	73.63	4	1.4E-07	11	37.44	0	0	49.34	61.84	191.01	10.84
6.32	2.720	75.95	4	1.2E-07	11	36.59	0	0	49.63	62.21	186.70	10.59
6.34	2.530	77.09	4	8.7E-08	10	33.93	0	0	0.00	61.42	173.10	9.85
6.36	2.400	70.58	4	8.1E-08	10	32.10	0	0	0.00	58.81	163.79	9.31
6.38	2.240	68.16	4	6.4E-08	9	29.86	0	0	0.00	57.12	152.33	8.67
6.40	2.010	69.16	4	3.9E-08	9	26.63	0	0	0.00	55.85	135.88	7.76
6.42	1.740	66.20	3	2.2E-08	8	22.85	0	0	0.00	53.02	116.57	6.69
6.44	1.540	64.97	3	1.3E-08	7	20.04	0	0	0.00	51.05	102.26	5.90

In situ data			Estimations					CPTe 01				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	1.500	62.10	3	1.3E-08	7	19.48	0	0	0.00	49.95	99.37	5.72
6.48	1.450	63.10	3	1.0E-08	7	18.77	0	0	0.00	49.85	95.78	5.51
6.50	1.430	61.37	3	1.0E-08	7	18.49	0	0	0.00	49.24	94.32	5.41
6.52	1.560	58.27	3	1.7E-08	7	20.30	0	0	0.00	49.49	103.58	5.91
6.54	1.650	56.50	3	2.3E-08	8	21.56	0	0	0.00	49.75	109.99	6.24
6.56	1.700	53.58	4	2.9E-08	8	22.25	0	0	0.00	49.29	113.53	6.41
6.58	1.700	51.80	4	3.0E-08	8	22.25	0	0	0.00	48.77	113.51	6.40
6.60	1.660	46.75	4	3.3E-08	7	21.68	0	0	0.00	46.88	110.62	6.22
6.62	1.780	41.64	4	5.4E-08	8	23.36	0	0	0.00	46.04	119.17	6.65
6.64	1.870	42.24	4	6.6E-08	8	24.61	0	0	0.00	46.89	125.57	6.98
6.66	1.860	42.15	4	6.4E-08	8	24.47	0	0	0.00	46.83	124.84	6.93
6.68	1.770	46.88	4	4.2E-08	8	23.20	0	0	0.00	47.87	118.38	6.59
6.70	1.740	52.35	4	3.2E-08	8	22.78	0	0	0.00	49.45	116.21	6.47
6.72	1.800	56.82	4	3.2E-08	8	23.61	0	0	0.00	51.32	120.47	6.70
6.74	1.640	61.37	3	1.8E-08	8	21.37	0	0	0.00	51.45	109.02	6.09
6.76	1.460	58.91	3	1.1E-08	7	18.84	0	0	0.00	49.27	96.14	5.38
6.78	1.350	58.73	3	7.9E-09	7	17.30	0	0	0.00	48.31	88.25	4.93
6.80	1.250	58.91	3	5.5E-09	7	15.54	0	0	0.00	47.49	81.09	4.52
6.82	1.030	62.33	3	1.9E-09	6	10.07	0	0	0.00	46.18	65.35	3.63
6.84	0.960	56.95	3	1.6E-09	6	8.57	0	0	0.00	43.97	60.32	3.35
6.86	0.870	53.35	3	1.1E-09	5	6.82	0	0	0.00	41.92	53.87	2.98
6.88	0.830	49.48	3	1.0E-09	5	6.10	0	0	0.00	40.36	50.99	2.82
6.90	0.760	43.79	3	9.1E-10	5	4.95	0	0	0.00	37.83	45.96	2.54
6.92	0.750	36.31	3	1.1E-09	5	4.78	0	0	0.00	35.41	45.22	2.49
6.94	0.800	29.30	3	2.2E-09	5	5.55	0	0	0.00	33.60	48.77	2.68
6.96	0.860	23.60	3	4.6E-09	5	6.55	0	0	0.00	32.02	53.03	2.91
6.98	1.010	19.50	4	1.4E-08	5	9.44	0	0	0.00	31.61	63.72	3.49
7.00	1.080	15.76	4	2.6E-08	5	10.89	0	0	0.00	30.38	68.70	3.74
7.02	1.040	15.13	4	2.3E-08	5	10.00	0	0	0.00	29.72	65.82	3.58
7.04	0.970	18.54	3	1.2E-08	5	8.56	0	0	0.00	30.85	60.80	3.32
7.06	0.960	21.37	3	9.0E-09	5	8.34	0	0	0.00	32.11	60.06	3.27
7.08	0.940	24.69	3	6.3E-09	5	7.93	0	0	0.00	33.39	58.61	3.19
7.10	0.930	26.06	3	5.5E-09	5	7.72	0	0	0.00	33.88	57.87	3.14
7.12	0.930	26.06	3	5.4E-09	5	7.70	0	0	0.00	33.90	57.84	3.14
7.14	0.980	26.06	3	7.0E-09	5	8.66	0	0	0.00	34.41	61.39	3.32
7.16	1.050	22.55	3	1.2E-08	5	10.10	0	0	0.00	33.54	66.37	3.59
7.18	1.100	22.46	4	1.5E-08	5	11.18	0	0	0.00	33.97	69.91	3.77
7.20	1.170	21.05	4	2.3E-08	5	12.77	0	0	0.00	33.94	74.89	4.02
7.22	1.220	21.37	4	2.6E-08	6	13.97	0	0	0.00	34.52	78.44	4.20
7.24	1.340	23.56	4	3.4E-08	6	17.05	0	0	0.00	36.50	86.99	4.64
7.26	1.610	29.25	4	5.5E-08	7	20.82	0	0	0.00	40.97	106.25	5.63
7.28	1.610	29.57	4	5.4E-08	7	20.82	0	0	0.00	41.13	106.22	5.62
7.30	1.580	34.17	4	3.8E-08	7	20.40	0	0	0.00	42.81	104.06	5.52
7.32	1.530	42.28	4	2.3E-08	7	19.69	0	0	0.00	45.45	100.46	5.34
7.34	1.390	53.08	3	9.5E-09	7	17.73	0	0	0.00	47.85	90.43	4.82
7.36	1.270	54.04	3	6.0E-09	7	15.11	0	0	0.00	47.11	81.84	4.35
7.38	1.200	54.77	3	4.4E-09	6	13.29	0	0	0.00	46.69	76.81	4.08
7.40	1.350	56.95	3	7.2E-09	7	17.15	0	0	0.00	48.78	87.50	4.64
7.42	1.570	57.59	3	1.4E-08	8	20.23	0	0	0.00	50.88	103.19	5.45
7.44	1.860	54.26	4	3.4E-08	8	24.28	0	0	0.00	52.14	123.88	6.49
7.46	1.800	47.02	4	3.8E-08	8	23.44	0	0	0.00	49.34	119.57	6.25
7.48	1.620	36.63	4	3.6E-08	7	20.91	0	0	0.00	44.32	106.69	5.57
7.50	1.410	32.26	4	2.4E-08	6	17.97	0	0	0.00	41.06	91.66	4.79
7.52	1.250	26.88	4	1.9E-08	6	14.28	0	0	0.00	37.59	80.21	4.20
7.54	1.140	22.96	4	1.6E-08	5	11.60	0	0	0.00	34.96	72.33	3.78

In situ data				Estimations					CPTe 01			
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	0.950	15.22	4	1.3E-08	5	7.65	0	0	0.00	29.50	58.73	3.07
7.58	0.870	14.22	3	9.2E-09	4	6.22	0	0	0.00	28.24	53.00	2.77
7.60	0.820	14.03	3	7.0E-09	4	5.40	0	0	0.00	27.66	49.40	2.57
7.62	0.810	11.94	3	8.4E-09	4	5.23	0	0	0.00	26.38	48.67	2.53
7.64	0.810	8.66	4	1.3E-08	4	5.22	0	0	0.00	24.27	48.64	2.53
7.66	0.850	6.61	4	2.4E-08	4	5.82	0	0	0.00	23.14	51.48	2.66
7.68	0.890	5.47	4	3.6E-08	4	6.45	0	0	0.00	22.56	54.31	2.80
7.70	0.910	5.15	4	4.3E-08	4	6.78	0	0	0.00	22.46	55.72	2.87
7.72	0.970	5.33	4	5.5E-08	4	7.83	0	0	0.00	23.12	59.99	3.08
7.74	1.030	4.69	4	8.2E-08	4	8.95	0	0	0.00	23.03	64.25	3.28
7.76	2.050	3.50	5	1.8E-06	6	26.87	24	32	22.47	28.17	0.00	0.00
7.78	3.530	3.50	6	1.3E-05	9	34.92	32	35	27.86	34.92	0.00	0.00
7.80	4.190	10.93	6	1.1E-05	11	42.81	35	36	34.16	42.81	0.00	0.00
7.82	4.590	29.25	6	4.6E-06	13	55.04	37	36	43.91	55.04	0.00	0.00
7.84	5.080	57.32	5	2.4E-06	15	69.04	39	37	55.08	69.04	0.00	0.00
7.86	5.270	78.41	5	1.6E-06	16	71.93	40	37	61.71	77.35	0.00	0.00
7.88	5.460	100.01	5	1.1E-06	18	74.58	41	37	67.82	85.00	0.00	0.00
7.90	5.630	119.28	5	9.0E-07	18	76.95	41	37	72.86	91.32	0.00	0.00
7.92	5.960	148.81	5	7.3E-07	20	81.57	42	37	80.26	100.60	0.00	0.00
7.94	6.140	157.33	5	7.3E-07	21	84.08	43	38	82.61	103.54	0.00	0.00
7.96	6.220	161.65	5	7.3E-07	21	85.20	43	38	83.78	105.01	0.00	0.00
7.98	7.000	168.26	5	1.1E-06	23	96.11	46	38	87.54	109.71	0.00	0.00
8.00	7.440	173.87	5	1.4E-06	24	102.27	47	38	89.98	112.78	0.00	0.00
8.02	8.030	168.94	5	2.0E-06	24	113.61	49	39	90.65	113.61	0.00	0.00
8.04	8.610	182.07	5	2.3E-06	26	118.95	51	39	94.91	118.95	0.00	0.00
8.06	8.740	180.79	5	2.5E-06	26	119.11	51	39	95.03	119.11	0.00	0.00
8.08	8.900	170.77	5	3.0E-06	26	117.06	51	39	93.40	117.06	0.00	0.00
8.10	9.160	173.09	5	3.3E-06	27	118.53	52	39	94.58	118.53	0.00	0.00
8.12	9.160	173.09	5	3.3E-06	27	118.60	52	39	94.63	118.60	0.00	0.00
8.14	11.820	173.09	6	9.8E-06	31	125.90	59	41	100.45	125.90	0.00	0.00
8.16	12.680	177.97	6	1.3E-05	33	129.41	61	41	103.25	129.41	0.00	0.00
8.18	12.730	207.22	6	9.1E-06	34	137.59	61	41	109.78	137.59	0.00	0.00
8.20	11.590	234.96	5	4.6E-06	33	141.66	59	40	113.03	141.66	0.00	0.00
8.22	14.110	263.53	6	8.2E-06	38	155.45	65	41	124.03	155.45	0.00	0.00
8.24	16.440	276.52	6	1.4E-05	42	164.37	70	42	131.15	164.37	0.00	0.00
8.26	18.160	253.23	6	2.7E-05	44	162.27	73	43	129.47	162.27	0.00	0.00
8.28	18.430	250.50	6	2.9E-05	44	162.18	74	43	129.40	162.18	0.00	0.00
8.30	17.860	237.20	6	2.8E-05	43	157.54	72	42	125.69	157.54	0.00	0.00
8.32	18.070	207.85	6	4.0E-05	42	149.84	73	43	119.55	149.84	0.00	0.00
8.34	17.700	200.79	6	3.9E-05	41	147.16	72	42	117.42	147.16	0.00	0.00
8.36	17.240	212.64	6	3.1E-05	41	149.73	71	42	119.46	149.73	0.00	0.00
8.38	16.830	205.26	6	3.0E-05	40	146.89	70	42	117.20	146.89	0.00	0.00
8.40	16.210	194.19	6	2.9E-05	39	142.54	69	42	113.73	142.54	0.00	0.00
8.42	15.700	202.39	6	2.3E-05	38	143.91	68	42	114.82	143.91	0.00	0.00
8.44	15.470	206.94	6	2.0E-05	38	144.77	67	42	115.50	144.77	0.00	0.00
8.46	16.040	195.23	6	2.7E-05	38	142.70	68	42	113.86	142.70	0.00	0.00
8.48	16.780	199.11	6	3.1E-05	40	145.37	70	42	115.98	145.37	0.00	0.00
8.50	17.720	200.43	6	3.9E-05	41	147.63	72	42	117.79	147.63	0.00	0.00
8.52	17.650	204.71	6	3.6E-05	41	148.81	71	42	118.73	148.81	0.00	0.00
8.54	17.500	218.11	6	3.0E-05	41	152.41	71	42	121.60	152.41	0.00	0.00
8.56	16.330	216.74	6	2.3E-05	40	149.73	69	42	119.46	149.73	0.00	0.00
8.58	16.150	212.96	6	2.3E-05	39	148.37	68	42	118.38	148.37	0.00	0.00
8.60	16.520	218.33	6	2.4E-05	40	150.70	69	42	120.24	150.70	0.00	0.00
8.62	16.700	227.63	6	2.2E-05	41	153.71	69	42	122.64	153.71	0.00	0.00
8.64	16.990	235.74	6	2.2E-05	41	156.59	70	42	124.94	156.59	0.00	0.00

In situ data				Estimations					CPTe 01			
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	16.230	225.44	6	2.0E-05	40	152.27	68	42	121.49	152.27	0.00	0.00
8.68	15.400	216.38	6	1.8E-05	38	148.08	66	42	118.15	148.08	0.00	0.00
8.70	14.900	238.02	6	1.2E-05	38	152.82	65	41	121.93	152.82	0.00	0.00
8.72	16.420	305.13	6	1.1E-05	43	173.21	68	42	138.20	173.21	0.00	0.00
8.74	19.460	321.40	6	1.9E-05	48	184.14	74	43	146.92	184.14	0.00	0.00
8.76	21.020	333.56	6	2.5E-05	51	190.49	77	43	151.99	190.49	0.00	0.00
8.78	20.550	338.71	6	2.1E-05	50	190.84	76	43	152.27	190.84	0.00	0.00
8.80	18.740	335.98	6	1.5E-05	47	186.31	73	43	148.65	186.31	0.00	0.00
8.82	15.630	321.71	5	7.4E-06	42	175.58	66	42	140.09	175.58	0.00	0.00
8.84	12.550	300.03	5	3.4E-06	36	162.30	59	41	129.49	162.30	0.00	0.00
8.86	8.960	265.86	5	1.0E-06	29	123.30	50	39	114.18	143.11	0.00	0.00
8.88	7.840	295.15	4	4.4E-07	27	107.62	0	0	115.71	145.02	549.07	25.22
8.90	7.060	331.56	4	2.1E-07	26	96.69	0	0	118.64	148.70	493.33	22.61
8.92	7.860	344.18	4	3.1E-07	28	107.89	0	0	123.58	154.89	550.44	25.19
8.94	8.550	343.13	4	4.5E-07	30	117.54	0	0	125.89	157.78	599.70	27.41
8.96	9.480	345.50	5	7.0E-07	32	130.56	51	39	129.34	162.10	0.00	0.00
8.98	10.440	352.24	5	1.0E-06	34	143.99	54	40	133.36	167.15	0.00	0.00
9.00	11.830	353.56	5	1.7E-06	37	163.44	57	40	137.50	172.33	0.00	0.00
9.02	12.400	345.95	5	2.2E-06	37	172.67	59	40	137.77	172.67	0.00	0.00
9.04	12.740	351.83	5	2.4E-06	38	175.08	59	41	139.69	175.08	0.00	0.00
9.06	13.640	368.01	5	2.9E-06	40	181.34	61	41	144.69	181.34	0.00	0.00
9.08	15.500	456.40	5	3.0E-06	45	205.05	66	42	163.61	205.05	0.00	0.00
9.10	18.010	492.76	5	4.7E-06	51	219.66	71	42	175.26	219.66	0.00	0.00
9.12	18.010	492.76	5	4.7E-06	51	219.77	71	42	175.35	219.77	0.00	0.00
9.14	21.990	492.59	6	1.1E-05	57	230.20	78	43	183.67	230.20	0.00	0.00
9.16	30.200	497.26	6	4.2E-05	69	248.93	92	45	198.61	248.93	0.00	0.00
9.18	38.940	609.35	6	7.4E-05	85	290.36	100	46	231.67	290.36	0.00	0.00
9.20	41.490	700.29	6	6.7E-05	91	314.91	100	46	251.26	314.91	0.00	0.00

CPTe 02 FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data**Estimations**

Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.050	0.00	0	0.0E+00	0	0.04	0	0	0.04	0.04	0.00	0.00
0.04	0.350	0.05	0	0.0E+00	1	3.22	0	0	2.57	3.22	0.00	0.00
0.06	0.600	0.05	0	0.0E+00	1	5.34	0	0	4.26	5.34	0.00	0.00
0.08	0.750	0.05	0	0.0E+00	2	6.76	0	0	5.40	6.76	0.00	0.00
0.10	0.860	0.09	0	0.0E+00	2	7.22	0	0	5.76	7.22	0.00	0.00
0.12	1.000	0.09	0	0.0E+00	2	8.44	0	0	6.74	8.44	0.00	0.00
0.14	1.070	0.05	0	0.0E+00	3	10.15	0	0	8.10	10.15	0.00	0.00
0.16	1.120	0.27	0	0.0E+00	2	8.32	0	0	6.64	8.32	0.00	0.00
0.18	1.160	1.18	6	8.4E-05	2	8.46	44	38	6.75	8.46	0.00	0.00
0.20	1.230	6.20	6	2.9E-05	3	10.85	49	39	8.66	10.85	0.00	0.00
0.22	1.420	12.44	6	1.8E-05	4	13.69	53	40	10.92	13.69	0.00	0.00
0.24	1.590	15.54	6	1.7E-05	4	15.49	55	40	12.36	15.49	0.00	0.00
0.26	1.780	16.68	6	2.0E-05	4	16.84	56	40	13.44	16.84	0.00	0.00
0.28	2.280	19.14	6	3.2E-05	5	19.76	60	41	15.76	19.76	0.00	0.00
0.30	2.820	25.20	6	3.9E-05	7	23.60	64	41	18.83	23.60	0.00	0.00
0.32	3.320	32.08	6	4.2E-05	8	27.48	67	42	21.93	27.48	0.00	0.00
0.34	3.510	35.99	6	4.0E-05	8	29.35	68	42	23.42	29.35	0.00	0.00
0.36	3.810	36.09	6	4.9E-05	9	30.70	69	42	24.50	30.70	0.00	0.00
0.38	4.020	42.56	6	4.2E-05	9	33.21	70	42	26.50	33.21	0.00	0.00
0.40	4.090	43.38	6	4.1E-05	9	33.92	70	42	27.07	33.92	0.00	0.00
0.42	4.080	45.93	6	3.6E-05	10	34.75	70	42	27.73	34.75	0.00	0.00
0.44	4.280	43.01	6	4.5E-05	10	35.03	69	42	27.95	35.03	0.00	0.00
0.46	4.340	40.91	6	4.8E-05	10	34.98	69	42	27.91	34.98	0.00	0.00
0.48	4.560	43.19	6	5.0E-05	10	36.51	69	42	29.13	36.51	0.00	0.00
0.50	4.440	47.84	6	3.8E-05	10	37.48	69	42	29.91	37.48	0.00	0.00
0.52	4.440	50.67	6	3.3E-05	10	38.39	69	42	30.63	38.39	0.00	0.00
0.54	4.540	58.14	6	2.7E-05	11	40.68	70	42	32.46	40.68	0.00	0.00
0.56	4.450	68.12	6	1.9E-05	11	42.67	70	42	34.04	42.67	0.00	0.00
0.58	4.320	78.41	6	1.2E-05	11	44.51	70	42	35.51	44.51	0.00	0.00
0.60	4.320	87.94	6	9.7E-06	11	46.59	70	42	37.17	46.59	0.00	0.00
0.62	4.120	105.29	5	5.6E-06	11	49.07	70	42	39.15	49.07	0.00	0.00
0.64	4.010	118.78	8	3.8E-06	11	51.06	70	42	40.74	51.06	0.00	0.00
0.66	3.970	130.67	8	3.0E-06	12	53.01	70	42	42.30	53.01	0.00	0.00
0.68	3.850	146.53	8	2.0E-06	12	55.04	70	42	43.91	55.04	0.00	0.00
0.70	3.730	161.24	9	1.4E-06	12	52.05	0	0	45.28	56.75	265.58	55.50
0.72	3.570	171.22	9	1.1E-06	12	49.81	0	0	45.87	57.49	254.12	53.83
0.74	3.450	187.03	9	7.4E-07	12	48.12	0	0	47.20	59.16	245.53	52.65
0.76	3.370	194.60	9	6.0E-07	11	47.00	0	0	47.80	59.91	239.78	51.44
0.78	3.280	204.12	9	4.8E-07	11	45.73	0	0	48.50	60.78	233.33	50.24
0.80	3.240	209.50	9	4.2E-07	11	45.17	0	0	49.04	61.47	230.44	49.26
0.82	3.240	210.91	9	4.0E-07	11	45.16	0	0	49.43	61.96	230.41	48.45
0.84	3.210	217.06	9	3.6E-07	11	44.74	0	0	50.09	62.78	228.24	47.64
0.86	3.190	221.20	9	3.2E-07	12	44.45	0	0	50.62	63.44	226.79	46.83
0.88	3.180	214.19	9	3.3E-07	11	44.30	0	0	50.17	62.88	226.04	45.61
0.90	3.090	213.37	9	3.0E-07	11	43.04	0	0	49.84	62.47	219.59	44.00
0.92	2.870	208.26	9	2.3E-07	11	39.95	0	0	48.35	60.60	203.85	41.06
0.94	2.700	203.85	9	1.9E-07	10	37.57	0	0	47.16	59.11	191.67	38.65

In situ data				Estimations				CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	2.590	195.60	9	1.7E-07	10	36.02	0	0	45.97	57.61	183.79	36.69
0.98	2.490	189.99	9	1.6E-07	10	34.62	0	0	45.05	56.46	176.62	34.99
1.00	2.360	174.05	9	1.5E-07	9	32.79	0	0	42.95	53.83	167.31	32.66
1.02	2.280	170.36	9	1.3E-07	9	31.67	0	0	42.29	53.01	161.56	31.31
1.04	2.230	166.53	9	1.3E-07	9	30.96	0	0	41.80	52.39	157.97	30.25
1.06	2.220	162.16	9	1.3E-07	9	30.82	0	0	41.51	52.02	157.22	29.57
1.08	2.270	152.31	9	1.5E-07	9	31.51	0	0	41.02	51.42	160.77	29.24
1.10	2.330	148.72	9	1.7E-07	9	32.35	0	0	41.20	51.64	165.03	29.22
1.12	2.330	148.72	9	1.7E-07	9	32.34	0	0	41.38	51.86	165.00	28.83
1.14	2.400	145.73	9	1.9E-07	9	33.31	0	0	41.66	52.21	169.97	28.93
1.16	2.390	146.41	9	1.8E-07	9	33.17	0	0	41.85	52.45	169.23	28.50
1.18	2.370	147.42	9	1.7E-07	9	32.88	0	0	42.01	52.66	167.77	28.01
1.20	2.300	147.29	9	1.5E-07	9	31.90	0	0	41.75	52.33	162.75	27.08
1.22	2.190	147.53	9	1.2E-07	9	30.35	0	0	41.27	51.72	154.86	25.85
1.24	2.160	151.36	9	1.1E-07	9	29.93	0	0	0.00	52.20	152.69	25.39
1.26	2.120	151.31	9	9.7E-08	9	29.36	0	0	0.00	52.08	149.81	24.75
1.28	2.010	148.31	9	8.1E-08	8	27.82	0	0	0.00	50.98	141.92	23.46
1.30	1.860	147.21	9	6.0E-08	8	25.71	0	0	0.00	49.75	131.18	21.90
1.32	1.710	148.53	9	4.2E-08	7	23.61	0	0	0.00	48.74	120.44	20.39
1.34	1.560	146.48	9	3.0E-08	7	21.50	0	0	0.00	47.23	109.70	18.81
1.36	1.370	139.60	3	2.0E-08	6	18.84	0	0	0.00	44.58	96.10	16.80
1.38	1.270	132.08	3	1.6E-08	6	17.43	0	0	0.00	42.76	88.93	15.56
1.40	1.290	117.60	3	2.1E-08	6	17.71	0	0	0.00	41.32	90.33	15.27
1.42	1.370	89.94	3	4.5E-08	6	18.82	0	0	0.00	38.41	96.02	15.13
1.44	1.450	73.58	4	8.1E-08	6	19.94	0	0	0.00	36.59	101.71	15.16
1.46	1.530	58.96	4	1.5E-07	6	21.05	0	0	27.65	34.66	107.40	15.15
1.48	1.720	43.60	5	3.9E-07	6	23.71	37	36	26.14	32.76	0.00	0.00
1.50	1.920	39.05	5	6.9E-07	6	26.50	38	36	26.29	32.95	0.00	0.00
1.52	2.200	33.31	5	1.5E-06	7	30.42	39	37	26.33	33.00	0.00	0.00
1.54	2.260	32.35	5	1.7E-06	7	31.25	40	37	26.42	33.12	0.00	0.00
1.56	1.960	42.37	5	6.1E-07	7	27.05	38	36	27.42	34.37	0.00	0.00
1.58	1.730	50.44	4	2.8E-07	6	23.82	0	0	27.91	34.99	121.53	15.42
1.60	1.650	54.31	4	2.0E-07	6	22.70	0	0	28.25	35.41	115.80	14.88
1.62	1.680	55.49	4	2.0E-07	6	23.11	0	0	28.72	36.00	117.91	14.99
1.64	1.680	62.33	4	1.6E-07	6	23.11	0	0	29.96	37.55	117.89	15.08
1.66	1.670	62.15	4	1.5E-07	6	22.96	0	0	29.97	37.57	117.15	14.87
1.68	1.650	62.83	4	1.4E-07	6	22.68	0	0	30.07	37.68	115.69	14.63
1.70	1.590	65.88	4	1.1E-07	6	21.83	0	0	0.00	37.96	111.38	14.18
1.72	1.560	68.34	4	9.2E-08	6	21.41	0	0	0.00	38.34	109.21	13.91
1.74	1.560	74.54	4	7.7E-08	6	21.40	0	0	0.00	39.64	109.19	13.93
1.76	1.540	81.69	3	6.0E-08	6	21.12	0	0	0.00	40.90	107.73	13.82
1.78	1.570	83.83	3	6.0E-08	7	21.53	0	0	0.00	41.66	109.85	13.95
1.80	1.630	83.06	4	7.0E-08	7	22.37	0	0	0.00	42.16	114.11	14.22
1.82	1.740	78.09	4	9.9E-08	7	23.90	0	0	0.00	42.25	121.94	14.73
1.84	1.720	63.42	4	1.4E-07	7	23.62	0	0	31.36	39.30	120.49	14.13
1.86	1.720	53.95	4	1.8E-07	7	23.61	0	0	29.79	37.34	120.46	13.77
1.88	1.730	48.07	4	2.3E-07	6	23.75	0	0	28.82	36.12	121.15	13.56
1.90	1.790	35.81	5	4.3E-07	6	24.58	34	35	26.63	33.37	0.00	0.00
1.92	1.870	30.16	5	6.6E-07	6	25.70	34	35	25.72	32.24	0.00	0.00
1.94	1.890	30.12	5	6.8E-07	6	25.97	34	35	25.87	32.42	0.00	0.00
1.96	1.830	47.93	4	2.7E-07	7	25.13	0	0	29.65	37.16	128.19	13.78
1.98	1.810	59.19	4	1.7E-07	7	24.84	0	0	31.76	39.81	126.74	13.85
2.00	1.780	68.84	4	1.2E-07	7	24.42	0	0	33.36	41.81	124.57	13.78
2.02	1.780	76.77	4	9.4E-08	7	24.41	0	0	0.00	43.54	124.54	13.84
2.04	1.750	89.76	4	6.4E-08	7	23.99	0	0	0.00	45.91	122.38	13.77

In situ data				Estimations				CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	1.760	98.51	3	5.3E-08	8	24.12	0	0	0.00	47.69	123.06	13.86
2.08	1.720	104.57	3	4.3E-08	7	23.56	0	0	0.00	48.53	120.18	13.58
2.10	1.690	107.71	3	3.7E-08	7	23.13	0	0	0.00	48.92	118.01	13.34
2.12	1.690	107.71	3	3.6E-08	7	23.12	0	0	0.00	49.06	117.98	13.23
2.14	1.620	96.41	3	3.8E-08	7	22.14	0	0	0.00	46.65	112.96	12.53
2.16	1.680	93.31	3	4.5E-08	7	22.97	0	0	0.00	46.77	117.22	12.76
2.18	1.660	93.77	3	4.2E-08	7	22.69	0	0	0.00	46.81	115.76	12.54
2.20	1.620	94.91	3	3.7E-08	7	22.12	0	0	0.00	46.78	112.88	12.22
2.22	1.540	95.86	3	2.9E-08	7	21.00	0	0	0.00	46.37	107.14	11.64
2.24	1.530	95.00	3	2.8E-08	7	20.85	0	0	0.00	46.26	106.40	11.48
2.26	1.490	92.81	3	2.6E-08	7	20.29	0	0	0.00	45.63	103.51	11.11
2.28	1.420	90.62	3	2.2E-08	7	19.30	0	0	0.00	44.71	98.49	10.57
2.30	1.440	84.93	3	2.6E-08	7	19.58	0	0	0.00	43.99	99.89	10.55
2.32	1.450	74.45	3	3.4E-08	6	19.71	0	0	0.00	42.19	100.58	10.40
2.34	1.470	70.62	3	4.0E-08	6	19.99	0	0	0.00	41.71	101.98	10.40
2.36	1.500	66.57	4	4.7E-08	6	20.40	0	0	0.00	41.24	104.10	10.44
2.38	1.430	56.22	4	5.3E-08	6	19.42	0	0	0.00	38.47	99.07	9.81
2.40	1.310	51.53	4	4.3E-08	6	17.73	0	0	0.00	36.46	90.48	8.99
2.42	1.310	45.93	4	5.2E-08	6	17.73	0	0	0.00	35.20	90.45	8.83
2.44	1.300	45.47	4	5.1E-08	6	17.58	0	0	0.00	35.09	89.71	8.71
2.46	1.170	53.03	3	2.5E-08	5	15.76	0	0	0.00	35.85	80.40	8.01
2.48	1.140	54.40	3	2.1E-08	5	15.33	0	0	0.00	35.97	78.23	7.79
2.50	1.160	51.21	3	2.5E-08	5	15.61	0	0	0.00	35.52	79.64	7.82
2.52	1.090	52.81	3	1.8E-08	5	14.62	0	0	0.00	35.31	74.61	7.37
2.54	1.060	49.89	3	1.7E-08	5	14.20	0	0	0.00	34.44	72.44	7.12
2.56	1.000	44.15	3	1.7E-08	5	13.35	0	0	0.00	32.57	68.13	6.65
2.58	1.020	33.40	4	2.9E-08	5	13.63	0	0	0.00	30.03	69.54	6.59
2.60	0.990	28.02	4	3.5E-08	4	13.20	0	0	0.00	28.24	67.37	6.30
2.62	1.000	23.74	4	4.7E-08	4	13.34	0	0	0.00	27.01	68.06	6.24
2.64	0.950	24.06	4	3.7E-08	4	12.64	0	0	0.00	26.75	64.47	5.94
2.66	0.940	21.00	4	4.3E-08	4	12.49	0	0	0.00	25.68	63.73	5.79
2.68	1.060	16.54	4	1.0E-07	4	14.17	0	0	0.00	25.01	72.28	6.31
2.70	1.310	13.40	5	3.1E-07	5	17.66	25	33	20.27	25.41	0.00	0.00
2.72	1.700	12.26	5	9.5E-07	6	23.12	28	34	21.68	27.17	0.00	0.00
2.74	1.760	14.12	5	8.9E-07	6	23.95	29	34	22.73	28.49	0.00	0.00
2.76	1.710	17.27	5	5.9E-07	6	23.25	29	34	23.75	29.77	0.00	0.00
2.78	1.630	21.32	5	3.5E-07	6	22.12	28	33	24.82	31.10	0.00	0.00
2.80	1.610	25.06	5	2.6E-07	6	21.84	28	33	25.94	32.51	0.00	0.00
2.82	1.450	26.24	4	1.5E-07	6	19.59	0	0	25.51	31.97	99.97	8.25
2.84	1.340	30.75	4	8.5E-08	5	18.05	0	0	0.00	32.80	92.09	7.73
2.86	1.270	33.12	4	6.0E-08	5	17.06	0	0	0.00	33.09	87.06	7.36
2.88	1.270	34.17	4	5.6E-08	5	17.06	0	0	0.00	33.49	87.04	7.34
2.90	1.270	34.49	4	5.4E-08	5	17.05	0	0	0.00	33.66	87.01	7.30
2.92	1.250	36.36	4	4.5E-08	5	16.77	0	0	0.00	34.14	85.56	7.18
2.94	1.260	34.72	4	5.0E-08	5	16.91	0	0	0.00	33.80	86.25	7.17
2.96	1.230	32.39	4	5.1E-08	5	16.48	0	0	0.00	32.91	84.08	6.95
2.98	1.250	33.26	4	5.1E-08	5	16.76	0	0	0.00	33.42	85.49	7.02
3.00	1.240	38.09	4	3.8E-08	5	16.61	0	0	0.00	34.88	84.75	6.99
3.02	1.330	37.54	4	5.2E-08	6	17.87	0	0	0.00	35.53	91.15	7.39
3.04	1.460	32.49	4	9.6E-08	6	19.68	0	0	0.00	34.99	100.41	7.93
3.06	1.650	30.62	4	1.7E-07	6	22.34	0	0	28.50	35.72	113.96	8.78
3.08	1.560	32.53	4	1.2E-07	6	21.07	0	0	28.61	35.85	107.51	8.33
3.10	1.540	32.08	4	1.2E-07	6	20.79	0	0	28.44	35.64	106.05	8.19
3.12	1.540	32.08	4	1.2E-07	6	20.78	0	0	28.50	35.71	106.03	8.15
3.14	1.810	30.48	5	2.4E-07	7	24.56	28	34	29.49	36.97	0.00	0.00

In situ data				Estimations				CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	1.850	30.48	5	2.6E-07	7	25.11	29	34	29.75	37.28	0.00	0.00
3.18	1.560	34.03	4	1.1E-07	6	21.05	0	0	0.00	36.73	107.39	8.15
3.20	1.350	39.18	4	4.5E-08	6	18.10	0	0	0.00	36.88	92.36	7.16
3.22	1.280	42.42	4	3.1E-08	6	17.12	0	0	0.00	37.33	87.34	6.81
3.24	1.140	37.04	3	2.4E-08	5	15.15	0	0	0.00	34.62	77.31	6.04
3.26	1.180	27.79	4	4.5E-08	5	15.71	0	0	0.00	32.05	80.14	6.11
3.28	1.540	22.60	5	1.9E-07	6	20.74	26	33	26.12	32.74	0.00	0.00
3.30	2.300	22.46	5	9.4E-07	8	31.38	31	34	29.48	36.95	0.00	0.00
3.32	2.670	23.92	5	1.5E-06	8	36.55	33	35	31.43	39.39	0.00	0.00
3.34	2.640	24.19	5	1.4E-06	8	36.13	33	35	31.47	39.44	0.00	0.00
3.36	2.230	34.72	5	4.0E-07	8	30.38	31	34	33.30	41.73	0.00	0.00
3.38	2.050	40.96	4	2.1E-07	8	27.86	0	0	34.27	42.95	142.14	10.06
3.40	1.920	50.80	4	1.1E-07	8	26.03	0	0	0.00	45.27	132.83	9.53
3.42	2.060	60.73	4	1.0E-07	8	27.99	0	0	0.00	49.10	142.80	10.21
3.44	2.710	64.52	5	2.8E-07	10	37.08	34	35	43.23	54.18	0.00	0.00
3.46	2.670	68.75	4	2.4E-07	10	36.52	0	0	44.07	55.23	186.32	12.90
3.48	2.260	75.86	4	9.6E-08	9	30.77	0	0	0.00	54.68	157.01	11.07
3.50	1.990	76.18	4	5.6E-08	8	26.99	0	0	0.00	52.99	137.70	9.80
3.52	1.980	77.32	4	5.2E-08	8	26.84	0	0	0.00	53.30	136.96	9.71
3.54	2.050	78.64	4	5.8E-08	9	27.82	0	0	0.00	54.23	141.93	9.99
3.56	2.110	76.45	4	6.8E-08	9	28.65	0	0	0.00	54.20	146.19	10.20
3.58	2.110	72.31	4	7.5E-08	9	28.65	0	0	0.00	53.21	146.17	10.15
3.60	2.080	68.80	4	7.8E-08	9	28.22	0	0	0.00	52.14	144.00	9.97
3.62	2.190	68.57	4	9.7E-08	9	29.76	0	0	0.00	52.86	151.83	10.44
3.64	2.050	64.24	4	8.2E-08	8	27.79	0	0	0.00	50.81	141.80	9.76
3.66	1.830	54.49	4	6.9E-08	8	24.71	0	0	0.00	46.63	126.06	8.70
3.68	1.680	46.88	4	6.3E-08	7	22.60	0	0	0.00	43.36	115.32	7.96
3.70	1.580	42.74	4	5.7E-08	7	21.20	0	0	0.00	41.40	108.16	7.46
3.72	1.430	40.28	4	4.1E-08	6	19.09	0	0	0.00	39.52	97.42	6.76
3.74	1.440	36.09	4	5.1E-08	6	19.23	0	0	0.00	38.27	98.11	6.76
3.76	1.440	36.04	4	5.1E-08	6	19.22	0	0	0.00	38.29	98.08	6.74
3.78	1.610	42.42	4	6.1E-08	7	21.60	0	0	0.00	41.65	110.20	7.53
3.80	2.040	49.02	4	1.3E-07	8	27.61	0	0	37.23	46.66	140.89	9.44
3.82	3.340	48.57	5	1.0E-06	11	45.81	36	36	42.56	53.34	0.00	0.00
3.84	4.600	50.21	5	3.5E-06	13	58.90	42	37	47.00	58.90	0.00	0.00
3.86	4.870	61.46	5	3.1E-06	14	63.86	43	37	50.95	63.86	0.00	0.00
3.88	5.120	86.75	5	2.0E-06	16	72.73	44	38	58.03	72.73	0.00	0.00
3.90	5.200	121.88	5	1.1E-06	17	71.83	45	38	65.85	82.54	0.00	0.00
3.92	5.150	137.10	5	8.1E-07	17	71.12	45	38	68.67	86.06	0.00	0.00
3.94	5.060	149.72	5	6.2E-07	17	69.86	44	38	70.71	88.62	0.00	0.00
3.96	4.150	165.89	4	2.2E-07	16	57.11	0	0	69.87	87.57	291.39	18.94
3.98	3.560	172.04	4	1.1E-07	14	48.85	0	0	0.00	85.39	249.22	16.42
4.00	3.050	172.86	3	5.4E-08	13	41.70	0	0	0.00	82.22	212.76	14.19
4.02	2.710	170.68	3	3.4E-08	12	36.94	0	0	0.00	79.39	188.45	12.67
4.04	2.350	155.64	3	2.2E-08	11	31.89	0	0	0.00	73.87	162.71	11.01
4.06	2.310	149.26	3	2.3E-08	11	31.33	0	0	0.00	72.44	159.82	10.78
4.08	2.360	144.89	3	2.6E-08	11	32.02	0	0	0.00	72.10	163.37	10.96
4.10	2.320	144.80	3	2.4E-08	11	31.45	0	0	0.00	71.82	160.48	10.75
4.12	2.320	144.80	3	2.4E-08	11	31.45	0	0	0.00	71.88	160.46	10.72
4.14	2.360	108.03	4	4.7E-08	10	32.00	0	0	0.00	64.80	163.29	10.74
4.16	2.370	103.20	4	5.2E-08	10	32.14	0	0	0.00	63.85	163.97	10.73
4.18	2.280	100.10	4	4.7E-08	10	30.87	0	0	0.00	62.56	157.52	10.31
4.20	2.160	98.69	3	3.8E-08	10	29.19	0	0	0.00	61.40	148.92	9.77
4.22	1.940	95.68	3	2.5E-08	9	26.10	0	0	0.00	59.06	133.18	8.78
4.24	1.840	93.77	3	2.1E-08	9	24.70	0	0	0.00	57.86	126.01	8.32

In situ data			Estimations					CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	1.980	94.68	3	2.8E-08	9	26.65	0	0	0.00	59.26	135.98	8.91
4.28	2.340	90.85	4	6.1E-08	10	31.69	0	0	0.00	61.08	161.67	10.40
4.30	2.340	83.24	4	7.3E-08	10	31.68	0	0	0.00	59.26	161.65	10.34
4.32	2.260	78.23	4	7.0E-08	9	30.56	0	0	0.00	57.49	155.91	9.96
4.34	2.000	76.82	4	4.3E-08	9	26.91	0	0	0.00	55.34	137.31	8.84
4.36	1.840	75.91	3	3.1E-08	8	24.67	0	0	0.00	53.94	125.85	8.14
4.38	1.740	73.81	3	2.5E-08	8	23.26	0	0	0.00	52.67	118.68	7.68
4.40	1.650	70.58	3	2.2E-08	8	22.00	0	0	0.00	51.16	112.23	7.27
4.42	1.630	71.67	3	2.0E-08	8	21.71	0	0	0.00	51.31	110.78	7.17
4.44	1.430	69.21	3	1.2E-08	7	18.91	0	0	0.00	48.97	96.46	6.29
4.46	1.530	65.15	3	1.8E-08	7	20.30	0	0	0.00	48.88	103.58	6.69
4.48	1.660	61.74	3	2.8E-08	8	22.12	0	0	0.00	49.09	112.84	7.21
4.50	1.790	56.31	4	4.6E-08	8	23.93	0	0	0.00	48.60	122.10	7.72
4.52	1.860	55.13	4	5.6E-08	8	24.91	0	0	0.00	48.79	127.08	7.99
4.54	1.820	54.77	4	5.2E-08	8	24.34	0	0	0.00	48.44	124.19	7.80
4.56	1.820	56.68	4	4.8E-08	8	24.34	0	0	0.00	49.04	124.17	7.79
4.58	1.760	56.95	4	4.1E-08	8	23.49	0	0	0.00	48.71	119.86	7.53
4.60	1.700	60.32	4	3.2E-08	8	22.65	0	0	0.00	49.25	115.55	7.28
4.62	1.730	67.84	3	2.7E-08	8	23.06	0	0	0.00	51.56	117.66	7.41
4.64	1.610	72.95	3	1.7E-08	8	21.38	0	0	0.00	51.91	109.07	6.91
4.66	1.630	71.58	3	1.9E-08	8	21.65	0	0	0.00	51.78	110.47	6.98
4.68	1.730	66.29	3	2.8E-08	8	23.05	0	0	0.00	51.27	117.59	7.36
4.70	1.880	62.47	4	4.4E-08	8	25.14	0	0	0.00	51.41	128.27	7.95
4.72	1.990	61.37	4	5.8E-08	8	26.68	0	0	0.00	51.92	136.11	8.38
4.74	1.880	57.45	4	5.1E-08	8	25.13	0	0	0.00	50.04	128.22	7.89
4.76	1.820	55.04	4	4.8E-08	8	24.29	0	0	0.00	48.94	123.91	7.62
4.78	2.160	54.49	4	1.0E-07	9	29.04	0	0	0.00	51.10	148.17	8.98
4.80	2.820	54.08	5	3.2E-07	10	38.28	32	35	43.69	54.76	0.00	0.00
4.82	2.990	53.54	5	4.2E-07	11	40.65	33	35	44.26	55.47	0.00	0.00
4.84	2.950	61.05	5	3.1E-07	11	40.09	32	35	46.09	57.76	0.00	0.00
4.86	2.710	68.02	4	1.7E-07	10	36.72	0	0	46.78	58.63	187.35	11.17
4.88	2.010	70.58	4	4.5E-08	9	26.92	0	0	0.00	54.95	137.33	8.35
4.90	1.680	74.08	3	1.9E-08	8	22.29	0	0	0.00	53.34	113.73	7.00
4.92	1.390	84.84	3	6.0E-09	7	18.23	0	0	0.00	53.49	92.99	5.75
4.94	1.300	90.90	3	3.8E-09	7	16.96	0	0	0.00	54.06	86.54	5.34
4.96	1.260	84.75	3	3.8E-09	7	16.40	0	0	0.00	52.32	83.65	5.15
4.98	1.340	67.48	3	7.9E-09	7	17.51	0	0	0.00	48.89	89.34	5.49
5.00	1.460	61.69	3	1.4E-08	7	19.19	0	0	0.00	48.42	97.89	5.99
5.02	1.790	52.03	4	4.6E-08	8	23.80	0	0	0.00	48.31	121.43	7.28
5.04	2.130	34.72	4	2.0E-07	8	28.56	0	0	35.52	44.52	145.69	8.53
5.06	2.060	29.57	5	2.2E-07	8	27.57	27	33	33.56	42.07	0.00	0.00
5.08	1.920	30.44	4	1.6E-07	7	25.61	0	0	33.22	41.64	130.64	7.65
5.10	1.940	32.90	4	1.4E-07	8	25.88	0	0	34.13	42.78	132.05	7.73
5.12	1.940	32.90	4	1.4E-07	8	25.88	0	0	34.16	42.81	132.02	7.71
5.14	2.300	34.90	5	2.7E-07	8	30.91	28	33	36.45	45.69	0.00	0.00
5.16	2.320	47.48	4	1.6E-07	9	31.19	0	0	40.27	50.47	159.12	9.25
5.18	2.040	53.95	4	7.3E-08	8	27.26	0	0	0.00	50.90	139.09	8.16
5.20	1.680	60.46	3	2.5E-08	8	22.22	0	0	0.00	50.28	113.35	6.74
5.22	1.420	63.97	3	1.1E-08	7	18.57	0	0	0.00	49.10	94.75	5.68
5.24	1.190	57.55	3	5.8E-09	6	15.35	0	0	0.00	45.34	78.30	4.69
5.26	1.190	52.03	3	7.0E-09	6	15.34	0	0	0.00	43.80	78.28	4.67
5.28	1.110	45.93	3	6.4E-09	6	13.30	0	0	0.00	41.27	72.54	4.32
5.30	1.500	34.17	4	4.2E-08	7	19.67	0	0	0.00	40.63	100.37	5.87
5.32	1.710	27.84	4	1.0E-07	7	22.61	0	0	0.00	39.60	115.34	6.65
5.34	1.870	24.88	5	1.8E-07	7	24.84	25	32	31.37	39.32	0.00	0.00

In situ data			Estimations					CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	1.750	28.52	4	1.1E-07	7	23.16	0	0	0.00	40.20	118.15	6.79
5.38	1.510	32.67	4	4.6E-08	7	19.79	0	0	0.00	40.25	100.99	5.86
5.40	1.190	42.56	3	9.8E-09	6	15.25	0	0	0.00	41.10	78.10	4.60
5.42	1.060	49.16	3	4.3E-09	6	11.81	0	0	0.00	41.98	68.79	4.05
5.44	1.070	53.44	3	3.8E-09	6	12.02	0	0	0.00	43.35	69.48	4.08
5.46	1.090	53.44	3	4.2E-09	6	12.49	0	0	0.00	43.59	70.89	4.15
5.48	1.240	48.75	3	9.0E-09	6	15.99	0	0	0.00	43.62	81.57	4.77
5.50	1.210	44.29	3	9.6E-09	6	15.56	0	0	0.00	41.99	79.41	4.63
5.52	1.150	41.78	3	8.4E-09	6	13.93	0	0	0.00	40.68	75.10	4.37
5.54	1.150	33.81	3	1.2E-08	6	13.90	0	0	0.00	37.96	75.07	4.36
5.56	1.260	27.20	4	2.7E-08	6	16.25	0	0	0.00	36.42	82.91	4.77
5.58	1.490	22.55	4	7.5E-08	6	19.46	0	0	0.00	36.15	99.31	5.63
5.60	1.580	20.82	4	1.1E-07	6	20.72	0	0	0.00	35.96	105.71	5.95
5.62	1.470	27.93	4	5.0E-08	6	19.18	0	0	0.00	38.40	97.83	5.55
5.64	1.530	35.54	4	3.9E-08	7	20.01	0	0	0.00	41.84	102.09	5.80
5.66	1.840	39.27	4	7.4E-08	8	24.35	0	0	0.00	45.41	124.21	6.99
5.68	2.350	39.00	5	2.1E-07	9	31.48	28	33	38.61	48.40	0.00	0.00
5.70	2.380	44.29	4	1.8E-07	9	31.90	0	0	40.35	50.58	162.73	9.04
5.72	2.370	50.48	4	1.4E-07	9	31.75	0	0	42.08	52.74	161.99	9.01
5.74	2.190	53.58	4	8.9E-08	9	29.23	0	0	0.00	52.72	149.11	8.32
5.76	2.150	54.81	4	7.8E-08	9	28.66	0	0	0.00	52.90	146.23	8.16
5.78	2.050	53.49	4	6.6E-08	9	27.26	0	0	0.00	51.86	139.06	7.76
5.80	2.200	53.67	4	8.9E-08	9	29.35	0	0	0.00	52.92	149.75	8.31
5.82	2.020	56.22	4	5.6E-08	9	26.83	0	0	0.00	52.61	136.87	7.62
5.84	1.840	55.59	4	3.8E-08	8	24.30	0	0	0.00	51.18	123.98	6.92
5.86	1.640	49.98	4	2.7E-08	7	21.50	0	0	0.00	47.96	109.67	6.13
5.88	1.650	50.03	4	2.8E-08	7	21.63	0	0	0.00	48.09	110.36	6.16
5.90	1.640	47.07	4	3.0E-08	7	21.49	0	0	0.00	47.09	109.62	6.10
5.92	1.530	44.24	4	2.5E-08	7	19.94	0	0	0.00	45.33	101.74	5.67
5.94	1.570	43.92	4	2.8E-08	7	20.50	0	0	0.00	45.57	104.57	5.81
5.96	1.480	44.20	3	2.1E-08	7	19.23	0	0	0.00	44.98	98.12	5.45
5.98	1.930	40.05	4	8.1E-08	8	25.53	0	0	0.00	46.79	130.24	7.13
6.00	2.090	38.04	4	1.3E-07	8	27.76	0	0	37.54	47.06	141.64	7.70
6.02	1.990	36.09	4	1.1E-07	8	26.36	0	0	0.00	45.72	134.47	7.31
6.04	1.920	33.81	4	1.1E-07	8	25.37	0	0	0.00	44.41	129.45	7.03
6.06	1.920	37.22	4	8.8E-08	8	25.37	0	0	0.00	45.78	129.42	7.03
6.08	2.010	44.42	4	7.9E-08	8	26.62	0	0	0.00	49.05	135.83	7.37
6.10	1.920	46.20	4	6.0E-08	8	25.36	0	0	0.00	49.12	129.37	7.03
6.12	1.920	46.20	4	6.0E-08	8	25.35	0	0	0.00	49.15	129.35	7.02
6.14	1.550	47.98	3	2.1E-08	7	20.17	0	0	0.00	47.08	102.89	5.63
6.16	1.440	57.45	3	1.1E-08	7	18.62	0	0	0.00	49.12	95.01	5.21
6.18	1.570	58.68	3	1.5E-08	8	20.44	0	0	0.00	50.61	104.27	5.70
6.20	1.660	55.13	3	2.2E-08	8	21.69	0	0	0.00	50.31	110.67	6.02
6.22	1.790	50.30	4	3.7E-08	8	23.51	0	0	0.00	49.80	119.93	6.48
6.24	1.680	52.85	4	2.5E-08	8	21.96	0	0	0.00	49.83	112.05	6.06
6.26	1.550	53.31	3	1.7E-08	7	20.14	0	0	0.00	48.97	102.74	5.57
6.28	1.370	49.39	3	1.1E-08	7	17.61	0	0	0.00	46.26	89.86	4.87
6.30	1.300	48.66	3	8.9E-09	7	16.53	0	0	0.00	45.47	84.83	4.59
6.32	1.440	50.39	3	1.3E-08	7	18.58	0	0	0.00	47.23	94.81	5.12
6.34	1.630	48.61	4	2.5E-08	7	21.24	0	0	0.00	48.25	108.35	5.81
6.36	1.610	48.89	3	2.3E-08	7	20.95	0	0	0.00	48.22	106.90	5.73
6.38	1.520	48.89	3	1.8E-08	7	19.69	0	0	0.00	47.53	100.45	5.38
6.40	1.250	50.94	3	6.6E-09	6	14.98	0	0	0.00	45.90	81.14	4.35
6.42	1.200	49.89	3	5.6E-09	6	13.66	0	0	0.00	45.14	77.54	4.15
6.44	1.160	48.25	3	5.1E-09	6	12.64	0	0	0.00	44.28	74.66	3.99

In situ data			Estimations					CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	1.130	42.24	3	5.7E-09	6	11.89	0	0	0.00	42.08	72.49	3.87
6.48	1.070	40.32	3	4.8E-09	6	10.50	0	0	0.00	40.89	68.18	3.63
6.50	0.890	39.73	3	2.0E-09	5	6.90	0	0	0.00	38.81	55.30	2.94
6.52	0.720	41.19	3	8.1E-10	5	4.19	0	0	0.00	37.14	43.13	2.29
6.54	0.720	31.89	3	1.0E-09	4	4.18	0	0	0.00	34.13	43.11	2.28
6.56	0.820	26.84	3	2.7E-09	5	5.66	0	0	0.00	33.48	50.23	2.66
6.58	1.190	21.28	4	2.3E-08	5	13.11	0	0	0.00	34.55	76.63	4.03
6.60	1.540	15.22	4	1.2E-07	6	19.91	0	0	27.07	33.93	101.61	5.27
6.62	1.620	13.67	5	1.8E-07	6	21.03	22	31	26.74	33.51	0.00	0.00
6.64	1.820	13.53	5	2.9E-07	7	23.83	23	32	27.61	34.61	0.00	0.00
6.66	2.050	23.65	5	2.2E-07	8	27.04	25	32	33.11	41.50	0.00	0.00
6.68	2.120	31.48	4	1.6E-07	8	28.02	0	0	36.33	45.54	142.94	7.37
6.70	2.090	36.81	4	1.1E-07	8	27.59	0	0	37.99	47.62	140.77	7.26
6.72	2.630	43.01	5	2.4E-07	10	35.15	28	33	42.36	53.09	0.00	0.00
6.74	2.680	42.01	5	2.7E-07	10	35.84	28	34	42.28	52.99	0.00	0.00
6.76	2.760	41.69	5	3.1E-07	10	36.96	29	34	42.53	53.30	0.00	0.00
6.78	2.840	43.06	5	3.3E-07	10	38.07	29	34	43.30	54.27	0.00	0.00
6.80	2.790	45.11	5	2.8E-07	10	37.37	29	34	43.77	54.86	0.00	0.00
6.82	2.530	50.76	4	1.5E-07	10	33.72	0	0	44.38	55.62	172.05	8.78
6.84	2.090	56.50	4	5.1E-08	9	27.56	0	0	0.00	54.94	140.60	7.21
6.86	1.710	59.64	3	1.9E-08	8	22.23	0	0	0.00	53.21	113.43	5.84
6.88	1.370	62.42	3	6.1E-09	7	17.35	0	0	0.00	51.18	89.12	4.59
6.90	1.080	58.18	3	2.2E-09	6	10.20	0	0	0.00	47.08	68.38	3.52
6.92	1.170	56.18	3	3.5E-09	6	12.17	0	0	0.00	47.49	74.78	3.84
6.94	1.930	50.48	4	4.3E-08	8	25.29	0	0	0.00	52.03	129.04	6.57
6.96	2.780	41.14	5	3.1E-07	10	37.19	29	34	42.69	53.51	0.00	0.00
6.98	2.860	44.92	5	3.0E-07	10	38.30	29	34	44.23	55.44	0.00	0.00
7.00	2.630	52.44	4	1.6E-07	10	35.08	0	0	45.55	57.09	178.96	9.00
7.02	2.270	52.85	4	8.0E-08	9	30.03	0	0	0.00	55.19	153.22	7.72
7.04	2.180	49.89	4	7.4E-08	9	28.77	0	0	0.00	53.63	146.77	7.39
7.06	2.080	50.07	4	5.9E-08	9	27.36	0	0	0.00	53.10	139.60	7.02
7.08	2.000	62.65	4	3.3E-08	9	26.24	0	0	0.00	56.71	133.86	6.74
7.10	2.070	64.93	4	3.5E-08	9	27.21	0	0	0.00	57.95	138.84	6.98
7.12	2.070	64.93	4	3.5E-08	9	27.21	0	0	0.00	57.99	138.81	6.97
7.14	1.980	66.25	4	2.8E-08	9	25.94	0	0	0.00	57.78	132.36	6.64
7.16	1.980	61.65	4	3.2E-08	9	25.94	0	0	0.00	56.42	132.33	6.62
7.18	1.880	62.28	3	2.4E-08	9	24.53	0	0	0.00	55.92	125.16	6.26
7.20	1.950	60.92	4	3.0E-08	9	25.51	0	0	0.00	56.05	130.14	6.49
7.22	2.110	65.34	4	3.7E-08	9	27.74	0	0	0.00	58.59	141.54	7.04
7.24	2.050	73.95	3	2.6E-08	9	26.90	0	0	0.00	60.76	137.23	6.83
7.26	2.040	74.54	3	2.5E-08	9	26.75	0	0	0.00	60.90	136.49	6.78
7.28	1.890	70.17	3	1.9E-08	9	24.65	0	0	0.00	58.54	125.75	6.24
7.30	1.740	66.48	3	1.5E-08	8	22.54	0	0	0.00	56.32	115.01	5.70
7.32	1.830	66.89	3	1.8E-08	9	23.80	0	0	0.00	57.19	121.41	6.01
7.34	1.850	62.51	3	2.2E-08	9	24.07	0	0	0.00	56.07	122.81	6.06
7.36	1.850	56.00	4	2.6E-08	8	24.07	0	0	0.00	54.05	122.79	6.05
7.38	1.630	50.16	3	1.8E-08	8	20.98	0	0	0.00	50.48	107.05	5.27
7.40	1.490	43.33	3	1.6E-08	7	19.02	0	0	0.00	47.03	97.02	4.77
7.42	1.460	37.27	4	1.8E-08	7	18.59	0	0	0.00	44.59	94.85	4.65
7.44	1.640	36.31	4	3.3E-08	7	21.11	0	0	0.00	45.62	107.69	5.27
7.46	1.740	39.82	4	3.6E-08	8	22.50	0	0	0.00	47.73	114.80	5.60
7.48	1.640	41.55	4	2.6E-08	7	21.10	0	0	0.00	47.68	107.64	5.25
7.50	1.730	45.74	4	2.7E-08	8	22.35	0	0	0.00	49.90	114.04	5.55
7.52	1.870	48.07	4	3.5E-08	8	24.31	0	0	0.00	51.77	124.01	6.03
7.54	1.590	49.21	3	1.6E-08	8	20.38	0	0	0.00	50.09	103.99	5.06

In situ data				Estimations				CPTe 02				
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	1.580	46.15	3	1.7E-08	7	20.24	0	0	0.00	49.00	103.25	5.01
7.58	1.480	42.37	3	1.5E-08	7	18.83	0	0	0.00	46.88	96.08	4.66
7.60	1.500	41.42	3	1.7E-08	7	19.11	0	0	0.00	46.73	97.49	4.72
7.62	1.390	44.70	3	1.0E-08	7	16.46	0	0	0.00	47.02	89.60	4.33
7.64	1.350	47.43	3	7.8E-09	7	15.39	0	0	0.00	47.63	86.72	4.18
7.66	1.280	46.61	3	6.2E-09	7	13.64	0	0	0.00	46.74	81.70	3.93
7.68	1.490	46.66	3	1.3E-08	7	18.95	0	0	0.00	48.63	96.67	4.65
7.70	1.420	44.70	3	1.1E-08	7	17.11	0	0	0.00	47.39	91.65	4.40
7.72	1.370	46.02	3	8.6E-09	7	15.77	0	0	0.00	47.45	88.05	4.22
7.74	1.360	53.76	3	6.2E-09	7	15.48	0	0	0.00	49.93	87.31	4.18
7.76	1.440	51.21	3	8.9E-09	7	17.53	0	0	0.00	49.87	93.00	4.44
7.78	1.320	52.67	3	5.5E-09	7	14.42	0	0	0.00	49.27	84.40	4.03
7.80	0.990	54.90	3	1.3E-09	6	7.47	0	0	0.00	46.42	60.81	2.90
7.82	0.890	49.75	3	9.4E-10	6	5.80	0	0	0.00	43.65	53.64	2.55
7.84	0.910	43.24	3	1.3E-09	5	6.10	0	0	0.00	41.90	55.04	2.61
7.86	1.360	42.83	3	9.2E-09	7	15.28	0	0	0.00	46.45	87.16	4.13
7.88	1.510	43.38	3	1.5E-08	7	19.18	0	0	0.00	47.94	97.85	4.63
7.90	1.570	40.55	4	2.0E-08	7	20.01	0	0	0.00	47.41	102.11	4.82
7.92	1.450	40.14	3	1.4E-08	7	17.50	0	0	0.00	46.32	93.51	4.41
7.94	1.310	39.46	3	8.7E-09	7	13.93	0	0	0.00	44.90	83.49	3.93
7.96	1.110	41.01	3	3.6E-09	6	9.55	0	0	0.00	43.57	69.18	3.25
7.98	1.120	42.87	3	3.5E-09	6	9.73	0	0	0.00	44.34	69.87	3.28
8.00	0.980	40.73	3	2.0E-09	6	7.12	0	0	0.00	42.10	59.84	2.81
8.02	1.260	43.01	3	6.1E-09	7	12.66	0	0	0.00	45.83	79.82	3.74
8.04	1.200	37.73	3	6.1E-09	6	11.31	0	0	0.00	43.39	75.51	3.53
8.06	0.900	34.13	3	1.8E-09	5	5.79	0	0	0.00	38.90	54.06	2.52
8.08	0.700	27.79	3	8.3E-10	4	3.12	0	0	0.00	33.93	39.75	1.85
8.10	0.700	27.79	3	8.3E-10	4	3.12	0	0	0.00	33.94	39.72	1.85
8.12	0.630	10.66	3	1.8E-09	4	2.37	0	0	0.00	24.81	34.70	1.61
8.14	0.670	8.56	3	3.4E-09	4	2.78	0	0	0.00	23.91	37.54	1.74
8.16	0.730	8.05	3	5.8E-09	4	3.44	0	0	0.00	24.23	41.80	1.94
8.18	0.830	9.05	4	9.3E-09	4	4.70	0	0	0.00	26.00	48.92	2.27
8.20	1.110	9.05	4	3.7E-08	5	9.32	0	0	0.00	28.47	68.90	3.19
8.22	1.180	9.05	4	5.0E-08	5	10.70	0	0	0.00	29.02	73.88	3.42
8.24	1.160	9.05	4	4.6E-08	5	10.28	0	0	0.00	28.88	72.42	3.34
8.26	1.210	9.05	4	5.5E-08	5	11.30	0	0	0.00	29.27	75.97	3.50
8.28	1.250	9.05	4	6.4E-08	5	12.14	0	0	0.00	29.57	78.81	3.63
8.30	1.440	11.07	4	9.3E-08	6	16.66	0	0	0.00	32.38	92.36	4.25
8.32	1.510	13.90	4	8.4E-08	6	18.48	0	0	0.00	34.76	97.33	4.48
8.34	1.550	18.45	4	6.2E-08	7	19.55	0	0	0.00	37.76	100.17	4.60
8.36	1.480	20.09	4	4.4E-08	6	17.61	0	0	0.00	38.20	95.14	4.36
8.38	1.440	24.83	4	2.7E-08	7	16.54	0	0	0.00	40.34	92.26	4.22
8.40	1.510	33.17	4	2.1E-08	7	18.34	0	0	0.00	44.63	97.24	4.45
8.42	1.470	34.54	4	1.7E-08	7	17.24	0	0	0.00	44.91	94.36	4.31
8.44	1.550	33.67	4	2.3E-08	7	19.36	0	0	0.00	45.19	100.05	4.56
8.46	1.460	33.26	4	1.8E-08	7	16.91	0	0	0.00	44.35	93.59	4.26
8.48	1.370	30.75	3	1.5E-08	7	14.64	0	0	0.00	42.59	87.14	3.96
8.50	1.310	30.03	3	1.2E-08	6	13.21	0	0	0.00	41.81	82.83	3.76
8.52	1.350	29.11	3	1.5E-08	6	14.11	0	0	0.00	41.77	85.66	3.88
8.54	1.670	26.84	4	4.6E-08	7	21.27	0	0	0.00	43.13	108.50	4.92
8.56	1.840	21.64	4	1.0E-07	7	23.64	0	0	0.00	41.60	120.62	5.46
8.58	1.860	20.91	4	1.1E-07	7	23.92	0	0	32.99	41.34	122.02	5.52
8.60	2.070	27.75	4	1.2E-07	8	26.85	0	0	36.80	46.13	137.00	6.19
8.62	2.040	36.40	4	6.9E-08	8	26.43	0	0	0.00	49.92	134.83	6.08
8.64	2.040	40.82	4	5.6E-08	9	26.42	0	0	0.00	51.78	134.80	6.07

In situ data				Estimations					CPTe 02			
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	2.070	49.34	4	4.3E-08	9	26.84	0	0	0.00	55.29	136.92	6.15
8.68	1.920	54.45	4	2.5E-08	9	24.73	0	0	0.00	56.12	126.18	5.66
8.70	2.000	55.27	4	2.9E-08	9	25.85	0	0	0.00	57.00	131.87	5.90
8.72	2.040	57.86	4	2.9E-08	9	26.40	0	0	0.00	58.20	134.70	6.02
8.74	2.050	58.91	4	2.9E-08	9	26.54	0	0	0.00	58.66	135.39	6.04
8.76	2.150	56.13	4	3.9E-08	9	27.93	0	0	0.00	58.42	142.51	6.36
8.78	2.200	57.00	4	4.2E-08	10	28.63	0	0	0.00	59.09	146.05	6.50
8.80	2.150	54.81	4	4.1E-08	9	27.92	0	0	0.00	58.03	142.46	6.33
8.82	2.250	57.14	4	4.6E-08	10	29.32	0	0	0.00	59.53	149.57	6.64
8.84	2.230	58.14	4	4.3E-08	10	29.03	0	0	0.00	59.79	148.12	6.57
8.86	2.190	59.09	4	3.8E-08	10	28.47	0	0	0.00	59.89	145.24	6.43
8.88	2.200	62.56	4	3.5E-08	10	28.60	0	0	0.00	61.17	145.92	6.45
8.90	2.280	65.52	4	3.7E-08	10	29.72	0	0	0.00	62.72	151.61	6.69
8.92	2.330	63.83	4	4.3E-08	10	30.41	0	0	0.00	62.52	155.16	6.84
8.94	2.290	66.29	4	3.7E-08	10	29.85	0	0	0.00	63.11	152.28	6.70
8.96	2.280	70.89	4	3.2E-08	10	29.70	0	0	0.00	64.57	151.54	6.65
8.98	2.310	68.66	4	3.6E-08	10	30.12	0	0	0.00	64.09	153.65	6.74
9.00	2.370	65.15	4	4.4E-08	10	30.95	0	0	0.00	63.37	157.91	6.92
9.02	2.190	65.70	4	3.0E-08	10	28.43	0	0	0.00	62.41	145.03	6.34
9.04	1.960	65.61	3	1.8E-08	9	25.20	0	0	0.00	60.78	128.57	5.60
9.06	1.830	66.07	3	1.3E-08	9	23.38	0	0	0.00	59.94	119.26	5.19
9.08	1.650	67.57	3	7.4E-09	8	20.84	0	0	0.00	58.90	106.38	4.62
9.10	1.650	67.57	3	7.4E-09	8	20.80	0	0	0.00	58.94	106.35	4.61
9.12	1.680	73.63	3	6.8E-09	9	21.26	0	0	0.00	61.03	108.47	4.69
9.14	1.670	74.59	3	6.4E-09	9	21.12	0	0	0.00	61.26	107.73	4.65
9.16	1.730	66.52	3	9.4E-09	9	21.95	0	0	0.00	59.43	111.99	4.83
9.18	1.830	58.37	3	1.6E-08	9	23.35	0	0	0.00	57.68	119.11	5.13
9.20	1.930	49.57	4	2.7E-08	9	24.74	0	0	0.00	55.35	126.23	5.44
9.22	2.060	49.94	4	3.6E-08	9	26.56	0	0	0.00	56.41	135.49	5.84
9.24	2.240	54.58	4	4.5E-08	10	29.07	0	0	0.00	59.32	148.32	6.39
9.26	2.280	59.23	4	4.2E-08	10	29.63	0	0	0.00	61.27	151.15	6.50
9.28	2.070	61.78	4	2.4E-08	9	26.68	0	0	0.00	60.77	136.12	5.83
9.30	1.930	63.92	3	1.6E-08	9	24.72	0	0	0.00	60.50	126.10	5.38
9.32	1.770	70.21	3	9.1E-09	9	22.47	0	0	0.00	61.18	114.64	4.89
9.34	1.650	68.66	3	6.8E-09	9	20.31	0	0	0.00	59.69	106.05	4.51
9.36	1.590	66.57	3	6.0E-09	8	18.66	0	0	0.00	58.54	101.73	4.32
9.38	1.670	58.91	3	9.5E-09	8	20.77	0	0	0.00	56.88	107.42	4.56
9.40	1.700	53.63	3	1.2E-08	8	21.47	0	0	0.00	55.40	109.54	4.64
9.42	1.740	49.71	3	1.6E-08	8	22.03	0	0	0.00	54.38	112.37	4.75
9.44	1.870	46.70	4	2.5E-08	9	23.84	0	0	0.00	54.26	121.63	5.15
9.46	1.790	44.47	4	2.2E-08	8	22.72	0	0	0.00	52.86	115.89	4.90
9.48	1.720	42.97	4	1.9E-08	8	21.73	0	0	0.00	51.79	110.87	4.67
9.50	1.610	43.42	3	1.4E-08	8	18.93	0	0	0.00	51.13	102.99	4.33
9.52	1.570	45.06	3	1.1E-08	8	17.86	0	0	0.00	51.44	100.10	4.21
9.54	1.520	47.98	3	8.5E-09	8	16.58	0	0	0.00	52.10	96.51	4.05
9.56	1.570	57.64	3	7.1E-09	8	17.79	0	0	0.00	55.87	100.05	4.19
9.58	1.760	57.18	3	1.2E-08	9	22.27	0	0	0.00	57.40	113.60	4.75
9.60	2.860	51.62	4	1.4E-07	11	37.66	0	0	49.75	62.35	192.15	8.12
9.62	3.640	49.34	5	4.6E-07	13	48.58	30	34	51.91	65.07	0.00	0.00
9.64	4.780	45.88	5	1.8E-06	15	64.53	35	36	54.12	67.83	0.00	0.00
9.66	7.120	48.61	6	9.2E-06	19	75.84	43	38	60.51	75.84	0.00	0.00
9.68	8.980	56.31	6	2.0E-05	22	83.75	49	39	66.82	83.75	0.00	0.00
9.70	10.220	74.95	6	2.1E-05	25	94.51	52	39	75.41	94.51	0.00	0.00
9.72	9.950	107.66	6	9.3E-06	26	106.46	51	39	84.94	106.46	0.00	0.00
9.74	9.280	137.32	5	4.2E-06	26	114.68	49	39	91.50	114.68	0.00	0.00

In situ data			Estimations						CPTe 02			
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
9.76	10.100	151.18	5	4.9E-06	28	121.17	51	39	96.68	121.17	0.00	0.00
9.78	11.140	157.83	6	6.9E-06	30	125.86	54	40	100.42	125.86	0.00	0.00
9.80	13.900	155.87	6	1.9E-05	34	131.42	60	41	104.85	131.42	0.00	0.00
9.82	16.730	171.18	6	3.5E-05	39	141.80	66	42	113.14	141.80	0.00	0.00
9.84	19.760	187.17	6	6.0E-05	44	152.19	72	42	121.43	152.19	0.00	0.00
9.86	21.190	211.14	6	6.2E-05	47	162.12	75	43	129.35	162.12	0.00	0.00
9.88	23.250	245.72	6	6.6E-05	51	175.96	78	43	140.39	175.96	0.00	0.00
9.90	24.160	281.80	6	5.7E-05	54	187.91	80	43	149.92	187.91	0.00	0.00
9.92	25.160	330.83	6	4.7E-05	57	203.04	81	44	162.00	203.04	0.00	0.00
9.94	27.610	369.74	6	5.4E-05	62	217.52	85	44	173.55	217.52	0.00	0.00
9.96	30.160	423.46	6	5.6E-05	67	235.58	89	44	187.96	235.58	0.00	0.00
9.98	32.170	469.75	6	5.7E-05	72	250.48	92	45	199.85	250.48	0.00	0.00
10.00	33.140	479.82	6	6.2E-05	73	254.68	93	45	203.20	254.68	0.00	0.00
10.02	33.530	479.09	6	6.5E-05	74	255.26	94	45	203.67	255.26	0.00	0.00
10.04	32.840	470.43	6	6.2E-05	73	252.08	93	45	201.13	252.08	0.00	0.00
10.06	31.000	452.39	6	5.3E-05	70	244.60	90	45	195.16	244.60	0.00	0.00
10.08	27.340	433.62	6	3.4E-05	64	233.53	84	44	186.33	233.53	0.00	0.00

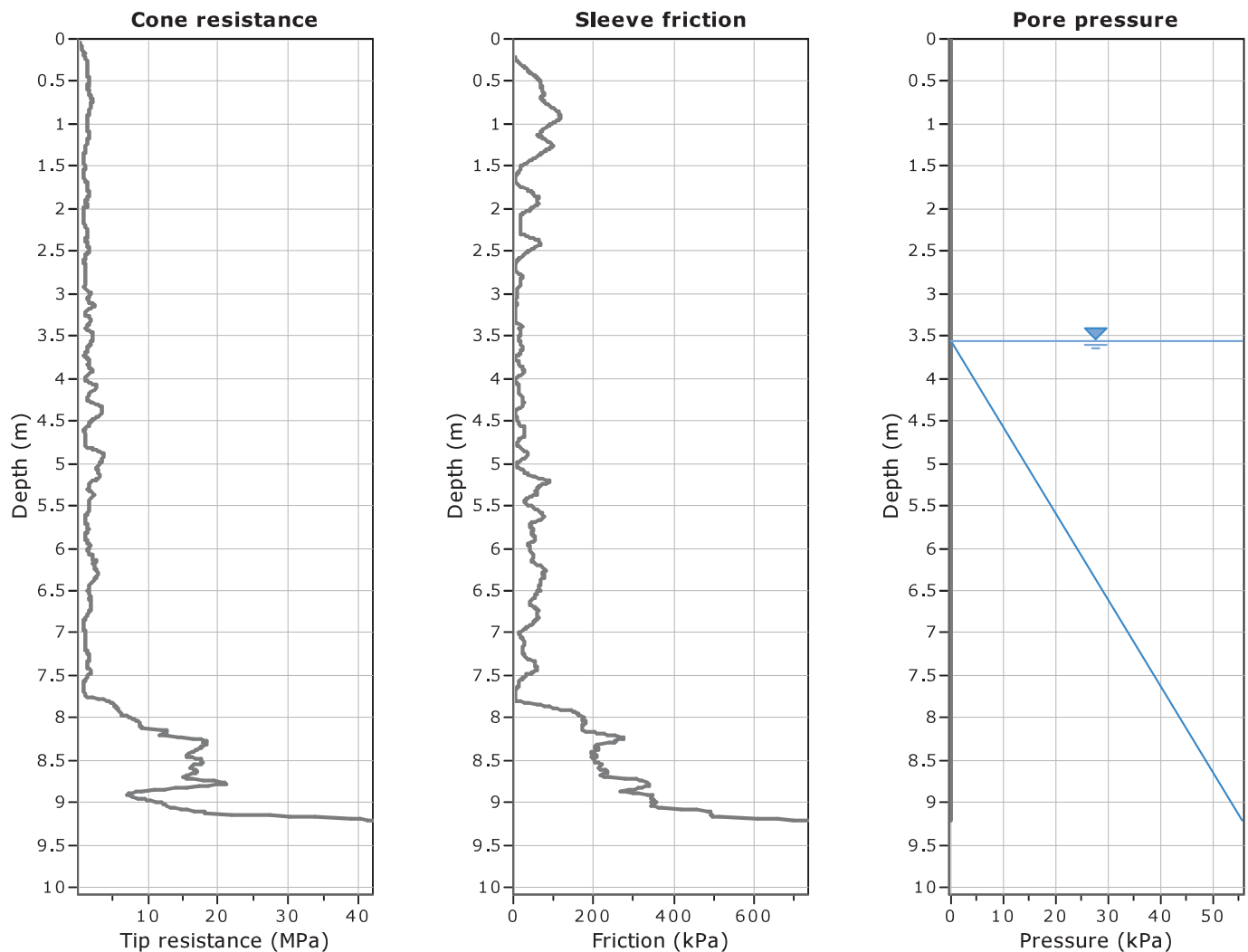
Allegato E

Prove Penetrometriche Statiche con Punta Elettrica

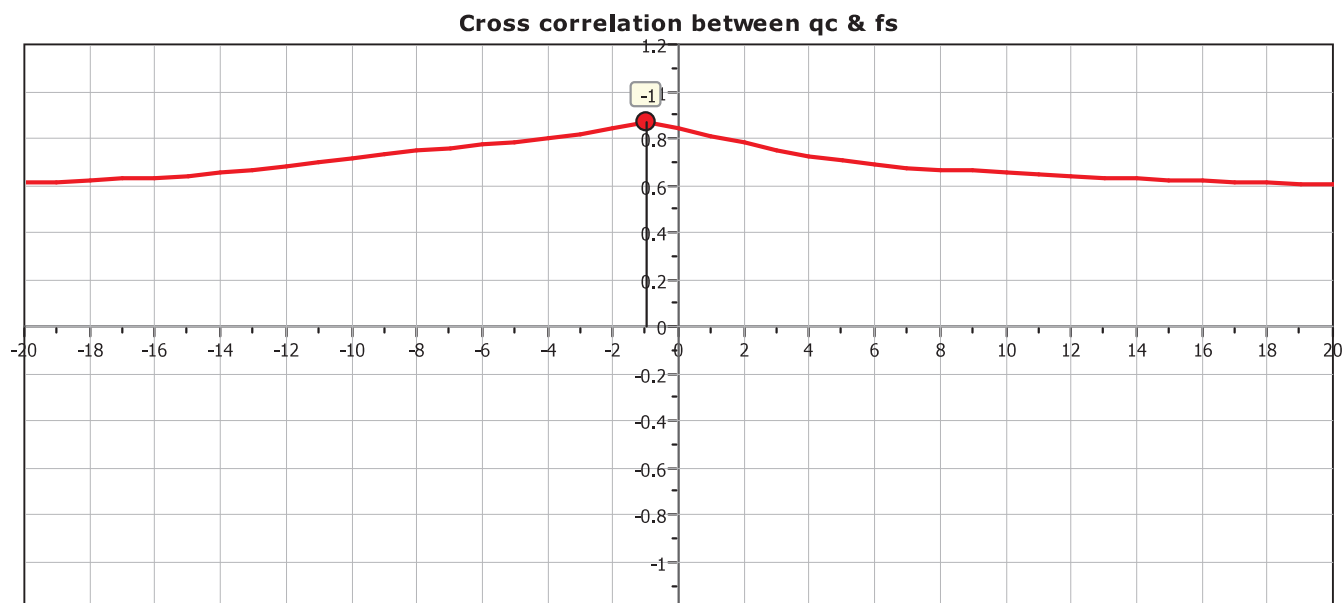
Elaborati Grafici

Project: Nuova Viabilità Fabbrica

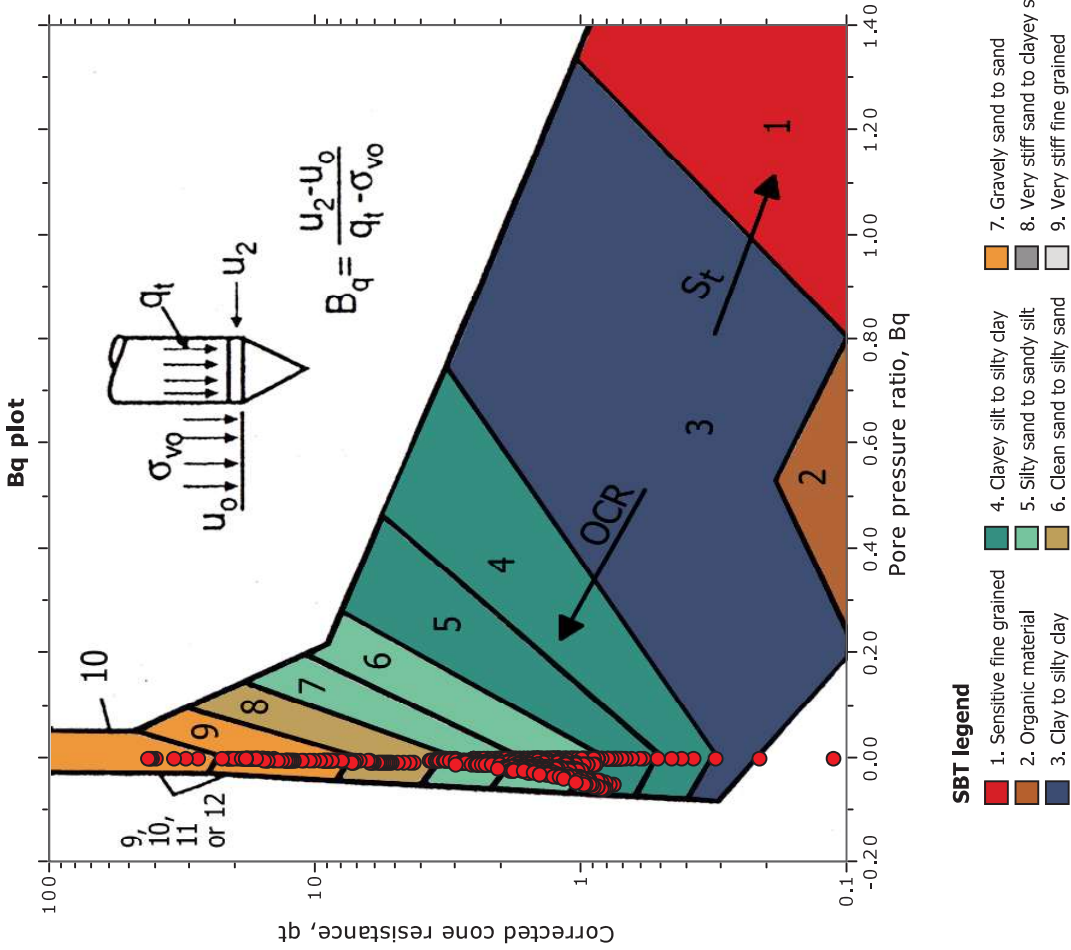
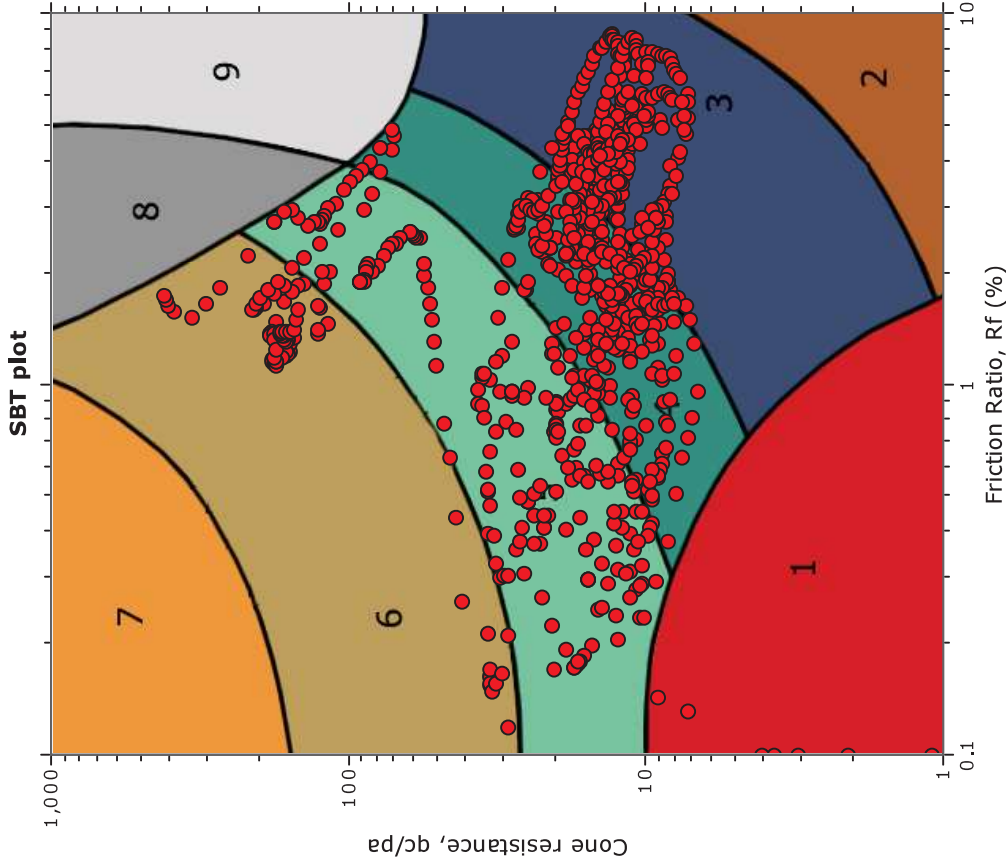
Location: Fabbrica - Peccioli (PI)

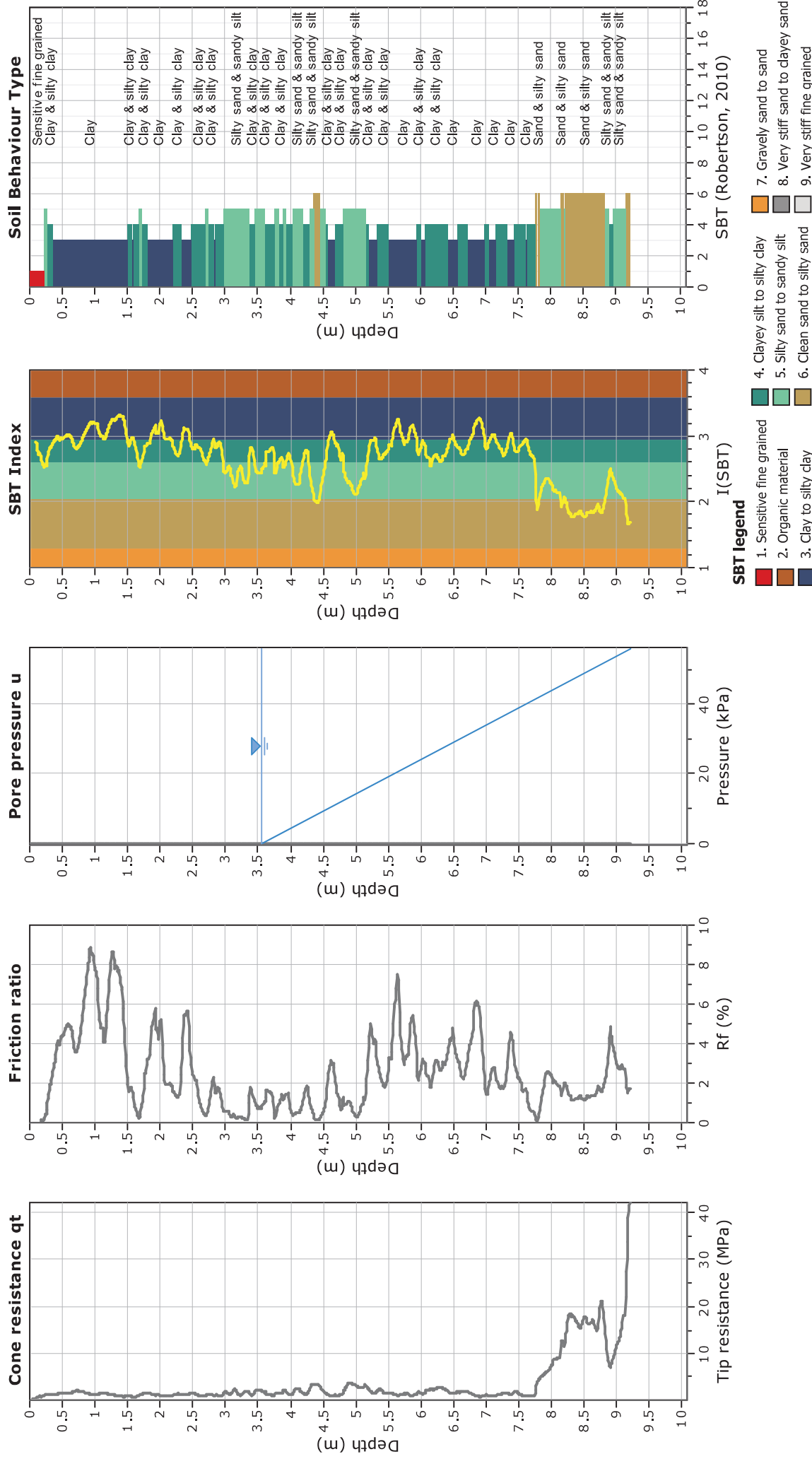


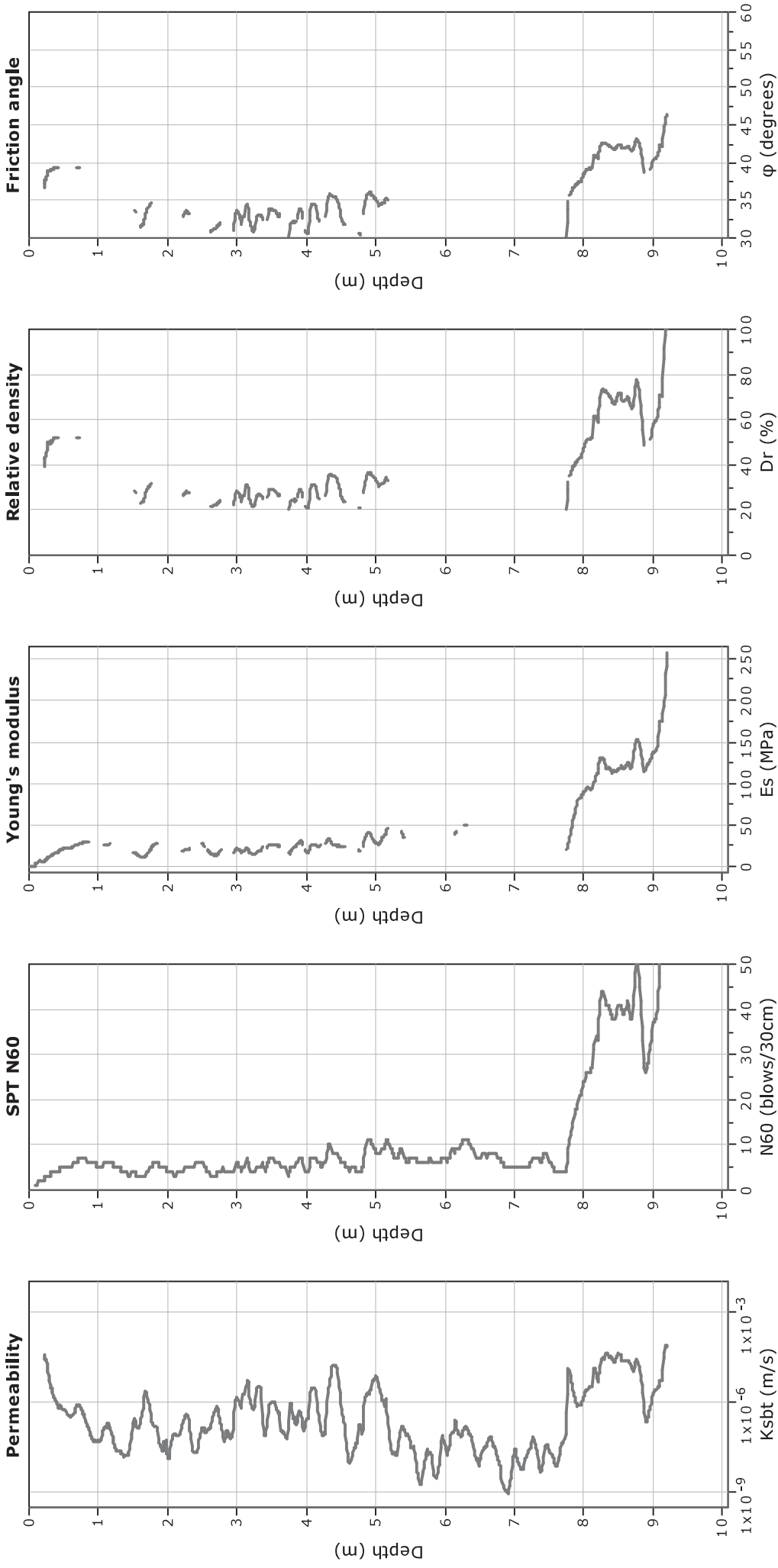
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



SBT - Bq plots

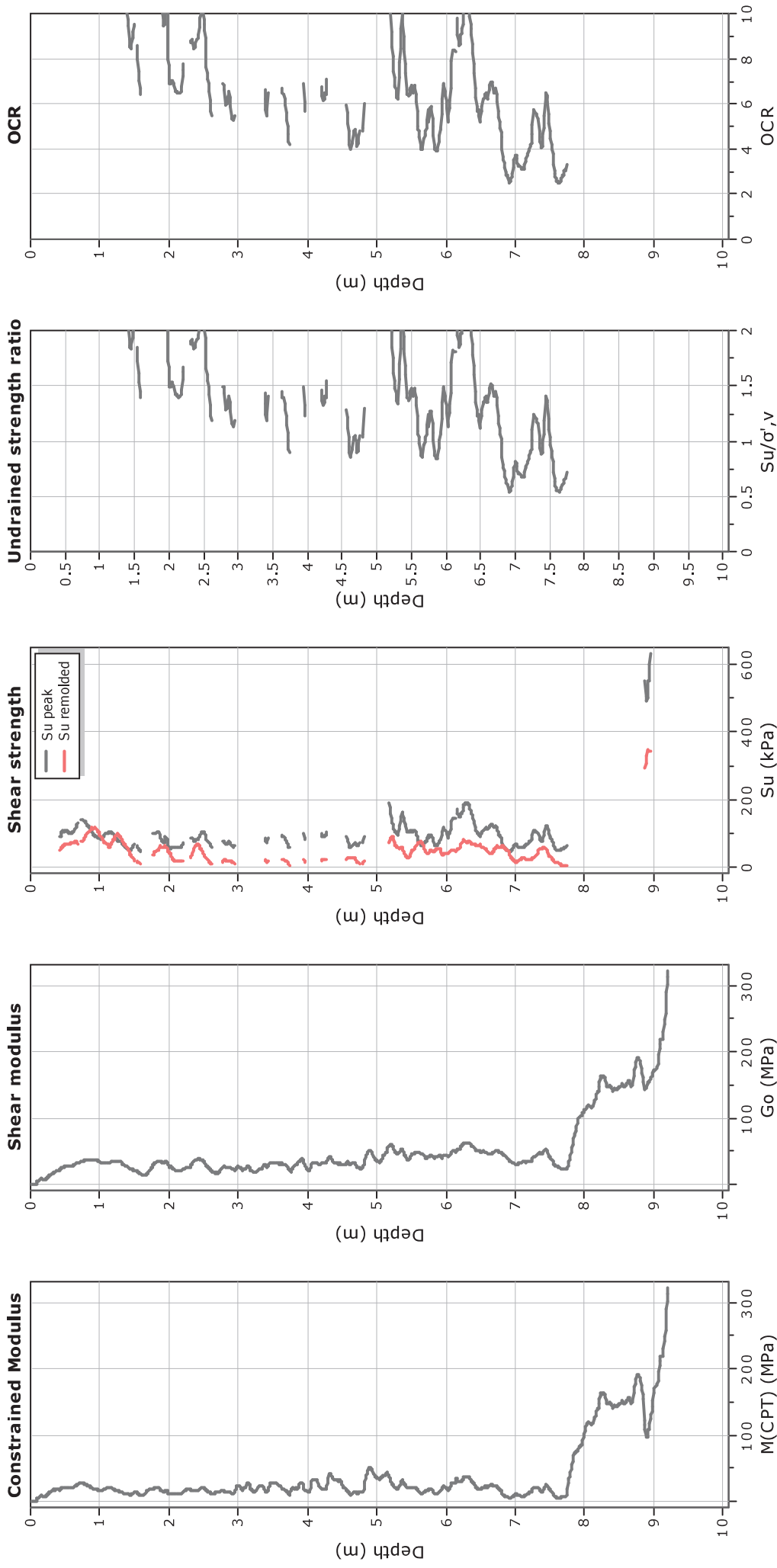






Calculation parameters

Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009) —●— User defined estimation data
Relative density constant, C_{or} : 350.0
Phi: Based on Kulhawy & Mayne (1990)

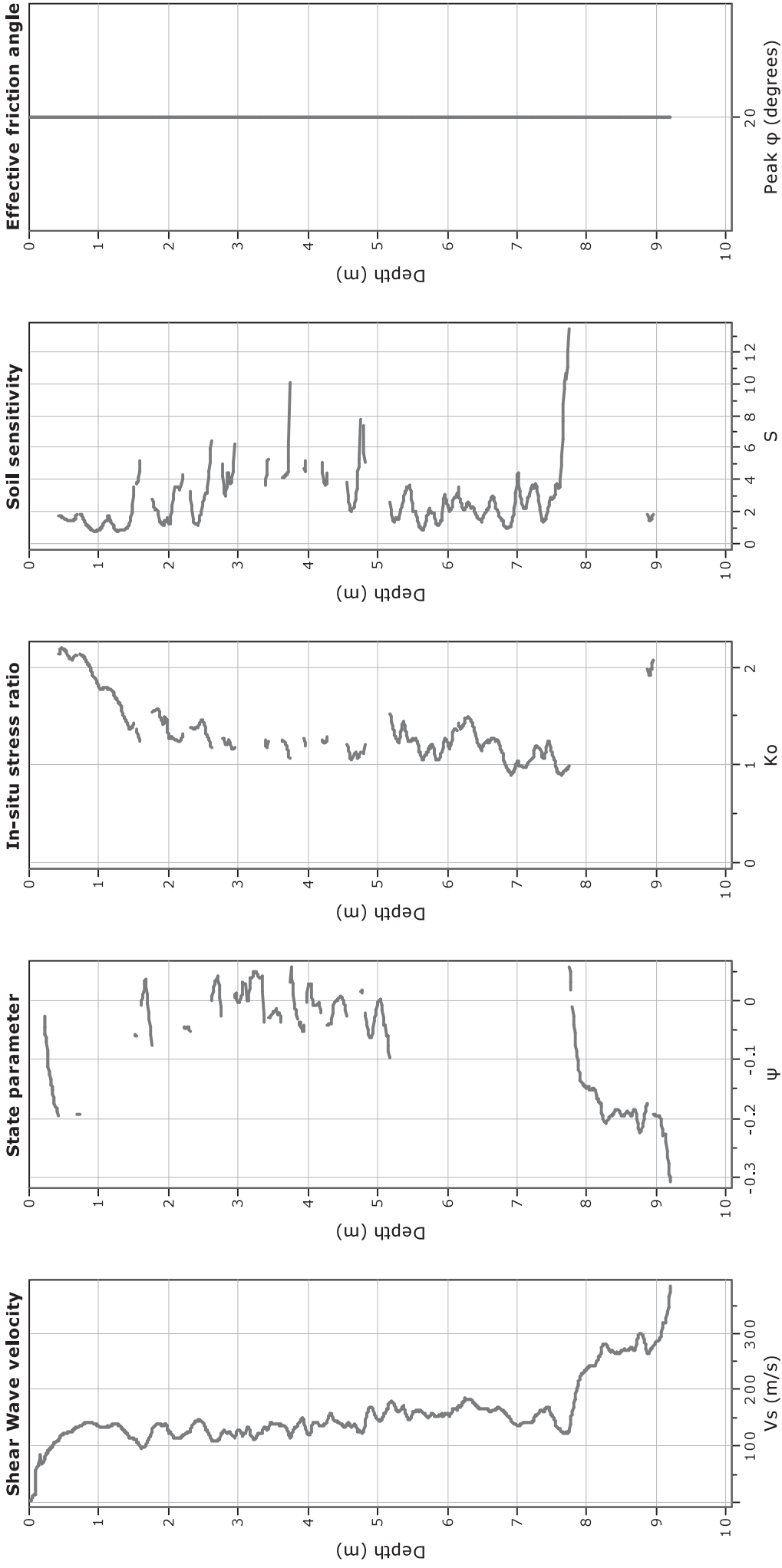


Calculation parameters

Constrained modulus: Based on variable α/ρ using I_c and Q_m (Robertson, 2009)
Go: Based on variable α/ρ using I_c (Robertson, 2009)
Undrained shear strength cone factor for days, N_{kt} : 14

OCR factor for days, N_{kt} : 0.33

—●— User defined estimation data



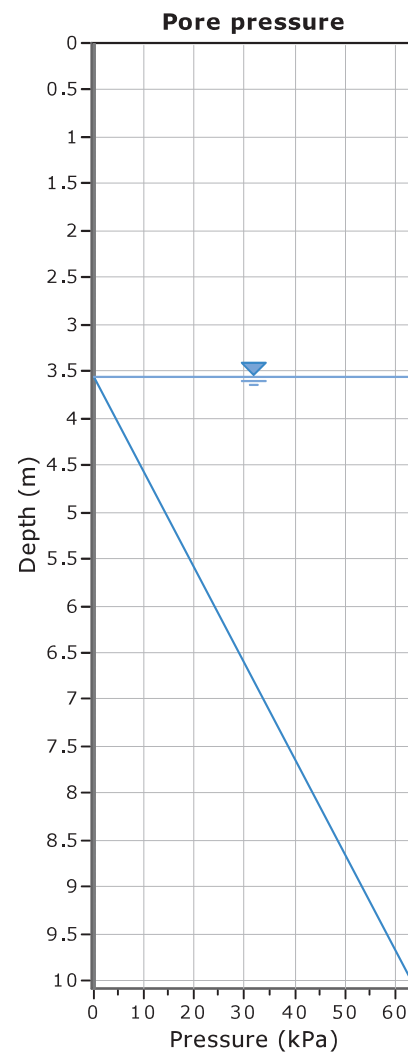
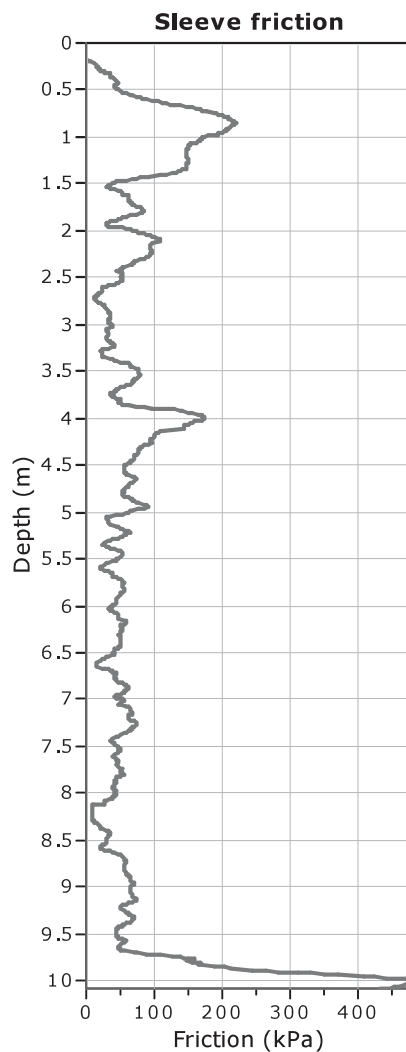
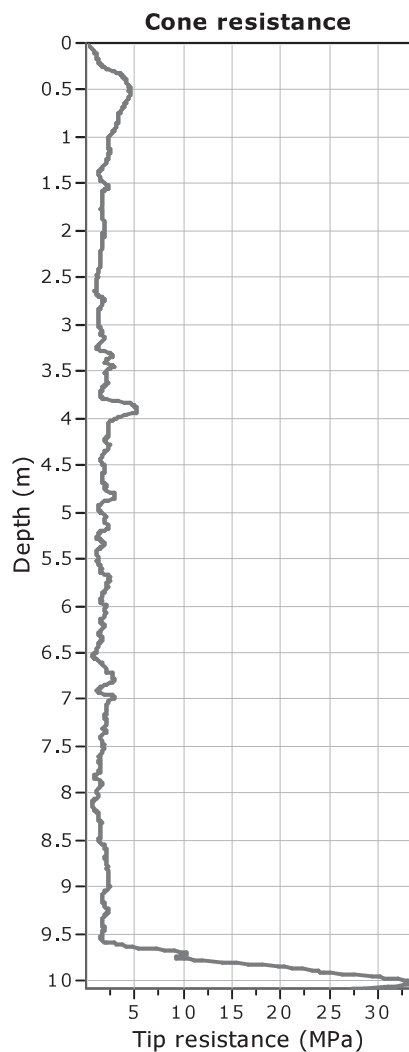
Calculation parameters

Soil Sensitivity factor, N_s : 7.00

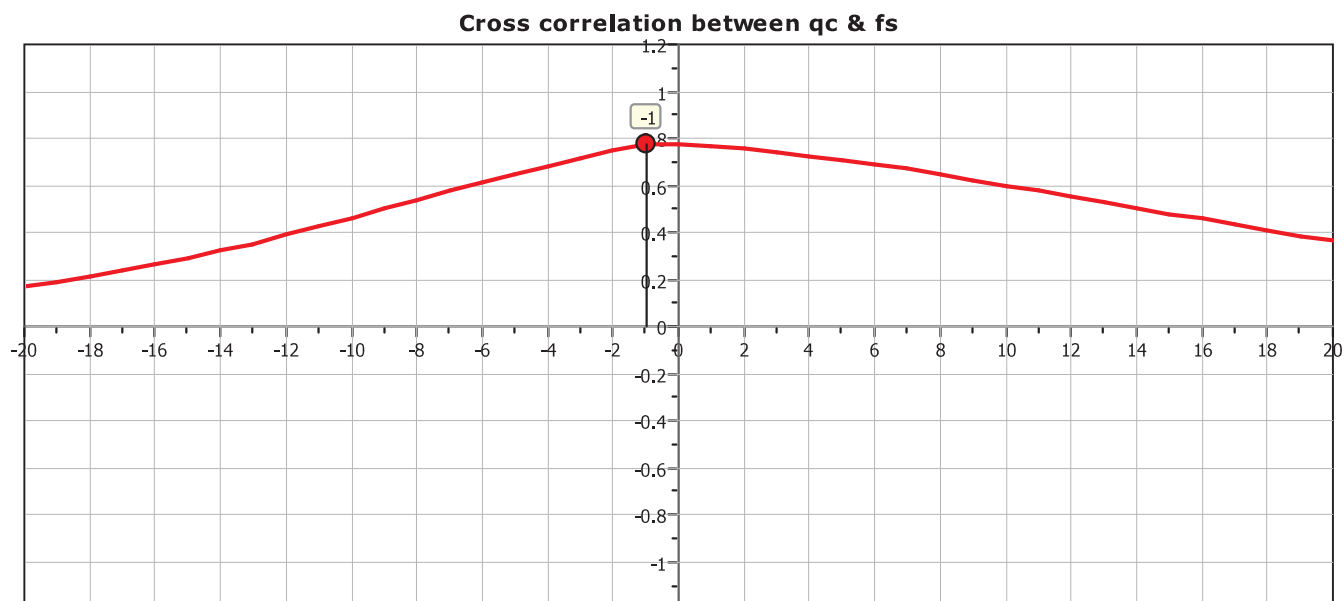
—●— User defined estimation data

Project: Nuova Viabilità Fabbrica

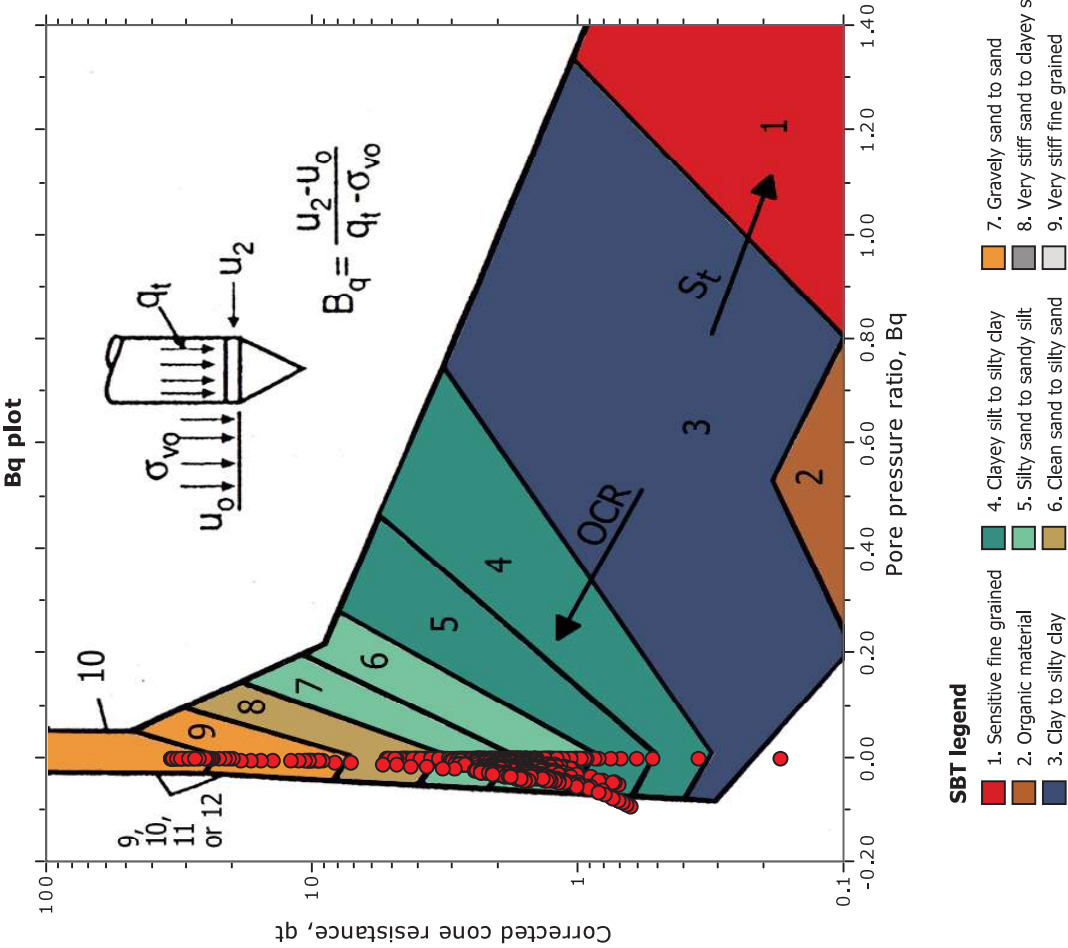
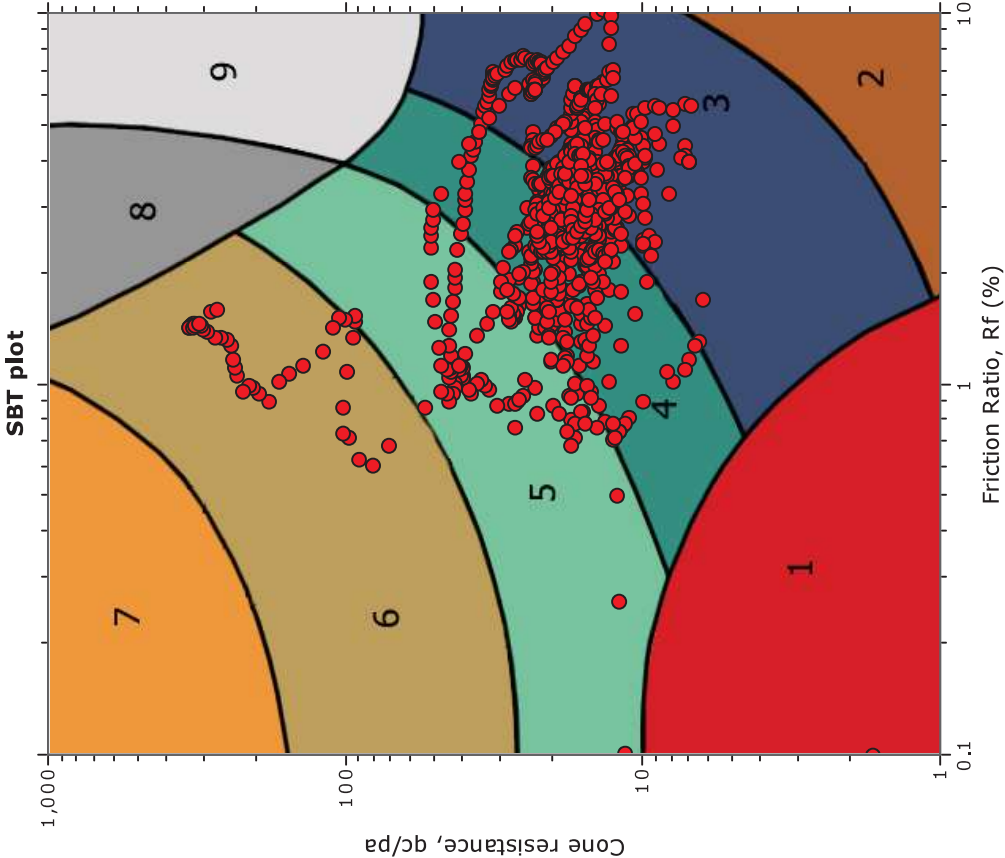
Location: Fabbrica - Peccioli (PI)

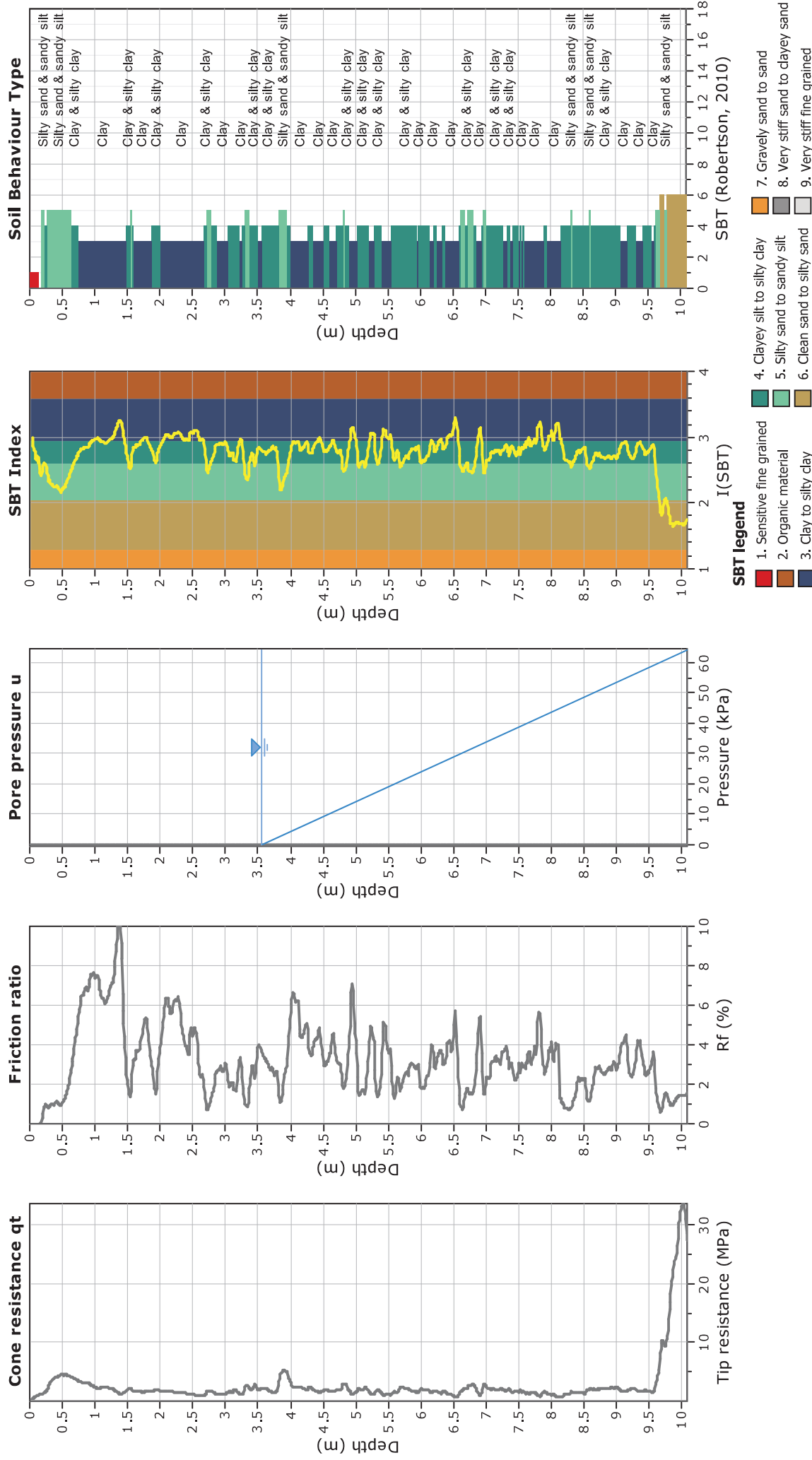


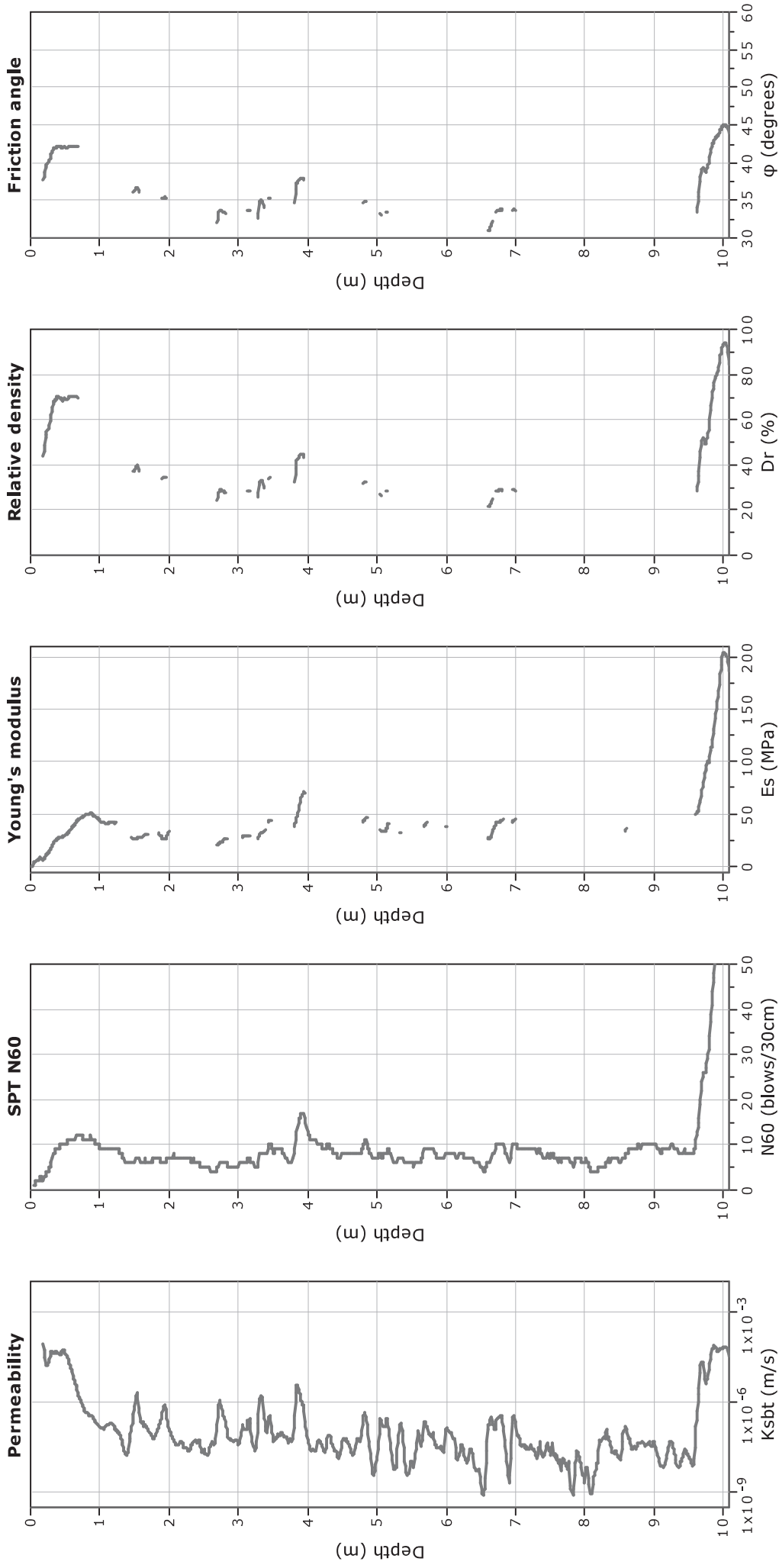
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



SBT - Bq plots

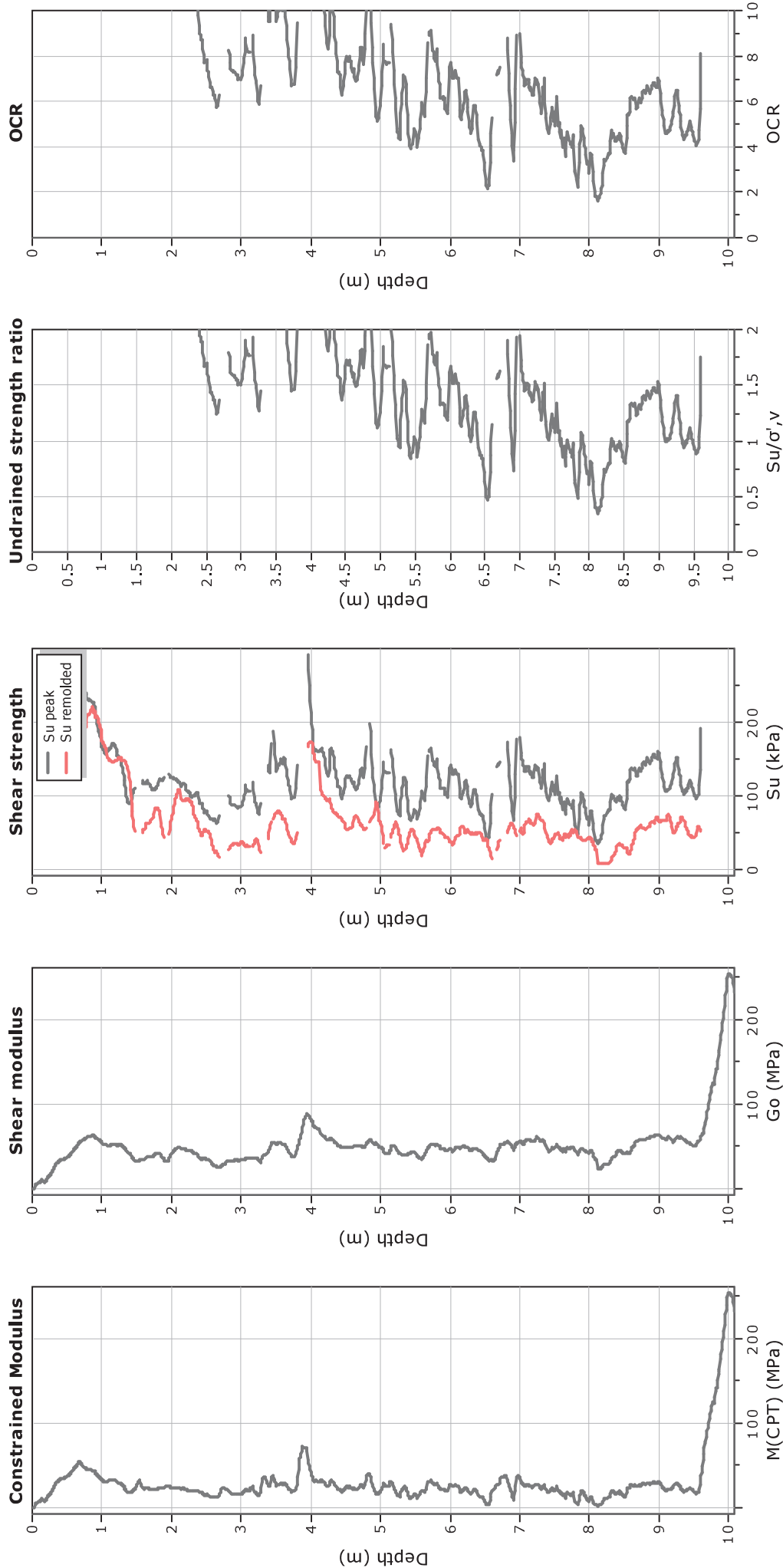






Calculation parameters

Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009) Relative density constant, C_{or} : 350.0
Phi: Based on Kulhawy & Mayne (1990) User defined estimation data



Calculation parameters

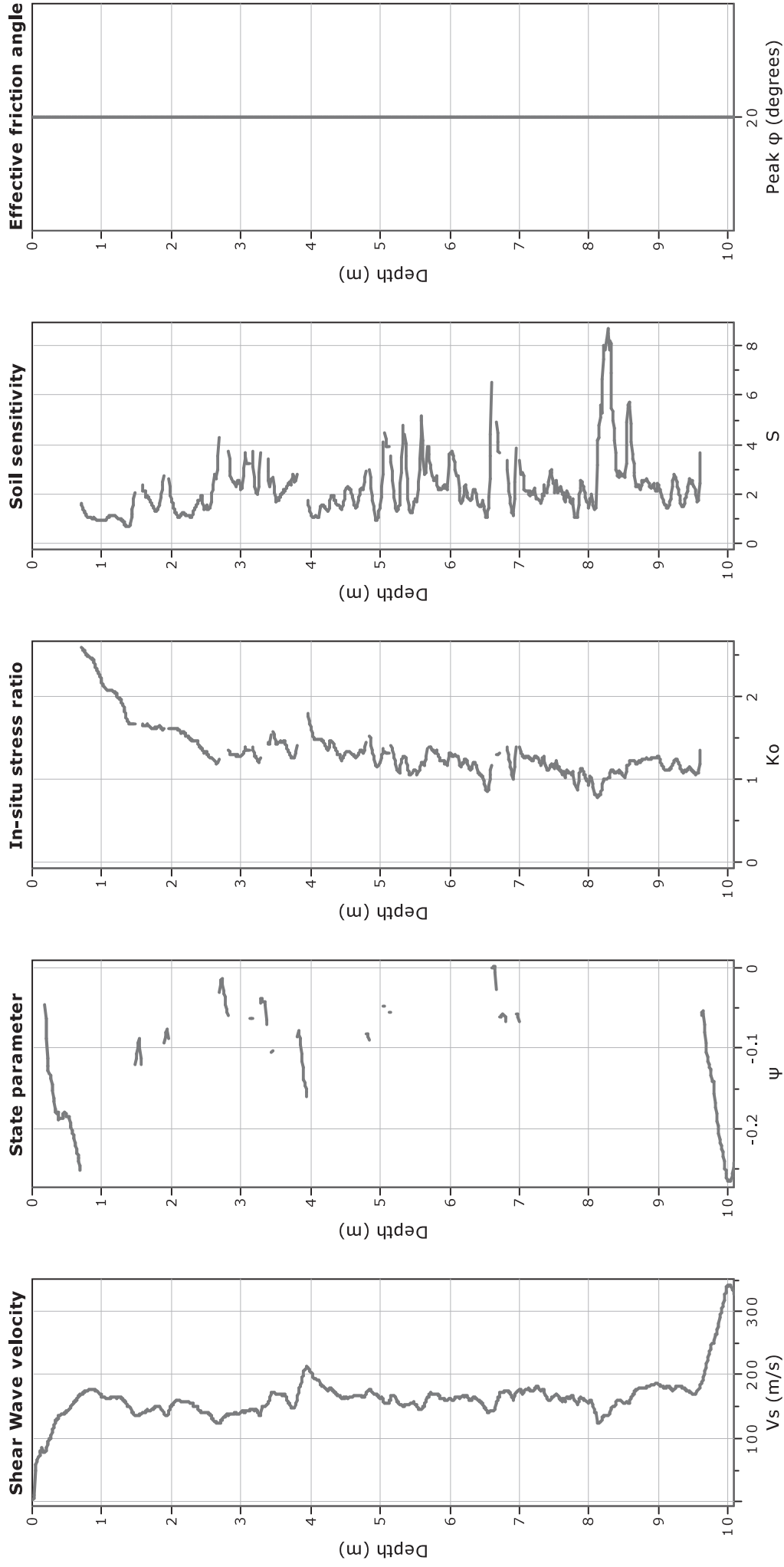
Constrained modulus: Based on variable α/ϕ using I_c and Q_m (Robertson, 2009)

Go: Based on variable α/ϕ using I_c (Robertson, 2009)

Undrained shear strength cone factor for days, N_{kt} : 14

OCR factor for days, N_{kt} : 0.33

—●— User defined estimation data



Calculation parameters

Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

:: Unit Weight, g (kN/m³) ::

$$g = g_w \cdot \left(0.27 \cdot \log(R_f) + 0.36 \cdot \log\left(\frac{q_t}{p_a}\right) + 1.236 \right)$$

where g_w = water unit weight

:: Permeability, k (m/s) ::

$$I_c < 3.27 \text{ and } I_c > 1.00 \text{ then } k = 10^{0.952 - 3.04 \cdot I_c}$$

$$I_c \leq 4.00 \text{ and } I_c > 3.27 \text{ then } k = 10^{-4.52 - 1.37 \cdot I_c}$$

:: N_{SPT} (blows per 30 cm) ::

$$N_{60} = \left(\frac{q_c}{p_a} \right) \cdot \frac{1}{10^{1.1268 - 0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268 - 0.2817 \cdot I_c}}$$

:: Young's Modulus, E_s (MPa) ::

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c_cutoff}$)

:: Relative Density, Dr (%) ::

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}} \quad \text{(applicable only to } SBT_n: 5, 6, 7 \text{ and } 8 \text{ or } I_c < I_{c_cutoff})$$

:: State Parameter, ψ ::

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

:: Peak drained friction angle, ϕ (°) ::

$$\phi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n: 5, 6, 7 \text{ and } 8$)

:: 1-D constrained modulus, M (MPa) ::

If $I_c > 2.20$

$$\alpha = 14 \text{ for } Q_{tn} > 14$$

$$\alpha = Q_{tn} \text{ for } Q_{tn} \leq 14$$

$$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$$

If $I_c \leq 2.20$

$$M_{CPT} = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 \cdot I_c + 1.68}$$

:: Small strain shear Modulus, G_0 (MPa) ::

$$G_0 = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 \cdot I_c + 1.68}$$

:: Shear Wave Velocity, V_s (m/s) ::

$$V_s = \left(\frac{G_0}{\rho} \right)^{0.50}$$

:: Undrained peak shear strength, S_u (kPa) ::

$$N_{kt} = 10.50 + 7 \cdot \log(F_r) \text{ or user defined}$$

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Remolded undrained shear strength, $S_u(rem)$ (kPa) ::

$$S_{u(rem)} = f_s \quad \text{(applicable only to } SBT_n: 1, 2, 3, 4 \text{ and } 9 \text{ or } I_c > I_{c_cutoff})$$

:: Overconsolidation Ratio, OCR ::

$$k_{OCR} = \left[\frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 + 7 \cdot \log(F_r))} \right]^{1.25} \text{ or user defined}$$

$$OCR = k_{OCR} \cdot Q_{tn}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: In situ Stress Ratio, K_0 ::

$$K_0 = (1 - \sin \phi') \cdot OCR^{\sin \phi'}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Soil Sensitivity, S_t ::

$$S_t = \frac{N_s}{F_r}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Effective Stress Friction Angle, ϕ' (°) ::

$$\phi' = 29.5^\circ \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

References

- Robertson, P.K., Cabal K.L., Guide to Cone Penetration Testing for Geotechnical Engineering, Gregg Drilling & Testing, Inc., 5th Edition, November 2012
- Robertson, P.K., Interpretation of Cone Penetration Tests - a unified approach., Can. Geotech. J. 46(11): 1337–1355 (2009)



COMUNE DI PECCIOLI

Aprile 2025

REALIZZAZIONE NUOVA VIABILITA' A FABBRICA DI PECCIOLI



RELAZIONE GEOLOGICA E CARATTERIZZAZIONE GEOTECNICA DEL SOTTOSUOLO

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Documento informatico firmato digitalmente ai sensi del T.U. 445/2000 e del D.LGS. 82/2005 e rispettive norme collegate, il quale sostituisce il documento cartaceo e la firma autografa.

Allegato 2

INDAGINI GEOGNOSTICHE, GEOTECNICHE E GEOFISICHE
Indagini integrative - Anno 2025

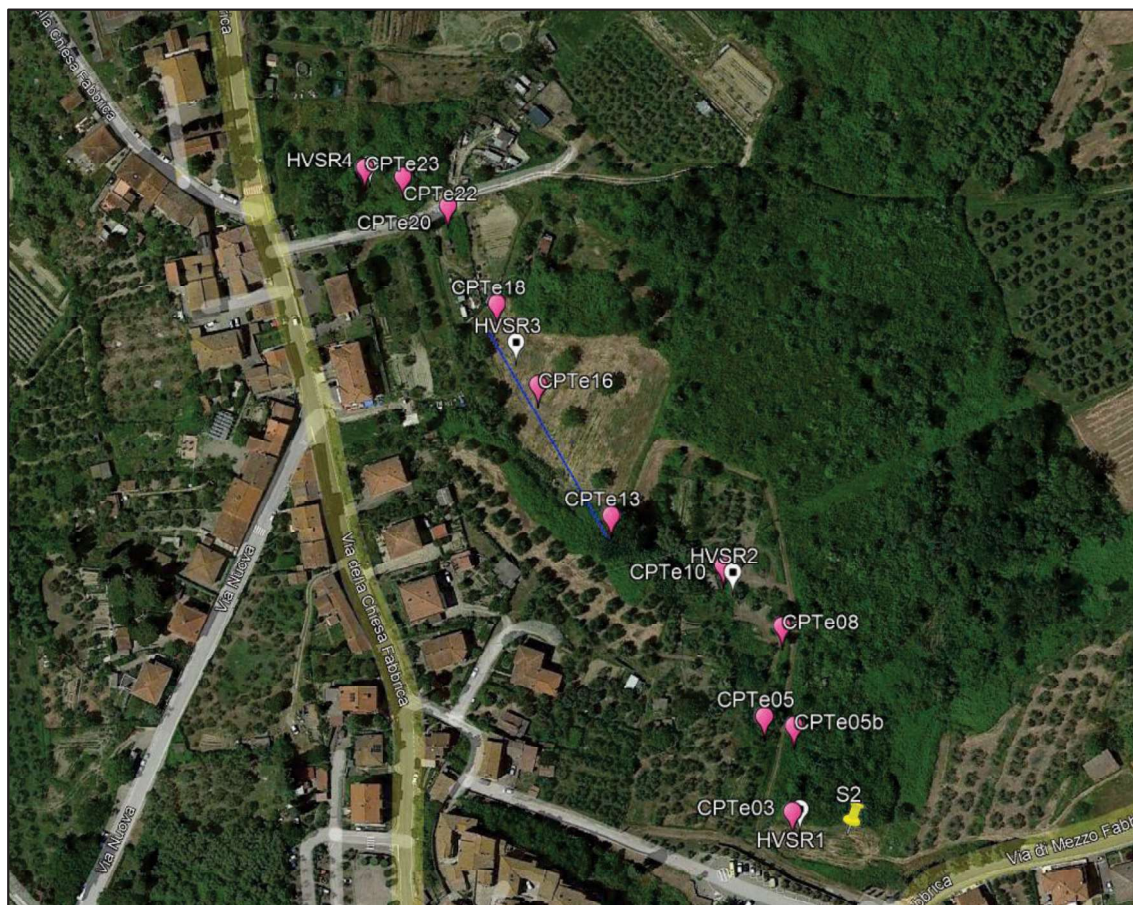
INDAGINI GEOGNOSTICHE GEOTECNICHE E GEOFISICHE

Relazione Tecnica

COMMITTENTE: Comune di Peccioli

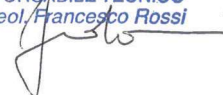
OGGETTO: “Incarico per indagini Geofisiche, Geognostiche e Geotecniche in sito presso cantiere nuova viabilità di Fabbrica”

CANTIERE: Frazione di Fabbrica – Peccioli (PI)



RAPPORTO RELATIVO ALLA CAMPAGNA D'INDAGINE ESEGUITA DA VENERDI' 10 A LUNEDI' 20 GENNAIO 2025

BIERREGI s.r.l.
IL RESPONSABILE TECNICO
Dott. Geol. Francesco Rossi



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FIGURE

Fig. 1 : COROGRAFIA (CTR Regione Toscana - Foglio 285060)

Fig. 2 : UBICAZIONE INDAGINI (CTR Regione Toscana - Fogli 15H04)

ALLEGATI

AII. A : LOG STRATIGRAFICO DEL SONDAGGIO GEOGNOSTICO

AII. B : ANALISI GEOTECNICHE DI LABORATORIO

AII. C : PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA
(Basic Results)

AII. D : PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA
(Estimated Parameters)

AII. E : PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA
(Elaborati Grafici)

AII. F : CERTIFICATI DI TARATURA DEL PIEZOCONO

AII. G : ELABORATI STESA SISMICA – ONDE P

AII. H : ELABORATI STESA SISMICA – ONDE SH

AII. I : ELABORATI GRAFICI MASW (Onde di Rayleigh)

AII. L : ELABORATI MISURE DI RUMORE (HVSr)

AII. M : DOCUMENTAZIONE FOTOGRAFICA

1. - Premessa

Per incarico ricevuto dal **Comune di Peccioli**, sono state eseguite indagini geognostiche e geofisiche propedeutiche alla relazione geologica/progettazione. Nell'area oggetto di studio, sita presso la frazione di Fabbrica nel Comune di Peccioli (PI), sono state eseguite le seguenti indagini:

- n° 1 Sondaggio geognostico a carotaggio continuo;
- n° 3 Prelievi di campioni indisturbati;
- n° 11 Prove penetrometriche statiche con punta elettrica (CPTe);
- n° 1 Stesa sismica in onde P-SH (Tomografia sismica);
- n° 1 Analisi Multicanale delle Onde Superficiali (MASW - Onde di Rayleigh);
- n° 4 Misure di rumore sismico ambientale a stazione singola (HVSr).

L'area e la relativa ubicazione delle indagini sono riportate rispettivamente in figura 1 (*Corografia*) e in figura 2 (*Ubicazione indagini*).

2. - Sondaggio geognostico

Il sondaggio geognostico è stato eseguito mediante una Sonda CMV MK 600. A seguire si riporta schematicamente un quadro riassuntivo delle specifiche del sondaggio eseguito:

Sondaggio n°	Data di esecuzione	Profondità (m)	Certificato	Coordinate Gauss-Boaga	
				X	Y
S2	14/01/2025	15,00	BHc-007/25	1642312.0777	4818725.6959

Nel corso dell'esecuzione dei sondaggi, sono state effettuate le seguenti operazioni:

- Raccolta in apposite cassette catalogatrici del materiale estratto (totale n. 3);
- Prelievo di campioni indisturbati - Shelby (totale n. 3);
- Documentazione fotografica

Tutte le informazioni raccolte durante l'esecuzione del sondaggio geognostico sono contenute nel relativo log stratigrafico, riportato dettagliatamente nell'allegato (All.A). I dati sono forniti dal *Geol. Andrea Petresi*.

2.1 - Documentazione fotografica del sondaggio geognostico

A seguire viene riportata la documentazione fotografica del sondaggio eseguito:

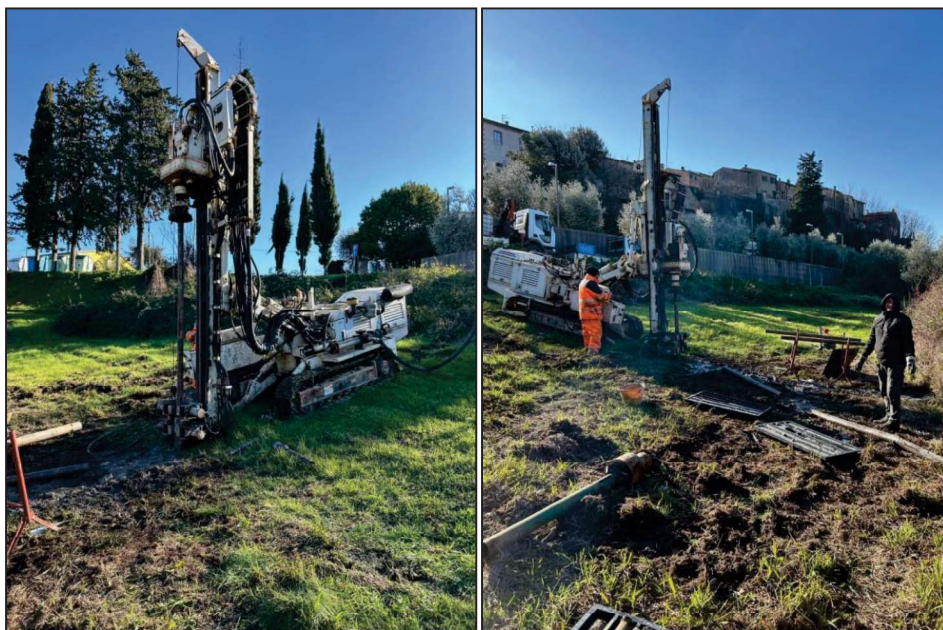


Figura 1: Sondaggio S2- Postazione



Figura 2: Sondaggio S2 - Cassetta n.1 da 0.00 a 5.00 metri



Figura 3: Sondaggio S2 - Cassetta n.2 da 5.00 a 10.00 metri



Figura 4: Sondaggio S2 - Cassetta n.3 da 10.00 a 15.00 metri

2.2 - Analisi geotecniche di laboratorio

Al fine di caratterizzare da un punto di vista geotecnico il terreno investigato, sono state eseguite analisi geotecniche di laboratorio su n. 3 campioni indisturbati. Le analisi geotecniche sono state eseguite dal laboratorio certificato **SOCOTEC SRL** di Ferrara. Di seguito si indicano sinteticamente le analisi svolte sui campioni raccolti:

TIPO DI PROVA	NORMA	CAMPIONI INDISTURBATI		
		S2C1	S2C1	S2C3
MASSA VOLUMICA	UNI EN ISO 17892-2	X	X	X
UMIDITA' DI UNA TERRA	UNI EN ISO 17892-1	X	X	X
DETERMINAZIONE PESO SPECIFICO	ASTM D854	X	X	X
LIMITI DI ATTERBERG	ASTM D4318 metodo A	X	X	X
ANALISI GRANULOMETRICA (1)	ASTM D 422	X	X	X
ESPANSIONE LATERALE LIBERA	ASTM D 2166-91	X	-	-
PROVA DI TAGLIO DIRETTO CD	UNI CEN ISO 17892-10	X	X	-
PROVA EDOMETRICA	ASTM D 2435 metodo A	X	X	-

⁽¹⁾ per setacciatura e sedimentazione

Dalle prove sopra riportate sono stati ricavati i seguenti parametri:

CAMPIONE	QUOTA PRELIEVO		W	γ	Ps	GRANULOMETRIA (UNI)				LIMITI DI ATTERBERG			ELL
						Ghiaia	Sabbia	Limo	Argilla	LL	LP	IP	
Id	da m.	a m.	(%)	(Mg/m ³)	(Mg/m ³)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(kPa)
S2C1	3.00	3.50	19.80	2.00	2.71	13.30	14.10	51.20	21.50	41.00	20.00	21.0	86.01
S2C2	8.00	8.50	14.60	2.00	2.71	0.10	74.80	20.80	4.30	ND	NP	ND	142.55
S2C3	12.00	12.50	16.30	2.07	2.70	9.50	3.50	61.20	25.80	34.00	19.00	15.0	-

CAMPIONE	QUOTA PRELIEVO		TAGLIO DIRETTO CD				PROVA DI CONSOLIDAZIONE EDOMETRICA								
			Condizioni di picco		Condizioni residuali		Pressione da 392.4 a 784.8 Kpa			Pressione da 784.8 a 1569.6 Kpa			Pressione da 1569.6 a 3139.2 Kpa		
			c'	ϕ'	c'	ϕ'	k	Cv	Calfa	k	Cv	Calfa	k	Cv	Calfa
Id	da m.	a m.	(kPa)	(°)	(kPa)	(°)	(m/s)	(cm ² /s)	(-)	(m/s)	(cm ² /s)	(-)	(m/s)	(cm ² /s)	(-)
S2C1	3.00	3.50	10.4	29.0	9.4	21.0	1.23E-10	2.39E-03	1.64E-03	7.55E-11	2.14E-03	2.01E-03	4.27E-11	2.06E-03	2.23E-03
S2C2	8.00	8.50	3.98	39.0	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
S2C3	12.00	12.50	-	-	-	-	-	-	-	-	-	-	-	-	-

Dove:

- W Umidità
- γ Peso di volume
- Ps Peso specifico
- LL Limite di liquidità
- LP Limite di plasticità
- IP Indice di plasticità
- Ic Indice di consistenza
- Ws Limite di ritiro
- Rs Coefficiente di ritiro
- Cu Coesione non drenata
- c' Coesione consolidata drenata
- ϕ' Angolo di attrito consolidato drenato
- K Permeabilità
- Cv Coefficiente di consolidazione verticale
- Calfa Coefficiente di consolidazione secondario

Per una visione dettagliata dei grafici e tabulati delle prove di laboratorio effettuate si veda l'All.B.

3. - Prove penetrometriche statiche con punta elettrica (CPTe)

Tutte le prove penetrometriche sono state effettuate mediante un Penetrometro statico/dinamico modello Pagani TG-63/200 da 20 tonn di spinta, con maglio di 63,5 Kg, avente le seguenti caratteristiche:



Tipo	STATICO/DINAMICO
Costruttore	PAGANI GEOTECHNICAL EQUIPMENT
Tipo	TG63-200
Anno	DICEMBRE 2015
Matricola	P 001541
Spinta	200 kN
Estrazione	205 kN

La prova penetrometrica statica elettrica (CPTe) permette di effettuare in continuo, ogni cm di avanzamento la misura dei valori di resistenza alla punta (q_c) e dell'attrito laterale locale (f_s), ottenendo così un maggior dettaglio nel rilievo stratigrafico e nella identificazione del tipo di terreno.

Come accennato in premessa sono state eseguite n° 11 prove penetrometriche statiche con punta elettrica (CPTe), di cui a seguire si riporta una tabella di sintesi delle specifiche tecniche:

Prova n°	Data di esecuzione	Profondità (m)	Falda (m)	Coordinate Gauss-Boaga	
				X	Y
P.3	10/01/2025	9.25	3.01	1642291.3097	4818722.5829
P.5	10/01/2025	10.87	3.99	1642273.2151	4818756.1132
P.5b	10/01/2025	9.37	1.80	1642284.9907	4818753.9127
P.8	10/01/2025	9.77	/	1642272.0317	4818806.2364
P.10	10/01/2025	7.89	3.52	1642244.2513	4818828.9296
P.13	13/01/2025	5.11	/	1642196.4002	4818860.7798
P.16	13/01/2025	7.97	/	1642170.8723	4818908.0981
P.18	13/01/2025	6.34	/	1642151.5275	4818947.3190
P.20	13/01/2025	9.28	3.65	1642140.9663	4818962.9478
P.22	15/01/2025	5.64	3.76	1642121.5151	4818976.5947
P.23	15/01/2025	4.23	/	1642105.4457	4818980.9042

La falda, misurata direttamente in foro al termine delle prove è risultata livellare alle profondità indicate nella tabella precedente. Le misure sono da riferirsi al piano campagna.

Per le caratteristiche tecniche del penetrometro utilizzato e la visione dei tabulati, diagrammi e grafici delle prove si rimanda ai relativi allegati (All.C-D-E).

In allegato (All.F) si riportano i rapporti di taratura relativi ai sensori della punta elettrica, ovvero resistenza alla punta (q_c), resistenza laterale (f_s) e inclinazione (tilt).

Per la documentazione fotografica relativa alle prove penetrometriche si rimanda al relativo allegato (All.M).

3.1 - Modalità di esecuzione

Le prove penetrometriche statiche con punta elettrica, ad ogni centimetro di profondità permettono di acquisire, durante il movimento continuo di spinta, le grandezze: qc (resistenza di punta) ed fs (attrito laterale). Le prove CPTe differiscono dalle prove penetrometriche statiche con punta meccanica (CPTm) soprattutto per una migliore precisione di lettura e frequenza di campionamento, oltre ad una maggiore precisione e linearità della lettura dove la maggiore sensibilità della misura (0.01 Mpa) è caratteristica fondamentale nel rilievo dei valori di resistenza di materiali molto soffici (torbe, sabbie o limi molto sciolti, ecc.). La linearità garantisce che i valori letti siano affidabili in tutto il "range" di misura dello strumento. La linearità della strumentazione è garantita dall'elettronica, mentre nella prova meccanica sono probabili starature nei valori estremi (in particolare i valori bassi, di grande importanza geotecnica).

Durante l'esecuzione delle prove penetrometriche con piezocono i dati vengono acquisiti mediante il sistema d'acquisizione **TGAS12** fornito dalla PAGANI GEOTECHNICAL EQUIPMENT S.R.L. di Piacenza. I dati vengono registrati istantaneamente sulla centralina integrata, collegata al penetrometro. Tale sistema è costituito dai seguenti componenti:

- ✓ TGAS12 → sistema d'acquisizione;
- ✓ ENCODER → misura la profondità e la velocità d'infissione;
- ✓ ALIMENTAZIONE → il sistema viene alimentato elettricamente dalla batteria del penetrometro, tramite una presa montata di serie.

Durante l'infissione vengono visualizzati, acquisiti e calcolati i seguenti parametri:

- ✓ qc (Cone tip stress) - resistenza alla punta;
- ✓ fs (Sleeve resistance) - resistenza unitaria di attrito laterale locale;
- ✓ Inclinazione (tilt);
- ✓ Velocità;
- ✓ Distanza (scostamento dalla verticale).

Le caratteristiche del piezocono sono le seguenti:

Canali di misura:		Dimensioni:	
Resistenza di punta (qc):	10; 50 o 100 MPa	Angolo di apertura cono:	60°
Attrito laterale (fs):	0,5 MPa	Diametro:	36 mm
Pressione nei pori (U):	2,5 MPa	Sezione di spinta:	10 cm ²
Inclinazione:	0 - 40°	Superficie laterale:	150 cm ²

3.2 - Elaborazione dei dati

I dati acquisiti in campagna sono stati elaborati con il programma CPeT-IT v.1.7.3.30 della Geologismiki Geotechnical Software. Il software, a partire dai valori di qc (cone resistance - resistenza alla punta), fs (sleeve friction - attrito laterale), permette di ricavare i dettagli stratigrafici dei terreni attraversati e i parametri principali del terreno.

Per la stratigrafia dei terreni viene riportato il grafico di P.K. Robertson et al. 1986 che utilizza i valori non-normalizzati (qc, fs e u2) e il grafico di P.K. Robertson et al. 1990 che utilizza i valori normalizzati (Qt, Fs), in quanto quest'ultimo tiene conto delle tensioni geostatiche totali ed efficaci. Di seguito si riportano i dati di output ricavati dal software di elaborazione CPeT-IT:

- ✓ grafici delle resistenze
- ✓ grafici di Robertson (SBT plot e SBTn plot);
- ✓ grafici delle resistenze e classificazione SBT;
- ✓ grafici dei parametri normalizzati e classificazione SBTn;
- ✓ grafici dei parametri geomeccanici del terreno;
- ✓ formulario;
- ✓ basic output data (parametri di base per l'elaborazione);
- ✓ estimations (parametri geomeccanici ricavati).

Per maggiori dettagli si rimanda al manuale del software reperibile all'indirizzo internet <http://www.geologismiki.gr/>.

4. - Indagini Geofisiche

Come accennato in premessa, nell'area oggetto di studio, considerando la logistica di cantiere, sono state eseguite le seguenti indagini sismiche:

- n° 1 Stesa sismica a rifrazione in onde P/SH
- n° 1 Analisi multicanale delle Onde Superficiali (MASW - Onde di Rayleigh)
- n° 4 Misure di rumore sismico ambientale a stazione singola (HVSr)

4.1 - Strumentazione e sistema di acquisizione

Per la stesa sismica a rifrazione (Onde P/SH/Rayleigh), i dati sono stati acquisiti mediante l'utilizzo di un sismografo a 48 canali ECHO 24-48/2012 dell'AMBROGEO di Piacenza, collegato ad un pc portatile su cui è installato programma di acquisizione Echo2012, avente le seguenti caratteristiche principali:

- | | |
|-----------------------------------|---|
| - Numero di canali: 48+1 | - A/D conversion: 24 bit; |
| - Gain: 0 dB - 72 dB (step 6 dB); | - Sampling interval: 32,64,128,256,480,960 μ s; |
| - Distorsion: 0,0004%; | - Noise: 0,25 μ s, 2ms 36dB; |

Inoltre, l'attrezzatura è completata da due cavi sismici a 12 takes out spazati a 4,00 m, con connettori cannon a cui sono stati collegati 24 geofoni verticali, con frequenza propria di 4,5 Hz per la ricezione delle onde P. L'utilizzo di geofoni da 4,5 Hz verticali associati ad una finestra temporale di acquisizione pari a 1 secondo, ha consentito di analizzare anche la dispersione delle onde superficiali Rayleigh (MASW).

Come sorgente di energizzazione per le onde P e SH è stata utilizzata una mazza di 8 kg battente su piastra in duralluminio.

Tutte le registrazioni SH sono state realizzate con metodo CROSS-OVER utilizzando la funzione sommatoria e inversione di polarità appartenute al sismografo AMBROGEO. In questo modo, facendo la differenza fra uno stesso numero di battute a destra e a sinistra con polarità invertita, è esaltato l'istante di primo arrivo delle onde SH ed eventualmente eliminato l'arrivo delle onde P spurie.

I segnali acquisiti in campagna sono stati poi comunque filtrati in fase di elaborazione, mediante utilizzo di filtri in frequenza. In allegato vengono presentati i sismogrammi "grezzi" acquisiti in campagna.

Per l'acquisizione dei microtremori (HVSR) è stato utilizzato un tomografo triassiale del tipo SR04HS (Geobox) prodotto da Sara Instruments di Perugia con frequenza propria dei sensori di 2.0 Hz, collegato ad un pc portatile su cui è installato il programma di acquisizione SEISMOWIN realizzato dal fornitore. Di seguito si riportano le caratteristiche principali dei sensori utilizzati:

**Sensore Verticale
(UD - Up/Down)**

Natural frequency: (2.0Hz +/- 15%)
Operational range: Vertical to 7°
DC resistance: 1250 ohm (+/- 5%)
Damping 0.64 (open circuit)
Moving mass: 22 grams (5%)
Sensitivity: 40v/m/s (+/- 10%)

Sensori Orizzontali

(NS – Nord/Sud; EW – Est/Ovest)

Natural frequency: 2.0Hz (+/- 15%)
Operational range: Horizontal +/- 0.5°
DC resistance: 1250 ohm (+/- 5%)
Damping 0.64 (open circuit)
Moving mass: 22 grams (5%)
Sensitivity: 40v/m/s (+/- 10%)

4.2 - Tomografia sismica

Nell'area oggetto di studio, è stata eseguita n.1 stesa sismica a rifrazione di onde P e SH. La caratteristica della prospezione è riportata nello schema seguente:

ID STESA	TIPO	CANALI (n°)	LUNGHEZZA (m)	SPARI (n°)	D.I. (m)
STP150125A	Onde P	24	96	9	4,00
STSH150125A	Onde SH	24	94	9	4,00

NOTE: D.I. - Distanza intergeofonica

Tra le prospezioni di tipo indiretto la sismica a rifrazione rappresenta ad oggi un valido supporto sia per la ricostruzione delle geometrie sepolte sia per la caratterizzazione del sottosuolo. Le onde, generate artificialmente dall'operatore,

vengono prodotte tramite martello percussore, massa battente o tramite esplosivo. La prospezione può essere eseguita energizzando onde compressionali (tipo "P") o onde di taglio (tipo "SH") a seconda delle finalità dell'indagine e delle caratteristiche geologiche/idrogeologiche locali.

L'apparecchiatura necessaria per eseguire le prospezioni è composta da una serie di ricevitori (geofoni - *receivers*) che vengono disposti e spazati sul terreno lungo un determinato allineamento (stesa sismica - *sismic array*) e da un sismografo che registra l'istante d'inizio della perturbazione elastica generata dall'operatore e i tempi di arrivo delle onde a ciascun ricevitore. In questo modo stabilendo i tempi di primo arrivo, siamo in grado di ricostruire per ogni punto sorgente una curva tempo-distanza (dromocrona - *travel time*).

La velocità delle onde sismiche nel suolo è compresa tra ampi limiti; per lo stesso tipo di roccia la velocità infatti diminuisce all'aumentare del grado di alterazione, fratturazione e/o fessurazione, dall'altro lato aumenta con l'aumentare della profondità e con l'età geologica del deposito. Le velocità delle onde compressionali (P), a differenza di quelle trasversali (SH) dove la velocità dipende esclusivamente dallo scheletro solido, è influenzata dalla presenza di acqua e di conseguenza dal grado di saturazione del deposito in esame. Questo aspetto, nel caso delle onde P, comporta che litotipi differenti (nel caso di terreno saturo) possano avere stessa velocità delle onde compressionali, per cui non necessariamente l'interpretazione corrisponderà alla reale situazione geologico-stratigrafica.

Per elaborazione tomografica si intende la ricostruzione della distribuzione di un parametro (in questo caso la velocità delle onde di compressione) che caratterizza un mezzo (il terreno) attraversato da una funzione dipendente dal parametro scelto per l'analisi (onda sismica). La ricerca del modello di distribuzione di velocità del terreno che ottimizza i tempi di arrivo individuati sui sismogrammi delle registrazioni di campagna viene effettuato in modo iterativo fino al raggiungimento della soluzione che minimizza l'errore fra i tempi misurati e quelli calcolati sulla soluzione ottenuta. Tale metodo ha un alto potere risolutivo e offre la possibilità all'operatore di individuare anomalie e discontinuità nel terreno anche complesse.

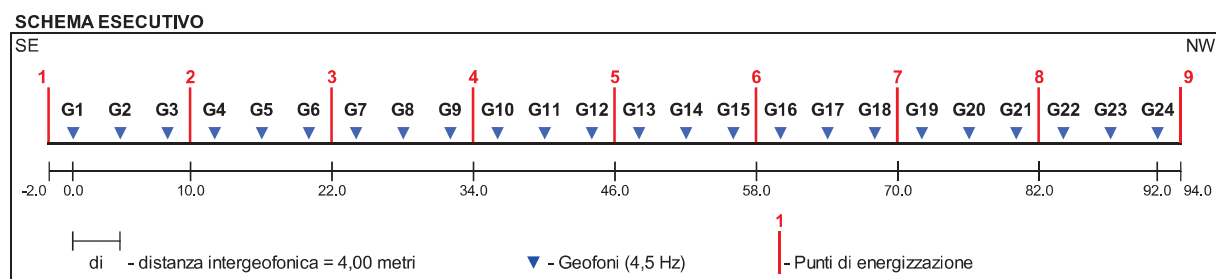
Viene utilizzato un modello di partenza privo di condizioni iniziali al fine di eliminare qualsiasi valutazione preliminare sull'assetto geologico che, in caso di imprecisioni, potrebbe dirottare verso una soluzione che non minimizzi l'errore oppure che lo minimizzi verso un minimo relativo della funzione di convergenza. Il modello iniziale e la soluzione finale sono costituiti da una serie di celle all'interno delle quali il valore di velocità rimane costante: tale valore viene aggiornato ad ogni iterazione del procedimento di calcolo per raggiungere il miglior risultato. Le dimensioni delle celle utilizzate e quindi il dettaglio finale ottenuto sono fortemente dipendenti dalla spaziatura dei geofoni e dal numero degli shots effettuati: aumentando la spaziatura dei geofoni si deve aumentare il numero degli shots per mantenere costante il dettaglio. Infine i valori del risultato vengono interpolati fra loro per ottenere una distribuzione continua di velocità. Per l'interpolazione è stato utilizzato il metodo della triangolazione con interpolazione lineare.

I dati acquisiti in campagna e registrati sul pc (formato .sgy/sg2) vengono poi processati in studio tramite il programma di elaborazione **WINSISM v.16.1.40** con i quali si svolgono le operazioni di picking dei primi arrivi di ciascuna traccia. Il processing dei dati è stato eseguito con il software Rayfract v. 4.01, (distribuito dalla Intelligent Resources Inc.). Una volta stabilito il picking (definizione dei primi arrivi) il processing dei dati prosegue con la fase di inversione tomografica detta WET (Wavepath Eikonal Traveltime), che permette il calcolo delle traiettorie d'onda (wavepath) attraverso le soluzioni alle differenze finite dell'equazione che esprime le modalità di propagazione di un'onda in un mezzo isotropo.

Successivamente, con la fase di imaging, si otterrà con un software dedicato (SURFER 9) l'immagine della sezione tomografica.

4.2.1 - Configurazione e risultati della tomografia sismica

Come specificato in precedenza, nell'area oggetto di studio è stata eseguita n.1 stesa sismica a rifrazione di onde P e SH. A seguire si riporta la configurazione della stesa:



Sono state eseguite 9 registrazioni; sono stati utilizzati 24 geofoni verticali interspaziati di 4,00 metri (lunghezza stesa 96 metri). L'azimuth della stesa (riferito al G1 in senso orario) è N 148° (SE-NW). Le registrazioni, per ciascun punto di sparo, sono state campionate con un intervallo di 0,128 millisecondi per un tempo totale di acquisizione pari a 1 s (Onde P) e 500 ms (Onde SH) (per un totale di 7800 (Onde P) e 3900 campioni (Onde SH)).

Relativamente alle elaborazioni prodotte, si riporta di seguito una sintesi dei risultati ottenuti.

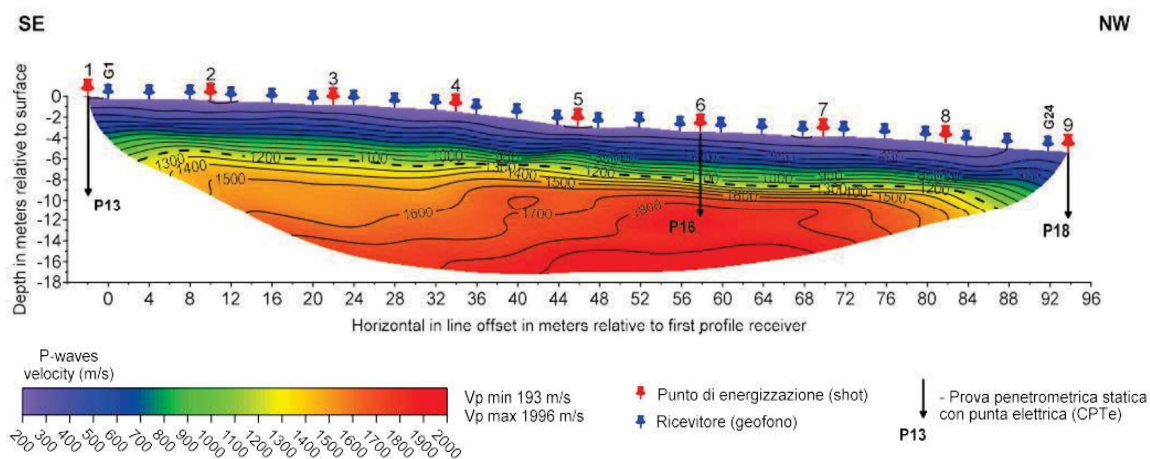
La tomografia sismica in onde P ha messo in evidenza un primo sismostrato con spessore medio pari a circa 5 metri e caratterizzato da V_p media di circa 700 m/s, presente lungo tutto lo stendimento.

Anche la tomografia sismica in onde SH ha messo in evidenza un primo sismostrato con spessore medio pari a circa 4 metri e V_s media di circa 170 m/s, ad andamento regolare.

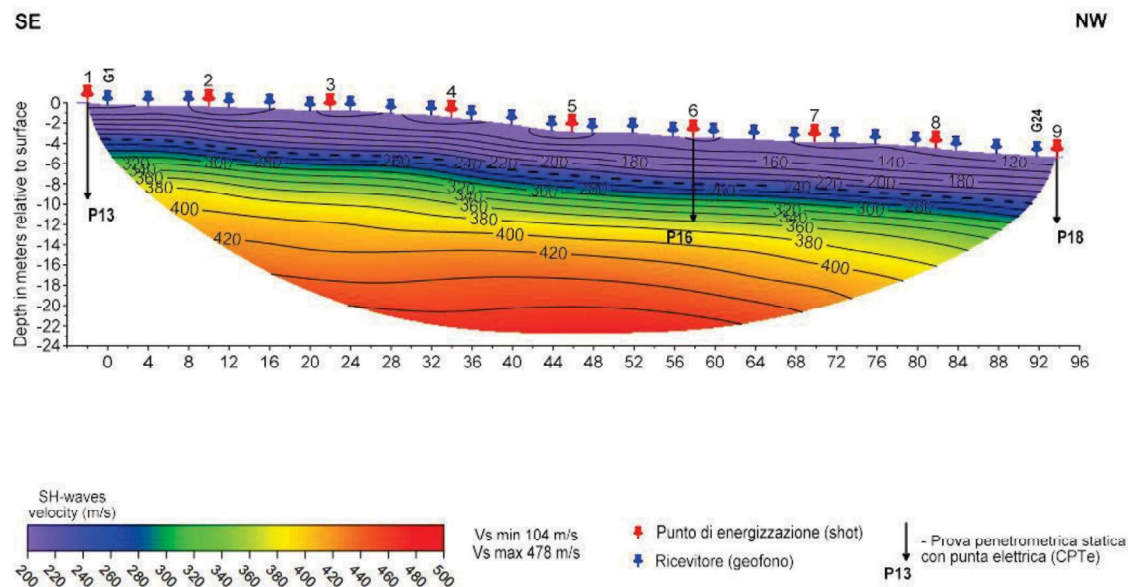
A seguire, per le onde P, si riscontra un secondo ed ultimo sismo-strato fino alla massima profondità d'indagine (circa 15-16 metri), caratterizzato da V_p media di circa 1600 m/s.

Analogamente alla tomografia in onde P, anche le onde SH evidenziano la presenza di un secondo ed ultimo sismo-strato fino alla massima profondità d'indagine raggiunta (circa 22 metri), caratterizzato da Vs pari a circa 360 m/s.

Fraz. Fabbrica, Peccioli (PI)
Comune di Peccioli
SEZIONE TOMOGRAFICA - ONDE P



Fraz. Fabbrica, Peccioli (PI)
Comune di Peccioli
SEZIONE TOMOGRAFICA - ONDE SH



Per una visualizzazione numerica completa delle caratteristiche delle prospezioni eseguite si rimanda ai relativi allegati (All. G-H).

4.3 - Analisi Multicanale delle Onde Superficiali (MASW)

Nella maggior parte delle indagini sismiche per le quali si utilizzano le onde di volume o di corpo (onde P e S - “*Body Waves*”), più di due terzi dell’energia sismica totale generata viene trasmessa nella forma di ONDE SUPERFICIALI (“*Surface Waves*”), la cui componente principale è rappresentata dalle onde di Rayleigh e Love (“*Ground Roll*”). Il metodo MASW (Multichannel Analysis of Surface Waves) è una tecnica geofisica limitatamente invasiva di recente applicazione che, attraverso l’analisi delle onde di superficie (dispersione), ha lo scopo di ottenere profili V_s -Z (velocità delle onde di taglio - profondità).

Il fenomeno dispersivo delle onde superficiali si manifesta in un mezzo stratificato, in quanto diverse lunghezze d’onda si propagano con velocità di fase differente. A sua volta la velocità di fase dipende dalla frequenza e tale dipendenza viene espressa attraverso la curva di dispersione. Esiste una relazione fondamentale che lega i tre parametri fondamentali che descrivono la propagazione nello spazio di un’oscillazione:

$$\lambda = \frac{v}{f}$$

dove:

λ	lunghezza d’onda (misurata in metri);
f	frequenza (in Hz);
v	velocità di propagazione (in m/s).

A tal proposito, la profondità di esplorazione massima raggiungibile dipende dalle caratteristiche del mezzo dalla superficie fino ad una profondità indicativamente pari al valore di $\lambda/2$ o $\lambda/3$. In riferimento a quest’ultimo aspetto, è buona regola operare che geometrie di acquisizione di lunghezza D prossima al doppio della profondità che si vuole indagare.

4.3.1. - Elaborazione

Il software qui utilizzato per il processing dei dati sismici acquisiti in campagna è WinMASW 7.0 ver. Academy, che consente di ricavare il profilo verticale delle V_s . Tale risultato viene ottenuto tramite l’inversione delle curve di dispersione delle Onde di Rayleigh. Il metodo MASW si articola in tre passaggi successivi:

- Acquisizione delle onde superficiali di Rayleigh (“*Ground Roll*”) da effettuarsi in campagna con apposita strumentazione;
- Costruzione di una curva di dispersione (il grafico della velocità di fase rispetto alla frequenza);
- Inversione della curva di dispersione per ottenere il profilo verticale delle V_s .

Il primo punto riguarda la prova MASW eseguita “in situ” per ottenere il sismogramma relativo alle onde di Rayleigh. I passaggi successivi fanno riferimento all’elaborazione dei dati acquisiti in campagna mediante pc, utilizzando il software WinMASW 7.0 ver. Academy. Il primo passo, una volta caricati i dati di campagna (sismogramma delle onde di Rayleigh) è quello di calcolare lo spettro di velocità e successivamente procedere con il picking della curva di dispersione.

Infine l’ultimo passaggio riguarda l’inversione della curva di dispersione precedentemente “piccata”. Questa viene effettuata grazie all’utilizzo di una potente tecnica di ottimizzazione (algoritmi genetici) da parte del software utilizzato. Dei valori approssimati per il rapporto di Poisson e per la densità sono necessari per ottenere il profilo verticale Vs dalla curva di dispersione.

I risultati delle prospezioni vengono restituiti in allegato che include i grafici dei vari passaggi necessari per ottenere il grafico del profilo verticale delle Vs. In particolare come allegati vengono forniti:

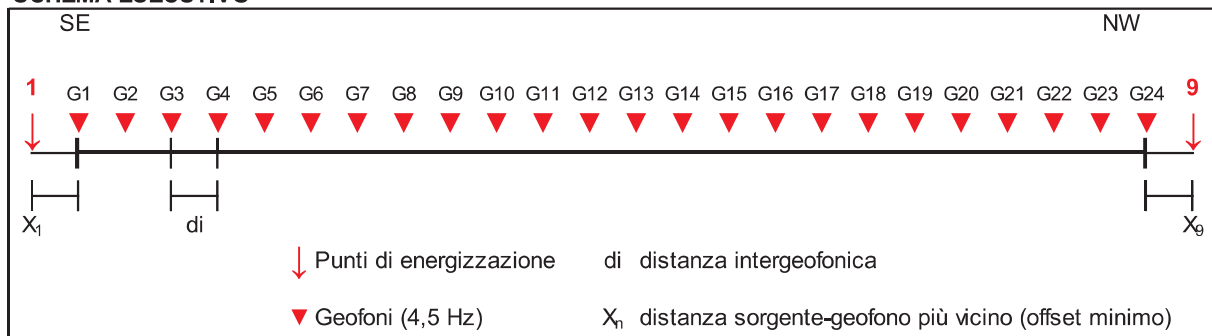
- Traccia sismica registrata ad ogni geofono per lo sparo effettuato (input file);
- Spettro di velocità e Curva di Dispersione (picking);
- Grafico Misfit - Generazione e Profilo verticale Onde S.

Attualmente la tecnica MASW, seppur presentando alcuni vantaggi rispetto alla sismica a rifrazione (es. operare in contesti con spazio limitato), è soggetta a limitazioni di tipo teorico (es. strati piano paralleli) e pratico (es. necessità di sorgenti energetiche a bassa frequenza), che unite alle difficoltà interpretative in assenza di un valido modello sismo-stratigrafico, pongono la massima cautela per l’utilizzo di questa tecnica come unico sistema di analisi.

Infatti, l’ottimizzazione di tali prospezioni può essere ottenuta con la realizzazione di più stese (sismica a rifrazione per ricostruire l’andamento dei sismostrati) ed eventuali operazioni di taratura con la realizzazione di sondaggi di tipo puntuale (carotaggi, penetrometrie...). Nel nostro caso abbiamo preso come riferimento le penetrometrie eseguite, oltre ad aver preso visione della carta geologica e delle cartografie a supporto degli strumenti urbanistici comunali e della Regione Toscana.

4.3.2. - Configurazione e risultati

Nell’area oggetto di studio, considerando la logistica del cantiere, è stata eseguita n°1 prospezione sismica MASW denominata “STR150125A” (Fig.2), utilizzando un sistema d’acquisizione a 24 geofoni interspaziati di 4,00 metri (lunghezza stesa 92,00 metri). La configurazione della stesa è riportata nello schema che segue:

SCHEMA ESECUTIVO

Sono state eseguite tre registrazioni, effettuate con mazza da 8 kg battente su piastra in duralluminio. I due punti sorgente (shot) sono stati effettuati esternamente alla stesa ad una distanza di 2,0 metri (X1 - shot 1 e X2 - shot 2) sia dal primo che dall'ultimo geofono (G.1-G.24). Azimut N151° (SE-NW) riferito al G1. Tempo di acquisizione 1,0 s - Intervallo di campionamento 0,128 s (N. campioni 7800).

Le registrazioni avvenute in campagna sono state ottenute, in fase di acquisizione, utilizzando la medesima sensibilità per ciascun geofono e senza l'utilizzo di filtraggio delle frequenze.

L'analisi MASW fornisce vari modelli (profili di velocità Vs monodimensionale) ottenuti mediante processo di inversione, tra i quali viene adottato quello relativo al modello stratigrafico medio. La velocità della $V_{s,eq}$ (a partire dal piano campagna) è risultata essere pari a:

$$V_{s,eq} = 355 \text{ m/s (modello medio)}$$

Per ulteriori dettagli su spessori e velocità ottenute dall'analisi MASW, si rimanda al relativo allegato (All.I).

4.4 - Misure di rumore sismico ambientale a stazione singola (HVSr)

Il rumore sismico ambientale deriva dalla composizione di molte sorgenti che agiscono in tempi diversi e in zone diverse. Nel campo di rumore vengono rappresentate sia le onde di volume che le onde di superficie; quest'ultime hanno però carattere dominante in quanto caratterizzate da minore attenuazione. L'esito di questa prova è una curva sperimentale che rappresenta il valore del rapporto fra le ampiezze spettrali medie delle vibrazioni ambientali in funzione della frequenza di vibrazione. Le frequenze alle quali la curva H/V mostra dei massimi sono legate alle frequenze di risonanza del terreno al di sotto del punto di misura. Quando la stazione di misura è posizionata su basamento sismico affiorante, la curva non mostra picchi significativi ($H/V > 2$) e si attesta intorno a valori di ampiezza 1.

Sul significato fisico del rapporto H/V, un gruppo di studiosi giapponesi mostrarono la sua relazione diretta con la curva di ellitticità delle onde di Rayleigh. Essi conclusero che il picco massimo di ampiezza si verifica alla frequenza di risonanza fondamentale della copertura di terreni. Nel 1989, Nakamura propose in inglese il rapporto H/V come stima affidabile della funzione di trasferimento delle onde S per un dato sito.

Le argomentazioni usate da Nakamura sono estremamente qualitative e si basano sull'ipotesi che i microtremori siano originati da sorgenti molto locali, come il traffico vicino al sismometro, e siano onde di Rayleigh che si propagano in un solo strato su un semispazio. In generale, la stima della frequenza di risonanza sarà tanto più precisa quanto maggiore sarà il contrasto d'impedenza tra copertura e bedrock sismico. È possibile stabilire una relazione fra lo spessore H dei terreni di copertura, la velocità media delle onde S all'interno di quest'ultimo (V_s) e la frequenza di risonanza fondamentale f dello strato:

$$f = \frac{V_s}{4h}$$

Tale tecnica, ampiamente utilizzata da anni nel settore sismologico, di recente viene sempre più impiegata in campo geotecnico/ingegneristico per derivare principalmente i seguenti parametri:

- la frequenza fondamentale di risonanza f_0 dei terreni presenti nel sottosuolo;
- la frequenza fondamentale di risonanza di un edificio e i relativi modi di vibrare.

L'ottimizzazione di tale prospezione può essere ottenuta con la realizzazione di più acquisizioni effettuate in tempi diversi lontano dalla sorgente di rumori antropici.

Le indagini HVSR vengono impiegate, per caratterizzare le proprietà elastiche dei materiali ed evidenziare eventuali contrasti d'impedenza sismica presenti nel sottosuolo che sono causa dei fenomeni di amplificazione che si possono verificare durante un evento sismico.

4.4.1 - Elaborazione e risultati

Il metodo HVSR si articola in tre passaggi successivi:

- Acquisizione dei microtremori da effettuarsi in campagna con apposita strumentazione;
- Costruzione della caratteristica curva H/V in funzione della frequenza;
- Analisi dei risultati ottenuti, comparando la curva H/V ottenuta con l'andamento degli spettri in funzione della frequenza.

Il primo punto riguarda la prova HVSR eseguita "in situ", mentre i passaggi successivi fanno riferimento all'elaborazione dei dati acquisiti in campagna mediante il pc, utilizzando il software *WinMasw 7.0 ver. Academy*. Il primo passo, una volta caricati i dati di campagna è quello di calcolare la curva H/V e successivamente procedere con la creazione di tabulati e grafici che danno conferma della bontà dei dati acquisiti. Quest'ultimo passaggio di controllo, è la fase più delicata dell'elaborazione, infatti le curve ottenute vengono sottoposte a numerosi controlli di conferma. I risultati ottenuti includono i grafici dei vari passaggi necessari per ottenere il grafico della frequenza di risonanza. In particolare come allegati vengono forniti:

- Grafico di risposta H/V con evidenziata la Curva H/V;
- Grafico degli spettri delle singole componenti del moto (N-S, E-W e Z);
- Criteri Sesame.

Al fine di fornire la frequenza di risonanza f_0 , nell'area oggetto di studio sono state eseguite n. 4 misure di rumore - HVSR (Horizontal to Vertical Spectral Ratio):

Misura n°	Data di esecuzione	Durata registrazione (minuti)	Coordinate Gauss-Boaga	
			X	Y
HVSR 1 (Nk-004/25)	20/01/2024	40	1642293.5770	4818724.0104
HVSR 2 (Nk-003/25)	20/01/2024	40	1642246.4699	4818828.0883
HVSR 3 (Nk-001/25)	15/01/2024	40	1642159.8973	4818929.5811
HVSR 4 (Nk-002/25)	15/01/2024	40	1642108.2634	4818984.2615

Le misure sono state sottoposte alle valutazioni dei criteri SESAME, inseriti nel report relativo alla sua elaborazione. Nel caso in esame, le misure non hanno evidenziato la presenza di picchi significativi.

Per la visione completa delle elaborazioni si rimanda al relativo allegato (All.L).

5. - Conclusioni

Sulla base dei dati raccolti sul campo e le elaborazioni eseguite, è stato possibile evidenziare quanto segue:

Il sondaggio geognostico ha permesso di ricavare la stratigrafia e i parametri geomeccanici del terreno investigato, grazie alle analisi svolte sui campioni indisturbati prelevati.

Le prove penetrometriche statiche con punta elettrica hanno permesso di ricavare i parametri geomeccanici e indirettamente la stratigrafia del terreno investigato.

La falda, misurata direttamente nei perfori delle prove, è risultata livellare alle profondità indicate nella tabella al capitolo 2.

VALUTAZIONE DELLA CATEGORIA DI SUOLO

La valutazione dell'azione sismica di progetto va definita, secondo il DM 17.01.2018 (NTC18), attraverso specifiche analisi di Risposta Sismica Locale (RSL). In alternativa, qualora le condizioni stratigrafiche e le proprietà del terreno siano chiaramente riconducibili alle categorie definite nella Tab 3.2.II delle norme, è possibile fare riferimento ad un approccio semplificato che si basa sulla classificazione del sottosuolo in funzione dei valori della velocità di propagazione delle onde di taglio V_s .

La classificazione del sottosuolo si effettua in base alle condizioni stratigrafiche ed ai valori della velocità equivalente di propagazione delle onde di taglio, $V_{S,eq}$ (in m/s), definita dall'espressione (3.2.1 delle NTC18):

$$V_{S,eq} = \frac{H}{\sum_{i=1}^N \frac{h_i}{V_{S,i}}}$$

con:

- h_i spessore dell' i -esimo strato;
- $V_{S,i}$ velocità delle onde di taglio nell' i -esimo strato;
- N numero di strati;
- H profondità del substrato, definito come quella formazione costituita da roccia o terreno molto rigido, caratterizzata da VS non inferiore a 800 m/s.

Nel nostro caso il bedrock sismico ($V_s > 800$ m/s) non è stato riscontrato entro i primi 30 metri e quindi il calcolo della $V_{S,eq}$ è associabile alla $V_{S,30}$.

Dall'analisi MASW effettuata per il sito d'interesse (modello medio), sono stati individuati i vari sismostrati e le relative velocità V_s riportati nella tabella sottostante:

MASW STR150125A - Comune di Peccioli Fabbrica - Peccioli (PI) (modello medio)	Profondità		Spessore (h_i)	Velocità ($V_{s,i}$)	$h_i/V_{s,i}$
	da (m)	a (m)	(metri)	(m/s)	(-)
Sismostrato 1	0.00	2.00	2.00	130	0.0154
Sismostrato 2	2.00	4.90	2.90	180	0.0161
Sismostrato 3	4.90	8.70	3.80	304	0.0125
Sismostrato 4	8.70	19.60	10.90	481	0.0227
Sismostrato 5	19.60	30.00	10.40	580	0.0179
			H = 30.0 metri		$\Sigma h_i/V_{s,i} = 0.0846$

$V_{S,eq} = V_{S,30} = 30.0/0.0846 = 355$ m/s	Categoria di Sottosuolo C (a partire dal piano campagna)
<i>"Depositi di terreni a grana grossa mediamente addensati o terreni a grana fina mediamente consistenti con profondità del substrato superiori a 30 m, caratterizzati da un miglioramento delle proprietà meccaniche con la profondità e da valori di velocità equivalente compresi tra 180 m/s e 360 m/s".</i>	

Infine, le misure di rumore non hanno evidenziato la presenza di picchi significativi.

L'analisi specifica dei dati elaborati rimane comunque a carico del "geologo/ingegnere" responsabile delle indagini; le considerazioni sopra esposte in merito all'elaborazione delle prove penetrometriche (parametri geomeccanici del terreno), alle indagini geofisiche e alla categoria di suolo, si devono intendere come mera interpretazione dei risultati ottenuti.

Per ulteriori dettagli sulle indagini svolte si rimanda ai relativi allegati (All.A-B-C-D-E-F-G-H-I-L-M).

Lucca, Marzo 2025

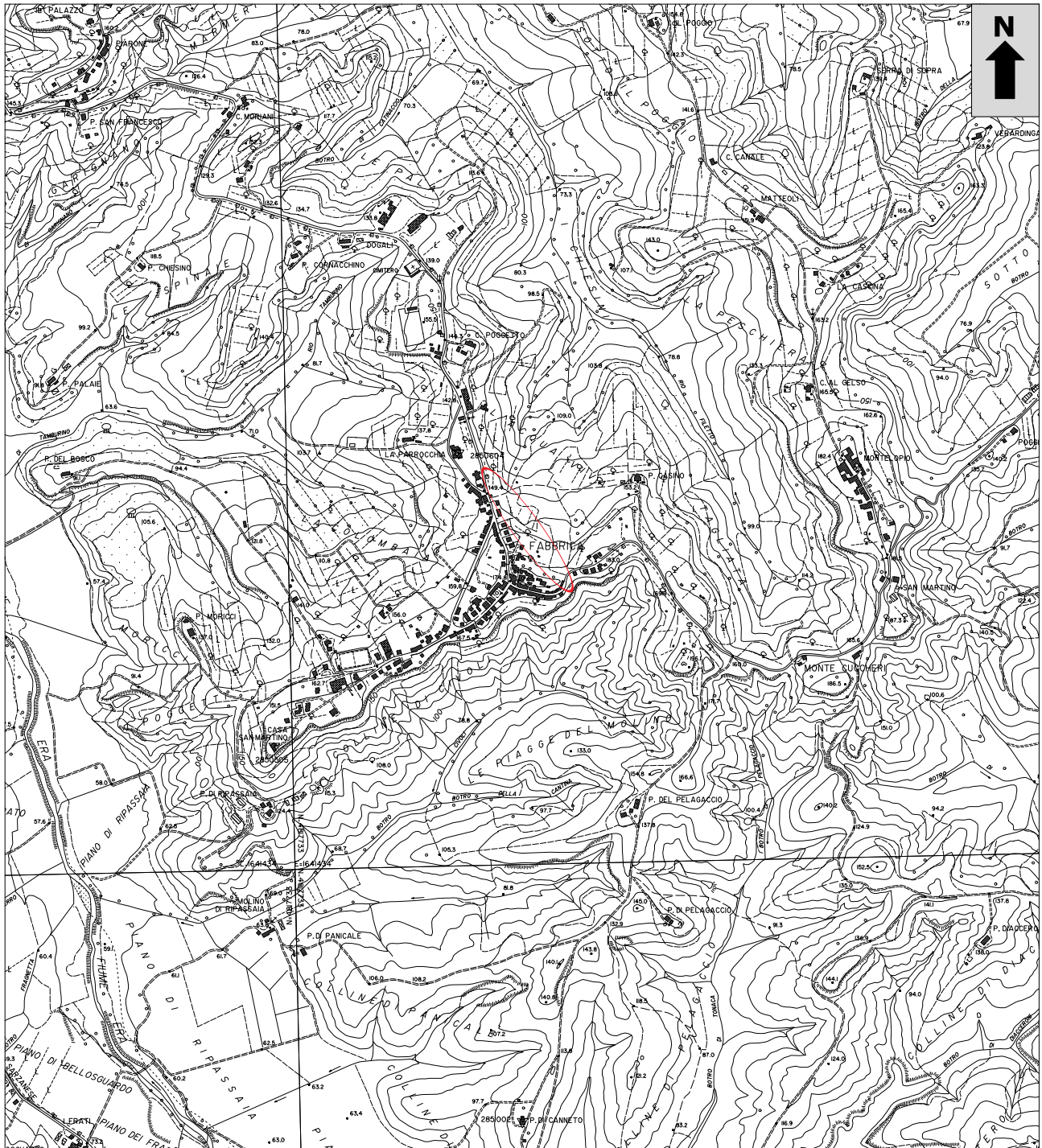
BIERREGI srl
Il Responsabile Tecnico
Dott. Geol. Francesco Rossi

BIERREGI s.r.l.
IL RESPONSABILE TECNICO
Dott. Geol. Francesco Rossi



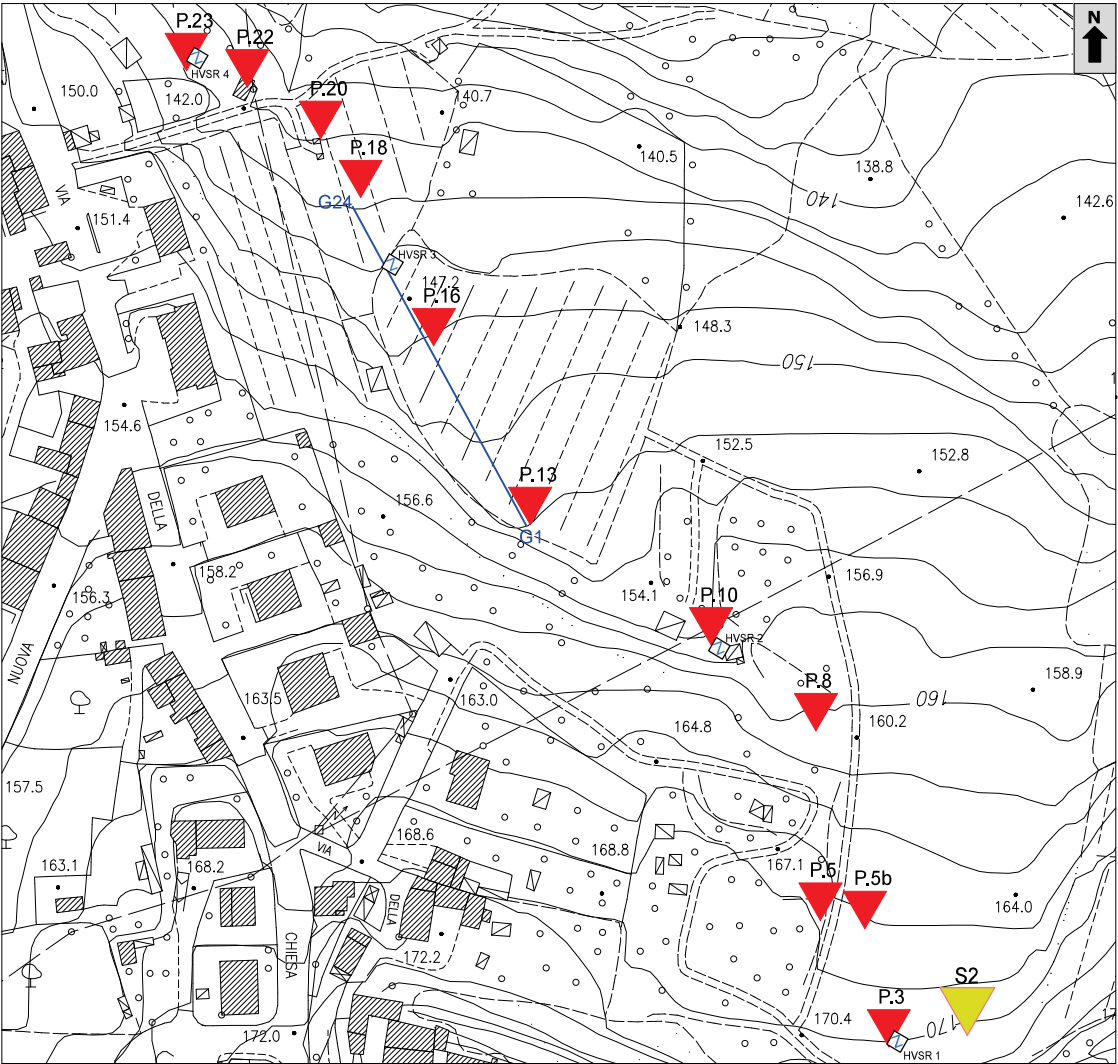
FIG.1 - COROGRAFIA

(C.T.R. Regione Toscana - Foglio 285060 - Scala 1:20'000)



- Area d'indagine

FIG.2 - UBICAZIONE INDAGINI
(C.T.R. Regione Toscana - Foglio 15H04 -
Scala 1:1'000)



Allegato A

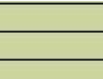




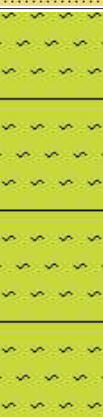


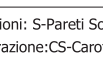
Stratigrafia del Sondaggio Geognostico

Raccolta dati e redazione di *Geol. Andrea Petresi*

S2

Profondità 15,00 m

Committente Comune di Peccioli	Profondità raggiunta	Quota Ass. P.C. 169	Certificato n°	Pagina
Operatore	Indagine Viabilità Fabbrica di Peccioli	Note1	Inizio/Fine Esecuzione 14-15 gennaio 2025	
Responsabile	Sondaggio 1	Tipo Carotaggio continuo	Tipo Sonda	Coordinate X Y

Scala (mt)	Litologia	Descrizione	Quota	Parametri geotecnici	S.P.T.	Pocket Test kg/cmq	Vane Test kg/cmq	Campioni	Metodo Perforazione	Metodo Stabilizzaz.	Cass. Catalog.	Falda	Altre prove	Altre prove
-1		limo sabbioso debolmente argilloso	-3.00											
-2														
-3														
-4		limo argilloso sabbioso	-5.00											
-5														
-6														
-7		limo argilloso con sabbia limosa e conchiglie	-9.50											
-8														
-9														
-10		limo argilloso duro	-15.00											
-11														
-12														
-13														
-14														
-15														
-16														
-17														
-18														
-19														
-20														

Campioni: S-Pareti Sottili, O-Osterberg, M-Mazier, R-Rimaneggiato, Rs-Rimaneggiato da SPT
Perforazione:CS-Carotiere Semplice, CD-Carotiere Doppio, EC-Elica Continua
Stabilizzazione:RM-Rivestimento Metallico, FB-Fanghi Betonitici
Prove SPT:PA-Punta Aperta, PC-Punta Chiusa
Carotaggio:continuo

Responsabile

Analisi Geotecniche di Laboratorio

FERRARA DEPARTMENT

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SCHEDA GENERALE DEL CAMPIONE

COMMITTENTE:	Bierregi S.r.l. per Comune di Peccioli (PI)
CANTIERE:	Fabbrica di Peccioli (PI)
CAMPIONE:	S2-C1 m 3.00 - 3.50
COMMESSA:	-
VERBALE ACC.:	-
DATA CONSEGNA:	20/01/25

Il campione è stato conservato in vasca umida termostatica

alto 3.00	P.P. kPa	T.V. kPa	LUNGHEZZA (cm): 63 GRADO DI QUALITA': AGI Q5 EC 7-3 Q1
			DESCRIZIONE: 0-20 rimaneggiato 20-63 limo argilloso con presenza di resti conchigliari grigio/marrone
			W naturale (%) 19.8 γ naturale(Mg/m ³) 2.00 γ secco (Mg/m ³) 1.67 γ immerso (Mg/m ³) 1.05 porosità (%) 38 indice dei vuoti 0.62 grado di saturazione (%) 86 massa specifica (Mg/m ³) 2.709
	240	-	
	200	-	PROVE ESEGUITE Umidità Naturale SI Trassiale UU - Limiti Atterberg SI Trassiale CIU - Gran. Setacciatura SI Edometria SI Gran. Sedimentazione SI Taglio Diretto SI
	340	-	Peso di Volume SI Espansione L.L. SI Peso Specifico SI Trassiale Cicl. + C.M. - Analisi Chimica - Colonna Risonante - Sostanza organica - Taglio Torsionale Cicl. -
	300	-	
			NOTE: -
3.50 basso			

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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UMIDITA' DI UNA TERRA**UNI EN ISO 17892-1**COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso sabbioso ghiaioso grigio**

bilancia cod. S.FE1490 - stufa S.FE2938

DETERMINAZIONE	1	2
TARA (g)	319.03	3.27
TERRA UMIDA (g)	1069.2	171.24
TERRA ESSICATA* (g)	948.85	142.67
UMDITA' DETERMINATA (%)	19.1	20.5
UMIDITA' CALCOLATA (%)	=	19.8

* materiale essiccato in stufa a 105 - 110 °C, fino a massa costante.

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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MASSA VOLUMICA APPARENTE**UNI EN ISO 17892-2****COMMITTENTE: Bierregi S.r.l. per Comune di Peccioli (PI)****CANTIERE: Fabbrica di Peccioli (PI)****CAMPIONE: S2-C1 m 3.00 - 3.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso sabbioso ghiaioso grigio**

bilancia cod. S.FE1490 - stufa S.FE2938 - calibro S.FE1465

DETERMINAZIONE	1	2
TARA (g)	42.33	42.33
ALTEZZA (cm)	2.01	2.01
DIAMETRO (cm)	5.99	5.99
MASSA LORDA (g)	154.29	156.92
MASSA VOLUMICA (Mg/m ³)	1.98	2.02
MEDIA (Mg/m³)	=	2.00

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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DETERMINAZIONE DEL PESO SPECIFICO CON PICNOMETRO**ASTM D854**COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso sabbioso ghiaioso grigio**

bilancia cod. S.FE1490 - stufa S.FE2938 - termometro S.FE2822 - disaeratore S.FE1094 - pompa a vuoto S.FE1115

determinazione picnometro n:	1 (pic. 001)	2 (pic. 002)
terra (g):	10.14	10.88
temperatura (°C):	20.0	20.0
picnometro + acqua (g):	143.42	146.58
picnometro + terra (g):	149.81	153.45
fattore K	1.0000	1.0000
Peso specifico determinato (Mg/m^3):	2.704	2.713

Peso specifico calcolato (Mg/m^3):	2.709
---	--------------

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LIMITI DI ATTERBERG (norma ASTM D4318 metodo A)COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C1** m 3.00 - 3.50

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

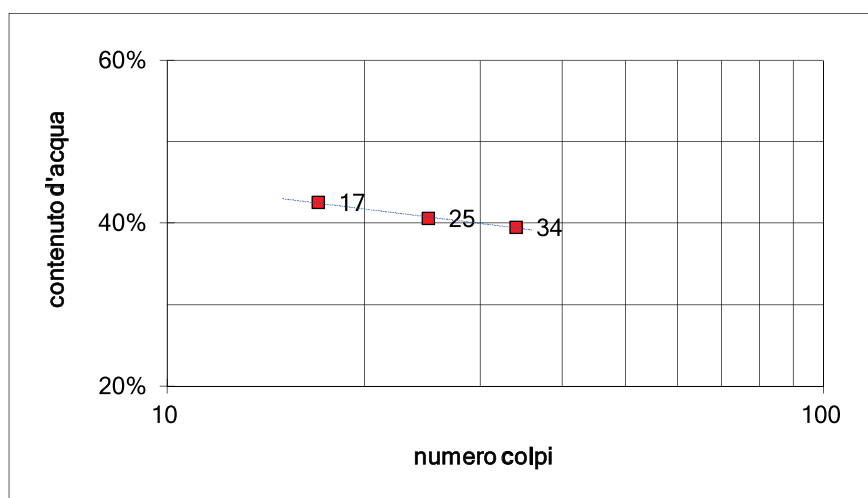
il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso sabbioso ghiaioso grigio**

codice stufa: S.FE1443; codice cucchiaino: S.FE1457; codice bilancia: S.FE1490.

	LIMITE LIQUIDO			LIMITE PLASTICO		UMIDITA'
	1	2	3	1	2	
impasto						
N° colpi	34	25	17			
massa umida+ tara (g)	20.66	20.00	20.30	14.90	14.57	1069.20
massa secca+ tara (g)	15.73	15.17	15.21	12.94	12.65	948.85
acqua contenuta (g)	4.93	4.83	5.09	1.96	1.92	120.35
tara (g)	3.25	3.27	3.24	3.24	3.26	319.03
peso secco (g)	12.48	11.90	11.97	9.70	9.39	629.82
contenuto d'acqua	39.5%	40.6%	42.5%	20.2%	20.4%	19.1%

Umidità Naturale	Wn =	19%
Limite Liquido	LL =	41%
Limite Plastico	LP =	20%
Indice Plastico	IP =	21%

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ANALISI GRANULOMETRICA

(per setacciatura e sedimentazione) norma A.S.T.M. D 422

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

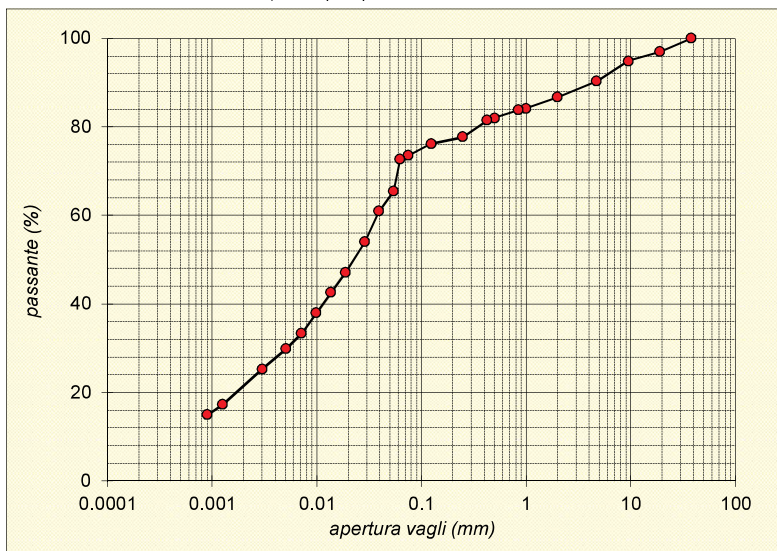
Il campione è stato conservato in vasca umida termostatica Codici strumentazione: bilancia S.FE1490, stufa S.FE1443, densimetro 151H S.FE1426, termometro S.FE2822, mescolatore

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo argilloso sabbioso ghiaioso grigio**

codici	vaglio (mm)	trattenuto (g)	trattenuto (%)	cum. tratt. (%)	passante (%)
S.FE1490	setaccio 38.1	0.00	0.00	0.00	100.00
S.FE1491	setaccio 19.1	19.23	3.05	3.05	96.95
S.FE1492	setaccio 9.51	13.18	2.09	5.15	94.85
S.FE1493	setaccio 4.75	28.30	4.49	9.64	90.36
S.FE1471	setaccio 2	23.12	3.67	13.31	86.69
S.FE1494	setaccio 1	15.85	2.52	15.83	84.17
S.FE1472	setaccio 0.85	2.42	0.38	16.21	83.79
S.FE1495	setaccio 0.5	11.25	1.79	18.00	82.00
S.FE1473	setaccio 0.425	3.13	0.50	18.49	81.51
S.FE1474	setaccio 0.250	23.71	3.76	22.26	77.74
S.FE1497	setaccio 0.125	9.64	1.53	23.79	76.21
S.FE1475	setaccio 0.075	16.89	2.68	26.47	73.53
S.FE1055	setaccio 0.063	5.68	0.90	27.37	72.63
-	calcolato 0.0542	44.81	7.12	34.49	65.51
-	calcolato 0.0393	28.95	4.60	39.09	60.91
-	calcolato 0.0289	43.43	6.90	45.98	54.02
-	calcolato 0.0189	43.43	6.90	52.88	47.12
-	calcolato 0.0137	28.95	4.60	57.47	42.53
-	calcolato 0.0099	28.95	4.60	62.07	37.93
-	calcolato 0.0071	28.95	4.60	66.67	33.33
-	calcolato 0.0051	21.72	3.45	70.12	29.88
-	calcolato 0.0030	28.95	4.60	74.71	25.29
-	calcolato 0.0013	50.67	8.05	82.76	17.24
-	calcolato 0.0009	14.48	2.30	85.06	14.94
-	fondo 94.10	14.94		100.00	0.00
TOTALE		629.82		ϕ max (mm) =	24.8

Passante effettivo setaccio 0.063 (g) in areometro		50.00
t° C	Tempo (s)	Letture
20	30	32.0
20	60	30.0
20	120	27.0
20	300	24.0
20	600	22.0
20	1200	20.0
20	2400	18.0
20	4800	16.5
20	14400	14.5
20	86400	11.0
20	172800	10.0
Rapporti granulometrici		
	USCS	UNI
GHIAIA	> 4,75 mm	> 2.00 mm
	9.6%	13.3%
SABBIA	> 0,075 mm	> 0.063 mm
	16.8%	14.1%
LIMO	> 2 μ	> 2 μ
	52.1%	51.2%
ARGILLA	< 2 μ	< 2 μ
	21.5%	21.5%

Soluzione disperdente preparata al momento

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio:
dott. geol. Luciano Rossi

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PROVA DI COMPRESSIONE AD ESPANSIONE LATERALE LIBERA

norma ASTM D 2166-91

COMMITTENTE:	Bierregi S.r.l. per Comune di Peccioli (PI)		
CANTIERE:	Fabbrica di Peccioli (PI)		
CAMPIONE:	S2-C1	m 3.00 - 3.50	
COMMESSA:	-	DURATA PROVE:	20/01 - 07/02/25
VERBALE ACC.:	-	DATA CONSEGNA:	20/01/25
GEO - CERT. n°:	rev.0 del:		

Codici strumentazione: S.FE1443-S.FE1078S.FE1079-S.FE1118-S.FE1465 il campione è stato conservato in vasca umida termostatica

NATURA DEL CAMPIONE: Limo argilloso sabbioso ghiaioso grigio

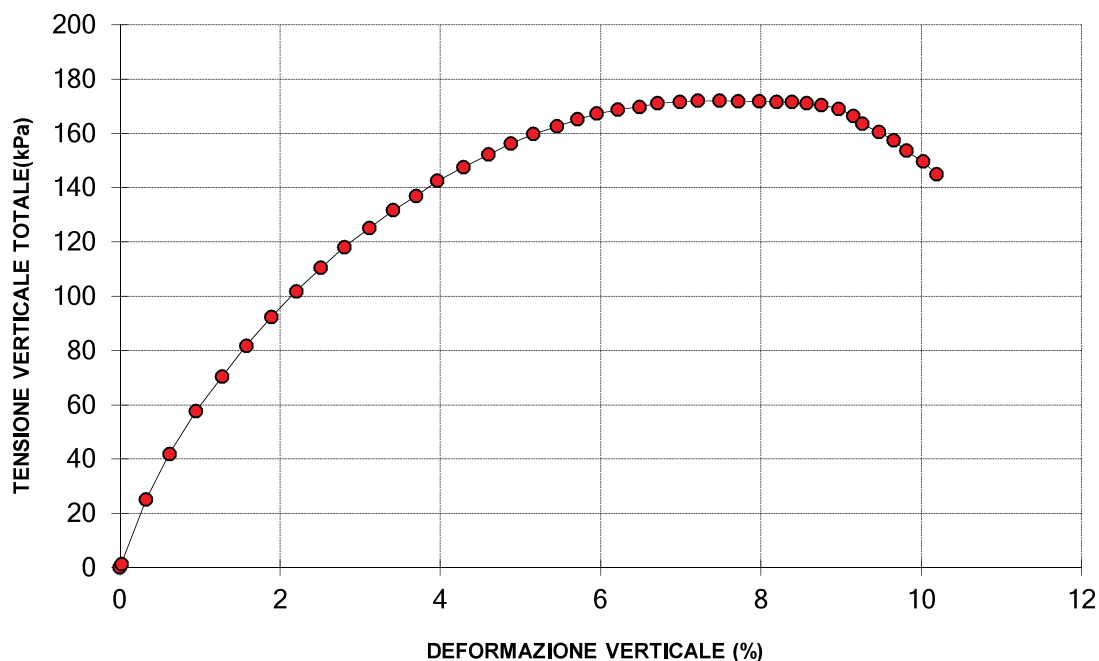
Velocità della pressa:	1.00 mm/min
------------------------	-------------

CARATTERISTICHE DEL PROVINO	
Dimensioni provino :	$h \times \phi = 100 \times 50 \text{ mm}$
Umidità naturale (%):	20.5
Massa volumica apparente umida (Mg/m^3):	1.98
Massa volumica apparente secca (Mg/m^3):	1.64
CONDIZIONI A ROTTURA*	
Tensione verticale totale (kPa):	172.02

* carico di rottura corrispondente allo sforzo massimo



def.vertic. (%)	tens.vertic. (kPa)
0.00	0.00
0.02	1.32
0.33	25.16
0.62	41.93
0.95	57.66
1.28	70.43
1.58	81.79
1.89	92.31
2.20	101.78
2.51	110.39
2.80	118.07
3.11	125.04
3.41	131.63
3.70	136.97
3.96	142.56
4.29	147.53
4.60	152.20
4.88	156.25
5.16	159.70
5.45	162.53
5.71	165.11
5.95	167.22
6.21	168.72
6.48	169.76
6.71	171.00
6.99	171.62
7.21	172.02
7.48	171.99
7.71	171.84
7.98	171.72
8.19	171.65
8.38	171.53
8.57	171.08
8.75	170.51
8.97	169.03
9.15	166.48
9.26	163.46
9.47	160.41
9.65	157.52
9.81	153.61
10.02	149.64
10.19	145.01



Lo sperimentatore:

dott. Roberto Bellanova

m_GEO 4 (rev.0 del 03/19)

Il Direttore del Laboratorio terre:

dott. Luciano Rossi

G6034/Sistema Qualità SOCOTEC ITALIA s.r.l.

S2C1_ELL-CERT.xls

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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C1 m 3.00 - 3.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:

edometro n: Ed 14

bilancia cod. S.FE1490 - calibro cod. S.FE1201

- trasduttore cod S.FE1124

NATURA DEL CAMPIONE:

Limo argilloso sabbioso ghiaioso grigio

Dp	DH	epsilon	e	e (t100)	av	mv	M
(kPa)	(mm)	(%)			(cm ² /daN)	(cm ² /daN)	(MPa)
12.3	0.100	0.50	0.508	0.508			
24.5	0.232	1.16	0.498	0.498	0.082	0.054	1.86
49.1	0.371	1.86	0.487	0.490	0.043	0.028	3.52
98.1	0.608	3.04	0.469	0.471	0.037	0.024	4.14
196.2	0.923	4.61	0.446	0.448	0.024	0.016	6.23
392.4	1.286	6.43	0.418	0.421	0.014	0.009	10.80
784.8	1.697	8.49	0.387	0.391	0.008	0.005	19.09
1569.6	2.261	11.31	0.344	0.350	0.005	0.004	27.84
3139.2	2.923	14.61	0.294	0.300	0.003	0.002	47.46
6278.4	3.712	18.56	0.234	0.243	0.002	0.001	79.48
1569.6	3.450	17.25	0.254	0.252			
392.4	3.063	15.32	0.283	0.282			
98.1	2.588	12.94	0.319	0.318			
24.5	2.112	10.56	0.355	0.515			

Dati provino

Iniziale

Finale

Altezza provino (mm)

20.000

17.888

Umidità (%):

19.1

13.1

Massa volumica apparente (Mg/m³):

2.13

2.26

Massa volumica apparente secca (Mg/m³):

1.79

2.00

Indice dei vuoti:

0.52

0.36

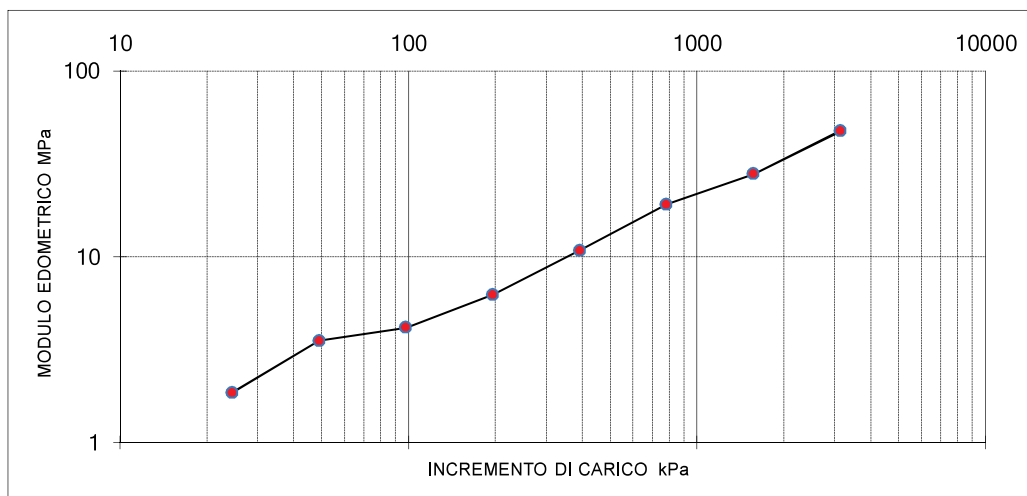
Grado di Saturazione (%):

100

100

Massa volumica reale (Mg/m³)

2.71

Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
dott.geol. Luciano Rossi

FERRARA DEPARTMENT**Via Annibale Zucchini, 69 – 44122 Ferrara (FE)****Tel.: +39 0532 56771 - Fax.: +39 0532 56119**

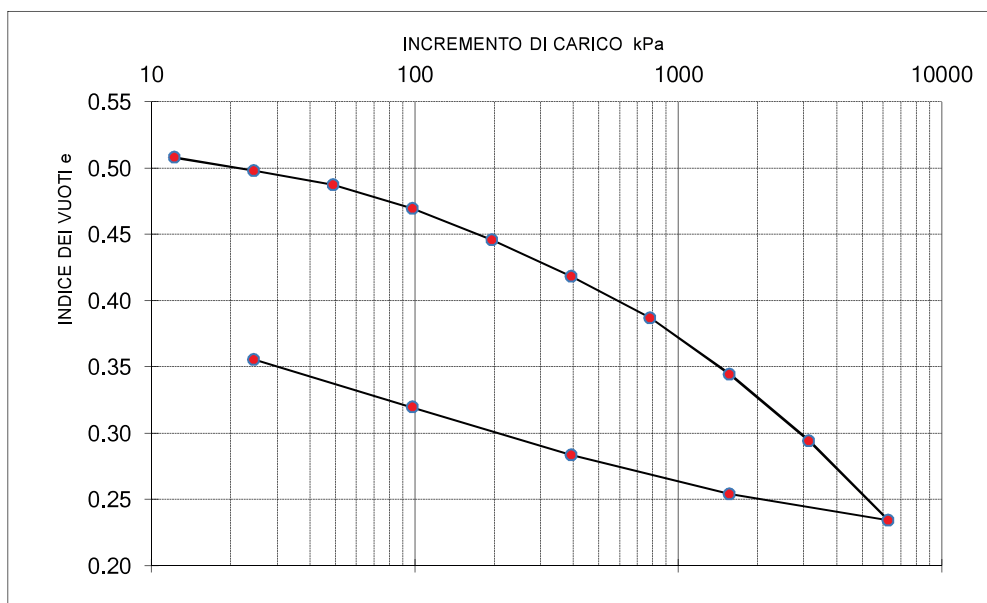
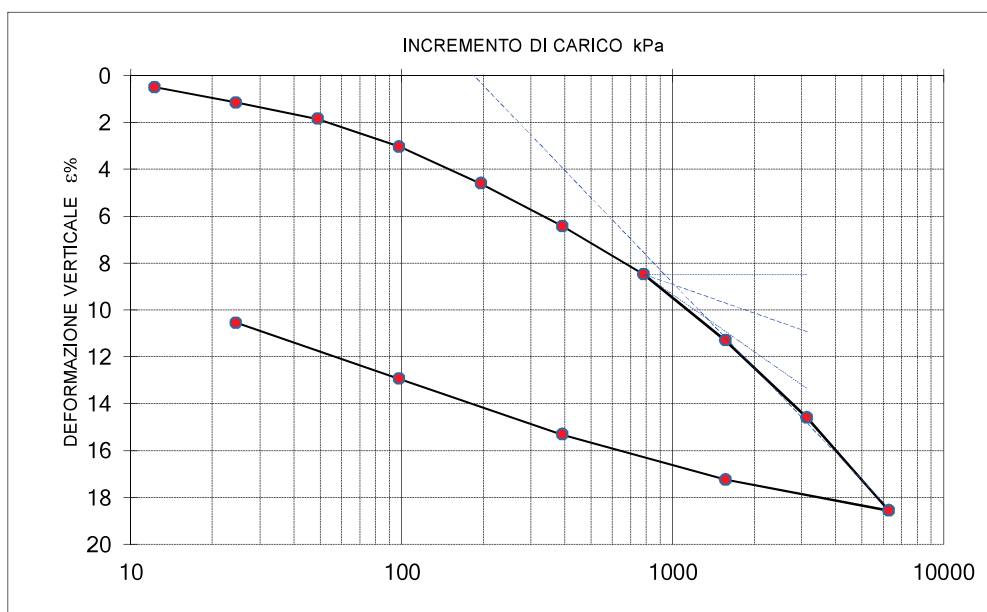
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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C1 m 3.00 - 3.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C1 m 3.00 - 3.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:

tempo (minuti)	cedimenti (mm) agli incrementi di carico (kPa)						
	12.3	24.5	49.1	98.1	196.2	392.4	784.8
0.08	0.098	0.172	0.272	0.445	0.712	1.045	1.419
0.14	0.099	0.177	0.276	0.454	0.723	1.057	1.433
0.23	0.099	0.183	0.281	0.462	0.736	1.070	1.448
0.39	0.099	0.189	0.286	0.472	0.747	1.088	1.466
1.08	0.099	0.199	0.298	0.496	0.776	1.124	1.504
1.81	0.100	0.205	0.305	0.508	0.790	1.145	1.524
5.05		0.219	0.327	0.536	0.829	1.184	1.579
8.44		0.224	0.335	0.553	0.849	1.205	1.598
14.09		0.226	0.342	0.565	0.866	1.218	1.619
39.29		0.229	0.351	0.580	0.885	1.239	1.643
65.61		0.230	0.354	0.585	0.892	1.246	1.649
109.58		0.230	0.362	0.590	0.902	1.252	1.657
182.98		0.231	0.361	0.599	0.905	1.257	1.665
305.58		0.232	0.363	0.599	0.910	1.273	1.675
510.33		0.232	0.364	0.604	0.914	1.276	1.684
852.27		0.232	0.372	0.606	0.919	1.282	1.692
1423.30		0.232	0.371	0.608	0.923	1.286	1.697

tempo (minuti)	cedimenti (mm) agli incrementi di carico (kPa)						
	1569.6	3139.2	6278.4	1569.6	392.4	98.1	24.5
0.08	1.864	2.395	2.967	3.662	3.377	3.020	2.566
0.14	1.882	2.437	3.005	3.562	3.345	3.014	2.565
0.23	1.904	2.459	3.068	3.543	3.333	3.004	2.563
0.39	1.926	2.487	3.147	3.534	3.317	2.991	2.560
1.08	1.987	2.567	3.255	3.503	3.284	2.963	2.546
1.81	2.021	2.614	3.319	3.500	3.266	2.947	2.537
5.05	2.105	2.721	3.455	3.482	3.208	2.892	2.508
8.44	2.139	2.765	3.514	3.474	3.176	2.851	2.485
14.09	2.162	2.795	3.550	3.469	3.142	2.806	2.454
39.29	2.192	2.837	3.604	3.463	3.096	2.704	2.363
65.61	2.205	2.850	3.621	3.459	3.084	2.663	2.305
109.58	2.217	2.863	3.639	3.457	3.078	2.629	2.249
182.98	2.225	2.876	3.654	3.456	3.075	2.608	2.196
305.58	2.234	2.890	3.670	3.456	3.072	2.596	2.166
510.33	2.245	2.905	3.686	3.453	3.070	2.588	2.146
852.27	2.255	2.915	3.701	3.450	3.067	2.588	2.130
1423.30	2.261	2.923	3.712		3.063		2.112

Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
dott.geol. Luciano Rossi

FERRARA DEPARTMENT

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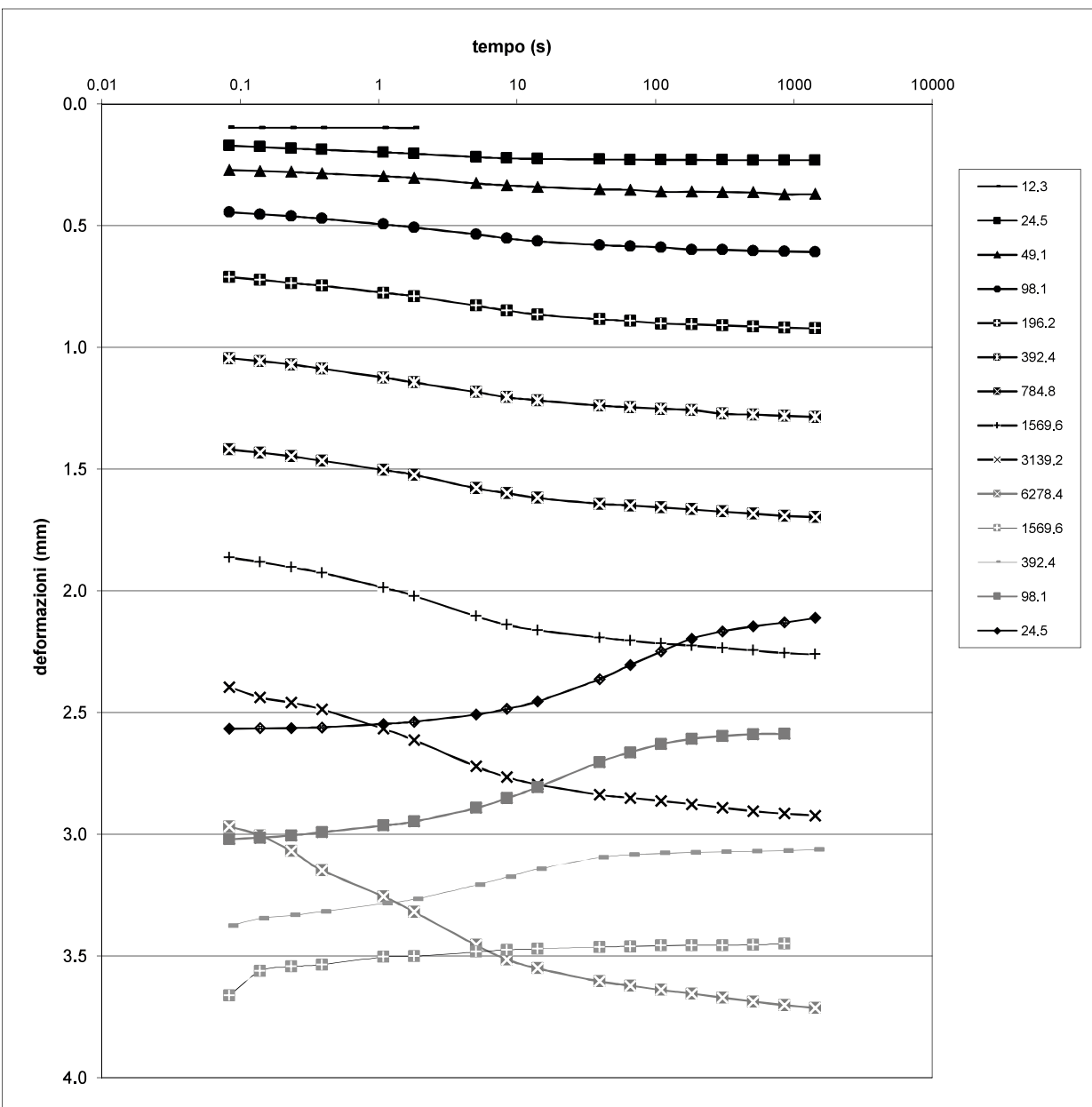
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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A**COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: DURATA PROVE DAL: 20/01/25 AL 06/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 del:

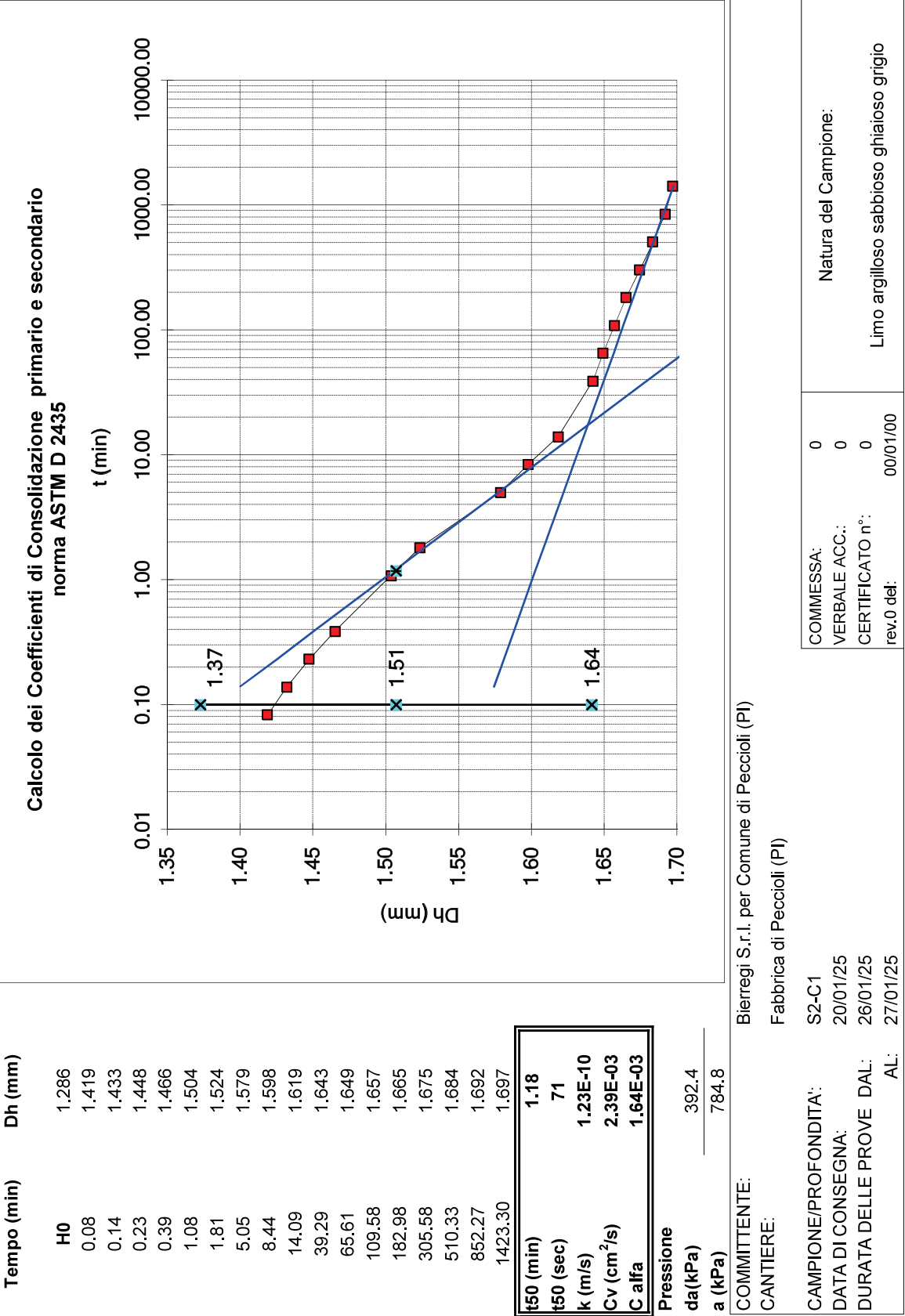
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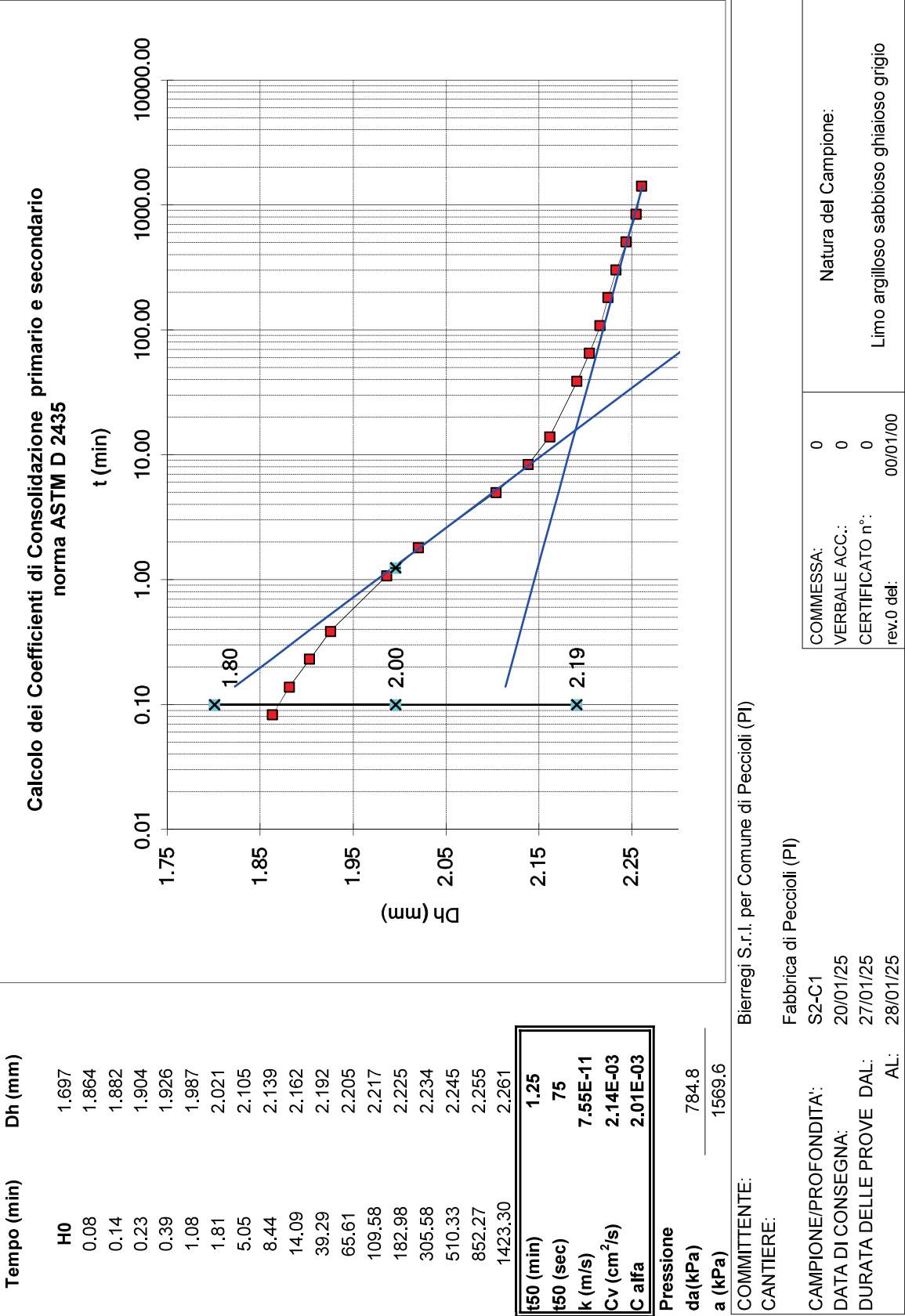


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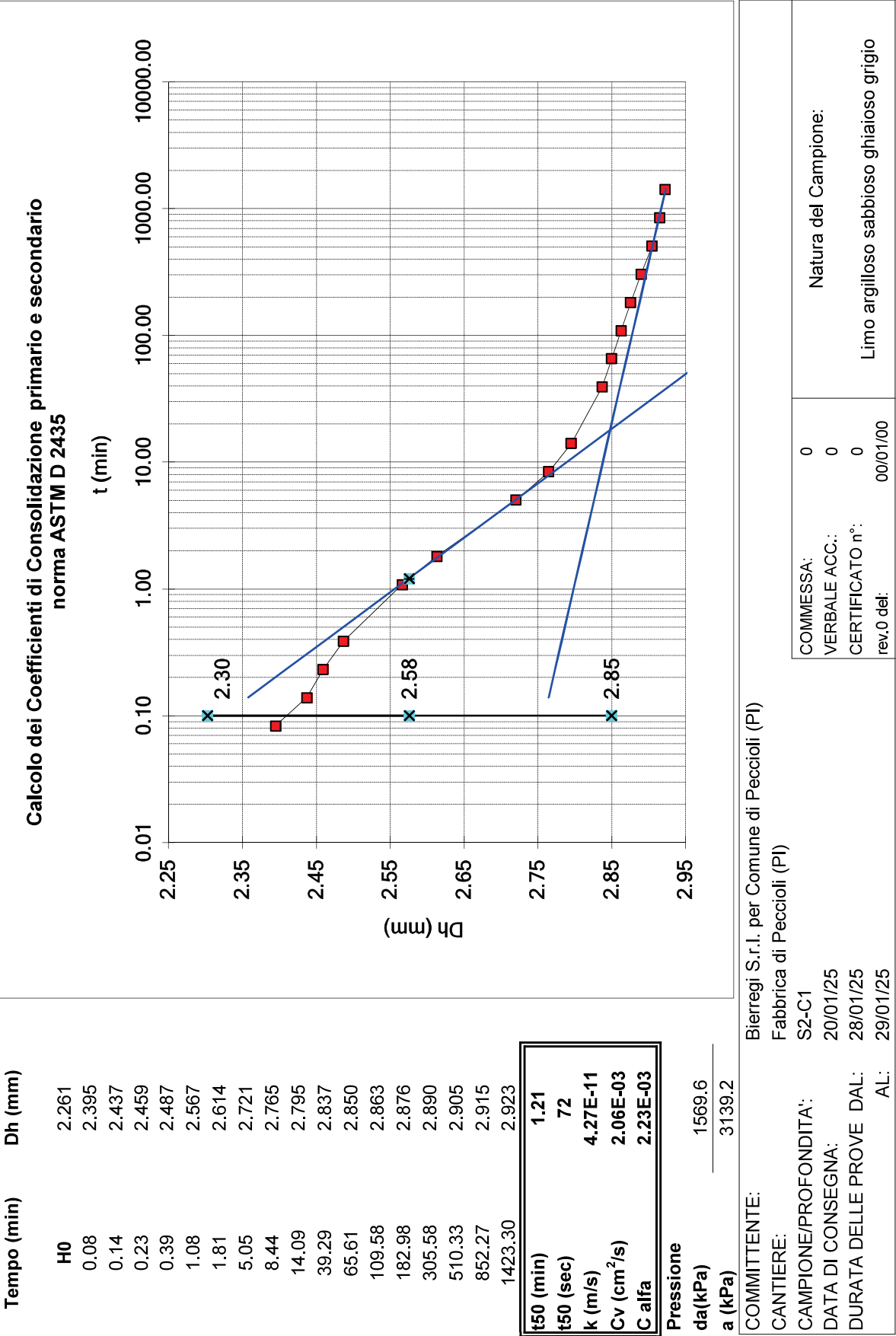


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Calcolo dei Coefficienti di Consolidazione primario e secondario

norma ASTM D 2435

t (min)

0.01

0.10

1.00

10.00

100.00

1000.00

10000.00

Dh (mm)

2.25

2.35

2.45

2.55

2.65

2.75

2.85

2.95

Lo sperimentatore:
dott. Roberto bellanova

Il Direttore laboratorio terre:
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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**

CANTIERE: **Fabbrica di Peccioli (PI)**

CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro S.FE1201; bilancia S.FE1490; trasduttori LVDT S.FE1290, S.FE1084, S.FE1183; SG S.FE1162, S.FE1019.

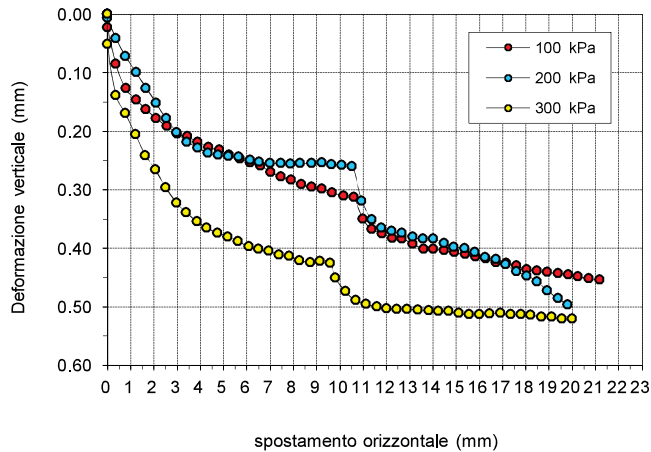
Macchina: CONTROLS T206 Electronic/T207 Digital

Prova: CONSOLIDATA DRENATA

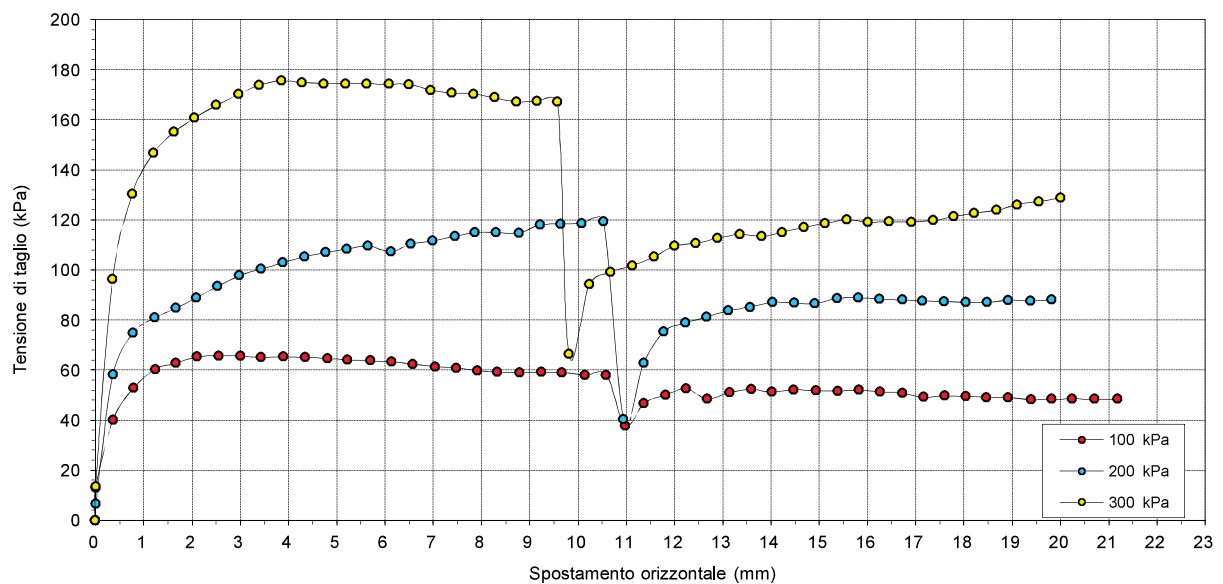
Dimensioni provino: $\phi \times h = 60 \times 20$ mm

Velocità prova: 0,004 mm/min

NATURA DEL CAMPIONE: Limo argilloso sabbioso ghiaioso grigio



	PROVINO 1	PROVINO 2	PROVINO 3
σ_v (kPa)	100	200	300
W ini (%)	19.0	18.8	18.3
γ ini (Mg/m ³)	1.98	2.02	1.97
γ_d ini (Mg/m ³)	1.66	1.70	1.67
S ini (%)	82	87	80
W fin (%)	23.5	20.0	21.6
γ fin (Mg/m ³)	2.05	2.11	2.08
γ_d fin (Mg/m ³)	1.66	1.76	1.71
S fin (%)	100	100	100
G (Mg/m ³)	2.709		
H fine cons (mm)	19.850	19.769	19.547



Lo sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. Geol. Luciano Rossi

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**

CANTIERE: **Fabbrica di Peccioli (PI)**

CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 del:

PROVINO 1 100 kPa			PROVINO 2 200 kPa			PROVINO 3 300 kPa		
Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.002	12.803	0.022	0.002	6.402	0.006	0.001	13.334	0.051
0.362	40.107	0.085	0.359	58.074	0.041	0.351	96.271	0.138
0.791	52.839	0.127	0.773	74.803	0.072	0.761	130.401	0.169
1.236	60.337	0.146	1.228	80.851	0.099	1.200	146.634	0.205
1.660	62.707	0.163	1.660	84.706	0.126	1.632	155.087	0.241
2.103	65.324	0.178	2.093	88.950	0.152	2.056	160.781	0.265
2.555	65.713	0.191	2.525	93.441	0.178	2.508	165.768	0.296
3.004	65.678	0.204	2.978	97.721	0.202	2.968	170.225	0.322
3.430	65.041	0.209	3.425	100.303	0.218	3.392	173.832	0.339
3.892	65.253	0.218	3.887	102.955	0.228	3.855	175.565	0.354
4.345	65.041	0.227	4.328	105.290	0.237	4.275	174.822	0.365
4.805	64.617	0.232	4.766	106.917	0.240	4.731	174.398	0.374
5.223	64.051	0.240	5.205	108.367	0.242	5.184	174.363	0.380
5.696	63.697	0.247	5.652	109.569	0.244	5.619	174.327	0.388
6.140	63.308	0.254	6.126	107.270	0.249	6.085	174.221	0.397
6.576	62.389	0.259	6.533	110.347	0.252	6.500	174.115	0.401
7.033	61.363	0.270	6.984	111.550	0.255	6.945	171.852	0.405
7.474	60.868	0.278	7.453	113.495	0.255	7.391	170.649	0.411
7.913	59.771	0.283	7.866	114.874	0.256	7.830	170.331	0.413
8.331	59.170	0.291	8.297	114.945	0.255	8.273	168.810	0.421
8.792	58.887	0.295	8.773	114.733	0.255	8.721	167.183	0.424
9.237	59.135	0.298	9.212	117.987	0.254	9.153	167.360	0.422
9.668	59.064	0.305	9.644	118.340	0.257	9.575	167.042	0.425
10.147	58.038	0.310	10.082	118.552	0.258	9.807	66.350	0.451
10.588	57.968	0.313	10.529	119.437	0.260	10.235	94.326	0.474
10.976	37.808	0.350	10.943	40.319	0.319	10.671	99.100	0.489
11.371	46.791	0.367	11.362	62.778	0.351	11.123	101.682	0.495
11.811	50.045	0.375	11.779	75.369	0.365	11.581	105.325	0.500
12.241	52.521	0.383	12.229	78.835	0.371	12.000	109.640	0.503
12.675	48.489	0.384	12.663	81.133	0.374	12.435	110.630	0.504
13.141	51.000	0.393	13.121	83.821	0.381	12.895	112.681	0.504
13.597	52.203	0.401	13.563	85.130	0.384	13.355	114.273	0.505
14.016	51.212	0.401	14.029	87.075	0.384	13.811	113.389	0.506
14.475	52.167	0.404	14.481	86.722	0.391	14.231	115.086	0.508
14.929	51.708	0.407	14.911	86.509	0.398	14.684	116.961	0.508
15.381	51.637	0.410	15.367	88.596	0.400	15.125	118.588	0.511
15.825	51.990	0.414	15.811	88.950	0.407	15.571	120.038	0.513
16.261	51.283	0.418	16.250	88.348	0.415	16.010	119.012	0.513
16.720	50.823	0.424	16.726	87.995	0.419	16.441	119.295	0.512
17.163	49.126	0.425	17.142	87.641	0.428	16.913	119.154	0.511
17.600	49.656	0.430	17.590	87.464	0.440	17.360	119.720	0.513
18.041	49.409	0.436	18.042	87.004	0.447	17.782	121.417	0.513
18.468	49.090	0.438	18.482	87.111	0.457	18.213	122.620	0.514
18.915	49.090	0.441	18.918	87.889	0.472	18.682	123.822	0.517
19.393	48.206	0.443	19.373	87.570	0.486	19.107	126.086	0.517
19.815	48.383	0.445	19.813	87.995	0.496	19.556	127.359	0.521
20.240	48.489	0.448				20.003	128.703	0.521
20.712	48.348	0.452						
21.180	48.489	0.454						

Lo sperimentatore:

dott. Roberto Bellanova

Il Direttore del Laboratorio te

dott. Geol. Luciano Rossi

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**

CANTIERE: **Fabbrica di Peccioli (PI)**

CAMPIONE: **S2-C1 m 3.00 - 3.50**

COMMESSA: DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 del:

Consolidazione Provino 1

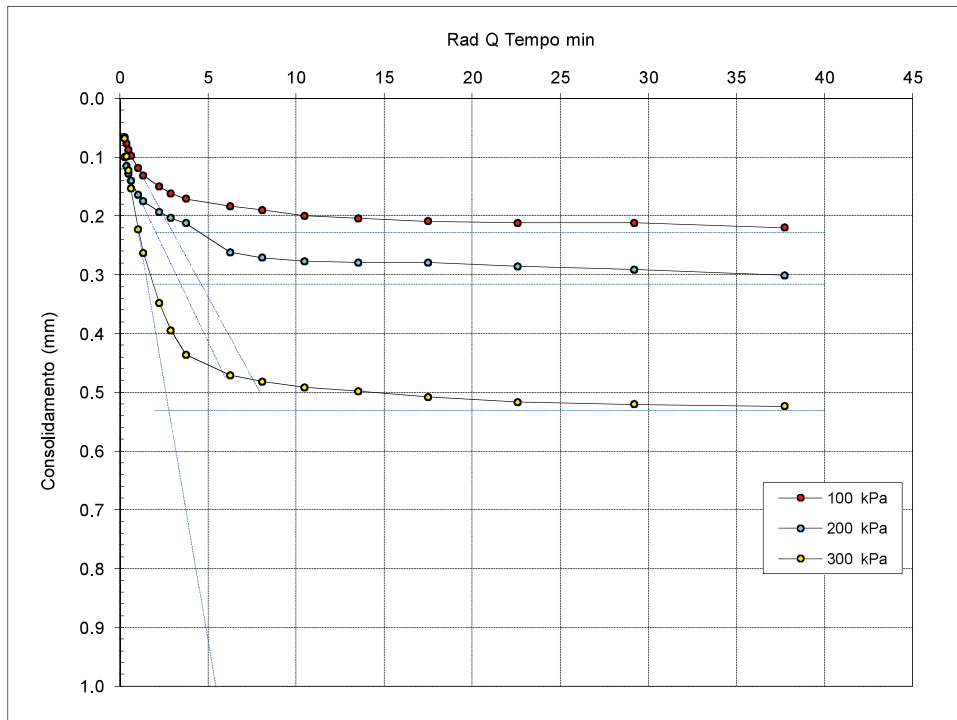
100 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.066
0.14	0.077
0.23	0.087
0.39	0.098
1.08	0.119
1.81	0.131
5.05	0.150
8.44	0.162
14.09	0.171
39.29	0.183
65.61	0.190
109.58	0.200
182.98	0.204
305.58	0.209
510.33	0.212
852.27	0.212
1423.30	0.220

Consolidazione Provino 2

200 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.100
0.14	0.115
0.23	0.128
0.39	0.140
1.08	0.164
1.81	0.175
5.05	0.193
8.44	0.204
14.09	0.212
39.29	0.262
65.61	0.271
109.58	0.277
182.98	0.279
305.58	0.279
510.33	0.286
852.27	0.291
1423.30	0.301

Consolidazione Provino 3

300 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.068
0.14	0.098
0.23	0.123
0.39	0.153
1.08	0.223
1.81	0.263
5.05	0.348
8.44	0.395
14.09	0.436
39.29	0.471
65.61	0.482
109.58	0.491
182.98	0.499
305.58	0.508
510.33	0.516
852.27	0.521
1423.30	0.524



t_{100} min
(Bishop ed Henkel)

Provino 1

9.1

Provino 2

11.9

Provino 3

7.8

Lo sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio te
dott. Geol. Luciano Rossi

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PROVA DI TAGLIO DIRETTO

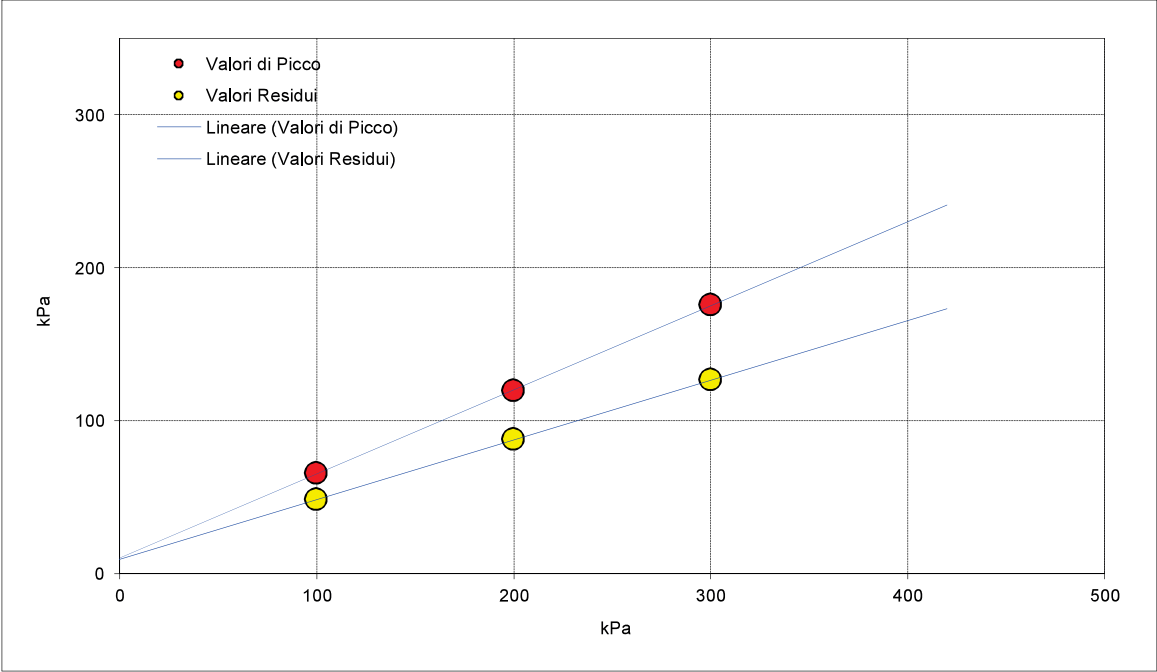
COMMITTENTE:	Bierregi S.r.l. per Comune di Peccioli (PI)		
CANTIERE:	Fabbrica di Peccioli (PI)		
CAMPIONE:	S2-C1		
COMMESSA:	0	DURATA PROVE:	20/01 - 07/02/25
VERBALE ACC.:	0	DATA CONSEGNA:	45677

Il presente elaborato non è parte del certificato di prova cui è allegato, è solo un'interpretazione soggettiva dei risultati di prova.

	PROVINO 1	PROVINO 2	PROVINO 3
Pressione verticale (kPa)	100	200	300
Tensione di taglio PICCO (kPa)	65.71	119.44	175.57
Tensione di taglio RESIDUO (kPa)	48.38	87.58	126.49

VALORI DI PICCO			
Coesione:	10.39 kPa	Angolo di attrito:	29°

VALORI RESIDUI			
Coesione:	9.38 kPa	Angolo di attrito:	21°



FERRARA DEPARTMENT

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SCHEDA GENERALE DEL CAMPIONECOMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: -

VERBALE ACC.: -

DATA CONSEGNA: 20/01/25

Il campione è stato conservato in vasca umida termostatica

alto 8.00	P.P. kPa	T.V. kPa	LUNGHEZZA (cm): 53 GRADO DI QUALITÀ: AGI Q5 EC 7-3 Q1
			DESCRIZIONE: 0-12 rimaneggiato 12-53 sabbia fina limosa con strati di limo argilloso con presenza di sostanza organica (a 15-16/ 33/ 48cm) grigio
	240	-	W naturale (%) 14.6 γ naturale (Mg/m ³) 2.00 γ secco (Mg/m ³) 1.74 γ immerso (Mg/m ³) 1.10 porosità (%) 36 indice dei vuoti 0.56 grado di saturazione (%) 71 massa specifica (Mg/m ³) 2.711
	200	-	PROVE ESEGUITE Umidità Naturale SI Trassiale UU - Limiti Atterberg SI Trassiale CIU - Gran. Setacciatura SI Edometria SI Gran. Sedimentazione SI Taglio Diretto SI Peso di Volume SI Espansione L.L. - Peso Specifico SI Trassiale Cicl. + C.M. - Analisi Chimica - Colonna Risonante - Sostanza organica - Taglio Torsionale Cicl. -
	340	-	
	300	-	NOTE: -
8.50 basso			

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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UMIDITA' DI UNA TERRA**UNI EN ISO 17892-1**COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Sabbia medio fina limosa grigio**

bilancia cod. S.FE1490 - stufa S.FE2938

DETERMINAZIONE	1	2
TARA (g)	321.09	3.23
TERRA UMIDA (g)	853.46	136.95
TERRA ESSICATA* (g)	787.44	119.55
UMDITA' DETERMINATA (%)	14.2	15.0
UMIDITA' CALCOLATA (%)	=	14.6

* materiale essiccato in stufa a 105 - 110 °C, fino a massa costante.

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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MASSA VOLUMICA APPARENTE**UNI EN ISO 17892-2**COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Sabbia medio fina limosa grigio**

bilancia cod. S.FE1490 - stufa S.FE2938 - calibro S.FE1465

DETERMINAZIONE	1	2
TARA (g)	43.59	43.59
ALTEZZA (cm)	2.00	2.00
DIAMETRO (cm)	5.98	5.98
MASSA LORDA (g)	155.66	155.15
MASSA VOLUMICA (Mg/m ³)	2.00	1.99
MEDIA (Mg/m³)	=	2.00

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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DETERMINAZIONE DEL PESO SPECIFICO CON PICNOMETRO

ASTM D854

COMMITTENTE:	Bierregi S.r.l. per Comune di Peccioli (PI)		
CANTIERE:	Fabbrica di Peccioli (PI)		
CAMPIONE:	S2-C2	m 8.00 - 8.50	
COMMESSA:	-	DURATA PROVE:	20/01 - 07/02/25
VERBALE ACC.:	-	DATA CONSEGNA:	20/01/25
GEO - CERT. n°:	0	rev.00 del:	00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Sabbia medio fina limosa grigio**

bilancia cod. S.FE1490 - stufa S.FE2938 - termometro S.FE2822 - disaeratore S.FE1094 - pompa a vuoto S.FE1115

determinazione picnometro n:	1 (pic. 001)	2 (pic. 002)
terra (g):	10.65	10.96
temperatura (°C):	20.0	20.0
picnometro + acqua (g):	143.82	148.02
picnometro + terra (g):	150.54	154.94
fattore K	1.0000	1.0000
Peso specifico determinato (Mg/m ³):	2.710	2.713

Peso specifico calcolato (Mg/m ³): 2.711

Io Sperimentatore:
dott. Roberto Bellanova

Il Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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LIMITI DI ATTERBERG (norma ASTM D4318 metodo A)COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2** **m 8.00 - 8.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

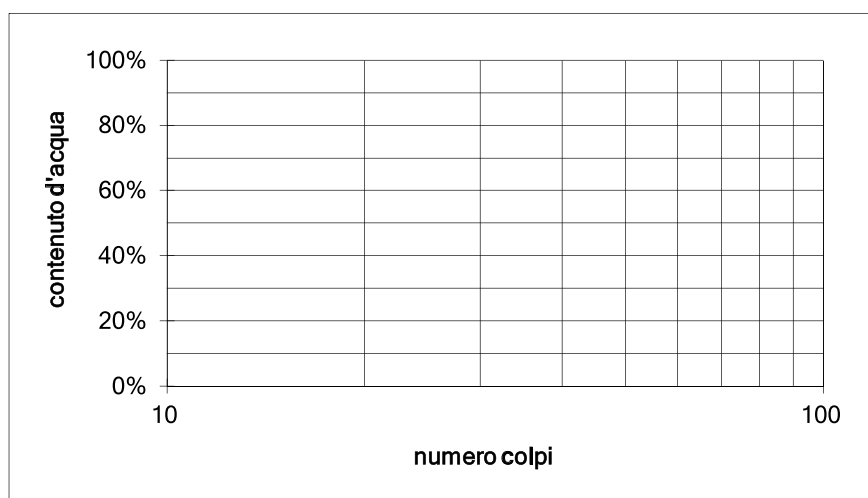
il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Sabbia medio fina limosa grigio**

codice stufa: S.FE1443; codice cucchiaino: S.FE1457; codice bilancia: S.FE1490.

	LIMITE LIQUIDO			LIMITE PLASTICO		UMIDITA'
	1	2	3	1	2	
impasto						
N° colpi						
massa umida+ tara (g)						853.46
massa secca+ tara (g)						787.44
acqua contenuta (g)						66.02
tara (g)						321.09
peso secco (g)						466.35
contenuto d'acqua						14.2%

Umidità Naturale	Wn =	14%
Limite Liquido	LL =	nd
Limite Plastico	LP =	np
Indice Plastico	IP =	nd


 Io Sperimentatore:
 dott. Roberto Bellanova

 Il Direttore del Laboratorio terre:
 dott. geol. Luciano Rossi

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**ANALISI GRANULOMETRICA**

(per setacciatura e sedimentazione) norma A.S.T.M. D 422

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

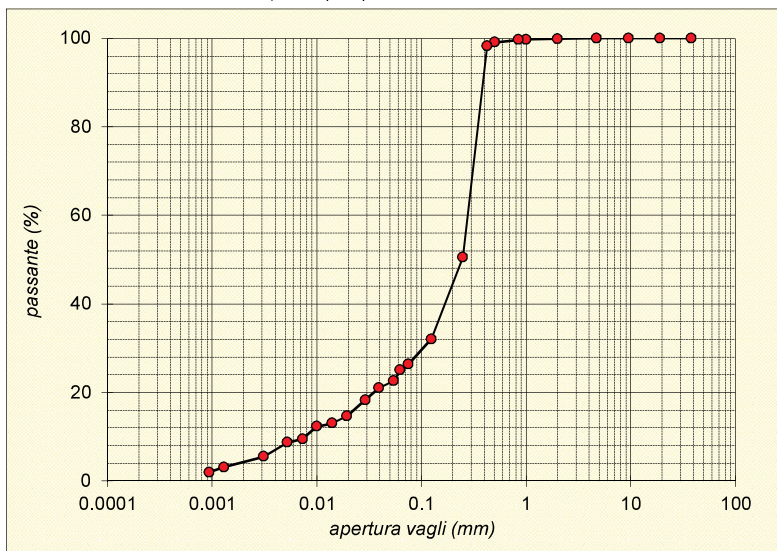
Il campione è stato conservato in vasca umida termostatica Codici strumentazione: bilancia S.FE1490, stufa S.FE1443, densimetro 151H S.FE1426, termometro S.FE2822, mescolatore

ASPETTO MACROSCOPICO DEL CAMPIONE:**Sabbia medio fina limosa grigio**

codici		vaglio (mm)	trattenuto (g)	trattenuto (%)	cum. tratt. (%)	passante (%)
S.FE1490	setaccio	38.1	0.00	0.00	0.00	100.00
S.FE1491	setaccio	19.1	0.00	0.00	0.00	100.00
S.FE1492	setaccio	9.51	0.00	0.00	0.00	100.00
S.FE1493	setaccio	4.75	0.00	0.00	0.00	100.00
S.FE1471	setaccio	2	0.30	0.06	0.06	99.94
S.FE1494	setaccio	1	0.73	0.16	0.22	99.78
S.FE1472	setaccio	0.85	0.42	0.09	0.31	99.69
S.FE1495	setaccio	0.5	2.48	0.53	0.84	99.16
S.FE1473	setaccio	0.425	3.84	0.82	1.67	98.33
S.FE1474	setaccio	0.250	223.08	47.84	49.50	50.50
S.FE1497	setaccio	0.125	85.91	18.42	67.92	32.08
S.FE1475	setaccio	0.075	26.71	5.73	73.65	26.35
S.FE1055	setaccio	0.063	5.77	1.24	74.89	25.11
-	calcolato	0.0541	11.52	2.47	77.36	22.64
-	calcolato	0.0393	7.41	1.59	78.95	21.05
-	calcolato	0.0291	12.97	2.78	81.73	18.27
-	calcolato	0.0194	16.67	3.58	85.30	14.70
-	calcolato	0.0140	7.41	1.59	86.89	13.11
-	calcolato	0.0100	3.71	0.79	87.69	12.31
-	calcolato	0.0073	12.97	2.78	90.47	9.53
-	calcolato	0.0052	3.71	0.79	91.26	8.74
-	calcolato	0.0031	14.82	3.18	94.44	5.56
-	calcolato	0.0013	11.12	2.38	96.82	3.18
-	calcolato	0.0009	5.56	1.19	98.01	1.99
-	fondo	9.26	1.99		100.00	0.00
TOTALE			466.35		ϕ max (mm) =	2.3

Passante effettivo setaccio 0.063 (g) in areometro			49.99
t° C	Tempo (s)	Lettura	
20	30	32.0	
20	60	30.0	
20	120	26.5	
20	300	22.0	
20	600	20.0	
20	1200	19.0	
20	2400	15.5	
20	4800	14.5	
20	14400	10.5	
20	86400	7.5	
20	172800	6.0	
Rapporti granulometrici			
	USCS	UNI	
GHIAIA	> 4,75 mm	> 2,00 mm	
	0.0%	0.1%	
SABBIA	> 0,075 mm	> 0,063 mm	
	73.7%	74.8%	
LIMO	> 2 μ	> 2 μ	
	22.0%	20.8%	
ARGILLA	< 2 μ	< 2 μ	
	4.3%	4.3%	

Soluzione disperdente preparata al momento

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio:
dott. geol. Luciano Rossi

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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C2 m 8.00 - 8.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:

edometro n: Ed 15

bilancia cod. S.FE1490 - calibro cod. S.FE1201

- trasduttore cod S.FE1103

NATURA DEL CAMPIONE:

Sabbia medio fina limosa grigio

Dp	DH	epsilon	e	e (t100)	av	mv	M
(kPa)	(mm)	(%)			(cm ² /daN)	(cm ² /daN)	(MPa)
12.3	0.047	0.24	0.494	0.494			
24.5	0.066	0.33	0.493	0.493	0.012	0.008	12.91
49.1	0.134	0.67	0.488	0.489	0.021	0.014	7.28
98.1	0.221	1.10	0.481	0.476	0.013	0.009	11.29
196.2	0.343	1.71	0.472	0.473	0.009	0.006	16.08
392.4	0.502	2.51	0.460	0.462	0.006	0.004	24.66
784.8	0.726	3.63	0.443	0.447	0.004	0.003	35.05
1569.6	1.005	5.03	0.422	0.426	0.003	0.002	56.16
3139.2	1.373	6.87	0.395	0.404	0.002	0.001	85.35
6278.4	1.918	9.59	0.354	0.368	0.001	0.001	115.24
1569.6	1.711	8.55	0.370	0.369			
392.4	1.566	7.83	0.380	0.380			
98.1	1.433	7.17	0.390	0.390			
24.5	1.296	6.48	0.401	0.498			

Dati provino

Iniziale

Finale

Altezza provino (mm)

20.000

18.704

Umidità (%):

14.2

14.8

Massa volumica apparente (Mg/m³):

2.07

2.22

Massa volumica apparente secca (Mg/m³):

1.81

1.94

Indice dei vuoti:

0.50

0.40

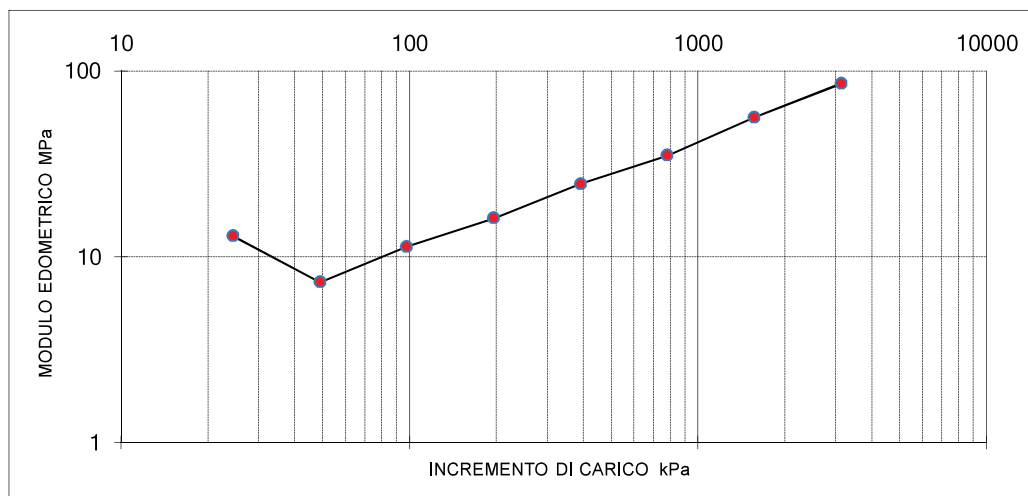
Grado di Saturazione (%):

77

100

Massa volumica reale (Mg/m³)

2.71

Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
dott.geol. Luciano Rossi

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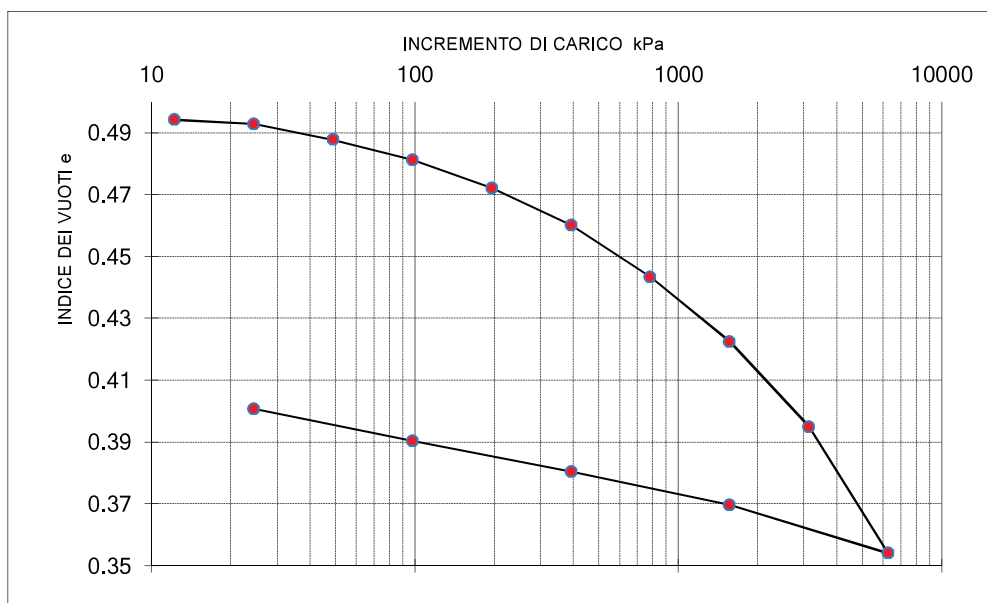
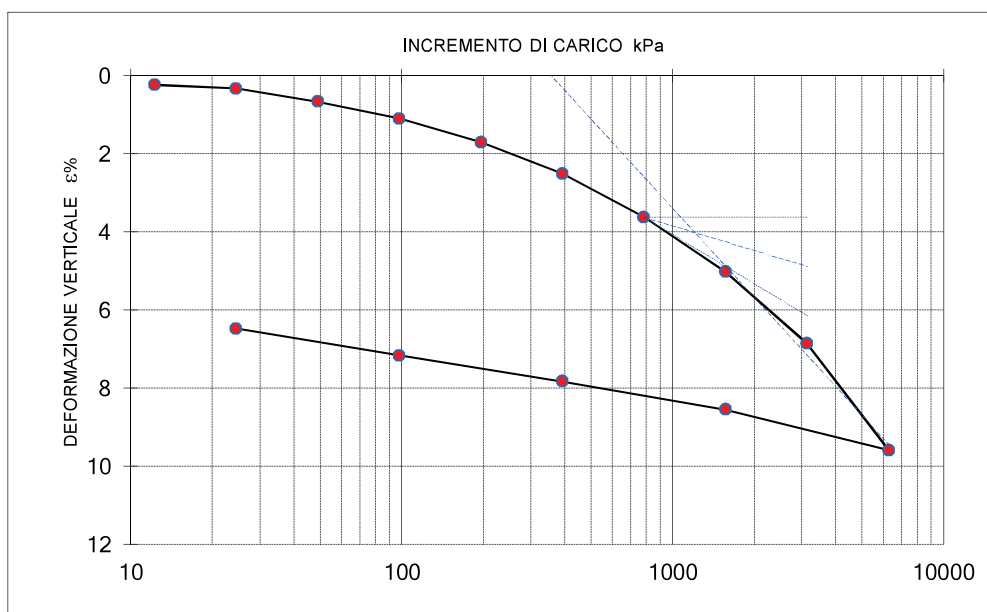
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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C2 m 8.00 - 8.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C2 m 8.00 - 8.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:

tempo (minuti)	cedimenti (mm) agli incrementi di carico (kPa)						
	12.3	24.5	49.1	98.1	196.2	392.4	784.8
0.08	0.046	0.052	0.104	0.184	0.298	0.447	0.654
0.14	0.047	0.052	0.105	0.186	0.300	0.451	0.658
0.23	0.047	0.053	0.105	0.187	0.302	0.453	0.662
0.39	0.047	0.053	0.106	0.189	0.304	0.457	0.666
1.08	0.047	0.054	0.108	0.192	0.307	0.462	0.671
1.81	0.047	0.055	0.109	0.194	0.309	0.464	0.674
5.05		0.056	0.121	0.196	0.314	0.470	0.680
8.44		0.057	0.121	0.198	0.316	0.472	0.684
14.09		0.058	0.121	0.200	0.318	0.475	0.687
39.29		0.060	0.122	0.205	0.323	0.482	0.695
65.61		0.060	0.123	0.206	0.326	0.485	0.700
109.58		0.061	0.130	0.208	0.330	0.488	0.704
182.98		0.063	0.131	0.214	0.334	0.491	0.709
305.58		0.064	0.131	0.216	0.336	0.496	0.714
510.33		0.064	0.131	0.217	0.339	0.496	0.718
852.27		0.065	0.133	0.219	0.340	0.499	0.722
1423.30		0.066	0.134	0.221	0.343	0.502	0.726

tempo (minuti)	cedimenti (mm) agli incrementi di carico (kPa)						
	1569.6	3139.2	6278.4	1569.6	392.4	98.1	24.5
0.08	0.914	1.110	1.425	1.876	1.573	1.449	1.322
0.14	0.919	1.242	1.503	1.811	1.572	1.449	1.321
0.23	0.926	1.256	1.620	1.715	1.572	1.447	1.319
0.39	0.930	1.264	1.738	1.715	1.567	1.447	1.317
1.08	0.937	1.277	1.775	1.712	1.566	1.441	1.314
1.81	0.941	1.284	1.785	1.713	1.566	1.441	1.311
5.05	0.950	1.296	1.804	1.712	1.566	1.440	1.309
8.44	0.955	1.302	1.813	1.712	1.566	1.440	1.307
14.09	0.960	1.310	1.822	1.712	1.566	1.438	1.305
39.29	0.970	1.323	1.842	1.712	1.566	1.437	1.303
65.61	0.974	1.328	1.853	1.712	1.566	1.437	1.302
109.58	0.979	1.335	1.864	1.712	1.567	1.435	1.300
182.98	0.984	1.343	1.875	1.713	1.567	1.434	1.299
305.58	0.990	1.351	1.884	1.713	1.567	1.433	1.298
510.33	0.995	1.359	1.894	1.711	1.567	1.433	1.297
852.27	1.001	1.366	1.907	1.711	1.566	1.433	1.296
1423.30	1.005	1.373	1.918				

Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
dott.geol. Luciano Rossi

FERRARA DEPARTMENT**Via Annibale Zucchini, 69 – 44122 Ferrara (FE)****Tel.: +39 0532 56771 - Fax.: +39 0532 56119**

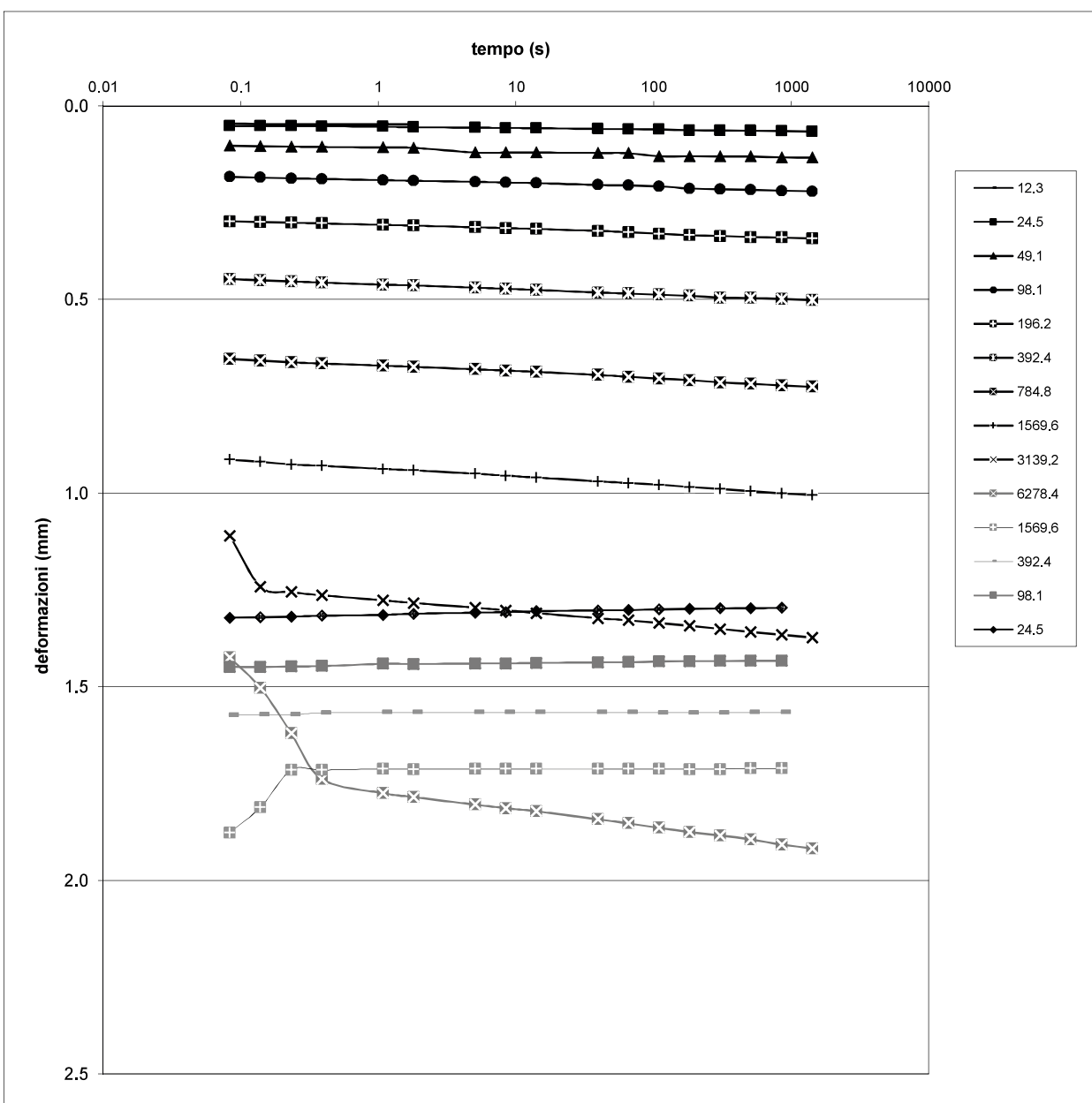
SOCOTEC ITALIA Srl – P.Iva 01872430648

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PROVA DI CONSOLIDAZIONE EDOMETRICA**norma ASTM D 2435 - method A****COMMITTENTE:** Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE:** Fabbrica di Peccioli (PI)**CAMPIONE:** S2-C2 m 8.00 - 8.50**COMMESSA:** DURATA PROVE DAL: 20/01/25 AL 06/02/25**VERBALE ACC.:** DATA CONSEGNA: 20/01/25**GEO - CERT. n°:** rev.00 del:Lo sperimentatore:
dott. Roberto bellanovaIl Direttore laboratorio terre:
dott.geol. Luciano Rossi

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 del:

Il campione è stato conservato in vasca umidostatica

CODICI STRUMENTAZIONE: calibro S.FE1201; bilancia S.FE1490; trasduttori LVDT S.FE1290, S.FE1084, S.FE1183; SG S.FE1162, S.FE1019.

Macchina: CONTROLS T206 Electronic/T207 Digital

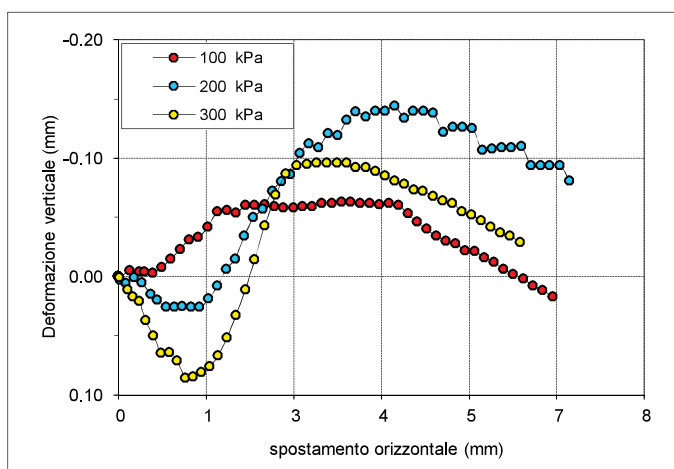
Prova: CONSOLIDATA DRENATA

Dimensioni provino: $\phi \times h = 60 \times 20$ mm

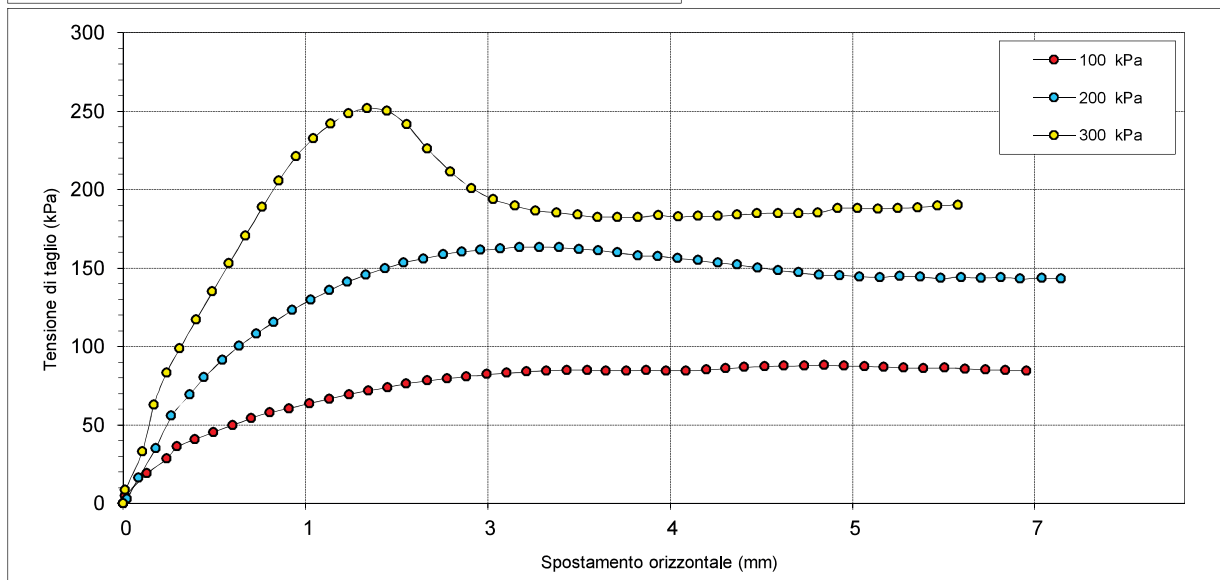
Velocità prova: 0,004 mm/min

NATURA DEL CAMPIONE:

Sabbia medio fina limosa grigio



	PROVINO 1	PROVINO 2	PROVINO 3
σ_v (kPa)	100	200	300
W ini (%)	14,2	15,0	14,0
γ ini (Mg/m ³)	1,94	2,00	1,99
γ_d ini (Mg/m ³)	1,70	1,74	1,75
S ini (%)	65	73	69
W fin (%)	27,5	23,2	22,1
γ fin (Mg/m ³)	1,98	2,05	2,07
γ_d fin (Mg/m ³)	1,55	1,66	1,70
S fin (%)	100	100	100
G (Mg/m ³)	2,711		
H fine cons (mm)	19.602	19.388	19.164

Lo sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio
dott. Geol. Luciano Rossi

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 def.

PROVINO 1 100 kPa			PROVINO 2 200 kPa			PROVINO 3 300 kPa		
Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)	Def.or. (mm)	Tensione (kPa)	Def.ver. (mm)
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.014	4.704	0.001	0.031	2.900	0.003	0.016	8.347	0.001
0.181	19.028	-0.005	0.117	16.411	0.006	0.144	33.069	0.011
0.329	28.365	-0.004	0.245	34.908	0.001	0.232	62.919	0.017
0.408	36.075	-0.004	0.365	55.739	0.005	0.329	83.326	0.021
0.540	40.779	-0.003	0.504	69.497	0.015	0.426	98.605	0.037
0.681	45.377	-0.008	0.609	80.143	0.020	0.549	116.961	0.050
0.824	49.833	-0.015	0.749	91.249	0.026	0.673	134.928	0.065
0.967	54.360	-0.023	0.875	100.338	0.026	0.799	153.036	0.064
1.108	57.932	-0.031	1.005	108.084	0.025	0.922	170.684	0.071
1.252	60.443	-0.033	1.136	115.617	0.026	1.050	188.793	0.086
1.404	63.662	-0.042	1.274	123.186	0.026	1.175	205.734	0.085
1.553	66.562	-0.055	1.416	129.870	0.019	1.303	221.189	0.081
1.702	69.391	-0.056	1.555	135.706	0.008	1.433	232.684	0.076
1.847	71.902	-0.054	1.691	141.223	-0.006	1.566	241.950	0.067
1.994	73.954	-0.060	1.829	145.679	-0.015	1.699	248.635	0.052
2.135	76.217	-0.060	1.973	149.818	-0.034	1.841	251.712	0.033
2.293	78.127	-0.061	2.116	153.460	-0.050	1.989	250.368	0.011
2.443	79.648	-0.059	2.262	156.042	-0.057	2.136	241.526	-0.014
2.587	80.921	-0.058	2.412	158.659	-0.072	2.294	226.106	-0.043
2.743	82.194	-0.058	2.552	160.322	-0.080	2.467	211.499	-0.069
2.889	83.185	-0.059	2.694	161.453	-0.086	2.627	200.888	-0.087
3.039	83.998	-0.059	2.843	162.373	-0.104	2.792	193.815	-0.094
3.191	84.564	-0.062	2.989	163.293	-0.112	2.953	189.571	-0.095
3.344	84.847	-0.062	3.136	163.399	-0.109	3.108	186.529	-0.096
3.499	84.847	-0.063	3.289	163.045	-0.121	3.268	185.291	-0.096
3.641	84.493	-0.063	3.435	162.055	-0.119	3.425	183.947	-0.096
3.794	84.493	-0.062	3.580	161.171	-0.132	3.575	182.533	-0.096
3.944	84.953	-0.062	3.725	159.827	-0.139	3.725	182.603	-0.092
4.091	84.564	-0.061	3.881	158.058	-0.135	3.882	182.320	-0.092
4.243	84.493	-0.062	4.030	157.669	-0.140	4.034	183.488	-0.089
4.394	85.165	-0.060	4.180	156.113	-0.140	4.183	182.709	-0.085
4.539	86.050	-0.053	4.332	155.017	-0.144	4.333	183.098	-0.081
4.683	86.757	-0.046	4.483	153.319	-0.134	4.482	183.098	-0.078
4.834	87.252	-0.040	4.628	152.046	-0.140	4.629	183.947	-0.073
4.981	87.535	-0.034	4.782	150.313	-0.140	4.778	184.832	-0.072
5.133	87.712	-0.030	4.938	148.474	-0.138	4.935	185.008	-0.068
5.286	87.995	-0.028	5.093	147.130	-0.122	5.089	184.938	-0.064
5.434	87.641	-0.022	5.247	145.644	-0.126	5.237	185.150	-0.062
5.586	87.464	-0.021	5.400	145.326	-0.126	5.387	188.298	-0.055
5.733	87.040	-0.016	5.550	144.477	-0.125	5.535	188.050	-0.052
5.883	86.474	-0.012	5.704	144.194	-0.107	5.689	187.802	-0.047
6.034	86.191	-0.006	5.854	144.831	-0.108	5.839	188.191	-0.042
6.191	86.333	-0.002	6.008	144.583	-0.109	5.991	188.580	-0.037
6.345	85.802	0.002	6.161	143.416	-0.109	6.140	189.783	-0.034
6.500	85.236	0.008	6.315	144.194	-0.110	6.295	190.313	-0.029
6.652	84.847	0.012	6.467	143.699	-0.094			
6.811	84.387	0.017	6.618	144.088	-0.094			
			6.762	143.204	-0.094			
			6.924	143.416	-0.094			
			7.069	143.239	-0.081			

Lo sperimentatore:
dott.Roberto BellanovaIl Direttore del Laboratorio I
dott. Geol. Luciano Rossi

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PROVA DI TAGLIO DIRETTO (norma UNI CEN ISO 17892-10)COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C2 m 8.00 - 8.50**

COMMESSA: DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: DATA CONSEGNA: 20/01/25

GEO - CERT. n°: rev.00 del:

Consolidazione Provino 1

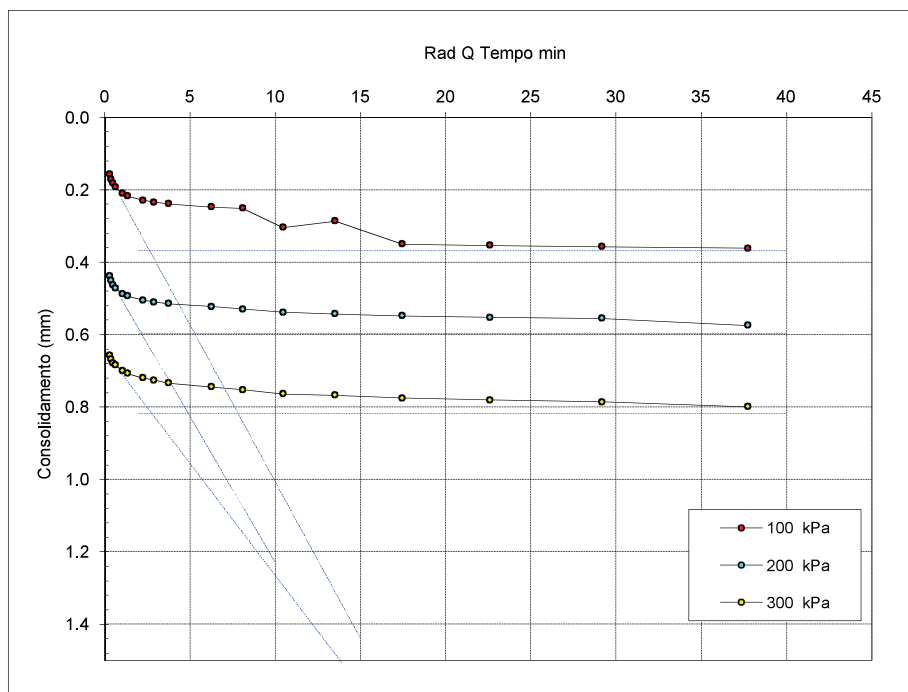
100 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.157
0.14	0.171
0.23	0.182
0.39	0.193
1.08	0.210
1.81	0.218
5.05	0.229
8.44	0.235
14.09	0.239
39.29	0.248
65.61	0.251
109.58	0.304
182.98	0.286
305.58	0.350
510.33	0.354
852.27	0.358
1423.31	0.362

Consolidazione Provino 2

200 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.439
0.14	0.451
0.23	0.464
0.39	0.472
1.08	0.488
1.81	0.493
5.05	0.505
8.44	0.510
14.09	0.515
39.29	0.523
65.61	0.530
109.58	0.538
182.98	0.543
305.58	0.549
510.33	0.553
852.27	0.555
1423.31	0.575

Consolidazione Provino 3

300 kPa	
Tempo (min)	Dh (mm)
H0	0.000
0.08	0.657
0.14	0.669
0.23	0.678
0.39	0.684
1.08	0.699
1.81	0.708
5.05	0.720
8.44	0.726
14.09	0.734
39.29	0.745
65.61	0.753
109.58	0.764
182.98	0.768
305.58	0.776
510.33	0.781
852.27	0.786
1423.31	0.800

 t_{100} min
(Bishop ed Henkel)

Provino 1

7.0

Provino 2

4.7

Provino 3

7.7

Lo sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio
dott. Geol. Luciano Rossi

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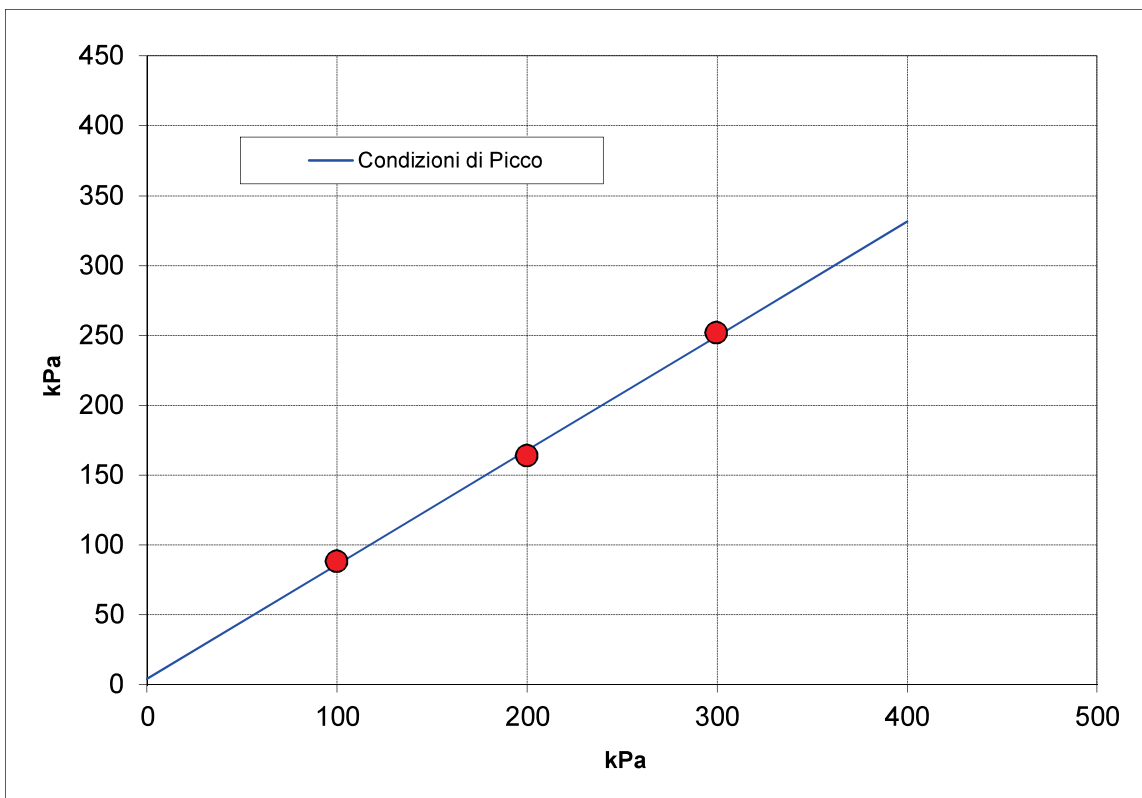
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PROVA DI TAGLIO DIRETTO

COMMITTENTE:	Bierregi S.r.l. per Comune di Peccioli (PI)		
CANTIERE:	Fabbrica di Peccioli (PI)		
CAMPIONE:	S2-C2		
COMMESSA:	0	DURATA PROVE:	20/01 - 07/02/25
VERBALE ACC.:	0	DATA CONSEGNA:	20/01/25

Il presente elaborato non è parte del certificato di prova cui è allegato, è solo un'interpretazione soggettiva dei risultati di prova.

	PROVINO 1	PROVINO 2	PROVINO 3
Pressione verticale (kPa)	100	200	300
Tensione di taglio (kPa)	87.99	163.40	251.71
Condizioni di Picco	Coesione:	3.98 kPa	Angolo di attrito: 39°



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SCHEDA GENERALE DEL CAMPIONECOMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C3 m 12.00 - 12.50**

COMMESSA: -

VERBALE ACC.: -

DATA CONSEGNA: 20/01/25

Il campione è stato conservato in vasca umida termostatica

alto 12.00	P.P. kPa	T.V. kPa	LUNGHEZZA (cm): 55 GRADO DI QUALITÀ: AGI Q5 EC 7-3 Q1
	190	-	DESCRIZIONE: limo argilloso grigio
	230	-	W naturale (%) 16.3 γ naturale (Mg/m ³) 2.07 γ secco (Mg/m ³) 1.78 γ immerso (Mg/m ³) 1.12 porosità (%) 34 indice dei vuoti 0.52 grado di saturazione (%) 85 massa specifica (Mg/m ³) 2.702
	>600	-	PROVE ESEGUITE Umidità Naturale SI Trassiale UU - Limiti Atterberg SI Trassiale CIU - Gran. Setacciatura SI Edometria - Gran. Sedimentazione SI Taglio Diretto - Peso di Volume SI Espansione L.L. - Peso Specifico SI Trassiale Cicl. + C.M. - Analisi Chimica - Colonna Risonante - Sostanza organica - Taglio Torsionale Cicl. -
	>600	-	NOTE: -
	>600	-	
12.50 basso			

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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UMIDITA' DI UNA TERRA**UNI EN ISO 17892-1****COMMITTENTE: Bierregi S.r.l. per Comune di Peccioli (PI)****CANTIERE: Fabbrica di Peccioli (PI)****CAMPIONE: S2-C3 m 12.00 - 12.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente ghiaioso grigio**

bilancia cod. S.FE1490 - stufa S.FE2938

DETERMINAZIONE	1	2
TARA (g)	323.64	3.25
TERRA UMIDA (g)	760.63	107.1
TERRA ESSICATA* (g)	700.45	92.26
UMDITA' DETERMINATA (%)	16.0	16.7
UMIDITA' CALCOLATA (%)	=	16.3

* materiale essiccato in stufa a 105 - 110 °C, fino a massa costante.

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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MASSA VOLUMICA APPARENTE**UNI EN ISO 17892-2**COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C3 m 12.00 - 12.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente ghiaioso grigio**

bilancia cod. S.FE1490 - stufa S.FE2938 - calibro S.FE1465

DETERMINAZIONE	1	2
TARA (g)	137.14	136.57
ALTEZZA (cm)	7.64	7.63
DIAMETRO (cm)	3.84	3.84
MASSA LORDA (g)	320.39	318.54
MASSA VOLUMICA (Mg/m ³)	2.08	2.07
MEDIA (Mg/m³)	=	2.07

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

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DETERMINAZIONE DEL PESO SPECIFICO CON PICNOMETRO

ASTM D854

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C3 m 12.00 - 12.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente ghiaioso grigio**

bilancia cod. S.FE1490 - stufa S.FE2938 - termometro S.FE2822 - disaeratore S.FE1094 - pompa a vuoto S.FE1115

determinazione picnometro n:	1 (pic. 001)	2 (pic. 002)
terra (g):	10.29	11.81
temperatura (°C):	20.0	20.0
picnometro + acqua (g):	144.02	143.61
picnometro + terra (g):	150.50	151.05
fattore K	1.0000	1.0000
Peso specifico determinato (Mg/m ³):	2.701	2.703

Peso specifico calcolato (Mg/m ³): 2.702

Io Sperimentatore:
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LIMITI DI ATTERBERG (norma ASTM D4318 metodo A)COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C3 m 12.00 - 12.50**

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

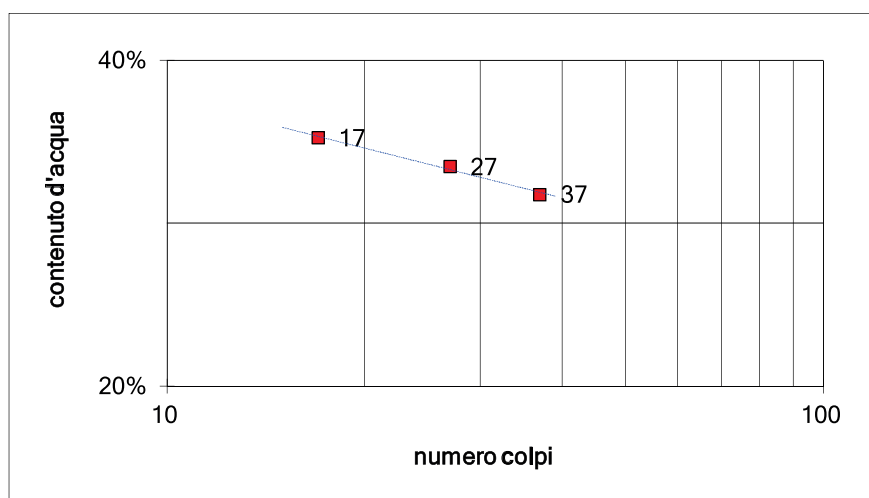
il campione è stato conservato in vasca umida termostatica

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente ghiaioso grigio**

codice stufa: S.FE1443; codice cucchiaino: S.FE1457; codice bilancia: S.FE1490.

	LIMITE LIQUIDO			LIMITE PLASTICO		UMIDITA'
	1	2	3	1	2	
impasto						
N° colpi	37	27	17			
massa umida+ tara (g)	19.42	20.16	20.07	14.41	14.16	760.63
massa secca+ tara (g)	15.63	15.92	15.69	12.64	12.42	700.45
acqua contenuta (g)	3.79	4.24	4.38	1.77	1.74	60.18
tara (g)	3.70	3.26	3.26	3.27	3.28	323.64
peso secco (g)	11.93	12.66	12.43	9.37	9.14	376.81
contenuto d'acqua	31.8%	33.5%	35.2%	18.9%	19.0%	16.0%

Umidità Naturale	Wn =	16%
Limite Liquido	LL =	34%
Limite Plastico	LP =	19%
Indice Plastico	IP =	15%

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio terre:
dott. geol. Luciano Rossi

FERRARA DEPARTMENT

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Laboratorio Geotecnico autorizzato con Dec.n. 360 del 04/10/2024, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC

**ANALISI GRANULOMETRICA**

(per setacciatura e sedimentazione) norma A.S.T.M. D 422

COMMITTENTE: **Bierregi S.r.l. per Comune di Peccioli (PI)**CANTIERE: **Fabbrica di Peccioli (PI)**CAMPIONE: **S2-C3** m 12.00 - 12.50

COMMESSA: - DURATA PROVE: 20/01 - 07/02/25

VERBALE ACC.: - DATA CONSEGNA: 20/01/25

GEO - CERT. n°: 0 rev.00 del: 00/01/00

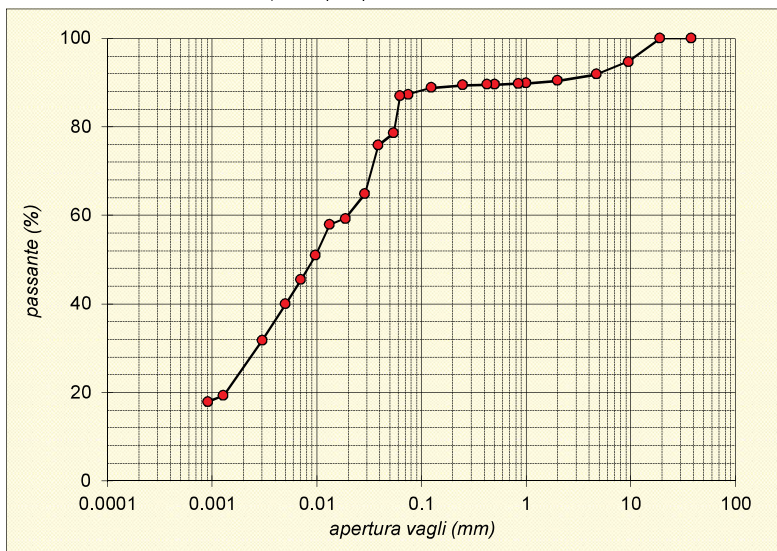
Il campione è stato conservato in vasca umida termostatica Codici strumentazione: bilancia S.FE1490, stufa S.FE1443, densimetro 151H S.FE1426, termometro S.FE2822, mescolatore

ASPETTO MACROSCOPICO DEL CAMPIONE:**Limo con argilla debolmente ghiaioso grigio**

codici	vaglio	trattenuto	trattenuto	cum. tratt.	passante
	(mm)	(g)	(%)	(%)	(%)
S.FE1490	setaccio 38.1	0.00	0.00	0.00	100.00
S.FE1491	setaccio 19.1	0.00	0.00	0.00	100.00
S.FE1492	setaccio 9.51	19.90	5.28	5.28	94.72
S.FE1493	setaccio 4.75	10.66	2.83	8.11	91.89
S.FE1471	setaccio 2	5.20	1.38	9.49	90.51
S.FE1494	setaccio 1	2.28	0.61	10.10	89.90
S.FE1472	setaccio 0.85	0.37	0.10	10.19	89.81
S.FE1495	setaccio 0.5	0.71	0.19	10.38	89.62
S.FE1473	setaccio 0.425	0.23	0.06	10.44	89.56
S.FE1474	setaccio 0.250	0.64	0.17	10.61	89.39
S.FE1497	setaccio 0.125	2.01	0.53	11.15	88.85
S.FE1475	setaccio 0.075	5.67	1.50	12.65	87.35
S.FE1055	setaccio 0.063	1.30	0.35	13.00	87.00
-	calcolato 0.0543	31.67	8.41	21.40	78.60
-	calcolato 0.0389	10.39	2.76	24.16	75.84
-	calcolato 0.0290	41.57	11.03	35.19	64.81
-	calcolato 0.0188	20.78	5.52	40.71	59.29
-	calcolato 0.0133	5.20	1.38	42.08	57.92
-	calcolato 0.0097	25.98	6.89	48.98	51.02
-	calcolato 0.0070	20.78	5.52	54.50	45.50
-	calcolato 0.0051	20.78	5.52	60.01	39.99
-	calcolato 0.0030	31.18	8.27	68.28	31.72
-	calcolato 0.0013	46.76	12.41	80.69	19.31
-	calcolato 0.0009	5.20	1.38	82.07	17.93
-	fondo 67.55	17.93		100.00	0.00
TOTALE		376.81	ϕ max (mm) =		12.6

Passante effettivo setaccio 0.063 (g) in areometro 50.00		
t° C	Tempo (s)	Lettura
20	30	32.0
20	60	31.0
20	120	27.0
20	300	25.0
20	600	24.5
20	1200	22.0
20	2400	20.0
20	4800	18.0
20	14400	15.0
20	86400	10.5
20	172800	10.0
Rapporti granulometrici		
USCS		UNI
GHIAIA	> 4,75 mm	> 2,00 mm
	8.1%	9.5%
SABBIA	> 0,075 mm	> 0,063 mm
	4.5%	3.5%
LIMO	> 2 μ	> 2 μ
	61.6%	61.2%
ARGILLA	< 2 μ	< 2 μ
	25.8%	25.8%

Soluzione disperdente preparata al momento

Io Sperimentatore:
dott. Roberto BellanovaIl Direttore del Laboratorio:
dott. geol. Luciano Rossi

Prove Penetrometriche Statiche con Punta elettrica (CPTe)

BASIC RESULTS

CPTe P3 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_{v0}	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P3		
Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.060	0.03	0.00	0.060	0.05	1	13.73	0.33	0.00	0.33	182.30	0.05	0.00	0	2.14	21.37
0.04	0.350	0.03	0.00	0.350	0.01	1	13.73	0.60	0.00	0.60	580.38	0.01	0.00	0	1.87	64.05
0.06	0.590	0.06	0.00	0.590	0.01	1	13.73	0.88	0.00	0.88	671.98	0.01	0.00	0	1.78	73.77
0.08	0.710	0.06	0.00	0.710	0.01	1	13.73	1.15	0.00	1.15	615.65	0.01	0.00	0	1.80	76.05
0.10	0.840	3.07	0.00	0.840	0.37	4	14.21	1.43	0.00	1.43	586.07	0.37	0.00	6	1.77	76.48
0.12	0.980	10.04	0.00	0.980	1.02	4	15.63	1.74	0.00	1.74	563.50	1.03	0.00	6	1.91	102.89
0.14	1.110	16.67	0.00	1.110	1.50	4	16.26	2.06	0.00	2.06	538.53	1.50	0.00	6	1.98	117.85
0.16	1.200	21.42	0.00	1.200	1.79	4	16.58	2.39	0.00	2.39	501.68	1.79	0.00	5	2.02	122.74
0.18	1.070	28.11	0.00	1.070	2.63	3	16.85	2.72	0.00	2.72	392.09	2.63	0.00	5	2.15	118.72
0.20	1.220	32.99	0.00	1.220	2.70	3	17.09	3.06	0.00	3.06	397.34	2.71	0.00	5	2.15	124.79
0.22	1.400	35.33	0.00	1.400	2.52	4	17.22	3.41	0.00	3.41	409.99	2.53	0.00	5	2.12	128.37
0.24	1.340	34.82	0.00	1.340	2.60	4	17.18	3.75	0.00	3.75	356.26	2.61	0.00	5	2.15	119.78
0.26	1.210	41.83	0.00	1.210	3.46	3	17.36	4.10	0.00	4.10	294.21	3.47	0.00	5	2.25	116.06
0.28	1.140	44.84	0.00	1.140	3.93	3	17.41	4.45	0.00	4.45	255.38	3.95	0.00	8	2.31	110.57
0.30	1.130	46.68	0.00	1.130	4.13	3	17.46	4.80	0.00	4.80	234.64	4.15	0.00	9	2.33	107.88
0.32	1.110	47.82	0.00	1.110	4.31	3	17.48	5.15	0.00	5.15	214.73	4.33	0.00	9	2.36	103.44
0.34	1.200	49.21	0.00	1.200	4.10	3	17.54	5.50	0.00	5.50	217.31	4.12	0.00	9	2.34	104.22
0.36	1.050	52.79	0.00	1.050	5.03	3	17.57	5.85	0.00	5.85	178.54	5.06	0.00	9	2.43	95.97
0.38	0.970	56.28	0.00	0.970	5.80	3	17.61	6.20	0.00	6.20	155.44	5.84	0.00	9	2.50	90.60
0.40	0.890	53.77	0.00	0.890	6.04	3	17.53	6.55	0.00	6.55	134.86	6.09	0.00	9	2.54	82.69
0.42	0.780	54.44	0.00	0.780	6.98	3	17.49	6.90	0.00	6.90	112.03	7.04	0.00	9	2.61	74.91
0.44	0.760	50.89	0.00	0.760	6.70	3	17.40	7.25	0.00	7.25	103.83	6.76	0.00	9	2.62	70.22
0.46	0.910	48.07	0.00	0.910	5.28	3	17.41	7.60	0.00	7.60	118.77	5.33	0.00	9	2.52	73.82
0.48	0.930	42.27	0.00	0.930	4.55	3	17.27	7.94	0.00	7.94	116.07	4.58	0.00	4	2.48	70.30
0.50	0.830	39.96	0.00	0.830	4.81	3	17.16	8.29	0.00	8.29	99.15	4.86	0.00	4	2.53	63.42
0.52	0.970	35.97	0.00	0.970	3.71	3	17.10	8.63	0.00	8.63	111.40	3.74	0.00	4	2.44	65.75
0.54	0.830	31.94	0.00	0.830	3.85	3	16.90	8.97	0.00	8.97	91.53	3.89	0.00	4	2.49	57.22
0.56	0.770	32.86	0.00	0.770	4.27	3	16.90	9.31	0.00	9.31	81.72	4.32	0.00	4	2.54	53.88
0.58	0.740	31.62	0.00	0.740	4.27	3	16.85	9.65	0.00	9.65	75.72	4.33	0.00	4	2.56	51.01
0.60	0.730	30.45	0.00	0.730	4.17	3	16.80	9.98	0.00	9.98	72.13	4.23	0.00	4	2.56	49.08
0.62	0.700	27.50	0.00	0.700	3.93	3	16.66	10.32	0.00	10.32	66.86	3.99	0.00	4	2.57	45.85
0.64	0.730	22.69	0.00	0.730	3.11	3	16.46	10.64	0.00	10.64	67.58	3.15	0.00	4	2.51	44.29
0.66	0.690	19.77	0.00	0.690	2.87	3	16.28	10.97	0.00	10.97	61.89	2.91	0.00	4	2.51	40.88
0.68	0.840	19.58	0.00	0.840	2.33	3	16.34	11.30	0.00	11.30	73.35	2.36	0.00	5	2.42	45.15
0.70	0.750	16.29	0.00	0.750	2.17	3	16.09	11.62	0.00	11.62	63.54	2.21	0.00	5	2.44	40.03
0.72	0.770	16.22	0.00	0.770	2.11	3	16.09	11.94	0.00	11.94	63.47	2.14	0.00	5	2.43	39.97
0.74	1.130	16.29	0.00	1.130	1.44	4	16.24	12.27	0.00	12.27	91.12	1.46	0.00	5	2.25	50.04
0.76	3.820	21.77	0.00	3.820	0.57	5	17.05	12.61	0.00	12.61	302.05	0.57	0.00	6	1.73	110.43
0.78	3.860	29.03	0.00	3.860	0.75	5	17.38	12.95	0.00	12.95	297.08	0.75	0.00	6	1.79	115.12
0.80	3.520	24.05	0.00	3.520	0.68	5	17.13	13.29	0.00	13.29	263.77	0.69	0.00	6	1.80	104.24
0.82	3.690	12.58	0.00	3.690	0.34	6	16.40	13.62	0.00	13.62	269.84	0.34	0.00	6	1.66	97.40
0.84	3.350	8.87	0.00	3.350	0.26	6	15.96	13.95	0.00	13.95	239.17	0.27	0.00	6	1.66	87.20
0.86	2.750	6.81	0.00	2.750	0.25	5	15.58	14.27	0.00	14.27	191.78	0.25	0.00	6	1.72	73.79
0.88	2.750	6.81	0.00	2.750	0.25	5	15.58	14.58	0.00	14.58	187.66	0.25	0.00	6	1.72	73.19
0.90	2.290	49.56	0.00	2.290	2.16	4	17.80	14.93	0.00	14.93	152.37	2.18	0.00	5	2.19	85.01

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	2.550	48.86	0.00	2.550	1.92	4	17.82	15.29	0.00	15.29	165.80	1.93	0.00	5	2.14	89.68
0.94	1.180	40.59	0.00	1.180	3.44	3	17.31	15.64	0.00	15.64	74.47	3.49	0.00	4	2.49	51.94
0.96	0.600	58.53	0.00	0.600	9.76	2	17.47	15.99	0.00	15.99	36.53	10.02	0.00	3	2.94	35.13
0.98	0.830	56.72	0.00	0.830	6.83	3	17.56	16.34	0.00	16.34	49.80	6.97	0.00	3	2.77	42.41
1.00	1.010	53.96	0.00	1.010	5.34	3	17.58	16.69	0.00	16.69	59.52	5.43	0.00	4	2.66	47.07
1.02	1.060	53.30	0.00	1.060	5.03	3	17.58	17.04	0.00	17.04	61.20	5.11	0.00	4	2.63	47.77
1.04	1.000	46.07	0.00	1.000	4.61	3	17.39	17.39	0.00	17.39	56.51	4.69	0.00	4	2.63	44.13
1.06	1.020	47.82	0.00	1.020	4.69	3	17.44	17.74	0.00	17.74	56.50	4.77	0.00	4	2.63	44.38
1.08	1.050	33.81	0.00	1.050	3.22	3	17.06	18.08	0.00	18.08	57.06	3.28	0.00	4	2.53	42.12
1.10	2.030	32.89	0.00	2.030	1.62	4	17.28	18.43	0.00	18.43	109.16	1.64	0.00	5	2.19	65.12
1.12	1.680	31.53	0.00	1.680	1.88	4	17.16	18.77	0.00	18.77	88.50	1.90	0.00	5	2.28	56.25
1.14	1.040	68.86	0.00	1.040	6.62	3	17.87	19.13	0.00	19.13	53.37	6.75	0.00	3	2.74	45.34
1.16	1.050	70.06	0.00	1.050	6.67	3	17.89	19.49	0.00	19.49	52.88	6.80	0.00	3	2.74	45.13
1.18	1.890	80.55	0.00	1.890	4.26	3	18.28	19.85	0.00	19.85	94.20	4.31	0.00	4	2.47	68.26
1.20	1.930	73.10	0.00	1.930	3.79	3	18.18	20.22	0.00	20.22	94.46	3.83	0.00	4	2.44	67.29
1.22	1.970	66.86	0.00	1.970	3.39	4	18.08	20.58	0.00	20.58	94.73	3.43	0.00	4	2.41	66.48
1.24	1.040	73.17	0.00	1.040	7.04	3	17.94	20.94	0.00	20.94	48.67	7.18	0.00	3	2.77	42.73
1.26	0.810	77.86	0.00	0.810	9.61	3	17.92	21.30	0.00	21.30	37.04	9.87	0.00	3	2.93	35.75
1.28	0.750	60.59	0.00	0.750	8.08	3	17.60	21.65	0.00	21.65	33.65	8.32	0.00	3	2.90	32.07
1.30	0.840	56.34	0.00	0.840	6.71	3	17.56	22.00	0.00	22.00	37.18	6.89	0.00	3	2.83	33.87
1.32	0.930	52.13	0.00	0.930	5.61	3	17.51	22.35	0.00	22.35	40.61	5.74	0.00	3	2.76	35.54
1.34	0.940	50.42	0.00	0.940	5.36	3	17.47	22.70	0.00	22.70	40.41	5.50	0.00	3	2.75	35.21
1.36	0.950	46.14	0.00	0.950	4.86	3	17.38	23.05	0.00	23.05	40.22	4.98	0.00	3	2.72	34.61
1.38	0.900	41.92	0.00	0.900	4.66	3	17.24	23.39	0.00	23.39	37.47	4.78	0.00	3	2.73	32.44
1.40	0.880	42.37	0.00	0.880	4.81	3	17.25	23.74	0.00	23.74	36.07	4.95	0.00	3	2.75	31.60
1.42	0.900	43.03	0.00	0.900	4.78	3	17.27	24.08	0.00	24.08	36.37	4.91	0.00	3	2.74	31.84
1.44	0.980	43.60	0.00	0.980	4.45	3	17.32	24.43	0.00	24.43	39.12	4.56	0.00	4	2.70	33.58
1.46	1.100	46.93	0.00	1.100	4.27	3	17.45	24.78	0.00	24.78	43.39	4.36	0.00	4	2.66	36.54
1.48	4.170	49.02	0.00	4.170	1.18	5	18.01	25.14	0.00	25.14	164.89	1.18	0.00	6	1.97	96.64
1.50	4.750	46.90	0.00	4.750	0.99	5	18.01	25.50	0.00	25.50	185.29	0.99	0.00	6	1.89	104.95
1.52	4.520	39.86	0.00	4.520	0.88	5	17.81	25.85	0.00	25.85	173.82	0.89	0.00	6	1.88	98.56
1.54	3.920	55.55	0.00	3.920	1.42	5	18.13	26.22	0.00	26.22	148.52	1.43	0.00	5	2.04	91.79
1.56	3.720	69.87	0.00	3.720	1.88	5	18.38	26.58	0.00	26.58	138.94	1.89	0.00	5	2.13	90.13
1.58	2.930	84.38	0.00	2.930	2.88	4	18.50	26.95	0.00	26.95	107.71	2.91	0.00	5	2.31	76.92
1.60	1.390	144.65	0.00	1.390	10.41	3	18.84	27.32	0.00	27.32	49.87	10.62	0.00	3	2.87	47.34
1.62	1.640	139.39	0.00	1.640	8.50	3	18.86	27.70	0.00	27.70	58.20	8.65	0.00	3	2.78	52.63
1.64	1.700	139.84	0.00	1.700	8.23	3	18.87	28.08	0.00	28.08	59.54	8.36	0.00	3	2.76	53.50
1.66	1.570	138.60	0.00	1.570	8.83	3	18.83	28.46	0.00	28.46	54.17	8.99	0.00	3	2.80	49.87
1.68	1.400	124.37	0.00	1.400	8.88	3	18.67	28.83	0.00	28.83	47.56	9.07	0.00	3	2.84	44.53
1.70	1.360	116.61	0.00	1.360	8.57	3	18.58	29.20	0.00	29.20	45.57	8.76	0.00	3	2.84	42.71
1.72	1.290	108.97	0.00	1.290	8.45	3	18.48	29.57	0.00	29.57	42.62	8.65	0.00	3	2.85	40.21
1.74	1.130	61.82	0.00	1.130	5.47	3	17.78	29.93	0.00	29.93	36.75	5.62	0.00	3	2.77	33.36
1.76	1.120	65.21	0.00	1.120	5.82	3	17.84	30.29	0.00	30.29	35.98	5.98	0.00	3	2.79	33.04
1.78	1.610	65.94	0.00	1.610	4.10	3	17.99	30.65	0.00	30.65	51.53	4.18	0.00	4	2.60	43.39
1.80	1.870	61.03	0.00	1.870	3.26	4	17.96	31.01	0.00	31.01	59.31	3.32	0.00	4	2.50	47.83
1.82	1.990	55.96	0.00	1.990	2.81	4	17.88	31.37	0.00	31.37	62.44	2.86	0.00	5	2.44	49.28
1.84	1.760	56.59	0.00	1.760	3.22	4	17.85	31.72	0.00	31.72	54.48	3.27	0.00	4	2.52	44.50
1.86	1.500	68.16	0.00	1.500	4.54	3	18.00	32.08	0.00	32.08	45.75	4.64	0.00	4	2.66	39.82
1.88	1.500	68.16	0.00	1.500	4.54	3	18.00	32.44	0.00	32.44	45.24	4.64	0.00	4	2.66	39.48
1.90	1.230	70.25	0.00	1.230	5.71	3	17.96	32.80	0.00	32.80	36.50	5.87	0.00	3	2.78	33.60
1.92	1.180	65.94	0.00	1.180	5.59	3	17.87	33.16	0.00	33.16	34.59	5.75	0.00	3	2.79	31.98
1.94	1.120	67.49	0.00	1.120	6.03	3	17.88	33.52	0.00	33.52	32.42	6.21	0.00	3	2.83	30.53
1.96	1.140	63.88	0.00	1.140	5.60	3	17.82	33.87	0.00	33.87	32.66	5.78	0.00	3	2.81	30.50
1.98	1.160	55.68	0.00	1.160	4.80	3	17.67	34.23	0.00	34.23	32.89	4.95	0.00	3	2.76	30.16
2.00	1.190	50.76	0.00	1.190	4.27	3	17.57	34.58	0.00	34.58	33.41	4.39	0.00	4	2.73	30.22

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	1.290	45.85	0.00	1.290	3.55	3	17.49	34.93	0.00	34.93	35.93	3.65	0.00	4	2.66	31.65
2.04	1.340	41.61	0.00	1.340	3.11	3	17.39	35.28	0.00	35.28	36.98	3.19	0.00	4	2.61	32.06
2.06	1.360	43.35	0.00	1.360	3.19	3	17.44	35.63	0.00	35.63	37.17	3.27	0.00	4	2.62	32.34
2.08	1.390	44.62	0.00	1.390	3.21	3	17.48	35.98	0.00	35.98	37.64	3.30	0.00	4	2.62	32.76
2.10	1.330	54.15	0.00	1.330	4.07	3	17.69	36.33	0.00	36.33	35.61	4.19	0.00	4	2.69	31.99
2.12	1.270	60.81	0.00	1.270	4.79	3	17.80	36.68	0.00	36.68	33.62	4.93	0.00	3	2.75	30.93
2.14	1.210	67.24	0.00	1.210	5.56	3	17.90	37.04	0.00	37.04	31.67	5.73	0.00	3	2.81	29.83
2.16	1.210	67.18	0.00	1.210	5.55	3	17.90	37.40	0.00	37.40	31.35	5.73	0.00	3	2.81	29.59
2.18	1.230	65.18	0.00	1.230	5.30	3	17.87	37.76	0.00	37.76	31.58	5.47	0.00	3	2.80	29.66
2.20	1.180	67.59	0.00	1.180	5.73	3	17.90	38.12	0.00	38.12	29.96	5.92	0.00	3	2.83	28.53
2.22	1.220	67.11	0.00	1.220	5.50	3	17.90	38.47	0.00	38.47	30.71	5.68	0.00	3	2.82	29.07
2.24	1.260	61.60	0.00	1.260	4.89	3	17.82	38.83	0.00	38.83	31.45	5.04	0.00	3	2.78	29.38
2.26	1.360	59.86	0.00	1.360	4.40	3	17.81	39.19	0.00	39.19	33.71	4.53	0.00	4	2.73	30.94
2.28	1.370	57.58	0.00	1.370	4.20	3	17.77	39.54	0.00	39.54	33.65	4.33	0.00	4	2.72	30.78
2.30	1.380	55.90	0.00	1.380	4.05	3	17.74	39.90	0.00	39.90	33.59	4.17	0.00	4	2.71	30.66
2.32	1.310	58.50	0.00	1.310	4.47	3	17.77	40.25	0.00	40.25	31.54	4.61	0.00	3	2.75	29.30
2.34	1.260	64.20	0.00	1.260	5.10	3	17.86	40.61	0.00	40.61	30.03	5.26	0.00	3	2.80	28.39
2.36	1.180	73.04	0.00	1.180	6.19	3	17.99	40.97	0.00	40.97	27.80	6.41	0.00	3	2.88	26.98
2.38	1.070	82.32	0.00	1.070	7.69	3	18.09	41.33	0.00	41.33	24.89	8.00	0.00	3	2.97	24.89
2.40	1.030	85.72	0.00	1.030	8.32	3	18.12	41.69	0.00	41.69	23.71	8.67	0.00	3	3.01	23.71
2.42	1.030	83.18	0.00	1.030	8.08	3	18.08	42.05	0.00	42.05	23.49	8.42	0.00	3	3.00	23.49
2.44	1.000	79.35	0.00	1.000	7.93	3	18.02	42.41	0.00	42.41	22.58	8.29	0.00	3	3.01	22.58
2.46	0.920	70.66	0.00	0.920	7.68	3	17.85	42.77	0.00	42.77	20.51	8.05	0.00	3	3.03	20.51
2.48	0.870	61.57	0.00	0.870	7.08	3	17.67	43.13	0.00	43.13	19.17	7.45	0.00	3	3.03	19.17
2.50	0.840	53.96	0.00	0.840	6.42	3	17.51	43.48	0.00	43.48	18.32	6.77	0.00	3	3.01	18.32
2.52	0.880	43.44	0.00	0.880	4.94	3	17.28	43.83	0.00	43.83	19.08	5.20	0.00	3	2.93	18.87
2.54	0.950	37.14	0.00	0.950	3.91	3	17.13	44.17	0.00	44.17	20.51	4.10	0.00	3	2.84	19.78
2.56	0.980	31.34	0.00	0.980	3.20	3	16.94	44.51	0.00	44.51	21.02	3.35	0.00	4	2.79	19.93
2.58	0.970	29.72	0.00	0.970	3.06	3	16.88	44.85	0.00	44.85	20.63	3.21	0.00	4	2.78	19.54
2.60	0.960	29.63	0.00	0.960	3.09	3	16.87	45.18	0.00	45.18	20.25	3.24	0.00	4	2.79	19.24
2.62	0.950	25.83	0.00	0.950	2.72	3	16.71	45.52	0.00	45.52	19.87	2.86	0.00	4	2.76	18.75
2.64	0.960	21.17	0.00	0.960	2.21	3	16.48	45.85	0.00	45.85	19.94	2.32	0.00	4	2.71	18.54
2.66	1.030	19.52	0.00	1.030	1.90	4	16.42	46.18	0.00	46.18	21.30	1.98	0.00	4	2.66	19.49
2.68	1.050	25.70	0.00	1.050	2.45	3	16.74	46.51	0.00	46.51	21.57	2.56	0.00	4	2.71	20.08
2.70	1.080	25.60	0.00	1.080	2.37	3	16.75	46.85	0.00	46.85	22.05	2.48	0.00	4	2.70	20.45
2.72	1.070	27.03	0.00	1.070	2.53	3	16.81	47.18	0.00	47.18	21.68	2.64	0.00	4	2.72	20.25
2.74	1.110	27.03	0.00	1.110	2.44	3	16.82	47.52	0.00	47.52	22.36	2.54	0.00	4	2.70	20.78
2.76	1.110	29.31	0.00	1.110	2.64	3	16.91	47.86	0.00	47.86	22.19	2.76	0.00	4	2.72	20.78
2.78	1.070	30.67	0.00	1.070	2.87	3	16.95	48.20	0.00	48.20	21.20	3.00	0.00	4	2.75	20.05
2.80	1.030	32.23	0.00	1.030	3.13	3	16.99	48.54	0.00	48.54	20.22	3.28	0.00	4	2.79	19.33
2.82	1.010	31.85	0.00	1.010	3.15	3	16.97	48.87	0.00	48.87	19.66	3.31	0.00	4	2.80	18.87
2.84	0.990	34.76	0.00	0.990	3.51	3	17.07	49.22	0.00	49.22	19.12	3.69	0.00	3	2.84	18.52
2.86	1.020	35.17	0.00	1.020	3.45	3	17.09	49.56	0.00	49.56	19.58	3.62	0.00	3	2.82	18.92
2.88	1.020	35.17	0.00	1.020	3.45	3	17.09	49.90	0.00	49.90	19.44	3.63	0.00	3	2.83	18.81
2.90	1.380	35.97	0.00	1.380	2.61	4	17.23	50.24	0.00	50.24	26.47	2.71	0.00	4	2.66	24.49
2.92	1.450	36.09	0.00	1.450	2.49	4	17.26	50.59	0.00	50.59	27.66	2.58	0.00	4	2.63	25.45
2.94	1.490	36.66	0.00	1.490	2.46	4	17.28	50.93	0.00	50.93	28.25	2.55	0.00	4	2.62	25.95
2.96	1.450	43.63	0.00	1.450	3.01	3	17.47	51.28	0.00	51.28	27.27	3.12	0.00	4	2.68	25.49
2.98	1.520	53.81	0.00	1.520	3.54	3	17.73	51.64	0.00	51.64	28.44	3.66	0.00	4	2.71	26.79
3.00	1.560	66.99	0.00	1.560	4.29	3	17.99	52.00	0.00	52.00	29.00	4.44	0.00	3	2.76	27.65
3.02	1.540	77.54	0.00	1.540	5.04	3	18.16	52.36	0.10	52.26	28.47	5.21	0.00	3	2.81	27.48
3.04	1.520	76.81	0.00	1.520	5.05	3	18.14	52.72	0.29	52.43	27.99	5.23	0.00	3	2.81	27.07
3.06	1.420	87.55	0.00	1.420	6.17	3	18.27	53.09	0.49	52.60	25.99	6.40	0.00	3	2.89	25.62
3.08	1.310	102.86	0.00	1.310	7.85	3	18.42	53.45	0.69	52.77	23.81	8.19	0.00	3	2.99	23.81
3.10	1.240	102.10	0.00	1.240	8.23	3	18.39	53.82	0.88	52.94	22.41	8.61	0.00	3	3.02	22.41

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	1.230	92.08	0.00	1.230	7.49	3	18.27	54.19	1.08	53.11	22.14	7.83	0.00	3	3.00	22.14
3.14	1.240	85.40	0.00	1.240	6.89	3	18.19	54.55	1.28	53.28	22.25	7.20	0.00	3	2.97	22.25
3.16	1.270	79.41	0.00	1.270	6.25	3	18.11	54.92	1.47	53.44	22.74	6.54	0.00	3	2.94	22.66
3.18	1.280	77.76	0.00	1.280	6.08	3	18.09	55.28	1.67	53.61	22.85	6.35	0.00	3	2.93	22.71
3.20	1.250	72.09	0.00	1.250	5.77	3	17.99	55.64	1.86	53.77	22.21	6.04	0.00	3	2.92	22.06
3.22	1.270	64.90	0.00	1.270	5.11	3	17.88	56.00	2.06	53.94	22.51	5.35	0.00	3	2.88	22.17
3.24	1.300	61.54	0.00	1.300	4.73	3	17.83	56.35	2.26	54.10	22.99	4.95	0.00	3	2.85	22.50
3.26	1.250	65.85	0.00	1.250	5.27	3	17.89	56.71	2.45	54.26	21.99	5.52	0.00	3	2.90	21.74
3.28	1.240	71.17	0.00	1.240	5.74	3	17.98	57.07	2.65	54.42	21.74	6.02	0.00	3	2.93	21.62
3.30	1.240	70.85	0.00	1.240	5.71	3	17.97	57.43	2.84	54.58	21.67	5.99	0.00	3	2.92	21.55
3.32	1.200	68.26	0.00	1.200	5.69	3	17.92	57.79	3.04	54.75	20.86	5.98	0.00	3	2.94	20.81
3.34	1.140	68.29	0.00	1.140	5.99	3	17.90	58.14	3.24	54.91	19.70	6.31	0.00	3	2.97	19.70
3.36	1.030	67.75	0.00	1.030	6.58	3	17.85	58.50	3.43	55.07	17.64	6.97	0.00	3	3.03	17.64
3.38	0.940	59.98	0.00	0.940	6.38	3	17.67	58.86	3.63	55.23	15.96	6.81	0.00	3	3.06	15.96
3.40	0.910	54.50	0.00	0.910	5.99	3	17.55	59.21	3.83	55.38	15.36	6.41	0.00	3	3.05	15.36
3.42	0.940	44.52	0.00	0.940	4.74	3	17.33	59.56	4.02	55.53	15.85	5.06	0.00	3	2.98	15.85
3.44	1.110	37.42	0.00	1.110	3.37	3	17.19	59.90	4.22	55.68	18.86	3.56	0.00	3	2.83	18.38
3.46	1.220	33.62	0.00	1.220	2.76	3	17.11	60.24	4.41	55.83	20.77	2.90	0.00	4	2.75	19.88
3.48	1.310	29.31	0.00	1.310	2.24	4	16.98	60.58	4.61	55.97	22.32	2.35	0.00	4	2.67	21.02
3.50	1.340	26.24	0.00	1.340	1.96	4	16.86	60.92	4.81	56.11	22.79	2.05	0.00	4	2.63	21.29
3.52	1.400	22.63	0.00	1.400	1.62	4	16.71	61.26	5.00	56.25	23.80	1.69	0.00	4	2.57	21.94
3.54	1.240	19.61	0.00	1.240	1.58	4	16.49	61.59	5.20	56.39	20.90	1.66	0.00	4	2.61	19.44
3.56	1.020	19.36	0.00	1.020	1.90	4	16.40	61.92	5.40	56.52	16.95	2.02	-0.01	4	2.73	16.18
3.58	0.900	18.60	0.00	0.900	2.07	3	16.31	62.24	5.59	56.65	14.79	2.22	-0.01	4	2.79	14.32
3.60	0.880	18.06	0.00	0.880	2.05	3	16.27	62.57	5.79	56.78	14.40	2.21	-0.01	4	2.80	13.97
3.62	0.920	18.92	0.00	0.920	2.06	3	16.34	62.89	5.98	56.91	15.06	2.21	-0.01	4	2.79	14.57
3.64	1.010	18.51	0.00	1.010	1.83	4	16.35	63.22	6.18	57.04	16.60	1.96	-0.01	4	2.73	15.85
3.66	1.080	20.06	0.00	1.080	1.86	4	16.47	63.55	6.38	57.17	17.78	1.97	-0.01	4	2.71	16.91
3.68	1.100	22.53	0.00	1.100	2.05	4	16.61	63.88	6.57	57.31	18.08	2.17	-0.01	4	2.72	17.26
3.70	1.130	27.19	0.00	1.130	2.41	3	16.83	64.22	6.77	57.45	18.55	2.55	-0.01	4	2.75	17.82
3.72	1.130	32.13	0.00	1.130	2.84	3	17.03	64.56	6.97	57.59	18.50	3.02	-0.01	4	2.79	17.93
3.74	1.170	34.35	0.00	1.170	2.94	3	17.12	64.90	7.16	57.74	19.14	3.11	-0.01	4	2.79	18.54
3.76	1.180	39.86	0.00	1.180	3.38	3	17.29	65.24	7.36	57.89	19.26	3.58	-0.01	3	2.82	18.79
3.78	1.130	48.51	0.00	1.130	4.29	3	17.50	65.59	7.55	58.04	18.34	4.56	-0.01	3	2.90	18.18
3.80	1.140	51.05	0.00	1.140	4.48	3	17.56	65.94	7.75	58.19	18.46	4.75	-0.01	3	2.91	18.34
3.82	1.130	51.05	0.00	1.130	4.52	3	17.56	66.30	7.95	58.35	18.23	4.80	-0.01	3	2.92	18.14
3.84	1.100	46.11	0.00	1.100	4.19	3	17.43	66.65	8.14	58.50	17.66	4.46	-0.01	3	2.91	17.54
3.86	1.110	46.90	0.00	1.110	4.23	3	17.45	66.99	8.34	58.66	17.78	4.50	-0.01	3	2.91	17.66
3.88	1.110	46.90	0.00	1.110	4.23	3	17.45	67.34	8.53	58.81	17.73	4.50	-0.01	3	2.91	17.61
3.90	0.970	39.83	0.00	0.970	4.11	3	17.21	67.69	8.73	58.96	15.30	4.41	-0.01	3	2.95	15.30
3.92	0.940	35.62	0.00	0.940	3.79	3	17.07	68.03	8.93	59.10	14.75	4.09	-0.01	3	2.94	14.75
3.94	0.940	31.72	0.00	0.940	3.37	3	16.94	68.37	9.12	59.25	14.71	3.64	-0.01	3	2.91	14.63
3.96	0.920	28.90	0.00	0.920	3.14	3	16.83	68.71	9.32	59.39	14.33	3.39	-0.01	3	2.90	14.23
3.98	0.900	28.65	0.00	0.900	3.18	3	16.81	69.04	9.52	59.53	13.96	3.45	-0.01	3	2.92	13.89
4.00	0.920	25.95	0.00	0.920	2.82	3	16.70	69.38	9.71	59.67	14.26	3.05	-0.01	3	2.88	14.09
4.02	0.950	24.94	0.00	0.950	2.63	3	16.67	69.71	9.91	59.80	14.72	2.83	-0.01	4	2.85	14.47
4.04	1.020	20.25	0.00	1.020	1.99	4	16.46	70.04	10.10	59.94	15.85	2.13	-0.01	4	2.76	15.31
4.06	1.050	20.82	0.00	1.050	1.98	4	16.50	70.37	10.30	60.07	16.31	2.13	-0.01	4	2.75	15.72
4.08	1.090	21.17	0.00	1.090	1.94	4	16.53	70.70	10.50	60.21	16.93	2.08	-0.01	4	2.73	16.27
4.10	1.110	23.29	0.00	1.110	2.10	4	16.65	71.03	10.69	60.34	17.22	2.24	-0.01	4	2.74	16.59
4.12	1.150	23.61	0.00	1.150	2.05	4	16.68	71.37	10.89	60.48	17.83	2.19	-0.01	4	2.73	17.13
4.14	1.180	24.40	0.00	1.180	2.07	4	16.73	71.70	11.09	60.62	18.28	2.20	-0.01	4	2.72	17.54
4.16	1.280	29.88	0.00	1.280	2.33	4	16.99	72.04	11.28	60.76	19.88	2.47	-0.01	4	2.72	19.08
4.18	1.420	34.25	0.00	1.420	2.41	4	17.19	72.38	11.48	60.90	22.13	2.54	-0.01	4	2.69	21.12
4.20	1.500	37.33	0.00	1.500	2.49	4	17.31	72.73	11.67	61.05	23.38	2.62	-0.01	4	2.68	22.28

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	1.320	46.93	0.00	1.320	3.56	3	17.52	73.08	11.87	61.21	20.37	3.76	-0.01	3	2.82	19.92
4.24	1.200	50.83	0.00	1.200	4.24	3	17.58	73.43	12.07	61.36	18.36	4.51	-0.01	3	2.90	18.22
4.26	1.130	53.62	0.00	1.130	4.75	3	17.62	73.78	12.26	61.52	17.17	5.08	-0.01	3	2.95	17.17
4.28	1.190	53.33	0.00	1.190	4.48	3	17.63	74.13	12.46	61.68	18.09	4.78	-0.01	3	2.92	18.02
4.30	1.370	46.80	0.00	1.370	3.42	3	17.53	74.49	12.65	61.83	20.95	3.61	-0.01	4	2.80	20.42
4.32	1.830	45.63	0.00	1.830	2.49	4	17.61	74.84	12.85	61.99	28.32	2.60	-0.01	4	2.62	26.72
4.34	2.070	34.73	0.00	2.070	1.68	4	17.35	75.19	13.05	62.14	32.10	1.74	-0.01	5	2.48	29.53
4.36	2.530	37.84	0.00	2.530	1.50	5	17.52	75.54	13.24	62.29	39.40	1.54	-0.01	5	2.38	35.63
4.38	2.230	42.08	0.00	2.230	1.89	4	17.60	75.89	13.44	62.45	34.49	1.95	-0.01	5	2.48	31.79
4.40	1.940	48.32	0.00	1.940	2.49	4	17.70	76.24	13.64	62.61	29.77	2.59	-0.01	4	2.60	28.04
4.42	1.740	53.52	0.00	1.740	3.08	4	17.78	76.60	13.83	62.76	26.50	3.22	-0.01	4	2.69	25.39
4.44	1.610	57.23	0.00	1.610	3.55	3	17.83	76.95	14.03	62.92	24.36	3.73	-0.01	4	2.76	23.61
4.46	1.580	57.04	0.00	1.580	3.61	3	17.81	77.31	14.22	63.08	23.82	3.80	-0.01	4	2.77	23.14
4.48	1.560	56.06	0.00	1.560	3.59	3	17.79	77.67	14.42	63.24	23.44	3.78	-0.01	4	2.77	22.79
4.50	1.550	55.68	0.00	1.550	3.59	3	17.78	78.02	14.62	63.40	23.22	3.78	-0.01	4	2.78	22.59
4.52	1.490	54.72	0.00	1.490	3.67	3	17.74	78.38	14.81	63.56	22.21	3.88	-0.01	3	2.80	21.69
4.54	1.440	52.73	0.00	1.440	3.66	3	17.69	78.73	15.01	63.72	21.36	3.87	-0.01	3	2.81	20.91
4.56	1.370	51.65	0.00	1.370	3.77	3	17.65	79.08	15.21	63.88	20.21	4.00	-0.01	3	2.83	19.87
4.58	1.340	53.65	0.00	1.340	4.00	3	17.68	79.44	15.40	64.04	19.69	4.26	-0.01	3	2.86	19.44
4.60	1.380	56.56	0.00	1.380	4.10	3	17.75	79.79	15.60	64.19	20.25	4.35	-0.01	3	2.86	19.99
4.62	1.430	57.35	0.00	1.430	4.01	3	17.78	80.15	15.79	64.35	20.98	4.25	-0.01	3	2.84	20.65
4.64	1.530	57.77	0.00	1.530	3.78	3	17.82	80.50	15.99	64.51	22.47	3.99	-0.01	3	2.80	21.98
4.66	1.610	61.22	0.00	1.610	3.80	3	17.90	80.86	16.19	64.67	23.64	4.00	-0.01	3	2.79	23.07
4.68	1.570	63.41	0.00	1.570	4.04	3	17.93	81.22	16.38	64.84	22.96	4.26	-0.01	3	2.81	22.51
4.70	1.490	67.88	0.00	1.490	4.56	3	17.99	81.58	16.58	65.00	21.67	4.82	-0.01	3	2.86	21.42
4.72	1.390	69.62	0.00	1.390	5.01	3	17.99	81.94	16.78	65.16	20.07	5.32	-0.01	3	2.91	20.01
4.74	1.320	66.77	0.00	1.320	5.06	3	17.93	82.30	16.97	65.33	18.95	5.39	-0.01	3	2.94	18.95
4.76	1.300	61.57	0.00	1.300	4.74	3	17.83	82.66	17.17	65.49	18.59	5.06	-0.01	3	2.92	18.56
4.78	1.290	55.74	0.00	1.290	4.32	3	17.71	83.01	17.36	65.65	18.39	4.62	-0.01	3	2.90	18.30
4.80	1.310	49.97	0.00	1.310	3.81	3	17.59	83.36	17.56	65.80	18.64	4.07	-0.01	3	2.86	18.44
4.82	1.310	48.58	0.00	1.310	3.71	3	17.56	83.71	17.76	65.96	18.59	3.96	-0.01	3	2.86	18.38
4.84	1.250	50.61	0.00	1.250	4.05	3	17.59	84.07	17.95	66.11	17.64	4.34	-0.02	3	2.90	17.55
4.86	1.310	44.52	0.00	1.310	3.40	3	17.46	84.42	18.15	66.27	18.49	3.63	-0.01	3	2.84	18.22
4.88	1.310	44.52	0.00	1.310	3.40	3	17.46	84.76	18.34	66.42	18.45	3.63	-0.01	3	2.84	18.18
4.90	1.420	42.65	0.00	1.420	3.00	3	17.44	85.11	18.54	66.57	20.05	3.20	-0.01	4	2.78	19.58
4.92	1.470	43.51	0.00	1.470	2.96	3	17.48	85.46	18.74	66.73	20.75	3.14	-0.01	4	2.76	20.22
4.94	1.490	50.10	0.00	1.490	3.36	3	17.64	85.81	18.93	66.88	21.00	3.57	-0.01	4	2.79	20.55
4.96	1.460	56.37	0.00	1.460	3.86	3	17.77	86.17	19.13	67.04	20.49	4.10	-0.01	3	2.84	20.20
4.98	1.450	63.25	0.00	1.450	4.36	3	17.90	86.53	19.33	67.20	20.29	4.64	-0.01	3	2.87	20.11
5.00	1.500	70.00	0.00	1.500	4.67	3	18.03	86.89	19.52	67.37	20.98	4.95	-0.01	3	2.88	20.82
5.02	1.480	80.71	0.00	1.480	5.45	3	18.19	87.25	19.72	67.53	20.62	5.80	-0.01	3	2.93	20.62
5.04	1.470	84.89	0.00	1.470	5.77	3	18.24	87.62	19.91	67.70	20.42	6.14	-0.01	3	2.95	20.42
5.06	1.510	84.23	0.00	1.510	5.58	3	18.25	87.98	20.11	67.87	20.95	5.92	-0.01	3	2.93	20.95
5.08	1.460	89.55	0.00	1.460	6.13	3	18.30	88.35	20.31	68.04	20.16	6.53	-0.01	3	2.97	20.16
5.10	1.450	91.17	0.00	1.450	6.29	3	18.32	88.71	20.50	68.21	19.96	6.70	-0.02	3	2.98	19.96
5.12	1.450	89.52	0.00	1.450	6.17	3	18.30	89.08	20.70	68.38	19.90	6.58	-0.02	3	2.98	19.90
5.14	1.460	88.69	0.00	1.460	6.07	3	18.29	89.44	20.90	68.55	19.99	6.47	-0.02	3	2.97	19.99
5.16	1.420	87.30	0.00	1.420	6.15	3	18.26	89.81	21.09	68.72	19.36	6.56	-0.02	3	2.99	19.36
5.18	1.330	87.27	0.00	1.330	6.56	3	18.24	90.17	21.29	68.89	18.00	7.04	-0.02	3	3.03	18.00
5.20	1.350	79.12	0.00	1.350	5.86	3	18.13	90.54	21.48	69.05	18.24	6.28	-0.02	3	2.99	18.24
5.22	1.320	74.78	0.00	1.320	5.67	3	18.06	90.90	21.68	69.22	17.76	6.08	-0.02	3	2.99	17.76
5.24	1.300	71.99	0.00	1.300	5.54	3	18.01	91.26	21.88	69.38	17.42	5.96	-0.02	3	2.99	17.42
5.26	1.280	67.24	0.00	1.280	5.25	3	17.92	91.62	22.07	69.55	17.09	5.66	-0.02	3	2.98	17.09
5.28	1.270	63.82	0.00	1.270	5.03	3	17.86	91.98	22.27	69.71	16.90	5.42	-0.02	3	2.97	16.90
5.30	1.300	56.97	0.00	1.300	4.38	3	17.74	92.33	22.46	69.87	17.29	4.72	-0.02	3	2.93	17.29

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	1.370	50.83	0.00	1.370	3.71	3	17.63	92.68	22.66	70.02	18.24	3.98	-0.02	3	2.86	18.09
5.34	1.410	47.66	0.00	1.410	3.38	3	17.56	93.04	22.86	70.18	18.77	3.62	-0.02	3	2.83	18.53
5.36	1.430	45.79	0.00	1.430	3.20	3	17.52	93.39	23.05	70.33	19.00	3.43	-0.02	4	2.81	18.72
5.38	1.450	44.05	0.00	1.450	3.04	3	17.48	93.74	23.25	70.49	19.24	3.25	-0.02	4	2.79	18.91
5.40	1.530	40.69	0.00	1.530	2.66	4	17.41	94.09	23.45	70.64	20.33	2.83	-0.02	4	2.74	19.84
5.42	1.610	37.39	0.00	1.610	2.32	4	17.34	94.43	23.64	70.79	21.41	2.47	-0.02	4	2.69	20.76
5.44	1.710	38.72	0.00	1.710	2.26	4	17.40	94.78	23.84	70.94	22.77	2.40	-0.01	4	2.66	22.00
5.46	1.740	47.75	0.00	1.740	2.74	4	17.65	95.13	24.03	71.10	23.14	2.90	-0.01	4	2.71	22.49
5.48	1.810	46.23	0.00	1.810	2.55	4	17.63	95.48	24.23	71.25	24.06	2.70	-0.01	4	2.67	23.29
5.50	2.190	52.92	0.00	2.190	2.42	4	17.85	95.84	24.43	71.41	29.33	2.53	-0.01	4	2.59	28.10
5.52	2.850	60.02	0.00	2.850	2.11	4	18.10	96.20	24.62	71.58	38.47	2.18	-0.01	5	2.47	36.29
5.54	3.900	61.54	0.00	3.900	1.58	5	18.25	96.56	24.82	71.74	53.01	1.62	-0.01	5	2.28	48.88
5.56	3.750	58.84	0.00	3.750	1.57	5	18.18	96.93	25.02	71.91	50.80	1.61	-0.01	5	2.30	46.94
5.58	3.260	47.94	0.00	3.260	1.47	5	17.89	97.29	25.21	72.08	43.88	1.52	-0.01	5	2.33	40.74
5.60	3.030	38.53	0.00	3.030	1.27	5	17.61	97.64	25.41	72.23	40.60	1.31	-0.01	5	2.32	37.67
5.62	3.000	42.68	0.00	3.000	1.42	5	17.73	97.99	25.60	72.39	40.09	1.47	-0.01	5	2.35	37.36
5.64	3.430	45.79	0.00	3.430	1.33	5	17.86	98.35	25.80	72.55	45.92	1.37	-0.01	5	2.29	42.49
5.66	4.220	47.06	0.00	4.220	1.12	5	17.97	98.71	26.00	72.71	56.68	1.14	-0.01	5	2.17	51.74
5.68	3.960	55.71	0.00	3.960	1.41	5	18.14	99.07	26.19	72.88	52.98	1.44	-0.01	5	2.25	48.87
5.70	3.420	63.25	0.00	3.420	1.85	5	18.23	99.44	26.39	73.05	45.46	1.90	-0.01	5	2.37	42.58
5.72	3.230	64.04	0.00	3.230	1.98	5	18.22	99.80	26.59	73.22	42.75	2.05	-0.01	5	2.41	40.25
5.74	2.920	61.66	0.00	2.920	2.11	4	18.14	100.16	26.78	73.38	38.43	2.19	-0.01	5	2.46	36.41
5.76	2.800	56.88	0.00	2.800	2.03	4	18.03	100.53	26.98	73.55	36.70	2.11	-0.01	5	2.47	34.82
5.78	2.710	52.89	0.00	2.710	1.95	4	17.93	100.88	27.17	73.71	35.40	2.03	-0.01	5	2.47	33.60
5.80	2.780	54.79	0.00	2.780	1.97	4	17.99	101.24	27.37	73.87	36.26	2.05	-0.01	5	2.47	34.41
5.82	2.810	53.93	0.00	2.810	1.92	4	17.97	101.60	27.57	74.04	36.58	1.99	-0.01	5	2.46	34.69
5.84	2.570	49.91	0.00	2.570	1.94	4	17.85	101.96	27.76	74.20	33.26	2.02	-0.01	5	2.49	31.68
5.86	2.290	52.82	0.00	2.290	2.31	4	17.87	102.32	27.96	74.36	29.42	2.41	-0.01	4	2.58	28.30
5.88	2.290	52.82	0.00	2.290	2.31	4	17.87	102.68	28.15	74.52	29.35	2.41	-0.01	4	2.58	28.25
5.90	2.000	62.90	0.00	2.000	3.15	4	18.02	103.04	28.35	74.69	25.40	3.32	-0.01	4	2.71	24.81
5.92	1.820	65.88	0.00	1.820	3.62	3	18.03	103.40	28.55	74.85	22.93	3.84	-0.02	4	2.78	22.58
5.94	1.680	64.61	0.00	1.680	3.85	3	17.98	103.76	28.74	75.01	21.01	4.10	-0.02	3	2.83	20.80
5.96	1.480	65.28	0.00	1.480	4.41	3	17.95	104.12	28.94	75.18	18.30	4.74	-0.02	3	2.91	18.28
5.98	1.320	66.73	0.00	1.320	5.06	3	17.93	104.47	29.14	75.34	16.13	5.49	-0.02	3	2.99	16.13
6.00	1.260	66.48	0.00	1.260	5.28	3	17.90	104.83	29.33	75.50	15.30	5.76	-0.03	3	3.02	15.30
6.02	1.210	66.51	0.00	1.210	5.50	3	17.89	105.19	29.53	75.66	14.60	6.02	-0.03	3	3.05	14.60
6.04	1.150	68.41	0.00	1.150	5.95	3	17.90	105.55	29.72	75.82	13.77	6.55	-0.03	3	3.10	13.77
6.06	1.200	60.71	0.00	1.200	5.06	3	17.78	105.90	29.92	75.98	14.40	5.55	-0.03	3	3.03	14.40
6.08	1.280	56.72	0.00	1.280	4.43	3	17.73	106.26	30.12	76.14	15.42	4.83	-0.03	3	2.97	15.42
6.10	1.310	54.22	0.00	1.310	4.14	3	17.68	106.61	30.31	76.30	15.77	4.51	-0.03	3	2.95	15.77
6.12	1.370	49.94	0.00	1.370	3.65	3	17.61	106.97	30.51	76.46	16.52	3.95	-0.02	3	2.89	16.48
6.14	1.380	52.09	0.00	1.380	3.77	3	17.66	107.32	30.71	76.61	16.61	4.09	-0.02	3	2.90	16.58
6.16	1.360	53.14	0.00	1.360	3.91	3	17.68	107.67	30.90	76.77	16.31	4.24	-0.02	3	2.92	16.31
6.18	1.360	51.90	0.00	1.360	3.82	3	17.65	108.03	31.10	76.93	16.27	4.15	-0.02	3	2.91	16.27
6.20	1.350	54.19	0.00	1.350	4.01	3	17.70	108.38	31.29	77.09	16.11	4.36	-0.03	3	2.93	16.11
6.22	1.340	60.59	0.00	1.340	4.52	3	17.82	108.74	31.49	77.25	15.94	4.92	-0.03	3	2.97	15.94
6.24	1.270	64.55	0.00	1.270	5.08	3	17.87	109.09	31.69	77.41	15.00	5.56	-0.03	3	3.02	15.00
6.26	1.190	65.44	0.00	1.190	5.50	3	17.86	109.45	31.88	77.57	13.93	6.06	-0.03	3	3.07	13.93
6.28	1.190	61.82	0.00	1.190	5.19	3	17.80	109.81	32.08	77.73	13.90	5.72	-0.03	3	3.05	13.90
6.30	1.180	61.63	0.00	1.180	5.22	3	17.79	110.16	32.27	77.89	13.74	5.76	-0.03	3	3.06	13.74
6.32	1.220	57.48	0.00	1.220	4.71	3	17.72	110.52	32.47	78.05	14.22	5.18	-0.03	3	3.02	14.22
6.34	1.280	52.32	0.00	1.280	4.09	3	17.63	110.87	32.67	78.20	14.95	4.48	-0.03	3	2.96	14.95
6.36	1.480	50.57	0.00	1.480	3.42	3	17.65	111.22	32.86	78.36	17.47	3.69	-0.02	3	2.86	17.38
6.38	1.610	49.84	0.00	1.610	3.10	3	17.67	111.58	33.06	78.52	19.08	3.33	-0.02	4	2.80	18.89
6.40	1.710	48.64	0.00	1.710	2.84	4	17.66	111.93	33.26	78.67	20.31	3.04	-0.02	4	2.76	20.02

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.860	49.15	0.00	1.860	2.64	4	17.71	112.28	33.45	78.83	22.17	2.81	-0.02	4	2.71	21.76
6.44	2.050	55.93	0.00	2.050	2.73	4	17.89	112.64	33.65	78.99	24.53	2.89	-0.02	4	2.68	24.02
6.46	2.370	62.11	0.00	2.370	2.62	4	18.07	113.00	33.84	79.15	28.51	2.75	-0.01	4	2.62	27.77
6.48	2.540	64.83	0.00	2.540	2.55	4	18.14	113.36	34.04	79.32	30.59	2.67	-0.01	4	2.59	29.73
6.50	2.360	59.83	0.00	2.360	2.54	4	18.02	113.72	34.24	79.49	28.26	2.66	-0.02	4	2.61	27.53
6.52	2.200	58.37	0.00	2.200	2.65	4	17.97	114.08	34.43	79.65	26.19	2.80	-0.02	4	2.65	25.60
6.54	2.150	58.56	0.00	2.150	2.72	4	17.96	114.44	34.63	79.81	25.50	2.88	-0.02	4	2.67	24.97
6.56	2.240	66.61	0.00	2.240	2.97	4	18.13	114.80	34.83	79.98	26.57	3.13	-0.02	4	2.68	26.04
6.58	2.180	71.33	0.00	2.180	3.27	4	18.20	115.17	35.02	80.15	25.76	3.45	-0.02	4	2.71	25.33
6.60	1.880	64.61	0.00	1.880	3.44	3	18.02	115.53	35.22	80.31	21.97	3.66	-0.02	4	2.78	21.73
6.62	1.640	53.11	0.00	1.640	3.24	3	17.75	115.88	35.41	80.47	18.94	3.48	-0.02	3	2.82	18.79
6.64	1.480	53.17	0.00	1.480	3.59	3	17.71	116.24	35.61	80.63	16.91	3.90	-0.03	3	2.88	16.87
6.66	1.400	52.47	0.00	1.400	3.75	3	17.67	116.59	35.81	80.79	15.89	4.09	-0.03	3	2.92	15.89
6.68	1.330	53.68	0.00	1.330	4.04	3	17.68	116.95	36.00	80.94	14.99	4.43	-0.03	3	2.96	14.99
6.70	1.360	51.40	0.00	1.360	3.78	3	17.64	117.30	36.20	81.10	15.32	4.14	-0.03	3	2.93	15.32
6.72	1.440	50.38	0.00	1.440	3.50	3	17.64	117.65	36.40	81.26	16.27	3.81	-0.03	3	2.89	16.24
6.74	1.510	48.42	0.00	1.510	3.21	3	17.61	118.00	36.59	81.41	17.10	3.48	-0.03	3	2.85	17.01
6.76	1.630	47.37	0.00	1.630	2.91	4	17.61	118.36	36.79	81.57	18.53	3.13	-0.02	4	2.79	18.37
6.78	1.640	51.46	0.00	1.640	3.14	3	17.71	118.71	36.98	81.73	18.61	3.38	-0.02	4	2.81	18.48
6.80	1.630	52.28	0.00	1.630	3.21	3	17.73	119.06	37.18	81.88	18.45	3.46	-0.02	3	2.82	18.33
6.82	1.640	54.91	0.00	1.640	3.35	3	17.79	119.42	37.38	82.04	18.53	3.61	-0.02	3	2.83	18.42
6.84	1.600	58.27	0.00	1.600	3.64	3	17.84	119.78	37.57	82.20	18.01	3.94	-0.03	3	2.86	17.95
6.86	1.550	66.01	0.00	1.550	4.26	3	17.98	120.14	37.77	82.37	17.36	4.62	-0.03	3	2.92	17.36
6.88	1.550	66.01	0.00	1.550	4.26	3	17.98	120.49	37.96	82.53	17.32	4.62	-0.03	3	2.92	17.32
6.90	1.450	70.82	0.00	1.450	4.88	3	18.03	120.86	38.16	82.69	16.07	5.33	-0.03	3	2.99	16.07
6.92	1.360	70.16	0.00	1.360	5.16	3	18.00	121.22	38.36	82.86	14.95	5.66	-0.03	3	3.03	14.95
6.94	1.320	66.64	0.00	1.320	5.05	3	17.92	121.57	38.55	83.02	14.44	5.56	-0.03	3	3.03	14.44
6.96	1.290	62.39	0.00	1.290	4.84	3	17.84	121.93	38.75	83.18	14.04	5.34	-0.03	3	3.03	14.04
6.98	1.300	56.09	0.00	1.300	4.31	3	17.72	122.29	38.95	83.34	14.13	4.76	-0.03	3	3.00	14.13
7.00	1.310	52.28	0.00	1.310	3.99	3	17.64	122.64	39.14	83.50	14.22	4.40	-0.03	3	2.97	14.22
7.02	1.270	48.77	0.00	1.270	3.84	3	17.55	122.99	39.34	83.65	13.71	4.25	-0.03	3	2.98	13.71
7.04	1.310	43.19	0.00	1.310	3.30	3	17.42	123.34	39.53	83.81	14.16	3.64	-0.03	3	2.92	14.16
7.06	1.390	40.31	0.00	1.390	2.90	3	17.37	123.69	39.73	83.96	15.08	3.18	-0.03	3	2.87	15.04
7.08	1.400	37.99	0.00	1.400	2.71	4	17.30	124.04	39.93	84.11	15.17	2.98	-0.03	3	2.85	15.11
7.10	1.460	36.22	0.00	1.460	2.48	4	17.26	124.38	40.12	84.26	15.85	2.71	-0.03	4	2.81	15.75
7.12	1.490	36.66	0.00	1.490	2.46	4	17.28	124.73	40.32	84.41	16.17	2.69	-0.03	4	2.80	16.06
7.14	1.440	40.28	0.00	1.440	2.80	4	17.38	125.07	40.52	84.56	15.55	3.06	-0.03	3	2.85	15.49
7.16	1.380	40.94	0.00	1.380	2.97	3	17.38	125.42	40.71	84.71	14.81	3.26	-0.03	3	2.88	14.79
7.18	1.390	38.60	0.00	1.390	2.78	3	17.32	125.77	40.91	84.86	14.90	3.05	-0.03	3	2.86	14.86
7.20	1.400	39.99	0.00	1.400	2.86	3	17.36	126.11	41.10	85.01	14.98	3.14	-0.03	3	2.87	14.95
7.22	1.420	40.37	0.00	1.420	2.84	3	17.38	126.46	41.30	85.16	15.19	3.12	-0.03	3	2.86	15.15
7.24	1.380	42.27	0.00	1.380	3.06	3	17.42	126.81	41.50	85.31	14.69	3.37	-0.03	3	2.89	14.68
7.26	1.370	42.56	0.00	1.370	3.11	3	17.42	127.16	41.69	85.47	14.54	3.42	-0.03	3	2.90	14.54
7.28	1.380	44.11	0.00	1.380	3.20	3	17.47	127.51	41.89	85.62	14.63	3.52	-0.03	3	2.90	14.63
7.30	1.420	44.49	0.00	1.420	3.13	3	17.49	127.86	42.08	85.77	15.06	3.44	-0.03	3	2.89	15.05
7.32	1.400	46.11	0.00	1.400	3.29	3	17.52	128.21	42.28	85.93	14.80	3.63	-0.03	3	2.91	14.80
7.34	1.430	42.43	0.00	1.430	2.97	3	17.44	128.56	42.48	86.08	15.12	3.26	-0.03	3	2.87	15.09
7.36	1.390	43.79	0.00	1.390	3.15	3	17.46	128.91	42.67	86.23	14.62	3.47	-0.03	3	2.90	14.62
7.38	1.380	46.01	0.00	1.380	3.33	3	17.52	129.26	42.87	86.39	14.48	3.68	-0.03	3	2.92	14.48
7.40	2.180	44.87	0.00	2.180	2.06	4	17.66	129.61	43.07	86.54	23.69	2.19	-0.02	4	2.62	23.32
7.42	3.900	45.50	0.00	3.900	1.17	5	17.90	129.96	43.26	86.70	43.48	1.21	-0.01	5	2.26	41.98
7.44	4.550	42.75	0.00	4.550	0.94	5	17.89	130.32	43.46	86.86	50.88	0.97	-0.01	5	2.15	48.86
7.46	5.160	61.54	0.00	5.160	1.19	5	18.36	130.69	43.65	87.03	57.79	1.22	-0.01	5	2.16	55.57
7.48	5.650	90.63	0.00	5.650	1.60	5	18.84	131.06	43.85	87.21	63.28	1.64	-0.01	5	2.21	61.04
7.50	5.740	109.01	0.00	5.740	1.90	5	19.05	131.44	44.05	87.40	64.17	1.94	-0.01	5	2.26	62.07

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	5.640	128.75	0.00	5.640	2.28	5	19.24	131.83	44.24	87.59	62.89	2.34	-0.01	5	2.32	61.05
7.54	5.560	154.92	0.00	5.560	2.79	5	19.45	132.22	44.44	87.78	61.84	2.85	-0.01	5	2.38	60.25
7.56	5.660	172.38	0.00	5.660	3.05	5	19.58	132.61	44.64	87.97	62.83	3.12	-0.01	5	2.40	61.31
7.58	5.750	188.19	0.00	5.750	3.27	4	19.68	133.00	44.83	88.17	63.71	3.35	-0.01	4	2.42	62.25
7.60	5.780	189.87	0.00	5.780	3.28	4	19.70	133.39	45.03	88.37	63.90	3.36	-0.01	4	2.42	62.46
7.62	5.690	191.01	0.00	5.690	3.36	4	19.70	133.79	45.22	88.56	62.74	3.44	-0.01	4	2.43	61.39
7.64	5.720	187.15	0.00	5.720	3.27	4	19.67	134.18	45.42	88.76	62.93	3.35	-0.01	4	2.42	61.58
7.66	5.630	184.96	0.00	5.630	3.29	4	19.66	134.58	45.62	88.96	61.78	3.37	-0.01	4	2.43	60.49
7.68	5.780	188.38	0.00	5.780	3.26	4	19.69	134.97	45.81	89.16	63.32	3.34	-0.01	4	2.42	62.00
7.70	5.800	184.11	0.00	5.800	3.17	4	19.66	135.36	46.01	89.35	63.40	3.25	-0.01	4	2.41	62.08
7.72	6.830	190.54	0.00	6.830	2.79	5	19.76	135.76	46.21	89.55	74.75	2.85	-0.01	5	2.32	72.95
7.74	7.440	205.68	0.00	7.440	2.76	5	19.88	136.15	46.40	89.75	81.38	2.82	-0.01	5	2.29	79.36
7.76	9.100	204.42	0.00	9.100	2.25	5	19.95	136.55	46.60	89.95	99.64	2.28	-0.01	5	2.17	96.74
7.78	11.670	216.11	0.00	11.670	1.85	5	20.11	136.95	46.79	90.16	127.92	1.87	0.00	5	2.03	123.61
7.80	14.150	204.80	0.00	14.150	1.45	6	20.13	137.36	46.99	90.37	155.07	1.46	0.00	6	1.90	149.18
7.82	16.040	225.55	0.00	16.040	1.41	6	20.28	137.76	47.19	90.57	175.57	1.42	0.00	6	1.85	168.76
7.84	21.970	279.39	0.00	21.970	1.27	6	20.65	138.17	47.38	90.79	240.46	1.28	0.00	6	1.73	230.32
7.86	24.710	286.84	0.00	24.710	1.16	6	20.73	138.59	47.58	91.01	269.99	1.17	0.00	6	1.67	258.30
7.88	24.710	286.84	0.00	24.710	1.16	6	20.73	139.00	47.77	91.23	269.34	1.17	0.00	6	1.67	257.98
7.90	25.850	278.69	0.00	25.850	1.08	6	20.71	139.42	47.97	91.44	281.16	1.08	0.00	6	1.63	269.27
7.92	26.310	305.63	0.00	26.310	1.16	6	20.82	139.83	48.17	91.66	285.50	1.17	0.00	6	1.65	273.93
7.94	27.390	375.25	0.00	27.390	1.37	6	21.08	140.25	48.36	91.89	296.55	1.38	0.00	6	1.70	285.29
7.96	29.680	423.60	0.00	29.680	1.43	6	21.25	140.68	48.56	92.12	320.67	1.43	0.00	6	1.69	308.78
7.98	30.780	424.01	0.00	30.780	1.38	6	21.26	141.10	48.76	92.35	331.78	1.38	0.00	6	1.67	319.65
8.00	30.440	426.77	0.00	30.440	1.40	6	21.26	141.53	48.95	92.58	327.29	1.41	0.00	6	1.68	315.77
8.02	29.010	422.40	0.00	29.010	1.46	6	21.23	141.95	49.15	92.80	311.06	1.46	0.00	6	1.70	300.69
8.04	28.000	425.09	0.00	28.000	1.52	6	21.23	142.38	49.34	93.03	299.44	1.53	0.00	6	1.73	289.97
8.06	26.800	408.52	0.00	26.800	1.52	6	21.17	142.80	49.54	93.26	285.84	1.53	0.00	6	1.74	277.19
8.08	25.390	402.94	0.00	25.390	1.59	6	21.13	143.22	49.74	93.49	270.06	1.60	0.00	6	1.77	262.36
8.10	24.770	436.91	0.00	24.770	1.76	6	21.21	143.65	49.93	93.71	262.78	1.77	0.00	6	1.81	255.84
8.12	25.520	486.44	0.00	25.520	1.91	6	21.35	144.07	50.13	93.94	270.12	1.92	0.00	6	1.83	263.37
8.14	26.120	567.59	0.00	26.120	2.17	6	21.53	144.50	50.33	94.18	275.81	2.19	0.00	6	1.87	269.46
8.16	26.180	587.77	0.00	26.180	2.25	6	21.57	144.93	50.52	94.41	275.76	2.26	0.00	6	1.89	269.73
8.18	26.290	568.73	0.00	26.290	2.16	6	21.54	145.37	50.72	94.65	276.23	2.18	0.00	6	1.87	270.38
8.20	27.400	553.74	0.00	27.400	2.02	6	21.52	145.80	50.91	94.88	287.24	2.03	0.00	6	1.84	281.23
8.22	29.270	528.01	0.00	29.270	1.80	6	21.49	146.23	51.11	95.12	306.19	1.81	0.00	6	1.78	299.76
8.24	30.420	486.91	0.00	30.420	1.60	6	21.42	146.65	51.31	95.35	317.50	1.61	0.00	6	1.73	310.87
8.26	30.510	436.12	0.00	30.510	1.43	6	21.29	147.08	51.50	95.58	317.68	1.44	0.00	6	1.69	311.15
8.28	30.200	371.13	0.00	30.200	1.23	6	21.10	147.50	51.70	95.81	313.68	1.23	0.00	6	1.64	307.33
8.30	30.230	357.47	0.00	30.230	1.18	6	21.06	147.93	51.89	96.03	313.25	1.19	0.00	6	1.63	307.19
8.32	29.480	372.43	0.00	29.480	1.26	6	21.10	148.35	52.09	96.26	304.72	1.27	0.00	6	1.66	299.29
8.34	28.190	373.31	0.00	28.190	1.32	6	21.08	148.77	52.29	96.48	290.64	1.33	0.00	6	1.68	285.89
8.36	27.560	371.60	0.00	27.560	1.35	6	21.07	149.19	52.48	96.71	283.44	1.36	0.00	6	1.70	279.15
8.38	27.010	368.97	0.00	27.010	1.37	6	21.05	149.61	52.68	96.93	277.11	1.37	0.00	6	1.71	273.24
8.40	27.040	363.93	0.00	27.040	1.35	6	21.04	150.03	52.88	97.16	276.77	1.35	0.00	6	1.70	273.17
8.42	27.170	359.40	0.00	27.170	1.32	6	21.02	150.45	53.07	97.38	277.46	1.33	0.00	6	1.69	274.13
8.44	26.620	379.49	0.00	26.620	1.43	6	21.08	150.87	53.27	97.61	271.18	1.43	0.00	6	1.73	268.28
8.46	26.590	400.12	0.00	26.590	1.50	6	21.14	151.30	53.46	97.83	270.24	1.51	0.00	6	1.75	267.67
8.48	28.180	400.41	0.00	28.180	1.42	6	21.16	151.72	53.66	98.06	285.83	1.43	0.00	6	1.71	283.32
8.50	30.070	387.79	0.00	30.070	1.29	6	21.15	152.14	53.86	98.29	304.40	1.30	0.00	6	1.66	301.94
8.52	30.530	395.65	0.00	30.530	1.30	6	21.18	152.57	54.05	98.51	308.36	1.30	0.00	6	1.66	306.20
8.54	30.780	409.56	0.00	30.780	1.33	6	21.22	152.99	54.25	98.74	310.17	1.34	0.00	6	1.67	308.35
8.56	31.270	401.26	0.00	31.270	1.28	6	21.20	153.42	54.45	98.97	314.41	1.29	0.00	6	1.65	312.87
8.58	32.350	386.15	0.00	32.350	1.19	6	21.17	153.84	54.64	99.20	324.57	1.20	0.00	6	1.62	323.30
8.60	33.920	359.31	0.00	33.920	1.06	6	21.11	154.26	54.84	99.42	339.62	1.06	0.00	6	1.56	338.62

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P3	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	34.020	328.57	0.00	34.020	0.97	6	21.01	154.68	55.03	99.65	339.85	0.97	0.00	6	1.53	339.23
8.64	33.650	308.61	0.00	33.650	0.92	6	20.93	155.10	55.23	99.87	335.38	0.92	0.00	6	1.52	335.16
8.66	33.110	291.46	0.00	33.110	0.88	6	20.86	155.52	55.43	100.09	329.24	0.88	0.00	6	1.51	329.40
8.68	32.880	276.54	0.00	32.880	0.84	6	20.79	155.93	55.62	100.31	326.22	0.85	0.00	6	1.49	326.76
8.70	32.720	277.84	0.00	32.720	0.85	6	20.80	156.35	55.82	100.53	323.92	0.85	0.00	6	1.50	324.83
8.72	32.650	286.62	0.00	32.650	0.88	6	20.83	156.77	56.02	100.75	322.51	0.88	0.00	6	1.51	323.78
8.74	32.320	299.20	0.00	32.320	0.93	6	20.88	157.18	56.21	100.97	318.53	0.93	0.00	6	1.53	320.13
8.76	30.710	322.55	0.00	30.710	1.05	6	20.95	157.60	56.41	101.20	301.92	1.06	0.00	6	1.59	303.69
8.78	28.380	319.03	0.00	28.380	1.12	6	20.90	158.02	56.60	101.42	278.28	1.13	0.00	6	1.63	280.15
8.80	25.560	315.93	0.00	25.560	1.24	6	20.85	158.44	56.80	101.64	249.92	1.24	0.00	6	1.69	251.77
8.82	23.240	337.32	0.00	23.240	1.45	6	20.89	158.86	57.00	101.86	226.60	1.46	0.00	6	1.78	228.37
8.84	22.660	369.57	0.00	22.660	1.63	6	20.99	159.27	57.19	102.08	220.42	1.64	0.00	6	1.82	222.26
8.86	21.280	437.29	0.00	21.280	2.05	6	21.15	159.70	57.39	102.31	206.44	2.07	0.00	6	1.92	208.18
8.88	21.280	437.29	0.00	21.280	2.05	6	21.15	160.12	57.58	102.54	205.98	2.07	0.00	6	1.92	207.88
8.90	16.850	374.99	0.00	16.850	2.23	5	20.89	160.54	57.78	102.76	162.42	2.25	0.00	5	2.01	163.89
8.92	14.410	416.47	0.00	14.410	2.89	5	20.95	160.96	57.98	102.98	138.37	2.92	0.00	5	2.14	139.52
8.94	10.950	470.75	0.00	10.950	4.30	9	20.98	161.38	58.17	103.20	104.54	4.36	-0.01	9	2.36	105.20
8.96	9.070	523.83	0.00	9.070	5.78	9	21.04	161.80	58.37	103.43	86.13	5.88	-0.01	9	2.51	86.54
8.98	8.180	561.32	0.00	8.180	6.86	9	21.08	162.22	58.57	103.65	77.35	7.00	-0.01	9	2.60	77.65
9.00	7.890	564.23	0.00	7.890	7.15	9	21.07	162.64	58.76	103.88	74.39	7.30	-0.01	9	2.63	74.67
9.02	8.540	509.92	0.00	8.540	5.97	9	20.98	163.06	58.96	104.10	80.47	6.09	-0.01	9	2.54	80.89
9.04	9.730	449.08	0.00	9.730	4.62	9	20.89	163.48	59.15	104.32	91.70	4.69	-0.01	9	2.42	92.39
9.06	10.780	399.04	0.00	10.780	3.70	5	20.79	163.89	59.35	104.54	101.55	3.76	-0.01	5	2.31	102.53
9.08	10.600	392.23	0.00	10.600	3.70	5	20.76	164.31	59.55	104.76	99.61	3.76	-0.01	5	2.32	100.61
9.10	10.960	376.23	0.00	10.960	3.43	5	20.73	164.72	59.74	104.98	102.83	3.49	-0.01	5	2.28	103.97
9.12	11.140	385.51	0.00	11.140	3.46	5	20.76	165.14	59.94	105.20	104.32	3.51	-0.01	5	2.28	105.54
9.14	11.680	397.14	0.00	11.680	3.40	5	20.81	165.55	60.14	105.42	109.23	3.45	-0.01	5	2.26	110.59
9.16	12.180	414.51	0.00	12.180	3.40	5	20.88	165.97	60.33	105.64	113.73	3.45	-0.01	5	2.25	115.23
9.18	13.180	421.98	0.00	13.180	3.20	5	20.93	166.39	60.53	105.86	122.93	3.24	0.00	5	2.21	124.73
9.20	13.950	449.74	0.00	13.950	3.22	5	21.03	166.81	60.72	106.09	129.93	3.26	0.00	5	2.20	131.94
9.22	14.310	461.02	0.00	14.310	3.22	5	21.06	167.23	60.92	106.31	133.03	3.26	0.00	5	2.19	135.19

CPTe P5 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc cone resistance

fs sleeve friction

u₂ penetration pore pressure

qt total cone resistance

Rf friction ratio

SBT soil behavior type

γ soil unit weight

σ_v total overburden stressu₀ in situ pore pressureσ'_{v0} effective overburden stress

Qt1 normalized cone resistance

Fr normalized friction ratio

Bq normalized pore pressure

SBTn soil behavior type normalized

Ic soil behavior type index

Qtn normalized cone resistance
based on the stress exponent n

In situ data				Basic output data			NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.080	0.03	0.00	0.080	0.04	1	13.73	0.27	0.00	0.27	290.25	0.04	0.00	0	2.22	18.33
0.04	0.330	0.06	0.00	0.330	0.02	1	13.73	0.55	0.00	0.55	599.70	0.02	0.00	0	1.80	55.81
0.06	0.720	0.10	0.00	0.720	0.01	1	13.73	0.82	0.00	0.82	872.74	0.01	0.00	0	1.69	79.69
0.08	0.790	0.10	0.00	0.790	0.01	1	13.73	1.10	0.00	1.10	718.02	0.01	0.00	0	1.73	76.18
0.10	0.850	0.10	0.00	0.850	0.01	1	13.73	1.37	0.00	1.37	617.90	0.01	0.00	0	1.74	75.25
0.12	0.930	0.10	0.00	0.930	0.01	1	13.73	1.65	0.00	1.65	563.29	0.01	0.00	0	1.74	78.62
0.14	0.990	3.96	0.00	0.990	0.40	5	14.57	1.93	0.00	1.93	511.66	0.40	0.00	6	1.78	78.11
0.16	1.070	10.39	0.00	1.070	0.97	4	15.71	2.24	0.00	2.24	476.86	0.97	0.00	6	1.92	95.90
0.18	1.160	16.03	0.00	1.160	1.38	4	16.24	2.56	0.00	2.56	451.98	1.38	0.00	6	1.98	107.91
0.20	1.230	20.57	0.00	1.230	1.67	4	16.55	2.89	0.00	2.89	424.62	1.68	0.00	5	2.02	112.48
0.22	1.250	27.00	0.00	1.250	2.16	4	16.86	3.23	0.00	3.23	386.57	2.17	0.00	5	2.10	115.26
0.24	1.260	30.67	0.00	1.260	2.43	4	17.01	3.56	0.00	3.56	352.47	2.44	0.00	5	2.14	114.90
0.26	1.270	31.72	0.00	1.270	2.50	4	17.06	3.91	0.00	3.91	324.16	2.51	0.00	5	2.16	111.49
0.28	1.300	35.90	0.00	1.300	2.76	3	17.21	4.25	0.00	4.25	304.89	2.77	0.00	5	2.19	112.19
0.30	1.340	37.64	0.00	1.340	2.81	3	17.27	4.60	0.00	4.60	290.60	2.82	0.00	5	2.20	110.90
0.32	1.360	39.86	0.00	1.360	2.93	3	17.35	4.94	0.00	4.94	274.18	2.94	0.00	5	2.21	109.40
0.34	1.290	45.28	0.00	1.290	3.51	3	17.47	5.29	0.00	5.29	242.80	3.52	0.00	5	2.28	107.75
0.36	1.200	47.66	0.00	1.200	3.97	3	17.50	5.64	0.00	5.64	211.72	3.99	0.00	9	2.34	101.75
0.38	1.140	49.34	0.00	1.140	4.33	3	17.52	5.99	0.00	5.99	189.27	4.35	0.00	9	2.38	96.69
0.40	1.070	49.40	0.00	1.070	4.62	3	17.50	6.34	0.00	6.34	167.73	4.64	0.00	9	2.42	90.56
0.42	1.060	49.84	0.00	1.060	4.70	3	17.51	6.69	0.00	6.69	157.41	4.73	0.00	9	2.43	87.43
0.44	1.080	50.03	0.00	1.080	4.63	3	17.52	7.04	0.00	7.04	152.37	4.66	0.00	9	2.44	85.65
0.46	1.090	50.10	0.00	1.090	4.60	3	17.52	7.39	0.00	7.39	146.45	4.63	0.00	9	2.44	83.57
0.48	1.120	48.39	0.00	1.120	4.32	3	17.49	7.74	0.00	7.74	143.66	4.35	0.00	4	2.43	81.68
0.50	1.180	46.55	0.00	1.180	3.94	3	17.47	8.09	0.00	8.09	144.83	3.97	0.00	4	2.40	81.01
0.52	1.120	46.39	0.00	1.120	4.14	3	17.45	8.44	0.00	8.44	131.69	4.17	0.00	4	2.43	76.66
0.54	1.110	45.85	0.00	1.110	4.13	3	17.43	8.79	0.00	8.79	125.29	4.16	0.00	4	2.44	74.18
0.56	1.130	47.69	0.00	1.130	4.22	3	17.48	9.14	0.00	9.14	122.65	4.25	0.00	4	2.45	73.82
0.58	1.150	48.10	0.00	1.150	4.18	3	17.50	9.49	0.00	9.49	120.20	4.22	0.00	4	2.45	72.96
0.60	1.080	48.45	0.00	1.080	4.49	3	17.48	9.84	0.00	9.84	108.78	4.53	0.00	4	2.49	68.91
0.62	1.050	50.83	0.00	1.050	4.84	3	17.53	10.19	0.00	10.19	102.06	4.89	0.00	4	2.52	67.01
0.64	1.020	52.35	0.00	1.020	5.13	3	17.55	10.54	0.00	10.54	95.78	5.19	0.00	4	2.55	64.87
0.66	1.030	51.24	0.00	1.030	4.97	3	17.53	10.89	0.00	10.89	93.58	5.03	0.00	4	2.54	63.53
0.68	1.060	50.29	0.00	1.060	4.74	3	17.52	11.24	0.00	11.24	93.30	4.80	0.00	4	2.53	63.02
0.70	1.110	49.75	0.00	1.110	4.48	3	17.52	11.59	0.00	11.59	94.77	4.53	0.00	4	2.51	63.34
0.72	1.170	49.40	0.00	1.170	4.22	3	17.53	11.94	0.00	11.94	96.98	4.27	0.00	4	2.49	64.03
0.74	1.210	48.58	0.00	1.210	4.01	3	17.53	12.29	0.00	12.29	97.44	4.06	0.00	4	2.47	63.91
0.76	1.240	48.48	0.00	1.240	3.91	3	17.53	12.64	0.00	12.64	97.08	3.95	0.00	4	2.46	63.68
0.78	1.220	51.90	0.00	1.220	4.25	3	17.61	12.99	0.00	12.99	92.89	4.30	0.00	4	2.50	62.80
0.80	1.240	55.42	0.00	1.240	4.47	3	17.69	13.35	0.00	13.35	91.90	4.52	0.00	4	2.51	63.16
0.82	1.270	58.78	0.00	1.270	4.63	3	17.77	13.70	0.00	13.70	91.69	4.68	0.00	4	2.52	63.75
0.84	1.270	64.07	0.00	1.270	5.04	3	17.86	14.06	0.00	14.06	89.33	5.10	0.00	4	2.55	63.51
0.86	1.270	65.88	0.00	1.270	5.19	3	17.90	14.42	0.00	14.42	87.09	5.25	0.00	4	2.56	62.80
0.88	1.240	67.78	0.00	1.240	5.47	3	17.92	14.77	0.00	14.77	82.93	5.53	0.00	4	2.59	61.18
0.90	1.190	72.95	0.00	1.190	6.13	3	17.99	15.13	0.00	15.13	77.63	6.21	0.00	3	2.63	59.49

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P5		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	1.180	75.26	0.00	1.180	6.38	3	18.02	15.49	0.00	15.49	75.16	6.46	0.00	3	2.65	58.55
0.94	1.200	75.54	0.00	1.200	6.30	3	18.03	15.86	0.00	15.86	74.69	6.38	0.00	3	2.65	58.26
0.96	1.220	76.15	0.00	1.220	6.24	3	18.05	16.22	0.00	16.22	74.23	6.33	0.00	3	2.65	58.04
0.98	1.220	75.51	0.00	1.220	6.19	3	18.04	16.58	0.00	16.58	72.60	6.27	0.00	3	2.65	57.04
1.00	1.270	72.47	0.00	1.270	5.71	3	18.01	16.94	0.00	16.94	73.98	5.78	0.00	4	2.62	57.22
1.02	1.260	72.06	0.00	1.260	5.72	3	18.00	17.30	0.00	17.30	71.84	5.80	0.00	4	2.63	56.02
1.04	1.230	71.30	0.00	1.230	5.80	3	17.98	17.66	0.00	17.66	68.66	5.88	0.00	3	2.64	54.21
1.06	1.190	71.46	0.00	1.190	6.01	3	17.97	18.02	0.00	18.02	65.05	6.10	0.00	3	2.66	52.28
1.08	1.160	72.12	0.00	1.160	6.22	3	17.97	18.38	0.00	18.38	62.13	6.32	0.00	3	2.68	50.73
1.10	1.090	73.67	0.00	1.090	6.76	3	17.97	18.73	0.00	18.73	57.18	6.88	0.00	3	2.73	48.13
1.12	1.030	75.67	0.00	1.030	7.35	3	17.98	19.09	0.00	19.09	52.94	7.49	0.00	3	2.77	45.86
1.14	0.960	75.80	0.00	0.960	7.90	3	17.95	19.45	0.00	19.45	48.35	8.06	0.00	3	2.81	43.08
1.16	0.930	75.29	0.00	0.930	8.10	3	17.93	19.81	0.00	19.81	45.94	8.27	0.00	3	2.83	41.49
1.18	0.930	71.17	0.00	0.930	7.65	3	17.87	20.17	0.00	20.17	45.11	7.82	0.00	3	2.82	40.51
1.20	0.970	66.89	0.00	0.970	6.90	3	17.81	20.53	0.00	20.53	46.26	7.04	0.00	3	2.78	40.72
1.22	0.990	63.31	0.00	0.990	6.39	3	17.76	20.88	0.00	20.88	46.41	6.53	0.00	3	2.76	40.39
1.24	1.030	57.86	0.00	1.030	5.62	3	17.67	21.24	0.00	21.24	47.50	5.74	0.00	3	2.72	40.40
1.26	1.000	50.57	0.00	1.000	5.06	3	17.50	21.59	0.00	21.59	45.33	5.17	0.00	3	2.70	38.26
1.28	0.920	41.04	0.00	0.920	4.46	3	17.23	21.93	0.00	21.93	40.95	4.57	0.00	4	2.70	34.51
1.30	0.840	33.72	0.00	0.840	4.01	3	16.97	22.27	0.00	22.27	36.72	4.12	0.00	4	2.70	31.05
1.32	0.770	30.52	0.00	0.770	3.96	3	16.82	22.61	0.00	22.61	33.06	4.08	0.00	4	2.72	28.42
1.34	0.750	28.39	0.00	0.750	3.79	3	16.73	22.94	0.00	22.94	31.69	3.90	0.00	4	2.72	27.29
1.36	0.710	26.68	0.00	0.710	3.76	3	16.63	23.28	0.00	23.28	29.50	3.89	0.00	4	2.74	25.71
1.38	0.700	25.03	0.00	0.700	3.58	3	16.56	23.61	0.00	23.61	28.65	3.70	0.00	4	2.74	24.95
1.40	0.750	22.88	0.00	0.750	3.05	3	16.48	23.94	0.00	23.94	30.33	3.15	0.00	4	2.68	25.67
1.42	0.790	22.18	0.00	0.790	2.81	3	16.46	24.27	0.00	24.27	31.55	2.90	0.00	4	2.65	26.30
1.44	0.840	21.99	0.00	0.840	2.62	3	16.48	24.60	0.00	24.60	33.15	2.70	0.00	4	2.62	27.23
1.46	0.840	23.26	0.00	0.840	2.77	3	16.54	24.93	0.00	24.93	32.70	2.85	0.00	4	2.64	27.15
1.48	0.830	24.72	0.00	0.830	2.98	3	16.61	25.26	0.00	25.26	31.86	3.07	0.00	4	2.66	26.85
1.50	0.810	26.02	0.00	0.810	3.21	3	16.66	25.59	0.00	25.59	30.65	3.32	0.00	4	2.69	26.27
1.52	0.800	27.31	0.00	0.800	3.41	3	16.71	25.93	0.00	25.93	29.86	3.53	0.00	4	2.71	25.93
1.54	0.820	29.79	0.00	0.820	3.63	3	16.82	26.26	0.00	26.26	30.22	3.75	0.00	4	2.72	26.44
1.56	0.840	32.26	0.00	0.840	3.84	3	16.92	26.60	0.00	26.60	30.58	3.97	0.00	4	2.73	26.93
1.58	0.880	33.84	0.00	0.880	3.85	3	16.99	26.94	0.00	26.94	31.67	3.97	0.00	4	2.72	27.78
1.60	0.950	33.72	0.00	0.950	3.55	3	17.02	27.28	0.00	27.28	33.83	3.65	0.00	4	2.68	29.15
1.62	1.020	33.30	0.00	1.020	3.26	3	17.03	27.62	0.00	27.62	35.93	3.36	0.00	4	2.64	30.43
1.64	1.080	33.27	0.00	1.080	3.08	3	17.05	27.96	0.00	27.96	37.63	3.16	0.00	4	2.62	31.49
1.66	1.070	33.78	0.00	1.070	3.16	3	17.06	28.30	0.00	28.30	36.81	3.24	0.00	4	2.63	31.04
1.68	1.020	34.73	0.00	1.020	3.40	3	17.08	28.64	0.00	28.64	34.61	3.50	0.00	4	2.66	29.75
1.70	0.940	34.82	0.00	0.940	3.70	3	17.05	28.98	0.00	28.98	31.43	3.82	0.00	4	2.71	27.69
1.72	0.870	35.46	0.00	0.870	4.08	3	17.04	29.32	0.00	29.32	28.67	4.22	0.00	3	2.76	25.90
1.74	0.830	35.62	0.00	0.830	4.29	3	17.03	29.67	0.00	29.67	26.98	4.45	0.00	3	2.79	24.74
1.76	0.810	36.28	0.00	0.810	4.48	3	17.04	30.01	0.00	30.01	25.99	4.65	0.00	3	2.81	24.10
1.78	0.830	36.35	0.00	0.830	4.38	3	17.05	30.35	0.00	30.35	26.35	4.55	0.00	3	2.80	24.34
1.80	0.910	35.49	0.00	0.910	3.90	3	17.06	30.69	0.00	30.69	28.65	4.04	0.00	4	2.75	25.86
1.82	1.080	32.96	0.00	1.080	3.05	3	17.04	31.03	0.00	31.03	33.81	3.14	0.00	4	2.64	29.08
1.84	1.120	31.05	0.00	1.120	2.77	3	16.98	31.37	0.00	31.37	34.70	2.85	0.00	4	2.61	29.48
1.86	1.090	29.56	0.00	1.090	2.71	3	16.92	31.71	0.00	31.71	33.38	2.79	0.00	4	2.62	28.47
1.88	1.070	20.41	0.00	1.070	1.91	4	16.48	32.04	0.00	32.04	32.39	1.97	0.00	4	2.54	26.81
1.90	1.080	22.40	0.00	1.080	2.07	4	16.59	32.37	0.00	32.37	32.36	2.14	0.00	4	2.56	27.05
1.92	1.120	24.24	0.00	1.120	2.16	4	16.70	32.71	0.00	32.71	33.24	2.23	0.00	4	2.56	27.85
1.94	1.160	26.84	0.00	1.160	2.31	4	16.83	33.04	0.00	33.04	34.11	2.38	0.00	4	2.57	28.72
1.96	1.180	27.73	0.00	1.180	2.35	4	16.87	33.38	0.00	33.38	34.35	2.42	0.00	4	2.57	28.98
1.98	1.090	29.94	0.00	1.090	2.75	3	16.93	33.72	0.00	33.72	31.33	2.83	0.00	4	2.63	27.20
2.00	1.040	32.04	0.00	1.040	3.08	3	16.99	34.06	0.00	34.06	29.54	3.19	0.00	4	2.68	26.17

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	1.000	32.32	0.00	1.000	3.23	3	16.99	34.40	0.00	34.40	28.07	3.35	0.00	4	2.71	25.18
2.04	1.000	32.23	0.00	1.000	3.22	3	16.98	34.74	0.00	34.74	27.79	3.34	0.00	4	2.71	24.97
2.06	1.000	32.70	0.00	1.000	3.27	3	17.00	35.08	0.00	35.08	27.51	3.39	0.00	4	2.71	24.81
2.08	0.990	33.56	0.00	0.990	3.39	3	17.03	35.42	0.00	35.42	26.95	3.52	0.00	4	2.73	24.48
2.10	0.990	34.60	0.00	0.990	3.49	3	17.06	35.76	0.00	35.76	26.69	3.63	0.00	4	2.74	24.36
2.12	1.000	35.01	0.00	1.000	3.50	3	17.08	36.10	0.00	36.10	26.70	3.63	0.00	4	2.74	24.40
2.14	1.010	35.05	0.00	1.010	3.47	3	17.08	36.44	0.00	36.44	26.72	3.60	0.00	4	2.74	24.42
2.16	1.030	35.08	0.00	1.030	3.41	3	17.09	36.78	0.00	36.78	27.00	3.53	0.00	4	2.73	24.63
2.18	1.090	35.27	0.00	1.090	3.24	3	17.12	37.13	0.00	37.13	28.36	3.35	0.00	4	2.70	25.62
2.20	1.170	35.65	0.00	1.170	3.05	3	17.16	37.47	0.00	37.47	30.23	3.15	0.00	4	2.67	26.98
2.22	1.280	36.38	0.00	1.280	2.84	3	17.22	37.81	0.00	37.81	32.85	2.93	0.00	4	2.62	28.90
2.24	1.450	36.31	0.00	1.450	2.50	4	17.26	38.16	0.00	38.16	37.00	2.57	0.00	4	2.56	31.79
2.26	1.680	36.31	0.00	1.680	2.16	4	17.32	38.50	0.00	38.50	42.63	2.21	0.00	5	2.48	35.63
2.28	1.890	38.12	0.00	1.890	2.02	4	17.42	38.85	0.00	38.85	47.65	2.06	0.00	5	2.42	39.16
2.30	2.010	40.59	0.00	2.010	2.02	4	17.52	39.20	0.00	39.20	50.27	2.06	0.00	5	2.41	41.16
2.32	2.240	44.93	0.00	2.240	2.01	4	17.67	39.55	0.00	39.55	55.63	2.04	0.00	5	2.37	45.11
2.34	2.420	50.00	0.00	2.420	2.07	4	17.83	39.91	0.00	39.91	59.64	2.10	0.00	5	2.36	48.23
2.36	2.650	53.65	0.00	2.650	2.02	4	17.94	40.27	0.00	40.27	64.81	2.06	0.00	5	2.33	51.97
2.38	2.810	56.91	0.00	2.810	2.03	4	18.03	40.63	0.00	40.63	68.16	2.05	0.00	5	2.31	54.50
2.40	3.020	61.25	0.00	3.020	2.03	4	18.15	40.99	0.00	40.99	72.67	2.06	0.00	5	2.29	57.86
2.42	3.200	63.03	0.00	3.200	1.97	5	18.20	41.36	0.00	41.36	76.38	2.00	0.00	5	2.27	60.49
2.44	3.510	64.86	0.00	3.510	1.85	5	18.27	41.72	0.00	41.72	83.13	1.87	0.00	5	2.23	65.07
2.46	3.890	67.91	0.00	3.890	1.75	5	18.36	42.09	0.00	42.09	91.43	1.76	0.00	5	2.19	70.73
2.48	4.250	67.37	0.00	4.250	1.59	5	18.39	42.46	0.00	42.46	99.11	1.60	0.00	5	2.14	75.63
2.50	4.580	67.15	0.00	4.580	1.47	5	18.41	42.82	0.00	42.82	105.95	1.48	0.00	5	2.09	80.02
2.52	4.830	68.00	0.00	4.830	1.41	5	18.45	43.19	0.00	43.19	110.83	1.42	0.00	5	2.07	83.29
2.54	5.010	70.41	0.00	5.010	1.41	5	18.50	43.56	0.00	43.56	114.01	1.42	0.00	5	2.06	85.68
2.56	5.110	71.36	0.00	5.110	1.40	5	18.52	43.93	0.00	43.93	115.32	1.41	0.00	5	2.05	86.77
2.58	5.160	70.92	0.00	5.160	1.37	5	18.52	44.30	0.00	44.30	115.47	1.39	0.00	5	2.05	87.00
2.60	5.100	68.86	0.00	5.100	1.35	5	18.48	44.67	0.00	44.67	113.16	1.36	0.00	5	2.05	85.54
2.62	4.950	69.46	0.00	4.950	1.40	5	18.48	45.04	0.00	45.04	108.90	1.42	0.00	5	2.07	83.08
2.64	4.780	71.01	0.00	4.780	1.49	5	18.49	45.41	0.00	45.41	104.26	1.50	0.00	5	2.10	80.43
2.66	4.580	70.06	0.00	4.580	1.53	5	18.46	45.78	0.00	45.78	99.04	1.55	0.00	5	2.12	77.13
2.68	4.220	68.22	0.00	4.220	1.62	5	18.40	46.15	0.00	46.15	90.44	1.63	0.00	5	2.16	71.48
2.70	3.930	66.10	0.00	3.930	1.68	5	18.33	46.52	0.00	46.52	83.49	1.70	0.00	5	2.19	66.80
2.72	3.460	64.23	0.00	3.460	1.86	5	18.25	46.88	0.00	46.88	72.80	1.88	0.00	5	2.26	59.53
2.74	3.140	62.80	0.00	3.140	2.00	5	18.19	47.25	0.00	47.25	65.46	2.03	0.00	5	2.31	54.43
2.76	3.040	63.03	0.00	3.040	2.07	4	18.18	47.61	0.00	47.61	62.85	2.11	0.00	5	2.33	52.68
2.78	2.920	67.68	0.00	2.920	2.32	4	18.25	47.97	0.00	47.97	59.87	2.36	0.00	5	2.38	50.90
2.80	2.690	81.09	0.00	2.690	3.01	4	18.42	48.34	0.00	48.34	54.65	3.07	0.00	4	2.47	47.82
2.82	2.660	93.35	0.00	2.660	3.51	4	18.58	48.71	0.00	48.71	53.61	3.57	0.00	4	2.52	47.60
2.84	2.900	102.32	0.00	2.900	3.53	4	18.72	49.09	0.00	49.09	58.08	3.59	0.00	4	2.50	51.34
2.86	3.050	109.86	0.00	3.050	3.60	4	18.82	49.46	0.00	49.46	60.66	3.66	0.00	4	2.49	53.60
2.88	3.290	116.45	0.00	3.290	3.54	4	18.92	49.84	0.00	49.84	65.01	3.59	0.00	4	2.47	57.15
2.90	3.290	119.21	0.00	3.290	3.62	4	18.94	50.22	0.00	50.22	64.51	3.68	0.00	4	2.48	56.92
2.92	3.240	120.54	0.00	3.240	3.72	4	18.95	50.60	0.00	50.60	63.03	3.78	0.00	4	2.49	55.90
2.94	3.140	120.95	0.00	3.140	3.85	4	18.94	50.98	0.00	50.98	60.60	3.92	0.00	4	2.51	54.11
2.96	3.040	120.03	0.00	3.040	3.95	4	18.92	51.36	0.00	51.36	58.19	4.02	0.00	4	2.53	52.28
2.98	2.950	124.31	0.00	2.950	4.21	4	18.95	51.73	0.00	51.73	56.02	4.29	0.00	4	2.56	50.76
3.00	2.870	127.26	0.00	2.870	4.43	3	18.97	52.11	0.00	52.11	54.07	4.52	0.00	4	2.58	49.36
3.02	2.850	136.00	0.00	2.850	4.77	3	19.04	52.49	0.00	52.49	53.29	4.86	0.00	4	2.61	49.01
3.04	2.860	142.75	0.00	2.860	4.99	3	19.10	52.88	0.00	52.88	53.09	5.09	0.00	4	2.62	49.06
3.06	2.840	151.02	0.00	2.840	5.32	3	19.16	53.26	0.00	53.26	52.32	5.42	0.00	4	2.65	48.67
3.08	2.830	155.27	0.00	2.830	5.49	3	19.19	53.64	0.00	53.64	51.76	5.59	0.00	4	2.66	48.32
3.10	2.740	153.75	0.00	2.740	5.61	3	19.17	54.03	0.00	54.03	49.72	5.72	0.00	3	2.67	46.65

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P5		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	2.670	156.89	0.00	2.670	5.88	3	19.18	54.41	0.00	54.41	48.07	6.00	0.00	3	2.70	45.39
3.14	2.600	159.07	0.00	2.600	6.12	3	19.19	54.79	0.00	54.79	46.45	6.25	0.00	3	2.72	44.11
3.16	2.560	158.82	0.00	2.560	6.20	3	19.18	55.18	0.00	55.18	45.40	6.34	0.00	3	2.73	43.24
3.18	2.490	159.23	0.00	2.490	6.39	3	19.17	55.56	0.00	55.56	43.82	6.54	0.00	3	2.75	41.94
3.20	2.380	163.35	0.00	2.380	6.86	3	19.18	55.94	0.00	55.94	41.54	7.03	0.00	3	2.79	40.11
3.22	2.340	160.94	0.00	2.340	6.88	3	19.16	56.33	0.00	56.33	40.54	7.05	0.00	3	2.79	39.22
3.24	2.260	158.12	0.00	2.260	7.00	3	19.12	56.71	0.00	56.71	38.85	7.18	0.00	3	2.81	37.74
3.26	2.150	151.56	0.00	2.150	7.05	3	19.06	57.09	0.00	57.09	36.66	7.24	0.00	3	2.83	35.77
3.28	2.090	144.37	0.00	2.090	6.91	3	18.99	57.47	0.00	57.47	35.37	7.10	0.00	3	2.83	34.55
3.30	2.140	137.40	0.00	2.140	6.42	3	18.94	57.85	0.00	57.85	35.99	6.60	0.00	3	2.81	34.98
3.32	2.140	133.79	0.00	2.140	6.25	3	18.91	58.23	0.00	58.23	35.75	6.43	0.00	3	2.80	34.72
3.34	2.050	131.09	0.00	2.050	6.39	3	18.87	58.61	0.00	58.61	33.98	6.58	0.00	3	2.82	33.16
3.36	2.040	128.56	0.00	2.040	6.30	3	18.85	58.98	0.00	58.98	33.59	6.49	0.00	3	2.82	32.78
3.38	1.940	124.79	0.00	1.940	6.43	3	18.79	59.36	0.00	59.36	31.68	6.64	0.00	3	2.84	31.07
3.40	1.900	123.46	0.00	1.900	6.50	3	18.77	59.74	0.00	59.74	30.81	6.71	0.00	3	2.85	30.29
3.42	1.790	119.72	0.00	1.790	6.69	3	18.72	60.11	0.00	60.11	28.78	6.92	0.00	3	2.88	28.46
3.44	1.750	117.62	0.00	1.750	6.72	3	18.69	60.48	0.00	60.48	27.93	6.96	0.00	3	2.89	27.69
3.46	1.790	111.67	0.00	1.790	6.24	3	18.64	60.86	0.00	60.86	28.41	6.46	0.00	3	2.87	28.03
3.48	1.850	108.21	0.00	1.850	5.85	3	18.61	61.23	0.00	61.23	29.21	6.05	0.00	3	2.84	28.68
3.50	1.860	104.16	0.00	1.860	5.60	3	18.57	61.60	0.00	61.60	29.19	5.79	0.00	3	2.83	28.60
3.52	1.870	99.15	0.00	1.870	5.30	3	18.52	61.97	0.00	61.97	29.18	5.48	0.00	3	2.81	28.51
3.54	1.890	95.95	0.00	1.890	5.08	3	18.48	62.34	0.00	62.34	29.32	5.25	0.00	3	2.80	28.59
3.56	1.850	97.12	0.00	1.850	5.25	3	18.49	62.71	0.00	62.71	28.50	5.43	0.00	3	2.81	27.89
3.58	1.780	96.24	0.00	1.780	5.41	3	18.46	63.08	0.00	63.08	27.22	5.61	0.00	3	2.84	26.75
3.60	1.740	94.46	0.00	1.740	5.43	3	18.43	63.45	0.00	63.45	26.42	5.63	0.00	3	2.85	26.02
3.62	1.710	95.51	0.00	1.710	5.59	3	18.44	63.82	0.00	63.82	25.79	5.80	0.00	3	2.86	25.48
3.64	1.710	99.56	0.00	1.710	5.82	3	18.49	64.19	0.00	64.19	25.64	6.05	0.00	3	2.88	25.39
3.66	1.760	102.32	0.00	1.760	5.81	3	18.53	64.56	0.00	64.56	26.26	6.04	0.00	3	2.87	25.98
3.68	1.820	107.64	0.00	1.820	5.91	3	18.60	64.93	0.00	64.93	27.03	6.13	0.00	3	2.86	26.73
3.70	1.890	112.21	0.00	1.890	5.94	3	18.66	65.30	0.00	65.30	27.94	6.15	0.00	3	2.86	27.59
3.72	1.920	113.73	0.00	1.920	5.92	3	18.68	65.68	0.00	65.68	28.23	6.13	0.00	3	2.85	27.87
3.74	1.980	112.52	0.00	1.980	5.68	3	18.68	66.05	0.00	66.05	28.98	5.88	0.00	3	2.83	28.52
3.76	1.980	122.19	0.00	1.980	6.17	3	18.78	66.42	0.00	66.42	28.81	6.39	0.00	3	2.86	28.48
3.78	1.830	130.36	0.00	1.830	7.12	3	18.82	66.80	0.00	66.80	26.40	7.39	0.00	3	2.93	26.37
3.80	1.700	127.67	0.00	1.700	7.51	3	18.77	67.18	0.00	67.18	24.31	7.82	0.00	3	2.97	24.31
3.82	1.640	123.84	0.00	1.640	7.55	3	18.72	67.55	0.00	67.55	23.28	7.88	0.00	3	2.98	23.28
3.84	1.620	122.60	0.00	1.620	7.57	3	18.70	67.92	0.00	67.92	22.85	7.90	0.00	3	2.99	22.85
3.86	1.520	128.02	0.00	1.520	8.42	3	18.73	68.30	0.00	68.30	21.25	8.82	0.00	3	3.05	21.25
3.88	1.420	121.93	0.00	1.420	8.59	3	18.65	68.67	0.00	68.67	19.68	9.02	0.00	3	3.08	19.68
3.90	1.400	108.78	0.00	1.400	7.77	3	18.51	69.04	0.00	69.04	19.28	8.17	0.00	3	3.05	19.28
3.92	1.390	103.11	0.00	1.390	7.42	3	18.45	69.41	0.00	69.41	19.02	7.81	0.00	3	3.04	19.02
3.94	1.390	96.62	0.00	1.390	6.95	3	18.37	69.78	0.00	69.78	18.92	7.32	0.00	3	3.03	18.92
3.96	1.360	91.96	0.00	1.360	6.76	3	18.31	70.15	0.00	70.15	18.39	7.13	0.00	3	3.03	18.39
3.98	1.330	81.41	0.00	1.330	6.12	3	18.16	70.51	0.00	70.51	17.86	6.46	0.00	3	3.01	17.86
4.00	1.580	72.85	0.00	1.580	4.61	3	18.10	70.87	0.10	70.77	21.32	4.83	0.00	3	2.87	21.16
4.02	1.790	71.96	0.00	1.790	4.02	3	18.13	71.24	0.29	70.94	24.23	4.19	0.00	3	2.79	23.80
4.04	1.870	72.18	0.00	1.870	3.86	3	18.15	71.60	0.49	71.11	25.29	4.01	0.00	4	2.76	24.77
4.06	1.820	64.86	0.00	1.820	3.56	3	18.02	71.96	0.69	71.27	24.53	3.71	0.00	4	2.75	23.98
4.08	1.750	60.71	0.00	1.750	3.47	3	17.93	72.32	0.88	71.44	23.49	3.62	0.00	4	2.76	22.99
4.10	1.580	54.09	0.00	1.580	3.42	3	17.75	72.67	1.08	71.60	21.05	3.59	0.00	4	2.79	20.70
4.12	1.450	48.77	0.00	1.450	3.36	3	17.60	73.03	1.28	71.75	19.19	3.54	0.00	3	2.82	18.93
4.14	1.320	41.51	0.00	1.320	3.14	3	17.38	73.38	1.47	71.90	17.34	3.33	0.00	3	2.83	17.14
4.16	1.310	36.50	0.00	1.310	2.79	3	17.23	73.72	1.67	72.05	17.16	2.95	0.00	4	2.81	16.91
4.18	1.390	30.99	0.00	1.390	2.23	4	17.06	74.06	1.86	72.20	18.23	2.35	0.00	4	2.73	17.80
4.20	1.420	31.50	0.00	1.420	2.22	4	17.09	74.40	2.06	72.34	18.60	2.34	0.00	4	2.72	18.15

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	1.430	32.73	0.00	1.430	2.29	4	17.14	74.75	2.26	72.49	18.70	2.42	0.00	4	2.73	18.26
4.24	1.340	32.45	0.00	1.340	2.42	4	17.10	75.09	2.45	72.64	17.41	2.57	0.00	4	2.77	17.09
4.26	1.370	32.57	0.00	1.370	2.38	4	17.12	75.43	2.65	72.78	17.79	2.52	0.00	4	2.76	17.43
4.28	1.430	32.32	0.00	1.430	2.26	4	17.12	75.77	2.84	72.93	18.57	2.39	0.00	4	2.73	18.14
4.30	1.670	32.80	0.00	1.670	1.96	4	17.20	76.12	3.04	73.08	21.81	2.06	0.00	4	2.64	21.08
4.32	1.790	32.45	0.00	1.790	1.81	4	17.21	76.46	3.24	73.22	23.40	1.89	0.00	4	2.59	22.51
4.34	1.980	28.52	0.00	1.980	1.44	4	17.10	76.80	3.43	73.37	25.94	1.50	0.00	5	2.50	24.69
4.36	2.060	22.37	0.00	2.060	1.09	5	16.84	77.14	3.63	73.51	26.97	1.13	0.00	5	2.42	25.45
4.38	2.070	20.69	0.00	2.070	1.00	5	16.75	77.48	3.83	73.65	27.05	1.04	0.00	5	2.41	25.48
4.40	2.040	17.71	0.00	2.040	0.87	5	16.57	77.81	4.02	73.79	26.59	0.90	0.00	5	2.38	24.99
4.42	2.320	14.04	0.00	2.320	0.61	5	16.35	78.14	4.22	73.92	30.33	0.63	0.00	5	2.26	28.11
4.44	2.430	13.47	0.00	2.430	0.55	5	16.32	78.47	4.41	74.05	31.76	0.57	0.00	5	2.23	29.34
4.46	2.400	14.20	0.00	2.400	0.59	5	16.38	78.79	4.61	74.18	31.29	0.61	0.00	5	2.25	28.98
4.48	2.470	18.13	0.00	2.470	0.73	5	16.67	79.13	4.81	74.32	32.17	0.76	0.00	5	2.28	29.91
4.50	2.710	17.14	0.00	2.710	0.63	5	16.64	79.46	5.00	74.46	35.33	0.65	0.00	5	2.21	32.63
4.52	2.840	16.86	0.00	2.840	0.59	5	16.64	79.79	5.20	74.59	37.00	0.61	0.00	5	2.18	34.08
4.54	2.870	17.36	0.00	2.870	0.60	5	16.68	80.12	5.40	74.73	37.33	0.62	0.00	5	2.18	34.40
4.56	2.720	17.49	0.00	2.720	0.64	5	16.66	80.46	5.59	74.87	35.26	0.66	0.00	5	2.22	32.62
4.58	2.470	16.38	0.00	2.470	0.66	5	16.55	80.79	5.79	75.00	31.86	0.69	0.00	5	2.26	29.63
4.60	2.550	17.43	0.00	2.550	0.68	5	16.63	81.12	5.98	75.14	32.86	0.71	0.00	5	2.25	30.56
4.62	2.620	17.36	0.00	2.620	0.66	5	16.64	81.45	6.18	75.27	33.72	0.68	0.00	5	2.24	31.33
4.64	2.590	19.36	0.00	2.590	0.75	5	16.76	81.79	6.38	75.41	33.26	0.77	0.00	5	2.27	31.01
4.66	2.590	17.78	0.00	2.590	0.69	5	16.66	82.12	6.57	75.55	33.19	0.71	0.00	5	2.25	30.91
4.68	2.400	16.48	0.00	2.400	0.69	5	16.55	82.45	6.77	75.69	30.62	0.71	0.00	5	2.28	28.62
4.70	2.270	14.89	0.00	2.270	0.66	5	16.41	82.78	6.97	75.82	28.85	0.68	0.00	5	2.29	27.01
4.72	2.150	11.57	0.00	2.150	0.54	5	16.10	83.11	7.16	75.95	27.22	0.56	0.00	5	2.28	25.45
4.74	2.000	10.87	0.00	2.000	0.54	5	16.00	83.43	7.36	76.07	25.20	0.57	0.00	5	2.31	23.65
4.76	1.980	14.73	0.00	1.980	0.74	5	16.34	83.75	7.55	76.20	24.89	0.78	0.00	5	2.37	23.52
4.78	1.970	17.81	0.00	1.970	0.90	5	16.56	84.08	7.75	76.33	24.71	0.94	0.00	5	2.42	23.46
4.80	1.720	18.44	0.00	1.720	1.07	4	16.55	84.41	7.95	76.47	21.39	1.13	0.00	5	2.51	20.51
4.82	1.510	20.50	0.00	1.510	1.36	4	16.62	84.74	8.14	76.60	18.61	1.44	-0.01	4	2.61	18.03
4.84	1.430	26.27	0.00	1.430	1.84	4	16.88	85.08	8.34	76.74	17.53	1.95	-0.01	4	2.70	17.14
4.86	1.370	27.60	0.00	1.370	2.01	4	16.93	85.42	8.53	76.88	16.71	2.15	-0.01	4	2.74	16.41
4.88	1.460	30.61	0.00	1.460	2.10	4	17.07	85.76	8.73	77.03	17.84	2.23	-0.01	4	2.72	17.50
4.90	1.300	32.99	0.00	1.300	2.54	4	17.11	86.10	8.93	77.17	15.73	2.72	-0.01	4	2.81	15.57
4.92	1.270	34.89	0.00	1.270	2.75	3	17.17	86.44	9.12	77.32	15.31	2.95	-0.01	4	2.84	15.20
4.94	1.580	40.59	0.00	1.580	2.57	4	17.42	86.79	9.32	77.47	19.27	2.72	-0.01	4	2.75	18.96
4.96	1.520	36.41	0.00	1.520	2.40	4	17.28	87.14	9.52	77.62	18.46	2.54	-0.01	4	2.74	18.16
4.98	1.710	37.30	0.00	1.710	2.18	4	17.36	87.48	9.71	77.77	20.86	2.30	-0.01	4	2.68	20.39
5.00	2.160	38.75	0.00	2.160	1.79	4	17.49	87.83	9.91	77.93	26.59	1.87	0.00	4	2.54	25.67
5.02	2.370	46.77	0.00	2.370	1.97	4	17.74	88.19	10.10	78.08	29.22	2.05	0.00	4	2.53	28.19
5.04	2.030	38.44	0.00	2.030	1.89	4	17.46	88.54	10.30	78.24	24.81	1.98	-0.01	4	2.58	24.05
5.06	1.660	30.13	0.00	1.660	1.82	4	17.10	88.88	10.50	78.39	20.04	1.92	-0.01	4	2.65	19.55
5.08	1.410	24.30	0.00	1.410	1.72	4	16.79	89.22	10.69	78.53	16.82	1.84	-0.01	4	2.70	16.49
5.10	1.280	25.48	0.00	1.280	1.99	4	16.81	89.56	10.89	78.67	15.13	2.14	-0.01	4	2.77	14.93
5.12	1.140	28.36	0.00	1.140	2.49	3	16.89	89.89	11.09	78.81	13.32	2.70	-0.01	3	2.87	13.27
5.14	1.080	30.83	0.00	1.080	2.85	3	16.96	90.23	11.28	78.95	12.54	3.11	-0.01	3	2.93	12.54
5.16	1.250	30.17	0.00	1.250	2.41	4	16.99	90.57	11.48	79.09	14.66	2.60	-0.01	4	2.83	14.55
5.18	1.520	35.74	0.00	1.520	2.35	4	17.26	90.92	11.67	79.24	18.03	2.50	-0.01	4	2.75	17.77
5.20	1.680	37.33	0.00	1.680	2.22	4	17.35	91.26	11.87	79.39	20.01	2.35	-0.01	4	2.70	19.63
5.22	1.870	38.41	0.00	1.870	2.05	4	17.42	91.61	12.07	79.55	22.36	2.16	-0.01	4	2.64	21.83
5.24	2.220	46.49	0.00	2.220	2.09	4	17.71	91.96	12.26	79.70	26.70	2.18	-0.01	4	2.58	25.94
5.26	2.300	54.82	0.00	2.300	2.38	4	17.91	92.32	12.46	79.86	27.64	2.48	-0.01	4	2.60	26.92
5.28	2.210	59.86	0.00	2.210	2.71	4	18.00	92.68	12.65	80.03	26.46	2.83	-0.01	4	2.65	25.87
5.30	1.760	69.43	0.00	1.760	3.94	3	18.08	93.04	12.85	80.19	20.79	4.17	-0.01	3	2.83	20.65

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P5		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	1.540	72.98	0.00	1.540	4.74	3	18.09	93.40	13.05	80.36	18.00	5.04	-0.01	3	2.93	18.00
5.34	1.260	78.68	0.00	1.260	6.24	3	18.10	93.77	13.24	80.52	14.48	6.75	-0.01	3	3.09	14.48
5.36	1.090	86.13	0.00	1.090	7.90	3	18.15	94.13	13.44	80.69	12.34	8.65	-0.01	3	3.21	12.34
5.38	1.040	86.03	0.00	1.040	8.27	3	18.13	94.49	13.64	80.86	11.69	9.10	-0.01	3	3.24	11.69
5.40	1.040	82.04	0.00	1.040	7.89	3	18.07	94.85	13.83	81.02	11.67	8.68	-0.01	3	3.23	11.67
5.42	1.060	74.94	0.00	1.060	7.07	3	17.98	95.21	14.03	81.19	11.88	7.77	-0.01	3	3.19	11.88
5.44	1.010	68.32	0.00	1.010	6.76	3	17.85	95.57	14.22	81.35	11.24	7.47	-0.02	3	3.20	11.24
5.46	0.950	63.38	0.00	0.950	6.67	3	17.74	95.93	14.42	81.51	10.48	7.42	-0.02	3	3.22	10.48
5.48	0.960	52.28	0.00	0.960	5.45	3	17.52	96.28	14.62	81.66	10.58	6.05	-0.02	3	3.16	10.58
5.50	1.090	43.35	0.00	1.090	3.98	3	17.36	96.63	14.81	81.81	12.14	4.36	-0.01	3	3.03	12.14
5.52	1.160	42.49	0.00	1.160	3.66	3	17.36	96.97	15.01	81.96	12.97	4.00	-0.01	3	2.98	12.97
5.54	1.080	38.79	0.00	1.080	3.59	3	17.23	97.32	15.21	82.11	11.97	3.95	-0.02	3	3.00	11.97
5.56	1.210	38.79	0.00	1.210	3.21	3	17.27	97.66	15.40	82.26	13.52	3.49	-0.01	3	2.93	13.52
5.58	1.240	38.85	0.00	1.240	3.13	3	17.28	98.01	15.60	82.41	13.86	3.40	-0.01	3	2.91	13.86
5.60	1.210	38.28	0.00	1.210	3.16	3	17.25	98.35	15.79	82.56	13.46	3.44	-0.01	3	2.93	13.46
5.62	1.220	44.65	0.00	1.220	3.66	3	17.43	98.70	15.99	82.71	13.56	3.98	-0.01	3	2.96	13.56
5.64	1.210	47.44	0.00	1.210	3.92	3	17.50	99.05	16.19	82.86	13.41	4.27	-0.01	3	2.99	13.41
5.66	1.140	48.70	0.00	1.140	4.27	3	17.51	99.40	16.38	83.02	12.53	4.68	-0.02	3	3.03	12.53
5.68	1.070	48.58	0.00	1.070	4.54	3	17.48	99.75	16.58	83.17	11.67	5.01	-0.02	3	3.08	11.67
5.70	1.120	44.33	0.00	1.120	3.96	3	17.39	100.10	16.78	83.32	12.24	4.35	-0.02	3	3.02	12.24
5.72	1.180	45.00	0.00	1.180	3.81	3	17.43	100.45	16.97	83.48	12.93	4.17	-0.02	3	2.99	12.93
5.74	1.100	43.51	0.00	1.100	3.96	3	17.36	100.79	17.17	83.63	11.95	4.35	-0.02	3	3.03	11.95
5.76	1.220	39.96	0.00	1.220	3.28	3	17.31	101.14	17.36	83.78	13.36	3.57	-0.02	3	2.94	13.36
5.78	1.370	38.25	0.00	1.370	2.79	3	17.30	101.49	17.56	83.93	15.11	3.02	-0.01	3	2.85	15.06
5.80	1.400	37.84	0.00	1.400	2.70	4	17.30	101.83	17.76	84.08	15.44	2.91	-0.01	4	2.84	15.37
5.82	1.340	38.41	0.00	1.340	2.87	3	17.30	102.18	17.95	84.23	14.70	3.10	-0.01	3	2.87	14.66
5.84	1.200	42.97	0.00	1.200	3.58	3	17.38	102.53	18.15	84.38	13.01	3.92	-0.02	3	2.97	13.01
5.86	1.150	43.19	0.00	1.150	3.76	3	17.37	102.87	18.34	84.53	12.39	4.12	-0.02	3	3.00	12.39
5.88	1.060	35.55	0.00	1.060	3.35	3	17.12	103.22	18.54	84.68	11.30	3.72	-0.02	3	3.01	11.30
5.90	1.070	35.01	0.00	1.070	3.27	3	17.10	103.56	18.74	84.82	11.39	3.62	-0.02	3	3.00	11.39
5.92	1.290	34.06	0.00	1.290	2.64	3	17.14	103.90	18.93	84.97	13.96	2.87	-0.02	3	2.87	13.93
5.94	2.360	33.43	0.00	2.360	1.42	5	17.35	104.25	19.13	85.12	26.50	1.48	-0.01	5	2.48	25.82
5.96	3.320	35.11	0.00	3.320	1.06	5	17.54	104.60	19.33	85.27	37.71	1.09	-0.01	5	2.29	36.32
5.98	3.420	39.83	0.00	3.420	1.16	5	17.70	104.95	19.52	85.43	38.80	1.20	-0.01	5	2.30	37.42
6.00	3.710	52.54	0.00	3.710	1.42	5	18.05	105.31	19.72	85.59	42.11	1.46	-0.01	5	2.32	40.67
6.02	3.890	64.74	0.00	3.890	1.66	5	18.31	105.68	19.91	85.76	44.13	1.71	-0.01	5	2.34	42.70
6.04	3.550	74.02	0.00	3.550	2.09	5	18.43	106.05	20.11	85.94	40.08	2.15	-0.01	5	2.44	39.01
6.06	3.100	84.48	0.00	3.100	2.73	4	18.53	106.42	20.31	86.11	34.77	2.82	-0.01	4	2.56	34.08
6.08	2.640	88.92	0.00	2.640	3.37	4	18.52	106.79	20.50	86.28	29.36	3.51	-0.01	4	2.67	28.98
6.10	2.120	96.20	0.00	2.120	4.54	3	18.53	107.16	20.70	86.46	23.28	4.78	-0.01	3	2.84	23.19
6.12	1.860	96.68	0.00	1.860	5.20	3	18.48	107.53	20.90	86.63	20.23	5.52	-0.01	3	2.92	20.23
6.14	1.610	98.45	0.00	1.610	6.11	3	18.45	107.90	21.09	86.80	17.30	6.55	-0.01	3	3.02	17.30
6.16	1.610	97.69	0.00	1.610	6.07	3	18.44	108.26	21.29	86.98	17.27	6.51	-0.01	3	3.02	17.27
6.18	1.490	89.90	0.00	1.490	6.03	3	18.32	108.63	21.48	87.15	15.85	6.51	-0.02	3	3.05	15.85
6.20	1.380	75.64	0.00	1.380	5.48	3	18.09	109.00	21.68	87.32	14.56	5.95	-0.02	3	3.05	14.56
6.22	1.270	64.42	0.00	1.270	5.07	3	17.87	109.35	21.88	87.48	13.27	5.55	-0.02	3	3.06	13.27
6.24	1.190	57.86	0.00	1.190	4.86	3	17.72	109.71	22.07	87.64	12.33	5.36	-0.02	3	3.08	12.33
6.26	1.150	46.77	0.00	1.150	4.07	3	17.46	110.06	22.27	87.79	11.85	4.50	-0.02	3	3.04	11.85
6.28	1.090	44.33	0.00	1.090	4.07	3	17.38	110.41	22.46	87.94	11.14	4.53	-0.02	3	3.06	11.14
6.30	1.010	42.72	0.00	1.010	4.23	3	17.31	110.76	22.66	88.09	10.21	4.75	-0.03	3	3.11	10.21
6.32	0.960	41.92	0.00	0.960	4.37	3	17.27	111.10	22.86	88.24	9.62	4.94	-0.03	3	3.14	9.62
6.34	0.930	39.29	0.00	0.930	4.22	3	17.18	111.45	23.05	88.39	9.26	4.80	-0.03	3	3.14	9.26
6.36	0.940	37.87	0.00	0.940	4.03	3	17.14	111.79	23.25	88.54	9.35	4.57	-0.03	3	3.13	9.35
6.38	0.960	33.75	0.00	0.960	3.52	3	17.02	112.13	23.45	88.68	9.56	3.98	-0.03	3	3.08	9.56
6.40	1.010	32.96	0.00	1.010	3.26	3	17.01	112.47	23.64	88.83	10.10	3.67	-0.03	3	3.04	10.10

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.070	32.04	0.00	1.070	2.99	3	17.00	112.81	23.84	88.97	10.76	3.35	-0.02	3	3.00	10.76
6.44	1.150	33.30	0.00	1.150	2.90	3	17.07	113.15	24.03	89.12	11.63	3.21	-0.02	3	2.96	11.63
6.46	1.130	32.61	0.00	1.130	2.89	3	17.04	113.49	24.23	89.26	11.39	3.21	-0.02	3	2.97	11.39
6.48	1.100	34.25	0.00	1.100	3.11	3	17.09	113.83	24.43	89.41	11.03	3.47	-0.02	3	3.00	11.03
6.50	1.110	34.70	0.00	1.110	3.13	3	17.11	114.18	24.62	89.55	11.12	3.48	-0.02	3	3.00	11.12
6.52	1.150	39.10	0.00	1.150	3.40	3	17.26	114.52	24.82	89.70	11.54	3.78	-0.02	3	3.00	11.54
6.54	1.170	39.70	0.00	1.170	3.39	3	17.28	114.87	25.02	89.85	11.74	3.76	-0.02	3	3.00	11.74
6.56	1.110	42.46	0.00	1.110	3.83	3	17.34	115.21	25.21	90.00	11.05	4.27	-0.03	3	3.05	11.05
6.58	1.120	38.25	0.00	1.120	3.42	3	17.22	115.56	25.41	90.15	11.14	3.81	-0.03	3	3.02	11.14
6.60	1.140	38.34	0.00	1.140	3.36	3	17.23	115.90	25.60	90.30	11.34	3.74	-0.03	3	3.01	11.34
6.62	1.060	41.61	0.00	1.060	3.93	3	17.30	116.25	25.80	90.45	10.43	4.41	-0.03	3	3.08	10.43
6.64	1.000	38.91	0.00	1.000	3.89	3	17.20	116.59	26.00	90.60	9.75	4.40	-0.03	3	3.10	9.75
6.66	0.920	36.66	0.00	0.920	3.98	3	17.10	116.94	26.19	90.74	8.85	4.57	-0.03	3	3.15	8.85
6.68	0.920	33.11	0.00	0.920	3.60	3	16.98	117.28	26.39	90.89	8.83	4.12	-0.03	3	3.12	8.83
6.70	0.870	27.98	0.00	0.870	3.22	3	16.77	117.61	26.59	91.03	8.27	3.72	-0.04	3	3.12	8.27
6.72	0.990	22.88	0.00	0.990	2.31	3	16.58	117.94	26.78	91.16	9.57	2.62	-0.03	3	2.98	9.57
6.74	1.230	19.90	0.00	1.230	1.62	4	16.51	118.27	26.98	91.30	12.18	1.79	-0.02	4	2.80	12.14
6.76	1.430	16.79	0.00	1.430	1.17	4	16.37	118.60	27.17	91.43	14.34	1.28	-0.02	4	2.67	14.23
6.78	1.520	16.38	0.00	1.520	1.08	4	16.36	118.93	27.37	91.56	15.30	1.17	-0.02	4	2.63	15.16
6.80	1.500	20.12	0.00	1.500	1.34	4	16.60	119.26	27.57	91.70	15.06	1.46	-0.02	4	2.68	14.95
6.82	1.670	22.97	0.00	1.670	1.38	4	16.79	119.60	27.76	91.83	16.88	1.48	-0.02	4	2.64	16.74
6.84	1.810	33.49	0.00	1.810	1.85	4	17.25	119.94	27.96	91.98	18.37	1.98	-0.02	4	2.68	18.25
6.86	1.810	33.49	0.00	1.810	1.85	4	17.25	120.29	28.15	92.13	18.34	1.98	-0.02	4	2.68	18.22
6.88	1.940	40.56	0.00	1.940	2.09	4	17.50	120.63	28.35	92.28	19.72	2.23	-0.02	4	2.68	19.59
6.90	2.100	52.92	0.00	2.100	2.52	4	17.84	120.99	28.55	92.44	21.41	2.67	-0.01	4	2.70	21.28
6.92	1.940	54.72	0.00	1.940	2.82	4	17.85	121.35	28.74	92.60	19.64	3.01	-0.02	4	2.76	19.56
6.94	1.900	53.71	0.00	1.900	2.83	4	17.82	121.70	28.94	92.76	19.17	3.02	-0.02	4	2.77	19.10
6.96	1.920	55.49	0.00	1.920	2.89	4	17.86	122.06	29.14	92.92	19.35	3.09	-0.02	4	2.77	19.28
6.98	2.100	57.35	0.00	2.100	2.73	4	17.93	122.42	29.33	93.08	21.24	2.90	-0.01	4	2.73	21.15
7.00	2.590	54.09	0.00	2.590	2.09	4	17.94	122.78	29.53	93.25	26.46	2.19	-0.01	4	2.58	26.24
7.02	2.720	55.52	0.00	2.720	2.04	4	17.99	123.14	29.72	93.41	27.80	2.14	-0.01	4	2.55	27.55
7.04	2.720	56.72	0.00	2.720	2.09	4	18.02	123.50	29.92	93.57	27.75	2.18	-0.01	4	2.56	27.51
7.06	2.500	65.15	0.00	2.500	2.61	4	18.14	123.86	30.12	93.74	25.35	2.74	-0.01	4	2.65	25.20
7.08	2.270	71.11	0.00	2.270	3.13	4	18.21	124.22	30.31	93.91	22.85	3.31	-0.01	4	2.74	22.76
7.10	2.050	75.10	0.00	2.050	3.66	3	18.23	124.59	30.51	94.08	20.47	3.90	-0.02	3	2.82	20.43
7.12	2.070	78.65	0.00	2.070	3.80	3	18.29	124.95	30.71	94.25	20.64	4.04	-0.02	3	2.83	20.61
7.14	1.990	79.76	0.00	1.990	4.01	3	18.29	125.32	30.90	94.42	19.75	4.28	-0.02	3	2.86	19.73
7.16	1.760	76.84	0.00	1.760	4.37	3	18.20	125.68	31.10	94.58	17.28	4.70	-0.02	3	2.93	17.28
7.18	1.890	68.07	0.00	1.890	3.60	3	18.09	126.04	31.29	94.75	18.62	3.86	-0.02	3	2.85	18.60
7.20	1.860	67.46	0.00	1.860	3.63	3	18.07	126.41	31.49	94.92	18.26	3.89	-0.02	3	2.86	18.25
7.22	2.070	67.34	0.00	2.070	3.25	4	18.11	126.77	31.69	95.08	20.44	3.47	-0.02	4	2.79	20.40
7.24	2.540	68.10	0.00	2.540	2.68	4	18.20	127.13	31.88	95.25	25.33	2.82	-0.01	4	2.66	25.22
7.26	3.100	62.14	0.00	3.100	2.00	4	18.17	127.50	32.08	95.42	31.15	2.09	-0.01	4	2.51	30.94
7.28	3.240	60.94	0.00	3.240	1.88	5	18.17	127.86	32.27	95.58	32.56	1.96	-0.01	5	2.48	32.33
7.30	3.140	67.88	0.00	3.140	2.16	4	18.28	128.22	32.47	95.75	31.45	2.25	-0.01	4	2.52	31.26
7.32	2.900	70.12	0.00	2.900	2.42	4	18.29	128.59	32.67	95.92	28.89	2.53	-0.01	4	2.58	28.75
7.34	2.690	68.19	0.00	2.690	2.53	4	18.22	128.95	32.86	96.09	26.65	2.66	-0.01	4	2.63	26.54
7.36	2.750	74.37	0.00	2.750	2.70	4	18.33	129.32	33.06	96.26	27.22	2.84	-0.01	4	2.64	27.12
7.38	2.980	75.39	0.00	2.980	2.53	4	18.38	129.69	33.26	96.43	29.56	2.64	-0.01	4	2.59	29.43
7.40	3.430	75.42	0.00	3.430	2.20	4	18.43	130.06	33.45	96.60	34.16	2.29	-0.01	4	2.50	33.98
7.42	3.420	77.10	0.00	3.420	2.25	4	18.46	130.43	33.65	96.78	33.99	2.34	-0.01	4	2.51	33.83
7.44	3.090	79.88	0.00	3.090	2.59	4	18.46	130.79	33.84	96.95	30.52	2.70	-0.01	4	2.58	30.41
7.46	2.880	83.28	0.00	2.880	2.89	4	18.48	131.16	34.04	97.12	28.30	3.03	-0.01	4	2.64	28.22
7.48	2.720	89.26	0.00	2.720	3.28	4	18.54	131.53	34.24	97.30	26.60	3.45	-0.01	4	2.70	26.55
7.50	2.370	91.36	0.00	2.370	3.85	4	18.51	131.90	34.43	97.47	22.96	4.08	-0.02	3	2.79	22.94

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	2.450	82.04	0.00	2.450	3.35	4	18.40	132.27	34.63	97.64	23.74	3.54	-0.01	4	2.74	23.70
7.54	2.650	83.72	0.00	2.650	3.16	4	18.45	132.64	34.83	97.82	25.74	3.33	-0.01	4	2.70	25.69
7.56	2.620	85.33	0.00	2.620	3.26	4	18.47	133.01	35.02	97.99	25.38	3.43	-0.01	4	2.71	25.35
7.58	2.630	80.93	0.00	2.630	3.08	4	18.41	133.38	35.22	98.16	25.43	3.24	-0.01	4	2.69	25.40
7.60	2.420	77.38	0.00	2.420	3.20	4	18.33	133.75	35.41	98.33	23.25	3.38	-0.02	4	2.74	23.23
7.62	2.150	74.37	0.00	2.150	3.46	4	18.24	134.11	35.61	98.50	20.47	3.69	-0.02	3	2.80	20.46
7.64	1.990	74.05	0.00	1.990	3.72	3	18.20	134.48	35.81	98.67	18.81	3.99	-0.02	3	2.85	18.80
7.66	1.880	78.17	0.00	1.880	4.16	3	18.24	134.84	36.00	98.84	17.66	4.48	-0.02	3	2.91	17.66
7.68	1.710	80.84	0.00	1.710	4.73	3	18.25	135.21	36.20	99.01	15.91	5.13	-0.02	3	2.98	15.91
7.70	1.670	72.75	0.00	1.670	4.36	3	18.12	135.57	36.40	99.17	15.47	4.74	-0.02	3	2.97	15.47
7.72	1.670	68.48	0.00	1.670	4.10	3	18.05	135.93	36.59	99.34	15.44	4.46	-0.02	3	2.95	15.44
7.74	1.690	65.78	0.00	1.690	3.89	3	18.00	136.29	36.79	99.50	15.61	4.23	-0.02	3	2.93	15.61
7.76	1.740	62.30	0.00	1.740	3.58	3	17.95	136.65	36.98	99.67	16.09	3.89	-0.02	3	2.90	16.09
7.78	1.830	54.12	0.00	1.830	2.96	4	17.81	137.01	37.18	99.83	16.96	3.20	-0.02	4	2.83	16.96
7.80	2.040	45.88	0.00	2.040	2.25	4	17.66	137.36	37.38	99.99	19.03	2.41	-0.02	4	2.71	19.03
7.82	2.070	43.57	0.00	2.070	2.10	4	17.61	137.71	37.57	100.14	19.30	2.25	-0.02	4	2.69	19.30
7.84	2.170	44.87	0.00	2.170	2.07	4	17.66	138.07	37.77	100.30	20.26	2.21	-0.02	4	2.67	20.26
7.86	2.130	48.93	0.00	2.130	2.30	4	17.75	138.42	37.96	100.46	19.83	2.46	-0.02	4	2.70	19.83
7.88	2.350	55.83	0.00	2.350	2.38	4	17.94	138.78	38.16	100.62	21.98	2.52	-0.02	4	2.68	21.99
7.90	2.390	57.04	0.00	2.390	2.39	4	17.97	139.14	38.36	100.78	22.33	2.53	-0.02	4	2.67	22.35
7.92	2.300	60.21	0.00	2.300	2.62	4	18.02	139.50	38.55	100.95	21.40	2.79	-0.02	4	2.71	21.42
7.94	2.720	62.58	0.00	2.720	2.30	4	18.13	139.86	38.75	101.11	25.52	2.43	-0.02	4	2.61	25.55
7.96	2.850	69.55	0.00	2.850	2.44	4	18.27	140.23	38.95	101.28	26.76	2.57	-0.01	4	2.61	26.79
7.98	3.170	73.48	0.00	3.170	2.32	4	18.37	140.59	39.14	101.45	29.86	2.43	-0.01	4	2.56	29.91
8.00	3.380	70.73	0.00	3.380	2.09	5	18.35	140.96	39.34	101.62	31.87	2.18	-0.01	4	2.51	31.95
8.02	3.250	74.24	0.00	3.250	2.28	4	18.39	141.33	39.53	101.79	30.54	2.39	-0.01	4	2.55	30.61
8.04	2.940	77.44	0.00	2.940	2.63	4	18.40	141.70	39.73	101.96	27.44	2.77	-0.01	4	2.62	27.50
8.06	2.570	85.30	0.00	2.570	3.32	4	18.46	142.06	39.93	102.14	23.77	3.51	-0.02	4	2.74	23.80
8.08	2.550	91.86	0.00	2.550	3.60	4	18.55	142.43	40.12	102.31	23.53	3.82	-0.02	4	2.77	23.56
8.10	2.860	92.65	0.00	2.860	3.24	4	18.60	142.81	40.32	102.49	26.51	3.41	-0.01	4	2.69	26.56
8.12	3.240	91.83	0.00	3.240	2.83	4	18.64	143.18	40.52	102.66	30.16	2.97	-0.01	4	2.61	30.25
8.14	3.170	88.73	0.00	3.170	2.80	4	18.59	143.55	40.71	102.84	29.43	2.93	-0.01	4	2.62	29.51
8.16	2.840	87.30	0.00	2.840	3.07	4	18.53	143.92	40.91	103.01	26.17	3.24	-0.02	4	2.68	26.23
8.18	2.340	85.37	0.00	2.340	3.65	4	18.43	144.29	41.10	103.19	21.28	3.89	-0.02	3	2.80	21.30
8.20	2.000	83.97	0.00	2.000	4.20	3	18.35	144.66	41.30	103.36	17.95	4.53	-0.02	3	2.90	17.95
8.22	1.770	85.56	0.00	1.770	4.83	3	18.32	145.02	41.50	103.53	15.70	5.27	-0.03	3	2.99	15.70
8.24	1.710	78.14	0.00	1.710	4.57	3	18.21	145.39	41.69	103.70	15.09	4.99	-0.03	3	2.99	15.09
8.26	2.230	70.79	0.00	2.230	3.17	4	18.20	145.75	41.89	103.86	20.07	3.40	-0.02	4	2.79	20.09
8.28	2.510	68.22	0.00	2.510	2.72	4	18.20	146.12	42.08	104.03	22.72	2.89	-0.02	4	2.70	22.79
8.30	2.470	59.92	0.00	2.470	2.43	4	18.04	146.48	42.28	104.20	22.30	2.58	-0.02	4	2.68	22.37
8.32	2.440	59.19	0.00	2.440	2.43	4	18.02	146.84	42.48	104.36	21.97	2.58	-0.02	4	2.68	22.05
8.34	2.400	63.06	0.00	2.400	2.63	4	18.09	147.20	42.67	104.53	21.55	2.80	-0.02	4	2.71	21.61
8.36	2.500	65.44	0.00	2.500	2.62	4	18.15	147.56	42.87	104.69	22.47	2.78	-0.02	4	2.69	22.54
8.38	2.470	58.72	0.00	2.470	2.38	4	18.02	147.92	43.07	104.86	22.14	2.53	-0.02	4	2.67	22.23
8.40	2.630	60.21	0.00	2.630	2.29	4	18.07	148.29	43.26	105.02	23.63	2.43	-0.02	4	2.64	23.74
8.42	2.900	66.80	0.00	2.900	2.30	4	18.23	148.65	43.46	105.19	26.16	2.43	-0.02	4	2.60	26.30
8.44	2.860	67.81	0.00	2.860	2.37	4	18.24	149.01	43.65	105.36	25.73	2.50	-0.02	4	2.62	25.87
8.46	3.120	66.29	0.00	3.120	2.12	4	18.25	149.38	43.85	105.53	28.15	2.23	-0.01	4	2.56	28.34
8.48	3.670	73.14	0.00	3.670	1.99	5	18.42	149.75	44.05	105.70	33.30	2.08	-0.01	5	2.48	33.59
8.50	4.540	72.69	0.00	4.540	1.60	5	18.50	150.12	44.24	105.87	41.46	1.66	-0.01	5	2.34	41.95
8.52	4.870	75.99	0.00	4.870	1.56	5	18.58	150.49	44.44	106.05	44.50	1.61	-0.01	5	2.31	45.07
8.54	4.900	82.04	0.00	4.900	1.67	5	18.67	150.86	44.64	106.23	44.71	1.73	-0.01	5	2.33	45.28
8.56	4.750	87.52	0.00	4.750	1.84	5	18.73	151.24	44.83	106.40	43.22	1.90	-0.01	5	2.37	43.75
8.58	4.220	98.14	0.00	4.220	2.33	5	18.82	151.61	45.03	106.58	38.17	2.41	-0.01	4	2.47	38.55
8.60	3.390	105.11	0.00	3.390	3.10	4	18.81	151.99	45.22	106.76	30.33	3.25	-0.01	4	2.63	30.51

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	2.650	99.02	0.00	2.650	3.74	4	18.65	152.36	45.42	106.94	23.36	3.96	-0.02	3	2.78	23.41
8.64	2.150	100.35	0.00	2.150	4.67	3	18.58	152.73	45.62	107.12	18.65	5.02	-0.02	3	2.92	18.65
8.66	1.820	105.14	0.00	1.820	5.78	3	18.57	153.11	45.81	107.29	15.54	6.31	-0.03	3	3.05	15.54
8.68	1.870	106.31	0.00	1.870	5.69	3	18.60	153.48	46.01	107.47	15.97	6.19	-0.03	3	3.03	15.97
8.70	2.810	107.58	0.00	2.810	3.83	4	18.77	153.85	46.21	107.65	24.67	4.05	-0.02	4	2.77	24.75
8.72	4.020	94.68	0.00	4.020	2.36	5	18.76	154.23	46.40	107.83	35.85	2.45	-0.01	4	2.50	36.24
8.74	3.700	90.34	0.00	3.700	2.44	4	18.67	154.60	46.60	108.00	32.83	2.55	-0.01	4	2.54	33.15
8.76	2.790	85.05	0.00	2.790	3.05	4	18.49	154.97	46.79	108.18	24.36	3.23	-0.02	4	2.71	24.48
8.78	3.050	78.21	0.00	3.050	2.56	4	18.43	155.34	46.99	108.35	26.72	2.70	-0.02	4	2.62	26.92
8.80	3.600	74.97	0.00	3.600	2.08	5	18.45	155.71	47.19	108.52	31.74	2.18	-0.01	4	2.51	32.11
8.82	3.260	73.20	0.00	3.260	2.25	4	18.38	156.08	47.38	108.70	28.56	2.36	-0.02	4	2.56	28.84
8.84	2.800	86.25	0.00	2.800	3.08	4	18.51	156.45	47.58	108.87	24.28	3.26	-0.02	4	2.71	24.41
8.86	2.750	86.29	0.00	2.750	3.14	4	18.50	156.82	47.77	109.04	23.78	3.33	-0.02	4	2.72	23.90
8.88	2.470	83.88	0.00	2.470	3.40	4	18.43	157.19	47.97	109.22	21.18	3.63	-0.02	4	2.79	21.24
8.90	2.350	82.39	0.00	2.350	3.51	4	18.39	157.56	48.17	109.39	20.04	3.76	-0.02	3	2.81	20.08
8.92	2.120	85.40	0.00	2.120	4.03	3	18.39	157.92	48.36	109.56	17.91	4.35	-0.02	3	2.89	17.91
8.94	2.160	82.20	0.00	2.160	3.81	3	18.36	158.29	48.56	109.73	18.24	4.11	-0.02	3	2.87	18.24
8.96	2.130	74.69	0.00	2.130	3.51	4	18.24	158.66	48.76	109.90	17.94	3.79	-0.02	3	2.85	17.95
8.98	2.110	69.11	0.00	2.110	3.28	4	18.15	159.02	48.95	110.07	17.73	3.54	-0.03	3	2.84	17.75
9.00	2.080	64.93	0.00	2.080	3.12	4	18.07	159.38	49.15	110.23	17.42	3.38	-0.03	3	2.83	17.45
9.02	2.550	59.29	0.00	2.550	2.33	4	18.04	159.74	49.34	110.40	21.65	2.48	-0.02	4	2.67	21.81
9.04	2.740	59.79	0.00	2.740	2.18	4	18.08	160.10	49.54	110.56	23.33	2.32	-0.02	4	2.63	23.55
9.06	2.950	55.14	0.00	2.950	1.87	5	18.02	160.47	49.74	110.73	25.19	1.98	-0.02	4	2.56	25.50
9.08	3.090	56.18	0.00	3.090	1.82	5	18.05	160.83	49.93	110.89	26.41	1.92	-0.02	4	2.54	26.77
9.10	3.370	68.95	0.00	3.370	2.05	5	18.32	161.19	50.13	111.06	28.89	2.15	-0.02	4	2.53	29.29
9.12	3.240	74.05	0.00	3.240	2.29	4	18.39	161.56	50.33	111.23	27.68	2.41	-0.02	4	2.58	28.01
9.14	2.850	85.05	0.00	2.850	2.98	4	18.50	161.93	50.52	111.41	24.13	3.16	-0.02	4	2.70	24.30
9.16	2.720	90.72	0.00	2.720	3.34	4	18.56	162.30	50.72	111.58	22.92	3.55	-0.02	4	2.75	23.04
9.18	2.730	98.01	0.00	2.730	3.59	4	18.65	162.67	50.91	111.76	22.97	3.82	-0.02	4	2.77	23.07
9.20	2.710	100.39	0.00	2.710	3.70	4	18.67	163.04	51.11	111.93	22.75	3.94	-0.02	3	2.78	22.84
9.22	2.760	101.05	0.00	2.760	3.66	4	18.69	163.42	51.31	112.11	23.16	3.89	-0.02	4	2.78	23.26
9.24	2.600	98.36	0.00	2.600	3.78	4	18.63	163.79	51.50	112.29	21.70	4.04	-0.02	3	2.81	21.76
9.26	2.380	95.38	0.00	2.380	4.01	3	18.56	164.16	51.70	112.46	19.70	4.30	-0.02	3	2.86	19.71
9.28	2.250	89.93	0.00	2.250	4.00	3	18.47	164.53	51.89	112.64	18.51	4.31	-0.02	3	2.88	18.51
9.30	1.940	83.75	0.00	1.940	4.32	3	18.34	164.90	52.09	112.81	15.74	4.72	-0.03	3	2.96	15.74
9.32	1.810	82.23	0.00	1.810	4.54	3	18.29	165.27	52.29	112.98	14.56	5.00	-0.03	3	3.00	14.56
9.34	2.040	83.40	0.00	2.040	4.09	3	18.35	165.63	52.48	113.15	16.57	4.45	-0.03	3	2.93	16.57
9.36	2.430	78.43	0.00	2.430	3.23	4	18.35	166.00	52.68	113.32	19.98	3.46	-0.02	4	2.79	20.05
9.38	2.670	71.11	0.00	2.670	2.66	4	18.27	166.37	52.88	113.49	22.06	2.84	-0.02	4	2.70	22.24
9.40	2.930	69.36	0.00	2.930	2.37	4	18.28	166.73	53.07	113.66	24.31	2.51	-0.02	4	2.64	24.59
9.42	3.120	65.82	0.00	3.120	2.11	4	18.24	167.10	53.27	113.83	25.94	2.23	-0.02	4	2.58	26.31
9.44	3.000	61.16	0.00	3.000	2.04	4	18.14	167.46	53.46	114.00	24.85	2.16	-0.02	4	2.59	25.20
9.46	2.930	60.40	0.00	2.930	2.06	4	18.12	167.82	53.66	114.16	24.20	2.19	-0.02	4	2.60	24.52
9.48	2.910	61.57	0.00	2.910	2.12	4	18.14	168.19	53.86	114.33	23.98	2.25	-0.02	4	2.61	24.30
9.50	2.810	67.53	0.00	2.810	2.40	4	18.23	168.55	54.05	114.50	23.07	2.56	-0.02	4	2.66	23.32
9.52	2.400	74.43	0.00	2.400	3.10	4	18.28	168.92	54.25	114.67	19.46	3.34	-0.02	4	2.79	19.54
9.54	2.210	69.40	0.00	2.210	3.14	4	18.17	169.28	54.45	114.83	17.77	3.40	-0.03	3	2.83	17.81
9.56	2.290	68.64	0.00	2.290	3.00	4	18.17	169.64	54.64	115.00	18.44	3.24	-0.03	4	2.80	18.50
9.58	2.170	77.22	0.00	2.170	3.56	4	18.28	170.01	54.84	115.17	17.37	3.86	-0.03	3	2.87	17.37
9.60	2.080	70.60	0.00	2.080	3.39	4	18.17	170.37	55.03	115.34	16.56	3.70	-0.03	3	2.87	16.56
9.62	2.270	67.65	0.00	2.270	2.98	4	18.15	170.74	55.23	115.51	18.17	3.22	-0.03	4	2.80	18.24
9.64	2.300	71.14	0.00	2.300	3.09	4	18.21	171.10	55.43	115.67	18.40	3.34	-0.03	4	2.81	18.46
9.66	2.490	69.40	0.00	2.490	2.79	4	18.21	171.46	55.62	115.84	20.01	2.99	-0.02	4	2.75	20.14
9.68	2.430	67.91	0.00	2.430	2.79	4	18.18	171.83	55.82	116.01	19.47	3.01	-0.02	4	2.76	19.58
9.70	2.290	65.18	0.00	2.290	2.85	4	18.11	172.19	56.02	116.18	18.23	3.08	-0.03	4	2.79	18.31

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
9.72	2.240	63.31	0.00	2.240	2.83	4	18.07	172.55	56.21	116.34	17.77	3.06	-0.03	4	2.80	17.84
9.74	2.270	57.96	0.00	2.270	2.55	4	17.97	172.91	56.41	116.50	18.00	2.76	-0.03	4	2.77	18.10
9.76	2.350	51.18	0.00	2.350	2.18	4	17.84	173.27	56.60	116.67	18.66	2.35	-0.03	4	2.71	18.83
9.78	2.730	47.50	0.00	2.730	1.74	5	17.81	173.63	56.80	116.83	21.88	1.86	-0.02	4	2.59	22.24
9.80	2.860	42.18	0.00	2.860	1.47	5	17.70	173.98	57.00	116.99	22.96	1.57	-0.02	4	2.53	23.42
9.82	2.740	47.09	0.00	2.740	1.72	5	17.81	174.34	57.19	117.14	21.90	1.84	-0.02	4	2.59	22.27
9.84	2.730	47.40	0.00	2.730	1.74	5	17.81	174.69	57.39	117.30	21.78	1.85	-0.02	4	2.59	22.14
9.86	2.920	44.20	0.00	2.920	1.51	5	17.76	175.05	57.58	117.46	23.37	1.61	-0.02	4	2.53	23.85
9.88	3.090	56.18	0.00	3.090	1.82	5	18.05	175.41	57.78	117.62	24.78	1.93	-0.02	4	2.56	25.25
9.90	2.930	67.37	0.00	2.930	2.30	4	18.24	175.77	57.98	117.79	23.38	2.45	-0.02	4	2.64	23.71
9.92	3.060	69.33	0.00	3.060	2.27	4	18.29	176.14	58.17	117.96	24.45	2.40	-0.02	4	2.62	24.82
9.94	3.010	79.57	0.00	3.010	2.64	4	18.44	176.50	58.37	118.13	23.99	2.81	-0.02	4	2.67	24.28
9.96	2.970	79.92	0.00	2.970	2.69	4	18.44	176.87	58.57	118.31	23.61	2.86	-0.02	4	2.68	23.89
9.98	2.870	74.91	0.00	2.870	2.61	4	18.36	177.24	58.76	118.48	22.73	2.78	-0.02	4	2.69	22.99
10.00	2.780	80.80	0.00	2.780	2.91	4	18.43	177.61	58.96	118.65	21.93	3.10	-0.02	4	2.73	22.13
10.02	2.680	84.92	0.00	2.680	3.17	4	18.48	177.98	59.15	118.82	21.06	3.39	-0.02	4	2.77	21.19
10.04	2.600	82.58	0.00	2.600	3.18	4	18.43	178.35	59.35	119.00	20.35	3.41	-0.02	4	2.78	20.46
10.06	2.470	78.84	0.00	2.470	3.19	4	18.36	178.71	59.55	119.17	19.23	3.44	-0.03	4	2.80	19.30
10.08	2.190	76.43	0.00	2.190	3.49	4	18.28	179.08	59.74	119.34	16.85	3.80	-0.03	3	2.88	16.85
10.10	2.190	77.63	0.00	2.190	3.54	4	18.29	179.45	59.94	119.51	16.82	3.86	-0.03	3	2.88	16.82
10.12	2.120	81.41	0.00	2.120	3.84	3	18.34	179.81	60.14	119.68	16.21	4.20	-0.03	3	2.92	16.21
10.14	2.040	81.34	0.00	2.040	3.99	3	18.32	180.18	60.33	119.85	15.52	4.37	-0.03	3	2.94	15.52
10.16	2.060	75.73	0.00	2.060	3.68	3	18.24	180.54	60.53	120.02	15.66	4.03	-0.03	3	2.92	15.66
10.18	2.140	80.46	0.00	2.140	3.76	3	18.33	180.91	60.72	120.19	16.30	4.11	-0.03	3	2.91	16.30
10.20	2.220	81.63	0.00	2.220	3.68	4	18.36	181.28	60.92	120.36	16.94	4.00	-0.03	3	2.89	16.94
10.22	2.300	80.61	0.00	2.300	3.50	4	18.36	181.64	61.12	120.53	17.58	3.81	-0.03	3	2.86	17.58
10.24	2.260	84.35	0.00	2.260	3.73	4	18.40	182.01	61.31	120.70	17.22	4.06	-0.03	3	2.89	17.22
10.26	2.210	79.25	0.00	2.210	3.59	4	18.32	182.38	61.51	120.87	16.78	3.91	-0.03	3	2.89	16.78
10.28	2.080	80.52	0.00	2.080	3.87	3	18.32	182.74	61.70	121.04	15.67	4.24	-0.03	3	2.93	15.67
10.30	1.940	82.01	0.00	1.940	4.23	3	18.31	183.11	61.90	121.21	14.49	4.67	-0.04	3	2.98	14.49
10.32	1.820	81.91	0.00	1.820	4.50	3	18.29	183.48	62.10	121.38	13.48	5.01	-0.04	3	3.03	13.48
10.34	1.590	88.12	0.00	1.590	5.54	3	18.32	183.84	62.29	121.55	11.57	6.27	-0.04	3	3.14	11.57
10.36	1.640	83.02	0.00	1.640	5.06	3	18.26	184.21	62.49	121.72	11.96	5.70	-0.04	3	3.10	11.96
10.38	1.560	84.13	0.00	1.560	5.39	3	18.26	184.57	62.69	121.89	11.28	6.12	-0.05	3	3.14	11.28
10.40	1.500	75.04	0.00	1.500	5.00	3	18.11	184.94	62.88	122.06	10.77	5.71	-0.05	3	3.14	10.77
10.42	1.390	69.93	0.00	1.390	5.03	3	18.00	185.30	63.08	122.22	9.86	5.80	-0.05	3	3.17	9.86
10.44	1.320	67.24	0.00	1.320	5.09	3	17.94	185.66	63.27	122.38	9.27	5.93	-0.06	3	3.20	9.27
10.46	1.270	60.02	0.00	1.270	4.73	3	17.79	186.01	63.47	122.54	8.85	5.54	-0.06	3	3.20	8.85
10.48	1.420	55.26	0.00	1.420	3.89	3	17.74	186.37	63.67	122.70	10.05	4.48	-0.05	3	3.10	10.05
10.50	1.860	51.87	0.00	1.860	2.79	4	17.77	186.72	63.86	122.86	13.62	3.10	-0.04	3	2.90	13.62
10.52	2.790	52.76	0.00	2.790	1.89	4	17.94	187.08	64.06	123.02	21.16	2.03	-0.02	4	2.63	21.55
10.54	3.650	51.90	0.00	3.650	1.42	5	18.03	187.44	64.26	123.19	28.11	1.50	-0.02	5	2.44	29.04
10.56	3.850	49.12	0.00	3.850	1.28	5	17.98	187.80	64.45	123.35	29.69	1.34	-0.02	5	2.40	30.80
10.58	4.370	61.51	0.00	4.370	1.41	5	18.29	188.17	64.65	123.52	33.86	1.47	-0.02	5	2.37	35.20
10.60	4.750	68.92	0.00	4.750	1.45	5	18.45	188.53	64.84	123.69	36.88	1.51	-0.01	5	2.35	38.43
10.62	5.110	70.19	0.00	5.110	1.37	5	18.50	188.90	65.04	123.86	39.73	1.43	-0.01	5	2.31	41.55
10.64	4.800	87.24	0.00	4.800	1.82	5	18.73	189.28	65.24	124.04	37.17	1.89	-0.01	5	2.41	38.57
10.66	5.200	110.53	0.00	5.200	2.13	5	19.03	189.66	65.43	124.22	40.33	2.21	-0.01	5	2.42	41.81
10.68	6.470	107.17	0.00	6.470	1.66	5	19.08	190.04	65.63	124.41	50.48	1.71	-0.01	5	2.27	52.99
10.70	6.970	96.33	0.00	6.970	1.38	5	18.99	190.42	65.83	124.59	54.41	1.42	-0.01	5	2.19	57.51
10.72	7.870	91.04	0.00	7.870	1.16	6	18.97	190.80	66.02	124.78	61.54	1.19	-0.01	5	2.10	65.59
10.74	7.880	106.82	0.00	7.880	1.36	5	19.15	191.18	66.22	124.96	61.53	1.39	-0.01	5	2.14	65.35
10.76	8.350	106.15	0.00	8.350	1.27	5	19.17	191.56	66.41	125.15	65.19	1.30	-0.01	5	2.10	69.50
10.78	9.070	105.27	0.00	9.070	1.16	6	19.19	191.95	66.61	125.34	70.83	1.19	-0.01	5	2.05	75.90
10.80	8.950	118.54	0.00	8.950	1.32	6	19.32	192.33	66.81	125.53	69.77	1.35	-0.01	5	2.09	74.52

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
10.82	8.200	136.45	0.00	8.200	1.66	5	19.45	192.72	67.00	125.72	63.69	1.70	-0.01	5	2.19	67.48
10.84	7.330	163.67	0.00	7.330	2.23	5	19.62	193.11	67.20	125.91	56.68	2.29	-0.01	5	2.32	59.40

CPTe P5b NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance	based on the stress exponent n	
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data				Basic output data			NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b		
Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_v	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.020	0.00	0.00	0.020	0.00	1	19.00	0.38	0.00	0.38	51.63	0.00	0.00	0	0.00	0.00
0.04	0.310	0.03	0.00	0.310	0.01	1	13.73	0.71	0.00	0.71	437.26	0.01	0.00	0	1.90	55.03
0.06	0.570	0.06	0.00	0.570	0.01	1	13.73	0.98	0.00	0.98	579.44	0.01	0.00	0	1.81	67.08
0.08	0.740	0.06	0.00	0.740	0.01	1	13.73	1.26	0.00	1.26	587.84	0.01	0.00	0	1.81	76.79
0.10	0.820	0.10	0.00	0.820	0.01	1	13.73	1.53	0.00	1.53	534.46	0.01	0.00	0	1.76	70.95
0.12	0.970	0.10	0.00	0.970	0.01	1	13.73	1.81	0.00	1.81	536.08	0.01	0.00	0	1.75	78.69
0.14	1.090	0.06	0.00	1.090	0.01	0	13.73	2.08	0.00	2.08	522.85	0.01	0.00	0	1.83	92.11
0.16	1.150	8.11	0.00	1.150	0.71	4	15.45	2.38	0.00	2.38	481.60	0.71	0.00	6	1.85	90.40
0.18	1.120	18.47	0.00	1.120	1.65	4	16.39	2.71	0.00	2.71	412.48	1.65	0.00	5	2.03	107.97
0.20	1.100	26.33	0.00	1.100	2.39	3	16.79	3.04	0.00	3.04	360.61	2.40	0.00	5	2.14	111.49
0.22	1.060	33.05	0.00	1.060	3.12	3	17.03	3.38	0.00	3.38	312.50	3.13	0.00	5	2.23	112.30
0.24	0.950	38.85	0.00	0.950	4.09	3	17.18	3.72	0.00	3.72	254.07	4.11	0.00	9	2.33	107.44
0.26	0.860	41.51	0.00	0.860	4.83	3	17.22	4.07	0.00	4.07	210.37	4.85	0.00	9	2.40	101.08
0.28	0.830	41.89	0.00	0.830	5.05	3	17.21	4.41	0.00	4.41	187.08	5.07	0.00	9	2.44	95.05
0.30	0.880	39.39	0.00	0.880	4.48	3	17.16	4.76	0.00	4.76	184.01	4.50	0.00	9	2.40	91.72
0.32	0.890	35.59	0.00	0.890	4.00	3	17.05	5.10	0.00	5.10	173.58	4.02	0.00	4	2.38	86.01
0.34	1.020	32.04	0.00	1.020	3.14	3	16.98	5.44	0.00	5.44	186.58	3.16	0.00	5	2.31	85.22
0.36	1.120	29.98	0.00	1.120	2.68	3	16.94	5.78	0.00	5.78	192.87	2.69	0.00	5	2.26	84.83
0.38	1.150	27.09	0.00	1.150	2.36	3	16.84	6.11	0.00	6.11	187.07	2.37	0.00	5	2.23	81.27
0.40	1.080	24.30	0.00	1.080	2.25	3	16.69	6.45	0.00	6.45	166.45	2.26	0.00	5	2.24	74.49
0.42	1.020	25.64	0.00	1.020	2.51	3	16.73	6.78	0.00	6.78	149.36	2.53	0.00	5	2.29	71.31
0.44	1.020	28.87	0.00	1.020	2.83	3	16.86	7.12	0.00	7.12	142.24	2.85	0.00	5	2.33	71.98
0.46	1.000	33.53	0.00	1.000	3.35	3	17.03	7.46	0.00	7.46	133.05	3.38	0.00	5	2.38	71.82
0.48	1.040	36.85	0.00	1.040	3.54	3	17.15	7.80	0.00	7.80	132.30	3.57	0.00	4	2.39	73.06
0.50	1.090	39.83	0.00	1.090	3.65	3	17.26	8.15	0.00	8.15	132.80	3.68	0.00	4	2.40	74.40
0.52	1.170	41.70	0.00	1.170	3.56	3	17.34	8.49	0.00	8.49	136.76	3.59	0.00	4	2.38	76.27
0.54	1.260	42.14	0.00	1.260	3.34	3	17.38	8.84	0.00	8.84	141.53	3.37	0.00	5	2.36	77.80
0.56	1.360	39.32	0.00	1.360	2.89	3	17.33	9.19	0.00	9.19	147.03	2.91	0.00	5	2.31	78.16
0.58	1.440	37.58	0.00	1.440	2.61	4	17.30	9.53	0.00	9.53	150.05	2.63	0.00	5	2.27	78.27
0.60	1.450	37.04	0.00	1.450	2.55	4	17.29	9.88	0.00	9.88	145.77	2.57	0.00	5	2.27	76.76
0.62	1.420	37.61	0.00	1.420	2.65	4	17.29	10.23	0.00	10.23	137.88	2.67	0.00	5	2.29	74.59
0.64	1.540	37.33	0.00	1.540	2.42	4	17.32	10.57	0.00	10.57	144.68	2.44	0.00	5	2.26	76.63
0.66	1.590	35.30	0.00	1.590	2.22	4	17.27	10.92	0.00	10.92	144.64	2.24	0.00	5	2.23	75.82
0.68	1.510	34.86	0.00	1.510	2.31	4	17.23	11.26	0.00	11.26	133.08	2.33	0.00	5	2.26	72.05
0.70	1.510	34.54	0.00	1.510	2.29	4	17.22	11.61	0.00	11.61	129.10	2.31	0.00	5	2.27	70.69
0.72	1.460	35.36	0.00	1.460	2.42	4	17.23	11.95	0.00	11.95	121.17	2.44	0.00	5	2.29	68.41
0.74	1.410	35.17	0.00	1.410	2.49	4	17.21	12.30	0.00	12.30	113.68	2.52	0.00	5	2.31	65.79
0.76	1.410	36.82	0.00	1.410	2.61	4	17.27	12.64	0.00	12.64	110.55	2.63	0.00	5	2.33	65.29
0.78	1.410	36.82	0.00	1.410	2.61	4	17.27	12.99	0.00	12.99	107.58	2.64	0.00	5	2.34	64.24
0.80	1.620	36.92	0.00	1.620	2.28	4	17.32	13.33	0.00	13.33	120.52	2.30	0.00	5	2.27	69.01
0.82	1.640	39.26	0.00	1.640	2.39	4	17.40	13.68	0.00	13.68	118.89	2.41	0.00	5	2.29	69.29
0.84	1.540	40.72	0.00	1.540	2.64	4	17.42	14.03	0.00	14.03	108.79	2.67	0.00	5	2.33	66.05
0.86	1.430	41.54	0.00	1.430	2.90	3	17.41	14.38	0.00	14.38	98.47	2.93	0.00	5	2.38	62.30
0.88	1.350	41.89	0.00	1.350	3.10	3	17.40	14.72	0.00	14.72	90.69	3.14	0.00	5	2.41	59.25
0.90	1.260	43.22	0.00	1.260	3.43	3	17.41	15.07	0.00	15.07	82.60	3.47	0.00	4	2.46	56.15

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	1.220	44.49	0.00	1.220	3.65	3	17.43	15.42	0.00	15.42	78.12	3.69	0.00	4	2.49	54.46
0.94	1.200	44.20	0.00	1.200	3.68	3	17.42	15.77	0.00	15.77	75.10	3.73	0.00	4	2.50	53.02
0.96	1.250	43.38	0.00	1.250	3.47	3	17.41	16.12	0.00	16.12	76.56	3.52	0.00	4	2.48	53.49
0.98	1.380	42.94	0.00	1.380	3.11	3	17.44	16.47	0.00	16.47	82.81	3.15	0.00	4	2.43	56.20
1.00	1.520	43.03	0.00	1.520	2.83	4	17.48	16.81	0.00	16.81	89.40	2.86	0.00	5	2.39	59.13
1.02	1.620	42.91	0.00	1.620	2.65	4	17.50	17.16	0.00	17.16	93.38	2.68	0.00	5	2.36	60.87
1.04	1.700	42.24	0.00	1.700	2.48	4	17.50	17.51	0.00	17.51	96.06	2.51	0.00	5	2.33	61.92
1.06	1.730	41.86	0.00	1.730	2.42	4	17.49	17.86	0.00	17.86	95.84	2.44	0.00	5	2.32	61.80
1.08	1.680	37.20	0.00	1.680	2.21	4	17.35	18.21	0.00	18.21	91.25	2.24	0.00	5	2.31	58.76
1.10	1.680	34.95	0.00	1.680	2.08	4	17.27	18.56	0.00	18.56	89.53	2.10	0.00	5	2.30	57.53
1.12	1.740	37.39	0.00	1.740	2.15	4	17.37	18.90	0.00	18.90	91.04	2.17	0.00	5	2.31	58.87
1.14	1.830	38.85	0.00	1.830	2.12	4	17.43	19.25	0.00	19.25	94.05	2.15	0.00	5	2.29	60.63
1.16	1.870	35.90	0.00	1.870	1.92	4	17.35	19.60	0.00	19.60	94.41	1.94	0.00	5	2.27	60.16
1.18	1.700	32.04	0.00	1.700	1.88	4	17.18	19.95	0.00	19.95	84.23	1.91	0.00	5	2.29	54.80
1.20	1.520	30.61	0.00	1.520	2.01	4	17.08	20.29	0.00	20.29	73.92	2.04	0.00	5	2.34	49.83
1.22	1.400	32.23	0.00	1.400	2.30	4	17.11	20.63	0.00	20.63	66.86	2.34	0.00	5	2.40	46.88
1.24	1.270	34.48	0.00	1.270	2.71	3	17.15	20.97	0.00	20.97	59.56	2.76	0.00	4	2.47	43.62
1.26	1.210	35.08	0.00	1.210	2.90	3	17.15	21.32	0.00	21.32	55.77	2.95	0.00	4	2.50	41.80
1.28	1.180	35.87	0.00	1.180	3.04	3	17.17	21.66	0.00	21.66	53.48	3.10	0.00	4	2.53	40.75
1.30	1.160	39.70	0.00	1.160	3.42	3	17.28	22.00	0.00	22.00	51.72	3.49	0.00	4	2.57	40.42
1.32	1.070	47.25	0.00	1.070	4.42	3	17.45	22.35	0.00	22.35	46.87	4.51	0.00	4	2.66	38.71
1.34	0.990	52.13	0.00	0.990	5.27	3	17.53	22.70	0.00	22.70	42.61	5.39	0.00	3	2.73	36.73
1.36	0.890	53.17	0.00	0.890	5.97	3	17.51	23.05	0.00	23.05	37.61	6.13	0.00	3	2.79	33.71
1.38	0.840	53.08	0.00	0.840	6.32	3	17.49	23.40	0.00	23.40	34.89	6.50	0.00	3	2.83	31.93
1.40	0.830	51.75	0.00	0.830	6.23	3	17.46	23.75	0.00	23.75	33.94	6.42	0.00	3	2.83	31.15
1.42	0.840	46.71	0.00	0.840	5.56	3	17.34	24.10	0.00	24.10	33.86	5.72	0.00	3	2.80	30.60
1.44	0.820	39.36	0.00	0.820	4.80	3	17.14	24.44	0.00	24.44	32.55	4.95	0.00	3	2.77	29.02
1.46	0.850	33.40	0.00	0.850	3.93	3	16.96	24.78	0.00	24.78	33.30	4.05	0.00	4	2.72	28.83
1.48	0.880	30.33	0.00	0.880	3.45	3	16.86	25.12	0.00	25.12	34.03	3.55	0.00	4	2.68	28.91
1.50	0.920	25.57	0.00	0.920	2.78	3	16.68	25.46	0.00	25.46	35.14	2.86	0.00	4	2.62	28.96
1.52	0.890	21.04	0.00	0.890	2.36	3	16.45	25.79	0.00	25.79	33.52	2.43	0.00	4	2.59	27.32
1.54	0.830	16.45	0.00	0.830	1.98	3	16.14	26.11	0.00	26.11	30.79	2.05	0.00	4	2.58	24.96
1.56	0.770	12.74	0.00	0.770	1.65	3	15.81	26.43	0.00	26.43	28.14	1.71	0.00	4	2.57	22.72
1.58	0.810	9.22	0.00	0.810	1.14	4	15.46	26.74	0.00	26.74	29.29	1.18	0.00	5	2.48	22.67
1.60	0.890	8.08	0.00	0.890	0.91	4	15.35	27.05	0.00	27.05	31.91	0.94	0.00	5	2.41	23.90
1.62	0.850	6.05	0.00	0.850	0.71	4	15.00	27.35	0.00	27.35	30.08	0.74	0.00	5	2.38	22.32
1.64	0.810	5.32	0.00	0.810	0.66	4	14.83	27.64	0.00	27.64	28.30	0.68	0.00	5	2.39	21.12
1.66	0.840	5.20	0.00	0.840	0.62	4	14.82	27.94	0.00	27.94	29.06	0.64	0.00	5	2.37	21.54
1.68	0.950	5.48	0.00	0.950	0.58	4	14.93	28.24	0.00	28.24	32.64	0.59	0.00	5	2.32	23.73
1.70	0.970	7.48	0.00	0.970	0.77	4	15.29	28.54	0.00	28.54	32.98	0.79	0.00	5	2.36	24.50
1.72	0.890	7.41	0.00	0.890	0.83	4	15.25	28.85	0.00	28.85	29.85	0.86	0.00	5	2.41	22.72
1.74	0.680	7.73	0.00	0.680	1.14	4	15.19	29.15	0.00	29.15	22.33	1.19	0.00	4	2.56	18.30
1.76	0.570	8.11	0.00	0.570	1.42	3	15.18	29.46	0.00	29.46	18.35	1.50	0.00	4	2.67	15.84
1.78	0.570	8.11	0.00	0.570	1.42	3	15.18	29.76	0.00	29.76	18.15	1.50	0.00	4	2.67	15.71
1.80	0.700	2.47	0.00	0.700	0.35	1	13.89	30.04	0.00	30.04	22.31	0.37	0.00	5	2.38	16.89
1.82	0.740	3.42	0.00	0.740	0.46	4	14.29	30.32	0.20	30.12	23.56	0.48	0.00	5	2.39	17.98
1.84	0.720	5.01	0.00	0.720	0.70	4	14.72	30.61	0.39	30.22	22.81	0.73	0.00	5	2.46	18.02
1.86	0.690	7.61	0.00	0.690	1.10	4	15.18	30.92	0.59	30.33	21.73	1.15	0.00	4	2.56	17.95
1.88	0.650	8.87	0.00	0.650	1.36	3	15.33	31.22	0.78	30.44	20.33	1.43	0.00	4	2.62	17.29
1.90	0.630	11.19	0.00	0.630	1.78	3	15.59	31.53	0.98	30.55	19.59	1.87	0.00	4	2.69	17.17
1.92	0.620	13.31	0.00	0.620	2.15	3	15.78	31.85	1.18	30.67	19.18	2.26	0.00	4	2.73	17.17
1.94	0.600	14.16	0.00	0.600	2.36	3	15.84	32.16	1.37	30.79	18.44	2.49	0.00	4	2.77	16.77
1.96	0.660	13.78	0.00	0.660	2.09	3	15.85	32.48	1.57	30.91	20.30	2.20	0.00	4	2.71	18.00
1.98	0.790	12.04	0.00	0.790	1.52	4	15.76	32.79	1.77	31.03	24.40	1.59	0.00	4	2.58	20.47
2.00	0.940	11.95	0.00	0.940	1.27	4	15.82	33.11	1.96	31.15	29.11	1.32	0.00	5	2.49	23.43

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	1.040	10.39	0.00	1.040	1.00	4	15.70	33.43	2.16	31.27	32.19	1.03	0.00	5	2.41	25.02
2.04	1.090	10.81	0.00	1.090	0.99	4	15.76	33.74	2.35	31.39	33.65	1.02	0.00	5	2.40	25.99
2.06	1.100	12.01	0.00	1.100	1.09	4	15.88	34.06	2.55	31.51	33.83	1.13	0.00	5	2.41	26.35
2.08	1.090	12.10	0.00	1.090	1.11	4	15.89	34.37	2.75	31.63	33.38	1.15	0.00	5	2.42	26.10
2.10	1.010	14.26	0.00	1.010	1.41	4	16.05	34.69	2.94	31.75	30.72	1.46	0.00	5	2.49	24.85
2.12	0.900	19.01	0.00	0.900	2.11	3	16.34	35.02	3.14	31.88	27.13	2.20	0.00	4	2.62	23.22
2.14	0.780	21.29	0.00	0.780	2.73	3	16.41	35.35	3.34	32.01	23.26	2.86	0.00	4	2.73	20.86
2.16	0.760	21.80	0.00	0.760	2.87	3	16.43	35.68	3.53	32.15	22.53	3.01	0.00	4	2.75	20.41
2.18	0.730	21.26	0.00	0.730	2.91	3	16.38	36.01	3.73	32.28	21.50	3.06	-0.01	4	2.77	19.63
2.20	0.680	21.61	0.00	0.680	3.18	3	16.38	36.33	3.92	32.41	19.86	3.36	-0.01	4	2.81	18.50
2.22	0.660	20.12	0.00	0.660	3.05	3	16.28	36.66	4.12	32.54	19.16	3.23	-0.01	4	2.81	17.86
2.24	0.630	19.61	0.00	0.630	3.11	3	16.23	36.98	4.32	32.67	18.15	3.31	-0.01	3	2.83	17.11
2.26	0.610	19.17	0.00	0.610	3.14	3	16.20	37.31	4.51	32.80	17.46	3.35	-0.01	3	2.85	16.56
2.28	0.590	18.06	0.00	0.590	3.06	3	16.11	37.63	4.71	32.92	16.78	3.27	-0.01	3	2.85	15.96
2.30	0.590	17.17	0.00	0.590	2.91	3	16.06	37.95	4.90	33.05	16.70	3.11	-0.01	3	2.84	15.83
2.32	0.580	16.13	0.00	0.580	2.78	3	15.98	38.27	5.10	33.17	16.33	2.98	-0.01	4	2.84	15.46
2.34	0.570	13.85	0.00	0.570	2.43	3	15.80	38.59	5.30	33.29	15.96	2.61	-0.01	4	2.82	14.95
2.36	0.560	9.98	0.00	0.560	1.78	3	15.41	38.90	5.49	33.40	15.60	1.92	-0.01	4	2.76	14.26
2.38	0.560	7.54	0.00	0.560	1.35	3	15.09	39.20	5.69	33.51	15.54	1.45	-0.01	4	2.71	13.89
2.40	0.580	4.88	0.00	0.580	0.84	4	14.60	39.50	5.89	33.61	16.08	0.90	-0.01	4	2.61	13.81
2.42	0.610	3.39	0.00	0.610	0.56	4	14.20	39.78	6.08	33.70	16.92	0.59	-0.01	5	2.53	14.04
2.44	0.630	2.15	0.00	0.630	0.34	1	13.73	40.06	6.28	33.78	17.46	0.36	-0.01	5	2.45	14.05
2.46	0.830	2.47	0.00	0.830	0.30	1	13.96	40.34	6.47	33.86	23.32	0.31	-0.01	5	2.33	17.86
2.48	1.250	3.93	0.00	1.250	0.31	5	14.65	40.63	6.67	33.96	35.62	0.32	-0.01	5	2.19	25.71
2.50	1.570	5.55	0.00	1.570	0.35	5	15.13	40.93	6.87	34.06	44.89	0.36	0.00	5	2.12	31.62
2.52	1.760	4.37	0.00	1.760	0.25	5	14.90	41.23	7.06	34.16	50.31	0.25	0.00	6	2.03	34.26
2.54	1.700	3.36	0.00	1.700	0.20	5	14.59	41.52	7.26	34.26	48.41	0.20	0.00	6	2.02	32.86
2.56	1.540	2.28	0.00	1.540	0.15	5	14.10	41.81	7.46	34.35	43.61	0.15	0.00	6	2.04	29.79
2.58	1.410	1.65	0.00	1.410	0.12	5	13.73	42.08	7.65	34.43	39.73	0.12	-0.01	6	2.05	27.37
2.60	1.220	3.71	0.00	1.220	0.30	5	14.57	42.37	7.85	34.52	34.11	0.32	-0.01	5	2.20	24.85
2.62	1.150	4.37	0.00	1.150	0.38	5	14.74	42.66	8.04	34.62	31.99	0.39	-0.01	5	2.25	23.81
2.64	1.050	8.78	0.00	1.050	0.84	4	15.51	42.97	8.24	34.73	29.00	0.87	-0.01	5	2.41	23.05
2.66	0.910	13.44	0.00	0.910	1.48	4	15.94	43.29	8.44	34.85	24.87	1.55	-0.01	4	2.57	21.12
2.68	0.820	14.99	0.00	0.820	1.83	3	16.03	43.61	8.63	34.97	22.20	1.93	-0.01	4	2.65	19.50
2.70	0.890	11.60	0.00	0.890	1.30	4	15.76	43.92	8.83	35.09	24.11	1.37	-0.01	4	2.55	20.37
2.72	1.060	14.42	0.00	1.060	1.36	4	16.08	44.24	9.03	35.22	28.84	1.42	-0.01	5	2.50	23.90
2.74	1.110	20.72	0.00	1.110	1.87	4	16.51	44.57	9.22	35.35	30.14	1.94	-0.01	4	2.56	25.54
2.76	1.140	26.81	0.00	1.140	2.35	3	16.82	44.91	9.42	35.49	30.86	2.45	-0.01	4	2.60	26.65
2.78	1.140	26.81	0.00	1.140	2.35	3	16.82	45.24	9.61	35.63	30.73	2.45	-0.01	4	2.60	26.57
2.80	1.440	36.73	0.00	1.440	2.55	4	17.27	45.59	9.81	35.78	38.98	2.63	-0.01	4	2.55	33.02
2.82	1.490	48.10	0.00	1.490	3.23	3	17.60	45.94	10.01	35.93	40.19	3.33	-0.01	4	2.60	34.76
2.84	1.550	50.95	0.00	1.550	3.29	3	17.68	46.29	10.20	36.09	41.67	3.39	-0.01	4	2.59	35.97
2.86	1.570	59.67	0.00	1.570	3.80	3	17.86	46.65	10.40	36.25	42.03	3.92	-0.01	4	2.63	36.82
2.88	1.550	73.17	0.00	1.550	4.72	3	18.09	47.01	10.59	36.41	41.28	4.87	-0.01	4	2.69	37.08
2.90	1.550	84.26	0.00	1.550	5.44	3	18.26	47.37	10.79	36.58	41.08	5.61	-0.01	3	2.73	37.50
2.92	1.540	88.63	0.00	1.540	5.76	3	18.31	47.74	10.99	36.75	40.61	5.94	-0.01	3	2.75	37.36
2.94	1.470	95.13	0.00	1.470	6.47	3	18.38	48.11	11.18	36.92	38.51	6.69	-0.01	3	2.80	36.14
2.96	1.330	98.80	0.00	1.330	7.43	3	18.38	48.47	11.38	37.09	34.55	7.71	-0.01	3	2.87	33.28
2.98	1.220	98.04	0.00	1.220	8.04	3	18.34	48.84	11.58	37.26	31.43	8.37	-0.01	3	2.92	30.84
3.00	1.120	97.66	0.00	1.120	8.72	3	18.30	49.21	11.77	37.43	28.60	9.12	-0.01	3	2.97	28.59
3.02	1.070	94.90	0.00	1.070	8.87	3	18.25	49.57	11.97	37.60	27.14	9.30	-0.01	3	2.99	27.14
3.04	1.000	91.83	0.00	1.000	9.18	3	18.19	49.94	12.16	37.77	25.15	9.67	-0.01	3	3.02	25.15
3.06	0.970	83.91	0.00	0.970	8.65	3	18.07	50.30	12.36	37.94	24.24	9.12	-0.01	3	3.02	24.24
3.08	0.990	74.05	0.00	0.990	7.48	3	17.94	50.66	12.56	38.10	24.65	7.88	-0.01	3	2.97	24.64
3.10	0.970	68.29	0.00	0.970	7.04	3	17.83	51.01	12.75	38.26	24.02	7.43	-0.01	3	2.96	23.91

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	0.940	63.60	0.00	0.940	6.77	3	17.74	51.37	12.95	38.42	23.13	7.16	-0.01	3	2.96	23.03
3.14	0.900	56.66	0.00	0.900	6.30	3	17.59	51.72	13.15	38.58	21.99	6.68	-0.02	3	2.95	21.86
3.16	0.890	54.53	0.00	0.890	6.13	3	17.54	52.07	13.34	38.73	21.63	6.51	-0.02	3	2.95	21.48
3.18	1.000	51.62	0.00	1.000	5.16	3	17.52	52.42	13.54	38.89	24.37	5.45	-0.01	3	2.87	23.53
3.20	0.890	49.02	0.00	0.890	5.51	3	17.42	52.77	13.73	39.04	21.45	5.86	-0.02	3	2.92	21.13
3.22	0.780	47.12	0.00	0.780	6.04	3	17.32	53.12	13.93	39.19	18.55	6.48	-0.02	3	3.00	18.55
3.24	0.710	40.97	0.00	0.710	5.77	3	17.13	53.46	14.13	39.34	16.69	6.24	-0.02	3	3.02	16.69
3.26	0.650	35.65	0.00	0.650	5.48	3	16.93	53.80	14.32	39.48	15.10	5.98	-0.02	3	3.04	15.10
3.28	0.720	26.78	0.00	0.720	3.72	3	16.64	54.14	14.52	39.62	16.81	4.02	-0.02	3	2.90	16.43
3.30	0.900	19.68	0.00	0.900	2.19	3	16.37	54.47	14.71	39.75	21.27	2.33	-0.02	4	2.70	19.36
3.32	0.920	18.13	0.00	0.920	1.97	3	16.29	54.79	14.91	39.88	21.70	2.10	-0.02	4	2.67	19.55
3.34	0.890	18.22	0.00	0.890	2.05	3	16.28	55.12	15.11	40.01	20.87	2.18	-0.02	4	2.69	18.95
3.36	0.850	19.55	0.00	0.850	2.30	3	16.35	55.44	15.30	40.14	19.79	2.46	-0.02	4	2.73	18.26
3.38	0.840	21.29	0.00	0.840	2.53	3	16.44	55.77	15.50	40.27	19.47	2.71	-0.02	4	2.76	18.14
3.40	0.870	24.08	0.00	0.870	2.77	3	16.59	56.10	15.70	40.41	20.14	2.96	-0.02	4	2.77	18.85
3.42	0.870	25.06	0.00	0.870	2.88	3	16.64	56.44	15.89	40.54	20.07	3.08	-0.02	4	2.78	18.85
3.44	0.830	22.63	0.00	0.830	2.73	3	16.50	56.77	16.09	40.68	19.01	2.93	-0.02	4	2.79	17.89
3.46	0.770	20.41	0.00	0.770	2.65	3	16.36	57.09	16.28	40.81	17.47	2.86	-0.02	4	2.81	16.57
3.48	0.760	17.02	0.00	0.760	2.24	3	16.14	57.42	16.48	40.94	17.16	2.42	-0.02	4	2.77	16.10
3.50	0.770	11.57	0.00	0.770	1.50	4	15.70	57.74	16.68	41.06	17.35	1.62	-0.02	4	2.68	15.78
3.52	0.850	6.18	0.00	0.850	0.73	4	15.02	58.04	16.87	41.17	19.24	0.78	-0.02	5	2.51	16.50
3.54	0.960	7.86	0.00	0.960	0.82	4	15.34	58.34	17.07	41.28	21.84	0.87	-0.02	5	2.49	18.60
3.56	1.140	9.73	0.00	1.140	0.85	4	15.66	58.66	17.27	41.39	26.12	0.90	-0.02	5	2.43	21.84
3.58	1.120	12.10	0.00	1.120	1.08	4	15.90	58.98	17.46	41.51	25.56	1.14	-0.02	5	2.49	21.77
3.60	0.990	16.00	0.00	0.990	1.62	4	16.17	59.30	17.66	41.64	22.35	1.72	-0.02	4	2.61	19.88
3.62	0.930	24.94	0.00	0.930	2.68	3	16.66	59.63	17.85	41.78	20.83	2.87	-0.02	4	2.75	19.42
3.64	1.040	26.52	0.00	1.040	2.55	3	16.77	59.97	18.05	41.92	23.38	2.71	-0.02	4	2.70	21.44
3.66	1.260	30.26	0.00	1.260	2.40	4	17.00	60.31	18.25	42.06	28.52	2.52	-0.02	4	2.62	25.50
3.68	1.250	33.30	0.00	1.250	2.66	3	17.11	60.65	18.44	42.20	28.18	2.80	-0.02	4	2.65	25.45
3.70	1.220	39.23	0.00	1.220	3.22	3	17.29	60.99	18.64	42.35	27.37	3.38	-0.02	4	2.71	25.18
3.72	1.110	46.68	0.00	1.110	4.21	3	17.45	61.34	18.84	42.50	24.67	4.45	-0.02	3	2.81	23.49
3.74	1.090	46.58	0.00	1.090	4.27	3	17.44	61.69	19.03	42.66	24.11	4.53	-0.02	3	2.82	23.04
3.76	1.120	46.23	0.00	1.120	4.13	3	17.44	62.04	19.23	42.81	24.71	4.37	-0.02	3	2.80	23.50
3.78	1.120	46.23	0.00	1.120	4.13	3	17.44	62.39	19.42	42.96	24.62	4.37	-0.02	3	2.81	23.43
3.80	1.260	45.66	0.00	1.260	3.62	3	17.47	62.74	19.62	43.12	27.77	3.81	-0.02	4	2.73	25.84
3.82	1.250	50.86	0.00	1.250	4.07	3	17.59	63.09	19.82	43.27	27.43	4.29	-0.02	3	2.77	25.81
3.84	1.280	51.87	0.00	1.280	4.05	3	17.62	63.44	20.01	43.43	28.01	4.26	-0.02	3	2.76	26.31
3.86	1.260	52.32	0.00	1.260	4.15	3	17.63	63.79	20.21	43.58	27.45	4.37	-0.02	3	2.77	25.88
3.88	1.160	56.02	0.00	1.160	4.83	3	17.68	64.15	20.40	43.74	25.05	5.11	-0.02	3	2.84	24.14
3.90	1.060	61.03	0.00	1.060	5.76	3	17.74	64.50	20.60	43.90	22.68	6.13	-0.02	3	2.92	22.39
3.92	1.010	62.42	0.00	1.010	6.18	3	17.75	64.85	20.80	44.06	21.45	6.60	-0.02	3	2.96	21.42
3.94	0.960	61.51	0.00	0.960	6.41	3	17.71	65.21	20.99	44.22	20.24	6.87	-0.02	3	2.99	20.24
3.96	0.910	58.59	0.00	0.910	6.44	3	17.63	65.56	21.19	44.37	19.03	6.94	-0.03	3	3.01	19.03
3.98	0.910	58.88	0.00	0.910	6.47	3	17.64	65.91	21.39	44.53	18.96	6.98	-0.03	3	3.01	18.96
4.00	0.890	56.53	0.00	0.890	6.35	3	17.58	66.27	21.58	44.68	18.43	6.86	-0.03	3	3.01	18.43
4.02	0.850	50.35	0.00	0.850	5.92	3	17.43	66.62	21.78	44.84	17.47	6.43	-0.03	3	3.01	17.47
4.04	0.820	45.88	0.00	0.820	5.60	3	17.31	66.96	21.97	44.99	16.74	6.09	-0.03	3	3.01	16.74
4.06	0.750	43.48	0.00	0.750	5.80	3	17.22	67.31	22.17	45.14	15.13	6.37	-0.03	3	3.06	15.13
4.08	0.690	38.37	0.00	0.690	5.56	3	17.04	67.65	22.37	45.28	13.74	6.17	-0.04	3	3.08	13.74
4.10	0.630	37.04	0.00	0.630	5.88	3	16.97	67.99	22.56	45.43	12.37	6.59	-0.04	3	3.13	12.37
4.12	0.570	34.82	0.00	0.570	6.11	3	16.86	68.33	22.76	45.57	11.01	6.94	-0.05	3	3.19	11.01
4.14	0.570	32.61	0.00	0.570	5.72	3	16.78	68.66	22.96	45.71	10.97	6.50	-0.05	3	3.17	10.97
4.16	0.590	29.06	0.00	0.590	4.93	3	16.66	69.00	23.15	45.84	11.36	5.58	-0.04	3	3.11	11.36
4.18	0.620	25.86	0.00	0.620	4.17	3	16.55	69.33	23.35	45.98	11.98	4.70	-0.04	3	3.05	11.98
4.20	0.620	24.87	0.00	0.620	4.01	3	16.50	69.66	23.54	46.11	11.93	4.52	-0.04	3	3.04	11.93

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	0.600	24.49	0.00	0.600	4.08	3	16.47	69.99	23.74	46.25	11.46	4.62	-0.04	3	3.06	11.46
4.24	0.570	22.82	0.00	0.570	4.00	3	16.37	70.32	23.94	46.38	10.77	4.57	-0.05	3	3.08	10.77
4.26	0.540	21.86	0.00	0.540	4.05	3	16.30	70.64	24.13	46.51	10.09	4.66	-0.05	3	3.11	10.09
4.28	0.530	21.55	0.00	0.530	4.07	3	16.28	70.97	24.33	46.64	9.84	4.69	-0.05	3	3.12	9.84
4.30	0.560	19.93	0.00	0.560	3.56	3	16.21	71.29	24.52	46.77	10.45	4.08	-0.05	3	3.06	10.45
4.32	0.540	17.55	0.00	0.540	3.25	3	16.05	71.61	24.72	46.89	9.99	3.75	-0.05	3	3.05	9.99
4.34	0.540	16.67	0.00	0.540	3.09	3	15.99	71.94	24.92	47.02	9.96	3.56	-0.05	3	3.04	9.96
4.36	0.590	12.87	0.00	0.590	2.18	3	15.72	72.25	25.11	47.14	10.98	2.49	-0.05	3	2.92	10.87
4.38	0.620	10.93	0.00	0.620	1.76	3	15.56	72.56	25.31	47.25	11.59	2.00	-0.05	4	2.86	11.26
4.40	0.640	9.95	0.00	0.640	1.55	3	15.46	72.87	25.51	47.37	11.97	1.75	-0.04	4	2.82	11.52
4.42	0.680	10.90	0.00	0.680	1.60	3	15.59	73.18	25.70	47.48	12.78	1.80	-0.04	4	2.80	12.24
4.44	0.770	12.48	0.00	0.770	1.62	3	15.79	73.50	25.90	47.60	14.63	1.79	-0.04	4	2.76	13.84
4.46	0.820	15.91	0.00	0.820	1.94	3	16.09	73.82	26.09	47.72	15.64	2.13	-0.03	4	2.77	14.85
4.48	0.890	19.39	0.00	0.890	2.18	3	16.35	74.14	26.29	47.85	17.05	2.38	-0.03	4	2.77	16.18
4.50	0.940	23.64	0.00	0.940	2.51	3	16.60	74.47	26.49	47.98	18.04	2.73	-0.03	4	2.78	17.19
4.52	1.000	29.63	0.00	1.000	2.96	3	16.89	74.81	26.68	48.12	19.23	3.20	-0.03	4	2.80	18.42
4.54	1.010	35.87	0.00	1.010	3.55	3	17.11	75.15	26.88	48.27	19.37	3.84	-0.03	3	2.84	18.78
4.56	0.980	39.29	0.00	0.980	4.01	3	17.20	75.49	27.08	48.42	18.68	4.34	-0.03	3	2.88	18.33
4.58	0.980	40.05	0.00	0.980	4.09	3	17.22	75.84	27.27	48.56	18.62	4.43	-0.03	3	2.89	18.30
4.60	0.970	47.50	0.00	0.970	4.90	3	17.42	76.18	27.47	48.72	18.35	5.31	-0.03	3	2.94	18.28
4.62	1.020	51.75	0.00	1.020	5.07	3	17.54	76.53	27.66	48.87	19.31	5.49	-0.03	3	2.94	19.20
4.64	1.140	51.87	0.00	1.140	4.55	3	17.58	76.89	27.86	49.03	21.68	4.88	-0.03	3	2.87	21.20
4.66	1.110	50.03	0.00	1.110	4.51	3	17.53	77.24	28.06	49.18	21.00	4.84	-0.03	3	2.88	20.57
4.68	1.070	47.56	0.00	1.070	4.44	3	17.46	77.59	28.25	49.33	20.12	4.79	-0.03	3	2.89	19.77
4.70	1.080	47.12	0.00	1.080	4.36	3	17.45	77.94	28.45	49.49	20.25	4.70	-0.03	3	2.88	19.86
4.72	1.030	47.37	0.00	1.030	4.60	3	17.44	78.29	28.65	49.64	19.17	4.98	-0.03	3	2.91	18.96
4.74	0.950	41.86	0.00	0.950	4.41	3	17.26	78.63	28.84	49.79	17.50	4.80	-0.03	3	2.93	17.39
4.76	0.890	41.54	0.00	0.890	4.67	3	17.23	78.98	29.04	49.94	16.24	5.12	-0.04	3	2.97	16.24
4.78	0.890	41.54	0.00	0.890	4.67	3	17.23	79.32	29.23	50.09	16.19	5.12	-0.04	3	2.97	16.19
4.80	0.990	40.62	0.00	0.990	4.10	3	17.25	79.66	29.43	50.23	18.12	4.46	-0.03	3	2.90	17.88
4.82	1.130	40.78	0.00	1.130	3.61	3	17.30	80.01	29.63	50.38	20.84	3.88	-0.03	3	2.82	20.15
4.84	1.200	35.24	0.00	1.200	2.94	3	17.16	80.35	29.82	50.53	22.16	3.15	-0.03	4	2.75	21.03
4.86	1.220	32.80	0.00	1.220	2.69	3	17.08	80.70	30.02	50.68	22.48	2.88	-0.03	4	2.72	21.20
4.88	1.630	31.18	0.00	1.630	1.91	4	17.13	81.04	30.21	50.82	30.48	2.01	-0.02	4	2.54	27.41
4.90	1.970	30.29	0.00	1.970	1.54	4	17.17	81.38	30.41	50.97	37.05	1.60	-0.02	5	2.42	32.35
4.92	2.170	28.27	0.00	2.170	1.30	5	17.13	81.73	30.61	51.12	40.85	1.35	-0.01	5	2.35	35.05
4.94	2.290	32.77	0.00	2.290	1.43	5	17.32	82.07	30.80	51.27	43.07	1.48	-0.01	5	2.36	37.01
4.96	2.360	37.30	0.00	2.360	1.58	4	17.48	82.42	31.00	51.42	44.29	1.64	-0.01	5	2.37	38.23
4.98	2.340	43.16	0.00	2.340	1.84	4	17.64	82.77	31.20	51.58	43.76	1.91	-0.01	5	2.41	38.20
5.00	2.160	49.94	0.00	2.160	2.31	4	17.78	83.13	31.39	51.74	40.14	2.40	-0.02	4	2.50	35.82
5.02	1.880	56.78	0.00	1.880	3.02	4	17.88	83.48	31.59	51.90	34.62	3.16	-0.02	4	2.61	31.82
5.04	1.590	63.44	0.00	1.590	3.99	3	17.94	83.84	31.78	52.06	28.93	4.21	-0.02	4	2.74	27.49
5.06	1.340	68.10	0.00	1.340	5.08	3	17.96	84.20	31.98	52.22	24.05	5.42	-0.03	3	2.87	23.56
5.08	1.210	68.38	0.00	1.210	5.65	3	17.92	84.56	32.18	52.38	21.48	6.08	-0.03	3	2.93	21.38
5.10	1.050	68.10	0.00	1.050	6.49	3	17.86	84.92	32.37	52.55	18.37	7.06	-0.03	3	3.02	18.37
5.12	0.890	67.21	0.00	0.890	7.55	3	17.78	85.27	32.57	52.71	15.27	8.35	-0.04	3	3.13	15.27
5.14	0.770	63.25	0.00	0.770	8.21	3	17.66	85.63	32.77	52.86	12.95	9.24	-0.05	3	3.22	12.95
5.16	0.840	54.22	0.00	0.840	6.45	3	17.51	85.98	32.96	53.02	14.22	7.19	-0.04	3	3.11	14.22
5.18	1.090	43.13	0.00	1.090	3.96	3	17.35	86.33	33.16	53.17	18.88	4.30	-0.03	3	2.88	18.56
5.20	1.310	35.30	0.00	1.310	2.69	3	17.19	86.67	33.35	53.32	22.94	2.89	-0.03	4	2.72	21.71
5.22	1.580	30.42	0.00	1.580	1.93	4	17.09	87.01	33.55	53.46	27.92	2.04	-0.02	4	2.57	25.50
5.24	1.800	28.74	0.00	1.800	1.60	4	17.08	87.36	33.75	53.61	31.95	1.68	-0.02	5	2.48	28.57
5.26	1.920	27.73	0.00	1.920	1.44	4	17.06	87.70	33.94	53.76	34.09	1.51	-0.02	5	2.43	30.18
5.28	2.020	31.62	0.00	2.020	1.57	4	17.23	88.04	34.14	53.90	35.84	1.64	-0.02	5	2.44	31.76
5.30	2.150	37.45	0.00	2.150	1.74	4	17.45	88.39	34.34	54.05	38.14	1.82	-0.02	5	2.44	33.86

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	2.230	46.23	0.00	2.230	2.07	4	17.71	88.74	34.53	54.21	39.50	2.16	-0.02	5	2.47	35.35
5.34	2.240	52.22	0.00	2.240	2.33	4	17.85	89.10	34.73	54.37	39.56	2.43	-0.02	4	2.50	35.67
5.36	2.200	57.13	0.00	2.200	2.60	4	17.94	89.46	34.92	54.53	38.70	2.71	-0.02	4	2.54	35.20
5.38	2.040	58.91	0.00	2.040	2.89	4	17.95	89.82	35.12	54.70	35.66	3.02	-0.02	4	2.59	32.85
5.40	1.800	61.22	0.00	1.800	3.40	3	17.95	90.17	35.32	54.86	31.17	3.58	-0.02	4	2.68	29.31
5.42	1.710	61.79	0.00	1.710	3.61	3	17.94	90.53	35.51	55.02	29.43	3.82	-0.02	4	2.71	27.90
5.44	1.600	61.00	0.00	1.600	3.81	3	17.90	90.89	35.71	55.18	27.35	4.04	-0.02	4	2.75	26.15
5.46	1.300	63.47	0.00	1.300	4.88	3	17.86	91.25	35.90	55.34	21.84	5.25	-0.03	3	2.89	21.55
5.48	1.160	61.76	0.00	1.160	5.32	3	17.79	91.60	36.10	55.50	19.25	5.78	-0.03	3	2.95	19.25
5.50	1.110	60.71	0.00	1.110	5.47	3	17.75	91.96	36.30	55.66	18.29	5.96	-0.04	3	2.98	18.29
5.52	1.000	58.50	0.00	1.000	5.85	3	17.67	92.31	36.49	55.82	16.26	6.44	-0.04	3	3.04	16.26
5.54	1.080	55.39	0.00	1.080	5.13	3	17.64	92.67	36.69	55.98	17.64	5.61	-0.04	3	2.97	17.64
5.56	1.190	45.69	0.00	1.190	3.84	3	17.45	93.02	36.89	56.13	19.54	4.17	-0.03	3	2.86	19.18
5.58	1.140	39.67	0.00	1.140	3.48	3	17.27	93.36	37.08	56.28	18.60	3.79	-0.04	3	2.85	18.21
5.60	1.190	33.91	0.00	1.190	2.85	3	17.11	93.71	37.28	56.43	19.43	3.09	-0.03	4	2.78	18.76
5.62	1.480	29.53	0.00	1.480	2.00	4	17.03	94.05	37.47	56.57	24.50	2.13	-0.03	4	2.62	22.83
5.64	1.850	25.41	0.00	1.850	1.37	4	16.95	94.39	37.67	56.72	30.95	1.45	-0.02	5	2.45	27.83
5.66	2.050	24.97	0.00	2.050	1.22	5	16.96	94.73	37.87	56.86	34.39	1.28	-0.02	5	2.39	30.51
5.68	2.170	26.36	0.00	2.170	1.21	5	17.05	95.07	38.06	57.00	36.40	1.27	-0.02	5	2.37	32.17
5.70	2.430	32.96	0.00	2.430	1.36	5	17.35	95.41	38.26	57.15	40.85	1.41	-0.02	5	2.35	36.02
5.72	2.710	38.66	0.00	2.710	1.43	5	17.57	95.76	38.46	57.31	45.62	1.48	-0.01	5	2.33	40.03
5.74	2.860	41.19	0.00	2.860	1.44	5	17.67	96.12	38.65	57.46	48.10	1.49	-0.01	5	2.31	42.10
5.76	2.840	47.44	0.00	2.840	1.67	5	17.83	96.47	38.85	57.62	47.61	1.73	-0.01	5	2.35	42.06
5.78	2.840	47.44	0.00	2.840	1.67	5	17.83	96.83	39.04	57.78	47.47	1.73	-0.01	5	2.35	41.97
5.80	2.580	70.54	0.00	2.580	2.73	4	18.25	97.19	39.24	57.95	42.84	2.84	-0.02	4	2.51	39.20
5.82	2.460	74.59	0.00	2.460	3.03	4	18.29	97.56	39.44	58.12	40.65	3.16	-0.02	4	2.56	37.55
5.84	2.370	75.67	0.00	2.370	3.19	4	18.30	97.92	39.63	58.29	38.98	3.33	-0.02	4	2.59	36.24
5.86	2.400	73.71	0.00	2.400	3.07	4	18.27	98.29	39.83	58.46	39.37	3.20	-0.02	4	2.57	36.52
5.88	2.540	69.21	0.00	2.540	2.72	4	18.22	98.65	40.02	58.63	41.64	2.83	-0.02	4	2.52	38.23
5.90	2.570	65.88	0.00	2.570	2.56	4	18.17	99.02	40.22	58.80	42.03	2.67	-0.02	4	2.50	38.46
5.92	2.460	64.42	0.00	2.460	2.62	4	18.12	99.38	40.42	58.96	40.04	2.73	-0.02	4	2.52	36.81
5.94	2.270	64.26	0.00	2.270	2.83	4	18.09	99.74	40.61	59.13	36.70	2.96	-0.02	4	2.57	34.10
5.96	2.000	66.16	0.00	2.000	3.31	4	18.08	100.10	40.81	59.29	32.04	3.48	-0.02	4	2.66	30.29
5.98	1.990	67.02	0.00	1.990	3.37	4	18.09	100.46	41.01	59.46	31.78	3.55	-0.02	4	2.66	30.09
6.00	2.160	69.90	0.00	2.160	3.24	4	18.17	100.83	41.20	59.63	34.53	3.39	-0.02	4	2.63	32.48
6.02	2.350	66.42	0.00	2.350	2.83	4	18.14	101.19	41.40	59.79	37.61	2.95	-0.02	4	2.56	34.94
6.04	2.510	61.13	0.00	2.510	2.44	4	18.07	101.55	41.59	59.96	40.17	2.54	-0.02	4	2.50	36.88
6.06	2.480	57.29	0.00	2.480	2.31	4	17.99	101.91	41.79	60.12	39.55	2.41	-0.02	4	2.49	36.27
6.08	2.540	55.36	0.00	2.540	2.18	4	17.96	102.27	41.99	60.29	40.44	2.27	-0.02	5	2.47	36.94
6.10	2.570	57.29	0.00	2.570	2.23	4	18.01	102.63	42.18	60.45	40.82	2.32	-0.02	5	2.47	37.33
6.12	2.560	61.16	0.00	2.560	2.39	4	18.08	102.99	42.38	60.61	40.54	2.49	-0.02	4	2.49	37.23
6.14	2.540	57.13	0.00	2.540	2.25	4	18.00	103.35	42.58	60.78	40.09	2.34	-0.02	4	2.48	36.76
6.16	2.260	60.11	0.00	2.260	2.66	4	18.01	103.71	42.77	60.94	35.38	2.79	-0.02	4	2.57	32.99
6.18	1.940	66.96	0.00	1.940	3.45	4	18.08	104.08	42.97	61.11	30.04	3.65	-0.02	4	2.69	28.67
6.20	1.650	72.03	0.00	1.650	4.37	3	18.10	104.44	43.16	61.27	25.22	4.66	-0.03	3	2.81	24.62
6.22	1.440	73.77	0.00	1.440	5.12	3	18.08	104.80	43.36	61.44	21.73	5.53	-0.03	3	2.90	21.58
6.24	1.330	72.56	0.00	1.330	5.46	3	18.03	105.16	43.56	61.60	19.88	5.92	-0.04	3	2.95	19.88
6.26	1.150	68.13	0.00	1.150	5.92	3	17.90	105.52	43.75	61.77	16.91	6.52	-0.04	3	3.03	16.91
6.28	1.090	60.46	0.00	1.090	5.55	3	17.74	105.87	43.95	61.93	15.89	6.14	-0.04	3	3.03	15.89
6.30	1.090	57.64	0.00	1.090	5.29	3	17.68	106.23	44.15	62.08	15.85	5.86	-0.04	3	3.02	15.85
6.32	1.210	49.81	0.00	1.210	4.12	3	17.56	106.58	44.34	62.24	17.73	4.51	-0.04	3	2.91	17.64
6.34	1.340	41.61	0.00	1.340	3.11	3	17.39	106.93	44.54	62.39	19.76	3.37	-0.04	4	2.80	19.28
6.36	1.460	39.55	0.00	1.460	2.71	4	17.36	107.28	44.73	62.54	21.63	2.92	-0.03	4	2.73	20.86
6.38	1.490	38.44	0.00	1.490	2.58	4	17.34	107.62	44.93	62.69	22.05	2.78	-0.03	4	2.71	21.20
6.40	1.460	34.29	0.00	1.460	2.35	4	17.20	107.97	45.13	62.84	21.52	2.54	-0.03	4	2.70	20.63

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.370	36.41	0.00	1.370	2.66	4	17.24	108.31	45.32	62.99	20.03	2.89	-0.04	4	2.75	19.40
6.44	1.490	36.92	0.00	1.490	2.48	4	17.29	108.66	45.52	63.14	21.88	2.67	-0.03	4	2.71	21.02
6.46	1.620	34.03	0.00	1.620	2.10	4	17.23	109.00	45.71	63.29	23.87	2.25	-0.03	4	2.64	22.66
6.48	1.580	33.62	0.00	1.580	2.13	4	17.21	109.35	45.91	63.44	23.18	2.29	-0.03	4	2.65	22.06
6.50	1.380	35.81	0.00	1.380	2.59	4	17.23	109.69	46.11	63.58	19.98	2.82	-0.04	4	2.75	19.35
6.52	1.360	37.17	0.00	1.360	2.73	3	17.26	110.04	46.30	63.73	19.61	2.97	-0.04	4	2.77	19.06
6.54	1.460	41.48	0.00	1.460	2.84	4	17.42	110.38	46.50	63.88	21.13	3.07	-0.03	4	2.75	20.48
6.56	1.590	43.44	0.00	1.590	2.73	4	17.50	110.73	46.70	64.04	23.10	2.94	-0.03	4	2.71	22.25
6.58	1.590	41.19	0.00	1.590	2.59	4	17.44	111.08	46.89	64.19	23.04	2.79	-0.03	4	2.70	22.15
6.60	1.420	45.76	0.00	1.420	3.22	3	17.52	111.43	47.09	64.34	20.34	3.50	-0.04	4	2.80	19.88
6.62	1.200	50.26	0.00	1.200	4.19	3	17.56	111.78	47.28	64.50	16.87	4.62	-0.04	3	2.93	16.86
6.64	1.030	51.24	0.00	1.030	4.97	3	17.53	112.13	47.48	64.65	14.20	5.58	-0.05	3	3.04	14.20
6.66	0.960	49.91	0.00	0.960	5.20	3	17.47	112.48	47.68	64.81	13.08	5.89	-0.06	3	3.08	13.08
6.68	0.900	47.53	0.00	0.900	5.28	3	17.39	112.83	47.87	64.96	12.12	6.04	-0.06	3	3.11	12.12
6.70	0.940	45.25	0.00	0.940	4.81	3	17.35	113.18	48.07	65.11	12.70	5.47	-0.06	3	3.07	12.70
6.72	1.180	38.69	0.00	1.180	3.28	3	17.26	113.53	48.27	65.26	16.34	3.63	-0.05	3	2.88	16.20
6.74	1.100	31.28	0.00	1.100	2.84	3	16.98	113.87	48.46	65.41	15.08	3.17	-0.05	3	2.87	14.92
6.76	1.040	23.35	0.00	1.040	2.25	3	16.63	114.20	48.66	65.55	14.12	2.52	-0.05	4	2.84	13.91
6.78	1.040	23.35	0.00	1.040	2.25	3	16.63	114.54	48.85	65.68	14.09	2.52	-0.05	4	2.84	13.88
6.80	1.020	18.28	0.00	1.020	1.79	4	16.34	114.86	49.05	65.81	13.75	2.02	-0.05	4	2.79	13.46
6.82	1.070	17.90	0.00	1.070	1.67	4	16.33	115.19	49.25	65.94	14.48	1.87	-0.05	4	2.76	14.09
6.84	1.200	18.25	0.00	1.200	1.52	4	16.40	115.52	49.44	66.07	16.41	1.68	-0.05	4	2.69	15.81
6.86	1.180	21.99	0.00	1.180	1.86	4	16.61	115.85	49.64	66.21	16.07	2.07	-0.05	4	2.75	15.61
6.88	1.130	23.01	0.00	1.130	2.04	4	16.64	116.18	49.83	66.35	15.28	2.27	-0.05	4	2.78	14.94
6.90	1.070	24.75	0.00	1.070	2.31	3	16.70	116.51	50.03	66.48	14.34	2.60	-0.05	4	2.84	14.14
6.92	0.970	25.95	0.00	0.970	2.68	3	16.72	116.85	50.23	66.62	12.81	3.04	-0.06	3	2.91	12.77
6.94	1.030	26.24	0.00	1.030	2.55	3	16.76	117.18	50.42	66.76	13.67	2.87	-0.06	3	2.88	13.56
6.96	1.120	25.98	0.00	1.120	2.32	3	16.78	117.52	50.62	66.90	14.99	2.59	-0.05	4	2.82	14.74
6.98	1.150	24.94	0.00	1.150	2.17	4	16.74	117.85	50.82	67.04	15.40	2.42	-0.05	4	2.80	15.09
7.00	1.160	25.73	0.00	1.160	2.22	4	16.78	118.19	51.01	67.18	15.51	2.47	-0.05	4	2.80	15.20
7.02	1.070	28.36	0.00	1.070	2.65	3	16.86	118.53	51.21	67.32	14.13	2.98	-0.05	3	2.88	14.02
7.04	1.100	26.49	0.00	1.100	2.41	3	16.79	118.86	51.40	67.46	14.54	2.70	-0.05	4	2.84	14.35
7.06	1.130	23.89	0.00	1.130	2.11	4	16.69	119.20	51.60	67.60	14.95	2.36	-0.05	4	2.80	14.67
7.08	1.190	24.72	0.00	1.190	2.08	4	16.74	119.53	51.80	67.73	15.80	2.31	-0.05	4	2.78	15.45
7.10	1.140	26.33	0.00	1.140	2.31	3	16.80	119.87	51.99	67.87	15.03	2.58	-0.05	4	2.82	14.79
7.12	1.140	28.23	0.00	1.140	2.48	3	16.88	120.20	52.19	68.01	14.99	2.77	-0.05	4	2.84	14.79
7.14	1.080	28.17	0.00	1.080	2.61	3	16.86	120.54	52.39	68.16	14.08	2.94	-0.05	3	2.87	13.96
7.16	0.940	31.40	0.00	0.940	3.34	3	16.93	120.88	52.58	68.30	11.99	3.83	-0.06	3	3.00	11.99
7.18	0.900	32.23	0.00	0.900	3.58	3	16.94	121.22	52.78	68.44	11.38	4.14	-0.07	3	3.03	11.38
7.20	0.890	28.23	0.00	0.890	3.17	3	16.79	121.55	52.97	68.58	11.20	3.67	-0.07	3	3.01	11.20
7.22	0.940	25.83	0.00	0.940	2.75	3	16.70	121.89	53.17	68.72	11.91	3.16	-0.06	3	2.95	11.91
7.24	0.960	22.88	0.00	0.960	2.38	3	16.57	122.22	53.37	68.85	12.17	2.73	-0.06	3	2.90	12.13
7.26	1.000	21.96	0.00	1.000	2.20	3	16.54	122.55	53.56	68.99	12.72	2.50	-0.06	4	2.87	12.61
7.28	1.190	18.79	0.00	1.190	1.58	4	16.43	122.88	53.76	69.12	15.44	1.76	-0.05	4	2.72	15.00
7.30	1.220	17.17	0.00	1.220	1.41	4	16.33	123.21	53.95	69.25	15.84	1.57	-0.05	4	2.69	15.32
7.32	1.190	18.73	0.00	1.190	1.57	4	16.43	123.54	54.15	69.38	15.37	1.76	-0.05	4	2.72	14.94
7.34	1.080	26.08	0.00	1.080	2.41	3	16.77	123.87	54.35	69.52	13.75	2.73	-0.06	3	2.86	13.63
7.36	1.000	30.33	0.00	1.000	3.03	3	16.91	124.21	54.54	69.66	12.57	3.46	-0.06	3	2.95	12.57
7.38	0.970	29.37	0.00	0.970	3.03	3	16.86	124.54	54.74	69.80	12.11	3.47	-0.06	3	2.97	12.11
7.40	1.020	26.36	0.00	1.020	2.58	3	16.76	124.88	54.94	69.94	12.80	2.94	-0.06	3	2.91	12.76
7.42	1.070	28.23	0.00	1.070	2.64	3	16.86	125.22	55.13	70.08	13.48	2.99	-0.06	3	2.89	13.42
7.44	1.070	29.22	0.00	1.070	2.73	3	16.90	125.55	55.33	70.23	13.45	3.09	-0.06	3	2.90	13.40
7.46	1.090	30.74	0.00	1.090	2.82	3	16.96	125.89	55.52	70.37	13.70	3.19	-0.06	3	2.90	13.65
7.48	1.200	26.90	0.00	1.200	2.24	4	16.84	126.23	55.72	70.51	15.23	2.51	-0.05	4	2.81	14.99
7.50	1.310	26.93	0.00	1.310	2.06	4	16.88	126.57	55.92	70.65	16.75	2.28	-0.05	4	2.75	16.37

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	1.330	30.10	0.00	1.330	2.26	4	17.01	126.91	56.11	70.79	16.99	2.50	-0.05	4	2.77	16.65
7.54	1.540	30.42	0.00	1.540	1.98	4	17.08	127.25	56.31	70.94	19.92	2.15	-0.04	4	2.68	19.29
7.56	1.550	32.04	0.00	1.550	2.07	4	17.14	127.59	56.51	71.08	20.01	2.25	-0.04	4	2.69	19.41
7.58	1.450	34.60	0.00	1.450	2.39	4	17.21	127.93	56.70	71.23	18.56	2.62	-0.04	4	2.75	18.15
7.60	1.400	35.08	0.00	1.400	2.51	4	17.21	128.28	56.90	71.38	17.82	2.76	-0.04	4	2.78	17.48
7.62	1.390	33.53	0.00	1.390	2.41	4	17.15	128.62	57.09	71.53	17.63	2.66	-0.05	4	2.77	17.30
7.64	1.300	37.01	0.00	1.300	2.85	3	17.24	128.97	57.29	71.68	16.34	3.16	-0.05	3	2.84	16.17
7.66	1.240	42.52	0.00	1.240	3.43	3	17.38	129.31	57.49	71.83	15.46	3.83	-0.05	3	2.91	15.43
7.68	1.320	41.04	0.00	1.320	3.11	3	17.37	129.66	57.68	71.98	16.54	3.45	-0.05	3	2.86	16.40
7.70	1.420	39.42	0.00	1.420	2.78	4	17.35	130.01	57.88	72.13	17.88	3.06	-0.04	4	2.80	17.62
7.72	1.490	33.27	0.00	1.490	2.23	4	17.17	130.35	58.08	72.28	18.81	2.45	-0.04	4	2.73	18.37
7.74	1.360	32.00	0.00	1.360	2.35	4	17.09	130.69	58.27	72.42	16.97	2.60	-0.05	4	2.78	16.68
7.76	1.260	32.51	0.00	1.260	2.58	3	17.08	131.04	58.47	72.57	15.56	2.88	-0.05	4	2.83	15.39
7.78	1.260	32.51	0.00	1.260	2.58	3	17.08	131.38	58.66	72.71	15.52	2.88	-0.05	4	2.83	15.36
7.80	1.410	31.47	0.00	1.410	2.23	4	17.09	131.72	58.86	72.86	17.54	2.46	-0.05	4	2.75	17.19
7.82	1.420	31.53	0.00	1.420	2.22	4	17.09	132.06	59.06	73.00	17.64	2.45	-0.05	4	2.75	17.28
7.84	1.450	35.52	0.00	1.450	2.45	4	17.24	132.41	59.25	73.15	18.01	2.70	-0.04	4	2.77	17.68
7.86	1.510	42.91	0.00	1.510	2.84	4	17.47	132.75	59.45	73.30	18.79	3.12	-0.04	4	2.79	18.50
7.88	1.730	45.06	0.00	1.730	2.60	4	17.58	133.10	59.64	73.46	21.74	2.82	-0.04	4	2.72	21.22
7.90	1.760	45.60	0.00	1.760	2.59	4	17.60	133.46	59.84	73.62	22.10	2.80	-0.04	4	2.71	21.56
7.92	1.800	45.88	0.00	1.800	2.55	4	17.61	133.81	60.04	73.77	22.59	2.75	-0.04	4	2.70	22.01
7.94	1.950	48.17	0.00	1.950	2.47	4	17.70	134.16	60.23	73.93	24.56	2.65	-0.03	4	2.66	23.84
7.96	2.110	52.73	0.00	2.110	2.50	4	17.84	134.52	60.43	74.09	26.66	2.67	-0.03	4	2.64	25.81
7.98	2.430	54.03	0.00	2.430	2.22	4	17.92	134.88	60.63	74.25	30.91	2.35	-0.03	4	2.55	29.65
8.00	2.380	60.02	0.00	2.380	2.52	4	18.03	135.24	60.82	74.41	30.17	2.67	-0.03	4	2.60	29.08
8.02	2.060	64.36	0.00	2.060	3.12	4	18.06	135.60	61.02	74.58	25.80	3.34	-0.03	4	2.71	25.19
8.04	1.890	71.30	0.00	1.890	3.77	3	18.14	135.96	61.21	74.75	23.47	4.06	-0.03	3	2.79	23.13
8.06	1.860	76.27	0.00	1.860	4.10	3	18.21	136.32	61.41	74.91	23.01	4.42	-0.04	3	2.82	22.75
8.08	1.750	84.95	0.00	1.750	4.85	3	18.31	136.69	61.61	75.08	21.49	5.27	-0.04	3	2.89	21.41
8.10	1.750	85.18	0.00	1.750	4.87	3	18.32	137.06	61.80	75.25	21.43	5.28	-0.04	3	2.89	21.37
8.12	2.330	83.24	0.00	2.330	3.57	4	18.40	137.42	62.00	75.42	29.07	3.80	-0.03	4	2.70	28.40
8.14	3.050	77.67	0.00	3.050	2.55	4	18.42	137.79	62.20	75.60	38.52	2.67	-0.02	4	2.52	36.90
8.16	2.920	73.77	0.00	2.920	2.53	4	18.35	138.16	62.39	75.77	36.72	2.65	-0.02	4	2.53	35.24
8.18	2.860	79.82	0.00	2.860	2.79	4	18.43	138.53	62.59	75.94	35.84	2.93	-0.02	4	2.56	34.53
8.20	2.800	83.94	0.00	2.800	3.00	4	18.48	138.90	62.78	76.11	34.96	3.15	-0.02	4	2.59	33.80
8.22	2.830	87.49	0.00	2.830	3.09	4	18.53	139.27	62.98	76.29	35.27	3.25	-0.02	4	2.60	34.13
8.24	3.000	94.84	0.00	3.000	3.16	4	18.65	139.64	63.18	76.46	37.41	3.32	-0.02	4	2.59	36.16
8.26	3.170	95.73	0.00	3.170	3.02	4	18.68	140.01	63.37	76.64	39.54	3.16	-0.02	4	2.55	38.11
8.28	3.250	104.41	0.00	3.250	3.21	4	18.79	140.39	63.57	76.82	40.48	3.36	-0.02	4	2.56	39.07
8.30	3.290	114.23	0.00	3.290	3.47	4	18.89	140.77	63.77	77.00	40.90	3.63	-0.02	4	2.58	39.56
8.32	3.420	120.32	0.00	3.420	3.52	4	18.97	141.15	63.96	77.18	42.48	3.67	-0.02	4	2.58	41.07
8.34	4.740	132.52	0.00	4.740	2.80	5	19.21	141.53	64.16	77.37	59.43	2.88	-0.01	5	2.40	56.52
8.36	9.590	136.23	0.00	9.590	1.42	6	19.51	141.92	64.35	77.56	121.81	1.44	-0.01	6	1.98	111.27
8.38	13.860	149.25	0.00	13.860	1.08	6	19.75	142.31	64.55	77.76	176.41	1.09	0.00	6	1.79	158.31
8.40	14.320	163.29	0.00	14.320	1.14	6	19.87	142.71	64.75	77.96	181.85	1.15	0.00	6	1.79	163.50
8.42	13.260	182.36	0.00	13.260	1.38	6	19.97	143.11	64.94	78.16	167.81	1.39	0.00	6	1.88	152.20
8.44	11.550	215.29	0.00	11.550	1.86	5	20.11	143.51	65.14	78.37	145.55	1.89	-0.01	5	2.01	133.83
8.46	11.230	222.86	0.00	11.230	1.98	5	20.13	143.91	65.33	78.57	141.09	2.01	-0.01	5	2.04	130.19
8.48	12.310	230.69	0.00	12.310	1.87	5	20.21	144.31	65.53	78.78	154.42	1.90	-0.01	6	1.99	142.05
8.50	15.070	239.37	0.00	15.070	1.59	6	20.33	144.72	65.73	78.99	188.95	1.60	0.00	6	1.89	172.25
8.52	18.570	238.32	0.00	18.570	1.28	6	20.40	145.13	65.92	79.20	232.63	1.29	0.00	6	1.76	209.92
8.54	24.460	237.09	0.00	24.460	0.97	6	20.50	145.54	66.12	79.42	306.16	0.98	0.00	6	1.59	272.59
8.56	25.260	253.91	0.00	25.260	1.01	6	20.60	145.95	66.32	79.63	315.38	1.01	0.00	6	1.59	281.26
8.58	22.690	361.43	0.00	22.690	1.59	6	20.96	146.36	66.51	79.85	282.32	1.60	0.00	6	1.78	256.12
8.60	21.440	433.20	0.00	21.440	2.02	6	21.15	146.79	66.71	80.08	265.91	2.03	0.00	6	1.87	243.51

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P5b	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	21.450	495.03	0.00	21.450	2.31	6	21.30	147.21	66.90	80.31	265.27	2.32	0.00	6	1.92	244.16
8.64	21.670	544.77	0.00	21.670	2.51	5	21.41	147.64	67.10	80.54	267.23	2.53	0.00	8	1.95	246.81
8.66	24.950	557.20	0.00	24.950	2.23	6	21.49	148.07	67.30	80.77	307.07	2.25	0.00	6	1.87	282.18
8.68	30.810	585.94	0.00	30.810	1.90	6	21.58	148.50	67.49	81.01	378.51	1.91	0.00	6	1.77	345.28
8.70	35.450	589.17	0.00	35.450	1.66	6	21.58	148.93	67.69	81.24	434.52	1.67	0.00	6	1.69	394.38
8.72	37.860	588.06	0.00	37.860	1.55	6	21.58	149.36	67.89	81.48	462.84	1.56	0.00	6	1.65	419.38
8.74	38.980	558.84	0.00	38.980	1.43	6	21.58	149.79	68.08	81.71	475.21	1.44	0.00	6	1.61	430.02
8.76	39.320	556.75	0.00	39.320	1.42	6	21.58	150.23	68.28	81.95	477.99	1.42	0.00	6	1.61	432.95
8.78	39.320	556.75	0.00	39.320	1.42	6	21.58	150.66	68.47	82.18	476.61	1.42	0.00	6	1.61	432.35
8.80	38.540	428.16	0.00	38.540	1.11	6	21.36	151.08	68.67	82.41	465.81	1.12	0.00	6	1.52	420.58
8.82	38.450	404.33	0.00	38.450	1.05	6	21.29	151.51	68.87	82.64	463.41	1.06	0.00	6	1.51	418.49
8.84	37.090	362.25	0.00	37.090	0.98	6	21.15	151.93	69.06	82.87	445.72	0.98	0.00	6	1.49	402.63
8.86	35.860	347.17	0.00	35.860	0.97	6	21.09	152.36	69.26	83.10	429.71	0.97	0.00	6	1.49	388.90
8.88	34.360	334.53	0.00	34.360	0.97	6	21.03	152.78	69.45	83.32	410.54	0.98	0.00	6	1.51	372.45
8.90	33.210	346.57	0.00	33.210	1.04	6	21.06	153.20	69.65	83.55	395.67	1.05	0.00	6	1.54	360.28
8.92	31.890	334.97	0.00	31.890	1.05	6	21.00	153.62	69.85	83.77	378.84	1.06	0.00	6	1.55	345.76
8.94	29.560	319.76	0.00	29.560	1.08	6	20.92	154.04	70.04	83.99	350.10	1.09	0.00	6	1.58	320.61
8.96	24.060	328.03	0.00	24.060	1.36	6	20.87	154.45	70.24	84.22	283.86	1.37	0.00	6	1.72	262.58
8.98	17.340	341.53	0.00	17.340	1.97	6	20.79	154.87	70.44	84.44	203.53	1.99	0.00	6	1.93	191.08
9.00	14.170	364.31	0.00	14.170	2.57	5	20.79	155.29	70.63	84.66	165.55	2.60	-0.01	5	2.07	157.01
9.02	11.370	423.82	0.00	11.370	3.73	8	20.88	155.70	70.83	84.88	132.13	3.78	-0.01	8	2.26	126.88
9.04	10.300	450.76	0.00	10.300	4.38	9	20.91	156.12	71.02	85.10	119.20	4.44	-0.01	9	2.34	115.12
9.06	13.510	454.75	0.00	13.510	3.37	8	21.03	156.54	71.22	85.32	156.51	3.41	-0.01	8	2.18	149.77
9.08	23.060	399.33	0.00	23.060	1.73	6	21.08	156.96	71.42	85.55	267.72	1.74	0.00	6	1.81	250.86
9.10	28.300	400.50	0.00	28.300	1.42	6	21.16	157.39	71.61	85.77	328.10	1.42	0.00	6	1.69	305.59
9.12	30.390	435.52	0.00	30.390	1.43	6	21.29	157.81	71.81	86.00	351.53	1.44	0.00	6	1.68	327.57
9.14	30.330	474.55	0.00	30.330	1.56	6	21.38	158.24	72.01	86.23	349.88	1.57	0.00	6	1.71	327.04
9.16	30.040	485.90	0.00	30.040	1.62	6	21.41	158.67	72.20	86.47	345.59	1.63	0.00	6	1.72	323.69
9.18	30.420	495.09	0.00	30.420	1.63	6	21.43	159.10	72.40	86.70	349.04	1.64	0.00	6	1.72	327.31
9.20	30.010	506.18	0.00	30.010	1.69	6	21.46	159.53	72.59	86.93	343.38	1.70	0.00	6	1.74	322.69
9.22	30.160	510.84	0.00	30.160	1.69	6	21.47	159.95	72.79	87.16	344.18	1.70	0.00	6	1.74	323.84
9.24	29.350	585.87	0.00	29.350	2.00	6	21.58	160.39	72.99	87.40	333.98	2.01	0.00	6	1.81	315.69
9.26	27.630	645.95	0.00	27.630	2.34	6	21.58	160.82	73.18	87.64	313.45	2.35	0.00	8	1.88	297.69
9.28	26.180	642.02	0.00	26.180	2.45	8	21.58	161.25	73.38	87.87	296.10	2.47	0.00	8	1.91	281.94
9.30	24.680	644.81	0.00	24.680	2.61	8	21.58	161.68	73.58	88.11	278.28	2.63	0.00	8	1.94	265.72
9.32	24.070	680.68	0.00	24.070	2.83	8	21.58	162.11	73.77	88.34	270.63	2.85	0.00	8	1.98	259.09
9.34	25.160	713.92	0.00	25.160	2.84	8	21.58	162.54	73.97	88.58	282.21	2.86	0.00	8	1.97	270.33

CPTe P8 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data		Basic output data						NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _v ,v ₀	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.070	0.00	0.00	0.070	0.00	1	19.00	0.38	0.00	0.38	183.21	0.00	0.00	0	0.00	0.00
0.04	0.520	0.13	0.00	0.520	0.03	1	13.73	0.65	0.00	0.65	793.28	0.03	0.00	0	1.71	63.00
0.06	0.870	0.19	0.00	0.870	0.02	1	13.73	0.93	0.00	0.93	935.13	0.02	0.00	0	1.64	77.95
0.08	0.900	0.16	0.00	0.900	0.02	1	13.73	1.20	0.00	1.20	746.48	0.02	0.00	0	1.66	78.13
0.10	0.910	0.13	0.00	0.910	0.01	1	13.73	1.48	0.00	1.48	614.40	0.01	0.00	0	1.71	76.29
0.12	1.000	0.10	0.00	1.000	0.01	0	13.73	1.75	0.00	1.75	569.32	0.01	0.00	0	1.74	81.45
0.14	1.030	0.06	0.00	1.030	0.01	0	13.73	2.03	0.00	2.03	506.87	0.01	0.00	0	1.83	88.54
0.16	1.070	0.10	0.00	1.070	0.01	0	13.73	2.30	0.00	2.30	463.66	0.01	0.00	0	1.78	77.23
0.18	1.070	6.50	0.00	1.070	0.61	4	15.17	2.59	0.00	2.59	411.85	0.61	0.00	6	1.85	82.31
0.20	1.040	14.01	0.00	1.040	1.35	4	16.04	2.91	0.00	2.91	356.59	1.35	0.00	6	2.02	93.97
0.22	1.050	18.03	0.00	1.050	1.72	4	16.33	3.23	0.00	3.23	323.65	1.72	0.00	5	2.08	96.23
0.24	1.060	17.55	0.00	1.060	1.66	4	16.31	3.56	0.00	3.56	296.73	1.66	0.00	5	2.09	91.73
0.26	1.060	18.70	0.00	1.060	1.76	4	16.38	3.89	0.00	3.89	271.68	1.77	0.00	5	2.12	88.40
0.28	1.050	18.63	0.00	1.050	1.77	4	16.37	4.21	0.00	4.21	248.12	1.78	0.00	5	2.13	84.72
0.30	1.040	19.52	0.00	1.040	1.88	4	16.42	4.54	0.00	4.54	227.93	1.89	0.00	5	2.16	82.44
0.32	1.000	21.48	0.00	1.000	2.15	3	16.52	4.87	0.00	4.87	204.23	2.16	0.00	5	2.21	80.23
0.34	0.950	24.08	0.00	0.950	2.53	3	16.63	5.20	0.00	5.20	181.53	2.55	0.00	5	2.27	78.02
0.36	0.920	26.40	0.00	0.920	2.87	3	16.72	5.54	0.00	5.54	165.10	2.89	0.00	5	2.31	76.14
0.38	0.880	27.16	0.00	0.880	3.09	3	16.74	5.87	0.00	5.87	148.82	3.11	0.00	5	2.35	72.65
0.40	0.880	27.47	0.00	0.880	3.12	3	16.75	6.21	0.00	6.21	140.74	3.14	0.00	5	2.36	71.24
0.42	0.910	28.20	0.00	0.910	3.10	3	16.79	6.54	0.00	6.54	138.06	3.12	0.00	5	2.36	70.76
0.44	0.960	28.17	0.00	0.960	2.93	3	16.81	6.88	0.00	6.88	138.53	2.96	0.00	5	2.34	70.67
0.46	0.990	28.58	0.00	0.990	2.89	3	16.84	7.22	0.00	7.22	136.17	2.91	0.00	5	2.34	70.12
0.48	1.010	28.46	0.00	1.010	2.82	3	16.84	7.55	0.00	7.55	132.70	2.84	0.00	5	2.34	68.97
0.50	1.010	28.74	0.00	1.010	2.85	3	16.85	7.89	0.00	7.89	126.99	2.87	0.00	5	2.35	67.39
0.52	1.030	28.61	0.00	1.030	2.78	3	16.86	8.23	0.00	8.23	124.18	2.80	0.00	5	2.34	66.41
0.54	1.050	28.99	0.00	1.050	2.76	3	16.88	8.57	0.00	8.57	121.58	2.78	0.00	5	2.35	65.76
0.56	1.030	30.45	0.00	1.030	2.96	3	16.93	8.90	0.00	8.90	114.68	2.98	0.00	5	2.37	64.27
0.58	1.020	32.10	0.00	1.020	3.15	3	16.99	9.24	0.00	9.24	109.35	3.18	0.00	5	2.40	63.22
0.60	1.010	32.23	0.00	1.010	3.19	3	16.99	9.58	0.00	9.58	104.40	3.22	0.00	5	2.41	61.55
0.62	1.000	33.40	0.00	1.000	3.34	3	17.02	9.92	0.00	9.92	99.78	3.37	0.00	4	2.43	60.36
0.64	0.970	34.38	0.00	0.970	3.54	3	17.05	10.26	0.00	10.26	93.51	3.58	0.00	4	2.46	58.42
0.66	0.950	35.30	0.00	0.950	3.72	3	17.07	10.61	0.00	10.61	88.58	3.76	0.00	4	2.48	56.84
0.68	0.960	34.92	0.00	0.960	3.64	3	17.06	10.95	0.00	10.95	86.70	3.68	0.00	4	2.48	55.92
0.70	0.960	34.73	0.00	0.960	3.62	3	17.05	11.29	0.00	11.29	84.05	3.66	0.00	4	2.49	54.77
0.72	0.950	34.48	0.00	0.950	3.63	3	17.04	11.63	0.00	11.63	80.70	3.67	0.00	4	2.50	53.31
0.74	0.940	35.14	0.00	0.940	3.74	3	17.06	11.97	0.00	11.97	77.53	3.79	0.00	4	2.51	52.18
0.76	0.920	35.93	0.00	0.920	3.91	3	17.08	12.31	0.00	12.31	73.73	3.96	0.00	4	2.53	50.78
0.78	0.890	36.12	0.00	0.890	4.06	3	17.07	12.65	0.00	12.65	69.34	4.12	0.00	4	2.56	48.90
0.80	0.850	36.66	0.00	0.850	4.31	3	17.07	12.99	0.00	12.99	64.42	4.38	0.00	4	2.59	46.81
0.82	0.860	36.60	0.00	0.860	4.26	3	17.07	13.34	0.00	13.34	63.49	4.32	0.00	4	2.59	46.31
0.84	0.850	36.00	0.00	0.850	4.24	3	17.05	13.68	0.00	13.68	61.15	4.30	0.00	4	2.60	44.83
0.86	0.830	35.65	0.00	0.830	4.30	3	17.03	14.02	0.00	14.02	58.21	4.37	0.00	4	2.61	43.35
0.88	0.820	35.65	0.00	0.820	4.35	3	17.02	14.36	0.00	14.36	56.11	4.43	0.00	4	2.62	42.31
0.90	0.780	29.28	0.00	0.780	3.75	3	16.78	14.70	0.00	14.70	52.08	3.83	0.00	4	2.60	38.88

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	0.740	28.68	0.00	0.740	3.88	3	16.73	15.03	0.00	15.03	48.23	3.96	0.00	4	2.63	36.87
0.94	0.700	27.73	0.00	0.700	3.96	3	16.67	15.36	0.00	15.36	44.56	4.05	0.00	4	2.66	34.81
0.96	0.680	25.64	0.00	0.680	3.77	3	16.57	15.70	0.00	15.70	42.32	3.86	0.00	4	2.66	33.18
0.98	0.680	24.53	0.00	0.680	3.61	3	16.52	16.03	0.00	16.03	41.43	3.69	0.00	4	2.65	32.45
1.00	0.690	22.88	0.00	0.690	3.32	3	16.45	16.36	0.00	16.36	41.19	3.40	0.00	4	2.63	31.93
1.02	0.720	22.09	0.00	0.720	3.07	3	16.42	16.68	0.00	16.68	42.16	3.14	0.00	4	2.61	32.21
1.04	0.760	20.72	0.00	0.760	2.73	3	16.37	17.01	0.00	17.01	43.68	2.79	0.00	4	2.57	32.62
1.06	0.780	18.63	0.00	0.780	2.39	3	16.26	17.34	0.00	17.34	43.99	2.44	0.00	4	2.53	32.37
1.08	0.790	18.60	0.00	0.790	2.35	3	16.26	17.66	0.00	17.66	43.73	2.41	0.00	4	2.53	32.24
1.10	0.790	19.23	0.00	0.790	2.43	3	16.30	17.99	0.00	17.99	42.92	2.49	0.00	4	2.55	31.88
1.12	0.750	18.85	0.00	0.750	2.51	3	16.26	18.31	0.00	18.31	39.95	2.58	0.00	4	2.57	30.30
1.14	0.800	19.27	0.00	0.800	2.41	3	16.31	18.64	0.00	18.64	41.92	2.47	0.00	4	2.55	31.40
1.16	0.860	20.60	0.00	0.860	2.40	3	16.41	18.97	0.00	18.97	44.34	2.45	0.00	4	2.53	32.95
1.18	0.960	22.24	0.00	0.960	2.32	3	16.54	19.30	0.00	19.30	48.75	2.36	0.00	4	2.49	35.54
1.20	1.140	21.07	0.00	1.140	1.85	4	16.54	19.63	0.00	19.63	57.08	1.88	0.00	5	2.40	39.47
1.22	1.320	18.63	0.00	1.320	1.41	4	16.46	19.96	0.00	19.96	65.13	1.43	0.00	5	2.30	42.59
1.24	1.340	14.16	0.00	1.340	1.06	4	16.15	20.28	0.00	20.28	65.06	1.07	0.00	5	2.24	41.18
1.26	1.310	12.36	0.00	1.310	0.94	4	15.98	20.60	0.00	20.60	62.58	0.96	0.00	5	2.23	39.52
1.28	1.190	7.10	0.00	1.190	0.60	5	15.31	20.91	0.00	20.91	55.91	0.61	0.00	5	2.18	34.48
1.30	1.150	5.61	0.00	1.150	0.49	5	15.03	21.21	0.00	21.21	53.21	0.50	0.00	5	2.16	32.64
1.32	1.080	5.48	0.00	1.080	0.51	4	14.97	21.51	0.00	21.51	49.20	0.52	0.00	5	2.19	30.85
1.34	1.070	7.13	0.00	1.070	0.67	4	15.27	21.82	0.00	21.82	48.05	0.68	0.00	5	2.24	31.13
1.36	1.090	9.51	0.00	1.090	0.87	4	15.61	22.13	0.00	22.13	48.26	0.89	0.00	5	2.28	32.21
1.38	1.120	11.82	0.00	1.120	1.06	4	15.87	22.44	0.00	22.44	48.91	1.08	0.00	5	2.31	33.35
1.40	1.110	13.94	0.00	1.110	1.26	4	16.06	22.76	0.00	22.76	47.77	1.28	0.00	5	2.36	33.45
1.42	1.090	16.19	0.00	1.090	1.49	4	16.22	23.09	0.00	23.09	46.22	1.52	0.00	5	2.40	33.28
1.44	1.020	17.49	0.00	1.020	1.71	4	16.29	23.41	0.00	23.41	42.57	1.75	0.00	5	2.45	31.62
1.46	1.010	17.08	0.00	1.010	1.69	4	16.26	23.74	0.00	23.74	41.55	1.73	0.00	5	2.46	31.02
1.48	0.970	15.97	0.00	0.970	1.65	4	16.16	24.06	0.00	24.06	39.32	1.69	0.00	5	2.47	29.60
1.50	0.950	14.70	0.00	0.950	1.55	4	16.06	24.38	0.00	24.38	37.96	1.59	0.00	5	2.46	28.61
1.52	0.970	13.44	0.00	0.970	1.39	4	15.96	24.70	0.00	24.70	38.27	1.42	0.00	5	2.44	28.51
1.54	1.070	12.74	0.00	1.070	1.19	4	15.94	25.02	0.00	25.02	41.77	1.22	0.00	5	2.38	30.33
1.56	1.140	12.83	0.00	1.140	1.13	4	15.97	25.34	0.00	25.34	43.99	1.15	0.00	5	2.35	31.58
1.58	1.190	12.26	0.00	1.190	1.03	4	15.94	25.66	0.00	25.66	45.38	1.05	0.00	5	2.32	32.21
1.60	1.250	11.57	0.00	1.250	0.93	4	15.89	25.98	0.00	25.98	47.12	0.95	0.00	5	2.29	32.99
1.62	1.270	12.77	0.00	1.270	1.01	4	16.01	26.30	0.00	26.30	47.30	1.03	0.00	5	2.30	33.45
1.64	1.300	17.08	0.00	1.300	1.31	4	16.35	26.62	0.00	26.62	47.84	1.34	0.00	5	2.35	34.74
1.66	1.380	18.82	0.00	1.380	1.36	4	16.49	26.95	0.00	26.95	50.21	1.39	0.00	5	2.35	36.44
1.68	1.540	21.17	0.00	1.540	1.37	4	16.66	27.28	0.00	27.28	55.45	1.40	0.00	5	2.32	39.79
1.70	1.670	22.40	0.00	1.670	1.34	4	16.76	27.62	0.00	27.62	59.47	1.36	0.00	5	2.29	42.24
1.72	1.830	24.78	0.00	1.830	1.35	4	16.91	27.95	0.00	27.95	64.47	1.38	0.00	5	2.27	45.43
1.74	1.870	25.64	0.00	1.870	1.37	4	16.96	28.29	0.00	28.29	65.10	1.39	0.00	5	2.26	46.02
1.76	1.840	22.28	0.00	1.840	1.21	4	16.79	28.63	0.00	28.63	63.27	1.23	0.00	5	2.24	44.45
1.78	1.790	20.57	0.00	1.790	1.15	4	16.69	28.96	0.00	28.96	60.81	1.17	0.00	5	2.24	42.87
1.80	1.700	21.07	0.00	1.700	1.24	4	16.70	29.30	0.00	29.30	57.03	1.26	0.00	5	2.28	41.01
1.82	1.590	23.29	0.00	1.590	1.46	4	16.79	29.63	0.00	29.63	52.66	1.49	0.00	5	2.34	39.08
1.84	1.490	25.73	0.00	1.490	1.73	4	16.88	29.97	0.00	29.97	48.72	1.76	0.00	5	2.40	37.28
1.86	1.460	28.80	0.00	1.460	1.97	4	17.00	30.31	0.00	30.31	47.17	2.01	0.00	5	2.44	36.86
1.88	1.470	31.47	0.00	1.470	2.14	4	17.10	30.65	0.00	30.65	46.96	2.19	0.00	5	2.46	37.12
1.90	1.500	39.99	0.00	1.500	2.67	4	17.39	30.99	0.00	30.99	47.40	2.72	0.00	4	2.51	38.42
1.92	1.360	44.90	0.00	1.360	3.30	3	17.48	31.34	0.00	31.34	42.39	3.38	0.00	4	2.59	35.77
1.94	1.210	43.41	0.00	1.210	3.59	3	17.40	31.69	0.00	31.69	37.18	3.68	0.00	4	2.65	32.25
1.96	1.110	40.40	0.00	1.110	3.64	3	17.28	32.04	0.00	32.04	33.65	3.75	0.00	4	2.69	29.64
1.98	1.110	38.15	0.00	1.110	3.44	3	17.22	32.38	0.00	32.38	33.28	3.54	0.00	4	2.67	29.21
2.00	1.190	36.06	0.00	1.190	3.03	3	17.18	32.73	0.00	32.73	35.36	3.12	0.00	4	2.62	30.43

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	1.330	32.10	0.00	1.330	2.41	4	17.09	33.07	0.00	33.07	39.22	2.48	0.00	4	2.54	32.58
2.04	1.300	24.72	0.00	1.300	1.90	4	16.78	33.41	0.00	33.41	37.91	1.95	0.00	5	2.49	30.94
2.06	1.260	22.94	0.00	1.260	1.82	4	16.68	33.74	0.00	33.74	36.34	1.87	0.00	5	2.49	29.75
2.08	1.240	24.21	0.00	1.240	1.95	4	16.74	34.07	0.00	34.07	35.39	2.01	0.00	4	2.52	29.32
2.10	1.170	26.97	0.00	1.170	2.31	4	16.84	34.41	0.00	34.41	33.00	2.37	0.00	4	2.58	28.06
2.12	1.190	30.83	0.00	1.190	2.59	3	17.00	34.75	0.00	34.75	33.24	2.67	0.00	4	2.60	28.61
2.14	1.270	34.76	0.00	1.270	2.74	3	17.16	35.09	0.00	35.09	35.19	2.81	0.00	4	2.60	30.28
2.16	1.300	37.71	0.00	1.300	2.90	3	17.26	35.44	0.00	35.44	35.69	2.98	0.00	4	2.61	30.87
2.18	1.260	39.99	0.00	1.260	3.17	3	17.32	35.78	0.00	35.78	34.21	3.27	0.00	4	2.64	30.05
2.20	1.270	38.09	0.00	1.270	3.00	3	17.27	36.13	0.00	36.13	34.15	3.09	0.00	4	2.63	29.88
2.22	1.300	36.79	0.00	1.300	2.83	3	17.24	36.47	0.00	36.47	34.64	2.91	0.00	4	2.61	30.13
2.24	1.350	33.94	0.00	1.350	2.51	4	17.16	36.82	0.00	36.82	35.67	2.58	0.00	4	2.57	30.61
2.26	1.440	29.06	0.00	1.440	2.02	4	17.00	37.16	0.00	37.16	37.75	2.07	0.00	4	2.50	31.59
2.28	1.560	21.26	0.00	1.560	1.36	4	16.67	37.49	0.00	37.49	40.61	1.40	0.00	5	2.39	32.63
2.30	1.640	14.92	0.00	1.640	0.91	5	16.29	37.82	0.00	37.82	42.36	0.93	0.00	5	2.29	32.88
2.32	1.840	11.38	0.00	1.840	0.62	5	16.02	38.14	0.00	38.14	47.24	0.63	0.00	5	2.18	35.29
2.34	2.070	10.08	0.00	2.070	0.49	5	15.92	38.46	0.00	38.46	52.82	0.50	0.00	5	2.10	38.42
2.36	2.280	9.44	0.00	2.280	0.41	5	15.89	38.78	0.00	38.78	57.80	0.42	0.00	6	2.04	41.27
2.38	2.240	10.30	0.00	2.240	0.46	5	15.98	39.10	0.00	39.10	56.29	0.47	0.00	6	2.06	40.69
2.40	2.000	9.66	0.00	2.000	0.48	5	15.86	39.42	0.00	39.42	49.74	0.49	0.00	5	2.11	36.71
2.42	1.850	10.36	0.00	1.850	0.56	5	15.91	39.73	0.00	39.73	45.56	0.57	0.00	5	2.17	34.37
2.44	1.740	14.26	0.00	1.740	0.82	5	16.26	40.06	0.00	40.06	42.44	0.84	0.00	5	2.26	33.16
2.46	1.560	22.63	0.00	1.560	1.45	4	16.75	40.39	0.00	40.39	37.62	1.49	0.00	5	2.42	31.13
2.48	1.510	27.63	0.00	1.510	1.83	4	16.96	40.73	0.00	40.73	36.07	1.88	0.00	5	2.48	30.59
2.50	1.520	31.37	0.00	1.520	2.06	4	17.11	41.07	0.00	41.07	36.01	2.12	0.00	4	2.51	30.89
2.52	1.550	34.32	0.00	1.550	2.21	4	17.22	41.41	0.00	41.41	36.43	2.27	0.00	4	2.53	31.43
2.54	1.540	38.94	0.00	1.540	2.53	4	17.37	41.76	0.00	41.76	35.88	2.60	0.00	4	2.56	31.39
2.56	1.520	43.67	0.00	1.520	2.87	4	17.49	42.11	0.00	42.11	35.10	2.95	0.00	4	2.60	31.14
2.58	1.460	50.16	0.00	1.460	3.44	3	17.64	42.46	0.00	42.46	33.38	3.54	0.00	4	2.66	30.26
2.60	1.370	53.17	0.00	1.370	3.88	3	17.68	42.82	0.00	42.82	31.00	4.01	0.00	4	2.72	28.62
2.62	1.280	54.25	0.00	1.280	4.24	3	17.68	43.17	0.00	43.17	28.65	4.39	0.00	3	2.76	26.90
2.64	1.200	51.21	0.00	1.200	4.27	3	17.59	43.52	0.00	43.52	26.57	4.43	0.00	3	2.79	25.16
2.66	1.110	48.99	0.00	1.110	4.41	3	17.50	43.87	0.00	43.87	24.30	4.60	0.00	3	2.82	23.28
2.68	1.090	45.50	0.00	1.090	4.17	3	17.41	44.22	0.00	44.22	23.65	4.35	0.00	3	2.82	22.62
2.70	1.100	41.70	0.00	1.100	3.79	3	17.32	44.57	0.00	44.57	23.68	3.95	0.00	3	2.79	22.49
2.72	1.150	37.39	0.00	1.150	3.25	3	17.21	44.91	0.00	44.91	24.61	3.38	0.00	4	2.74	23.02
2.74	1.140	35.93	0.00	1.140	3.15	3	17.16	45.26	0.00	45.26	24.19	3.28	0.00	4	2.74	22.64
2.76	1.130	32.61	0.00	1.130	2.89	3	17.04	45.60	0.00	45.60	23.78	3.01	0.00	4	2.72	22.14
2.78	1.270	29.25	0.00	1.270	2.30	4	16.96	45.94	0.00	45.94	26.65	2.39	0.00	4	2.63	24.17
2.80	1.370	25.92	0.00	1.370	1.89	4	16.85	46.27	0.00	46.27	28.61	1.96	0.00	4	2.56	25.44
2.82	1.450	26.62	0.00	1.450	1.84	4	16.91	46.61	0.00	46.61	30.11	1.90	0.00	4	2.53	26.62
2.84	1.390	29.34	0.00	1.390	2.11	4	17.00	46.95	0.00	46.95	28.61	2.18	0.00	4	2.58	25.69
2.86	1.360	32.73	0.00	1.360	2.41	4	17.12	47.29	0.00	47.29	27.76	2.49	0.00	4	2.62	25.25
2.88	1.340	34.29	0.00	1.340	2.56	4	17.17	47.64	0.00	47.64	27.13	2.65	0.00	4	2.65	24.86
2.90	1.480	32.96	0.00	1.480	2.23	4	17.16	47.98	0.00	47.98	29.85	2.30	0.00	4	2.58	26.88
2.92	1.460	37.80	0.00	1.460	2.59	4	17.31	48.32	0.00	48.32	29.21	2.68	0.00	4	2.63	26.66
2.94	1.440	40.05	0.00	1.440	2.78	4	17.37	48.67	0.00	48.67	28.59	2.88	0.00	4	2.65	26.29
2.96	1.470	41.35	0.00	1.470	2.81	4	17.42	49.02	0.00	49.02	28.99	2.91	0.00	4	2.65	26.68
2.98	1.600	39.20	0.00	1.600	2.45	4	17.39	49.37	0.00	49.37	31.41	2.53	0.00	4	2.59	28.46
3.00	1.640	38.25	0.00	1.640	2.33	4	17.37	49.71	0.00	49.71	31.99	2.41	0.00	4	2.57	28.88
3.02	1.750	37.80	0.00	1.750	2.16	4	17.38	50.06	0.00	50.06	33.96	2.22	0.00	4	2.53	30.38
3.04	1.820	38.12	0.00	1.820	2.09	4	17.41	50.41	0.00	50.41	35.10	2.15	0.00	4	2.51	31.29
3.06	1.870	40.47	0.00	1.870	2.16	4	17.48	50.76	0.00	50.76	35.84	2.22	0.00	4	2.51	32.00
3.08	1.970	43.22	0.00	1.970	2.19	4	17.58	51.11	0.00	51.11	37.54	2.25	0.00	4	2.50	33.46
3.10	2.070	44.24	0.00	2.070	2.14	4	17.63	51.46	0.00	51.46	39.22	2.19	0.00	5	2.48	34.82

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	2.310	50.07	0.00	2.310	2.17	4	17.81	51.82	0.00	51.82	43.58	2.22	0.00	5	2.45	38.45
3.14	2.360	51.94	0.00	2.360	2.20	4	17.86	52.17	0.00	52.17	44.23	2.25	0.00	5	2.45	39.07
3.16	2.360	54.25	0.00	2.360	2.30	4	17.91	52.53	0.00	52.53	43.92	2.35	0.00	5	2.46	38.98
3.18	2.420	57.20	0.00	2.420	2.36	4	17.98	52.89	0.00	52.89	44.75	2.42	0.00	5	2.46	39.78
3.20	2.370	63.22	0.00	2.370	2.67	4	18.09	53.25	0.00	53.25	43.50	2.73	0.00	4	2.50	39.10
3.22	2.290	65.18	0.00	2.290	2.85	4	18.11	53.62	0.00	53.62	41.71	2.91	0.00	4	2.53	37.80
3.24	2.220	64.74	0.00	2.220	2.92	4	18.09	53.98	0.00	53.98	40.13	2.99	0.00	4	2.55	36.56
3.26	2.220	66.48	0.00	2.220	2.99	4	18.12	54.34	0.00	54.34	39.85	3.07	0.00	4	2.56	36.43
3.28	2.360	66.13	0.00	2.360	2.80	4	18.14	54.70	0.00	54.70	42.14	2.87	0.00	4	2.53	38.25
3.30	2.620	64.55	0.00	2.620	2.46	4	18.15	55.07	0.00	55.07	46.58	2.52	0.00	5	2.46	41.70
3.32	2.690	67.27	0.00	2.690	2.50	4	18.21	55.43	0.00	55.43	47.53	2.55	0.00	5	2.46	42.58
3.34	2.680	68.45	0.00	2.680	2.55	4	18.23	55.79	0.00	55.79	47.03	2.61	0.00	4	2.47	42.27
3.36	2.480	74.43	0.00	2.480	3.00	4	18.29	56.16	0.00	56.16	43.16	3.07	0.00	4	2.54	39.44
3.38	2.360	74.34	0.00	2.360	3.15	4	18.27	56.53	0.00	56.53	40.75	3.23	0.00	4	2.57	37.53
3.40	2.250	76.56	0.00	2.250	3.40	4	18.29	56.89	0.00	56.89	38.55	3.49	0.00	4	2.60	35.84
3.42	2.040	75.61	0.00	2.040	3.71	3	18.24	57.26	0.00	57.26	34.63	3.81	0.00	4	2.66	32.61
3.44	1.620	76.75	0.00	1.620	4.74	3	18.17	57.62	0.00	57.62	27.12	4.91	0.00	3	2.80	26.33
3.46	1.590	74.40	0.00	1.590	4.68	3	18.12	57.98	0.00	57.98	26.42	4.86	0.00	3	2.81	25.69
3.48	1.550	70.85	0.00	1.550	4.57	3	18.06	58.34	0.00	58.34	25.57	4.75	0.00	3	2.81	24.89
3.50	1.580	64.58	0.00	1.580	4.09	3	17.96	58.70	0.00	58.70	25.91	4.25	0.00	3	2.78	25.06
3.52	1.510	58.78	0.00	1.510	3.89	3	17.83	59.06	0.00	59.06	24.57	4.05	0.00	3	2.78	23.79
3.54	1.490	56.21	0.00	1.490	3.77	3	17.78	59.42	0.00	59.42	24.08	3.93	0.00	4	2.78	23.31
3.56	1.490	46.01	0.00	1.490	3.09	3	17.55	59.77	0.00	59.77	23.93	3.22	0.00	4	2.73	22.95
3.58	1.470	42.08	0.00	1.470	2.86	4	17.44	60.12	0.00	60.12	23.45	2.98	0.00	4	2.71	22.45
3.60	1.500	34.73	0.00	1.500	2.32	4	17.22	60.46	0.00	60.46	23.81	2.41	0.00	4	2.65	22.55
3.62	1.530	32.89	0.00	1.530	2.15	4	17.17	60.81	0.00	60.81	24.16	2.24	0.00	4	2.63	22.80
3.64	1.610	32.29	0.00	1.610	2.01	4	17.17	61.15	0.00	61.15	25.33	2.08	0.00	4	2.60	23.77
3.66	1.590	32.32	0.00	1.590	2.03	4	17.16	61.49	0.00	61.49	24.86	2.11	0.00	4	2.61	23.39
3.68	1.550	33.21	0.00	1.550	2.14	4	17.19	61.84	0.00	61.84	24.07	2.23	0.00	4	2.63	22.76
3.70	1.460	35.05	0.00	1.460	2.40	4	17.22	62.18	0.00	62.18	22.48	2.51	0.00	4	2.68	21.47
3.72	1.300	38.15	0.00	1.300	2.93	3	17.28	62.53	0.00	62.53	19.79	3.08	0.00	4	2.77	19.23
3.74	1.270	36.41	0.00	1.270	2.87	3	17.21	62.87	0.00	62.87	19.20	3.02	0.00	4	2.78	18.68
3.76	1.230	35.08	0.00	1.230	2.85	3	17.16	63.21	0.00	63.21	18.46	3.01	0.00	4	2.79	18.00
3.78	1.240	32.54	0.00	1.240	2.62	3	17.08	63.56	0.00	63.56	18.51	2.77	0.00	4	2.77	17.99
3.80	1.270	31.75	0.00	1.270	2.50	4	17.06	63.90	0.00	63.90	18.88	2.63	0.00	4	2.75	18.29
3.82	1.310	29.31	0.00	1.310	2.24	4	16.98	64.24	0.00	64.24	19.39	2.35	0.00	4	2.71	18.69
3.84	1.280	23.48	0.00	1.280	1.83	4	16.71	64.57	0.00	64.57	18.82	1.93	0.00	4	2.68	18.04
3.86	1.240	21.52	0.00	1.240	1.74	4	16.60	64.91	0.00	64.91	18.10	1.83	0.00	4	2.68	17.36
3.88	1.310	20.47	0.00	1.310	1.56	4	16.56	65.24	0.00	65.24	19.08	1.64	0.00	4	2.64	18.18
3.90	1.800	4.94	0.00	1.800	0.27	5	15.05	65.55	0.00	65.55	26.46	0.28	0.00	5	2.20	23.53
3.92	1.700	10.74	0.00	1.700	0.63	5	15.92	65.87	0.00	65.87	24.81	0.66	0.00	5	2.36	22.64
3.94	1.670	14.51	0.00	1.670	0.87	5	16.26	66.19	0.00	66.19	24.23	0.90	0.00	5	2.42	22.37
3.96	1.710	19.65	0.00	1.710	1.15	4	16.62	66.52	0.00	66.52	24.71	1.20	0.00	5	2.48	23.02
3.98	1.880	29.91	0.00	1.880	1.59	4	17.14	66.86	0.00	66.86	27.12	1.65	0.00	5	2.52	25.45
4.00	1.950	31.28	0.00	1.950	1.60	4	17.20	67.21	0.00	67.21	28.01	1.66	0.00	5	2.51	26.28
4.02	1.960	31.91	0.00	1.960	1.63	4	17.23	67.55	0.00	67.55	28.01	1.69	0.00	5	2.51	26.31
4.04	1.970	34.48	0.00	1.970	1.75	4	17.32	67.90	0.00	67.90	28.01	1.81	0.00	4	2.53	26.40
4.06	2.060	35.90	0.00	2.060	1.74	4	17.38	68.25	0.00	68.25	29.19	1.80	0.00	4	2.51	27.47
4.08	1.980	40.88	0.00	1.980	2.06	4	17.52	68.60	0.00	68.60	27.86	2.14	0.00	4	2.57	26.46
4.10	1.920	40.05	0.00	1.920	2.09	4	17.48	68.95	0.00	68.95	26.85	2.16	0.00	4	2.58	25.57
4.12	1.930	36.00	0.00	1.930	1.87	4	17.36	69.29	0.00	69.29	26.85	1.93	0.00	4	2.56	25.49
4.14	1.860	33.94	0.00	1.860	1.82	4	17.28	69.64	0.00	69.64	25.71	1.90	0.00	4	2.56	24.46
4.16	1.750	36.66	0.00	1.750	2.09	4	17.35	69.98	0.00	69.98	24.01	2.18	0.00	4	2.62	23.03
4.18	1.700	39.67	0.00	1.700	2.33	4	17.43	70.33	0.00	70.33	23.17	2.43	0.00	4	2.66	22.36
4.20	1.660	40.81	0.00	1.660	2.46	4	17.45	70.68	0.00	70.68	22.49	2.57	0.00	4	2.68	21.78

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P8		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	1.710	37.77	0.00	1.710	2.21	4	17.37	71.03	0.00	71.03	23.07	2.30	0.00	4	2.65	22.26
4.24	1.800	36.06	0.00	1.800	2.00	4	17.34	71.38	0.00	71.38	24.22	2.09	0.00	4	2.61	23.25
4.26	1.880	34.86	0.00	1.880	1.85	4	17.32	71.72	0.00	71.72	25.21	1.93	0.00	4	2.57	24.12
4.28	2.000	36.85	0.00	2.000	1.84	4	17.40	72.07	0.00	72.07	26.75	1.91	0.00	4	2.55	25.54
4.30	2.180	37.90	0.00	2.180	1.74	4	17.47	72.42	0.00	72.42	29.10	1.80	0.00	5	2.51	27.66
4.32	2.210	34.54	0.00	2.210	1.56	4	17.37	72.77	0.00	72.77	29.37	1.62	0.00	5	2.48	27.83
4.34	2.050	36.92	0.00	2.050	1.80	4	17.41	73.12	0.00	73.12	27.04	1.87	0.00	4	2.54	25.84
4.36	1.790	37.01	0.00	1.790	2.07	4	17.37	73.46	0.00	73.46	23.37	2.16	0.00	4	2.63	22.57
4.38	1.500	42.87	0.00	1.500	2.86	4	17.47	73.81	0.00	73.81	19.32	3.01	0.00	4	2.77	18.99
4.40	1.360	43.16	0.00	1.360	3.17	3	17.44	74.16	0.00	74.16	17.34	3.36	0.00	3	2.84	17.17
4.42	1.240	39.23	0.00	1.240	3.16	3	17.29	74.51	0.00	74.51	15.64	3.37	0.00	3	2.87	15.56
4.44	1.250	33.62	0.00	1.250	2.69	3	17.12	74.85	0.00	74.85	15.70	2.86	0.00	4	2.83	15.54
4.46	1.300	31.15	0.00	1.300	2.40	4	17.04	75.19	0.00	75.19	16.29	2.54	0.00	4	2.79	16.06
4.48	1.610	31.91	0.00	1.610	1.98	4	17.15	75.54	0.00	75.54	20.31	2.08	0.00	4	2.66	19.77
4.50	1.850	27.47	0.00	1.850	1.48	4	17.03	75.88	0.00	75.88	23.38	1.55	0.00	4	2.54	22.48
4.52	1.780	19.61	0.00	1.780	1.10	4	16.63	76.21	0.00	76.21	22.36	1.15	0.00	5	2.49	21.40
4.54	1.680	22.15	0.00	1.680	1.32	4	16.75	76.55	0.00	76.55	20.95	1.38	0.00	4	2.56	20.19
4.56	1.490	24.62	0.00	1.490	1.65	4	16.83	76.88	0.00	76.88	18.38	1.74	0.00	4	2.66	17.90
4.58	1.300	30.33	0.00	1.300	2.33	4	17.01	77.22	0.00	77.22	15.83	2.48	0.00	4	2.79	15.64
4.60	1.160	32.64	0.00	1.160	2.81	3	17.05	77.56	0.00	77.56	13.96	3.02	0.00	3	2.88	13.91
4.62	1.130	31.56	0.00	1.130	2.79	3	17.01	77.90	0.00	77.90	13.51	3.00	0.00	3	2.89	13.47
4.64	1.400	28.11	0.00	1.400	2.01	4	16.95	78.24	0.00	78.24	16.89	2.13	0.00	4	2.73	16.60
4.66	1.530	26.27	0.00	1.530	1.72	4	16.91	78.58	0.00	78.58	18.47	1.81	0.00	4	2.66	18.05
4.68	1.550	24.05	0.00	1.550	1.55	4	16.81	78.92	0.00	78.92	18.64	1.63	0.00	4	2.63	18.18
4.70	1.480	23.48	0.00	1.480	1.59	4	16.77	79.25	0.00	79.25	17.67	1.68	0.00	4	2.66	17.28
4.72	1.460	22.72	0.00	1.460	1.56	4	16.73	79.59	0.00	79.59	17.34	1.65	0.00	4	2.66	16.97
4.74	1.600	23.20	0.00	1.600	1.45	4	16.78	79.92	0.00	79.92	19.02	1.53	0.00	4	2.61	18.54
4.76	1.620	23.51	0.00	1.620	1.45	4	16.80	80.26	0.00	80.26	19.18	1.53	0.00	4	2.61	18.70
4.78	1.630	23.58	0.00	1.630	1.45	4	16.81	80.59	0.00	80.59	19.22	1.52	0.00	4	2.61	18.75
4.80	1.730	26.21	0.00	1.730	1.52	4	16.96	80.93	0.00	80.93	20.38	1.59	0.00	4	2.60	19.86
4.82	1.670	27.03	0.00	1.670	1.62	4	16.98	81.27	0.00	81.27	19.55	1.70	0.00	4	2.63	19.11
4.84	1.530	27.28	0.00	1.530	1.78	4	16.95	81.61	0.00	81.61	17.75	1.88	0.00	4	2.68	17.44
4.86	1.490	27.57	0.00	1.490	1.85	4	16.96	81.95	0.00	81.95	17.18	1.96	0.00	4	2.70	16.91
4.88	1.360	28.08	0.00	1.360	2.06	4	16.94	82.29	0.00	82.29	15.53	2.20	0.00	4	2.77	15.36
4.90	1.390	22.66	0.00	1.390	1.63	4	16.70	82.63	0.00	82.63	15.82	1.73	0.00	4	2.70	15.59
4.92	1.590	23.23	0.00	1.590	1.46	4	16.78	82.96	0.00	82.96	18.17	1.54	0.00	4	2.63	17.81
4.94	1.820	27.44	0.00	1.820	1.51	4	17.03	83.30	0.00	83.30	20.85	1.58	0.00	4	2.58	20.38
4.96	2.070	30.42	0.00	2.070	1.47	4	17.20	83.65	0.00	83.65	23.75	1.53	0.00	4	2.53	23.15
4.98	1.750	33.91	0.00	1.750	1.94	4	17.26	83.99	0.00	83.99	19.84	2.04	0.00	4	2.66	19.51
5.00	1.700	33.53	0.00	1.700	1.97	4	17.23	84.33	0.00	84.33	19.16	2.08	0.00	4	2.68	18.88
5.02	1.480	37.23	0.00	1.480	2.52	4	17.30	84.68	0.00	84.68	16.48	2.67	0.00	4	2.79	16.36
5.04	1.390	39.17	0.00	1.390	2.82	3	17.33	85.03	0.00	85.03	15.35	3.00	0.00	3	2.85	15.29
5.06	1.560	42.43	0.00	1.560	2.72	4	17.47	85.38	0.00	85.38	17.27	2.88	0.00	4	2.80	17.16
5.08	1.940	39.32	0.00	1.940	2.03	4	17.47	85.72	0.00	85.72	21.63	2.12	0.00	4	2.64	21.30
5.10	2.220	34.98	0.00	2.220	1.58	4	17.38	86.07	0.00	86.07	24.79	1.64	0.00	4	2.53	24.27
5.12	1.920	38.98	0.00	1.920	2.03	4	17.45	86.42	0.00	86.42	21.22	2.13	0.00	4	2.65	20.92
5.14	1.590	40.31	0.00	1.590	2.54	4	17.42	86.77	0.00	86.77	17.32	2.68	0.00	4	2.78	17.20
5.16	1.380	36.09	0.00	1.380	2.62	4	17.24	87.12	0.00	87.12	14.84	2.79	0.00	4	2.84	14.79
5.18	1.210	36.06	0.00	1.210	2.98	3	17.19	87.46	0.00	87.46	12.84	3.21	0.00	3	2.93	12.84
5.20	1.100	33.91	0.00	1.100	3.08	3	17.08	87.80	0.00	87.80	11.53	3.35	0.00	3	2.97	11.53
5.22	1.180	29.98	0.00	1.180	2.54	3	16.96	88.14	0.00	88.14	12.39	2.75	0.00	3	2.90	12.39
5.24	1.310	27.09	0.00	1.310	2.07	4	16.89	88.48	0.00	88.48	13.81	2.22	0.00	4	2.81	13.75
5.26	1.640	21.55	0.00	1.640	1.31	4	16.71	88.81	0.00	88.81	17.47	1.39	0.00	4	2.62	17.24
5.28	2.100	20.15	0.00	2.100	0.96	5	16.73	89.15	0.00	89.15	22.56	1.00	0.00	5	2.45	22.12
5.30	2.180	17.21	0.00	2.180	0.79	5	16.56	89.48	0.00	89.48	23.36	0.82	0.00	5	2.40	22.87

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	1.940	18.35	0.00	1.940	0.95	5	16.59	89.81	0.00	89.81	20.60	0.99	0.00	5	2.48	20.25
5.34	2.010	24.49	0.00	2.010	1.22	5	16.93	90.15	0.00	90.15	21.30	1.28	0.00	5	2.52	20.98
5.36	2.990	36.31	0.00	2.990	1.21	5	17.54	90.50	0.00	90.50	32.04	1.25	0.00	5	2.37	31.40
5.38	3.220	29.94	0.00	3.220	0.93	5	17.35	90.84	0.00	90.84	34.45	0.96	0.00	5	2.28	33.68
5.40	2.890	31.94	0.00	2.890	1.11	5	17.38	91.19	0.00	91.19	30.69	1.14	0.00	5	2.37	30.12
5.42	2.430	37.55	0.00	2.430	1.55	5	17.50	91.54	0.00	91.54	25.55	1.61	0.00	5	2.51	25.22
5.44	2.210	50.42	0.00	2.210	2.28	4	17.80	91.90	0.00	91.90	23.05	2.38	0.00	4	2.65	22.86
5.46	1.880	54.63	0.00	1.880	2.91	4	17.83	92.25	0.00	92.25	19.38	3.06	0.00	4	2.77	19.30
5.48	1.810	56.31	0.00	1.810	3.11	4	17.85	92.61	0.00	92.61	18.54	3.28	0.00	4	2.80	18.49
5.50	1.740	57.20	0.00	1.740	3.29	3	17.86	92.97	0.00	92.97	17.72	3.47	0.00	3	2.84	17.69
5.52	2.130	57.73	0.00	2.130	2.71	4	17.94	93.33	0.00	93.33	21.82	2.83	0.00	4	2.71	21.72
5.54	1.880	57.89	0.00	1.880	3.08	4	17.90	93.68	0.00	93.68	19.07	3.24	0.00	4	2.79	19.02
5.56	1.740	52.09	0.00	1.740	2.99	4	17.75	94.04	0.00	94.04	17.50	3.16	0.00	4	2.81	17.47
5.58	1.590	46.42	0.00	1.590	2.92	4	17.58	94.39	0.00	94.39	15.84	3.10	0.00	3	2.84	15.83
5.60	1.400	43.67	0.00	1.400	3.12	3	17.46	94.74	0.00	94.74	13.78	3.35	0.00	3	2.91	13.78
5.62	1.310	41.42	0.00	1.310	3.16	3	17.37	95.09	0.00	95.09	12.78	3.41	0.00	3	2.94	12.78
5.64	1.150	41.76	0.00	1.150	3.63	3	17.33	95.44	0.00	95.44	11.05	3.96	0.00	3	3.03	11.05
5.66	1.090	39.89	0.00	1.090	3.66	3	17.26	95.78	0.00	95.78	10.38	4.01	0.00	3	3.06	10.38
5.68	1.110	31.50	0.00	1.110	2.84	3	17.00	96.12	0.00	96.12	10.55	3.11	0.00	3	2.99	10.55
5.70	1.230	28.42	0.00	1.230	2.31	4	16.92	96.46	0.00	96.46	11.75	2.51	0.00	3	2.90	11.75
5.72	1.340	25.19	0.00	1.340	1.88	4	16.81	96.80	0.00	96.80	12.84	2.03	0.00	4	2.81	12.83
5.74	1.600	24.11	0.00	1.600	1.51	4	16.83	97.13	0.00	97.13	15.47	1.60	0.00	4	2.69	15.44
5.76	1.780	27.47	0.00	1.780	1.54	4	17.02	97.47	0.00	97.47	17.26	1.63	0.00	4	2.65	17.22
5.78	1.810	27.70	0.00	1.810	1.53	4	17.04	97.81	0.00	97.81	17.50	1.62	0.00	4	2.65	17.47
5.80	1.790	28.42	0.00	1.790	1.59	4	17.06	98.16	0.00	98.16	17.24	1.68	0.00	4	2.66	17.21
5.82	1.780	30.26	0.00	1.780	1.70	4	17.13	98.50	0.00	98.50	17.07	1.80	0.00	4	2.68	17.05
5.84	1.710	36.35	0.00	1.710	2.13	4	17.33	98.84	0.00	98.84	16.30	2.26	0.00	4	2.75	16.29
5.86	1.910	42.08	0.00	1.910	2.20	4	17.54	99.19	0.00	99.19	18.26	2.32	0.00	4	2.72	18.25
5.88	2.180	44.30	0.00	2.180	2.03	4	17.65	99.55	0.00	99.55	20.90	2.13	0.00	4	2.65	20.89
5.90	2.410	48.10	0.00	2.410	2.00	4	17.78	99.90	0.00	99.90	23.12	2.08	0.00	4	2.61	23.12
5.92	2.530	50.86	0.00	2.530	2.01	4	17.86	100.26	0.00	100.26	24.23	2.09	0.00	4	2.59	24.24
5.94	2.710	55.87	0.00	2.710	2.06	4	18.00	100.62	0.00	100.62	25.93	2.14	0.00	4	2.58	25.95
5.96	2.840	56.94	0.00	2.840	2.00	4	18.04	100.98	0.00	100.98	27.12	2.08	0.00	4	2.55	27.16
5.98	2.760	55.07	0.00	2.760	2.00	4	17.99	101.34	0.00	101.34	26.24	2.07	0.00	4	2.56	26.28
6.00	2.710	54.57	0.00	2.710	2.01	4	17.97	101.70	0.00	101.70	25.65	2.09	0.00	4	2.57	25.70
6.02	2.660	56.94	0.00	2.660	2.14	4	18.01	102.06	0.00	102.06	25.06	2.23	0.00	4	2.60	25.12
6.04	2.480	64.36	0.00	2.480	2.60	4	18.13	102.42	0.00	102.42	23.21	2.71	0.00	4	2.67	23.26
6.06	2.280	72.75	0.00	2.280	3.19	4	18.24	102.78	0.00	102.78	21.18	3.34	0.00	4	2.76	21.21
6.08	2.050	74.91	0.00	2.050	3.65	3	18.23	103.15	0.00	103.15	18.87	3.85	0.00	3	2.84	18.88
6.10	1.900	72.82	0.00	1.900	3.83	3	18.17	103.51	0.00	103.51	17.36	4.05	0.00	3	2.88	17.36
6.12	1.840	73.23	0.00	1.840	3.98	3	18.16	103.88	0.00	103.88	16.71	4.22	0.00	3	2.91	16.71
6.14	1.840	72.47	0.00	1.840	3.94	3	18.15	104.24	0.00	104.24	16.65	4.18	0.00	3	2.91	16.65
6.16	1.790	72.22	0.00	1.790	4.03	3	18.13	104.60	0.00	104.60	16.11	4.29	0.00	3	2.92	16.11
6.18	2.070	62.36	0.00	2.070	3.01	4	18.02	104.96	0.00	104.96	18.72	3.17	0.00	4	2.79	18.75
6.20	2.180	57.29	0.00	2.180	2.63	4	17.94	105.32	0.00	105.32	19.70	2.76	0.00	4	2.74	19.75
6.22	2.400	52.28	0.00	2.400	2.18	4	17.87	105.68	0.00	105.68	21.71	2.28	0.00	4	2.65	21.81
6.24	2.610	50.42	0.00	2.610	1.93	4	17.87	106.04	0.00	106.04	23.61	2.01	0.00	4	2.59	23.77
6.26	2.660	50.73	0.00	2.660	1.91	4	17.88	106.39	0.00	106.39	24.00	1.99	0.00	4	2.58	24.17
6.28	2.540	49.84	0.00	2.540	1.96	4	17.84	106.75	0.00	106.75	22.79	2.05	0.00	4	2.61	22.95
6.30	2.400	51.94	0.00	2.400	2.16	4	17.87	107.11	0.00	107.11	21.41	2.27	0.00	4	2.65	21.53
6.32	2.190	54.95	0.00	2.190	2.51	4	17.90	107.47	0.00	107.47	19.38	2.64	0.00	4	2.73	19.46
6.34	1.860	61.13	0.00	1.860	3.29	4	17.96	107.82	0.00	107.82	16.25	3.49	0.00	3	2.87	16.26
6.36	1.540	67.49	0.00	1.540	4.38	3	18.00	108.18	0.00	108.18	13.23	4.71	0.00	3	3.02	13.23
6.38	1.420	66.96	0.00	1.420	4.72	3	17.96	108.54	0.00	108.54	12.08	5.11	0.00	3	3.07	12.08
6.40	1.390	65.69	0.00	1.390	4.73	3	17.93	108.90	0.00	108.90	11.76	5.13	0.00	3	3.08	11.76

In situ data			Basic output data					NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P8		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ',v ₀	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.390	65.59	0.00	1.390	4.72	3	17.93	109.26	0.00	109.26	11.72	5.12	0.00	3	3.08	11.72
6.44	1.570	61.32	0.00	1.570	3.91	3	17.90	109.62	0.00	109.62	13.32	4.20	0.00	3	2.98	13.32
6.46	1.660	57.26	0.00	1.660	3.45	3	17.84	109.98	0.00	109.98	14.09	3.69	0.00	3	2.93	14.09
6.48	1.780	49.65	0.00	1.780	2.79	4	17.70	110.33	0.00	110.33	15.13	2.97	0.00	3	2.85	15.15
6.50	1.910	45.85	0.00	1.910	2.40	4	17.64	110.68	0.00	110.68	16.26	2.55	0.00	4	2.78	16.31
6.52	1.950	45.31	0.00	1.950	2.32	4	17.63	111.04	0.00	111.04	16.56	2.46	0.00	4	2.77	16.63
6.54	1.980	44.93	0.00	1.980	2.27	4	17.63	111.39	0.00	111.39	16.78	2.40	0.00	4	2.76	16.86
6.56	2.050	44.49	0.00	2.050	2.17	4	17.63	111.74	0.00	111.74	17.35	2.30	0.00	4	2.73	17.45
6.58	2.140	43.22	0.00	2.140	2.02	4	17.61	112.09	0.00	112.09	18.09	2.13	0.00	4	2.70	18.23
6.60	2.340	43.73	0.00	2.340	1.87	4	17.66	112.45	0.00	112.45	19.81	1.96	0.00	4	2.64	20.01
6.62	2.670	47.75	0.00	2.670	1.79	4	17.81	112.80	0.00	112.80	22.67	1.87	0.00	4	2.58	22.97
6.64	2.760	47.91	0.00	2.760	1.74	5	17.83	113.16	0.00	113.16	23.39	1.81	0.00	4	2.56	23.73
6.66	2.910	47.56	0.00	2.910	1.63	5	17.84	113.52	0.00	113.52	24.64	1.70	0.00	4	2.53	25.04
6.68	2.970	49.72	0.00	2.970	1.67	5	17.90	113.87	0.00	113.87	25.08	1.74	0.00	4	2.53	25.51
6.70	2.910	52.47	0.00	2.910	1.80	5	17.95	114.23	0.00	114.23	24.47	1.88	0.00	4	2.56	24.87
6.72	2.730	60.30	0.00	2.730	2.21	4	18.09	114.59	0.00	114.59	22.82	2.31	0.00	4	2.63	23.10
6.74	2.740	67.18	0.00	2.740	2.45	4	18.21	114.96	0.00	114.96	22.84	2.56	0.00	4	2.66	23.09
6.76	2.840	68.35	0.00	2.840	2.41	4	18.25	115.32	0.00	115.32	23.63	2.51	0.00	4	2.65	23.91
6.78	2.880	68.76	0.00	2.880	2.39	4	18.26	115.69	0.00	115.69	23.89	2.49	0.00	4	2.64	24.20
6.80	2.660	71.74	0.00	2.660	2.70	4	18.28	116.05	0.00	116.05	21.92	2.82	0.00	4	2.70	22.12
6.82	2.720	72.79	0.00	2.720	2.68	4	18.30	116.42	0.00	116.42	22.36	2.80	0.00	4	2.69	22.59
6.84	2.670	75.80	0.00	2.670	2.84	4	18.34	116.78	0.00	116.78	21.86	2.97	0.00	4	2.72	22.05
6.86	2.660	74.72	0.00	2.660	2.81	4	18.33	117.15	0.00	117.15	21.71	2.94	0.00	4	2.72	21.90
6.88	2.740	72.06	0.00	2.740	2.63	4	18.29	117.52	0.00	117.52	22.32	2.75	0.00	4	2.69	22.56
6.90	3.650	74.47	0.00	3.650	2.04	5	18.44	117.88	0.00	117.88	29.96	2.11	0.00	4	2.51	30.63
6.92	4.010	78.65	0.00	4.010	1.96	5	18.54	118.25	0.00	118.25	32.91	2.02	0.00	5	2.47	33.75
6.94	3.650	76.68	0.00	3.650	2.10	5	18.48	118.62	0.00	118.62	29.77	2.17	0.00	4	2.52	30.43
6.96	3.600	76.40	0.00	3.600	2.12	5	18.47	118.99	0.00	118.99	29.25	2.19	0.00	4	2.53	29.90
6.98	4.300	76.40	0.00	4.300	1.78	5	18.53	119.36	0.00	119.36	35.02	1.83	0.00	5	2.42	36.08
7.00	4.400	81.22	0.00	4.400	1.85	5	18.61	119.74	0.00	119.74	35.75	1.90	0.00	5	2.42	36.84
7.02	4.410	81.53	0.00	4.410	1.85	5	18.62	120.11	0.00	120.11	35.72	1.90	0.00	5	2.42	36.82
7.04	4.490	86.76	0.00	4.490	1.93	5	18.70	120.48	0.00	120.48	36.27	1.99	0.00	5	2.43	37.39
7.06	4.490	90.50	0.00	4.490	2.02	5	18.75	120.86	0.00	120.86	36.15	2.07	0.00	5	2.44	37.26
7.08	4.450	94.49	0.00	4.450	2.12	5	18.79	121.23	0.00	121.23	35.71	2.18	0.00	5	2.46	36.76
7.10	4.690	101.53	0.00	4.690	2.16	5	18.90	121.61	0.00	121.61	37.57	2.22	0.00	5	2.45	38.73
7.12	4.870	107.07	0.00	4.870	2.20	5	18.97	121.99	0.00	121.99	38.92	2.26	0.00	5	2.44	40.17
7.14	4.930	111.60	0.00	4.930	2.26	5	19.02	122.37	0.00	122.37	39.29	2.32	0.00	5	2.45	40.55
7.16	4.960	113.51	0.00	4.960	2.29	5	19.05	122.75	0.00	122.75	39.41	2.35	0.00	5	2.45	40.69
7.18	4.920	118.99	0.00	4.920	2.42	5	19.10	123.13	0.00	123.13	38.96	2.48	0.00	5	2.47	40.18
7.20	4.970	125.86	0.00	4.970	2.53	5	19.16	123.51	0.00	123.51	39.24	2.60	0.00	4	2.48	40.45
7.22	4.920	129.25	0.00	4.920	2.63	5	19.19	123.90	0.00	123.90	38.71	2.69	0.00	4	2.49	39.87
7.24	4.780	129.25	0.00	4.780	2.70	5	19.18	124.28	0.00	124.28	37.46	2.78	0.00	4	2.51	38.54
7.26	4.840	127.42	0.00	4.840	2.63	5	19.17	124.66	0.00	124.66	37.82	2.70	0.00	4	2.50	38.96
7.28	4.830	127.23	0.00	4.830	2.63	5	19.17	125.05	0.00	125.05	37.63	2.70	0.00	4	2.50	38.76
7.30	4.870	125.42	0.00	4.870	2.58	5	19.15	125.43	0.00	125.43	37.83	2.64	0.00	4	2.50	39.01
7.32	4.760	124.09	0.00	4.760	2.61	5	19.13	125.81	0.00	125.81	36.83	2.68	0.00	4	2.51	37.96
7.34	4.490	124.53	0.00	4.490	2.77	4	19.11	126.20	0.00	126.20	34.58	2.85	0.00	4	2.55	35.53
7.36	4.400	120.76	0.00	4.400	2.74	4	19.07	126.58	0.00	126.58	33.76	2.83	0.00	4	2.55	34.68
7.38	4.300	122.44	0.00	4.300	2.85	4	19.08	126.96	0.00	126.96	32.87	2.93	0.00	4	2.57	33.71
7.40	4.250	120.70	0.00	4.250	2.84	4	19.06	127.34	0.00	127.34	32.38	2.93	0.00	4	2.58	33.20
7.42	4.370	126.59	0.00	4.370	2.90	4	19.12	127.72	0.00	127.72	33.21	2.98	0.00	4	2.57	34.08
7.44	4.750	122.69	0.00	4.750	2.58	5	19.12	128.10	0.00	128.10	36.08	2.65	0.00	4	2.51	37.25
7.46	4.740	128.05	0.00	4.740	2.70	5	19.17	128.49	0.00	128.49	35.89	2.78	0.00	4	2.53	37.01
7.48	4.810	121.65	0.00	4.810	2.53	5	19.11	128.87	0.00	128.87	36.32	2.60	0.00	4	2.50	37.56
7.50	5.260	121.33	0.00	5.260	2.31	5	19.14	129.25	0.00	129.25	39.70	2.36	0.00	5	2.44	41.29

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	5.310	129.10	0.00	5.310	2.43	5	19.22	129.64	0.00	129.64	39.96	2.49	0.00	5	2.46	41.53
7.54	5.290	132.80	0.00	5.290	2.51	5	19.25	130.02	0.00	130.02	39.69	2.57	0.00	4	2.47	41.21
7.56	5.070	138.51	0.00	5.070	2.73	5	19.28	130.41	0.00	130.41	37.88	2.80	0.00	4	2.51	39.19
7.58	4.900	140.69	0.00	4.900	2.87	4	19.29	130.79	0.00	130.79	36.46	2.95	0.00	4	2.54	37.63
7.60	4.770	139.49	0.00	4.770	2.92	4	19.27	131.18	0.00	131.18	35.36	3.01	0.00	4	2.55	36.44
7.62	4.930	140.82	0.00	4.930	2.86	5	19.29	131.56	0.00	131.56	36.47	2.93	0.00	4	2.54	37.67
7.64	5.140	142.69	0.00	5.140	2.78	5	19.32	131.95	0.00	131.95	37.95	2.85	0.00	4	2.51	39.30
7.66	5.220	144.46	0.00	5.220	2.77	5	19.34	132.34	0.00	132.34	38.44	2.84	0.00	4	2.51	39.85
7.68	5.230	145.22	0.00	5.230	2.78	5	19.35	132.72	0.00	132.72	38.40	2.85	0.00	4	2.51	39.81
7.70	5.260	143.77	0.00	5.260	2.73	5	19.34	133.11	0.00	133.11	38.52	2.80	0.00	4	2.50	39.96
7.72	5.100	145.83	0.00	5.100	2.86	5	19.34	133.50	0.00	133.50	37.20	2.94	0.00	4	2.53	38.51
7.74	4.980	148.23	0.00	4.980	2.98	4	19.35	133.89	0.00	133.89	36.20	3.06	0.00	4	2.55	37.39
7.76	4.630	148.11	0.00	4.630	3.20	4	19.32	134.27	0.00	134.27	33.48	3.29	0.00	4	2.60	34.41
7.78	4.040	144.94	0.00	4.040	3.59	4	19.25	134.66	0.00	134.66	29.00	3.71	0.00	4	2.68	29.53
7.80	3.700	142.53	0.00	3.700	3.85	4	19.19	135.04	0.00	135.04	26.40	4.00	0.00	4	2.74	26.71
7.82	3.660	139.71	0.00	3.660	3.82	4	19.17	135.42	0.00	135.42	26.03	3.96	0.00	4	2.74	26.33
7.84	3.350	145.00	0.00	3.350	4.33	4	19.18	135.81	0.00	135.81	23.67	4.51	0.00	3	2.81	23.75
7.86	2.900	138.22	0.00	2.900	4.77	3	19.07	136.19	0.00	136.19	20.29	5.00	0.00	3	2.89	20.29
7.88	2.820	132.14	0.00	2.820	4.69	3	19.00	136.57	0.00	136.57	19.65	4.92	0.00	3	2.90	19.65
7.90	2.540	134.13	0.00	2.540	5.28	3	18.98	136.95	0.00	136.95	17.55	5.58	0.00	3	2.97	17.55
7.92	2.140	141.90	0.00	2.140	6.63	3	18.98	137.33	0.00	137.33	14.58	7.09	0.00	3	3.10	14.58
7.94	1.970	145.26	0.00	1.970	7.37	3	18.97	137.71	0.00	137.71	13.31	7.93	0.00	3	3.16	13.31
7.96	1.970	136.00	0.00	1.970	6.90	3	18.90	138.09	0.00	138.09	13.27	7.42	0.00	3	3.14	13.27
7.98	2.320	124.63	0.00	2.320	5.37	3	18.86	138.47	0.00	138.47	15.76	5.71	0.00	3	3.01	15.76
8.00	2.470	100.64	0.00	2.470	4.07	3	18.64	138.84	0.00	138.84	16.79	4.32	0.00	3	2.91	16.79
8.02	2.760	79.63	0.00	2.760	2.89	4	18.41	139.21	0.00	139.21	18.83	3.04	0.00	4	2.78	18.97
8.04	3.120	60.75	0.00	3.120	1.95	5	18.15	139.57	0.00	139.57	21.35	2.04	0.00	4	2.62	21.94
8.06	3.420	55.83	0.00	3.420	1.63	5	18.09	139.94	0.00	139.94	23.44	1.70	0.00	4	2.54	24.34
8.08	3.510	57.86	0.00	3.510	1.65	5	18.14	140.30	0.00	140.30	24.02	1.72	0.00	4	2.53	24.97
8.10	4.030	68.19	0.00	4.030	1.69	5	18.38	140.66	0.00	140.66	27.65	1.75	0.00	5	2.49	28.93
8.12	4.540	76.94	0.00	4.540	1.69	5	18.56	141.03	0.00	141.03	31.19	1.75	0.00	5	2.44	32.83
8.14	4.690	85.91	0.00	4.690	1.83	5	18.70	141.41	0.00	141.41	32.17	1.89	0.00	5	2.45	33.83
8.16	5.320	92.05	0.00	5.320	1.73	5	18.83	141.78	0.00	141.78	36.52	1.78	0.00	5	2.39	38.74
8.18	5.410	108.34	0.00	5.410	2.00	5	19.02	142.16	0.00	142.16	37.05	2.06	0.00	5	2.42	39.13
8.20	4.990	127.45	0.00	4.990	2.55	5	19.18	142.55	0.00	142.55	34.01	2.63	0.00	4	2.53	35.44
8.22	4.860	130.62	0.00	4.860	2.69	5	19.20	142.93	0.00	142.93	33.00	2.77	0.00	4	2.55	34.28
8.24	4.610	136.95	0.00	4.610	2.97	4	19.23	143.31	0.00	143.31	31.17	3.07	0.00	4	2.60	32.16
8.26	4.310	138.03	0.00	4.310	3.20	4	19.22	143.70	0.00	143.70	28.99	3.31	0.00	4	2.65	29.73
8.28	5.240	142.40	0.00	5.240	2.72	5	19.33	144.08	0.00	144.08	35.37	2.79	0.00	4	2.53	36.87
8.30	6.010	157.93	0.00	6.010	2.63	5	19.50	144.47	0.00	144.47	40.60	2.69	0.00	4	2.47	42.68
8.32	6.290	158.69	0.00	6.290	2.52	5	19.52	144.86	0.00	144.86	42.42	2.58	0.00	5	2.44	44.78
8.34	6.350	159.67	0.00	6.350	2.51	5	19.53	145.25	0.00	145.25	42.72	2.57	0.00	5	2.44	45.13
8.36	6.290	160.88	0.00	6.290	2.56	5	19.54	145.64	0.00	145.64	42.19	2.62	0.00	5	2.45	44.53
8.38	5.440	159.61	0.00	5.440	2.93	5	19.47	146.03	0.00	146.03	36.25	3.01	0.00	4	2.54	37.76
8.40	5.950	171.62	0.00	5.950	2.88	5	19.59	146.43	0.00	146.43	39.63	2.96	0.00	4	2.51	41.51
8.42	5.360	170.89	0.00	5.360	3.19	4	19.55	146.82	0.00	146.82	35.51	3.28	0.00	4	2.58	36.82
8.44	5.670	167.41	0.00	5.670	2.95	5	19.54	147.21	0.00	147.21	37.52	3.03	0.00	4	2.53	39.16
8.46	6.160	171.30	0.00	6.160	2.78	5	19.60	147.60	0.00	147.60	40.73	2.85	0.00	4	2.49	42.82
8.48	6.570	161.29	0.00	6.570	2.45	5	19.56	147.99	0.00	147.99	43.39	2.51	0.00	5	2.43	46.04
8.50	6.600	155.55	0.00	6.600	2.36	5	19.52	148.38	0.00	148.38	43.48	2.41	0.00	5	2.41	46.24
8.52	6.120	147.32	0.00	6.120	2.41	5	19.43	148.77	0.00	148.77	40.14	2.47	0.00	5	2.45	42.48
8.54	5.670	152.61	0.00	5.670	2.69	5	19.44	149.16	0.00	149.16	37.01	2.76	0.00	4	2.51	38.82
8.56	5.820	146.62	0.00	5.820	2.52	5	19.40	149.55	0.00	149.55	37.92	2.59	0.00	4	2.48	39.95
8.58	5.870	145.32	0.00	5.870	2.48	5	19.39	149.94	0.00	149.94	38.15	2.54	0.00	4	2.47	40.25
8.60	5.810	149.44	0.00	5.810	2.57	5	19.42	150.32	0.00	150.32	37.65	2.64	0.00	4	2.49	39.63

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P8	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	5.830	165.25	0.00	5.830	2.83	5	19.54	150.71	0.00	150.71	37.68	2.91	0.00	4	2.52	39.50
8.64	5.690	182.46	0.00	5.690	3.21	4	19.64	151.11	0.00	151.11	36.66	3.29	0.00	4	2.57	38.14
8.66	5.690	199.03	0.00	5.690	3.50	4	19.74	151.50	0.00	151.50	36.56	3.59	0.00	4	2.59	37.88
8.68	5.420	206.32	0.00	5.420	3.81	4	19.77	151.90	0.00	151.90	34.68	3.92	0.00	4	2.64	35.69
8.70	5.300	210.09	0.00	5.300	3.96	4	19.78	152.29	0.00	152.29	33.80	4.08	0.00	4	2.66	34.67
8.72	5.180	212.81	0.00	5.180	4.11	4	19.78	152.69	0.00	152.69	32.93	4.23	0.00	4	2.68	33.66
8.74	5.110	210.69	0.00	5.110	4.12	4	19.77	153.08	0.00	153.08	32.38	4.25	0.00	4	2.69	33.07
8.76	4.850	206.79	0.00	4.850	4.26	4	19.73	153.48	0.00	153.48	30.60	4.40	0.00	4	2.72	31.10
8.78	4.500	199.60	0.00	4.500	4.44	4	19.66	153.87	0.00	153.87	28.25	4.59	0.00	3	2.76	28.52
8.80	4.080	198.02	0.00	4.080	4.85	4	19.61	154.26	0.00	154.26	25.45	5.04	0.00	3	2.82	25.45
8.82	3.610	197.60	0.00	3.610	5.47	3	19.56	154.66	0.00	154.66	22.34	5.72	0.00	3	2.90	22.34
8.84	3.410	194.50	0.00	3.410	5.70	3	19.52	155.05	0.00	155.05	20.99	5.98	0.00	3	2.93	20.99
8.86	3.270	193.61	0.00	3.270	5.92	3	19.50	155.44	0.00	155.44	20.04	6.22	0.00	3	2.96	20.04
8.88	3.330	194.50	0.00	3.330	5.84	3	19.51	155.83	0.00	155.83	20.37	6.13	0.00	3	2.95	20.37
8.90	4.330	204.23	0.00	4.330	4.72	4	19.67	156.22	0.00	156.22	26.72	4.89	0.00	3	2.80	26.79
8.92	5.210	202.20	0.00	5.210	3.88	4	19.73	156.61	0.00	156.61	32.27	4.00	0.00	4	2.67	33.07
8.94	6.270	174.66	0.00	6.270	2.79	5	19.63	157.01	0.00	157.01	38.93	2.86	0.00	4	2.50	41.07
8.96	7.410	188.48	0.00	7.410	2.54	5	19.78	157.40	0.00	157.40	46.08	2.60	0.00	5	2.41	49.34
8.98	7.990	193.33	0.00	7.990	2.42	5	19.84	157.80	0.00	157.80	49.63	2.47	0.00	5	2.37	53.55
9.00	8.290	200.71	0.00	8.290	2.42	5	19.90	158.20	0.00	158.20	51.40	2.47	0.00	5	2.36	55.59
9.02	8.700	230.69	0.00	8.700	2.65	5	20.08	158.60	0.00	158.60	53.86	2.70	0.00	5	2.37	58.13
9.04	9.830	276.32	0.00	9.830	2.81	5	20.33	159.00	0.00	159.00	60.82	2.86	0.00	5	2.35	65.93
9.06	10.630	299.20	0.00	10.630	2.81	5	20.45	159.41	0.00	159.41	65.68	2.86	0.00	5	2.33	71.53
9.08	12.610	328.70	0.00	12.610	2.61	5	20.63	159.82	0.00	159.82	77.90	2.64	0.00	5	2.25	86.11
9.10	13.430	355.82	0.00	13.430	2.65	5	20.74	160.24	0.00	160.24	82.81	2.68	0.00	5	2.23	91.82
9.12	13.810	373.57	0.00	13.810	2.71	5	20.81	160.65	0.00	160.65	84.96	2.74	0.00	5	2.23	94.26
9.14	13.770	395.75	0.00	13.770	2.87	5	20.87	161.07	0.00	161.07	84.49	2.91	0.00	5	2.25	93.40
9.16	14.210	414.76	0.00	14.210	2.92	5	20.94	161.49	0.00	161.49	86.99	2.95	0.00	5	2.25	96.28
9.18	14.300	404.27	0.00	14.300	2.83	5	20.91	161.91	0.00	161.91	87.32	2.86	0.00	5	2.24	96.91
9.20	14.020	403.45	0.00	14.020	2.88	5	20.90	162.32	0.00	162.32	85.37	2.91	0.00	5	2.25	94.56
9.22	13.570	417.64	0.00	13.570	3.08	5	20.93	162.74	0.00	162.74	82.38	3.12	0.00	5	2.29	90.72
9.24	13.560	406.68	0.00	13.560	3.00	5	20.90	163.16	0.00	163.16	82.11	3.04	0.00	5	2.28	90.58
9.26	13.320	391.85	0.00	13.320	2.94	5	20.85	163.58	0.00	163.58	80.43	2.98	0.00	5	2.28	88.77
9.28	13.450	393.47	0.00	13.450	2.93	5	20.86	164.00	0.00	164.00	81.01	2.96	0.00	5	2.27	89.53
9.30	13.510	399.93	0.00	13.510	2.96	5	20.88	164.41	0.00	164.41	81.17	3.00	0.00	5	2.28	89.68
9.32	13.690	393.94	0.00	13.690	2.88	5	20.87	164.83	0.00	164.83	82.06	2.91	0.00	5	2.26	90.92
9.34	13.600	398.38	0.00	13.600	2.93	5	20.88	165.25	0.00	165.25	81.30	2.97	0.00	5	2.27	89.97
9.36	13.090	383.10	0.00	13.090	2.93	5	20.82	165.66	0.00	165.66	78.02	2.96	0.00	5	2.28	86.17
9.38	12.950	386.21	0.00	12.950	2.98	5	20.82	166.08	0.00	166.08	76.97	3.02	0.00	5	2.29	84.88
9.40	12.750	388.71	0.00	12.750	3.05	5	20.82	166.50	0.00	166.50	75.58	3.09	0.00	5	2.31	83.16
9.42	12.570	374.74	0.00	12.570	2.98	5	20.78	166.91	0.00	166.91	74.31	3.02	0.00	5	2.31	81.83
9.44	11.650	372.74	0.00	11.650	3.20	5	20.74	167.33	0.00	167.33	68.62	3.25	0.00	5	2.35	74.85
9.46	10.440	368.62	0.00	10.440	3.53	5	20.69	167.74	0.00	167.74	61.24	3.59	0.00	4	2.42	65.91
9.48	9.730	337.73	0.00	9.730	3.47	5	20.56	168.15	0.00	168.15	56.86	3.53	0.00	4	2.44	61.00
9.50	9.850	344.41	0.00	9.850	3.50	5	20.58	168.57	0.00	168.57	57.43	3.56	0.00	4	2.44	61.63
9.52	10.410	352.21	0.00	10.410	3.38	5	20.63	168.98	0.00	168.98	60.61	3.44	0.00	4	2.41	65.42
9.54	11.180	350.66	0.00	11.180	3.14	5	20.65	169.39	0.00	169.39	65.00	3.18	0.00	5	2.36	70.86
9.56	11.020	349.55	0.00	11.020	3.17	5	20.65	169.80	0.00	169.80	63.90	3.22	0.00	5	2.37	69.55
9.58	11.310	310.03	0.00	11.310	2.74	5	20.52	170.21	0.00	170.21	65.45	2.78	0.00	5	2.32	72.10
9.60	11.090	333.96	0.00	11.090	3.01	5	20.59	170.63	0.00	170.63	64.00	3.06	0.00	5	2.36	69.95
9.62	11.700	380.09	0.00	11.700	3.25	5	20.76	171.04	0.00	171.04	67.40	3.30	0.00	5	2.36	73.57
9.64	13.050	391.28	0.00	13.050	3.00	5	20.84	171.46	0.00	171.46	75.11	3.04	0.00	5	2.30	83.07
9.66	14.090	406.11	0.00	14.090	2.88	5	20.91	171.88	0.00	171.88	80.98	2.92	0.00	5	2.27	90.28
9.68	14.550	401.61	0.00	14.550	2.76	5	20.91	172.29	0.00	172.29	83.45	2.79	0.00	5	2.24	93.54
9.70	14.880	379.49	0.00	14.880	2.55	5	20.85	172.71	0.00	172.71	85.16	2.58	0.00	5	2.21	96.17

Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
9.72	14.380	369.45	0.00	14.380	2.57	5	20.81	173.13	0.00	173.13	82.06	2.60	0.00	5	2.22	92.44
9.74	13.460	336.30	0.00	13.460	2.50	5	20.68	173.54	0.00	173.54	76.56	2.53	0.00	5	2.23	86.05

CPTe P10 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_{v0}	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.160	0.00	0.00	0.160	0.00	1	19.00	0.38	0.00	0.38	420.05	0.00	0.00	0	0.00	0.00
0.04	0.480	0.03	0.00	0.480	0.01	1	13.73	0.65	0.00	0.65	732.18	0.01	0.00	0	1.86	77.34
0.06	0.590	0.06	0.00	0.590	0.01	1	13.73	0.93	0.00	0.93	633.85	0.01	0.00	0	1.80	70.02
0.08	0.780	0.06	0.00	0.780	0.01	1	13.73	1.20	0.00	1.20	646.82	0.01	0.00	0	1.80	81.36
0.10	1.010	0.06	0.00	1.010	0.01	0	13.73	1.48	0.00	1.48	682.02	0.01	0.00	0	1.80	94.88
0.12	1.220	0.10	0.00	1.220	0.01	0	13.73	1.75	0.00	1.75	694.79	0.01	0.00	0	1.73	93.85
0.14	1.350	0.06	0.00	1.350	0.00	0	13.73	2.03	0.00	2.03	664.65	0.00	0.00	0	1.82	110.53
0.16	1.390	0.10	0.00	1.390	0.01	0	13.73	2.30	0.00	2.30	602.62	0.01	0.00	0	1.74	98.22
0.18	1.370	5.29	0.00	1.370	0.39	5	15.02	2.59	0.00	2.59	527.89	0.39	0.00	6	1.72	88.82
0.20	1.350	14.04	0.00	1.350	1.04	4	16.14	2.91	0.00	2.91	462.78	1.04	0.00	6	1.90	105.30
0.22	1.310	21.86	0.00	1.310	1.67	4	16.64	3.24	0.00	3.24	403.05	1.67	0.00	5	2.03	111.63
0.24	1.250	26.84	0.00	1.250	2.15	4	16.86	3.58	0.00	3.58	348.30	2.15	0.00	5	2.11	109.68
0.26	1.190	32.83	0.00	1.190	2.76	3	17.07	3.92	0.00	3.92	302.66	2.77	0.00	5	2.19	109.33
0.28	1.160	35.27	0.00	1.160	3.04	3	17.14	4.26	0.00	4.26	271.21	3.05	0.00	5	2.23	105.89
0.30	1.150	36.03	0.00	1.150	3.13	3	17.16	4.60	0.00	4.60	248.74	3.15	0.00	5	2.26	101.95
0.32	1.150	36.12	0.00	1.150	3.14	3	17.17	4.95	0.00	4.95	231.42	3.15	0.00	5	2.27	98.21
0.34	1.190	35.43	0.00	1.190	2.98	3	17.16	5.29	0.00	5.29	223.90	2.99	0.00	5	2.26	95.80
0.36	1.210	35.81	0.00	1.210	2.96	3	17.18	5.63	0.00	5.63	213.75	2.97	0.00	5	2.26	93.67
0.38	1.190	35.87	0.00	1.190	3.01	3	17.17	5.98	0.00	5.98	198.06	3.03	0.00	5	2.28	90.03
0.40	1.140	32.89	0.00	1.140	2.89	3	17.06	6.32	0.00	6.32	179.37	2.90	0.00	5	2.29	83.55
0.42	1.120	30.39	0.00	1.120	2.71	3	16.96	6.66	0.00	6.66	167.17	2.73	0.00	5	2.28	78.86
0.44	1.060	28.14	0.00	1.060	2.65	3	16.85	7.00	0.00	7.00	150.49	2.67	0.00	5	2.30	73.76
0.46	1.040	26.62	0.00	1.040	2.56	3	16.78	7.33	0.00	7.33	140.83	2.58	0.00	5	2.30	70.19
0.48	1.040	25.86	0.00	1.040	2.49	3	16.74	7.67	0.00	7.67	134.63	2.51	0.00	5	2.30	67.98
0.50	1.060	24.27	0.00	1.060	2.29	3	16.68	8.00	0.00	8.00	131.47	2.31	0.00	5	2.29	66.13
0.52	1.070	22.43	0.00	1.070	2.10	4	16.59	8.33	0.00	8.33	127.38	2.11	0.00	5	2.27	63.89
0.54	1.110	22.43	0.00	1.110	2.02	4	16.61	8.67	0.00	8.67	127.08	2.04	0.00	5	2.26	63.82
0.56	1.120	23.04	0.00	1.120	2.06	4	16.64	9.00	0.00	9.00	123.46	2.07	0.00	5	2.27	63.16
0.58	1.110	22.66	0.00	1.110	2.04	4	16.62	9.33	0.00	9.33	117.95	2.06	0.00	5	2.28	61.35
0.60	1.050	23.45	0.00	1.050	2.23	3	16.64	9.66	0.00	9.66	107.65	2.25	0.00	5	2.32	58.62
0.62	0.990	23.99	0.00	0.990	2.42	3	16.64	10.00	0.00	10.00	98.03	2.45	0.00	5	2.36	55.78
0.64	0.960	24.59	0.00	0.960	2.56	3	16.66	10.33	0.00	10.33	91.94	2.59	0.00	5	2.38	53.98
0.66	0.990	24.46	0.00	0.990	2.47	3	16.66	10.66	0.00	10.66	91.85	2.50	0.00	5	2.37	53.88
0.68	1.020	24.59	0.00	1.020	2.41	3	16.68	11.00	0.00	11.00	91.76	2.44	0.00	5	2.37	53.90
0.70	1.050	25.95	0.00	1.050	2.47	3	16.75	11.33	0.00	11.33	91.67	2.50	0.00	5	2.37	54.43
0.72	1.100	27.31	0.00	1.100	2.48	3	16.83	11.67	0.00	11.67	93.28	2.51	0.00	5	2.37	55.55
0.74	1.190	25.70	0.00	1.190	2.16	4	16.79	12.00	0.00	12.00	98.14	2.18	0.00	5	2.32	56.66
0.76	1.220	24.62	0.00	1.220	2.02	4	16.75	12.34	0.00	12.34	97.88	2.04	0.00	5	2.30	56.18
0.78	1.270	24.94	0.00	1.270	1.96	4	16.78	12.67	0.00	12.67	99.21	1.98	0.00	5	2.29	56.84
0.80	1.250	25.70	0.00	1.250	2.06	4	16.81	13.01	0.00	13.01	95.08	2.08	0.00	5	2.31	55.72
0.82	1.280	26.24	0.00	1.280	2.05	4	16.84	13.35	0.00	13.35	94.91	2.07	0.00	5	2.31	55.91
0.84	1.280	25.76	0.00	1.280	2.01	4	16.82	13.68	0.00	13.68	92.55	2.03	0.00	5	2.31	54.92
0.86	1.380	25.03	0.00	1.380	1.81	4	16.82	14.02	0.00	14.02	97.44	1.83	0.00	5	2.27	56.53
0.88	1.440	25.92	0.00	1.440	1.80	4	16.87	14.36	0.00	14.36	99.30	1.82	0.00	5	2.26	57.64
0.90	1.520	19.93	0.00	1.520	1.31	4	16.59	14.69	0.00	14.69	102.47	1.32	0.00	5	2.18	56.48

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P10		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	1.510	26.97	0.00	1.510	1.79	4	16.94	15.03	0.00	15.03	99.47	1.80	0.00	5	2.25	58.26
0.94	1.510	30.52	0.00	1.510	2.02	4	17.08	15.37	0.00	15.37	97.24	2.04	0.00	5	2.29	58.69
0.96	1.500	33.08	0.00	1.500	2.21	4	17.17	15.71	0.00	15.71	94.46	2.23	0.00	5	2.32	58.46
0.98	1.450	36.22	0.00	1.450	2.50	4	17.26	16.06	0.00	16.06	89.30	2.53	0.00	5	2.36	57.29
1.00	1.390	39.07	0.00	1.390	2.81	3	17.33	16.40	0.00	16.40	83.74	2.84	0.00	5	2.40	55.69
1.02	1.340	40.28	0.00	1.340	3.01	3	17.35	16.75	0.00	16.75	79.00	3.04	0.00	4	2.43	53.91
1.04	1.310	37.26	0.00	1.310	2.84	3	17.25	17.10	0.00	17.10	75.62	2.88	0.00	5	2.43	51.73
1.06	1.260	34.89	0.00	1.260	2.77	3	17.16	17.44	0.00	17.44	71.25	2.81	0.00	5	2.44	49.21
1.08	1.240	33.78	0.00	1.240	2.72	3	17.12	17.78	0.00	17.78	68.73	2.76	0.00	5	2.44	47.82
1.10	1.260	32.86	0.00	1.260	2.61	3	17.09	18.13	0.00	18.13	68.52	2.65	0.00	5	2.43	47.54
1.12	1.260	31.69	0.00	1.260	2.52	3	17.05	18.47	0.00	18.47	67.23	2.55	0.00	5	2.43	46.70
1.14	1.270	31.43	0.00	1.270	2.47	4	17.05	18.81	0.00	18.81	66.53	2.51	0.00	5	2.42	46.35
1.16	1.330	29.66	0.00	1.330	2.23	4	17.00	19.15	0.00	19.15	68.46	2.26	0.00	5	2.39	46.88
1.18	1.370	28.30	0.00	1.370	2.07	4	16.95	19.49	0.00	19.49	69.30	2.10	0.00	5	2.37	47.00
1.20	1.400	29.09	0.00	1.400	2.08	4	16.99	19.83	0.00	19.83	69.61	2.11	0.00	5	2.37	47.38
1.22	1.480	30.23	0.00	1.480	2.04	4	17.06	20.17	0.00	20.17	72.38	2.07	0.00	5	2.35	49.00
1.24	1.510	31.69	0.00	1.510	2.10	4	17.12	20.51	0.00	20.51	72.62	2.13	0.00	5	2.36	49.50
1.26	1.570	32.16	0.00	1.570	2.05	4	17.15	20.85	0.00	20.85	74.29	2.08	0.00	5	2.34	50.46
1.28	1.660	32.83	0.00	1.660	1.98	4	17.20	21.20	0.00	21.20	77.31	2.00	0.00	5	2.32	52.10
1.30	1.730	33.02	0.00	1.730	1.91	4	17.22	21.54	0.00	21.54	79.31	1.93	0.00	5	2.30	53.15
1.32	1.710	34.95	0.00	1.710	2.04	4	17.28	21.89	0.00	21.89	77.13	2.07	0.00	5	2.33	52.61
1.34	1.650	39.93	0.00	1.650	2.42	4	17.42	22.23	0.00	22.23	73.21	2.45	0.00	5	2.38	51.61
1.36	1.600	43.00	0.00	1.600	2.69	4	17.49	22.58	0.00	22.58	69.85	2.73	0.00	5	2.42	50.52
1.38	1.590	44.46	0.00	1.590	2.80	4	17.53	22.93	0.00	22.93	68.33	2.84	0.00	5	2.44	50.02
1.40	1.600	49.12	0.00	1.600	3.07	3	17.65	23.29	0.00	23.29	67.71	3.12	0.00	4	2.46	50.46
1.42	1.630	53.65	0.00	1.630	3.29	3	17.76	23.64	0.00	23.64	67.95	3.34	0.00	4	2.48	51.27
1.44	1.670	55.36	0.00	1.670	3.31	3	17.80	24.00	0.00	24.00	68.59	3.36	0.00	4	2.48	51.88
1.46	1.830	54.53	0.00	1.830	2.98	4	17.82	24.35	0.00	24.35	74.14	3.02	0.00	5	2.43	54.77
1.48	1.990	52.57	0.00	1.990	2.64	4	17.81	24.71	0.00	24.71	79.53	2.67	0.00	5	2.38	57.36
1.50	2.000	51.05	0.00	2.000	2.55	4	17.78	25.07	0.00	25.07	78.79	2.58	0.00	5	2.37	56.81
1.52	2.050	48.58	0.00	2.050	2.37	4	17.73	25.42	0.00	25.42	79.64	2.40	0.00	5	2.35	56.94
1.54	2.110	45.95	0.00	2.110	2.18	4	17.68	25.77	0.00	25.77	80.86	2.20	0.00	5	2.32	57.23
1.56	2.180	44.17	0.00	2.180	2.03	4	17.64	26.13	0.00	26.13	82.44	2.05	0.00	5	2.29	57.83
1.58	2.420	44.65	0.00	2.420	1.85	4	17.70	26.48	0.00	26.48	90.39	1.87	0.00	5	2.24	62.04
1.60	2.740	46.01	0.00	2.740	1.68	5	17.78	26.84	0.00	26.84	101.10	1.70	0.00	5	2.19	67.74
1.62	2.990	48.36	0.00	2.990	1.62	5	17.87	27.19	0.00	27.19	108.96	1.63	0.00	5	2.16	72.17
1.64	3.230	54.53	0.00	3.230	1.69	5	18.04	27.55	0.00	27.55	116.23	1.70	0.00	5	2.15	77.01
1.66	3.350	63.09	0.00	3.350	1.88	5	18.22	27.92	0.00	27.92	119.00	1.90	0.00	5	2.17	80.00
1.68	3.460	71.61	0.00	3.460	2.07	5	18.38	28.28	0.00	28.28	121.34	2.09	0.00	5	2.19	82.66
1.70	3.530	78.40	0.00	3.530	2.22	5	18.49	28.65	0.00	28.65	122.20	2.24	0.00	5	2.20	84.25
1.72	3.710	85.46	0.00	3.710	2.30	5	18.61	29.02	0.00	29.02	126.83	2.32	0.00	5	2.20	87.75
1.74	3.950	94.78	0.00	3.950	2.40	5	18.75	29.40	0.00	29.40	133.36	2.42	0.00	5	2.20	92.52
1.76	4.150	101.43	0.00	4.150	2.44	5	18.85	29.77	0.00	29.77	138.38	2.46	0.00	5	2.19	96.15
1.78	4.330	107.64	0.00	4.330	2.49	5	18.93	30.15	0.00	30.15	142.60	2.50	0.00	5	2.19	99.30
1.80	4.610	111.45	0.00	4.610	2.42	5	19.00	30.53	0.00	30.53	149.99	2.43	0.00	5	2.17	103.82
1.82	4.840	117.85	0.00	4.840	2.43	5	19.08	30.91	0.00	30.91	155.56	2.45	0.00	5	2.16	107.71
1.84	5.140	121.05	0.00	5.140	2.36	5	19.13	31.30	0.00	31.30	163.24	2.37	0.00	5	2.13	112.34
1.86	5.440	121.90	0.00	5.440	2.24	5	19.16	31.68	0.00	31.68	170.72	2.25	0.00	5	2.11	116.59
1.88	5.530	123.14	0.00	5.530	2.23	5	19.18	32.06	0.00	32.06	171.47	2.24	0.00	5	2.10	117.40
1.90	6.330	130.84	0.00	6.330	2.07	5	19.30	32.45	0.00	32.45	194.08	2.08	0.00	5	2.05	130.35
1.92	6.640	138.67	0.00	6.640	2.09	5	19.39	32.84	0.00	32.84	201.22	2.10	0.00	5	2.04	135.32
1.94	6.740	138.92	0.00	6.740	2.06	5	19.40	33.22	0.00	33.22	201.87	2.07	0.00	5	2.04	136.03
1.96	6.660	143.93	0.00	6.660	2.16	5	19.43	33.61	0.00	33.61	197.15	2.17	0.00	5	2.06	134.48
1.98	6.510	153.43	0.00	6.510	2.36	5	19.50	34.00	0.00	34.00	190.47	2.37	0.00	5	2.09	132.28
2.00	6.460	162.30	0.00	6.460	2.51	5	19.56	34.39	0.00	34.39	186.84	2.53	0.00	5	2.11	131.52

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	6.450	165.92	0.00	6.450	2.57	5	19.58	34.78	0.00	34.78	184.43	2.59	0.00	5	2.12	130.84
2.04	6.400	167.09	0.00	6.400	2.61	5	19.59	35.17	0.00	35.17	180.95	2.63	0.00	5	2.13	129.29
2.06	6.270	174.85	0.00	6.270	2.79	5	19.63	35.57	0.00	35.57	175.29	2.80	0.00	5	2.16	127.06
2.08	6.150	192.76	0.00	6.150	3.13	5	19.74	35.96	0.00	35.96	170.02	3.15	0.00	5	2.20	125.75
2.10	6.050	212.94	0.00	6.050	3.52	4	19.84	36.36	0.00	36.36	165.40	3.54	0.00	8	2.24	124.76
2.12	6.190	229.77	0.00	6.190	3.71	4	19.94	36.76	0.00	36.76	167.41	3.73	0.00	8	2.25	127.31
2.14	6.370	237.72	0.00	6.370	3.73	4	19.99	37.16	0.00	37.16	170.44	3.75	0.00	8	2.25	129.86
2.16	6.420	244.63	0.00	6.420	3.81	4	20.03	37.56	0.00	37.56	169.94	3.83	0.00	8	2.26	130.21
2.18	6.390	249.70	0.00	6.390	3.91	4	20.05	37.96	0.00	37.96	167.35	3.93	0.00	8	2.27	129.14
2.20	6.300	246.15	0.00	6.300	3.91	4	20.03	38.36	0.00	38.36	163.24	3.93	0.00	8	2.27	126.59
2.22	6.190	238.89	0.00	6.190	3.86	4	19.99	38.76	0.00	38.76	158.71	3.88	0.00	8	2.27	123.54
2.24	6.110	219.41	0.00	6.110	3.59	4	19.88	39.16	0.00	39.16	155.04	3.61	0.00	8	2.26	120.27
2.26	6.050	209.30	0.00	6.050	3.46	4	19.83	39.55	0.00	39.55	151.96	3.48	0.00	5	2.25	117.92
2.28	6.030	195.92	0.00	6.030	3.25	4	19.75	39.95	0.00	39.95	149.94	3.27	0.00	5	2.23	116.01
2.30	5.860	181.00	0.00	5.860	3.09	5	19.65	40.34	0.00	40.34	144.26	3.11	0.00	5	2.23	111.68
2.32	5.620	168.74	0.00	5.620	3.00	5	19.55	40.73	0.00	40.73	136.97	3.02	0.00	5	2.23	106.49
2.34	5.390	155.97	0.00	5.390	2.89	5	19.44	41.12	0.00	41.12	130.07	2.92	0.00	5	2.23	101.47
2.36	5.210	143.10	0.00	5.210	2.75	5	19.33	41.51	0.00	41.51	124.51	2.77	0.00	5	2.23	97.25
2.38	4.940	136.00	0.00	4.940	2.75	5	19.25	41.90	0.00	41.90	116.91	2.78	0.00	5	2.24	92.08
2.40	4.740	131.12	0.00	4.740	2.77	5	19.19	42.28	0.00	42.28	111.11	2.79	0.00	5	2.26	88.16
2.42	4.510	127.70	0.00	4.510	2.83	4	19.14	42.66	0.00	42.66	104.71	2.86	0.00	5	2.28	83.90
2.44	4.350	124.60	0.00	4.350	2.86	4	19.10	43.05	0.00	43.05	100.06	2.89	0.00	5	2.30	80.76
2.46	4.410	125.01	0.00	4.410	2.83	4	19.11	43.43	0.00	43.43	100.55	2.86	0.00	5	2.29	81.23
2.48	4.500	127.13	0.00	4.500	2.83	4	19.14	43.81	0.00	43.81	101.71	2.85	0.00	5	2.29	82.24
2.50	4.840	122.41	0.00	4.840	2.53	5	19.12	44.19	0.00	44.19	108.52	2.55	0.00	5	2.24	86.58
2.52	5.200	112.40	0.00	5.200	2.16	5	19.05	44.58	0.00	44.58	115.66	2.18	0.00	5	2.17	90.72
2.54	5.970	95.98	0.00	5.970	1.61	5	18.92	44.95	0.00	44.95	131.80	1.62	0.00	5	2.05	99.91
2.56	7.470	74.47	0.00	7.470	1.00	6	18.72	45.33	0.00	45.33	163.79	1.00	0.00	6	1.86	117.49
2.58	9.030	66.26	0.00	9.030	0.73	6	18.66	45.70	0.00	45.70	196.58	0.74	0.00	6	1.72	135.94
2.60	9.870	59.41	0.00	9.870	0.60	6	18.56	46.08	0.00	46.08	213.21	0.60	0.00	6	1.65	144.79
2.62	10.640	51.62	0.00	10.640	0.49	6	18.43	46.44	0.00	46.44	228.09	0.49	0.00	6	1.58	152.23
2.64	10.670	50.86	0.00	10.670	0.48	6	18.42	46.81	0.00	46.81	226.93	0.48	0.00	6	1.57	151.95
2.66	10.660	51.94	0.00	10.660	0.49	6	18.44	47.18	0.00	47.18	224.94	0.49	0.00	6	1.58	151.54
2.68	10.650	54.91	0.00	10.650	0.52	6	18.50	47.55	0.00	47.55	222.97	0.52	0.00	6	1.59	151.48
2.70	10.200	63.95	0.00	10.200	0.63	6	18.66	47.92	0.00	47.92	211.83	0.63	0.00	6	1.65	147.04
2.72	9.780	67.97	0.00	9.780	0.69	6	18.72	48.30	0.00	48.30	201.49	0.70	0.00	6	1.69	141.98
2.74	8.750	75.39	0.00	8.750	0.86	6	18.79	48.67	0.00	48.67	178.77	0.87	0.00	6	1.78	129.63
2.76	7.900	79.47	0.00	7.900	1.01	6	18.81	49.05	0.00	49.05	160.06	1.01	0.00	6	1.86	118.81
2.78	7.090	80.39	0.00	7.090	1.13	5	18.79	49.43	0.00	49.43	142.44	1.14	0.00	6	1.92	107.98
2.80	6.150	80.11	0.00	6.150	1.30	5	18.73	49.80	0.00	49.80	122.49	1.31	0.00	6	2.00	95.18
2.82	5.660	78.59	0.00	5.660	1.39	5	18.67	50.18	0.00	50.18	111.80	1.40	0.00	5	2.05	88.13
2.84	5.350	75.51	0.00	5.350	1.41	5	18.61	50.55	0.00	50.55	104.84	1.42	0.00	5	2.07	83.36
2.86	5.050	69.24	0.00	5.050	1.37	5	18.48	50.92	0.00	50.92	98.18	1.39	0.00	5	2.08	78.49
2.88	5.050	69.24	0.00	5.050	1.37	5	18.48	51.29	0.00	51.29	97.46	1.39	0.00	5	2.08	78.15
2.90	4.060	50.95	0.00	4.060	1.25	5	18.05	51.65	0.00	51.65	77.60	1.27	0.00	5	2.13	63.13
2.92	3.430	46.93	0.00	3.430	1.37	5	17.89	52.01	0.00	52.01	64.95	1.39	0.00	5	2.21	53.98
2.94	2.750	43.35	0.00	2.750	1.58	5	17.71	52.37	0.00	52.37	51.51	1.61	0.00	5	2.32	44.07
2.96	2.160	41.42	0.00	2.160	1.92	4	17.57	52.72	0.00	52.72	39.97	1.97	0.00	5	2.45	35.35
2.98	1.890	41.29	0.00	1.890	2.18	4	17.51	53.07	0.00	53.07	34.61	2.25	0.00	4	2.52	31.24
3.00	1.500	42.49	0.00	1.500	2.83	4	17.46	53.42	0.00	53.42	27.08	2.94	0.00	4	2.67	25.34
3.02	1.370	43.86	0.00	1.370	3.20	3	17.46	53.77	0.00	53.77	24.48	3.33	0.00	4	2.73	23.27
3.04	1.350	44.49	0.00	1.350	3.30	3	17.47	54.12	0.00	54.12	23.95	3.43	0.00	4	2.75	22.85
3.06	1.230	48.77	0.00	1.230	3.97	3	17.54	54.47	0.00	54.47	21.58	4.15	0.00	3	2.83	20.99
3.08	1.200	50.57	0.00	1.200	4.21	3	17.57	54.82	0.00	54.82	20.89	4.42	0.00	3	2.85	20.45
3.10	1.090	52.79	0.00	1.090	4.84	3	17.58	55.17	0.00	55.17	18.76	5.10	0.00	3	2.92	18.66

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	1.330	47.28	0.00	1.330	3.55	3	17.53	55.52	0.00	55.52	22.95	3.71	0.00	4	2.78	22.11
3.14	2.440	34.06	0.00	2.440	1.40	5	17.39	55.87	0.00	55.87	42.67	1.43	0.00	5	2.34	37.34
3.16	2.980	28.77	0.00	2.980	0.97	5	17.27	56.22	0.00	56.22	52.01	0.98	0.00	5	2.19	44.09
3.18	2.600	31.94	0.00	2.600	1.23	5	17.34	56.56	0.00	56.56	44.97	1.26	0.00	5	2.30	39.05
3.20	1.590	53.36	0.00	1.590	3.36	3	17.74	56.92	0.00	56.92	26.94	3.48	0.00	4	2.71	25.63
3.22	1.340	73.67	0.00	1.340	5.50	3	18.05	57.28	0.00	57.28	22.39	5.74	0.00	3	2.90	22.20
3.24	1.520	80.77	0.00	1.520	5.31	3	18.20	57.64	0.00	57.64	25.37	5.52	0.00	3	2.85	24.91
3.26	2.060	79.92	0.00	2.060	3.88	3	18.30	58.01	0.00	58.01	34.51	3.99	0.00	4	2.67	32.64
3.28	1.990	86.82	0.00	1.990	4.36	3	18.39	58.37	0.00	58.37	33.09	4.49	0.00	4	2.72	31.61
3.30	1.700	98.64	0.00	1.700	5.80	3	18.47	58.74	0.00	58.74	27.94	6.01	0.00	3	2.85	27.43
3.32	1.510	97.25	0.00	1.510	6.44	3	18.41	59.11	0.00	59.11	24.54	6.70	0.00	3	2.92	24.43
3.34	1.390	86.79	0.00	1.390	6.24	3	18.25	59.48	0.00	59.48	22.37	6.52	0.00	3	2.94	22.36
3.36	1.360	83.18	0.00	1.360	6.12	3	18.19	59.84	0.00	59.84	21.73	6.40	0.00	3	2.94	21.73
3.38	1.290	90.53	0.00	1.290	7.02	3	18.27	60.21	0.00	60.21	20.43	7.36	0.00	3	3.00	20.43
3.40	1.190	95.19	0.00	1.190	8.00	3	18.30	60.57	0.00	60.57	18.65	8.43	0.00	3	3.07	18.65
3.42	1.130	87.08	0.00	1.130	7.71	3	18.17	60.94	0.00	60.94	17.54	8.15	0.00	3	3.08	17.54
3.44	1.110	82.20	0.00	1.110	7.41	3	18.10	61.30	0.00	61.30	17.11	7.84	0.00	3	3.08	17.11
3.46	1.070	73.83	0.00	1.070	6.90	3	17.96	61.66	0.00	61.66	16.35	7.32	0.00	3	3.07	16.35
3.48	1.070	63.47	0.00	1.070	5.93	3	17.79	62.01	0.00	62.01	16.25	6.30	0.00	3	3.03	16.25
3.50	1.220	50.45	0.00	1.220	4.14	3	17.57	62.37	0.00	62.37	18.56	4.36	0.00	3	2.88	18.39
3.52	1.380	43.13	0.00	1.380	3.13	3	17.44	62.72	0.00	62.72	21.00	3.27	0.00	4	2.77	20.40
3.54	1.540	40.05	0.00	1.540	2.60	4	17.40	63.06	0.20	62.87	23.49	2.71	0.00	4	2.69	22.48
3.56	1.470	40.66	0.00	1.470	2.77	4	17.40	63.41	0.39	63.02	22.32	2.89	0.00	4	2.72	21.49
3.58	1.360	48.36	0.00	1.360	3.56	3	17.57	63.76	0.59	63.17	20.52	3.73	0.00	3	2.81	20.08
3.60	1.300	55.23	0.00	1.300	4.25	3	17.70	64.12	0.78	63.33	19.51	4.47	0.00	3	2.88	19.31
3.62	1.330	62.39	0.00	1.330	4.69	3	17.85	64.47	0.98	63.49	19.93	4.93	0.00	3	2.90	19.80
3.64	1.760	64.04	0.00	1.760	3.64	3	17.99	64.83	1.18	63.65	26.63	3.78	0.00	4	2.73	25.73
3.66	1.890	63.28	0.00	1.890	3.35	4	18.00	65.19	1.37	63.82	28.59	3.47	0.00	4	2.69	27.42
3.68	1.930	60.68	0.00	1.930	3.14	4	17.96	65.55	1.57	63.98	29.14	3.25	0.00	4	2.67	27.84
3.70	2.400	57.29	0.00	2.400	2.39	4	17.98	65.91	1.77	64.15	36.39	2.45	0.00	4	2.52	33.94
3.72	2.820	50.61	0.00	2.820	1.79	5	17.90	66.27	1.96	64.31	42.82	1.84	0.00	5	2.39	39.10
3.74	2.890	40.21	0.00	2.890	1.39	5	17.64	66.62	2.16	64.47	43.80	1.42	0.00	5	2.32	39.54
3.76	2.740	35.43	0.00	2.740	1.29	5	17.48	66.97	2.35	64.62	41.37	1.33	0.00	5	2.32	37.38
3.78	2.980	35.11	0.00	2.980	1.18	5	17.50	67.32	2.55	64.77	44.97	1.21	0.00	5	2.27	40.32
3.80	3.200	34.13	0.00	3.200	1.07	5	17.49	67.67	2.75	64.93	48.25	1.09	0.00	5	2.23	42.94
3.82	3.610	39.51	0.00	3.610	1.09	5	17.71	68.02	2.94	65.08	54.42	1.12	0.00	5	2.19	48.20
3.84	4.100	41.35	0.00	4.100	1.01	5	17.81	68.38	3.14	65.24	61.80	1.03	0.00	5	2.13	54.21
3.86	4.260	39.55	0.00	4.260	0.93	5	17.77	68.74	3.34	65.40	64.09	0.94	0.00	5	2.10	55.97
3.88	4.120	38.28	0.00	4.120	0.93	5	17.72	69.09	3.53	65.56	61.79	0.94	0.00	5	2.11	54.12
3.90	3.280	29.69	0.00	3.280	0.91	5	17.34	69.44	3.73	65.71	48.86	0.92	0.00	5	2.18	43.34
3.92	2.810	36.03	0.00	2.810	1.28	5	17.51	69.79	3.92	65.87	41.60	1.31	0.00	5	2.32	37.74
3.94	2.340	41.86	0.00	2.340	1.79	4	17.61	70.14	4.12	66.02	34.38	1.84	0.00	5	2.46	31.93
3.96	2.560	41.92	0.00	2.560	1.64	5	17.65	70.49	4.32	66.18	37.62	1.68	0.00	5	2.41	34.67
3.98	3.230	50.64	0.00	3.230	1.57	5	17.95	70.85	4.51	66.34	47.62	1.60	0.00	5	2.32	43.29
4.00	3.870	57.16	0.00	3.870	1.48	5	18.16	71.21	4.71	66.50	57.12	1.50	0.00	5	2.25	51.36
4.02	4.230	58.21	0.00	4.230	1.38	5	18.22	71.58	4.90	66.67	62.37	1.40	0.00	5	2.20	55.71
4.04	4.500	54.50	0.00	4.500	1.21	5	18.16	71.94	5.10	66.84	66.25	1.23	0.00	5	2.15	58.74
4.06	4.590	51.65	0.00	4.590	1.13	5	18.11	72.30	5.30	67.01	67.42	1.14	0.00	5	2.12	59.60
4.08	4.630	48.89	0.00	4.630	1.06	5	18.05	72.66	5.49	67.17	67.85	1.07	0.00	5	2.10	59.86
4.10	4.580	44.71	0.00	4.580	0.98	5	17.94	73.02	5.69	67.33	66.93	0.99	0.00	5	2.09	58.97
4.12	4.460	33.24	0.00	4.460	0.75	5	17.59	73.38	5.89	67.49	65.00	0.76	0.00	6	2.04	56.86
4.14	4.340	28.17	0.00	4.340	0.65	5	17.39	73.73	6.08	67.64	63.07	0.66	0.00	6	2.02	55.06
4.16	4.250	27.12	0.00	4.250	0.64	5	17.34	74.07	6.28	67.79	61.60	0.65	0.00	6	2.02	53.85
4.18	4.080	27.63	0.00	4.080	0.68	5	17.34	74.42	6.47	67.95	58.95	0.69	0.00	6	2.05	51.79
4.20	3.890	29.75	0.00	3.890	0.76	5	17.41	74.77	6.67	68.10	56.03	0.78	0.00	5	2.09	49.58

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	3.840	30.77	0.00	3.840	0.80	5	17.45	75.12	6.87	68.25	55.16	0.82	0.00	5	2.11	48.96
4.24	3.720	30.23	0.00	3.720	0.81	5	17.41	75.47	7.06	68.40	53.28	0.83	0.00	5	2.12	47.43
4.26	3.450	28.61	0.00	3.450	0.83	5	17.32	75.81	7.26	68.55	49.22	0.85	0.00	5	2.16	44.05
4.28	3.420	26.52	0.00	3.420	0.78	5	17.23	76.16	7.46	68.70	48.67	0.79	0.00	5	2.15	43.52
4.30	3.320	24.59	0.00	3.320	0.74	5	17.13	76.50	7.65	68.85	47.11	0.76	0.00	5	2.15	42.16
4.32	3.220	21.90	0.00	3.220	0.68	5	16.99	76.84	7.85	68.99	45.56	0.70	0.00	5	2.14	40.77
4.34	3.160	20.09	0.00	3.160	0.64	5	16.88	77.18	8.04	69.13	44.59	0.65	0.00	5	2.14	39.89
4.36	3.200	19.17	0.00	3.200	0.60	5	16.83	77.52	8.24	69.28	45.07	0.61	0.00	5	2.12	40.26
4.38	3.300	18.51	0.00	3.300	0.56	5	16.80	77.85	8.44	69.42	46.42	0.57	0.00	5	2.10	41.35
4.40	3.630	20.03	0.00	3.630	0.55	5	16.93	78.19	8.63	69.56	51.06	0.56	0.00	6	2.06	45.28
4.42	3.780	24.56	0.00	3.780	0.65	5	17.18	78.53	8.83	69.70	53.10	0.66	0.00	5	2.08	47.24
4.44	4.430	25.26	0.00	4.430	0.57	5	17.27	78.88	9.03	69.85	62.29	0.58	0.00	6	1.99	54.81
4.46	4.640	24.02	0.00	4.640	0.52	6	17.23	79.22	9.22	70.00	65.15	0.53	0.00	6	1.96	57.09
4.48	4.730	20.82	0.00	4.730	0.44	6	17.08	79.56	9.42	70.15	66.30	0.45	0.00	6	1.92	57.84
4.50	4.940	16.76	0.00	4.940	0.34	6	16.84	79.90	9.61	70.29	69.14	0.34	0.00	6	1.85	59.87
4.52	4.740	14.54	0.00	4.740	0.31	6	16.66	80.24	9.81	70.43	66.16	0.31	0.00	6	1.85	57.34
4.54	4.220	13.37	0.00	4.220	0.32	6	16.52	80.57	10.01	70.56	58.66	0.32	0.00	6	1.91	51.23
4.56	3.660	16.07	0.00	3.660	0.44	5	16.68	80.90	10.20	70.70	50.63	0.45	0.00	6	2.02	44.89
4.58	3.290	24.59	0.00	3.290	0.75	5	17.13	81.24	10.40	70.84	45.30	0.77	0.00	5	2.16	40.97
4.60	3.250	32.35	0.00	3.250	1.00	5	17.44	81.59	10.59	70.99	44.63	1.02	0.00	5	2.23	40.75
4.62	3.330	55.64	0.00	3.330	1.67	5	18.07	81.95	10.79	71.15	45.65	1.71	0.00	5	2.35	42.35
4.64	3.780	67.37	0.00	3.780	1.78	5	18.34	82.31	10.99	71.32	51.84	1.82	0.00	5	2.32	47.97
4.66	4.020	69.33	0.00	4.020	1.72	5	18.40	82.68	11.18	71.49	55.07	1.76	0.00	5	2.29	50.80
4.68	4.140	66.10	0.00	4.140	1.60	5	18.35	83.05	11.38	71.67	56.61	1.63	0.00	5	2.26	52.06
4.70	4.270	60.40	0.00	4.270	1.41	5	18.26	83.41	11.58	71.84	58.28	1.44	0.00	5	2.22	53.35
4.72	4.050	55.77	0.00	4.050	1.38	5	18.15	83.77	11.77	72.00	55.08	1.41	0.00	5	2.23	50.53
4.74	3.660	41.42	0.00	3.660	1.13	5	17.77	84.13	11.97	72.16	49.55	1.16	0.00	5	2.22	45.41
4.76	3.200	20.95	0.00	3.200	0.65	5	16.93	84.47	12.16	72.31	43.09	0.67	0.00	5	2.15	39.16
4.78	2.810	16.54	0.00	2.810	0.59	5	16.61	84.81	12.36	72.45	37.62	0.61	0.00	5	2.18	34.33
4.80	2.660	20.15	0.00	2.660	0.76	5	16.82	85.14	12.56	72.58	35.47	0.78	0.00	5	2.25	32.68
4.82	2.550	30.55	0.00	2.550	1.20	5	17.28	85.48	12.75	72.73	33.89	1.24	-0.01	5	2.37	31.68
4.84	2.500	55.20	0.00	2.500	2.21	4	17.95	85.84	12.95	72.89	33.12	2.29	-0.01	4	2.53	31.57
4.86	2.490	62.33	0.00	2.490	2.50	4	18.09	86.20	13.15	73.06	32.90	2.59	-0.01	4	2.56	31.51
4.88	2.420	67.94	0.00	2.420	2.81	4	18.18	86.57	13.34	73.22	31.87	2.91	-0.01	4	2.60	30.68
4.90	2.490	73.74	0.00	2.490	2.96	4	18.28	86.93	13.54	73.39	32.74	3.07	-0.01	4	2.61	31.55
4.92	2.810	83.75	0.00	2.810	2.98	4	18.48	87.30	13.73	73.56	37.01	3.08	-0.01	4	2.57	35.52
4.94	3.210	79.50	0.00	3.210	2.48	4	18.47	87.67	13.93	73.74	42.34	2.55	0.00	4	2.47	40.21
4.96	3.480	77.57	0.00	3.480	2.23	4	18.47	88.04	14.13	73.91	45.89	2.29	0.00	5	2.42	43.32
4.98	3.740	71.04	0.00	3.740	1.90	5	18.40	88.41	14.32	74.08	49.29	1.95	0.00	5	2.35	46.20
5.00	4.140	64.29	0.00	4.140	1.55	5	18.32	88.77	14.52	74.25	54.56	1.59	0.00	5	2.27	50.66
5.02	4.200	62.08	0.00	4.200	1.48	5	18.29	89.14	14.71	74.42	55.24	1.51	0.00	5	2.25	51.21
5.04	4.240	55.68	0.00	4.240	1.31	5	18.17	89.50	14.91	74.59	55.64	1.34	0.00	5	2.22	51.43
5.06	4.220	43.51	0.00	4.220	1.03	5	17.88	89.86	15.11	74.75	55.25	1.05	0.00	5	2.16	50.77
5.08	4.330	35.81	0.00	4.330	0.83	5	17.67	90.22	15.30	74.91	56.60	0.84	0.00	5	2.10	51.70
5.10	4.490	37.04	0.00	4.490	0.82	5	17.72	90.57	15.50	75.07	58.60	0.84	0.00	5	2.08	53.49
5.12	4.550	39.07	0.00	4.550	0.86	5	17.79	90.93	15.70	75.23	59.27	0.88	0.00	5	2.09	54.17
5.14	4.560	52.98	0.00	4.560	1.16	5	18.14	91.29	15.89	75.40	59.27	1.19	0.00	5	2.16	54.63
5.16	4.460	58.05	0.00	4.460	1.30	5	18.23	91.65	16.09	75.56	57.81	1.33	0.00	5	2.20	53.53
5.18	4.060	53.62	0.00	4.060	1.32	5	18.11	92.02	16.28	75.73	52.40	1.35	0.00	5	2.24	48.74
5.20	3.850	47.02	0.00	3.850	1.22	5	17.93	92.38	16.48	75.89	49.51	1.25	0.00	5	2.24	46.09
5.22	3.630	55.36	0.00	3.630	1.53	5	18.10	92.74	16.68	76.06	46.51	1.57	0.00	5	2.31	43.66
5.24	3.380	76.15	0.00	3.380	2.25	4	18.44	93.10	16.87	76.23	43.12	2.32	-0.01	5	2.44	41.04
5.26	3.120	89.68	0.00	3.120	2.87	4	18.60	93.48	17.07	76.41	39.61	2.96	-0.01	4	2.54	38.09
5.28	3.070	100.61	0.00	3.070	3.28	4	18.72	93.85	17.27	76.58	38.86	3.38	-0.01	4	2.58	37.55
5.30	3.420	103.81	0.00	3.420	3.04	4	18.80	94.22	17.46	76.76	43.33	3.12	-0.01	4	2.52	41.64

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _v ,v ₀	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	3.790	104.13	0.00	3.790	2.75	4	18.84	94.60	17.66	76.94	48.03	2.82	0.00	4	2.46	45.89
5.34	3.630	107.29	0.00	3.630	2.96	4	18.86	94.98	17.85	77.12	45.84	3.04	-0.01	4	2.50	43.97
5.36	3.570	102.07	0.00	3.570	2.86	4	18.80	95.35	18.05	77.30	44.95	2.94	-0.01	4	2.49	43.12
5.38	3.400	96.11	0.00	3.400	2.83	4	18.71	95.73	18.25	77.48	42.65	2.91	-0.01	4	2.51	40.98
5.40	3.380	92.75	0.00	3.380	2.74	4	18.67	96.10	18.44	77.66	42.29	2.82	-0.01	4	2.50	40.63
5.42	3.430	93.42	0.00	3.430	2.72	4	18.68	96.48	18.64	77.84	42.83	2.80	-0.01	4	2.49	41.14
5.44	3.670	86.73	0.00	3.670	2.36	4	18.62	96.85	18.84	78.01	45.80	2.43	-0.01	5	2.43	43.76
5.46	3.830	76.43	0.00	3.830	2.00	5	18.49	97.22	19.03	78.19	47.74	2.05	-0.01	5	2.37	45.38
5.48	4.020	58.24	0.00	4.020	1.45	5	18.20	97.59	19.23	78.36	50.06	1.48	0.00	5	2.27	47.16
5.50	4.120	44.58	0.00	4.120	1.08	5	17.90	97.95	19.42	78.52	51.22	1.11	0.00	5	2.19	47.92
5.52	4.260	40.24	0.00	4.260	0.94	5	17.79	98.30	19.62	78.68	52.89	0.97	0.00	5	2.15	49.31
5.54	4.400	40.12	0.00	4.400	0.91	5	17.80	98.66	19.82	78.84	54.56	0.93	0.00	5	2.13	50.80
5.56	4.470	42.87	0.00	4.470	0.96	5	17.89	99.01	20.01	79.00	55.33	0.98	0.00	5	2.13	51.59
5.58	4.740	46.33	0.00	4.740	0.98	5	18.00	99.37	20.21	79.17	58.62	1.00	0.00	5	2.12	54.61
5.60	5.190	53.17	0.00	5.190	1.02	5	18.19	99.74	20.40	79.33	64.16	1.04	0.00	5	2.10	59.71
5.62	5.740	55.52	0.00	5.740	0.97	5	18.28	100.10	20.60	79.50	70.94	0.98	0.00	6	2.05	65.78
5.64	6.220	60.52	0.00	6.220	0.97	5	18.41	100.47	20.80	79.67	76.81	0.99	0.00	6	2.02	71.11
5.66	6.330	62.42	0.00	6.330	0.99	5	18.45	100.84	20.99	79.84	78.02	1.00	0.00	6	2.02	72.27
5.68	6.510	67.21	0.00	6.510	1.03	5	18.55	101.21	21.19	80.02	80.09	1.05	0.00	6	2.02	74.26
5.70	6.890	73.77	0.00	6.890	1.07	5	18.68	101.58	21.39	80.20	84.65	1.09	0.00	6	2.01	78.49
5.72	7.510	82.48	0.00	7.510	1.10	6	18.84	101.96	21.58	80.37	92.17	1.11	0.00	6	1.99	85.37
5.74	7.910	84.89	0.00	7.910	1.07	6	18.89	102.33	21.78	80.56	96.92	1.09	0.00	6	1.97	89.68
5.76	7.600	94.62	0.00	7.600	1.25	5	19.00	102.71	21.97	80.74	92.86	1.26	0.00	6	2.02	86.38
5.78	7.510	96.96	0.00	7.510	1.29	5	19.02	103.09	22.17	80.92	91.53	1.31	0.00	5	2.04	85.31
5.80	7.410	104.28	0.00	7.410	1.41	5	19.10	103.48	22.37	81.11	90.08	1.43	0.00	5	2.07	84.22
5.82	7.200	107.96	0.00	7.200	1.50	5	19.13	103.86	22.56	81.30	87.29	1.52	0.00	5	2.10	81.85
5.84	7.150	119.78	0.00	7.150	1.68	5	19.25	104.24	22.76	81.48	86.47	1.70	0.00	5	2.13	81.36
5.86	6.700	136.99	0.00	6.700	2.04	5	19.38	104.63	22.96	81.67	80.75	2.08	0.00	5	2.21	76.50
5.88	6.700	136.99	0.00	6.700	2.04	5	19.38	105.02	23.15	81.87	80.56	2.08	0.00	5	2.21	76.37
5.90	6.010	91.74	0.00	6.010	1.53	5	18.87	105.40	23.35	82.05	71.96	1.55	0.00	5	2.16	68.01
5.92	5.550	97.34	0.00	5.550	1.75	5	18.91	105.78	23.54	82.23	66.20	1.79	0.00	5	2.23	62.92
5.94	4.670	105.74	0.00	4.670	2.26	5	18.94	106.16	23.74	82.42	55.38	2.32	-0.01	5	2.36	53.16
5.96	3.840	106.12	0.00	3.840	2.76	4	18.87	106.53	23.94	82.60	45.20	2.84	-0.01	4	2.48	43.80
5.98	3.250	98.83	0.00	3.250	3.04	4	18.72	106.91	24.13	82.78	37.97	3.14	-0.01	4	2.56	37.03
6.00	2.690	82.48	0.00	2.690	3.07	4	18.44	107.28	24.33	82.95	31.14	3.19	-0.01	4	2.63	30.52
6.02	2.250	74.24	0.00	2.250	3.30	4	18.25	107.65	24.52	83.12	25.77	3.47	-0.01	4	2.71	25.42
6.04	2.000	80.84	0.00	2.000	4.04	3	18.31	108.01	24.72	83.29	22.72	4.27	-0.01	3	2.81	22.56
6.06	1.870	85.14	0.00	1.870	4.55	3	18.34	108.38	24.92	83.46	21.11	4.83	-0.01	3	2.87	21.05
6.08	1.720	84.26	0.00	1.720	4.90	3	18.30	108.75	25.11	83.63	19.27	5.23	-0.02	3	2.92	19.27
6.10	1.690	79.69	0.00	1.690	4.72	3	18.23	109.11	25.31	83.80	18.86	5.04	-0.02	3	2.92	18.86
6.12	1.650	77.13	0.00	1.650	4.67	3	18.18	109.47	25.51	83.97	18.35	5.01	-0.02	3	2.92	18.35
6.14	1.700	71.71	0.00	1.700	4.22	3	18.11	109.84	25.70	84.14	18.90	4.51	-0.02	3	2.89	18.87
6.16	1.810	62.71	0.00	1.810	3.46	3	17.98	110.20	25.90	84.30	20.16	3.69	-0.02	3	2.81	20.04
6.18	1.870	54.85	0.00	1.870	2.93	4	17.83	110.55	26.09	84.46	20.83	3.12	-0.01	4	2.75	20.63
6.20	1.900	54.03	0.00	1.900	2.84	4	17.82	110.91	26.29	84.62	21.14	3.02	-0.01	4	2.74	20.92
6.22	1.830	54.95	0.00	1.830	3.00	4	17.83	111.27	26.49	84.78	20.27	3.20	-0.02	4	2.77	20.10
6.24	1.740	58.37	0.00	1.740	3.35	3	17.88	111.62	26.68	84.94	19.17	3.58	-0.02	3	2.82	19.07
6.26	1.620	62.55	0.00	1.620	3.86	3	17.93	111.98	26.88	85.10	17.72	4.15	-0.02	3	2.88	17.69
6.28	1.560	63.82	0.00	1.560	4.09	3	17.94	112.34	27.08	85.27	16.98	4.41	-0.02	3	2.91	16.98
6.30	1.550	62.23	0.00	1.550	4.01	3	17.91	112.70	27.27	85.43	16.82	4.33	-0.02	3	2.91	16.82
6.32	1.550	60.33	0.00	1.550	3.89	3	17.87	113.06	27.47	85.59	16.79	4.20	-0.02	3	2.90	16.79
6.34	1.490	58.27	0.00	1.490	3.91	3	17.82	113.41	27.66	85.75	16.05	4.23	-0.02	3	2.92	16.05
6.36	1.470	55.39	0.00	1.470	3.77	3	17.75	113.77	27.86	85.91	15.79	4.08	-0.02	3	2.92	15.79
6.38	1.440	50.99	0.00	1.440	3.54	3	17.65	114.12	28.06	86.07	15.41	3.85	-0.02	3	2.91	15.41
6.40	1.490	46.96	0.00	1.490	3.15	3	17.57	114.48	28.25	86.22	15.95	3.41	-0.02	3	2.87	15.92

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	1.610	43.98	0.00	1.610	2.73	4	17.52	114.83	28.45	86.38	17.31	2.94	-0.02	4	2.80	17.21
6.44	1.780	42.11	0.00	1.780	2.37	4	17.51	115.18	28.65	86.53	19.24	2.53	-0.02	4	2.73	19.05
6.46	1.790	42.84	0.00	1.790	2.39	4	17.53	115.53	28.84	86.68	19.32	2.56	-0.02	4	2.73	19.13
6.48	1.680	43.16	0.00	1.680	2.57	4	17.52	115.88	29.04	86.84	18.01	2.76	-0.02	4	2.77	17.88
6.50	1.860	40.91	0.00	1.860	2.20	4	17.50	116.23	29.23	86.99	20.05	2.35	-0.02	4	2.69	19.82
6.52	1.680	42.40	0.00	1.680	2.52	4	17.50	116.58	29.43	87.15	17.94	2.71	-0.02	4	2.77	17.81
6.54	1.670	42.97	0.00	1.670	2.57	4	17.51	116.93	29.63	87.30	17.79	2.77	-0.02	4	2.78	17.67
6.56	1.710	42.84	0.00	1.710	2.51	4	17.52	117.28	29.82	87.45	18.21	2.69	-0.02	4	2.76	18.08
6.58	1.730	42.97	0.00	1.730	2.48	4	17.52	117.63	30.02	87.61	18.40	2.67	-0.02	4	2.75	18.27
6.60	1.790	39.39	0.00	1.790	2.20	4	17.44	117.98	30.21	87.76	19.05	2.36	-0.02	4	2.71	18.87
6.62	1.820	39.10	0.00	1.820	2.15	4	17.43	118.32	30.41	87.91	19.36	2.30	-0.02	4	2.70	19.16
6.64	1.880	40.34	0.00	1.880	2.15	4	17.48	118.67	30.61	88.07	20.00	2.29	-0.02	4	2.69	19.79
6.66	1.930	39.96	0.00	1.930	2.07	4	17.48	119.02	30.80	88.22	20.53	2.21	-0.02	4	2.67	20.30
6.68	1.930	43.95	0.00	1.930	2.28	4	17.59	119.37	31.00	88.37	20.49	2.43	-0.02	4	2.69	20.29
6.70	1.940	44.71	0.00	1.940	2.30	4	17.61	119.73	31.20	88.53	20.56	2.46	-0.02	4	2.70	20.36
6.72	2.000	46.26	0.00	2.000	2.31	4	17.66	120.08	31.39	88.69	21.20	2.46	-0.02	4	2.69	20.99
6.74	2.030	46.20	0.00	2.030	2.28	4	17.67	120.43	31.59	88.84	21.49	2.42	-0.02	4	2.68	21.28
6.76	2.020	45.98	0.00	2.020	2.28	4	17.66	120.79	31.78	89.00	21.34	2.42	-0.02	4	2.68	21.13
6.78	1.990	47.34	0.00	1.990	2.38	4	17.69	121.14	31.98	89.16	20.96	2.53	-0.02	4	2.70	20.77
6.80	1.920	48.23	0.00	1.920	2.51	4	17.70	121.49	32.18	89.32	20.14	2.68	-0.02	4	2.72	19.98
6.82	1.830	47.88	0.00	1.830	2.62	4	17.67	121.85	32.37	89.47	19.09	2.80	-0.02	4	2.75	18.97
6.84	2.010	46.49	0.00	2.010	2.31	4	17.67	122.20	32.57	89.63	21.06	2.46	-0.02	4	2.69	20.88
6.86	2.970	49.05	0.00	2.970	1.65	5	17.88	122.56	32.77	89.79	31.71	1.72	-0.01	5	2.46	31.14
6.88	3.200	49.46	0.00	3.200	1.55	5	17.92	122.91	32.96	89.95	34.21	1.61	-0.01	5	2.41	33.54
6.90	4.190	56.63	0.00	4.190	1.35	5	18.18	123.28	33.16	90.12	45.13	1.39	-0.01	5	2.28	44.03
6.92	4.220	62.93	0.00	4.220	1.49	5	18.30	123.64	33.35	90.29	45.37	1.54	-0.01	5	2.30	44.33
6.94	4.170	87.05	0.00	4.170	2.09	5	18.67	124.02	33.55	90.46	44.72	2.15	-0.01	5	2.40	43.88
6.96	4.280	121.49	0.00	4.280	2.84	4	19.07	124.40	33.75	90.65	45.84	2.92	-0.01	4	2.48	45.13
6.98	4.780	147.41	0.00	4.780	3.08	4	19.33	124.78	33.94	90.84	51.25	3.17	-0.01	4	2.47	50.44
7.00	5.440	171.68	0.00	5.440	3.16	4	19.56	125.17	34.14	91.03	58.38	3.23	-0.01	4	2.43	57.42
7.02	5.950	179.45	0.00	5.950	3.02	5	19.64	125.56	34.34	91.23	63.85	3.08	-0.01	5	2.39	62.72
7.04	6.890	183.95	0.00	6.890	2.67	5	19.73	125.96	34.53	91.43	73.98	2.72	-0.01	5	2.31	72.51
7.06	8.100	194.72	0.00	8.100	2.40	5	19.85	126.35	34.73	91.63	87.02	2.44	0.00	5	2.23	85.10
7.08	9.320	210.06	0.00	9.320	2.25	5	19.99	126.75	34.92	91.83	100.11	2.28	0.00	5	2.16	97.75
7.10	10.130	225.71	0.00	10.130	2.23	5	20.11	127.15	35.12	92.03	108.69	2.26	0.00	5	2.14	106.10
7.12	10.770	243.46	0.00	10.770	2.26	5	20.22	127.56	35.32	92.24	115.38	2.29	0.00	5	2.12	112.66
7.14	11.010	263.90	0.00	11.010	2.40	5	20.32	127.96	35.51	92.45	117.71	2.43	0.00	5	2.14	115.06
7.16	10.480	304.27	0.00	10.480	2.90	5	20.47	128.37	35.71	92.66	111.71	2.94	0.00	5	2.21	109.52
7.18	10.570	317.86	0.00	10.570	3.01	5	20.52	128.78	35.90	92.88	112.42	3.04	0.00	5	2.22	110.31
7.20	10.670	316.02	0.00	10.670	2.96	5	20.52	129.19	36.10	93.09	113.23	3.00	0.00	5	2.22	111.15
7.22	10.200	315.55	0.00	10.200	3.09	5	20.50	129.60	36.30	93.31	107.93	3.13	0.00	5	2.24	106.08
7.24	10.190	308.42	0.00	10.190	3.03	5	20.47	130.01	36.49	93.52	107.57	3.07	0.00	5	2.24	105.78
7.26	10.950	308.64	0.00	10.950	2.82	5	20.50	130.42	36.69	93.73	115.43	2.85	0.00	5	2.19	113.45
7.28	11.210	311.71	0.00	11.210	2.78	5	20.52	130.83	36.89	93.95	117.93	2.81	0.00	5	2.18	115.95
7.30	10.650	314.98	0.00	10.650	2.96	5	20.51	131.24	37.08	94.16	111.71	2.99	0.00	5	2.22	109.99
7.32	11.120	313.83	0.00	11.120	2.82	5	20.52	131.65	37.28	94.37	116.43	2.86	0.00	5	2.19	114.64
7.34	10.970	316.08	0.00	10.970	2.88	5	20.53	132.06	37.47	94.59	114.58	2.92	0.00	5	2.20	112.91
7.36	10.750	316.05	0.00	10.750	2.94	5	20.52	132.47	37.67	94.80	112.00	2.98	0.00	5	2.21	110.46
7.38	10.200	314.60	0.00	10.200	3.08	5	20.49	132.88	37.87	95.02	105.95	3.13	0.00	5	2.25	104.62
7.40	9.250	315.96	0.00	9.250	3.42	5	20.46	133.29	38.06	95.23	95.73	3.47	0.00	5	2.31	94.70
7.42	8.160	301.10	0.00	8.160	3.69	4	20.36	133.70	38.26	95.44	84.10	3.75	0.00	4	2.37	83.32
7.44	7.540	284.52	0.00	7.540	3.77	4	20.26	134.11	38.46	95.65	77.43	3.84	-0.01	4	2.40	76.78
7.46	7.830	284.14	0.00	7.830	3.63	4	20.28	134.51	38.65	95.86	80.28	3.69	-0.01	4	2.38	79.62
7.48	8.150	287.15	0.00	8.150	3.52	5	20.30	134.92	38.85	96.07	83.43	3.58	0.00	5	2.36	82.75
7.50	8.080	271.06	0.00	8.080	3.35	5	20.23	135.32	39.04	96.28	82.52	3.41	0.00	5	2.34	81.87

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P10	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	7.660	266.40	0.00	7.660	3.48	5	20.19	135.73	39.24	96.49	77.98	3.54	-0.01	5	2.37	77.43
7.54	8.410	254.58	0.00	8.410	3.03	5	20.18	136.13	39.44	96.69	85.57	3.08	0.00	5	2.30	84.92
7.56	8.890	256.39	0.00	8.890	2.88	5	20.21	136.54	39.63	96.90	90.33	2.93	0.00	5	2.27	89.66
7.58	10.390	293.17	0.00	10.390	2.82	5	20.42	136.94	39.83	97.11	105.58	2.86	0.00	5	2.22	104.79
7.60	10.750	284.24	0.00	10.750	2.64	5	20.40	137.35	40.02	97.33	109.04	2.68	0.00	5	2.19	108.25
7.62	10.120	281.83	0.00	10.120	2.78	5	20.36	137.76	40.22	97.54	102.34	2.82	0.00	5	2.22	101.69
7.64	9.570	293.33	0.00	9.570	3.07	5	20.39	138.17	40.42	97.75	96.49	3.11	0.00	5	2.27	95.97
7.66	9.530	300.56	0.00	9.530	3.15	5	20.42	138.57	40.61	97.96	95.87	3.20	0.00	5	2.28	95.41
7.68	10.340	306.55	0.00	10.340	2.96	5	20.47	138.98	40.81	98.17	103.91	3.01	0.00	5	2.24	103.43
7.70	11.250	316.62	0.00	11.250	2.81	5	20.54	139.39	41.01	98.39	112.93	2.85	0.00	5	2.20	112.44
7.72	12.850	318.71	0.00	12.850	2.48	5	20.60	139.81	41.20	98.60	128.90	2.51	0.00	5	2.12	128.37
7.74	15.100	338.27	0.00	15.100	2.24	5	20.73	140.22	41.40	98.82	151.38	2.26	0.00	5	2.04	150.80
7.76	16.650	372.33	0.00	16.650	2.24	5	20.88	140.64	41.59	99.04	166.69	2.26	0.00	5	2.01	166.15
7.78	19.320	389.82	0.00	19.320	2.02	6	20.99	141.05	41.79	99.26	193.21	2.03	0.00	6	1.93	192.69
7.80	26.640	413.43	0.00	26.640	1.55	6	21.18	141.48	41.99	99.49	266.34	1.56	0.00	6	1.76	265.76
7.82	33.420	457.22	0.00	33.420	1.37	6	21.38	141.90	42.18	99.72	333.71	1.37	0.00	6	1.66	333.28
7.84	40.990	494.64	0.00	40.990	1.21	6	21.55	142.33	42.38	99.95	408.66	1.21	0.00	6	1.56	408.57
7.86	44.620	488.18	0.00	44.620	1.09	6	21.57	142.77	42.58	100.19	443.93	1.10	0.00	6	1.50	444.37

CPTe P13 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P13	
Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_v	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.030	0.06	0.00	0.030	0.20	1	13.73	0.27	0.00	0.27	108.22	0.20	0.00	5	2.30	17.13
0.04	0.130	0.06	0.00	0.130	0.05	1	13.73	0.55	0.00	0.55	235.64	0.05	0.00	0	1.98	31.26
0.06	0.320	0.10	0.00	0.320	0.03	1	13.73	0.82	0.00	0.82	387.33	0.03	0.00	0	1.85	44.01
0.08	0.500	0.10	0.00	0.500	0.02	1	13.73	1.10	0.00	1.10	454.07	0.02	0.00	0	1.80	54.52
0.10	0.600	0.10	0.00	0.600	0.02	1	13.73	1.37	0.00	1.37	435.87	0.02	0.00	0	1.78	59.76
0.12	0.760	0.13	0.00	0.760	0.02	1	13.73	1.65	0.00	1.65	460.14	0.02	0.00	0	1.76	62.79
0.14	0.940	0.13	0.00	0.940	0.01	1	13.73	1.92	0.00	1.92	487.88	0.01	0.00	0	1.73	72.20
0.16	1.170	0.19	0.00	1.170	0.02	0	13.73	2.20	0.00	2.20	531.44	0.02	0.00	0	1.68	77.44
0.18	2.460	0.44	0.00	2.460	0.02	0	13.73	2.47	0.00	2.47	994.10	0.02	0.00	0	1.50	115.52
0.20	3.300	0.57	0.00	3.300	0.02	0	13.73	2.75	0.00	2.75	1200.40	0.02	0.00	0	1.44	136.90
0.22	3.030	0.60	0.00	3.030	0.02	0	13.73	3.02	0.00	3.02	1001.82	0.02	0.00	0	1.46	124.19
0.24	1.750	0.35	0.00	1.750	0.02	0	13.73	3.30	0.00	3.30	529.92	0.02	0.00	0	1.61	84.90
0.26	1.620	1.24	0.00	1.620	0.08	0	13.73	3.57	0.00	3.57	452.67	0.08	0.00	0	1.60	74.42
0.28	1.640	7.61	0.00	1.640	0.46	5	15.51	3.87	0.00	3.87	422.84	0.47	0.00	6	1.76	88.79
0.30	1.810	21.04	0.00	1.810	1.16	4	16.72	4.20	0.00	4.20	430.34	1.17	0.00	6	1.91	114.23
0.32	1.880	29.09	0.00	1.880	1.55	4	17.11	4.54	0.00	4.54	413.39	1.55	0.00	6	1.98	121.12
0.34	1.220	42.24	0.00	1.220	3.46	3	17.37	4.88	0.00	4.88	248.84	3.48	0.00	5	2.28	106.45
0.36	1.230	43.73	0.00	1.230	3.56	3	17.41	5.23	0.00	5.23	234.13	3.57	0.00	5	2.29	104.94
0.38	1.300	37.26	0.00	1.300	2.87	3	17.25	5.58	0.00	5.58	232.11	2.88	0.00	5	2.24	98.62
0.40	1.330	36.06	0.00	1.330	2.71	3	17.22	5.92	0.00	5.92	223.60	2.72	0.00	5	2.23	95.77
0.42	1.810	33.24	0.00	1.810	1.84	4	17.25	6.27	0.00	6.27	287.82	1.84	0.00	5	2.07	106.40
0.44	1.690	33.46	0.00	1.690	1.98	4	17.23	6.61	0.00	6.61	254.62	1.99	0.00	5	2.11	100.27
0.46	0.820	48.51	0.00	0.820	5.92	3	17.38	6.95	0.00	6.95	116.90	5.97	0.00	9	2.56	74.15
0.48	0.890	47.94	0.00	0.890	5.39	3	17.39	7.30	0.00	7.30	120.89	5.43	0.00	9	2.52	74.78
0.50	1.050	50.00	0.00	1.050	4.76	3	17.51	7.65	0.00	7.65	136.23	4.80	0.00	9	2.46	80.14
0.52	1.110	49.91	0.00	1.110	4.50	3	17.53	8.00	0.00	8.00	137.72	4.53	0.00	4	2.44	80.27
0.54	1.160	55.87	0.00	1.160	4.82	3	17.67	8.35	0.00	8.35	137.85	4.85	0.00	9	2.46	82.33
0.56	1.180	63.63	0.00	1.180	5.39	3	17.83	8.71	0.00	8.71	134.47	5.43	0.00	9	2.49	83.61
0.58	1.210	56.88	0.00	1.210	4.70	3	17.71	9.07	0.00	9.07	132.46	4.74	0.00	9	2.46	80.40
0.60	1.290	44.14	0.00	1.290	3.42	3	17.44	9.42	0.00	9.42	136.00	3.45	0.00	5	2.37	76.73
0.62	1.390	44.93	0.00	1.390	3.23	3	17.49	9.77	0.00	9.77	141.34	3.26	0.00	5	2.34	78.67
0.64	1.440	46.07	0.00	1.440	3.20	3	17.53	10.12	0.00	10.12	141.35	3.22	0.00	5	2.34	79.07
0.66	1.480	45.88	0.00	1.480	3.10	3	17.54	10.47	0.00	10.47	140.40	3.12	0.00	5	2.33	78.66
0.68	1.620	42.91	0.00	1.620	2.65	4	17.50	10.82	0.00	10.82	148.77	2.67	0.00	5	2.27	80.22
0.70	1.850	36.25	0.00	1.850	1.96	4	17.35	11.16	0.00	11.16	164.71	1.97	0.00	5	2.17	82.41
0.72	1.570	35.68	0.00	1.570	2.27	4	17.27	11.51	0.00	11.51	135.40	2.29	0.00	5	2.25	73.18
0.74	1.600	36.22	0.00	1.600	2.26	4	17.30	11.86	0.00	11.86	133.95	2.28	0.00	5	2.25	73.00
0.76	1.670	35.68	0.00	1.670	2.14	4	17.30	12.20	0.00	12.20	135.86	2.15	0.00	5	2.23	73.51
0.78	1.690	36.50	0.00	1.690	2.16	4	17.33	12.55	0.00	12.55	133.68	2.18	0.00	5	2.24	73.20
0.80	1.710	37.42	0.00	1.710	2.19	4	17.36	12.90	0.00	12.90	131.60	2.20	0.00	5	2.24	72.94
0.82	1.710	37.68	0.00	1.710	2.20	4	17.37	13.24	0.00	13.24	128.12	2.22	0.00	5	2.25	71.93
0.84	1.740	39.99	0.00	1.740	2.30	4	17.44	13.59	0.00	13.59	127.02	2.32	0.00	5	2.26	72.44
0.86	1.840	39.29	0.00	1.840	2.14	4	17.44	13.94	0.00	13.94	130.99	2.15	0.00	5	2.23	73.71
0.88	1.970	38.28	0.00	1.970	1.94	4	17.44	14.29	0.00	14.29	136.87	1.96	0.00	5	2.20	75.55
0.90	2.110	37.58	0.00	2.110	1.78	4	17.45	14.64	0.00	14.64	143.14	1.79	0.00	5	2.16	77.64

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P13	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	2.210	37.55	0.00	2.210	1.70	4	17.46	14.99	0.00	14.99	146.46	1.71	0.00	5	2.14	78.95
0.94	2.400	38.82	0.00	2.400	1.62	4	17.53	15.34	0.00	15.34	155.48	1.63	0.00	5	2.11	82.71
0.96	2.570	40.81	0.00	2.570	1.59	5	17.62	15.69	0.00	15.69	162.80	1.60	0.00	5	2.09	86.15
0.98	2.570	40.81	0.00	2.570	1.59	5	17.62	16.04	0.00	16.04	159.21	1.60	0.00	5	2.10	85.14
1.00	2.910	32.70	0.00	2.910	1.12	5	17.41	16.39	0.00	16.39	176.55	1.13	0.00	6	1.99	88.19
1.02	2.950	35.90	0.00	2.950	1.22	5	17.52	16.74	0.00	16.74	175.22	1.22	0.00	6	2.00	89.34
1.04	2.950	41.89	0.00	2.950	1.42	5	17.70	17.09	0.00	17.09	171.58	1.43	0.00	5	2.04	90.58
1.06	2.960	48.04	0.00	2.960	1.62	5	17.86	17.45	0.00	17.45	168.64	1.63	0.00	5	2.08	91.82
1.08	3.150	54.47	0.00	3.150	1.73	5	18.03	17.81	0.00	17.81	175.88	1.74	0.00	5	2.08	96.66
1.10	3.320	60.84	0.00	3.320	1.83	5	18.17	18.17	0.00	18.17	181.71	1.84	0.00	5	2.09	100.88
1.12	3.760	70.44	0.00	3.760	1.87	5	18.39	18.54	0.00	18.54	201.83	1.88	0.00	5	2.06	111.21
1.14	3.840	69.93	0.00	3.840	1.82	5	18.39	18.91	0.00	18.91	202.11	1.83	0.00	5	2.05	111.49
1.16	4.020	69.52	0.00	4.020	1.73	5	18.40	19.27	0.00	19.27	207.57	1.74	0.00	5	2.03	113.73
1.18	4.020	70.44	0.00	4.020	1.75	5	18.42	19.64	0.00	19.64	203.66	1.76	0.00	5	2.04	112.84
1.20	4.130	71.65	0.00	4.130	1.73	5	18.45	20.01	0.00	20.01	205.38	1.74	0.00	5	2.03	114.14
1.22	4.340	77.73	0.00	4.340	1.79	5	18.56	20.38	0.00	20.38	211.93	1.80	0.00	5	2.03	118.50
1.24	4.640	81.09	0.00	4.640	1.75	5	18.63	20.75	0.00	20.75	222.57	1.76	0.00	5	2.01	123.76
1.26	4.970	88.63	0.00	4.970	1.78	5	18.76	21.13	0.00	21.13	234.22	1.79	0.00	6	2.00	130.43
1.28	5.220	98.45	0.00	5.220	1.89	5	18.90	21.51	0.00	21.51	241.72	1.89	0.00	5	2.01	136.00
1.30	5.680	119.75	0.00	5.680	2.11	5	19.16	21.89	0.00	21.89	258.50	2.12	0.00	5	2.02	147.56
1.32	6.100	132.80	0.00	6.100	2.18	5	19.30	22.27	0.00	22.27	272.87	2.19	0.00	5	2.01	156.33
1.34	6.460	137.08	0.00	6.460	2.12	5	19.36	22.66	0.00	22.66	284.08	2.13	0.00	5	2.00	161.75
1.36	6.680	136.61	0.00	6.680	2.05	5	19.37	23.05	0.00	23.05	288.83	2.05	0.00	6	1.98	164.06
1.38	6.700	135.78	0.00	6.700	2.03	5	19.37	23.44	0.00	23.44	284.90	2.03	0.00	6	1.98	162.84
1.40	6.740	138.70	0.00	6.740	2.06	5	19.39	23.82	0.00	23.82	281.92	2.07	0.00	6	1.98	162.70
1.42	6.730	141.42	0.00	6.730	2.10	5	19.41	24.21	0.00	24.21	276.97	2.11	0.00	5	1.99	161.66
1.44	6.590	142.97	0.00	6.590	2.17	5	19.42	24.60	0.00	24.60	266.90	2.18	0.00	5	2.01	158.19
1.46	6.360	145.29	0.00	6.360	2.28	5	19.42	24.99	0.00	24.99	253.53	2.29	0.00	5	2.04	153.30
1.48	5.880	150.55	0.00	5.880	2.56	5	19.44	25.38	0.00	25.38	230.71	2.57	0.00	5	2.09	144.44
1.50	5.330	165.54	0.00	5.330	3.11	4	19.51	25.77	0.00	25.77	205.86	3.12	0.00	5	2.17	135.33
1.52	5.430	187.53	0.00	5.430	3.45	4	19.66	26.16	0.00	26.16	206.58	3.47	0.00	8	2.21	138.62
1.54	5.560	192.28	0.00	5.560	3.46	4	19.70	26.55	0.00	26.55	208.40	3.47	0.00	8	2.20	140.31
1.56	6.470	215.98	0.00	6.470	3.34	4	19.89	26.95	0.00	26.95	239.08	3.35	0.00	8	2.16	158.25
1.58	6.900	229.77	0.00	6.900	3.33	5	19.98	27.35	0.00	27.35	251.30	3.34	0.00	8	2.15	166.07
1.60	6.820	230.81	0.00	6.820	3.38	4	19.98	27.75	0.00	27.75	244.78	3.40	0.00	8	2.16	163.35
1.62	6.650	228.37	0.00	6.650	3.43	4	19.96	28.15	0.00	28.15	235.25	3.45	0.00	8	2.17	158.71
1.64	6.470	225.74	0.00	6.470	3.49	4	19.94	28.55	0.00	28.55	225.65	3.50	0.00	8	2.18	153.92
1.66	6.150	225.33	0.00	6.150	3.66	4	19.92	28.94	0.00	28.94	211.47	3.68	0.00	8	2.21	146.92
1.68	5.500	235.47	0.00	5.500	4.28	4	19.92	29.34	0.00	29.34	186.44	4.30	0.00	9	2.29	134.84
1.70	4.970	245.39	0.00	4.970	4.94	4	19.93	29.74	0.00	29.74	166.10	4.97	0.00	9	2.36	124.60
1.72	4.680	256.26	0.00	4.680	5.48	4	19.96	30.14	0.00	30.14	154.27	5.51	0.00	9	2.41	118.75
1.74	4.530	264.94	0.00	4.530	5.85	3	19.99	30.54	0.00	30.54	147.33	5.89	0.00	9	2.44	115.35
1.76	4.290	263.17	0.00	4.290	6.13	3	19.96	30.94	0.00	30.94	137.66	6.18	0.00	9	2.47	109.56
1.78	4.120	260.19	0.00	4.120	6.32	3	19.93	31.34	0.00	31.34	130.47	6.36	0.00	9	2.49	105.09
1.80	4.250	255.34	0.00	4.250	6.01	3	19.92	31.74	0.00	31.74	132.91	6.05	0.00	9	2.47	106.37
1.82	4.140	247.39	0.00	4.140	5.98	3	19.87	32.13	0.00	32.13	127.83	6.02	0.00	9	2.47	102.87
1.84	4.060	238.35	0.00	4.060	5.87	3	19.82	32.53	0.00	32.53	123.80	5.92	0.00	9	2.48	99.94
1.86	4.140	228.91	0.00	4.140	5.53	3	19.78	32.93	0.00	32.93	124.73	5.57	0.00	9	2.45	100.04
1.88	4.220	216.65	0.00	4.220	5.13	4	19.73	33.32	0.00	33.32	125.64	5.17	0.00	9	2.43	99.96
1.90	4.240	208.35	0.00	4.240	4.91	4	19.68	33.72	0.00	33.72	124.76	4.95	0.00	9	2.42	99.00
1.92	4.250	200.74	0.00	4.250	4.72	4	19.64	34.11	0.00	34.11	123.60	4.76	0.00	9	2.41	97.92
1.94	4.270	199.95	0.00	4.270	4.68	4	19.64	34.50	0.00	34.50	122.76	4.72	0.00	9	2.40	97.45
1.96	4.290	199.79	0.00	4.290	4.66	4	19.64	34.89	0.00	34.89	121.94	4.70	0.00	9	2.40	97.03
1.98	4.290	199.79	0.00	4.290	4.66	4	19.64	35.29	0.00	35.29	120.57	4.70	0.00	9	2.41	96.28
2.00	4.430	194.59	0.00	4.430	4.39	4	19.62	35.68	0.00	35.68	123.16	4.43	0.00	9	2.38	97.68

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P13	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	4.840	206.98	0.00	4.840	4.28	4	19.73	36.07	0.00	36.07	133.17	4.31	0.00	9	2.35	104.75
2.04	5.530	213.48	0.00	5.530	3.86	4	19.81	36.47	0.00	36.47	150.64	3.89	0.00	8	2.29	115.99
2.06	6.080	216.27	0.00	6.080	3.56	4	19.86	36.87	0.00	36.87	163.92	3.58	0.00	8	2.24	124.37
2.08	6.260	206.79	0.00	6.260	3.30	4	19.82	37.26	0.00	37.26	167.00	3.32	0.00	5	2.22	125.75
2.10	6.160	199.73	0.00	6.160	3.24	4	19.78	37.66	0.00	37.66	162.57	3.26	0.00	5	2.22	122.82
2.12	5.820	201.47	0.00	5.820	3.46	4	19.77	38.05	0.00	38.05	151.94	3.48	0.00	5	2.25	116.70
2.14	5.570	201.57	0.00	5.570	3.62	4	19.75	38.45	0.00	38.45	143.87	3.64	0.00	5	2.28	111.91
2.16	5.390	206.98	0.00	5.390	3.84	4	19.77	38.84	0.00	38.84	137.76	3.87	0.00	8	2.31	108.58
2.18	5.210	211.80	0.00	5.210	4.07	4	19.78	39.24	0.00	39.24	131.77	4.10	0.00	9	2.34	105.19
2.20	5.090	223.43	0.00	5.090	4.39	4	19.83	39.64	0.00	39.64	127.42	4.42	0.00	9	2.37	103.13
2.22	4.980	240.92	0.00	4.980	4.84	4	19.91	40.03	0.00	40.03	123.39	4.88	0.00	9	2.40	101.45
2.24	4.720	259.24	0.00	4.720	5.49	4	19.98	40.43	0.00	40.43	115.74	5.54	0.00	9	2.46	97.21
2.26	4.470	262.22	0.00	4.470	5.87	3	19.97	40.83	0.00	40.83	108.47	5.92	0.00	9	2.50	92.44
2.28	4.340	259.59	0.00	4.340	5.98	3	19.95	41.23	0.00	41.23	104.26	6.04	0.00	9	2.51	89.48
2.30	3.960	254.80	0.00	3.960	6.43	3	19.89	41.63	0.00	41.63	94.12	6.50	0.00	9	2.56	82.23
2.32	3.730	242.79	0.00	3.730	6.51	3	19.81	42.03	0.00	42.03	87.75	6.58	0.00	9	2.58	77.32
2.34	3.520	234.52	0.00	3.520	6.66	3	19.75	42.42	0.00	42.42	81.98	6.74	0.00	9	2.60	72.91
2.36	3.230	228.28	0.00	3.230	7.07	3	19.68	42.82	0.00	42.82	74.44	7.16	0.00	9	2.65	67.21
2.38	2.920	223.68	0.00	2.920	7.66	3	19.62	43.21	0.00	43.21	66.58	7.78	0.00	9	2.70	61.27
2.40	2.680	216.71	0.00	2.680	8.09	3	19.55	43.60	0.00	43.60	60.47	8.22	0.00	3	2.74	56.43
2.42	2.760	202.52	0.00	2.760	7.34	3	19.49	43.99	0.00	43.99	61.74	7.46	0.00	3	2.70	57.03
2.44	2.690	184.30	0.00	2.690	6.85	3	19.37	44.38	0.00	44.38	59.62	6.97	0.00	3	2.69	54.91
2.46	2.530	168.90	0.00	2.530	6.68	3	19.24	44.76	0.00	44.76	55.52	6.80	0.00	3	2.70	51.36
2.48	2.490	154.79	0.00	2.490	6.22	3	19.14	45.15	0.00	45.15	54.15	6.33	0.00	3	2.69	49.92
2.50	2.520	144.50	0.00	2.520	5.73	3	19.06	45.53	0.00	45.53	54.35	5.84	0.00	3	2.66	49.73
2.52	2.400	131.41	0.00	2.400	5.48	3	18.94	45.91	0.00	45.91	51.28	5.58	0.00	3	2.66	47.00
2.54	2.250	123.65	0.00	2.250	5.50	3	18.84	46.28	0.00	46.28	47.61	5.61	0.00	3	2.69	43.99
2.56	2.090	115.37	0.00	2.090	5.52	3	18.73	46.66	0.00	46.66	43.79	5.65	0.00	3	2.71	40.79
2.58	1.960	109.07	0.00	1.960	5.56	3	18.64	47.03	0.00	47.03	40.67	5.70	0.00	3	2.73	38.16
2.60	1.890	105.11	0.00	1.890	5.56	3	18.59	47.41	0.00	47.41	38.87	5.70	0.00	3	2.75	36.63
2.62	1.840	106.79	0.00	1.840	5.80	3	18.59	47.78	0.00	47.78	37.51	5.96	0.00	3	2.77	35.60
2.64	1.850	103.87	0.00	1.850	5.61	3	18.56	48.15	0.00	48.15	37.42	5.76	0.00	3	2.76	35.45
2.66	1.870	97.69	0.00	1.870	5.22	3	18.50	48.52	0.00	48.52	37.54	5.36	0.00	3	2.74	35.37
2.68	1.910	88.76	0.00	1.910	4.65	3	18.40	48.89	0.00	48.89	38.07	4.77	0.00	4	2.70	35.54
2.70	1.910	82.77	0.00	1.910	4.33	3	18.32	49.25	0.00	49.25	37.78	4.45	0.00	4	2.68	35.13
2.72	1.870	77.60	0.00	1.870	4.15	3	18.23	49.62	0.00	49.62	36.69	4.26	0.00	4	2.68	34.11
2.74	1.800	74.47	0.00	1.800	4.14	3	18.17	49.98	0.00	49.98	35.01	4.26	0.00	4	2.69	32.69
2.76	1.810	68.76	0.00	1.810	3.80	3	18.08	50.34	0.00	50.34	34.95	3.91	0.00	4	2.67	32.47
2.78	1.880	60.49	0.00	1.880	3.22	4	17.95	50.70	0.00	50.70	36.08	3.31	0.00	4	2.61	33.05
2.80	1.840	57.13	0.00	1.840	3.10	4	17.88	51.06	0.00	51.06	35.03	3.19	0.00	4	2.61	32.12
2.82	1.720	55.61	0.00	1.720	3.23	3	17.82	51.42	0.00	51.42	32.45	3.33	0.00	4	2.65	30.04
2.84	1.570	55.01	0.00	1.570	3.50	3	17.77	51.77	0.00	51.77	29.32	3.62	0.00	4	2.70	27.55
2.86	1.480	54.09	0.00	1.480	3.65	3	17.73	52.13	0.00	52.13	27.39	3.79	0.00	4	2.73	25.95
2.88	1.430	49.02	0.00	1.430	3.43	3	17.60	52.48	0.00	52.48	26.25	3.56	0.00	4	2.73	24.87
2.90	1.440	45.00	0.00	1.440	3.13	3	17.51	52.83	0.00	52.83	26.26	3.24	0.00	4	2.70	24.74
2.92	1.350	43.10	0.00	1.350	3.19	3	17.43	53.18	0.00	53.18	24.38	3.32	0.00	4	2.73	23.16
2.94	1.290	42.33	0.00	1.290	3.28	3	17.39	53.53	0.00	53.53	23.10	3.42	0.00	4	2.76	22.08
2.96	1.260	39.70	0.00	1.260	3.15	3	17.31	53.88	0.00	53.88	22.39	3.29	0.00	4	2.76	21.41
2.98	1.260	39.70	0.00	1.260	3.15	3	17.31	54.22	0.00	54.22	22.24	3.29	0.00	4	2.76	21.28
3.00	1.290	18.13	0.00	1.290	1.41	4	16.42	54.55	0.00	54.55	22.65	1.47	0.00	4	2.56	20.72
3.02	1.280	19.96	0.00	1.280	1.56	4	16.53	54.88	0.00	54.88	22.32	1.63	0.00	4	2.59	20.57
3.04	1.320	21.01	0.00	1.320	1.59	4	16.60	55.21	0.00	55.21	22.91	1.66	0.00	4	2.58	21.11
3.06	1.340	20.60	0.00	1.340	1.54	4	16.58	55.54	0.00	55.54	23.13	1.60	0.00	4	2.57	21.27
3.08	1.340	17.90	0.00	1.340	1.34	4	16.42	55.87	0.00	55.87	22.98	1.39	0.00	4	2.54	21.03
3.10	1.250	19.23	0.00	1.250	1.54	4	16.47	56.20	0.00	56.20	21.24	1.61	0.00	4	2.60	19.70

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P13	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	1.210	22.72	0.00	1.210	1.88	4	16.65	56.53	0.00	56.53	20.40	1.97	0.00	4	2.66	19.19
3.14	1.260	25.70	0.00	1.260	2.04	4	16.81	56.87	0.00	56.87	21.16	2.14	0.00	4	2.67	19.94
3.16	1.210	26.30	0.00	1.210	2.17	4	16.82	57.21	0.00	57.21	20.15	2.28	0.00	4	2.70	19.13
3.18	1.250	24.65	0.00	1.250	1.97	4	16.76	57.54	0.00	57.54	20.72	2.07	0.00	4	2.67	19.55
3.20	1.210	25.35	0.00	1.210	2.10	4	16.78	57.88	0.00	57.88	19.91	2.20	0.00	4	2.69	18.90
3.22	1.110	27.98	0.00	1.110	2.52	3	16.86	58.21	0.00	58.21	18.07	2.66	0.00	4	2.77	17.44
3.24	1.070	27.03	0.00	1.070	2.53	3	16.81	58.55	0.00	58.55	17.27	2.67	0.00	4	2.79	16.74
3.26	1.030	25.64	0.00	1.030	2.49	3	16.73	58.89	0.00	58.89	16.49	2.64	0.00	4	2.80	16.02
3.28	1.010	24.75	0.00	1.010	2.45	3	16.68	59.22	0.00	59.22	16.06	2.60	0.00	4	2.80	15.62
3.30	1.010	24.84	0.00	1.010	2.46	3	16.69	59.55	0.00	59.55	15.96	2.61	0.00	4	2.81	15.54
3.32	1.010	27.35	0.00	1.010	2.71	3	16.80	59.89	0.00	59.89	15.86	2.88	0.00	4	2.83	15.53
3.34	1.070	26.62	0.00	1.070	2.49	3	16.79	60.22	0.00	60.22	16.77	2.64	0.00	4	2.79	16.30
3.36	1.090	25.54	0.00	1.090	2.34	3	16.75	60.56	0.00	60.56	17.00	2.48	0.00	4	2.77	16.47
3.38	1.180	24.94	0.00	1.180	2.11	4	16.75	60.89	0.00	60.89	18.38	2.23	0.00	4	2.72	17.64
3.40	1.210	25.60	0.00	1.210	2.12	4	16.79	61.23	0.00	61.23	18.76	2.23	0.00	4	2.71	17.99
3.42	1.210	26.36	0.00	1.210	2.18	4	16.82	61.57	0.00	61.57	18.65	2.30	0.00	4	2.72	17.93
3.44	1.200	27.22	0.00	1.200	2.27	4	16.86	61.90	0.00	61.90	18.39	2.39	0.00	4	2.74	17.73
3.46	1.200	29.91	0.00	1.200	2.49	3	16.97	62.24	0.00	62.24	18.28	2.63	0.00	4	2.76	17.71
3.48	1.240	33.65	0.00	1.240	2.71	3	17.11	62.58	0.00	62.58	18.81	2.86	0.00	4	2.77	18.27
3.50	1.240	34.44	0.00	1.240	2.78	3	17.14	62.93	0.00	62.93	18.71	2.93	0.00	4	2.78	18.20
3.52	1.190	35.81	0.00	1.190	3.01	3	17.17	63.27	0.00	63.27	17.81	3.18	0.00	4	2.82	17.44
3.54	1.200	37.36	0.00	1.200	3.11	3	17.22	63.61	0.00	63.61	17.86	3.29	0.00	4	2.82	17.53
3.56	1.180	41.29	0.00	1.180	3.50	3	17.33	63.96	0.00	63.96	17.45	3.70	0.00	3	2.86	17.23
3.58	1.120	48.13	0.00	1.120	4.30	3	17.49	64.31	0.00	64.31	16.42	4.56	0.00	3	2.93	16.42
3.60	1.180	44.33	0.00	1.180	3.76	3	17.41	64.66	0.00	64.66	17.25	3.97	0.00	3	2.88	17.11
3.62	1.160	44.08	0.00	1.160	3.80	3	17.40	65.01	0.00	65.01	16.84	4.03	0.00	3	2.89	16.74
3.64	1.150	44.30	0.00	1.150	3.85	3	17.40	65.35	0.00	65.35	16.60	4.08	0.00	3	2.90	16.52
3.66	1.190	41.42	0.00	1.190	3.48	3	17.34	65.70	0.00	65.70	17.11	3.68	0.00	3	2.87	16.93
3.68	1.140	41.76	0.00	1.140	3.66	3	17.33	66.05	0.00	66.05	16.26	3.89	0.00	3	2.90	16.17
3.70	1.120	42.43	0.00	1.120	3.79	3	17.34	66.39	0.00	66.39	15.87	4.03	0.00	3	2.91	15.82
3.72	1.090	44.68	0.00	1.090	4.10	3	17.39	66.74	0.00	66.74	15.33	4.37	0.00	3	2.95	15.33
3.74	1.150	45.06	0.00	1.150	3.92	3	17.42	67.09	0.00	67.09	16.14	4.16	0.00	3	2.92	16.10
3.76	1.220	42.37	0.00	1.220	3.47	3	17.37	67.44	0.00	67.44	17.09	3.68	0.00	3	2.87	16.93
3.78	1.280	42.08	0.00	1.280	3.29	3	17.38	67.79	0.00	67.79	17.88	3.47	0.00	3	2.84	17.64
3.80	1.300	40.18	0.00	1.300	3.09	3	17.34	68.13	0.00	68.13	18.08	3.26	0.00	4	2.82	17.79
3.82	1.320	36.98	0.00	1.320	2.80	3	17.25	68.48	0.00	68.48	18.28	2.95	0.00	4	2.79	17.91
3.84	1.340	35.71	0.00	1.340	2.66	3	17.21	68.82	0.00	68.82	18.47	2.81	0.00	4	2.77	18.06
3.86	1.390	36.31	0.00	1.390	2.61	4	17.25	69.17	0.00	69.17	19.10	2.75	0.00	4	2.76	18.64
3.88	2.190	37.80	0.00	2.190	1.73	4	17.47	69.52	0.00	69.52	30.50	1.78	0.00	5	2.49	28.72
3.90	3.180	38.94	0.00	3.180	1.22	5	17.64	69.87	0.00	69.87	44.51	1.25	0.00	5	2.28	40.75
3.92	4.320	40.05	0.00	4.320	0.93	5	17.79	70.22	0.00	70.22	60.52	0.94	0.00	5	2.11	54.20
3.94	4.540	41.10	0.00	4.540	0.91	5	17.84	70.58	0.00	70.58	63.32	0.92	0.00	5	2.09	56.64
3.96	4.240	43.73	0.00	4.240	1.03	5	17.89	70.94	0.00	70.94	58.77	1.05	0.00	5	2.14	53.04
3.98	4.240	43.73	0.00	4.240	1.03	5	17.89	71.30	0.00	71.30	58.47	1.05	0.00	5	2.14	52.86
4.00	2.950	54.44	0.00	2.950	1.85	5	18.00	71.65	0.00	71.65	40.17	1.89	0.00	5	2.41	37.66
4.02	2.680	72.09	0.00	2.680	2.69	4	18.29	72.02	0.00	72.02	36.21	2.76	0.00	4	2.55	34.55
4.04	2.640	96.46	0.00	2.640	3.65	4	18.62	72.39	0.00	72.39	35.47	3.76	0.00	4	2.64	34.25
4.06	3.060	107.26	0.00	3.060	3.51	4	18.79	72.76	0.00	72.76	41.05	3.59	0.00	4	2.58	39.39
4.08	3.550	104.85	0.00	3.550	2.95	4	18.83	73.14	0.00	73.14	47.54	3.02	0.00	4	2.49	45.14
4.10	3.460	97.28	0.00	3.460	2.81	4	18.73	73.52	0.00	73.52	46.07	2.87	0.00	4	2.48	43.75
4.12	3.350	99.18	0.00	3.350	2.96	4	18.74	73.89	0.00	73.89	44.34	3.03	0.00	4	2.51	42.28
4.14	3.530	101.75	0.00	3.530	2.88	4	18.79	74.27	0.00	74.27	46.53	2.94	0.00	4	2.49	44.29
4.16	3.840	108.28	0.00	3.840	2.82	4	18.89	74.64	0.00	74.64	50.45	2.88	0.00	4	2.45	47.89
4.18	5.050	120.70	0.00	5.050	2.39	5	19.12	75.02	0.00	75.02	66.31	2.43	0.00	5	2.32	62.11
4.20	6.350	127.48	0.00	6.350	2.01	5	19.27	75.41	0.00	75.41	83.21	2.03	0.00	5	2.20	77.02

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P13	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	7.170	134.07	0.00	7.170	1.87	5	19.38	75.80	0.00	75.80	93.60	1.89	0.00	5	2.14	86.24
4.24	8.300	151.31	0.00	8.300	1.82	5	19.57	76.19	0.00	76.19	107.94	1.84	0.00	5	2.09	99.09
4.26	8.580	180.43	0.00	8.580	2.10	5	19.79	76.58	0.00	76.58	111.04	2.12	0.00	5	2.13	102.46
4.28	8.110	204.48	0.00	8.110	2.52	5	19.91	76.98	0.00	76.98	104.35	2.55	0.00	5	2.20	97.16
4.30	8.230	233.63	0.00	8.230	2.84	5	20.07	77.38	0.00	77.38	105.36	2.87	0.00	5	2.23	98.57
4.32	8.980	265.07	0.00	8.980	2.95	5	20.25	77.78	0.00	77.78	114.45	2.98	0.00	5	2.22	107.11
4.34	8.700	299.42	0.00	8.700	3.44	5	20.38	78.19	0.00	78.19	110.27	3.47	0.00	5	2.28	103.92
4.36	8.730	290.39	0.00	8.730	3.33	5	20.34	78.60	0.00	78.60	110.07	3.36	0.00	5	2.27	103.77
4.38	9.090	284.87	0.00	9.090	3.13	5	20.34	79.01	0.00	79.01	114.06	3.16	0.00	5	2.24	107.38
4.40	9.330	291.69	0.00	9.330	3.13	5	20.37	79.41	0.00	79.41	116.49	3.15	0.00	5	2.24	109.75
4.42	9.510	283.35	0.00	9.510	2.98	5	20.35	79.82	0.00	79.82	118.14	3.00	0.00	5	2.22	111.27
4.44	9.460	275.65	0.00	9.460	2.91	5	20.31	80.23	0.00	80.23	116.92	2.94	0.00	5	2.21	110.23
4.46	9.380	259.05	0.00	9.380	2.76	5	20.24	80.63	0.00	80.63	115.33	2.79	0.00	5	2.20	108.76
4.48	9.730	251.66	0.00	9.730	2.59	5	20.22	81.04	0.00	81.04	119.07	2.61	0.00	5	2.17	112.17
4.50	9.670	258.57	0.00	9.670	2.67	5	20.25	81.44	0.00	81.44	117.74	2.70	0.00	5	2.18	111.19
4.52	9.290	268.46	0.00	9.290	2.89	5	20.28	81.85	0.00	81.85	112.51	2.92	0.00	5	2.22	106.71
4.54	9.370	260.06	0.00	9.370	2.78	5	20.24	82.25	0.00	82.25	112.92	2.80	0.00	5	2.20	107.13
4.56	9.040	266.84	0.00	9.040	2.95	5	20.26	82.66	0.00	82.66	108.37	2.98	0.00	5	2.23	103.18
4.58	8.850	264.31	0.00	8.850	2.99	5	20.24	83.06	0.00	83.06	105.55	3.01	0.00	5	2.24	100.71
4.60	7.900	277.05	0.00	7.900	3.51	5	20.25	83.47	0.00	83.47	93.65	3.54	0.00	5	2.33	89.99
4.62	6.920	272.26	0.00	6.920	3.93	4	20.18	83.87	0.00	83.87	81.51	3.98	0.00	4	2.41	78.81
4.64	6.090	262.12	0.00	6.090	4.30	4	20.09	84.27	0.00	84.27	71.27	4.36	0.00	4	2.47	69.27
4.66	5.640	257.91	0.00	5.640	4.57	4	20.04	84.67	0.00	84.67	65.61	4.64	0.00	4	2.52	64.00
4.68	5.240	266.91	0.00	5.240	5.09	4	20.05	85.07	0.00	85.07	60.59	5.18	0.00	4	2.57	59.36
4.70	4.600	276.92	0.00	4.600	6.02	3	20.04	85.47	0.00	85.47	52.82	6.13	0.00	3	2.67	52.06
4.72	4.470	258.41	0.00	4.470	5.78	3	19.95	85.87	0.00	85.87	51.05	5.89	0.00	3	2.66	50.34
4.74	4.370	221.21	0.00	4.370	5.06	4	19.76	86.27	0.00	86.27	49.65	5.16	0.00	4	2.63	48.89
4.76	4.500	211.07	0.00	4.500	4.69	4	19.72	86.67	0.00	86.67	50.92	4.78	0.00	4	2.60	50.08
4.78	4.750	193.33	0.00	4.750	4.07	4	19.64	87.06	0.00	87.06	53.56	4.15	0.00	4	2.54	52.53
4.80	4.940	175.26	0.00	4.940	3.55	4	19.54	87.45	0.00	87.45	55.49	3.61	0.00	4	2.48	54.31
4.82	5.150	161.80	0.00	5.150	3.14	4	19.47	87.84	0.00	87.84	57.63	3.20	0.00	4	2.44	56.31
4.84	5.520	153.65	0.00	5.520	2.78	5	19.43	88.23	0.00	88.23	61.57	2.83	0.00	5	2.38	60.04
4.86	5.650	160.78	0.00	5.650	2.85	5	19.50	88.62	0.00	88.62	62.76	2.89	0.00	5	2.38	61.26
4.88	5.720	157.11	0.00	5.720	2.75	5	19.47	89.01	0.00	89.01	63.26	2.79	0.00	5	2.37	61.78
4.90	6.140	170.61	0.00	6.140	2.78	5	19.60	89.40	0.00	89.40	67.68	2.82	0.00	5	2.35	66.10
4.92	6.730	190.03	0.00	6.730	2.82	5	19.75	89.79	0.00	89.79	73.95	2.86	0.00	5	2.33	72.23
4.94	6.710	205.78	0.00	6.710	3.07	5	19.85	90.19	0.00	90.19	73.40	3.11	0.00	5	2.35	71.84
4.96	6.590	201.69	0.00	6.590	3.06	5	19.82	90.59	0.00	90.59	71.75	3.10	0.00	5	2.36	70.30
4.98	6.590	201.69	0.00	6.590	3.06	5	19.82	90.98	0.00	90.98	71.43	3.10	0.00	5	2.36	70.06
5.00	5.690	240.76	0.00	5.690	4.23	4	19.96	91.38	0.00	91.38	61.27	4.30	0.00	4	2.51	60.45
5.02	5.470	253.06	0.00	5.470	4.63	4	20.00	91.78	0.00	91.78	58.60	4.71	0.00	4	2.55	57.93
5.04	5.290	256.35	0.00	5.290	4.85	4	20.01	92.18	0.00	92.18	56.39	4.93	0.00	4	2.57	55.83
5.06	5.160	253.44	0.00	5.160	4.91	4	19.98	92.58	0.00	92.58	54.74	5.00	0.00	4	2.59	54.24
5.08	5.230	246.82	0.00	5.230	4.72	4	19.96	92.98	0.00	92.98	55.25	4.80	0.00	4	2.57	54.75
5.10	5.940	231.13	0.00	5.940	3.89	4	19.93	93.38	0.00	93.38	62.61	3.95	0.00	4	2.47	61.93

CPTe P16 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance	based on the stress exponent n	
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data		Basic output data						NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P16		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _v ,v ₀	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.040	0.00	0.00	0.040	0.00	1	19.00	0.38	0.00	0.38	104.26	0.00	0.00	0	0.00	0.00
0.04	0.260	0.03	0.00	0.260	0.01	1	13.73	0.71	0.00	0.71	366.57	0.01	0.00	0	1.94	46.48
0.06	0.380	0.03	0.00	0.380	0.01	1	13.73	0.98	0.00	0.98	385.96	0.01	0.00	0	1.92	57.78
0.08	0.450	0.03	0.00	0.450	0.01	1	13.73	1.26	0.00	1.26	357.08	0.01	0.00	0	1.94	60.73
0.10	0.510	0.06	0.00	0.510	0.01	1	13.73	1.53	0.00	1.53	332.03	0.01	0.00	0	1.88	53.35
0.12	0.560	0.10	0.00	0.560	0.02	1	13.73	1.81	0.00	1.81	309.07	0.02	0.00	0	1.84	50.46
0.14	0.640	0.10	0.00	0.640	0.02	1	13.73	2.08	0.00	2.08	306.58	0.02	0.00	0	1.83	54.36
0.16	0.660	0.10	0.00	0.660	0.02	1	13.73	2.36	0.00	2.36	279.20	0.02	0.00	0	1.85	51.99
0.18	0.710	0.10	0.00	0.710	0.01	1	13.73	2.63	0.00	2.63	268.95	0.01	0.00	0	1.86	53.10
0.20	0.770	0.10	0.00	0.770	0.01	1	13.73	2.90	0.00	2.90	264.08	0.01	0.00	0	1.85	55.77
0.22	0.790	0.10	0.00	0.790	0.01	1	13.73	3.18	0.00	3.18	247.47	0.01	0.00	0	1.86	54.92
0.24	0.810	0.10	0.00	0.810	0.01	1	13.73	3.45	0.00	3.45	233.50	0.01	0.00	0	1.87	54.23
0.26	0.820	0.06	0.00	0.820	0.01	1	13.73	3.73	0.00	3.73	218.91	0.01	0.00	0	1.94	56.70
0.28	0.840	0.10	0.00	0.840	0.01	1	13.73	4.00	0.00	4.00	208.82	0.01	0.00	0	1.89	51.93
0.30	0.840	0.06	0.00	0.840	0.01	1	13.73	4.28	0.00	4.28	195.35	0.01	0.00	0	1.96	54.88
0.32	0.850	0.10	0.00	0.850	0.01	1	13.73	4.55	0.00	4.55	185.70	0.01	0.00	0	1.91	50.03
0.34	0.890	0.10	0.00	0.890	0.01	1	13.73	4.83	0.00	4.83	183.36	0.01	0.00	0	1.91	50.81
0.36	1.000	0.16	0.00	1.000	0.02	0	13.73	5.10	0.00	5.10	194.99	0.02	0.00	0	1.85	51.65
0.38	1.040	0.16	0.00	1.040	0.02	0	13.73	5.38	0.00	5.38	192.42	0.02	0.00	0	1.85	52.29
0.40	1.090	0.13	0.00	1.090	0.01	0	13.73	5.65	0.00	5.65	191.87	0.01	0.00	0	1.87	54.65
0.42	1.150	0.16	0.00	1.150	0.01	0	13.73	5.93	0.00	5.93	193.05	0.01	0.00	0	1.84	54.70
0.44	1.200	0.16	0.00	1.200	0.01	0	13.73	6.20	0.00	6.20	192.52	0.01	0.00	0	1.84	56.30
0.46	1.330	0.16	0.00	1.330	0.01	0	13.73	6.48	0.00	6.48	204.39	0.01	0.00	0	1.83	60.19
0.48	1.380	0.13	0.00	1.380	0.01	0	13.73	6.75	0.00	6.75	203.44	0.01	0.00	0	1.86	62.65
0.50	1.370	0.13	0.00	1.370	0.01	0	13.73	7.02	0.00	7.02	194.02	0.01	0.00	0	1.86	61.25
0.52	1.340	0.13	0.00	1.340	0.01	0	13.73	7.30	0.00	7.30	182.57	0.01	0.00	0	1.87	59.16
0.54	1.240	0.13	0.00	1.240	0.01	0	13.73	7.57	0.00	7.57	162.71	0.01	0.00	0	1.89	54.54
0.56	1.120	0.10	0.00	1.120	0.01	0	13.73	7.85	0.00	7.85	141.69	0.01	0.00	0	1.95	50.88
0.58	1.020	0.13	0.00	1.020	0.01	0	13.73	8.12	0.00	8.12	124.56	0.01	0.00	0	1.94	44.96
0.60	1.010	2.09	0.00	1.010	0.21	5	13.84	8.40	0.00	8.40	119.25	0.21	0.00	6	1.92	42.80
0.62	1.050	2.69	0.00	1.050	0.26	5	14.14	8.68	0.00	8.68	119.98	0.26	0.00	6	1.93	44.23
0.64	1.100	3.71	0.00	1.100	0.34	5	14.53	8.97	0.00	8.97	121.66	0.34	0.00	6	1.96	45.99
0.66	1.130	3.93	0.00	1.130	0.35	5	14.61	9.26	0.00	9.26	121.04	0.35	0.00	6	1.96	46.45
0.68	1.120	4.75	0.00	1.120	0.42	5	14.82	9.55	0.00	9.55	116.22	0.43	0.00	6	1.99	46.63
0.70	1.150	4.53	0.00	1.150	0.39	5	14.78	9.85	0.00	9.85	115.75	0.40	0.00	6	1.98	46.51
0.72	1.210	5.55	0.00	1.210	0.46	5	15.03	10.15	0.00	10.15	118.20	0.46	0.00	6	1.99	48.59
0.74	1.240	6.34	0.00	1.240	0.51	5	15.19	10.45	0.00	10.45	117.60	0.52	0.00	6	2.00	49.54
0.76	1.240	5.96	0.00	1.240	0.48	5	15.12	10.76	0.00	10.76	114.28	0.48	0.00	6	2.00	48.52
0.78	1.250	8.24	0.00	1.250	0.66	5	15.50	11.06	0.00	11.06	111.97	0.67	0.00	6	2.05	50.29
0.80	1.320	10.01	0.00	1.320	0.76	4	15.74	11.38	0.00	11.38	115.01	0.76	0.00	6	2.07	52.81
0.82	1.490	12.10	0.00	1.490	0.81	5	16.01	11.70	0.00	11.70	126.38	0.82	0.00	6	2.05	57.83
0.84	1.580	14.73	0.00	1.580	0.93	5	16.26	12.02	0.00	12.02	130.45	0.94	0.00	5	2.06	61.04
0.86	1.630	15.50	0.00	1.630	0.95	5	16.33	12.34	0.00	12.34	131.04	0.96	0.00	5	2.06	62.29
0.88	1.630	15.50	0.00	1.630	0.95	5	16.33	12.67	0.00	12.67	127.64	0.96	0.00	5	2.07	61.47
0.90	1.580	18.25	0.00	1.580	1.16	4	16.50	13.00	0.00	13.00	120.55	1.16	0.00	5	2.12	61.00

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P16	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	1.560	21.23	0.00	1.560	1.36	4	16.67	13.33	0.00	13.33	116.01	1.37	0.00	5	2.16	61.17
0.94	1.500	26.74	0.00	1.500	1.78	4	16.92	13.67	0.00	13.67	108.74	1.80	0.00	5	2.24	61.17
0.96	1.480	32.48	0.00	1.480	2.19	4	17.14	14.01	0.00	14.01	104.63	2.22	0.00	5	2.30	61.86
0.98	1.440	35.97	0.00	1.440	2.50	4	17.25	14.36	0.00	14.36	99.31	2.52	0.00	5	2.34	61.01
1.00	1.390	36.82	0.00	1.390	2.65	4	17.26	14.70	0.00	14.70	93.56	2.68	0.00	5	2.37	59.03
1.02	1.310	36.00	0.00	1.310	2.75	3	17.21	15.05	0.00	15.05	86.07	2.78	0.00	5	2.40	55.78
1.04	1.240	33.15	0.00	1.240	2.67	3	17.10	15.39	0.00	15.39	79.58	2.71	0.00	5	2.41	52.31
1.06	1.190	30.48	0.00	1.190	2.56	3	16.99	15.73	0.00	15.73	74.66	2.60	0.00	5	2.41	49.51
1.08	1.220	28.68	0.00	1.220	2.35	4	16.92	16.07	0.00	16.07	74.93	2.38	0.00	5	2.39	49.16
1.10	1.260	27.73	0.00	1.260	2.20	4	16.90	16.41	0.00	16.41	75.80	2.23	0.00	5	2.37	49.30
1.12	1.300	27.31	0.00	1.300	2.10	4	16.89	16.74	0.00	16.74	76.64	2.13	0.00	5	2.35	49.58
1.14	1.420	27.19	0.00	1.420	1.91	4	16.92	17.08	0.00	17.08	82.13	1.94	0.00	5	2.31	51.93
1.16	1.320	27.54	0.00	1.320	2.09	4	16.91	17.42	0.00	17.42	74.78	2.11	0.00	5	2.36	48.95
1.18	1.360	27.98	0.00	1.360	2.06	4	16.94	17.76	0.00	17.76	75.58	2.08	0.00	5	2.35	49.47
1.20	1.360	26.93	0.00	1.360	1.98	4	16.89	18.10	0.00	18.10	74.15	2.01	0.00	5	2.34	48.62
1.22	1.370	26.90	0.00	1.370	1.96	4	16.90	18.43	0.00	18.43	73.32	1.99	0.00	5	2.34	48.30
1.24	1.290	23.35	0.00	1.290	1.81	4	16.71	18.77	0.00	18.77	67.73	1.84	0.00	5	2.35	44.89
1.26	1.290	22.53	0.00	1.290	1.75	4	16.67	19.10	0.00	19.10	66.52	1.77	0.00	5	2.34	44.17
1.28	1.240	21.71	0.00	1.240	1.75	4	16.61	19.44	0.00	19.44	62.80	1.78	0.00	5	2.36	42.30
1.30	1.200	21.14	0.00	1.200	1.76	4	16.57	19.77	0.00	19.77	59.70	1.79	0.00	5	2.37	40.75
1.32	1.180	19.30	0.00	1.180	1.64	4	16.46	20.10	0.00	20.10	57.71	1.66	0.00	5	2.36	39.37
1.34	1.190	17.71	0.00	1.190	1.49	4	16.36	20.43	0.00	20.43	57.26	1.51	0.00	5	2.35	38.76
1.36	1.210	17.21	0.00	1.210	1.42	4	16.33	20.75	0.00	20.75	57.30	1.45	0.00	5	2.33	38.70
1.38	1.270	14.58	0.00	1.270	1.15	4	16.16	21.08	0.00	21.08	59.25	1.17	0.00	5	2.28	38.88
1.40	1.300	11.85	0.00	1.300	0.91	4	15.93	21.40	0.00	21.40	59.75	0.93	0.00	5	2.23	38.26
1.42	1.360	9.35	0.00	1.360	0.69	5	15.68	21.71	0.00	21.71	61.64	0.70	0.00	5	2.17	38.23
1.44	1.330	8.94	0.00	1.330	0.67	5	15.62	22.02	0.00	22.02	59.39	0.68	0.00	5	2.17	37.15
1.46	1.270	10.46	0.00	1.270	0.82	4	15.78	22.34	0.00	22.34	55.85	0.84	0.00	5	2.23	36.19
1.48	1.240	11.50	0.00	1.240	0.93	4	15.88	22.66	0.00	22.66	53.73	0.94	0.00	5	2.26	35.62
1.50	1.250	12.52	0.00	1.250	1.00	4	15.98	22.97	0.00	22.97	53.41	1.02	0.00	5	2.28	35.86
1.52	1.250	13.97	0.00	1.250	1.12	4	16.11	23.30	0.00	23.30	52.66	1.14	0.00	5	2.30	35.98
1.54	1.240	14.73	0.00	1.240	1.19	4	16.16	23.62	0.00	23.62	51.50	1.21	0.00	5	2.32	35.68
1.56	1.220	14.45	0.00	1.220	1.18	4	16.14	23.94	0.00	23.94	49.96	1.21	0.00	5	2.33	34.88
1.58	1.190	14.48	0.00	1.190	1.22	4	16.13	24.26	0.00	24.26	48.04	1.24	0.00	5	2.34	33.96
1.60	1.140	14.29	0.00	1.140	1.25	4	16.10	24.59	0.00	24.59	45.37	1.28	0.00	5	2.36	32.57
1.62	1.070	14.42	0.00	1.070	1.35	4	16.08	24.91	0.00	24.91	41.96	1.38	0.00	5	2.40	30.75
1.64	1.070	13.47	0.00	1.070	1.26	4	16.01	25.23	0.00	25.23	41.41	1.29	0.00	5	2.39	30.27
1.66	1.080	12.71	0.00	1.080	1.18	4	15.94	25.55	0.00	25.55	41.27	1.21	0.00	5	2.38	30.05
1.68	1.090	12.36	0.00	1.090	1.13	4	15.91	25.87	0.00	25.87	41.14	1.16	0.00	5	2.37	29.93
1.70	1.130	11.09	0.00	1.130	0.98	4	15.80	26.18	0.00	26.18	42.16	1.00	0.00	5	2.33	30.27
1.72	1.150	10.77	0.00	1.150	0.94	4	15.78	26.50	0.00	26.50	42.40	0.96	0.00	5	2.32	30.36
1.74	1.130	11.25	0.00	1.130	1.00	4	15.82	26.81	0.00	26.81	41.14	1.02	0.00	5	2.34	29.78
1.76	1.110	10.77	0.00	1.110	0.97	4	15.76	27.13	0.00	27.13	39.91	0.99	0.00	5	2.35	29.04
1.78	1.030	10.96	0.00	1.030	1.06	4	15.75	27.44	0.00	27.44	36.53	1.09	0.00	5	2.39	27.26
1.80	0.990	11.03	0.00	0.990	1.11	4	15.75	27.76	0.00	27.76	34.66	1.15	0.00	5	2.42	26.26
1.82	0.950	11.82	0.00	0.950	1.24	4	15.81	28.07	0.00	28.07	32.84	1.28	0.00	5	2.46	25.41
1.84	0.900	13.06	0.00	0.900	1.45	4	15.90	28.39	0.00	28.39	30.70	1.50	0.00	5	2.51	24.42
1.86	0.830	13.18	0.00	0.830	1.59	4	15.88	28.71	0.00	28.71	27.91	1.64	0.00	4	2.55	22.76
1.88	0.830	13.18	0.00	0.830	1.59	4	15.88	29.03	0.00	29.03	27.59	1.65	0.00	4	2.56	22.58
1.90	0.850	9.92	0.00	0.850	1.17	4	15.57	29.34	0.00	29.34	27.97	1.21	0.00	5	2.49	22.23
1.92	0.890	9.32	0.00	0.890	1.05	4	15.51	29.65	0.00	29.65	29.02	1.08	0.00	5	2.46	22.75
1.94	0.940	7.00	0.00	0.940	0.74	4	15.20	29.96	0.00	29.96	30.38	0.77	0.00	5	2.38	23.03
1.96	1.060	3.64	0.00	1.060	0.34	5	14.50	30.25	0.00	30.25	34.04	0.35	0.00	5	2.22	24.15
1.98	1.000	4.21	0.00	1.000	0.42	5	14.64	30.53	0.00	30.53	31.75	0.43	0.00	5	2.27	23.11
2.00	0.950	5.20	0.00	0.950	0.55	4	14.86	30.83	0.00	30.83	29.81	0.57	0.00	5	2.33	22.30

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P16		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	0.920	5.61	0.00	0.920	0.61	4	14.94	31.13	0.00	31.13	28.55	0.63	0.00	5	2.36	21.71
2.04	0.900	6.24	0.00	0.900	0.69	4	15.05	31.43	0.00	31.43	27.64	0.72	0.00	5	2.40	21.36
2.06	0.890	7.03	0.00	0.890	0.79	4	15.19	31.73	0.00	31.73	27.05	0.82	0.00	5	2.42	21.22
2.08	0.880	9.85	0.00	0.880	1.12	4	15.57	32.04	0.00	32.04	26.47	1.16	0.00	5	2.49	21.46
2.10	0.890	10.49	0.00	0.890	1.18	4	15.65	32.35	0.00	32.35	26.51	1.22	0.00	5	2.50	21.62
2.12	0.840	9.51	0.00	0.840	1.13	4	15.51	32.66	0.00	32.66	24.72	1.18	0.00	5	2.52	20.32
2.14	0.820	9.89	0.00	0.820	1.21	4	15.55	32.97	0.00	32.97	23.87	1.26	0.00	5	2.54	19.85
2.16	0.820	10.24	0.00	0.820	1.25	4	15.59	33.29	0.00	33.29	23.64	1.30	0.00	4	2.55	19.77
2.18	0.800	10.01	0.00	0.800	1.25	4	15.55	33.60	0.00	33.60	22.81	1.31	0.00	4	2.56	19.21
2.20	0.790	8.30	0.00	0.790	1.05	4	15.33	33.91	0.00	33.91	22.30	1.10	0.00	5	2.54	18.60
2.22	0.790	7.00	0.00	0.790	0.89	4	15.14	34.21	0.00	34.21	22.09	0.93	0.00	5	2.51	18.25
2.24	0.760	8.43	0.00	0.760	1.11	4	15.33	34.51	0.00	34.51	21.02	1.16	0.00	4	2.56	17.80
2.26	0.690	9.51	0.00	0.690	1.38	3	15.44	34.82	0.00	34.82	18.81	1.45	0.00	4	2.64	16.47
2.28	0.640	7.64	0.00	0.640	1.19	3	15.16	35.13	0.00	35.13	17.22	1.26	0.00	4	2.64	15.10
2.30	0.600	4.88	0.00	0.600	0.81	4	14.62	35.42	0.00	35.42	15.94	0.86	0.00	4	2.60	13.76
2.32	0.590	3.36	0.00	0.590	0.57	4	14.18	35.71	0.00	35.71	15.52	0.61	0.00	5	2.56	13.17
2.34	0.590	2.66	0.00	0.590	0.45	1	13.91	35.99	0.00	35.99	15.39	0.48	0.00	5	2.52	12.93
2.36	0.610	1.77	0.00	0.610	0.29	1	13.73	36.27	0.00	36.27	15.82	0.31	0.00	5	2.46	12.98
2.38	0.630	-0.03	0.00	0.630	0.00	1	19.00	36.59	0.00	36.59	16.22	-0.01	0.00	0	0.00	0.00
2.40	0.630	0.06	0.00	0.630	0.01	1	13.73	36.87	0.00	36.87	16.09	0.01	0.00	0	2.47	13.30
2.42	0.620	0.06	0.00	0.620	0.01	1	13.73	37.14	0.00	37.14	15.69	0.01	0.00	0	2.48	13.02
2.44	0.650	0.06	0.00	0.650	0.01	1	13.73	37.42	0.00	37.42	16.37	0.01	0.00	0	2.47	13.56
2.46	0.710	0.06	0.00	0.710	0.01	1	13.73	37.69	0.00	37.69	17.84	0.01	0.00	0	2.45	14.68
2.48	0.750	0.06	0.00	0.750	0.01	1	13.73	37.97	0.00	37.97	18.75	0.01	0.00	0	2.44	15.40
2.50	0.790	0.06	0.00	0.790	0.01	1	13.73	38.24	0.00	38.24	19.66	0.01	0.00	0	2.43	16.11
2.52	0.770	0.76	0.00	0.770	0.10	1	13.73	38.52	0.00	38.52	18.99	0.10	0.00	5	2.31	14.93
2.54	0.720	2.98	0.00	0.720	0.41	4	14.12	38.80	0.00	38.80	17.56	0.44	0.00	5	2.46	14.62
2.56	0.660	6.02	0.00	0.660	0.91	4	14.89	39.09	0.00	39.09	15.88	0.97	0.00	4	2.62	14.01
2.58	0.590	9.60	0.00	0.590	1.63	3	15.39	39.40	0.00	39.40	13.98	1.74	0.00	4	2.77	13.04
2.60	0.550	13.25	0.00	0.550	2.41	3	15.73	39.71	0.00	39.71	12.85	2.60	0.00	3	2.88	12.48
2.62	0.540	15.24	0.00	0.540	2.82	3	15.88	40.03	0.00	40.03	12.49	3.05	0.00	3	2.93	12.32
2.64	0.530	13.91	0.00	0.530	2.62	3	15.77	40.34	0.00	40.34	12.14	2.84	0.00	3	2.92	11.95
2.66	0.520	11.06	0.00	0.520	2.13	3	15.50	40.65	0.00	40.65	11.79	2.31	0.00	4	2.88	11.47
2.68	0.530	8.78	0.00	0.530	1.66	3	15.24	40.96	0.00	40.96	11.94	1.80	0.00	4	2.83	11.41
2.70	0.540	4.91	0.00	0.540	0.91	3	14.58	41.26	0.00	41.26	12.09	0.98	0.00	4	2.71	11.10
2.72	0.570	0.73	0.00	0.570	0.13	1	13.73	41.53	0.00	41.53	12.72	0.14	0.00	5	2.46	10.76
2.74	0.580	0.03	0.00	0.580	0.01	1	13.73	41.86	0.00	41.86	12.85	0.01	0.00	0	2.62	11.48
2.76	0.610	0.03	0.00	0.610	0.00	1	13.73	42.14	0.00	42.14	13.48	0.01	0.00	0	2.61	12.01
2.78	0.580	0.03	0.00	0.580	0.01	1	13.73	42.41	0.00	42.41	12.68	0.01	0.00	0	2.63	11.35
2.80	0.580	0.03	0.00	0.580	0.01	1	13.73	42.69	0.00	42.69	12.59	0.01	0.00	0	2.63	11.29
2.82	0.570	0.03	0.00	0.570	0.01	1	13.73	42.96	0.00	42.96	12.27	0.01	0.00	0	2.63	11.04
2.84	0.590	0.06	0.00	0.590	0.01	1	13.73	43.24	0.00	43.24	12.65	0.01	0.00	0	2.54	11.04
2.86	0.530	0.03	0.00	0.530	0.01	1	13.73	43.51	0.00	43.51	11.18	0.01	0.00	0	2.66	10.14
2.88	0.530	0.03	0.00	0.530	0.01	1	13.73	43.78	0.00	43.78	11.10	0.01	0.00	0	2.66	10.09
2.90	0.530	0.03	0.00	0.530	0.01	1	13.73	44.11	0.00	44.11	11.01	0.01	0.00	0	2.66	10.03
2.92	0.560	0.00	0.00	0.560	0.00	1	19.00	44.49	0.00	44.49	11.59	0.00	0.00	0	0.00	0.00
2.94	0.570	0.00	0.00	0.570	0.00	1	19.00	44.82	0.00	44.82	11.72	0.00	0.00	0	0.00	0.00
2.96	0.590	0.00	0.00	0.590	0.00	1	19.00	45.20	0.00	45.20	12.05	0.00	0.00	0	0.00	0.00
2.98	0.600	0.00	0.00	0.600	0.00	1	19.00	45.58	0.00	45.58	12.16	0.00	0.00	0	0.00	0.00
3.00	0.640	0.00	0.00	0.640	0.00	1	19.00	45.96	0.00	45.96	12.93	0.00	0.00	0	0.00	0.00
3.02	0.660	0.00	0.00	0.660	0.00	1	19.00	46.34	0.00	46.34	13.24	0.00	0.00	0	0.00	0.00
3.04	0.680	0.00	0.00	0.680	0.00	1	19.00	46.72	0.00	46.72	13.55	0.00	0.00	0	0.00	0.00
3.06	0.710	0.03	0.00	0.710	0.00	1	13.73	47.05	0.00	47.05	14.09	0.00	0.00	0	2.62	12.78
3.08	0.720	0.70	0.00	0.720	0.10	1	13.73	47.32	0.00	47.32	14.22	0.10	0.00	5	2.40	12.12
3.10	0.730	1.77	0.00	0.730	0.24	1	13.73	47.60	0.00	47.60	14.34	0.26	0.00	5	2.46	12.45

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P16	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	0.790	2.50	0.00	0.790	0.32	1	13.95	47.87	0.00	47.87	15.50	0.34	0.00	5	2.46	13.47
3.14	0.830	3.26	0.00	0.830	0.39	4	14.28	48.16	0.00	48.16	16.23	0.42	0.00	5	2.47	14.17
3.16	0.820	4.72	0.00	0.820	0.58	4	14.70	48.45	0.00	48.45	15.93	0.61	0.00	5	2.53	14.15
3.18	0.810	5.39	0.00	0.810	0.67	4	14.84	48.75	0.00	48.75	15.62	0.71	0.00	5	2.56	14.01
3.20	0.780	5.86	0.00	0.780	0.75	4	14.93	49.04	0.00	49.04	14.90	0.80	0.00	4	2.60	13.52
3.22	0.830	8.27	0.00	0.830	1.00	4	15.35	49.35	0.00	49.35	15.82	1.06	0.00	4	2.62	14.47
3.24	0.890	8.33	0.00	0.890	0.94	4	15.38	49.65	0.00	49.65	16.92	0.99	0.00	4	2.59	15.35
3.26	1.010	9.19	0.00	1.010	0.91	4	15.54	49.96	0.00	49.96	19.21	0.96	0.00	5	2.54	17.21
3.28	0.960	8.97	0.00	0.960	0.93	4	15.50	50.27	0.00	50.27	18.10	0.99	0.00	5	2.56	16.34
3.30	0.930	10.17	0.00	0.930	1.09	4	15.63	50.59	0.00	50.59	17.38	1.16	0.00	4	2.61	15.89
3.32	1.120	9.25	0.00	1.120	0.83	4	15.59	50.90	0.00	50.90	21.00	0.87	0.00	5	2.49	18.63
3.34	1.080	7.99	0.00	1.080	0.74	4	15.41	51.21	0.00	51.21	20.09	0.78	0.00	5	2.48	17.82
3.36	1.200	8.49	0.00	1.200	0.71	4	15.52	51.52	0.00	51.52	22.29	0.74	0.00	5	2.44	19.57
3.38	1.280	8.14	0.00	1.280	0.64	5	15.49	51.83	0.00	51.83	23.70	0.66	0.00	5	2.39	20.61
3.40	1.390	9.70	0.00	1.390	0.70	5	15.73	52.14	0.00	52.14	25.66	0.73	0.00	5	2.38	22.28
3.42	1.720	11.60	0.00	1.720	0.67	5	16.02	52.46	0.00	52.46	31.79	0.70	0.00	5	2.30	27.08
3.44	2.240	13.02	0.00	2.240	0.58	5	16.25	52.79	0.00	52.79	41.44	0.60	0.00	5	2.18	34.32
3.46	2.900	11.63	0.00	2.900	0.40	5	16.22	53.11	0.00	53.11	53.60	0.41	0.00	6	2.02	42.82
3.48	4.170	13.37	0.00	4.170	0.32	6	16.52	53.44	0.00	53.44	77.04	0.32	0.00	6	1.85	59.23
3.50	4.280	10.96	0.00	4.280	0.26	6	16.30	53.76	0.00	53.76	78.61	0.26	0.00	6	1.81	60.00
3.52	3.780	14.20	0.00	3.780	0.38	6	16.55	54.09	0.00	54.09	68.88	0.38	0.00	6	1.91	54.05
3.54	3.420	18.70	0.00	3.420	0.55	5	16.83	54.43	0.00	54.43	61.83	0.56	0.00	6	2.02	49.85
3.56	3.100	25.54	0.00	3.100	0.82	5	17.15	54.77	0.00	54.77	55.60	0.84	0.00	5	2.14	46.17
3.58	2.860	32.07	0.00	2.860	1.12	5	17.38	55.12	0.00	55.12	50.89	1.14	0.00	5	2.24	43.30
3.60	2.500	36.69	0.00	2.500	1.47	5	17.48	55.47	0.00	55.47	44.07	1.50	0.00	5	2.35	38.51
3.62	2.310	42.30	0.00	2.310	1.83	4	17.62	55.82	0.00	55.82	40.38	1.88	0.00	5	2.43	35.99
3.64	2.020	49.34	0.00	2.020	2.44	4	17.74	56.17	0.00	56.17	34.96	2.51	0.00	4	2.55	32.03
3.66	1.850	54.28	0.00	1.850	2.93	4	17.82	56.53	0.00	56.53	31.73	3.03	0.00	4	2.62	29.61
3.68	1.830	57.67	0.00	1.830	3.15	4	17.88	56.89	0.00	56.89	31.17	3.25	0.00	4	2.65	29.26
3.70	1.980	60.52	0.00	1.980	3.06	4	17.97	57.25	0.00	57.25	33.59	3.15	0.00	4	2.62	31.35
3.72	2.410	56.53	0.00	2.410	2.35	4	17.97	57.61	0.00	57.61	40.84	2.40	0.00	4	2.49	37.09
3.74	2.950	48.42	0.00	2.950	1.64	5	17.87	57.96	0.00	57.96	49.89	1.67	0.00	5	2.33	43.92
3.76	3.170	46.77	0.00	3.170	1.48	5	17.85	58.32	0.00	58.32	53.36	1.50	0.00	5	2.28	46.57
3.78	3.350	50.83	0.00	3.350	1.52	5	17.97	58.68	0.00	58.68	56.09	1.54	0.00	5	2.27	48.94
3.80	3.340	65.88	0.00	3.340	1.97	5	18.27	59.04	0.00	59.04	55.57	2.01	0.00	5	2.34	49.26
3.82	3.330	86.29	0.00	3.330	2.59	4	18.58	59.41	0.00	59.41	55.05	2.64	0.00	5	2.42	49.62
3.84	3.320	102.10	0.00	3.320	3.08	4	18.77	59.79	0.00	59.79	54.53	3.13	0.00	4	2.47	49.71
3.86	3.430	109.89	0.00	3.430	3.20	4	18.87	60.16	0.00	60.16	56.01	3.26	0.00	4	2.47	51.16
3.88	3.430	109.89	0.00	3.430	3.20	4	18.87	60.54	0.00	60.54	55.66	3.26	0.00	4	2.47	50.91
3.90	4.140	113.38	0.00	4.140	2.74	4	18.97	60.92	0.00	60.92	66.96	2.78	0.00	5	2.37	60.17
3.92	3.960	121.36	0.00	3.960	3.06	4	19.04	61.30	0.00	61.30	63.60	3.11	0.00	5	2.42	57.74
3.94	3.430	132.07	0.00	3.430	3.85	4	19.08	61.68	0.00	61.68	54.61	3.92	0.00	4	2.53	50.68
3.96	3.100	146.90	0.00	3.100	4.74	3	19.16	62.06	0.00	62.06	48.95	4.84	0.00	4	2.62	46.25
3.98	3.040	146.46	0.00	3.040	4.82	3	19.15	62.45	0.00	62.45	47.68	4.92	0.00	4	2.64	45.19
4.00	2.890	141.77	0.00	2.890	4.91	3	19.09	62.83	0.00	62.83	45.00	5.01	0.00	4	2.66	42.85
4.02	2.800	134.39	0.00	2.800	4.80	3	19.02	63.21	0.00	63.21	43.30	4.91	0.00	4	2.66	41.29
4.04	2.860	124.50	0.00	2.860	4.35	4	18.94	63.59	0.00	63.59	43.98	4.45	0.00	4	2.63	41.72
4.06	2.870	119.21	0.00	2.870	4.15	4	18.89	63.97	0.00	63.97	43.87	4.25	0.00	4	2.62	41.56
4.08	2.720	118.16	0.00	2.720	4.34	3	18.86	64.34	0.00	64.34	41.27	4.45	0.00	4	2.65	39.34
4.10	2.370	107.61	0.00	2.370	4.54	3	18.70	64.72	0.00	64.72	35.62	4.67	0.00	4	2.70	34.29
4.12	2.100	99.50	0.00	2.100	4.74	3	18.56	65.09	0.00	65.09	31.26	4.89	0.00	3	2.76	30.37
4.14	1.830	95.54	0.00	1.830	5.22	3	18.46	65.46	0.00	65.46	26.96	5.41	0.00	3	2.83	26.51
4.16	1.650	89.61	0.00	1.650	5.43	3	18.35	65.83	0.00	65.83	24.07	5.66	0.00	3	2.88	23.85
4.18	1.450	87.33	0.00	1.450	6.02	3	18.27	66.19	0.00	66.19	20.91	6.31	0.00	3	2.95	20.91
4.20	1.270	85.18	0.00	1.270	6.71	3	18.19	66.56	0.00	66.56	18.08	7.08	0.00	3	3.03	18.08

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P16	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	1.230	77.13	0.00	1.230	6.27	3	18.07	66.92	0.00	66.92	17.38	6.63	0.00	3	3.02	17.38
4.24	1.190	70.54	0.00	1.190	5.93	3	17.95	67.28	0.00	67.28	16.69	6.28	0.00	3	3.02	16.69
4.26	1.130	62.01	0.00	1.130	5.49	3	17.78	67.64	0.00	67.64	15.71	5.84	0.00	3	3.02	15.71
4.28	1.050	52.66	0.00	1.050	5.02	3	17.57	67.99	0.00	67.99	14.44	5.36	0.00	3	3.02	14.44
4.30	0.990	45.31	0.00	0.990	4.58	3	17.37	68.34	0.00	68.34	13.49	4.92	0.00	3	3.02	13.49
4.32	0.910	41.95	0.00	0.910	4.61	3	17.25	68.68	0.00	68.68	12.25	4.99	0.00	3	3.06	12.25
4.34	0.830	40.08	0.00	0.830	4.83	3	17.16	69.03	0.00	69.03	11.02	5.27	0.00	3	3.11	11.02
4.36	0.870	41.76	0.00	0.870	4.80	3	17.23	69.37	0.00	69.37	11.54	5.22	0.00	3	3.09	11.54
4.38	1.220	41.48	0.00	1.220	3.40	3	17.35	69.72	0.00	69.72	16.50	3.61	0.00	3	2.87	16.38
4.40	1.560	41.19	0.00	1.560	2.64	4	17.44	70.06	0.00	70.06	21.27	2.76	0.00	4	2.72	20.68
4.42	1.840	40.12	0.00	1.840	2.18	4	17.47	70.41	0.00	70.41	25.13	2.27	0.00	4	2.62	24.11
4.44	1.850	36.47	0.00	1.850	1.97	4	17.36	70.76	0.00	70.76	25.14	2.05	0.00	4	2.59	24.06
4.46	1.770	36.12	0.00	1.770	2.04	4	17.33	71.11	0.00	71.11	23.89	2.13	0.00	4	2.62	22.95
4.48	1.870	41.99	0.00	1.870	2.25	4	17.53	71.46	0.00	71.46	25.17	2.33	0.00	4	2.62	24.21
4.50	2.200	51.18	0.00	2.200	2.33	4	17.82	71.81	0.00	71.81	29.64	2.40	0.00	4	2.58	28.36
4.52	3.120	54.88	0.00	3.120	1.76	5	18.03	72.17	0.00	72.17	42.23	1.80	0.00	5	2.38	39.50
4.54	4.100	58.21	0.00	4.100	1.42	5	18.20	72.54	0.00	72.54	55.52	1.45	0.00	5	2.24	51.06
4.56	5.650	65.40	0.00	5.650	1.16	5	18.46	72.90	0.00	72.90	76.50	1.17	0.00	5	2.08	69.11
4.58	6.410	80.33	0.00	6.410	1.25	5	18.75	73.28	0.00	73.28	86.47	1.27	0.00	5	2.06	78.07
4.60	6.860	97.63	0.00	6.860	1.42	5	19.00	73.66	0.00	73.66	92.13	1.44	0.00	5	2.07	83.46
4.62	6.280	121.43	0.00	6.280	1.93	5	19.21	74.04	0.00	74.04	83.82	1.96	0.00	5	2.19	77.07
4.64	6.090	141.93	0.00	6.090	2.33	5	19.38	74.43	0.00	74.43	80.82	2.36	0.00	5	2.25	74.99
4.66	6.300	172.03	0.00	6.300	2.73	5	19.62	74.82	0.00	74.82	83.20	2.76	0.00	5	2.29	77.63
4.68	7.110	197.13	0.00	7.110	2.77	5	19.82	75.22	0.00	75.22	93.53	2.80	0.00	5	2.26	87.10
4.70	7.470	207.21	0.00	7.470	2.77	5	19.89	75.61	0.00	75.61	97.79	2.80	0.00	5	2.25	91.07
4.72	7.660	207.59	0.00	7.660	2.71	5	19.91	76.01	0.00	76.01	99.77	2.74	0.00	5	2.24	92.92
4.74	7.660	210.98	0.00	7.660	2.75	5	19.92	76.41	0.00	76.41	99.25	2.78	0.00	5	2.24	92.62
4.76	7.740	212.59	0.00	7.740	2.75	5	19.94	76.81	0.00	76.81	99.77	2.77	0.00	5	2.24	93.21
4.78	7.760	212.72	0.00	7.760	2.74	5	19.94	77.21	0.00	77.21	99.51	2.77	0.00	5	2.24	93.09
4.80	7.780	211.04	0.00	7.780	2.71	5	19.93	77.61	0.00	77.61	99.25	2.74	0.00	5	2.24	92.95
4.82	7.930	203.94	0.00	7.930	2.57	5	19.90	78.00	0.00	78.00	100.66	2.60	0.00	5	2.22	94.21
4.84	7.540	204.77	0.00	7.540	2.72	5	19.88	78.40	0.00	78.40	95.17	2.74	0.00	5	2.25	89.47
4.86	7.060	204.96	0.00	7.060	2.90	5	19.86	78.80	0.00	78.80	88.60	2.94	0.00	5	2.29	83.71
4.88	7.060	204.96	0.00	7.060	2.90	5	19.86	79.20	0.00	79.20	88.15	2.94	0.00	5	2.29	83.40
4.90	5.480	225.55	0.00	5.480	4.12	4	19.87	79.59	0.00	79.59	67.85	4.18	0.00	4	2.48	65.31
4.92	4.890	222.73	0.00	4.890	4.55	4	19.82	79.99	0.00	79.99	60.13	4.63	0.00	4	2.54	58.26
4.94	4.380	225.14	0.00	4.380	5.14	4	19.79	80.39	0.00	80.39	53.49	5.24	0.00	4	2.61	52.17
4.96	4.340	217.41	0.00	4.340	5.01	4	19.74	80.78	0.00	80.78	52.73	5.10	0.00	4	2.61	51.44
4.98	4.040	218.30	0.00	4.040	5.40	3	19.72	81.18	0.00	81.18	48.77	5.51	0.00	4	2.66	47.79
5.00	4.050	197.38	0.00	4.050	4.87	4	19.60	81.57	0.00	81.57	48.65	4.97	0.00	4	2.62	47.58
5.02	4.210	185.50	0.00	4.210	4.41	4	19.55	81.96	0.00	81.96	50.37	4.49	0.00	4	2.58	49.13
5.04	4.590	166.14	0.00	4.590	3.62	4	19.45	82.35	0.00	82.35	54.74	3.69	0.00	4	2.50	53.09
5.06	4.650	159.86	0.00	4.650	3.44	4	19.41	82.74	0.00	82.74	55.20	3.50	0.00	4	2.48	53.51
5.08	4.650	143.29	0.00	4.650	3.08	4	19.29	83.12	0.00	83.12	54.94	3.14	0.00	4	2.45	53.18
5.10	4.810	138.09	0.00	4.810	2.87	4	19.26	83.51	0.00	83.51	56.60	2.92	0.00	5	2.42	54.72
5.12	5.100	149.60	0.00	5.100	2.93	5	19.37	83.90	0.00	83.90	59.79	2.98	0.00	5	2.41	57.81
5.14	5.660	159.55	0.00	5.660	2.82	5	19.49	84.29	0.00	84.29	66.15	2.86	0.00	5	2.36	63.85
5.16	6.150	166.77	0.00	6.150	2.71	5	19.57	84.68	0.00	84.68	71.63	2.75	0.00	5	2.33	69.04
5.18	6.050	176.06	0.00	6.050	2.91	5	19.63	85.07	0.00	85.07	70.12	2.95	0.00	5	2.35	67.77
5.20	5.650	186.29	0.00	5.650	3.30	4	19.66	85.46	0.00	85.46	65.11	3.35	0.00	4	2.41	63.22
5.22	5.320	193.83	0.00	5.320	3.64	4	19.69	85.86	0.00	85.86	60.96	3.70	0.00	4	2.46	59.42
5.24	4.970	207.08	0.00	4.970	4.17	4	19.74	86.25	0.00	86.25	56.62	4.24	0.00	4	2.53	55.43
5.26	5.240	207.21	0.00	5.240	3.95	4	19.76	86.64	0.00	86.64	59.48	4.02	0.00	4	2.50	58.17
5.28	6.020	221.53	0.00	6.020	3.68	4	19.89	87.04	0.00	87.04	68.16	3.73	0.00	4	2.43	66.49
5.30	6.920	215.38	0.00	6.920	3.11	5	19.91	87.44	0.00	87.44	78.14	3.15	0.00	5	2.34	75.92

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P16	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	7.860	200.90	0.00	7.860	2.56	5	19.88	87.84	0.00	87.84	88.48	2.58	0.00	5	2.24	85.64
5.34	8.740	194.75	0.00	8.740	2.23	5	19.88	88.24	0.00	88.24	98.05	2.25	0.00	5	2.17	94.68
5.36	8.640	220.93	0.00	8.640	2.56	5	20.02	88.64	0.00	88.64	96.48	2.58	0.00	5	2.22	93.49
5.38	8.610	224.79	0.00	8.610	2.61	5	20.04	89.04	0.00	89.04	95.70	2.64	0.00	5	2.22	92.88
5.40	8.570	239.84	0.00	8.570	2.80	5	20.12	89.44	0.00	89.44	94.82	2.83	0.00	5	2.25	92.23
5.42	8.480	263.48	0.00	8.480	3.11	5	20.22	89.84	0.00	89.84	93.39	3.14	0.00	5	2.29	91.08
5.44	8.560	264.15	0.00	8.560	3.09	5	20.23	90.25	0.00	90.25	93.85	3.12	0.00	5	2.28	91.62
5.46	8.610	263.48	0.00	8.610	3.06	5	20.23	90.65	0.00	90.65	93.98	3.09	0.00	5	2.28	91.83
5.48	8.800	287.28	0.00	8.800	3.26	5	20.33	91.06	0.00	91.06	95.64	3.30	0.00	5	2.30	93.60
5.50	9.490	279.52	0.00	9.490	2.95	5	20.33	91.46	0.00	91.46	102.76	2.97	0.00	5	2.24	100.49
5.52	10.020	284.65	0.00	10.020	2.84	5	20.37	91.87	0.00	91.87	108.07	2.87	0.00	5	2.21	105.71
5.54	10.170	289.31	0.00	10.170	2.84	5	20.40	92.28	0.00	92.28	109.21	2.87	0.00	5	2.21	106.94
5.56	9.840	316.27	0.00	9.840	3.21	5	20.49	92.69	0.00	92.69	105.16	3.24	0.00	5	2.26	103.25
5.58	9.730	327.33	0.00	9.730	3.36	5	20.52	93.10	0.00	93.10	103.51	3.40	0.00	5	2.28	101.79
5.60	9.780	334.53	0.00	9.780	3.42	5	20.55	93.51	0.00	93.51	103.59	3.45	0.00	5	2.29	101.99
5.62	10.040	337.98	0.00	10.040	3.37	5	20.57	93.92	0.00	93.92	105.90	3.40	0.00	5	2.27	104.34
5.64	10.080	355.22	0.00	10.080	3.52	5	20.63	94.33	0.00	94.33	105.86	3.56	0.00	5	2.29	104.44
5.66	10.310	361.91	0.00	10.310	3.51	5	20.66	94.74	0.00	94.74	107.82	3.54	0.00	5	2.28	106.47
5.68	11.080	360.80	0.00	11.080	3.26	5	20.68	95.16	0.00	95.16	115.44	3.28	0.00	5	2.24	114.02
5.70	11.380	372.05	0.00	11.380	3.27	5	20.73	95.57	0.00	95.57	118.07	3.30	0.00	5	2.23	116.74
5.72	11.690	367.64	0.00	11.690	3.14	5	20.73	95.99	0.00	95.99	120.79	3.17	0.00	5	2.21	119.52
5.74	11.960	363.43	0.00	11.960	3.04	5	20.72	96.40	0.00	96.40	123.06	3.06	0.00	5	2.20	121.88
5.76	11.650	379.62	0.00	11.650	3.26	5	20.76	96.82	0.00	96.82	119.33	3.29	0.00	5	2.23	118.36
5.78	11.220	380.09	0.00	11.220	3.39	5	20.75	97.23	0.00	97.23	114.39	3.42	0.00	5	2.25	113.62
5.80	11.180	369.45	0.00	11.180	3.30	5	20.71	97.65	0.00	97.65	113.50	3.33	0.00	5	2.25	112.83
5.82	10.850	363.74	0.00	10.850	3.35	5	20.68	98.06	0.00	98.06	109.65	3.38	0.00	5	2.26	109.13
5.84	10.730	353.32	0.00	10.730	3.29	5	20.65	98.47	0.00	98.47	107.96	3.32	0.00	5	2.26	107.57
5.86	10.620	343.24	0.00	10.620	3.23	5	20.61	98.89	0.00	98.89	106.40	3.26	0.00	5	2.26	106.11
5.88	10.620	343.24	0.00	10.620	3.23	5	20.61	99.30	0.00	99.30	105.95	3.26	0.00	5	2.26	105.77
5.90	11.330	354.87	0.00	11.330	3.13	5	20.67	99.71	0.00	99.71	112.63	3.16	0.00	5	2.23	112.55
5.92	10.770	359.88	0.00	10.770	3.34	5	20.67	100.12	0.00	100.12	106.57	3.37	0.00	5	2.27	106.60
5.94	10.350	360.67	0.00	10.350	3.48	5	20.66	100.54	0.00	100.54	101.95	3.52	0.00	5	2.29	102.07
5.96	10.270	346.09	0.00	10.270	3.37	5	20.61	100.95	0.00	100.95	100.73	3.40	0.00	5	2.28	100.95
5.98	10.480	325.21	0.00	10.480	3.10	5	20.54	101.36	0.00	101.36	102.39	3.13	0.00	5	2.25	102.73
6.00	10.780	307.05	0.00	10.780	2.85	5	20.49	101.77	0.00	101.77	104.92	2.88	0.00	5	2.22	105.39
6.02	10.580	295.52	0.00	10.580	2.79	5	20.44	102.18	0.00	102.18	102.54	2.82	0.00	5	2.22	103.11
6.04	10.580	287.34	0.00	10.580	2.72	5	20.40	102.59	0.00	102.59	102.13	2.74	0.00	5	2.21	102.80
6.06	10.320	290.73	0.00	10.320	2.82	5	20.41	103.00	0.00	103.00	99.20	2.85	0.00	5	2.23	99.93
6.08	9.860	287.60	0.00	9.860	2.92	5	20.38	103.40	0.00	103.40	94.35	2.95	0.00	5	2.25	95.11
6.10	9.570	279.87	0.00	9.570	2.92	5	20.34	103.81	0.00	103.81	91.19	2.96	0.00	5	2.26	91.99
6.12	9.190	277.96	0.00	9.190	3.02	5	20.31	104.22	0.00	104.22	87.18	3.06	0.00	5	2.29	88.00
6.14	8.600	278.31	0.00	8.600	3.24	5	20.29	104.62	0.00	104.62	81.20	3.28	0.00	5	2.33	81.97
6.16	7.850	279.96	0.00	7.850	3.57	5	20.26	105.03	0.00	105.03	73.74	3.61	0.00	4	2.39	74.42
6.18	7.540	280.85	0.00	7.540	3.72	4	20.25	105.43	0.00	105.43	70.51	3.78	0.00	4	2.42	71.17
6.20	7.210	290.16	0.00	7.210	4.02	4	20.27	105.84	0.00	105.84	67.12	4.08	0.00	4	2.46	67.74
6.22	6.810	301.98	0.00	6.810	4.43	4	20.29	106.24	0.00	106.24	63.10	4.50	0.00	4	2.51	63.64
6.24	6.520	308.99	0.00	6.520	4.74	4	20.30	106.65	0.00	106.65	60.13	4.82	0.00	4	2.54	60.63
6.26	6.840	286.96	0.00	6.840	4.20	4	20.24	107.06	0.00	107.06	62.89	4.26	0.00	4	2.49	63.53
6.28	7.130	283.26	0.00	7.130	3.97	4	20.24	107.46	0.00	107.46	65.35	4.03	0.00	4	2.46	66.10
6.30	7.640	278.88	0.00	7.640	3.65	4	20.24	107.86	0.00	107.86	69.83	3.70	0.00	4	2.41	70.77
6.32	8.070	269.60	0.00	8.070	3.34	5	20.23	108.27	0.00	108.27	73.54	3.39	0.00	5	2.37	74.67
6.34	8.240	255.50	0.00	8.240	3.10	5	20.17	108.67	0.00	108.67	74.82	3.14	0.00	5	2.34	76.11
6.36	8.450	243.77	0.00	8.450	2.88	5	20.13	109.08	0.00	109.08	76.47	2.92	0.00	5	2.31	77.91
6.38	8.370	249.13	0.00	8.370	2.98	5	20.15	109.48	0.00	109.48	75.45	3.02	0.00	5	2.32	76.90
6.40	8.170	268.46	0.00	8.170	3.29	5	20.23	109.88	0.00	109.88	73.35	3.33	0.00	5	2.36	74.71

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P16		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	7.930	281.96	0.00	7.930	3.56	5	20.27	110.29	0.00	110.29	70.90	3.61	0.00	4	2.40	72.17
6.44	7.630	290.20	0.00	7.630	3.80	4	20.29	110.69	0.00	110.69	67.93	3.86	0.00	4	2.43	69.09
6.46	7.170	297.14	0.00	7.170	4.14	4	20.29	111.10	0.00	111.10	63.54	4.21	0.00	4	2.48	64.54
6.48	7.040	299.26	0.00	7.040	4.25	4	20.29	111.51	0.00	111.51	62.14	4.32	0.00	4	2.50	63.11
6.50	7.000	304.01	0.00	7.000	4.34	4	20.31	111.91	0.00	111.91	61.55	4.41	0.00	4	2.51	62.52
6.52	6.920	295.46	0.00	6.920	4.27	4	20.27	112.32	0.00	112.32	60.61	4.34	0.00	4	2.50	61.60
6.54	7.010	272.55	0.00	7.010	3.89	4	20.19	112.72	0.00	112.72	61.19	3.95	0.00	4	2.47	62.31
6.56	7.040	262.63	0.00	7.040	3.73	4	20.14	113.13	0.00	113.13	61.23	3.79	0.00	4	2.46	62.43
6.58	6.680	256.42	0.00	6.680	3.84	4	20.10	113.53	0.00	113.53	57.84	3.90	0.00	4	2.48	58.93
6.60	6.310	248.53	0.00	6.310	3.94	4	20.04	113.93	0.00	113.93	54.39	4.01	0.00	4	2.51	55.36
6.62	5.920	238.20	0.00	5.920	4.02	4	19.97	114.33	0.00	114.33	50.78	4.10	0.00	4	2.54	51.64
6.64	5.640	241.84	0.00	5.640	4.29	4	19.96	114.73	0.00	114.73	48.16	4.38	0.00	4	2.58	48.90
6.66	5.450	238.45	0.00	5.450	4.38	4	19.94	115.13	0.00	115.13	46.34	4.47	0.00	4	2.59	47.02
6.68	5.450	232.52	0.00	5.450	4.27	4	19.91	115.52	0.00	115.52	46.18	4.36	0.00	4	2.59	46.89
6.70	5.300	227.36	0.00	5.300	4.29	4	19.87	115.92	0.00	115.92	44.72	4.39	0.00	4	2.60	45.40
6.72	5.030	215.03	0.00	5.030	4.27	4	19.79	116.32	0.00	116.32	42.24	4.38	0.00	4	2.62	42.86
6.74	4.700	208.54	0.00	4.700	4.44	4	19.72	116.71	0.00	116.71	39.27	4.55	0.00	4	2.65	39.77
6.76	4.470	203.05	0.00	4.470	4.54	4	19.67	117.11	0.00	117.11	37.17	4.66	0.00	4	2.68	37.60
6.78	4.320	204.20	0.00	4.320	4.73	4	19.67	117.50	0.00	117.50	35.77	4.86	0.00	4	2.70	36.13
6.80	4.380	198.75	0.00	4.380	4.54	4	19.64	117.89	0.00	117.89	36.15	4.66	0.00	4	2.68	36.56
6.82	4.580	184.83	0.00	4.580	4.04	4	19.58	118.29	0.00	118.29	37.72	4.14	0.00	4	2.63	38.28
6.84	4.700	177.55	0.00	4.700	3.78	4	19.54	118.68	0.00	118.68	38.60	3.88	0.00	4	2.61	39.26
6.86	4.940	171.46	0.00	4.940	3.47	4	19.52	119.07	0.00	119.07	40.49	3.56	0.00	4	2.56	41.30
6.88	4.940	171.46	0.00	4.940	3.47	4	19.52	119.46	0.00	119.46	40.35	3.56	0.00	4	2.56	41.17
6.90	5.590	167.28	0.00	5.590	2.99	5	19.54	119.85	0.00	119.85	45.64	3.06	0.00	4	2.48	46.86
6.92	5.630	166.30	0.00	5.630	2.95	5	19.53	120.24	0.00	120.24	45.82	3.02	0.00	4	2.47	47.09
6.94	5.690	159.55	0.00	5.690	2.80	5	19.49	120.63	0.00	120.63	46.17	2.86	0.00	4	2.46	47.52
6.96	5.740	160.21	0.00	5.740	2.79	5	19.50	121.02	0.00	121.02	46.43	2.85	0.00	4	2.45	47.83
6.98	5.660	167.56	0.00	5.660	2.96	5	19.54	121.41	0.00	121.41	45.62	3.03	0.00	4	2.48	46.93
7.00	5.640	164.55	0.00	5.640	2.92	5	19.52	121.80	0.00	121.80	45.31	2.98	0.00	4	2.47	46.64
7.02	5.910	168.86	0.00	5.910	2.86	5	19.57	122.19	0.00	122.19	47.37	2.92	0.00	4	2.45	48.86
7.04	6.090	168.80	0.00	6.090	2.77	5	19.58	122.58	0.00	122.58	48.68	2.83	0.00	5	2.43	50.31
7.06	6.120	175.74	0.00	6.120	2.87	5	19.63	122.97	0.00	122.97	48.77	2.93	0.00	5	2.44	50.38
7.08	6.170	178.50	0.00	6.170	2.89	5	19.65	123.37	0.00	123.37	49.01	2.95	0.00	5	2.44	50.66
7.10	6.340	181.00	0.00	6.340	2.85	5	19.68	123.76	0.00	123.76	50.23	2.91	0.00	5	2.43	51.99
7.12	6.770	176.12	0.00	6.770	2.60	5	19.67	124.15	0.00	124.15	53.53	2.65	0.00	5	2.38	55.66
7.14	7.020	180.71	0.00	7.020	2.57	5	19.71	124.55	0.00	124.55	55.36	2.62	0.00	5	2.37	57.67
7.16	7.390	184.42	0.00	7.390	2.50	5	19.76	124.94	0.00	124.94	58.15	2.54	0.00	5	2.34	60.73
7.18	7.720	186.48	0.00	7.720	2.42	5	19.79	125.34	0.00	125.34	60.59	2.46	0.00	5	2.32	63.45
7.20	7.180	197.98	0.00	7.180	2.76	5	19.83	125.73	0.00	125.73	56.10	2.81	0.00	5	2.38	58.45
7.22	6.860	203.78	0.00	6.860	2.97	5	19.84	126.13	0.00	126.13	53.39	3.03	0.00	5	2.42	55.45
7.24	6.640	191.11	0.00	6.640	2.88	5	19.76	126.53	0.00	126.53	51.48	2.93	0.00	5	2.43	53.49
7.26	5.860	199.73	0.00	5.860	3.41	4	19.76	126.92	0.00	126.92	45.17	3.48	0.00	4	2.52	46.55
7.28	5.400	196.78	0.00	5.400	3.64	4	19.71	127.32	0.00	127.32	41.41	3.73	0.00	4	2.57	42.50
7.30	4.910	210.72	0.00	4.910	4.29	4	19.75	127.71	0.00	127.71	37.45	4.41	0.00	4	2.65	38.14
7.32	4.770	212.85	0.00	4.770	4.46	4	19.75	128.11	0.00	128.11	36.23	4.59	0.00	4	2.68	36.83
7.34	4.750	191.01	0.00	4.750	4.02	4	19.63	128.50	0.00	128.50	35.97	4.13	0.00	4	2.65	36.67
7.36	4.770	190.03	0.00	4.770	3.98	4	19.62	128.89	0.00	128.89	36.01	4.09	0.00	4	2.64	36.73
7.38	4.970	184.49	0.00	4.970	3.71	4	19.60	129.28	0.00	129.28	37.44	3.81	0.00	4	2.61	38.33
7.40	5.180	179.92	0.00	5.180	3.47	4	19.59	129.68	0.00	129.68	38.95	3.56	0.00	4	2.57	40.01
7.42	5.510	172.13	0.00	5.510	3.12	4	19.56	130.07	0.00	130.07	41.36	3.20	0.00	4	2.52	42.73
7.44	5.800	162.81	0.00	5.800	2.81	5	19.52	130.46	0.00	130.46	43.46	2.87	0.00	4	2.47	45.14
7.46	6.060	156.28	0.00	6.060	2.58	5	19.49	130.85	0.00	130.85	45.31	2.64	0.00	5	2.43	47.28
7.48	6.220	156.25	0.00	6.220	2.51	5	19.50	131.24	0.00	131.24	46.39	2.57	0.00	5	2.42	48.51
7.50	6.400	159.55	0.00	6.400	2.49	5	19.53	131.63	0.00	131.63	47.62	2.55	0.00	5	2.40	49.87

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P16		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	6.540	161.32	0.00	6.540	2.47	5	19.56	132.02	0.00	132.02	48.54	2.52	0.00	5	2.40	50.90
7.54	6.620	167.66	0.00	6.620	2.53	5	19.60	132.41	0.00	132.41	49.00	2.58	0.00	5	2.40	51.38
7.56	6.560	176.91	0.00	6.560	2.70	5	19.66	132.80	0.00	132.80	48.40	2.75	0.00	5	2.42	50.65
7.58	6.420	182.71	0.00	6.420	2.85	5	19.69	133.20	0.00	133.20	47.20	2.91	0.00	4	2.45	49.28
7.60	6.370	182.39	0.00	6.370	2.86	5	19.69	133.59	0.00	133.59	46.68	2.92	0.00	4	2.45	48.73
7.62	6.320	185.09	0.00	6.320	2.93	5	19.70	133.99	0.00	133.99	46.17	2.99	0.00	4	2.46	48.16
7.64	6.250	184.49	0.00	6.250	2.95	5	19.69	134.38	0.00	134.38	45.51	3.02	0.00	4	2.47	47.45
7.66	6.180	183.54	0.00	6.180	2.97	5	19.68	134.77	0.00	134.77	44.85	3.04	0.00	4	2.48	46.75
7.68	6.210	176.41	0.00	6.210	2.84	5	19.64	135.17	0.00	135.17	44.94	2.90	0.00	4	2.46	46.93
7.70	6.200	173.81	0.00	6.200	2.80	5	19.62	135.56	0.00	135.56	44.74	2.87	0.00	4	2.46	46.75
7.72	6.150	172.29	0.00	6.150	2.80	5	19.61	135.95	0.00	135.95	44.24	2.86	0.00	4	2.46	46.22
7.74	6.090	168.83	0.00	6.090	2.77	5	19.58	136.34	0.00	136.34	43.67	2.84	0.00	4	2.47	45.64
7.76	6.180	166.93	0.00	6.180	2.70	5	19.57	136.73	0.00	136.73	44.20	2.76	0.00	5	2.45	46.28
7.78	6.280	170.51	0.00	6.280	2.72	5	19.60	137.13	0.00	137.13	44.80	2.78	0.00	5	2.45	46.94
7.80	6.470	172.13	0.00	6.470	2.66	5	19.63	137.52	0.00	137.52	46.05	2.72	0.00	5	2.43	48.36
7.82	6.900	172.89	0.00	6.900	2.51	5	19.66	137.91	0.00	137.91	49.03	2.56	0.00	5	2.39	51.76
7.84	7.130	176.31	0.00	7.130	2.47	5	19.69	138.31	0.00	138.31	50.55	2.52	0.00	5	2.38	53.48
7.86	7.350	178.75	0.00	7.350	2.43	5	19.72	138.70	0.00	138.70	51.99	2.48	0.00	5	2.37	55.13
7.88	7.350	178.75	0.00	7.350	2.43	5	19.72	139.09	0.00	139.09	51.84	2.48	0.00	5	2.37	54.99
7.90	7.540	218.80	0.00	7.540	2.90	5	19.96	139.49	0.00	139.49	53.05	2.96	0.00	5	2.41	55.96
7.92	7.680	243.14	0.00	7.680	3.17	5	20.09	139.89	0.00	139.89	53.90	3.22	0.00	4	2.44	56.72
7.94	7.820	250.52	0.00	7.820	3.20	5	20.13	140.30	0.00	140.30	54.74	3.26	0.00	4	2.43	57.63

CPTe P18 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_{v0}	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance	based on the stress exponent n	
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P18	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ',v ₀	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.110	0.03	0.00	0.110	0.03	1	13.73	0.33	0.00	0.33	335.04	0.03	0.00	0	1.99	31.97
0.04	0.440	0.06	0.00	0.440	0.01	1	13.73	0.60	0.00	0.60	729.87	0.01	0.00	0	1.77	66.37
0.06	0.480	0.03	0.00	0.480	0.01	1	13.73	0.88	0.00	0.88	546.51	0.01	0.00	0	1.89	72.64
0.08	0.590	0.03	0.00	0.590	0.01	1	13.73	1.15	0.00	1.15	511.43	0.01	0.00	0	1.90	78.69
0.10	0.620	0.03	0.00	0.620	0.00	1	13.73	1.43	0.00	1.43	433.76	0.00	0.00	0	1.94	74.24
0.12	0.690	0.03	0.00	0.690	0.00	1	13.73	1.70	0.00	1.70	404.71	0.00	0.00	0	1.95	78.27
0.14	0.790	0.03	0.00	0.790	0.00	1	13.73	1.98	0.00	1.98	398.91	0.00	0.00	0	1.96	83.15
0.16	0.910	0.06	0.00	0.910	0.01	1	13.73	2.25	0.00	2.25	403.43	0.01	0.00	0	1.85	76.52
0.18	0.930	0.06	0.00	0.930	0.01	1	13.73	2.52	0.00	2.52	367.35	0.01	0.00	0	1.87	74.55
0.20	0.950	0.06	0.00	0.950	0.01	1	13.73	2.80	0.00	2.80	338.35	0.01	0.00	0	1.88	72.93
0.22	0.960	0.06	0.00	0.960	0.01	1	13.73	3.07	0.00	3.07	311.28	0.01	0.00	0	1.90	69.90
0.24	1.020	0.03	0.00	1.020	0.00	0	13.73	3.35	0.00	3.35	303.58	0.00	0.00	0	2.02	85.01
0.26	1.060	2.85	0.00	1.060	0.27	5	14.21	3.63	0.00	3.63	291.15	0.27	0.00	6	1.79	62.96
0.28	1.030	6.43	0.00	1.030	0.62	4	15.14	3.93	0.00	3.93	261.28	0.63	0.00	6	1.93	67.99
0.30	1.010	8.08	0.00	1.010	0.80	4	15.40	4.23	0.00	4.23	237.54	0.80	0.00	6	1.98	69.21
0.32	0.960	6.56	0.00	0.960	0.68	4	15.14	4.54	0.00	4.54	210.56	0.69	0.00	6	1.98	62.88
0.34	0.940	6.50	0.00	0.940	0.69	4	15.12	4.84	0.00	4.84	193.21	0.70	0.00	6	2.00	60.35
0.36	0.800	6.91	0.00	0.800	0.86	4	15.13	5.14	0.00	5.14	154.55	0.87	0.00	5	2.09	54.57
0.38	0.760	5.67	0.00	0.760	0.75	4	14.88	5.44	0.00	5.44	138.67	0.75	0.00	5	2.08	49.89
0.40	0.750	4.12	0.00	0.750	0.55	4	14.51	5.73	0.00	5.73	129.78	0.55	0.00	6	2.05	45.87
0.42	0.710	1.87	0.00	0.710	0.26	1	13.73	6.01	0.00	6.01	117.12	0.27	0.00	6	1.98	39.38
0.44	0.660	1.08	0.00	0.660	0.16	1	13.73	6.29	0.00	6.29	104.00	0.17	0.00	6	1.98	34.82
0.46	0.640	0.10	0.00	0.640	0.02	1	13.73	6.56	0.00	6.56	96.56	0.02	0.00	0	2.02	34.72
0.48	0.600	0.03	0.00	0.600	0.01	1	13.73	6.89	0.00	6.89	86.11	0.01	0.00	0	2.19	36.86
0.50	0.590	0.03	0.00	0.590	0.01	1	13.73	7.16	0.00	7.16	81.38	0.01	0.00	0	2.20	35.63
0.52	0.590	0.03	0.00	0.590	0.01	1	13.73	7.44	0.00	7.44	78.33	0.01	0.00	0	2.20	34.98
0.54	0.600	0.06	0.00	0.600	0.01	1	13.73	7.71	0.00	7.71	76.80	0.01	0.00	0	2.11	32.12
0.56	0.640	0.06	0.00	0.640	0.01	1	13.73	7.99	0.00	7.99	79.14	0.01	0.00	0	2.11	33.34
0.58	0.680	0.06	0.00	0.680	0.01	1	13.73	8.26	0.00	8.26	81.31	0.01	0.00	0	2.11	34.21
0.60	0.730	0.10	0.00	0.730	0.01	1	13.73	8.54	0.00	8.54	84.52	0.01	0.00	0	2.04	34.22
0.62	0.780	0.06	0.00	0.780	0.01	1	13.73	8.81	0.00	8.81	87.53	0.01	0.00	0	2.10	37.38
0.64	0.800	0.06	0.00	0.800	0.01	1	13.73	9.09	0.00	9.09	87.06	0.01	0.00	0	2.10	37.67
0.66	0.790	0.03	0.00	0.790	0.00	1	13.73	9.36	0.00	9.36	83.40	0.00	0.00	0	2.21	40.59
0.68	0.790	0.06	0.00	0.790	0.01	1	13.73	9.63	0.00	9.63	81.00	0.01	0.00	0	2.11	36.23
0.70	0.780	0.03	0.00	0.780	0.00	1	13.73	9.91	0.00	9.91	77.72	0.00	0.00	0	2.22	38.94
0.72	0.740	0.03	0.00	0.740	0.00	1	13.73	10.18	0.00	10.18	71.66	0.00	0.00	0	2.24	36.56
0.74	0.700	0.03	0.00	0.700	0.00	1	13.73	10.46	0.00	10.46	65.93	0.00	0.00	0	2.25	34.25
0.76	0.650	0.03	0.00	0.650	0.00	1	13.73	10.73	0.00	10.73	59.56	0.00	0.00	0	2.26	31.57
0.78	0.620	0.03	0.00	0.620	0.00	1	13.73	11.01	0.00	11.01	55.32	0.00	0.00	0	2.27	29.83
0.80	0.580	0.00	0.00	0.580	0.00	1	19.00	11.34	0.00	11.34	50.17	0.00	0.00	0	0.00	0.00
0.82	0.560	0.00	0.00	0.560	0.00	1	19.00	11.66	0.00	11.66	47.02	0.00	0.00	0	0.00	0.00
0.84	0.520	0.03	0.00	0.520	0.01	1	13.73	11.94	0.00	11.94	42.56	0.01	0.00	0	2.32	24.33
0.86	0.520	0.03	0.00	0.520	0.01	1	13.73	12.21	0.00	12.21	41.58	0.01	0.00	0	2.32	24.02
0.88	0.470	0.10	0.00	0.470	0.02	1	13.73	12.49	0.00	12.49	36.64	0.02	0.00	0	2.22	19.65
0.90	0.440	0.10	0.00	0.440	0.02	1	13.73	12.76	0.00	12.76	33.48	0.02	0.00	0	2.24	18.40

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P18	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	0.440	0.06	0.00	0.440	0.01	1	13.73	13.04	0.00	13.04	32.75	0.01	0.00	0	2.29	18.75
0.94	0.420	0.10	0.00	0.420	0.02	1	13.73	13.31	0.00	13.31	30.55	0.02	0.00	0	2.27	17.31
0.96	0.400	0.10	0.00	0.400	0.03	1	13.73	13.59	0.00	13.59	28.44	0.03	0.00	0	2.28	16.45
0.98	0.400	0.10	0.00	0.400	0.03	1	13.73	13.86	0.00	13.86	27.86	0.03	0.00	0	2.29	16.26
1.00	0.390	0.06	0.00	0.390	0.02	1	13.73	14.13	0.00	14.13	26.59	0.02	0.00	0	2.33	16.16
1.02	0.380	0.06	0.00	0.380	0.02	1	13.73	14.41	0.00	14.41	25.37	0.02	0.00	0	2.34	15.72
1.04	0.380	0.06	0.00	0.380	0.02	1	13.73	14.68	0.00	14.68	24.88	0.02	0.00	0	2.35	15.54
1.06	0.390	0.06	0.00	0.390	0.02	1	13.73	14.96	0.00	14.96	25.07	0.02	0.00	0	2.35	15.71
1.08	0.380	0.06	0.00	0.380	0.02	1	13.73	15.23	0.00	15.23	23.95	0.02	0.00	0	2.36	15.19
1.10	0.390	0.03	0.00	0.390	0.01	1	13.73	15.51	0.00	15.51	24.15	0.01	0.00	0	2.43	16.14
1.12	0.390	0.03	0.00	0.390	0.01	1	13.73	15.78	0.00	15.78	23.71	0.01	0.00	0	2.43	15.96
1.14	0.400	0.06	0.00	0.400	0.01	1	13.73	16.06	0.00	16.06	23.91	0.02	0.00	0	2.36	15.37
1.16	0.390	0.06	0.00	0.390	0.02	1	13.73	16.33	0.00	16.33	22.88	0.02	0.00	0	2.37	14.88
1.18	0.360	0.10	0.00	0.360	0.03	1	13.73	16.61	0.00	16.61	20.68	0.03	0.00	0	2.36	13.46
1.20	0.350	0.10	0.00	0.350	0.03	1	13.73	16.88	0.00	16.88	19.73	0.03	0.00	0	2.38	13.01
1.22	0.350	0.06	0.00	0.350	0.02	1	13.73	17.16	0.00	17.16	19.40	0.02	0.00	0	2.41	13.13
1.24	0.350	0.10	0.00	0.350	0.03	1	13.73	17.43	0.00	17.43	19.08	0.03	0.00	0	2.38	12.74
1.26	0.370	0.10	0.00	0.370	0.03	1	13.73	17.71	0.00	17.71	19.90	0.03	0.00	0	2.37	13.23
1.28	0.380	0.10	0.00	0.380	0.03	1	13.73	17.98	0.00	17.98	20.13	0.03	0.00	0	2.37	13.40
1.30	0.370	0.10	0.00	0.370	0.03	1	13.73	18.25	0.00	18.25	19.27	0.03	0.00	0	2.38	12.97
1.32	0.360	0.10	0.00	0.360	0.03	1	13.73	18.53	0.00	18.53	18.43	0.03	0.00	0	2.39	12.55
1.34	0.350	0.06	0.00	0.350	0.02	1	13.73	18.80	0.00	18.80	17.61	0.02	0.00	0	2.43	12.37
1.36	0.360	0.06	0.00	0.360	0.02	1	13.73	19.08	0.00	19.08	17.87	0.02	0.00	0	2.43	12.56
1.38	0.390	0.06	0.00	0.390	0.02	1	13.73	19.35	0.00	19.35	19.15	0.02	0.00	0	2.41	13.35
1.40	0.390	0.06	0.00	0.390	0.02	1	13.73	19.63	0.00	19.63	18.87	0.02	0.00	0	2.42	13.23
1.42	0.400	0.06	0.00	0.400	0.01	1	13.73	19.90	0.00	19.90	19.10	0.02	0.00	0	2.41	13.41
1.44	0.420	0.06	0.00	0.420	0.01	1	13.73	20.18	0.00	20.18	19.82	0.02	0.00	0	2.40	13.88
1.46	0.420	0.06	0.00	0.420	0.01	1	13.73	20.45	0.00	20.45	19.54	0.02	0.00	0	2.41	13.76
1.48	0.420	0.06	0.00	0.420	0.01	1	13.73	20.73	0.00	20.73	19.26	0.02	0.00	0	2.41	13.64
1.50	0.420	0.06	0.00	0.420	0.01	1	13.73	21.00	0.00	21.00	19.00	0.02	0.00	0	2.42	13.52
1.52	0.440	0.10	0.00	0.440	0.02	1	13.73	21.28	0.00	21.28	19.68	0.02	0.00	0	2.37	13.67
1.54	0.470	0.10	0.00	0.470	0.02	1	13.73	21.55	0.00	21.55	20.81	0.02	0.00	0	2.35	14.36
1.56	0.480	0.10	0.00	0.480	0.02	1	13.73	21.83	0.00	21.83	20.99	0.02	0.00	0	2.35	14.51
1.58	0.500	0.10	0.00	0.500	0.02	1	13.73	22.10	0.00	22.10	21.62	0.02	0.00	0	2.34	14.92
1.60	0.530	0.06	0.00	0.530	0.01	1	13.73	22.37	0.00	22.37	22.69	0.01	0.00	0	2.37	15.99
1.62	0.560	0.06	0.00	0.560	0.01	1	13.73	22.65	0.00	22.65	23.72	0.01	0.00	0	2.36	16.68
1.64	0.560	0.10	0.00	0.560	0.02	1	13.73	22.92	0.00	22.92	23.43	0.02	0.00	0	2.32	16.12
1.66	0.560	0.10	0.00	0.560	0.02	1	13.73	23.20	0.00	23.20	23.14	0.02	0.00	0	2.32	16.00
1.68	0.550	0.06	0.00	0.550	0.01	1	13.73	23.47	0.00	23.47	22.43	0.01	0.00	0	2.38	16.03
1.70	0.570	0.06	0.00	0.570	0.01	1	13.73	23.75	0.00	23.75	23.00	0.01	0.00	0	2.37	16.44
1.72	0.590	0.06	0.00	0.590	0.01	1	13.73	24.02	0.00	24.02	23.56	0.01	0.00	0	2.37	16.84
1.74	0.620	0.10	0.00	0.620	0.02	1	13.73	24.30	0.00	24.30	24.52	0.02	0.00	0	2.31	17.02
1.76	0.750	0.10	0.00	0.750	0.01	1	13.73	24.57	0.00	24.57	29.52	0.01	0.00	0	2.26	20.05
1.78	1.210	0.10	0.00	1.210	0.01	0	13.73	24.85	0.00	24.85	47.70	0.01	0.00	0	2.16	30.78
1.80	1.120	0.13	0.00	1.120	0.01	0	13.73	25.12	0.00	25.12	43.58	0.01	0.00	0	2.14	28.00
1.82	1.260	0.10	0.00	1.260	0.01	0	13.73	25.40	0.00	25.40	48.61	0.01	0.00	0	2.16	31.55
1.84	1.030	0.13	0.00	1.030	0.01	0	13.73	25.67	0.00	25.67	39.12	0.01	0.00	0	2.17	25.64
1.86	1.030	0.13	0.00	1.030	0.01	0	13.73	25.95	0.00	25.95	38.70	0.01	0.00	0	2.17	25.48
1.88	0.650	0.06	0.00	0.650	0.01	1	13.73	26.22	0.00	26.22	23.79	0.01	0.00	0	2.37	17.39
1.90	0.630	0.06	0.00	0.630	0.01	1	13.73	26.50	0.00	26.50	22.78	0.01	0.00	0	2.38	16.78
1.92	0.610	0.03	0.00	0.610	0.00	1	13.73	26.77	0.00	26.77	21.79	0.01	0.00	0	2.48	16.91
1.94	0.620	0.03	0.00	0.620	0.00	1	13.73	27.04	0.00	27.04	21.93	0.01	0.00	0	2.48	17.06
1.96	0.690	0.03	0.00	0.690	0.00	1	13.73	27.32	0.00	27.32	24.26	0.00	0.00	0	2.47	18.77
1.98	0.700	0.00	0.00	0.700	0.00	1	19.00	27.65	0.00	27.65	24.32	0.00	0.00	0	0.00	0.00
2.00	0.700	0.03	0.00	0.700	0.00	1	13.73	27.92	0.00	27.92	24.07	0.00	0.00	0	2.47	18.74

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P18	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	0.740	0.00	0.00	0.740	0.00	1	19.00	28.25	0.00	28.25	25.20	0.00	0.00	0	0.00	0.00
2.04	0.830	0.03	0.00	0.830	0.00	1	13.73	28.52	0.00	28.52	28.10	0.00	0.00	0	2.45	21.76
2.06	0.870	0.06	0.00	0.870	0.01	1	13.73	28.80	0.00	28.80	29.21	0.01	0.00	0	2.33	21.47
2.08	0.920	0.10	0.00	0.920	0.01	1	13.73	29.07	0.00	29.07	30.64	0.01	0.00	0	2.25	21.78
2.10	0.940	0.06	0.00	0.940	0.01	1	13.73	29.35	0.00	29.35	31.03	0.01	0.00	0	2.32	22.81
2.12	0.980	0.06	0.00	0.980	0.01	1	13.73	29.62	0.00	29.62	32.08	0.01	0.00	0	2.32	23.53
2.14	1.020	0.06	0.00	1.020	0.01	0	13.73	29.90	0.00	29.90	33.12	0.01	0.00	0	2.31	24.30
2.16	0.910	0.03	0.00	0.910	0.00	1	13.73	30.17	0.00	30.17	29.16	0.00	0.00	0	2.45	22.89
2.18	0.890	0.03	0.00	0.890	0.00	1	13.73	30.45	0.00	30.45	28.23	0.00	0.00	0	2.46	22.26
2.20	0.890	0.03	0.00	0.890	0.00	1	13.73	30.72	0.00	30.72	27.97	0.00	0.00	0	2.46	22.12
2.22	0.890	0.00	0.00	0.890	0.00	1	19.00	31.10	0.00	31.10	27.62	0.00	0.00	0	0.00	0.00
2.24	0.940	0.03	0.00	0.940	0.00	1	13.73	31.38	0.00	31.38	28.96	0.00	0.00	0	2.46	22.99
2.26	1.000	0.03	0.00	1.000	0.00	0	13.73	31.65	0.00	31.65	30.60	0.00	0.00	0	2.45	24.27
2.28	1.030	0.03	0.00	1.030	0.00	0	13.73	31.92	0.00	31.92	31.26	0.00	0.00	0	2.45	24.83
2.30	1.050	0.03	0.00	1.050	0.00	0	13.73	32.20	0.00	32.20	31.61	0.00	0.00	0	2.45	25.15
2.32	1.060	0.03	0.00	1.060	0.00	0	13.73	32.47	0.00	32.47	31.64	0.00	0.00	0	2.45	25.24
2.34	1.030	1.96	0.00	1.030	0.19	5	13.77	32.75	0.00	32.75	30.45	0.20	0.00	5	2.19	21.83
2.36	1.030	3.14	0.00	1.030	0.30	5	14.32	33.04	0.00	33.04	30.18	0.31	0.00	5	2.24	22.12
2.38	1.070	6.15	0.00	1.070	0.57	4	15.10	33.34	0.00	33.34	31.10	0.59	0.00	5	2.32	23.61
2.40	1.070	9.13	0.00	1.070	0.85	4	15.56	33.64	0.00	33.64	30.80	0.88	0.00	5	2.39	24.15
2.42	1.130	7.76	0.00	1.130	0.69	4	15.39	33.95	0.00	33.95	32.28	0.71	0.00	5	2.34	24.79
2.44	1.160	7.29	0.00	1.160	0.63	4	15.33	34.26	0.00	34.26	32.86	0.65	0.00	5	2.31	25.07
2.46	1.140	8.65	0.00	1.140	0.76	4	15.52	34.57	0.00	34.57	31.98	0.78	0.00	5	2.35	24.87
2.48	1.130	9.85	0.00	1.130	0.87	4	15.67	34.88	0.00	34.88	31.39	0.90	0.00	5	2.38	24.78
2.50	1.130	9.54	0.00	1.130	0.84	4	15.63	35.20	0.00	35.20	31.11	0.87	0.00	5	2.38	24.57
2.52	1.180	9.25	0.00	1.180	0.78	4	15.61	35.51	0.00	35.51	32.23	0.81	0.00	5	2.36	25.25
2.54	1.200	10.52	0.00	1.200	0.88	4	15.76	35.82	0.00	35.82	32.50	0.90	0.00	5	2.37	25.69
2.56	1.230	11.60	0.00	1.230	0.94	4	15.89	36.14	0.00	36.14	33.03	0.97	0.00	5	2.38	26.25
2.58	1.270	12.07	0.00	1.270	0.95	4	15.94	36.46	0.00	36.46	33.83	0.98	0.00	5	2.37	26.87
2.60	1.220	13.15	0.00	1.220	1.08	4	16.03	36.78	0.00	36.78	32.17	1.11	0.00	5	2.41	26.01
2.62	1.190	14.51	0.00	1.190	1.22	4	16.13	37.10	0.00	37.10	31.07	1.26	0.00	5	2.45	25.51
2.64	1.160	15.56	0.00	1.160	1.34	4	16.20	37.42	0.00	37.42	30.00	1.39	0.00	5	2.48	24.96
2.66	1.120	17.65	0.00	1.120	1.58	4	16.33	37.75	0.00	37.75	28.67	1.63	0.00	4	2.53	24.34
2.68	1.090	18.82	0.00	1.090	1.73	4	16.40	38.08	0.00	38.08	27.63	1.79	0.00	4	2.56	23.76
2.70	1.050	20.79	0.00	1.050	1.98	4	16.50	38.41	0.00	38.41	26.34	2.06	0.00	4	2.61	23.07
2.72	1.030	19.36	0.00	1.030	1.88	4	16.41	38.74	0.00	38.74	25.59	1.95	0.00	4	2.60	22.42
2.74	1.010	18.13	0.00	1.010	1.80	4	16.32	39.06	0.00	39.06	24.86	1.87	0.00	4	2.60	21.80
2.76	1.010	17.08	0.00	1.010	1.69	4	16.26	39.39	0.00	39.39	24.64	1.76	0.00	4	2.59	21.56
2.78	1.000	15.27	0.00	1.000	1.53	4	16.12	39.71	0.00	39.71	24.18	1.59	0.00	4	2.57	21.06
2.80	1.040	11.50	0.00	1.040	1.11	4	15.81	40.03	0.00	40.03	24.98	1.15	0.00	5	2.50	21.20
2.82	1.090	9.76	0.00	1.090	0.90	4	15.64	40.34	0.00	40.34	26.02	0.93	0.00	5	2.44	21.70
2.84	1.130	9.22	0.00	1.130	0.82	4	15.59	40.65	0.00	40.65	26.80	0.85	0.00	5	2.41	22.17
2.86	1.130	9.22	0.00	1.130	0.82	4	15.59	40.97	0.00	40.97	26.58	0.85	0.00	5	2.42	22.05
2.88	1.090	7.10	0.00	1.090	0.65	4	15.28	41.27	0.00	41.27	25.41	0.68	0.00	5	2.39	20.94
2.90	1.090	8.05	0.00	1.090	0.74	4	15.42	41.58	0.00	41.58	25.22	0.77	0.00	5	2.42	20.98
2.92	1.070	10.20	0.00	1.070	0.95	4	15.69	41.89	0.00	41.89	24.54	0.99	0.00	5	2.47	20.84
2.94	1.060	13.47	0.00	1.060	1.27	4	16.00	42.21	0.00	42.21	24.11	1.32	0.00	5	2.53	20.93
2.96	1.000	17.87	0.00	1.000	1.79	4	16.30	42.54	0.00	42.54	22.51	1.87	0.00	4	2.63	20.19
2.98	0.990	16.92	0.00	0.990	1.71	4	16.24	42.86	0.00	42.86	22.10	1.79	0.00	4	2.62	19.81
3.00	0.950	17.17	0.00	0.950	1.81	4	16.24	43.19	0.00	43.19	21.00	1.89	0.00	4	2.65	19.02
3.02	0.890	19.11	0.00	0.890	2.15	3	16.34	43.51	0.00	43.51	19.45	2.26	0.00	4	2.72	18.00
3.04	0.910	18.51	0.00	0.910	2.03	3	16.31	43.84	0.00	43.84	19.76	2.14	0.00	4	2.70	18.20
3.06	0.940	16.38	0.00	0.940	1.74	4	16.18	44.16	0.00	44.16	20.28	1.83	0.00	4	2.66	18.45
3.08	0.980	14.70	0.00	0.980	1.50	4	16.07	44.48	0.00	44.48	21.03	1.57	0.00	4	2.61	18.88
3.10	1.040	12.48	0.00	1.040	1.20	4	15.91	44.80	0.00	44.80	22.21	1.25	0.00	4	2.55	19.57

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P18	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	1.070	9.92	0.00	1.070	0.93	4	15.65	45.12	0.00	45.12	22.72	0.97	0.00	5	2.49	19.68
3.14	1.090	9.51	0.00	1.090	0.87	4	15.61	45.43	0.00	45.43	22.99	0.91	0.00	5	2.47	19.86
3.16	1.100	8.33	0.00	1.100	0.76	4	15.46	45.74	0.00	45.74	23.05	0.79	0.00	5	2.44	19.77
3.18	1.120	8.78	0.00	1.120	0.78	4	15.53	46.05	0.00	46.05	23.32	0.82	0.00	5	2.45	20.04
3.20	1.050	11.91	0.00	1.050	1.13	4	15.86	46.37	0.00	46.37	21.65	1.19	0.00	5	2.54	19.16
3.22	0.960	15.24	0.00	0.960	1.59	4	16.11	46.69	0.00	46.69	19.56	1.67	0.00	4	2.65	17.87
3.24	0.900	18.22	0.00	0.900	2.02	3	16.29	47.01	0.00	47.01	18.14	2.14	0.00	4	2.72	16.97
3.26	0.870	20.85	0.00	0.870	2.40	3	16.43	47.34	0.00	47.34	17.38	2.53	0.00	4	2.78	16.52
3.28	0.880	21.64	0.00	0.880	2.46	3	16.48	47.67	0.00	47.67	17.46	2.60	0.00	4	2.78	16.63
3.30	0.900	21.10	0.00	0.900	2.34	3	16.46	48.00	0.00	48.00	17.75	2.48	0.00	4	2.76	16.83
3.32	0.930	20.25	0.00	0.930	2.18	3	16.42	48.33	0.00	48.33	18.24	2.30	0.00	4	2.74	17.19
3.34	1.000	17.40	0.00	1.000	1.74	4	16.27	48.65	0.00	48.65	19.55	1.83	0.00	4	2.66	18.05
3.36	1.060	15.43	0.00	1.060	1.46	4	16.16	48.98	0.00	48.98	20.64	1.53	0.00	4	2.61	18.78
3.38	1.040	15.40	0.00	1.040	1.48	4	16.15	49.30	0.00	49.30	20.10	1.55	0.00	4	2.62	18.36
3.40	1.000	14.83	0.00	1.000	1.48	4	16.09	49.62	0.00	49.62	19.15	1.56	0.00	4	2.64	17.59
3.42	0.950	16.48	0.00	0.950	1.73	4	16.19	49.95	0.00	49.95	18.02	1.83	0.00	4	2.69	16.81
3.44	0.880	18.28	0.00	0.880	2.08	3	16.28	50.27	0.00	50.27	16.51	2.20	0.00	4	2.76	15.70
3.46	0.820	18.38	0.00	0.820	2.24	3	16.26	50.60	0.00	50.60	15.21	2.39	0.00	4	2.80	14.64
3.48	0.770	17.84	0.00	0.770	2.32	3	16.20	50.92	0.00	50.92	14.12	2.48	0.00	4	2.84	13.72
3.50	0.770	16.89	0.00	0.770	2.19	3	16.14	51.24	0.00	51.24	14.03	2.35	0.00	4	2.83	13.59
3.52	0.770	15.72	0.00	0.770	2.04	3	16.06	51.57	0.00	51.57	13.93	2.19	0.00	4	2.81	13.46
3.54	0.780	13.53	0.00	0.780	1.73	3	15.89	51.88	0.00	51.88	14.03	1.86	0.00	4	2.78	13.44
3.56	0.830	10.24	0.00	0.830	1.23	4	15.59	52.20	0.00	52.20	14.90	1.32	0.00	4	2.68	13.95
3.58	0.830	7.83	0.00	0.830	0.94	4	15.28	52.51	0.00	52.51	14.81	1.01	0.00	4	2.63	13.70
3.60	0.820	6.31	0.00	0.820	0.77	4	15.03	52.81	0.00	52.81	14.53	0.82	0.00	4	2.60	13.36
3.62	0.800	6.27	0.00	0.800	0.78	4	15.01	53.11	0.00	53.11	14.06	0.84	0.00	4	2.62	12.99
3.64	0.790	6.24	0.00	0.790	0.79	4	15.00	53.41	0.00	53.41	13.79	0.85	0.00	4	2.63	12.77
3.66	0.770	6.56	0.00	0.770	0.85	4	15.05	53.71	0.00	53.71	13.34	0.92	0.00	4	2.65	12.44
3.68	0.790	5.61	0.00	0.790	0.71	4	14.88	54.01	0.00	54.01	13.63	0.76	0.00	4	2.61	12.60
3.70	0.830	5.01	0.00	0.830	0.60	4	14.77	54.30	0.00	54.30	14.28	0.65	0.00	5	2.57	13.08
3.72	0.820	5.01	0.00	0.820	0.61	4	14.77	54.60	0.00	54.60	14.02	0.65	0.00	5	2.58	12.87
3.74	0.820	4.88	0.00	0.820	0.60	4	14.74	54.89	0.00	54.89	13.94	0.64	0.00	5	2.58	12.80
3.76	0.830	4.12	0.00	0.830	0.50	4	14.55	55.18	0.00	55.18	14.04	0.53	0.00	5	2.54	12.82
3.78	0.880	3.33	0.00	0.880	0.38	4	14.32	55.47	0.00	55.47	14.86	0.40	0.00	5	2.48	13.40
3.80	0.890	3.23	0.00	0.890	0.36	4	14.29	55.76	0.00	55.76	14.96	0.39	0.00	5	2.48	13.48
3.82	0.930	3.45	0.00	0.930	0.37	4	14.38	56.04	0.00	56.04	15.59	0.39	0.00	5	2.46	14.02
3.84	0.890	4.12	0.00	0.890	0.46	4	14.57	56.33	0.00	56.33	14.80	0.49	0.00	5	2.51	13.47
3.86	0.890	4.12	0.00	0.890	0.46	4	14.57	56.62	0.00	56.62	14.72	0.49	0.00	5	2.51	13.41
3.88	0.940	1.55	0.00	0.940	0.16	1	13.73	56.90	0.00	56.90	15.52	0.18	0.00	5	2.38	13.74
3.90	0.970	2.28	0.00	0.970	0.24	5	13.92	57.18	0.00	57.18	15.97	0.25	0.00	5	2.40	14.21
3.92	0.990	2.41	0.00	0.990	0.24	5	14.00	57.46	0.00	57.46	16.23	0.26	0.00	5	2.39	14.46
3.94	0.980	2.95	0.00	0.980	0.30	5	14.22	57.74	0.00	57.74	15.97	0.32	0.00	5	2.42	14.33
3.96	0.920	4.82	0.00	0.920	0.52	4	14.77	58.04	0.00	58.04	14.85	0.56	0.00	5	2.53	13.63
3.98	0.910	4.72	0.00	0.910	0.52	4	14.74	58.33	0.00	58.33	14.60	0.55	0.00	5	2.53	13.42
4.00	0.880	4.44	0.00	0.880	0.50	4	14.65	58.62	0.00	58.62	14.01	0.54	0.00	5	2.54	12.92
4.02	0.910	3.49	0.00	0.910	0.38	4	14.39	58.91	0.00	58.91	14.45	0.41	0.00	5	2.49	13.20
4.04	0.940	3.93	0.00	0.940	0.42	4	14.54	59.20	0.00	59.20	14.88	0.45	0.00	5	2.49	13.60
4.06	0.940	5.45	0.00	0.940	0.58	4	14.91	59.50	0.00	59.50	14.80	0.62	0.00	5	2.54	13.68
4.08	0.930	5.48	0.00	0.930	0.59	4	14.92	59.80	0.00	59.80	14.55	0.63	0.00	5	2.55	13.49
4.10	0.910	6.12	0.00	0.910	0.67	4	15.04	60.10	0.00	60.10	14.14	0.72	0.00	5	2.58	13.20
4.12	0.890	7.00	0.00	0.890	0.79	4	15.18	60.40	0.00	60.40	13.74	0.84	0.00	4	2.62	12.93
4.14	0.870	8.21	0.00	0.870	0.94	4	15.36	60.71	0.00	60.71	13.33	1.01	0.00	4	2.67	12.66
4.16	0.870	7.83	0.00	0.870	0.90	4	15.30	61.01	0.00	61.01	13.26	0.97	0.00	4	2.66	12.58
4.18	0.860	6.62	0.00	0.860	0.77	4	15.10	61.32	0.00	61.32	13.03	0.83	0.00	4	2.64	12.32
4.20	0.880	5.01	0.00	0.880	0.57	4	14.79	61.61	0.00	61.61	13.28	0.61	0.00	5	2.58	12.43

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P18	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	0.890	3.83	0.00	0.890	0.43	4	14.49	61.90	0.00	61.90	13.38	0.46	0.00	5	2.54	12.43
4.24	0.890	3.74	0.00	0.890	0.42	4	14.46	62.19	0.00	62.19	13.31	0.45	0.00	5	2.53	12.37
4.26	0.890	3.45	0.00	0.890	0.39	4	14.37	62.48	0.00	62.48	13.24	0.42	0.00	5	2.52	12.30
4.28	0.870	3.55	0.00	0.870	0.41	4	14.39	62.77	0.00	62.77	12.86	0.44	0.00	5	2.54	11.99
4.30	0.870	3.68	0.00	0.870	0.42	4	14.43	63.06	0.00	63.06	12.80	0.46	0.00	5	2.55	11.96
4.32	0.850	5.77	0.00	0.850	0.68	4	14.94	63.35	0.00	63.35	12.42	0.73	0.00	4	2.63	11.78
4.34	0.830	9.00	0.00	0.830	1.08	4	15.44	63.66	0.00	63.66	12.04	1.17	0.00	4	2.73	11.62
4.36	0.810	10.74	0.00	0.810	1.33	4	15.64	63.97	0.00	63.97	11.66	1.44	0.00	4	2.78	11.36
4.38	0.810	10.90	0.00	0.810	1.35	4	15.65	64.28	0.00	64.28	11.60	1.46	0.00	4	2.79	11.31
4.40	0.820	10.62	0.00	0.820	1.30	4	15.63	64.60	0.00	64.60	11.69	1.41	0.00	4	2.77	11.39
4.42	0.810	10.84	0.00	0.810	1.34	4	15.65	64.91	0.00	64.91	11.48	1.45	0.00	4	2.79	11.21
4.44	0.810	11.03	0.00	0.810	1.36	4	15.67	65.22	0.00	65.22	11.42	1.48	0.00	4	2.79	11.16
4.46	0.820	10.39	0.00	0.820	1.27	4	15.60	65.54	0.00	65.54	11.51	1.38	0.00	4	2.78	11.23
4.48	0.830	8.75	0.00	0.830	1.05	4	15.41	65.84	0.00	65.84	11.61	1.15	0.00	4	2.74	11.25
4.50	0.860	6.78	0.00	0.860	0.79	4	15.13	66.15	0.00	66.15	12.00	0.85	0.00	4	2.67	11.52
4.52	0.880	7.16	0.00	0.880	0.81	4	15.20	66.45	0.00	66.45	12.24	0.88	0.00	4	2.67	11.75
4.54	0.900	6.69	0.00	0.900	0.74	4	15.13	66.75	0.00	66.75	12.48	0.80	0.00	4	2.64	11.95
4.56	0.900	8.27	0.00	0.900	0.92	4	15.38	67.06	0.00	67.06	12.42	0.99	0.00	4	2.68	11.96
4.58	0.930	10.04	0.00	0.930	1.08	4	15.61	67.37	0.00	67.37	12.80	1.16	0.00	4	2.70	12.38
4.60	0.960	11.22	0.00	0.960	1.17	4	15.75	67.68	0.00	67.68	13.18	1.26	0.00	4	2.71	12.76
4.62	0.980	13.09	0.00	0.980	1.34	4	15.94	68.00	0.00	68.00	13.41	1.44	0.00	4	2.73	13.02
4.64	1.010	15.97	0.00	1.010	1.58	4	16.18	68.33	0.00	68.33	13.78	1.70	0.00	4	2.75	13.44
4.66	1.020	16.19	0.00	1.020	1.59	4	16.20	68.65	0.00	68.65	13.86	1.70	0.00	4	2.75	13.51
4.68	1.100	14.29	0.00	1.100	1.30	4	16.08	68.97	0.00	68.97	14.95	1.39	0.00	4	2.68	14.44
4.70	1.110	13.91	0.00	1.110	1.25	4	16.06	69.29	0.00	69.29	15.02	1.34	0.00	4	2.67	14.49
4.72	1.080	13.02	0.00	1.080	1.21	4	15.97	69.61	0.00	69.61	14.51	1.29	0.00	4	2.68	14.02
4.74	1.050	13.44	0.00	1.050	1.28	4	16.00	69.93	0.00	69.93	14.01	1.37	0.00	4	2.70	13.59
4.76	1.070	13.82	0.00	1.070	1.29	4	16.03	70.25	0.00	70.25	14.23	1.38	0.00	4	2.70	13.80
4.78	1.190	17.62	0.00	1.190	1.48	4	16.35	70.58	0.00	70.58	15.86	1.57	0.00	4	2.69	15.37
4.80	1.230	20.44	0.00	1.230	1.66	4	16.54	70.91	0.00	70.91	16.35	1.76	0.00	4	2.70	15.88
4.82	1.310	21.74	0.00	1.310	1.66	4	16.63	71.24	0.00	71.24	17.39	1.75	0.00	4	2.68	16.85
4.84	1.550	25.79	0.00	1.550	1.66	4	16.89	71.58	0.00	71.58	20.65	1.74	0.00	4	2.62	19.87
4.86	1.550	25.79	0.00	1.550	1.66	4	16.89	71.92	0.00	71.92	20.55	1.74	0.00	4	2.62	19.78
4.88	3.250	42.02	0.00	3.250	1.29	5	17.74	72.27	0.00	72.27	43.97	1.32	0.00	5	2.29	40.67
4.90	4.210	49.97	0.00	4.210	1.19	5	18.04	72.63	0.00	72.63	56.97	1.21	0.00	5	2.18	52.06
4.92	4.680	58.46	0.00	4.680	1.25	5	18.26	72.99	0.00	72.99	63.11	1.27	0.00	5	2.16	57.61
4.94	5.760	90.69	0.00	5.760	1.57	5	18.84	73.37	0.00	73.37	77.51	1.59	0.00	5	2.16	70.81
4.96	6.330	115.60	0.00	6.330	1.83	5	19.16	73.75	0.00	73.75	84.83	1.85	0.00	5	2.17	77.74
4.98	6.820	140.28	0.00	6.820	2.06	5	19.41	74.14	0.00	74.14	90.99	2.08	0.00	5	2.18	83.64
5.00	7.060	167.03	0.00	7.060	2.37	5	19.62	74.53	0.00	74.53	93.73	2.39	0.00	5	2.21	86.61
5.02	7.140	201.06	0.00	7.140	2.82	5	19.84	74.92	0.00	74.92	94.30	2.85	0.00	5	2.27	87.76
5.04	7.270	216.81	0.00	7.270	2.98	5	19.94	75.32	0.00	75.32	95.52	3.01	0.00	5	2.28	89.15
5.06	7.010	236.77	0.00	7.010	3.38	5	20.02	75.72	0.00	75.72	91.58	3.41	0.00	5	2.33	86.05
5.08	6.750	241.78	0.00	6.750	3.58	4	20.03	76.12	0.00	76.12	87.67	3.62	0.00	5	2.36	82.74
5.10	6.680	243.39	0.00	6.680	3.64	4	20.04	76.52	0.00	76.52	86.29	3.69	0.00	4	2.37	81.61
5.12	6.890	243.77	0.00	6.890	3.54	4	20.05	76.92	0.00	76.92	88.57	3.58	0.00	5	2.35	83.72
5.14	7.110	232.97	0.00	7.110	3.28	5	20.01	77.32	0.00	77.32	90.95	3.31	0.00	5	2.32	85.80
5.16	7.100	229.01	0.00	7.100	3.23	5	19.99	77.72	0.00	77.72	90.35	3.26	0.00	5	2.32	85.31
5.18	6.720	226.44	0.00	6.720	3.37	4	19.96	78.12	0.00	78.12	85.02	3.41	0.00	5	2.35	80.61
5.20	5.810	224.48	0.00	5.810	3.86	4	19.89	78.52	0.00	78.52	72.99	3.92	0.00	4	2.44	69.84
5.22	5.200	221.72	0.00	5.200	4.26	4	19.83	78.92	0.00	78.92	64.89	4.33	0.00	4	2.50	62.51
5.24	4.910	223.08	0.00	4.910	4.54	4	19.82	79.31	0.00	79.31	60.91	4.62	0.00	4	2.54	58.92
5.26	4.700	225.62	0.00	4.700	4.80	4	19.81	79.71	0.00	79.71	57.96	4.88	0.00	4	2.57	56.26
5.28	4.340	227.68	0.00	4.340	5.25	4	19.79	80.11	0.00	80.11	53.18	5.34	0.00	4	2.62	51.88
5.30	4.450	213.32	0.00	4.450	4.79	4	19.73	80.50	0.00	80.50	54.28	4.88	0.00	4	2.59	52.84

Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	4.430	202.04	0.00	4.430	4.56	4	19.66	80.90	0.00	80.90	53.76	4.65	0.00	4	2.57	52.32
5.34	4.230	190.54	0.00	4.230	4.50	4	19.58	81.29	0.00	81.29	51.04	4.59	0.00	4	2.59	49.74
5.36	4.230	177.32	0.00	4.230	4.19	4	19.50	81.68	0.00	81.68	50.79	4.27	0.00	4	2.57	49.45
5.38	4.520	167.82	0.00	4.520	3.71	4	19.46	82.07	0.00	82.07	54.08	3.78	0.00	4	2.51	52.47
5.40	4.970	169.91	0.00	4.970	3.42	4	19.51	82.46	0.00	82.46	59.27	3.48	0.00	4	2.46	57.33
5.42	5.280	170.42	0.00	5.280	3.23	4	19.54	82.85	0.00	82.85	62.73	3.28	0.00	4	2.42	60.57
5.44	5.840	170.80	0.00	5.840	2.92	5	19.58	83.24	0.00	83.24	69.16	2.97	0.00	5	2.36	66.56
5.46	6.050	171.49	0.00	6.050	2.83	5	19.60	83.63	0.00	83.63	71.34	2.87	0.00	5	2.34	68.64
5.48	6.000	178.97	0.00	6.000	2.98	5	19.64	84.02	0.00	84.02	70.41	3.03	0.00	5	2.36	67.90
5.50	5.450	193.71	0.00	5.450	3.55	4	19.70	84.42	0.00	84.42	63.56	3.61	0.00	4	2.45	61.69
5.52	4.760	199.98	0.00	4.760	4.20	4	19.68	84.81	0.00	84.81	55.13	4.28	0.00	4	2.54	53.87
5.54	4.390	196.46	0.00	4.390	4.48	4	19.63	85.20	0.00	85.20	50.52	4.56	0.00	4	2.59	49.54
5.56	4.150	197.76	0.00	4.150	4.77	4	19.62	85.60	0.00	85.60	47.48	4.87	0.00	4	2.62	46.69
5.58	4.430	197.00	0.00	4.430	4.45	4	19.64	85.99	0.00	85.99	50.52	4.53	0.00	4	2.58	49.59
5.60	5.630	190.89	0.00	5.630	3.39	4	19.69	86.38	0.00	86.38	64.18	3.44	0.00	4	2.43	62.49
5.62	7.530	174.41	0.00	7.530	2.32	5	19.70	86.78	0.00	86.78	85.78	2.34	0.00	5	2.22	82.67
5.64	8.850	160.82	0.00	8.850	1.82	5	19.67	87.17	0.00	87.17	100.53	1.84	0.00	5	2.10	96.39
5.66	9.300	166.61	0.00	9.300	1.79	5	19.73	87.56	0.00	87.56	105.21	1.81	0.00	5	2.08	100.92
5.68	9.270	196.81	0.00	9.270	2.12	5	19.92	87.96	0.00	87.96	104.39	2.14	0.00	5	2.14	100.55
5.70	8.840	232.43	0.00	8.840	2.63	5	20.09	88.36	0.00	88.36	99.05	2.66	0.00	5	2.22	95.90
5.72	8.370	260.16	0.00	8.370	3.11	5	20.20	88.76	0.00	88.76	93.30	3.14	0.00	5	2.29	90.73
5.74	7.870	293.52	0.00	7.870	3.73	4	20.31	89.17	0.00	89.17	87.26	3.77	0.00	4	2.37	85.24
5.76	7.880	315.29	0.00	7.880	4.00	4	20.40	89.58	0.00	89.58	86.97	4.05	0.00	4	2.39	85.12
5.78	7.860	341.56	0.00	7.860	4.35	4	20.49	89.99	0.00	89.99	86.35	4.40	0.00	9	2.42	84.69
5.80	8.320	340.07	0.00	8.320	4.09	4	20.51	90.40	0.00	90.40	91.04	4.13	0.00	4	2.38	89.25
5.82	9.000	325.12	0.00	9.000	3.61	5	20.48	90.81	0.00	90.81	98.11	3.65	0.00	5	2.32	96.05
5.84	9.580	297.20	0.00	9.580	3.10	5	20.40	91.21	0.00	91.21	104.03	3.13	0.00	5	2.25	101.71
5.86	9.580	297.20	0.00	9.580	3.10	5	20.40	91.62	0.00	91.62	103.56	3.13	0.00	5	2.26	101.36
5.88	10.660	297.04	0.00	10.660	2.79	5	20.45	92.03	0.00	92.03	114.83	2.81	0.00	5	2.19	112.29
5.90	10.710	318.11	0.00	10.710	2.97	5	20.53	92.44	0.00	92.44	114.86	3.00	0.00	5	2.21	112.52
5.92	10.960	322.36	0.00	10.960	2.94	5	20.55	92.85	0.00	92.85	117.04	2.97	0.00	5	2.20	114.77
5.94	10.930	329.87	0.00	10.930	3.02	5	20.58	93.26	0.00	93.26	116.20	3.04	0.00	5	2.21	114.11
5.96	11.150	334.40	0.00	11.150	3.00	5	20.60	93.68	0.00	93.68	118.03	3.02	0.00	5	2.21	116.02
5.98	11.170	352.43	0.00	11.170	3.16	5	20.66	94.09	0.00	94.09	117.72	3.18	0.00	5	2.22	115.90
6.00	10.710	374.93	0.00	10.710	3.50	5	20.71	94.50	0.00	94.50	112.33	3.53	0.00	5	2.27	110.83
6.02	10.700	368.15	0.00	10.700	3.44	5	20.69	94.92	0.00	94.92	111.73	3.47	0.00	5	2.27	110.35
6.04	10.330	362.73	0.00	10.330	3.51	5	20.66	95.33	0.00	95.33	107.36	3.54	0.00	5	2.28	106.18
6.06	10.010	349.83	0.00	10.010	3.49	5	20.61	95.74	0.00	95.74	103.55	3.53	0.00	5	2.29	102.53
6.08	9.960	330.69	0.00	9.960	3.32	5	20.54	96.15	0.00	96.15	102.58	3.35	0.00	5	2.28	101.65
6.10	10.100	321.57	0.00	10.100	3.18	5	20.52	96.56	0.00	96.56	103.59	3.21	0.00	5	2.26	102.73
6.12	10.240	312.69	0.00	10.240	3.05	5	20.49	96.97	0.00	96.97	104.60	3.08	0.00	5	2.24	103.81
6.14	10.430	314.34	0.00	10.430	3.01	5	20.50	97.38	0.00	97.38	106.10	3.04	0.00	5	2.23	105.40
6.16	10.730	307.94	0.00	10.730	2.87	5	20.49	97.79	0.00	97.79	108.72	2.90	0.00	5	2.21	108.10
6.18	10.500	312.06	0.00	10.500	2.97	5	20.50	98.20	0.00	98.20	105.92	3.00	0.00	5	2.23	105.44
6.20	10.550	296.37	0.00	10.550	2.81	5	20.44	98.61	0.00	98.61	105.98	2.84	0.00	5	2.21	105.60
6.22	10.530	296.09	0.00	10.530	2.81	5	20.44	99.02	0.00	99.02	105.34	2.84	0.00	5	2.21	105.07
6.24	10.100	299.23	0.00	10.100	2.96	5	20.43	99.43	0.00	99.43	100.58	2.99	0.00	5	2.24	100.44
6.26	9.990	294.73	0.00	9.990	2.95	5	20.41	99.84	0.00	99.84	99.06	2.98	0.00	5	2.25	99.02
6.28	9.950	300.62	0.00	9.950	3.02	5	20.43	100.25	0.00	100.25	98.26	3.05	0.00	5	2.26	98.31
6.30	9.900	297.96	0.00	9.900	3.01	5	20.42	100.65	0.00	100.65	97.36	3.04	0.00	5	2.26	97.51
6.32	8.980	278.12	0.00	8.980	3.10	5	20.30	101.06	0.00	101.06	87.86	3.13	0.00	5	2.30	88.07

CPTe P20 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc cone resistance

fs sleeve friction

u₂ penetration pore pressure

qt total cone resistance

Rf friction ratio

SBT soil behavior type

γ soil unit weight

σ_v total overburden stressu₀ in situ pore pressureσ'_{v0} effective overburden stress

Qt1 normalized cone resistance

Fr normalized friction ratio

Bq normalized pore pressure

SBTn soil behavior type normalized

Ic soil behavior type index

Qtn normalized cone resistance
based on the stress exponent n

In situ data			Basic output data					NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.010	0.00	0.00	0.010	0.00	1	19.00	0.38	0.00	0.38	25.32	0.00	0.00	0	0.00	0.00
0.04	0.010	0.03	0.00	0.010	0.30	1	13.73	0.71	0.00	0.71	13.14	0.32	0.00	1	2.70	7.46
0.06	0.430	0.06	0.00	0.430	0.01	1	13.73	0.98	0.00	0.98	436.87	0.01	0.00	0	1.83	56.15
0.08	1.230	0.10	0.00	1.230	0.01	0	13.73	1.26	0.00	1.26	977.75	0.01	0.00	0	1.68	107.90
0.10	0.990	0.13	0.00	0.990	0.01	1	13.73	1.53	0.00	1.53	645.48	0.01	0.00	0	1.71	78.59
0.12	0.990	0.13	0.00	0.990	0.01	1	13.73	1.81	0.00	1.81	547.15	0.01	0.00	0	1.72	76.76
0.14	1.090	0.13	0.00	1.090	0.01	0	13.73	2.08	0.00	2.08	522.85	0.01	0.00	0	1.73	76.98
0.16	1.110	0.13	0.00	1.110	0.01	0	13.73	2.36	0.00	2.36	470.25	0.01	0.00	0	1.74	75.34
0.18	1.110	0.13	0.00	1.110	0.01	0	13.73	2.63	0.00	2.63	421.04	0.01	0.00	0	1.76	72.83
0.20	1.120	0.13	0.00	1.120	0.01	0	13.73	2.90	0.00	2.90	384.57	0.01	0.00	0	1.76	72.26
0.22	1.140	0.10	0.00	1.140	0.01	0	13.73	3.18	0.00	3.18	357.55	0.01	0.00	0	1.81	73.86
0.24	1.130	13.82	0.00	1.130	1.22	4	16.06	3.50	0.00	3.50	322.12	1.23	0.00	6	2.00	89.53
0.26	1.140	21.04	0.00	1.140	1.85	4	16.54	3.83	0.00	3.83	296.90	1.85	0.00	5	2.11	95.08
0.28	1.110	27.25	0.00	1.110	2.45	3	16.83	4.16	0.00	4.16	265.71	2.46	0.00	5	2.19	97.30
0.30	1.090	30.67	0.00	1.090	2.81	3	16.96	4.50	0.00	4.50	241.21	2.83	0.00	5	2.24	96.02
0.32	1.080	33.81	0.00	1.080	3.13	3	17.07	4.84	0.00	4.84	222.08	3.14	0.00	5	2.28	94.66
0.34	1.100	35.08	0.00	1.100	3.19	3	17.12	5.18	0.00	5.18	211.22	3.20	0.00	5	2.29	93.02
0.36	1.110	36.31	0.00	1.110	3.27	3	17.16	5.53	0.00	5.53	199.86	3.29	0.00	5	2.30	91.11
0.38	1.060	38.15	0.00	1.060	3.60	3	17.20	5.87	0.00	5.87	179.58	3.62	0.00	5	2.34	88.00
0.40	1.020	38.88	0.00	1.020	3.81	3	17.21	6.21	0.00	6.21	163.14	3.84	0.00	4	2.38	83.91
0.42	0.960	40.18	0.00	0.960	4.19	3	17.22	6.56	0.00	6.56	145.38	4.21	0.00	4	2.42	79.44
0.44	0.940	41.19	0.00	0.940	4.38	3	17.24	6.90	0.00	6.90	135.17	4.41	0.00	4	2.45	76.66
0.46	0.930	39.89	0.00	0.930	4.29	3	17.20	7.25	0.00	7.25	127.32	4.32	0.00	4	2.45	73.37
0.48	0.890	38.44	0.00	0.890	4.32	3	17.14	7.59	0.00	7.59	116.25	4.36	0.00	4	2.47	69.00
0.50	0.870	37.77	0.00	0.870	4.34	3	17.11	7.93	0.00	7.93	108.67	4.38	0.00	4	2.49	66.01
0.52	0.880	36.06	0.00	0.880	4.10	3	17.06	8.27	0.00	8.27	105.35	4.14	0.00	4	2.48	63.98
0.54	0.900	33.94	0.00	0.900	3.77	3	17.00	8.61	0.00	8.61	103.48	3.81	0.00	4	2.46	62.28
0.56	0.920	31.66	0.00	0.920	3.44	3	16.93	8.95	0.00	8.95	101.76	3.48	0.00	4	2.44	60.61
0.58	0.910	30.61	0.00	0.910	3.36	3	16.89	9.29	0.00	9.29	96.94	3.40	0.00	4	2.44	58.43
0.60	0.910	30.61	0.00	0.910	3.36	3	16.89	9.63	0.00	9.63	93.50	3.40	0.00	4	2.45	57.15
0.62	0.950	24.15	0.00	0.950	2.54	3	16.63	9.96	0.00	9.96	94.36	2.57	0.00	5	2.38	54.63
0.64	0.930	27.09	0.00	0.930	2.91	3	16.76	10.30	0.00	10.30	89.32	2.95	0.00	5	2.42	54.12
0.66	0.900	30.80	0.00	0.900	3.42	3	16.89	10.63	0.00	10.63	83.63	3.46	0.00	4	2.48	53.41
0.68	0.890	34.60	0.00	0.890	3.89	3	17.02	10.97	0.00	10.97	80.10	3.94	0.00	4	2.52	53.26
0.70	0.890	35.49	0.00	0.890	3.99	3	17.05	11.32	0.00	11.32	77.66	4.04	0.00	4	2.53	52.48
0.72	0.930	34.13	0.00	0.930	3.67	3	17.02	11.66	0.00	11.66	78.79	3.72	0.00	4	2.50	52.44
0.74	0.910	35.87	0.00	0.910	3.94	3	17.07	12.00	0.00	12.00	74.85	3.99	0.00	4	2.53	51.29
0.76	0.900	36.54	0.00	0.900	4.06	3	17.09	12.34	0.00	12.34	71.94	4.12	0.00	4	2.55	50.19
0.78	0.910	36.76	0.00	0.910	4.04	3	17.10	12.68	0.00	12.68	70.76	4.10	0.00	4	2.55	49.68
0.80	0.890	35.43	0.00	0.890	3.98	3	17.05	13.02	0.00	13.02	67.35	4.04	0.00	4	2.56	47.79
0.82	0.850	35.08	0.00	0.850	4.13	3	17.02	13.36	0.00	13.36	62.61	4.19	0.00	4	2.58	45.53
0.84	0.780	35.24	0.00	0.780	4.52	3	16.99	13.70	0.00	13.70	55.93	4.60	0.00	4	2.64	42.25
0.86	0.700	34.82	0.00	0.700	4.97	3	16.93	14.04	0.00	14.04	48.85	5.08	0.00	4	2.69	38.70
0.88	0.640	31.47	0.00	0.640	4.92	3	16.78	14.38	0.00	14.38	43.51	5.03	0.00	3	2.72	35.25
0.90	0.620	29.06	0.00	0.620	4.69	3	16.68	14.71	0.00	14.71	41.14	4.80	0.00	4	2.72	33.47

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	0.590	26.02	0.00	0.590	4.41	3	16.53	15.04	0.00	15.04	38.22	4.53	0.00	4	2.72	31.25
0.94	0.580	22.21	0.00	0.580	3.83	3	16.35	15.37	0.00	15.37	36.73	3.93	0.00	4	2.70	29.59
0.96	0.540	18.22	0.00	0.540	3.37	3	16.09	15.70	0.00	15.70	33.41	3.48	0.00	4	2.70	26.90
0.98	0.610	13.66	0.00	0.610	2.24	3	15.81	16.01	0.00	16.01	37.09	2.30	0.00	4	2.57	27.61
1.00	0.660	8.08	0.00	0.660	1.22	4	15.23	16.32	0.00	16.32	39.44	1.26	0.00	5	2.43	26.74
1.02	0.730	5.01	0.00	0.730	0.69	4	14.72	16.62	0.00	16.62	42.92	0.70	0.00	5	2.30	26.80
1.04	0.800	3.58	0.00	0.800	0.45	4	14.37	16.91	0.00	16.91	46.31	0.46	0.00	5	2.21	27.38
1.06	0.890	3.30	0.00	0.890	0.37	4	14.32	17.20	0.00	17.20	50.76	0.38	0.00	5	2.16	29.07
1.08	1.010	4.02	0.00	1.010	0.40	5	14.59	17.49	0.00	17.49	56.76	0.41	0.00	5	2.13	32.08
1.10	1.130	6.43	0.00	1.130	0.57	4	15.18	17.79	0.00	17.79	62.53	0.58	0.00	5	2.15	35.99
1.12	1.420	10.46	0.00	1.420	0.74	5	15.82	18.10	0.00	18.10	77.44	0.75	0.00	5	2.13	44.13
1.14	1.670	18.00	0.00	1.670	1.08	4	16.51	18.43	0.00	18.43	89.61	1.09	0.00	5	2.16	52.31
1.16	1.920	26.08	0.00	1.920	1.36	4	16.99	18.77	0.00	18.77	101.30	1.37	0.00	5	2.17	59.97
1.18	2.280	34.03	0.00	2.280	1.49	4	17.36	19.11	0.00	19.11	118.28	1.51	0.00	5	2.15	69.41
1.20	2.580	41.70	0.00	2.580	1.62	5	17.64	19.47	0.00	19.47	131.54	1.63	0.00	5	2.13	77.10
1.22	2.750	52.57	0.00	2.750	1.91	4	17.93	19.82	0.00	19.82	137.73	1.93	0.00	5	2.16	82.62
1.24	2.840	62.08	0.00	2.840	2.19	4	18.14	20.18	0.00	20.18	139.71	2.20	0.00	5	2.19	85.82
1.26	2.980	75.16	0.00	2.980	2.52	4	18.38	20.55	0.00	20.55	144.01	2.54	0.00	5	2.22	90.52
1.28	3.430	82.64	0.00	3.430	2.41	4	18.54	20.92	0.00	20.92	162.95	2.42	0.00	5	2.18	100.27
1.30	3.860	89.55	0.00	3.860	2.32	5	18.68	21.29	0.00	21.29	180.27	2.33	0.00	5	2.14	109.15
1.32	4.050	101.12	0.00	4.050	2.50	4	18.83	21.67	0.00	21.67	185.89	2.51	0.00	5	2.15	113.69
1.34	4.210	106.98	0.00	4.210	2.54	5	18.91	22.05	0.00	22.05	189.95	2.55	0.00	5	2.15	116.74
1.36	4.270	116.23	0.00	4.270	2.72	4	19.01	22.43	0.00	22.43	189.39	2.74	0.00	5	2.17	118.36
1.38	4.270	131.38	0.00	4.270	3.08	4	19.16	22.81	0.00	22.81	186.20	3.09	0.00	5	2.21	119.60
1.40	4.310	139.17	0.00	4.310	3.23	4	19.23	23.19	0.00	23.19	184.82	3.25	0.00	5	2.22	120.33
1.42	4.140	150.10	0.00	4.140	3.63	4	19.30	23.58	0.00	23.58	174.57	3.65	0.00	8	2.27	117.23
1.44	3.930	149.06	0.00	3.930	3.79	4	19.27	23.97	0.00	23.97	162.99	3.82	0.00	8	2.30	111.70
1.46	3.690	156.35	0.00	3.690	4.24	4	19.30	24.35	0.00	24.35	150.53	4.27	0.00	9	2.35	106.52
1.48	3.520	157.30	0.00	3.520	4.47	4	19.29	24.74	0.00	24.74	141.30	4.50	0.00	9	2.38	102.02
1.50	3.540	156.44	0.00	3.540	4.42	4	19.28	25.12	0.00	25.12	139.91	4.45	0.00	9	2.37	101.31
1.52	3.620	154.79	0.00	3.620	4.28	4	19.28	25.51	0.00	25.51	140.91	4.31	0.00	9	2.36	101.76
1.54	3.600	152.04	0.00	3.600	4.22	4	19.26	25.89	0.00	25.89	138.03	4.25	0.00	9	2.36	100.08
1.56	3.720	144.43	0.00	3.720	3.88	4	19.21	26.28	0.00	26.28	140.56	3.91	0.00	4	2.33	100.73
1.58	3.980	139.65	0.00	3.980	3.51	4	19.20	26.66	0.00	26.66	148.27	3.53	0.00	5	2.29	104.33
1.60	3.980	139.65	0.00	3.980	3.51	4	19.20	27.05	0.00	27.05	146.15	3.53	0.00	5	2.29	103.39
1.62	4.090	149.34	0.00	4.090	3.65	4	19.29	27.43	0.00	27.43	148.10	3.68	0.00	5	2.30	105.59
1.64	4.010	150.33	0.00	4.010	3.75	4	19.29	27.82	0.00	27.82	143.15	3.78	0.00	5	2.31	103.23
1.66	4.160	154.60	0.00	4.160	3.72	4	19.33	28.20	0.00	28.20	146.50	3.74	0.00	5	2.30	105.58
1.68	4.250	156.73	0.00	4.250	3.69	4	19.36	28.59	0.00	28.59	147.65	3.71	0.00	5	2.30	106.55
1.70	4.160	156.16	0.00	4.160	3.75	4	19.34	28.98	0.00	28.98	142.56	3.78	0.00	5	2.31	103.90
1.72	4.190	151.25	0.00	4.190	3.61	4	19.31	29.36	0.00	29.36	141.69	3.64	0.00	5	2.30	103.11
1.74	4.050	152.58	0.00	4.050	3.77	4	19.31	29.75	0.00	29.75	135.13	3.80	0.00	5	2.32	99.77
1.76	3.840	159.58	0.00	3.840	4.16	4	19.34	30.14	0.00	30.14	126.42	4.19	0.00	9	2.37	95.61
1.78	3.510	167.47	0.00	3.510	4.77	4	19.36	30.52	0.00	30.52	113.99	4.81	0.00	9	2.44	89.12
1.80	3.350	166.42	0.00	3.350	4.97	3	19.33	30.91	0.00	30.91	107.38	5.01	0.00	9	2.46	85.18
1.82	3.270	169.72	0.00	3.270	5.19	3	19.35	31.30	0.00	31.30	103.48	5.24	0.00	9	2.48	83.11
1.84	3.020	175.74	0.00	3.020	5.82	3	19.36	31.68	0.00	31.68	94.31	5.88	0.00	9	2.54	77.86
1.86	2.680	181.13	0.00	2.680	6.76	3	19.35	32.07	0.00	32.07	82.56	6.84	0.00	9	2.62	70.65
1.88	2.540	170.42	0.00	2.540	6.71	3	19.26	32.46	0.00	32.46	77.26	6.80	0.00	9	2.63	66.62
1.90	2.420	165.85	0.00	2.420	6.85	3	19.21	32.84	0.00	32.84	72.69	6.95	0.00	9	2.65	63.36
1.92	2.470	165.28	0.00	2.470	6.69	3	19.21	33.23	0.00	33.23	73.34	6.78	0.00	9	2.64	63.77
1.94	2.540	164.46	0.00	2.540	6.47	3	19.21	33.61	0.00	33.61	74.57	6.56	0.00	9	2.63	64.56
1.96	2.500	159.99	0.00	2.500	6.40	3	19.18	33.99	0.00	33.99	72.54	6.49	0.00	9	2.63	62.99
1.98	2.470	145.16	0.00	2.470	5.88	3	19.06	34.38	0.00	34.38	70.85	5.96	0.00	4	2.61	61.12
2.00	2.590	136.92	0.00	2.590	5.29	3	19.01	34.76	0.00	34.76	73.52	5.36	0.00	4	2.57	62.48

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	2.720	134.67	0.00	2.720	4.95	3	19.01	35.14	0.00	35.14	76.41	5.02	0.00	4	2.54	64.29
2.04	2.900	133.41	0.00	2.900	4.60	3	19.03	35.52	0.00	35.52	80.65	4.66	0.00	4	2.50	67.03
2.06	3.090	126.47	0.00	3.090	4.09	4	18.99	35.90	0.00	35.90	85.08	4.14	0.00	4	2.45	69.52
2.08	3.340	120.83	0.00	3.340	3.62	4	18.97	36.28	0.00	36.28	91.07	3.66	0.00	4	2.40	73.03
2.10	3.800	119.91	0.00	3.800	3.16	4	19.01	36.66	0.00	36.66	102.67	3.19	0.00	5	2.33	80.28
2.12	4.180	122.66	0.00	4.180	2.93	4	19.07	37.04	0.00	37.04	111.86	2.96	0.00	5	2.28	86.25
2.14	4.990	122.57	0.00	4.990	2.46	5	19.14	37.42	0.00	37.42	132.35	2.47	0.00	5	2.19	98.69
2.16	5.870	121.90	0.00	5.870	2.08	5	19.19	37.80	0.00	37.80	154.28	2.09	0.00	5	2.10	111.61
2.18	6.310	120.06	0.00	6.310	1.90	5	19.20	38.19	0.00	38.19	164.24	1.91	0.00	5	2.05	117.38
2.20	6.600	128.34	0.00	6.600	1.94	5	19.30	38.57	0.00	38.57	170.11	1.96	0.00	5	2.05	121.84
2.22	6.900	137.08	0.00	6.900	1.99	5	19.39	38.96	0.00	38.96	176.11	2.00	0.00	5	2.05	126.42
2.24	7.150	148.58	0.00	7.150	2.08	5	19.50	39.35	0.00	39.35	180.71	2.09	0.00	5	2.05	130.46
2.26	6.840	165.57	0.00	6.840	2.42	5	19.60	39.74	0.00	39.74	171.12	2.43	0.00	5	2.11	126.58
2.28	6.360	182.11	0.00	6.360	2.86	5	19.68	40.13	0.00	40.13	157.47	2.88	0.00	5	2.18	119.83
2.30	6.070	199.35	0.00	6.070	3.28	4	19.77	40.53	0.00	40.53	148.77	3.31	0.00	5	2.24	115.76
2.32	5.840	217.54	0.00	5.840	3.73	4	19.86	40.93	0.00	40.93	141.70	3.75	0.00	8	2.29	112.50
2.34	5.620	216.81	0.00	5.620	3.86	4	19.84	41.32	0.00	41.32	135.00	3.89	0.00	8	2.31	108.29
2.36	5.780	203.02	0.00	5.780	3.51	4	19.77	41.72	0.00	41.72	137.55	3.54	0.00	5	2.28	109.35
2.38	5.990	193.80	0.00	5.990	3.24	4	19.73	42.11	0.00	42.11	141.24	3.26	0.00	5	2.24	111.37
2.40	6.020	187.15	0.00	6.020	3.11	5	19.69	42.51	0.00	42.51	140.62	3.13	0.00	5	2.23	110.76
2.42	5.740	179.10	0.00	5.740	3.12	4	19.63	42.90	0.00	42.90	132.80	3.14	0.00	5	2.25	105.40
2.44	5.450	166.80	0.00	5.450	3.06	4	19.52	43.29	0.00	43.29	124.89	3.09	0.00	5	2.26	99.68
2.46	5.730	163.25	0.00	5.730	2.85	5	19.52	43.68	0.00	43.68	130.18	2.87	0.00	5	2.22	103.08
2.48	5.890	163.00	0.00	5.890	2.77	5	19.53	44.07	0.00	44.07	132.64	2.79	0.00	5	2.21	104.85
2.50	6.300	162.68	0.00	6.300	2.58	5	19.55	44.46	0.00	44.46	140.69	2.60	0.00	5	2.17	110.24
2.52	6.050	166.30	0.00	6.050	2.75	5	19.56	44.85	0.00	44.85	133.88	2.77	0.00	5	2.20	106.20
2.54	6.480	169.18	0.00	6.480	2.61	5	19.61	45.25	0.00	45.25	142.22	2.63	0.00	5	2.17	112.02
2.56	7.260	162.65	0.00	7.260	2.24	5	19.60	45.64	0.00	45.64	158.08	2.25	0.00	5	2.09	122.09
2.58	8.550	152.23	0.00	8.550	1.78	5	19.59	46.03	0.00	46.03	184.75	1.79	0.00	6	1.98	138.48
2.60	8.550	152.23	0.00	8.550	1.78	5	19.59	46.42	0.00	46.42	183.18	1.79	0.00	6	1.98	137.82
2.62	8.410	120.70	0.00	8.410	1.44	5	19.32	46.81	0.00	46.81	178.67	1.44	0.00	6	1.93	132.66
2.64	9.280	129.51	0.00	9.280	1.40	5	19.44	47.20	0.00	47.20	195.63	1.40	0.00	6	1.89	144.32
2.66	9.970	143.89	0.00	9.970	1.44	6	19.59	47.59	0.00	47.59	208.51	1.45	0.00	6	1.89	153.98
2.68	9.240	161.04	0.00	9.240	1.74	5	19.69	47.98	0.00	47.98	191.58	1.75	0.00	6	1.96	145.11
2.70	8.540	188.07	0.00	8.540	2.20	5	19.83	48.38	0.00	48.38	175.53	2.21	0.00	5	2.06	136.88
2.72	7.970	207.05	0.00	7.970	2.60	5	19.92	48.78	0.00	48.78	162.40	2.61	0.00	5	2.13	129.50
2.74	8.010	217.31	0.00	8.010	2.71	5	19.98	49.17	0.00	49.17	161.89	2.73	0.00	5	2.14	129.92
2.76	8.060	229.32	0.00	8.060	2.85	5	20.04	49.58	0.00	49.58	161.58	2.86	0.00	5	2.16	130.53
2.78	7.680	220.77	0.00	7.680	2.87	5	19.98	49.98	0.00	49.98	152.68	2.89	0.00	5	2.17	124.22
2.80	7.750	213.86	0.00	7.750	2.76	5	19.94	50.37	0.00	50.37	152.85	2.78	0.00	5	2.16	124.22
2.82	7.730	217.38	0.00	7.730	2.81	5	19.96	50.77	0.00	50.77	151.25	2.83	0.00	5	2.17	123.49
2.84	7.630	227.93	0.00	7.630	2.99	5	20.01	51.17	0.00	51.17	148.10	3.01	0.00	5	2.19	121.96
2.86	7.590	230.18	0.00	7.590	3.03	5	20.02	51.57	0.00	51.57	146.17	3.05	0.00	5	2.20	120.88
2.88	7.640	234.39	0.00	7.640	3.07	5	20.04	51.97	0.00	51.97	145.99	3.09	0.00	5	2.20	121.13
2.90	8.290	244.06	0.00	8.290	2.94	5	20.12	52.38	0.00	52.38	157.28	2.96	0.00	5	2.17	129.74
2.92	7.560	254.83	0.00	7.560	3.37	5	20.14	52.78	0.00	52.78	142.24	3.39	0.00	5	2.24	119.59
2.94	7.340	251.54	0.00	7.340	3.43	5	20.11	53.18	0.00	53.18	137.02	3.45	0.00	5	2.25	115.85
2.96	7.220	256.70	0.00	7.220	3.56	4	20.13	53.58	0.00	53.58	133.74	3.58	0.00	5	2.27	113.79
2.98	6.760	272.36	0.00	6.760	4.03	4	20.17	53.99	0.00	53.99	124.21	4.06	0.00	9	2.33	107.37
3.00	6.730	259.43	0.00	6.730	3.85	4	20.11	54.39	0.00	54.39	122.74	3.89	0.00	8	2.32	106.00
3.02	6.770	258.92	0.00	6.770	3.82	4	20.11	54.79	0.00	54.79	122.56	3.86	0.00	8	2.31	105.99
3.04	6.760	254.23	0.00	6.760	3.76	4	20.09	55.19	0.00	55.19	121.48	3.79	0.00	5	2.31	105.16
3.06	6.850	238.67	0.00	6.850	3.48	4	20.02	55.60	0.00	55.60	122.21	3.51	0.00	5	2.28	105.38
3.08	6.820	221.85	0.00	6.820	3.25	5	19.94	55.99	0.00	55.99	120.80	3.28	0.00	5	2.26	103.92
3.10	7.200	202.23	0.00	7.200	2.81	5	19.85	56.39	0.00	56.39	126.68	2.83	0.00	5	2.20	107.79

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	7.800	186.01	0.00	7.800	2.38	5	19.79	56.79	0.00	56.79	136.35	2.40	0.00	5	2.13	114.50
3.14	8.010	186.13	0.00	8.010	2.32	5	19.80	57.18	0.00	57.18	139.07	2.34	0.00	5	2.12	116.70
3.16	7.780	194.25	0.00	7.780	2.50	5	19.84	57.58	0.00	57.58	134.11	2.52	0.00	5	2.15	113.55
3.18	7.290	208.09	0.00	7.290	2.85	5	19.89	57.98	0.00	57.98	124.74	2.88	0.00	5	2.21	107.18
3.20	6.850	222.16	0.00	6.850	3.24	5	19.94	58.38	0.00	58.38	116.34	3.27	0.00	5	2.27	101.37
3.22	6.880	231.57	0.00	6.880	3.37	5	19.99	58.78	0.00	58.78	116.05	3.39	0.00	5	2.28	101.55
3.24	6.760	249.86	0.00	6.760	3.70	4	20.07	59.18	0.00	59.18	113.23	3.73	0.00	5	2.32	99.97
3.26	6.760	235.38	0.00	6.760	3.48	4	20.00	59.58	0.00	59.58	112.46	3.51	0.00	5	2.30	99.12
3.28	6.730	228.69	0.00	6.730	3.40	4	19.97	59.98	0.00	59.98	111.21	3.43	0.00	5	2.29	98.08
3.30	6.660	220.86	0.00	6.660	3.32	5	19.92	60.38	0.00	60.38	109.31	3.35	0.00	5	2.29	96.51
3.32	6.800	199.00	0.00	6.800	2.93	5	19.81	60.77	0.00	60.77	110.89	2.95	0.00	5	2.25	97.27
3.34	6.760	188.29	0.00	6.760	2.79	5	19.75	61.17	0.00	61.17	109.52	2.81	0.00	5	2.24	96.01
3.36	6.570	187.40	0.00	6.570	2.85	5	19.73	61.56	0.00	61.56	105.72	2.88	0.00	5	2.25	93.14
3.38	6.050	196.02	0.00	6.050	3.24	4	19.75	61.96	0.00	61.96	96.65	3.27	0.00	5	2.32	86.29
3.40	5.550	206.16	0.00	5.550	3.71	4	19.77	62.35	0.00	62.35	88.01	3.76	0.00	4	2.38	79.67
3.42	5.160	208.79	0.00	5.160	4.05	4	19.76	62.75	0.00	62.75	81.23	4.10	0.00	4	2.43	74.28
3.44	4.730	213.42	0.00	4.730	4.51	4	19.75	63.14	0.00	63.14	73.91	4.57	0.00	4	2.49	68.39
3.46	4.230	222.23	0.00	4.230	5.25	4	19.76	63.54	0.00	63.54	65.57	5.33	0.00	4	2.57	61.60
3.48	4.050	219.28	0.00	4.050	5.41	3	19.72	63.93	0.00	63.93	62.35	5.50	0.00	4	2.60	58.85
3.50	4.160	212.12	0.00	4.160	5.10	4	19.70	64.33	0.00	64.33	63.67	5.18	0.00	4	2.57	59.90
3.52	4.380	200.90	0.00	4.380	4.59	4	19.65	64.72	0.00	64.72	66.68	4.66	0.00	4	2.52	62.31
3.54	4.500	194.37	0.00	4.500	4.32	4	19.63	65.11	0.00	65.11	68.11	4.38	0.00	4	2.50	63.46
3.56	4.690	188.29	0.00	4.690	4.01	4	19.61	65.51	0.00	65.51	70.60	4.07	0.00	4	2.47	65.50
3.58	4.750	184.71	0.00	4.750	3.89	4	19.59	65.90	0.00	65.90	71.08	3.94	0.00	4	2.45	65.90
3.60	4.750	184.71	0.00	4.750	3.89	4	19.59	66.29	0.00	66.29	70.66	3.94	0.00	4	2.46	65.59
3.62	4.690	185.85	0.00	4.690	3.96	4	19.59	66.68	0.00	66.68	69.33	4.02	0.00	4	2.47	64.55
3.64	4.640	185.44	0.00	4.640	4.00	4	19.58	67.07	0.00	67.07	68.18	4.06	0.00	4	2.47	63.61
3.66	4.740	185.09	0.00	4.740	3.90	4	19.59	67.46	0.10	67.37	69.36	3.96	0.00	4	2.46	64.65
3.68	4.910	184.61	0.00	4.910	3.76	4	19.60	67.86	0.29	67.56	71.67	3.81	0.00	4	2.44	66.63
3.70	5.000	190.73	0.00	5.000	3.81	4	19.65	68.25	0.49	67.76	72.78	3.87	0.00	4	2.44	67.70
3.72	5.010	182.74	0.00	5.010	3.65	4	19.60	68.64	0.69	67.95	72.72	3.70	0.00	4	2.43	67.54
3.74	5.000	181.44	0.00	5.000	3.63	4	19.59	69.03	0.88	68.15	72.35	3.68	0.00	4	2.43	67.24
3.76	5.020	181.29	0.00	5.020	3.61	4	19.59	69.43	1.08	68.35	72.43	3.66	0.00	4	2.42	67.33
3.78	4.990	182.01	0.00	4.990	3.65	4	19.59	69.82	1.28	68.54	71.78	3.70	0.00	4	2.43	66.82
3.80	5.040	184.49	0.00	5.040	3.66	4	19.61	70.21	1.47	68.74	72.30	3.71	0.00	4	2.43	67.33
3.82	5.050	183.76	0.00	5.050	3.64	4	19.61	70.60	1.67	68.93	72.23	3.69	0.00	4	2.43	67.29
3.84	5.170	178.56	0.00	5.170	3.45	4	19.58	70.99	1.86	69.13	73.76	3.50	0.00	4	2.40	68.54
3.86	5.010	182.96	0.00	5.010	3.65	4	19.60	71.38	2.06	69.32	71.24	3.70	0.00	4	2.43	66.48
3.88	4.960	177.83	0.00	4.960	3.59	4	19.56	71.78	2.26	69.52	70.31	3.64	0.00	4	2.43	65.64
3.90	4.890	179.29	0.00	4.890	3.67	4	19.57	72.17	2.45	69.71	69.11	3.72	0.00	4	2.44	64.65
3.92	4.870	176.09	0.00	4.870	3.62	4	19.54	72.56	2.65	69.91	68.62	3.67	0.00	4	2.44	64.22
3.94	4.860	175.11	0.00	4.860	3.60	4	19.54	72.95	2.84	70.10	68.28	3.66	0.00	4	2.44	63.94
3.96	4.770	170.51	0.00	4.770	3.57	4	19.50	73.34	3.04	70.30	66.81	3.63	0.00	4	2.44	62.62
3.98	4.680	170.00	0.00	4.680	3.63	4	19.49	73.73	3.24	70.49	65.34	3.69	0.00	4	2.45	61.37
4.00	4.560	168.29	0.00	4.560	3.69	4	19.47	74.12	3.43	70.68	63.46	3.75	0.00	4	2.47	59.74
4.02	4.390	169.15	0.00	4.390	3.85	4	19.46	74.51	3.63	70.88	60.89	3.92	0.00	4	2.49	57.53
4.04	4.290	166.49	0.00	4.290	3.88	4	19.43	74.90	3.83	71.07	59.31	3.95	0.00	4	2.50	56.14
4.06	4.090	162.78	0.00	4.090	3.98	4	19.39	75.28	4.02	71.26	56.34	4.05	0.00	4	2.52	53.51
4.08	3.930	158.82	0.00	3.930	4.04	4	19.34	75.67	4.22	71.45	53.94	4.12	0.00	4	2.54	51.37
4.10	3.760	158.57	0.00	3.760	4.22	4	19.32	76.06	4.41	71.64	51.42	4.30	0.00	4	2.57	49.15
4.12	3.650	157.99	0.00	3.650	4.33	4	19.31	76.44	4.61	71.83	49.75	4.42	0.00	4	2.59	47.68
4.14	3.540	155.40	0.00	3.540	4.39	4	19.28	76.83	4.81	72.02	48.08	4.49	0.00	4	2.60	46.18
4.16	3.520	150.55	0.00	3.520	4.28	4	19.24	77.21	5.00	72.21	47.68	4.37	0.00	4	2.60	45.78
4.18	3.490	148.46	0.00	3.490	4.25	4	19.22	77.60	5.20	72.40	47.13	4.35	0.00	4	2.60	45.28
4.20	3.470	143.99	0.00	3.470	4.15	4	19.18	77.98	5.40	72.59	46.73	4.24	0.00	4	2.59	44.88

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	3.350	143.48	0.00	3.350	4.28	4	19.16	78.37	5.59	72.77	44.96	4.39	0.00	4	2.61	43.30
4.24	3.170	140.76	0.00	3.170	4.44	4	19.12	78.75	5.79	72.96	42.37	4.55	0.00	4	2.64	40.96
4.26	2.970	138.79	0.00	2.970	4.67	3	19.08	79.13	5.98	73.15	39.52	4.80	0.00	4	2.68	38.39
4.28	2.770	137.84	0.00	2.770	4.98	3	19.05	79.51	6.18	73.33	36.69	5.12	0.00	3	2.72	35.82
4.30	2.600	134.93	0.00	2.600	5.19	3	19.00	79.89	6.38	73.52	34.28	5.35	0.00	3	2.75	33.61
4.32	2.960	131.98	0.00	2.960	4.46	4	19.02	80.27	6.57	73.70	39.07	4.58	0.00	4	2.67	37.94
4.34	3.480	129.89	0.00	3.480	3.73	4	19.06	80.65	6.77	73.88	46.01	3.82	0.00	4	2.56	44.16
4.36	3.550	130.33	0.00	3.550	3.67	4	19.08	81.04	6.97	74.07	46.83	3.76	0.00	4	2.55	44.91
4.38	3.700	120.29	0.00	3.700	3.25	4	19.00	81.42	7.16	74.25	48.73	3.32	0.00	4	2.51	46.50
4.40	3.750	124.72	0.00	3.750	3.33	4	19.05	81.80	7.36	74.44	49.28	3.40	0.00	4	2.51	47.05
4.42	4.350	134.93	0.00	4.350	3.10	4	19.19	82.18	7.55	74.63	57.19	3.16	0.00	4	2.44	54.23
4.44	4.650	148.08	0.00	4.650	3.18	4	19.33	82.56	7.75	74.81	61.05	3.24	0.00	4	2.43	57.84
4.46	5.790	161.80	0.00	5.790	2.79	5	19.51	82.95	7.95	75.01	76.09	2.84	0.00	5	2.33	71.30
4.48	6.810	161.32	0.00	6.810	2.37	5	19.57	83.35	8.14	75.20	89.45	2.40	0.00	5	2.23	82.98
4.50	8.180	183.09	0.00	8.180	2.24	5	19.79	83.74	8.34	75.40	107.37	2.26	0.00	5	2.16	98.93
4.52	8.980	199.13	0.00	8.980	2.22	5	19.92	84.14	8.53	75.60	117.67	2.24	0.00	5	2.13	108.16
4.54	9.120	212.21	0.00	9.120	2.33	5	20.00	84.54	8.73	75.81	119.19	2.35	0.00	5	2.14	109.78
4.56	8.760	232.05	0.00	8.760	2.65	5	20.09	84.94	8.93	76.01	114.13	2.67	0.00	5	2.19	105.79
4.58	8.500	261.74	0.00	8.500	3.08	5	20.21	85.34	9.12	76.22	110.40	3.11	0.00	5	2.25	103.02
4.60	8.500	261.74	0.00	8.500	3.08	5	20.21	85.75	9.32	76.43	110.09	3.11	0.00	5	2.25	102.81
4.62	8.320	325.12	0.00	8.320	3.91	4	20.45	86.16	9.52	76.64	107.44	3.95	0.00	9	2.33	101.26
4.64	8.430	337.32	0.00	8.430	4.00	4	20.50	86.57	9.71	76.85	108.56	4.04	0.00	9	2.34	102.44
4.66	8.630	328.82	0.00	8.630	3.81	4	20.48	86.97	9.91	77.07	110.85	3.85	0.00	5	2.32	104.44
4.68	8.680	326.32	0.00	8.680	3.76	4	20.47	87.38	10.10	77.28	111.19	3.80	0.00	5	2.31	104.77
4.70	8.450	320.17	0.00	8.450	3.79	4	20.44	87.79	10.30	77.49	107.91	3.83	0.00	5	2.32	101.85
4.72	8.390	309.40	0.00	8.390	3.69	4	20.40	88.20	10.50	77.70	106.84	3.73	0.00	5	2.31	100.84
4.74	8.340	303.16	0.00	8.340	3.64	5	20.37	88.61	10.69	77.92	105.90	3.67	0.00	5	2.31	100.00
4.76	8.390	295.30	0.00	8.390	3.52	5	20.35	89.02	10.89	78.13	106.25	3.56	0.00	5	2.30	100.28
4.78	8.480	289.88	0.00	8.480	3.42	5	20.33	89.42	11.09	78.34	107.11	3.45	0.00	5	2.29	101.05
4.80	8.550	285.79	0.00	8.550	3.34	5	20.32	89.83	11.28	78.55	107.71	3.38	0.00	5	2.28	101.60
4.82	8.490	284.90	0.00	8.490	3.36	5	20.31	90.24	11.48	78.76	106.65	3.39	0.00	5	2.28	100.71
4.84	8.100	284.71	0.00	8.100	3.51	5	20.29	90.64	11.67	78.97	101.43	3.55	0.00	5	2.31	96.08
4.86	7.220	285.25	0.00	7.220	3.95	4	20.25	91.05	11.87	79.18	90.04	4.00	0.00	4	2.38	85.89
4.88	6.650	283.95	0.00	6.650	4.27	4	20.21	91.45	12.07	79.38	82.62	4.33	0.00	4	2.43	79.19
4.90	6.330	283.13	0.00	6.330	4.47	4	20.19	91.85	12.26	79.59	78.38	4.54	0.00	4	2.46	75.36
4.92	6.120	285.19	0.00	6.120	4.66	4	20.19	92.26	12.46	79.80	75.54	4.73	0.00	4	2.49	72.81
4.94	5.960	283.54	0.00	5.960	4.76	4	20.17	92.66	12.65	80.01	73.34	4.83	0.00	4	2.50	70.81
4.96	5.800	277.43	0.00	5.800	4.78	4	20.13	93.06	12.85	80.21	71.15	4.86	0.00	4	2.51	68.78
4.98	5.720	267.38	0.00	5.720	4.67	4	20.09	93.47	13.05	80.42	69.96	4.75	0.00	4	2.51	67.65
5.00	6.230	250.52	0.00	6.230	4.02	4	20.04	93.87	13.24	80.62	76.11	4.08	0.00	4	2.44	73.19
5.02	7.130	247.83	0.00	7.130	3.48	4	20.08	94.27	13.44	80.83	87.04	3.52	0.00	5	2.35	83.17
5.04	7.730	250.81	0.00	7.730	3.24	5	20.13	94.67	13.64	81.04	94.22	3.28	0.00	5	2.31	89.76
5.06	7.970	241.59	0.00	7.970	3.03	5	20.10	95.07	13.83	81.24	96.93	3.07	0.00	5	2.28	92.18
5.08	7.900	236.55	0.00	7.900	2.99	5	20.07	95.47	14.03	81.45	95.82	3.03	0.00	5	2.28	91.17
5.10	7.260	248.08	0.00	7.260	3.42	5	20.09	95.88	14.22	81.65	87.74	3.46	0.00	5	2.34	83.97
5.12	6.730	260.06	0.00	6.730	3.86	4	20.12	96.28	14.42	81.86	81.04	3.92	0.00	4	2.40	77.97
5.14	6.430	264.59	0.00	6.430	4.11	4	20.12	96.68	14.62	82.06	77.18	4.18	0.00	4	2.44	74.48
5.16	6.420	262.72	0.00	6.420	4.09	4	20.11	97.08	14.81	82.27	76.86	4.16	0.00	4	2.44	74.20
5.18	6.720	261.96	0.00	6.720	3.90	4	20.12	97.49	15.01	82.48	80.30	3.96	0.00	4	2.41	77.40
5.20	7.160	261.84	0.00	7.160	3.66	4	20.15	97.89	15.21	82.68	85.41	3.71	0.00	4	2.37	82.14
5.22	8.360	256.67	0.00	8.360	3.07	5	20.18	98.29	15.40	82.89	99.67	3.11	0.00	5	2.27	95.22
5.24	9.370	259.52	0.00	9.370	2.77	5	20.24	98.70	15.60	83.10	111.57	2.80	0.00	5	2.21	106.17
5.26	10.300	261.87	0.00	10.300	2.54	5	20.29	99.10	15.79	83.31	122.45	2.57	0.00	5	2.15	116.16
5.28	10.130	290.39	0.00	10.130	2.87	5	20.40	99.51	15.99	83.52	120.10	2.90	0.00	5	2.20	114.37
5.30	9.440	312.73	0.00	9.440	3.31	5	20.46	99.92	16.19	83.73	111.55	3.35	0.00	5	2.26	106.78

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	9.230	327.05	0.00	9.230	3.54	5	20.50	100.33	16.38	83.95	108.76	3.58	0.00	5	2.29	104.38
5.34	9.720	350.47	0.00	9.720	3.61	5	20.60	100.74	16.58	84.16	114.30	3.64	0.00	5	2.28	109.71
5.36	10.400	341.56	0.00	10.400	3.28	5	20.60	101.15	16.78	84.38	122.06	3.32	0.00	5	2.24	116.86
5.38	9.950	338.36	0.00	9.950	3.40	5	20.57	101.56	16.97	84.59	116.42	3.44	0.00	5	2.26	111.71
5.40	9.690	352.62	0.00	9.690	3.64	5	20.61	101.98	17.17	84.81	113.06	3.68	0.00	5	2.29	108.76
5.42	9.910	328.38	0.00	9.910	3.31	5	20.53	102.39	17.36	85.02	115.35	3.35	0.00	5	2.25	110.79
5.44	11.130	310.51	0.00	11.130	2.79	5	20.51	102.80	17.56	85.24	129.37	2.82	0.00	5	2.16	123.66
5.46	12.300	318.40	0.00	12.300	2.59	5	20.58	103.21	17.76	85.45	142.73	2.61	0.00	5	2.11	136.11
5.48	14.010	318.33	0.00	14.010	2.27	5	20.63	103.62	17.95	85.67	162.33	2.29	0.00	5	2.03	154.20
5.50	15.570	338.27	0.00	15.570	2.17	5	20.74	104.03	18.15	85.89	180.08	2.19	0.00	5	1.99	170.78
5.52	15.700	389.35	0.00	15.700	2.48	5	20.90	104.45	18.34	86.11	181.12	2.50	0.00	5	2.03	172.35
5.54	16.110	394.96	0.00	16.110	2.45	5	20.93	104.87	18.54	86.33	185.40	2.47	0.00	5	2.02	176.47
5.56	15.700	426.07	0.00	15.700	2.71	5	21.01	105.29	18.74	86.55	180.18	2.73	0.00	5	2.07	172.05
5.58	14.870	459.34	0.00	14.870	3.09	5	21.07	105.71	18.93	86.78	170.14	3.11	0.00	8	2.12	163.12
5.60	14.870	459.34	0.00	14.870	3.09	5	21.07	106.13	19.13	87.00	169.70	3.11	0.00	8	2.13	162.83
5.62	13.770	548.48	0.00	13.770	3.98	8	21.25	106.56	19.33	87.23	156.64	4.01	0.00	8	2.23	151.27
5.64	12.550	561.54	0.00	12.550	4.47	9	21.24	106.98	19.52	87.46	142.27	4.51	0.00	9	2.30	137.95
5.66	11.080	549.24	0.00	11.080	4.96	9	21.17	107.41	19.72	87.69	125.13	5.01	0.00	9	2.37	121.82
5.68	10.860	504.63	0.00	10.860	4.65	9	21.06	107.83	19.91	87.91	122.31	4.69	0.00	9	2.35	119.03
5.70	10.760	458.52	0.00	10.760	4.26	9	20.95	108.25	20.11	88.14	120.86	4.30	0.00	9	2.32	117.53
5.72	10.850	407.12	0.00	10.850	3.75	5	20.81	108.66	20.31	88.36	121.57	3.79	0.00	8	2.28	118.04
5.74	11.450	360.89	0.00	11.450	3.15	5	20.70	109.08	20.50	88.58	128.04	3.18	0.00	5	2.21	123.98
5.76	11.950	316.50	0.00	11.950	2.65	5	20.56	109.49	20.70	88.79	133.35	2.67	0.00	5	2.14	128.81
5.78	11.760	287.22	0.00	11.760	2.44	5	20.44	109.90	20.90	89.01	130.89	2.47	0.00	5	2.11	126.40
5.80	11.390	294.41	0.00	11.390	2.58	5	20.46	110.31	21.09	89.22	126.43	2.61	0.00	5	2.14	122.33
5.82	11.220	304.55	0.00	11.220	2.71	5	20.49	110.72	21.29	89.43	124.22	2.74	0.00	5	2.16	120.38
5.84	11.590	315.51	0.00	11.590	2.72	5	20.55	111.13	21.48	89.65	128.05	2.75	0.00	5	2.16	124.14
5.86	11.460	350.62	0.00	11.460	3.06	5	20.66	111.54	21.68	89.86	126.29	3.09	0.00	5	2.20	122.73
5.88	11.260	359.31	0.00	11.260	3.19	5	20.68	111.96	21.88	90.08	123.76	3.22	0.00	5	2.22	120.44
5.90	10.930	380.73	0.00	10.930	3.48	5	20.74	112.37	22.07	90.30	119.80	3.52	0.00	5	2.26	116.84
5.92	10.760	377.56	0.00	10.760	3.51	5	20.72	112.78	22.27	90.52	117.63	3.55	0.00	5	2.26	114.82
5.94	10.520	363.68	0.00	10.520	3.46	5	20.67	113.20	22.46	90.73	114.70	3.49	0.00	5	2.26	112.03
5.96	10.160	364.54	0.00	10.160	3.59	5	20.66	113.61	22.66	90.95	110.46	3.63	0.00	5	2.29	108.04
5.98	9.590	375.72	0.00	9.590	3.92	4	20.67	114.02	22.86	91.17	103.94	3.96	0.00	9	2.33	101.89
6.00	9.170	358.51	0.00	9.170	3.91	4	20.60	114.44	23.05	91.38	99.09	3.96	0.00	4	2.35	97.23
6.02	8.330	362.03	0.00	8.330	4.35	4	20.58	114.85	23.25	91.60	89.69	4.41	0.00	9	2.41	88.23
6.04	7.710	369.92	0.00	7.710	4.80	9	20.57	115.26	23.45	91.81	82.72	4.87	0.00	9	2.46	81.56
6.06	7.340	365.45	0.00	7.340	4.98	4	20.54	115.67	23.64	92.03	78.50	5.06	0.00	9	2.49	77.49
6.08	7.220	361.08	0.00	7.220	5.00	4	20.52	116.08	23.84	92.24	77.01	5.08	0.00	9	2.50	76.07
6.10	7.030	350.40	0.00	7.030	4.98	4	20.48	116.49	24.03	92.46	74.78	5.07	0.00	9	2.50	73.90
6.12	7.100	323.88	0.00	7.100	4.56	4	20.39	116.90	24.23	92.67	75.36	4.64	0.00	4	2.47	74.43
6.14	6.990	305.18	0.00	6.990	4.37	4	20.31	117.31	24.43	92.88	74.00	4.44	0.00	4	2.46	73.10
6.16	6.840	292.07	0.00	6.840	4.27	4	20.26	117.71	24.62	93.09	72.21	4.34	0.00	4	2.46	71.37
6.18	6.510	283.10	0.00	6.510	4.35	4	20.20	118.12	24.82	93.30	68.51	4.43	0.00	4	2.48	67.77
6.20	6.520	268.33	0.00	6.520	4.12	4	20.14	118.52	25.02	93.50	68.46	4.19	0.00	4	2.47	67.71
6.22	6.370	270.17	0.00	6.370	4.24	4	20.14	118.92	25.21	93.71	66.71	4.32	0.00	4	2.48	66.03
6.24	6.340	265.48	0.00	6.340	4.19	4	20.12	119.32	25.41	93.92	66.24	4.27	0.00	4	2.48	65.58
6.26	6.160	262.60	0.00	6.160	4.26	4	20.09	119.73	25.60	94.12	64.18	4.35	0.00	4	2.50	63.59
6.28	5.730	251.09	0.00	5.730	4.38	4	20.01	120.13	25.80	94.33	59.47	4.48	0.00	4	2.53	58.99
6.30	5.270	247.13	0.00	5.270	4.69	4	19.96	120.53	26.00	94.53	54.48	4.80	-0.01	4	2.58	54.10
6.32	4.880	238.07	0.00	4.880	4.88	4	19.89	120.92	26.19	94.73	50.24	5.00	-0.01	4	2.61	49.95
6.34	4.540	238.64	0.00	4.540	5.26	4	19.87	121.32	26.39	94.93	46.55	5.40	-0.01	4	2.66	46.33
6.36	4.300	227.04	0.00	4.300	5.28	4	19.79	121.72	26.59	95.13	43.92	5.43	-0.01	3	2.68	43.74
6.38	4.130	215.35	0.00	4.130	5.21	4	19.71	122.11	26.78	95.33	42.04	5.37	-0.01	3	2.69	41.88
6.40	4.090	198.59	0.00	4.090	4.86	4	19.61	122.50	26.98	95.53	41.53	5.01	-0.01	4	2.67	41.37

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
6.42	4.190	187.56	0.00	4.190	4.48	4	19.56	122.90	27.17	95.72	42.49	4.61	-0.01	4	2.64	42.31
6.44	4.410	181.16	0.00	4.410	4.11	4	19.54	123.29	27.37	95.92	44.69	4.23	-0.01	4	2.59	44.48
6.46	4.670	170.92	0.00	4.670	3.66	4	19.49	123.68	27.57	96.11	47.30	3.76	-0.01	4	2.54	47.05
6.48	5.100	161.39	0.00	5.100	3.16	4	19.46	124.07	27.76	96.30	51.67	3.24	-0.01	4	2.47	51.36
6.50	5.610	151.40	0.00	5.610	2.70	5	19.42	124.45	27.96	96.50	56.85	2.76	-0.01	5	2.39	56.46
6.52	6.060	147.66	0.00	6.060	2.44	5	19.42	124.84	28.15	96.69	61.38	2.49	0.00	5	2.33	60.95
6.54	6.360	149.22	0.00	6.360	2.35	5	19.46	125.23	28.35	96.88	64.35	2.39	0.00	5	2.31	63.90
6.56	6.890	161.26	0.00	6.890	2.34	5	19.58	125.62	28.55	97.08	69.68	2.38	0.00	5	2.28	69.20
6.58	6.990	175.17	0.00	6.990	2.51	5	19.68	126.02	28.74	97.27	70.56	2.55	0.00	5	2.30	70.13
6.60	6.990	175.17	0.00	6.990	2.51	5	19.68	126.41	28.94	97.47	70.42	2.55	0.00	5	2.30	70.01
6.62	6.610	217.35	0.00	6.610	3.29	5	19.90	126.81	29.14	97.67	66.38	3.35	0.00	4	2.40	66.09
6.64	6.540	228.91	0.00	6.540	3.50	4	19.96	127.21	29.33	97.87	65.52	3.57	0.00	4	2.43	65.27
6.66	6.570	250.02	0.00	6.570	3.81	4	20.06	127.61	29.53	98.08	65.69	3.88	0.00	4	2.45	65.47
6.68	6.770	236.04	0.00	6.770	3.49	4	20.01	128.01	29.72	98.28	67.58	3.55	0.00	4	2.41	67.37
6.70	6.630	234.96	0.00	6.630	3.54	4	19.99	128.41	29.92	98.49	66.02	3.61	0.00	4	2.43	65.84
6.72	6.990	218.87	0.00	6.990	3.13	5	19.93	128.81	30.12	98.69	69.52	3.19	0.00	5	2.37	69.34
6.74	6.800	234.33	0.00	6.800	3.45	4	20.00	129.21	30.31	98.89	67.45	3.51	0.00	4	2.41	67.32
6.76	7.250	223.21	0.00	7.250	3.08	5	19.97	129.61	30.51	99.10	71.85	3.13	0.00	5	2.36	71.72
6.78	7.520	210.85	0.00	7.520	2.80	5	19.92	130.00	30.71	99.30	74.42	2.85	0.00	5	2.32	74.31
6.80	7.490	206.60	0.00	7.490	2.76	5	19.89	130.40	30.90	99.50	73.97	2.81	0.00	5	2.31	73.88
6.82	7.570	209.01	0.00	7.570	2.76	5	19.91	130.80	31.10	99.70	74.61	2.81	0.00	5	2.31	74.57
6.84	7.690	216.49	0.00	7.690	2.82	5	19.96	131.20	31.29	99.90	75.66	2.86	0.00	5	2.31	75.64
6.86	7.360	217.19	0.00	7.360	2.95	5	19.94	131.60	31.49	100.11	72.21	3.00	0.00	5	2.34	72.22
6.88	7.160	202.36	0.00	7.160	2.83	5	19.85	132.00	31.69	100.31	70.06	2.88	0.00	5	2.34	70.11
6.90	6.480	201.95	0.00	6.480	3.12	5	19.81	132.39	31.88	100.51	63.15	3.18	-0.01	5	2.40	63.21
6.92	5.900	205.53	0.00	5.900	3.48	4	19.79	132.79	32.08	100.71	57.27	3.56	-0.01	4	2.46	57.33
6.94	5.380	214.11	0.00	5.380	3.98	4	19.81	133.18	32.27	100.91	52.00	4.08	-0.01	4	2.54	52.06
6.96	5.000	217.88	0.00	5.000	4.36	4	19.80	133.58	32.47	101.11	48.13	4.48	-0.01	4	2.59	48.19
6.98	4.820	215.67	0.00	4.820	4.47	4	19.77	133.98	32.67	101.31	46.26	4.60	-0.01	4	2.61	46.32
7.00	4.750	214.94	0.00	4.750	4.53	4	19.76	134.37	32.86	101.51	45.47	4.66	-0.01	4	2.62	45.54
7.02	4.900	208.47	0.00	4.900	4.25	4	19.74	134.77	33.06	101.71	46.85	4.37	-0.01	4	2.59	46.94
7.04	5.100	206.13	0.00	5.100	4.04	4	19.74	135.16	33.26	101.90	48.72	4.15	-0.01	4	2.56	48.83
7.06	5.420	195.39	0.00	5.420	3.60	4	19.70	135.55	33.45	102.10	51.76	3.70	-0.01	4	2.51	51.91
7.08	5.680	185.25	0.00	5.680	3.26	4	19.66	135.95	33.65	102.30	54.19	3.34	-0.01	4	2.46	54.39
7.10	5.870	179.86	0.00	5.870	3.06	5	19.64	136.34	33.84	102.50	55.94	3.14	-0.01	4	2.43	56.18
7.12	6.110	176.15	0.00	6.110	2.88	5	19.63	136.73	34.04	102.69	58.17	2.95	-0.01	5	2.40	58.45
7.14	6.300	173.74	0.00	6.300	2.76	5	19.63	137.13	34.24	102.89	59.90	2.82	-0.01	5	2.38	60.23
7.16	6.410	177.74	0.00	6.410	2.77	5	19.66	137.52	34.43	103.09	60.85	2.83	-0.01	5	2.37	61.21
7.18	6.590	178.47	0.00	6.590	2.71	5	19.67	137.91	34.63	103.28	62.47	2.77	-0.01	5	2.36	62.88
7.20	6.620	181.89	0.00	6.620	2.75	5	19.70	138.31	34.83	103.48	62.64	2.81	-0.01	5	2.36	63.06
7.22	6.680	185.28	0.00	6.680	2.77	5	19.72	138.70	35.02	103.68	63.09	2.83	-0.01	5	2.36	63.55
7.24	6.830	187.53	0.00	6.830	2.75	5	19.75	139.10	35.22	103.88	64.41	2.80	-0.01	5	2.35	64.91
7.26	6.650	191.01	0.00	6.650	2.87	5	19.76	139.49	35.41	104.08	62.56	2.93	-0.01	5	2.37	63.04
7.28	6.740	183.50	0.00	6.740	2.72	5	19.72	139.89	35.61	104.27	63.30	2.78	-0.01	5	2.35	63.83
7.30	6.630	183.44	0.00	6.630	2.77	5	19.71	140.28	35.81	104.47	62.12	2.83	-0.01	5	2.36	62.66
7.32	6.530	177.70	0.00	6.530	2.72	5	19.67	140.67	36.00	104.67	61.04	2.78	-0.01	5	2.37	61.59
7.34	6.490	165.66	0.00	6.490	2.55	5	19.58	141.07	36.20	104.87	60.54	2.61	-0.01	5	2.35	61.13
7.36	6.480	156.22	0.00	6.480	2.41	5	19.51	141.46	36.40	105.06	60.33	2.46	-0.01	5	2.33	60.96
7.38	6.450	150.80	0.00	6.450	2.34	5	19.47	141.85	36.59	105.25	59.93	2.39	-0.01	5	2.32	60.59
7.40	6.630	136.95	0.00	6.630	2.07	5	19.37	142.23	36.79	105.45	61.53	2.11	-0.01	5	2.28	62.28
7.42	6.710	139.11	0.00	6.710	2.07	5	19.39	142.62	36.98	105.64	62.17	2.12	-0.01	5	2.28	62.96
7.44	6.750	142.78	0.00	6.750	2.12	5	19.43	143.01	37.18	105.83	62.43	2.16	-0.01	5	2.28	63.24
7.46	6.760	143.58	0.00	6.760	2.12	5	19.43	143.40	37.38	106.02	62.41	2.17	-0.01	5	2.28	63.24
7.48	6.680	152.32	0.00	6.680	2.28	5	19.50	143.79	37.57	106.22	61.54	2.33	-0.01	5	2.31	62.35
7.50	6.510	160.94	0.00	6.510	2.47	5	19.55	144.18	37.77	106.41	59.82	2.53	-0.01	5	2.34	60.59

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
7.52	6.340	180.05	0.00	6.340	2.84	5	19.67	144.57	37.96	106.61	58.11	2.91	-0.01	5	2.39	58.81
7.54	6.430	185.88	0.00	6.430	2.89	5	19.71	144.97	38.16	106.80	58.85	2.96	-0.01	5	2.39	59.56
7.56	6.600	183.92	0.00	6.600	2.79	5	19.71	145.36	38.36	107.00	60.32	2.85	-0.01	5	2.37	61.11
7.58	6.420	190.54	0.00	6.420	2.97	5	19.74	145.75	38.55	107.20	58.53	3.04	-0.01	5	2.40	59.27
7.60	6.420	190.54	0.00	6.420	2.97	5	19.74	146.15	38.75	107.40	58.42	3.04	-0.01	5	2.40	59.17
7.62	6.720	221.08	0.00	6.720	3.29	5	19.93	146.55	38.95	107.60	61.09	3.36	-0.01	4	2.42	61.87
7.64	6.890	214.78	0.00	6.890	3.12	5	19.90	146.95	39.14	107.80	62.55	3.19	-0.01	5	2.40	63.41
7.66	7.340	211.61	0.00	7.340	2.88	5	19.91	147.34	39.34	108.01	66.60	2.94	-0.01	5	2.35	67.62
7.68	7.380	219.25	0.00	7.380	2.97	5	19.95	147.74	39.53	108.21	66.84	3.03	-0.01	5	2.36	67.88
7.70	7.440	241.21	0.00	7.440	3.24	5	20.07	148.14	39.73	108.41	67.26	3.31	-0.01	5	2.39	68.28
7.72	7.530	230.56	0.00	7.530	3.06	5	20.02	148.54	39.93	108.62	67.96	3.12	-0.01	5	2.37	69.06
7.74	7.740	223.62	0.00	7.740	2.89	5	20.00	148.94	40.12	108.82	69.76	2.95	-0.01	5	2.34	70.97
7.76	7.830	220.61	0.00	7.830	2.82	5	19.98	149.34	40.32	109.03	70.45	2.87	-0.01	5	2.33	71.73
7.78	8.110	212.40	0.00	8.110	2.62	5	19.95	149.74	40.52	109.23	72.88	2.67	-0.01	5	2.29	74.31
7.80	8.850	207.93	0.00	8.850	2.35	5	19.96	150.14	40.71	109.43	79.50	2.39	0.00	5	2.23	81.27
7.82	10.380	219.34	0.00	10.380	2.11	5	20.09	150.54	40.91	109.64	93.30	2.14	0.00	5	2.15	95.70
7.84	12.360	224.57	0.00	12.360	1.82	5	20.18	150.95	41.10	109.84	111.15	1.84	0.00	5	2.05	114.48
7.86	12.100	219.85	0.00	12.100	1.82	5	20.15	151.35	41.30	110.05	108.57	1.84	0.00	5	2.06	111.87
7.88	11.050	272.39	0.00	11.050	2.47	5	20.36	151.76	41.50	110.26	98.84	2.50	0.00	5	2.18	101.42
7.90	9.870	334.65	0.00	9.870	3.39	5	20.55	152.17	41.69	110.47	87.97	3.44	0.00	5	2.32	89.83
7.92	8.840	397.65	0.00	8.840	4.50	9	20.71	152.58	41.89	110.69	78.48	4.58	0.00	4	2.45	79.78
7.94	8.460	418.31	0.00	8.460	4.94	9	20.75	152.99	42.08	110.91	74.90	5.04	-0.01	9	2.49	76.03
7.96	8.370	407.00	0.00	8.370	4.86	9	20.71	153.41	42.28	111.13	73.94	4.95	-0.01	9	2.49	75.08
7.98	8.000	383.45	0.00	8.000	4.79	9	20.63	153.82	42.48	111.34	70.47	4.89	-0.01	4	2.50	71.55
8.00	7.750	366.25	0.00	7.750	4.73	4	20.56	154.23	42.67	111.56	68.09	4.82	-0.01	4	2.51	69.13
8.02	7.570	353.00	0.00	7.570	4.66	4	20.51	154.64	42.87	111.77	66.34	4.76	-0.01	4	2.51	67.37
8.04	7.660	339.28	0.00	7.660	4.43	4	20.47	155.05	43.07	111.99	67.02	4.52	-0.01	4	2.49	68.13
8.06	7.900	310.06	0.00	7.900	3.92	4	20.38	155.46	43.26	112.20	69.03	4.00	-0.01	4	2.44	70.34
8.08	7.440	291.75	0.00	7.440	3.92	4	20.29	155.87	43.46	112.41	64.80	4.01	-0.01	4	2.46	66.00
8.10	6.830	265.64	0.00	6.830	3.89	4	20.15	156.27	43.65	112.62	59.26	3.98	-0.01	4	2.48	60.31
8.12	6.160	269.50	0.00	6.160	4.38	4	20.12	156.67	43.85	112.82	53.21	4.49	-0.01	4	2.55	53.99
8.14	5.910	268.27	0.00	5.910	4.54	4	20.10	157.08	44.05	113.03	50.90	4.66	-0.01	4	2.58	51.59
8.16	5.870	270.11	0.00	5.870	4.60	4	20.11	157.48	44.24	113.23	50.45	4.73	-0.01	4	2.59	51.13
8.18	5.820	265.35	0.00	5.820	4.56	4	20.08	157.88	44.44	113.44	49.91	4.69	-0.01	4	2.59	50.59
8.20	5.520	245.96	0.00	5.520	4.46	4	19.98	158.28	44.64	113.64	47.18	4.59	-0.01	4	2.60	47.81
8.22	5.400	231.13	0.00	5.400	4.28	4	19.90	158.68	44.83	113.85	46.04	4.41	-0.01	4	2.59	46.67
8.24	5.450	223.30	0.00	5.450	4.10	4	19.86	159.08	45.03	114.05	46.39	4.22	-0.01	4	2.58	47.08
8.26	5.540	218.52	0.00	5.540	3.94	4	19.84	159.47	45.22	114.25	47.10	4.06	-0.01	4	2.56	47.84
8.28	5.650	213.42	0.00	5.650	3.78	4	19.82	159.87	45.42	114.45	47.97	3.89	-0.01	4	2.54	48.79
8.30	5.550	199.03	0.00	5.550	3.59	4	19.73	160.26	45.62	114.65	47.01	3.69	-0.01	4	2.53	47.85
8.32	5.550	189.84	0.00	5.550	3.42	4	19.68	160.66	45.81	114.84	46.93	3.52	-0.01	4	2.52	47.81
8.34	5.890	191.01	0.00	5.890	3.24	4	19.71	161.05	46.01	115.04	49.80	3.33	-0.01	4	2.48	50.84
8.36	5.960	197.07	0.00	5.960	3.31	4	19.75	161.45	46.21	115.24	50.32	3.40	-0.01	4	2.48	51.37
8.38	6.130	201.12	0.00	6.130	3.28	4	19.78	161.84	46.40	115.44	51.70	3.37	-0.01	4	2.47	52.83
8.40	6.620	198.71	0.00	6.620	3.00	5	19.80	162.24	46.60	115.64	55.84	3.08	-0.01	5	2.42	57.25
8.42	7.030	208.70	0.00	7.030	2.97	5	19.88	162.63	46.79	115.84	59.28	3.04	-0.01	5	2.40	60.87
8.44	7.440	217.85	0.00	7.440	2.93	5	19.95	163.03	46.99	116.04	62.71	2.99	-0.01	5	2.37	64.48
8.46	7.570	223.49	0.00	7.570	2.95	5	19.99	163.43	47.19	116.25	63.71	3.02	-0.01	5	2.37	65.55
8.48	7.660	228.85	0.00	7.660	2.99	5	20.02	163.83	47.38	116.45	64.37	3.05	-0.01	5	2.37	66.24
8.50	7.820	227.77	0.00	7.820	2.91	5	20.02	164.23	47.58	116.65	65.63	2.98	-0.01	5	2.36	67.61
8.52	7.890	238.32	0.00	7.890	3.02	5	20.08	164.63	47.77	116.86	66.11	3.08	-0.01	5	2.37	68.09
8.54	8.430	224.79	0.00	8.430	2.67	5	20.03	165.04	47.97	117.06	70.60	2.72	-0.01	5	2.31	73.01
8.56	8.970	224.82	0.00	8.970	2.51	5	20.06	165.44	48.17	117.27	75.08	2.55	-0.01	5	2.27	77.85
8.58	9.050	229.39	0.00	9.050	2.53	5	20.08	165.84	48.36	117.47	75.63	2.58	-0.01	5	2.27	78.44
8.60	9.050	229.39	0.00	9.050	2.53	5	20.08	166.24	48.56	117.68	75.49	2.58	-0.01	5	2.27	78.33

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P20	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
8.62	8.720	251.00	0.00	8.720	2.88	5	20.17	166.64	48.76	117.89	72.56	2.93	-0.01	5	2.32	75.06
8.64	7.770	273.69	0.00	7.770	3.52	5	20.23	167.05	48.95	118.10	64.38	3.60	-0.01	4	2.42	66.20
8.66	6.760	294.63	0.00	6.760	4.36	4	20.26	167.45	49.15	118.30	55.73	4.47	-0.01	4	2.54	56.90
8.68	6.110	294.47	0.00	6.110	4.82	4	20.22	167.86	49.34	118.51	50.14	4.96	-0.01	4	2.60	50.99
8.70	5.970	282.18	0.00	5.970	4.73	4	20.16	168.26	49.54	118.72	48.87	4.86	-0.01	4	2.60	49.70
8.72	5.920	279.90	0.00	5.920	4.73	4	20.15	168.66	49.74	118.93	48.36	4.87	-0.01	4	2.61	49.18
8.74	6.020	265.95	0.00	6.020	4.42	4	20.10	169.07	49.93	119.13	49.11	4.55	-0.01	4	2.58	50.04
8.76	6.430	251.89	0.00	6.430	3.92	4	20.06	169.47	50.13	119.34	52.46	4.02	-0.01	4	2.52	53.68
8.78	6.740	236.30	0.00	6.740	3.51	4	20.01	169.87	50.33	119.54	54.96	3.60	-0.01	4	2.47	56.44
8.80	6.720	227.87	0.00	6.720	3.39	4	19.96	170.27	50.52	119.75	54.70	3.48	-0.01	4	2.46	56.22
8.82	6.540	218.77	0.00	6.540	3.35	4	19.91	170.67	50.72	119.95	53.10	3.43	-0.01	4	2.47	54.57
8.84	6.380	212.37	0.00	6.380	3.33	4	19.86	171.06	50.91	120.15	51.68	3.42	-0.01	4	2.47	53.09
8.86	6.490	202.83	0.00	6.490	3.13	5	19.82	171.46	51.11	120.35	52.50	3.21	-0.01	4	2.45	54.05
8.88	6.570	196.97	0.00	6.570	3.00	5	19.79	171.86	51.31	120.55	53.08	3.08	-0.01	4	2.43	54.71
8.90	6.630	189.62	0.00	6.630	2.86	5	19.75	172.25	51.50	120.75	53.48	2.94	-0.01	5	2.42	55.22
8.92	6.800	193.01	0.00	6.800	2.84	5	19.78	172.65	51.70	120.95	54.80	2.91	-0.01	5	2.41	56.63
8.94	7.210	189.43	0.00	7.210	2.63	5	19.78	173.04	51.89	121.15	58.09	2.69	-0.01	5	2.36	60.24
8.96	7.450	194.12	0.00	7.450	2.61	5	19.82	173.44	52.09	121.35	59.97	2.67	-0.01	5	2.35	62.26
8.98	7.110	195.99	0.00	7.110	2.76	5	19.81	173.83	52.29	121.55	57.07	2.83	-0.01	5	2.38	59.12
9.00	6.540	223.33	0.00	6.540	3.41	4	19.93	174.23	52.48	121.75	52.29	3.51	-0.01	4	2.48	53.80
9.02	6.400	223.52	0.00	6.400	3.49	4	19.92	174.63	52.68	121.95	51.05	3.59	-0.01	4	2.49	52.48
9.04	6.340	223.33	0.00	6.340	3.52	4	19.92	175.03	52.88	122.15	50.47	3.62	-0.01	4	2.50	51.87
9.06	6.300	221.02	0.00	6.300	3.51	4	19.90	175.43	53.07	122.35	50.06	3.61	-0.01	4	2.50	51.45
9.08	6.170	225.96	0.00	6.170	3.66	4	19.92	175.83	53.27	122.56	48.91	3.77	-0.01	4	2.52	50.20
9.10	6.150	223.30	0.00	6.150	3.63	4	19.91	176.22	53.46	122.76	48.66	3.74	-0.01	4	2.52	49.96
9.12	6.150	220.29	0.00	6.150	3.58	4	19.89	176.62	53.66	122.96	48.58	3.69	-0.01	4	2.52	49.90
9.14	6.000	205.94	0.00	6.000	3.43	4	19.80	177.02	53.86	123.16	47.28	3.54	-0.01	4	2.51	48.59
9.16	6.030	203.66	0.00	6.030	3.38	4	19.79	177.41	54.05	123.36	47.44	3.48	-0.01	4	2.51	48.79
9.18	6.100	204.64	0.00	6.100	3.35	4	19.80	177.81	54.25	123.56	47.93	3.46	-0.01	4	2.50	49.33
9.20	6.210	204.26	0.00	6.210	3.29	4	19.81	178.21	54.45	123.76	48.74	3.39	-0.01	4	2.49	50.21
9.22	6.350	204.96	0.00	6.350	3.23	5	19.82	178.60	54.64	123.96	49.79	3.32	-0.01	4	2.48	51.36
9.24	6.460	205.05	0.00	6.460	3.17	5	19.83	179.00	54.84	124.16	50.59	3.26	-0.01	4	2.46	52.24
9.26	6.520	207.11	0.00	6.520	3.18	5	19.84	179.40	55.03	124.36	50.99	3.27	-0.01	4	2.46	52.67

CPTe P22 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_v	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance		based on the stress exponent n
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data			Basic output data					NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P22	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _v ,v ₀	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.050	0.03	0.00	0.050	0.06	1	13.73	0.33	0.00	0.33	151.75	0.06	0.00	0	2.18	19.43
0.04	0.290	0.03	0.00	0.290	0.01	1	13.73	0.60	0.00	0.60	480.71	0.01	0.00	0	1.89	55.27
0.06	0.600	0.06	0.00	0.600	0.01	1	13.73	0.88	0.00	0.88	683.38	0.01	0.00	0	1.78	74.71
0.08	1.580	0.16	0.00	1.580	0.01	0	13.73	1.15	0.00	1.15	1371.27	0.01	0.00	0	1.60	118.99
0.10	1.190	0.13	0.00	1.190	0.01	0	13.73	1.43	0.00	1.43	833.47	0.01	0.00	0	1.67	93.01
0.12	1.120	0.10	0.00	1.120	0.01	0	13.73	1.70	0.00	1.70	657.54	0.01	0.00	0	1.73	90.19
0.14	1.090	0.13	0.00	1.090	0.01	0	13.73	1.98	0.00	1.98	550.78	0.01	0.00	0	1.72	80.16
0.16	0.710	0.13	0.00	0.710	0.02	1	13.73	2.25	0.00	2.25	314.54	0.02	0.00	0	1.80	55.37
0.18	0.790	0.10	0.00	0.790	0.01	1	13.73	2.52	0.00	2.52	311.90	0.01	0.00	0	1.83	58.53
0.20	0.810	0.10	0.00	0.810	0.01	1	13.73	2.80	0.00	2.80	288.34	0.01	0.00	0	1.84	57.70
0.22	0.820	0.10	0.00	0.820	0.01	1	13.73	3.07	0.00	3.07	265.74	0.01	0.00	0	1.85	57.30
0.24	0.970	0.10	0.00	0.970	0.01	1	13.73	3.35	0.00	3.35	288.65	0.01	0.00	0	1.83	63.42
0.26	1.050	0.13	0.00	1.050	0.01	0	13.73	3.62	0.00	3.62	288.78	0.01	0.00	0	1.80	63.24
0.28	1.080	0.13	0.00	1.080	0.01	0	13.73	3.90	0.00	3.90	276.05	0.01	0.00	0	1.82	61.96
0.30	1.060	0.13	0.00	1.060	0.01	0	13.73	4.17	0.00	4.17	253.02	0.01	0.00	0	1.83	59.62
0.32	1.030	0.13	0.00	1.030	0.01	0	13.73	4.45	0.00	4.45	230.59	0.01	0.00	0	1.84	56.96
0.34	0.880	1.49	0.00	0.880	0.17	1	13.73	4.72	0.00	4.72	185.35	0.17	0.00	6	1.85	47.35
0.36	0.850	2.28	0.00	0.850	0.27	1	13.87	5.00	0.00	5.00	169.06	0.27	0.00	6	1.91	47.52
0.38	0.840	4.37	0.00	0.840	0.52	4	14.62	5.29	0.00	5.29	157.84	0.52	0.00	6	2.00	51.12
0.40	0.900	7.95	0.00	0.900	0.88	4	15.33	5.59	0.00	5.59	159.96	0.89	0.00	5	2.07	57.34
0.42	1.050	9.25	0.00	1.050	0.88	4	15.57	5.90	0.00	5.90	176.92	0.89	0.00	6	2.04	62.48
0.44	1.210	8.52	0.00	1.210	0.70	4	15.53	6.21	0.00	6.21	193.79	0.71	0.00	6	1.97	64.93
0.46	1.030	9.00	0.00	1.030	0.87	4	15.53	6.52	0.00	6.52	156.92	0.88	0.00	5	2.06	58.17
0.48	0.930	10.11	0.00	0.930	1.09	4	15.62	6.83	0.00	6.83	135.07	1.10	0.00	5	2.14	55.10
0.50	0.830	10.20	0.00	0.830	1.23	4	15.59	7.15	0.00	7.15	115.14	1.24	0.00	5	2.20	50.75
0.52	0.760	10.84	0.00	0.760	1.43	4	15.62	7.46	0.00	7.46	100.90	1.44	0.00	5	2.26	47.87
0.54	0.920	10.71	0.00	0.920	1.16	4	15.68	7.77	0.00	7.77	117.38	1.17	0.00	5	2.18	52.02
0.56	1.070	8.84	0.00	1.070	0.83	4	15.52	8.08	0.00	8.08	131.37	0.83	0.00	5	2.08	53.70
0.58	1.110	8.05	0.00	1.110	0.73	4	15.43	8.39	0.00	8.39	131.26	0.73	0.00	6	2.05	53.06
0.60	0.960	9.44	0.00	0.960	0.98	4	15.55	8.70	0.00	8.70	109.33	0.99	0.00	5	2.15	49.24
0.62	0.810	9.00	0.00	0.810	1.11	4	15.43	9.01	0.00	9.01	88.90	1.12	0.00	5	2.23	43.45
0.64	0.720	8.49	0.00	0.720	1.18	4	15.32	9.32	0.00	9.32	76.28	1.19	0.00	5	2.28	39.42
0.66	0.790	7.92	0.00	0.790	1.00	4	15.28	9.62	0.00	9.62	81.10	1.01	0.00	5	2.23	40.48
0.68	1.280	7.45	0.00	1.280	0.58	5	15.39	9.93	0.00	9.93	127.90	0.59	0.00	6	2.01	52.88
0.70	1.190	7.73	0.00	1.190	0.65	4	15.41	10.24	0.00	10.24	115.23	0.66	0.00	6	2.05	50.13
0.72	1.290	12.48	0.00	1.290	0.97	4	15.99	10.56	0.00	10.56	121.21	0.98	0.00	5	2.10	55.92
0.74	1.350	12.55	0.00	1.350	0.93	4	16.01	10.88	0.00	10.88	123.12	0.94	0.00	5	2.09	56.70
0.76	1.380	14.04	0.00	1.380	1.02	4	16.15	11.20	0.00	11.20	122.23	1.03	0.00	5	2.11	57.69
0.78	1.310	17.90	0.00	1.310	1.37	4	16.41	11.53	0.00	11.53	112.66	1.38	0.00	5	2.18	57.68
0.80	1.240	22.09	0.00	1.240	1.78	4	16.63	11.86	0.00	11.86	103.58	1.80	0.00	5	2.26	56.94
0.82	1.170	25.26	0.00	1.170	2.16	4	16.76	12.19	0.00	12.19	94.97	2.18	0.00	5	2.33	55.39
0.84	1.100	28.23	0.00	1.100	2.57	3	16.87	12.53	0.00	12.53	86.80	2.60	0.00	5	2.39	53.53
0.86	1.080	26.65	0.00	1.080	2.47	3	16.79	12.86	0.00	12.86	82.95	2.50	0.00	5	2.39	51.52
0.88	1.100	27.19	0.00	1.100	2.47	3	16.82	13.20	0.00	13.20	82.33	2.50	0.00	5	2.39	51.48
0.90	1.480	18.95	0.00	1.480	1.28	4	16.52	13.53	0.00	13.53	108.35	1.29	0.00	5	2.17	57.61

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P22	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	1.810	17.55	0.00	1.810	0.97	5	16.51	13.86	0.00	13.86	129.55	0.98	0.00	5	2.06	63.98
0.94	2.040	16.16	0.00	2.040	0.79	5	16.46	14.19	0.00	14.19	142.72	0.80	0.00	6	1.99	67.53
0.96	1.990	14.16	0.00	1.990	0.71	5	16.30	14.52	0.00	14.52	136.04	0.72	0.00	6	1.98	64.52
0.98	1.910	14.20	0.00	1.910	0.74	5	16.29	14.85	0.00	14.85	127.65	0.75	0.00	6	2.00	62.14
1.00	1.930	14.48	0.00	1.930	0.75	5	16.31	15.17	0.00	15.17	126.20	0.76	0.00	6	2.00	62.06
1.02	1.990	15.75	0.00	1.990	0.79	5	16.42	15.50	0.00	15.50	127.38	0.80	0.00	6	2.01	63.38
1.04	2.080	21.52	0.00	2.080	1.03	5	16.80	15.83	0.00	15.83	130.36	1.04	0.00	5	2.06	67.47
1.06	2.070	23.61	0.00	2.070	1.14	5	16.90	16.17	0.00	16.17	127.00	1.15	0.00	5	2.08	67.43
1.08	2.100	27.41	0.00	2.100	1.31	5	17.08	16.51	0.00	16.51	126.18	1.32	0.00	5	2.11	68.86
1.10	2.030	35.27	0.00	2.030	1.74	4	17.36	16.86	0.00	16.86	119.42	1.75	0.00	5	2.19	69.23
1.12	2.030	39.80	0.00	2.030	1.96	4	17.50	17.21	0.00	17.21	116.98	1.98	0.00	5	2.22	69.78
1.14	1.870	45.82	0.00	1.870	2.45	4	17.63	17.56	0.00	17.56	105.50	2.47	0.00	5	2.30	66.80
1.16	1.810	49.37	0.00	1.810	2.73	4	17.70	17.91	0.00	17.91	100.05	2.75	0.00	5	2.34	65.36
1.18	1.980	57.70	0.00	1.980	2.91	4	17.91	18.27	0.00	18.27	107.38	2.94	0.00	5	2.34	70.41
1.20	2.510	64.99	0.00	2.510	2.59	4	18.14	18.63	0.00	18.63	133.72	2.61	0.00	5	2.25	83.30
1.22	2.770	68.60	0.00	2.770	2.48	4	18.24	19.00	0.00	19.00	144.82	2.49	0.00	5	2.22	88.84
1.24	3.210	65.47	0.00	3.210	2.04	5	18.25	19.36	0.00	19.36	164.80	2.05	0.00	5	2.13	96.39
1.26	3.430	77.95	0.00	3.430	2.27	4	18.47	19.73	0.00	19.73	172.85	2.29	0.00	5	2.15	102.70
1.28	3.430	89.49	0.00	3.430	2.61	4	18.63	20.10	0.00	20.10	169.64	2.62	0.00	5	2.19	103.98
1.30	3.550	97.06	0.00	3.550	2.73	4	18.74	20.48	0.00	20.48	172.38	2.75	0.00	5	2.20	106.77
1.32	3.370	99.66	0.00	3.370	2.96	4	18.75	20.85	0.00	20.85	160.63	2.98	0.00	5	2.24	102.11
1.34	3.270	95.51	0.00	3.270	2.92	4	18.69	21.22	0.00	21.22	153.07	2.94	0.00	5	2.24	98.24
1.36	3.100	94.21	0.00	3.100	3.04	4	18.65	21.60	0.00	21.60	142.53	3.06	0.00	5	2.27	93.46
1.38	3.010	92.34	0.00	3.010	3.07	4	18.62	21.97	0.00	21.97	136.01	3.09	0.00	5	2.28	90.31
1.40	3.160	93.38	0.00	3.160	2.96	4	18.65	22.34	0.00	22.34	140.43	2.98	0.00	5	2.26	92.66
1.42	3.370	92.69	0.00	3.370	2.75	4	18.66	22.72	0.00	22.72	147.35	2.77	0.00	5	2.23	95.88
1.44	3.640	89.52	0.00	3.640	2.46	4	18.65	23.09	0.00	23.09	156.65	2.48	0.00	5	2.18	99.73
1.46	4.230	83.31	0.00	4.230	1.97	5	18.63	23.46	0.00	23.46	179.29	1.98	0.00	5	2.09	109.02
1.48	3.710	78.11	0.00	3.710	2.11	5	18.50	23.83	0.00	23.83	154.67	2.12	0.00	5	2.14	97.23
1.50	3.600	73.07	0.00	3.600	2.03	5	18.42	24.20	0.00	24.20	147.75	2.04	0.00	5	2.14	93.41
1.52	3.660	73.20	0.00	3.660	2.00	5	18.42	24.57	0.00	24.57	147.96	2.01	0.00	5	2.14	93.75
1.54	3.510	83.47	0.00	3.510	2.38	4	18.56	24.94	0.00	24.94	139.74	2.40	0.00	5	2.20	91.91
1.56	3.380	89.68	0.00	3.380	2.65	4	18.63	25.31	0.00	25.31	132.53	2.67	0.00	5	2.24	89.57
1.58	3.170	98.30	0.00	3.170	3.10	4	18.71	25.69	0.00	25.69	122.41	3.13	0.00	5	2.30	85.86
1.60	3.040	107.96	0.00	3.040	3.55	4	18.80	26.06	0.00	26.06	115.64	3.58	0.00	5	2.35	83.65
1.62	2.970	114.23	0.00	2.970	3.85	4	18.86	26.44	0.00	26.44	111.33	3.88	0.00	4	2.39	82.14
1.64	2.950	117.18	0.00	2.950	3.97	4	18.88	26.82	0.00	26.82	109.01	4.01	0.00	4	2.40	81.27
1.66	2.770	123.11	0.00	2.770	4.44	3	18.92	27.19	0.00	27.19	100.86	4.49	0.00	4	2.45	77.40
1.68	2.610	133.79	0.00	2.610	5.13	3	18.99	27.57	0.00	27.57	93.65	5.18	0.00	9	2.51	74.23
1.70	2.690	137.02	0.00	2.690	5.09	3	19.03	27.95	0.00	27.95	95.23	5.15	0.00	9	2.50	75.44
1.72	2.760	135.05	0.00	2.760	4.89	3	19.02	28.33	0.00	28.33	96.41	4.94	0.00	9	2.49	76.01
1.74	3.100	118.42	0.00	3.100	3.82	4	18.91	28.71	0.00	28.71	106.96	3.86	0.00	4	2.39	80.66
1.76	3.380	113.57	0.00	3.380	3.36	4	18.90	29.09	0.00	29.09	115.18	3.39	0.00	5	2.33	84.84
1.78	3.420	109.86	0.00	3.420	3.21	4	18.86	29.47	0.00	29.47	115.05	3.24	0.00	5	2.32	84.51
1.80	3.480	110.02	0.00	3.480	3.16	4	18.87	29.85	0.00	29.85	115.60	3.19	0.00	5	2.31	84.94
1.82	3.290	115.88	0.00	3.290	3.52	4	18.91	30.22	0.00	30.22	107.85	3.55	0.00	5	2.36	81.29
1.84	3.120	131.79	0.00	3.120	4.22	4	19.04	30.60	0.00	30.60	100.95	4.27	0.00	4	2.43	78.74
1.86	2.940	142.06	0.00	2.940	4.83	3	19.10	30.99	0.00	30.99	93.88	4.88	0.00	9	2.49	75.35
1.88	2.850	145.22	0.00	2.850	5.10	3	19.12	31.37	0.00	31.37	89.86	5.15	0.00	9	2.51	73.14
1.90	4.470	164.68	0.00	4.470	3.68	4	19.43	31.75	0.00	31.75	139.77	3.71	0.00	5	2.30	104.14
1.92	7.580	170.99	0.00	7.580	2.26	5	19.68	32.15	0.00	32.15	234.80	2.27	0.00	5	2.03	155.72
1.94	13.470	164.40	0.00	13.470	1.22	6	19.85	32.54	0.00	32.54	412.92	1.22	0.00	6	1.70	239.35
1.96	16.220	158.15	0.00	16.220	0.98	6	19.88	32.94	0.00	32.94	491.41	0.98	0.00	6	1.59	273.33
1.98	16.140	146.59	0.00	16.140	0.91	6	19.79	33.34	0.00	33.34	483.15	0.91	0.00	6	1.57	268.44
2.00	15.840	133.22	0.00	15.840	0.84	6	19.67	33.73	0.00	33.73	468.60	0.84	0.00	6	1.56	260.33

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P22	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	15.600	124.06	0.00	15.600	0.80	6	19.59	34.12	0.00	34.12	456.17	0.80	0.00	6	1.55	253.97
2.04	15.100	115.69	0.00	15.100	0.77	6	19.49	34.51	0.00	34.51	436.51	0.77	0.00	6	1.55	244.56
2.06	13.240	117.12	0.00	13.240	0.88	6	19.46	34.90	0.00	34.90	378.34	0.89	0.00	6	1.62	220.02
2.08	11.260	138.98	0.00	11.260	1.23	6	19.59	35.29	0.00	35.29	318.04	1.24	0.00	6	1.76	196.67
2.10	10.400	151.66	0.00	10.400	1.46	6	19.66	35.69	0.00	35.69	290.43	1.46	0.00	6	1.83	185.67
2.12	8.640	212.15	0.00	8.640	2.46	5	19.98	36.08	0.00	36.08	238.44	2.47	0.00	5	2.04	166.00
2.14	8.000	244.47	0.00	8.000	3.06	5	20.11	36.49	0.00	36.49	218.26	3.07	0.00	5	2.13	157.90
2.16	7.830	252.68	0.00	7.830	3.23	5	20.14	36.89	0.00	36.89	211.26	3.24	0.00	8	2.15	154.82
2.18	6.790	291.88	0.00	6.790	4.30	4	20.25	37.29	0.00	37.29	181.07	4.32	0.00	9	2.28	139.71
2.20	6.610	298.78	0.00	6.610	4.52	4	20.27	37.70	0.00	37.70	174.34	4.55	0.00	9	2.30	136.15
2.22	6.840	297.52	0.00	6.840	4.35	4	20.28	38.10	0.00	38.10	178.50	4.37	0.00	9	2.29	138.86
2.24	7.120	297.33	0.00	7.120	4.18	4	20.29	38.51	0.00	38.51	183.88	4.20	0.00	8	2.27	142.39
2.26	7.290	257.91	0.00	7.290	3.54	4	20.14	38.91	0.00	38.91	186.33	3.56	0.00	8	2.21	141.77
2.28	7.320	246.85	0.00	7.320	3.37	5	20.09	39.32	0.00	39.32	185.18	3.39	0.00	8	2.19	140.62
2.30	7.870	254.10	0.00	7.870	3.23	5	20.15	39.72	0.00	39.72	197.14	3.25	0.00	8	2.16	148.62
2.32	8.120	250.93	0.00	8.120	3.09	5	20.15	40.12	0.00	40.12	201.38	3.11	0.00	5	2.14	151.26
2.34	8.510	244.00	0.00	8.510	2.87	5	20.13	40.52	0.00	40.52	209.00	2.88	0.00	5	2.11	155.69
2.36	8.560	243.08	0.00	8.560	2.84	5	20.13	40.93	0.00	40.93	208.15	2.85	0.00	5	2.11	155.44
2.38	8.770	242.79	0.00	8.770	2.77	5	20.14	41.33	0.00	41.33	211.19	2.78	0.00	5	2.10	157.59
2.40	8.630	239.24	0.00	8.630	2.77	5	20.12	41.73	0.00	41.73	205.79	2.79	0.00	5	2.10	154.38
2.42	8.030	264.43	0.00	8.030	3.29	5	20.20	42.14	0.00	42.14	189.57	3.31	0.00	8	2.17	146.21
2.44	7.350	275.75	0.00	7.350	3.75	4	20.22	42.54	0.00	42.54	171.78	3.77	0.00	8	2.24	135.73
2.46	7.500	291.18	0.00	7.500	3.88	4	20.29	42.95	0.00	42.95	173.64	3.90	0.00	8	2.25	137.93
2.48	7.250	308.51	0.00	7.250	4.26	4	20.34	43.35	0.00	43.35	166.23	4.28	0.00	9	2.29	134.09
2.50	6.620	305.91	0.00	6.620	4.62	4	20.30	43.76	0.00	43.76	150.28	4.65	0.00	9	2.34	123.48
2.52	6.770	279.33	0.00	6.770	4.13	4	20.20	44.16	0.00	44.16	152.29	4.15	0.00	9	2.30	123.85
2.54	7.170	283.89	0.00	7.170	3.96	4	20.24	44.57	0.00	44.57	159.88	3.98	0.00	8	2.27	129.32
2.56	7.460	273.91	0.00	7.460	3.67	4	20.21	44.97	0.00	44.97	164.88	3.69	0.00	8	2.24	132.39
2.58	7.470	251.63	0.00	7.470	3.37	5	20.12	45.38	0.00	45.38	163.63	3.39	0.00	8	2.21	130.69
2.60	7.340	239.46	0.00	7.340	3.26	5	20.05	45.78	0.00	45.78	159.34	3.28	0.00	5	2.21	127.44
2.62	6.080	260.28	0.00	6.080	4.28	4	20.08	46.18	0.00	46.18	130.66	4.31	0.00	9	2.34	109.04
2.64	5.550	235.60	0.00	5.550	4.25	4	19.93	46.58	0.00	46.58	118.16	4.28	0.00	9	2.37	99.45
2.66	5.240	234.05	0.00	5.240	4.47	4	19.90	46.98	0.00	46.98	110.55	4.51	0.00	9	2.40	94.12
2.68	4.580	247.13	0.00	4.580	5.40	4	19.91	47.37	0.00	47.37	95.68	5.45	0.00	9	2.49	83.88
2.70	4.150	246.78	0.00	4.150	5.95	3	19.87	47.77	0.00	47.77	85.87	6.02	0.00	9	2.55	76.64
2.72	4.560	229.10	0.00	4.560	5.02	4	19.82	48.17	0.00	48.17	93.67	5.08	0.00	9	2.48	81.97
2.74	4.800	223.59	0.00	4.800	4.66	4	19.81	48.56	0.00	48.56	97.84	4.71	0.00	9	2.44	84.93
2.76	4.550	224.44	0.00	4.550	4.93	4	19.80	48.96	0.00	48.96	91.93	4.99	0.00	9	2.47	80.67
2.78	4.810	192.28	0.00	4.810	4.00	4	19.64	49.35	0.00	49.35	96.46	4.04	0.00	4	2.40	83.01
2.80	4.750	185.18	0.00	4.750	3.90	4	19.59	49.75	0.00	49.75	94.49	3.94	0.00	4	2.39	81.41
2.82	4.570	177.86	0.00	4.570	3.89	4	19.53	50.14	0.00	50.14	90.15	3.94	0.00	4	2.40	78.05
2.84	4.460	172.86	0.00	4.460	3.88	4	19.49	50.53	0.00	50.53	87.27	3.92	0.00	4	2.41	75.82
2.86	4.370	166.36	0.00	4.370	3.81	4	19.44	50.92	0.00	50.92	84.83	3.85	0.00	4	2.41	73.86
2.88	4.300	166.23	0.00	4.300	3.87	4	19.43	51.30	0.00	51.30	82.81	3.91	0.00	4	2.42	72.43
2.90	4.440	159.61	0.00	4.440	3.59	4	19.39	51.69	0.00	51.69	84.89	3.64	0.00	4	2.40	73.83
2.92	4.500	169.72	0.00	4.500	3.77	4	19.47	52.08	0.00	52.08	85.40	3.82	0.00	4	2.41	74.63
2.94	4.600	170.70	0.00	4.600	3.71	4	19.49	52.47	0.00	52.47	86.67	3.75	0.00	4	2.40	75.68
2.96	4.770	168.96	0.00	4.770	3.54	4	19.49	52.86	0.00	52.86	89.24	3.58	0.00	4	2.38	77.63
2.98	5.070	168.61	0.00	5.070	3.33	4	19.51	53.25	0.00	53.25	94.21	3.36	0.00	5	2.34	81.42
3.00	5.390	172.63	0.00	5.390	3.20	4	19.56	53.64	0.00	53.64	99.48	3.23	0.00	5	2.31	85.59
3.02	5.770	177.36	0.00	5.770	3.07	5	19.62	54.03	0.00	54.03	105.78	3.10	0.00	5	2.28	90.55
3.04	5.960	181.03	0.00	5.960	3.04	5	19.65	54.43	0.00	54.43	108.51	3.07	0.00	5	2.27	92.82
3.06	5.950	191.55	0.00	5.950	3.22	4	19.72	54.82	0.00	54.82	107.54	3.25	0.00	5	2.29	92.59
3.08	5.820	195.80	0.00	5.820	3.36	4	19.73	55.22	0.00	55.22	104.41	3.40	0.00	5	2.31	90.50
3.10	5.510	206.70	0.00	5.510	3.75	4	19.77	55.61	0.00	55.61	98.08	3.79	0.00	4	2.36	86.13

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P22		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	5.220	215.06	0.00	5.220	4.12	4	19.80	56.01	0.00	56.01	92.20	4.16	0.00	4	2.41	81.92
3.14	4.990	216.30	0.00	4.990	4.33	4	19.79	56.40	0.00	56.40	87.47	4.38	0.00	4	2.44	78.34
3.16	4.880	217.79	0.00	4.880	4.46	4	19.79	56.80	0.00	56.80	84.92	4.52	0.00	4	2.46	76.44
3.18	4.880	216.81	0.00	4.880	4.44	4	19.78	57.19	0.00	57.19	84.32	4.50	0.00	4	2.46	76.02
3.20	4.860	221.66	0.00	4.860	4.56	4	19.81	57.59	0.00	57.59	83.39	4.62	0.00	4	2.47	75.45
3.22	4.900	224.41	0.00	4.900	4.58	4	19.82	57.99	0.00	57.99	83.50	4.63	0.00	4	2.47	75.66
3.24	5.000	225.11	0.00	5.000	4.50	4	19.84	58.38	0.00	58.38	84.64	4.56	0.00	4	2.46	76.65
3.26	5.200	221.31	0.00	5.200	4.26	4	19.83	58.78	0.00	58.78	87.47	4.30	0.00	4	2.43	78.89
3.28	5.270	224.70	0.00	5.270	4.26	4	19.85	59.18	0.00	59.18	88.06	4.31	0.00	4	2.43	79.50
3.30	5.390	228.15	0.00	5.390	4.23	4	19.88	59.57	0.00	59.57	89.48	4.28	0.00	4	2.42	80.79
3.32	5.490	226.41	0.00	5.490	4.12	4	19.88	59.97	0.00	59.97	90.54	4.17	0.00	4	2.41	81.68
3.34	5.550	225.11	0.00	5.550	4.06	4	19.88	60.37	0.00	60.37	90.93	4.10	0.00	4	2.40	82.04
3.36	5.560	226.35	0.00	5.560	4.07	4	19.88	60.77	0.00	60.77	90.50	4.12	0.00	4	2.41	81.80
3.38	5.500	232.33	0.00	5.500	4.22	4	19.91	61.16	0.00	61.16	88.92	4.27	0.00	4	2.42	80.73
3.40	5.430	231.35	0.00	5.430	4.26	4	19.90	61.56	0.00	61.56	87.20	4.31	0.00	4	2.43	79.39
3.42	5.350	227.93	0.00	5.350	4.26	4	19.88	61.96	0.00	61.96	85.35	4.31	0.00	4	2.44	77.88
3.44	5.370	221.15	0.00	5.370	4.12	4	19.84	62.36	0.00	62.36	85.12	4.17	0.00	4	2.43	77.63
3.46	5.310	219.66	0.00	5.310	4.14	4	19.83	62.75	0.00	62.75	83.62	4.19	0.00	4	2.43	76.44
3.48	5.290	217.79	0.00	5.290	4.12	4	19.82	63.15	0.00	63.15	82.77	4.17	0.00	4	2.43	75.80
3.50	5.310	214.27	0.00	5.310	4.04	4	19.80	63.55	0.00	63.55	82.56	4.08	0.00	4	2.43	75.63
3.52	5.240	210.15	0.00	5.240	4.01	4	19.77	63.94	0.00	63.94	80.95	4.06	0.00	4	2.43	74.29
3.54	5.000	211.17	0.00	5.000	4.22	4	19.76	64.34	0.00	64.34	76.72	4.28	0.00	4	2.46	70.85
3.56	4.900	208.09	0.00	4.900	4.25	4	19.74	64.73	0.00	64.73	74.70	4.30	0.00	4	2.47	69.17
3.58	4.870	205.30	0.00	4.870	4.22	4	19.72	65.13	0.00	65.13	73.78	4.27	0.00	4	2.47	68.41
3.60	4.840	202.39	0.00	4.840	4.18	4	19.70	65.52	0.00	65.52	72.87	4.24	0.00	4	2.47	67.65
3.62	4.980	194.31	0.00	4.980	3.90	4	19.66	65.91	0.00	65.91	74.55	3.95	0.00	4	2.44	68.98
3.64	4.870	189.78	0.00	4.870	3.90	4	19.63	66.31	0.00	66.31	72.45	3.95	0.00	4	2.45	67.19
3.66	4.500	187.75	0.00	4.500	4.17	4	19.59	66.70	0.00	66.70	66.47	4.23	0.00	4	2.49	62.15
3.68	4.140	185.21	0.00	4.140	4.47	4	19.54	67.09	0.00	67.09	60.71	4.55	0.00	4	2.54	57.23
3.70	3.960	187.15	0.00	3.960	4.73	4	19.53	67.48	0.00	67.48	57.68	4.81	0.00	4	2.57	54.68
3.72	3.900	191.39	0.00	3.900	4.91	4	19.55	67.87	0.00	67.87	56.46	4.99	0.00	4	2.59	53.71
3.74	3.720	191.81	0.00	3.720	5.16	3	19.54	68.26	0.00	68.26	53.50	5.25	0.00	4	2.62	51.15
3.76	3.690	189.37	0.00	3.690	5.13	3	19.52	68.65	0.00	68.65	52.75	5.23	0.00	4	2.62	50.49
3.78	3.640	190.06	0.00	3.640	5.22	3	19.52	69.04	0.00	69.04	51.72	5.32	0.00	4	2.63	49.62
3.80	3.670	191.39	0.00	3.670	5.21	3	19.53	69.43	0.00	69.43	51.86	5.32	0.00	4	2.63	49.78
3.82	3.630	196.88	0.00	3.630	5.42	3	19.56	69.83	0.00	69.83	50.99	5.53	0.00	4	2.65	49.09
3.84	3.590	197.70	0.00	3.590	5.51	3	19.56	70.22	0.00	70.22	50.13	5.62	0.00	3	2.66	48.35
3.86	3.550	199.79	0.00	3.550	5.63	3	19.57	70.61	0.00	70.61	49.28	5.74	0.00	3	2.67	47.64
3.88	3.510	202.14	0.00	3.510	5.76	3	19.58	71.00	0.00	71.00	48.44	5.88	0.00	3	2.68	46.92
3.90	3.350	196.91	0.00	3.350	5.88	3	19.53	71.39	0.00	71.39	45.93	6.01	0.00	3	2.70	44.64
3.92	3.320	197.29	0.00	3.320	5.94	3	19.53	71.78	0.00	71.78	45.25	6.07	0.00	3	2.71	44.05
3.94	3.280	201.50	0.00	3.280	6.14	3	19.55	72.17	0.00	72.17	44.45	6.28	0.00	3	2.73	43.37
3.96	3.230	203.31	0.00	3.230	6.29	3	19.55	72.56	0.00	72.56	43.51	6.44	0.00	3	2.74	42.55
3.98	3.240	202.77	0.00	3.240	6.26	3	19.55	72.95	0.00	72.95	43.41	6.40	0.00	3	2.74	42.46
4.00	3.350	200.71	0.00	3.350	5.99	3	19.55	73.34	0.00	73.34	44.67	6.13	0.00	3	2.72	43.60
4.02	3.650	198.56	0.00	3.650	5.44	3	19.57	73.74	0.00	73.74	48.50	5.55	0.00	3	2.66	47.07
4.04	3.920	192.60	0.00	3.920	4.91	4	19.56	74.13	0.00	74.13	51.88	5.01	0.00	4	2.61	50.08
4.06	4.640	180.62	0.00	4.640	3.89	4	19.55	74.52	0.00	74.52	61.27	3.96	0.00	4	2.49	58.39
4.08	5.300	178.24	0.00	5.300	3.36	4	19.59	74.91	0.00	74.91	69.75	3.41	0.00	4	2.41	65.93
4.10	6.210	178.91	0.00	6.210	2.88	5	19.65	75.30	0.00	75.30	81.47	2.92	0.00	5	2.31	76.32
4.12	6.820	186.80	0.00	6.820	2.74	5	19.74	75.70	0.00	75.70	89.10	2.77	0.00	5	2.27	83.20
4.14	7.630	190.95	0.00	7.630	2.50	5	19.81	76.09	0.00	76.09	99.27	2.53	0.00	5	2.21	92.25
4.16	8.150	190.13	0.00	8.150	2.33	5	19.83	76.49	0.00	76.49	105.55	2.35	0.00	5	2.17	97.83
4.18	8.370	197.51	0.00	8.370	2.36	5	19.88	76.89	0.00	76.89	107.86	2.38	0.00	5	2.17	100.09
4.20	8.370	212.05	0.00	8.370	2.53	5	19.96	77.29	0.00	77.29	107.30	2.56	0.00	5	2.19	99.95

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P22	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
4.22	8.440	212.78	0.00	8.440	2.52	5	19.97	77.68	0.00	77.68	107.64	2.54	0.00	5	2.19	100.39
4.24	8.250	213.83	0.00	8.250	2.59	5	19.97	78.08	0.00	78.08	104.66	2.62	0.00	5	2.21	97.89
4.26	8.040	209.61	0.00	8.040	2.61	5	19.94	78.48	0.00	78.48	101.44	2.63	0.00	5	2.22	95.12
4.28	7.810	211.36	0.00	7.810	2.71	5	19.93	78.88	0.00	78.88	98.01	2.73	0.00	5	2.24	92.20
4.30	7.720	214.94	0.00	7.720	2.78	5	19.95	79.28	0.00	79.28	96.38	2.81	0.00	5	2.25	90.89
4.32	7.840	215.82	0.00	7.840	2.75	5	19.96	79.68	0.00	79.68	97.39	2.78	0.00	5	2.24	91.92
4.34	7.930	217.44	0.00	7.930	2.74	5	19.97	80.08	0.00	80.08	98.03	2.77	0.00	5	2.24	92.61
4.36	8.210	226.88	0.00	8.210	2.76	5	20.03	80.48	0.00	80.48	101.01	2.79	0.00	5	2.23	95.51
4.38	8.540	246.97	0.00	8.540	2.89	5	20.15	80.88	0.00	80.88	104.59	2.92	0.00	5	2.24	99.05
4.40	8.660	259.90	0.00	8.660	3.00	5	20.21	81.29	0.00	81.29	105.54	3.03	0.00	5	2.25	100.15
4.42	8.720	275.62	0.00	8.720	3.16	5	20.28	81.69	0.00	81.69	105.74	3.19	0.00	5	2.26	100.60
4.44	8.430	291.94	0.00	8.430	3.46	5	20.34	82.10	0.00	82.10	101.68	3.50	0.00	5	2.30	97.15
4.46	8.290	294.47	0.00	8.290	3.55	5	20.34	82.50	0.00	82.50	99.48	3.59	0.00	5	2.32	95.26
4.48	8.390	284.97	0.00	8.390	3.40	5	20.31	82.91	0.00	82.91	100.19	3.43	0.00	5	2.30	95.94
4.50	8.370	270.36	0.00	8.370	3.23	5	20.24	83.32	0.00	83.32	99.46	3.26	0.00	5	2.29	95.25
4.52	7.830	265.95	0.00	7.830	3.40	5	20.20	83.72	0.00	83.72	92.53	3.43	0.00	5	2.32	88.93
4.54	7.500	258.95	0.00	7.500	3.45	5	20.15	84.12	0.00	84.12	88.15	3.49	0.00	5	2.34	84.93
4.56	7.270	248.72	0.00	7.270	3.42	5	20.09	84.53	0.00	84.53	85.01	3.46	0.00	5	2.35	82.02
4.58	6.550	244.03	0.00	6.550	3.73	4	20.03	84.93	0.00	84.93	76.13	3.77	0.00	4	2.41	73.80
4.60	6.010	237.15	0.00	6.010	3.95	4	19.97	85.33	0.00	85.33	69.44	4.00	0.00	4	2.45	67.55
4.62	5.510	232.65	0.00	5.510	4.22	4	19.91	85.72	0.00	85.72	63.28	4.29	0.00	4	2.50	61.79
4.64	5.420	227.52	0.00	5.420	4.20	4	19.88	86.12	0.00	86.12	61.93	4.27	0.00	4	2.50	60.54
4.66	5.270	231.57	0.00	5.270	4.39	4	19.89	86.52	0.00	86.52	59.91	4.47	0.00	4	2.53	58.68
4.68	5.040	228.28	0.00	5.040	4.53	4	19.85	86.92	0.00	86.92	56.99	4.61	0.00	4	2.55	55.93
4.70	4.840	223.27	0.00	4.840	4.61	4	19.81	87.31	0.00	87.31	54.43	4.70	0.00	4	2.57	53.51
4.72	4.710	215.22	0.00	4.710	4.57	4	19.76	87.71	0.00	87.71	52.70	4.66	0.00	4	2.58	51.85
4.74	4.410	222.51	0.00	4.410	5.05	4	19.77	88.10	0.00	88.10	49.05	5.15	0.00	4	2.63	48.41
4.76	4.100	227.61	0.00	4.100	5.55	3	19.77	88.50	0.00	88.50	45.33	5.67	0.00	3	2.68	44.87
4.78	3.920	229.61	0.00	3.920	5.86	3	19.77	88.90	0.00	88.90	43.10	5.99	0.00	3	2.72	42.74
4.80	3.700	225.87	0.00	3.700	6.10	3	19.72	89.29	0.00	89.29	40.44	6.26	0.00	3	2.75	40.17
4.82	3.570	223.49	0.00	3.570	6.26	3	19.70	89.68	0.00	89.68	38.81	6.42	0.00	3	2.77	38.59
4.84	3.550	218.90	0.00	3.550	6.17	3	19.67	90.08	0.00	90.08	38.41	6.33	0.00	3	2.77	38.21
4.86	3.630	210.91	0.00	3.630	5.81	3	19.64	90.47	0.00	90.47	39.12	5.96	0.00	3	2.74	38.89
4.88	3.660	206.16	0.00	3.660	5.63	3	19.62	90.86	0.00	90.86	39.28	5.78	0.00	3	2.73	39.04
4.90	3.900	193.10	0.00	3.900	4.95	4	19.56	91.25	0.00	91.25	41.74	5.07	0.00	4	2.67	41.41
4.92	4.250	180.05	0.00	4.250	4.24	4	19.52	91.65	0.00	91.65	45.37	4.33	0.00	4	2.60	44.92
4.94	4.550	174.82	0.00	4.550	3.84	4	19.51	92.04	0.00	92.04	48.44	3.92	0.00	4	2.55	47.90
4.96	5.100	165.57	0.00	5.100	3.25	4	19.49	92.43	0.00	92.43	54.18	3.31	0.00	4	2.46	53.48
4.98	5.810	156.89	0.00	5.810	2.70	5	19.48	92.81	0.00	92.81	61.60	2.74	0.00	5	2.37	60.68
5.00	6.540	153.02	0.00	6.540	2.34	5	19.49	93.20	0.00	93.20	69.17	2.37	0.00	5	2.29	68.05
5.02	6.910	146.84	0.00	6.910	2.13	5	19.47	93.59	0.00	93.59	72.83	2.15	0.00	5	2.24	71.64
5.04	7.330	145.92	0.00	7.330	1.99	5	19.48	93.98	0.00	93.98	76.99	2.02	0.00	5	2.20	75.74
5.06	7.380	148.11	0.00	7.380	2.01	5	19.50	94.37	0.00	94.37	77.20	2.03	0.00	5	2.20	76.03
5.08	7.460	152.39	0.00	7.460	2.04	5	19.54	94.76	0.00	94.76	77.72	2.07	0.00	5	2.21	76.64
5.10	7.660	165.16	0.00	7.660	2.16	5	19.64	95.16	0.00	95.16	79.50	2.18	0.00	5	2.22	78.49
5.12	7.340	176.03	0.00	7.340	2.40	5	19.70	95.55	0.00	95.55	75.82	2.43	0.00	5	2.26	74.99
5.14	7.220	198.46	0.00	7.220	2.75	5	19.83	95.95	0.00	95.95	74.25	2.79	0.00	5	2.31	73.57
5.16	7.030	233.47	0.00	7.030	3.32	5	20.01	96.35	0.00	96.35	71.97	3.37	0.00	5	2.38	71.45
5.18	6.720	247.48	0.00	6.720	3.68	4	20.06	96.75	0.00	96.75	68.46	3.74	0.00	4	2.43	68.06
5.20	6.430	248.21	0.00	6.430	3.86	4	20.04	97.15	0.00	97.15	65.19	3.92	0.00	4	2.46	64.88
5.22	6.100	240.83	0.00	6.100	3.95	4	19.99	97.55	0.00	97.55	61.53	4.01	0.00	4	2.48	61.30
5.24	5.560	240.70	0.00	5.560	4.33	4	19.95	97.95	0.00	97.95	55.77	4.41	0.00	4	2.54	55.61
5.26	5.050	222.64	0.00	5.050	4.41	4	19.83	98.34	0.00	98.34	50.35	4.50	0.00	4	2.58	50.25
5.28	5.890	197.00	0.00	5.890	3.34	4	19.75	98.74	0.00	98.74	58.65	3.40	0.00	4	2.44	58.53
5.30	6.570	188.99	0.00	6.570	2.88	5	19.74	99.13	0.00	99.13	65.27	2.92	0.00	5	2.36	65.16

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P22	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
5.32	6.410	178.78	0.00	6.410	2.79	5	19.67	99.53	0.00	99.53	63.40	2.83	0.00	5	2.36	63.34
5.34	5.720	177.83	0.00	5.720	3.11	4	19.62	99.92	0.00	99.92	56.25	3.16	0.00	4	2.43	56.24
5.36	5.560	172.19	0.00	5.560	3.10	4	19.57	100.31	0.00	100.31	54.43	3.15	0.00	4	2.44	54.46
5.38	5.980	170.00	0.00	5.980	2.84	5	19.58	100.70	0.00	100.70	58.38	2.89	0.00	5	2.39	58.46
5.40	7.710	173.14	0.00	7.710	2.25	5	19.70	101.10	0.00	101.10	75.26	2.28	0.00	5	2.24	75.47
5.42	9.640	188.80	0.00	9.640	1.96	5	19.89	101.49	0.00	101.49	93.98	1.98	0.00	5	2.13	94.38
5.44	10.020	188.29	0.00	10.020	1.88	5	19.90	101.89	0.00	101.89	97.34	1.90	0.00	5	2.11	97.88
5.46	9.360	183.15	0.00	9.360	1.96	5	19.84	102.29	0.00	102.29	90.51	1.98	0.00	5	2.14	91.09
5.48	9.530	196.81	0.00	9.530	2.07	5	19.93	102.69	0.00	102.69	91.81	2.09	0.00	5	2.15	92.49
5.50	10.450	230.21	0.00	10.450	2.20	5	20.14	103.09	0.00	103.09	100.37	2.22	0.00	5	2.15	101.23
5.52	13.520	255.09	0.00	13.520	1.89	5	20.36	103.49	0.00	103.49	129.64	1.90	0.00	5	2.02	131.11
5.54	15.430	282.18	0.00	15.430	1.83	6	20.53	103.90	0.00	103.90	147.50	1.84	0.00	6	1.97	149.48
5.56	17.860	314.06	0.00	17.860	1.76	6	20.71	104.32	0.00	104.32	170.21	1.77	0.00	6	1.92	172.87
5.58	20.940	374.33	0.00	20.940	1.79	6	20.97	104.73	0.00	104.73	198.93	1.80	0.00	6	1.88	202.48
5.60	26.090	509.51	0.00	26.090	1.95	6	21.41	105.16	0.00	105.16	247.10	1.96	0.00	6	1.85	252.02
5.62	35.130	590.25	0.00	35.130	1.68	6	21.58	105.59	0.00	105.59	331.69	1.69	0.00	6	1.72	339.73

CPTe P23 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	γ	soil unit weight	Bq	normalized pore pressure
fs	sleeve friction	σ_v	total overburden stress	SBTn	soil behavior type normalized
u_2	penetration pore pressure	u_0	in situ pore pressure	Ic	soil behavior type index
qt	total cone resistance	σ'_{v_0}	effective overburden stress	Qtn	normalized cone resistance
Rf	friction ratio	Qt1	normalized cone resistance	based on the stress exponent n	
SBT	soil behavior type	Fr	normalized friction ratio		

In situ data				Basic output data			NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P23		
Depth	qc	fs	u_2	qt	Rf	SBT	γ	σ_v	u_0	σ'_{v_0}	Qt1	Fr	Bq	SBTn	Ic	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.190	0.00	0.00	0.190	0.00	1	19.00	0.38	0.00	0.38	499.00	0.00	0.00	0	0.00	0.00
0.04	0.900	0.10	0.00	0.900	0.01	1	13.73	0.65	0.00	0.65	1373.72	0.01	0.00	0	1.64	101.15
0.06	1.110	0.10	0.00	1.110	0.01	0	13.73	0.93	0.00	0.93	1193.37	0.01	0.00	0	1.66	108.35
0.08	1.240	0.10	0.00	1.240	0.01	0	13.73	1.20	0.00	1.20	1028.87	0.01	0.00	0	1.68	107.18
0.10	1.320	0.10	0.00	1.320	0.01	0	13.73	1.48	0.00	1.48	891.66	0.01	0.00	0	1.69	108.32
0.12	1.270	0.06	0.00	1.270	0.00	0	13.73	1.75	0.00	1.75	723.31	0.00	0.00	0	1.80	112.49
0.14	1.280	0.06	0.00	1.280	0.00	0	13.73	2.03	0.00	2.03	630.14	0.00	0.00	0	1.82	107.34
0.16	1.520	0.16	0.00	1.520	0.01	0	13.73	2.30	0.00	2.30	659.08	0.01	0.00	0	1.67	94.69
0.18	1.580	0.16	0.00	1.580	0.01	0	13.73	2.58	0.00	2.58	612.01	0.01	0.00	0	1.68	96.34
0.20	1.520	0.13	0.00	1.520	0.01	0	13.73	2.85	0.00	2.85	531.94	0.01	0.00	0	1.72	93.39
0.22	1.420	0.10	0.00	1.420	0.01	0	13.73	3.13	0.00	3.13	453.14	0.01	0.00	0	1.79	88.25
0.24	1.170	0.10	0.00	1.170	0.01	0	13.73	3.40	0.00	3.40	342.97	0.01	0.00	0	1.82	72.45
0.26	1.200	0.10	0.00	1.200	0.01	0	13.73	3.68	0.00	3.68	325.43	0.01	0.00	0	1.83	72.09
0.28	0.850	0.06	0.00	0.850	0.01	1	13.73	3.95	0.00	3.95	214.14	0.01	0.00	0	1.95	57.20
0.30	0.720	5.23	0.00	0.720	0.73	4	14.77	4.25	0.00	4.25	168.52	0.73	0.00	6	2.05	53.59
0.32	0.700	6.12	0.00	0.700	0.87	4	14.93	4.55	0.00	4.55	153.00	0.88	0.00	5	2.10	52.72
0.34	0.670	6.34	0.00	0.670	0.95	4	14.96	4.85	0.00	4.85	137.28	0.95	0.00	5	2.14	50.35
0.36	0.660	6.50	0.00	0.660	0.98	4	14.98	5.14	0.00	5.14	127.28	0.99	0.00	5	2.16	48.76
0.38	0.630	5.17	0.00	0.630	0.82	4	14.70	5.44	0.00	5.44	114.77	0.83	0.00	5	2.15	44.37
0.40	0.630	4.47	0.00	0.630	0.71	4	14.53	5.73	0.00	5.73	108.90	0.72	0.00	5	2.14	42.20
0.42	0.760	3.90	0.00	0.760	0.51	4	14.45	6.02	0.00	6.02	125.23	0.52	0.00	6	2.04	44.83
0.44	0.830	0.19	0.00	0.830	0.02	1	13.73	6.30	0.00	6.30	130.84	0.02	0.00	0	1.91	40.68
0.46	0.880	0.22	0.00	0.880	0.03	1	13.73	6.57	0.00	6.57	132.94	0.03	0.00	0	1.89	41.43
0.48	0.940	0.25	0.00	0.940	0.03	1	13.73	6.84	0.00	6.84	136.33	0.03	0.00	0	1.87	43.03
0.50	1.080	0.16	0.00	1.080	0.01	0	13.73	7.12	0.00	7.12	150.70	0.01	0.00	0	1.88	48.83
0.52	1.070	0.19	0.00	1.070	0.02	0	13.73	7.39	0.00	7.39	143.71	0.02	0.00	0	1.87	46.98
0.54	0.810	0.22	0.00	0.810	0.03	1	13.73	7.67	0.00	7.67	104.62	0.03	0.00	0	1.93	36.86
0.56	0.590	0.19	0.00	0.590	0.03	1	13.73	7.94	0.00	7.94	73.28	0.03	0.00	0	2.03	28.70
0.58	0.590	0.19	0.00	0.590	0.03	1	13.73	8.22	0.00	8.22	70.79	0.03	0.00	0	2.04	28.25
0.60	0.570	0.19	0.00	0.570	0.03	1	13.73	8.49	0.00	8.49	66.12	0.03	0.00	0	2.05	27.11
0.62	0.530	0.19	0.00	0.530	0.04	1	13.73	8.77	0.00	8.77	59.45	0.04	0.00	0	2.08	25.27
0.64	0.510	0.16	0.00	0.510	0.03	1	13.73	9.04	0.00	9.04	55.40	0.03	0.00	0	2.10	24.31
0.66	0.500	0.16	0.00	0.500	0.03	1	13.73	9.32	0.00	9.32	52.67	0.03	0.00	0	2.11	23.60
0.68	0.460	0.13	0.00	0.460	0.03	1	13.73	9.59	0.00	9.59	46.96	0.03	0.00	0	2.16	21.79
0.70	0.460	0.13	0.00	0.460	0.03	1	13.73	9.87	0.00	9.87	45.62	0.03	0.00	0	2.16	21.49
0.72	0.460	0.13	0.00	0.460	0.03	1	13.73	10.14	0.00	10.14	44.36	0.03	0.00	0	2.17	21.21
0.74	0.460	0.13	0.00	0.460	0.03	1	13.73	10.42	0.00	10.42	43.17	0.03	0.00	0	2.17	20.93
0.76	0.490	0.10	0.00	0.490	0.02	1	13.73	10.69	0.00	10.69	44.84	0.02	0.00	0	2.18	22.02
0.78	0.570	0.10	0.00	0.570	0.02	1	13.73	10.96	0.00	10.96	50.98	0.02	0.00	0	2.14	24.60
0.80	0.590	0.13	0.00	0.590	0.02	1	13.73	11.24	0.00	11.24	51.49	0.02	0.00	0	2.12	24.59
0.82	0.600	0.13	0.00	0.600	0.02	1	13.73	11.51	0.00	11.51	51.11	0.02	0.00	0	2.12	24.64
0.84	0.610	0.13	0.00	0.610	0.02	1	13.73	11.79	0.00	11.79	50.74	0.02	0.00	0	2.12	24.69
0.86	0.590	0.19	0.00	0.590	0.03	1	13.73	12.06	0.00	12.06	47.91	0.03	0.00	0	2.12	23.37
0.88	0.660	0.19	0.00	0.660	0.03	1	13.73	12.34	0.00	12.34	52.49	0.03	0.00	0	2.09	25.27
0.90	0.730	0.19	0.00	0.730	0.03	1	13.73	12.61	0.00	12.61	56.88	0.03	0.00	0	2.07	27.11

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P23	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
0.92	0.840	0.22	0.00	0.840	0.03	1	13.73	12.89	0.00	12.89	64.18	0.03	0.00	0	2.03	29.85
0.94	0.990	0.22	0.00	0.990	0.02	1	13.73	13.16	0.00	13.16	74.21	0.02	0.00	0	1.99	33.79
0.96	1.240	1.20	0.00	1.240	0.10	0	13.73	13.44	0.00	13.44	91.28	0.10	0.00	0	1.89	38.91
0.98	1.360	2.38	0.00	1.360	0.17	5	14.10	13.72	0.00	13.72	98.16	0.18	0.00	6	1.90	42.52
1.00	1.290	5.99	0.00	1.290	0.46	5	15.14	14.01	0.00	14.01	91.05	0.47	0.00	6	2.03	44.03
1.02	1.250	10.17	0.00	1.250	0.81	4	15.74	14.33	0.00	14.33	86.25	0.82	0.00	5	2.14	45.73
1.04	1.260	13.28	0.00	1.260	1.05	4	16.05	14.64	0.00	14.64	85.04	1.07	0.00	5	2.19	47.11
1.06	1.240	18.41	0.00	1.240	1.48	4	16.42	14.97	0.00	14.97	81.83	1.50	0.00	5	2.27	48.32
1.08	1.450	18.54	0.00	1.450	1.28	4	16.49	15.30	0.00	15.30	93.76	1.29	0.00	5	2.20	52.95
1.10	1.570	21.14	0.00	1.570	1.35	4	16.67	15.63	0.00	15.63	99.42	1.36	0.00	5	2.19	56.24
1.12	1.700	20.60	0.00	1.700	1.21	4	16.67	15.97	0.00	15.97	105.47	1.22	0.00	5	2.15	58.37
1.14	1.800	18.57	0.00	1.800	1.03	5	16.57	16.30	0.00	16.30	109.44	1.04	0.00	5	2.10	59.09
1.16	1.830	18.73	0.00	1.830	1.02	5	16.59	16.63	0.00	16.63	109.04	1.03	0.00	5	2.10	59.18
1.18	1.880	18.16	0.00	1.880	0.97	5	16.56	16.96	0.00	16.96	109.84	0.97	0.00	5	2.08	59.39
1.20	1.970	17.97	0.00	1.970	0.91	5	16.57	17.29	0.00	17.29	112.91	0.92	0.00	5	2.06	60.60
1.22	2.060	17.05	0.00	2.060	0.83	5	16.53	17.62	0.00	17.62	115.88	0.83	0.00	6	2.03	61.45
1.24	2.070	17.71	0.00	2.070	0.86	5	16.57	17.95	0.00	17.95	114.29	0.86	0.00	6	2.04	61.37
1.26	2.170	18.89	0.00	2.170	0.87	5	16.67	18.29	0.00	18.29	117.66	0.88	0.00	6	2.03	63.32
1.28	2.280	20.95	0.00	2.280	0.92	5	16.80	18.62	0.00	18.62	121.43	0.93	0.00	6	2.03	65.79
1.30	2.400	21.93	0.00	2.400	0.91	5	16.88	18.96	0.00	18.96	125.58	0.92	0.00	6	2.02	67.95
1.32	2.530	26.36	0.00	2.530	1.04	5	17.11	19.30	0.00	19.30	130.08	1.05	0.00	6	2.04	71.56
1.34	2.620	31.66	0.00	2.620	1.21	5	17.33	19.65	0.00	19.65	132.36	1.22	0.00	5	2.06	74.49
1.36	2.740	39.83	0.00	2.740	1.45	5	17.61	20.00	0.00	20.00	136.02	1.46	0.00	5	2.10	78.65
1.38	2.700	45.06	0.00	2.700	1.67	5	17.75	20.35	0.00	20.35	131.67	1.68	0.00	5	2.14	78.52
1.40	2.690	48.13	0.00	2.690	1.79	4	17.82	20.71	0.00	20.71	128.90	1.80	0.00	5	2.16	78.32
1.42	2.860	46.04	0.00	2.860	1.61	5	17.80	21.06	0.00	21.06	134.78	1.62	0.00	5	2.12	80.43
1.44	2.850	42.11	0.00	2.850	1.48	5	17.69	21.42	0.00	21.42	132.07	1.49	0.00	5	2.10	78.49
1.46	2.620	39.10	0.00	2.620	1.49	5	17.57	21.77	0.00	21.77	119.35	1.50	0.00	5	2.13	72.55
1.48	2.430	34.29	0.00	2.430	1.41	5	17.39	22.12	0.00	22.12	108.86	1.42	0.00	5	2.14	66.95
1.50	2.300	30.80	0.00	2.300	1.34	5	17.25	22.46	0.00	22.46	101.38	1.35	0.00	5	2.15	62.92
1.52	2.240	28.04	0.00	2.240	1.25	5	17.13	22.81	0.00	22.81	97.21	1.26	0.00	5	2.14	60.48
1.54	2.120	27.98	0.00	2.120	1.32	5	17.11	23.15	0.00	23.15	90.58	1.33	0.00	5	2.18	57.62
1.56	2.080	26.81	0.00	2.080	1.29	5	17.05	23.49	0.00	23.49	87.54	1.30	0.00	5	2.18	56.05
1.58	2.170	25.32	0.00	2.170	1.17	5	17.00	23.83	0.00	23.83	90.06	1.18	0.00	5	2.15	56.94
1.60	2.510	23.48	0.00	2.510	0.94	5	16.97	24.17	0.00	24.17	102.85	0.94	0.00	6	2.06	62.28
1.62	3.220	21.48	0.00	3.220	0.67	5	16.96	24.51	0.00	24.51	130.38	0.67	0.00	6	1.92	73.53
1.64	4.070	23.70	0.00	4.070	0.58	5	17.17	24.85	0.00	24.85	162.77	0.59	0.00	6	1.82	87.73
1.66	4.460	33.87	0.00	4.460	0.76	5	17.61	25.20	0.00	25.20	175.97	0.76	0.00	6	1.85	96.95
1.68	4.970	40.59	0.00	4.970	0.82	5	17.86	25.56	0.00	25.56	193.46	0.82	0.00	6	1.84	106.50
1.70	5.270	53.17	0.00	5.270	1.01	5	18.20	25.92	0.00	25.92	202.32	1.01	0.00	6	1.87	114.13
1.72	5.490	68.89	0.00	5.490	1.25	5	18.51	26.29	0.00	26.29	207.85	1.26	0.00	6	1.92	120.74
1.74	5.620	86.89	0.00	5.620	1.55	5	18.79	26.66	0.00	26.66	209.79	1.55	0.00	6	1.97	125.53
1.76	5.620	96.58	0.00	5.620	1.72	5	18.91	27.04	0.00	27.04	206.85	1.73	0.00	6	2.00	126.45
1.78	5.080	132.93	0.00	5.080	2.62	5	19.24	27.42	0.00	27.42	184.25	2.63	0.00	5	2.15	121.86
1.80	4.840	139.58	0.00	4.840	2.88	4	19.27	27.81	0.00	27.81	173.05	2.90	0.00	5	2.19	117.43
1.82	4.390	158.38	0.00	4.390	3.61	4	19.38	28.19	0.00	28.19	154.70	3.63	0.00	5	2.28	110.30
1.84	4.160	164.05	0.00	4.160	3.94	4	19.40	28.58	0.00	28.58	144.54	3.97	0.00	9	2.32	105.57
1.86	3.910	136.73	0.00	3.910	3.50	4	19.17	28.97	0.00	28.97	133.98	3.52	0.00	5	2.31	97.37
1.88	3.830	137.18	0.00	3.830	3.58	4	19.16	29.35	0.00	29.35	129.49	3.61	0.00	5	2.32	95.10
1.90	3.810	140.44	0.00	3.810	3.69	4	19.19	29.74	0.00	29.74	127.13	3.72	0.00	5	2.33	94.23
1.92	3.820	130.68	0.00	3.820	3.42	4	19.11	30.12	0.00	30.12	125.84	3.45	0.00	5	2.31	92.72
1.94	3.820	117.88	0.00	3.820	3.09	4	18.99	30.50	0.00	30.50	124.25	3.11	0.00	5	2.28	90.72
1.96	3.770	111.26	0.00	3.770	2.95	4	18.92	30.88	0.00	30.88	121.10	2.98	0.00	5	2.28	88.45
1.98	3.690	101.65	0.00	3.690	2.75	4	18.80	31.25	0.00	31.25	117.07	2.78	0.00	5	2.27	85.36
2.00	3.690	100.80	0.00	3.690	2.73	4	18.80	31.63	0.00	31.63	115.66	2.76	0.00	5	2.27	84.63

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)							CPTe P23	
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
2.02	3.630	99.82	0.00	3.630	2.75	4	18.78	32.01	0.00	32.01	112.42	2.77	0.00	5	2.27	82.84
2.04	3.480	99.91	0.00	3.480	2.87	4	18.76	32.38	0.00	32.38	106.47	2.90	0.00	5	2.30	79.60
2.06	3.210	102.51	0.00	3.210	3.19	4	18.76	32.76	0.00	32.76	97.00	3.23	0.00	5	2.35	74.44
2.08	3.050	100.64	0.00	3.050	3.30	4	18.72	33.13	0.00	33.13	91.06	3.34	0.00	5	2.38	70.84
2.10	2.910	97.38	0.00	2.910	3.35	4	18.66	33.50	0.00	33.50	85.86	3.39	0.00	4	2.40	67.51
2.12	2.710	93.57	0.00	2.710	3.45	4	18.59	33.88	0.00	33.88	79.00	3.50	0.00	4	2.43	63.07
2.14	2.540	90.75	0.00	2.540	3.57	4	18.53	34.25	0.00	34.25	73.17	3.62	0.00	4	2.46	59.27
2.16	2.290	84.92	0.00	2.290	3.71	4	18.41	34.62	0.00	34.62	65.15	3.77	0.00	4	2.50	53.80
2.18	2.170	81.50	0.00	2.170	3.76	3	18.35	34.98	0.00	34.98	61.03	3.82	0.00	4	2.52	50.92
2.20	2.070	75.77	0.00	2.070	3.66	3	18.25	35.35	0.00	35.35	57.56	3.72	0.00	4	2.53	48.29
2.22	1.900	74.91	0.00	1.900	3.94	3	18.20	35.71	0.00	35.71	52.20	4.02	0.00	4	2.58	44.70
2.24	1.830	76.24	0.00	1.830	4.17	3	18.20	36.08	0.00	36.08	49.73	4.25	0.00	4	2.60	43.12
2.26	1.830	77.98	0.00	1.830	4.26	3	18.23	36.44	0.00	36.44	49.22	4.35	0.00	4	2.61	42.89
2.28	1.810	80.65	0.00	1.810	4.46	3	18.27	36.81	0.00	36.81	48.18	4.55	0.00	4	2.63	42.34
2.30	1.890	81.18	0.00	1.890	4.30	3	18.29	37.17	0.00	37.17	49.84	4.38	0.00	4	2.61	43.54
2.32	1.920	79.60	0.00	1.920	4.15	3	18.27	37.54	0.00	37.54	50.15	4.23	0.00	4	2.60	43.67
2.34	1.870	80.87	0.00	1.870	4.32	3	18.28	37.90	0.00	37.90	48.34	4.41	0.00	4	2.62	42.50
2.36	1.860	80.71	0.00	1.860	4.34	3	18.28	38.27	0.00	38.27	47.60	4.43	0.00	4	2.63	41.99
2.38	1.800	80.55	0.00	1.800	4.47	3	18.26	38.63	0.00	38.63	45.59	4.57	0.00	4	2.65	40.57
2.40	1.800	81.69	0.00	1.800	4.54	3	18.28	39.00	0.00	39.00	45.15	4.64	0.00	4	2.65	40.32
2.42	2.110	79.92	0.00	2.110	3.79	3	18.31	39.37	0.00	39.37	52.60	3.86	0.00	4	2.56	45.49
2.44	2.050	77.44	0.00	2.050	3.78	3	18.27	39.73	0.00	39.73	50.60	3.85	0.00	4	2.57	43.99
2.46	1.870	81.28	0.00	1.870	4.35	3	18.29	40.10	0.00	40.10	45.64	4.44	0.00	4	2.64	40.68
2.48	1.650	86.10	0.00	1.650	5.22	3	18.31	40.46	0.00	40.46	39.78	5.35	0.00	3	2.73	36.62
2.50	1.660	83.02	0.00	1.660	5.00	3	18.27	40.83	0.00	40.83	39.66	5.13	0.00	3	2.71	36.41
2.52	1.710	77.60	0.00	1.710	4.54	3	18.20	41.19	0.00	41.19	40.51	4.65	0.00	4	2.68	36.81
2.54	1.720	76.05	0.00	1.720	4.42	3	18.18	41.56	0.00	41.56	40.39	4.53	0.00	4	2.67	36.66
2.56	1.820	74.31	0.00	1.820	4.08	3	18.17	41.92	0.00	41.92	42.42	4.18	0.00	4	2.64	38.08
2.58	1.870	72.72	0.00	1.870	3.89	3	18.16	42.28	0.00	42.28	43.23	3.98	0.00	4	2.62	38.61
2.60	1.880	72.63	0.00	1.880	3.86	3	18.16	42.65	0.00	42.65	43.08	3.95	0.00	4	2.62	38.52
2.62	1.930	71.39	0.00	1.930	3.70	3	18.15	43.01	0.00	43.01	43.87	3.78	0.00	4	2.60	39.05
2.64	1.940	72.95	0.00	1.940	3.76	3	18.18	43.37	0.00	43.37	43.73	3.85	0.00	4	2.61	39.04
2.66	1.960	73.01	0.00	1.960	3.73	3	18.18	43.74	0.00	43.74	43.81	3.81	0.00	4	2.60	39.12
2.68	1.840	77.10	0.00	1.840	4.19	3	18.22	44.10	0.00	44.10	40.72	4.29	0.00	4	2.65	37.02
2.70	1.820	75.42	0.00	1.820	4.14	3	18.19	44.46	0.00	44.46	39.93	4.25	0.00	4	2.66	36.36
2.72	1.810	74.09	0.00	1.810	4.09	3	18.17	44.83	0.00	44.83	39.38	4.20	0.00	4	2.66	35.90
2.74	1.880	73.74	0.00	1.880	3.92	3	18.18	45.19	0.00	45.19	40.60	4.02	0.00	4	2.64	36.82
2.76	2.030	71.39	0.00	2.030	3.52	4	18.17	45.55	0.00	45.55	43.56	3.60	0.00	4	2.59	38.96
2.78	2.120	69.84	0.00	2.120	3.29	4	18.16	45.92	0.00	45.92	45.17	3.37	0.00	4	2.56	40.10
2.80	2.170	68.92	0.00	2.170	3.18	4	18.15	46.28	0.00	46.28	45.89	3.25	0.00	4	2.54	40.61
2.82	2.170	66.29	0.00	2.170	3.05	4	18.11	46.64	0.00	46.64	45.52	3.12	0.00	4	2.53	40.25
2.84	2.160	67.15	0.00	2.160	3.11	4	18.12	47.01	0.00	47.01	44.95	3.18	0.00	4	2.54	39.89
2.86	2.090	72.95	0.00	2.090	3.49	4	18.21	47.37	0.00	47.37	43.12	3.57	0.00	4	2.58	38.79
2.88	2.190	75.39	0.00	2.190	3.44	4	18.26	47.73	0.00	47.73	44.88	3.52	0.00	4	2.57	40.24
2.90	2.340	77.22	0.00	2.340	3.30	4	18.31	48.10	0.00	48.10	47.65	3.37	0.00	4	2.54	42.43
2.92	3.610	75.54	0.00	3.610	2.09	5	18.45	48.47	0.00	48.47	73.48	2.12	0.00	5	2.29	61.10
2.94	5.100	71.23	0.00	5.100	1.40	5	18.52	48.84	0.00	48.84	103.42	1.41	0.00	5	2.08	81.35
2.96	6.220	71.61	0.00	6.220	1.15	5	18.60	49.21	0.00	49.21	125.39	1.16	0.00	6	1.97	96.00
2.98	6.530	84.04	0.00	6.530	1.29	5	18.80	49.59	0.00	49.59	130.69	1.30	0.00	6	1.98	100.79
3.00	6.410	118.16	0.00	6.410	1.84	5	19.19	49.97	0.00	49.97	127.28	1.86	0.00	5	2.09	101.27
3.02	6.370	149.47	0.00	6.370	2.35	5	19.46	50.36	0.00	50.36	125.50	2.37	0.00	5	2.16	102.07
3.04	6.420	173.59	0.00	6.420	2.70	5	19.63	50.75	0.00	50.75	125.51	2.73	0.00	5	2.20	103.45
3.06	5.850	208.82	0.00	5.850	3.57	4	19.81	51.14	0.00	51.14	113.38	3.60	0.00	5	2.32	96.39
3.08	6.080	214.34	0.00	6.080	3.53	4	19.85	51.54	0.00	51.54	116.97	3.56	0.00	5	2.30	99.32
3.10	6.910	235.38	0.00	6.910	3.41	4	20.01	51.94	0.00	51.94	132.04	3.43	0.00	5	2.26	111.15

In situ data				Basic output data				NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)						CPTe P23		
Depth	qc	fs	u ₂	qt	Rf	SBT	γ	σ _v	u ₀	σ' _{v0}	Qt1	Fr	Bq	SBTn	lc	Qtn
(m)	(MPa)	(kPa)	(kPa)	(MPa)	(%)		kN/m ³	(kPa)	(kPa)	(kPa)		(%)				
3.12	7.780	242.70	0.00	7.780	3.12	5	20.09	52.34	0.00	52.34	147.64	3.14	0.00	5	2.20	122.81
3.14	7.960	226.73	0.00	7.960	2.85	5	20.02	52.74	0.00	52.74	149.92	2.87	0.00	5	2.17	123.98
3.16	7.330	230.18	0.00	7.330	3.14	5	20.01	53.14	0.00	53.14	136.93	3.16	0.00	5	2.22	114.99
3.18	7.200	245.99	0.00	7.200	3.42	5	20.08	53.54	0.00	53.54	133.47	3.44	0.00	5	2.26	113.21
3.20	6.600	290.04	0.00	6.600	4.39	4	20.23	53.95	0.00	53.95	121.34	4.43	0.00	9	2.36	105.71
3.22	6.530	271.21	0.00	6.530	4.15	4	20.15	54.35	0.00	54.35	119.15	4.19	0.00	9	2.35	103.64
3.24	5.840	272.55	0.00	5.840	4.67	4	20.12	54.75	0.00	54.75	105.66	4.71	0.00	9	2.41	93.52
3.26	5.710	266.02	0.00	5.710	4.66	4	20.08	55.15	0.00	55.15	102.53	4.70	0.00	9	2.42	91.03
3.28	5.560	260.88	0.00	5.560	4.69	4	20.05	55.56	0.00	55.56	99.08	4.74	0.00	9	2.43	88.32
3.30	5.590	253.72	0.00	5.590	4.54	4	20.02	55.96	0.00	55.96	98.90	4.58	0.00	9	2.42	88.09
3.32	5.510	230.91	0.00	5.510	4.19	4	19.90	56.36	0.00	56.36	96.77	4.23	0.00	4	2.40	85.95
3.34	5.020	227.49	0.00	5.020	4.53	4	19.85	56.75	0.00	56.75	87.45	4.58	0.00	4	2.45	78.66
3.36	5.060	217.16	0.00	5.060	4.29	4	19.80	57.15	0.00	57.15	87.54	4.34	0.00	4	2.44	78.55
3.38	5.140	208.60	0.00	5.140	4.06	4	19.76	57.54	0.00	57.54	88.32	4.10	0.00	4	2.42	79.03
3.40	5.240	211.71	0.00	5.240	4.04	4	19.78	57.94	0.00	57.94	89.44	4.09	0.00	4	2.41	80.06
3.42	5.490	203.31	0.00	5.490	3.70	4	19.75	58.33	0.00	58.33	93.11	3.74	0.00	4	2.37	82.82
3.44	5.870	178.81	0.00	5.870	3.05	5	19.63	58.73	0.00	58.73	98.95	3.08	0.00	5	2.29	86.78
3.46	6.290	161.89	0.00	6.290	2.57	5	19.54	59.12	0.00	59.12	105.39	2.60	0.00	5	2.22	91.32
3.48	6.570	159.90	0.00	6.570	2.43	5	19.55	59.51	0.00	59.51	109.40	2.46	0.00	5	2.20	94.45
3.50	7.010	162.08	0.00	7.010	2.31	5	19.59	59.90	0.00	59.90	116.02	2.33	0.00	5	2.16	99.73
3.52	7.260	161.48	0.00	7.260	2.22	5	19.60	60.29	0.00	60.29	119.41	2.24	0.00	5	2.14	102.44
3.54	7.560	164.65	0.00	7.560	2.18	5	19.63	60.69	0.00	60.69	123.57	2.20	0.00	5	2.13	105.90
3.56	7.760	169.37	0.00	7.760	2.18	5	19.68	61.08	0.00	61.08	126.05	2.20	0.00	5	2.12	108.13
3.58	7.830	179.48	0.00	7.830	2.29	5	19.75	61.47	0.00	61.47	126.37	2.31	0.00	5	2.14	108.91
3.60	7.660	189.46	0.00	7.660	2.47	5	19.80	61.87	0.00	61.87	122.81	2.49	0.00	5	2.17	106.66
3.62	7.490	197.35	0.00	7.490	2.63	5	19.84	62.27	0.00	62.27	119.29	2.66	0.00	5	2.19	104.31
3.64	7.060	209.17	0.00	7.060	2.96	5	19.88	62.66	0.00	62.66	111.66	2.99	0.00	5	2.25	98.78
3.66	6.790	215.92	0.00	6.790	3.18	5	19.91	63.06	0.00	63.06	106.67	3.21	0.00	5	2.28	95.10
3.68	6.600	215.67	0.00	6.600	3.27	5	19.89	63.46	0.00	63.46	103.00	3.30	0.00	5	2.30	92.26
3.70	6.650	215.54	0.00	6.650	3.24	5	19.90	63.86	0.00	63.86	103.14	3.27	0.00	5	2.30	92.47
3.72	6.700	217.92	0.00	6.700	3.25	5	19.91	64.26	0.00	64.26	103.27	3.28	0.00	5	2.30	92.75
3.74	6.660	216.49	0.00	6.660	3.25	5	19.90	64.65	0.00	64.65	102.01	3.28	0.00	5	2.30	91.80
3.76	6.770	217.38	0.00	6.770	3.21	5	19.91	65.05	0.00	65.05	103.07	3.24	0.00	5	2.29	92.79
3.78	7.390	211.67	0.00	7.390	2.86	5	19.91	65.45	0.20	65.25	112.25	2.89	0.00	5	2.23	100.16
3.80	7.870	223.72	0.00	7.870	2.84	5	20.00	65.85	0.39	65.46	119.22	2.87	0.00	5	2.21	106.15
3.82	8.140	224.63	0.00	8.140	2.76	5	20.02	66.25	0.59	65.66	122.96	2.78	0.00	5	2.20	109.26
3.84	8.450	222.38	0.00	8.450	2.63	5	20.02	66.65	0.78	65.87	127.28	2.65	0.00	5	2.17	112.76
3.86	8.610	239.15	0.00	8.610	2.78	5	20.11	67.05	0.98	66.07	129.30	2.80	0.00	5	2.18	114.89
3.88	8.660	249.16	0.00	8.660	2.88	5	20.16	67.46	1.18	66.28	129.64	2.90	0.00	5	2.19	115.49
3.90	8.660	248.30	0.00	8.660	2.87	5	20.16	67.86	1.37	66.49	129.23	2.89	0.00	5	2.19	115.22
3.92	8.190	251.66	0.00	8.190	3.07	5	20.15	68.26	1.57	66.69	121.78	3.10	0.00	5	2.23	109.31
3.94	7.930	252.68	0.00	7.930	3.19	5	20.15	68.66	1.77	66.90	117.51	3.21	0.00	5	2.25	105.91
3.96	7.980	244.88	0.00	7.980	3.07	5	20.11	69.07	1.96	67.11	117.89	3.10	0.00	5	2.24	106.13
3.98	8.290	246.40	0.00	8.290	2.97	5	20.13	69.47	2.16	67.31	122.13	3.00	0.00	5	2.22	109.70
4.00	10.220	240.48	0.00	10.220	2.35	5	20.19	69.87	2.35	67.52	150.33	2.37	0.00	5	2.09	132.53
4.02	11.530	239.72	0.00	11.530	2.08	5	20.23	70.28	2.55	67.73	169.20	2.09	0.00	5	2.02	147.74
4.04	14.180	237.06	0.00	14.180	1.67	6	20.29	70.68	2.75	67.94	207.68	1.68	0.00	6	1.89	178.23
4.06	15.500	239.02	0.00	15.500	1.54	6	20.34	71.09	2.94	68.15	226.41	1.55	0.00	6	1.84	193.14
4.08	14.360	235.38	0.00	14.360	1.64	6	20.29	71.50	3.14	68.36	209.03	1.65	0.00	6	1.88	179.61
4.10	13.210	233.00	0.00	13.210	1.76	6	20.25	71.90	3.34	68.57	191.61	1.77	0.00	6	1.93	165.96
4.12	12.060	249.22	0.00	12.060	2.07	5	20.29	72.31	3.53	68.77	174.30	2.08	0.00	5	2.00	152.79
4.14	11.810	257.84	0.00	11.810	2.18	5	20.32	72.71	3.73	68.99	170.14	2.20	0.00	5	2.03	149.82
4.16	11.620	296.22	0.00	11.620	2.55	5	20.47	73.12	3.92	69.20	166.87	2.57	0.00	5	2.08	148.24
4.18	12.130	327.30	0.00	12.130	2.70	5	20.61	73.53	4.12	69.41	173.69	2.71	0.00	5	2.09	154.63
4.20	12.950	364.25	0.00	12.950	2.81	5	20.75	73.95	4.32	69.63	184.92	2.83	0.00	5	2.09	164.74

Prove Penetrometriche Statiche con Punta elettrica (CPTe)

ESTIMATED PARAMETERS

CPTe P3 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.060	0.03	0	0.0E+00	0	0.81	0	0	0.65	0.81	0.00	0.00
0.04	0.350	0.03	0	0.0E+00	1	3.34	0	0	2.67	3.34	0.00	0.00
0.06	0.590	0.06	0	0.0E+00	1	5.04	0	0	4.02	5.04	0.00	0.00
0.08	0.710	0.06	0	0.0E+00	2	6.26	0	0	4.99	6.26	0.00	0.00
0.10	0.840	3.07	6	3.7E-05	2	7.09	47	38	5.66	7.09	0.00	0.00
0.12	0.980	10.04	6	1.4E-05	2	9.86	54	40	7.87	9.86	0.00	0.00
0.14	1.110	16.67	6	8.7E-06	3	12.19	58	40	9.73	12.19	0.00	0.00
0.16	1.200	21.42	5	6.5E-06	3	13.89	59	41	11.08	13.89	0.00	0.00
0.18	1.070	28.11	5	2.5E-06	3	14.69	58	40	11.72	14.69	0.00	0.00
0.20	1.220	32.99	5	2.6E-06	4	16.66	60	41	13.29	16.66	0.00	0.00
0.22	1.400	35.33	5	3.3E-06	4	18.38	61	41	14.67	18.38	0.00	0.00
0.24	1.340	34.82	5	2.7E-06	4	18.25	58	40	14.56	18.25	0.00	0.00
0.26	1.210	41.83	5	1.3E-06	4	16.88	58	40	15.00	18.80	0.00	0.00
0.28	1.140	44.84	8	8.5E-07	4	15.90	56	40	15.19	19.04	0.00	0.00
0.30	1.130	46.68	9	7.2E-07	4	15.75	0	0	15.51	19.43	80.37	35.60
0.32	1.110	47.82	9	6.0E-07	4	15.47	0	0	15.73	19.71	78.92	34.13
0.34	1.200	49.21	9	6.9E-07	4	16.72	0	0	16.60	20.81	85.32	34.39
0.36	1.050	52.79	9	3.6E-07	4	14.62	0	0	16.31	20.44	74.58	31.67
0.38	0.970	56.28	9	2.3E-07	4	13.49	0	0	16.34	20.48	68.84	29.90
0.40	0.890	53.77	9	1.8E-07	3	12.37	0	0	15.73	19.71	63.10	27.29
0.42	0.780	54.44	9	1.0E-07	3	10.82	0	0	0.00	19.00	55.22	24.72
0.44	0.760	50.89	9	1.0E-07	3	10.54	0	0	0.00	18.58	53.77	23.17
0.46	0.910	48.07	9	1.9E-07	3	12.63	0	0	15.77	19.77	64.46	24.36
0.48	0.930	42.27	4	2.5E-07	3	12.91	0	0	15.40	19.30	65.86	23.20
0.50	0.830	39.96	4	1.8E-07	3	11.50	0	0	14.59	18.29	58.69	20.93
0.52	0.970	35.97	4	3.5E-07	3	13.46	0	0	15.13	18.97	68.67	21.70
0.54	0.830	31.94	4	2.4E-07	3	11.49	0	0	13.83	17.34	58.65	18.88
0.56	0.770	32.86	4	1.7E-07	3	10.65	0	0	13.67	17.13	54.34	17.78
0.58	0.740	31.62	4	1.5E-07	3	10.22	0	0	13.41	16.81	52.17	16.83
0.60	0.730	30.45	4	1.4E-07	3	10.08	0	0	13.29	16.66	51.43	16.20
0.62	0.700	27.50	4	1.4E-07	3	9.66	0	0	12.77	16.01	49.26	15.13
0.64	0.730	22.69	4	2.2E-07	3	10.07	0	0	12.34	15.47	51.38	14.62
0.66	0.690	19.77	4	2.1E-07	3	9.51	0	0	11.68	14.64	48.50	13.49
0.68	0.840	19.58	5	4.1E-07	3	11.60	36	36	12.68	15.89	0.00	0.00
0.70	0.750	16.29	5	3.5E-07	3	10.34	34	35	11.59	14.52	0.00	0.00
0.72	0.770	16.22	5	3.7E-07	3	10.61	34	35	11.78	14.76	0.00	0.00
0.74	1.130	16.29	5	1.3E-06	4	15.65	38	36	13.82	17.32	0.00	0.00
0.76	3.820	21.77	6	5.0E-05	9	30.62	56	40	24.43	30.62	0.00	0.00
0.78	3.860	29.03	6	3.3E-05	9	33.24	57	40	26.52	33.24	0.00	0.00
0.80	3.520	24.05	6	3.1E-05	8	30.66	55	40	24.46	30.66	0.00	0.00
0.82	3.690	12.58	6	7.9E-05	8	27.16	53	39	21.67	27.16	0.00	0.00
0.84	3.350	8.87	6	8.1E-05	7	24.56	50	39	19.60	24.56	0.00	0.00
0.86	2.750	6.81	6	5.4E-05	6	21.64	46	38	17.27	21.64	0.00	0.00
0.88	2.750	6.81	6	5.3E-05	6	21.73	46	38	17.34	21.73	0.00	0.00
0.90	2.290	49.56	5	2.0E-06	7	32.83	49	39	26.19	32.83	0.00	0.00
0.92	2.550	48.86	5	2.9E-06	8	34.16	51	39	27.25	34.16	0.00	0.00
0.94	1.180	40.59	4	2.5E-07	4	16.30	0	0	19.50	24.43	83.17	17.14

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	0.600	58.53	3	1.0E-08	3	8.18	0	0	0.00	21.72	41.72	11.59
0.98	0.830	56.72	3	3.5E-08	4	11.39	0	0	0.00	24.32	58.12	13.99
1.00	1.010	53.96	4	7.6E-08	4	13.91	0	0	0.00	25.81	70.95	15.53
1.02	1.060	53.30	4	8.9E-08	4	14.60	0	0	0.00	26.30	74.50	15.76
1.04	1.000	46.07	4	9.2E-08	4	13.76	0	0	0.00	24.66	70.19	14.56
1.06	1.020	47.82	4	8.9E-08	4	14.03	0	0	0.00	25.28	71.59	14.65
1.08	1.050	33.81	4	1.8E-07	4	14.45	0	0	18.33	22.97	73.71	13.90
1.10	2.030	32.89	5	2.0E-06	6	29.01	43	38	23.14	29.01	0.00	0.00
1.12	1.680	31.53	5	1.0E-06	5	23.26	40	37	21.43	26.86	0.00	0.00
1.14	1.040	68.86	3	4.3E-08	5	14.29	0	0	0.00	29.38	72.92	14.96
1.16	1.050	70.06	3	4.2E-08	5	14.43	0	0	0.00	29.81	73.61	14.89
1.18	1.890	80.55	4	2.7E-07	7	26.18	0	0	30.76	38.55	133.58	22.52
1.20	1.930	73.10	4	3.5E-07	7	26.74	0	0	30.08	37.70	136.41	22.21
1.22	1.970	66.86	4	4.3E-07	7	27.29	0	0	29.51	36.99	139.24	21.94
1.24	1.040	73.17	3	3.3E-08	5	14.27	0	0	0.00	30.75	72.79	14.10
1.26	0.810	77.86	3	1.1E-08	4	11.04	0	0	0.00	28.96	56.34	11.80
1.28	0.750	60.59	3	1.3E-08	4	10.20	0	0	0.00	25.94	52.03	10.58
1.30	0.840	56.34	3	2.3E-08	4	11.45	0	0	0.00	26.46	58.43	11.18
1.32	0.930	52.13	3	3.7E-08	4	12.71	0	0	0.00	26.82	64.83	11.73
1.34	0.940	50.42	3	4.0E-08	4	12.84	0	0	0.00	26.73	65.52	11.62
1.36	0.950	46.14	3	4.8E-08	4	12.98	0	0	0.00	26.16	66.21	11.42
1.38	0.900	41.92	3	4.5E-08	4	12.27	0	0	0.00	24.99	62.61	10.71
1.40	0.880	42.37	3	4.0E-08	4	11.99	0	0	0.00	24.99	61.16	10.43
1.42	0.900	43.03	3	4.1E-08	4	12.26	0	0	0.00	25.42	62.57	10.51
1.44	0.980	43.60	4	5.4E-08	4	13.38	0	0	0.00	26.39	68.26	11.08
1.46	1.100	46.93	4	7.1E-08	5	15.05	0	0	0.00	28.24	76.80	12.06
1.48	4.170	49.02	6	9.3E-06	11	45.14	53	39	36.01	45.14	0.00	0.00
1.50	4.750	46.90	6	1.6E-05	12	46.69	55	40	37.25	46.69	0.00	0.00
1.52	4.520	39.86	6	1.7E-05	11	43.87	53	40	35.00	43.87	0.00	0.00
1.54	3.920	55.55	5	5.6E-06	11	46.38	51	39	37.01	46.38	0.00	0.00
1.56	3.720	69.87	5	3.0E-06	11	49.32	51	39	39.35	49.32	0.00	0.00
1.58	2.930	84.38	5	8.4E-07	10	40.64	47	38	38.93	48.79	0.00	0.00
1.60	1.390	144.65	3	1.6E-08	7	19.08	0	0	0.00	46.75	97.33	15.62
1.62	1.640	139.39	3	3.2E-08	7	22.57	0	0	0.00	48.84	115.16	17.37
1.64	1.700	139.84	3	3.6E-08	8	23.41	0	0	0.00	49.65	119.42	17.66
1.66	1.570	138.60	3	2.7E-08	7	21.58	0	0	0.00	48.38	110.11	16.46
1.68	1.400	124.37	3	2.1E-08	7	19.20	0	0	0.00	44.94	97.94	14.70
1.70	1.360	116.61	3	2.1E-08	6	18.63	0	0	0.00	43.63	95.06	14.09
1.72	1.290	108.97	3	1.9E-08	6	17.65	0	0	0.00	41.99	90.03	13.27
1.74	1.130	61.82	3	3.4E-08	5	15.40	0	0	0.00	33.02	78.58	11.01
1.76	1.120	65.21	3	2.9E-08	5	15.26	0	0	0.00	33.65	77.84	10.90
1.78	1.610	65.94	4	1.1E-07	6	22.11	0	0	30.42	38.13	112.81	14.32
1.80	1.870	61.03	4	2.3E-07	7	25.75	0	0	31.20	39.10	131.36	15.79
1.82	1.990	55.96	5	3.4E-07	7	27.42	38	36	31.02	38.88	0.00	0.00
1.84	1.760	56.59	4	2.0E-07	7	24.20	0	0	30.02	37.62	123.45	14.69
1.86	1.500	68.16	4	7.5E-08	6	20.55	0	0	0.00	38.19	104.85	13.14
1.88	1.500	68.16	4	7.4E-08	6	20.55	0	0	0.00	38.31	104.83	13.03
1.90	1.230	70.25	3	3.2E-08	6	16.76	0	0	0.00	36.45	85.51	11.09
1.92	1.180	65.94	3	3.0E-08	5	16.06	0	0	0.00	35.30	81.92	10.55
1.94	1.120	67.49	3	2.3E-08	5	15.21	0	0	0.00	35.10	77.61	10.07
1.96	1.140	63.88	3	2.7E-08	5	15.49	0	0	0.00	34.74	79.01	10.06
1.98	1.160	55.68	3	3.6E-08	5	15.76	0	0	0.00	33.46	80.41	9.95
2.00	1.190	50.76	4	4.6E-08	5	16.18	0	0	0.00	32.81	82.53	9.97
2.02	1.290	45.85	4	7.5E-08	5	17.57	0	0	0.00	32.65	89.65	10.44
2.04	1.340	41.61	4	1.0E-07	5	18.27	0	0	0.00	32.13	93.19	10.58

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	1.360	43.35	4	9.9E-08	5	18.54	0	0	0.00	32.81	94.60	10.67
2.08	1.390	44.62	4	1.0E-07	6	18.96	0	0	0.00	33.45	96.72	10.81
2.10	1.330	54.15	4	5.8E-08	6	18.11	0	0	0.00	35.26	92.41	10.56
2.12	1.270	60.81	3	3.8E-08	6	17.27	0	0	0.00	36.25	88.09	10.21
2.14	1.210	67.24	3	2.6E-08	6	16.42	0	0	0.00	37.05	83.78	9.84
2.16	1.210	67.18	3	2.5E-08	6	16.42	0	0	0.00	37.16	83.76	9.76
2.18	1.230	65.18	3	2.8E-08	6	16.69	0	0	0.00	37.07	85.16	9.79
2.20	1.180	67.59	3	2.2E-08	5	15.99	0	0	0.00	37.17	81.56	9.41
2.22	1.220	67.11	3	2.5E-08	6	16.54	0	0	0.00	37.57	84.39	9.59
2.24	1.260	61.60	3	3.3E-08	6	17.10	0	0	0.00	36.95	87.23	9.69
2.26	1.360	59.86	4	4.6E-08	6	18.49	0	0	0.00	37.59	94.34	10.21
2.28	1.370	57.58	4	5.0E-08	6	18.63	0	0	0.00	37.29	95.03	10.16
2.30	1.380	55.90	4	5.3E-08	6	18.76	0	0	0.00	37.10	95.72	10.12
2.32	1.310	58.50	3	3.9E-08	6	17.78	0	0	0.00	37.16	90.70	9.67
2.34	1.260	64.20	3	2.8E-08	6	17.07	0	0	0.00	38.02	87.10	9.37
2.36	1.180	73.04	3	1.6E-08	6	15.95	0	0	0.00	39.08	81.36	8.90
2.38	1.070	82.32	3	8.5E-09	5	14.40	0	0	0.00	39.71	73.48	8.21
2.40	1.030	85.72	3	6.4E-09	5	13.84	0	0	0.00	40.12	70.59	7.82
2.42	1.030	83.18	3	6.7E-09	5	13.83	0	0	0.00	39.78	70.57	7.75
2.44	1.000	79.35	3	6.4E-09	5	13.41	0	0	0.00	38.91	68.40	7.45
2.46	0.920	70.66	3	5.5E-09	5	12.28	0	0	0.00	36.60	62.66	6.77
2.48	0.870	61.57	3	5.6E-09	5	11.58	0	0	0.00	34.38	59.06	6.33
2.50	0.840	53.96	3	6.2E-09	4	11.15	0	0	0.00	32.54	56.89	6.05
2.52	0.880	43.44	3	1.1E-08	4	11.71	0	0	0.00	30.60	59.73	6.23
2.54	0.950	37.14	3	2.0E-08	4	12.68	0	0	0.00	29.85	64.70	6.53
2.56	0.980	31.34	4	3.1E-08	4	13.10	0	0	0.00	28.64	66.82	6.58
2.58	0.970	29.72	4	3.2E-08	4	12.95	0	0	0.00	28.15	66.08	6.45
2.60	0.960	29.63	4	3.0E-08	4	12.81	0	0	0.00	28.11	65.34	6.35
2.62	0.950	25.83	4	3.6E-08	4	12.66	0	0	0.00	26.93	64.61	6.19
2.64	0.960	21.17	4	5.1E-08	4	12.80	0	0	0.00	25.54	65.30	6.12
2.66	1.030	19.52	4	7.5E-08	4	13.77	0	0	0.00	25.59	70.27	6.43
2.68	1.050	25.70	4	5.1E-08	4	14.05	0	0	0.00	27.97	71.68	6.63
2.70	1.080	25.60	4	5.7E-08	5	14.46	0	0	0.00	28.25	73.80	6.75
2.72	1.070	27.03	4	5.0E-08	5	14.32	0	0	0.00	28.70	73.06	6.68
2.74	1.110	27.03	4	5.7E-08	5	14.87	0	0	0.00	29.11	75.89	6.86
2.76	1.110	29.31	4	4.9E-08	5	14.87	0	0	0.00	29.89	75.87	6.86
2.78	1.070	30.67	4	3.8E-08	5	14.31	0	0	0.00	30.05	72.99	6.62
2.80	1.030	32.23	4	3.0E-08	5	13.74	0	0	0.00	30.23	70.10	6.38
2.82	1.010	31.85	4	2.7E-08	5	13.46	0	0	0.00	30.01	68.65	6.23
2.84	0.990	34.76	3	2.1E-08	5	13.17	0	0	0.00	30.74	67.20	6.11
2.86	1.020	35.17	3	2.3E-08	5	13.59	0	0	0.00	31.21	69.32	6.24
2.88	1.020	35.17	3	2.3E-08	5	13.58	0	0	0.00	31.29	69.29	6.21
2.90	1.380	35.97	4	7.5E-08	6	18.62	0	0	0.00	34.62	94.98	8.08
2.92	1.450	36.09	4	9.0E-08	6	19.59	0	0	0.00	35.26	99.96	8.40
2.94	1.490	36.66	4	9.6E-08	6	20.15	0	0	0.00	35.80	102.79	8.56
2.96	1.450	43.63	4	6.3E-08	6	19.58	0	0	0.00	37.61	99.91	8.41
2.98	1.520	53.81	4	5.1E-08	7	20.56	0	0	0.00	40.96	104.88	8.84
3.00	1.560	66.99	3	3.7E-08	7	21.11	0	0	0.00	44.57	107.71	9.12
3.02	1.540	77.54	3	2.6E-08	7	20.83	0	0	0.00	46.80	106.26	9.07
3.04	1.520	76.81	3	2.5E-08	7	20.54	0	0	0.00	46.52	104.81	8.93
3.06	1.420	87.55	3	1.5E-08	7	19.14	0	0	0.00	47.84	97.64	8.45
3.08	1.310	102.86	3	7.4E-09	7	17.59	0	0	0.00	49.78	89.75	7.86
3.10	1.240	102.10	3	5.8E-09	6	16.61	0	0	0.00	49.06	84.73	7.39
3.12	1.230	92.08	3	6.9E-09	6	16.46	0	0	0.00	47.09	83.99	7.31
3.14	1.240	85.40	3	8.4E-09	6	16.60	0	0	0.00	45.88	84.67	7.34

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	1.270	79.41	3	1.1E-08	6	17.01	0	0	0.00	44.98	86.79	7.48
3.18	1.280	77.76	3	1.1E-08	6	17.15	0	0	0.00	44.80	87.48	7.50
3.20	1.250	72.09	3	1.2E-08	6	16.72	0	0	0.00	43.36	85.31	7.28
3.22	1.270	64.90	3	1.6E-08	6	17.00	0	0	0.00	42.04	86.71	7.32
3.24	1.300	61.54	3	1.9E-08	6	17.41	0	0	0.00	41.59	88.83	7.43
3.26	1.250	65.85	3	1.4E-08	6	16.71	0	0	0.00	42.14	85.24	7.18
3.28	1.240	71.17	3	1.2E-08	6	16.56	0	0	0.00	43.24	84.50	7.13
3.30	1.240	70.85	3	1.2E-08	6	16.56	0	0	0.00	43.22	84.47	7.11
3.32	1.200	68.26	3	1.1E-08	6	15.99	0	0	0.00	42.30	81.59	6.87
3.34	1.140	68.29	3	8.5E-09	6	15.15	0	0	0.00	41.80	77.28	6.50
3.36	1.030	67.75	3	5.4E-09	5	13.60	0	0	0.00	40.74	69.39	5.82
3.38	0.940	59.98	3	4.5E-09	5	12.34	0	0	0.00	38.14	62.94	5.27
3.40	0.910	54.50	3	4.7E-09	5	11.91	0	0	0.00	36.58	60.77	5.07
3.42	0.940	44.52	3	8.1E-09	5	12.33	0	0	0.00	34.31	62.89	5.23
3.44	1.110	37.42	3	2.2E-08	5	14.70	0	0	0.00	34.00	75.01	6.07
3.46	1.220	33.62	4	4.0E-08	5	16.24	0	0	0.00	33.83	82.84	6.56
3.48	1.310	29.31	4	6.7E-08	5	17.49	0	0	0.00	33.15	89.24	6.94
3.50	1.340	26.24	4	8.9E-08	5	17.91	0	0	0.00	32.31	91.36	7.03
3.52	1.400	22.63	4	1.3E-07	5	18.74	0	0	25.05	31.39	95.62	7.24
3.54	1.240	19.61	4	1.0E-07	5	16.50	0	0	0.00	29.06	84.17	6.42
3.56	1.020	19.36	4	4.6E-08	4	13.41	0	0	0.00	27.27	68.43	5.34
3.58	0.900	18.60	4	2.9E-08	4	11.73	0	0	0.00	25.95	59.84	4.73
3.60	0.880	18.06	4	2.7E-08	4	11.42	0	0	0.00	25.57	58.39	4.61
3.62	0.920	18.92	4	3.0E-08	4	12.00	0	0	0.00	26.30	61.22	4.81
3.64	1.010	18.51	4	4.6E-08	4	13.25	0	0	0.00	26.93	67.63	5.23
3.66	1.080	20.06	4	5.3E-08	5	14.23	0	0	0.00	28.15	72.60	5.58
3.68	1.100	22.53	4	4.7E-08	5	14.51	0	0	0.00	29.30	74.01	5.69
3.70	1.130	27.19	4	3.9E-08	5	14.92	0	0	0.00	31.27	76.13	5.88
3.72	1.130	32.13	4	2.9E-08	5	14.92	0	0	0.00	32.95	76.10	5.92
3.74	1.170	34.35	4	3.0E-08	5	15.47	0	0	0.00	34.02	78.94	6.12
3.76	1.180	39.86	3	2.4E-08	5	15.61	0	0	0.00	35.80	79.63	6.20
3.78	1.130	48.51	3	1.4E-08	5	14.90	0	0	0.00	37.74	76.03	6.00
3.80	1.140	51.05	3	1.3E-08	6	15.04	0	0	0.00	38.52	76.72	6.05
3.82	1.130	51.05	3	1.2E-08	6	14.89	0	0	0.00	38.46	75.98	5.98
3.84	1.100	46.11	3	1.3E-08	5	14.47	0	0	0.00	36.92	73.81	5.79
3.86	1.110	46.90	3	1.3E-08	5	14.60	0	0	0.00	37.26	74.50	5.83
3.88	1.110	46.90	3	1.3E-08	5	14.60	0	0	0.00	37.29	74.48	5.81
3.90	0.970	39.83	3	9.7E-09	5	12.63	0	0	0.00	34.02	64.45	5.05
3.92	0.940	35.62	3	1.0E-08	5	12.21	0	0	0.00	32.52	62.28	4.87
3.94	0.940	31.72	3	1.3E-08	5	12.20	0	0	0.00	31.37	62.26	4.83
3.96	0.920	28.90	3	1.3E-08	4	11.92	0	0	0.00	30.30	60.81	4.70
3.98	0.900	28.65	3	1.2E-08	4	11.54	0	0	0.00	30.04	59.35	4.58
4.00	0.920	25.95	3	1.6E-08	4	11.91	0	0	0.00	29.36	60.76	4.65
4.02	0.950	24.94	4	1.9E-08	4	12.32	0	0	0.00	29.31	62.88	4.77
4.04	1.020	20.25	4	3.6E-08	5	13.30	0	0	0.00	28.19	67.85	5.05
4.06	1.050	20.82	4	3.9E-08	5	13.71	0	0	0.00	28.69	69.97	5.19
4.08	1.090	21.17	4	4.4E-08	5	14.27	0	0	0.00	29.19	72.81	5.37
4.10	1.110	23.29	4	4.1E-08	5	14.55	0	0	0.00	30.20	74.21	5.47
4.12	1.150	23.61	4	4.6E-08	5	15.10	0	0	0.00	30.67	77.05	5.65
4.14	1.180	24.40	4	4.8E-08	5	15.52	0	0	0.00	31.24	79.16	5.79
4.16	1.280	29.88	4	4.8E-08	6	16.91	0	0	0.00	34.04	86.28	6.29
4.18	1.420	34.25	4	5.9E-08	6	18.87	0	0	0.00	36.64	96.26	6.97
4.20	1.500	37.33	4	6.4E-08	6	19.98	0	0	0.00	38.28	101.95	7.35
4.22	1.320	46.93	3	2.4E-08	6	17.46	0	0	0.00	39.76	89.07	6.57
4.24	1.200	50.83	3	1.4E-08	6	15.77	0	0	0.00	39.76	80.47	6.01

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	1.130	53.62	3	9.6E-09	6	14.79	0	0	0.00	39.86	75.44	5.67
4.28	1.190	53.33	3	1.2E-08	6	15.62	0	0	0.00	40.39	79.70	5.95
4.30	1.370	46.80	4	2.8E-08	6	18.14	0	0	0.00	40.29	92.54	6.74
4.32	1.830	45.63	4	9.9E-08	7	24.57	0	0	0.00	43.42	125.37	8.82
4.34	2.070	34.73	5	2.7E-07	8	27.93	29	34	32.96	41.31	0.00	0.00
4.36	2.530	37.84	5	5.2E-07	9	34.36	32	35	35.87	44.96	0.00	0.00
4.38	2.230	42.08	5	2.6E-07	8	30.16	30	34	35.80	44.86	0.00	0.00
4.40	1.940	48.32	4	1.1E-07	8	26.09	0	0	36.00	45.12	133.13	9.25
4.42	1.740	53.52	4	5.8E-08	7	23.29	0	0	0.00	45.30	118.81	8.38
4.44	1.610	57.23	4	3.7E-08	7	21.46	0	0	0.00	45.37	109.50	7.79
4.46	1.580	57.04	4	3.4E-08	7	21.04	0	0	0.00	45.12	107.34	7.64
4.48	1.560	56.06	4	3.3E-08	7	20.75	0	0	0.00	44.74	105.88	7.52
4.50	1.550	55.68	4	3.2E-08	7	20.61	0	0	0.00	44.59	105.14	7.45
4.52	1.490	54.72	3	2.8E-08	7	19.76	0	0	0.00	43.88	100.83	7.16
4.54	1.440	52.73	3	2.6E-08	7	19.06	0	0	0.00	42.96	97.23	6.90
4.56	1.370	51.65	3	2.2E-08	6	18.07	0	0	0.00	42.10	92.21	6.56
4.58	1.340	53.65	3	1.8E-08	6	17.65	0	0	0.00	42.41	90.04	6.41
4.60	1.380	56.56	3	1.9E-08	6	18.20	0	0	0.00	43.57	92.87	6.60
4.62	1.430	57.35	3	2.1E-08	7	18.90	0	0	0.00	44.26	96.42	6.81
4.64	1.530	57.77	3	2.7E-08	7	20.29	0	0	0.00	45.25	103.54	7.25
4.66	1.610	61.22	3	3.0E-08	7	21.41	0	0	0.00	46.86	109.22	7.61
4.68	1.570	63.41	3	2.5E-08	7	20.84	0	0	0.00	47.13	106.34	7.43
4.70	1.490	67.88	3	1.8E-08	7	19.72	0	0	0.00	47.60	100.60	7.07
4.72	1.390	69.62	3	1.2E-08	7	18.31	0	0	0.00	47.15	93.43	6.60
4.74	1.320	66.77	3	1.1E-08	7	17.33	0	0	0.00	45.85	88.41	6.25
4.76	1.300	61.57	3	1.2E-08	6	17.04	0	0	0.00	44.42	86.95	6.13
4.78	1.290	55.74	3	1.3E-08	6	16.90	0	0	0.00	42.88	86.21	6.04
4.80	1.310	49.97	3	1.8E-08	6	17.17	0	0	0.00	41.55	87.62	6.09
4.82	1.310	48.58	3	1.8E-08	6	17.17	0	0	0.00	41.19	87.59	6.06
4.84	1.250	50.61	3	1.4E-08	6	16.32	0	0	0.00	41.24	83.28	5.79
4.86	1.310	44.52	3	2.1E-08	6	17.16	0	0	0.00	40.09	87.54	6.01
4.88	1.310	44.52	3	2.1E-08	6	17.15	0	0	0.00	40.12	87.52	6.00
4.90	1.420	42.65	4	3.2E-08	6	18.69	0	0	0.00	40.51	95.35	6.46
4.92	1.470	43.51	4	3.6E-08	7	19.38	0	0	0.00	41.21	98.90	6.67
4.94	1.490	50.10	4	2.9E-08	7	19.66	0	0	0.00	43.36	100.30	6.78
4.96	1.460	56.37	3	2.1E-08	7	19.23	0	0	0.00	44.89	98.13	6.67
4.98	1.450	63.25	3	1.7E-08	7	19.09	0	0	0.00	46.64	97.39	6.64
5.00	1.500	70.00	3	1.6E-08	7	19.78	0	0	0.00	48.81	100.94	6.87
5.02	1.480	80.71	3	1.1E-08	7	19.50	0	0	0.00	51.17	99.48	6.80
5.04	1.470	84.89	3	9.7E-09	7	19.35	0	0	0.00	52.11	98.74	6.74
5.06	1.510	84.23	3	1.1E-08	7	19.91	0	0	0.00	52.34	101.57	6.91
5.08	1.460	89.55	3	8.3E-09	7	19.20	0	0	0.00	53.18	97.98	6.65
5.10	1.450	91.17	3	7.7E-09	7	19.06	0	0	0.00	53.50	97.23	6.59
5.12	1.450	89.52	3	7.9E-09	7	19.05	0	0	0.00	53.19	97.21	6.57
5.14	1.460	88.69	3	8.3E-09	7	19.19	0	0	0.00	53.14	97.90	6.60
5.16	1.420	87.30	3	7.5E-09	7	18.62	0	0	0.00	52.52	95.01	6.39
5.18	1.330	87.27	3	5.5E-09	7	17.36	0	0	0.00	51.75	88.56	5.94
5.20	1.350	79.12	3	7.2E-09	7	17.63	0	0	0.00	50.12	89.96	6.02
5.22	1.320	74.78	3	7.2E-09	7	17.21	0	0	0.00	48.86	87.79	5.86
5.24	1.300	71.99	3	7.2E-09	7	16.92	0	0	0.00	48.05	86.34	5.75
5.26	1.280	67.24	3	7.7E-09	7	16.64	0	0	0.00	46.74	84.88	5.64
5.28	1.270	63.82	3	8.2E-09	6	16.49	0	0	0.00	45.81	84.14	5.58
5.30	1.300	56.97	3	1.1E-08	6	16.91	0	0	0.00	44.27	86.26	5.70
5.32	1.370	50.83	3	1.8E-08	6	17.88	0	0	0.00	43.26	91.24	5.97
5.34	1.410	47.66	3	2.2E-08	7	18.44	0	0	0.00	42.72	94.07	6.11

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	1.430	45.79	4	2.5E-08	7	18.71	0	0	0.00	42.36	95.47	6.18
5.38	1.450	44.05	4	2.9E-08	7	18.99	0	0	0.00	42.02	96.88	6.24
5.40	1.530	40.69	4	4.1E-08	7	20.10	0	0	0.00	41.61	102.57	6.55
5.42	1.610	37.39	4	6.0E-08	7	21.22	0	0	0.00	41.12	108.25	6.85
5.44	1.710	38.72	4	7.2E-08	7	22.61	0	0	0.00	42.31	115.37	7.26
5.46	1.740	47.75	4	5.4E-08	7	23.03	0	0	0.00	45.52	117.49	7.42
5.48	1.810	46.23	4	6.7E-08	8	24.00	0	0	0.00	45.56	122.47	7.69
5.50	2.190	52.92	4	1.2E-07	9	29.32	0	0	40.06	50.21	149.58	9.27
5.52	2.850	60.02	5	2.9E-07	10	38.55	32	35	44.86	56.23	0.00	0.00
5.54	3.900	61.54	5	1.0E-06	13	53.25	37	36	49.21	61.68	0.00	0.00
5.56	3.750	58.84	5	9.4E-07	12	51.14	37	36	48.02	60.19	0.00	0.00
5.58	3.260	47.94	5	7.5E-07	11	44.28	34	35	43.33	54.30	0.00	0.00
5.60	3.030	38.53	5	8.0E-07	10	41.05	33	35	39.71	49.77	0.00	0.00
5.62	3.000	42.68	5	6.4E-07	10	40.63	33	35	40.90	51.26	0.00	0.00
5.64	3.430	45.79	5	9.9E-07	11	46.64	35	36	43.38	54.37	0.00	0.00
5.66	4.220	47.06	5	2.2E-06	13	58.03	38	36	46.30	58.03	0.00	0.00
5.68	3.960	55.71	5	1.3E-06	13	54.05	37	36	48.05	60.23	0.00	0.00
5.70	3.420	63.25	5	5.4E-07	12	46.49	35	36	48.22	60.44	0.00	0.00
5.72	3.230	64.04	5	4.1E-07	11	43.82	34	35	47.74	59.83	0.00	0.00
5.74	2.920	61.66	5	2.9E-07	11	39.48	32	35	45.93	57.56	0.00	0.00
5.76	2.800	56.88	5	2.8E-07	10	37.79	32	35	44.25	55.46	0.00	0.00
5.78	2.710	52.89	5	2.7E-07	10	36.53	31	34	42.86	53.71	0.00	0.00
5.80	2.780	54.79	5	2.9E-07	10	37.50	31	35	43.68	54.75	0.00	0.00
5.82	2.810	53.93	5	3.1E-07	10	37.92	31	35	43.61	54.66	0.00	0.00
5.84	2.570	49.91	5	2.4E-07	10	34.55	30	34	41.55	52.08	0.00	0.00
5.86	2.290	52.82	4	1.3E-07	9	30.63	0	0	41.07	51.48	156.26	9.34
5.88	2.290	52.82	4	1.3E-07	9	30.62	0	0	41.10	51.51	156.24	9.32
5.90	2.000	62.90	4	5.2E-08	9	26.56	0	0	0.00	52.72	135.50	8.19
5.92	1.820	65.88	4	3.2E-08	8	24.03	0	0	0.00	52.27	122.61	7.45
5.94	1.680	64.61	3	2.3E-08	8	22.07	0	0	0.00	50.86	112.59	6.86
5.96	1.480	65.28	3	1.3E-08	7	19.26	0	0	0.00	49.37	98.28	6.03
5.98	1.320	66.73	3	7.1E-09	7	17.02	0	0	0.00	48.42	86.82	5.32
6.00	1.260	66.48	3	5.8E-09	7	16.17	0	0	0.00	47.85	82.51	5.05
6.02	1.210	66.51	3	4.7E-09	6	15.47	0	0	0.00	47.42	78.92	4.82
6.04	1.150	68.41	3	3.5E-09	6	14.39	0	0	0.00	47.35	74.60	4.55
6.06	1.200	60.71	3	5.4E-09	6	15.32	0	0	0.00	45.88	78.15	4.75
6.08	1.280	56.72	3	8.3E-09	6	16.43	0	0	0.00	45.54	83.84	5.09
6.10	1.310	54.22	3	1.0E-08	7	16.85	0	0	0.00	45.12	85.96	5.20
6.12	1.370	49.94	3	1.4E-08	7	17.68	0	0	0.00	44.42	90.22	5.44
6.14	1.380	52.09	3	1.4E-08	7	17.82	0	0	0.00	45.17	90.91	5.47
6.16	1.360	53.14	3	1.2E-08	7	17.53	0	0	0.00	45.33	89.45	5.38
6.18	1.360	51.90	3	1.3E-08	7	17.53	0	0	0.00	45.00	89.43	5.37
6.20	1.350	54.19	3	1.1E-08	7	17.38	0	0	0.00	45.63	88.69	5.32
6.22	1.340	60.59	3	8.6E-09	7	17.24	0	0	0.00	47.41	87.95	5.26
6.24	1.270	64.55	3	5.9E-09	7	16.25	0	0	0.00	47.89	82.92	4.95
6.26	1.190	65.44	3	4.2E-09	6	15.05	0	0	0.00	47.40	77.18	4.60
6.28	1.190	61.82	3	4.7E-09	6	15.01	0	0	0.00	46.48	77.16	4.59
6.30	1.180	61.63	3	4.5E-09	6	14.70	0	0	0.00	46.37	76.42	4.53
6.32	1.220	57.48	3	6.0E-09	6	15.53	0	0	0.00	45.65	79.25	4.69
6.34	1.280	52.32	3	8.9E-09	6	16.37	0	0	0.00	44.74	83.51	4.93
6.36	1.480	50.57	3	1.8E-08	7	19.16	0	0	0.00	45.97	97.77	5.73
6.38	1.610	49.84	4	2.7E-08	7	20.98	0	0	0.00	46.83	107.03	6.23
6.40	1.710	48.64	4	3.7E-08	8	22.37	0	0	0.00	47.25	114.15	6.61
6.42	1.860	49.15	4	5.3E-08	8	24.47	0	0	0.00	48.53	124.84	7.18
6.44	2.050	55.93	4	6.3E-08	9	27.12	0	0	0.00	52.01	138.38	7.93

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	2.370	62.11	4	9.8E-08	10	31.60	0	0	0.00	56.01	161.21	9.17
6.48	2.540	64.83	4	1.2E-07	10	33.97	0	0	46.20	57.91	173.33	9.81
6.50	2.360	59.83	4	1.0E-07	9	31.45	0	0	0.00	55.33	160.45	9.08
6.52	2.200	58.37	4	7.8E-08	9	29.20	0	0	0.00	53.91	148.99	8.45
6.54	2.150	58.56	4	7.0E-08	9	28.50	0	0	0.00	53.68	145.40	8.24
6.56	2.240	66.61	4	6.5E-08	9	29.75	0	0	0.00	56.73	151.80	8.59
6.58	2.180	71.33	4	5.1E-08	9	28.91	0	0	0.00	57.72	147.49	8.36
6.60	1.880	64.61	4	3.2E-08	8	24.70	0	0	0.00	53.71	126.03	7.17
6.62	1.640	53.11	3	2.5E-08	8	21.34	0	0	0.00	48.51	108.87	6.20
6.64	1.480	53.17	3	1.5E-08	7	19.09	0	0	0.00	47.24	97.41	5.57
6.66	1.400	52.47	3	1.2E-08	7	17.97	0	0	0.00	46.38	91.67	5.24
6.68	1.330	53.68	3	9.2E-09	7	16.98	0	0	0.00	46.19	86.65	4.95
6.70	1.360	51.40	3	1.1E-08	7	17.40	0	0	0.00	45.79	88.76	5.06
6.72	1.440	50.38	3	1.5E-08	7	18.51	0	0	0.00	46.19	94.45	5.36
6.74	1.510	48.42	3	2.0E-08	7	19.49	0	0	0.00	46.21	99.43	5.61
6.76	1.630	47.37	4	2.9E-08	7	21.16	0	0	0.00	46.86	107.97	6.06
6.78	1.640	51.46	4	2.5E-08	7	21.30	0	0	0.00	48.27	108.66	6.10
6.80	1.630	52.28	3	2.4E-08	7	21.15	0	0	0.00	48.49	107.92	6.05
6.82	1.640	54.91	3	2.2E-08	8	21.29	0	0	0.00	49.41	108.61	6.08
6.84	1.600	58.27	3	1.8E-08	8	20.72	0	0	0.00	50.12	105.73	5.92
6.86	1.550	66.01	3	1.2E-08	8	20.02	0	0	0.00	51.92	102.13	5.73
6.88	1.550	66.01	3	1.2E-08	8	20.01	0	0	0.00	51.97	102.11	5.72
6.90	1.450	70.82	3	7.5E-09	7	18.61	0	0	0.00	52.47	94.94	5.30
6.92	1.360	70.16	3	5.6E-09	7	17.34	0	0	0.00	51.51	88.48	4.93
6.94	1.320	66.64	3	5.4E-09	7	16.78	0	0	0.00	50.24	85.60	4.76
6.96	1.290	62.39	3	5.5E-09	7	16.35	0	0	0.00	48.84	83.43	4.63
6.98	1.300	56.09	3	6.9E-09	7	16.49	0	0	0.00	47.17	84.12	4.66
7.00	1.310	52.28	3	8.2E-09	7	16.62	0	0	0.00	46.16	84.81	4.69
7.02	1.270	48.77	3	8.0E-09	6	15.73	0	0	0.00	44.75	81.93	4.52
7.04	1.310	43.19	3	1.2E-08	6	16.61	0	0	0.00	43.32	84.76	4.67
7.06	1.390	40.31	3	1.7E-08	7	17.73	0	0	0.00	43.06	90.45	4.96
7.08	1.400	37.99	3	2.0E-08	7	17.86	0	0	0.00	42.35	91.14	4.99
7.10	1.460	36.22	4	2.6E-08	7	18.70	0	0	0.00	42.22	95.40	5.20
7.12	1.490	36.66	4	2.7E-08	7	19.11	0	0	0.00	42.65	97.52	5.30
7.14	1.440	40.28	3	2.0E-08	7	18.41	0	0	0.00	43.58	93.92	5.11
7.16	1.380	40.94	3	1.6E-08	7	17.56	0	0	0.00	43.34	89.61	4.88
7.18	1.390	38.60	3	1.8E-08	7	17.70	0	0	0.00	42.63	90.30	4.90
7.20	1.400	39.99	3	1.7E-08	7	17.83	0	0	0.00	43.23	90.99	4.93
7.22	1.420	40.37	3	1.8E-08	7	18.11	0	0	0.00	43.56	92.40	5.00
7.24	1.380	42.27	3	1.5E-08	7	17.54	0	0	0.00	43.91	89.51	4.84
7.26	1.370	42.56	3	1.4E-08	7	17.40	0	0	0.00	43.95	88.77	4.80
7.28	1.380	44.11	3	1.3E-08	7	17.53	0	0	0.00	44.58	89.46	4.83
7.30	1.420	44.49	3	1.5E-08	7	18.09	0	0	0.00	45.09	92.30	4.97
7.32	1.400	46.11	3	1.3E-08	7	17.81	0	0	0.00	45.48	90.84	4.88
7.34	1.430	42.43	3	1.7E-08	7	18.22	0	0	0.00	44.54	92.96	4.98
7.36	1.390	43.79	3	1.4E-08	7	17.66	0	0	0.00	44.69	90.08	4.82
7.38	1.380	46.01	3	1.2E-08	7	17.51	0	0	0.00	45.38	89.34	4.78
7.40	2.180	44.87	4	9.9E-08	9	28.71	0	0	0.00	50.80	146.46	7.70
7.42	3.900	45.50	5	1.2E-06	12	52.78	35	35	47.33	59.32	0.00	0.00
7.44	4.550	42.75	5	2.6E-06	14	60.59	37	36	48.34	60.59	0.00	0.00
7.46	5.160	61.54	5	2.4E-06	15	70.19	40	37	56.00	70.19	0.00	0.00
7.48	5.650	90.63	5	1.7E-06	17	77.27	42	37	65.33	81.88	0.00	0.00
7.50	5.740	109.01	5	1.2E-06	18	78.52	42	37	70.08	87.84	0.00	0.00
7.52	5.640	128.75	5	8.2E-07	19	77.11	42	37	74.23	93.03	0.00	0.00
7.54	5.560	154.92	5	5.2E-07	19	75.99	41	37	79.36	99.47	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	5.660	172.38	5	4.5E-07	20	77.38	42	37	83.09	104.14	0.00	0.00
7.58	5.750	188.19	4	4.0E-07	20	78.64	0	0	86.36	108.24	401.21	20.54
7.60	5.780	189.87	4	4.0E-07	20	79.05	0	0	86.83	108.82	403.33	20.61
7.62	5.690	191.01	4	3.6E-07	20	77.79	0	0	86.76	108.74	396.87	20.26
7.64	5.720	187.15	4	3.9E-07	20	78.20	0	0	86.24	108.08	398.99	20.32
7.66	5.630	184.96	4	3.7E-07	20	76.94	0	0	85.57	107.25	392.53	19.96
7.68	5.780	188.38	4	4.0E-07	20	79.03	0	0	86.79	108.77	403.22	20.46
7.70	5.800	184.11	4	4.2E-07	20	79.30	0	0	86.14	107.96	404.62	20.49
7.72	6.830	190.54	5	7.9E-07	23	93.72	46	38	90.82	113.82	0.00	0.00
7.74	7.440	205.68	5	9.6E-07	24	102.25	48	38	95.57	119.78	0.00	0.00
7.76	9.100	204.42	5	2.3E-06	27	125.37	53	39	100.03	125.37	0.00	0.00
7.78	11.670	216.11	5	6.0E-06	32	135.97	59	41	108.48	135.97	0.00	0.00
7.80	14.150	204.80	6	1.5E-05	36	139.30	65	42	111.14	139.30	0.00	0.00
7.82	16.040	225.55	6	2.1E-05	39	149.16	69	42	119.01	149.16	0.00	0.00
7.84	21.970	279.39	6	5.0E-05	50	175.39	81	44	139.94	175.39	0.00	0.00
7.86	24.710	286.84	6	7.7E-05	54	182.37	86	44	145.51	182.37	0.00	0.00
7.88	24.710	286.84	6	7.7E-05	54	182.45	86	44	145.57	182.45	0.00	0.00
7.90	25.850	278.69	6	9.9E-05	55	182.25	88	44	145.41	182.25	0.00	0.00
7.92	26.310	305.63	6	8.6E-05	57	190.36	88	44	151.88	190.36	0.00	0.00
7.94	27.390	375.25	6	6.3E-05	61	210.05	90	45	167.59	210.05	0.00	0.00
7.96	29.680	423.60	6	6.5E-05	65	225.96	94	45	180.29	225.96	0.00	0.00
7.98	30.780	424.01	6	7.6E-05	67	228.14	96	45	182.03	228.14	0.00	0.00
8.00	30.440	426.77	6	7.1E-05	67	228.28	95	45	182.14	228.28	0.00	0.00
8.02	29.010	422.40	6	5.9E-05	65	224.73	93	45	179.31	224.73	0.00	0.00
8.04	28.000	425.09	6	5.0E-05	63	223.56	91	45	178.37	223.56	0.00	0.00
8.06	26.800	408.52	6	4.6E-05	61	217.47	89	44	173.51	217.47	0.00	0.00
8.08	25.390	402.94	6	3.8E-05	59	213.49	87	44	170.34	213.49	0.00	0.00
8.10	24.770	436.91	6	2.8E-05	59	220.06	85	44	175.58	220.06	0.00	0.00
8.12	25.520	486.44	6	2.4E-05	62	232.60	87	44	185.59	232.60	0.00	0.00
8.14	26.120	567.59	6	1.8E-05	65	250.91	88	44	200.19	250.91	0.00	0.00
8.16	26.180	587.77	6	1.7E-05	66	255.20	88	44	203.61	255.20	0.00	0.00
8.18	26.290	568.73	6	1.8E-05	65	251.76	88	44	200.88	251.76	0.00	0.00
8.20	27.400	553.74	6	2.3E-05	67	251.34	90	45	200.54	251.34	0.00	0.00
8.22	29.270	528.01	6	3.5E-05	68	250.02	93	45	199.49	250.02	0.00	0.00
8.24	30.420	486.91	6	5.0E-05	69	243.36	94	45	194.17	243.36	0.00	0.00
8.26	30.510	436.12	6	6.6E-05	67	231.87	94	45	185.00	231.87	0.00	0.00
8.28	30.200	371.13	6	9.3E-05	64	215.45	94	45	171.90	215.45	0.00	0.00
8.30	30.230	357.47	6	1.0E-04	64	212.08	94	45	169.21	212.08	0.00	0.00
8.32	29.480	372.43	6	8.3E-05	64	214.74	92	45	171.34	214.74	0.00	0.00
8.34	28.190	373.31	6	6.8E-05	62	212.81	90	45	169.80	212.81	0.00	0.00
8.36	27.560	371.60	6	6.2E-05	61	211.35	89	45	168.63	211.35	0.00	0.00
8.38	27.010	368.97	6	5.8E-05	60	209.80	88	44	167.39	209.80	0.00	0.00
8.40	27.040	363.93	6	6.0E-05	60	208.69	88	44	166.50	208.69	0.00	0.00
8.42	27.170	359.40	6	6.3E-05	60	207.87	88	44	165.85	207.87	0.00	0.00
8.44	26.620	379.49	6	5.1E-05	60	211.94	88	44	169.10	211.94	0.00	0.00
8.46	26.590	400.12	6	4.4E-05	61	216.96	87	44	173.10	216.96	0.00	0.00
8.48	28.180	400.41	6	5.7E-05	63	220.08	90	45	175.60	220.08	0.00	0.00
8.50	30.070	387.79	6	8.0E-05	65	220.39	93	45	175.85	220.39	0.00	0.00
8.52	30.530	395.65	6	8.1E-05	66	223.23	94	45	178.11	223.23	0.00	0.00
8.54	30.780	409.56	6	7.7E-05	67	227.20	94	45	181.27	227.20	0.00	0.00
8.56	31.270	401.26	6	8.7E-05	67	226.06	95	45	180.37	226.06	0.00	0.00
8.58	32.350	386.15	6	1.1E-04	68	224.10	96	45	178.81	224.10	0.00	0.00
8.60	33.920	359.31	6	1.6E-04	69	219.59	98	45	175.20	219.59	0.00	0.00
8.62	34.020	328.57	6	2.0E-04	68	211.40	98	45	168.67	211.40	0.00	0.00
8.64	33.650	308.61	6	2.2E-04	66	205.32	98	45	163.82	205.32	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P3	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	33.110	291.46	6	2.4E-04	65	199.69	97	45	159.33	199.69	0.00	0.00
8.68	32.880	276.54	6	2.6E-04	64	195.05	97	45	155.62	195.05	0.00	0.00
8.70	32.720	277.84	6	2.5E-04	64	195.29	96	45	155.82	195.29	0.00	0.00
8.72	32.650	286.62	6	2.3E-04	64	197.86	96	45	157.86	197.86	0.00	0.00
8.74	32.320	299.20	6	2.0E-04	64	201.12	96	45	160.47	201.12	0.00	0.00
8.76	30.710	322.55	6	1.3E-04	63	205.40	93	45	163.88	205.40	0.00	0.00
8.78	28.380	319.03	6	9.7E-05	60	200.88	89	45	160.27	200.88	0.00	0.00
8.80	25.560	315.93	6	6.3E-05	57	195.43	85	44	155.93	195.43	0.00	0.00
8.82	23.240	337.32	6	3.6E-05	54	196.79	81	44	157.01	196.79	0.00	0.00
8.84	22.660	369.57	6	2.6E-05	54	203.62	80	43	162.46	203.62	0.00	0.00
8.86	21.280	437.29	6	1.3E-05	54	216.15	77	43	172.46	216.15	0.00	0.00
8.88	21.280	437.29	6	1.3E-05	54	216.25	77	43	172.54	216.25	0.00	0.00
8.90	16.850	374.99	5	6.9E-06	46	191.83	68	42	153.05	191.83	0.00	0.00
8.92	14.410	416.47	5	2.7E-06	43	193.81	63	41	154.63	193.81	0.00	0.00
8.94	10.950	470.75	9	6.1E-07	37	151.04	0	0	153.26	192.08	770.62	34.72
8.96	9.070	523.83	9	2.1E-07	34	124.71	0	0	153.87	192.85	636.30	28.56
8.98	8.180	561.32	9	1.1E-07	33	112.25	0	0	0.00	194.22	572.70	25.63
9.00	7.890	564.23	9	9.4E-08	32	108.18	0	0	0.00	193.17	551.95	24.64
9.02	8.540	509.92	9	1.7E-07	33	117.28	0	0	150.26	188.33	598.35	26.69
9.04	9.730	449.08	9	4.0E-07	34	133.93	0	0	146.59	183.73	683.32	30.49
9.06	10.780	399.04	5	8.3E-07	36	148.63	54	40	142.68	178.83	0.00	0.00
9.08	10.600	392.23	5	8.0E-07	35	146.10	54	40	141.18	176.94	0.00	0.00
9.10	10.960	376.23	5	1.0E-06	36	151.13	55	40	139.81	175.23	0.00	0.00
9.12	11.140	385.51	5	1.0E-06	36	153.65	55	40	141.87	177.82	0.00	0.00
9.14	11.680	397.14	5	1.2E-06	37	161.20	56	40	145.31	182.13	0.00	0.00
9.16	12.180	414.51	5	1.3E-06	39	168.20	57	40	149.50	187.38	0.00	0.00
9.18	13.180	421.98	5	1.7E-06	41	182.19	60	41	153.45	192.33	0.00	0.00
9.20	13.950	449.74	5	1.9E-06	43	200.39	61	41	159.88	200.39	0.00	0.00
9.22	14.310	461.02	5	2.0E-06	44	203.85	62	41	162.65	203.85	0.00	0.00

CPTe P5 **NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)**

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.080	0.03	0	0.0E+00	0	1.12	0	0	0.95	1.19	0.00	0.00
0.04	0.330	0.06	0	0.0E+00	1	2.90	0	0	2.31	2.90	0.00	0.00
0.06	0.720	0.10	0	0.0E+00	2	5.52	0	0	4.41	5.52	0.00	0.00
0.08	0.790	0.10	0	0.0E+00	2	6.32	0	0	5.04	6.32	0.00	0.00
0.10	0.850	0.10	0	0.0E+00	2	6.95	0	0	5.55	6.95	0.00	0.00
0.12	0.930	0.10	0	0.0E+00	2	7.59	0	0	6.06	7.59	0.00	0.00
0.14	0.990	3.96	6	3.5E-05	2	8.46	47	38	6.75	8.46	0.00	0.00
0.16	1.070	10.39	6	1.3E-05	3	10.89	52	39	8.69	10.89	0.00	0.00
0.18	1.160	16.03	6	8.6E-06	3	12.78	56	40	10.19	12.78	0.00	0.00
0.20	1.230	20.57	5	6.3E-06	3	14.34	57	40	11.44	14.34	0.00	0.00
0.22	1.250	27.00	5	3.7E-06	4	16.00	57	40	12.76	16.00	0.00	0.00
0.24	1.260	30.67	5	2.8E-06	4	16.95	57	40	13.53	16.95	0.00	0.00
0.26	1.270	31.72	5	2.5E-06	4	17.46	56	40	13.93	17.46	0.00	0.00
0.28	1.300	35.90	5	2.0E-06	4	18.59	57	40	14.83	18.59	0.00	0.00
0.30	1.340	37.64	5	1.9E-06	4	19.38	56	40	15.46	19.38	0.00	0.00
0.32	1.360	39.86	5	1.7E-06	4	18.97	56	40	16.05	20.11	0.00	0.00
0.34	1.290	45.28	5	1.1E-06	4	17.99	55	40	16.51	20.69	0.00	0.00
0.36	1.200	47.66	9	7.1E-07	4	16.72	0	0	16.51	20.69	85.31	33.58
0.38	1.140	49.34	9	5.3E-07	4	15.88	0	0	16.56	20.75	81.00	31.91
0.40	1.070	49.40	9	4.0E-07	4	14.89	0	0	16.34	20.47	75.98	29.88
0.42	1.060	49.84	9	3.6E-07	4	14.75	0	0	16.51	20.69	75.24	28.85
0.44	1.080	50.03	9	3.5E-07	4	15.02	0	0	16.83	21.09	76.64	28.27
0.46	1.090	50.10	9	3.4E-07	4	15.16	0	0	17.07	21.40	77.33	27.58
0.48	1.120	48.39	4	3.8E-07	4	15.57	0	0	17.22	21.59	79.45	26.96
0.50	1.180	46.55	4	4.6E-07	4	16.41	0	0	17.52	21.96	83.71	26.73
0.52	1.120	46.39	4	3.7E-07	4	15.56	0	0	17.30	21.68	79.40	25.30
0.54	1.110	45.85	4	3.5E-07	4	15.42	0	0	17.33	21.72	78.66	24.48
0.56	1.130	47.69	4	3.3E-07	4	15.69	0	0	17.83	22.34	80.06	24.36
0.58	1.150	48.10	4	3.3E-07	4	15.97	0	0	18.15	22.75	81.47	24.08
0.60	1.080	48.45	4	2.5E-07	4	14.98	0	0	17.90	22.44	76.44	22.74
0.62	1.050	50.83	4	2.0E-07	4	14.56	0	0	18.14	22.74	74.27	22.11
0.64	1.020	52.35	4	1.6E-07	4	14.13	0	0	18.26	22.89	72.10	21.41
0.66	1.030	51.24	4	1.7E-07	4	14.27	0	0	18.34	22.98	72.79	20.97
0.68	1.060	50.29	4	1.8E-07	4	14.68	0	0	18.56	23.26	74.91	20.80
0.70	1.110	49.75	4	2.1E-07	4	15.38	0	0	18.95	23.75	78.46	20.90
0.72	1.170	49.40	4	2.5E-07	4	16.21	0	0	19.42	24.34	82.72	21.13
0.74	1.210	48.58	4	2.7E-07	4	16.77	0	0	19.69	24.68	85.55	21.09
0.76	1.240	48.48	4	2.9E-07	5	17.18	0	0	19.99	25.05	87.67	21.02
0.78	1.220	51.90	4	2.3E-07	5	16.90	0	0	20.45	25.63	86.21	20.72
0.80	1.240	55.42	4	2.1E-07	5	17.17	0	0	21.17	26.53	87.62	20.84
0.82	1.270	58.78	4	2.0E-07	5	17.59	0	0	21.92	27.47	89.74	21.04
0.84	1.270	64.07	4	1.6E-07	5	17.58	0	0	22.74	28.50	89.71	20.96
0.86	1.270	65.88	4	1.5E-07	5	17.58	0	0	23.09	28.95	89.68	20.72
0.88	1.240	67.78	4	1.2E-07	5	17.15	0	0	23.26	29.15	87.52	20.19
0.90	1.190	72.95	3	8.9E-08	5	16.45	0	0	0.00	29.63	83.92	19.63
0.92	1.180	75.26	3	7.9E-08	5	16.30	0	0	0.00	30.04	83.18	19.32
0.94	1.200	75.54	3	8.1E-08	5	16.58	0	0	0.00	30.43	84.58	19.23

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.220	76.15	3	8.2E-08	5	16.85	0	0	0.00	30.87	85.98	19.15
0.98	1.220	75.51	3	8.0E-08	5	16.85	0	0	0.00	30.94	85.96	18.82
1.00	1.270	72.47	4	9.8E-08	5	17.54	0	0	0.00	31.11	89.50	18.88
1.02	1.260	72.06	4	9.3E-08	5	17.40	0	0	0.00	31.12	88.76	18.49
1.04	1.230	71.30	3	8.4E-08	5	16.97	0	0	0.00	30.90	86.60	17.89
1.06	1.190	71.46	3	7.2E-08	5	16.41	0	0	0.00	30.72	83.71	17.25
1.08	1.160	72.12	3	6.3E-08	5	15.98	0	0	0.00	30.70	81.54	16.74
1.10	1.090	73.67	3	4.6E-08	5	15.00	0	0	0.00	30.42	76.52	15.88
1.12	1.030	75.67	3	3.5E-08	5	14.15	0	0	0.00	30.25	72.21	15.13
1.14	0.960	75.80	3	2.6E-08	4	13.17	0	0	0.00	29.68	67.18	14.22
1.16	0.930	75.29	3	2.3E-08	4	12.74	0	0	0.00	29.43	65.01	13.69
1.18	0.930	71.17	3	2.5E-08	4	12.74	0	0	0.00	29.00	64.99	13.37
1.20	0.970	66.89	3	3.1E-08	4	13.29	0	0	0.00	28.94	67.82	13.44
1.22	0.990	63.31	3	3.7E-08	4	13.57	0	0	0.00	28.73	69.22	13.33
1.24	1.030	57.86	3	4.9E-08	4	14.12	0	0	0.00	28.37	72.05	13.33
1.26	1.000	50.57	3	5.5E-08	4	13.70	0	0	0.00	26.96	69.89	12.63
1.28	0.920	41.04	4	5.7E-08	4	12.57	0	0	0.00	24.55	64.15	11.39
1.30	0.840	33.72	4	5.6E-08	4	11.45	0	0	0.00	22.43	58.41	10.25
1.32	0.770	30.52	4	4.7E-08	3	10.46	0	0	0.00	21.17	53.39	9.38
1.34	0.750	28.39	4	4.7E-08	3	10.18	0	0	0.00	20.60	51.93	9.01
1.36	0.710	26.68	4	4.1E-08	3	9.61	0	0	0.00	19.90	49.05	8.48
1.38	0.700	25.03	4	4.3E-08	3	9.47	0	0	0.00	19.50	48.31	8.23
1.40	0.750	22.88	4	6.2E-08	3	10.16	0	0	0.00	19.54	51.86	8.47
1.42	0.790	22.18	4	7.8E-08	3	10.72	0	0	0.00	19.80	54.70	8.68
1.44	0.840	21.99	4	9.7E-08	3	11.42	0	0	0.00	20.26	58.24	8.99
1.46	0.840	23.26	4	8.6E-08	3	11.41	0	0	0.00	20.68	58.22	8.96
1.48	0.830	24.72	4	7.3E-08	3	11.27	0	0	0.00	21.06	57.48	8.86
1.50	0.810	26.02	4	6.0E-08	3	10.98	0	0	0.00	21.28	56.03	8.67
1.52	0.800	27.31	4	5.1E-08	3	10.84	0	0	0.00	21.59	55.29	8.56
1.54	0.820	29.79	4	4.7E-08	4	11.11	0	0	0.00	22.46	56.70	8.73
1.56	0.840	32.26	4	4.4E-08	4	11.39	0	0	0.00	23.30	58.10	8.89
1.58	0.880	33.84	4	4.7E-08	4	11.94	0	0	0.00	24.13	60.93	9.17
1.60	0.950	33.72	4	6.2E-08	4	12.92	0	0	0.00	24.83	65.91	9.62
1.62	1.020	33.30	4	8.2E-08	4	13.89	0	0	0.00	25.44	70.88	10.04
1.64	1.080	33.27	4	9.9E-08	4	14.73	0	0	0.00	26.02	75.15	10.39
1.66	1.070	33.78	4	9.2E-08	4	14.58	0	0	0.00	26.16	74.41	10.24
1.68	1.020	34.73	4	7.1E-08	4	13.88	0	0	0.00	26.05	70.81	9.82
1.70	0.940	34.82	4	5.1E-08	4	12.75	0	0	0.00	25.45	65.07	9.14
1.72	0.870	35.46	3	3.6E-08	4	11.77	0	0	0.00	25.03	60.05	8.55
1.74	0.830	35.62	3	2.9E-08	4	11.20	0	0	0.00	24.76	57.17	8.17
1.76	0.810	36.28	3	2.5E-08	4	10.92	0	0	0.00	24.79	55.71	7.95
1.78	0.830	36.35	3	2.7E-08	4	11.20	0	0	0.00	25.10	57.12	8.03
1.80	0.910	35.49	4	3.9E-08	4	12.31	0	0	0.00	25.78	62.81	8.53
1.82	1.080	32.96	4	8.4E-08	4	14.69	0	0	0.00	26.76	74.93	9.60
1.84	1.120	31.05	4	1.1E-07	4	15.24	0	0	0.00	26.68	77.76	9.73
1.86	1.090	29.56	4	1.0E-07	4	14.82	0	0	0.00	26.12	75.59	9.40
1.88	1.070	20.41	4	1.7E-07	4	14.53	0	0	18.63	23.35	74.14	8.85
1.90	1.080	22.40	4	1.5E-07	4	14.67	0	0	19.25	24.13	74.83	8.93
1.92	1.120	24.24	4	1.5E-07	4	15.22	0	0	20.01	25.07	77.66	9.19
1.94	1.160	26.84	4	1.4E-07	5	15.78	0	0	20.93	26.23	80.50	9.48
1.96	1.180	27.73	4	1.4E-07	5	16.05	0	0	21.32	26.72	81.90	9.56
1.98	1.090	29.94	4	8.8E-08	4	14.79	0	0	0.00	26.72	75.45	8.98
2.00	1.040	32.04	4	6.4E-08	4	14.08	0	0	0.00	26.95	71.85	8.64
2.02	1.000	32.32	4	5.3E-08	4	13.52	0	0	0.00	26.76	68.97	8.31
2.04	1.000	32.23	4	5.2E-08	4	13.51	0	0	0.00	26.82	68.95	8.24

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	1.000	32.70	4	5.0E-08	4	13.51	0	0	0.00	27.02	68.92	8.19
2.08	0.990	33.56	4	4.5E-08	4	13.36	0	0	0.00	27.24	68.18	8.08
2.10	0.990	34.60	4	4.2E-08	4	13.36	0	0	0.00	27.59	68.16	8.04
2.12	1.000	35.01	4	4.2E-08	4	13.49	0	0	0.00	27.86	68.85	8.05
2.14	1.010	35.05	4	4.3E-08	4	13.63	0	0	0.00	28.05	69.54	8.06
2.16	1.030	35.08	4	4.5E-08	4	13.91	0	0	0.00	28.32	70.94	8.13
2.18	1.090	35.27	4	5.5E-08	5	14.74	0	0	0.00	28.97	75.21	8.45
2.20	1.170	35.65	4	7.0E-08	5	15.86	0	0	0.00	29.83	80.90	8.90
2.22	1.280	36.38	4	9.5E-08	5	17.39	0	0	0.00	30.98	88.73	9.54
2.24	1.450	36.31	4	1.5E-07	6	19.77	0	0	25.78	32.31	100.85	10.49
2.26	1.680	36.31	5	2.7E-07	6	22.98	32	35	27.09	33.96	0.00	0.00
2.28	1.890	38.12	5	3.8E-07	7	25.92	33	35	28.63	35.88	0.00	0.00
2.30	2.010	40.59	5	4.3E-07	7	27.59	34	35	29.84	37.40	0.00	0.00
2.32	2.240	44.93	5	5.4E-07	8	30.81	36	36	31.95	40.05	0.00	0.00
2.34	2.420	50.00	5	6.0E-07	8	33.32	37	36	33.95	42.55	0.00	0.00
2.36	2.650	53.65	5	7.4E-07	9	36.54	39	36	35.81	44.88	0.00	0.00
2.38	2.810	56.91	5	8.3E-07	9	38.77	39	37	37.26	46.70	0.00	0.00
2.40	3.020	61.25	5	9.5E-07	10	41.71	41	37	39.11	49.02	0.00	0.00
2.42	3.200	63.03	5	1.1E-06	10	44.22	42	37	40.28	50.48	0.00	0.00
2.44	3.510	64.86	5	1.5E-06	11	48.56	43	38	41.91	52.53	0.00	0.00
2.46	3.890	67.91	5	2.0E-06	12	55.14	45	38	44.00	55.14	0.00	0.00
2.48	4.250	67.37	5	2.9E-06	13	56.60	46	38	45.16	56.60	0.00	0.00
2.50	4.580	67.15	5	3.8E-06	13	57.94	48	39	46.23	57.94	0.00	0.00
2.52	4.830	68.00	5	4.6E-06	14	59.24	49	39	47.27	59.24	0.00	0.00
2.54	5.010	70.41	5	4.9E-06	14	60.71	49	39	48.44	60.71	0.00	0.00
2.56	5.110	71.36	5	5.1E-06	14	61.46	50	39	49.04	61.46	0.00	0.00
2.58	5.160	70.92	5	5.3E-06	14	61.63	50	39	49.18	61.63	0.00	0.00
2.60	5.100	68.86	5	5.3E-06	14	60.94	49	39	48.62	60.94	0.00	0.00
2.62	4.950	69.46	5	4.6E-06	14	60.70	49	39	48.43	60.70	0.00	0.00
2.64	4.780	71.01	5	3.8E-06	14	60.63	48	39	48.38	60.63	0.00	0.00
2.66	4.580	70.06	5	3.2E-06	13	59.72	47	38	47.65	59.72	0.00	0.00
2.68	4.220	68.22	5	2.4E-06	13	57.90	45	38	46.20	57.90	0.00	0.00
2.70	3.930	66.10	5	1.9E-06	12	56.22	44	38	44.85	56.22	0.00	0.00
2.72	3.460	64.23	5	1.2E-06	11	47.78	41	37	42.88	53.74	0.00	0.00
2.74	3.140	62.80	5	8.4E-07	10	43.30	39	37	41.45	51.95	0.00	0.00
2.76	3.040	63.03	5	7.3E-07	10	41.89	39	37	41.19	51.63	0.00	0.00
2.78	2.920	67.68	5	5.4E-07	10	40.21	38	36	41.78	52.37	0.00	0.00
2.80	2.690	81.09	4	2.7E-07	10	36.98	0	0	43.51	54.53	188.69	15.78
2.82	2.660	93.35	4	1.9E-07	10	36.56	0	0	45.67	57.24	186.52	15.71
2.84	2.900	102.32	4	2.3E-07	11	39.91	0	0	48.49	60.78	203.64	16.94
2.86	3.050	109.86	4	2.4E-07	11	42.01	0	0	50.59	63.41	214.32	17.69
2.88	3.290	116.45	4	2.8E-07	12	45.36	0	0	52.92	66.33	231.44	18.86
2.90	3.290	119.21	4	2.7E-07	12	45.36	0	0	53.49	67.04	231.41	18.78
2.92	3.240	120.54	4	2.4E-07	12	44.65	0	0	53.59	67.16	227.81	18.45
2.94	3.140	120.95	4	2.1E-07	12	43.25	0	0	53.29	66.79	220.64	17.86
2.96	3.040	120.03	4	1.8E-07	12	41.84	0	0	52.77	66.14	213.47	17.25
2.98	2.950	124.31	4	1.5E-07	11	40.58	0	0	53.12	66.58	207.02	16.75
3.00	2.870	127.26	4	1.3E-07	11	39.45	0	0	53.28	66.78	201.28	16.29
3.02	2.850	136.00	4	1.1E-07	11	39.17	0	0	0.00	68.47	199.82	16.17
3.04	2.860	142.75	4	9.6E-08	12	39.30	0	0	0.00	69.93	200.51	16.19
3.06	2.840	151.02	4	8.2E-08	12	39.01	0	0	0.00	71.45	199.05	16.06
3.08	2.830	155.27	4	7.5E-08	12	38.87	0	0	0.00	72.29	198.31	15.95
3.10	2.740	153.75	3	6.6E-08	11	37.60	0	0	0.00	71.53	191.86	15.40
3.12	2.670	156.89	3	5.6E-08	11	36.62	0	0	0.00	71.72	186.83	14.98
3.14	2.600	159.07	3	4.8E-08	11	35.63	0	0	0.00	71.72	181.80	14.56

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	2.560	158.82	3	4.5E-08	11	35.07	0	0	0.00	71.52	178.92	14.27
3.18	2.490	159.23	3	3.9E-08	11	34.08	0	0	0.00	71.20	173.89	13.84
3.20	2.380	163.35	3	3.1E-08	11	32.54	0	0	0.00	71.16	166.00	13.23
3.22	2.340	160.94	3	2.9E-08	11	31.97	0	0	0.00	70.57	163.12	12.94
3.24	2.260	158.12	3	2.6E-08	10	30.85	0	0	0.00	69.58	157.38	12.46
3.26	2.150	151.56	3	2.3E-08	10	29.30	0	0	0.00	67.67	149.49	11.80
3.28	2.090	144.37	3	2.2E-08	10	28.46	0	0	0.00	66.06	145.18	11.40
3.30	2.140	137.40	3	2.7E-08	10	29.15	0	0	0.00	65.40	148.72	11.54
3.32	2.140	133.79	3	2.8E-08	10	29.14	0	0	0.00	64.89	148.70	11.46
3.34	2.050	131.09	3	2.4E-08	9	27.88	0	0	0.00	63.77	142.24	10.94
3.36	2.040	128.56	3	2.4E-08	9	27.73	0	0	0.00	63.35	141.50	10.82
3.38	1.940	124.79	3	2.0E-08	9	26.33	0	0	0.00	61.93	134.33	10.25
3.40	1.900	123.46	3	1.9E-08	9	25.76	0	0	0.00	61.46	131.45	10.00
3.42	1.790	119.72	3	1.6E-08	9	24.22	0	0	0.00	59.90	123.56	9.39
3.44	1.750	117.62	3	1.4E-08	8	23.65	0	0	0.00	59.26	120.68	9.14
3.46	1.790	111.67	3	1.7E-08	8	24.21	0	0	0.00	58.62	123.51	9.25
3.48	1.850	108.21	3	2.1E-08	9	25.04	0	0	0.00	58.60	127.77	9.46
3.50	1.860	104.16	3	2.3E-08	9	25.18	0	0	0.00	57.99	128.46	9.44
3.52	1.870	99.15	3	2.6E-08	9	25.31	0	0	0.00	57.16	129.14	9.41
3.54	1.890	95.95	3	2.8E-08	9	25.59	0	0	0.00	56.76	130.55	9.43
3.56	1.850	97.12	3	2.5E-08	8	25.02	0	0	0.00	56.79	127.66	9.20
3.58	1.780	96.24	3	2.1E-08	8	24.04	0	0	0.00	56.13	122.64	8.83
3.60	1.740	94.46	3	2.0E-08	8	23.47	0	0	0.00	55.52	119.75	8.59
3.62	1.710	95.51	3	1.8E-08	8	23.05	0	0	0.00	55.59	117.58	8.41
3.64	1.710	99.56	3	1.6E-08	8	23.04	0	0	0.00	56.55	117.56	8.38
3.66	1.760	102.32	3	1.7E-08	8	23.74	0	0	0.00	57.68	121.10	8.57
3.68	1.820	107.64	3	1.8E-08	9	24.57	0	0	0.00	59.41	125.36	8.82
3.70	1.890	112.21	3	1.9E-08	9	25.55	0	0	0.00	61.06	130.34	9.11
3.72	1.920	113.73	3	1.9E-08	9	25.96	0	0	0.00	61.75	132.45	9.20
3.74	1.980	112.52	3	2.2E-08	9	26.80	0	0	0.00	62.14	136.71	9.41
3.76	1.980	122.19	3	1.9E-08	9	26.79	0	0	0.00	64.19	136.68	9.40
3.78	1.830	130.36	3	1.1E-08	9	24.68	0	0	0.00	64.52	125.94	8.70
3.80	1.700	127.67	3	8.5E-09	9	22.86	0	0	0.00	63.03	116.63	8.02
3.82	1.640	123.84	3	7.6E-09	8	22.01	0	0	0.00	61.90	112.32	7.68
3.84	1.620	122.60	3	7.3E-09	8	21.73	0	0	0.00	61.61	110.86	7.54
3.86	1.520	128.02	3	4.9E-09	8	20.32	0	0	0.00	61.87	103.69	7.01
3.88	1.420	121.93	3	4.0E-09	8	18.92	0	0	0.00	59.87	96.52	6.49
3.90	1.400	108.78	3	4.7E-09	7	18.63	0	0	0.00	57.21	95.07	6.36
3.92	1.390	103.11	3	5.0E-09	7	18.49	0	0	0.00	56.07	94.33	6.28
3.94	1.390	96.62	3	5.7E-09	7	18.48	0	0	0.00	54.82	94.30	6.24
3.96	1.360	91.96	3	5.6E-09	7	18.06	0	0	0.00	53.64	92.13	6.07
3.98	1.330	81.41	3	6.5E-09	7	17.63	0	0	0.00	51.08	89.96	5.89
4.00	1.580	72.85	3	1.7E-08	7	21.13	0	0	0.00	51.29	107.79	6.98
4.02	1.790	71.96	3	3.0E-08	8	24.06	0	0	0.00	52.84	122.77	7.85
4.04	1.870	72.18	4	3.6E-08	8	25.18	0	0	0.00	53.56	128.46	8.17
4.06	1.820	64.86	4	3.9E-08	8	24.47	0	0	0.00	51.29	124.86	7.91
4.08	1.750	60.71	4	3.7E-08	8	23.49	0	0	0.00	49.66	119.83	7.59
4.10	1.580	54.09	4	2.9E-08	7	21.10	0	0	0.00	46.50	107.67	6.83
4.12	1.450	48.77	3	2.4E-08	7	19.28	0	0	0.00	43.93	98.36	6.25
4.14	1.320	41.51	3	2.2E-08	6	17.45	0	0	0.00	40.64	89.04	5.66
4.16	1.310	36.50	4	2.6E-08	6	17.31	0	0	0.00	38.94	88.31	5.58
4.18	1.390	30.99	4	4.5E-08	6	18.42	0	0	0.00	37.65	94.00	5.87
4.20	1.420	31.50	4	4.7E-08	6	18.84	0	0	0.00	38.09	96.11	5.99
4.22	1.430	32.73	4	4.5E-08	6	18.97	0	0	0.00	38.65	96.80	6.02
4.24	1.340	32.45	4	3.5E-08	6	17.71	0	0	0.00	37.88	90.35	5.64

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	1.370	32.57	4	3.8E-08	6	18.12	0	0	0.00	38.19	92.47	5.75
4.28	1.430	32.32	4	4.6E-08	6	18.96	0	0	0.00	38.58	96.73	5.99
4.30	1.670	32.80	4	8.6E-08	7	22.31	0	0	0.00	40.49	113.85	6.96
4.32	1.790	32.45	4	1.2E-07	7	23.99	0	0	32.84	41.16	122.40	7.43
4.34	1.980	28.52	5	2.2E-07	7	26.64	27	33	32.52	40.75	0.00	0.00
4.36	2.060	22.37	5	3.8E-07	7	27.76	27	33	30.70	38.47	0.00	0.00
4.38	2.070	20.69	5	4.4E-07	7	27.90	27	33	30.11	37.74	0.00	0.00
4.40	2.040	17.71	5	5.1E-07	7	27.47	27	33	28.79	36.08	0.00	0.00
4.42	2.320	14.04	5	1.2E-06	7	31.39	28	34	28.25	35.41	0.00	0.00
4.44	2.430	13.47	5	1.5E-06	8	32.92	29	34	28.39	35.59	0.00	0.00
4.46	2.400	14.20	5	1.3E-06	8	32.50	29	34	28.65	35.91	0.00	0.00
4.48	2.470	18.13	5	1.1E-06	8	33.47	29	34	30.70	38.48	0.00	0.00
4.50	2.710	17.14	5	1.7E-06	8	36.83	31	34	31.13	39.02	0.00	0.00
4.52	2.840	16.86	5	2.1E-06	9	39.43	31	34	31.46	39.43	0.00	0.00
4.54	2.870	17.36	5	2.1E-06	9	39.86	31	35	31.80	39.86	0.00	0.00
4.56	2.720	17.49	5	1.6E-06	8	36.95	31	34	31.38	39.32	0.00	0.00
4.58	2.470	16.38	5	1.2E-06	8	33.45	29	34	30.02	37.63	0.00	0.00
4.60	2.550	17.43	5	1.3E-06	8	34.56	30	34	30.79	38.59	0.00	0.00
4.62	2.620	17.36	5	1.4E-06	8	35.54	30	34	31.03	38.89	0.00	0.00
4.64	2.590	19.36	5	1.2E-06	8	35.11	30	34	31.81	39.87	0.00	0.00
4.66	2.590	17.78	5	1.3E-06	8	35.11	30	34	31.14	39.03	0.00	0.00
4.68	2.400	16.48	5	1.0E-06	8	32.45	29	34	29.90	37.47	0.00	0.00
4.70	2.270	14.89	5	9.5E-07	7	30.62	28	33	28.70	35.97	0.00	0.00
4.72	2.150	11.57	5	1.1E-06	7	28.94	27	33	26.63	33.38	0.00	0.00
4.74	2.000	10.87	5	8.4E-07	7	26.83	26	33	25.69	32.20	0.00	0.00
4.76	1.980	14.73	5	5.4E-07	7	26.55	26	33	27.53	34.50	0.00	0.00
4.78	1.970	17.81	5	4.1E-07	7	26.40	26	33	28.86	36.18	0.00	0.00
4.80	1.720	18.44	5	2.2E-07	6	22.90	24	32	28.03	35.13	0.00	0.00
4.82	1.510	20.50	4	1.1E-07	6	19.95	0	0	0.00	34.86	101.80	5.95
4.84	1.430	26.27	4	5.6E-08	6	18.83	0	0	0.00	36.90	96.07	5.66
4.86	1.370	27.60	4	4.3E-08	6	17.98	0	0	0.00	37.03	91.76	5.42
4.88	1.460	30.61	4	4.7E-08	6	19.24	0	0	0.00	38.92	98.16	5.78
4.90	1.300	32.99	4	2.5E-08	6	16.99	0	0	0.00	38.60	86.71	5.14
4.92	1.270	34.89	4	2.0E-08	6	16.57	0	0	0.00	39.06	84.54	5.02
4.94	1.580	40.59	4	4.0E-08	7	20.90	0	0	0.00	43.53	106.66	6.26
4.96	1.520	36.41	4	4.1E-08	7	20.06	0	0	0.00	41.64	102.35	5.99
4.98	1.710	37.30	4	6.5E-08	7	22.72	0	0	0.00	43.35	115.89	6.73
5.00	2.160	38.75	4	1.7E-07	8	29.01	0	0	37.30	46.75	148.01	8.47
5.02	2.370	46.77	4	1.8E-07	9	31.95	0	0	40.61	50.89	162.99	9.30
5.04	2.030	38.44	4	1.3E-07	8	27.18	0	0	36.64	45.92	138.68	7.94
5.06	1.660	30.13	4	8.1E-08	7	22.00	0	0	0.00	40.38	112.22	6.45
5.08	1.410	24.30	4	5.6E-08	6	18.49	0	0	0.00	36.22	94.34	5.44
5.10	1.280	25.48	4	3.4E-08	6	16.67	0	0	0.00	35.77	85.03	4.93
5.12	1.140	28.36	3	1.7E-08	5	13.94	0	0	0.00	35.80	75.01	4.38
5.14	1.080	30.83	3	1.1E-08	5	12.41	0	0	0.00	36.22	70.70	4.14
5.16	1.250	30.17	4	2.3E-08	6	16.23	0	0	0.00	37.48	82.82	4.80
5.18	1.520	35.74	4	4.0E-08	7	20.01	0	0	0.00	41.71	102.08	5.86
5.20	1.680	37.33	4	5.7E-08	7	22.24	0	0	0.00	43.48	113.48	6.48
5.22	1.870	38.41	4	8.6E-08	8	24.90	0	0	0.00	45.18	127.03	7.20
5.24	2.220	46.49	4	1.3E-07	9	29.79	0	0	40.12	50.28	152.00	8.56
5.26	2.300	54.82	4	1.1E-07	9	30.91	0	0	0.00	53.60	157.69	8.88
5.28	2.210	59.86	4	7.8E-08	9	29.64	0	0	0.00	54.67	151.24	8.54
5.30	1.760	69.43	3	2.2E-08	8	23.34	0	0	0.00	54.26	119.07	6.81
5.32	1.540	72.98	3	1.1E-08	8	20.25	0	0	0.00	53.41	103.33	5.94
5.34	1.260	78.68	3	3.7E-09	7	16.33	0	0	0.00	52.35	83.30	4.78

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	1.090	86.13	3	1.6E-09	6	12.29	0	0	0.00	52.29	71.13	4.07
5.38	1.040	86.03	3	1.2E-09	6	11.06	0	0	0.00	51.71	67.54	3.86
5.40	1.040	82.04	3	1.4E-09	6	11.03	0	0	0.00	50.85	67.51	3.85
5.42	1.060	74.94	3	1.8E-09	6	11.47	0	0	0.00	49.46	68.91	3.92
5.44	1.010	68.32	3	1.7E-09	6	10.28	0	0	0.00	47.30	65.32	3.71
5.46	0.950	63.38	3	1.5E-09	6	8.95	0	0	0.00	45.38	61.01	3.46
5.48	0.960	52.28	3	2.2E-09	5	9.14	0	0	0.00	42.54	61.69	3.49
5.50	1.090	43.35	3	5.7E-09	6	12.06	0	0	0.00	41.21	70.96	4.01
5.52	1.160	42.49	3	7.9E-09	6	13.79	0	0	0.00	41.61	75.93	4.28
5.54	1.080	38.79	3	6.6E-09	6	11.76	0	0	0.00	39.67	70.19	3.95
5.56	1.210	38.79	3	1.1E-08	6	15.04	0	0	0.00	40.85	79.45	4.46
5.58	1.240	38.85	3	1.2E-08	6	15.82	0	0	0.00	41.15	81.57	4.57
5.60	1.210	38.28	3	1.1E-08	6	14.97	0	0	0.00	40.73	79.40	4.44
5.62	1.220	44.65	3	8.8E-09	6	15.20	0	0	0.00	43.00	80.09	4.47
5.64	1.210	47.44	3	7.5E-09	6	14.89	0	0	0.00	43.83	79.35	4.42
5.66	1.140	48.70	3	5.4E-09	6	13.04	0	0	0.00	43.61	74.33	4.14
5.68	1.070	48.58	3	4.0E-09	6	11.32	0	0	0.00	42.92	69.30	3.85
5.70	1.120	44.33	3	5.9E-09	6	12.48	0	0	0.00	42.11	72.85	4.04
5.72	1.180	45.00	3	7.2E-09	6	13.96	0	0	0.00	42.91	77.11	4.27
5.74	1.100	43.51	3	5.5E-09	6	11.94	0	0	0.00	41.71	71.37	3.94
5.76	1.220	39.96	3	1.0E-08	6	14.94	0	0	0.00	41.64	79.92	4.41
5.78	1.370	38.25	3	1.9E-08	6	17.76	0	0	0.00	42.35	90.61	4.97
5.80	1.400	37.84	4	2.1E-08	7	18.17	0	0	0.00	42.48	92.73	5.07
5.82	1.340	38.41	3	1.7E-08	6	17.33	0	0	0.00	42.21	88.42	4.84
5.84	1.200	42.97	3	8.2E-09	6	14.27	0	0	0.00	42.60	78.39	4.29
5.86	1.150	43.19	3	6.6E-09	6	12.97	0	0	0.00	42.25	74.79	4.09
5.88	1.060	35.55	3	6.4E-09	5	10.81	0	0	0.00	38.83	68.34	3.73
5.90	1.070	35.01	3	6.9E-09	6	11.01	0	0	0.00	38.76	69.03	3.76
5.92	1.290	34.06	3	1.7E-08	6	16.52	0	0	0.00	40.35	84.72	4.60
5.94	2.360	33.43	5	2.5E-07	9	31.58	27	33	37.63	47.16	0.00	0.00
5.96	3.320	35.11	5	1.0E-06	11	45.02	32	35	41.80	52.40	0.00	0.00
5.98	3.420	39.83	5	9.2E-07	11	46.41	33	35	43.78	54.87	0.00	0.00
6.00	3.710	52.54	5	8.0E-07	12	50.47	34	35	48.78	61.14	0.00	0.00
6.02	3.890	64.74	5	6.7E-07	13	52.98	35	36	52.90	66.30	0.00	0.00
6.04	3.550	74.02	5	3.5E-07	13	48.22	33	35	54.15	67.87	0.00	0.00
6.06	3.100	84.48	4	1.5E-07	12	41.91	0	0	54.87	68.77	213.83	11.25
6.08	2.640	88.92	4	6.7E-08	11	35.46	0	0	0.00	67.34	180.94	9.56
6.10	2.120	96.20	3	2.2E-08	10	28.18	0	0	0.00	65.65	143.77	7.65
6.12	1.860	96.68	3	1.2E-08	9	24.53	0	0	0.00	63.72	125.18	6.68
6.14	1.610	98.45	3	5.9E-09	8	21.03	0	0	0.00	62.03	107.29	5.71
6.16	1.610	97.69	3	5.9E-09	8	21.02	0	0	0.00	61.90	107.27	5.70
6.18	1.490	89.90	3	4.9E-09	8	19.34	0	0	0.00	58.97	98.67	5.23
6.20	1.380	75.64	3	4.8E-09	7	17.79	0	0	0.00	54.40	90.79	4.80
6.22	1.270	64.42	3	4.4E-09	7	15.40	0	0	0.00	50.38	82.90	4.38
6.24	1.190	57.86	3	4.0E-09	6	13.32	0	0	0.00	47.77	77.16	4.07
6.26	1.150	46.77	3	5.1E-09	6	12.32	0	0	0.00	44.06	74.28	3.91
6.28	1.090	44.33	3	4.3E-09	6	10.91	0	0	0.00	42.71	69.97	3.68
6.30	1.010	42.72	3	3.2E-09	6	9.18	0	0	0.00	41.40	64.23	3.37
6.32	0.960	41.92	3	2.6E-09	5	8.17	0	0	0.00	40.63	60.64	3.17
6.34	0.930	39.29	3	2.5E-09	5	7.58	0	0	0.00	39.46	58.47	3.06
6.36	0.940	37.87	3	2.8E-09	5	7.75	0	0	0.00	39.11	59.16	3.09
6.38	0.960	33.75	3	3.8E-09	5	8.11	0	0	0.00	37.89	60.56	3.16
6.40	1.010	32.96	3	5.0E-09	5	9.07	0	0	0.00	38.13	64.11	3.33
6.42	1.070	32.04	3	6.9E-09	6	10.30	0	0	0.00	38.38	68.37	3.55
6.44	1.150	33.30	3	9.0E-09	6	12.06	0	0	0.00	39.62	74.06	3.84

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	1.130	32.61	3	8.5E-09	6	11.58	0	0	0.00	39.20	72.61	3.76
6.48	1.100	34.25	3	6.9E-09	6	10.88	0	0	0.00	39.57	70.44	3.64
6.50	1.110	34.70	3	7.0E-09	6	11.07	0	0	0.00	39.86	71.13	3.67
6.52	1.150	39.10	3	6.6E-09	6	11.95	0	0	0.00	41.85	73.96	3.81
6.54	1.170	39.70	3	6.9E-09	6	12.39	0	0	0.00	42.27	75.37	3.88
6.56	1.110	42.46	3	4.7E-09	6	11.00	0	0	0.00	42.68	71.06	3.65
6.58	1.120	38.25	3	6.0E-09	6	11.19	0	0	0.00	41.35	71.75	3.68
6.60	1.140	38.34	3	6.4E-09	6	11.61	0	0	0.00	41.60	73.15	3.74
6.62	1.060	41.61	3	3.9E-09	6	9.85	0	0	0.00	41.97	67.41	3.44
6.64	1.000	38.91	3	3.3E-09	6	8.61	0	0	0.00	40.46	63.10	3.22
6.66	0.920	36.66	3	2.4E-09	5	7.11	0	0	0.00	38.84	57.36	2.92
6.68	0.920	33.11	3	2.9E-09	5	7.09	0	0	0.00	37.59	57.34	2.91
6.70	0.870	27.98	3	3.0E-09	5	6.22	0	0	0.00	35.12	53.74	2.73
6.72	0.990	22.88	3	7.8E-09	5	8.34	0	0	0.00	34.19	62.29	3.16
6.74	1.230	19.90	4	2.7E-08	6	13.49	0	0	0.00	34.86	79.41	4.01
6.76	1.430	16.79	4	6.8E-08	6	18.36	0	0	0.00	34.71	93.67	4.70
6.78	1.520	16.38	4	9.3E-08	6	19.61	0	0	0.00	35.10	100.08	5.00
6.80	1.500	20.12	4	6.4E-08	6	19.33	0	0	0.00	37.01	98.62	4.93
6.82	1.670	22.97	4	8.3E-08	7	21.71	0	0	0.00	39.59	110.74	5.53
6.84	1.810	33.49	4	6.4E-08	8	23.66	0	0	0.00	45.27	120.72	6.02
6.86	1.810	33.49	4	6.4E-08	8	23.66	0	0	0.00	45.30	120.69	6.01
6.88	1.940	40.56	4	6.2E-08	8	25.47	0	0	0.00	49.00	129.95	6.46
6.90	2.100	52.92	4	5.5E-08	9	27.71	0	0	0.00	54.54	141.36	7.02
6.92	1.940	54.72	4	3.6E-08	9	25.46	0	0	0.00	54.10	129.90	6.46
6.94	1.900	53.71	4	3.4E-08	8	24.90	0	0	0.00	53.52	127.02	6.30
6.96	1.920	55.49	4	3.3E-08	9	25.17	0	0	0.00	54.29	128.42	6.36
6.98	2.100	57.35	4	4.6E-08	9	27.69	0	0	0.00	56.17	141.26	6.98
7.00	2.590	54.09	4	1.3E-07	10	34.54	0	0	46.34	58.08	176.23	8.66
7.02	2.720	55.52	4	1.5E-07	11	36.36	0	0	47.34	59.33	185.49	9.09
7.04	2.720	56.72	4	1.5E-07	11	36.35	0	0	47.70	59.79	185.46	9.08
7.06	2.500	65.15	4	7.8E-08	10	33.27	0	0	0.00	61.40	169.72	8.31
7.08	2.270	71.11	4	4.3E-08	10	30.04	0	0	0.00	61.83	153.27	7.51
7.10	2.050	75.10	3	2.4E-08	9	26.96	0	0	0.00	61.51	137.53	6.74
7.12	2.070	78.65	3	2.3E-08	10	27.23	0	0	0.00	62.71	138.93	6.80
7.14	1.990	79.76	3	1.9E-08	9	26.11	0	0	0.00	62.45	133.19	6.51
7.16	1.760	76.84	3	1.1E-08	9	22.88	0	0	0.00	59.85	116.74	5.70
7.18	1.890	68.07	3	2.0E-08	9	24.70	0	0	0.00	58.41	126.00	6.14
7.20	1.860	67.46	3	1.9E-08	9	24.27	0	0	0.00	58.04	123.83	6.02
7.22	2.070	67.34	4	3.0E-08	9	27.21	0	0	0.00	59.60	138.80	6.73
7.24	2.540	68.10	4	7.4E-08	11	33.78	0	0	0.00	62.94	172.35	8.32
7.26	3.100	62.14	4	2.1E-07	12	41.62	0	0	51.13	64.08	212.32	10.21
7.28	3.240	60.94	5	2.7E-07	12	43.57	30	34	51.38	64.39	0.00	0.00
7.30	3.140	67.88	4	1.9E-07	12	42.16	0	0	52.91	66.32	215.13	10.32
7.32	2.900	70.12	4	1.2E-07	11	38.80	0	0	52.52	65.82	197.96	9.49
7.34	2.690	68.19	4	9.3E-08	11	35.85	0	0	0.00	64.06	182.93	8.76
7.36	2.750	74.37	4	8.7E-08	11	36.69	0	0	0.00	66.40	187.19	8.95
7.38	2.980	75.39	4	1.2E-07	12	39.90	0	0	54.31	68.06	203.59	9.71
7.40	3.430	75.42	4	2.2E-07	13	46.20	0	0	56.21	70.45	235.71	11.21
7.42	3.420	77.10	4	2.1E-07	13	46.05	0	0	56.63	70.98	234.97	11.16
7.44	3.090	79.88	4	1.3E-07	12	41.43	0	0	56.00	70.19	211.37	10.04
7.46	2.880	83.28	4	8.4E-08	12	38.48	0	0	0.00	70.08	196.35	9.31
7.48	2.720	89.26	4	5.7E-08	12	36.24	0	0	0.00	70.91	184.89	8.76
7.50	2.370	91.36	3	2.9E-08	11	31.33	0	0	0.00	69.23	159.86	7.57
7.52	2.450	82.04	4	4.1E-08	11	32.45	0	0	0.00	67.20	165.55	7.82
7.54	2.650	83.72	4	5.6E-08	11	35.24	0	0	0.00	69.01	179.81	8.48

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	2.620	85.33	4	5.1E-08	11	34.82	0	0	0.00	69.34	177.64	8.36
7.58	2.630	80.93	4	5.8E-08	11	34.95	0	0	0.00	68.16	178.33	8.38
7.60	2.420	77.38	4	4.3E-08	11	32.01	0	0	0.00	65.81	163.30	7.66
7.62	2.150	74.37	3	2.7E-08	10	28.22	0	0	0.00	63.11	143.99	6.75
7.64	1.990	74.05	3	1.9E-08	9	25.98	0	0	0.00	61.89	132.54	6.20
7.66	1.880	78.17	3	1.3E-08	9	24.43	0	0	0.00	62.25	124.65	5.83
7.68	1.710	80.84	3	7.9E-09	9	22.05	0	0	0.00	61.61	112.49	5.25
7.70	1.670	72.75	3	8.6E-09	8	21.48	0	0	0.00	59.05	109.60	5.11
7.72	1.670	68.48	3	9.7E-09	8	21.48	0	0	0.00	57.85	109.58	5.10
7.74	1.690	65.78	3	1.1E-08	8	21.75	0	0	0.00	57.25	110.98	5.15
7.76	1.740	62.30	3	1.4E-08	8	22.45	0	0	0.00	56.63	114.52	5.31
7.78	1.830	54.12	4	2.3E-08	8	23.70	0	0	0.00	54.70	120.93	5.60
7.80	2.040	45.88	4	5.0E-08	9	26.64	0	0	0.00	53.24	135.90	6.28
7.82	2.070	43.57	4	5.9E-08	9	27.05	0	0	0.00	52.58	138.02	6.37
7.84	2.170	44.87	4	6.9E-08	9	28.45	0	0	0.00	53.74	145.14	6.69
7.86	2.130	48.93	4	5.4E-08	9	27.88	0	0	0.00	55.05	142.26	6.54
7.88	2.350	55.83	4	6.6E-08	10	30.96	0	0	0.00	58.94	157.94	7.26
7.90	2.390	57.04	4	6.8E-08	10	31.51	0	0	0.00	59.65	160.78	7.37
7.92	2.300	60.21	4	5.1E-08	10	30.25	0	0	0.00	60.22	154.32	7.07
7.94	2.720	62.58	4	1.0E-07	11	36.12	0	0	0.00	63.56	184.30	8.43
7.96	2.850	69.55	4	1.0E-07	11	37.94	0	0	0.00	66.67	193.56	8.84
7.98	3.170	73.48	4	1.5E-07	12	42.41	0	0	55.63	69.72	216.39	9.87
8.00	3.380	70.73	4	2.1E-07	13	45.35	0	0	55.77	69.90	231.36	10.54
8.02	3.250	74.24	4	1.6E-07	13	43.52	0	0	56.22	70.46	222.05	10.10
8.04	2.940	77.44	4	9.4E-08	12	39.18	0	0	0.00	69.88	199.88	9.07
8.06	2.570	85.30	4	4.2E-08	11	33.99	0	0	0.00	70.09	173.42	7.85
8.08	2.550	91.86	4	3.5E-08	11	33.71	0	0	0.00	71.88	171.97	7.77
8.10	2.860	92.65	4	5.8E-08	12	38.04	0	0	0.00	74.12	194.09	8.76
8.12	3.240	91.83	4	1.0E-07	13	43.36	0	0	0.00	76.11	221.20	9.98
8.14	3.170	88.73	4	1.0E-07	13	42.37	0	0	0.00	74.85	216.17	9.74
8.16	2.840	87.30	4	6.2E-08	12	37.75	0	0	0.00	72.58	192.58	8.66
8.18	2.340	85.37	3	2.7E-08	11	30.74	0	0	0.00	68.84	156.84	7.03
8.20	2.000	83.97	3	1.3E-08	10	25.97	0	0	0.00	65.97	132.52	5.92
8.22	1.770	85.56	3	7.3E-09	9	22.75	0	0	0.00	64.51	116.07	5.18
8.24	1.710	78.14	3	7.4E-09	9	21.90	0	0	0.00	61.97	111.76	4.98
8.26	2.230	70.79	4	3.0E-08	10	29.18	0	0	0.00	63.88	148.87	6.63
8.28	2.510	68.22	4	5.6E-08	11	33.09	0	0	0.00	64.91	168.85	7.52
8.30	2.470	59.92	4	6.6E-08	10	32.53	0	0	0.00	61.90	165.97	7.38
8.32	2.440	59.19	4	6.4E-08	10	32.10	0	0	0.00	61.51	163.80	7.27
8.34	2.400	63.06	4	5.2E-08	10	31.54	0	0	0.00	62.63	160.91	7.13
8.36	2.500	65.44	4	5.8E-08	11	32.93	0	0	0.00	64.08	168.03	7.44
8.38	2.470	58.72	4	6.7E-08	10	32.51	0	0	0.00	61.63	165.86	7.34
8.40	2.630	60.21	4	8.5E-08	11	34.74	0	0	0.00	63.13	177.27	7.83
8.42	2.900	66.80	4	1.1E-07	12	38.52	0	0	0.00	66.96	196.53	8.68
8.44	2.860	67.81	4	9.9E-08	12	37.95	0	0	0.00	67.12	193.64	8.54
8.46	3.120	66.29	4	1.5E-07	12	41.59	0	0	54.27	68.02	212.19	9.35
8.48	3.670	73.14	5	2.6E-07	13	49.28	31	34	58.32	73.09	0.00	0.00
8.50	4.540	72.69	5	6.8E-07	15	61.46	35	35	61.15	76.65	0.00	0.00
8.52	4.870	75.99	5	8.5E-07	16	66.07	36	36	63.13	79.12	0.00	0.00
8.54	4.900	82.04	5	7.6E-07	16	66.49	36	36	64.95	81.40	0.00	0.00
8.56	4.750	87.52	5	5.8E-07	16	64.38	35	36	66.00	82.72	0.00	0.00
8.58	4.220	98.14	4	2.7E-07	15	56.96	0	0	66.96	83.93	290.60	12.72
8.60	3.390	105.11	4	8.8E-08	14	45.33	0	0	0.00	81.91	231.29	10.07
8.62	2.650	99.02	3	3.2E-08	12	34.97	0	0	0.00	75.80	178.40	7.73
8.64	2.150	100.35	3	1.2E-08	11	27.96	0	0	0.00	72.57	142.66	6.15

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	1.820	105.14	3	5.0E-09	10	23.34	0	0	0.00	70.93	119.06	5.13
8.68	1.870	106.31	3	5.5E-09	10	24.03	0	0	0.00	71.73	122.61	5.27
8.70	2.810	107.58	4	3.5E-08	12	37.19	0	0	0.00	79.39	189.72	8.17
8.72	4.020	94.68	4	2.3E-07	15	54.12	0	0	65.65	82.28	276.13	11.96
8.74	3.700	90.34	4	1.7E-07	14	49.64	0	0	63.39	79.45	253.24	10.94
8.76	2.790	85.05	4	5.3E-08	12	36.89	0	0	0.00	72.95	188.22	8.08
8.78	3.050	78.21	4	9.4E-08	12	40.53	0	0	0.00	72.34	206.76	8.88
8.80	3.600	74.97	4	2.2E-07	13	48.22	0	0	59.11	74.09	246.02	10.59
8.82	3.260	73.20	4	1.4E-07	13	43.45	0	0	57.34	71.87	221.71	9.52
8.84	2.800	86.25	4	5.2E-08	12	37.01	0	0	0.00	73.55	188.83	8.06
8.86	2.750	86.29	4	4.8E-08	12	36.30	0	0	0.00	73.30	185.23	7.89
8.88	2.470	83.88	4	3.1E-08	11	32.38	0	0	0.00	70.84	165.20	7.01
8.90	2.350	82.39	3	2.5E-08	11	30.69	0	0	0.00	69.62	156.60	6.63
8.92	2.120	85.40	3	1.4E-08	10	27.47	0	0	0.00	68.87	140.15	5.91
8.94	2.160	82.20	3	1.7E-08	10	28.02	0	0	0.00	68.30	142.98	6.02
8.96	2.130	74.69	3	1.9E-08	10	27.60	0	0	0.00	65.85	140.81	5.92
8.98	2.110	69.11	3	2.1E-08	10	27.31	0	0	0.00	63.99	139.36	5.86
9.00	2.080	64.93	3	2.2E-08	10	26.89	0	0	0.00	62.45	137.19	5.76
9.02	2.550	59.29	4	6.7E-08	11	33.46	0	0	0.00	63.56	170.73	7.20
9.04	2.740	59.79	4	9.1E-08	11	36.12	0	0	0.00	64.85	184.28	7.77
9.06	2.950	55.14	4	1.5E-07	11	39.05	0	0	51.27	64.26	199.25	8.42
9.08	3.090	56.18	4	1.8E-07	12	41.01	0	0	52.18	65.40	209.23	8.83
9.10	3.370	68.95	4	1.8E-07	13	44.92	0	0	57.06	71.51	229.20	9.66
9.12	3.240	74.05	4	1.3E-07	13	43.10	0	0	57.98	72.67	219.89	9.24
9.14	2.850	85.05	4	5.5E-08	12	37.63	0	0	0.00	74.14	192.01	8.02
9.16	2.720	90.72	4	3.9E-08	12	35.81	0	0	0.00	75.11	182.69	7.60
9.18	2.730	98.01	4	3.3E-08	12	35.94	0	0	0.00	77.34	183.38	7.61
9.20	2.710	100.39	3	3.1E-08	12	35.66	0	0	0.00	77.94	181.93	7.54
9.22	2.760	101.05	4	3.3E-08	12	36.35	0	0	0.00	78.50	185.47	7.68
9.24	2.600	98.36	3	2.6E-08	12	34.11	0	0	0.00	76.73	174.01	7.18
9.26	2.380	95.38	3	1.8E-08	11	31.02	0	0	0.00	74.41	158.27	6.51
9.28	2.250	89.93	3	1.6E-08	11	29.20	0	0	0.00	71.95	148.96	6.11
9.30	1.940	83.75	3	9.1E-09	10	24.85	0	0	0.00	67.71	126.79	5.19
9.32	1.810	82.23	3	6.8E-09	9	23.03	0	0	0.00	66.17	117.48	4.80
9.34	2.040	83.40	3	1.2E-08	10	26.24	0	0	0.00	68.53	133.88	5.47
9.36	2.430	78.43	4	2.9E-08	11	31.70	0	0	0.00	69.93	161.71	6.62
9.38	2.670	71.11	4	5.4E-08	11	35.05	0	0	0.00	69.09	178.83	7.34
9.40	2.930	69.36	4	8.7E-08	12	38.69	0	0	0.00	70.01	197.38	8.11
9.42	3.120	65.82	4	1.3E-07	12	41.34	0	0	55.69	69.80	210.92	8.68
9.44	3.000	61.16	4	1.2E-07	12	39.66	0	0	53.87	67.52	202.32	8.32
9.46	2.930	60.40	4	1.1E-07	12	38.67	0	0	0.00	66.91	197.30	8.09
9.48	2.910	61.57	4	1.0E-07	12	38.39	0	0	0.00	67.28	195.84	8.02
9.50	2.810	67.53	4	7.4E-08	12	36.98	0	0	0.00	68.91	188.68	7.70
9.52	2.400	74.43	4	2.9E-08	11	31.24	0	0	0.00	68.79	159.36	6.45
9.54	2.210	69.40	3	2.3E-08	10	28.57	0	0	0.00	65.91	145.77	5.88
9.56	2.290	68.64	4	2.7E-08	10	29.68	0	0	0.00	66.24	151.45	6.11
9.58	2.170	77.22	3	1.7E-08	10	28.00	0	0	0.00	68.21	142.86	5.73
9.60	2.080	70.60	3	1.6E-08	10	26.73	0	0	0.00	65.49	136.40	5.46
9.62	2.270	67.65	4	2.7E-08	10	29.39	0	0	0.00	65.89	149.95	6.02
9.64	2.300	71.14	4	2.6E-08	10	29.80	0	0	0.00	67.29	152.06	6.09
9.66	2.490	69.40	4	3.9E-08	11	32.46	0	0	0.00	67.98	165.61	6.65
9.68	2.430	67.91	4	3.6E-08	11	31.61	0	0	0.00	67.14	161.30	6.46
9.70	2.290	65.18	4	2.9E-08	10	29.65	0	0	0.00	65.34	151.27	6.04
9.72	2.240	63.31	4	2.8E-08	10	28.94	0	0	0.00	64.40	147.67	5.89
9.74	2.270	57.96	4	3.5E-08	10	29.36	0	0	0.00	62.73	149.79	5.97

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
9.76	2.350	51.18	4	5.1E-08	10	30.47	0	0	0.00	60.70	155.48	6.21
9.78	2.730	47.50	4	1.2E-07	11	35.79	0	0	48.97	61.37	182.60	7.34
9.80	2.860	42.18	4	1.8E-07	11	37.60	0	0	47.69	59.77	191.86	7.73
9.82	2.740	47.09	4	1.2E-07	11	35.92	0	0	48.93	61.32	183.26	7.35
9.84	2.730	47.40	4	1.2E-07	11	35.77	0	0	49.01	61.43	182.52	7.31
9.86	2.920	44.20	4	1.8E-07	11	38.43	0	0	48.71	61.05	196.07	7.87
9.88	3.090	56.18	4	1.5E-07	12	40.80	0	0	53.36	66.88	208.19	8.33
9.90	2.930	67.37	4	8.4E-08	12	38.56	0	0	0.00	70.29	196.73	7.82
9.92	3.060	69.33	4	9.7E-08	12	40.37	0	0	0.00	71.72	205.99	8.19
9.94	3.010	79.57	4	6.8E-08	13	39.67	0	0	0.00	75.00	202.39	8.01
9.96	2.970	79.92	4	6.3E-08	12	39.10	0	0	0.00	74.94	199.51	7.88
9.98	2.870	74.91	4	6.1E-08	12	37.70	0	0	0.00	72.74	192.34	7.59
10.00	2.780	80.80	4	4.5E-08	12	36.43	0	0	0.00	74.21	185.89	7.30
10.02	2.680	84.92	4	3.5E-08	12	35.03	0	0	0.00	74.96	178.72	6.99
10.04	2.600	82.58	4	3.2E-08	12	33.90	0	0	0.00	73.76	172.98	6.75
10.06	2.470	78.84	4	2.7E-08	11	32.08	0	0	0.00	71.77	163.66	6.37
10.08	2.190	76.43	3	1.6E-08	10	28.15	0	0	0.00	69.09	143.64	5.56
10.10	2.190	77.63	3	1.6E-08	10	28.15	0	0	0.00	69.51	143.61	5.55
10.12	2.120	81.41	3	1.2E-08	10	27.16	0	0	0.00	70.13	138.58	5.35
10.14	2.040	81.34	3	1.0E-08	10	26.04	0	0	0.00	69.49	132.84	5.12
10.16	2.060	75.73	3	1.2E-08	10	26.31	0	0	0.00	67.99	134.25	5.17
10.18	2.140	80.46	3	1.3E-08	10	27.43	0	0	0.00	70.13	139.94	5.38
10.20	2.220	81.63	3	1.5E-08	11	28.54	0	0	0.00	71.16	145.62	5.59
10.22	2.300	80.61	3	1.8E-08	11	29.66	0	0	0.00	71.51	151.31	5.80
10.24	2.260	84.35	3	1.5E-08	11	29.09	0	0	0.00	72.38	148.43	5.68
10.26	2.210	79.25	3	1.5E-08	11	28.39	0	0	0.00	70.48	144.83	5.54
10.28	2.080	80.52	3	1.1E-08	10	26.56	0	0	0.00	69.85	135.52	5.17
10.30	1.940	82.01	3	7.6E-09	10	24.60	0	0	0.00	69.13	125.49	4.78
10.32	1.820	81.91	3	5.6E-09	10	22.06	0	0	0.00	68.04	116.89	4.45
10.34	1.590	88.12	3	2.6E-09	9	16.27	0	0	0.00	67.50	100.44	3.82
10.36	1.640	83.02	3	3.3E-09	9	17.41	0	0	0.00	66.66	103.99	3.95
10.38	1.560	84.13	3	2.5E-09	9	15.52	0	0	0.00	66.15	98.24	3.72
10.40	1.500	75.04	3	2.6E-09	8	14.17	0	0	0.00	62.96	93.93	3.56
10.42	1.390	69.93	3	2.0E-09	8	11.87	0	0	0.00	60.27	86.05	3.25
10.44	1.320	67.24	3	1.7E-09	8	10.51	0	0	0.00	58.69	81.02	3.06
10.46	1.270	60.02	3	1.7E-09	7	9.59	0	0	0.00	55.92	77.43	2.92
10.48	1.420	55.26	3	3.5E-09	8	12.40	0	0	0.00	56.06	88.12	3.32
10.50	1.860	51.87	3	1.4E-08	9	22.79	0	0	0.00	58.93	119.52	4.49
10.52	2.790	52.76	4	9.3E-08	11	36.44	0	0	0.00	65.16	185.92	7.11
10.54	3.650	51.90	5	3.3E-07	13	48.48	29	34	54.96	68.88	0.00	0.00
10.56	3.850	49.12	5	4.7E-07	13	51.27	30	34	54.67	68.52	0.00	0.00
10.58	4.370	61.51	5	5.5E-07	15	58.55	32	35	60.52	75.85	0.00	0.00
10.60	4.750	68.92	5	6.5E-07	16	63.86	33	35	64.05	80.28	0.00	0.00
10.62	5.110	70.19	5	8.8E-07	17	68.90	34	35	65.51	82.10	0.00	0.00
10.64	4.800	87.24	5	4.3E-07	17	64.55	33	35	69.70	87.36	0.00	0.00
10.66	5.200	110.53	5	3.9E-07	18	70.14	35	35	77.21	96.77	0.00	0.00
10.68	6.470	107.17	5	1.1E-06	21	87.92	39	37	79.98	100.24	0.00	0.00
10.70	6.970	96.33	5	1.9E-06	21	98.05	41	37	78.23	98.05	0.00	0.00
10.72	7.870	91.04	5	3.7E-06	23	98.65	43	38	78.71	98.65	0.00	0.00
10.74	7.880	106.82	5	2.7E-06	23	104.48	43	38	83.36	104.48	0.00	0.00
10.76	8.350	106.15	5	3.6E-06	24	105.56	45	38	84.22	105.56	0.00	0.00
10.78	9.070	105.27	5	5.3E-06	25	107.12	47	38	85.47	107.12	0.00	0.00
10.80	8.950	118.54	5	3.9E-06	26	111.56	46	38	89.01	111.56	0.00	0.00
10.82	8.200	136.45	5	2.0E-06	25	115.49	44	38	92.14	115.49	0.00	0.00
10.84	7.330	163.67	5	8.0E-07	24	99.92	41	37	96.54	121.00	0.00	0.00

CPTe P5b NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.020	0.00	0	0.0E+00	0	0.02	0	0	0.01	0.02	0.00	0.00
0.04	0.310	0.03	0	0.0E+00	1	3.10	0	0	2.47	3.10	0.00	0.00
0.06	0.570	0.06	0	0.0E+00	1	5.06	0	0	4.04	5.06	0.00	0.00
0.08	0.740	0.06	0	0.0E+00	2	6.56	0	0	5.24	6.56	0.00	0.00
0.10	0.820	0.10	0	0.0E+00	2	6.85	0	0	5.47	6.85	0.00	0.00
0.12	0.970	0.10	0	0.0E+00	2	8.00	0	0	6.38	8.00	0.00	0.00
0.14	1.090	0.06	0	0.0E+00	3	9.93	0	0	7.92	9.93	0.00	0.00
0.16	1.150	8.11	6	2.1E-05	3	10.80	51	39	8.61	10.80	0.00	0.00
0.18	1.120	18.47	5	5.9E-06	3	13.20	56	40	10.53	13.20	0.00	0.00
0.20	1.100	26.33	5	2.8E-06	3	14.86	56	40	11.86	14.86	0.00	0.00
0.22	1.060	33.05	5	1.5E-06	3	14.79	57	40	12.72	15.95	0.00	0.00
0.24	0.950	38.85	9	7.4E-07	3	13.25	0	0	13.00	16.29	67.59	35.46
0.26	0.860	41.51	9	4.4E-07	3	11.98	0	0	12.90	16.17	61.14	33.36
0.28	0.830	41.89	9	3.5E-07	3	11.56	0	0	12.96	16.24	58.97	31.37
0.30	0.880	39.39	9	4.4E-07	3	12.25	0	0	13.20	16.55	62.52	30.27
0.32	0.890	35.59	4	5.1E-07	3	12.39	0	0	13.02	16.31	63.21	28.38
0.34	1.020	32.04	5	8.6E-07	3	14.20	49	39	13.54	16.97	0.00	0.00
0.36	1.120	29.98	5	1.2E-06	4	15.60	49	39	13.96	17.50	0.00	0.00
0.38	1.150	27.09	5	1.5E-06	4	16.01	48	39	13.85	17.36	0.00	0.00
0.40	1.080	24.30	5	1.4E-06	3	15.03	46	38	13.21	16.55	0.00	0.00
0.42	1.020	25.64	5	9.7E-07	3	14.19	45	38	13.24	16.59	0.00	0.00
0.44	1.020	28.87	5	7.7E-07	3	14.18	45	38	13.82	17.32	0.00	0.00
0.46	1.000	33.53	5	5.2E-07	3	13.90	45	38	14.51	18.18	0.00	0.00
0.48	1.040	36.85	4	4.8E-07	4	14.45	0	0	15.33	19.22	73.73	24.11
0.50	1.090	39.83	4	4.6E-07	4	15.15	0	0	16.16	20.26	77.28	24.55
0.52	1.170	41.70	4	5.2E-07	4	16.26	0	0	17.02	21.33	82.96	25.17
0.54	1.260	42.14	5	6.2E-07	4	17.52	47	38	17.73	22.22	0.00	0.00
0.56	1.360	39.32	5	8.7E-07	4	18.91	47	38	18.01	22.58	0.00	0.00
0.58	1.440	37.58	5	1.1E-06	5	20.03	47	38	18.30	22.94	0.00	0.00
0.60	1.450	37.04	5	1.1E-06	5	20.16	47	38	18.41	23.07	0.00	0.00
0.62	1.420	37.61	5	9.5E-07	5	19.74	46	38	18.48	23.17	0.00	0.00
0.64	1.540	37.33	5	1.2E-06	5	21.41	47	38	19.16	24.02	0.00	0.00
0.66	1.590	35.30	5	1.5E-06	5	22.11	47	38	19.20	24.07	0.00	0.00
0.68	1.510	34.86	5	1.2E-06	5	20.98	45	38	18.88	23.66	0.00	0.00
0.70	1.510	34.54	5	1.2E-06	5	20.98	45	38	18.95	23.75	0.00	0.00
0.72	1.460	35.36	5	9.6E-07	5	20.27	44	38	18.97	23.77	0.00	0.00
0.74	1.410	35.17	5	8.3E-07	5	19.57	43	38	18.81	23.57	0.00	0.00
0.76	1.410	36.82	5	7.4E-07	5	19.56	43	38	19.20	24.06	0.00	0.00
0.78	1.410	36.82	5	7.1E-07	5	19.56	43	37	19.32	24.21	0.00	0.00
0.80	1.620	36.92	5	1.1E-06	5	22.49	44	38	20.49	25.68	0.00	0.00
0.82	1.640	39.26	5	1.0E-06	5	22.77	44	38	21.10	26.45	0.00	0.00
0.84	1.540	40.72	5	7.4E-07	5	21.36	43	38	20.97	26.28	0.00	0.00
0.86	1.430	41.54	5	5.3E-07	5	19.82	42	37	20.65	25.88	0.00	0.00
0.88	1.350	41.89	5	4.1E-07	5	18.69	41	37	20.39	25.55	0.00	0.00
0.90	1.260	43.22	4	2.9E-07	5	17.43	0	0	20.19	25.31	88.92	18.53
0.92	1.220	44.49	4	2.4E-07	5	16.86	0	0	20.26	25.39	86.04	17.97
0.94	1.200	44.20	4	2.2E-07	4	16.58	0	0	20.20	25.32	84.59	17.50

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.250	43.38	4	2.6E-07	5	17.27	0	0	20.49	25.68	88.13	17.65
0.98	1.380	42.94	4	3.6E-07	5	19.09	0	0	21.28	26.67	97.40	18.55
1.00	1.520	43.03	5	5.0E-07	5	21.04	41	37	22.17	27.78	0.00	0.00
1.02	1.620	42.91	5	6.1E-07	6	22.44	42	37	22.77	28.54	0.00	0.00
1.04	1.700	42.24	5	7.3E-07	6	23.55	42	37	23.17	29.03	0.00	0.00
1.06	1.730	41.86	5	7.7E-07	6	23.97	42	37	23.35	29.27	0.00	0.00
1.08	1.680	37.20	5	8.2E-07	6	23.27	41	37	22.37	28.04	0.00	0.00
1.10	1.680	34.95	5	8.9E-07	6	23.26	41	37	22.05	27.64	0.00	0.00
1.12	1.740	37.39	5	8.8E-07	6	24.10	41	37	22.90	28.70	0.00	0.00
1.14	1.830	38.85	5	9.6E-07	6	25.35	42	37	23.70	29.70	0.00	0.00
1.16	1.870	35.90	5	1.2E-06	6	25.91	41	37	23.41	29.34	0.00	0.00
1.18	1.700	32.04	5	9.7E-07	6	23.52	40	37	21.95	27.51	0.00	0.00
1.20	1.520	30.61	5	6.8E-07	5	21.00	38	36	20.89	26.18	0.00	0.00
1.22	1.400	32.23	5	4.5E-07	5	19.31	37	36	20.69	25.93	0.00	0.00
1.24	1.270	34.48	4	2.7E-07	5	17.49	0	0	20.52	25.71	89.22	14.39
1.26	1.210	35.08	4	2.2E-07	5	16.64	0	0	20.36	25.52	84.91	13.79
1.28	1.180	35.87	4	1.9E-07	4	16.22	0	0	20.41	25.58	82.74	13.45
1.30	1.160	39.70	4	1.4E-07	5	15.93	0	0	21.04	26.37	81.29	13.34
1.32	1.070	47.25	4	7.5E-08	4	14.67	0	0	0.00	27.24	74.83	12.78
1.34	0.990	52.13	3	4.6E-08	4	13.54	0	0	0.00	27.52	69.09	12.12
1.36	0.890	53.17	3	2.9E-08	4	12.14	0	0	0.00	26.82	61.92	11.12
1.38	0.840	53.08	3	2.3E-08	4	11.43	0	0	0.00	26.40	58.33	10.54
1.40	0.830	51.75	3	2.2E-08	4	11.29	0	0	0.00	26.18	57.59	10.28
1.42	0.840	46.71	3	2.7E-08	4	11.42	0	0	0.00	25.51	58.28	10.10
1.44	0.820	39.36	3	3.3E-08	4	11.14	0	0	0.00	24.01	56.83	9.58
1.46	0.850	33.40	4	4.9E-08	4	11.55	0	0	0.00	23.16	58.94	9.51
1.48	0.880	30.33	4	6.5E-08	4	11.97	0	0	0.00	22.84	61.06	9.54
1.50	0.920	25.57	4	1.0E-07	4	12.52	0	0	0.00	22.10	63.90	9.56
1.52	0.890	21.04	4	1.2E-07	4	12.10	0	0	16.52	20.71	61.73	9.02
1.54	0.830	16.45	4	1.3E-07	3	11.25	0	0	15.08	18.91	57.42	8.24
1.56	0.770	12.74	4	1.4E-07	3	10.41	0	0	13.75	17.23	53.11	7.50
1.58	0.810	9.22	5	2.6E-07	3	10.97	25	33	12.96	16.24	0.00	0.00
1.60	0.890	8.08	5	4.3E-07	3	12.08	26	33	13.06	16.37	0.00	0.00
1.62	0.850	6.05	5	5.1E-07	3	11.52	25	32	12.08	15.14	0.00	0.00
1.64	0.810	5.32	5	4.9E-07	3	10.95	25	32	11.58	14.52	0.00	0.00
1.66	0.840	5.20	5	5.6E-07	3	11.37	25	32	11.73	14.71	0.00	0.00
1.68	0.950	5.48	5	8.0E-07	3	12.90	26	33	12.47	15.63	0.00	0.00
1.70	0.970	7.48	5	5.9E-07	3	13.18	26	33	13.48	16.89	0.00	0.00
1.72	0.890	7.41	5	4.3E-07	3	12.06	25	33	13.06	16.36	0.00	0.00
1.74	0.680	7.73	4	1.5E-07	3	9.11	0	0	11.94	14.97	46.49	6.04
1.76	0.570	8.11	4	7.1E-08	2	7.57	0	0	0.00	14.22	38.61	5.23
1.78	0.570	8.11	4	6.9E-08	2	7.56	0	0	0.00	14.27	38.59	5.19
1.80	0.700	2.47	5	5.3E-07	2	9.38	22	31	9.75	12.22	0.00	0.00
1.82	0.740	3.42	5	4.8E-07	3	9.94	23	31	10.54	13.21	0.00	0.00
1.84	0.720	5.01	5	2.9E-07	3	9.65	23	31	11.22	14.06	0.00	0.00
1.86	0.690	7.61	4	1.5E-07	3	9.23	0	0	12.11	15.18	47.08	5.92
1.88	0.650	8.87	4	9.5E-08	3	8.66	0	0	0.00	15.42	44.20	5.70
1.90	0.630	11.19	4	6.1E-08	3	8.38	0	0	0.00	16.19	42.75	5.66
1.92	0.620	13.31	4	4.4E-08	3	8.23	0	0	0.00	16.88	42.01	5.67
1.94	0.600	14.16	4	3.5E-08	3	7.95	0	0	0.00	16.99	40.56	5.53
1.96	0.660	13.78	4	5.2E-08	3	8.79	0	0	0.00	17.47	44.82	5.94
1.98	0.790	12.04	4	1.2E-07	3	10.60	0	0	14.35	17.99	54.09	6.75
2.00	0.940	11.95	5	2.4E-07	3	12.70	26	33	15.27	19.14	0.00	0.00
2.02	1.040	10.39	5	4.2E-07	4	14.09	27	33	15.32	19.20	0.00	0.00
2.04	1.090	10.81	5	4.7E-07	4	14.79	27	33	15.75	19.74	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	1.100	12.01	5	4.2E-07	4	14.92	27	33	16.23	20.34	0.00	0.00
2.08	1.090	12.10	5	4.0E-07	4	14.78	27	33	16.22	20.33	0.00	0.00
2.10	1.010	14.26	5	2.3E-07	4	13.65	27	33	16.49	20.66	0.00	0.00
2.12	0.900	19.01	4	9.7E-08	4	12.11	0	0	0.00	21.50	61.78	7.66
2.14	0.780	21.29	4	4.6E-08	3	10.43	0	0	0.00	21.17	53.19	6.88
2.16	0.760	21.80	4	4.0E-08	3	10.14	0	0	0.00	21.16	51.74	6.73
2.18	0.730	21.26	4	3.5E-08	3	9.72	0	0	0.00	20.74	49.57	6.48
2.20	0.680	21.61	4	2.6E-08	3	9.01	0	0	0.00	20.36	45.98	6.10
2.22	0.660	20.12	4	2.5E-08	3	8.73	0	0	0.00	19.75	44.52	5.89
2.24	0.630	19.61	3	2.2E-08	3	8.30	0	0	0.00	19.30	42.36	5.65
2.26	0.610	19.17	3	2.0E-08	3	8.02	0	0	0.00	18.98	40.91	5.47
2.28	0.590	18.06	3	1.9E-08	3	7.73	0	0	0.00	18.46	39.45	5.27
2.30	0.590	17.17	3	2.0E-08	3	7.73	0	0	0.00	18.21	39.43	5.22
2.32	0.580	16.13	4	2.1E-08	3	7.58	0	0	0.00	17.80	38.69	5.10
2.34	0.570	13.85	4	2.4E-08	3	7.44	0	0	0.00	16.98	37.96	4.93
2.36	0.560	9.98	4	3.6E-08	2	7.30	0	0	0.00	15.46	37.22	4.71
2.38	0.560	7.54	4	5.3E-08	2	7.23	0	0	0.00	14.43	37.20	4.58
2.40	0.580	4.88	4	1.0E-07	2	7.46	0	0	0.00	13.25	38.61	4.56
2.42	0.610	3.39	5	1.9E-07	2	7.98	20	30	10.04	12.58	0.00	0.00
2.44	0.630	2.15	5	3.2E-07	2	8.26	20	30	9.43	11.82	0.00	0.00
2.46	0.830	2.47	5	7.4E-07	3	11.06	23	31	10.85	13.60	0.00	0.00
2.48	1.250	3.93	5	2.0E-06	4	17.34	27	33	13.84	17.34	0.00	0.00
2.50	1.570	5.55	5	3.2E-06	5	20.13	30	34	16.06	20.13	0.00	0.00
2.52	1.760	4.37	6	5.9E-06	5	20.32	31	34	16.21	20.32	0.00	0.00
2.54	1.700	3.36	6	6.3E-06	5	19.35	31	34	15.44	19.35	0.00	0.00
2.56	1.540	2.28	6	5.8E-06	4	17.76	29	34	14.17	17.76	0.00	0.00
2.58	1.410	1.65	6	5.1E-06	4	16.61	28	33	13.25	16.61	0.00	0.00
2.60	1.220	3.71	5	1.9E-06	4	17.09	27	33	13.63	17.09	0.00	0.00
2.62	1.150	4.37	5	1.3E-06	4	15.50	26	33	13.68	17.14	0.00	0.00
2.64	1.050	8.78	5	4.4E-07	4	14.10	26	33	15.21	19.07	0.00	0.00
2.66	0.910	13.44	4	1.4E-07	4	12.13	0	0	16.07	20.14	61.91	6.97
2.68	0.820	14.99	4	7.9E-08	3	10.87	0	0	0.00	20.02	55.46	6.43
2.70	0.890	11.60	4	1.6E-07	3	11.85	0	0	15.38	19.28	60.43	6.72
2.72	1.060	14.42	5	2.2E-07	4	14.22	26	33	17.33	21.71	0.00	0.00
2.74	1.110	20.72	4	1.5E-07	4	14.92	0	0	19.46	24.39	76.10	8.43
2.76	1.140	26.81	4	1.1E-07	5	15.33	0	0	0.00	26.57	78.22	8.79
2.78	1.140	26.81	4	1.1E-07	5	15.33	0	0	0.00	26.60	78.20	8.77
2.80	1.440	36.73	4	1.6E-07	6	19.52	0	0	25.27	31.67	99.60	10.90
2.82	1.490	48.10	4	1.1E-07	6	20.22	0	0	27.89	34.95	103.15	11.47
2.84	1.550	50.95	4	1.2E-07	6	21.05	0	0	28.82	36.12	107.41	11.87
2.86	1.570	59.67	4	9.1E-08	6	21.33	0	0	0.00	38.28	108.81	12.15
2.88	1.550	73.17	4	5.8E-08	7	21.04	0	0	0.00	40.94	107.36	12.24
2.90	1.550	84.26	3	4.4E-08	7	21.04	0	0	0.00	43.08	107.33	12.38
2.92	1.540	88.63	3	3.8E-08	7	20.89	0	0	0.00	43.83	106.59	12.33
2.94	1.470	95.13	3	2.8E-08	7	19.91	0	0	0.00	44.36	101.56	11.93
2.96	1.330	98.80	3	1.7E-08	6	17.94	0	0	0.00	43.66	91.54	10.98
2.98	1.220	98.04	3	1.2E-08	6	16.40	0	0	0.00	42.44	83.65	10.18
3.00	1.120	97.66	3	8.5E-09	6	14.99	0	0	0.00	41.32	76.49	9.43
3.02	1.070	94.90	3	7.3E-09	5	14.29	0	0	0.00	40.47	72.89	8.96
3.04	1.000	91.83	3	5.7E-09	5	13.30	0	0	0.00	39.37	67.86	8.30
3.06	0.970	83.91	3	6.0E-09	5	12.88	0	0	0.00	37.77	65.69	8.00
3.08	0.990	74.05	3	8.6E-09	5	13.15	0	0	0.00	36.19	67.10	8.13
3.10	0.970	68.29	3	9.2E-09	5	12.87	0	0	0.00	35.00	65.64	7.89
3.12	0.940	63.60	3	9.1E-09	5	12.44	0	0	0.00	33.85	63.47	7.60
3.14	0.900	56.66	3	9.4E-09	5	11.88	0	0	0.00	32.12	60.59	7.21

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	0.890	54.53	3	9.6E-09	4	11.73	0	0	0.00	31.63	59.85	7.09
3.18	1.000	51.62	3	1.7E-08	5	13.27	0	0	0.00	32.25	67.68	7.77
3.20	0.890	49.02	3	1.2E-08	4	11.72	0	0	0.00	30.58	59.80	6.97
3.22	0.780	47.12	3	7.0E-09	4	10.18	0	0	0.00	29.07	51.92	6.12
3.24	0.710	40.97	3	6.0E-09	4	9.19	0	0	0.00	27.02	46.90	5.51
3.26	0.650	35.65	3	5.2E-09	3	8.35	0	0	0.00	25.18	42.59	4.98
3.28	0.720	26.78	3	1.4E-08	3	9.32	0	0	0.00	23.59	47.56	5.42
3.30	0.900	19.68	4	5.6E-08	4	11.84	0	0	0.00	23.21	60.40	6.39
3.32	0.920	18.13	4	6.9E-08	4	12.11	0	0	0.00	22.87	61.80	6.45
3.34	0.890	18.22	4	5.9E-08	4	11.69	0	0	0.00	22.67	59.63	6.25
3.36	0.850	19.55	4	4.4E-08	4	11.12	0	0	0.00	22.79	56.75	6.02
3.38	0.840	21.29	4	3.6E-08	4	10.98	0	0	0.00	23.30	56.02	5.99
3.40	0.870	24.08	4	3.4E-08	4	11.39	0	0	0.00	24.47	58.14	6.22
3.42	0.870	25.06	4	3.1E-08	4	11.39	0	0	0.00	24.79	58.11	6.22
3.44	0.830	22.63	4	3.0E-08	4	10.83	0	0	0.00	23.69	55.23	5.90
3.46	0.770	20.41	4	2.6E-08	4	9.98	0	0	0.00	22.43	50.92	5.47
3.48	0.760	17.02	4	3.3E-08	3	9.84	0	0	0.00	21.21	50.18	5.31
3.50	0.770	11.57	4	6.2E-08	3	9.97	0	0	0.00	19.21	50.88	5.21
3.52	0.850	6.18	5	2.1E-07	3	11.09	22	31	13.69	17.16	0.00	0.00
3.54	0.960	7.86	5	2.5E-07	4	12.62	23	32	15.12	18.94	0.00	0.00
3.56	1.140	9.73	5	3.6E-07	4	15.14	25	32	16.91	21.19	0.00	0.00
3.58	1.120	12.10	5	2.5E-07	4	14.85	25	32	17.73	22.23	0.00	0.00
3.60	0.990	16.00	4	1.0E-07	4	13.03	0	0	0.00	22.95	66.48	6.56
3.62	0.930	24.94	4	3.9E-08	4	12.19	0	0	0.00	25.55	62.17	6.41
3.64	1.040	26.52	4	5.4E-08	4	13.72	0	0	0.00	27.03	70.00	7.08
3.66	1.260	30.26	4	9.4E-08	5	16.80	0	0	0.00	29.97	85.69	8.42
3.68	1.250	33.30	4	7.7E-08	5	16.65	0	0	0.00	30.82	84.95	8.40
3.70	1.220	39.23	4	5.2E-08	5	16.23	0	0	0.00	32.24	82.79	8.31
3.72	1.110	46.68	3	2.6E-08	5	14.68	0	0	0.00	33.15	74.90	7.75
3.74	1.090	46.58	3	2.4E-08	5	14.40	0	0	0.00	32.97	73.45	7.60
3.76	1.120	46.23	3	2.7E-08	5	14.81	0	0	0.00	33.21	75.57	7.76
3.78	1.120	46.23	3	2.6E-08	5	14.81	0	0	0.00	33.25	75.54	7.73
3.80	1.260	45.66	4	4.4E-08	5	16.76	0	0	0.00	34.39	85.52	8.53
3.82	1.250	50.86	3	3.4E-08	6	16.62	0	0	0.00	35.59	84.78	8.52
3.84	1.280	51.87	3	3.6E-08	6	17.03	0	0	0.00	36.13	86.90	8.68
3.86	1.260	52.32	3	3.3E-08	6	16.75	0	0	0.00	36.10	85.44	8.54
3.88	1.160	56.02	3	2.1E-08	5	15.34	0	0	0.00	36.05	78.28	7.97
3.90	1.060	61.03	3	1.2E-08	5	13.94	0	0	0.00	36.14	71.11	7.39
3.92	1.010	62.42	3	9.3E-09	5	13.23	0	0	0.00	35.92	67.51	7.07
3.94	0.960	61.51	3	7.5E-09	5	12.53	0	0	0.00	35.32	63.91	6.68
3.96	0.910	58.59	3	6.4E-09	5	11.82	0	0	0.00	34.28	60.32	6.28
3.98	0.910	58.88	3	6.3E-09	5	11.82	0	0	0.00	34.39	60.29	6.26
4.00	0.890	56.53	3	6.1E-09	5	11.53	0	0	0.00	33.73	58.84	6.08
4.02	0.850	50.35	3	6.2E-09	4	10.97	0	0	0.00	31.99	55.96	5.77
4.04	0.820	45.88	3	6.3E-09	4	10.54	0	0	0.00	30.68	53.79	5.52
4.06	0.750	43.48	3	4.6E-09	4	9.56	0	0	0.00	29.48	48.76	4.99
4.08	0.690	38.37	3	3.9E-09	4	8.55	0	0	0.00	27.63	44.45	4.54
4.10	0.630	37.04	3	2.7E-09	4	6.95	0	0	0.00	26.70	40.14	4.08
4.12	0.570	34.82	3	1.9E-09	3	5.52	0	0	0.00	25.50	35.83	3.63
4.14	0.570	32.61	3	2.1E-09	3	5.50	0	0	0.00	24.94	35.81	3.62
4.16	0.590	29.06	3	3.1E-09	3	5.92	0	0	0.00	24.19	37.21	3.75
4.18	0.620	25.86	3	4.8E-09	3	6.60	0	0	0.00	23.56	39.33	3.95
4.20	0.620	24.87	3	5.1E-09	3	6.57	0	0	0.00	23.28	39.31	3.94
4.22	0.600	24.49	3	4.5E-09	3	6.07	0	0	0.00	22.99	37.86	3.78
4.24	0.570	22.82	3	3.9E-09	3	5.38	0	0	0.00	22.17	35.69	3.56

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	0.540	21.86	3	3.2E-09	3	4.74	0	0	0.00	21.57	33.53	3.33
4.28	0.530	21.55	3	3.0E-09	3	4.52	0	0	0.00	21.39	32.79	3.25
4.30	0.560	19.93	3	4.5E-09	3	5.11	0	0	0.00	21.17	34.91	3.45
4.32	0.540	17.55	3	4.7E-09	3	4.68	0	0	0.00	20.13	33.46	3.30
4.34	0.540	16.67	3	5.1E-09	3	4.66	0	0	0.00	19.82	33.43	3.29
4.36	0.590	12.87	3	1.2E-08	3	5.63	0	0	0.00	18.83	36.98	3.59
4.38	0.620	10.93	4	1.9E-08	3	6.17	0	0	0.00	18.35	39.10	3.72
4.40	0.640	9.95	4	2.4E-08	3	6.53	0	0	0.00	18.12	40.51	3.80
4.42	0.680	10.90	4	2.7E-08	3	7.43	0	0	0.00	18.97	43.34	4.04
4.44	0.770	12.48	4	3.8E-08	3	9.64	0	0	0.00	20.55	49.75	4.57
4.46	0.820	15.91	4	3.4E-08	4	10.45	0	0	0.00	22.45	53.30	4.90
4.48	0.890	19.39	4	3.5E-08	4	11.42	0	0	0.00	24.43	58.28	5.34
4.50	0.940	23.64	4	3.1E-08	4	12.12	0	0	0.00	26.38	61.82	5.67
4.52	1.000	29.63	4	2.8E-08	5	12.95	0	0	0.00	28.86	66.09	6.08
4.54	1.010	35.87	3	2.1E-08	5	13.09	0	0	0.00	30.77	66.78	6.20
4.56	0.980	39.29	3	1.5E-08	5	12.66	0	0	0.00	31.42	64.61	6.05
4.58	0.980	40.05	3	1.5E-08	5	12.66	0	0	0.00	31.65	64.58	6.04
4.60	0.970	47.50	3	1.0E-08	5	12.51	0	0	0.00	33.41	63.84	6.03
4.62	1.020	51.75	3	1.1E-08	5	13.21	0	0	0.00	34.97	67.39	6.34
4.64	1.140	51.87	3	1.7E-08	5	14.88	0	0	0.00	36.25	75.94	7.00
4.66	1.110	50.03	3	1.6E-08	5	14.46	0	0	0.00	35.55	73.77	6.79
4.68	1.070	47.56	3	1.5E-08	5	13.89	0	0	0.00	34.60	70.89	6.52
4.70	1.080	47.12	3	1.6E-08	5	14.03	0	0	0.00	34.63	71.58	6.55
4.72	1.030	47.37	3	1.3E-08	5	13.32	0	0	0.00	34.22	67.98	6.26
4.74	0.950	41.86	3	1.1E-08	5	12.20	0	0	0.00	32.07	62.24	5.74
4.76	0.890	41.54	3	8.3E-09	5	11.35	0	0	0.00	31.43	57.93	5.36
4.78	0.890	41.54	3	8.2E-09	5	11.35	0	0	0.00	31.46	57.91	5.34
4.80	0.990	40.62	3	1.4E-08	5	12.74	0	0	0.00	32.26	65.02	5.90
4.82	1.130	40.78	3	2.4E-08	5	14.70	0	0	0.00	33.69	75.00	6.65
4.84	1.200	35.24	4	3.9E-08	5	15.68	0	0	0.00	32.78	79.97	6.94
4.86	1.220	32.80	4	4.7E-08	5	15.95	0	0	0.00	32.25	81.38	7.00
4.88	1.630	31.18	4	1.7E-07	6	21.69	0	0	27.74	34.77	110.64	9.04
4.90	1.970	30.29	5	3.8E-07	7	26.44	30	34	29.18	36.58	0.00	0.00
4.92	2.170	28.27	5	6.3E-07	7	29.24	32	35	29.49	36.96	0.00	0.00
4.94	2.290	32.77	5	6.2E-07	8	30.91	33	35	31.34	39.28	0.00	0.00
4.96	2.360	37.30	5	5.6E-07	8	31.89	33	35	32.92	41.26	0.00	0.00
4.98	2.340	43.16	5	4.2E-07	8	31.60	33	35	34.39	43.10	0.00	0.00
5.00	2.160	49.94	4	2.3E-07	8	29.08	0	0	35.22	44.14	148.35	11.82
5.02	1.880	56.78	4	1.0E-07	8	25.15	0	0	0.00	44.23	128.32	10.50
5.04	1.590	63.44	4	4.1E-08	7	21.09	0	0	0.00	43.74	107.58	9.07
5.06	1.340	68.10	3	1.7E-08	6	17.58	0	0	0.00	42.65	89.70	7.78
5.08	1.210	68.38	3	1.1E-08	6	15.76	0	0	0.00	41.48	80.39	7.06
5.10	1.050	68.10	3	5.7E-09	6	13.51	0	0	0.00	39.99	68.93	6.06
5.12	0.890	67.21	3	2.7E-09	5	11.27	0	0	0.00	38.27	57.48	5.04
5.14	0.770	63.25	3	1.5E-09	5	8.86	0	0	0.00	36.12	48.88	4.27
5.16	0.840	54.22	3	3.1E-09	5	10.56	0	0	0.00	34.91	53.86	4.69
5.18	1.090	43.13	3	1.6E-08	5	14.05	0	0	0.00	34.55	71.69	6.12
5.20	1.310	35.30	4	5.0E-08	6	17.13	0	0	0.00	34.30	87.38	7.16
5.22	1.580	30.42	4	1.4E-07	6	20.90	0	0	27.71	34.73	106.64	8.42
5.24	1.800	28.74	5	2.6E-07	7	23.98	29	34	28.38	35.57	0.00	0.00
5.26	1.920	27.73	5	3.6E-07	7	25.65	29	34	28.67	35.93	0.00	0.00
5.28	2.020	31.62	5	3.5E-07	7	27.05	30	34	30.29	37.97	0.00	0.00
5.30	2.150	37.45	5	3.4E-07	8	28.86	31	34	32.53	40.77	0.00	0.00
5.32	2.230	46.23	5	2.8E-07	8	29.98	32	35	35.16	44.07	0.00	0.00
5.34	2.240	52.22	4	2.2E-07	8	30.11	0	0	36.66	45.95	153.64	11.77

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	2.200	57.13	4	1.8E-07	8	29.55	0	0	37.60	47.13	150.75	11.61
5.38	2.040	58.91	4	1.2E-07	8	27.30	0	0	37.20	46.62	139.30	10.84
5.40	1.800	61.22	4	6.6E-08	8	23.94	0	0	0.00	45.57	122.13	9.67
5.42	1.710	61.79	4	5.2E-08	7	22.67	0	0	0.00	45.08	115.68	9.21
5.44	1.600	61.00	4	4.0E-08	7	21.13	0	0	0.00	44.06	107.79	8.63
5.46	1.300	63.47	3	1.5E-08	6	16.92	0	0	0.00	42.06	86.34	7.11
5.48	1.160	61.76	3	9.6E-09	6	14.96	0	0	0.00	40.33	76.31	6.35
5.50	1.110	60.71	3	8.0E-09	6	14.25	0	0	0.00	39.69	72.72	6.04
5.52	1.000	58.50	3	5.3E-09	5	12.71	0	0	0.00	38.21	64.83	5.37
5.54	1.080	55.39	3	8.4E-09	5	13.82	0	0	0.00	38.21	70.52	5.82
5.56	1.190	45.69	3	1.8E-08	6	15.36	0	0	0.00	36.84	78.36	6.33
5.58	1.140	39.67	3	2.0E-08	5	14.65	0	0	0.00	34.75	74.76	6.01
5.60	1.190	33.91	4	3.1E-08	5	15.35	0	0	0.00	33.52	78.31	6.19
5.62	1.480	29.53	4	9.8E-08	6	19.40	0	0	0.00	34.36	99.00	7.53
5.64	1.850	25.41	5	3.2E-07	7	24.58	28	33	28.10	35.22	0.00	0.00
5.66	2.050	24.97	5	4.9E-07	7	27.37	30	34	28.88	36.19	0.00	0.00
5.68	2.170	26.36	5	5.7E-07	7	29.05	30	34	29.86	37.43	0.00	0.00
5.70	2.430	32.96	5	6.3E-07	8	32.68	32	35	33.00	41.37	0.00	0.00
5.72	2.710	38.66	5	7.5E-07	9	36.60	34	35	35.80	44.87	0.00	0.00
5.74	2.860	41.19	5	8.4E-07	9	38.69	35	35	37.11	46.51	0.00	0.00
5.76	2.840	47.44	5	6.3E-07	10	38.41	35	35	38.74	48.56	0.00	0.00
5.78	2.840	47.44	5	6.3E-07	10	38.40	35	35	38.78	48.60	0.00	0.00
5.80	2.580	70.54	4	2.0E-07	10	34.76	0	0	43.05	53.96	177.34	12.93
5.82	2.460	74.59	4	1.5E-07	10	33.07	0	0	43.34	54.32	168.75	12.39
5.84	2.370	75.67	4	1.2E-07	9	31.81	0	0	43.13	54.06	162.29	11.96
5.86	2.400	73.71	4	1.4E-07	9	32.22	0	0	42.93	53.81	164.41	12.05
5.88	2.540	69.21	4	1.9E-07	10	34.18	0	0	42.74	53.56	174.38	12.62
5.90	2.570	65.88	4	2.2E-07	10	34.59	0	0	42.20	52.89	176.50	12.69
5.92	2.460	64.42	4	1.9E-07	9	33.05	0	0	41.40	51.89	168.62	12.15
5.94	2.270	64.26	4	1.4E-07	9	30.38	0	0	40.46	50.71	155.02	11.25
5.96	2.000	66.16	4	7.5E-08	8	26.60	0	0	0.00	49.45	135.71	10.00
5.98	1.990	67.02	4	7.1E-08	8	26.45	0	0	0.00	49.64	134.97	9.93
6.00	2.160	69.90	4	9.3E-08	9	28.83	0	0	0.00	51.60	147.08	10.72
6.02	2.350	66.42	4	1.5E-07	9	31.48	0	0	41.47	51.97	160.63	11.53
6.04	2.510	61.13	4	2.2E-07	9	33.72	0	0	41.12	51.54	172.03	12.17
6.06	2.480	57.29	4	2.4E-07	9	33.29	0	0	40.14	50.30	169.86	11.97
6.08	2.540	55.36	5	2.8E-07	9	34.13	32	35	39.99	50.12	0.00	0.00
6.10	2.570	57.29	5	2.7E-07	9	34.54	33	35	40.61	50.90	0.00	0.00
6.12	2.560	61.16	4	2.4E-07	10	34.40	0	0	41.49	52.01	175.50	12.29
6.14	2.540	57.13	4	2.6E-07	9	34.11	0	0	40.51	50.77	174.05	12.13
6.16	2.260	60.11	4	1.4E-07	9	30.19	0	0	39.89	49.99	154.02	10.89
6.18	1.940	66.96	4	6.0E-08	8	25.70	0	0	0.00	49.71	131.14	9.46
6.20	1.650	72.03	3	2.6E-08	8	21.64	0	0	0.00	48.74	110.40	8.13
6.22	1.440	73.77	3	1.4E-08	7	18.69	0	0	0.00	47.31	95.37	7.12
6.24	1.330	72.56	3	9.8E-09	7	17.15	0	0	0.00	46.05	87.49	6.56
6.26	1.150	68.13	3	5.6E-09	6	14.62	0	0	0.00	43.46	74.61	5.58
6.28	1.090	60.46	3	5.5E-09	6	13.78	0	0	0.00	41.09	70.29	5.24
6.30	1.090	57.64	3	6.0E-09	6	13.77	0	0	0.00	40.42	70.27	5.23
6.32	1.210	49.81	3	1.3E-08	6	15.45	0	0	0.00	39.49	78.82	5.82
6.34	1.340	41.61	4	2.8E-08	6	17.26	0	0	0.00	38.38	88.08	6.36
6.36	1.460	39.55	4	4.4E-08	6	18.94	0	0	0.00	38.76	96.62	6.88
6.38	1.490	38.44	4	5.0E-08	6	19.35	0	0	0.00	38.67	98.74	7.00
6.40	1.460	34.29	4	5.6E-08	6	18.93	0	0	0.00	37.11	96.57	6.81
6.42	1.370	36.41	4	3.8E-08	6	17.66	0	0	0.00	37.14	90.12	6.40
6.44	1.490	36.92	4	5.3E-08	6	19.34	0	0	0.00	38.27	98.67	6.94

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	1.620	34.03	4	8.7E-08	7	21.15	0	0	0.00	38.27	107.93	7.48
6.48	1.580	33.62	4	8.0E-08	6	20.59	0	0	0.00	37.88	105.05	7.28
6.50	1.380	35.81	4	3.9E-08	6	17.78	0	0	0.00	37.15	90.74	6.39
6.52	1.360	37.17	4	3.4E-08	6	17.50	0	0	0.00	37.46	89.28	6.29
6.54	1.460	41.48	4	3.8E-08	6	18.89	0	0	0.00	39.65	96.40	6.76
6.56	1.590	43.44	4	5.1E-08	7	20.71	0	0	0.00	41.28	105.66	7.34
6.58	1.590	41.19	4	5.6E-08	7	20.70	0	0	0.00	40.62	105.64	7.31
6.60	1.420	45.76	4	2.8E-08	6	18.32	0	0	0.00	40.70	93.47	6.56
6.62	1.200	50.26	3	1.1E-08	6	15.24	0	0	0.00	40.01	77.73	5.56
6.64	1.030	51.24	3	5.1E-09	5	12.85	0	0	0.00	38.80	65.56	4.68
6.66	0.960	49.91	3	3.8E-09	5	11.08	0	0	0.00	37.80	60.54	4.32
6.68	0.900	47.53	3	3.1E-09	5	9.54	0	0	0.00	36.57	56.23	4.00
6.70	0.940	45.25	3	4.1E-09	5	10.50	0	0	0.00	36.38	59.06	4.19
6.72	1.180	38.69	3	1.6E-08	6	14.93	0	0	0.00	36.69	76.18	5.34
6.74	1.100	31.28	3	1.7E-08	5	13.81	0	0	0.00	33.61	70.44	4.93
6.76	1.040	23.35	4	2.1E-08	5	12.88	0	0	0.00	30.24	66.13	4.59
6.78	1.040	23.35	4	2.1E-08	5	12.84	0	0	0.00	30.26	66.10	4.58
6.80	1.020	18.28	4	2.9E-08	5	12.18	0	0	0.00	28.03	64.65	4.44
6.82	1.070	17.90	4	3.7E-08	5	13.37	0	0	0.00	28.31	68.20	4.65
6.84	1.200	18.25	4	5.9E-08	5	15.18	0	0	0.00	29.53	77.46	5.22
6.86	1.180	21.99	4	4.0E-08	5	14.90	0	0	0.00	31.00	76.01	5.15
6.88	1.130	23.01	4	3.1E-08	5	14.19	0	0	0.00	31.02	72.42	4.93
6.90	1.070	24.75	4	2.1E-08	5	13.35	0	0	0.00	31.20	68.11	4.66
6.92	0.970	25.95	3	1.2E-08	5	10.89	0	0	0.00	30.73	60.94	4.21
6.94	1.030	26.24	3	1.6E-08	5	12.38	0	0	0.00	31.43	65.20	4.48
6.96	1.120	25.98	4	2.4E-08	5	14.03	0	0	0.00	32.17	71.61	4.86
6.98	1.150	24.94	4	2.8E-08	5	14.45	0	0	0.00	32.06	73.72	4.98
7.00	1.160	25.73	4	2.8E-08	5	14.59	0	0	0.00	32.47	74.42	5.02
7.02	1.070	28.36	3	1.6E-08	5	13.32	0	0	0.00	32.66	67.96	4.63
7.04	1.100	26.49	4	2.1E-08	5	13.74	0	0	0.00	32.28	70.08	4.74
7.06	1.130	23.89	4	2.7E-08	5	14.15	0	0	0.00	31.58	72.20	4.84
7.08	1.190	24.72	4	3.2E-08	5	14.99	0	0	0.00	32.43	76.46	5.10
7.10	1.140	26.33	4	2.4E-08	5	14.28	0	0	0.00	32.65	72.87	4.88
7.12	1.140	28.23	4	2.1E-08	5	14.28	0	0	0.00	33.37	72.84	4.88
7.14	1.080	28.17	3	1.7E-08	5	13.40	0	0	0.00	32.84	68.53	4.61
7.16	0.940	31.40	3	7.0E-09	5	9.82	0	0	0.00	32.72	58.51	3.96
7.18	0.900	32.23	3	5.4E-09	5	8.86	0	0	0.00	32.65	55.63	3.76
7.20	0.890	28.23	3	6.4E-09	5	8.61	0	0	0.00	31.19	54.89	3.70
7.22	0.940	25.83	3	9.8E-09	5	9.74	0	0	0.00	30.77	58.44	3.93
7.24	0.960	22.88	3	1.3E-08	5	10.16	0	0	0.00	29.85	59.84	4.00
7.26	1.000	21.96	4	1.7E-08	5	11.07	0	0	0.00	29.88	62.67	4.16
7.28	1.190	18.79	4	4.8E-08	5	14.94	0	0	0.00	30.17	76.22	4.95
7.30	1.220	17.17	4	6.1E-08	5	15.36	0	0	0.00	29.67	78.34	5.05
7.32	1.190	18.73	4	4.7E-08	5	14.93	0	0	0.00	30.18	76.18	4.93
7.34	1.080	26.08	3	1.8E-08	5	13.03	0	0	0.00	32.30	68.30	4.50
7.36	1.000	30.33	3	9.5E-09	5	11.01	0	0	0.00	33.13	62.56	4.15
7.38	0.970	29.37	3	8.6E-09	5	10.24	0	0	0.00	32.55	60.39	4.00
7.40	1.020	26.36	3	1.3E-08	5	11.42	0	0	0.00	31.92	63.94	4.21
7.42	1.070	28.23	3	1.5E-08	5	12.68	0	0	0.00	33.10	67.48	4.43
7.44	1.070	29.22	3	1.4E-08	5	12.66	0	0	0.00	33.48	67.46	4.42
7.46	1.090	30.74	3	1.4E-08	5	13.16	0	0	0.00	34.23	68.86	4.51
7.48	1.200	26.90	4	2.6E-08	5	15.03	0	0	0.00	33.83	76.70	4.95
7.50	1.310	26.93	4	3.8E-08	6	16.57	0	0	0.00	34.77	84.53	5.40
7.52	1.330	30.10	4	3.4E-08	6	16.84	0	0	0.00	36.15	85.94	5.50
7.54	1.540	30.42	4	6.4E-08	6	19.78	0	0	0.00	37.89	100.91	6.37

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	1.550	32.04	4	6.0E-08	7	19.91	0	0	0.00	38.59	101.60	6.40
7.58	1.450	34.60	4	3.9E-08	6	18.51	0	0	0.00	38.80	94.43	5.99
7.60	1.400	35.08	4	3.2E-08	6	17.80	0	0	0.00	38.60	90.84	5.77
7.62	1.390	33.53	4	3.3E-08	6	17.66	0	0	0.00	38.01	90.10	5.71
7.64	1.300	37.01	3	2.1E-08	6	16.39	0	0	0.00	38.48	83.65	5.33
7.66	1.240	42.52	3	1.3E-08	6	15.55	0	0	0.00	39.73	79.33	5.09
7.68	1.320	41.04	3	1.8E-08	6	16.66	0	0	0.00	40.02	85.02	5.41
7.70	1.420	39.42	4	2.7E-08	6	18.06	0	0	0.00	40.38	92.14	5.81
7.72	1.490	33.27	4	4.5E-08	6	19.04	0	0	0.00	38.83	97.12	6.06
7.74	1.360	32.00	4	3.2E-08	6	17.21	0	0	0.00	37.39	87.81	5.50
7.76	1.260	32.51	4	2.2E-08	6	15.81	0	0	0.00	36.77	80.64	5.08
7.78	1.260	32.51	4	2.2E-08	6	15.80	0	0	0.00	36.80	80.62	5.07
7.80	1.410	31.47	4	3.8E-08	6	17.90	0	0	0.00	37.67	91.31	5.67
7.82	1.420	31.53	4	3.9E-08	6	18.03	0	0	0.00	37.80	92.00	5.70
7.84	1.450	35.52	4	3.4E-08	6	18.45	0	0	0.00	39.49	94.11	5.84
7.86	1.510	42.91	4	2.9E-08	7	19.28	0	0	0.00	42.48	98.37	6.10
7.88	1.730	45.06	4	4.9E-08	7	22.36	0	0	0.00	44.87	114.06	7.00
7.90	1.760	45.60	4	5.2E-08	8	22.77	0	0	0.00	45.30	116.18	7.11
7.92	1.800	45.88	4	5.6E-08	8	23.33	0	0	0.00	45.71	119.01	7.26
7.94	1.950	48.17	4	7.3E-08	8	25.42	0	0	0.00	47.51	129.70	7.87
7.96	2.110	52.73	4	8.7E-08	9	27.66	0	0	0.00	50.06	141.11	8.52
7.98	2.430	54.03	4	1.5E-07	9	32.13	0	0	41.87	52.48	163.94	9.79
8.00	2.380	60.02	4	1.2E-07	9	31.43	0	0	43.15	54.08	160.34	9.60
8.02	2.060	64.36	4	5.3E-08	9	26.94	0	0	0.00	53.30	137.46	8.31
8.04	1.890	71.30	3	3.0E-08	9	24.56	0	0	0.00	53.99	125.29	7.63
8.06	1.860	76.27	3	2.4E-08	9	24.13	0	0	0.00	55.08	123.12	7.51
8.08	1.750	84.95	3	1.5E-08	8	22.59	0	0	0.00	56.33	115.24	7.07
8.10	1.750	85.18	3	1.5E-08	8	22.58	0	0	0.00	56.43	115.21	7.05
8.12	2.330	83.24	4	5.4E-08	10	30.70	0	0	0.00	60.48	156.61	9.37
8.14	3.050	77.67	4	2.0E-07	11	40.77	0	0	50.60	63.42	208.01	12.18
8.16	2.920	73.77	4	1.8E-07	11	38.95	0	0	49.17	61.63	198.70	11.63
8.18	2.860	79.82	4	1.4E-07	11	38.10	0	0	50.30	63.05	194.39	11.40
8.20	2.800	83.94	4	1.2E-07	11	37.26	0	0	50.95	63.86	190.08	11.15
8.22	2.830	87.49	4	1.1E-07	11	37.67	0	0	51.89	65.03	192.20	11.26
8.24	3.000	94.84	4	1.2E-07	12	40.05	0	0	54.26	68.01	204.31	11.93
8.26	3.170	95.73	4	1.5E-07	12	42.42	0	0	55.27	69.27	216.43	12.58
8.28	3.250	104.41	4	1.4E-07	13	43.53	0	0	57.44	71.99	222.12	12.89
8.30	3.290	114.23	4	1.3E-07	13	44.09	0	0	59.59	74.68	224.95	13.06
8.32	3.420	120.32	4	1.3E-07	13	45.90	0	0	61.39	76.95	234.20	13.55
8.34	4.740	132.52	5	4.5E-07	17	64.38	40	37	69.20	86.73	0.00	0.00
8.36	9.590	136.23	6	8.5E-06	26	104.61	56	40	83.46	104.61	0.00	0.00
8.38	13.860	149.25	6	3.3E-05	33	118.65	67	42	94.67	118.65	0.00	0.00
8.40	14.320	163.29	6	3.1E-05	34	123.82	68	42	98.79	123.82	0.00	0.00
8.42	13.260	182.36	6	1.8E-05	33	126.85	66	42	101.21	126.85	0.00	0.00
8.44	11.550	215.29	5	6.9E-06	31	130.96	62	41	104.49	130.96	0.00	0.00
8.46	11.230	222.86	5	5.7E-06	31	131.94	61	41	105.27	131.94	0.00	0.00
8.48	12.310	230.69	6	7.7E-06	33	136.93	64	41	109.25	136.93	0.00	0.00
8.50	15.070	239.37	6	1.7E-05	38	146.17	70	42	116.62	146.17	0.00	0.00
8.52	18.570	238.32	6	4.1E-05	43	153.67	77	43	122.61	153.67	0.00	0.00
8.54	24.460	237.09	6	1.3E-04	51	164.13	88	44	130.96	164.13	0.00	0.00
8.56	25.260	253.91	6	1.3E-04	52	170.22	90	45	135.82	170.22	0.00	0.00
8.58	22.690	361.43	6	3.6E-05	53	192.53	86	44	153.62	192.53	0.00	0.00
8.60	21.440	433.20	6	1.8E-05	53	205.51	83	44	163.97	205.51	0.00	0.00
8.62	21.450	495.03	6	1.3E-05	55	218.14	84	44	174.05	218.14	0.00	0.00
8.64	21.670	544.77	8	1.1E-05	57	228.40	84	44	182.23	228.40	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P5b	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	24.950	557.20	6	1.8E-05	62	239.29	90	45	190.92	239.29	0.00	0.00
8.68	30.810	585.94	6	3.8E-05	71	258.56	99	46	206.30	258.56	0.00	0.00
8.70	35.450	589.17	6	6.7E-05	78	268.90	100	46	214.55	268.90	0.00	0.00
8.72	37.860	588.06	6	8.8E-05	81	273.40	100	46	218.14	273.40	0.00	0.00
8.74	38.980	558.84	6	1.1E-04	82	269.15	100	47	214.75	269.15	0.00	0.00
8.76	39.320	556.75	6	1.2E-04	82	269.40	100	47	214.95	269.40	0.00	0.00
8.78	39.320	556.75	6	1.2E-04	82	269.50	100	47	215.03	269.50	0.00	0.00
8.80	38.540	428.16	6	2.1E-04	76	237.96	100	46	189.86	237.96	0.00	0.00
8.82	38.450	404.33	6	2.4E-04	75	231.89	100	46	185.02	231.89	0.00	0.00
8.84	37.090	362.25	6	2.7E-04	72	218.98	100	46	174.72	218.98	0.00	0.00
8.86	35.860	347.17	6	2.6E-04	70	213.24	100	46	170.14	213.24	0.00	0.00
8.88	34.360	334.53	6	2.3E-04	67	207.72	100	46	165.73	207.72	0.00	0.00
8.90	33.210	346.57	6	1.9E-04	66	209.26	100	46	166.97	209.26	0.00	0.00
8.92	31.890	334.97	6	1.7E-04	64	204.24	99	46	162.96	204.24	0.00	0.00
8.94	29.560	319.76	6	1.4E-04	61	196.60	96	45	156.86	196.60	0.00	0.00
8.96	24.060	328.03	6	5.4E-05	54	189.14	87	44	150.91	189.14	0.00	0.00
8.98	17.340	341.53	6	1.2E-05	45	177.78	74	43	141.84	177.78	0.00	0.00
9.00	14.170	364.31	5	4.5E-06	40	174.07	67	42	138.89	174.07	0.00	0.00
9.02	11.370	423.82	8	1.2E-06	36	157.00	60	41	140.52	176.12	0.00	0.00
9.04	10.300	450.76	9	6.9E-07	35	142.01	0	0	140.94	176.64	724.56	37.99
9.06	13.510	454.75	8	2.1E-06	41	189.65	65	42	151.32	189.65	0.00	0.00
9.08	23.060	399.33	6	2.8E-05	55	204.38	85	44	163.07	204.38	0.00	0.00
9.10	28.300	400.50	6	6.5E-05	62	215.26	93	45	171.75	215.26	0.00	0.00
9.12	30.390	435.52	6	7.2E-05	66	227.45	97	45	181.48	227.45	0.00	0.00
9.14	30.330	474.55	6	5.7E-05	68	236.35	97	45	188.58	236.35	0.00	0.00
9.16	30.040	485.90	6	5.2E-05	68	238.42	96	45	190.23	238.42	0.00	0.00
9.18	30.420	495.09	6	5.2E-05	69	241.30	97	45	192.53	241.30	0.00	0.00
9.20	30.010	506.18	6	4.6E-05	68	243.01	96	45	193.89	243.01	0.00	0.00
9.22	30.160	510.84	6	4.6E-05	69	244.43	96	45	195.03	244.43	0.00	0.00
9.24	29.350	585.87	6	2.9E-05	70	258.54	95	45	206.28	258.54	0.00	0.00
9.26	27.630	645.95	8	1.8E-05	69	266.45	92	45	212.59	266.45	0.00	0.00
9.28	26.180	642.02	8	1.4E-05	67	262.24	90	45	209.24	262.24	0.00	0.00
9.30	24.680	644.81	8	1.1E-05	64	259.03	87	44	206.67	259.03	0.00	0.00
9.32	24.070	680.68	8	8.6E-06	64	264.02	86	44	210.65	264.02	0.00	0.00
9.34	25.160	713.92	8	9.1E-06	67	273.05	88	44	217.86	273.05	0.00	0.00

CPTe P8 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.070	0.00	0	0.0E+00	0	0.06	0	0	0.05	0.06	0.00	0.00
0.04	0.520	0.13	0	0.0E+00	1	4.09	0	0	3.27	4.09	0.00	0.00
0.06	0.870	0.19	0	0.0E+00	2	6.23	0	0	4.97	6.23	0.00	0.00
0.08	0.900	0.16	0	0.0E+00	2	6.65	0	0	5.31	6.65	0.00	0.00
0.10	0.910	0.13	0	0.0E+00	2	7.09	0	0	5.66	7.09	0.00	0.00
0.12	1.000	0.10	0	0.0E+00	2	8.17	0	0	6.52	8.17	0.00	0.00
0.14	1.030	0.06	0	0.0E+00	2	9.38	0	0	7.49	9.38	0.00	0.00
0.16	1.070	0.10	0	0.0E+00	2	9.12	0	0	7.27	9.12	0.00	0.00
0.18	1.070	6.50	6	2.1E-05	3	10.01	48	39	7.99	10.01	0.00	0.00
0.20	1.040	14.01	6	6.7E-06	3	11.99	52	39	9.57	11.99	0.00	0.00
0.22	1.050	18.03	5	4.2E-06	3	13.14	52	39	10.48	13.14	0.00	0.00
0.24	1.060	17.55	5	4.1E-06	3	13.33	51	39	10.63	13.33	0.00	0.00
0.26	1.060	18.70	5	3.3E-06	3	13.85	50	39	11.05	13.85	0.00	0.00
0.28	1.050	18.63	5	3.0E-06	3	13.98	49	39	11.16	13.98	0.00	0.00
0.30	1.040	19.52	5	2.5E-06	3	14.30	49	39	11.41	14.30	0.00	0.00
0.32	1.000	21.48	5	1.8E-06	3	13.93	48	39	11.68	14.63	0.00	0.00
0.34	0.950	24.08	5	1.2E-06	3	13.23	47	38	11.96	14.99	0.00	0.00
0.36	0.920	26.40	5	8.4E-07	3	12.80	47	38	12.28	15.39	0.00	0.00
0.38	0.880	27.16	5	6.5E-07	3	12.24	46	38	12.30	15.42	0.00	0.00
0.40	0.880	27.47	5	6.0E-07	3	12.23	45	38	12.45	15.60	0.00	0.00
0.42	0.910	28.20	5	6.0E-07	3	12.65	45	38	12.86	16.12	0.00	0.00
0.44	0.960	28.17	5	6.8E-07	3	13.34	45	38	13.28	16.65	0.00	0.00
0.46	0.990	28.58	5	6.9E-07	3	13.76	45	38	13.65	17.11	0.00	0.00
0.48	1.010	28.46	5	7.1E-07	3	14.03	44	38	13.88	17.40	0.00	0.00
0.50	1.010	28.74	5	6.6E-07	3	14.03	44	38	14.06	17.62	0.00	0.00
0.52	1.030	28.61	5	6.7E-07	3	14.30	44	38	14.28	17.89	0.00	0.00
0.54	1.050	28.99	5	6.6E-07	4	14.58	43	38	14.57	18.27	0.00	0.00
0.56	1.030	30.45	5	5.5E-07	4	14.30	43	37	14.81	18.56	0.00	0.00
0.58	1.020	32.10	5	4.6E-07	4	14.15	43	37	15.12	18.96	0.00	0.00
0.60	1.010	32.23	5	4.2E-07	4	14.01	42	37	15.21	19.06	0.00	0.00
0.62	1.000	33.40	4	3.7E-07	4	13.86	0	0	15.44	19.36	70.72	19.92
0.64	0.970	34.38	4	3.0E-07	4	13.44	0	0	15.52	19.46	68.55	19.28
0.66	0.950	35.30	4	2.5E-07	4	13.15	0	0	15.65	19.61	67.10	18.76
0.68	0.960	34.92	4	2.6E-07	4	13.29	0	0	15.78	19.77	67.79	18.45
0.70	0.960	34.73	4	2.5E-07	4	13.28	0	0	15.86	19.88	67.77	18.07
0.72	0.950	34.48	4	2.3E-07	4	13.14	0	0	15.88	19.90	67.03	17.59
0.74	0.940	35.14	4	2.1E-07	4	12.99	0	0	16.02	20.08	66.29	17.22
0.76	0.920	35.93	4	1.8E-07	4	12.71	0	0	16.11	20.20	64.83	16.76
0.78	0.890	36.12	4	1.5E-07	3	12.28	0	0	16.05	20.11	62.67	16.14
0.80	0.850	36.66	4	1.2E-07	3	11.72	0	0	15.95	20.00	59.79	15.45
0.82	0.860	36.60	4	1.2E-07	3	11.85	0	0	16.12	20.20	60.48	15.28
0.84	0.850	36.00	4	1.1E-07	3	11.71	0	0	16.10	20.17	59.74	14.79
0.86	0.830	35.65	4	1.0E-07	3	11.42	0	0	0.00	20.06	58.28	14.31
0.88	0.820	35.65	4	9.5E-08	3	11.28	0	0	0.00	20.09	57.55	13.96
0.90	0.780	29.28	4	1.1E-07	3	10.71	0	0	0.00	18.65	54.66	12.83
0.92	0.740	28.68	4	9.0E-08	3	10.15	0	0	0.00	18.27	51.78	12.17
0.94	0.700	27.73	4	7.5E-08	3	9.58	0	0	0.00	17.82	48.90	11.49

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	0.680	25.64	4	7.5E-08	3	9.30	0	0	0.00	17.31	47.45	10.95
0.98	0.680	24.53	4	7.8E-08	3	9.30	0	0	0.00	17.17	47.43	10.71
1.00	0.690	22.88	4	8.9E-08	3	9.43	0	0	0.00	17.00	48.12	10.54
1.02	0.720	22.09	4	1.1E-07	3	9.85	0	0	0.00	17.19	50.24	10.63
1.04	0.760	20.72	4	1.4E-07	3	10.40	0	0	13.81	17.31	53.07	10.76
1.06	0.780	18.63	4	1.8E-07	3	10.68	0	0	13.57	17.01	54.48	10.68
1.08	0.790	18.60	4	1.8E-07	3	10.81	0	0	13.70	17.17	55.17	10.64
1.10	0.790	19.23	4	1.6E-07	3	10.81	0	0	13.92	17.45	55.14	10.52
1.12	0.750	18.85	4	1.4E-07	3	10.24	0	0	13.64	17.10	52.26	10.00
1.14	0.800	19.27	4	1.6E-07	3	10.94	0	0	14.13	17.71	55.81	10.36
1.16	0.860	20.60	4	1.8E-07	3	11.77	0	0	14.87	18.64	60.07	10.87
1.18	0.960	22.24	4	2.3E-07	4	13.17	0	0	15.91	19.94	67.19	11.73
1.20	1.140	21.07	5	4.6E-07	4	15.69	34	35	16.73	20.97	0.00	0.00
1.22	1.320	18.63	5	9.2E-07	4	18.20	35	36	17.14	21.49	0.00	0.00
1.24	1.340	14.16	5	1.4E-06	4	18.48	34	35	16.11	20.19	0.00	0.00
1.26	1.310	12.36	5	1.5E-06	4	18.05	34	35	15.51	19.43	0.00	0.00
1.28	1.190	7.10	5	2.2E-06	4	16.58	31	35	13.23	16.58	0.00	0.00
1.30	1.150	5.61	5	2.4E-06	3	15.66	31	34	12.50	15.66	0.00	0.00
1.32	1.080	5.48	5	2.0E-06	3	15.25	30	34	12.17	15.25	0.00	0.00
1.34	1.070	7.13	5	1.4E-06	3	14.67	30	34	12.83	16.08	0.00	0.00
1.36	1.090	9.51	5	1.0E-06	4	14.95	30	34	13.83	17.34	0.00	0.00
1.38	1.120	11.82	5	8.2E-07	4	15.37	31	34	14.78	18.52	0.00	0.00
1.40	1.110	13.94	5	6.2E-07	4	15.22	31	34	15.42	19.32	0.00	0.00
1.42	1.090	16.19	5	4.6E-07	4	14.94	31	34	15.99	20.04	0.00	0.00
1.44	1.020	17.49	5	3.1E-07	4	13.95	30	34	16.02	20.08	0.00	0.00
1.46	1.010	17.08	5	3.0E-07	4	13.81	30	34	15.92	19.95	0.00	0.00
1.48	0.970	15.97	5	2.8E-07	4	13.24	29	34	15.46	19.38	0.00	0.00
1.50	0.950	14.70	5	2.9E-07	3	12.96	29	34	15.06	18.88	0.00	0.00
1.52	0.970	13.44	5	3.5E-07	3	13.23	29	34	14.88	18.65	0.00	0.00
1.54	1.070	12.74	5	5.3E-07	4	14.63	29	34	15.26	19.12	0.00	0.00
1.56	1.140	12.83	5	6.4E-07	4	15.61	30	34	15.70	19.68	0.00	0.00
1.58	1.190	12.26	5	7.8E-07	4	16.30	30	34	15.83	19.84	0.00	0.00
1.60	1.250	11.57	5	9.9E-07	4	17.14	31	34	15.95	19.99	0.00	0.00
1.62	1.270	12.77	5	9.0E-07	4	17.41	31	34	16.49	20.67	0.00	0.00
1.64	1.300	17.08	5	6.3E-07	4	17.83	32	35	18.00	22.56	0.00	0.00
1.66	1.380	18.82	5	6.6E-07	5	18.94	32	35	18.94	23.74	0.00	0.00
1.68	1.540	21.17	5	8.2E-07	5	21.18	34	35	20.40	25.57	0.00	0.00
1.70	1.670	22.40	5	9.9E-07	5	22.99	35	35	21.39	26.81	0.00	0.00
1.72	1.830	24.78	5	1.2E-06	6	25.23	36	36	22.79	28.56	0.00	0.00
1.74	1.870	25.64	5	1.2E-06	6	25.78	36	36	23.25	29.14	0.00	0.00
1.76	1.840	22.28	5	1.4E-06	6	25.36	36	36	22.30	27.95	0.00	0.00
1.78	1.790	20.57	5	1.4E-06	6	24.65	35	36	21.68	27.17	0.00	0.00
1.80	1.700	21.07	5	1.1E-06	5	23.39	34	35	21.50	26.94	0.00	0.00
1.82	1.590	23.29	5	7.0E-07	5	21.85	33	35	21.66	27.15	0.00	0.00
1.84	1.490	25.73	5	4.6E-07	5	20.44	33	35	21.86	27.40	0.00	0.00
1.86	1.460	28.80	5	3.5E-07	5	20.02	32	35	22.52	28.22	0.00	0.00
1.88	1.470	31.47	5	3.0E-07	5	20.15	33	35	23.25	29.14	0.00	0.00
1.90	1.500	39.99	4	2.1E-07	6	20.57	0	0	25.29	31.69	104.93	12.68
1.92	1.360	44.90	4	1.2E-07	5	18.60	0	0	25.50	31.95	94.90	11.80
1.94	1.210	43.41	4	7.7E-08	5	16.50	0	0	0.00	30.52	84.16	10.64
1.96	1.110	40.40	4	6.2E-08	5	15.09	0	0	0.00	29.08	77.00	9.78
1.98	1.110	38.15	4	6.7E-08	5	15.09	0	0	0.00	28.64	76.97	9.64
2.00	1.190	36.06	4	9.5E-08	5	16.20	0	0	0.00	28.88	82.66	10.04
2.02	1.330	32.10	4	1.7E-07	5	18.16	0	0	23.12	28.98	92.64	10.75
2.04	1.300	24.72	5	2.4E-07	5	17.73	30	34	21.29	26.68	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	1.260	22.94	5	2.4E-07	5	17.17	29	34	20.68	25.91	0.00	0.00
2.08	1.240	24.21	4	2.0E-07	5	16.88	0	0	20.95	26.26	86.14	9.67
2.10	1.170	26.97	4	1.3E-07	5	15.90	0	0	21.28	26.67	81.11	9.26
2.12	1.190	30.83	4	1.1E-07	5	16.17	0	0	0.00	28.01	82.52	9.44
2.14	1.270	34.76	4	1.1E-07	5	17.29	0	0	23.76	29.78	88.21	9.99
2.16	1.300	37.71	4	1.1E-07	5	17.70	0	0	0.00	30.88	90.33	10.19
2.18	1.260	39.99	4	8.4E-08	5	17.14	0	0	0.00	31.23	87.44	9.92
2.20	1.270	38.09	4	9.2E-08	5	17.27	0	0	0.00	30.92	88.13	9.86
2.22	1.300	36.79	4	1.1E-07	5	17.69	0	0	0.00	30.91	90.25	9.94
2.24	1.350	33.94	4	1.4E-07	5	18.38	0	0	24.41	30.59	93.80	10.10
2.26	1.440	29.06	4	2.3E-07	5	19.64	0	0	23.84	29.88	100.20	10.43
2.28	1.560	21.26	5	5.0E-07	5	21.32	31	34	22.42	28.10	0.00	0.00
2.30	1.640	14.92	5	1.0E-06	5	22.43	31	34	20.82	26.09	0.00	0.00
2.32	1.840	11.38	5	2.2E-06	6	25.52	32	35	20.36	25.52	0.00	0.00
2.34	2.070	10.08	5	3.8E-06	6	25.99	33	35	20.74	25.99	0.00	0.00
2.36	2.280	9.44	6	5.7E-06	6	26.63	34	35	21.24	26.63	0.00	0.00
2.38	2.240	10.30	6	4.8E-06	6	26.99	34	35	21.53	26.99	0.00	0.00
2.40	2.000	9.66	5	3.4E-06	6	25.61	32	35	20.43	25.61	0.00	0.00
2.42	1.850	10.36	5	2.3E-06	6	25.33	31	34	20.21	25.33	0.00	0.00
2.44	1.740	14.26	5	1.2E-06	6	23.80	31	34	21.36	26.77	0.00	0.00
2.46	1.560	22.63	5	4.0E-07	6	21.27	30	34	23.33	29.24	0.00	0.00
2.48	1.510	27.63	5	2.5E-07	6	20.57	30	34	24.52	30.73	0.00	0.00
2.50	1.520	31.37	4	2.1E-07	6	20.71	0	0	25.58	32.07	105.64	10.19
2.52	1.550	34.32	4	1.9E-07	6	21.12	0	0	26.53	33.25	107.76	10.37
2.54	1.540	38.94	4	1.5E-07	6	20.98	0	0	27.61	34.60	107.02	10.36
2.56	1.520	43.67	4	1.1E-07	6	20.69	0	0	0.00	35.84	105.56	10.28
2.58	1.460	50.16	4	7.2E-08	6	19.85	0	0	0.00	37.13	101.25	9.99
2.60	1.370	53.17	4	5.0E-08	6	18.58	0	0	0.00	37.22	94.80	9.45
2.62	1.280	54.25	3	3.6E-08	6	17.32	0	0	0.00	36.79	88.35	8.88
2.64	1.200	51.21	3	3.0E-08	5	16.19	0	0	0.00	35.47	82.61	8.30
2.66	1.110	48.99	3	2.4E-08	5	14.93	0	0	0.00	34.22	76.15	7.68
2.68	1.090	45.50	3	2.5E-08	5	14.64	0	0	0.00	33.29	74.70	7.47
2.70	1.100	41.70	3	3.0E-08	5	14.78	0	0	0.00	32.53	75.39	7.42
2.72	1.150	37.39	4	4.2E-08	5	15.47	0	0	0.00	31.92	78.93	7.60
2.74	1.140	35.93	4	4.3E-08	5	15.33	0	0	0.00	31.52	78.20	7.47
2.76	1.130	32.61	4	4.8E-08	5	15.18	0	0	0.00	30.57	77.46	7.31
2.78	1.270	29.25	4	9.1E-08	5	17.14	0	0	0.00	30.74	87.43	7.97
2.80	1.370	25.92	4	1.5E-07	5	18.53	0	0	24.28	30.43	94.55	8.40
2.82	1.450	26.62	4	1.8E-07	6	19.65	0	0	24.97	31.29	100.24	8.79
2.84	1.390	29.34	4	1.3E-07	5	18.80	0	0	25.43	31.87	95.93	8.48
2.86	1.360	32.73	4	9.4E-08	6	18.38	0	0	0.00	32.81	93.76	8.33
2.88	1.340	34.29	4	8.1E-08	5	18.09	0	0	0.00	33.21	92.31	8.20
2.90	1.480	32.96	4	1.3E-07	6	20.05	0	0	27.05	33.90	102.29	8.87
2.92	1.460	37.80	4	9.3E-08	6	19.76	0	0	0.00	35.31	100.83	8.80
2.94	1.440	40.05	4	7.9E-08	6	19.48	0	0	0.00	35.90	99.38	8.68
2.96	1.470	41.35	4	8.0E-08	6	19.89	0	0	0.00	36.58	101.50	8.80
2.98	1.600	39.20	4	1.2E-07	6	21.71	0	0	29.50	36.98	110.76	9.39
3.00	1.640	38.25	4	1.4E-07	6	22.26	0	0	29.56	37.05	113.59	9.53
3.02	1.750	37.80	4	1.8E-07	7	23.80	0	0	30.10	37.72	121.42	10.03
3.04	1.820	38.12	4	2.1E-07	7	24.77	0	0	30.60	38.35	126.40	10.33
3.06	1.870	40.47	4	2.1E-07	7	25.47	0	0	31.50	39.48	129.95	10.56
3.08	1.970	43.22	4	2.2E-07	7	26.86	0	0	32.74	41.03	137.06	11.04
3.10	2.070	44.24	5	2.6E-07	8	28.26	32	35	33.54	42.03	0.00	0.00
3.12	2.310	50.07	5	3.2E-07	8	31.61	33	35	36.11	45.26	0.00	0.00
3.14	2.360	51.94	5	3.2E-07	9	32.31	33	35	36.85	46.19	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	2.360	54.25	5	2.9E-07	9	32.30	33	35	37.46	46.95	0.00	0.00
3.18	2.420	57.20	5	2.9E-07	9	33.14	34	35	38.48	48.22	0.00	0.00
3.20	2.370	63.22	4	2.2E-07	9	32.43	0	0	39.63	49.67	165.48	12.90
3.22	2.290	65.18	4	1.8E-07	9	31.31	0	0	39.73	49.80	159.74	12.47
3.24	2.220	64.74	4	1.6E-07	9	30.32	0	0	39.37	49.35	154.72	12.07
3.26	2.220	66.48	4	1.5E-07	9	30.32	0	0	39.81	49.90	154.69	12.02
3.28	2.360	66.13	4	1.9E-07	9	32.27	0	0	40.52	50.79	164.66	12.62
3.30	2.620	64.55	5	3.0E-07	10	35.91	35	35	41.48	51.99	0.00	0.00
3.32	2.690	67.27	5	3.0E-07	10	36.88	35	36	42.47	53.23	0.00	0.00
3.34	2.680	68.45	4	2.9E-07	10	36.74	0	0	42.76	53.59	187.44	13.95
3.36	2.480	74.43	4	1.8E-07	9	33.93	0	0	43.14	54.07	173.13	13.02
3.38	2.360	74.34	4	1.4E-07	9	32.25	0	0	42.61	53.41	164.53	12.39
3.40	2.250	76.56	4	1.1E-07	9	30.70	0	0	0.00	53.34	156.65	11.83
3.42	2.040	75.61	4	7.4E-08	8	27.76	0	0	0.00	51.78	141.62	10.76
3.44	1.620	76.75	3	2.7E-08	7	21.87	0	0	0.00	48.90	111.60	8.69
3.46	1.590	74.40	3	2.6E-08	7	21.45	0	0	0.00	48.22	109.43	8.48
3.48	1.550	70.85	3	2.6E-08	7	20.88	0	0	0.00	47.16	106.55	8.21
3.50	1.580	64.58	3	3.3E-08	7	21.30	0	0	0.00	46.02	108.66	8.27
3.52	1.510	58.78	3	3.2E-08	7	20.31	0	0	0.00	44.09	103.64	7.85
3.54	1.490	56.21	4	3.2E-08	7	20.03	0	0	0.00	43.35	102.18	7.69
3.56	1.490	46.01	4	4.6E-08	6	20.02	0	0	0.00	40.65	102.16	7.57
3.58	1.470	42.08	4	5.1E-08	6	19.74	0	0	0.00	39.41	100.71	7.41
3.60	1.500	34.73	4	7.6E-08	6	20.15	0	0	0.00	37.38	102.82	7.44
3.62	1.530	32.89	4	9.0E-08	6	20.57	0	0	0.00	37.04	104.94	7.52
3.64	1.610	32.29	4	1.1E-07	6	21.68	0	0	29.88	37.45	110.63	7.85
3.66	1.590	32.32	4	1.1E-07	6	21.40	0	0	0.00	37.40	109.18	7.72
3.68	1.550	33.21	4	9.0E-08	6	20.83	0	0	0.00	37.51	106.30	7.51
3.70	1.460	35.05	4	6.3E-08	6	19.57	0	0	0.00	37.56	99.84	7.09
3.72	1.300	38.15	4	3.3E-08	6	17.32	0	0	0.00	37.39	88.39	6.35
3.74	1.270	36.41	4	3.2E-08	6	16.90	0	0	0.00	36.67	86.22	6.16
3.76	1.230	35.08	4	2.9E-08	6	16.34	0	0	0.00	35.98	83.34	5.94
3.78	1.240	32.54	4	3.4E-08	6	16.47	0	0	0.00	35.30	84.03	5.94
3.80	1.270	31.75	4	3.9E-08	6	16.89	0	0	0.00	35.34	86.15	6.04
3.82	1.310	29.31	4	5.0E-08	6	17.44	0	0	0.00	34.86	88.98	6.17
3.84	1.280	23.48	4	6.5E-08	5	17.02	0	0	0.00	32.47	86.82	5.95
3.86	1.240	21.52	4	6.5E-08	5	16.45	0	0	0.00	31.43	83.94	5.73
3.88	1.310	20.47	4	8.7E-08	5	17.43	0	0	0.00	31.55	88.91	6.00
3.90	1.800	4.94	5	1.8E-06	6	24.28	26	33	20.30	25.44	0.00	0.00
3.92	1.700	10.74	5	6.2E-07	6	22.88	25	33	23.18	29.06	0.00	0.00
3.94	1.670	14.51	5	3.8E-07	6	22.45	25	32	24.82	31.11	0.00	0.00
3.96	1.710	19.65	5	2.7E-07	6	23.01	26	33	27.12	33.99	0.00	0.00
3.98	1.880	29.91	5	2.0E-07	7	25.38	27	33	31.48	39.45	0.00	0.00
4.00	1.950	31.28	5	2.2E-07	7	26.36	27	33	32.29	40.47	0.00	0.00
4.02	1.960	31.91	5	2.1E-07	7	26.49	27	33	32.59	40.85	0.00	0.00
4.04	1.970	34.48	4	1.9E-07	7	26.63	0	0	33.47	41.95	135.86	8.71
4.06	2.060	35.90	4	2.1E-07	8	27.88	0	0	34.38	43.08	142.27	9.06
4.08	1.980	40.88	4	1.4E-07	8	26.76	0	0	35.47	44.45	136.53	8.73
4.10	1.920	40.05	4	1.3E-07	8	25.91	0	0	35.00	43.87	132.22	8.44
4.12	1.930	36.00	4	1.5E-07	7	26.05	0	0	33.97	42.57	132.91	8.41
4.14	1.860	33.94	4	1.4E-07	7	25.07	0	0	33.07	41.45	127.88	8.07
4.16	1.750	36.66	4	9.6E-08	7	23.52	0	0	0.00	41.81	120.00	7.60
4.18	1.700	39.67	4	7.3E-08	7	22.82	0	0	0.00	42.60	116.40	7.38
4.20	1.660	40.81	4	6.2E-08	7	22.25	0	0	0.00	42.78	113.52	7.19
4.22	1.710	37.77	4	8.0E-08	7	22.95	0	0	0.00	42.16	117.07	7.34
4.24	1.800	36.06	4	1.1E-07	7	24.20	0	0	0.00	42.22	123.47	7.67

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	1.880	34.86	4	1.3E-07	7	25.32	0	0	33.79	42.36	129.16	7.96
4.28	2.000	36.85	4	1.6E-07	8	26.99	0	0	35.03	43.90	137.71	8.43
4.30	2.180	37.90	5	2.1E-07	8	29.51	28	33	36.24	45.42	0.00	0.00
4.32	2.210	34.54	5	2.6E-07	8	29.92	28	33	35.41	44.38	0.00	0.00
4.34	2.050	36.92	4	1.7E-07	8	27.68	0	0	35.46	44.45	141.21	8.53
4.36	1.790	37.01	4	9.3E-08	7	24.03	0	0	0.00	42.94	122.61	7.45
4.38	1.500	42.87	4	3.3E-08	7	19.97	0	0	0.00	42.96	101.87	6.27
4.40	1.360	43.16	3	2.1E-08	6	18.00	0	0	0.00	42.00	91.85	5.67
4.42	1.240	39.23	3	1.7E-08	6	16.32	0	0	0.00	39.78	83.25	5.13
4.44	1.250	33.62	4	2.3E-08	6	16.45	0	0	0.00	38.03	83.94	5.13
4.46	1.300	31.15	4	3.0E-08	6	17.15	0	0	0.00	37.61	87.49	5.30
4.48	1.610	31.91	4	7.2E-08	7	21.48	0	0	0.00	40.25	109.60	6.52
4.50	1.850	27.47	4	1.7E-07	7	24.84	0	0	31.96	40.05	126.72	7.42
4.52	1.780	19.61	5	2.4E-07	7	23.85	25	32	28.78	36.07	0.00	0.00
4.54	1.680	22.15	4	1.5E-07	7	22.45	0	0	29.33	36.76	114.53	6.66
4.56	1.490	24.62	4	7.6E-08	6	19.78	0	0	0.00	36.70	100.94	5.91
4.58	1.300	30.33	4	3.0E-08	6	17.12	0	0	0.00	37.69	87.34	5.16
4.60	1.160	32.64	3	1.6E-08	6	15.05	0	0	0.00	37.43	77.32	4.59
4.62	1.130	31.56	3	1.5E-08	5	14.17	0	0	0.00	36.84	75.15	4.45
4.64	1.400	28.11	4	4.5E-08	6	18.50	0	0	0.00	37.78	94.41	5.48
4.66	1.530	26.27	4	7.3E-08	6	20.32	0	0	0.00	38.00	103.67	5.95
4.68	1.550	24.05	4	8.8E-08	6	20.60	0	0	0.00	37.22	105.08	6.00
4.70	1.480	23.48	4	7.4E-08	6	19.61	0	0	0.00	36.55	100.05	5.70
4.72	1.460	22.72	4	7.3E-08	6	19.33	0	0	0.00	36.13	98.60	5.60
4.74	1.600	23.20	4	1.0E-07	6	21.28	0	0	0.00	37.35	108.58	6.12
4.76	1.620	23.51	4	1.1E-07	6	21.56	0	0	0.00	37.68	109.98	6.17
4.78	1.630	23.58	4	1.1E-07	7	21.69	0	0	0.00	37.83	110.67	6.19
4.80	1.730	26.21	4	1.2E-07	7	23.09	0	0	31.69	39.72	117.79	6.55
4.82	1.670	27.03	4	9.3E-08	7	22.24	0	0	0.00	39.76	113.48	6.31
4.84	1.530	27.28	4	6.2E-08	6	20.28	0	0	0.00	38.99	103.46	5.75
4.86	1.490	27.57	4	5.4E-08	6	19.71	0	0	0.00	38.90	100.57	5.58
4.88	1.360	28.08	4	3.5E-08	6	17.89	0	0	0.00	38.22	91.26	5.07
4.90	1.390	22.66	4	5.4E-08	6	18.30	0	0	0.00	36.14	93.38	5.14
4.92	1.590	23.23	4	9.2E-08	6	21.10	0	0	0.00	37.83	107.65	5.88
4.94	1.820	27.44	4	1.2E-07	7	24.31	0	0	32.92	41.26	124.05	6.73
4.96	2.070	30.42	4	1.8E-07	8	27.81	0	0	35.19	44.10	141.88	7.64
4.98	1.750	33.91	4	7.2E-08	7	23.32	0	0	0.00	43.66	119.00	6.44
5.00	1.700	33.53	4	6.4E-08	7	22.62	0	0	0.00	43.24	115.40	6.23
5.02	1.480	37.23	4	2.9E-08	7	19.53	0	0	0.00	43.15	99.67	5.40
5.04	1.390	39.17	3	2.0E-08	6	18.27	0	0	0.00	43.21	93.21	5.05
5.06	1.560	42.43	4	2.8E-08	7	20.64	0	0	0.00	45.77	105.33	5.66
5.08	1.940	39.32	4	8.4E-08	8	25.96	0	0	0.00	47.34	132.45	7.03
5.10	2.220	34.98	4	1.8E-07	8	29.87	0	0	37.78	47.35	152.42	8.01
5.12	1.920	38.98	4	8.0E-08	8	25.67	0	0	0.00	47.23	130.97	6.90
5.14	1.590	40.31	4	3.2E-08	7	21.05	0	0	0.00	45.53	107.37	5.68
5.16	1.380	36.09	4	2.1E-08	6	18.10	0	0	0.00	42.43	92.35	4.88
5.18	1.210	36.06	3	1.1E-08	6	14.41	0	0	0.00	41.06	80.18	4.24
5.20	1.100	33.91	3	8.2E-09	6	11.67	0	0	0.00	39.37	72.30	3.80
5.22	1.180	29.98	3	1.4E-08	6	13.52	0	0	0.00	38.60	77.99	4.09
5.24	1.310	27.09	4	2.6E-08	6	16.79	0	0	0.00	38.54	87.25	4.54
5.26	1.640	21.55	4	1.0E-07	7	21.72	0	0	0.00	38.35	110.80	5.69
5.28	2.100	20.15	5	3.2E-07	8	28.15	25	32	32.18	40.33	0.00	0.00
5.30	2.180	17.21	5	4.6E-07	8	29.27	26	33	31.23	39.14	0.00	0.00
5.32	1.940	18.35	5	2.6E-07	7	25.90	24	32	30.79	38.59	0.00	0.00
5.34	2.010	24.49	5	1.9E-07	8	26.88	24	32	33.71	42.25	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	2.990	36.31	5	5.5E-07	10	40.59	30	34	42.01	52.65	0.00	0.00
5.38	3.220	29.94	5	1.0E-06	10	43.81	31	34	40.52	50.78	0.00	0.00
5.40	2.890	31.94	5	5.8E-07	10	39.18	29	34	40.19	50.38	0.00	0.00
5.42	2.430	37.55	5	2.1E-07	9	32.74	27	33	40.43	50.67	0.00	0.00
5.44	2.210	50.42	4	8.1E-08	9	29.65	0	0	0.00	54.42	151.29	7.54
5.46	1.880	54.63	4	3.4E-08	8	25.03	0	0	0.00	53.77	127.70	6.37
5.48	1.810	56.31	4	2.7E-08	8	24.04	0	0	0.00	53.90	122.67	6.10
5.50	1.740	57.20	3	2.2E-08	8	23.06	0	0	0.00	53.74	117.65	5.84
5.52	2.130	57.73	4	5.2E-08	9	28.51	0	0	0.00	56.75	145.48	7.17
5.54	1.880	57.89	4	2.9E-08	8	25.01	0	0	0.00	55.17	127.59	6.28
5.56	1.740	52.09	4	2.5E-08	8	23.04	0	0	0.00	52.32	117.57	5.77
5.58	1.590	46.42	3	2.0E-08	7	20.94	0	0	0.00	49.31	106.83	5.22
5.60	1.400	43.67	3	1.3E-08	7	17.98	0	0	0.00	46.89	93.23	4.55
5.62	1.310	41.42	3	1.0E-08	7	15.52	0	0	0.00	45.40	86.78	4.22
5.64	1.150	41.76	3	5.4E-09	6	11.65	0	0	0.00	44.14	75.33	3.65
5.66	1.090	39.89	3	4.6E-09	6	10.32	0	0	0.00	42.96	71.02	3.43
5.68	1.110	31.50	3	7.5E-09	6	10.69	0	0	0.00	40.06	72.42	3.48
5.70	1.230	28.42	3	1.4E-08	6	13.32	0	0	0.00	39.89	80.97	3.88
5.72	1.340	25.19	4	2.5E-08	6	15.95	0	0	0.00	39.39	88.80	4.23
5.74	1.600	24.11	4	6.0E-08	7	21.04	0	0	0.00	40.79	107.35	5.09
5.76	1.780	27.47	4	7.7E-08	7	23.56	0	0	0.00	43.63	120.18	5.68
5.78	1.810	27.70	4	8.1E-08	7	23.97	0	0	0.00	43.99	122.30	5.76
5.80	1.790	28.42	4	7.3E-08	7	23.69	0	0	0.00	44.26	120.85	5.68
5.82	1.780	30.26	4	6.4E-08	7	23.54	0	0	0.00	45.10	120.11	5.63
5.84	1.710	36.35	4	3.9E-08	8	22.56	0	0	0.00	47.31	115.08	5.38
5.86	1.910	42.08	4	4.8E-08	8	25.35	0	0	0.00	51.01	129.34	6.02
5.88	2.180	44.30	4	7.9E-08	9	29.13	0	0	0.00	53.65	148.60	6.89
5.90	2.410	48.10	4	1.1E-07	10	32.34	0	0	0.00	56.53	165.01	7.63
5.92	2.530	50.86	4	1.2E-07	10	34.02	0	0	46.53	58.32	173.55	8.00
5.94	2.710	55.87	4	1.3E-07	11	36.53	0	0	48.85	61.23	186.38	8.56
5.96	2.840	56.94	4	1.6E-07	11	38.35	0	0	49.78	62.39	195.64	8.96
5.98	2.760	55.07	4	1.5E-07	11	37.22	0	0	48.97	61.37	189.90	8.67
6.00	2.710	54.57	4	1.4E-07	11	36.52	0	0	48.67	61.00	186.31	8.48
6.02	2.660	56.94	4	1.1E-07	11	35.81	0	0	49.21	61.68	182.71	8.29
6.04	2.480	64.36	4	6.6E-08	10	33.29	0	0	0.00	63.31	169.83	7.68
6.06	2.280	72.75	4	3.6E-08	10	30.48	0	0	0.00	64.84	155.52	7.00
6.08	2.050	74.91	3	2.1E-08	10	27.26	0	0	0.00	63.99	139.06	6.23
6.10	1.900	72.82	3	1.5E-08	9	25.15	0	0	0.00	62.33	128.32	5.73
6.12	1.840	73.23	3	1.3E-08	9	24.31	0	0	0.00	62.06	124.01	5.52
6.14	1.840	72.47	3	1.3E-08	9	24.30	0	0	0.00	61.93	123.98	5.50
6.16	1.790	72.22	3	1.2E-08	9	23.60	0	0	0.00	61.53	120.39	5.32
6.18	2.070	62.36	4	2.9E-08	9	27.51	0	0	0.00	60.62	140.36	6.19
6.20	2.180	57.29	4	4.3E-08	9	29.05	0	0	0.00	59.71	148.19	6.52
6.22	2.400	52.28	4	7.8E-08	10	32.12	0	0	0.00	59.32	163.88	7.20
6.24	2.610	50.42	4	1.2E-07	10	35.06	0	0	47.77	59.87	178.85	7.84
6.26	2.660	50.73	4	1.3E-07	10	35.75	0	0	48.14	60.34	182.40	7.98
6.28	2.540	49.84	4	1.1E-07	10	34.07	0	0	0.00	59.42	173.80	7.57
6.30	2.400	51.94	4	7.6E-08	10	32.10	0	0	0.00	59.51	163.78	7.11
6.32	2.190	54.95	4	4.5E-08	9	29.16	0	0	0.00	59.43	148.75	6.42
6.34	1.860	61.13	3	1.7E-08	9	24.53	0	0	0.00	59.38	125.16	5.36
6.36	1.540	67.49	3	6.1E-09	8	18.95	0	0	0.00	58.76	102.27	4.37
6.38	1.420	66.96	3	4.2E-09	8	15.85	0	0	0.00	57.53	93.68	3.99
6.40	1.390	65.69	3	3.9E-09	8	15.07	0	0	0.00	56.93	91.51	3.88
6.42	1.390	65.59	3	3.9E-09	8	15.01	0	0	0.00	56.98	91.48	3.87
6.44	1.570	61.32	3	7.7E-09	8	19.46	0	0	0.00	57.45	104.31	4.40

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	1.660	57.26	3	1.1E-08	8	21.70	0	0	0.00	56.98	110.72	4.65
6.48	1.780	49.65	3	2.0E-08	8	23.38	0	0	0.00	55.34	119.26	5.00
6.50	1.910	45.85	4	3.1E-08	9	25.19	0	0	0.00	54.89	128.52	5.38
6.52	1.950	45.31	4	3.5E-08	9	25.75	0	0	0.00	55.02	131.35	5.49
6.54	1.980	44.93	4	3.8E-08	9	26.16	0	0	0.00	55.14	133.47	5.56
6.56	2.050	44.49	4	4.4E-08	9	27.14	0	0	0.00	55.49	138.45	5.76
6.58	2.140	43.22	4	5.6E-08	9	28.39	0	0	0.00	55.60	144.85	6.02
6.60	2.340	43.73	4	8.2E-08	10	31.19	0	0	0.00	57.06	159.11	6.60
6.62	2.670	47.75	4	1.3E-07	11	35.80	0	0	48.35	60.60	182.66	7.58
6.64	2.760	47.91	4	1.4E-07	11	37.06	0	0	48.83	61.21	189.06	7.83
6.66	2.910	47.56	4	1.8E-07	11	39.15	0	0	49.38	61.89	199.75	8.26
6.68	2.970	49.72	4	1.9E-07	11	39.99	0	0	50.38	63.15	204.01	8.42
6.70	2.910	52.47	4	1.5E-07	11	39.14	0	0	51.10	64.05	199.70	8.21
6.72	2.730	60.30	4	8.8E-08	11	36.62	0	0	0.00	66.19	186.81	7.62
6.74	2.740	67.18	4	7.2E-08	11	36.75	0	0	0.00	68.81	187.50	7.62
6.76	2.840	68.35	4	8.2E-08	12	38.15	0	0	0.00	69.86	194.62	7.89
6.78	2.880	68.76	4	8.5E-08	12	38.70	0	0	0.00	70.31	197.45	7.99
6.80	2.660	71.74	4	5.4E-08	11	35.62	0	0	0.00	70.19	181.71	7.30
6.82	2.720	72.79	4	5.8E-08	12	36.45	0	0	0.00	70.99	185.97	7.45
6.84	2.670	75.80	4	4.9E-08	11	35.75	0	0	0.00	71.79	182.37	7.28
6.86	2.660	74.72	4	4.9E-08	11	35.60	0	0	0.00	71.47	181.63	7.23
6.88	2.740	72.06	4	6.0E-08	12	36.71	0	0	0.00	71.13	187.32	7.44
6.90	3.650	74.47	4	2.0E-07	14	49.45	0	0	61.20	76.71	252.29	10.11
6.92	4.010	78.65	5	2.8E-07	15	54.48	31	34	63.74	79.88	0.00	0.00
6.94	3.650	76.68	4	1.9E-07	14	49.44	0	0	61.97	77.67	252.24	10.04
6.96	3.600	76.40	4	1.8E-07	14	48.73	0	0	61.78	77.43	248.64	9.87
6.98	4.300	76.40	5	4.0E-07	15	58.53	32	35	64.28	80.57	0.00	0.00
7.00	4.400	81.22	5	3.9E-07	16	59.92	32	35	66.06	82.80	0.00	0.00
7.02	4.410	81.53	5	3.9E-07	16	60.06	32	35	66.26	83.04	0.00	0.00
7.04	4.490	86.76	5	3.7E-07	16	61.17	33	35	68.05	85.30	0.00	0.00
7.06	4.490	90.50	5	3.4E-07	16	61.17	33	35	69.16	86.68	0.00	0.00
7.08	4.450	94.49	5	3.0E-07	16	60.60	32	35	70.17	87.95	0.00	0.00
7.10	4.690	101.53	5	3.2E-07	17	63.96	33	35	72.90	91.36	0.00	0.00
7.12	4.870	107.07	5	3.4E-07	17	66.47	34	35	74.99	93.99	0.00	0.00
7.14	4.930	111.60	5	3.3E-07	18	67.31	34	35	76.41	95.77	0.00	0.00
7.16	4.960	113.51	5	3.2E-07	18	67.72	34	35	77.07	96.60	0.00	0.00
7.18	4.920	118.99	5	2.8E-07	18	67.16	34	35	78.38	98.24	0.00	0.00
7.20	4.970	125.86	4	2.6E-07	18	67.85	0	0	80.29	100.63	346.18	13.35
7.22	4.920	129.25	4	2.4E-07	18	67.15	0	0	81.01	101.53	342.58	13.16
7.24	4.780	129.25	4	2.1E-07	18	65.18	0	0	80.62	101.04	332.55	12.72
7.26	4.840	127.42	4	2.2E-07	18	66.01	0	0	80.49	100.88	336.81	12.86
7.28	4.830	127.23	4	2.2E-07	18	65.87	0	0	80.50	100.89	336.07	12.79
7.30	4.870	125.42	4	2.3E-07	18	66.42	0	0	80.30	100.64	338.90	12.87
7.32	4.760	124.09	4	2.1E-07	18	64.88	0	0	79.69	99.88	331.01	12.53
7.34	4.490	124.53	4	1.6E-07	17	61.09	0	0	78.93	98.93	311.70	11.72
7.36	4.400	120.76	4	1.6E-07	17	59.83	0	0	77.80	97.51	305.24	11.44
7.38	4.300	122.44	4	1.4E-07	17	58.42	0	0	77.92	97.66	298.07	11.13
7.40	4.250	120.70	4	1.3E-07	17	57.72	0	0	77.41	97.02	294.48	10.96
7.42	4.370	126.59	4	1.3E-07	17	59.39	0	0	79.34	99.43	303.02	11.25
7.44	4.750	122.69	4	2.1E-07	18	64.71	0	0	79.86	100.09	330.14	12.29
7.46	4.740	128.05	4	1.9E-07	18	64.56	0	0	81.20	101.77	329.39	12.21
7.48	4.810	121.65	4	2.2E-07	18	65.54	0	0	79.99	100.26	334.37	12.39
7.50	5.260	121.33	5	3.3E-07	19	71.83	34	35	81.47	102.11	0.00	0.00
7.52	5.310	129.10	5	3.0E-07	19	72.53	34	35	83.63	104.81	0.00	0.00
7.54	5.290	132.80	4	2.8E-07	19	72.24	0	0	84.55	105.96	368.57	13.60

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	5.070	138.51	4	2.1E-07	19	69.15	0	0	85.25	106.85	352.83	12.93
7.58	4.900	140.69	4	1.7E-07	19	66.77	0	0	85.26	106.86	340.66	12.42
7.60	4.770	139.49	4	1.5E-07	18	64.94	0	0	84.62	106.06	331.34	12.03
7.62	4.930	140.82	4	1.7E-07	19	67.18	0	0	85.59	107.27	342.75	12.43
7.64	5.140	142.69	4	2.0E-07	19	70.11	0	0	86.84	108.84	357.72	12.97
7.66	5.220	144.46	4	2.1E-07	20	71.23	0	0	87.61	109.81	363.40	13.15
7.68	5.230	145.22	4	2.1E-07	20	71.36	0	0	87.92	110.19	364.09	13.14
7.70	5.260	143.77	4	2.2E-07	20	71.78	0	0	87.78	110.02	366.21	13.19
7.72	5.100	145.83	4	1.8E-07	19	69.53	0	0	87.81	110.05	354.75	12.71
7.74	4.980	148.23	4	1.6E-07	19	67.85	0	0	88.03	110.33	346.15	12.34
7.76	4.630	148.11	4	1.1E-07	18	62.94	0	0	86.83	108.82	321.12	11.35
7.78	4.040	144.94	4	6.2E-08	17	54.67	0	0	0.00	105.14	278.95	9.74
7.80	3.700	142.53	4	4.3E-08	16	49.91	0	0	0.00	102.77	254.64	8.82
7.82	3.660	139.71	4	4.2E-08	16	49.34	0	0	0.00	101.89	251.76	8.69
7.84	3.350	145.00	3	2.6E-08	15	45.00	0	0	0.00	101.64	229.59	7.84
7.86	2.900	138.22	3	1.5E-08	14	38.69	0	0	0.00	96.81	197.41	6.70
7.88	2.820	132.14	3	1.4E-08	14	37.57	0	0	0.00	94.72	191.67	6.48
7.90	2.540	134.13	3	8.4E-09	13	33.64	0	0	0.00	93.02	171.65	5.79
7.92	2.140	141.90	3	3.4E-09	12	28.04	0	0	0.00	91.27	143.05	4.81
7.94	1.970	145.26	3	2.2E-09	11	24.38	0	0	0.00	90.35	130.88	4.39
7.96	1.970	136.00	3	2.5E-09	11	24.30	0	0	0.00	88.28	130.85	4.38
7.98	2.320	124.63	3	6.2E-09	12	30.54	0	0	0.00	89.04	155.82	5.20
8.00	2.470	100.64	3	1.3E-08	12	32.64	0	0	0.00	83.85	166.51	5.54
8.02	2.760	79.63	4	3.3E-08	12	36.69	0	0	0.00	79.28	187.20	6.26
8.04	3.120	60.75	4	9.6E-08	13	41.73	0	0	0.00	74.14	212.89	7.24
8.06	3.420	55.83	4	1.7E-07	13	45.92	0	0	58.68	73.54	234.29	8.03
8.08	3.510	57.86	4	1.8E-07	13	47.18	0	0	59.76	74.89	240.69	8.24
8.10	4.030	68.19	5	2.5E-07	15	54.45	29	34	65.01	81.48	0.00	0.00
8.12	4.540	76.94	5	3.4E-07	16	61.59	31	34	69.47	87.07	0.00	0.00
8.14	4.690	85.91	5	3.2E-07	17	63.68	31	34	72.73	91.16	0.00	0.00
8.16	5.320	92.05	5	4.9E-07	18	72.50	33	35	76.48	95.86	0.00	0.00
8.18	5.410	108.34	5	3.8E-07	19	73.75	33	35	81.45	102.08	0.00	0.00
8.20	4.990	127.45	4	1.9E-07	19	67.86	0	0	85.22	106.81	346.25	11.69
8.22	4.860	130.62	4	1.6E-07	19	66.04	0	0	85.66	107.36	336.93	11.31
8.24	4.610	136.95	4	1.1E-07	18	62.53	0	0	0.00	108.30	319.05	10.61
8.26	4.310	138.03	4	7.9E-08	18	58.33	0	0	0.00	107.33	297.59	9.81
8.28	5.240	142.40	4	1.8E-07	20	71.34	0	0	90.08	112.90	363.99	12.17
8.30	6.010	157.93	4	2.8E-07	22	82.12	0	0	96.31	120.71	418.97	14.08
8.32	6.290	158.69	5	3.3E-07	23	86.03	36	36	97.43	122.11	0.00	0.00
8.34	6.350	159.67	5	3.4E-07	23	86.87	36	36	97.93	122.74	0.00	0.00
8.36	6.290	160.88	5	3.2E-07	23	86.02	36	36	98.14	123.00	0.00	0.00
8.38	5.440	159.61	4	1.7E-07	21	74.12	0	0	95.27	119.41	378.14	12.46
8.40	5.950	171.62	4	2.1E-07	22	81.25	0	0	99.77	125.05	414.54	13.70
8.42	5.360	170.89	4	1.3E-07	21	72.98	0	0	97.75	122.52	372.37	12.15
8.44	5.670	167.41	4	1.8E-07	22	77.32	0	0	98.12	122.97	394.49	12.92
8.46	6.160	171.30	4	2.5E-07	23	84.17	0	0	100.66	126.16	429.46	14.13
8.48	6.570	161.29	5	3.8E-07	23	89.91	36	36	99.64	124.89	0.00	0.00
8.50	6.600	155.55	5	4.1E-07	23	90.32	36	36	98.44	123.38	0.00	0.00
8.52	6.120	147.32	5	3.2E-07	22	83.60	35	36	95.15	119.26	0.00	0.00
8.54	5.670	152.61	4	2.1E-07	21	77.29	0	0	95.16	119.27	394.35	12.81
8.56	5.820	146.62	4	2.6E-07	21	79.39	0	0	94.28	118.16	405.03	13.18
8.58	5.870	145.32	4	2.7E-07	22	80.08	0	0	94.20	118.07	408.58	13.28
8.60	5.810	149.44	4	2.4E-07	22	79.24	0	0	95.12	119.22	404.26	13.08
8.62	5.830	165.25	4	2.0E-07	22	79.51	0	0	99.04	124.13	405.66	13.03
8.64	5.690	182.46	4	1.4E-07	22	77.54	0	0	102.57	128.56	395.64	12.59

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P8	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	5.690	199.03	4	1.2E-07	23	77.54	0	0	106.26	133.18	395.61	12.50
8.68	5.420	206.32	4	8.5E-08	22	73.75	0	0	0.00	134.01	376.29	11.78
8.70	5.300	210.09	4	7.3E-08	22	72.07	0	0	0.00	134.56	367.69	11.44
8.72	5.180	212.81	4	6.4E-08	22	70.38	0	0	0.00	134.82	359.09	11.11
8.74	5.110	210.69	4	6.1E-08	22	69.40	0	0	0.00	134.08	354.07	10.91
8.76	4.850	206.79	4	4.9E-08	21	65.75	0	0	0.00	131.94	335.47	10.26
8.78	4.500	199.60	3	3.7E-08	20	60.85	0	0	0.00	128.43	310.44	9.41
8.80	4.080	198.02	3	2.4E-08	19	54.96	0	0	0.00	125.80	280.41	8.40
8.82	3.610	197.60	3	1.4E-08	17	48.37	0	0	0.00	122.30	246.81	7.37
8.84	3.410	194.50	3	1.1E-08	17	45.57	0	0	0.00	120.10	232.50	6.93
8.86	3.270	193.61	3	9.1E-09	16	43.60	0	0	0.00	118.84	222.47	6.61
8.88	3.330	194.50	3	9.7E-09	17	44.44	0	0	0.00	119.67	226.73	6.72
8.90	4.330	204.23	3	2.8E-08	20	58.43	0	0	0.00	129.52	298.13	8.84
8.92	5.210	202.20	4	6.9E-08	22	70.75	0	0	0.00	133.62	360.96	10.91
8.94	6.270	174.66	4	2.2E-07	23	85.58	0	0	104.22	130.62	436.64	13.55
8.96	7.410	188.48	5	4.1E-07	26	101.54	38	36	110.79	138.86	0.00	0.00
8.98	7.990	193.33	5	5.5E-07	27	109.65	39	37	113.55	142.32	0.00	0.00
9.00	8.290	200.71	5	5.9E-07	28	113.85	40	37	116.13	145.55	0.00	0.00
9.02	8.700	230.69	5	5.4E-07	30	119.58	41	37	123.99	155.40	0.00	0.00
9.04	9.830	276.32	5	6.3E-07	33	135.39	43	38	136.60	171.21	0.00	0.00
9.06	10.630	299.20	5	7.5E-07	35	146.59	45	38	143.34	179.65	0.00	0.00
9.08	12.610	328.70	5	1.3E-06	40	174.30	50	39	153.94	192.94	0.00	0.00
9.10	13.430	355.82	5	1.5E-06	42	185.78	51	39	161.20	202.04	0.00	0.00
9.12	13.810	373.57	5	1.5E-06	43	191.09	52	39	165.58	207.53	0.00	0.00
9.14	13.770	395.75	5	1.3E-06	44	190.53	52	39	169.81	212.83	0.00	0.00
9.16	14.210	414.76	5	1.3E-06	45	196.68	52	39	174.45	218.65	0.00	0.00
9.18	14.300	404.27	5	1.4E-06	45	197.93	53	39	172.86	216.65	0.00	0.00
9.20	14.020	403.45	5	1.3E-06	45	194.01	52	39	172.22	215.85	0.00	0.00
9.22	13.570	417.64	5	1.0E-06	44	187.70	51	39	173.94	218.01	0.00	0.00
9.24	13.560	406.68	5	1.1E-06	44	187.56	51	39	172.06	215.65	0.00	0.00
9.26	13.320	391.85	5	1.1E-06	43	184.19	50	39	168.90	211.69	0.00	0.00
9.28	13.450	393.47	5	1.1E-06	43	186.00	51	39	169.64	212.62	0.00	0.00
9.30	13.510	399.93	5	1.1E-06	44	186.84	51	39	171.12	214.47	0.00	0.00
9.32	13.690	393.94	5	1.2E-06	44	189.35	51	39	170.55	213.76	0.00	0.00
9.34	13.600	398.38	5	1.1E-06	44	188.09	51	39	171.32	214.72	0.00	0.00
9.36	13.090	383.10	5	1.0E-06	42	180.94	50	39	167.43	209.84	0.00	0.00
9.38	12.950	386.21	5	9.5E-07	42	178.97	49	39	167.83	210.35	0.00	0.00
9.40	12.750	388.71	5	8.6E-07	42	176.17	49	39	167.97	210.52	0.00	0.00
9.42	12.570	374.74	5	8.8E-07	41	173.64	48	39	165.06	206.87	0.00	0.00
9.44	11.650	372.74	5	6.2E-07	40	160.76	46	38	162.62	203.82	0.00	0.00
9.46	10.440	368.62	4	3.8E-07	37	143.81	0	0	158.86	199.11	733.73	21.75
9.48	9.730	337.73	4	3.4E-07	35	133.87	0	0	151.29	189.62	682.99	20.13
9.50	9.850	344.41	4	3.4E-07	35	135.54	0	0	153.02	191.78	691.53	20.34
9.52	10.410	352.21	4	4.1E-07	37	143.37	0	0	156.13	195.69	731.50	21.59
9.54	11.180	350.66	5	5.8E-07	38	154.15	45	38	157.95	197.96	0.00	0.00
9.56	11.020	349.55	5	5.4E-07	38	151.90	45	38	157.47	197.36	0.00	0.00
9.58	11.310	310.03	5	8.1E-07	37	155.96	45	38	150.46	188.58	0.00	0.00
9.60	11.090	333.96	5	6.2E-07	38	152.87	45	38	154.88	194.12	0.00	0.00
9.62	11.700	380.09	5	5.8E-07	40	161.41	46	38	165.36	207.26	0.00	0.00
9.64	13.050	391.28	5	8.9E-07	43	180.30	49	39	170.81	214.09	0.00	0.00
9.66	14.090	406.11	5	1.2E-06	45	194.85	51	39	176.09	220.70	0.00	0.00
9.68	14.550	401.61	5	1.4E-06	46	201.29	52	39	176.37	221.05	0.00	0.00
9.70	14.880	379.49	5	1.7E-06	46	205.90	52	39	172.90	216.70	0.00	0.00
9.72	14.380	369.45	5	1.6E-06	45	198.90	51	39	170.03	213.10	0.00	0.00
9.74	13.460	336.30	5	1.4E-06	42	186.01	50	39	161.58	202.51	0.00	0.00

CPTe P10 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.160	0.00	0	0.0E+00	0	0.14	0	0	0.11	0.14	0.00	0.00
0.04	0.480	0.03	0	0.0E+00	1	4.56	0	0	3.64	4.56	0.00	0.00
0.06	0.590	0.06	0	0.0E+00	1	5.17	0	0	4.13	5.17	0.00	0.00
0.08	0.780	0.06	0	0.0E+00	2	6.83	0	0	5.45	6.83	0.00	0.00
0.10	1.010	0.06	0	0.0E+00	2	8.87	0	0	7.07	8.87	0.00	0.00
0.12	1.220	0.10	0	0.0E+00	3	9.80	0	0	7.82	9.80	0.00	0.00
0.14	1.350	0.06	0	0.0E+00	3	12.17	0	0	9.71	12.17	0.00	0.00
0.16	1.390	0.10	0	0.0E+00	3	11.34	0	0	9.05	11.34	0.00	0.00
0.18	1.370	5.29	6	5.2E-05	3	10.90	50	39	8.70	10.90	0.00	0.00
0.20	1.350	14.04	6	1.5E-05	3	13.53	55	40	10.79	13.53	0.00	0.00
0.22	1.310	21.86	5	6.2E-06	4	15.31	56	40	12.21	15.31	0.00	0.00
0.24	1.250	26.84	5	3.4E-06	4	16.25	56	40	12.97	16.25	0.00	0.00
0.26	1.190	32.83	5	1.9E-06	4	17.17	56	40	13.70	17.17	0.00	0.00
0.28	1.160	35.27	5	1.4E-06	4	16.18	55	40	14.06	17.62	0.00	0.00
0.30	1.150	36.03	5	1.3E-06	4	16.04	54	40	14.31	17.93	0.00	0.00
0.32	1.150	36.12	5	1.2E-06	4	16.03	53	40	14.51	18.19	0.00	0.00
0.34	1.190	35.43	5	1.2E-06	4	16.59	52	39	14.82	18.57	0.00	0.00
0.36	1.210	35.81	5	1.2E-06	4	16.86	52	39	15.15	18.99	0.00	0.00
0.38	1.190	35.87	5	1.1E-06	4	16.58	51	39	15.23	19.09	0.00	0.00
0.40	1.140	32.89	5	1.0E-06	4	15.87	49	39	14.73	18.46	0.00	0.00
0.42	1.120	30.39	5	1.0E-06	4	15.59	47	38	14.42	18.08	0.00	0.00
0.44	1.060	28.14	5	9.3E-07	3	14.74	46	38	13.87	17.39	0.00	0.00
0.46	1.040	26.62	5	9.0E-07	3	14.46	45	38	13.68	17.14	0.00	0.00
0.48	1.040	25.86	5	9.0E-07	3	14.45	44	38	13.69	17.16	0.00	0.00
0.50	1.060	24.27	5	1.0E-06	3	14.73	43	38	13.66	17.13	0.00	0.00
0.52	1.070	22.43	5	1.1E-06	3	14.86	43	37	13.52	16.95	0.00	0.00
0.54	1.110	22.43	5	1.2E-06	4	15.42	43	37	13.84	17.35	0.00	0.00
0.56	1.120	23.04	5	1.1E-06	4	15.55	42	37	14.12	17.70	0.00	0.00
0.58	1.110	22.66	5	1.1E-06	4	15.41	42	37	14.12	17.69	0.00	0.00
0.60	1.050	23.45	5	8.1E-07	3	14.56	41	37	14.06	17.62	0.00	0.00
0.62	0.990	23.99	5	6.1E-07	3	13.72	40	37	13.93	17.46	0.00	0.00
0.64	0.960	24.59	5	5.0E-07	3	13.30	39	37	13.97	17.51	0.00	0.00
0.66	0.990	24.46	5	5.4E-07	3	13.71	39	37	14.23	17.83	0.00	0.00
0.68	1.020	24.59	5	5.7E-07	3	14.13	39	37	14.52	18.20	0.00	0.00
0.70	1.050	25.95	5	5.5E-07	4	14.54	39	37	15.03	18.84	0.00	0.00
0.72	1.100	27.31	5	5.7E-07	4	15.24	40	37	15.64	19.61	0.00	0.00
0.74	1.190	25.70	5	8.0E-07	4	16.49	40	37	15.94	19.98	0.00	0.00
0.76	1.220	24.62	5	9.0E-07	4	16.91	40	37	16.00	20.05	0.00	0.00
0.78	1.270	24.94	5	9.8E-07	4	17.60	40	37	16.41	20.57	0.00	0.00
0.80	1.250	25.70	5	8.5E-07	4	17.32	40	37	16.56	20.75	0.00	0.00
0.82	1.280	26.24	5	8.6E-07	4	17.73	40	37	16.91	21.20	0.00	0.00
0.84	1.280	25.76	5	8.6E-07	4	17.73	40	37	16.92	21.21	0.00	0.00
0.86	1.380	25.03	5	1.1E-06	4	19.12	40	37	17.37	21.76	0.00	0.00
0.88	1.440	25.92	5	1.2E-06	5	19.96	41	37	17.93	22.47	0.00	0.00
0.90	1.520	19.93	5	2.1E-06	5	21.42	40	37	17.09	21.42	0.00	0.00
0.92	1.510	26.97	5	1.3E-06	5	20.93	41	37	18.66	23.39	0.00	0.00
0.94	1.510	30.52	5	9.9E-07	5	20.92	41	37	19.46	24.39	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.500	33.08	5	8.2E-07	5	20.78	41	37	19.99	25.06	0.00	0.00
0.98	1.450	36.22	5	6.1E-07	5	20.08	40	37	20.41	25.58	0.00	0.00
1.00	1.390	39.07	5	4.4E-07	5	19.23	40	37	20.69	25.93	0.00	0.00
1.02	1.340	40.28	4	3.6E-07	5	18.53	0	0	20.72	25.97	94.52	17.79
1.04	1.310	37.26	5	3.7E-07	5	18.10	38	36	20.15	25.25	0.00	0.00
1.06	1.260	34.89	5	3.5E-07	5	17.40	37	36	19.56	24.52	0.00	0.00
1.08	1.240	33.78	5	3.4E-07	4	17.11	37	36	19.35	24.25	0.00	0.00
1.10	1.260	32.86	5	3.6E-07	4	17.39	37	36	19.39	24.30	0.00	0.00
1.12	1.260	31.69	5	3.8E-07	4	17.38	37	36	19.27	24.15	0.00	0.00
1.14	1.270	31.43	5	3.8E-07	5	17.52	36	36	19.36	24.27	0.00	0.00
1.16	1.330	29.66	5	4.8E-07	5	18.35	37	36	19.43	24.36	0.00	0.00
1.18	1.370	28.30	5	5.7E-07	5	18.91	37	36	19.46	24.39	0.00	0.00
1.20	1.400	29.09	5	5.7E-07	5	19.32	37	36	19.86	24.89	0.00	0.00
1.22	1.480	30.23	5	6.4E-07	5	20.44	37	36	20.58	25.80	0.00	0.00
1.24	1.510	31.69	5	6.2E-07	5	20.85	38	36	21.12	26.46	0.00	0.00
1.26	1.570	32.16	5	6.8E-07	5	21.69	38	36	21.60	27.07	0.00	0.00
1.28	1.660	32.83	5	7.9E-07	6	22.94	39	36	22.26	27.89	0.00	0.00
1.30	1.730	33.02	5	8.8E-07	6	23.92	39	37	22.71	28.47	0.00	0.00
1.32	1.710	34.95	5	7.5E-07	6	23.63	39	37	23.11	28.96	0.00	0.00
1.34	1.650	39.93	5	5.1E-07	6	22.79	38	36	23.90	29.95	0.00	0.00
1.36	1.600	43.00	5	3.9E-07	6	22.08	38	36	24.30	30.46	0.00	0.00
1.38	1.590	44.46	5	3.5E-07	6	21.94	38	36	24.60	30.84	0.00	0.00
1.40	1.600	49.12	4	3.0E-07	6	22.07	0	0	25.56	32.04	112.62	16.65
1.42	1.630	53.65	4	2.6E-07	6	22.49	0	0	26.58	33.32	114.74	16.92
1.44	1.670	55.36	4	2.7E-07	6	23.04	0	0	27.19	34.08	117.57	17.12
1.46	1.830	54.53	5	3.8E-07	7	25.28	40	37	28.01	35.11	0.00	0.00
1.48	1.990	52.57	5	5.4E-07	7	27.51	40	37	28.58	35.81	0.00	0.00
1.50	2.000	51.05	5	5.7E-07	7	27.65	40	37	28.45	35.66	0.00	0.00
1.52	2.050	48.58	5	6.6E-07	7	28.34	40	37	28.33	35.51	0.00	0.00
1.54	2.110	45.95	5	8.0E-07	7	29.18	40	37	28.20	35.35	0.00	0.00
1.56	2.180	44.17	5	9.5E-07	7	30.15	41	37	28.26	35.42	0.00	0.00
1.58	2.420	44.65	5	1.4E-06	8	33.51	42	37	29.47	36.93	0.00	0.00
1.60	2.740	46.01	5	2.0E-06	8	39.00	44	38	31.12	39.00	0.00	0.00
1.62	2.990	48.36	5	2.5E-06	9	40.92	45	38	32.65	40.92	0.00	0.00
1.64	3.230	54.53	5	2.7E-06	10	43.75	47	38	34.90	43.75	0.00	0.00
1.66	3.350	63.09	5	2.3E-06	10	46.56	48	39	37.15	46.56	0.00	0.00
1.68	3.460	71.61	5	2.0E-06	11	49.23	49	39	39.28	49.23	0.00	0.00
1.70	3.530	78.40	5	1.8E-06	11	49.02	49	39	40.89	51.25	0.00	0.00
1.72	3.710	85.46	5	1.8E-06	11	51.53	50	39	42.93	53.81	0.00	0.00
1.74	3.950	94.78	5	1.9E-06	12	57.08	51	39	45.55	57.08	0.00	0.00
1.76	4.150	101.43	5	1.9E-06	13	59.57	52	39	47.53	59.57	0.00	0.00
1.78	4.330	107.64	5	2.0E-06	13	61.84	53	40	49.34	61.84	0.00	0.00
1.80	4.610	111.45	5	2.3E-06	14	64.05	54	40	51.10	64.05	0.00	0.00
1.82	4.840	117.85	5	2.5E-06	14	66.54	55	40	53.09	66.54	0.00	0.00
1.84	5.140	121.05	5	2.9E-06	15	68.65	57	40	54.78	68.65	0.00	0.00
1.86	5.440	121.90	5	3.5E-06	16	70.24	58	40	56.04	70.24	0.00	0.00
1.88	5.530	123.14	5	3.6E-06	16	71.04	58	40	56.68	71.04	0.00	0.00
1.90	6.330	130.84	5	5.3E-06	18	75.94	61	41	60.59	75.94	0.00	0.00
1.92	6.640	138.67	5	5.6E-06	18	78.93	62	41	62.98	78.93	0.00	0.00
1.94	6.740	138.92	5	5.8E-06	19	79.54	62	41	63.46	79.54	0.00	0.00
1.96	6.660	143.93	5	5.1E-06	19	80.48	62	41	64.21	80.48	0.00	0.00
1.98	6.510	153.43	5	4.0E-06	19	82.05	61	41	65.46	82.05	0.00	0.00
2.00	6.460	162.30	5	3.4E-06	19	83.80	61	41	66.87	83.80	0.00	0.00
2.02	6.450	165.92	5	3.2E-06	19	84.67	61	41	67.55	84.67	0.00	0.00
2.04	6.400	167.09	5	3.0E-06	19	84.89	61	41	67.73	84.89	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	6.270	174.85	5	2.5E-06	19	86.04	60	41	68.65	86.04	0.00	0.00
2.08	6.150	192.76	5	1.9E-06	19	89.02	60	41	71.03	89.02	0.00	0.00
2.10	6.050	212.94	8	1.4E-06	19	84.19	60	41	73.66	92.32	0.00	0.00
2.12	6.190	229.77	8	1.3E-06	20	86.15	60	41	76.61	96.02	0.00	0.00
2.14	6.370	237.72	8	1.3E-06	20	88.66	61	41	78.51	98.40	0.00	0.00
2.16	6.420	244.63	8	1.2E-06	20	89.35	61	41	79.78	99.99	0.00	0.00
2.18	6.390	249.70	8	1.2E-06	20	88.93	61	41	80.51	100.90	0.00	0.00
2.20	6.300	246.15	8	1.1E-06	20	87.66	60	41	79.89	100.12	0.00	0.00
2.22	6.190	238.89	8	1.1E-06	20	86.12	59	41	78.70	98.63	0.00	0.00
2.24	6.110	219.41	8	1.2E-06	19	84.99	59	40	75.96	95.20	0.00	0.00
2.26	6.050	209.30	5	1.3E-06	19	84.15	58	40	74.50	93.37	0.00	0.00
2.28	6.030	195.92	5	1.5E-06	19	83.86	58	40	72.69	91.10	0.00	0.00
2.30	5.860	181.00	5	1.5E-06	18	81.48	56	40	70.04	87.79	0.00	0.00
2.32	5.620	168.74	5	1.5E-06	18	78.11	55	40	67.49	84.59	0.00	0.00
2.34	5.390	155.97	5	1.5E-06	17	74.88	54	40	64.84	81.26	0.00	0.00
2.36	5.210	143.10	5	1.5E-06	16	72.36	53	39	62.28	78.06	0.00	0.00
2.38	4.940	136.00	5	1.4E-06	16	68.57	51	39	60.29	75.56	0.00	0.00
2.40	4.740	131.12	5	1.2E-06	15	65.77	50	39	58.88	73.80	0.00	0.00
2.42	4.510	127.70	5	1.1E-06	15	62.54	49	39	57.59	72.18	0.00	0.00
2.44	4.350	124.60	5	9.4E-07	14	60.30	48	39	56.59	70.93	0.00	0.00
2.46	4.410	125.01	5	9.8E-07	14	61.13	48	39	57.01	71.46	0.00	0.00
2.48	4.500	127.13	5	1.0E-06	15	62.39	48	39	57.83	72.48	0.00	0.00
2.50	4.840	122.41	5	1.4E-06	15	67.14	50	39	58.38	73.17	0.00	0.00
2.52	5.200	112.40	5	2.2E-06	16	72.58	51	39	57.91	72.58	0.00	0.00
2.54	5.970	95.98	5	5.2E-06	17	71.57	53	40	57.11	71.57	0.00	0.00
2.56	7.470	74.47	6	2.0E-05	18	70.25	58	40	56.05	70.25	0.00	0.00
2.58	9.030	66.26	6	5.2E-05	20	71.69	62	41	57.20	71.69	0.00	0.00
2.60	9.870	59.41	6	8.7E-05	21	71.30	64	41	56.89	71.30	0.00	0.00
2.62	10.640	51.62	6	1.5E-04	22	70.09	66	42	55.92	70.09	0.00	0.00
2.64	10.670	50.86	6	1.5E-04	22	69.95	66	42	55.81	69.95	0.00	0.00
2.66	10.660	51.94	6	1.4E-04	22	70.45	66	42	56.21	70.45	0.00	0.00
2.68	10.650	54.91	6	1.3E-04	22	71.69	66	42	57.20	71.69	0.00	0.00
2.70	10.200	63.95	6	8.4E-05	22	74.20	65	41	59.20	74.20	0.00	0.00
2.72	9.780	67.97	6	6.4E-05	22	74.80	64	41	59.68	74.80	0.00	0.00
2.74	8.750	75.39	6	3.4E-05	21	74.98	61	41	59.82	74.98	0.00	0.00
2.76	7.900	79.47	6	2.0E-05	19	74.19	58	40	59.19	74.19	0.00	0.00
2.78	7.090	80.39	6	1.3E-05	18	72.31	56	40	57.69	72.31	0.00	0.00
2.80	6.150	80.11	6	7.3E-06	17	69.45	52	39	55.41	69.45	0.00	0.00
2.82	5.660	78.59	5	5.3E-06	16	67.49	50	39	53.85	67.49	0.00	0.00
2.84	5.350	75.51	5	4.6E-06	15	65.64	49	39	52.37	65.64	0.00	0.00
2.86	5.050	69.24	5	4.2E-06	14	62.83	47	38	50.13	62.83	0.00	0.00
2.88	5.050	69.24	5	4.2E-06	14	62.94	47	38	50.22	62.94	0.00	0.00
2.90	4.060	50.95	5	3.0E-06	12	53.61	42	37	42.77	53.61	0.00	0.00
2.92	3.430	46.93	5	1.7E-06	11	47.29	39	37	39.75	49.82	0.00	0.00
2.94	2.750	43.35	5	8.1E-07	9	37.77	35	36	36.42	45.64	0.00	0.00
2.96	2.160	41.42	5	3.3E-07	8	29.50	32	35	33.51	42.00	0.00	0.00
2.98	1.890	41.29	4	1.9E-07	7	25.72	0	0	32.25	40.42	131.21	10.31
3.00	1.500	42.49	4	6.9E-08	6	20.25	0	0	0.00	38.19	103.33	8.36
3.02	1.370	43.86	4	4.5E-08	6	18.43	0	0	0.00	37.65	94.02	7.68
3.04	1.350	44.49	4	4.0E-08	6	18.14	0	0	0.00	37.75	92.56	7.54
3.06	1.230	48.77	3	2.3E-08	6	16.46	0	0	0.00	37.95	83.97	6.93
3.08	1.200	50.57	3	1.9E-08	6	16.03	0	0	0.00	38.22	81.80	6.75
3.10	1.090	52.79	3	1.2E-08	5	14.49	0	0	0.00	37.80	73.92	6.16
3.12	1.330	47.28	4	3.2E-08	6	17.84	0	0	0.00	38.68	91.03	7.30
3.14	2.440	34.06	5	6.7E-07	8	33.38	33	35	33.29	41.73	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	2.980	28.77	5	1.9E-06	9	42.23	35	36	33.70	42.23	0.00	0.00
3.18	2.600	31.94	5	9.4E-07	8	35.61	33	35	33.41	41.87	0.00	0.00
3.20	1.590	53.36	4	5.1E-08	7	21.46	0	0	0.00	42.76	109.51	8.46
3.22	1.340	73.67	3	1.3E-08	6	17.96	0	0	0.00	45.59	91.62	7.33
3.24	1.520	80.77	3	1.9E-08	7	20.47	0	0	0.00	48.91	104.45	8.22
3.26	2.060	79.92	4	6.7E-08	9	28.03	0	0	0.00	53.16	143.00	10.77
3.28	1.990	86.82	4	4.9E-08	9	27.04	0	0	0.00	54.33	137.97	10.43
3.30	1.700	98.64	3	1.9E-08	8	22.98	0	0	0.00	54.57	117.23	9.05
3.32	1.510	97.25	3	1.2E-08	7	20.31	0	0	0.00	52.65	103.63	8.06
3.34	1.390	86.79	3	1.0E-08	7	18.63	0	0	0.00	49.48	95.04	7.38
3.36	1.360	83.18	3	1.0E-08	7	18.20	0	0	0.00	48.55	92.87	7.17
3.38	1.290	90.53	3	6.6E-09	7	17.22	0	0	0.00	49.64	87.84	6.74
3.40	1.190	95.19	3	4.1E-09	6	15.81	0	0	0.00	49.78	80.67	6.15
3.42	1.130	87.08	3	3.8E-09	6	14.97	0	0	0.00	47.64	76.36	5.79
3.44	1.110	82.20	3	3.9E-09	6	14.68	0	0	0.00	46.52	74.91	5.65
3.46	1.070	73.83	3	4.1E-09	6	14.12	0	0	0.00	44.40	72.02	5.40
3.48	1.070	63.47	3	5.5E-09	6	14.11	0	0	0.00	42.08	72.00	5.36
3.50	1.220	50.45	3	1.5E-08	6	16.21	0	0	0.00	40.20	82.69	6.07
3.52	1.380	43.13	4	3.4E-08	6	18.44	0	0	0.00	39.61	94.09	6.73
3.54	1.540	40.05	4	6.1E-08	6	20.68	0	0	0.00	39.93	105.50	7.42
3.56	1.470	40.66	4	4.8E-08	6	19.69	0	0	0.00	39.63	100.47	7.09
3.58	1.360	48.36	3	2.5E-08	6	18.15	0	0	0.00	41.06	92.59	6.63
3.60	1.300	55.23	3	1.6E-08	6	17.30	0	0	0.00	42.43	88.28	6.37
3.62	1.330	62.39	3	1.4E-08	6	17.72	0	0	0.00	44.55	90.39	6.53
3.64	1.760	64.04	4	4.4E-08	8	23.73	0	0	0.00	48.62	121.08	8.49
3.66	1.890	63.28	4	6.0E-08	8	25.55	0	0	0.00	49.42	130.34	9.05
3.68	1.930	60.68	4	7.1E-08	8	26.10	0	0	0.00	49.04	133.17	9.19
3.70	2.400	57.29	4	2.0E-07	9	32.68	0	0	40.78	51.12	166.72	11.20
3.72	2.820	50.61	5	4.7E-07	10	38.55	33	35	40.97	51.35	0.00	0.00
3.74	2.890	40.21	5	7.8E-07	10	39.53	34	35	38.40	48.13	0.00	0.00
3.76	2.740	35.43	5	7.7E-07	9	37.42	33	35	36.43	45.65	0.00	0.00
3.78	2.980	35.11	5	1.1E-06	10	40.78	34	35	37.23	46.66	0.00	0.00
3.80	3.200	34.13	5	1.5E-06	10	43.85	35	36	37.70	47.25	0.00	0.00
3.82	3.610	39.51	5	2.0E-06	11	51.09	37	36	40.77	51.09	0.00	0.00
3.84	4.100	41.35	5	3.0E-06	12	53.71	39	37	42.86	53.71	0.00	0.00
3.86	4.260	39.55	5	3.8E-06	12	53.61	40	37	42.78	53.61	0.00	0.00
3.88	4.120	38.28	5	3.5E-06	12	52.64	39	37	42.00	52.64	0.00	0.00
3.90	3.280	29.69	5	2.1E-06	10	45.87	35	36	36.60	45.87	0.00	0.00
3.92	2.810	36.03	5	8.0E-07	9	38.36	33	35	37.09	46.48	0.00	0.00
3.94	2.340	41.86	5	2.9E-07	9	31.78	30	34	36.93	46.28	0.00	0.00
3.96	2.560	41.92	5	4.2E-07	9	34.85	31	35	37.91	47.51	0.00	0.00
3.98	3.230	50.64	5	7.8E-07	11	44.23	35	36	42.94	53.82	0.00	0.00
4.00	3.870	57.16	5	1.3E-06	12	53.18	38	36	46.94	58.83	0.00	0.00
4.02	4.230	58.21	5	1.8E-06	13	60.66	40	37	48.40	60.66	0.00	0.00
4.04	4.500	54.50	5	2.7E-06	13	60.44	41	37	48.22	60.44	0.00	0.00
4.06	4.590	51.65	5	3.2E-06	13	59.78	41	37	47.70	59.78	0.00	0.00
4.08	4.630	48.89	5	3.6E-06	13	58.94	41	37	47.03	58.94	0.00	0.00
4.10	4.580	44.71	5	4.0E-06	13	57.21	41	37	45.65	57.21	0.00	0.00
4.12	4.460	33.24	6	5.7E-06	12	52.10	40	37	41.57	52.10	0.00	0.00
4.14	4.340	28.17	6	6.6E-06	12	49.42	40	37	39.43	49.42	0.00	0.00
4.16	4.250	27.12	6	6.4E-06	12	48.66	39	37	38.82	48.66	0.00	0.00
4.18	4.080	27.63	6	5.2E-06	11	48.36	38	36	38.58	48.36	0.00	0.00
4.20	3.890	29.75	5	3.9E-06	11	48.70	38	36	38.86	48.70	0.00	0.00
4.22	3.840	30.77	5	3.5E-06	11	49.01	37	36	39.10	49.01	0.00	0.00
4.24	3.720	30.23	5	3.1E-06	11	48.36	37	36	38.58	48.36	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	3.450	28.61	5	2.5E-06	10	46.64	35	36	37.21	46.64	0.00	0.00
4.28	3.420	26.52	5	2.7E-06	10	45.59	35	36	36.37	45.59	0.00	0.00
4.30	3.320	24.59	5	2.6E-06	10	44.31	35	35	35.36	44.31	0.00	0.00
4.32	3.220	21.90	5	2.8E-06	10	42.63	34	35	34.01	42.63	0.00	0.00
4.34	3.160	20.09	5	2.9E-06	9	41.49	34	35	33.10	41.49	0.00	0.00
4.36	3.200	19.17	5	3.2E-06	9	41.18	34	35	32.86	41.18	0.00	0.00
4.38	3.300	18.51	5	3.8E-06	9	41.24	34	35	32.90	41.24	0.00	0.00
4.40	3.630	20.03	6	5.0E-06	10	43.29	36	36	34.54	43.29	0.00	0.00
4.42	3.780	24.56	5	4.4E-06	11	46.17	37	36	36.84	46.17	0.00	0.00
4.44	4.430	25.26	6	7.9E-06	12	48.74	40	37	38.89	48.74	0.00	0.00
4.46	4.640	24.02	6	1.0E-05	12	48.81	40	37	38.94	48.81	0.00	0.00
4.48	4.730	20.82	6	1.3E-05	12	47.43	41	37	37.84	47.43	0.00	0.00
4.50	4.940	16.76	6	2.1E-05	12	45.80	41	37	36.54	45.80	0.00	0.00
4.52	4.740	14.54	6	2.1E-05	12	43.91	40	37	35.03	43.91	0.00	0.00
4.54	4.220	13.37	6	1.4E-05	11	41.60	38	36	33.20	41.60	0.00	0.00
4.56	3.660	16.07	6	6.7E-06	10	41.39	36	36	33.02	41.39	0.00	0.00
4.58	3.290	24.59	5	2.4E-06	10	44.57	34	35	35.56	44.57	0.00	0.00
4.60	3.250	32.35	5	1.5E-06	10	44.36	34	35	38.28	47.98	0.00	0.00
4.62	3.330	55.64	5	6.5E-07	11	45.47	35	35	45.58	57.13	0.00	0.00
4.64	3.780	67.37	5	7.8E-07	13	51.77	37	36	50.26	62.99	0.00	0.00
4.66	4.020	69.33	5	9.5E-07	13	55.12	38	36	51.61	64.69	0.00	0.00
4.68	4.140	66.10	5	1.2E-06	13	56.80	39	36	51.22	64.20	0.00	0.00
4.70	4.270	60.40	5	1.6E-06	13	58.61	39	37	50.16	62.87	0.00	0.00
4.72	4.050	55.77	5	1.5E-06	13	55.53	38	36	48.23	60.45	0.00	0.00
4.74	3.660	41.42	5	1.6E-06	11	50.06	36	36	42.78	53.62	0.00	0.00
4.76	3.200	20.95	5	2.6E-06	10	42.66	33	35	34.04	42.66	0.00	0.00
4.78	2.810	16.54	5	2.1E-06	9	38.72	31	34	30.90	38.72	0.00	0.00
4.80	2.660	20.15	5	1.3E-06	8	36.05	31	34	31.96	40.06	0.00	0.00
4.82	2.550	30.55	5	5.7E-07	9	34.50	30	34	35.45	44.43	0.00	0.00
4.84	2.500	55.20	4	1.9E-07	9	33.80	0	0	42.44	53.19	172.44	10.42
4.86	2.490	62.33	4	1.5E-07	10	33.65	0	0	44.18	55.38	171.70	10.40
4.88	2.420	67.94	4	1.1E-07	10	32.67	0	0	0.00	56.64	166.67	10.12
4.90	2.490	73.74	4	1.1E-07	10	33.64	0	0	0.00	58.75	171.65	10.41
4.92	2.810	83.75	4	1.4E-07	11	38.12	0	0	50.61	63.44	194.48	11.72
4.94	3.210	79.50	4	2.7E-07	12	43.71	0	0	51.48	64.53	223.02	13.27
4.96	3.480	77.57	5	3.9E-07	12	47.49	35	36	52.17	65.38	0.00	0.00
4.98	3.740	71.04	5	6.3E-07	13	51.12	36	36	51.61	64.68	0.00	0.00
5.00	4.140	64.29	5	1.2E-06	13	56.72	38	36	51.28	64.27	0.00	0.00
5.02	4.200	62.08	5	1.3E-06	13	57.55	38	36	50.92	63.82	0.00	0.00
5.04	4.240	55.68	5	1.7E-06	13	58.11	38	36	49.30	61.79	0.00	0.00
5.06	4.220	43.51	5	2.5E-06	13	57.15	38	36	45.60	57.15	0.00	0.00
5.08	4.330	35.81	5	3.8E-06	12	54.35	38	36	43.37	54.35	0.00	0.00
5.10	4.490	37.04	5	4.1E-06	13	55.47	39	37	44.26	55.47	0.00	0.00
5.12	4.550	39.07	5	4.0E-06	13	56.58	39	37	45.14	56.58	0.00	0.00
5.14	4.560	52.98	5	2.4E-06	14	62.18	40	37	49.61	62.18	0.00	0.00
5.16	4.460	58.05	5	1.8E-06	14	63.70	39	37	50.82	63.70	0.00	0.00
5.18	4.060	53.62	5	1.4E-06	13	55.55	37	36	48.37	60.62	0.00	0.00
5.20	3.850	47.02	5	1.4E-06	12	52.61	36	36	45.78	57.38	0.00	0.00
5.22	3.630	55.36	5	8.3E-07	12	49.52	35	36	47.52	59.55	0.00	0.00
5.24	3.380	76.15	5	3.4E-07	12	46.02	34	35	51.94	65.10	0.00	0.00
5.26	3.120	89.68	4	1.8E-07	12	42.37	0	0	53.93	67.59	216.18	12.57
5.28	3.070	100.61	4	1.3E-07	12	41.67	0	0	56.01	70.19	212.58	12.39
5.30	3.420	103.81	4	1.9E-07	13	46.56	0	0	58.26	73.02	237.56	13.74
5.32	3.790	104.13	4	3.0E-07	14	51.74	0	0	59.91	75.09	263.96	15.14
5.34	3.630	107.29	4	2.3E-07	14	49.49	0	0	59.95	75.14	252.50	14.51

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	3.570	102.07	4	2.4E-07	13	48.65	0	0	58.67	73.54	248.19	14.23
5.38	3.400	96.11	4	2.1E-07	13	46.26	0	0	56.75	71.13	236.02	13.52
5.40	3.380	92.75	4	2.2E-07	13	45.97	0	0	55.99	70.18	234.56	13.41
5.42	3.430	93.42	4	2.3E-07	13	46.67	0	0	56.39	70.67	238.11	13.58
5.44	3.670	86.73	5	3.6E-07	13	50.02	35	36	55.91	70.08	0.00	0.00
5.46	3.830	76.43	5	5.5E-07	13	52.26	36	36	54.13	67.84	0.00	0.00
5.48	4.020	58.24	5	1.1E-06	13	54.91	37	36	50.06	62.74	0.00	0.00
5.50	4.120	44.58	5	2.0E-06	13	58.05	37	36	46.32	58.05	0.00	0.00
5.52	4.260	40.24	5	2.7E-06	13	56.81	38	36	45.33	56.81	0.00	0.00
5.54	4.400	40.12	5	3.0E-06	13	57.29	38	36	45.71	57.29	0.00	0.00
5.56	4.470	42.87	5	2.9E-06	13	58.72	38	36	46.85	58.72	0.00	0.00
5.58	4.740	46.33	5	3.2E-06	14	61.10	40	37	48.75	61.10	0.00	0.00
5.60	5.190	53.17	5	3.7E-06	15	65.34	41	37	52.13	65.34	0.00	0.00
5.62	5.740	55.52	6	5.3E-06	16	68.03	43	38	54.28	68.03	0.00	0.00
5.64	6.220	60.52	6	6.3E-06	17	71.42	45	38	56.99	71.42	0.00	0.00
5.66	6.330	62.42	6	6.4E-06	17	72.50	45	38	57.85	72.50	0.00	0.00
5.68	6.510	67.21	6	6.3E-06	18	74.84	46	38	59.72	74.84	0.00	0.00
5.70	6.890	73.77	6	6.7E-06	19	78.35	47	38	62.51	78.35	0.00	0.00
5.72	7.510	82.48	6	7.8E-06	20	83.17	49	39	66.36	83.17	0.00	0.00
5.74	7.910	84.89	6	9.2E-06	21	85.14	51	39	67.93	85.14	0.00	0.00
5.76	7.600	94.62	6	6.3E-06	21	87.57	50	39	69.87	87.57	0.00	0.00
5.78	7.510	96.96	5	5.7E-06	21	88.11	49	39	70.30	88.11	0.00	0.00
5.80	7.410	104.28	5	4.6E-06	21	90.17	49	39	71.94	90.17	0.00	0.00
5.82	7.200	107.96	5	3.8E-06	21	90.70	48	39	72.37	90.70	0.00	0.00
5.84	7.150	119.78	5	3.0E-06	21	94.08	48	39	75.06	94.08	0.00	0.00
5.86	6.700	136.99	5	1.7E-06	21	92.34	47	38	77.69	97.37	0.00	0.00
5.88	6.700	136.99	5	1.7E-06	21	92.33	47	38	77.74	97.43	0.00	0.00
5.90	6.010	91.74	5	2.4E-06	18	82.09	44	38	65.50	82.09	0.00	0.00
5.92	5.550	97.34	5	1.5E-06	17	76.22	42	37	65.62	82.24	0.00	0.00
5.94	4.670	105.74	5	6.1E-07	16	63.89	39	37	64.82	81.24	0.00	0.00
5.96	3.840	106.12	4	2.6E-07	14	52.27	0	0	61.88	77.56	266.68	14.46
5.98	3.250	98.83	4	1.5E-07	13	44.00	0	0	57.90	72.57	224.51	12.22
6.00	2.690	82.48	4	9.1E-08	11	36.16	0	0	0.00	64.94	184.48	10.07
6.02	2.250	74.24	4	5.1E-08	10	29.99	0	0	0.00	59.87	153.03	8.39
6.04	2.000	80.84	3	2.5E-08	9	26.49	0	0	0.00	59.91	135.14	7.45
6.06	1.870	85.14	3	1.7E-08	9	24.66	0	0	0.00	60.03	125.83	6.95
6.08	1.720	84.26	3	1.2E-08	8	22.56	0	0	0.00	58.60	115.09	6.36
6.10	1.690	79.69	3	1.2E-08	8	22.13	0	0	0.00	57.23	112.92	6.23
6.12	1.650	77.13	3	1.2E-08	8	21.57	0	0	0.00	56.28	110.04	6.05
6.14	1.700	71.71	3	1.5E-08	8	22.26	0	0	0.00	55.30	113.58	6.23
6.16	1.810	62.71	3	2.6E-08	8	23.80	0	0	0.00	53.69	121.41	6.61
6.18	1.870	54.85	4	3.8E-08	8	24.63	0	0	0.00	51.78	125.67	6.81
6.20	1.900	54.03	4	4.2E-08	8	25.05	0	0	0.00	51.77	127.79	6.90
6.22	1.830	54.95	4	3.4E-08	8	24.06	0	0	0.00	51.59	122.77	6.63
6.24	1.740	58.37	3	2.4E-08	8	22.80	0	0	0.00	52.01	116.31	6.29
6.26	1.620	62.55	3	1.5E-08	8	21.11	0	0	0.00	52.31	107.72	5.84
6.28	1.560	63.82	3	1.2E-08	8	20.27	0	0	0.00	52.21	103.40	5.60
6.30	1.550	62.23	3	1.3E-08	8	20.12	0	0	0.00	51.71	102.66	5.55
6.32	1.550	60.33	3	1.3E-08	8	20.12	0	0	0.00	51.19	102.64	5.54
6.34	1.490	58.27	3	1.2E-08	7	19.27	0	0	0.00	50.12	98.33	5.30
6.36	1.470	55.39	3	1.2E-08	7	18.99	0	0	0.00	49.12	96.87	5.21
6.38	1.440	50.99	3	1.3E-08	7	18.56	0	0	0.00	47.54	94.71	5.08
6.40	1.490	46.96	3	1.7E-08	7	19.26	0	0	0.00	46.70	98.25	5.25
6.42	1.610	43.98	4	2.7E-08	7	20.93	0	0	0.00	46.68	106.80	5.68
6.44	1.780	42.11	4	4.6E-08	8	23.31	0	0	0.00	47.29	118.92	6.29

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	1.790	42.84	4	4.6E-08	8	23.44	0	0	0.00	47.66	119.61	6.31
6.48	1.680	43.16	4	3.4E-08	7	21.90	0	0	0.00	47.01	111.72	5.90
6.50	1.860	40.91	4	5.8E-08	8	24.41	0	0	0.00	47.49	124.56	6.54
6.52	1.680	42.40	4	3.5E-08	7	21.89	0	0	0.00	46.81	111.67	5.88
6.54	1.670	42.97	4	3.3E-08	7	21.74	0	0	0.00	46.97	110.93	5.83
6.56	1.710	42.84	4	3.6E-08	8	22.30	0	0	0.00	47.24	113.77	5.97
6.58	1.730	42.97	4	3.8E-08	8	22.57	0	0	0.00	47.47	115.17	6.03
6.60	1.790	39.39	4	5.1E-08	8	23.41	0	0	0.00	46.61	119.43	6.23
6.62	1.820	39.10	4	5.6E-08	8	23.82	0	0	0.00	46.73	121.55	6.32
6.64	1.880	40.34	4	6.1E-08	8	24.66	0	0	0.00	47.63	125.81	6.53
6.66	1.930	39.96	4	6.9E-08	8	25.35	0	0	0.00	47.84	129.36	6.70
6.68	1.930	43.95	4	5.8E-08	8	25.35	0	0	0.00	49.35	129.33	6.69
6.70	1.940	44.71	4	5.7E-08	8	25.48	0	0	0.00	49.73	130.02	6.72
6.72	2.000	46.26	4	6.2E-08	8	26.32	0	0	0.00	50.71	134.28	6.93
6.74	2.030	46.20	4	6.6E-08	8	26.73	0	0	0.00	50.92	136.40	7.02
6.76	2.020	45.98	4	6.5E-08	8	26.59	0	0	0.00	50.80	135.66	6.97
6.78	1.990	47.34	4	5.7E-08	8	26.16	0	0	0.00	51.13	133.49	6.86
6.80	1.920	48.23	4	4.7E-08	8	25.18	0	0	0.00	51.00	128.46	6.59
6.82	1.830	47.88	4	3.8E-08	8	23.91	0	0	0.00	50.29	122.01	6.26
6.84	2.010	46.49	4	6.1E-08	8	26.43	0	0	0.00	51.06	134.84	6.89
6.86	2.970	49.05	5	3.1E-07	11	39.86	30	34	45.80	57.41	0.00	0.00
6.88	3.200	49.46	5	4.2E-07	11	43.08	31	34	46.83	58.69	0.00	0.00
6.90	4.190	56.63	5	1.1E-06	14	56.93	35	36	52.35	65.62	0.00	0.00
6.92	4.220	62.93	5	9.0E-07	14	57.35	36	36	54.32	68.09	0.00	0.00
6.94	4.170	87.05	5	4.6E-07	15	56.64	35	36	60.56	75.90	0.00	0.00
6.96	4.280	121.49	4	2.6E-07	16	58.18	0	0	68.77	86.20	296.83	14.89
6.98	4.780	147.41	4	2.8E-07	17	65.17	0	0	75.96	95.20	332.52	16.65
7.00	5.440	171.68	4	3.6E-07	19	74.41	0	0	83.08	104.13	379.63	18.95
7.02	5.950	179.45	5	4.8E-07	21	81.54	42	37	86.38	108.27	0.00	0.00
7.04	6.890	183.95	5	8.6E-07	23	94.70	46	38	90.34	113.22	0.00	0.00
7.06	8.100	194.72	5	1.5E-06	25	111.63	49	39	96.00	120.31	0.00	0.00
7.08	9.320	210.06	5	2.4E-06	28	128.18	53	39	102.27	128.18	0.00	0.00
7.10	10.130	225.71	5	2.9E-06	30	134.58	55	40	107.38	134.58	0.00	0.00
7.12	10.770	243.46	5	3.2E-06	31	140.83	57	40	112.36	140.83	0.00	0.00
7.14	11.010	263.90	5	2.9E-06	32	146.36	57	40	116.78	146.36	0.00	0.00
7.16	10.480	304.27	5	1.7E-06	32	144.92	56	40	122.50	153.54	0.00	0.00
7.18	10.570	317.86	5	1.6E-06	33	146.18	56	40	125.08	156.77	0.00	0.00
7.20	10.670	316.02	5	1.7E-06	33	147.57	56	40	125.13	156.83	0.00	0.00
7.22	10.200	315.55	5	1.4E-06	32	140.99	55	40	123.81	155.18	0.00	0.00
7.24	10.190	308.42	5	1.4E-06	32	140.84	55	40	122.68	153.76	0.00	0.00
7.26	10.950	308.64	5	1.9E-06	33	156.50	57	40	124.87	156.50	0.00	0.00
7.28	11.210	311.71	5	2.1E-06	34	158.10	58	40	126.14	158.10	0.00	0.00
7.30	10.650	314.98	5	1.6E-06	33	147.26	56	40	125.27	157.00	0.00	0.00
7.32	11.120	313.83	5	2.0E-06	34	158.43	57	40	126.41	158.43	0.00	0.00
7.34	10.970	316.08	5	1.8E-06	34	151.73	57	40	126.46	158.50	0.00	0.00
7.36	10.750	316.05	5	1.7E-06	33	148.65	56	40	125.94	157.84	0.00	0.00
7.38	10.200	314.60	5	1.3E-06	32	140.94	55	40	124.24	155.72	0.00	0.00
7.40	9.250	315.96	5	8.6E-07	30	127.63	52	39	121.75	152.59	0.00	0.00
7.42	8.160	301.10	4	5.6E-07	28	112.37	0	0	115.98	145.36	573.31	27.50
7.44	7.540	284.52	4	4.5E-07	26	103.68	0	0	111.31	139.51	528.99	25.34
7.46	7.830	284.14	4	5.3E-07	27	107.74	0	0	112.30	140.75	549.68	26.27
7.48	8.150	287.15	5	6.1E-07	28	112.21	49	39	113.91	142.76	0.00	0.00
7.50	8.080	271.06	5	6.7E-07	27	111.23	48	39	111.09	139.23	0.00	0.00
7.52	7.660	266.40	5	5.5E-07	26	105.34	47	38	109.02	136.64	0.00	0.00
7.54	8.410	254.58	5	9.1E-07	28	115.83	49	39	109.41	137.13	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P10	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	8.890	256.39	5	1.1E-06	29	122.55	51	39	111.20	139.38	0.00	0.00
7.58	10.390	293.17	5	1.6E-06	32	143.54	55	40	121.86	152.73	0.00	0.00
7.60	10.750	284.24	5	2.0E-06	33	152.05	56	40	121.32	152.05	0.00	0.00
7.62	10.120	281.83	5	1.6E-06	31	139.75	54	40	119.30	149.52	0.00	0.00
7.64	9.570	293.33	5	1.1E-06	31	132.05	52	39	119.81	150.17	0.00	0.00
7.66	9.530	300.56	5	1.1E-06	31	131.48	52	39	120.98	151.63	0.00	0.00
7.68	10.340	306.55	5	1.4E-06	33	142.81	54	40	124.36	155.86	0.00	0.00
7.70	11.250	316.62	5	1.9E-06	34	161.15	57	40	128.58	161.15	0.00	0.00
7.72	12.850	318.71	5	3.3E-06	37	166.68	61	41	132.99	166.68	0.00	0.00
7.74	15.100	338.27	5	5.8E-06	42	177.45	66	42	141.58	177.45	0.00	0.00
7.76	16.650	372.33	5	7.0E-06	45	189.17	69	42	150.93	189.17	0.00	0.00
7.78	19.320	389.82	6	1.2E-05	50	199.78	74	43	159.40	199.78	0.00	0.00
7.80	26.640	413.43	6	4.1E-05	61	220.91	87	44	176.26	220.91	0.00	0.00
7.82	33.420	457.22	6	8.3E-05	72	243.75	98	45	194.48	243.75	0.00	0.00
7.84	40.990	494.64	6	1.6E-04	83	265.26	100	46	211.64	265.26	0.00	0.00
7.86	44.620	488.18	6	2.4E-04	87	269.16	100	47	214.75	269.16	0.00	0.00

CPTe P13 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P13	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.030	0.06	5	9.3E-07	0	0.42	22	31	0.39	0.49	0.00	0.00
0.04	0.130	0.06	0	0.0E+00	0	1.43	0	0	1.14	1.43	0.00	0.00
0.06	0.320	0.10	0	0.0E+00	1	2.98	0	0	2.38	2.98	0.00	0.00
0.08	0.500	0.10	0	0.0E+00	1	4.38	0	0	3.49	4.38	0.00	0.00
0.10	0.600	0.10	0	0.0E+00	1	5.15	0	0	4.11	5.15	0.00	0.00
0.12	0.760	0.13	0	0.0E+00	2	6.33	0	0	5.05	6.33	0.00	0.00
0.14	0.940	0.13	0	0.0E+00	2	7.58	0	0	6.05	7.58	0.00	0.00
0.16	1.170	0.19	0	0.0E+00	3	8.82	0	0	7.04	8.82	0.00	0.00
0.18	2.460	0.44	0	0.0E+00	5	14.83	0	0	11.83	14.83	0.00	0.00
0.20	3.300	0.57	0	0.0E+00	6	18.37	0	0	14.66	18.37	0.00	0.00
0.22	3.030	0.60	0	0.0E+00	6	17.26	0	0	13.78	17.26	0.00	0.00
0.24	1.750	0.35	0	0.0E+00	4	12.13	0	0	9.68	12.13	0.00	0.00
0.26	1.620	1.24	0	0.0E+00	3	11.06	0	0	8.82	11.06	0.00	0.00
0.28	1.640	7.61	6	4.0E-05	4	13.70	50	39	10.93	13.70	0.00	0.00
0.30	1.810	21.04	6	1.4E-05	5	18.26	57	40	14.57	18.26	0.00	0.00
0.32	1.880	29.09	6	8.7E-06	5	20.67	59	41	16.49	20.67	0.00	0.00
0.34	1.220	42.24	5	1.1E-06	4	17.01	55	40	15.59	19.54	0.00	0.00
0.36	1.230	43.73	5	9.8E-07	4	17.15	55	40	15.97	20.02	0.00	0.00
0.38	1.300	37.26	5	1.4E-06	4	18.12	53	40	15.77	19.76	0.00	0.00
0.40	1.330	36.06	5	1.5E-06	4	18.54	52	39	15.94	19.97	0.00	0.00
0.42	1.810	33.24	5	4.5E-06	5	22.36	55	40	17.84	22.36	0.00	0.00
0.44	1.690	33.46	5	3.4E-06	5	21.99	54	40	17.55	21.99	0.00	0.00
0.46	0.820	48.51	9	1.5E-07	3	11.38	0	0	14.89	18.67	58.07	24.47
0.48	0.890	47.94	9	1.9E-07	3	12.36	0	0	15.49	19.41	63.05	24.68
0.50	1.050	50.00	9	2.9E-07	4	14.59	0	0	16.93	21.22	74.45	26.45
0.52	1.110	49.91	4	3.3E-07	4	15.43	0	0	17.46	21.89	78.71	26.49
0.54	1.160	55.87	9	3.0E-07	4	16.12	0	0	18.62	23.34	82.26	27.17
0.56	1.180	63.63	9	2.4E-07	4	16.40	0	0	19.78	24.79	83.66	27.59
0.58	1.210	56.88	9	3.0E-07	4	16.81	0	0	19.38	24.29	85.78	26.53
0.60	1.290	44.14	5	5.7E-07	4	17.93	47	38	18.41	23.08	0.00	0.00
0.62	1.390	44.93	5	6.9E-07	5	19.32	47	38	19.21	24.08	0.00	0.00
0.64	1.440	46.07	5	7.1E-07	5	20.02	48	38	19.78	24.79	0.00	0.00
0.66	1.480	45.88	5	7.5E-07	5	20.57	47	38	20.11	25.21	0.00	0.00
0.68	1.620	42.91	5	1.1E-06	5	22.53	48	39	20.52	25.72	0.00	0.00
0.70	1.850	36.25	5	2.3E-06	6	25.84	49	39	20.62	25.84	0.00	0.00
0.72	1.570	35.68	5	1.3E-06	5	21.82	46	38	19.39	24.31	0.00	0.00
0.74	1.600	36.22	5	1.3E-06	5	22.23	46	38	19.75	24.76	0.00	0.00
0.76	1.670	35.68	5	1.5E-06	5	23.21	46	38	20.11	25.20	0.00	0.00
0.78	1.690	36.50	5	1.4E-06	5	23.48	46	38	20.47	25.65	0.00	0.00
0.80	1.710	37.42	5	1.4E-06	5	23.76	46	38	20.84	26.12	0.00	0.00
0.82	1.710	37.68	5	1.3E-06	5	23.75	45	38	21.01	26.33	0.00	0.00
0.84	1.740	39.99	5	1.2E-06	6	24.17	45	38	21.67	27.15	0.00	0.00
0.86	1.840	39.29	5	1.5E-06	6	25.56	46	38	22.12	27.73	0.00	0.00
0.88	1.970	38.28	5	1.9E-06	6	28.37	46	38	22.63	28.37	0.00	0.00
0.90	2.110	37.58	5	2.4E-06	6	29.09	47	38	23.21	29.09	0.00	0.00
0.92	2.210	37.55	5	2.8E-06	7	29.74	47	38	23.73	29.74	0.00	0.00
0.94	2.400	38.82	5	3.4E-06	7	31.12	49	39	24.83	31.12	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P13	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	2.570	40.81	5	3.9E-06	7	32.56	50	39	25.98	32.56	0.00	0.00
0.98	2.570	40.81	5	3.8E-06	7	32.72	49	39	26.10	32.72	0.00	0.00
1.00	2.910	32.70	6	8.2E-06	8	32.21	50	39	25.70	32.21	0.00	0.00
1.02	2.950	35.90	6	7.2E-06	8	33.41	51	39	26.66	33.41	0.00	0.00
1.04	2.950	41.89	5	5.5E-06	8	35.14	51	39	28.04	35.14	0.00	0.00
1.06	2.960	48.04	5	4.3E-06	8	36.87	51	39	29.41	36.87	0.00	0.00
1.08	3.150	54.47	5	4.2E-06	9	39.39	53	39	31.43	39.39	0.00	0.00
1.10	3.320	60.84	5	4.1E-06	9	41.77	54	40	33.33	41.77	0.00	0.00
1.12	3.760	70.44	5	4.7E-06	11	45.99	56	40	36.69	45.99	0.00	0.00
1.14	3.840	69.93	5	5.1E-06	11	46.39	56	40	37.02	46.39	0.00	0.00
1.16	4.020	69.52	5	5.9E-06	11	47.23	57	40	37.68	47.23	0.00	0.00
1.18	4.020	70.44	5	5.7E-06	11	47.61	57	40	37.99	47.61	0.00	0.00
1.20	4.130	71.65	5	5.9E-06	11	48.51	57	40	38.71	48.51	0.00	0.00
1.22	4.340	77.73	5	6.0E-06	12	50.90	58	40	40.61	50.90	0.00	0.00
1.24	4.640	81.09	5	6.9E-06	13	53.02	59	41	42.30	53.02	0.00	0.00
1.26	4.970	88.63	6	7.4E-06	13	56.15	61	41	44.80	56.15	0.00	0.00
1.28	5.220	98.45	5	7.1E-06	14	59.42	62	41	47.41	59.42	0.00	0.00
1.30	5.680	119.75	5	6.5E-06	16	65.76	65	41	52.47	65.76	0.00	0.00
1.32	6.100	132.80	5	6.7E-06	17	70.16	67	42	55.98	70.16	0.00	0.00
1.34	6.460	137.08	5	7.6E-06	17	72.64	68	42	57.96	72.64	0.00	0.00
1.36	6.680	136.61	6	8.5E-06	18	73.58	68	42	58.71	73.58	0.00	0.00
1.38	6.700	135.78	6	8.6E-06	18	73.70	68	42	58.81	73.70	0.00	0.00
1.40	6.740	138.70	6	8.3E-06	18	74.65	68	42	59.56	74.65	0.00	0.00
1.42	6.730	141.42	5	7.8E-06	18	75.37	68	42	60.14	75.37	0.00	0.00
1.44	6.590	142.97	5	6.9E-06	18	75.37	67	42	60.14	75.37	0.00	0.00
1.46	6.360	145.29	5	5.8E-06	18	75.17	66	42	59.98	75.17	0.00	0.00
1.48	5.880	150.55	5	3.9E-06	17	74.47	64	41	59.42	74.47	0.00	0.00
1.50	5.330	165.54	5	2.2E-06	16	74.99	62	41	59.84	74.99	0.00	0.00
1.52	5.430	187.53	8	1.8E-06	17	75.65	63	41	63.34	79.38	0.00	0.00
1.54	5.560	192.28	8	1.8E-06	17	77.47	63	41	64.63	81.01	0.00	0.00
1.56	6.470	215.98	8	2.5E-06	19	89.25	67	42	71.21	89.25	0.00	0.00
1.58	6.900	229.77	8	2.7E-06	20	93.63	69	42	74.70	93.63	0.00	0.00
1.60	6.820	230.81	8	2.5E-06	20	93.70	68	42	74.76	93.70	0.00	0.00
1.62	6.650	228.37	8	2.3E-06	20	92.81	67	42	74.05	92.81	0.00	0.00
1.64	6.470	225.74	8	2.1E-06	20	91.83	66	42	73.27	91.83	0.00	0.00
1.66	6.150	225.33	8	1.7E-06	19	85.69	65	41	72.25	90.55	0.00	0.00
1.68	5.500	235.47	9	1.0E-06	18	76.59	0	0	71.17	89.20	390.76	44.50
1.70	4.970	245.39	9	6.1E-07	17	69.16	0	0	70.27	88.08	352.88	41.12
1.72	4.680	256.26	9	4.3E-07	16	65.10	0	0	70.37	88.19	332.13	39.19
1.74	4.530	264.94	9	3.5E-07	16	62.99	0	0	70.79	88.73	321.39	38.07
1.76	4.290	263.17	9	2.8E-07	16	59.63	0	0	69.61	87.24	304.22	36.15
1.78	4.120	260.19	9	2.4E-07	15	57.24	0	0	68.62	86.00	292.05	34.68
1.80	4.250	255.34	9	2.8E-07	16	59.06	0	0	68.96	86.43	301.30	35.10
1.82	4.140	247.39	9	2.7E-07	15	57.51	0	0	67.73	84.89	293.42	33.95
1.84	4.060	238.35	9	2.7E-07	15	56.38	0	0	66.51	83.36	287.68	32.98
1.86	4.140	228.91	9	3.1E-07	15	57.50	0	0	66.03	82.76	293.36	33.01
1.88	4.220	216.65	9	3.7E-07	15	58.61	0	0	65.17	81.68	299.05	32.99
1.90	4.240	208.35	9	4.0E-07	15	58.89	0	0	64.44	80.77	300.45	32.67
1.92	4.250	200.74	9	4.3E-07	15	59.02	0	0	63.73	79.87	301.14	32.31
1.94	4.270	199.95	9	4.4E-07	15	59.30	0	0	63.89	80.08	302.54	32.16
1.96	4.290	199.79	9	4.4E-07	15	59.57	0	0	64.13	80.37	303.94	32.02
1.98	4.290	199.79	9	4.4E-07	15	59.57	0	0	64.30	80.58	303.91	31.77
2.00	4.430	194.59	9	5.1E-07	15	61.52	0	0	64.43	80.75	313.88	32.23
2.02	4.840	206.98	9	6.3E-07	16	67.25	0	0	67.97	85.19	343.14	34.57
2.04	5.530	213.48	8	9.7E-07	18	76.91	58	40	71.80	89.99	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P13	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	6.080	216.27	8	1.4E-06	19	84.60	60	41	74.44	93.30	0.00	0.00
2.08	6.260	206.79	5	1.6E-06	19	87.12	60	41	73.95	92.68	0.00	0.00
2.10	6.160	199.73	5	1.6E-06	19	85.71	59	41	72.76	91.20	0.00	0.00
2.12	5.820	201.47	5	1.3E-06	18	80.95	58	40	71.94	90.17	0.00	0.00
2.14	5.570	201.57	5	1.1E-06	18	77.44	57	40	71.18	89.21	0.00	0.00
2.16	5.390	206.98	8	8.7E-07	18	74.92	56	40	71.38	89.47	0.00	0.00
2.18	5.210	211.80	9	7.1E-07	17	72.39	0	0	71.47	89.58	369.34	34.71
2.20	5.090	223.43	9	5.7E-07	17	70.71	0	0	72.66	91.07	360.74	34.03
2.22	4.980	240.92	9	4.4E-07	17	69.16	0	0	74.56	93.45	352.85	33.48
2.24	4.720	259.24	9	3.0E-07	17	65.51	0	0	75.75	94.94	334.25	32.08
2.26	4.470	262.22	9	2.3E-07	17	62.01	0	0	75.06	94.08	316.37	30.50
2.28	4.340	259.59	9	2.1E-07	16	60.18	0	0	74.29	93.10	307.05	29.53
2.30	3.960	254.80	9	1.5E-07	15	54.86	0	0	71.94	90.16	279.88	27.14
2.32	3.730	242.79	9	1.3E-07	15	51.63	0	0	69.49	87.10	263.43	25.51
2.34	3.520	234.52	9	1.1E-07	14	48.69	0	0	0.00	84.66	248.40	24.06
2.36	3.230	228.28	9	8.1E-08	13	44.62	0	0	0.00	81.87	227.66	22.18
2.38	2.920	223.68	9	5.6E-08	12	40.28	0	0	0.00	79.02	205.49	20.22
2.40	2.680	216.71	3	4.2E-08	12	36.91	0	0	0.00	76.30	188.31	18.62
2.42	2.760	202.52	3	5.4E-08	12	38.02	0	0	0.00	75.12	194.00	18.82
2.44	2.690	184.30	3	5.8E-08	11	37.04	0	0	0.00	72.04	188.97	18.12
2.46	2.530	168.90	3	5.4E-08	11	34.79	0	0	0.00	68.59	177.52	16.95
2.48	2.490	154.79	3	6.0E-08	10	34.23	0	0	0.00	66.20	174.63	16.47
2.50	2.520	144.50	3	7.2E-08	10	34.64	0	0	0.00	64.89	176.75	16.41
2.52	2.400	131.41	3	7.1E-08	10	32.96	0	0	0.00	61.88	168.15	15.51
2.54	2.250	123.65	3	6.1E-08	9	30.85	0	0	0.00	59.50	157.41	14.52
2.56	2.090	115.37	3	5.2E-08	9	28.61	0	0	0.00	56.90	145.95	13.46
2.58	1.960	109.07	3	4.4E-08	9	26.78	0	0	0.00	54.84	136.64	12.59
2.60	1.890	105.11	3	4.0E-08	8	25.80	0	0	0.00	53.67	131.61	12.09
2.62	1.840	106.79	3	3.5E-08	8	25.09	0	0	0.00	53.69	128.02	11.75
2.64	1.850	103.87	3	3.7E-08	8	25.23	0	0	0.00	53.37	128.70	11.70
2.66	1.870	97.69	3	4.3E-08	8	25.50	0	0	0.00	52.48	130.11	11.67
2.68	1.910	88.76	4	5.6E-08	8	26.06	0	0	0.00	51.14	132.94	11.73
2.70	1.910	82.77	4	6.3E-08	8	26.05	0	0	0.00	50.00	132.91	11.59
2.72	1.870	77.60	4	6.5E-08	8	25.49	0	0	0.00	48.69	130.03	11.26
2.74	1.800	74.47	4	5.9E-08	8	24.50	0	0	0.00	47.58	125.00	10.79
2.76	1.810	68.76	4	6.9E-08	8	24.64	0	0	0.00	46.46	125.69	10.71
2.78	1.880	60.49	4	1.0E-07	8	25.61	0	0	0.00	45.08	130.66	10.91
2.80	1.840	57.13	4	1.0E-07	7	25.05	0	0	0.00	44.04	127.78	10.60
2.82	1.720	55.61	4	8.0E-08	7	23.36	0	0	0.00	42.89	119.18	9.91
2.84	1.570	55.01	4	5.6E-08	7	21.26	0	0	0.00	41.69	108.44	9.09
2.86	1.480	54.09	4	4.5E-08	6	19.99	0	0	0.00	40.84	101.99	8.57
2.88	1.430	49.02	4	4.6E-08	6	19.29	0	0	0.00	39.22	98.39	8.21
2.90	1.440	45.00	4	5.4E-08	6	19.42	0	0	0.00	38.30	99.08	8.17
2.92	1.350	43.10	4	4.4E-08	6	18.16	0	0	0.00	37.14	92.63	7.64
2.94	1.290	42.33	4	3.7E-08	6	17.31	0	0	0.00	36.51	88.32	7.28
2.96	1.260	39.70	4	3.8E-08	6	16.89	0	0	0.00	35.59	86.15	7.06
2.98	1.260	39.70	4	3.7E-08	6	16.88	0	0	0.00	35.67	86.13	7.02
3.00	1.290	18.13	4	1.5E-07	5	17.30	0	0	22.73	28.49	88.25	6.84
3.02	1.280	19.96	4	1.2E-07	5	17.15	0	0	23.34	29.26	87.51	6.79
3.04	1.320	21.01	4	1.3E-07	5	17.71	0	0	23.96	30.03	90.34	6.97
3.06	1.340	20.60	4	1.4E-07	5	17.98	0	0	23.98	30.06	91.75	7.02
3.08	1.340	17.90	4	1.7E-07	5	17.98	0	0	23.11	28.97	91.72	6.94
3.10	1.250	19.23	4	1.1E-07	5	16.71	0	0	0.00	28.98	85.27	6.50
3.12	1.210	22.72	4	7.3E-08	5	16.15	0	0	0.00	30.15	82.39	6.33
3.14	1.260	25.70	4	7.0E-08	5	16.84	0	0	0.00	31.71	85.94	6.58

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P13	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	1.210	26.30	4	5.6E-08	5	16.14	0	0	0.00	31.61	82.34	6.31
3.18	1.250	24.65	4	7.1E-08	5	16.69	0	0	0.00	31.37	85.18	6.45
3.20	1.210	25.35	4	5.8E-08	5	16.13	0	0	0.00	31.39	82.29	6.24
3.22	1.110	27.98	4	3.4E-08	5	14.73	0	0	0.00	31.58	75.13	5.76
3.24	1.070	27.03	4	3.1E-08	5	14.16	0	0	0.00	30.98	72.25	5.52
3.26	1.030	25.64	4	2.8E-08	5	13.60	0	0	0.00	30.21	69.37	5.29
3.28	1.010	24.75	4	2.7E-08	5	13.31	0	0	0.00	29.77	67.91	5.16
3.30	1.010	24.84	4	2.7E-08	5	13.31	0	0	0.00	29.87	67.89	5.13
3.32	1.010	27.35	4	2.2E-08	5	13.30	0	0	0.00	30.82	67.87	5.13
3.34	1.070	26.62	4	2.9E-08	5	14.14	0	0	0.00	31.16	72.13	5.38
3.36	1.090	25.54	4	3.4E-08	5	14.41	0	0	0.00	31.00	73.53	5.43
3.38	1.180	24.94	4	4.8E-08	5	15.67	0	0	0.00	31.58	79.94	5.82
3.40	1.210	25.60	4	5.0E-08	5	16.08	0	0	0.00	32.13	82.06	5.94
3.42	1.210	26.36	4	4.7E-08	5	16.08	0	0	0.00	32.48	82.03	5.92
3.44	1.200	27.22	4	4.3E-08	5	15.93	0	0	0.00	32.78	81.29	5.85
3.46	1.200	29.91	4	3.6E-08	5	15.93	0	0	0.00	33.80	81.27	5.84
3.48	1.240	33.65	4	3.4E-08	6	16.48	0	0	0.00	35.47	84.10	6.03
3.50	1.240	34.44	4	3.2E-08	6	16.48	0	0	0.00	35.80	84.08	6.01
3.52	1.190	35.81	4	2.5E-08	5	15.77	0	0	0.00	35.89	80.48	5.76
3.54	1.200	37.36	4	2.3E-08	6	15.91	0	0	0.00	36.54	81.17	5.78
3.56	1.180	41.29	3	1.8E-08	6	15.62	0	0	0.00	37.63	79.72	5.69
3.58	1.120	48.13	3	1.1E-08	6	14.78	0	0	0.00	39.08	75.41	5.42
3.60	1.180	44.33	3	1.5E-08	6	15.61	0	0	0.00	38.67	79.67	5.65
3.62	1.160	44.08	3	1.4E-08	6	15.33	0	0	0.00	38.49	78.21	5.52
3.64	1.150	44.30	3	1.3E-08	6	15.19	0	0	0.00	38.54	77.47	5.45
3.66	1.190	41.42	3	1.7E-08	6	15.74	0	0	0.00	38.14	80.31	5.59
3.68	1.140	41.76	3	1.4E-08	5	15.04	0	0	0.00	37.86	76.71	5.34
3.70	1.120	42.43	3	1.3E-08	5	14.75	0	0	0.00	37.94	75.26	5.22
3.72	1.090	44.68	3	9.9E-09	5	14.33	0	0	0.00	38.41	73.09	5.06
3.74	1.150	45.06	3	1.2E-08	6	15.16	0	0	0.00	39.14	77.35	5.31
3.76	1.220	42.37	3	1.7E-08	6	16.14	0	0	0.00	39.07	82.33	5.59
3.78	1.280	42.08	3	2.1E-08	6	16.97	0	0	0.00	39.59	86.59	5.82
3.80	1.300	40.18	4	2.5E-08	6	17.25	0	0	0.00	39.25	87.99	5.87
3.82	1.320	36.98	4	3.0E-08	6	17.52	0	0	0.00	38.46	89.39	5.91
3.84	1.340	35.71	4	3.4E-08	6	17.80	0	0	0.00	38.26	90.80	5.96
3.86	1.390	36.31	4	3.8E-08	6	18.49	0	0	0.00	38.94	94.35	6.15
3.88	2.190	37.80	5	2.4E-07	8	29.69	29	34	35.75	44.80	0.00	0.00
3.90	3.180	38.94	5	1.1E-06	10	43.54	34	35	40.04	50.18	0.00	0.00
3.92	4.320	40.05	5	3.5E-06	12	55.14	39	37	43.99	55.14	0.00	0.00
3.94	4.540	41.10	5	4.1E-06	13	56.41	40	37	45.01	56.41	0.00	0.00
3.96	4.240	43.73	5	2.8E-06	13	56.49	39	37	45.07	56.49	0.00	0.00
3.98	4.240	43.73	5	2.7E-06	13	56.58	39	37	45.14	56.58	0.00	0.00
4.00	2.950	54.44	5	4.1E-07	10	40.30	33	35	43.96	55.09	0.00	0.00
4.02	2.680	72.09	4	1.6E-07	10	36.51	0	0	47.18	59.13	186.28	11.40
4.04	2.640	96.46	4	8.5E-08	11	35.95	0	0	0.00	65.37	183.40	11.30
4.06	3.060	107.26	4	1.3E-07	12	41.82	0	0	56.40	70.69	213.37	13.00
4.08	3.550	104.85	4	2.5E-07	13	48.68	0	0	58.21	72.95	248.35	14.89
4.10	3.460	97.28	4	2.6E-07	13	47.41	0	0	56.38	70.66	241.89	14.44
4.12	3.350	99.18	4	2.1E-07	13	45.87	0	0	56.39	70.68	234.01	13.95
4.14	3.530	101.75	4	2.5E-07	13	48.38	0	0	57.77	72.41	246.84	14.62
4.16	3.840	108.28	4	3.1E-07	14	52.72	0	0	60.47	75.78	268.95	15.80
4.18	5.050	120.70	5	7.9E-07	17	69.65	42	37	67.53	84.64	0.00	0.00
4.20	6.350	127.48	5	1.8E-06	20	87.84	47	38	73.09	91.61	0.00	0.00
4.22	7.170	134.07	5	2.7E-06	21	96.34	50	39	76.87	96.34	0.00	0.00
4.24	8.300	151.31	5	3.9E-06	24	104.70	53	40	83.53	104.70	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P13	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	8.580	180.43	5	3.1E-06	25	113.07	54	40	90.22	113.07	0.00	0.00
4.28	8.110	204.48	5	1.8E-06	25	112.46	53	39	93.56	117.26	0.00	0.00
4.30	8.230	233.63	5	1.4E-06	26	114.14	53	40	99.15	124.27	0.00	0.00
4.32	8.980	265.07	5	1.6E-06	28	124.63	55	40	106.77	133.81	0.00	0.00
4.34	8.700	299.42	5	1.0E-06	28	120.71	54	40	111.52	139.77	0.00	0.00
4.36	8.730	290.39	5	1.1E-06	28	121.12	54	40	110.35	138.31	0.00	0.00
4.38	9.090	284.87	5	1.4E-06	29	126.15	55	40	110.73	138.78	0.00	0.00
4.40	9.330	291.69	5	1.4E-06	29	129.51	56	40	112.68	141.22	0.00	0.00
4.42	9.510	283.35	5	1.7E-06	29	132.02	56	40	112.00	140.38	0.00	0.00
4.44	9.460	275.65	5	1.7E-06	29	131.32	56	40	110.74	138.79	0.00	0.00
4.46	9.380	259.05	5	1.9E-06	29	135.20	56	40	107.87	135.20	0.00	0.00
4.48	9.730	251.66	5	2.3E-06	29	134.99	57	40	107.70	134.99	0.00	0.00
4.50	9.670	258.57	5	2.1E-06	29	136.45	56	40	108.87	136.45	0.00	0.00
4.52	9.290	268.46	5	1.6E-06	29	128.91	55	40	109.61	137.38	0.00	0.00
4.54	9.370	260.06	5	1.8E-06	29	130.03	55	40	108.56	136.06	0.00	0.00
4.56	9.040	266.84	5	1.5E-06	28	125.40	54	40	108.89	136.48	0.00	0.00
4.58	8.850	264.31	5	1.3E-06	28	122.74	54	40	108.05	135.42	0.00	0.00
4.60	7.900	277.05	5	7.4E-07	26	109.43	51	39	107.30	134.49	0.00	0.00
4.62	6.920	272.26	4	4.3E-07	24	95.71	0	0	103.32	129.49	488.30	26.01
4.64	6.090	262.12	4	2.7E-07	22	84.08	0	0	98.78	123.80	428.98	22.86
4.66	5.640	257.91	4	2.0E-07	21	77.77	0	0	96.46	120.90	396.81	21.12
4.68	5.240	266.91	4	1.4E-07	20	72.17	0	0	96.23	120.61	368.21	19.59
4.70	4.600	276.92	3	7.1E-08	19	63.20	0	0	0.00	118.82	322.47	17.18
4.72	4.470	258.41	3	7.2E-08	19	61.38	0	0	0.00	114.90	313.15	16.61
4.74	4.370	221.21	4	9.2E-08	18	59.97	0	0	0.00	107.53	305.98	16.13
4.76	4.500	211.07	4	1.1E-07	18	61.79	0	0	84.93	106.44	315.24	16.53
4.78	4.750	193.33	4	1.7E-07	18	65.28	0	0	83.23	104.31	333.07	17.34
4.80	4.940	175.26	4	2.5E-07	18	67.94	0	0	80.97	101.48	346.61	17.92
4.82	5.150	161.80	4	3.5E-07	18	70.87	0	0	79.40	99.52	361.58	18.58
4.84	5.520	153.65	5	5.3E-07	19	76.04	41	37	79.25	99.33	0.00	0.00
4.86	5.650	160.78	5	5.3E-07	19	77.86	42	37	81.19	101.76	0.00	0.00
4.88	5.720	157.11	5	5.8E-07	20	78.83	42	37	80.82	101.29	0.00	0.00
4.90	6.140	170.61	5	6.5E-07	21	84.71	43	38	84.94	106.45	0.00	0.00
4.92	6.730	190.03	5	7.6E-07	22	92.96	45	38	90.62	113.58	0.00	0.00
4.94	6.710	205.78	5	6.3E-07	23	92.68	45	38	93.56	117.26	0.00	0.00
4.96	6.590	201.69	5	6.0E-07	22	90.99	45	38	92.55	115.99	0.00	0.00
4.98	6.590	201.69	5	6.0E-07	22	90.99	45	38	92.67	116.14	0.00	0.00
5.00	5.690	240.76	4	2.1E-07	21	78.38	0	0	96.21	120.58	399.90	19.95
5.02	5.470	253.06	4	1.6E-07	21	75.30	0	0	97.39	122.06	384.16	19.12
5.04	5.290	256.35	4	1.3E-07	21	72.77	0	0	97.27	121.91	371.27	18.42
5.06	5.160	253.44	4	1.2E-07	20	70.94	0	0	96.39	120.81	361.96	17.90
5.08	5.230	246.82	4	1.4E-07	20	71.92	0	0	95.80	120.07	366.93	18.07
5.10	5.940	231.13	4	2.7E-07	22	81.85	0	0	96.24	120.62	417.62	20.44

CPTe P16 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.040	0.00	0	0.0E+00	0	0.04	0	0	0.03	0.04	0.00	0.00
0.04	0.260	0.03	0	0.0E+00	1	2.72	0	0	2.17	2.72	0.00	0.00
0.06	0.380	0.03	0	0.0E+00	1	3.89	0	0	3.10	3.89	0.00	0.00
0.08	0.450	0.03	0	0.0E+00	1	4.70	0	0	3.75	4.70	0.00	0.00
0.10	0.510	0.06	0	0.0E+00	1	4.96	0	0	3.95	4.96	0.00	0.00
0.12	0.560	0.10	0	0.0E+00	1	5.19	0	0	4.14	5.19	0.00	0.00
0.14	0.640	0.10	0	0.0E+00	2	5.83	0	0	4.65	5.83	0.00	0.00
0.16	0.660	0.10	0	0.0E+00	2	6.19	0	0	4.94	6.19	0.00	0.00
0.18	0.710	0.10	0	0.0E+00	2	6.67	0	0	5.32	6.67	0.00	0.00
0.20	0.770	0.10	0	0.0E+00	2	7.16	0	0	5.71	7.16	0.00	0.00
0.22	0.790	0.10	0	0.0E+00	2	7.44	0	0	5.94	7.44	0.00	0.00
0.24	0.810	0.10	0	0.0E+00	2	7.72	0	0	6.16	7.72	0.00	0.00
0.26	0.820	0.06	0	0.0E+00	2	8.62	0	0	6.88	8.62	0.00	0.00
0.28	0.840	0.10	0	0.0E+00	2	8.24	0	0	6.57	8.24	0.00	0.00
0.30	0.840	0.06	0	0.0E+00	2	9.02	0	0	7.20	9.02	0.00	0.00
0.32	0.850	0.10	0	0.0E+00	2	8.51	0	0	6.79	8.51	0.00	0.00
0.34	0.890	0.10	0	0.0E+00	2	8.92	0	0	7.12	8.92	0.00	0.00
0.36	1.000	0.16	0	0.0E+00	2	9.30	0	0	7.42	9.30	0.00	0.00
0.38	1.040	0.16	0	0.0E+00	3	9.67	0	0	7.72	9.67	0.00	0.00
0.40	1.090	0.13	0	0.0E+00	3	10.41	0	0	8.30	10.41	0.00	0.00
0.42	1.150	0.16	0	0.0E+00	3	10.64	0	0	8.49	10.64	0.00	0.00
0.44	1.200	0.16	0	0.0E+00	3	11.03	0	0	8.80	11.03	0.00	0.00
0.46	1.330	0.16	0	0.0E+00	3	12.07	0	0	9.63	12.07	0.00	0.00
0.48	1.380	0.13	0	0.0E+00	3	12.97	0	0	10.34	12.97	0.00	0.00
0.50	1.370	0.13	0	0.0E+00	3	12.99	0	0	10.36	12.99	0.00	0.00
0.52	1.340	0.13	0	0.0E+00	3	12.86	0	0	10.26	12.86	0.00	0.00
0.54	1.240	0.13	0	0.0E+00	3	12.17	0	0	9.71	12.17	0.00	0.00
0.56	1.120	0.10	0	0.0E+00	3	11.79	0	0	9.40	11.79	0.00	0.00
0.58	1.020	0.13	0	0.0E+00	3	10.59	0	0	8.45	10.59	0.00	0.00
0.60	1.010	2.09	6	1.3E-05	3	10.20	35	36	8.14	10.20	0.00	0.00
0.62	1.050	2.69	6	1.2E-05	3	10.81	36	36	8.62	10.81	0.00	0.00
0.64	1.100	3.71	6	1.0E-05	3	11.71	36	36	9.34	11.71	0.00	0.00
0.66	1.130	3.93	6	1.0E-05	3	12.05	36	36	9.61	12.05	0.00	0.00
0.68	1.120	4.75	6	7.9E-06	3	12.46	37	36	9.94	12.46	0.00	0.00
0.70	1.150	4.53	6	8.6E-06	3	12.59	36	36	10.05	12.59	0.00	0.00
0.72	1.210	5.55	6	7.9E-06	3	13.44	37	36	10.72	13.44	0.00	0.00
0.74	1.240	6.34	6	7.2E-06	3	14.02	38	36	11.18	14.02	0.00	0.00
0.76	1.240	5.96	6	7.4E-06	3	13.94	37	36	11.12	13.94	0.00	0.00
0.78	1.250	8.24	6	5.1E-06	3	15.01	38	36	11.98	15.01	0.00	0.00
0.80	1.320	10.01	6	4.7E-06	4	16.13	39	37	12.87	16.13	0.00	0.00
0.82	1.490	12.10	6	5.3E-06	4	17.83	41	37	14.23	17.83	0.00	0.00
0.84	1.580	14.73	5	4.8E-06	4	19.26	42	37	15.37	19.26	0.00	0.00
0.86	1.630	15.50	5	4.8E-06	5	19.82	42	37	15.81	19.82	0.00	0.00
0.88	1.630	15.50	5	4.7E-06	5	19.93	42	37	15.90	19.93	0.00	0.00
0.90	1.580	18.25	5	3.2E-06	5	20.65	42	37	16.48	20.65	0.00	0.00
0.92	1.560	21.23	5	2.4E-06	5	21.53	42	37	17.18	21.53	0.00	0.00
0.94	1.500	26.74	5	1.4E-06	5	20.81	42	37	18.17	22.77	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.480	32.48	5	9.4E-07	5	20.52	42	37	19.26	24.14	0.00	0.00
0.98	1.440	35.97	5	7.0E-07	5	19.96	42	37	19.78	24.79	0.00	0.00
1.00	1.390	36.82	5	5.7E-07	5	19.25	41	37	19.78	24.79	0.00	0.00
1.02	1.310	36.00	5	4.7E-07	5	18.13	40	37	19.32	24.21	0.00	0.00
1.04	1.240	33.15	5	4.3E-07	4	17.14	39	37	18.55	23.26	0.00	0.00
1.06	1.190	30.48	5	4.1E-07	4	16.44	38	36	17.91	22.44	0.00	0.00
1.08	1.220	28.68	5	4.9E-07	4	16.86	37	36	17.84	22.36	0.00	0.00
1.10	1.260	27.73	5	5.6E-07	4	17.41	38	36	17.96	22.51	0.00	0.00
1.12	1.300	27.31	5	6.2E-07	4	17.97	38	36	18.18	22.79	0.00	0.00
1.14	1.420	27.19	5	8.3E-07	5	19.64	39	36	18.85	23.63	0.00	0.00
1.16	1.320	27.54	5	6.1E-07	4	18.24	37	36	18.51	23.20	0.00	0.00
1.18	1.360	27.98	5	6.4E-07	5	18.79	38	36	18.89	23.68	0.00	0.00
1.20	1.360	26.93	5	6.7E-07	5	18.79	37	36	18.77	23.52	0.00	0.00
1.22	1.370	26.90	5	6.7E-07	5	18.92	37	36	18.90	23.69	0.00	0.00
1.24	1.290	23.35	5	6.6E-07	4	17.80	36	36	17.82	22.34	0.00	0.00
1.26	1.290	22.53	5	6.8E-07	4	17.79	36	36	17.72	22.21	0.00	0.00
1.28	1.240	21.71	5	6.1E-07	4	17.09	35	35	17.36	21.76	0.00	0.00
1.30	1.200	21.14	5	5.5E-07	4	16.52	34	35	17.10	21.43	0.00	0.00
1.32	1.180	19.30	5	5.8E-07	4	16.24	34	35	16.64	20.85	0.00	0.00
1.34	1.190	17.71	5	6.6E-07	4	16.37	33	35	16.37	20.52	0.00	0.00
1.36	1.210	17.21	5	7.2E-07	4	16.65	33	35	16.41	20.57	0.00	0.00
1.38	1.270	14.58	5	1.1E-06	4	17.48	33	35	16.07	20.14	0.00	0.00
1.40	1.300	11.85	5	1.5E-06	4	17.90	33	35	15.45	19.37	0.00	0.00
1.42	1.360	9.35	5	2.3E-06	4	18.73	33	35	14.94	18.73	0.00	0.00
1.44	1.330	8.94	5	2.2E-06	4	18.45	33	35	14.72	18.45	0.00	0.00
1.46	1.270	10.46	5	1.5E-06	4	17.47	32	35	15.04	18.85	0.00	0.00
1.48	1.240	11.50	5	1.2E-06	4	17.04	32	35	15.30	19.17	0.00	0.00
1.50	1.250	12.52	5	1.1E-06	4	17.18	32	35	15.72	19.71	0.00	0.00
1.52	1.250	13.97	5	9.1E-07	4	17.17	32	35	16.22	20.33	0.00	0.00
1.54	1.240	14.73	5	8.0E-07	4	17.03	32	35	16.46	20.63	0.00	0.00
1.56	1.220	14.45	5	7.6E-07	4	16.74	32	35	16.34	20.48	0.00	0.00
1.58	1.190	14.48	5	6.8E-07	4	16.32	31	34	16.26	20.37	0.00	0.00
1.60	1.140	14.29	5	5.8E-07	4	15.62	31	34	16.01	20.06	0.00	0.00
1.62	1.070	14.42	5	4.4E-07	4	14.63	30	34	15.75	19.74	0.00	0.00
1.64	1.070	13.47	5	4.8E-07	4	14.63	29	34	15.53	19.46	0.00	0.00
1.66	1.080	12.71	5	5.2E-07	4	14.76	29	34	15.41	19.31	0.00	0.00
1.68	1.090	12.36	5	5.5E-07	4	14.90	29	34	15.41	19.31	0.00	0.00
1.70	1.130	11.09	5	7.2E-07	4	15.45	29	34	15.24	19.10	0.00	0.00
1.72	1.150	10.77	5	7.8E-07	4	15.73	29	34	15.28	19.15	0.00	0.00
1.74	1.130	11.25	5	6.7E-07	4	15.44	29	34	15.41	19.31	0.00	0.00
1.76	1.110	10.77	5	6.5E-07	4	15.16	29	34	15.20	19.05	0.00	0.00
1.78	1.030	10.96	5	4.8E-07	4	14.04	28	33	14.89	18.67	0.00	0.00
1.80	0.990	11.03	5	4.0E-07	3	13.47	27	33	14.75	18.48	0.00	0.00
1.82	0.950	11.82	5	3.1E-07	3	12.91	27	33	14.83	18.58	0.00	0.00
1.84	0.900	13.06	5	2.2E-07	3	12.20	26	33	14.97	18.76	0.00	0.00
1.86	0.830	13.18	4	1.5E-07	3	11.22	0	0	14.62	18.32	57.23	7.51
1.88	0.830	13.18	4	1.5E-07	3	11.21	0	0	14.67	18.38	57.21	7.45
1.90	0.850	9.92	5	2.4E-07	3	11.49	25	32	13.81	17.31	0.00	0.00
1.92	0.890	9.32	5	3.0E-07	3	12.04	25	33	13.88	17.40	0.00	0.00
1.94	0.940	7.00	5	5.2E-07	3	12.74	26	33	13.31	16.69	0.00	0.00
1.96	1.060	3.64	5	1.6E-06	3	14.42	26	33	12.36	15.49	0.00	0.00
1.98	1.000	4.21	5	1.1E-06	3	13.57	26	33	12.40	15.54	0.00	0.00
2.00	0.950	5.20	5	7.2E-07	3	12.87	25	32	12.68	15.90	0.00	0.00
2.02	0.920	5.61	5	5.8E-07	3	12.44	25	32	12.75	15.98	0.00	0.00
2.04	0.900	6.24	5	4.7E-07	3	12.16	25	32	12.96	16.24	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	0.890	7.03	5	3.8E-07	3	12.02	25	32	13.28	16.64	0.00	0.00
2.08	0.880	9.85	5	2.3E-07	3	11.87	25	32	14.34	17.98	0.00	0.00
2.10	0.890	10.49	5	2.2E-07	3	12.01	25	32	14.67	18.39	0.00	0.00
2.12	0.840	9.51	5	2.0E-07	3	11.30	24	32	14.07	17.63	0.00	0.00
2.14	0.820	9.89	5	1.7E-07	3	11.02	24	32	14.12	17.70	0.00	0.00
2.16	0.820	10.24	4	1.6E-07	3	11.01	0	0	14.28	17.90	56.19	6.53
2.18	0.800	10.01	4	1.5E-07	3	10.73	0	0	14.12	17.70	54.74	6.34
2.20	0.790	8.30	5	1.8E-07	3	10.59	23	32	13.47	16.88	0.00	0.00
2.22	0.790	7.00	5	2.1E-07	3	10.58	23	31	12.99	16.28	0.00	0.00
2.24	0.760	8.43	4	1.4E-07	3	10.16	0	0	13.41	16.80	51.82	5.87
2.26	0.690	9.51	4	8.3E-08	3	9.17	0	0	0.00	16.76	46.80	5.44
2.28	0.640	7.64	4	8.2E-08	3	8.47	0	0	0.00	15.50	43.21	4.98
2.30	0.600	4.88	4	1.1E-07	2	7.77	0	0	0.00	13.72	40.33	4.54
2.32	0.590	3.36	5	1.5E-07	2	7.30	19	30	10.12	12.68	0.00	0.00
2.34	0.590	2.66	5	1.9E-07	2	7.16	19	30	9.73	12.20	0.00	0.00
2.36	0.610	1.77	5	3.0E-07	2	7.45	19	30	9.30	11.65	0.00	0.00
2.38	0.630	-0.03	0	0.0E+00	0	0.53	0	0	0.43	0.53	0.00	0.00
2.40	0.630	0.06	0	0.0E+00	2	7.89	0	0	9.73	12.20	0.00	0.00
2.42	0.620	0.06	0	0.0E+00	2	7.59	0	0	9.64	12.08	0.00	0.00
2.44	0.650	0.06	0	0.0E+00	2	8.30	0	0	10.01	12.54	0.00	0.00
2.46	0.710	0.06	0	0.0E+00	3	9.41	0	0	10.72	13.43	0.00	0.00
2.48	0.750	0.06	0	0.0E+00	3	9.97	0	0	11.19	14.03	0.00	0.00
2.50	0.790	0.06	0	0.0E+00	3	10.52	0	0	11.67	14.63	0.00	0.00
2.52	0.770	0.76	5	8.6E-07	3	10.24	21	31	9.77	12.24	0.00	0.00
2.54	0.720	2.98	5	3.0E-07	3	9.54	20	30	11.03	13.83	0.00	0.00
2.56	0.660	6.02	4	9.8E-08	3	8.69	0	0	0.00	15.39	44.35	4.62
2.58	0.590	9.60	4	3.4E-08	3	7.18	0	0	0.00	16.57	39.33	4.30
2.60	0.550	13.25	3	1.6E-08	3	6.37	0	0	0.00	17.66	36.45	4.12
2.62	0.540	15.24	3	1.1E-08	3	6.16	0	0	0.00	18.31	35.71	4.07
2.64	0.530	13.91	3	1.2E-08	3	5.85	0	0	0.00	17.78	34.98	3.94
2.66	0.520	11.06	4	1.5E-08	2	5.50	0	0	0.00	16.63	34.24	3.79
2.68	0.530	8.78	4	2.3E-08	2	5.58	0	0	0.00	15.80	34.93	3.76
2.70	0.540	4.91	4	5.1E-08	2	5.54	0	0	0.00	13.91	35.62	3.66
2.72	0.570	0.73	5	2.9E-07	2	5.69	18	29	8.60	10.78	0.00	0.00
2.74	0.580	0.03	0	0.0E+00	2	6.18	0	0	0.00	13.41	0.00	0.00
2.76	0.610	0.03	0	0.0E+00	2	6.82	0	0	0.00	14.00	0.00	0.00
2.78	0.580	0.03	0	0.0E+00	2	6.10	0	0	0.00	13.47	0.00	0.00
2.80	0.580	0.03	0	0.0E+00	2	6.07	0	0	0.00	13.49	0.00	0.00
2.82	0.570	0.03	0	0.0E+00	2	5.82	0	0	0.00	13.34	0.00	0.00
2.84	0.590	0.06	0	0.0E+00	2	6.04	0	0	9.76	12.23	0.00	0.00
2.86	0.530	0.03	0	0.0E+00	2	4.94	0	0	0.00	12.64	0.00	0.00
2.88	0.530	0.03	0	0.0E+00	2	4.91	0	0	0.00	12.66	0.00	0.00
2.90	0.530	0.03	0	0.0E+00	2	4.87	0	0	0.00	12.69	0.00	0.00
2.92	0.560	0.00	0	0.0E+00	0	0.46	0	0	0.37	0.46	0.00	0.00
2.94	0.570	0.00	0	0.0E+00	0	0.47	0	0	0.38	0.47	0.00	0.00
2.96	0.590	0.00	0	0.0E+00	0	0.49	0	0	0.39	0.49	0.00	0.00
2.98	0.600	0.00	0	0.0E+00	0	0.50	0	0	0.40	0.50	0.00	0.00
3.00	0.640	0.00	0	0.0E+00	0	0.53	0	0	0.43	0.53	0.00	0.00
3.02	0.660	0.00	0	0.0E+00	0	0.55	0	0	0.44	0.55	0.00	0.00
3.04	0.680	0.00	0	0.0E+00	0	0.57	0	0	0.45	0.57	0.00	0.00
3.06	0.710	0.03	0	0.0E+00	3	8.47	0	0	0.00	16.41	0.00	0.00
3.08	0.720	0.70	5	4.6E-07	3	8.15	19	30	10.07	12.62	0.00	0.00
3.10	0.730	1.77	5	3.0E-07	3	8.50	19	30	11.02	13.81	0.00	0.00
3.12	0.790	2.50	5	3.0E-07	3	10.00	20	30	11.96	15.00	0.00	0.00
3.14	0.830	3.26	5	2.9E-07	3	10.95	20	30	12.75	15.99	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	0.820	4.72	5	1.9E-07	3	10.80	20	30	13.61	17.06	0.00	0.00
3.18	0.810	5.39	5	1.5E-07	3	10.66	20	30	13.95	17.48	0.00	0.00
3.20	0.780	5.86	4	1.2E-07	3	9.88	0	0	14.04	17.59	52.21	4.46
3.22	0.830	8.27	4	9.5E-08	3	10.93	0	0	0.00	19.48	55.76	4.78
3.24	0.890	8.33	4	1.2E-07	4	11.76	0	0	15.98	20.03	60.02	5.07
3.26	1.010	9.19	5	1.7E-07	4	13.44	22	31	17.12	21.46	0.00	0.00
3.28	0.960	8.97	5	1.5E-07	4	12.74	22	31	16.77	21.01	0.00	0.00
3.30	0.930	10.17	4	1.1E-07	4	12.31	0	0	0.00	21.48	62.82	5.24
3.32	1.120	9.25	5	2.5E-07	4	14.97	23	32	17.87	22.40	0.00	0.00
3.34	1.080	7.99	5	2.6E-07	4	14.40	23	31	17.11	21.44	0.00	0.00
3.36	1.200	8.49	5	3.5E-07	4	16.08	24	32	18.02	22.58	0.00	0.00
3.38	1.280	8.14	5	4.7E-07	4	17.19	24	32	18.29	22.92	0.00	0.00
3.40	1.390	9.70	5	5.2E-07	5	18.73	25	32	19.60	24.56	0.00	0.00
3.42	1.720	11.60	5	9.3E-07	6	23.35	28	33	21.98	27.54	0.00	0.00
3.44	2.240	13.02	5	2.2E-06	7	30.93	31	34	24.68	30.93	0.00	0.00
3.46	2.900	11.63	6	6.6E-06	8	32.98	35	36	26.31	32.98	0.00	0.00
3.48	4.170	13.37	6	2.2E-05	10	38.49	41	37	30.71	38.49	0.00	0.00
3.50	4.280	10.96	6	2.9E-05	10	37.48	41	37	29.90	37.48	0.00	0.00
3.52	3.780	14.20	6	1.4E-05	10	37.80	39	37	30.16	37.80	0.00	0.00
3.54	3.420	18.70	6	6.6E-06	9	39.00	38	36	31.12	39.00	0.00	0.00
3.56	3.100	25.54	5	2.9E-06	9	41.05	36	36	32.75	41.05	0.00	0.00
3.58	2.860	32.07	5	1.4E-06	9	39.27	35	36	34.14	42.79	0.00	0.00
3.60	2.500	36.69	5	6.6E-07	8	34.22	33	35	34.22	42.89	0.00	0.00
3.62	2.310	42.30	5	3.7E-07	8	31.56	32	35	35.01	43.88	0.00	0.00
3.64	2.020	49.34	4	1.6E-07	8	27.49	0	0	35.45	44.44	140.27	10.57
3.66	1.850	54.28	4	9.4E-08	7	25.11	0	0	0.00	44.80	128.11	9.77
3.68	1.830	57.67	4	8.0E-08	8	24.82	0	0	0.00	45.67	126.65	9.66
3.70	1.980	60.52	4	9.9E-08	8	26.92	0	0	0.00	47.57	137.34	10.34
3.72	2.410	56.53	4	2.5E-07	9	32.93	0	0	39.30	49.25	168.03	12.24
3.74	2.950	48.42	5	7.5E-07	10	40.49	35	36	39.64	49.69	0.00	0.00
3.76	3.170	46.77	5	1.1E-06	10	43.56	36	36	40.09	50.25	0.00	0.00
3.78	3.350	50.83	5	1.1E-06	11	46.08	37	36	41.89	52.50	0.00	0.00
3.80	3.340	65.88	5	6.9E-07	11	45.93	38	36	45.65	57.21	0.00	0.00
3.82	3.330	86.29	5	4.0E-07	12	45.79	38	36	50.13	62.83	0.00	0.00
3.84	3.320	102.10	4	2.8E-07	12	45.64	0	0	53.28	66.78	232.87	16.40
3.86	3.430	109.89	4	2.8E-07	13	47.18	0	0	55.31	69.32	240.70	16.88
3.88	3.430	109.89	4	2.7E-07	13	47.17	0	0	55.41	69.44	240.68	16.80
3.90	4.140	113.38	5	5.5E-07	14	57.11	41	37	59.07	74.03	0.00	0.00
3.92	3.960	121.36	5	4.0E-07	14	54.58	41	37	59.94	75.13	0.00	0.00
3.94	3.430	132.07	4	1.8E-07	13	47.16	0	0	59.62	74.72	240.59	16.72
3.96	3.100	146.90	4	9.5E-08	13	42.53	0	0	0.00	75.83	217.00	15.26
3.98	3.040	146.46	4	8.7E-08	12	41.69	0	0	0.00	75.49	212.68	14.91
4.00	2.890	141.77	4	7.4E-08	12	39.58	0	0	0.00	73.71	201.94	14.14
4.02	2.800	134.39	4	7.2E-08	12	38.32	0	0	0.00	71.77	195.49	13.63
4.04	2.860	124.50	4	9.1E-08	12	39.15	0	0	0.00	70.28	199.74	13.77
4.06	2.870	119.21	4	1.0E-07	12	39.28	0	0	0.00	69.35	200.43	13.71
4.08	2.720	118.16	4	8.0E-08	11	37.18	0	0	0.00	68.27	189.69	12.98
4.10	2.370	107.61	4	5.4E-08	10	32.27	0	0	0.00	63.70	164.66	11.32
4.12	2.100	99.50	3	3.8E-08	9	28.49	0	0	0.00	60.05	145.35	10.02
4.14	1.830	95.54	3	2.2E-08	8	24.70	0	0	0.00	57.13	126.04	8.75
4.16	1.650	89.61	3	1.6E-08	8	22.18	0	0	0.00	54.40	113.16	7.87
4.18	1.450	87.33	3	9.6E-09	7	19.37	0	0	0.00	52.20	98.84	6.90
4.20	1.270	85.18	3	5.5E-09	7	16.85	0	0	0.00	50.24	85.96	5.97
4.22	1.230	77.13	3	5.8E-09	6	16.28	0	0	0.00	48.15	83.08	5.74
4.24	1.190	70.54	3	5.9E-09	6	15.72	0	0	0.00	46.33	80.19	5.51

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	1.130	62.01	3	5.9E-09	6	14.87	0	0	0.00	43.75	75.88	5.18
4.28	1.050	52.66	3	5.8E-09	5	13.75	0	0	0.00	40.63	70.14	4.77
4.30	0.990	45.31	3	5.8E-09	5	12.43	0	0	0.00	38.07	65.83	4.45
4.32	0.910	41.95	3	4.5E-09	5	10.31	0	0	0.00	36.39	60.09	4.04
4.34	0.830	40.08	3	3.2E-09	5	8.39	0	0	0.00	35.09	54.36	3.64
4.36	0.870	41.76	3	3.6E-09	5	9.24	0	0	0.00	36.08	57.19	3.81
4.38	1.220	41.48	3	1.7E-08	6	16.10	0	0	0.00	39.30	82.16	5.40
4.40	1.560	41.19	4	4.8E-08	7	20.86	0	0	0.00	42.05	106.42	6.83
4.42	1.840	40.12	4	1.0E-07	7	24.77	0	0	0.00	43.71	126.40	7.96
4.44	1.850	36.47	4	1.2E-07	7	24.91	0	0	33.95	42.56	127.09	7.94
4.46	1.770	36.12	4	1.0E-07	7	23.78	0	0	0.00	41.99	121.35	7.57
4.48	1.870	41.99	4	9.6E-08	8	25.18	0	0	0.00	44.78	128.47	7.99
4.50	2.200	51.18	4	1.3E-07	9	29.79	0	0	39.86	49.96	152.01	9.36
4.52	3.120	54.88	5	5.0E-07	11	42.67	34	35	44.84	56.20	0.00	0.00
4.54	4.100	58.21	5	1.4E-06	13	56.38	38	36	49.21	61.67	0.00	0.00
4.56	5.650	65.40	5	4.3E-06	16	69.79	44	38	55.68	69.79	0.00	0.00
4.58	6.410	80.33	5	4.9E-06	18	77.34	47	38	61.71	77.34	0.00	0.00
4.60	6.860	97.63	5	4.5E-06	19	84.31	49	39	67.27	84.31	0.00	0.00
4.62	6.280	121.43	5	2.0E-06	19	89.29	47	38	71.24	89.29	0.00	0.00
4.64	6.090	141.93	5	1.3E-06	19	84.22	46	38	75.01	94.01	0.00	0.00
4.66	6.300	172.03	5	9.6E-07	21	87.15	47	38	81.52	102.17	0.00	0.00
4.68	7.110	197.13	5	1.2E-06	23	98.49	50	39	88.72	111.19	0.00	0.00
4.70	7.470	207.21	5	1.3E-06	24	103.52	51	39	91.73	114.96	0.00	0.00
4.72	7.660	207.59	5	1.4E-06	24	106.18	52	39	92.50	115.93	0.00	0.00
4.74	7.660	210.98	5	1.4E-06	24	106.17	51	39	93.22	116.83	0.00	0.00
4.76	7.740	212.59	5	1.4E-06	24	107.28	52	39	93.87	117.65	0.00	0.00
4.78	7.760	212.72	5	1.4E-06	24	107.56	52	39	94.08	117.91	0.00	0.00
4.80	7.780	211.04	5	1.4E-06	24	107.83	52	39	93.97	117.77	0.00	0.00
4.82	7.930	203.94	5	1.7E-06	25	109.93	52	39	93.26	116.89	0.00	0.00
4.84	7.540	204.77	5	1.3E-06	24	104.46	51	39	92.38	115.79	0.00	0.00
4.86	7.060	204.96	5	9.8E-07	23	97.74	49	39	91.06	114.12	0.00	0.00
4.88	7.060	204.96	5	9.7E-07	23	97.73	49	39	91.18	114.28	0.00	0.00
4.90	5.480	225.55	4	2.7E-07	20	75.61	0	0	89.12	111.70	385.74	21.55
4.92	4.890	222.73	4	1.7E-07	19	67.34	0	0	86.35	108.23	343.57	19.23
4.94	4.380	225.14	4	1.0E-07	18	60.19	0	0	0.00	105.95	307.12	17.22
4.96	4.340	217.41	4	1.0E-07	17	59.63	0	0	0.00	104.41	304.23	16.98
4.98	4.040	218.30	4	7.6E-08	17	55.42	0	0	0.00	102.92	282.77	15.77
5.00	4.050	197.38	4	9.4E-08	16	55.56	0	0	0.00	99.12	283.46	15.70
5.02	4.210	185.50	4	1.3E-07	17	57.79	0	0	78.04	97.81	294.86	16.21
5.04	4.590	166.14	4	2.3E-07	17	63.11	0	0	76.48	95.86	321.98	17.52
5.06	4.650	159.86	4	2.6E-07	17	63.94	0	0	75.71	94.89	326.23	17.66
5.08	4.650	143.29	4	3.3E-07	17	63.94	0	0	72.73	91.15	326.21	17.55
5.10	4.810	138.09	5	4.0E-07	17	66.17	40	37	72.42	90.76	0.00	0.00
5.12	5.100	149.60	5	4.3E-07	18	70.23	41	37	75.81	95.02	0.00	0.00
5.14	5.660	159.55	5	5.9E-07	19	78.06	43	37	79.79	100.00	0.00	0.00
5.16	6.150	166.77	5	7.6E-07	21	84.91	44	38	82.90	103.90	0.00	0.00
5.18	6.050	176.06	5	6.2E-07	21	83.51	44	38	84.44	105.83	0.00	0.00
5.20	5.650	186.29	4	4.1E-07	20	77.90	0	0	85.02	106.56	397.47	20.86
5.22	5.320	193.83	4	2.9E-07	19	73.28	0	0	85.23	106.83	373.87	19.61
5.24	4.970	207.08	4	1.8E-07	19	68.37	0	0	86.19	108.02	348.84	18.29
5.26	5.240	207.21	4	2.3E-07	20	72.15	0	0	87.43	109.58	368.10	19.20
5.28	6.020	221.53	4	3.6E-07	22	83.06	0	0	92.93	116.47	423.78	21.94
5.30	6.920	215.38	5	6.8E-07	23	95.66	47	38	95.12	119.21	0.00	0.00
5.32	7.860	200.90	5	1.4E-06	25	108.81	49	39	95.48	119.67	0.00	0.00
5.34	8.740	194.75	5	2.3E-06	26	121.36	52	39	96.83	121.36	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	8.640	220.93	5	1.6E-06	27	119.72	52	39	101.64	127.39	0.00	0.00
5.38	8.610	224.79	5	1.5E-06	27	119.29	52	39	102.39	128.33	0.00	0.00
5.40	8.570	239.84	5	1.3E-06	27	118.73	51	39	105.11	131.73	0.00	0.00
5.42	8.480	263.48	5	1.0E-06	28	117.46	51	39	109.06	136.68	0.00	0.00
5.44	8.560	264.15	5	1.0E-06	28	118.58	51	39	109.54	137.29	0.00	0.00
5.46	8.610	263.48	5	1.1E-06	28	119.27	51	39	109.71	137.51	0.00	0.00
5.48	8.800	287.28	5	9.4E-07	29	121.93	52	39	114.40	143.38	0.00	0.00
5.50	9.490	279.52	5	1.4E-06	30	131.58	54	40	115.27	144.47	0.00	0.00
5.52	10.020	284.65	5	1.7E-06	31	138.99	55	40	117.76	147.59	0.00	0.00
5.54	10.170	289.31	5	1.7E-06	31	141.09	55	40	119.10	149.27	0.00	0.00
5.56	9.840	316.27	5	1.2E-06	31	136.46	54	40	122.78	153.89	0.00	0.00
5.58	9.730	327.33	5	1.0E-06	31	134.92	54	40	124.38	155.89	0.00	0.00
5.60	9.780	334.53	5	1.0E-06	32	135.61	54	40	125.82	157.69	0.00	0.00
5.62	10.040	337.98	5	1.1E-06	32	139.25	55	40	127.28	159.53	0.00	0.00
5.64	10.080	355.22	5	9.8E-07	33	139.80	55	40	130.25	163.25	0.00	0.00
5.66	10.310	361.91	5	1.0E-06	33	143.01	55	40	132.13	165.60	0.00	0.00
5.68	11.080	360.80	5	1.4E-06	35	153.79	57	40	134.34	168.37	0.00	0.00
5.70	11.380	372.05	5	1.5E-06	36	157.98	58	40	137.10	171.83	0.00	0.00
5.72	11.690	367.64	5	1.7E-06	36	162.32	58	40	137.41	172.22	0.00	0.00
5.74	11.960	363.43	5	1.9E-06	37	172.47	59	41	137.61	172.47	0.00	0.00
5.76	11.650	379.62	5	1.5E-06	36	161.74	58	40	139.50	174.84	0.00	0.00
5.78	11.220	380.09	5	1.3E-06	36	155.72	57	40	138.51	173.60	0.00	0.00
5.80	11.180	369.45	5	1.3E-06	35	155.15	57	40	136.89	171.56	0.00	0.00
5.82	10.850	363.74	5	1.2E-06	35	150.53	56	40	135.20	169.45	0.00	0.00
5.84	10.730	353.32	5	1.2E-06	34	148.84	55	40	133.35	167.13	0.00	0.00
5.86	10.620	343.24	5	1.2E-06	34	147.30	55	40	131.56	164.89	0.00	0.00
5.88	10.620	343.24	5	1.2E-06	34	147.29	55	40	131.71	165.07	0.00	0.00
5.90	11.330	354.87	5	1.5E-06	35	157.22	57	40	135.71	170.09	0.00	0.00
5.92	10.770	359.88	5	1.2E-06	35	149.38	55	40	135.10	169.32	0.00	0.00
5.94	10.350	360.67	5	9.6E-07	34	143.49	54	40	134.15	168.14	0.00	0.00
5.96	10.270	346.09	5	1.0E-06	33	142.37	54	40	131.74	165.12	0.00	0.00
5.98	10.480	325.21	5	1.3E-06	33	145.30	54	40	129.07	161.77	0.00	0.00
6.00	10.780	307.05	5	1.6E-06	33	149.50	55	40	126.94	159.10	0.00	0.00
6.02	10.580	295.52	5	1.6E-06	33	146.69	54	40	124.54	156.10	0.00	0.00
6.04	10.580	287.34	5	1.7E-06	33	146.68	54	40	123.23	154.45	0.00	0.00
6.06	10.320	290.73	5	1.5E-06	32	143.04	53	40	123.28	154.51	0.00	0.00
6.08	9.860	287.60	5	1.3E-06	31	136.59	52	39	121.62	152.43	0.00	0.00
6.10	9.570	279.87	5	1.2E-06	31	132.53	51	39	119.59	149.88	0.00	0.00
6.12	9.190	277.96	5	9.9E-07	30	127.20	50	39	118.31	148.28	0.00	0.00
6.14	8.600	278.31	5	7.3E-07	29	118.94	48	39	116.77	146.35	0.00	0.00
6.16	7.850	279.96	4	4.8E-07	27	108.43	0	0	114.84	143.93	553.21	24.56
6.18	7.540	280.85	4	4.0E-07	27	104.08	0	0	114.09	143.00	531.04	23.49
6.20	7.210	290.16	4	3.0E-07	26	99.46	0	0	114.63	143.67	507.44	22.35
6.22	6.810	301.98	4	2.1E-07	26	93.85	0	0	115.21	144.39	478.84	21.00
6.24	6.520	308.99	4	1.7E-07	25	89.79	0	0	115.33	144.55	458.10	20.01
6.26	6.840	286.96	4	2.4E-07	25	94.26	0	0	113.19	141.86	480.92	20.96
6.28	7.130	283.26	4	3.0E-07	26	98.32	0	0	113.75	142.57	501.61	21.81
6.30	7.640	278.88	4	4.1E-07	27	105.45	0	0	114.89	143.99	538.01	23.35
6.32	8.070	269.60	5	5.6E-07	28	111.46	46	38	114.80	143.89	0.00	0.00
6.34	8.240	255.50	5	6.9E-07	28	113.84	47	38	112.95	141.56	0.00	0.00
6.36	8.450	243.77	5	8.5E-07	28	116.77	47	38	111.54	139.80	0.00	0.00
6.38	8.370	249.13	5	7.8E-07	28	115.65	47	38	112.42	140.91	0.00	0.00
6.40	8.170	268.46	5	5.9E-07	28	112.84	46	38	115.43	144.67	0.00	0.00
6.42	7.930	281.96	4	4.6E-07	28	109.48	0	0	117.14	146.82	558.55	23.82
6.44	7.630	290.20	4	3.6E-07	27	105.27	0	0	117.69	147.50	537.09	22.80

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	7.170	297.14	4	2.6E-07	26	98.82	0	0	117.38	147.12	504.21	21.30
6.48	7.040	299.26	4	2.3E-07	26	97.00	0	0	117.39	147.13	494.89	20.83
6.50	7.000	304.01	4	2.2E-07	26	96.43	0	0	118.15	148.08	492.01	20.63
6.52	6.920	295.46	4	2.2E-07	26	95.31	0	0	116.61	146.15	486.26	20.33
6.54	7.010	272.55	4	2.8E-07	26	96.56	0	0	113.25	141.94	492.66	20.56
6.56	7.040	262.63	4	3.0E-07	26	96.98	0	0	111.77	140.09	494.78	20.60
6.58	6.680	256.42	4	2.5E-07	25	91.93	0	0	109.57	137.33	469.03	19.45
6.60	6.310	248.53	4	2.1E-07	24	86.75	0	0	107.00	134.10	442.58	18.27
6.62	5.920	238.20	4	1.7E-07	23	81.28	0	0	103.87	130.18	414.69	17.04
6.64	5.640	241.84	4	1.3E-07	22	77.35	0	0	103.55	129.78	394.66	16.14
6.66	5.450	238.45	4	1.2E-07	22	74.69	0	0	102.33	128.25	381.06	15.52
6.68	5.450	232.52	4	1.2E-07	22	74.68	0	0	101.42	127.11	381.03	15.47
6.70	5.300	227.36	4	1.1E-07	21	72.58	0	0	100.03	125.37	370.29	14.98
6.72	5.030	215.03	4	1.0E-07	20	68.79	0	0	0.00	121.39	350.98	14.14
6.74	4.700	208.54	4	7.8E-08	19	64.17	0	0	0.00	118.35	327.38	13.12
6.76	4.470	203.05	4	6.6E-08	19	60.94	0	0	0.00	116.00	310.92	12.41
6.78	4.320	204.20	4	5.5E-08	18	58.83	0	0	0.00	115.56	300.18	11.92
6.80	4.380	198.75	4	6.2E-08	18	59.67	0	0	0.00	114.81	304.44	12.07
6.82	4.580	184.83	4	8.8E-08	19	62.46	0	0	0.00	112.77	318.69	12.63
6.84	4.700	177.55	4	1.1E-07	19	64.14	0	0	0.00	111.76	327.24	12.95
6.86	4.940	171.46	4	1.4E-07	19	67.49	0	0	89.01	111.55	344.35	13.63
6.88	4.940	171.46	4	1.4E-07	19	67.49	0	0	89.11	111.69	344.32	13.59
6.90	5.590	167.28	4	2.6E-07	21	76.58	0	0	90.69	113.67	390.73	15.46
6.92	5.630	166.30	4	2.7E-07	21	77.14	0	0	90.72	113.71	393.55	15.54
6.94	5.690	159.55	4	3.1E-07	21	77.97	0	0	89.58	112.28	397.81	15.68
6.96	5.740	160.21	4	3.2E-07	21	78.67	0	0	89.99	112.79	401.36	15.78
6.98	5.660	167.56	4	2.7E-07	21	77.54	0	0	91.40	114.55	395.61	15.49
7.00	5.640	164.55	4	2.7E-07	21	77.25	0	0	90.79	113.80	394.16	15.39
7.02	5.910	168.86	4	3.2E-07	21	81.03	0	0	92.71	116.19	413.41	16.12
7.04	6.090	168.80	5	3.6E-07	22	83.54	38	36	93.38	117.03	0.00	0.00
7.06	6.120	175.74	5	3.3E-07	22	83.96	38	36	95.05	119.13	0.00	0.00
7.08	6.170	178.50	5	3.3E-07	22	84.65	38	36	95.89	120.19	0.00	0.00
7.10	6.340	181.00	5	3.6E-07	23	87.03	39	36	97.06	121.65	0.00	0.00
7.12	6.770	176.12	5	5.1E-07	23	93.04	40	37	97.45	122.13	0.00	0.00
7.14	7.020	180.71	5	5.7E-07	24	96.54	41	37	99.27	124.42	0.00	0.00
7.16	7.390	184.42	5	6.8E-07	25	101.71	42	37	101.23	126.87	0.00	0.00
7.18	7.720	186.48	5	8.0E-07	26	106.33	43	37	102.69	128.70	0.00	0.00
7.20	7.180	197.98	5	5.1E-07	25	98.76	41	37	103.70	129.97	0.00	0.00
7.22	6.860	203.78	5	3.9E-07	24	94.27	40	37	104.03	130.39	0.00	0.00
7.24	6.640	191.11	5	3.8E-07	24	91.19	39	37	100.86	126.41	0.00	0.00
7.26	5.860	199.73	4	2.0E-07	22	80.26	0	0	100.16	125.53	409.51	15.36
7.28	5.400	196.78	4	1.4E-07	21	73.82	0	0	98.03	122.87	376.62	14.03
7.30	4.910	210.72	4	7.7E-08	20	66.95	0	0	0.00	123.96	341.59	12.59
7.32	4.770	212.85	4	6.5E-08	20	64.99	0	0	0.00	123.87	331.56	12.15
7.34	4.750	191.01	4	8.1E-08	19	64.70	0	0	0.00	118.71	330.11	12.10
7.36	4.770	190.03	4	8.3E-08	20	64.98	0	0	0.00	118.70	331.51	12.12
7.38	4.970	184.49	4	1.1E-07	20	67.77	0	0	0.00	118.45	345.77	12.65
7.40	5.180	179.92	4	1.3E-07	20	70.70	0	0	94.48	118.42	360.74	13.20
7.42	5.510	172.13	4	1.9E-07	21	75.32	0	0	94.14	117.99	384.28	14.10
7.44	5.800	162.81	4	2.7E-07	21	79.37	0	0	93.19	116.80	404.97	14.90
7.46	6.060	156.28	5	3.6E-07	22	83.01	37	36	92.65	116.12	0.00	0.00
7.48	6.220	156.25	5	4.0E-07	22	85.24	37	36	93.22	116.84	0.00	0.00
7.50	6.400	159.55	5	4.4E-07	22	87.76	38	36	94.61	118.58	0.00	0.00
7.52	6.540	161.32	5	4.7E-07	23	89.71	38	36	95.53	119.73	0.00	0.00
7.54	6.620	167.66	5	4.5E-07	23	90.83	38	36	97.30	121.95	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P16	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	6.560	176.91	5	3.9E-07	23	89.98	38	36	99.27	124.42	0.00	0.00
7.58	6.420	182.71	4	3.2E-07	23	88.02	0	0	100.21	125.59	449.06	16.26
7.60	6.370	182.39	4	3.1E-07	23	87.31	0	0	100.09	125.44	445.46	16.08
7.62	6.320	185.09	4	2.9E-07	23	86.60	0	0	100.61	126.10	441.86	15.89
7.64	6.250	184.49	4	2.8E-07	23	85.62	0	0	100.37	125.80	436.83	15.66
7.66	6.180	183.54	4	2.6E-07	23	84.63	0	0	100.05	125.40	431.80	15.43
7.68	6.210	176.41	4	2.9E-07	23	85.05	0	0	98.71	123.72	433.92	15.49
7.70	6.200	173.81	4	3.0E-07	23	84.90	0	0	98.21	123.09	433.17	15.43
7.72	6.150	172.29	4	2.9E-07	22	84.20	0	0	97.82	122.61	429.57	15.25
7.74	6.090	168.83	4	2.9E-07	22	83.35	0	0	96.97	121.54	425.26	15.06
7.76	6.180	166.93	5	3.1E-07	22	84.61	36	36	96.93	121.48	0.00	0.00
7.78	6.280	170.51	5	3.2E-07	23	86.00	37	36	98.14	123.00	0.00	0.00
7.80	6.470	172.13	5	3.6E-07	23	88.65	37	36	99.18	124.30	0.00	0.00
7.82	6.900	172.89	5	4.7E-07	24	94.67	38	36	100.71	126.22	0.00	0.00
7.84	7.130	176.31	5	5.2E-07	25	97.88	39	37	102.23	128.13	0.00	0.00
7.86	7.350	178.75	5	5.8E-07	25	100.96	40	37	103.49	129.71	0.00	0.00
7.88	7.350	178.75	5	5.8E-07	25	100.95	40	37	103.60	129.84	0.00	0.00
7.90	7.540	218.80	5	4.1E-07	27	103.61	40	37	112.90	141.50	0.00	0.00
7.92	7.680	243.14	4	3.5E-07	27	105.56	0	0	118.35	148.34	538.58	18.72
7.94	7.820	250.52	4	3.6E-07	28	107.52	0	0	120.34	150.83	548.55	19.02

CPTe P18 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P18	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.110	0.03	0	0.0E+00	0	1.23	0	0	0.98	1.23	0.00	0.00
0.04	0.440	0.06	0	0.0E+00	1	3.72	0	0	2.97	3.72	0.00	0.00
0.06	0.480	0.03	0	0.0E+00	1	4.70	0	0	3.75	4.70	0.00	0.00
0.08	0.590	0.03	0	0.0E+00	1	5.91	0	0	4.72	5.91	0.00	0.00
0.10	0.620	0.03	0	0.0E+00	2	6.48	0	0	5.17	6.48	0.00	0.00
0.12	0.690	0.03	0	0.0E+00	2	7.28	0	0	5.81	7.28	0.00	0.00
0.14	0.790	0.03	0	0.0E+00	2	8.49	0	0	6.77	8.49	0.00	0.00
0.16	0.910	0.06	0	0.0E+00	2	8.55	0	0	6.82	8.55	0.00	0.00
0.18	0.930	0.06	0	0.0E+00	2	8.90	0	0	7.10	8.90	0.00	0.00
0.20	0.950	0.06	0	0.0E+00	2	9.23	0	0	7.37	9.23	0.00	0.00
0.22	0.960	0.06	0	0.0E+00	2	9.54	0	0	7.62	9.54	0.00	0.00
0.24	1.020	0.03	0	0.0E+00	3	11.85	0	0	9.45	11.85	0.00	0.00
0.26	1.060	2.85	6	3.2E-05	3	9.21	42	37	7.35	9.21	0.00	0.00
0.28	1.030	6.43	6	1.2E-05	3	10.61	44	38	8.46	10.61	0.00	0.00
0.30	1.010	8.08	6	8.6E-06	3	11.11	44	38	8.87	11.11	0.00	0.00
0.32	0.960	6.56	6	8.7E-06	3	10.52	42	37	8.39	10.52	0.00	0.00
0.34	0.940	6.50	6	7.7E-06	3	10.53	42	37	8.40	10.53	0.00	0.00
0.36	0.800	6.91	5	4.1E-06	2	10.03	39	37	8.00	10.03	0.00	0.00
0.38	0.760	5.67	5	4.2E-06	2	9.50	38	36	7.58	9.50	0.00	0.00
0.40	0.750	4.12	6	5.3E-06	2	8.97	36	36	7.16	8.97	0.00	0.00
0.42	0.710	1.87	6	8.4E-06	2	7.80	34	35	6.22	7.80	0.00	0.00
0.44	0.660	1.08	6	8.7E-06	2	7.20	32	35	5.74	7.20	0.00	0.00
0.46	0.640	0.10	0	0.0E+00	2	7.32	0	0	5.84	7.32	0.00	0.00
0.48	0.600	0.03	0	0.0E+00	2	8.51	0	0	6.79	8.51	0.00	0.00
0.50	0.590	0.03	0	0.0E+00	2	8.46	0	0	6.75	8.46	0.00	0.00
0.52	0.590	0.03	0	0.0E+00	2	8.16	0	0	6.81	8.53	0.00	0.00
0.54	0.600	0.06	0	0.0E+00	2	7.72	0	0	6.16	7.72	0.00	0.00
0.56	0.640	0.06	0	0.0E+00	2	8.19	0	0	6.53	8.19	0.00	0.00
0.58	0.680	0.06	0	0.0E+00	2	8.70	0	0	6.94	8.70	0.00	0.00
0.60	0.730	0.10	0	0.0E+00	2	8.58	0	0	6.84	8.58	0.00	0.00
0.62	0.780	0.06	0	0.0E+00	2	9.86	0	0	7.86	9.86	0.00	0.00
0.64	0.800	0.06	0	0.0E+00	2	10.13	0	0	8.08	10.13	0.00	0.00
0.66	0.790	0.03	0	0.0E+00	2	10.93	0	0	9.23	11.57	0.00	0.00
0.68	0.790	0.06	0	0.0E+00	2	10.16	0	0	8.10	10.16	0.00	0.00
0.70	0.780	0.03	0	0.0E+00	2	10.78	0	0	9.25	11.59	0.00	0.00
0.72	0.740	0.03	0	0.0E+00	2	10.22	0	0	8.89	11.14	0.00	0.00
0.74	0.700	0.03	0	0.0E+00	2	9.65	0	0	8.52	10.68	0.00	0.00
0.76	0.650	0.03	0	0.0E+00	2	8.95	0	0	8.04	10.08	0.00	0.00
0.78	0.620	0.03	0	0.0E+00	2	8.53	0	0	7.77	9.74	0.00	0.00
0.80	0.580	0.00	0	0.0E+00	0	0.51	0	0	0.41	0.51	0.00	0.00
0.82	0.560	0.00	0	0.0E+00	0	0.49	0	0	0.39	0.49	0.00	0.00
0.84	0.520	0.03	0	0.0E+00	2	7.11	0	0	6.84	8.58	0.00	0.00
0.86	0.520	0.03	0	0.0E+00	2	7.11	0	0	6.88	8.63	0.00	0.00
0.88	0.470	0.10	0	0.0E+00	1	6.41	0	0	5.47	6.85	0.00	0.00
0.90	0.440	0.10	0	0.0E+00	1	5.98	0	0	5.25	6.58	0.00	0.00
0.92	0.440	0.06	0	0.0E+00	1	5.98	0	0	5.54	6.95	0.00	0.00
0.94	0.420	0.10	0	0.0E+00	1	5.69	0	0	5.14	6.45	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P18	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	0.400	0.10	0	0.0E+00	1	5.41	0	0	5.00	6.27	0.00	0.00
0.98	0.400	0.10	0	0.0E+00	1	5.41	0	0	5.03	6.30	0.00	0.00
1.00	0.390	0.06	0	0.0E+00	1	5.26	0	0	5.19	6.50	0.00	0.00
1.02	0.380	0.06	0	0.0E+00	1	5.12	0	0	5.10	6.39	0.00	0.00
1.04	0.380	0.06	0	0.0E+00	1	5.11	0	0	5.13	6.43	0.00	0.00
1.06	0.390	0.06	0	0.0E+00	1	5.25	0	0	5.25	6.58	0.00	0.00
1.08	0.380	0.06	0	0.0E+00	1	5.11	0	0	5.18	6.49	0.00	0.00
1.10	0.390	0.03	0	0.0E+00	1	5.24	0	0	5.80	7.27	0.00	0.00
1.12	0.390	0.03	0	0.0E+00	1	5.24	0	0	5.83	7.31	0.00	0.00
1.14	0.400	0.06	0	0.0E+00	1	5.38	0	0	5.46	6.84	0.00	0.00
1.16	0.390	0.06	0	0.0E+00	1	5.23	0	0	5.38	6.75	0.00	0.00
1.18	0.360	0.10	0	0.0E+00	1	4.62	0	0	4.91	6.15	0.00	0.00
1.20	0.350	0.10	0	0.0E+00	1	4.33	0	0	4.84	6.07	0.00	0.00
1.22	0.350	0.06	0	0.0E+00	1	4.37	0	0	5.05	6.33	0.00	0.00
1.24	0.350	0.10	0	0.0E+00	1	4.24	0	0	4.89	6.13	0.00	0.00
1.26	0.370	0.10	0	0.0E+00	1	4.66	0	0	5.09	6.39	0.00	0.00
1.28	0.380	0.10	0	0.0E+00	1	4.85	0	0	5.21	6.53	0.00	0.00
1.30	0.370	0.10	0	0.0E+00	1	4.56	0	0	5.14	6.44	0.00	0.00
1.32	0.360	0.10	0	0.0E+00	1	4.29	0	0	5.07	6.35	0.00	0.00
1.34	0.350	0.06	0	0.0E+00	1	4.10	0	0	5.19	6.50	0.00	0.00
1.36	0.360	0.06	0	0.0E+00	1	4.28	0	0	5.32	6.66	0.00	0.00
1.38	0.390	0.06	0	0.0E+00	1	4.95	0	0	5.65	7.08	0.00	0.00
1.40	0.390	0.06	0	0.0E+00	1	4.90	0	0	5.67	7.11	0.00	0.00
1.42	0.400	0.06	0	0.0E+00	1	5.10	0	0	5.80	7.27	0.00	0.00
1.44	0.420	0.06	0	0.0E+00	1	5.55	0	0	6.03	7.56	0.00	0.00
1.46	0.420	0.06	0	0.0E+00	1	5.50	0	0	6.06	7.59	0.00	0.00
1.48	0.420	0.06	0	0.0E+00	1	5.44	0	0	6.08	7.62	0.00	0.00
1.50	0.420	0.06	0	0.0E+00	1	5.39	0	0	6.10	7.65	0.00	0.00
1.52	0.440	0.10	0	0.0E+00	2	5.72	0	0	6.04	7.57	0.00	0.00
1.54	0.470	0.10	0	0.0E+00	2	6.28	0	0	6.34	7.94	0.00	0.00
1.56	0.480	0.10	0	0.0E+00	2	6.41	0	0	6.45	8.09	0.00	0.00
1.58	0.500	0.10	0	0.0E+00	2	6.69	0	0	6.66	8.34	0.00	0.00
1.60	0.530	0.06	0	0.0E+00	2	7.11	0	0	7.37	9.23	0.00	0.00
1.62	0.560	0.06	0	0.0E+00	2	7.52	0	0	7.70	9.65	0.00	0.00
1.64	0.560	0.10	0	0.0E+00	2	7.52	0	0	7.27	9.12	0.00	0.00
1.66	0.560	0.10	0	0.0E+00	2	7.52	0	0	7.30	9.15	0.00	0.00
1.68	0.550	0.06	0	0.0E+00	2	7.37	0	0	7.68	9.62	0.00	0.00
1.70	0.570	0.06	0	0.0E+00	2	7.65	0	0	7.91	9.91	0.00	0.00
1.72	0.590	0.06	0	0.0E+00	2	7.92	0	0	8.14	10.21	0.00	0.00
1.74	0.620	0.10	0	0.0E+00	2	8.34	0	0	7.94	9.95	0.00	0.00
1.76	0.750	0.10	0	0.0E+00	2	10.16	0	0	9.12	11.43	0.00	0.00
1.78	1.210	0.10	0	0.0E+00	4	16.40	0	0	13.08	16.40	0.00	0.00
1.80	1.120	0.13	0	0.0E+00	3	14.85	0	0	11.85	14.85	0.00	0.00
1.82	1.260	0.10	0	0.0E+00	4	17.02	0	0	13.58	17.02	0.00	0.00
1.84	1.030	0.13	0	0.0E+00	3	14.05	0	0	11.21	14.05	0.00	0.00
1.86	1.030	0.13	0	0.0E+00	3	14.09	0	0	11.24	14.09	0.00	0.00
1.88	0.650	0.06	0	0.0E+00	2	8.73	0	0	8.98	11.26	0.00	0.00
1.90	0.630	0.06	0	0.0E+00	2	8.45	0	0	8.80	11.03	0.00	0.00
1.92	0.610	0.03	0	0.0E+00	2	8.17	0	0	9.72	12.19	0.00	0.00
1.94	0.620	0.03	0	0.0E+00	2	8.30	0	0	9.88	12.39	0.00	0.00
1.96	0.690	0.03	0	0.0E+00	3	9.28	0	0	10.83	13.57	0.00	0.00
1.98	0.700	0.00	0	0.0E+00	0	0.61	0	0	0.48	0.61	0.00	0.00
2.00	0.700	0.03	0	0.0E+00	3	9.41	0	0	11.03	13.82	0.00	0.00
2.02	0.740	0.00	0	0.0E+00	0	0.64	0	0	0.51	0.64	0.00	0.00
2.04	0.830	0.03	0	0.0E+00	3	11.22	0	0	12.81	16.05	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P18	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	0.870	0.06	0	0.0E+00	3	11.78	0	0	11.55	14.48	0.00	0.00
2.08	0.920	0.10	0	0.0E+00	3	12.47	0	0	11.10	13.91	0.00	0.00
2.10	0.940	0.06	0	0.0E+00	3	12.75	0	0	12.35	15.48	0.00	0.00
2.12	0.980	0.06	0	0.0E+00	3	13.31	0	0	12.81	16.06	0.00	0.00
2.14	1.020	0.06	0	0.0E+00	3	13.86	0	0	13.26	16.63	0.00	0.00
2.16	0.910	0.03	0	0.0E+00	3	12.32	0	0	14.09	17.65	0.00	0.00
2.18	0.890	0.03	0	0.0E+00	3	12.03	0	0	13.85	17.36	0.00	0.00
2.20	0.890	0.03	0	0.0E+00	3	12.03	0	0	13.89	17.41	0.00	0.00
2.22	0.890	0.00	0	0.0E+00	0	0.77	0	0	0.62	0.77	0.00	0.00
2.24	0.940	0.03	0	0.0E+00	3	12.72	0	0	14.65	18.36	0.00	0.00
2.26	1.000	0.03	0	0.0E+00	4	13.56	0	0	15.50	19.42	0.00	0.00
2.28	1.030	0.03	0	0.0E+00	4	13.97	0	0	15.94	19.98	0.00	0.00
2.30	1.050	0.03	0	0.0E+00	4	14.25	0	0	16.25	20.37	0.00	0.00
2.32	1.060	0.03	0	0.0E+00	4	14.39	0	0	16.43	20.59	0.00	0.00
2.34	1.030	1.96	5	1.9E-06	3	14.41	25	32	11.49	14.41	0.00	0.00
2.36	1.030	3.14	5	1.4E-06	3	13.96	25	32	12.26	15.37	0.00	0.00
2.38	1.070	6.15	5	7.9E-07	4	14.51	26	33	14.06	17.62	0.00	0.00
2.40	1.070	9.13	5	4.9E-07	4	14.51	26	33	15.35	19.24	0.00	0.00
2.42	1.130	7.76	5	7.1E-07	4	15.34	27	33	15.15	18.98	0.00	0.00
2.44	1.160	7.29	5	8.3E-07	4	15.76	27	33	15.13	18.97	0.00	0.00
2.46	1.140	8.65	5	6.2E-07	4	15.48	27	33	15.65	19.61	0.00	0.00
2.48	1.130	9.85	5	5.0E-07	4	15.33	27	33	16.12	20.20	0.00	0.00
2.50	1.130	9.54	5	5.2E-07	4	15.33	26	33	16.04	20.10	0.00	0.00
2.52	1.180	9.25	5	6.2E-07	4	16.02	27	33	16.22	20.33	0.00	0.00
2.54	1.200	10.52	5	5.5E-07	4	16.30	27	33	16.86	21.13	0.00	0.00
2.56	1.230	11.60	5	5.2E-07	4	16.71	27	33	17.46	21.88	0.00	0.00
2.58	1.270	12.07	5	5.5E-07	4	17.27	28	33	17.88	22.41	0.00	0.00
2.60	1.220	13.15	5	4.1E-07	4	16.57	27	33	18.06	22.63	0.00	0.00
2.62	1.190	14.51	5	3.2E-07	4	16.14	27	33	18.41	23.07	0.00	0.00
2.64	1.160	15.56	5	2.6E-07	4	15.72	27	33	18.64	23.36	0.00	0.00
2.66	1.120	17.65	4	1.8E-07	4	15.15	0	0	19.11	23.95	77.30	8.03
2.68	1.090	18.82	4	1.5E-07	4	14.73	0	0	19.32	24.22	75.14	7.84
2.70	1.050	20.79	4	1.1E-07	4	14.16	0	0	0.00	24.67	72.26	7.61
2.72	1.030	19.36	4	1.1E-07	4	13.88	0	0	0.00	24.09	70.80	7.40
2.74	1.010	18.13	4	1.1E-07	4	13.59	0	0	0.00	23.56	69.35	7.19
2.76	1.010	17.08	4	1.2E-07	4	13.59	0	0	18.54	23.23	69.33	7.11
2.78	1.000	15.27	4	1.3E-07	4	13.44	0	0	17.97	22.52	68.59	6.95
2.80	1.040	11.50	5	2.3E-07	4	14.00	25	32	16.96	21.26	0.00	0.00
2.82	1.090	9.76	5	3.4E-07	4	14.70	25	32	16.61	20.82	0.00	0.00
2.84	1.130	9.22	5	4.1E-07	4	15.25	25	32	16.64	20.85	0.00	0.00
2.86	1.130	9.22	5	4.0E-07	4	15.25	25	32	16.68	20.91	0.00	0.00
2.88	1.090	7.10	5	4.8E-07	4	14.68	24	32	15.57	19.52	0.00	0.00
2.90	1.090	8.05	5	4.1E-07	4	14.68	24	32	16.04	20.11	0.00	0.00
2.92	1.070	10.20	5	2.8E-07	4	14.39	24	32	16.88	21.15	0.00	0.00
2.94	1.060	13.47	5	1.8E-07	4	14.25	24	32	18.08	22.66	0.00	0.00
2.96	1.000	17.87	4	9.1E-08	4	13.40	0	0	0.00	24.05	68.39	6.66
2.98	0.990	16.92	4	9.4E-08	4	13.26	0	0	0.00	23.67	67.65	6.54
3.00	0.950	17.17	4	7.7E-08	4	12.70	0	0	0.00	23.50	64.77	6.28
3.02	0.890	19.11	4	4.9E-08	4	11.85	0	0	0.00	23.77	60.46	5.94
3.04	0.910	18.51	4	5.6E-08	4	12.13	0	0	0.00	23.79	61.87	6.00
3.06	0.940	16.38	4	7.6E-08	4	12.54	0	0	0.00	23.29	63.99	6.09
3.08	0.980	14.70	4	1.0E-07	4	13.10	0	0	0.00	22.99	66.82	6.23
3.10	1.040	12.48	4	1.6E-07	4	13.93	0	0	17.97	22.52	71.09	6.46
3.12	1.070	9.92	5	2.5E-07	4	14.35	24	32	17.18	21.53	0.00	0.00
3.14	1.090	9.51	5	2.7E-07	4	14.62	24	32	17.16	21.50	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P18	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	1.100	8.33	5	3.3E-07	4	14.76	24	32	16.73	20.97	0.00	0.00
3.18	1.120	8.78	5	3.3E-07	4	15.04	24	32	17.08	21.40	0.00	0.00
3.20	1.050	11.91	5	1.7E-07	4	14.05	23	32	18.02	22.58	0.00	0.00
3.22	0.960	15.24	4	8.1E-08	4	12.79	0	0	0.00	23.44	65.24	5.90
3.24	0.900	18.22	4	4.7E-08	4	11.94	0	0	0.00	24.17	60.93	5.60
3.26	0.870	20.85	4	3.3E-08	4	11.52	0	0	0.00	24.91	58.76	5.45
3.28	0.880	21.64	4	3.2E-08	4	11.65	0	0	0.00	25.34	59.45	5.49
3.30	0.900	21.10	4	3.6E-08	4	11.93	0	0	0.00	25.39	60.86	5.56
3.32	0.930	20.25	4	4.3E-08	4	12.34	0	0	0.00	25.42	62.98	5.67
3.34	1.000	17.40	4	7.1E-08	4	13.32	0	0	0.00	24.98	67.95	5.96
3.36	1.060	15.43	4	1.1E-07	4	14.15	0	0	0.00	24.69	72.22	6.20
3.38	1.040	15.40	4	9.8E-08	4	13.87	0	0	0.00	24.58	70.76	6.06
3.40	1.000	14.83	4	8.7E-08	4	13.31	0	0	0.00	24.08	67.88	5.81
3.42	0.950	16.48	4	6.0E-08	4	12.60	0	0	0.00	24.43	64.29	5.55
3.44	0.880	18.28	4	3.7E-08	4	11.62	0	0	0.00	24.59	59.27	5.18
3.46	0.820	18.38	4	2.7E-08	4	10.77	0	0	0.00	24.14	54.96	4.83
3.48	0.770	17.84	4	2.1E-08	4	9.86	0	0	0.00	23.51	51.36	4.53
3.50	0.770	16.89	4	2.3E-08	4	9.77	0	0	0.00	23.20	51.34	4.49
3.52	0.770	15.72	4	2.5E-08	4	9.67	0	0	0.00	22.79	51.32	4.44
3.54	0.780	13.53	4	3.3E-08	3	9.78	0	0	0.00	22.01	52.01	4.43
3.56	0.830	10.24	4	6.2E-08	3	10.85	0	0	0.00	20.94	55.56	4.60
3.58	0.830	7.83	4	8.8E-08	3	10.66	0	0	0.00	19.67	55.54	4.52
3.60	0.820	6.31	4	1.1E-07	3	10.25	0	0	0.00	18.69	54.80	4.41
3.62	0.800	6.27	4	9.8E-08	3	9.70	0	0	0.00	18.54	53.35	4.29
3.64	0.790	6.24	4	9.2E-08	3	9.41	0	0	0.00	18.48	52.61	4.22
3.66	0.770	6.56	4	7.7E-08	3	8.91	0	0	0.00	18.55	51.16	4.10
3.68	0.790	5.61	4	1.0E-07	3	9.27	0	0	0.00	18.13	52.57	4.16
3.70	0.830	5.01	5	1.4E-07	3	10.15	19	30	14.41	18.06	0.00	0.00
3.72	0.820	5.01	5	1.3E-07	3	9.85	19	30	14.38	18.02	0.00	0.00
3.74	0.820	4.88	5	1.3E-07	3	9.80	19	30	14.33	17.96	0.00	0.00
3.76	0.830	4.12	5	1.7E-07	3	9.93	19	30	13.95	17.49	0.00	0.00
3.78	0.880	3.33	5	2.5E-07	3	11.05	20	30	13.76	17.25	0.00	0.00
3.80	0.890	3.23	5	2.7E-07	3	11.24	20	30	13.78	17.27	0.00	0.00
3.82	0.930	3.45	5	2.9E-07	3	12.24	20	30	14.19	17.78	0.00	0.00
3.84	0.890	4.12	5	2.1E-07	3	11.23	20	30	14.43	18.08	0.00	0.00
3.86	0.890	4.12	5	2.0E-07	3	11.17	20	30	14.45	18.12	0.00	0.00
3.88	0.940	1.55	5	5.3E-07	3	12.14	20	30	12.88	16.14	0.00	0.00
3.90	0.970	2.28	5	4.6E-07	3	12.78	20	30	13.66	17.12	0.00	0.00
3.92	0.990	2.41	5	4.7E-07	3	13.06	20	30	13.90	17.42	0.00	0.00
3.94	0.980	2.95	5	3.8E-07	3	12.91	20	30	14.27	17.89	0.00	0.00
3.96	0.920	4.82	5	1.9E-07	3	11.75	20	30	15.20	19.06	0.00	0.00
3.98	0.910	4.72	5	1.8E-07	3	11.43	20	30	15.11	18.94	0.00	0.00
4.00	0.880	4.44	5	1.7E-07	3	10.61	19	30	14.78	18.53	0.00	0.00
4.02	0.910	3.49	5	2.4E-07	3	11.23	19	30	14.36	17.99	0.00	0.00
4.04	0.940	3.93	5	2.4E-07	3	11.98	20	30	14.86	18.63	0.00	0.00
4.06	0.940	5.45	5	1.7E-07	4	12.05	20	30	15.84	19.86	0.00	0.00
4.08	0.930	5.48	5	1.6E-07	4	11.74	20	30	15.83	19.84	0.00	0.00
4.10	0.910	6.12	5	1.2E-07	4	11.22	19	30	16.11	20.19	0.00	0.00
4.12	0.890	7.00	4	9.6E-08	4	10.73	0	0	0.00	20.67	59.26	4.27
4.14	0.870	8.21	4	7.0E-08	4	10.25	0	0	0.00	21.31	57.81	4.18
4.16	0.870	7.83	4	7.4E-08	4	10.18	0	0	0.00	21.12	57.78	4.15
4.18	0.860	6.62	4	8.6E-08	4	9.84	0	0	0.00	20.29	57.05	4.07
4.20	0.880	5.01	5	1.3E-07	3	10.18	19	30	15.42	19.32	0.00	0.00
4.22	0.890	3.83	5	1.8E-07	3	10.29	19	30	14.74	18.47	0.00	0.00
4.24	0.890	3.74	5	1.8E-07	3	10.24	19	30	14.70	18.43	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P18	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	0.890	3.45	5	1.9E-07	3	10.18	19	30	14.52	18.20	0.00	0.00
4.28	0.870	3.55	5	1.7E-07	3	9.68	19	29	14.50	18.17	0.00	0.00
4.30	0.870	3.68	5	1.6E-07	3	9.65	18	29	14.61	18.32	0.00	0.00
4.32	0.850	5.77	4	8.9E-08	3	9.27	0	0	0.00	19.86	56.19	3.89
4.34	0.830	9.00	4	4.5E-08	4	8.91	0	0	0.00	21.85	54.74	3.83
4.36	0.810	10.74	4	3.2E-08	4	8.48	0	0	0.00	22.70	53.29	3.75
4.38	0.810	10.90	4	3.1E-08	4	8.44	0	0	0.00	22.83	53.27	3.73
4.40	0.820	10.62	4	3.3E-08	4	8.60	0	0	0.00	22.81	53.96	3.76
4.42	0.810	10.84	4	3.0E-08	4	8.35	0	0	0.00	22.89	53.22	3.70
4.44	0.810	11.03	4	2.9E-08	4	8.31	0	0	0.00	23.03	53.20	3.68
4.46	0.820	10.39	4	3.3E-08	4	8.47	0	0	0.00	22.81	53.89	3.70
4.48	0.830	8.75	4	4.3E-08	4	8.60	0	0	0.00	21.99	54.58	3.71
4.50	0.860	6.78	4	6.9E-08	4	9.14	0	0	0.00	21.00	56.70	3.80
4.52	0.880	7.16	4	7.0E-08	4	9.56	0	0	0.00	21.46	58.11	3.88
4.54	0.900	6.69	4	8.2E-08	4	9.95	0	0	0.00	21.34	59.52	3.94
4.56	0.900	8.27	4	6.2E-08	4	9.97	0	0	0.00	22.43	59.50	3.95
4.58	0.930	10.04	4	5.4E-08	4	10.68	0	0	0.00	23.80	61.62	4.08
4.60	0.960	11.22	4	5.3E-08	4	11.38	0	0	0.00	24.76	63.74	4.21
4.62	0.980	13.09	4	4.6E-08	4	11.88	0	0	0.00	25.98	65.14	4.30
4.64	1.010	15.97	4	3.8E-08	4	12.65	0	0	0.00	27.72	67.26	4.43
4.66	1.020	16.19	4	3.8E-08	4	12.86	0	0	0.00	27.95	67.95	4.46
4.68	1.100	14.29	4	6.3E-08	5	14.43	0	0	0.00	27.70	73.64	4.76
4.70	1.110	13.91	4	6.7E-08	5	14.57	0	0	0.00	27.63	74.34	4.78
4.72	1.080	13.02	4	6.5E-08	5	14.15	0	0	0.00	26.98	72.17	4.63
4.74	1.050	13.44	4	5.5E-08	4	13.32	0	0	0.00	27.02	70.00	4.49
4.76	1.070	13.82	4	5.6E-08	5	13.80	0	0	0.00	27.42	71.41	4.55
4.78	1.190	17.62	4	6.1E-08	5	15.67	0	0	0.00	30.28	79.96	5.07
4.80	1.230	20.44	4	5.5E-08	5	16.23	0	0	0.00	31.94	82.79	5.24
4.82	1.310	21.74	4	6.4E-08	5	17.34	0	0	0.00	33.16	88.48	5.56
4.84	1.550	25.79	4	9.9E-08	6	20.70	0	0	0.00	36.63	105.60	6.56
4.86	1.550	25.79	4	9.7E-08	6	20.69	0	0	0.00	36.69	105.58	6.53
4.88	3.250	42.02	5	9.5E-07	11	44.49	34	35	41.67	52.22	0.00	0.00
4.90	4.210	49.97	5	2.1E-06	13	59.17	39	36	47.21	59.17	0.00	0.00
4.92	4.680	58.46	5	2.4E-06	14	64.07	41	37	51.12	64.07	0.00	0.00
4.94	5.760	90.69	5	2.5E-06	17	78.49	45	38	62.62	78.49	0.00	0.00
4.96	6.330	115.60	5	2.3E-06	19	87.78	47	38	70.04	87.78	0.00	0.00
4.98	6.820	140.28	5	2.1E-06	21	96.21	49	39	76.76	96.21	0.00	0.00
5.00	7.060	167.03	5	1.7E-06	22	97.80	50	39	82.84	103.83	0.00	0.00
5.02	7.140	201.06	5	1.2E-06	23	98.91	50	39	89.41	112.06	0.00	0.00
5.04	7.270	216.81	5	1.1E-06	24	100.73	50	39	92.67	116.14	0.00	0.00
5.06	7.010	236.77	5	7.4E-07	23	97.08	50	39	95.25	119.38	0.00	0.00
5.08	6.750	241.78	5	6.0E-07	23	93.43	49	39	95.29	119.43	0.00	0.00
5.10	6.680	243.39	4	5.6E-07	23	92.45	0	0	95.43	119.61	471.68	26.93
5.12	6.890	243.77	5	6.3E-07	23	95.38	49	39	96.37	120.78	0.00	0.00
5.14	7.110	232.97	5	7.9E-07	24	98.46	50	39	95.50	119.69	0.00	0.00
5.16	7.100	229.01	5	8.0E-07	24	98.31	49	39	94.94	119.00	0.00	0.00
5.18	6.720	226.44	5	6.5E-07	23	92.99	48	39	93.37	117.03	0.00	0.00
5.20	5.810	224.48	4	3.5E-07	21	80.24	0	0	89.89	112.67	409.39	23.05
5.22	5.200	221.72	4	2.3E-07	19	71.70	0	0	87.16	109.24	365.79	20.63
5.24	4.910	223.08	4	1.7E-07	19	67.63	0	0	86.28	108.13	345.05	19.44
5.26	4.700	225.62	4	1.4E-07	18	64.68	0	0	85.87	107.62	330.02	18.57
5.28	4.340	227.68	4	9.6E-08	18	59.64	0	0	0.00	106.07	304.28	17.12
5.30	4.450	213.32	4	1.2E-07	18	61.17	0	0	83.10	104.16	312.11	17.44
5.32	4.430	202.04	4	1.3E-07	17	60.89	0	0	81.37	101.99	310.65	17.26
5.34	4.230	190.54	4	1.2E-07	17	58.08	0	0	78.75	98.70	296.34	16.42

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P18	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	4.230	177.32	4	1.4E-07	16	58.08	0	0	76.69	96.11	296.31	16.32
5.38	4.520	167.82	4	2.1E-07	17	62.13	0	0	76.41	95.77	317.00	17.31
5.40	4.970	169.91	4	3.1E-07	18	68.43	0	0	78.69	98.62	349.11	18.92
5.42	5.280	170.42	4	3.9E-07	19	72.76	0	0	80.06	100.34	371.23	19.99
5.44	5.840	170.80	5	5.9E-07	20	80.59	44	38	82.22	103.05	0.00	0.00
5.46	6.050	171.49	5	6.8E-07	20	83.53	44	38	83.17	104.24	0.00	0.00
5.48	6.000	178.97	5	5.9E-07	20	82.82	44	38	84.50	105.91	0.00	0.00
5.50	5.450	193.71	4	3.3E-07	20	75.12	0	0	85.27	106.88	383.26	20.36
5.52	4.760	199.98	4	1.7E-07	18	65.45	0	0	83.70	104.90	333.94	17.78
5.54	4.390	196.46	4	1.2E-07	17	60.27	0	0	81.63	102.30	307.49	16.35
5.56	4.150	197.76	4	9.5E-08	17	56.90	0	0	0.00	101.34	290.31	15.41
5.58	4.430	197.00	4	1.3E-07	17	60.82	0	0	82.13	102.94	310.29	16.36
5.60	5.630	190.89	4	3.8E-07	20	77.61	0	0	86.04	107.84	395.97	20.62
5.62	7.530	174.41	5	1.6E-06	23	104.21	49	39	89.14	111.72	0.00	0.00
5.64	8.850	160.82	5	3.7E-06	25	112.65	52	39	89.88	112.65	0.00	0.00
5.66	9.300	166.61	5	4.2E-06	26	115.67	54	40	92.29	115.67	0.00	0.00
5.68	9.270	196.81	5	2.9E-06	27	123.47	54	40	98.51	123.47	0.00	0.00
5.70	8.840	232.43	5	1.6E-06	27	122.52	52	39	104.21	130.61	0.00	0.00
5.72	8.370	260.16	5	9.9E-07	27	115.94	51	39	107.81	135.12	0.00	0.00
5.74	7.870	293.52	4	5.8E-07	27	108.93	0	0	111.78	140.09	555.77	28.13
5.76	7.880	315.29	4	4.9E-07	27	109.07	0	0	115.32	144.53	556.46	28.09
5.78	7.860	341.56	9	4.0E-07	28	108.78	0	0	119.32	149.54	555.00	27.95
5.80	8.320	340.07	4	5.1E-07	29	115.21	0	0	120.86	151.48	587.83	29.45
5.82	9.000	325.12	5	7.9E-07	30	124.73	52	39	120.98	151.62	0.00	0.00
5.84	9.580	297.20	5	1.3E-06	30	132.84	54	40	118.40	148.40	0.00	0.00
5.86	9.580	297.20	5	1.2E-06	30	132.84	54	40	118.54	148.57	0.00	0.00
5.88	10.660	297.04	5	2.0E-06	33	152.47	57	40	121.65	152.47	0.00	0.00
5.90	10.710	318.11	5	1.7E-06	33	148.65	57	40	125.46	157.24	0.00	0.00
5.92	10.960	322.36	5	1.8E-06	34	152.14	57	40	126.98	159.15	0.00	0.00
5.94	10.930	329.87	5	1.7E-06	34	151.71	57	40	128.28	160.77	0.00	0.00
5.96	11.150	334.40	5	1.8E-06	34	154.79	58	40	129.76	162.63	0.00	0.00
5.98	11.170	352.43	5	1.6E-06	35	155.06	58	40	132.87	166.53	0.00	0.00
6.00	10.710	374.93	5	1.1E-06	34	148.62	56	40	135.23	169.49	0.00	0.00
6.02	10.700	368.15	5	1.2E-06	34	148.47	56	40	134.31	168.33	0.00	0.00
6.04	10.330	362.73	5	1.0E-06	33	143.29	55	40	132.53	166.10	0.00	0.00
6.06	10.010	349.83	5	9.6E-07	33	138.80	54	40	129.71	162.58	0.00	0.00
6.08	9.960	330.69	5	1.1E-06	32	138.09	54	40	126.68	158.77	0.00	0.00
6.10	10.100	321.57	5	1.2E-06	32	140.05	54	40	125.74	157.60	0.00	0.00
6.12	10.240	312.69	5	1.4E-06	32	142.00	54	40	124.81	156.43	0.00	0.00
6.14	10.430	314.34	5	1.4E-06	33	144.66	55	40	125.76	157.62	0.00	0.00
6.16	10.730	307.94	5	1.7E-06	33	148.85	56	40	125.63	157.46	0.00	0.00
6.18	10.500	312.06	5	1.5E-06	33	145.63	55	40	125.85	157.73	0.00	0.00
6.20	10.550	296.37	5	1.7E-06	33	146.32	55	40	123.44	154.71	0.00	0.00
6.22	10.530	296.09	5	1.7E-06	33	146.03	55	40	123.47	154.75	0.00	0.00
6.24	10.100	299.23	5	1.4E-06	32	140.01	54	40	122.98	154.14	0.00	0.00
6.26	9.990	294.73	5	1.3E-06	32	138.46	53	40	122.04	152.96	0.00	0.00
6.28	9.950	300.62	5	1.2E-06	32	137.90	53	40	123.07	154.25	0.00	0.00
6.30	9.900	297.96	5	1.2E-06	32	137.19	53	39	122.62	153.68	0.00	0.00
6.32	8.980	278.12	5	9.4E-07	29	124.31	50	39	116.71	146.28	0.00	0.00

CPTe P20 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.010	0.00	0	0.0E+00	0	0.01	0	0	0.01	0.01	0.00	0.00
0.04	0.010	0.03	1	5.6E-08	0	0.07	0	0	0.00	0.25	0.66	2.46
0.06	0.430	0.06	0	0.0E+00	1	3.94	0	0	3.14	3.94	0.00	0.00
0.08	1.230	0.10	0	0.0E+00	3	9.28	0	0	7.40	9.28	0.00	0.00
0.10	0.990	0.13	0	0.0E+00	2	7.73	0	0	6.17	7.73	0.00	0.00
0.12	0.990	0.13	0	0.0E+00	2	7.82	0	0	6.24	7.82	0.00	0.00
0.14	1.090	0.13	0	0.0E+00	2	8.78	0	0	7.01	8.78	0.00	0.00
0.16	1.110	0.13	0	0.0E+00	3	9.08	0	0	7.24	9.08	0.00	0.00
0.18	1.110	0.13	0	0.0E+00	3	9.23	0	0	7.36	9.23	0.00	0.00
0.20	1.120	0.13	0	0.0E+00	3	9.36	0	0	7.47	9.36	0.00	0.00
0.22	1.140	0.10	0	0.0E+00	3	10.08	0	0	8.04	10.08	0.00	0.00
0.24	1.130	13.82	6	7.2E-06	3	12.83	51	39	10.24	12.83	0.00	0.00
0.26	1.140	21.04	5	3.5E-06	3	14.74	52	39	11.76	14.74	0.00	0.00
0.28	1.110	27.25	5	2.0E-06	3	15.92	53	39	12.70	15.92	0.00	0.00
0.30	1.090	30.67	5	1.4E-06	3	15.20	52	39	13.25	16.61	0.00	0.00
0.32	1.080	33.81	5	1.1E-06	3	15.05	52	39	13.79	17.28	0.00	0.00
0.34	1.100	35.08	5	1.0E-06	4	15.33	52	39	14.24	17.85	0.00	0.00
0.36	1.110	36.31	5	9.0E-07	4	15.46	51	39	14.63	18.34	0.00	0.00
0.38	1.060	38.15	5	6.7E-07	4	14.76	50	39	14.71	18.44	0.00	0.00
0.40	1.020	38.88	4	5.4E-07	4	14.19	0	0	14.75	18.48	72.41	27.69
0.42	0.960	40.18	4	3.9E-07	3	13.35	0	0	14.71	18.44	68.10	26.22
0.44	0.940	41.19	4	3.2E-07	3	13.06	0	0	14.87	18.64	66.65	25.30
0.46	0.930	39.89	4	3.1E-07	3	12.92	0	0	14.81	18.56	65.91	24.21
0.48	0.890	38.44	4	2.7E-07	3	12.35	0	0	14.52	18.20	63.03	22.77
0.50	0.870	37.77	4	2.5E-07	3	12.07	0	0	14.45	18.11	61.58	21.78
0.52	0.880	36.06	4	2.6E-07	3	12.20	0	0	14.44	18.10	62.27	21.11
0.54	0.900	33.94	4	3.0E-07	3	12.48	0	0	14.42	18.07	63.67	20.55
0.56	0.920	31.66	4	3.5E-07	3	12.75	0	0	14.36	17.99	65.07	20.00
0.58	0.910	30.61	4	3.4E-07	3	12.61	0	0	14.27	17.88	64.34	19.28
0.60	0.910	30.61	4	3.2E-07	3	12.61	0	0	14.39	18.03	64.31	18.86
0.62	0.950	24.15	5	5.3E-07	3	13.16	40	37	13.72	17.20	0.00	0.00
0.64	0.930	27.09	5	3.9E-07	3	12.88	39	37	14.20	17.79	0.00	0.00
0.66	0.900	30.80	4	2.7E-07	3	12.45	0	0	14.69	18.41	63.53	17.63
0.68	0.890	34.60	4	2.0E-07	3	12.31	0	0	15.29	19.16	62.79	17.58
0.70	0.890	35.49	4	1.8E-07	3	12.30	0	0	15.53	19.46	62.76	17.32
0.72	0.930	34.13	4	2.2E-07	3	12.86	0	0	15.71	19.69	65.60	17.31
0.74	0.910	35.87	4	1.8E-07	3	12.57	0	0	15.94	19.97	64.14	16.93
0.76	0.900	36.54	4	1.6E-07	3	12.43	0	0	16.07	20.15	63.40	16.56
0.78	0.910	36.76	4	1.6E-07	4	12.56	0	0	16.28	20.41	64.09	16.39
0.80	0.890	35.43	4	1.5E-07	3	12.28	0	0	16.06	20.13	62.64	15.77
0.82	0.850	35.08	4	1.3E-07	3	11.71	0	0	15.84	19.86	59.76	15.03
0.84	0.780	35.24	4	8.7E-08	3	10.73	0	0	0.00	19.41	54.74	13.94
0.86	0.700	34.82	4	5.8E-08	3	9.60	0	0	0.00	18.68	49.00	12.77
0.88	0.640	31.47	3	4.9E-08	3	8.76	0	0	0.00	17.60	44.69	11.63
0.90	0.620	29.06	4	4.8E-08	3	8.47	0	0	0.00	17.07	43.23	11.04
0.92	0.590	26.02	4	4.7E-08	3	8.05	0	0	0.00	16.29	41.07	10.31
0.94	0.580	22.21	4	5.6E-08	2	7.90	0	0	0.00	15.52	40.33	9.77

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	0.540	18.22	4	5.7E-08	2	7.34	0	0	0.00	14.32	37.45	8.88
0.98	0.610	13.66	4	1.4E-07	2	8.32	0	0	11.09	13.90	42.43	9.11
1.00	0.660	8.08	5	3.6E-07	2	9.01	28	33	10.05	12.59	0.00	0.00
1.02	0.730	5.01	5	8.9E-07	2	9.99	28	33	9.47	11.87	0.00	0.00
1.04	0.800	3.58	5	1.7E-06	2	10.96	28	33	9.29	11.65	0.00	0.00
1.06	0.890	3.30	5	2.4E-06	3	12.10	29	34	9.65	12.10	0.00	0.00
1.08	1.010	4.02	5	3.0E-06	3	13.27	30	34	10.59	13.27	0.00	0.00
1.10	1.130	6.43	5	2.6E-06	3	15.26	32	35	12.17	15.26	0.00	0.00
1.12	1.420	10.46	5	3.1E-06	4	18.66	36	36	14.89	18.66	0.00	0.00
1.14	1.670	18.00	5	2.5E-06	5	22.80	39	37	18.19	22.80	0.00	0.00
1.16	1.920	26.08	5	2.3E-06	6	26.68	41	37	21.29	26.68	0.00	0.00
1.18	2.280	34.03	5	2.7E-06	7	30.81	45	38	24.59	30.81	0.00	0.00
1.20	2.580	41.70	5	2.9E-06	8	34.39	47	38	27.44	34.39	0.00	0.00
1.22	2.750	52.57	5	2.4E-06	8	37.98	49	39	30.30	37.98	0.00	0.00
1.24	2.840	62.08	5	2.0E-06	9	40.71	50	39	32.48	40.71	0.00	0.00
1.26	2.980	75.16	5	1.6E-06	9	41.43	51	39	35.36	44.31	0.00	0.00
1.28	3.430	82.64	5	2.2E-06	10	48.22	54	40	38.47	48.22	0.00	0.00
1.30	3.860	89.55	5	2.8E-06	11	51.80	56	40	41.33	51.80	0.00	0.00
1.32	4.050	101.12	5	2.6E-06	12	55.20	57	40	44.04	55.20	0.00	0.00
1.34	4.210	106.98	5	2.6E-06	13	57.26	58	40	45.68	57.26	0.00	0.00
1.36	4.270	116.23	5	2.3E-06	13	59.47	58	40	47.45	59.47	0.00	0.00
1.38	4.270	131.38	5	1.8E-06	13	59.46	58	40	49.80	62.41	0.00	0.00
1.40	4.310	139.17	5	1.6E-06	13	60.02	59	40	51.20	64.17	0.00	0.00
1.42	4.140	150.10	8	1.2E-06	13	57.63	58	40	52.15	65.36	0.00	0.00
1.44	3.930	149.06	8	9.4E-07	13	54.68	56	40	51.31	64.30	0.00	0.00
1.46	3.690	156.35	9	6.6E-07	12	51.32	0	0	51.34	64.35	261.83	35.15
1.48	3.520	157.30	9	5.4E-07	12	48.93	0	0	50.85	63.73	249.66	33.67
1.50	3.540	156.44	9	5.4E-07	12	49.21	0	0	51.01	63.93	251.06	33.43
1.52	3.620	154.79	9	5.9E-07	12	50.32	0	0	51.35	64.36	256.75	33.58
1.54	3.600	152.04	9	5.9E-07	12	50.04	0	0	51.08	64.02	255.29	33.03
1.56	3.720	144.43	4	7.3E-07	12	51.71	0	0	50.80	63.67	263.84	33.24
1.58	3.980	139.65	5	1.0E-06	13	55.35	55	40	51.43	64.46	0.00	0.00
1.60	3.980	139.65	5	9.8E-07	13	55.34	54	40	51.59	64.66	0.00	0.00
1.62	4.090	149.34	5	9.3E-07	13	56.88	55	40	53.54	67.10	0.00	0.00
1.64	4.010	150.33	5	8.3E-07	13	55.75	54	40	53.49	67.05	0.00	0.00
1.66	4.160	154.60	5	8.9E-07	14	57.85	55	40	54.86	68.76	0.00	0.00
1.68	4.250	156.73	5	9.2E-07	14	59.10	55	40	55.69	69.80	0.00	0.00
1.70	4.160	156.16	5	8.4E-07	14	57.83	54	40	55.40	69.44	0.00	0.00
1.72	4.190	151.25	5	9.1E-07	14	58.25	54	40	55.02	68.96	0.00	0.00
1.74	4.050	152.58	5	7.7E-07	13	56.28	53	40	54.77	68.65	0.00	0.00
1.76	3.840	159.58	9	5.6E-07	13	53.34	0	0	54.94	68.86	272.13	31.55
1.78	3.510	167.47	9	3.5E-07	13	48.71	0	0	54.56	68.39	248.53	29.41
1.80	3.350	166.42	9	3.0E-07	12	46.47	0	0	53.80	67.43	237.08	28.11
1.82	3.270	169.72	9	2.5E-07	12	45.34	0	0	53.96	67.63	231.34	27.43
1.84	3.020	175.74	9	1.7E-07	12	41.84	0	0	53.50	67.05	213.45	25.69
1.86	2.680	181.13	9	9.9E-08	11	37.07	0	0	0.00	65.56	189.14	23.32
1.88	2.540	170.42	9	9.0E-08	10	35.11	0	0	0.00	63.16	179.11	21.99
1.90	2.420	165.85	9	7.8E-08	10	33.42	0	0	0.00	61.76	170.51	20.91
1.92	2.470	165.28	9	8.3E-08	10	34.11	0	0	0.00	62.26	174.06	21.04
1.94	2.540	164.46	9	9.2E-08	10	35.09	0	0	0.00	62.87	179.03	21.30
1.96	2.500	159.99	9	9.0E-08	10	34.52	0	0	0.00	62.10	176.14	20.79
1.98	2.470	145.16	4	1.0E-07	10	34.10	0	0	0.00	59.80	173.97	20.17
2.00	2.590	136.92	4	1.4E-07	10	35.77	0	0	47.50	59.53	182.52	20.62
2.02	2.720	134.67	4	1.7E-07	10	37.59	0	0	48.06	60.23	191.78	21.22
2.04	2.900	133.41	4	2.2E-07	11	40.10	0	0	48.98	61.39	204.61	22.12

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	3.090	126.47	4	3.1E-07	11	42.76	0	0	49.09	61.53	218.15	22.94
2.08	3.340	120.83	4	4.5E-07	12	46.25	0	0	49.56	62.12	235.98	24.10
2.10	3.800	119.91	5	7.5E-07	13	52.69	48	39	51.54	64.59	0.00	0.00
2.12	4.180	122.66	5	1.0E-06	14	58.00	50	39	53.63	67.21	0.00	0.00
2.14	4.990	122.57	5	2.0E-06	15	71.06	53	40	56.70	71.06	0.00	0.00
2.16	5.870	121.90	5	3.8E-06	17	74.65	56	40	59.56	74.65	0.00	0.00
2.18	6.310	120.06	5	5.1E-06	18	76.04	58	40	60.67	76.04	0.00	0.00
2.20	6.600	128.34	5	5.3E-06	18	79.13	59	41	63.14	79.13	0.00	0.00
2.22	6.900	137.08	5	5.4E-06	19	82.33	60	41	65.69	82.33	0.00	0.00
2.24	7.150	148.58	5	5.2E-06	20	85.92	61	41	68.55	85.92	0.00	0.00
2.26	6.840	165.57	5	3.5E-06	20	88.52	60	41	70.63	88.52	0.00	0.00
2.28	6.360	182.11	5	2.1E-06	19	90.05	59	40	71.85	90.05	0.00	0.00
2.30	6.070	199.35	5	1.4E-06	19	84.41	58	40	73.56	92.19	0.00	0.00
2.32	5.840	217.54	8	1.0E-06	19	81.19	57	40	75.43	94.53	0.00	0.00
2.34	5.620	216.81	8	8.5E-07	19	78.10	56	40	74.64	93.55	0.00	0.00
2.36	5.780	203.02	5	1.1E-06	19	80.34	56	40	73.50	92.12	0.00	0.00
2.38	5.990	193.80	5	1.4E-06	19	83.27	56	40	73.09	91.60	0.00	0.00
2.40	6.020	187.15	5	1.5E-06	19	83.68	56	40	72.36	90.69	0.00	0.00
2.42	5.740	179.10	5	1.3E-06	18	79.76	55	40	70.30	88.11	0.00	0.00
2.44	5.450	166.80	5	1.3E-06	17	75.69	53	40	67.52	84.63	0.00	0.00
2.46	5.730	163.25	5	1.6E-06	18	79.61	54	40	68.10	85.35	0.00	0.00
2.48	5.890	163.00	5	1.7E-06	18	81.84	55	40	68.74	86.16	0.00	0.00
2.50	6.300	162.68	5	2.3E-06	19	87.96	56	40	70.18	87.96	0.00	0.00
2.52	6.050	166.30	5	1.8E-06	19	84.07	55	40	70.09	87.84	0.00	0.00
2.54	6.480	169.18	5	2.3E-06	20	90.36	57	40	72.10	90.36	0.00	0.00
2.56	7.260	162.65	5	3.8E-06	21	92.15	59	41	73.52	92.15	0.00	0.00
2.58	8.550	152.23	6	8.4E-06	23	94.35	63	41	75.28	94.35	0.00	0.00
2.60	8.550	152.23	6	8.3E-06	23	94.51	63	41	75.41	94.51	0.00	0.00
2.62	8.410	120.70	6	1.2E-05	22	86.50	62	41	69.01	86.50	0.00	0.00
2.64	9.280	129.51	6	1.6E-05	23	91.43	64	41	72.95	91.43	0.00	0.00
2.66	9.970	143.89	6	1.7E-05	25	97.17	66	42	77.53	97.17	0.00	0.00
2.68	9.240	161.04	6	9.7E-06	24	99.37	64	41	79.28	99.37	0.00	0.00
2.70	8.540	188.07	5	5.0E-06	24	103.32	63	41	82.44	103.32	0.00	0.00
2.72	7.970	207.05	5	3.1E-06	23	105.39	61	41	84.09	105.39	0.00	0.00
2.74	8.010	217.31	5	2.8E-06	24	107.76	61	41	85.98	107.76	0.00	0.00
2.76	8.060	229.32	5	2.5E-06	24	110.48	61	41	88.15	110.48	0.00	0.00
2.78	7.680	220.77	5	2.2E-06	23	107.55	60	41	85.81	107.55	0.00	0.00
2.80	7.750	213.86	5	2.5E-06	23	106.66	60	41	85.10	106.66	0.00	0.00
2.82	7.730	217.38	5	2.3E-06	23	107.46	59	41	85.74	107.46	0.00	0.00
2.84	7.630	227.93	5	2.0E-06	23	109.29	59	41	87.20	109.29	0.00	0.00
2.86	7.590	230.18	5	1.9E-06	23	109.75	59	41	87.57	109.75	0.00	0.00
2.88	7.640	234.39	5	1.8E-06	23	106.23	59	41	88.52	110.94	0.00	0.00
2.90	8.290	244.06	5	2.3E-06	25	115.54	61	41	92.18	115.54	0.00	0.00
2.92	7.560	254.83	5	1.4E-06	24	105.10	58	40	91.59	114.80	0.00	0.00
2.94	7.340	251.54	5	1.3E-06	23	102.02	58	40	90.53	113.47	0.00	0.00
2.96	7.220	256.70	5	1.1E-06	23	100.33	57	40	91.02	114.08	0.00	0.00
2.98	6.760	272.36	9	7.6E-07	23	93.88	0	0	91.71	114.95	479.00	35.43
3.00	6.730	259.43	8	8.2E-07	22	93.46	55	40	89.97	112.76	0.00	0.00
3.02	6.770	258.92	8	8.3E-07	22	94.01	55	40	90.20	113.06	0.00	0.00
3.04	6.760	254.23	5	8.5E-07	22	93.87	55	40	89.66	112.37	0.00	0.00
3.06	6.850	238.67	5	1.0E-06	22	95.12	55	40	87.88	110.14	0.00	0.00
3.08	6.820	221.85	5	1.2E-06	22	94.70	54	40	85.40	107.03	0.00	0.00
3.10	7.200	202.23	5	1.8E-06	22	100.01	55	40	83.69	104.90	0.00	0.00
3.12	7.800	186.01	5	2.9E-06	23	103.92	57	40	82.92	103.92	0.00	0.00
3.14	8.010	186.13	5	3.2E-06	23	104.87	58	40	83.67	104.87	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	7.780	194.25	5	2.6E-06	23	105.96	57	40	84.54	105.96	0.00	0.00
3.18	7.290	208.09	5	1.7E-06	23	101.25	55	40	85.48	107.14	0.00	0.00
3.20	6.850	222.16	5	1.1E-06	22	95.08	54	40	86.41	108.30	0.00	0.00
3.22	6.880	231.57	5	1.0E-06	22	95.50	54	40	88.10	110.41	0.00	0.00
3.24	6.760	249.86	5	8.1E-07	22	93.81	53	40	90.55	113.48	0.00	0.00
3.26	6.760	235.38	5	9.1E-07	22	93.81	53	40	88.55	110.98	0.00	0.00
3.28	6.730	228.69	5	9.5E-07	22	93.38	53	40	87.57	109.76	0.00	0.00
3.30	6.660	220.86	5	9.7E-07	22	92.39	53	39	86.27	108.12	0.00	0.00
3.32	6.800	199.00	5	1.3E-06	22	94.35	53	39	83.38	104.51	0.00	0.00
3.34	6.760	188.29	5	1.4E-06	21	93.78	52	39	81.60	102.27	0.00	0.00
3.36	6.570	187.40	5	1.3E-06	21	91.12	52	39	80.97	101.48	0.00	0.00
3.38	6.050	196.02	5	8.2E-07	20	83.83	50	39	80.75	101.20	0.00	0.00
3.40	5.550	206.16	4	5.1E-07	19	76.83	0	0	80.64	101.06	391.97	26.29
3.42	5.160	208.79	4	3.6E-07	18	71.36	0	0	79.63	99.80	364.09	24.51
3.44	4.730	213.42	4	2.4E-07	18	65.34	0	0	78.62	98.54	333.35	22.57
3.46	4.230	222.23	4	1.4E-07	17	58.33	0	0	77.70	97.38	297.60	20.33
3.48	4.050	219.28	4	1.2E-07	16	55.80	0	0	76.54	95.93	284.72	19.42
3.50	4.160	212.12	4	1.4E-07	16	57.34	0	0	76.22	95.52	292.55	19.77
3.52	4.380	200.90	4	1.9E-07	17	60.41	0	0	75.75	94.94	308.23	20.56
3.54	4.500	194.37	4	2.3E-07	17	62.09	0	0	75.44	94.55	316.78	20.94
3.56	4.690	188.29	4	2.9E-07	17	64.74	0	0	75.45	94.56	330.32	21.61
3.58	4.750	184.71	4	3.1E-07	17	65.58	0	0	75.26	94.33	334.58	21.75
3.60	4.750	184.71	4	3.1E-07	17	65.57	0	0	75.39	94.49	334.55	21.65
3.62	4.690	185.85	4	2.8E-07	17	64.73	0	0	75.45	94.56	330.24	21.30
3.64	4.640	185.44	4	2.7E-07	17	64.02	0	0	75.30	94.37	326.64	20.99
3.66	4.740	185.09	4	3.0E-07	17	65.42	0	0	75.75	94.94	333.75	21.33
3.68	4.910	184.61	4	3.4E-07	18	67.79	0	0	76.43	95.79	345.87	21.99
3.70	5.000	190.73	4	3.4E-07	18	69.04	0	0	77.84	97.56	352.27	22.34
3.72	5.010	182.74	4	3.8E-07	18	69.18	0	0	76.65	96.07	352.95	22.29
3.74	5.000	181.44	4	3.8E-07	18	69.03	0	0	76.46	95.83	352.21	22.19
3.76	5.020	181.29	4	3.8E-07	18	69.31	0	0	76.58	95.97	353.61	22.22
3.78	4.990	182.01	4	3.7E-07	18	68.88	0	0	76.64	96.05	351.44	22.05
3.80	5.040	184.49	4	3.7E-07	18	69.58	0	0	77.30	96.88	354.99	22.22
3.82	5.050	183.76	4	3.8E-07	18	69.71	0	0	77.28	96.86	355.67	22.21
3.84	5.170	178.56	4	4.4E-07	18	71.39	0	0	76.95	96.44	364.21	22.62
3.86	5.010	182.96	4	3.6E-07	18	69.14	0	0	77.11	96.65	352.76	21.94
3.88	4.960	177.83	4	3.7E-07	18	68.44	0	0	76.13	95.42	349.16	21.66
3.90	4.890	179.29	4	3.4E-07	18	67.45	0	0	76.15	95.45	344.13	21.34
3.92	4.870	176.09	4	3.5E-07	17	67.16	0	0	75.60	94.76	342.67	21.19
3.94	4.860	175.11	4	3.4E-07	17	67.02	0	0	75.46	94.58	341.93	21.10
3.96	4.770	170.51	4	3.4E-07	17	65.75	0	0	74.39	93.24	335.48	20.66
3.98	4.680	170.00	4	3.1E-07	17	64.49	0	0	74.00	92.75	329.02	20.25
4.00	4.560	168.29	4	2.8E-07	17	62.80	0	0	73.28	91.85	320.42	19.71
4.02	4.390	169.15	4	2.4E-07	16	60.42	0	0	72.77	91.21	308.25	18.99
4.04	4.290	166.49	4	2.2E-07	16	59.01	0	0	71.96	90.19	301.08	18.53
4.06	4.090	162.78	4	1.9E-07	16	56.21	0	0	70.53	88.40	286.77	17.66
4.08	3.930	158.82	4	1.7E-07	15	53.96	0	0	69.21	86.75	275.31	16.95
4.10	3.760	158.57	4	1.4E-07	15	51.58	0	0	68.45	85.79	263.14	16.22
4.12	3.650	157.99	4	1.2E-07	14	50.03	0	0	67.89	85.09	255.25	15.73
4.14	3.540	155.40	4	1.1E-07	14	48.48	0	0	0.00	83.96	247.37	15.24
4.16	3.520	150.55	4	1.2E-07	14	48.20	0	0	66.14	82.90	245.91	15.11
4.18	3.490	148.46	4	1.1E-07	14	47.77	0	0	65.70	82.35	243.74	14.94
4.20	3.470	143.99	4	1.2E-07	14	47.49	0	0	64.90	81.34	242.29	14.81
4.22	3.350	143.48	4	1.0E-07	13	45.80	0	0	0.00	80.57	233.69	14.29
4.24	3.170	140.76	4	8.3E-08	13	43.28	0	0	0.00	78.93	220.80	13.52

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	2.970	138.79	4	6.5E-08	12	40.47	0	0	0.00	77.28	206.49	12.67
4.28	2.770	137.84	3	4.9E-08	12	37.67	0	0	0.00	75.77	192.18	11.82
4.30	2.600	134.93	3	3.9E-08	11	35.28	0	0	0.00	74.01	180.01	11.09
4.32	2.960	131.98	4	7.0E-08	12	40.32	0	0	0.00	75.95	205.69	12.52
4.34	3.480	129.89	4	1.4E-07	14	47.59	0	0	62.83	78.74	242.81	14.57
4.36	3.550	130.33	4	1.5E-07	14	48.57	0	0	63.28	79.31	247.78	14.82
4.38	3.700	120.29	4	2.2E-07	14	50.66	0	0	62.12	77.86	258.47	15.34
4.40	3.750	124.72	4	2.1E-07	14	51.35	0	0	63.22	79.23	262.01	15.53
4.42	4.350	134.93	4	3.3E-07	16	59.75	0	0	67.65	84.78	304.84	17.90
4.44	4.650	148.08	4	3.6E-07	17	63.94	0	0	71.30	89.36	326.25	19.09
4.46	5.790	161.80	5	7.6E-07	19	79.90	45	38	77.98	97.74	0.00	0.00
4.48	6.810	161.32	5	1.5E-06	21	94.17	49	39	81.18	101.75	0.00	0.00
4.50	8.180	183.09	5	2.5E-06	24	111.91	53	40	89.29	111.91	0.00	0.00
4.52	8.980	199.13	5	3.1E-06	26	118.45	56	40	94.51	118.45	0.00	0.00
4.54	9.120	212.21	5	2.8E-06	27	122.01	56	40	97.35	122.01	0.00	0.00
4.56	8.760	232.05	5	2.0E-06	27	125.27	55	40	99.95	125.27	0.00	0.00
4.58	8.500	261.74	5	1.3E-06	27	117.81	54	40	104.22	130.62	0.00	0.00
4.60	8.500	261.74	5	1.3E-06	27	117.80	54	40	104.29	130.71	0.00	0.00
4.62	8.320	325.12	9	7.2E-07	28	115.27	0	0	113.51	142.26	588.13	33.42
4.64	8.430	337.32	9	7.0E-07	28	116.81	0	0	115.73	145.04	595.96	33.80
4.66	8.630	328.82	5	8.1E-07	29	119.60	55	40	115.25	144.45	0.00	0.00
4.68	8.680	326.32	5	8.5E-07	29	120.30	55	40	115.13	144.30	0.00	0.00
4.70	8.450	320.17	5	7.9E-07	28	117.07	54	40	113.54	142.30	0.00	0.00
4.72	8.390	309.40	5	8.2E-07	28	116.23	54	40	111.82	140.14	0.00	0.00
4.74	8.340	303.16	5	8.4E-07	28	115.52	53	40	110.79	138.85	0.00	0.00
4.76	8.390	295.30	5	9.1E-07	28	116.21	54	40	109.83	137.65	0.00	0.00
4.78	8.480	289.88	5	9.9E-07	28	117.47	54	40	109.36	137.06	0.00	0.00
4.80	8.550	285.79	5	1.1E-06	28	118.44	54	40	109.02	136.63	0.00	0.00
4.82	8.490	284.90	5	1.0E-06	28	117.60	54	40	108.76	136.31	0.00	0.00
4.84	8.100	284.71	5	8.4E-07	27	112.13	52	39	107.55	134.79	0.00	0.00
4.86	7.220	285.25	4	5.1E-07	25	99.81	0	0	104.69	131.21	509.21	28.34
4.88	6.650	283.95	4	3.6E-07	24	91.82	0	0	102.47	128.43	468.47	26.13
4.90	6.330	283.13	4	2.9E-07	23	87.33	0	0	101.18	126.81	445.58	24.87
4.92	6.120	285.19	4	2.5E-07	23	84.39	0	0	100.71	126.23	430.55	24.03
4.94	5.960	283.54	4	2.3E-07	22	82.14	0	0	99.89	125.20	419.10	23.37
4.96	5.800	277.43	4	2.1E-07	22	79.90	0	0	98.42	123.35	407.64	22.70
4.98	5.720	267.38	4	2.1E-07	21	78.77	0	0	96.69	121.19	401.90	22.32
5.00	6.230	250.52	4	3.5E-07	22	85.91	0	0	96.24	120.62	438.30	24.15
5.02	7.130	247.83	5	6.4E-07	24	98.50	49	39	99.11	124.22	0.00	0.00
5.04	7.730	250.81	5	8.8E-07	25	106.89	51	39	101.65	127.40	0.00	0.00
5.06	7.970	241.59	5	1.1E-06	26	110.25	51	39	100.94	126.51	0.00	0.00
5.08	7.900	236.55	5	1.1E-06	25	109.26	51	39	99.93	125.25	0.00	0.00
5.10	7.260	248.08	5	6.8E-07	24	100.30	49	39	99.86	125.16	0.00	0.00
5.12	6.730	260.06	4	4.4E-07	24	92.87	0	0	99.99	125.32	473.84	25.73
5.14	6.430	264.59	4	3.5E-07	23	88.67	0	0	99.65	124.90	452.38	24.58
5.16	6.420	262.72	4	3.5E-07	23	88.52	0	0	99.40	124.58	451.64	24.49
5.18	6.720	261.96	4	4.3E-07	24	92.72	0	0	100.46	125.91	473.04	25.54
5.20	7.160	261.84	4	5.6E-07	25	98.87	0	0	102.07	127.93	504.44	27.11
5.22	8.360	256.67	5	1.1E-06	27	115.66	52	39	105.20	131.85	0.00	0.00
5.24	9.370	259.52	5	1.8E-06	29	129.80	55	40	108.70	136.24	0.00	0.00
5.26	10.300	261.87	5	2.6E-06	31	140.00	58	40	111.70	140.00	0.00	0.00
5.28	10.130	290.39	5	1.9E-06	31	145.58	57	40	116.15	145.58	0.00	0.00
5.30	9.440	312.73	5	1.2E-06	30	130.76	55	40	117.82	147.67	0.00	0.00
5.32	9.230	327.05	5	9.6E-07	30	127.82	55	40	119.47	149.73	0.00	0.00
5.34	9.720	350.47	5	1.0E-06	32	134.67	56	40	124.62	156.19	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	10.400	341.56	5	1.4E-06	33	144.18	58	40	125.40	157.16	0.00	0.00
5.38	9.950	338.36	5	1.2E-06	32	137.88	56	40	123.65	154.97	0.00	0.00
5.40	9.690	352.62	5	9.8E-07	32	134.23	56	40	125.09	156.78	0.00	0.00
5.42	9.910	328.38	5	1.3E-06	31	137.31	56	40	122.14	153.08	0.00	0.00
5.44	11.130	310.51	5	2.4E-06	33	153.88	59	41	122.78	153.88	0.00	0.00
5.46	12.300	318.40	5	3.4E-06	36	159.39	62	41	127.17	159.39	0.00	0.00
5.48	14.010	318.33	5	5.9E-06	39	164.54	66	42	131.28	164.54	0.00	0.00
5.50	15.570	338.27	5	7.9E-06	42	173.25	70	42	138.23	173.25	0.00	0.00
5.52	15.700	389.35	5	5.9E-06	43	184.46	70	42	147.18	184.46	0.00	0.00
5.54	16.110	394.96	5	6.3E-06	44	186.87	71	42	149.10	186.87	0.00	0.00
5.56	15.700	426.07	5	4.7E-06	44	192.02	70	42	153.20	192.02	0.00	0.00
5.58	14.870	459.34	8	3.1E-06	43	195.92	68	42	156.32	195.92	0.00	0.00
5.60	14.870	459.34	8	3.1E-06	44	196.04	68	42	156.41	196.04	0.00	0.00
5.62	13.770	548.48	8	1.5E-06	43	191.29	66	42	166.07	208.14	0.00	0.00
5.64	12.550	561.54	9	9.2E-07	41	174.20	0	0	164.14	205.72	888.79	45.52
5.66	11.080	549.24	9	5.7E-07	38	153.62	0	0	157.76	197.73	783.76	40.20
5.68	10.860	504.63	9	6.4E-07	37	150.53	0	0	151.36	189.71	768.01	39.28
5.70	10.760	458.52	9	7.8E-07	36	149.12	0	0	144.94	181.66	760.84	38.79
5.72	10.850	407.12	8	1.1E-06	35	150.38	58	40	138.06	173.04	0.00	0.00
5.74	11.450	360.89	5	1.8E-06	35	158.77	60	41	132.92	166.60	0.00	0.00
5.76	11.950	316.50	5	2.9E-06	35	159.34	61	41	127.13	159.34	0.00	0.00
5.78	11.760	287.22	5	3.4E-06	34	152.53	60	41	121.70	152.53	0.00	0.00
5.80	11.390	294.41	5	2.8E-06	34	153.03	59	41	122.10	153.03	0.00	0.00
5.82	11.220	304.55	5	2.4E-06	34	154.74	59	40	123.46	154.74	0.00	0.00
5.84	11.590	315.51	5	2.5E-06	35	158.34	60	41	126.34	158.34	0.00	0.00
5.86	11.460	350.62	5	1.9E-06	35	165.19	59	41	131.80	165.19	0.00	0.00
5.88	11.260	359.31	5	1.6E-06	35	156.07	59	40	132.70	166.31	0.00	0.00
5.90	10.930	380.73	5	1.3E-06	35	151.45	58	40	135.13	169.36	0.00	0.00
5.92	10.760	377.56	5	1.2E-06	34	149.06	57	40	134.23	168.23	0.00	0.00
5.94	10.520	363.68	5	1.2E-06	34	145.70	57	40	131.48	164.79	0.00	0.00
5.96	10.160	364.54	5	1.0E-06	33	140.65	56	40	130.61	163.70	0.00	0.00
5.98	9.590	375.72	9	7.2E-07	32	132.66	0	0	130.58	163.66	676.86	33.62
6.00	9.170	358.51	4	6.6E-07	31	126.78	0	0	126.75	158.85	646.83	32.09
6.02	8.330	362.03	9	4.3E-07	29	115.01	0	0	124.49	156.03	586.80	29.12
6.04	7.710	369.92	9	2.9E-07	28	106.33	0	0	123.43	154.70	542.48	26.91
6.06	7.340	365.45	9	2.4E-07	27	101.14	0	0	121.46	152.23	516.02	25.57
6.08	7.220	361.08	9	2.3E-07	27	99.45	0	0	120.46	150.98	507.42	25.10
6.10	7.030	350.40	9	2.2E-07	26	96.79	0	0	118.28	148.25	493.82	24.39
6.12	7.100	323.88	4	2.7E-07	26	97.76	0	0	114.80	143.88	498.79	24.56
6.14	6.990	305.18	4	2.9E-07	25	96.22	0	0	111.67	139.95	490.91	24.12
6.16	6.840	292.07	4	2.9E-07	25	94.11	0	0	109.18	136.83	480.16	23.55
6.18	6.510	283.10	4	2.5E-07	24	89.49	0	0	106.61	133.62	456.56	22.36
6.20	6.520	268.33	4	2.9E-07	24	89.62	0	0	104.41	130.86	457.25	22.35
6.22	6.370	270.17	4	2.5E-07	24	87.52	0	0	104.20	130.60	446.51	21.79
6.24	6.340	265.48	4	2.6E-07	23	87.09	0	0	103.41	129.61	444.33	21.64
6.26	6.160	262.60	4	2.3E-07	23	84.56	0	0	102.33	128.26	431.45	20.98
6.28	5.730	251.09	4	1.9E-07	22	78.54	0	0	98.88	123.92	400.71	19.47
6.30	5.270	247.13	4	1.3E-07	21	72.09	0	0	96.41	120.83	367.82	17.85
6.32	4.880	238.07	4	1.0E-07	20	66.63	0	0	0.00	116.99	339.93	16.48
6.34	4.540	238.64	4	7.4E-08	19	61.86	0	0	0.00	115.23	315.62	15.29
6.36	4.300	227.04	3	6.5E-08	18	58.50	0	0	0.00	111.61	298.45	14.43
6.38	4.130	215.35	3	6.1E-08	17	56.11	0	0	0.00	108.33	286.28	13.82
6.40	4.090	198.59	4	6.9E-08	17	55.54	0	0	0.00	104.75	283.39	13.65
6.42	4.190	187.56	4	8.7E-08	17	56.94	0	0	0.00	103.08	290.51	13.96
6.44	4.410	181.16	4	1.2E-07	17	60.01	0	0	82.16	102.98	306.19	14.68

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
6.46	4.670	170.92	4	1.7E-07	18	63.65	0	0	81.46	102.09	324.74	15.53
6.48	5.100	161.39	4	2.8E-07	19	69.66	0	0	81.37	101.98	355.42	16.95
6.50	5.610	151.40	5	4.9E-07	19	76.80	40	37	81.22	101.80	0.00	0.00
6.52	6.060	147.66	5	7.2E-07	20	83.09	42	37	81.95	102.71	0.00	0.00
6.54	6.360	149.22	5	8.6E-07	21	87.29	43	37	83.25	104.34	0.00	0.00
6.56	6.890	161.26	5	1.0E-06	22	94.70	44	38	87.39	109.53	0.00	0.00
6.58	6.990	175.17	5	9.2E-07	23	96.10	45	38	90.58	113.52	0.00	0.00
6.60	6.990	175.17	5	9.2E-07	23	96.09	45	38	90.63	113.59	0.00	0.00
6.62	6.610	217.35	4	4.5E-07	23	90.76	0	0	97.46	122.16	463.09	21.81
6.64	6.540	228.91	4	3.8E-07	23	89.78	0	0	99.32	124.49	458.06	21.54
6.66	6.570	250.02	4	3.2E-07	24	90.19	0	0	103.09	129.21	460.17	21.61
6.68	6.770	236.04	4	4.1E-07	24	92.99	0	0	101.48	127.19	474.43	22.23
6.70	6.630	234.96	4	3.8E-07	24	91.02	0	0	100.87	126.43	464.40	21.73
6.72	6.990	218.87	5	5.5E-07	24	96.06	45	38	99.30	124.45	0.00	0.00
6.74	6.800	234.33	4	4.2E-07	24	93.39	0	0	101.47	127.18	476.49	22.22
6.76	7.250	223.21	5	6.2E-07	25	99.69	45	38	101.04	126.63	0.00	0.00
6.78	7.520	210.85	5	8.2E-07	25	103.46	46	38	99.65	124.90	0.00	0.00
6.80	7.490	206.60	5	8.4E-07	25	103.03	46	38	98.82	123.85	0.00	0.00
6.82	7.570	209.01	5	8.5E-07	25	104.15	46	38	99.57	124.80	0.00	0.00
6.84	7.690	216.49	5	8.4E-07	25	105.82	46	38	101.39	127.08	0.00	0.00
6.86	7.360	217.19	5	6.9E-07	25	101.20	45	38	100.58	126.06	0.00	0.00
6.88	7.160	202.36	5	7.1E-07	24	98.39	45	38	97.25	121.88	0.00	0.00
6.90	6.480	201.95	5	4.6E-07	23	88.87	42	37	95.05	119.14	0.00	0.00
6.92	5.900	205.53	4	2.9E-07	21	80.74	0	0	93.76	117.52	411.94	18.92
6.94	5.380	214.11	4	1.8E-07	21	73.46	0	0	93.38	117.04	374.77	17.18
6.96	5.000	217.88	4	1.2E-07	20	68.13	0	0	92.54	115.98	347.60	15.90
6.98	4.820	215.67	4	1.1E-07	19	65.60	0	0	0.00	114.63	334.72	15.29
7.00	4.750	214.94	4	9.9E-08	19	64.62	0	0	0.00	114.17	329.69	15.03
7.02	4.900	208.47	4	1.2E-07	19	66.71	0	0	90.69	113.66	340.37	15.49
7.04	5.100	206.13	4	1.5E-07	20	69.51	0	0	91.17	114.26	354.63	16.12
7.06	5.420	195.39	4	2.2E-07	20	73.98	0	0	90.56	113.50	377.46	17.13
7.08	5.680	185.25	4	3.0E-07	21	77.62	0	0	89.68	112.40	396.00	17.95
7.10	5.870	179.86	4	3.7E-07	21	80.27	0	0	89.37	112.01	409.55	18.54
7.12	6.110	176.15	5	4.6E-07	21	83.63	41	37	89.50	112.18	0.00	0.00
7.14	6.300	173.74	5	5.4E-07	22	86.28	41	37	89.69	112.41	0.00	0.00
7.16	6.410	177.74	5	5.5E-07	22	87.81	42	37	90.89	113.92	0.00	0.00
7.18	6.590	178.47	5	6.1E-07	22	90.33	42	37	91.66	114.88	0.00	0.00
7.20	6.620	181.89	5	6.0E-07	23	90.74	42	37	92.49	115.92	0.00	0.00
7.22	6.680	185.28	5	6.0E-07	23	91.58	43	37	93.40	117.06	0.00	0.00
7.24	6.830	187.53	5	6.4E-07	23	93.67	43	38	94.37	118.27	0.00	0.00
7.26	6.650	191.01	5	5.4E-07	23	91.15	42	37	94.54	118.49	0.00	0.00
7.28	6.740	183.50	5	6.3E-07	23	92.40	43	37	93.40	117.06	0.00	0.00
7.30	6.630	183.44	5	5.8E-07	23	90.86	42	37	93.10	116.68	0.00	0.00
7.32	6.530	177.70	5	5.8E-07	22	89.45	42	37	91.70	114.92	0.00	0.00
7.34	6.490	165.66	5	6.5E-07	22	88.89	42	37	89.17	111.76	0.00	0.00
7.36	6.480	156.22	5	7.3E-07	22	88.74	42	37	87.20	109.29	0.00	0.00
7.38	6.450	150.80	5	7.7E-07	21	88.31	42	37	85.99	107.78	0.00	0.00
7.40	6.630	136.95	5	1.1E-06	21	90.83	42	37	83.48	104.62	0.00	0.00
7.42	6.710	139.11	5	1.1E-06	22	91.94	42	37	84.24	105.58	0.00	0.00
7.44	6.750	142.78	5	1.0E-06	22	92.50	43	37	85.23	106.82	0.00	0.00
7.46	6.760	143.58	5	1.0E-06	22	92.63	43	37	85.49	107.14	0.00	0.00
7.48	6.680	152.32	5	8.6E-07	22	91.51	42	37	87.24	109.34	0.00	0.00
7.50	6.510	160.94	5	6.8E-07	22	89.12	42	37	88.64	111.10	0.00	0.00
7.52	6.340	180.05	5	4.8E-07	22	86.74	41	37	92.09	115.42	0.00	0.00
7.54	6.430	185.88	5	4.7E-07	22	87.99	41	37	93.59	117.30	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
7.56	6.600	183.92	5	5.4E-07	23	90.36	42	37	93.79	117.56	0.00	0.00
7.58	6.420	190.54	5	4.4E-07	23	87.84	41	37	94.58	118.54	0.00	0.00
7.60	6.420	190.54	5	4.4E-07	23	87.83	41	37	94.63	118.61	0.00	0.00
7.62	6.720	221.08	4	3.9E-07	24	92.03	0	0	101.45	127.15	469.53	20.42
7.64	6.890	214.78	5	4.6E-07	24	94.40	43	37	100.90	126.46	0.00	0.00
7.66	7.340	211.61	5	6.3E-07	25	100.70	44	38	101.77	127.55	0.00	0.00
7.68	7.380	219.25	5	5.9E-07	25	101.25	44	38	103.40	129.60	0.00	0.00
7.70	7.440	241.21	5	4.9E-07	26	102.09	44	38	107.70	134.99	0.00	0.00
7.72	7.530	230.56	5	5.7E-07	26	103.34	44	38	106.10	132.98	0.00	0.00
7.74	7.740	223.62	5	6.9E-07	26	106.27	45	38	105.50	132.22	0.00	0.00
7.76	7.830	220.61	5	7.5E-07	26	107.53	45	38	105.25	131.92	0.00	0.00
7.78	8.110	212.40	5	9.5E-07	26	111.44	46	38	104.53	131.01	0.00	0.00
7.80	8.850	207.93	5	1.5E-06	28	121.80	48	39	105.69	132.47	0.00	0.00
7.82	10.380	219.34	5	2.6E-06	31	140.18	52	39	111.84	140.18	0.00	0.00
7.84	12.360	224.57	5	5.3E-06	34	147.05	57	40	117.32	147.05	0.00	0.00
7.86	12.100	219.85	5	5.1E-06	34	145.20	57	40	115.85	145.20	0.00	0.00
7.88	11.050	272.39	5	2.1E-06	34	155.42	54	40	124.01	155.42	0.00	0.00
7.90	9.870	334.65	5	7.9E-07	33	136.05	51	39	131.89	165.31	0.00	0.00
7.92	8.840	397.65	4	3.2E-07	32	121.62	0	0	138.58	173.69	620.53	26.33
7.94	8.460	418.31	9	2.4E-07	31	116.30	0	0	140.33	175.88	593.36	25.09
7.96	8.370	407.00	9	2.4E-07	31	115.03	0	0	138.45	173.52	586.90	24.78
7.98	8.000	383.45	4	2.2E-07	30	109.85	0	0	133.72	167.59	560.44	23.61
8.00	7.750	366.25	4	2.2E-07	29	106.34	0	0	130.31	163.32	542.55	22.81
8.02	7.570	353.00	4	2.1E-07	28	103.82	0	0	127.71	160.07	529.67	22.23
8.04	7.660	339.28	4	2.4E-07	28	105.07	0	0	126.00	157.92	536.07	22.48
8.06	7.900	310.06	4	3.4E-07	28	108.42	0	0	122.24	153.21	553.18	23.21
8.08	7.440	291.75	4	3.0E-07	27	101.98	0	0	117.72	147.54	520.30	21.78
8.10	6.830	265.64	4	2.5E-07	25	93.43	0	0	111.25	139.43	476.69	19.90
8.12	6.160	269.50	4	1.5E-07	24	84.05	0	0	109.49	137.22	428.81	17.82
8.14	5.910	268.27	4	1.3E-07	23	80.54	0	0	108.37	135.82	410.92	17.03
8.16	5.870	270.11	4	1.2E-07	23	79.98	0	0	108.58	136.08	408.04	16.87
8.18	5.820	265.35	4	1.2E-07	23	79.27	0	0	107.66	134.93	404.44	16.70
8.20	5.520	245.96	4	1.1E-07	22	75.06	0	0	103.26	129.42	382.98	15.78
8.22	5.400	231.13	4	1.2E-07	21	73.38	0	0	100.28	125.69	374.38	15.40
8.24	5.450	223.30	4	1.3E-07	21	74.07	0	0	99.17	124.29	377.92	15.54
8.26	5.540	218.52	4	1.5E-07	21	75.33	0	0	98.72	123.73	384.32	15.79
8.28	5.650	213.42	4	1.7E-07	22	76.86	0	0	98.27	123.16	392.15	16.10
8.30	5.550	199.03	4	1.8E-07	21	75.46	0	0	95.28	119.41	384.98	15.79
8.32	5.550	189.84	4	2.0E-07	21	75.45	0	0	93.57	117.28	384.95	15.78
8.34	5.890	191.01	4	2.6E-07	22	80.21	0	0	95.06	119.14	409.21	16.78
8.36	5.960	197.07	4	2.5E-07	22	81.18	0	0	96.54	121.00	414.18	16.95
8.38	6.130	201.12	4	2.8E-07	22	83.55	0	0	97.96	122.78	426.30	17.43
8.40	6.620	198.71	5	4.0E-07	23	90.41	40	37	99.17	124.30	0.00	0.00
8.42	7.030	208.70	5	4.7E-07	25	96.14	42	37	102.49	128.45	0.00	0.00
8.44	7.440	217.85	5	5.4E-07	26	101.88	43	38	105.58	132.33	0.00	0.00
8.46	7.570	223.49	5	5.5E-07	26	103.69	43	38	107.12	134.26	0.00	0.00
8.48	7.660	228.85	5	5.5E-07	26	104.95	44	38	108.48	135.96	0.00	0.00
8.50	7.820	227.77	5	6.1E-07	27	107.18	44	38	108.81	136.37	0.00	0.00
8.52	7.890	238.32	5	5.7E-07	27	108.16	44	38	111.09	139.23	0.00	0.00
8.54	8.430	224.79	5	8.7E-07	28	115.71	46	38	110.09	137.98	0.00	0.00
8.56	8.970	224.82	5	1.2E-06	29	123.26	47	38	111.62	139.89	0.00	0.00
8.58	9.050	229.39	5	1.1E-06	29	124.38	47	38	112.80	141.37	0.00	0.00
8.60	9.050	229.39	5	1.1E-06	29	124.37	47	38	112.85	141.44	0.00	0.00
8.62	8.720	251.00	5	7.8E-07	29	119.75	46	38	116.19	145.63	0.00	0.00
8.64	7.770	273.69	4	3.8E-07	28	106.44	0	0	117.54	147.31	543.07	21.85

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P20	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
8.66	6.760	294.63	4	1.7E-07	26	92.30	0	0	117.69	147.50	470.90	18.78
8.68	6.110	294.47	4	1.1E-07	24	83.19	0	0	0.00	144.41	424.44	16.83
8.70	5.970	282.18	4	1.1E-07	24	81.22	0	0	0.00	141.28	414.41	16.40
8.72	5.920	279.90	4	1.1E-07	24	80.52	0	0	0.00	140.64	410.81	16.23
8.74	6.020	265.95	4	1.3E-07	24	81.91	0	0	110.35	138.30	417.92	16.51
8.76	6.430	251.89	4	1.9E-07	24	87.65	0	0	109.52	137.26	447.18	17.71
8.78	6.740	236.30	4	2.8E-07	25	91.98	0	0	107.85	135.17	469.30	18.62
8.80	6.720	227.87	4	2.9E-07	24	91.70	0	0	106.28	133.20	467.84	18.55
8.82	6.540	218.77	4	2.8E-07	24	89.17	0	0	104.01	130.37	454.95	18.01
8.84	6.380	212.37	4	2.7E-07	23	86.93	0	0	102.31	128.23	443.50	17.52
8.86	6.490	202.83	4	3.2E-07	23	88.46	0	0	100.88	126.43	451.32	17.84
8.88	6.570	196.97	4	3.6E-07	23	89.57	0	0	100.03	125.37	457.01	18.06
8.90	6.630	189.62	5	4.1E-07	23	90.41	40	37	98.78	123.81	0.00	0.00
8.92	6.800	193.01	5	4.4E-07	24	92.78	40	37	100.06	125.41	0.00	0.00
8.94	7.210	189.43	5	5.9E-07	25	98.52	41	37	100.60	126.09	0.00	0.00
8.96	7.450	194.12	5	6.5E-07	25	101.87	42	37	102.33	128.25	0.00	0.00
8.98	7.110	195.99	5	5.1E-07	25	97.11	41	37	101.77	127.55	0.00	0.00
9.00	6.540	223.33	4	2.6E-07	24	89.12	0	0	105.40	132.10	454.70	17.75
9.02	6.400	223.52	4	2.4E-07	24	87.16	0	0	105.02	131.62	444.67	17.32
9.04	6.340	223.33	4	2.3E-07	24	86.31	0	0	104.83	131.39	440.36	17.12
9.06	6.300	221.02	4	2.2E-07	24	85.74	0	0	104.32	130.74	437.47	16.98
9.08	6.170	225.96	4	1.9E-07	23	83.92	0	0	104.85	131.41	428.16	16.57
9.10	6.150	223.30	4	2.0E-07	23	83.63	0	0	104.34	130.77	426.70	16.49
9.12	6.150	220.29	4	2.0E-07	23	83.63	0	0	103.83	130.13	426.67	16.47
9.14	6.000	205.94	4	2.1E-07	23	81.52	0	0	100.62	126.11	415.93	16.04
9.16	6.030	203.66	4	2.2E-07	23	81.94	0	0	100.33	125.75	418.04	16.10
9.18	6.100	204.64	4	2.3E-07	23	82.91	0	0	100.82	126.36	423.01	16.28
9.20	6.210	204.26	4	2.4E-07	23	84.45	0	0	101.18	126.81	430.84	16.57
9.22	6.350	204.96	4	2.7E-07	23	86.40	0	0	101.84	127.64	440.81	16.95
9.24	6.460	205.05	4	2.9E-07	24	87.93	0	0	102.28	128.19	448.64	17.24
9.26	6.520	207.11	4	2.9E-07	24	88.77	0	0	102.94	129.02	452.90	17.38

CPTe P22 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P22	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.050	0.03	0	0.0E+00	0	0.71	0	0	0.56	0.71	0.00	0.00
0.04	0.290	0.03	0	0.0E+00	1	2.85	0	0	2.27	2.85	0.00	0.00
0.06	0.600	0.06	0	0.0E+00	1	5.12	0	0	4.08	5.12	0.00	0.00
0.08	1.580	0.16	0	0.0E+00	3	10.71	0	0	8.54	10.71	0.00	0.00
0.10	1.190	0.13	0	0.0E+00	3	8.91	0	0	7.11	8.91	0.00	0.00
0.12	1.120	0.10	0	0.0E+00	3	8.96	0	0	7.15	8.96	0.00	0.00
0.14	1.090	0.13	0	0.0E+00	2	8.61	0	0	6.87	8.61	0.00	0.00
0.16	0.710	0.13	0	0.0E+00	2	6.24	0	0	4.98	6.24	0.00	0.00
0.18	0.790	0.10	0	0.0E+00	2	7.21	0	0	5.75	7.21	0.00	0.00
0.20	0.810	0.10	0	0.0E+00	2	7.48	0	0	5.97	7.48	0.00	0.00
0.22	0.820	0.10	0	0.0E+00	2	7.62	0	0	6.08	7.62	0.00	0.00
0.24	0.970	0.10	0	0.0E+00	2	8.89	0	0	7.09	8.89	0.00	0.00
0.26	1.050	0.13	0	0.0E+00	2	9.25	0	0	7.38	9.25	0.00	0.00
0.28	1.080	0.13	0	0.0E+00	3	9.67	0	0	7.72	9.67	0.00	0.00
0.30	1.060	0.13	0	0.0E+00	3	9.64	0	0	7.69	9.64	0.00	0.00
0.32	1.030	0.13	0	0.0E+00	3	9.53	0	0	7.60	9.53	0.00	0.00
0.34	0.880	1.49	6	2.1E-05	2	8.20	37	36	6.55	8.20	0.00	0.00
0.36	0.850	2.28	6	1.4E-05	2	8.52	37	36	6.79	8.52	0.00	0.00
0.38	0.840	4.37	6	7.7E-06	2	9.41	38	36	7.51	9.41	0.00	0.00
0.40	0.900	7.95	5	4.5E-06	3	11.11	40	37	8.86	11.11	0.00	0.00
0.42	1.050	9.25	6	5.6E-06	3	12.46	42	37	9.94	12.46	0.00	0.00
0.44	1.210	8.52	6	9.0E-06	3	13.18	43	38	10.51	13.18	0.00	0.00
0.46	1.030	9.00	5	4.7E-06	3	12.59	41	37	10.04	12.59	0.00	0.00
0.48	0.930	10.11	5	2.8E-06	3	12.47	40	37	9.95	12.47	0.00	0.00
0.50	0.830	10.20	5	1.8E-06	3	12.00	38	36	9.58	12.00	0.00	0.00
0.52	0.760	10.84	5	1.2E-06	2	10.54	37	36	9.44	11.84	0.00	0.00
0.54	0.920	10.71	5	2.2E-06	3	12.93	39	36	10.32	12.93	0.00	0.00
0.56	1.070	8.84	5	4.2E-06	3	13.32	39	37	10.63	13.32	0.00	0.00
0.58	1.110	8.05	6	5.1E-06	3	13.37	39	37	10.67	13.37	0.00	0.00
0.60	0.960	9.44	5	2.5E-06	3	13.10	38	36	10.45	13.10	0.00	0.00
0.62	0.810	9.00	5	1.5E-06	3	11.21	35	36	9.68	12.13	0.00	0.00
0.64	0.720	8.49	5	1.1E-06	2	9.95	34	35	9.15	11.47	0.00	0.00
0.66	0.790	7.92	5	1.5E-06	2	10.93	34	35	9.44	11.83	0.00	0.00
0.68	1.280	7.45	6	7.1E-06	3	14.51	39	37	11.58	14.51	0.00	0.00
0.70	1.190	7.73	6	5.2E-06	3	14.26	38	36	11.37	14.26	0.00	0.00
0.72	1.290	12.48	5	3.6E-06	4	16.54	40	37	13.20	16.54	0.00	0.00
0.74	1.350	12.55	5	4.0E-06	4	16.99	40	37	13.56	16.99	0.00	0.00
0.76	1.380	14.04	5	3.5E-06	4	17.74	41	37	14.15	17.74	0.00	0.00
0.78	1.310	17.90	5	2.1E-06	4	18.56	41	37	14.81	18.56	0.00	0.00
0.80	1.240	22.09	5	1.2E-06	4	17.19	40	37	15.46	19.38	0.00	0.00
0.82	1.170	25.26	5	7.6E-07	4	16.21	40	37	15.82	19.82	0.00	0.00
0.84	1.100	28.23	5	4.9E-07	4	15.22	39	37	16.07	20.14	0.00	0.00
0.86	1.080	26.65	5	4.9E-07	4	14.94	38	36	15.78	19.78	0.00	0.00
0.88	1.100	27.19	5	4.9E-07	4	15.22	38	36	16.09	20.17	0.00	0.00
0.90	1.480	18.95	5	2.3E-06	4	20.52	41	37	16.37	20.52	0.00	0.00
0.92	1.810	17.55	5	5.0E-06	5	21.88	43	37	17.46	21.88	0.00	0.00
0.94	2.040	16.16	6	8.1E-06	5	22.59	44	38	18.02	22.59	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P22	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.990	14.16	6	8.7E-06	5	21.77	43	38	17.37	21.77	0.00	0.00
0.98	1.910	14.20	6	7.3E-06	5	21.53	42	37	17.18	21.53	0.00	0.00
1.00	1.930	14.48	6	7.2E-06	5	21.83	42	37	17.42	21.83	0.00	0.00
1.02	1.990	15.75	6	6.9E-06	5	22.66	43	37	18.08	22.66	0.00	0.00
1.04	2.080	21.52	5	5.1E-06	6	25.09	44	38	20.02	25.09	0.00	0.00
1.06	2.070	23.61	5	4.2E-06	6	25.80	44	38	20.58	25.80	0.00	0.00
1.08	2.100	27.41	5	3.4E-06	6	27.17	44	38	21.68	27.17	0.00	0.00
1.10	2.030	35.27	5	2.0E-06	6	29.02	44	38	23.16	29.02	0.00	0.00
1.12	2.030	39.80	5	1.6E-06	6	28.18	45	38	24.14	30.26	0.00	0.00
1.14	1.870	45.82	5	8.9E-07	6	25.93	44	38	24.61	30.85	0.00	0.00
1.16	1.810	49.37	5	6.7E-07	6	25.09	43	38	25.04	31.38	0.00	0.00
1.18	1.980	57.70	5	6.8E-07	7	27.46	45	38	27.33	34.25	0.00	0.00
1.20	2.510	64.99	5	1.3E-06	8	34.88	49	39	31.04	38.91	0.00	0.00
1.22	2.770	68.60	5	1.6E-06	9	38.51	50	39	32.86	41.18	0.00	0.00
1.24	3.210	65.47	5	2.9E-06	9	42.85	52	39	34.19	42.85	0.00	0.00
1.26	3.430	77.95	5	2.6E-06	10	46.68	54	40	37.25	46.68	0.00	0.00
1.28	3.430	89.49	5	2.0E-06	10	49.16	55	40	39.22	49.16	0.00	0.00
1.30	3.550	97.06	5	1.9E-06	11	51.38	55	40	40.99	51.38	0.00	0.00
1.32	3.370	99.66	5	1.4E-06	11	46.89	54	40	40.85	51.20	0.00	0.00
1.34	3.270	95.51	5	1.4E-06	10	45.48	53	40	39.98	50.11	0.00	0.00
1.36	3.100	94.21	5	1.1E-06	10	43.10	52	39	39.22	49.16	0.00	0.00
1.38	3.010	92.34	5	1.0E-06	10	41.83	51	39	38.70	48.51	0.00	0.00
1.40	3.160	93.38	5	1.2E-06	10	43.93	51	39	39.64	49.68	0.00	0.00
1.42	3.370	92.69	5	1.5E-06	11	46.86	52	39	40.55	50.82	0.00	0.00
1.44	3.640	89.52	5	2.1E-06	11	51.70	53	40	41.25	51.70	0.00	0.00
1.46	4.230	83.31	5	4.1E-06	12	53.15	56	40	42.41	53.15	0.00	0.00
1.48	3.710	78.11	5	2.8E-06	11	49.97	53	39	39.87	49.97	0.00	0.00
1.50	3.600	73.07	5	2.7E-06	11	48.53	52	39	38.72	48.53	0.00	0.00
1.52	3.660	73.20	5	2.9E-06	11	48.98	52	39	39.08	48.98	0.00	0.00
1.54	3.510	83.47	5	1.9E-06	11	50.68	51	39	40.44	50.68	0.00	0.00
1.56	3.380	89.68	5	1.4E-06	11	46.97	51	39	41.08	51.49	0.00	0.00
1.58	3.170	98.30	5	9.0E-07	10	44.02	50	39	41.68	52.24	0.00	0.00
1.60	3.040	107.96	5	6.2E-07	10	42.20	49	39	42.66	53.47	0.00	0.00
1.62	2.970	114.23	4	5.0E-07	10	41.21	0	0	43.36	54.35	210.25	27.11
1.64	2.950	117.18	4	4.6E-07	10	40.92	0	0	43.82	54.91	208.80	26.82
1.66	2.770	123.11	4	3.2E-07	10	38.40	0	0	43.86	54.97	195.91	25.54
1.68	2.610	133.79	9	2.1E-07	10	36.15	0	0	44.53	55.81	184.46	24.50
1.70	2.690	137.02	9	2.2E-07	10	37.27	0	0	45.51	57.04	190.15	24.90
1.72	2.760	135.05	9	2.5E-07	10	38.24	0	0	45.79	57.39	195.12	25.08
1.74	3.100	118.42	4	4.9E-07	11	43.00	0	0	45.42	56.92	219.38	26.62
1.76	3.380	113.57	5	7.3E-07	11	46.91	49	39	46.12	57.81	0.00	0.00
1.78	3.420	109.86	5	8.0E-07	11	47.47	49	39	45.88	57.50	0.00	0.00
1.80	3.480	110.02	5	8.4E-07	11	48.30	49	39	46.29	58.02	0.00	0.00
1.82	3.290	115.88	5	6.0E-07	11	45.64	48	39	46.48	58.25	0.00	0.00
1.84	3.120	131.79	4	3.7E-07	11	43.25	0	0	48.07	60.24	220.67	25.99
1.86	2.940	142.06	9	2.5E-07	11	40.73	0	0	48.66	60.99	207.79	24.86
1.88	2.850	145.22	9	2.1E-07	11	39.46	0	0	48.74	61.08	201.33	24.14
1.90	4.470	164.68	5	8.8E-07	15	62.14	55	40	59.00	73.95	0.00	0.00
1.92	7.580	170.99	5	6.1E-06	21	88.61	67	42	70.70	88.61	0.00	0.00
1.94	13.470	164.40	6	6.0E-05	30	104.49	83	44	83.37	104.49	0.00	0.00
1.96	16.220	158.15	6	1.3E-04	34	109.25	88	44	87.17	109.25	0.00	0.00
1.98	16.140	146.59	6	1.5E-04	33	106.24	88	44	84.77	106.24	0.00	0.00
2.00	15.840	133.22	6	1.7E-04	32	102.19	86	44	81.53	102.19	0.00	0.00
2.02	15.600	124.06	6	1.8E-04	31	99.32	85	44	79.24	99.32	0.00	0.00
2.04	15.100	115.69	6	1.8E-04	30	96.10	84	44	76.67	96.10	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P22	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	13.240	117.12	6	1.0E-04	28	92.84	79	43	74.08	92.84	0.00	0.00
2.08	11.260	138.98	6	3.9E-05	26	94.15	75	43	75.12	94.15	0.00	0.00
2.10	10.400	151.66	6	2.4E-05	25	95.10	73	43	75.88	95.10	0.00	0.00
2.12	8.640	212.15	5	5.6E-06	24	102.50	69	42	81.78	102.50	0.00	0.00
2.14	8.000	244.47	5	3.0E-06	23	106.18	67	42	84.72	106.18	0.00	0.00
2.16	7.830	252.68	8	2.6E-06	23	107.13	67	42	85.48	107.13	0.00	0.00
2.18	6.790	291.88	9	1.1E-06	22	94.54	0	0	87.02	109.06	482.34	46.10
2.20	6.610	298.78	9	8.8E-07	22	92.01	0	0	87.34	109.47	469.45	44.93
2.22	6.840	297.52	9	1.0E-06	22	95.23	0	0	88.29	110.66	485.85	45.83
2.24	7.120	297.33	8	1.2E-06	23	99.14	64	41	89.53	112.21	0.00	0.00
2.26	7.290	257.91	8	1.7E-06	22	101.52	64	41	85.28	106.88	0.00	0.00
2.28	7.320	246.85	8	1.9E-06	22	105.37	63	41	84.07	105.37	0.00	0.00
2.30	7.870	254.10	8	2.4E-06	24	109.14	65	41	87.08	109.14	0.00	0.00
2.32	8.120	250.93	5	2.7E-06	24	109.82	66	42	87.63	109.82	0.00	0.00
2.34	8.510	244.00	5	3.4E-06	25	110.33	67	42	88.03	110.33	0.00	0.00
2.36	8.560	243.08	5	3.5E-06	25	110.57	67	42	88.22	110.57	0.00	0.00
2.38	8.770	242.79	5	3.8E-06	25	111.52	67	42	88.98	111.52	0.00	0.00
2.40	8.630	239.24	5	3.7E-06	25	110.56	66	42	88.21	110.56	0.00	0.00
2.42	8.030	264.43	8	2.2E-06	24	112.92	65	41	90.10	112.92	0.00	0.00
2.44	7.350	275.75	8	1.4E-06	23	102.30	62	41	89.48	112.15	0.00	0.00
2.46	7.500	291.18	8	1.3E-06	24	104.40	63	41	92.22	115.58	0.00	0.00
2.48	7.250	308.51	9	1.0E-06	24	100.89	0	0	93.70	117.43	514.76	44.25
2.50	6.620	305.91	9	7.0E-07	22	92.07	0	0	91.12	114.20	469.73	40.75
2.52	6.770	279.33	9	9.3E-07	22	94.16	0	0	88.54	110.98	480.42	40.87
2.54	7.170	283.89	8	1.1E-06	23	99.76	61	41	90.80	113.81	0.00	0.00
2.56	7.460	273.91	8	1.4E-06	23	103.81	62	41	90.70	113.67	0.00	0.00
2.58	7.470	251.63	8	1.7E-06	23	103.94	61	41	87.84	110.09	0.00	0.00
2.60	7.340	239.46	5	1.7E-06	23	102.12	60	41	85.84	107.58	0.00	0.00
2.62	6.080	260.28	9	6.7E-07	20	84.47	0	0	84.26	105.61	430.99	35.98
2.64	5.550	235.60	9	5.8E-07	19	77.05	0	0	79.03	99.05	393.10	32.82
2.66	5.240	234.05	9	4.6E-07	18	72.70	0	0	77.70	97.38	370.93	31.06
2.68	4.580	247.13	9	2.4E-07	17	63.46	0	0	76.57	95.97	323.76	27.68
2.70	4.150	246.78	9	1.6E-07	16	57.43	0	0	74.57	93.46	293.02	25.29
2.72	4.560	229.10	9	2.7E-07	17	63.17	0	0	74.51	93.39	322.27	27.05
2.74	4.800	223.59	9	3.4E-07	17	66.52	0	0	75.03	94.04	339.39	28.03
2.76	4.550	224.44	9	2.7E-07	17	63.01	0	0	74.17	92.96	321.50	26.62
2.78	4.810	192.28	4	4.7E-07	17	66.65	0	0	71.04	89.04	340.05	27.39
2.80	4.750	185.18	4	4.8E-07	17	65.80	0	0	69.90	87.61	335.73	26.86
2.82	4.570	177.86	4	4.4E-07	16	63.28	0	0	68.21	85.49	322.85	25.76
2.84	4.460	172.86	4	4.2E-07	16	61.73	0	0	67.14	84.15	314.96	25.02
2.86	4.370	166.36	4	4.1E-07	15	60.47	0	0	65.91	82.61	308.51	24.38
2.88	4.300	166.23	4	3.8E-07	15	59.48	0	0	65.72	82.37	303.48	23.90
2.90	4.440	159.61	4	4.7E-07	15	61.44	0	0	65.42	82.00	313.45	24.36
2.92	4.500	169.72	4	4.3E-07	16	62.27	0	0	67.36	84.43	317.71	24.63
2.94	4.600	170.70	4	4.6E-07	16	63.67	0	0	68.06	85.30	324.82	24.98
2.96	4.770	168.96	4	5.4E-07	16	66.04	0	0	68.61	85.99	336.94	25.62
2.98	5.070	168.61	5	6.8E-07	17	70.23	48	39	69.85	87.55	0.00	0.00
3.00	5.390	172.63	5	8.2E-07	18	74.71	49	39	71.82	90.02	0.00	0.00
3.02	5.770	177.36	5	1.0E-06	19	80.02	51	39	74.09	92.86	0.00	0.00
3.04	5.960	181.03	5	1.1E-06	19	82.68	51	39	75.48	94.60	0.00	0.00
3.06	5.950	191.55	5	9.6E-07	19	82.53	51	39	77.25	96.82	0.00	0.00
3.08	5.820	195.80	5	8.3E-07	19	80.71	51	39	77.59	97.24	0.00	0.00
3.10	5.510	206.70	4	5.8E-07	19	76.36	0	0	78.21	98.03	389.60	28.42
3.12	5.220	215.06	4	4.2E-07	18	72.30	0	0	78.42	98.29	368.86	27.03
3.14	4.990	216.30	4	3.4E-07	18	69.07	0	0	77.78	97.49	352.40	25.85

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P22	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	4.880	217.79	4	3.1E-07	18	67.52	0	0	77.67	97.34	344.51	25.23
3.18	4.880	216.81	4	3.1E-07	18	67.52	0	0	77.67	97.35	344.49	25.08
3.20	4.860	221.66	4	2.8E-07	18	67.23	0	0	78.41	98.27	343.03	24.90
3.22	4.900	224.41	4	2.8E-07	18	67.79	0	0	79.12	99.16	345.86	24.97
3.24	5.000	225.11	4	3.0E-07	18	69.18	0	0	79.79	100.01	352.97	25.29
3.26	5.200	221.31	4	3.6E-07	19	71.98	0	0	80.24	100.57	367.23	26.03
3.28	5.270	224.70	4	3.7E-07	19	72.95	0	0	81.16	101.72	372.20	26.24
3.30	5.390	228.15	4	3.9E-07	19	74.63	0	0	82.29	103.14	380.74	26.66
3.32	5.490	226.41	4	4.2E-07	19	76.02	0	0	82.59	103.52	387.86	26.95
3.34	5.550	225.11	4	4.4E-07	19	76.85	0	0	82.79	103.76	392.12	27.07
3.36	5.560	226.35	4	4.3E-07	20	76.99	0	0	83.15	104.21	392.80	26.99
3.38	5.500	232.33	4	3.9E-07	20	76.14	0	0	83.92	105.18	388.49	26.64
3.40	5.430	231.35	4	3.7E-07	19	75.16	0	0	83.64	104.82	383.46	26.20
3.42	5.350	227.93	4	3.5E-07	19	74.03	0	0	82.95	103.97	377.72	25.70
3.44	5.370	221.15	4	3.8E-07	19	74.31	0	0	82.19	103.01	379.12	25.62
3.46	5.310	219.66	4	3.7E-07	19	73.46	0	0	81.86	102.60	374.80	25.23
3.48	5.290	217.79	4	3.6E-07	19	73.18	0	0	81.63	102.31	373.35	25.01
3.50	5.310	214.27	4	3.8E-07	19	73.45	0	0	81.33	101.93	374.75	24.96
3.52	5.240	210.15	4	3.7E-07	19	72.46	0	0	80.56	100.97	369.72	24.51
3.54	5.000	211.17	4	3.0E-07	18	69.10	0	0	79.86	100.09	352.55	23.38
3.56	4.900	208.09	4	2.8E-07	18	67.69	0	0	79.11	99.15	345.38	22.83
3.58	4.870	205.30	4	2.8E-07	18	67.27	0	0	78.70	98.63	343.21	22.57
3.60	4.840	202.39	4	2.8E-07	18	66.84	0	0	78.26	98.09	341.03	22.32
3.62	4.980	194.31	4	3.4E-07	18	68.80	0	0	77.72	97.41	351.01	22.76
3.64	4.870	189.78	4	3.2E-07	18	67.25	0	0	76.69	96.12	343.12	22.17
3.66	4.500	187.75	4	2.3E-07	17	62.07	0	0	74.94	93.92	316.66	20.51
3.68	4.140	185.21	4	1.7E-07	16	57.02	0	0	73.07	91.58	290.92	18.89
3.70	3.960	187.15	4	1.4E-07	15	54.50	0	0	72.64	91.05	278.04	18.04
3.72	3.900	191.39	4	1.2E-07	15	53.65	0	0	73.12	91.64	273.72	17.72
3.74	3.720	191.81	4	9.7E-08	15	51.12	0	0	0.00	90.76	260.84	16.88
3.76	3.690	189.37	4	9.5E-08	15	50.70	0	0	0.00	90.27	258.67	16.66
3.78	3.640	190.06	4	8.8E-08	15	49.99	0	0	0.00	90.24	255.07	16.37
3.80	3.670	191.39	4	8.9E-08	15	50.41	0	0	0.00	90.84	257.18	16.43
3.82	3.630	196.88	4	7.9E-08	15	49.84	0	0	0.00	91.74	254.30	16.20
3.84	3.590	197.70	3	7.4E-08	15	49.28	0	0	0.00	91.79	251.41	15.96
3.86	3.550	199.79	3	6.9E-08	15	48.71	0	0	0.00	92.06	248.53	15.72
3.88	3.510	202.14	3	6.3E-08	15	48.15	0	0	0.00	92.38	245.64	15.49
3.90	3.350	196.91	3	5.4E-08	14	45.90	0	0	0.00	90.50	234.19	14.73
3.92	3.320	197.29	3	5.1E-08	14	45.48	0	0	0.00	90.52	232.02	14.54
3.94	3.280	201.50	3	4.6E-08	14	44.91	0	0	0.00	91.15	229.13	14.31
3.96	3.230	203.31	3	4.2E-08	14	44.20	0	0	0.00	91.27	225.53	14.04
3.98	3.240	202.77	3	4.2E-08	14	44.34	0	0	0.00	91.40	226.22	14.01
4.00	3.350	200.71	3	4.9E-08	14	45.87	0	0	0.00	91.97	234.05	14.39
4.02	3.650	198.56	3	7.2E-08	15	50.07	0	0	0.00	93.76	255.45	15.53
4.04	3.920	192.60	4	1.0E-07	16	53.84	0	0	0.00	94.49	274.71	16.53
4.06	4.640	180.62	4	2.4E-07	17	63.92	0	0	76.84	96.31	326.11	19.27
4.08	5.300	178.24	4	4.3E-07	19	73.15	0	0	79.17	99.22	373.22	21.76
4.10	6.210	178.91	5	8.2E-07	21	85.89	47	38	82.61	103.54	0.00	0.00
4.12	6.820	186.80	5	1.1E-06	22	94.42	49	39	86.12	107.93	0.00	0.00
4.14	7.630	190.95	5	1.7E-06	24	105.75	51	39	89.44	112.10	0.00	0.00
4.16	8.150	190.13	5	2.2E-06	25	113.91	53	39	90.89	113.91	0.00	0.00
4.18	8.370	197.51	5	2.3E-06	25	116.54	53	40	92.99	116.54	0.00	0.00
4.20	8.370	212.05	5	1.9E-06	26	120.02	53	40	95.76	120.02	0.00	0.00
4.22	8.440	212.78	5	2.0E-06	26	120.58	54	40	96.21	120.58	0.00	0.00
4.24	8.250	213.83	5	1.8E-06	25	114.41	53	39	95.99	120.30	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P22	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
4.26	8.040	209.61	5	1.6E-06	25	111.46	52	39	94.75	118.75	0.00	0.00
4.28	7.810	211.36	5	1.4E-06	25	108.24	51	39	94.51	118.46	0.00	0.00
4.30	7.720	214.94	5	1.3E-06	25	106.97	51	39	95.00	119.07	0.00	0.00
4.32	7.840	215.82	5	1.3E-06	25	108.64	51	39	95.64	119.87	0.00	0.00
4.34	7.930	217.44	5	1.4E-06	25	109.90	51	39	96.32	120.72	0.00	0.00
4.36	8.210	226.88	5	1.4E-06	26	113.81	52	39	98.93	123.99	0.00	0.00
4.38	8.540	246.97	5	1.4E-06	27	118.43	53	40	103.49	129.71	0.00	0.00
4.40	8.660	259.90	5	1.3E-06	27	120.10	53	40	106.15	133.04	0.00	0.00
4.42	8.720	275.62	5	1.2E-06	28	120.94	54	40	109.05	136.68	0.00	0.00
4.44	8.430	291.94	5	8.9E-07	28	116.87	53	39	110.89	138.98	0.00	0.00
4.46	8.290	294.47	5	8.0E-07	27	114.90	52	39	110.98	139.09	0.00	0.00
4.48	8.390	284.97	5	9.0E-07	28	116.30	52	39	109.95	137.80	0.00	0.00
4.50	8.370	270.36	5	1.0E-06	27	116.01	52	39	107.68	134.96	0.00	0.00
4.52	7.830	265.95	5	7.8E-07	26	108.45	50	39	105.38	132.08	0.00	0.00
4.54	7.500	258.95	5	6.8E-07	25	103.82	49	39	103.30	129.47	0.00	0.00
4.56	7.270	248.72	5	6.5E-07	25	100.60	48	39	101.00	126.59	0.00	0.00
4.58	6.550	244.03	4	4.3E-07	23	90.51	0	0	97.88	122.67	461.79	24.35
4.60	6.010	237.15	4	3.2E-07	22	82.95	0	0	94.91	118.95	423.19	22.29
4.62	5.510	232.65	4	2.3E-07	21	75.94	0	0	92.36	115.76	387.45	20.39
4.64	5.420	227.52	4	2.2E-07	20	74.67	0	0	91.31	114.44	380.99	19.98
4.66	5.270	231.57	4	1.8E-07	20	72.57	0	0	91.47	114.64	370.25	19.36
4.68	5.040	228.28	4	1.6E-07	19	69.34	0	0	90.11	112.94	353.79	18.46
4.70	4.840	223.27	4	1.4E-07	19	66.54	0	0	88.58	111.02	339.48	17.66
4.72	4.710	215.22	4	1.3E-07	18	64.71	0	0	86.85	108.86	330.16	17.11
4.74	4.410	222.51	4	9.0E-08	18	60.51	0	0	0.00	108.75	308.71	15.98
4.76	4.100	227.61	3	6.2E-08	17	56.16	0	0	0.00	108.00	286.54	14.81
4.78	3.920	229.61	3	5.0E-08	17	53.64	0	0	0.00	107.38	273.65	14.10
4.80	3.700	225.87	3	4.0E-08	16	50.55	0	0	0.00	105.38	257.91	13.26
4.82	3.570	223.49	3	3.5E-08	16	48.72	0	0	0.00	104.20	248.59	12.74
4.84	3.550	218.90	3	3.5E-08	16	48.44	0	0	0.00	103.37	247.14	12.61
4.86	3.630	210.91	3	4.2E-08	16	49.55	0	0	0.00	102.55	252.82	12.83
4.88	3.660	206.16	3	4.5E-08	16	49.97	0	0	0.00	101.98	254.94	12.88
4.90	3.900	193.10	4	6.8E-08	16	53.32	0	0	0.00	101.03	272.05	13.66
4.92	4.250	180.05	4	1.1E-07	17	58.22	0	0	80.16	100.46	297.03	14.82
4.94	4.550	174.82	4	1.6E-07	18	62.41	0	0	80.64	101.06	318.43	15.81
4.96	5.100	165.57	4	2.9E-07	19	70.11	0	0	81.21	101.78	357.68	17.65
4.98	5.810	156.89	5	5.8E-07	20	80.04	42	37	82.11	102.91	0.00	0.00
5.00	6.540	153.02	5	1.0E-06	21	90.26	44	38	83.70	104.90	0.00	0.00
5.02	6.910	146.84	5	1.4E-06	22	95.43	45	38	83.56	104.73	0.00	0.00
5.04	7.330	145.92	5	1.8E-06	23	101.30	47	38	84.61	106.04	0.00	0.00
5.06	7.380	148.11	5	1.8E-06	23	102.00	47	38	85.32	106.94	0.00	0.00
5.08	7.460	152.39	5	1.7E-06	23	103.11	47	38	86.57	108.50	0.00	0.00
5.10	7.660	165.16	5	1.6E-06	24	105.91	47	38	89.92	112.70	0.00	0.00
5.12	7.340	176.03	5	1.2E-06	23	101.42	46	38	91.37	114.52	0.00	0.00
5.14	7.220	198.46	5	8.4E-07	24	99.74	46	38	95.52	119.72	0.00	0.00
5.16	7.030	233.47	5	5.2E-07	24	97.07	45	38	101.41	127.10	0.00	0.00
5.18	6.720	247.48	4	3.7E-07	24	92.73	0	0	102.88	128.94	473.09	22.46
5.20	6.430	248.21	4	3.0E-07	23	88.66	0	0	102.09	127.96	452.35	21.41
5.22	6.100	240.83	4	2.6E-07	22	84.03	0	0	99.77	125.05	428.75	20.23
5.24	5.560	240.70	4	1.7E-07	21	76.47	0	0	97.79	122.56	390.15	18.35
5.26	5.050	222.64	4	1.3E-07	20	69.32	0	0	92.84	116.35	353.69	16.58
5.28	5.890	197.00	4	3.4E-07	21	81.08	0	0	91.71	114.95	413.66	19.31
5.30	6.570	188.99	5	5.9E-07	22	90.59	43	38	92.61	116.07	0.00	0.00
5.32	6.410	178.78	5	5.9E-07	22	88.35	43	37	90.22	113.08	0.00	0.00
5.34	5.720	177.83	4	3.6E-07	20	78.68	0	0	87.86	110.11	401.43	18.56

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P22	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
5.36	5.560	172.19	4	3.4E-07	20	76.44	0	0	86.32	108.18	389.98	17.97
5.38	5.980	170.00	5	4.8E-07	21	82.31	41	37	87.42	109.57	0.00	0.00
5.40	7.710	173.14	5	1.4E-06	24	106.52	46	38	93.33	116.97	0.00	0.00
5.42	9.640	188.80	5	3.0E-06	28	127.33	52	39	101.59	127.33	0.00	0.00
5.44	10.020	188.29	5	3.6E-06	29	128.43	53	39	102.47	128.43	0.00	0.00
5.46	9.360	183.15	5	2.8E-06	28	125.26	51	39	99.95	125.26	0.00	0.00
5.48	9.530	196.81	5	2.6E-06	28	129.51	51	39	103.33	129.51	0.00	0.00
5.50	10.450	230.21	5	2.7E-06	31	140.87	54	40	112.40	140.87	0.00	0.00
5.52	13.520	255.09	5	6.5E-06	37	155.67	61	41	124.21	155.67	0.00	0.00
5.54	15.430	282.18	6	9.1E-06	41	167.29	65	42	133.48	167.29	0.00	0.00
5.56	17.860	314.06	6	1.3E-05	46	180.93	70	42	144.36	180.93	0.00	0.00
5.58	20.940	374.33	6	1.8E-05	52	202.31	76	43	161.42	202.31	0.00	0.00
5.60	26.090	509.51	6	2.1E-05	64	244.00	85	44	194.68	244.00	0.00	0.00
5.62	35.130	590.25	6	5.1E-05	79	279.94	99	45	223.36	279.94	0.00	0.00

CPTe P23 NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)

qc	cone resistance	SPT	equivalent SPT N60	Es	Young's modulus
fs	sleeve friction	M	constrained modulus	Go	Shear modulus
SBTn	soil behavior type normalized	Dr	relative density	Su	Shear strenght
Ksbt	permeability	Fi	Friction angle	OCR	Over consolidation ratio

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P23	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.00	-	-	-	-	-	-	-	-	-	-	-	-
0.02	0.190	0.00	0	0.0E+00	0	0.17	0	0	0.14	0.17	0.00	0.00
0.04	0.900	0.10	0	0.0E+00	2	6.45	0	0	5.14	6.45	0.00	0.00
0.06	1.110	0.10	0	0.0E+00	2	8.12	0	0	6.48	8.12	0.00	0.00
0.08	1.240	0.10	0	0.0E+00	3	9.40	0	0	7.50	9.40	0.00	0.00
0.10	1.320	0.10	0	0.0E+00	3	10.14	0	0	8.09	10.14	0.00	0.00
0.12	1.270	0.06	0	0.0E+00	3	11.13	0	0	8.88	11.13	0.00	0.00
0.14	1.280	0.06	0	0.0E+00	3	11.48	0	0	9.16	11.48	0.00	0.00
0.16	1.520	0.16	0	0.0E+00	3	11.39	0	0	9.08	11.39	0.00	0.00
0.18	1.580	0.16	0	0.0E+00	3	11.85	0	0	9.45	11.85	0.00	0.00
0.20	1.520	0.13	0	0.0E+00	3	12.09	0	0	9.65	12.09	0.00	0.00
0.22	1.420	0.10	0	0.0E+00	3	12.24	0	0	9.77	12.24	0.00	0.00
0.24	1.170	0.10	0	0.0E+00	3	10.51	0	0	8.39	10.51	0.00	0.00
0.26	1.200	0.10	0	0.0E+00	3	10.87	0	0	8.68	10.87	0.00	0.00
0.28	0.850	0.06	0	0.0E+00	2	8.98	0	0	7.16	8.98	0.00	0.00
0.30	0.720	5.23	6	5.2E-06	2	8.65	39	37	6.90	8.65	0.00	0.00
0.32	0.700	6.12	5	3.7E-06	2	8.95	39	37	7.14	8.95	0.00	0.00
0.34	0.670	6.34	5	2.9E-06	2	8.95	38	36	7.14	8.95	0.00	0.00
0.36	0.660	6.50	5	2.5E-06	2	9.06	37	36	7.23	9.06	0.00	0.00
0.38	0.630	5.17	5	2.6E-06	2	8.54	36	36	6.82	8.54	0.00	0.00
0.40	0.630	4.47	5	2.9E-06	2	8.39	35	35	6.69	8.39	0.00	0.00
0.42	0.760	3.90	6	5.5E-06	2	9.03	36	36	7.21	9.03	0.00	0.00
0.44	0.830	0.19	0	0.0E+00	2	8.29	0	0	6.62	8.29	0.00	0.00
0.46	0.880	0.22	0	0.0E+00	2	8.62	0	0	6.88	8.62	0.00	0.00
0.48	0.940	0.25	0	0.0E+00	2	8.96	0	0	7.15	8.96	0.00	0.00
0.50	1.080	0.16	0	0.0E+00	3	10.46	0	0	8.35	10.46	0.00	0.00
0.52	1.070	0.19	0	0.0E+00	3	10.26	0	0	8.19	10.26	0.00	0.00
0.54	0.810	0.22	0	0.0E+00	2	8.36	0	0	6.67	8.36	0.00	0.00
0.56	0.590	0.19	0	0.0E+00	2	6.85	0	0	5.46	6.85	0.00	0.00
0.58	0.590	0.19	0	0.0E+00	2	6.90	0	0	5.51	6.90	0.00	0.00
0.60	0.570	0.19	0	0.0E+00	2	6.80	0	0	5.42	6.80	0.00	0.00
0.62	0.530	0.19	0	0.0E+00	2	6.53	0	0	5.21	6.53	0.00	0.00
0.64	0.510	0.16	0	0.0E+00	1	6.46	0	0	5.15	6.46	0.00	0.00
0.66	0.500	0.16	0	0.0E+00	1	6.42	0	0	5.12	6.42	0.00	0.00
0.68	0.460	0.13	0	0.0E+00	1	6.21	0	0	4.96	6.21	0.00	0.00
0.70	0.460	0.13	0	0.0E+00	1	6.26	0	0	4.99	6.26	0.00	0.00
0.72	0.460	0.13	0	0.0E+00	1	6.30	0	0	5.02	6.30	0.00	0.00
0.74	0.460	0.13	0	0.0E+00	1	6.34	0	0	5.06	6.34	0.00	0.00
0.76	0.490	0.10	0	0.0E+00	1	6.79	0	0	5.42	6.79	0.00	0.00
0.78	0.570	0.10	0	0.0E+00	2	7.61	0	0	6.07	7.61	0.00	0.00
0.80	0.590	0.13	0	0.0E+00	2	7.66	0	0	6.11	7.66	0.00	0.00
0.82	0.600	0.13	0	0.0E+00	2	7.80	0	0	6.22	7.80	0.00	0.00
0.84	0.610	0.13	0	0.0E+00	2	7.93	0	0	6.33	7.93	0.00	0.00
0.86	0.590	0.19	0	0.0E+00	2	7.60	0	0	6.06	7.60	0.00	0.00
0.88	0.660	0.19	0	0.0E+00	2	8.23	0	0	6.57	8.23	0.00	0.00
0.90	0.730	0.19	0	0.0E+00	2	8.86	0	0	7.07	8.86	0.00	0.00
0.92	0.840	0.22	0	0.0E+00	2	9.69	0	0	7.73	9.69	0.00	0.00
0.94	0.990	0.22	0	0.0E+00	3	10.90	0	0	8.69	10.90	0.00	0.00

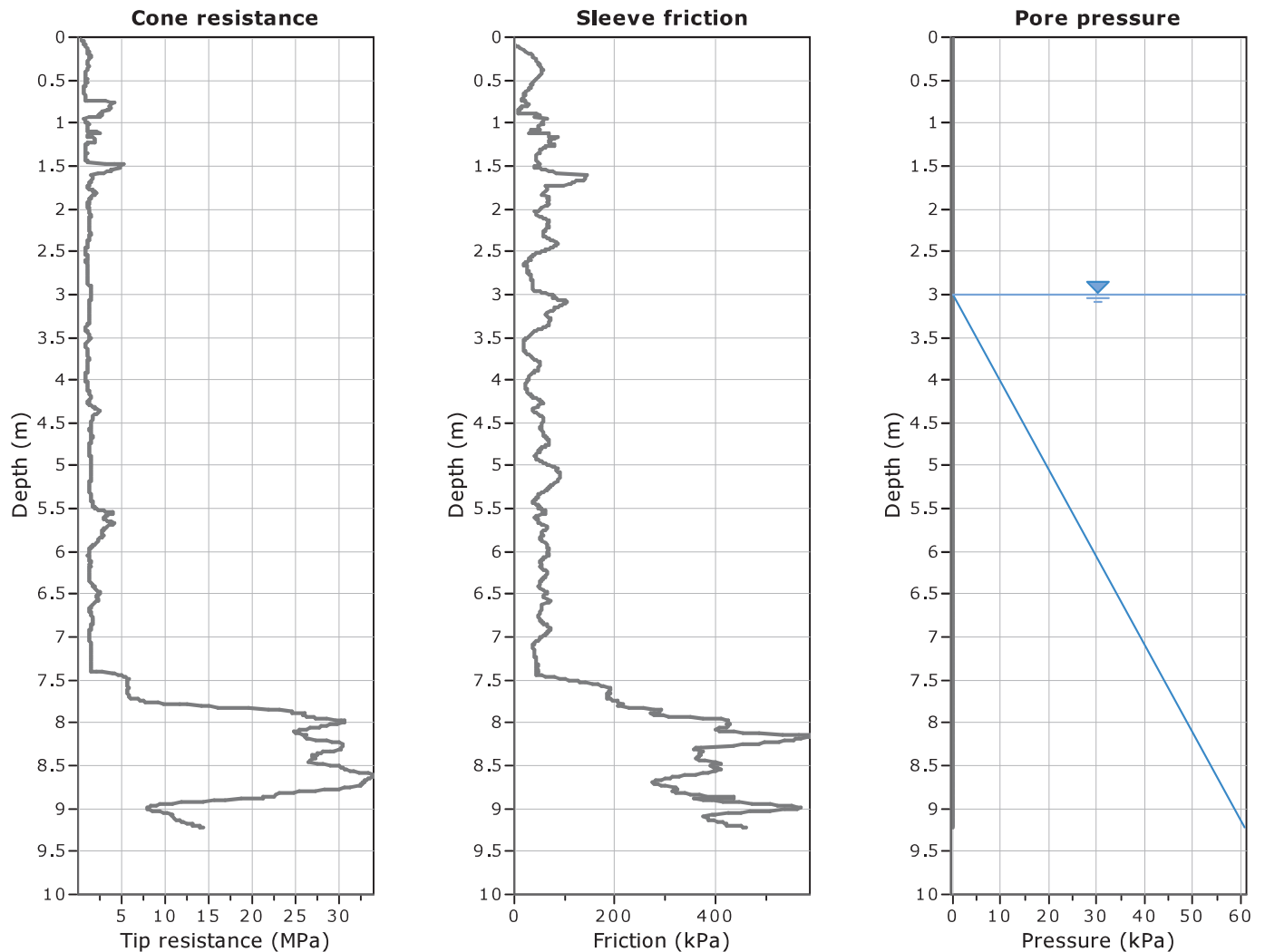
In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P23	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
0.96	1.240	1.20	0	0.0E+00	3	12.11	0	0	9.66	12.11	0.00	0.00
0.98	1.360	2.38	6	1.5E-05	3	13.43	35	36	10.72	13.43	0.00	0.00
1.00	1.290	5.99	6	5.9E-06	4	15.06	35	36	12.01	15.06	0.00	0.00
1.02	1.250	10.17	5	2.9E-06	4	16.64	36	36	13.28	16.64	0.00	0.00
1.04	1.260	13.28	5	2.0E-06	4	17.89	37	36	14.28	17.89	0.00	0.00
1.06	1.240	18.41	5	1.2E-06	4	17.15	37	36	15.53	19.47	0.00	0.00
1.08	1.450	18.54	5	1.9E-06	4	20.83	39	37	16.62	20.83	0.00	0.00
1.10	1.570	21.14	5	2.0E-06	5	22.36	40	37	17.84	22.36	0.00	0.00
1.12	1.700	20.60	5	2.7E-06	5	23.00	41	37	18.35	23.00	0.00	0.00
1.14	1.800	18.57	5	3.7E-06	5	22.98	41	37	18.33	22.98	0.00	0.00
1.16	1.830	18.73	5	3.7E-06	5	23.28	41	37	18.58	23.28	0.00	0.00
1.18	1.880	18.16	5	4.2E-06	5	23.44	41	37	18.70	23.44	0.00	0.00
1.20	1.970	17.97	5	4.9E-06	6	23.91	42	37	19.08	23.91	0.00	0.00
1.22	2.060	17.05	6	5.9E-06	6	24.11	42	37	19.23	24.11	0.00	0.00
1.24	2.070	17.71	6	5.6E-06	6	24.48	42	37	19.54	24.48	0.00	0.00
1.26	2.170	18.89	6	5.9E-06	6	25.45	43	37	20.30	25.45	0.00	0.00
1.28	2.280	20.95	6	5.9E-06	6	26.74	43	38	21.34	26.74	0.00	0.00
1.30	2.400	21.93	6	6.4E-06	7	27.70	44	38	22.10	27.70	0.00	0.00
1.32	2.530	26.36	6	5.7E-06	7	29.81	45	38	23.78	29.81	0.00	0.00
1.34	2.620	31.66	5	4.8E-06	7	31.92	46	38	25.47	31.92	0.00	0.00
1.36	2.740	39.83	5	3.8E-06	8	34.85	47	38	27.81	34.85	0.00	0.00
1.38	2.700	45.06	5	2.8E-06	8	36.15	47	38	28.84	36.15	0.00	0.00
1.40	2.690	48.13	5	2.4E-06	8	37.00	47	38	29.52	37.00	0.00	0.00
1.42	2.860	46.04	5	3.2E-06	8	37.42	48	39	29.86	37.42	0.00	0.00
1.44	2.850	42.11	5	3.6E-06	8	36.49	47	38	29.11	36.49	0.00	0.00
1.46	2.620	39.10	5	3.0E-06	8	34.76	46	38	27.74	34.76	0.00	0.00
1.48	2.430	34.29	5	2.8E-06	7	32.67	44	38	26.07	32.67	0.00	0.00
1.50	2.300	30.80	5	2.6E-06	7	31.16	42	37	24.86	31.16	0.00	0.00
1.52	2.240	28.04	5	2.7E-06	7	30.15	42	37	24.06	30.15	0.00	0.00
1.54	2.120	27.98	5	2.2E-06	6	29.66	41	37	23.66	29.66	0.00	0.00
1.56	2.080	26.81	5	2.1E-06	6	29.21	40	37	23.30	29.21	0.00	0.00
1.58	2.170	25.32	5	2.7E-06	6	29.28	40	37	23.36	29.28	0.00	0.00
1.60	2.510	23.48	6	5.0E-06	7	30.31	42	37	24.19	30.31	0.00	0.00
1.62	3.220	21.48	6	1.4E-05	8	32.52	46	38	25.95	32.52	0.00	0.00
1.64	4.070	23.70	6	2.7E-05	10	36.42	50	39	29.06	36.42	0.00	0.00
1.66	4.460	33.87	6	2.2E-05	11	41.47	53	39	33.09	41.47	0.00	0.00
1.68	4.970	40.59	6	2.4E-05	12	45.46	55	40	36.27	45.46	0.00	0.00
1.70	5.270	53.17	6	1.8E-05	13	50.42	57	40	40.22	50.42	0.00	0.00
1.72	5.490	68.89	6	1.3E-05	14	55.65	59	41	44.40	55.65	0.00	0.00
1.74	5.620	86.89	6	9.3E-06	15	60.83	60	41	48.53	60.83	0.00	0.00
1.76	5.620	96.58	6	7.5E-06	15	63.26	60	41	50.47	63.26	0.00	0.00
1.78	5.080	132.93	5	2.7E-06	15	68.87	59	41	54.95	68.87	0.00	0.00
1.80	4.840	139.58	5	2.0E-06	15	69.25	58	40	55.25	69.25	0.00	0.00
1.82	4.390	158.38	5	1.0E-06	14	61.07	56	40	56.32	70.59	0.00	0.00
1.84	4.160	164.05	9	7.7E-07	14	57.84	0	0	56.28	70.54	295.10	34.84
1.86	3.910	136.73	5	8.8E-07	13	54.33	53	39	51.67	64.77	0.00	0.00
1.88	3.830	137.18	5	7.9E-07	13	53.21	52	39	51.55	64.61	0.00	0.00
1.90	3.810	140.44	5	7.3E-07	13	52.92	52	39	52.07	65.26	0.00	0.00
1.92	3.820	130.68	5	8.4E-07	13	53.06	51	39	50.88	63.78	0.00	0.00
1.94	3.820	117.88	5	1.0E-06	12	53.05	51	39	49.13	61.58	0.00	0.00
1.96	3.770	111.26	5	1.1E-06	12	52.35	50	39	48.05	60.22	0.00	0.00
1.98	3.690	101.65	5	1.2E-06	12	51.22	49	39	46.33	58.07	0.00	0.00
2.00	3.690	100.80	5	1.2E-06	12	51.22	49	39	46.32	58.05	0.00	0.00
2.02	3.630	99.82	5	1.1E-06	12	50.37	49	39	46.05	57.71	0.00	0.00
2.04	3.480	99.91	5	9.1E-07	11	48.27	48	39	45.58	57.13	0.00	0.00

In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P23	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
2.06	3.210	102.51	5	6.2E-07	11	44.48	46	38	44.98	56.37	0.00	0.00
2.08	3.050	100.64	5	5.2E-07	11	42.24	45	38	44.10	55.27	0.00	0.00
2.10	2.910	97.38	4	4.6E-07	10	40.27	0	0	43.07	53.98	205.46	22.28
2.12	2.710	93.57	4	3.7E-07	10	37.47	0	0	41.64	52.19	191.15	20.81
2.14	2.540	90.75	4	3.0E-07	9	35.08	0	0	40.48	50.74	178.98	19.56
2.16	2.290	84.92	4	2.3E-07	9	31.58	0	0	38.40	48.12	161.10	17.75
2.18	2.170	81.50	4	1.9E-07	8	29.89	0	0	37.32	46.78	152.50	16.80
2.20	2.070	75.77	4	1.8E-07	8	28.49	0	0	35.96	45.07	145.33	15.93
2.22	1.900	74.91	4	1.3E-07	7	26.10	0	0	34.97	43.83	133.16	14.75
2.24	1.830	76.24	4	1.1E-07	7	25.11	0	0	0.00	43.71	128.14	14.23
2.26	1.830	77.98	4	1.0E-07	7	25.11	0	0	0.00	44.18	128.11	14.15
2.28	1.810	80.65	4	9.0E-08	7	24.82	0	0	0.00	44.68	126.66	13.97
2.30	1.890	81.18	4	1.0E-07	8	25.94	0	0	0.00	45.52	132.34	14.37
2.32	1.920	79.60	4	1.1E-07	8	26.35	0	0	36.35	45.55	134.46	14.41
2.34	1.870	80.87	4	9.7E-08	8	25.65	0	0	0.00	45.56	130.86	14.02
2.36	1.860	80.71	4	9.3E-08	8	25.50	0	0	0.00	45.58	130.12	13.86
2.38	1.800	80.55	4	8.1E-08	7	24.66	0	0	0.00	45.22	125.81	13.39
2.40	1.800	81.69	4	7.8E-08	7	24.65	0	0	0.00	45.57	125.79	13.31
2.42	2.110	79.92	4	1.5E-07	8	28.99	0	0	37.97	47.60	147.90	15.01
2.44	2.050	77.44	4	1.4E-07	8	28.14	0	0	37.33	46.79	143.59	14.52
2.46	1.870	81.28	4	8.7E-08	8	25.62	0	0	0.00	46.40	130.71	13.43
2.48	1.650	86.10	3	4.6E-08	7	22.53	0	0	0.00	45.71	114.97	12.09
2.50	1.660	83.02	3	5.0E-08	7	22.67	0	0	0.00	45.33	115.66	12.01
2.52	1.710	77.60	4	6.3E-08	7	23.36	0	0	0.00	44.78	119.20	12.15
2.54	1.720	76.05	4	6.6E-08	7	23.50	0	0	0.00	44.67	119.89	12.10
2.56	1.820	74.31	4	8.6E-08	7	24.89	0	0	0.00	45.19	127.01	12.57
2.58	1.870	72.72	4	9.8E-08	8	25.59	0	0	0.00	45.34	130.55	12.74
2.60	1.880	72.63	4	9.9E-08	8	25.72	0	0	0.00	45.50	131.24	12.71
2.62	1.930	71.39	4	1.1E-07	8	26.42	0	0	0.00	45.71	134.79	12.89
2.64	1.940	72.95	4	1.1E-07	8	26.55	0	0	0.00	46.24	135.47	12.88
2.66	1.960	73.01	4	1.1E-07	8	26.83	0	0	0.00	46.51	136.88	12.91
2.68	1.840	77.10	4	7.6E-08	8	25.14	0	0	0.00	46.63	128.28	12.22
2.70	1.820	75.42	4	7.5E-08	8	24.86	0	0	0.00	46.24	126.82	12.00
2.72	1.810	74.09	4	7.5E-08	7	24.71	0	0	0.00	45.99	126.08	11.85
2.74	1.880	73.74	4	8.6E-08	8	25.69	0	0	0.00	46.55	131.06	12.15
2.76	2.030	71.39	4	1.2E-07	8	27.78	0	0	37.66	47.21	141.75	12.86
2.78	2.120	69.84	4	1.5E-07	8	29.04	0	0	37.95	47.57	148.15	13.23
2.80	2.170	68.92	4	1.7E-07	8	29.73	0	0	38.13	47.79	151.69	13.40
2.82	2.170	66.29	4	1.8E-07	8	29.73	0	0	37.72	47.27	151.67	13.28
2.84	2.160	67.15	4	1.7E-07	8	29.58	0	0	37.92	47.52	150.93	13.16
2.86	2.090	72.95	4	1.2E-07	8	28.60	0	0	38.73	48.54	145.90	12.80
2.88	2.190	75.39	4	1.4E-07	9	29.99	0	0	39.80	49.89	153.02	13.28
2.90	2.340	77.22	4	1.7E-07	9	32.09	0	0	41.01	51.40	163.71	14.00
2.92	3.610	75.54	5	1.0E-06	12	49.86	42	37	46.26	57.98	0.00	0.00
2.94	5.100	71.23	5	4.4E-06	14	62.96	48	39	50.23	62.96	0.00	0.00
2.96	6.220	71.61	6	9.5E-06	16	66.93	52	39	53.40	66.93	0.00	0.00
2.98	6.530	84.04	6	8.5E-06	17	71.74	54	40	57.24	71.74	0.00	0.00
3.00	6.410	118.16	5	4.0E-06	18	80.59	54	40	64.30	80.59	0.00	0.00
3.02	6.370	149.47	5	2.4E-06	19	87.92	54	40	70.15	87.92	0.00	0.00
3.04	6.420	173.59	5	1.8E-06	20	89.17	54	40	74.55	93.44	0.00	0.00
3.06	5.850	208.82	5	8.2E-07	19	81.18	52	39	78.20	98.01	0.00	0.00
3.08	6.080	214.34	5	8.9E-07	20	84.40	53	40	80.02	100.29	0.00	0.00
3.10	6.910	235.38	5	1.2E-06	22	96.01	56	40	86.22	108.06	0.00	0.00
3.12	7.780	242.70	5	1.8E-06	24	108.19	59	41	90.36	113.25	0.00	0.00
3.14	7.960	226.73	5	2.3E-06	24	111.10	60	41	88.64	111.10	0.00	0.00

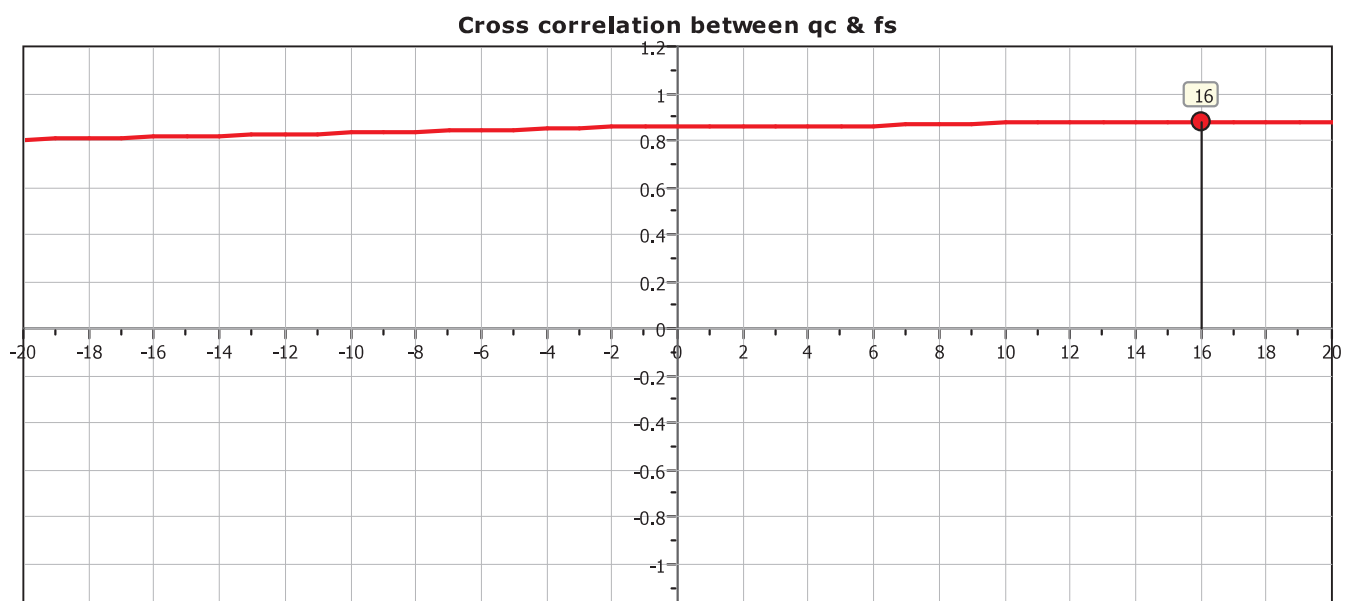
In situ data				Estimations		NUOVA VIABILITA', FABBRICA - PECCIOLI (PI)					CPTe P23	
Depth (m)	qc (MPa)	fs (kPa)	SBTn	Ksbt (m/s)	SPT N60	M (MPa)	Dr (%)	Fi (°)	Es (MPa)	Go (MPa)	Su (kPa)	OCR
3.16	7.330	230.18	5	1.6E-06	23	101.88	57	40	87.32	109.44	0.00	0.00
3.18	7.200	245.99	5	1.2E-06	23	100.05	57	40	89.38	112.03	0.00	0.00
3.20	6.600	290.04	9	6.0E-07	22	91.64	0	0	93.46	117.14	467.58	34.88
3.22	6.530	271.21	9	6.6E-07	22	90.66	0	0	90.83	113.84	462.55	34.20
3.24	5.840	272.55	9	4.1E-07	21	80.99	0	0	88.42	110.82	413.23	30.86
3.26	5.710	266.02	9	3.9E-07	20	79.17	0	0	87.17	109.26	403.92	30.04
3.28	5.560	260.88	9	3.6E-07	20	77.06	0	0	86.02	107.81	393.17	29.15
3.30	5.590	253.72	9	3.9E-07	20	77.48	0	0	85.34	106.95	395.29	29.07
3.32	5.510	230.91	4	4.5E-07	19	76.35	0	0	82.00	102.77	389.55	28.36
3.34	5.020	227.49	4	3.1E-07	18	69.49	0	0	79.62	99.79	354.52	25.96
3.36	5.060	217.16	4	3.5E-07	18	70.04	0	0	78.47	98.35	357.35	25.92
3.38	5.140	208.60	4	4.1E-07	18	71.15	0	0	77.71	97.39	363.03	26.08
3.40	5.240	211.71	4	4.2E-07	18	72.55	0	0	78.71	98.65	370.15	26.42
3.42	5.490	203.31	4	5.5E-07	19	76.04	0	0	78.59	98.49	387.98	27.33
3.44	5.870	178.81	5	9.5E-07	19	81.36	50	39	76.24	95.55	0.00	0.00
3.46	6.290	161.89	5	1.5E-06	20	87.23	51	39	74.88	93.85	0.00	0.00
3.48	6.570	159.90	5	1.9E-06	20	94.66	52	39	75.53	94.66	0.00	0.00
3.50	7.010	162.08	5	2.4E-06	21	96.97	53	40	77.37	96.97	0.00	0.00
3.52	7.260	161.48	5	2.7E-06	22	97.90	54	40	78.11	97.90	0.00	0.00
3.54	7.560	164.65	5	3.1E-06	22	99.86	55	40	79.67	99.86	0.00	0.00
3.56	7.760	169.37	5	3.2E-06	23	101.80	56	40	81.22	101.80	0.00	0.00
3.58	7.830	179.48	5	2.9E-06	23	104.51	56	40	83.38	104.51	0.00	0.00
3.60	7.660	189.46	5	2.3E-06	23	106.27	55	40	84.79	106.27	0.00	0.00
3.62	7.490	197.35	5	1.9E-06	23	107.50	55	40	85.77	107.50	0.00	0.00
3.64	7.060	209.17	5	1.3E-06	22	97.96	53	40	86.53	108.46	0.00	0.00
3.66	6.790	215.92	5	1.0E-06	22	94.18	52	39	86.87	108.88	0.00	0.00
3.68	6.600	215.67	5	9.2E-07	22	91.51	51	39	86.32	108.19	0.00	0.00
3.70	6.650	215.54	5	9.4E-07	22	92.21	51	39	86.61	108.55	0.00	0.00
3.72	6.700	217.92	5	9.4E-07	22	92.90	51	39	87.29	109.41	0.00	0.00
3.74	6.660	216.49	5	9.2E-07	22	92.33	51	39	87.06	109.12	0.00	0.00
3.76	6.770	217.38	5	9.7E-07	22	93.87	51	39	87.72	109.94	0.00	0.00
3.78	7.390	211.67	5	1.5E-06	23	102.54	53	40	88.87	111.39	0.00	0.00
3.80	7.870	223.72	5	1.7E-06	24	109.26	55	40	92.42	115.83	0.00	0.00
3.82	8.140	224.63	5	1.9E-06	25	117.13	56	40	93.45	117.13	0.00	0.00
3.84	8.450	222.38	5	2.3E-06	25	117.89	57	40	94.06	117.89	0.00	0.00
3.86	8.610	239.15	5	2.1E-06	26	122.05	57	40	97.38	122.05	0.00	0.00
3.88	8.660	249.16	5	1.9E-06	26	124.36	57	40	99.22	124.36	0.00	0.00
3.90	8.660	248.30	5	1.9E-06	26	124.28	57	40	99.16	124.28	0.00	0.00
3.92	8.190	251.66	5	1.5E-06	26	113.70	56	40	98.34	123.25	0.00	0.00
3.94	7.930	252.68	5	1.3E-06	25	110.06	55	40	97.75	122.52	0.00	0.00
3.96	7.980	244.88	5	1.4E-06	25	110.75	55	40	96.75	121.26	0.00	0.00
3.98	8.290	246.40	5	1.6E-06	26	115.09	56	40	98.03	122.86	0.00	0.00
4.00	10.220	240.48	5	4.0E-06	29	128.51	62	41	102.53	128.51	0.00	0.00
4.02	11.530	239.72	5	6.7E-06	31	132.48	65	41	105.71	132.48	0.00	0.00
4.04	14.180	237.06	6	1.6E-05	36	139.19	71	42	111.05	139.19	0.00	0.00
4.06	15.500	239.02	6	2.3E-05	38	142.97	74	43	114.07	142.97	0.00	0.00
4.08	14.360	235.38	6	1.7E-05	36	139.41	72	42	111.23	139.41	0.00	0.00
4.10	13.210	233.00	6	1.2E-05	34	135.98	69	42	108.50	135.98	0.00	0.00
4.12	12.060	249.22	5	7.2E-06	33	136.60	66	42	108.99	136.60	0.00	0.00
4.14	11.810	257.84	5	6.1E-06	32	137.85	65	42	109.98	137.85	0.00	0.00
4.16	11.620	296.22	5	4.2E-06	33	145.42	65	41	116.03	145.42	0.00	0.00
4.18	12.130	327.30	5	3.9E-06	35	153.39	66	42	122.38	153.39	0.00	0.00
4.20	12.950	364.25	5	4.0E-06	37	163.31	69	42	130.30	163.31	0.00	0.00

Prove Penetrometriche Statiche con Punta elettrica (CPTe)

ELABORATI GRAFICI



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



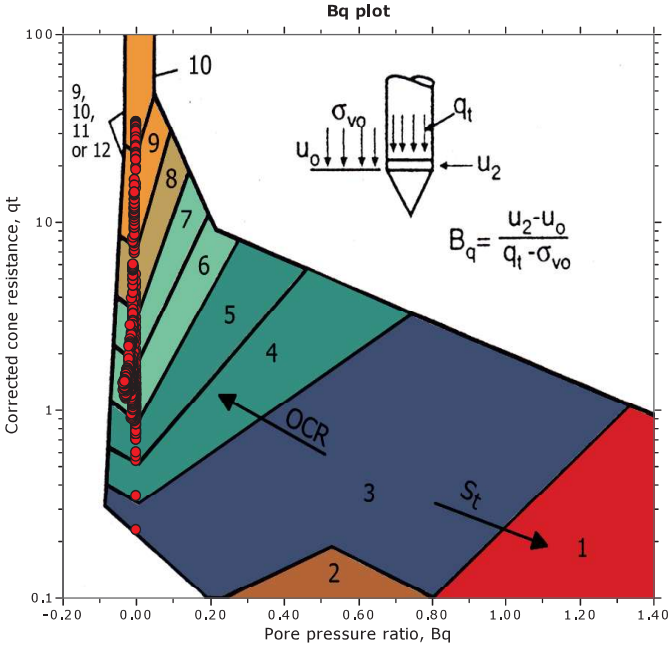
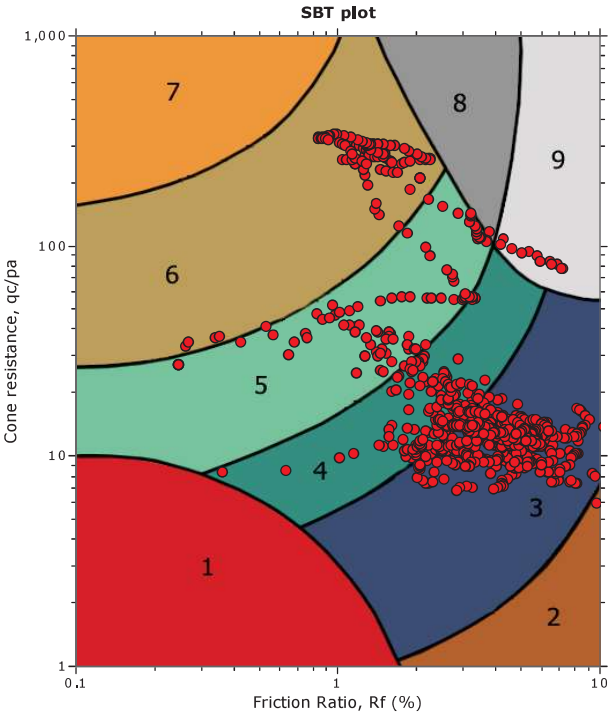
BIERREGI SRL
Via dell'Acquacalda 840/a
55100 Lucca
info@bierregilucca.it

Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

CPT: P3

Total depth: 9.22 m, Date: 10/01/2025
Coords: X:1642291.31, Y:4818722.58
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

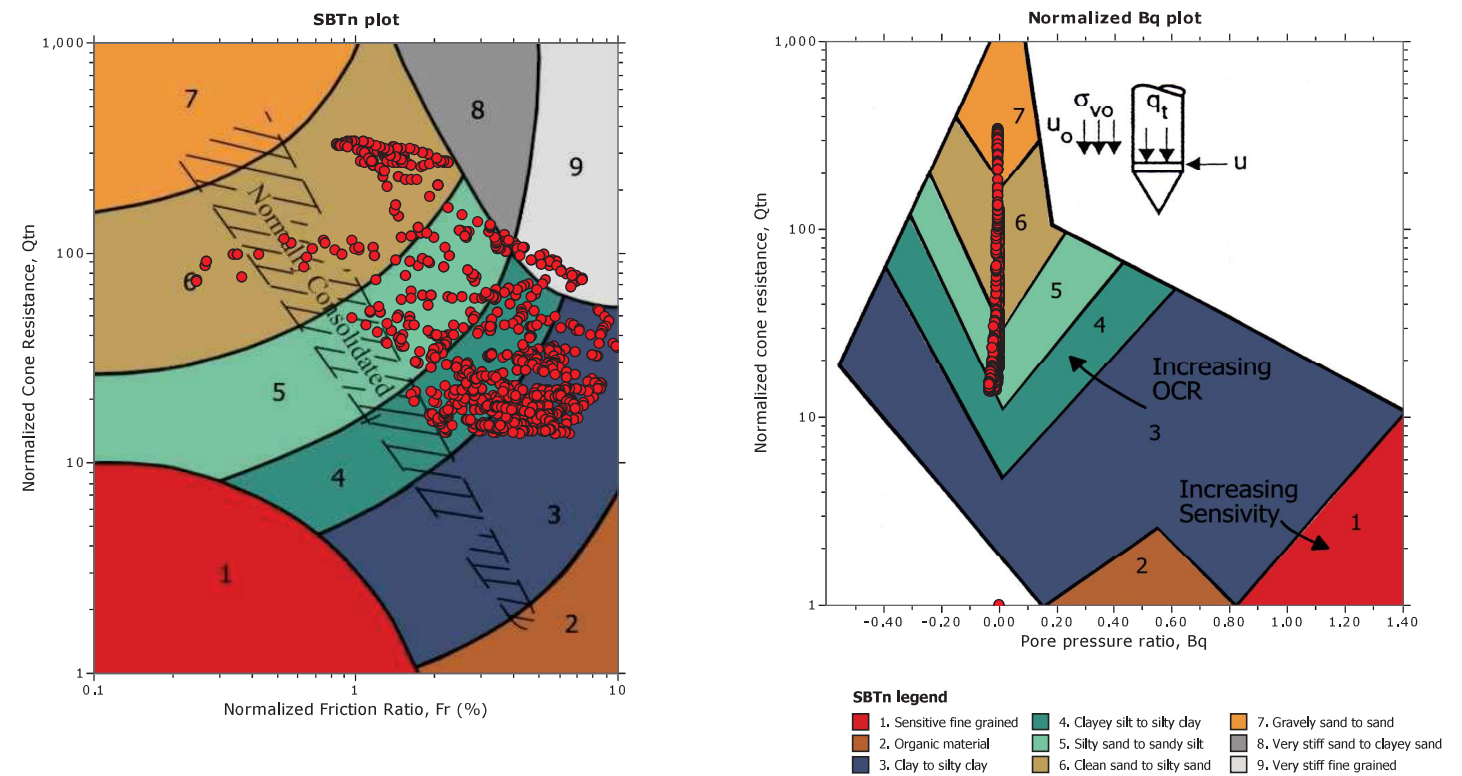
SBT - Bq plots



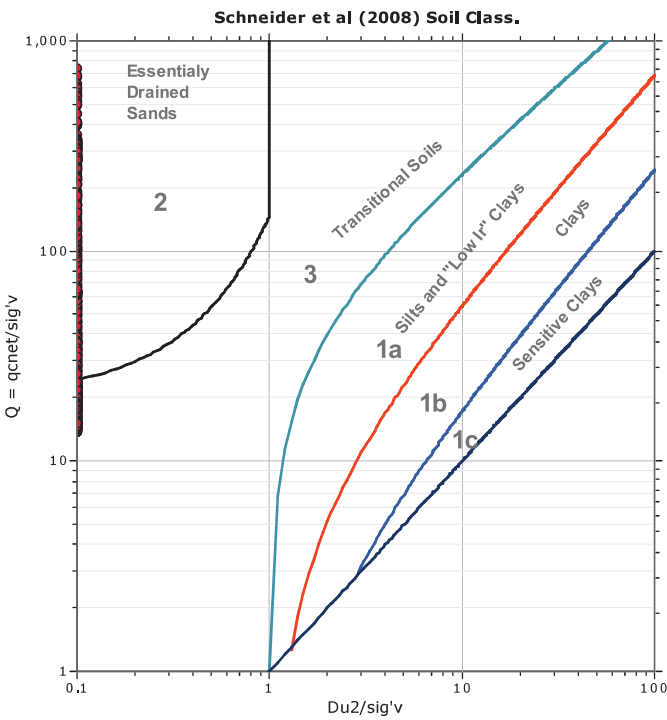
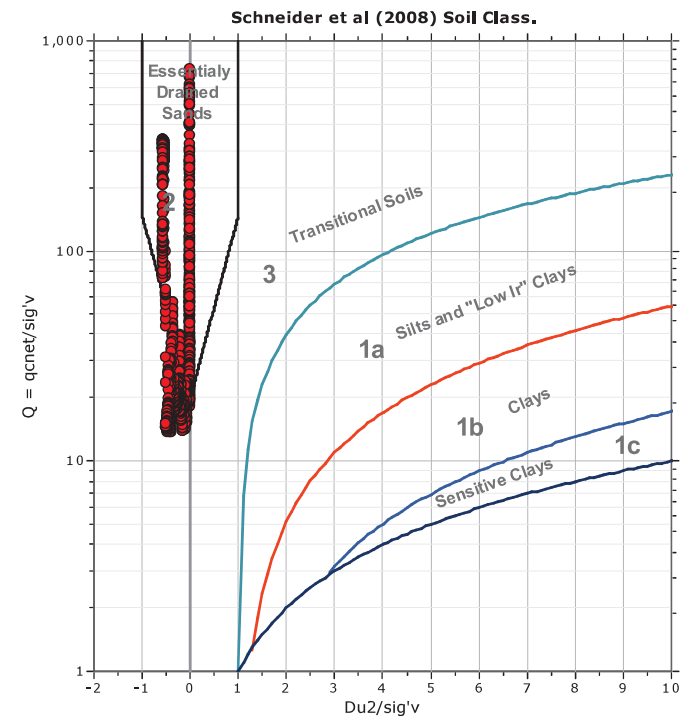
SBT legend

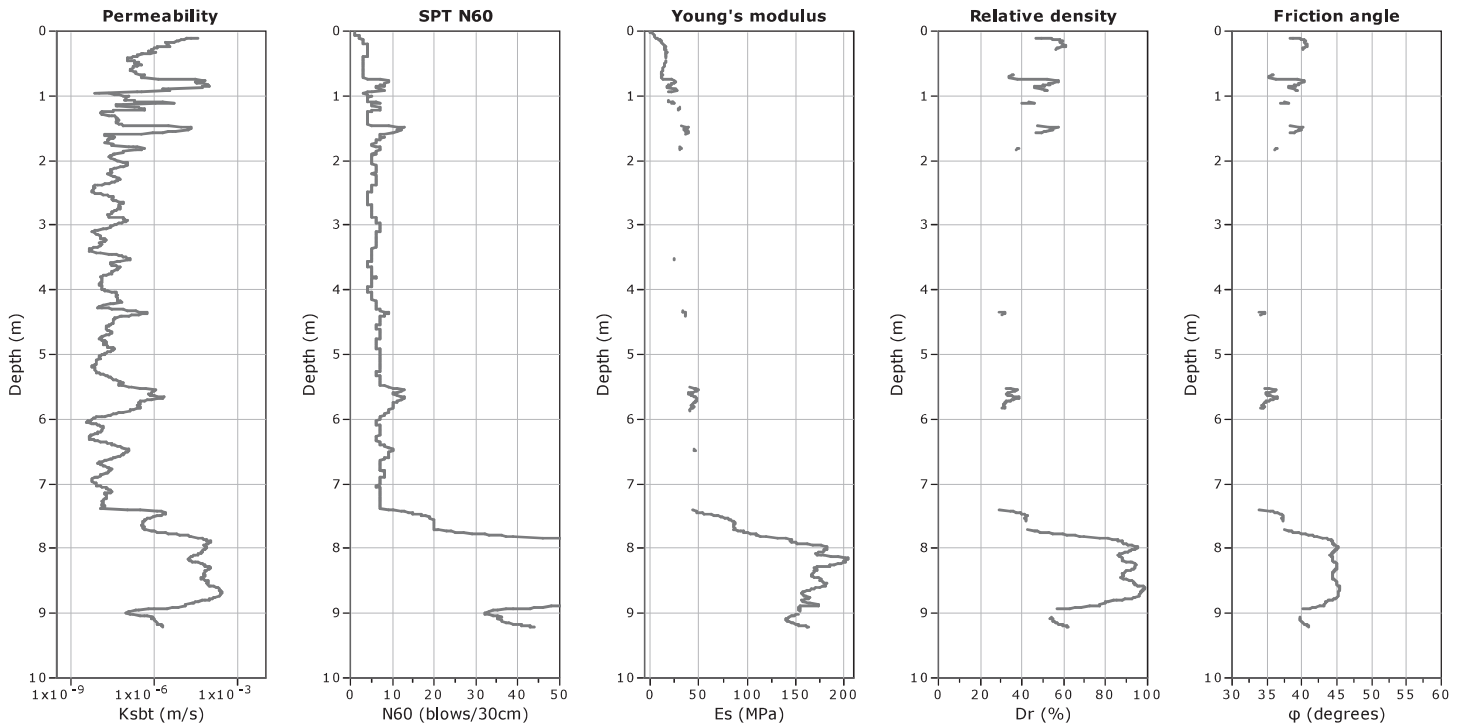
1. Sensitive fine grained	4. Clayey silt to silty clay	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to clayey sand
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

SBT - Bq plots (normalized)



Bq plots (Schneider)





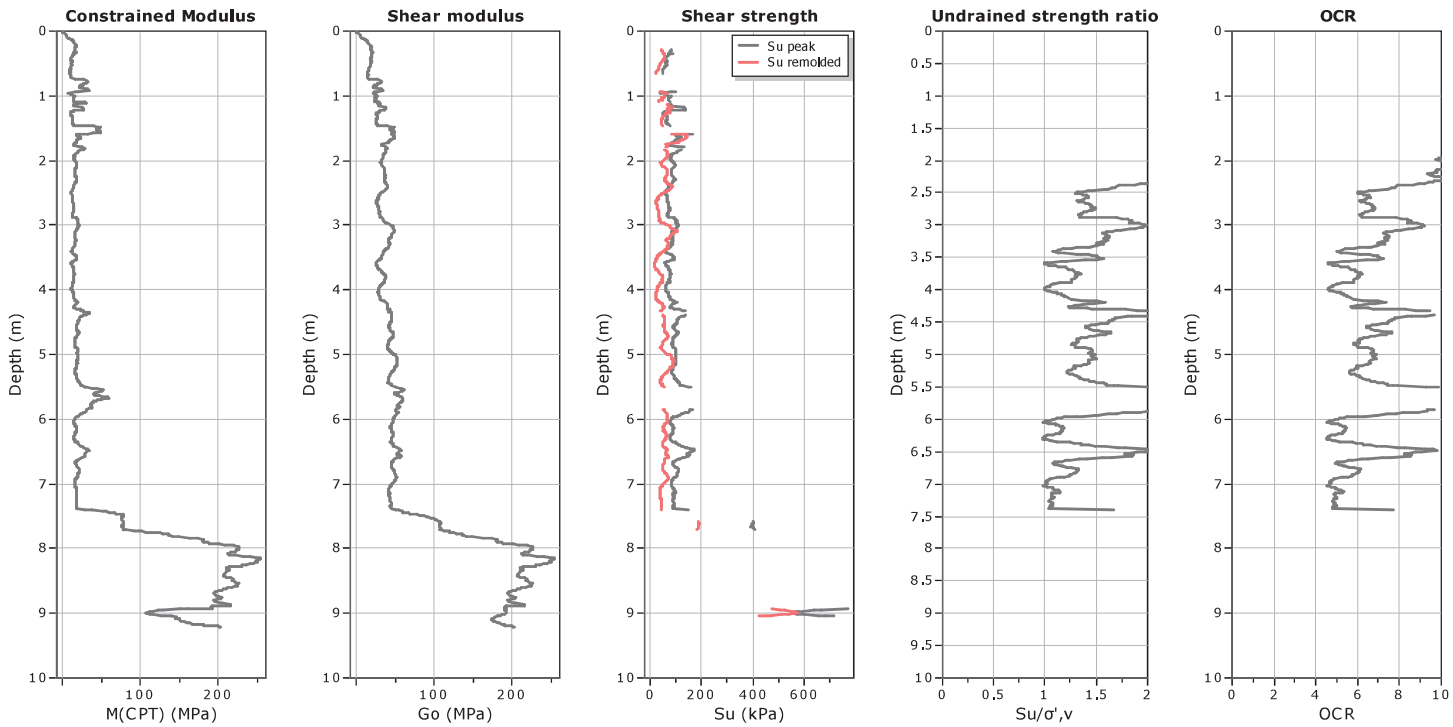
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative desnisty constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
● — User defined estimation data

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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P3
Total depth: 9.22 m, Date: 10/01/2025
Coords: X:1642291.31, Y:4818722.58
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



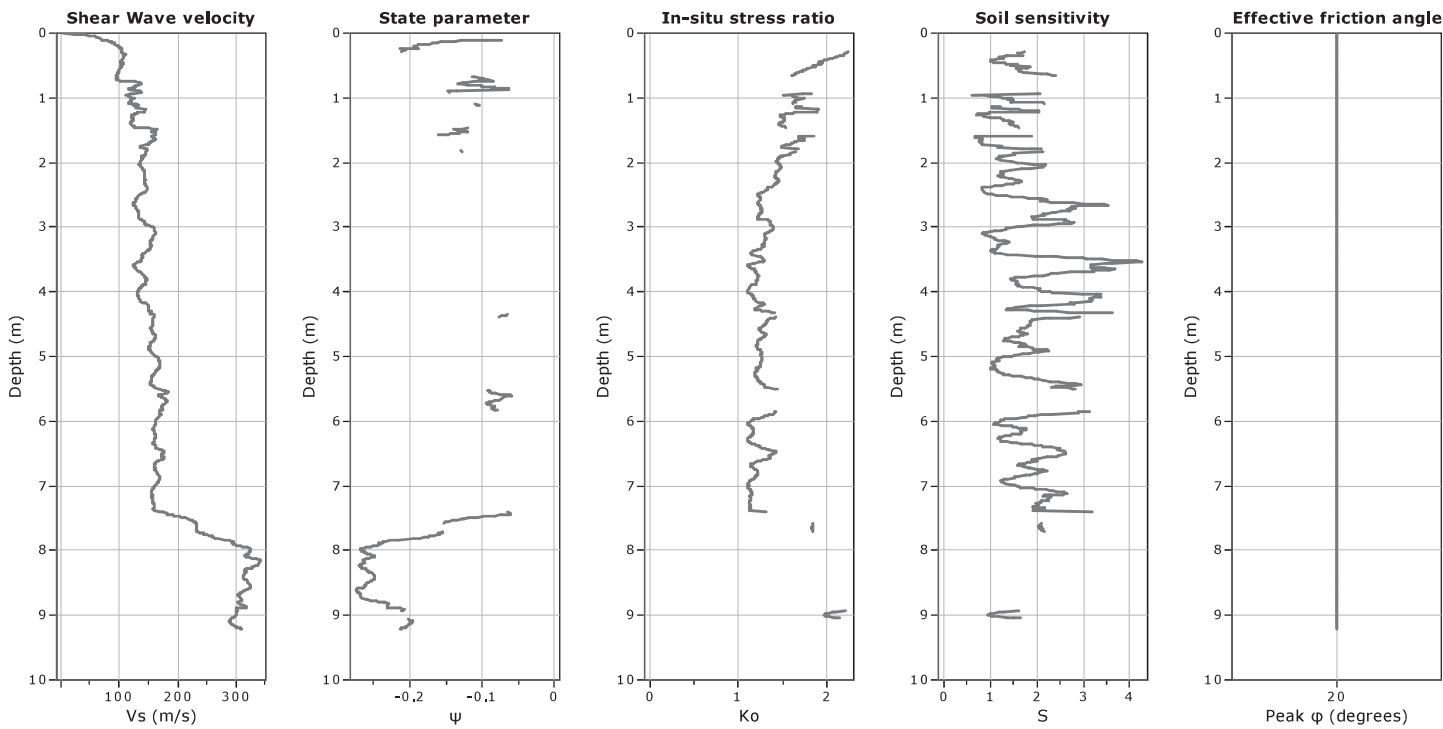
Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{m1} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{k1} : 14

OCR factor for clays, N_{k1} : 0.33
—●— User defined estimation data

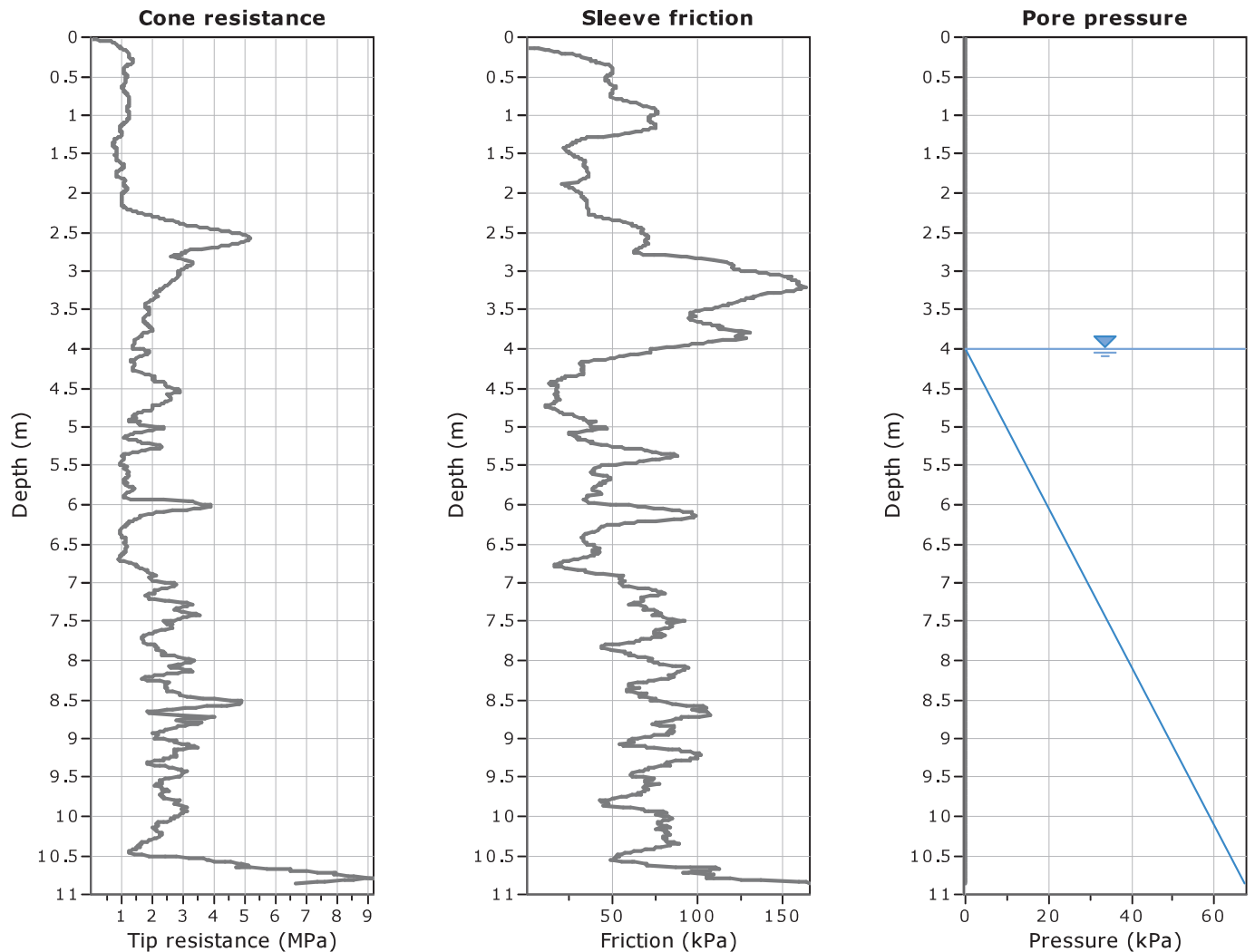
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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

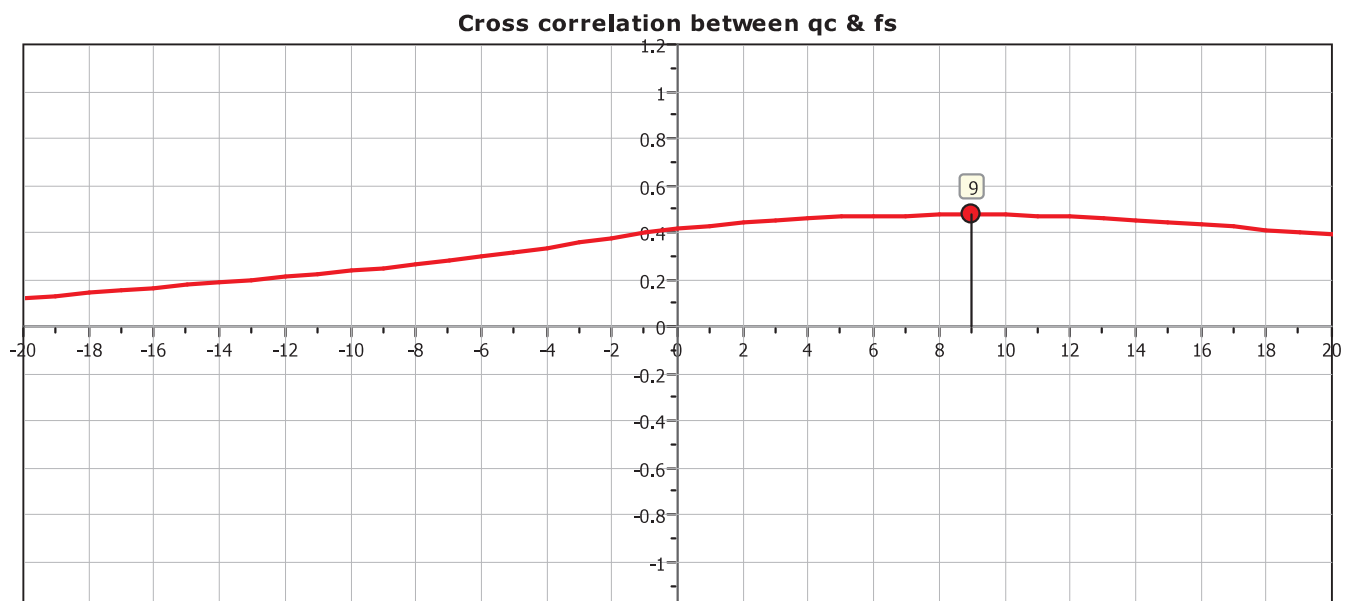
CPT: P3
Total depth: 9.22 m, Date: 10/01/2025
Coords: X:1642291.31, Y:4818722.58
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



Calculation parameters
Soil Sensitivity factor, N_s : 7.00
—●— User defined estimation data



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



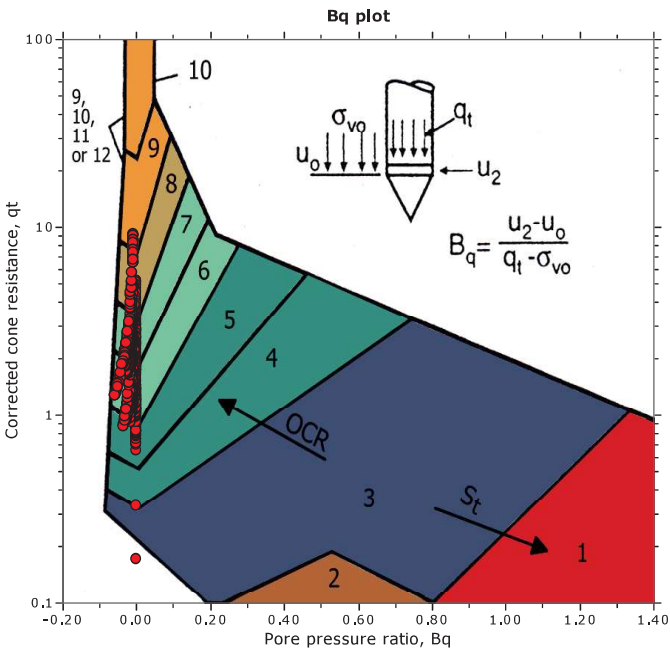
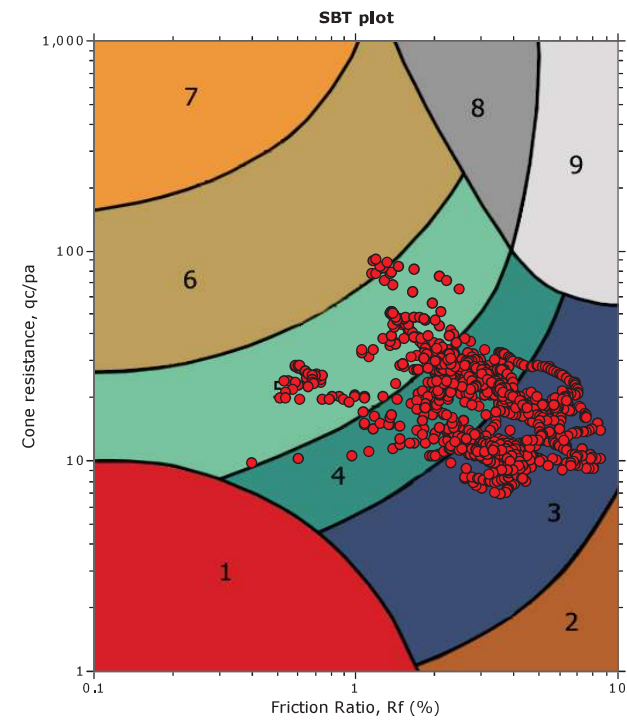
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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P5

Total depth: 10.85 m, Date: 10/01/2025
Coords: X:1642273.22, Y:4818756.11
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

SBT - Bq plots



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

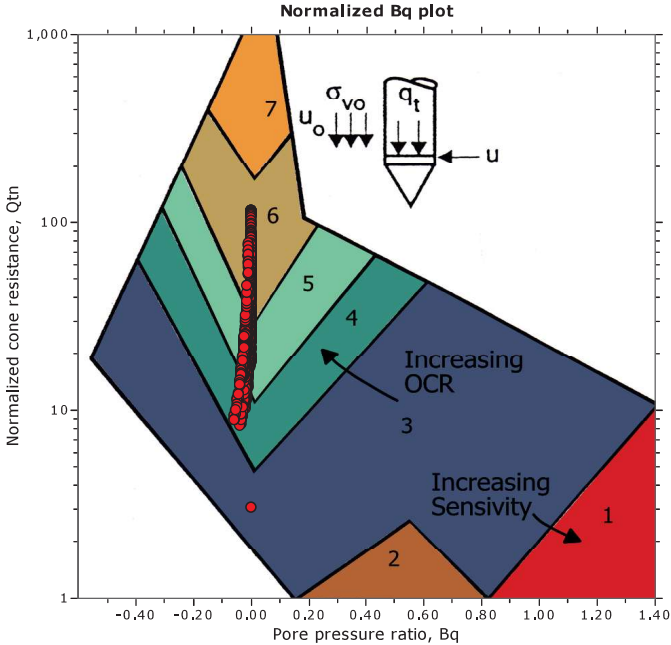
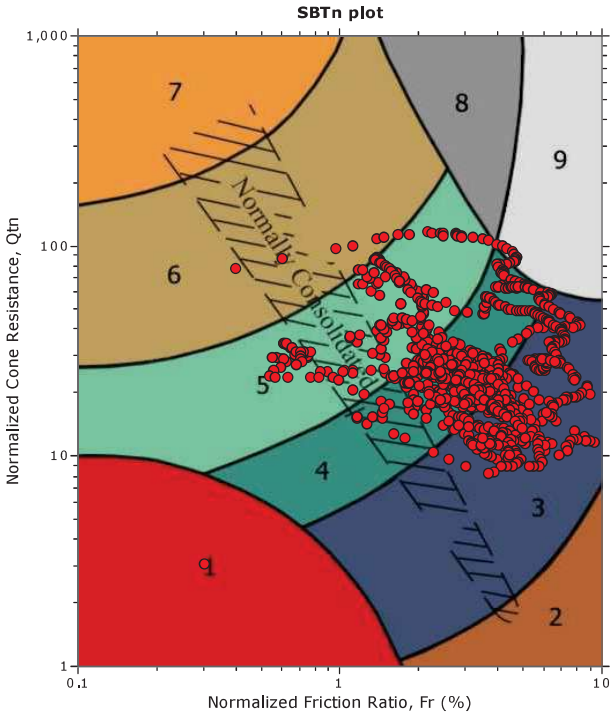
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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

CPT: P5

Total depth: 10.85 m, Date: 10/01/2025
Coords: X:1642273.22, Y:4818756.11
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

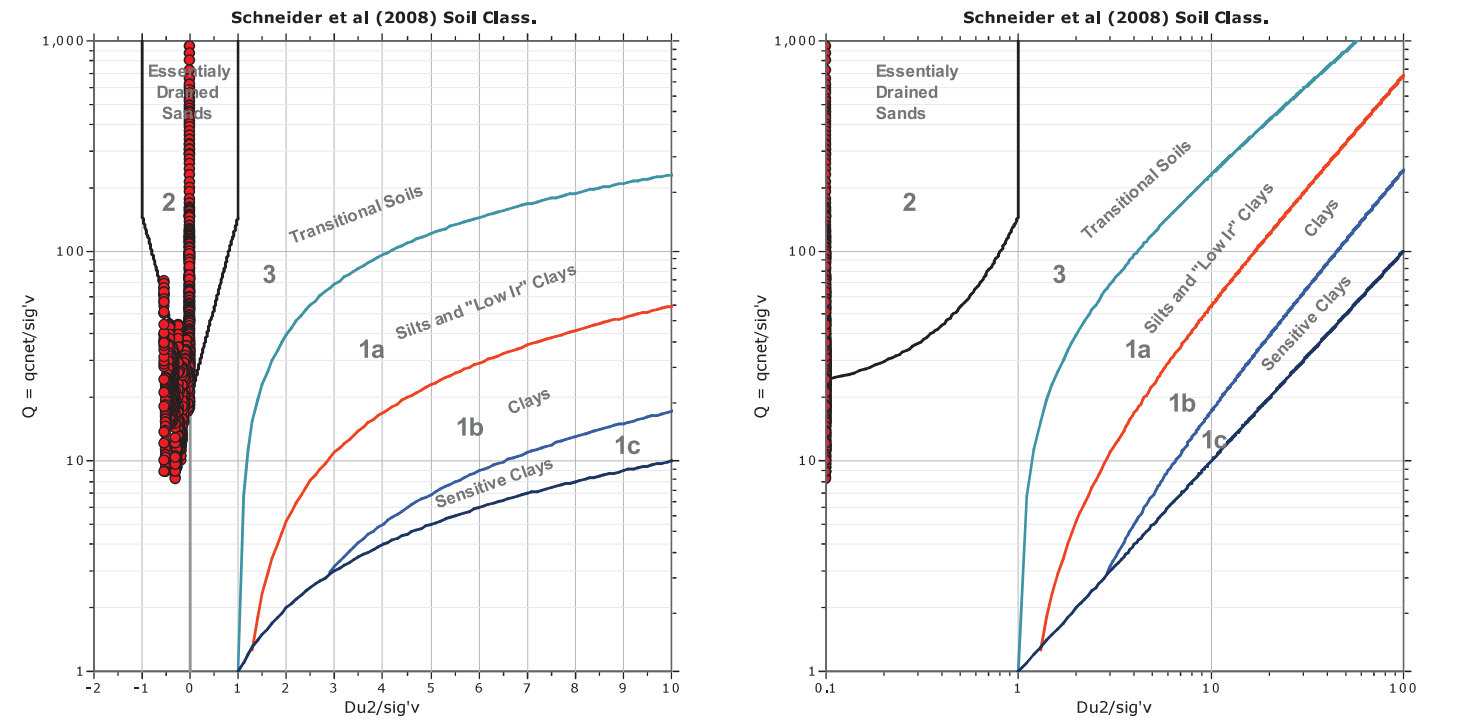
SBT - Bq plots (normalized)



SBTn legend

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

Bq plots (Schneider)

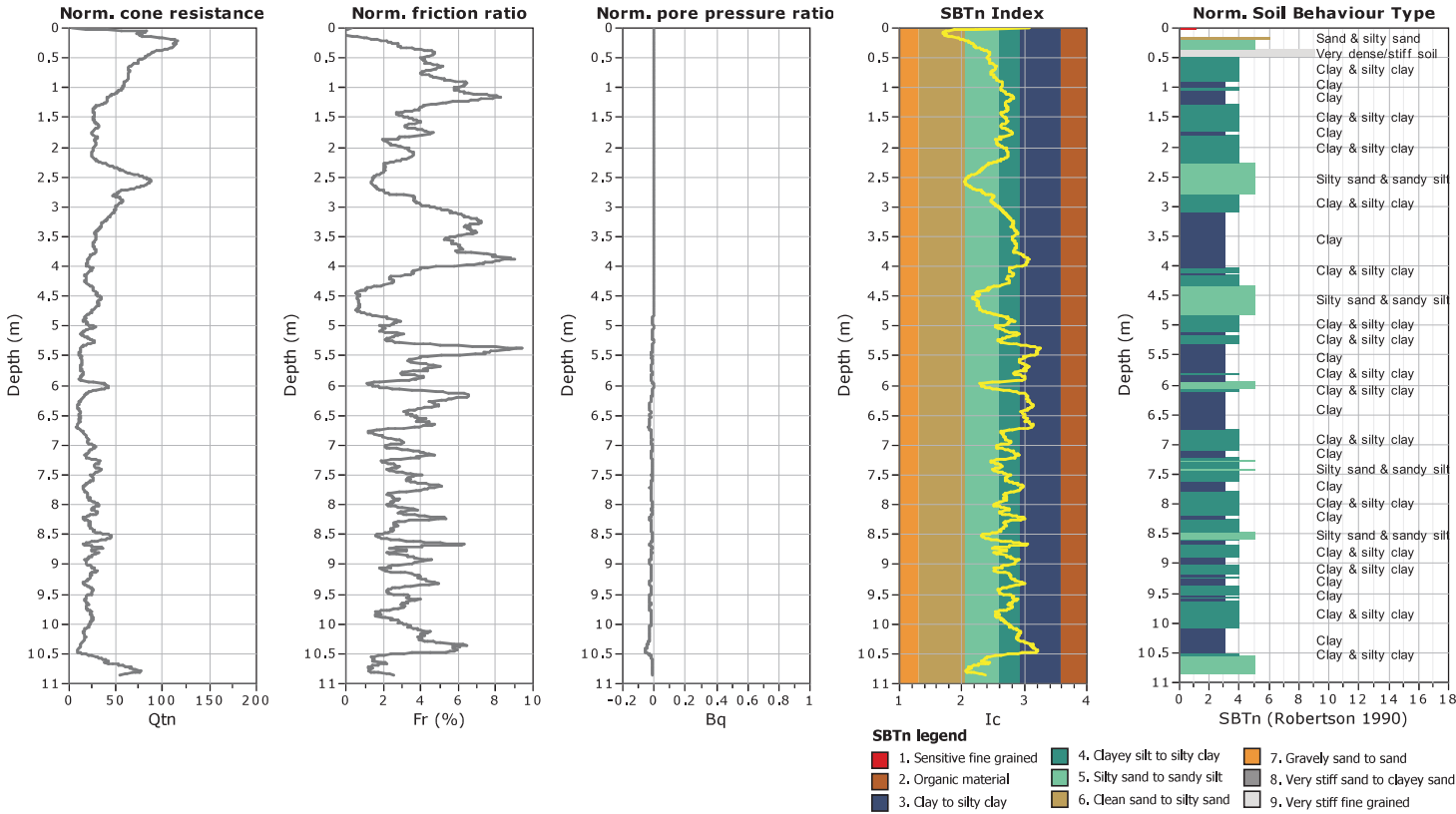


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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

CPT: P5

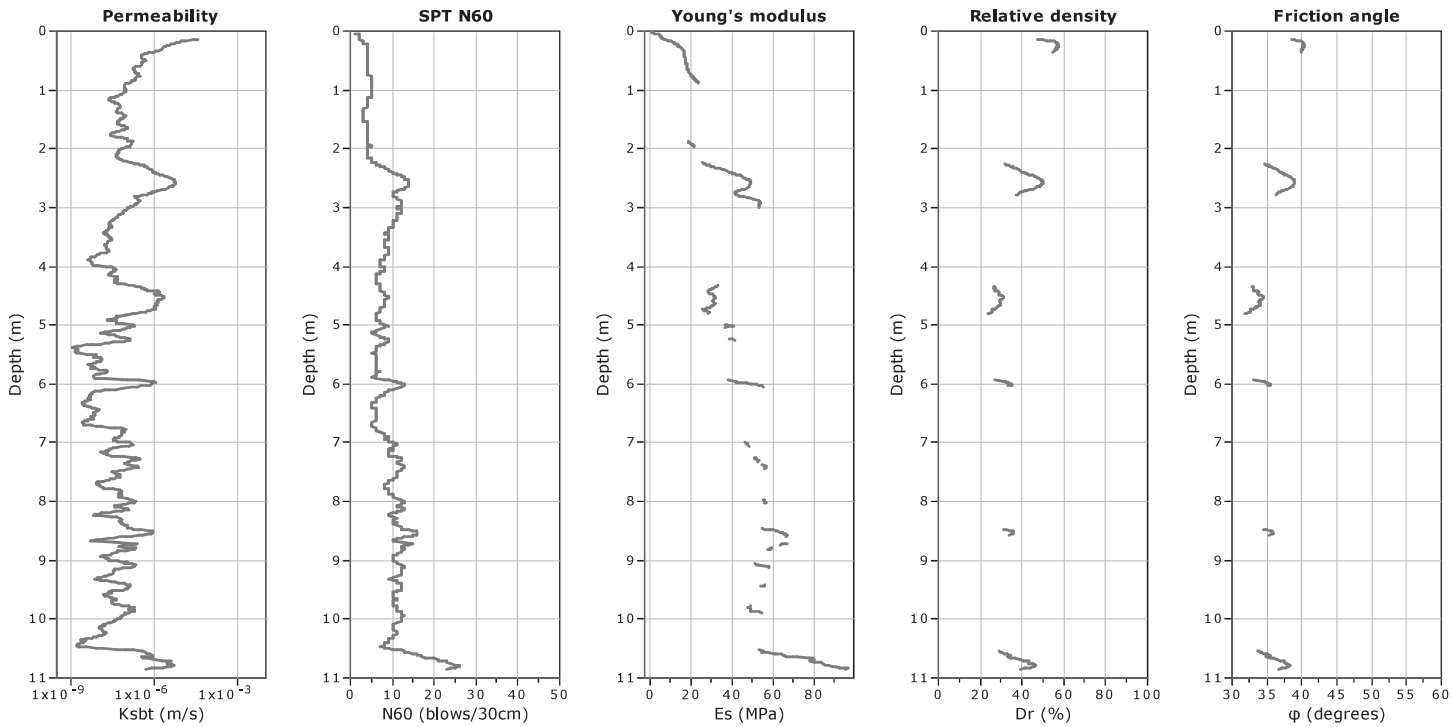
Total depth: 10.85 m, Date: 10/01/2025
Coords: X:1642273.22, Y:4818756.11
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P5
Total depth: 10.85 m, Date: 10/01/2025
Coords: X:1642273.22, Y:4818756.11
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

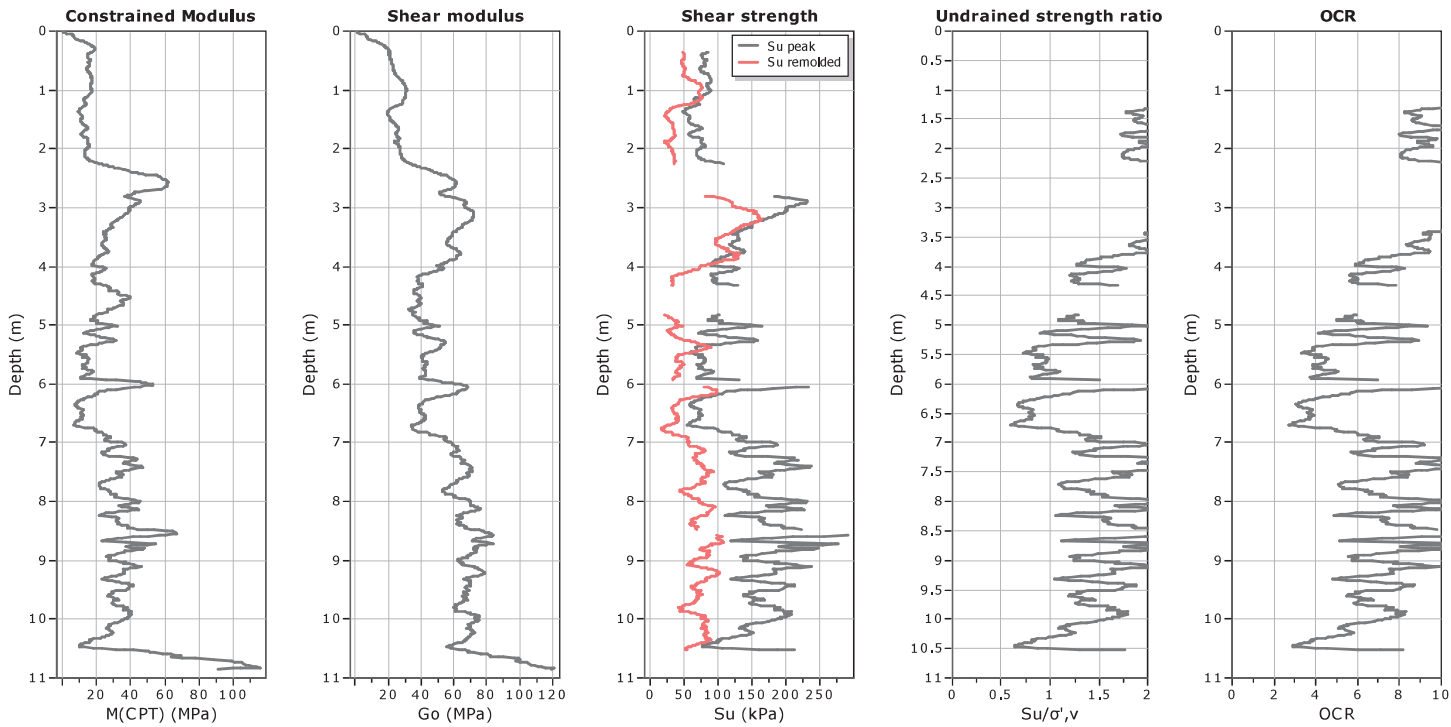


Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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info@bierregilucca.it

Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P5
Total depth: 10.85 m, Date: 10/01/2025
Coords: X:1642273.22, Y:4818756.11
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



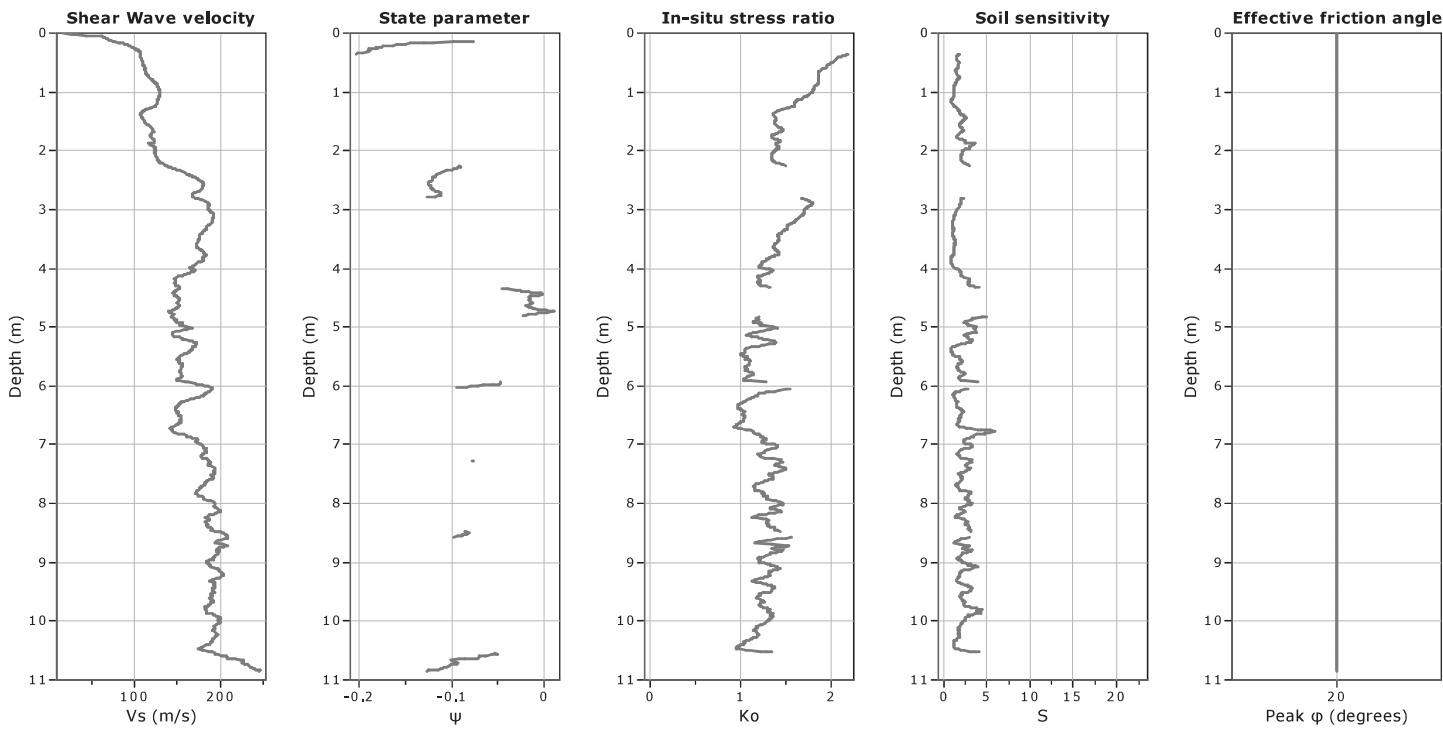
Calculation parameters
Constrained modulus: Based on variable α using I_c and $Q_{m,0}$ (Robertson, 2009)
 G_0 : Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, $N_{k,c}$: 14

OCR factor for clays, $N_{k,c}$: 0.33
—●— User defined estimation data

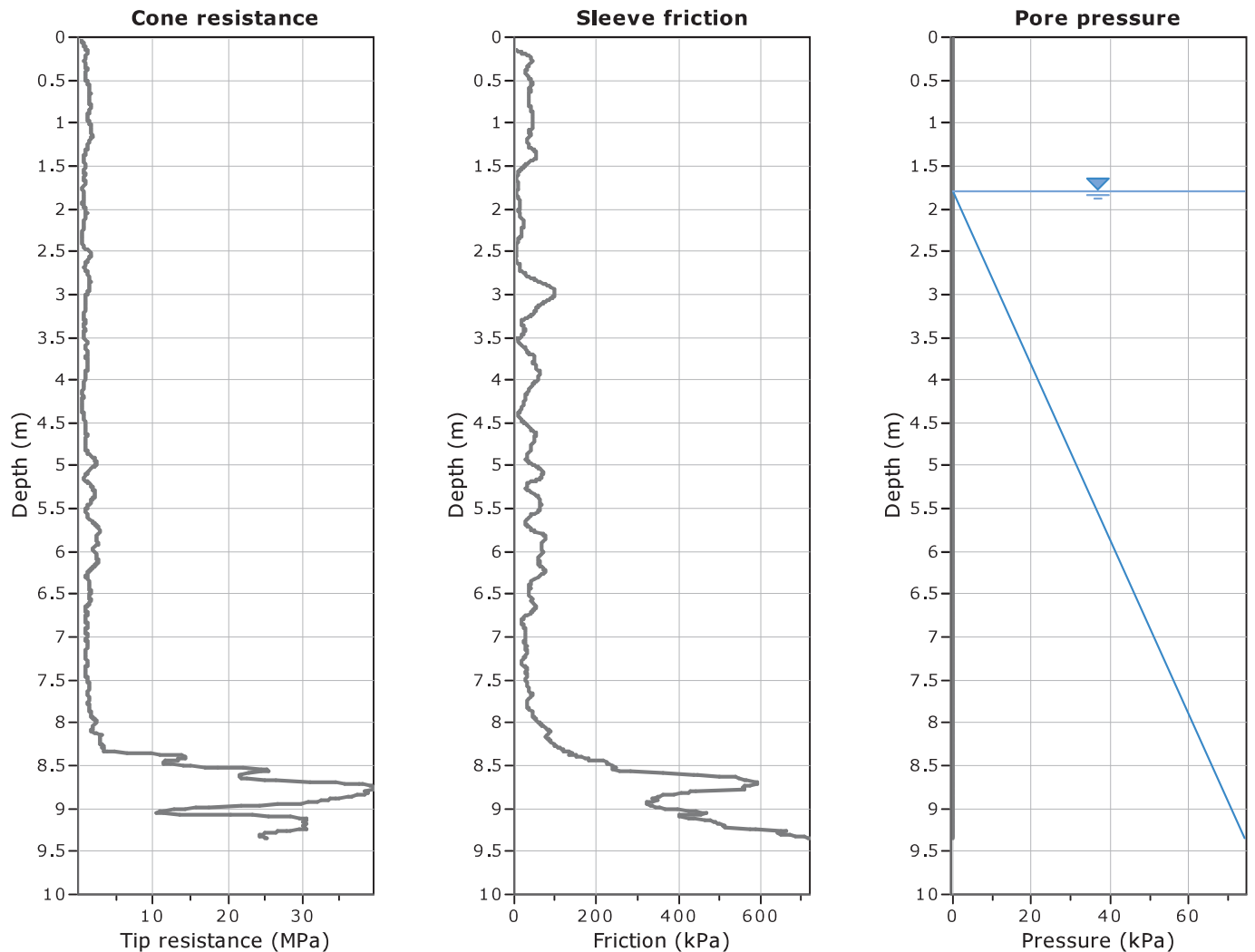
BIERREGI SRL
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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

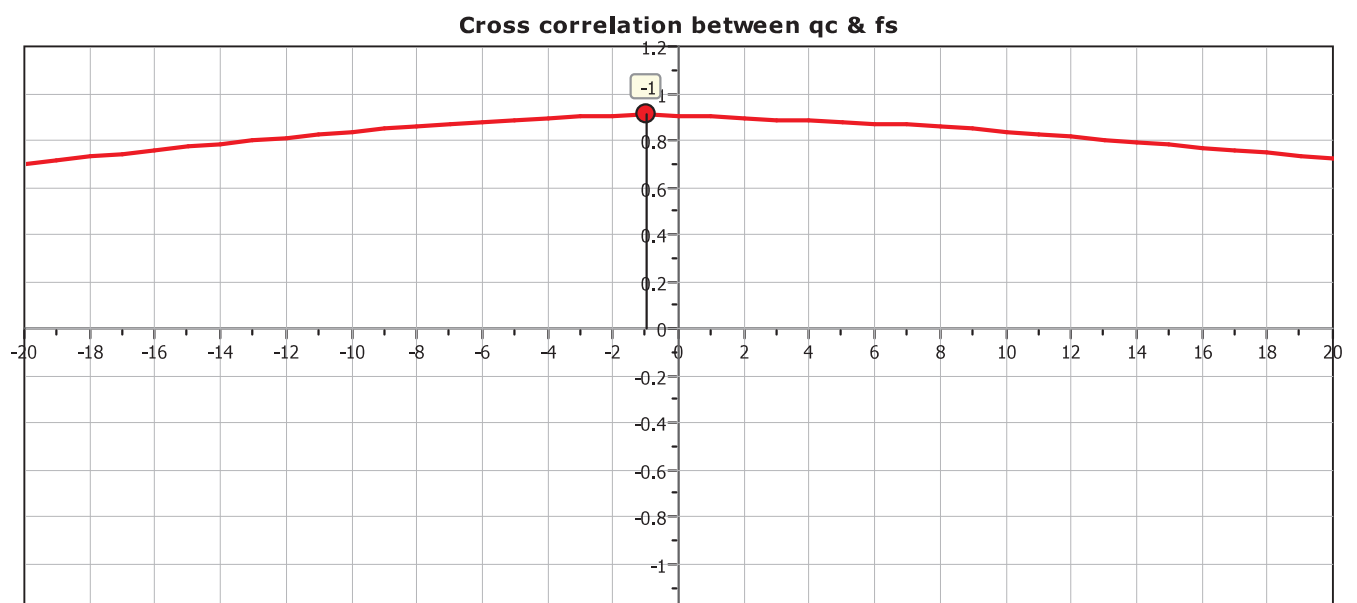
CPT: P5
Total depth: 10.85 m, Date: 10/01/2025
Coords: X:1642273.22, Y:4818756.11
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



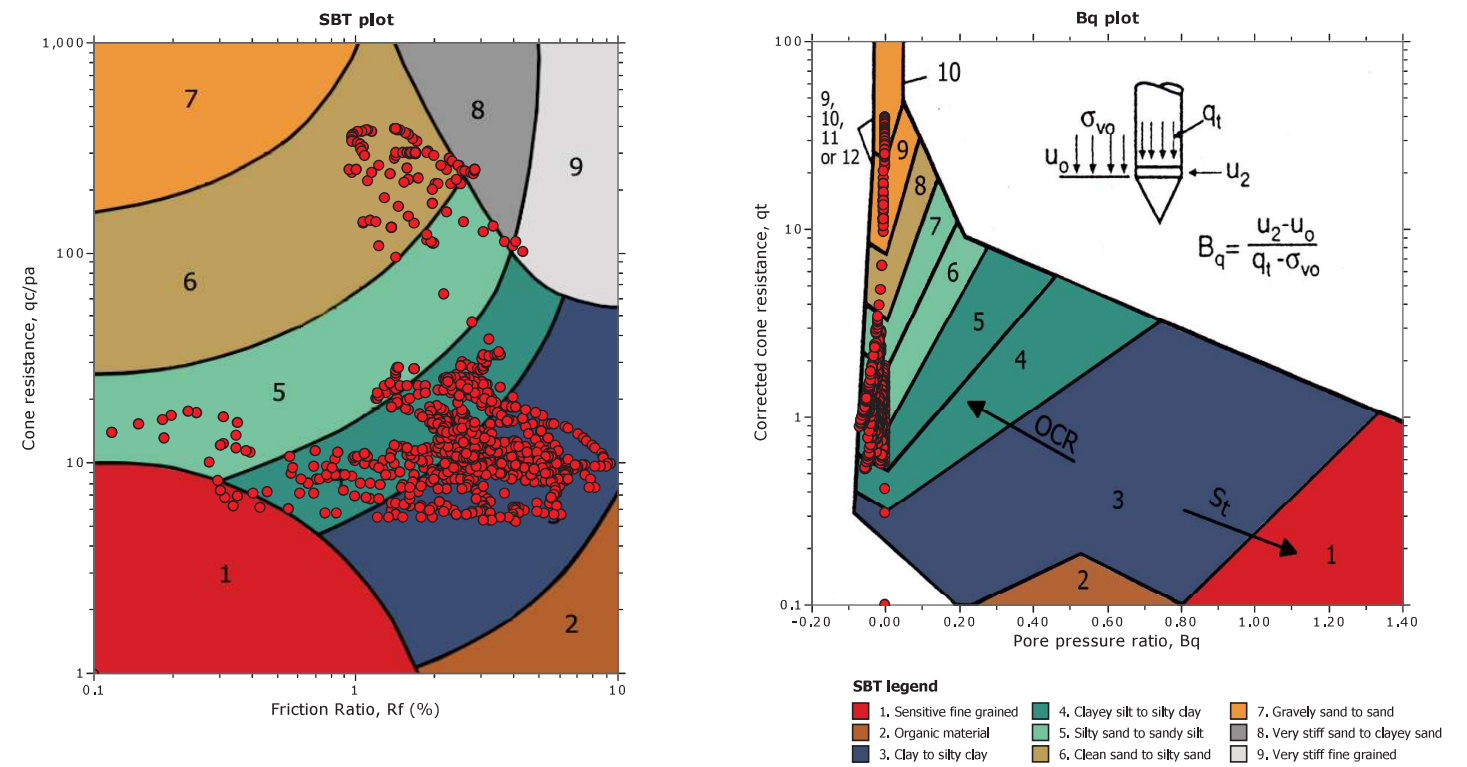
Calculation parameters
Soil Sensitivity factor, N_s : 7.00
—●— User defined estimation data



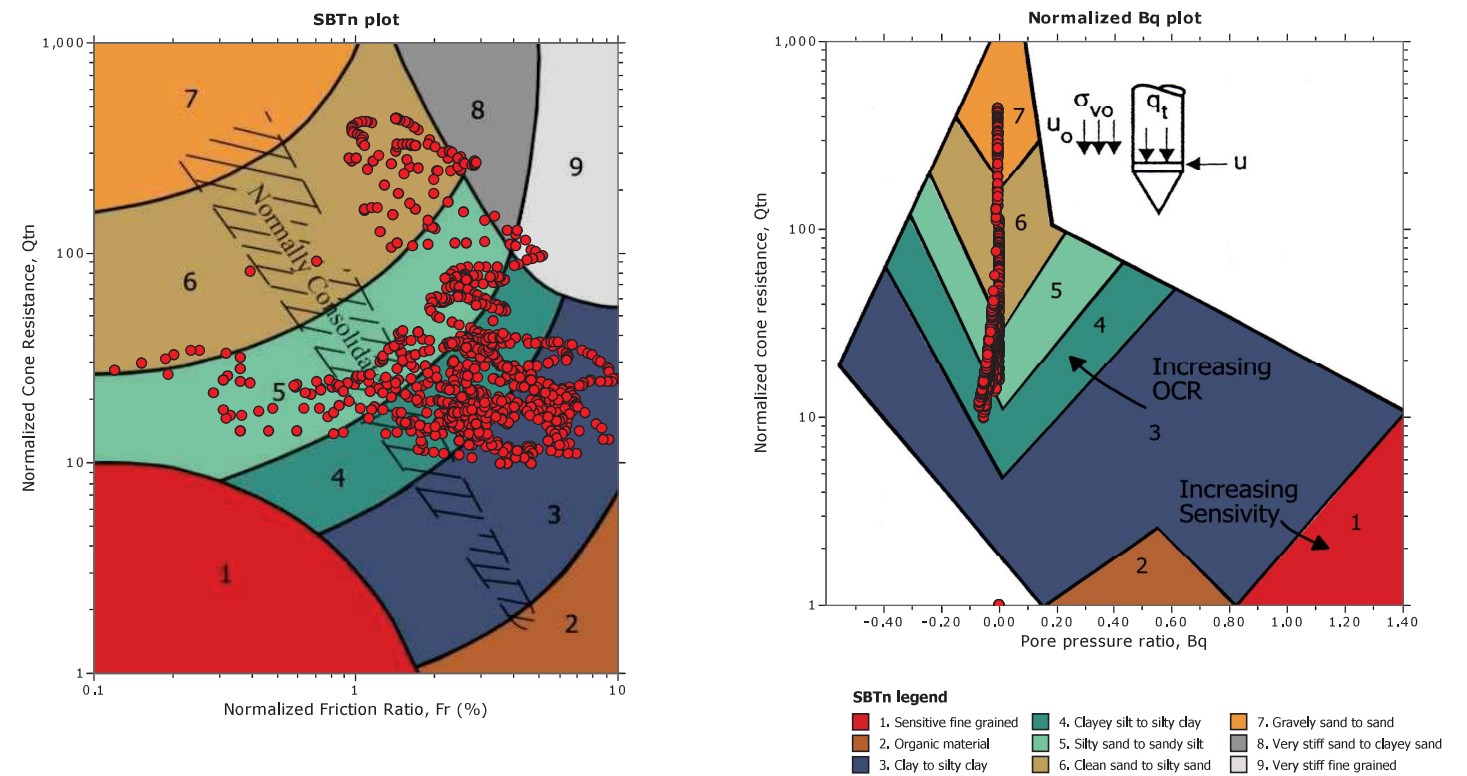
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



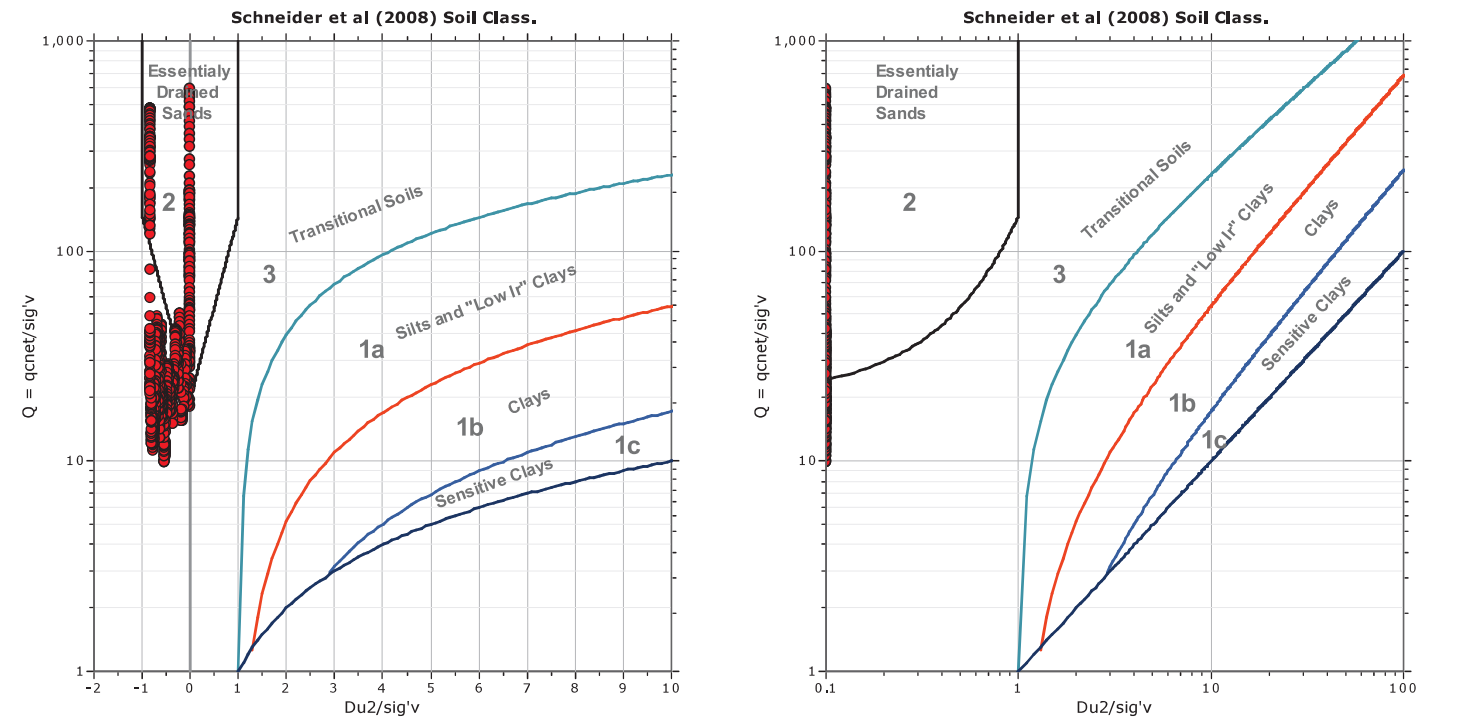
SBT - Bq plots

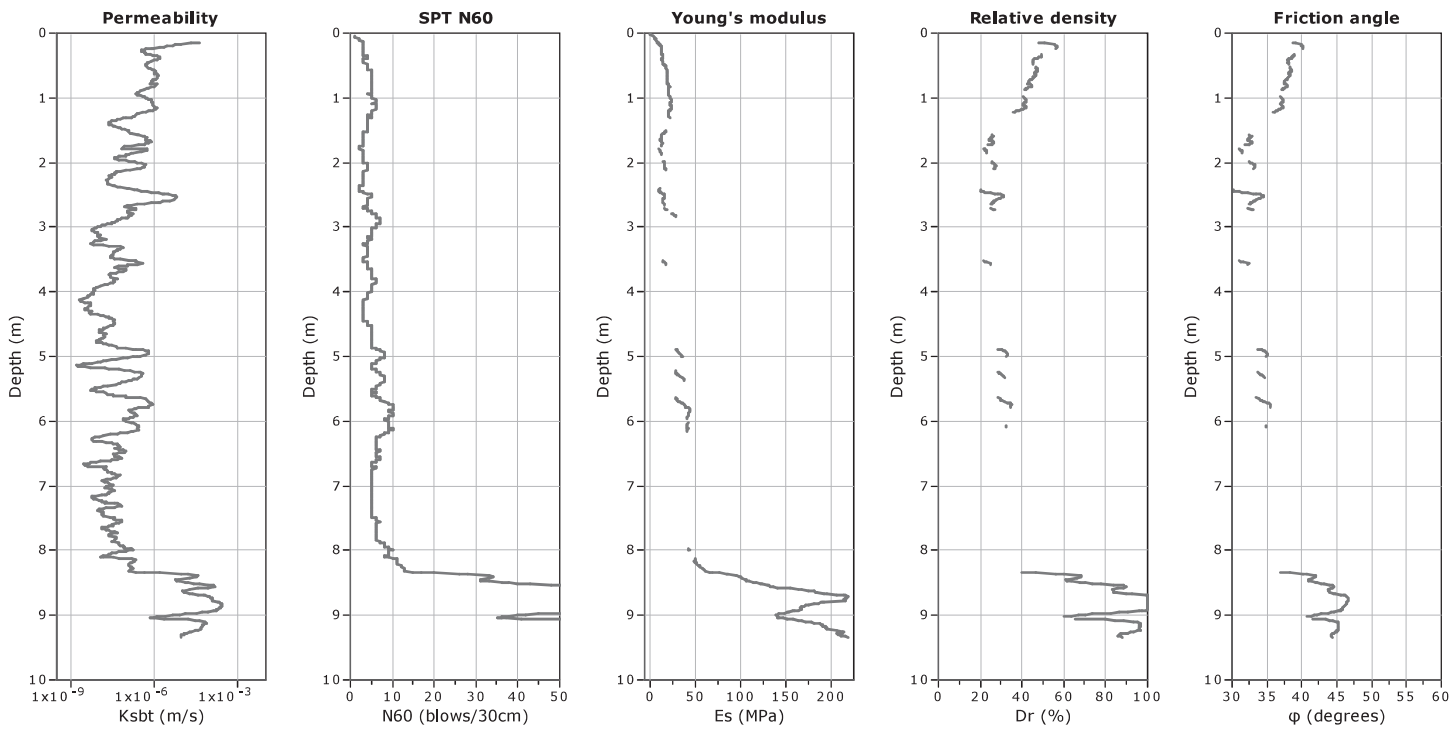


SBT - Bq plots (normalized)



Bq plots (Schneider)





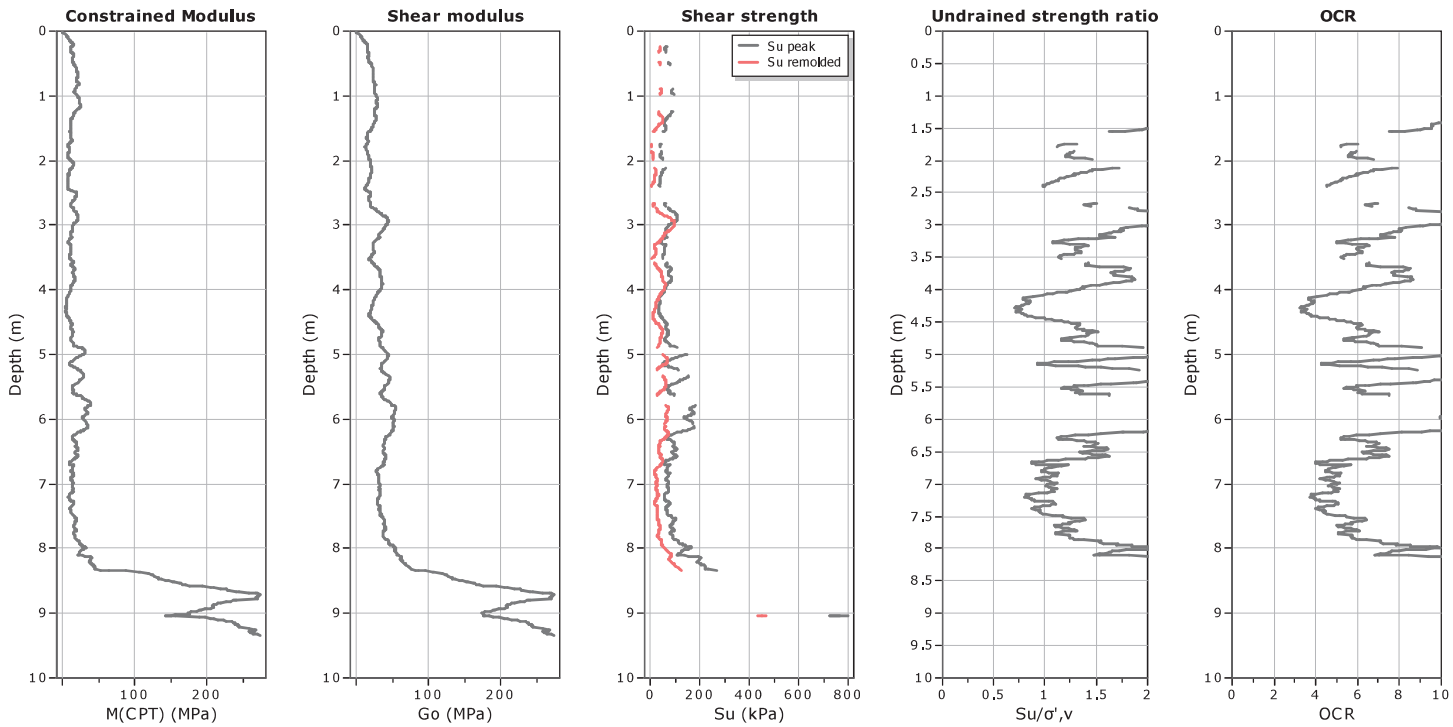
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable α using I_c (Robertson, 2009)

Relative density constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
● — User defined estimation data

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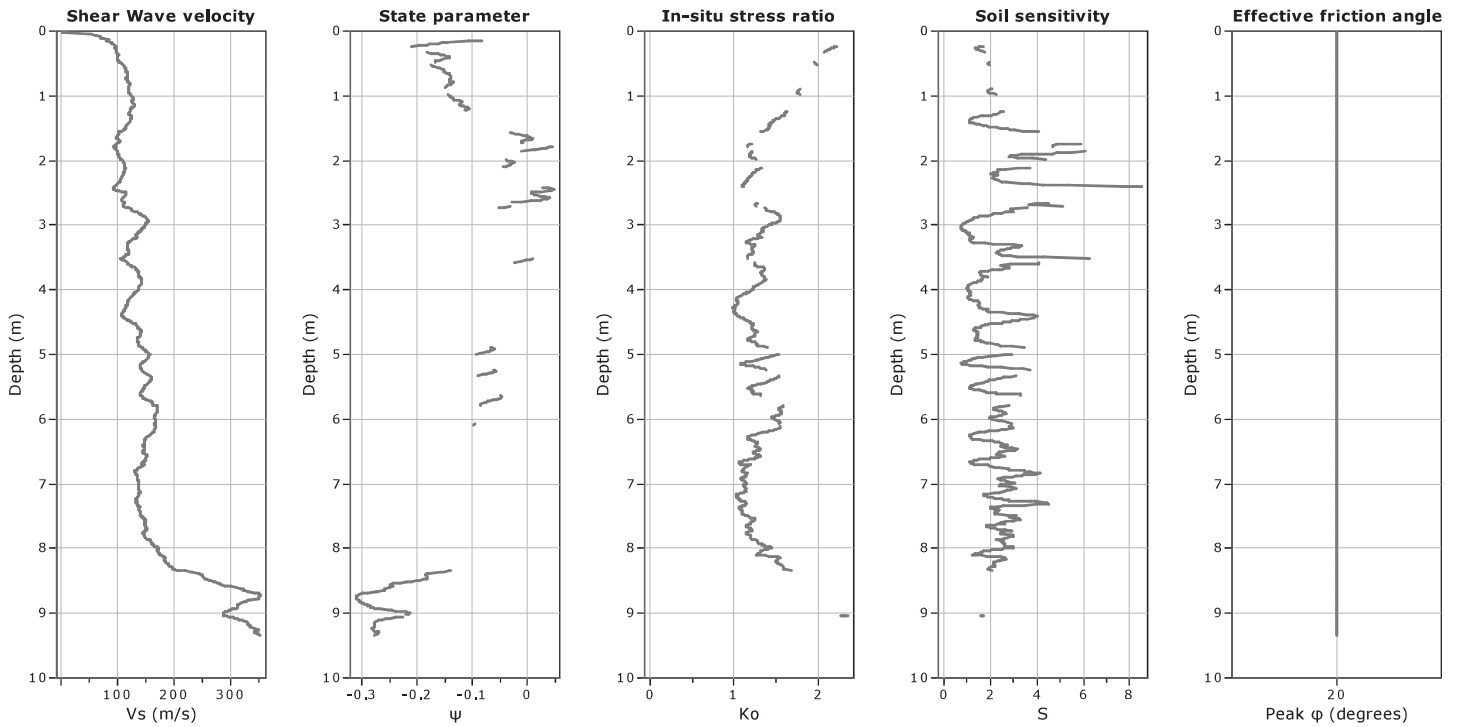
Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P5b
Total depth: 9.35 m, Date: 10/01/2025
Coords: X:1642284.99, Y:4817277.39
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

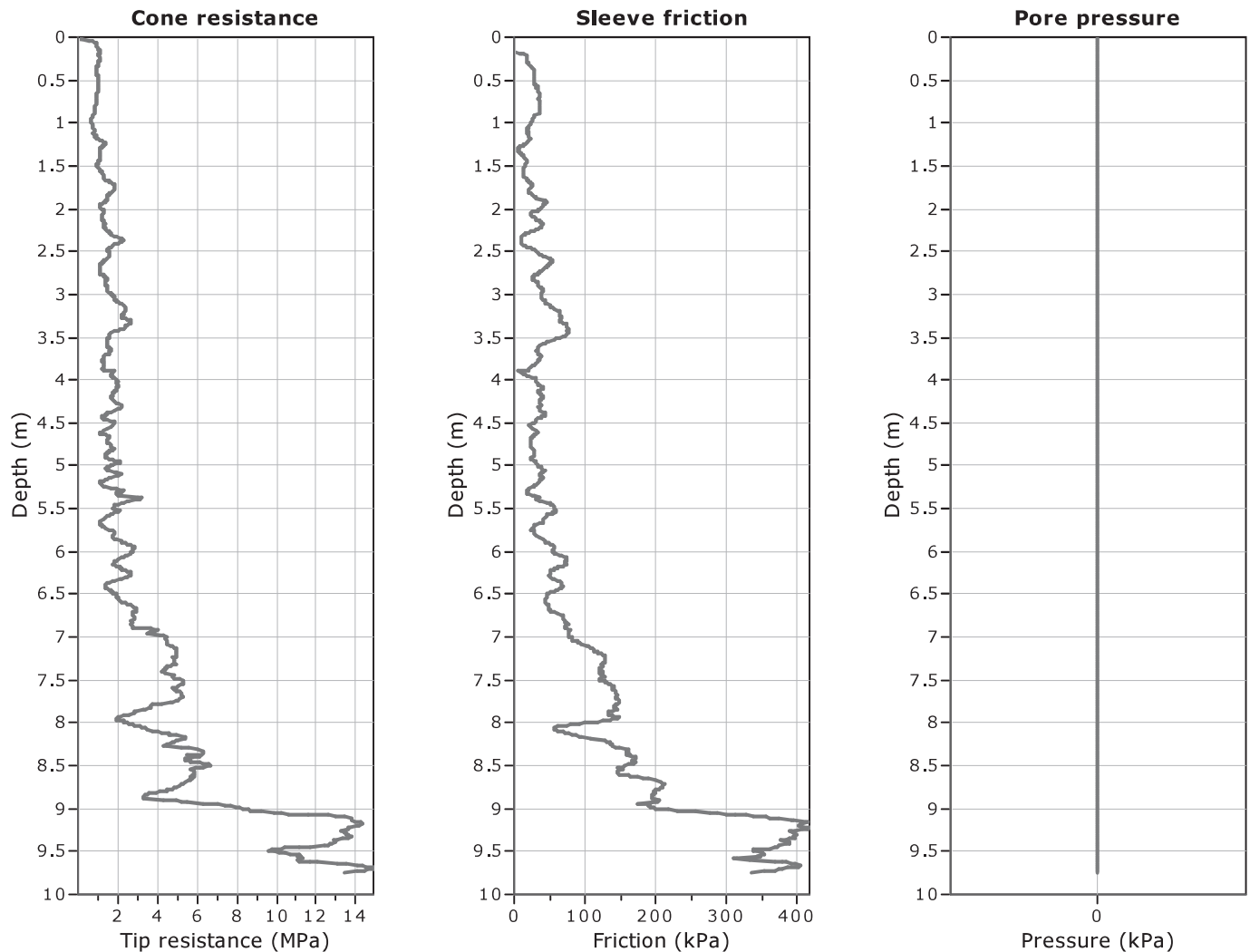


Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14

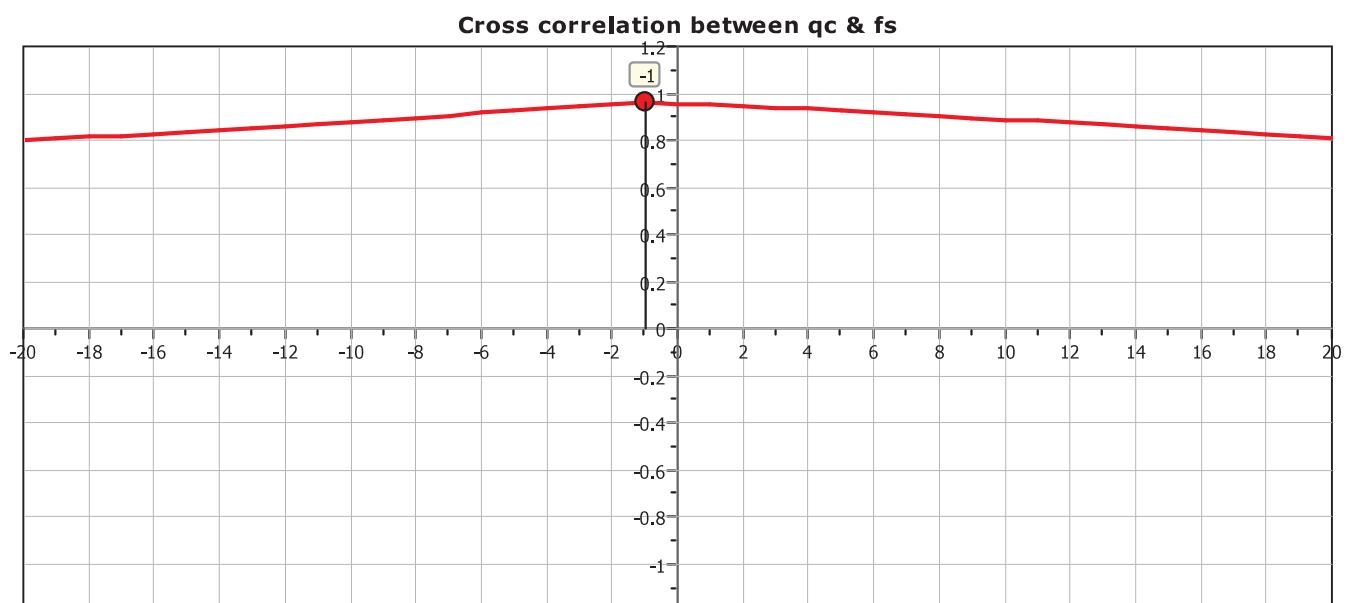
OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data



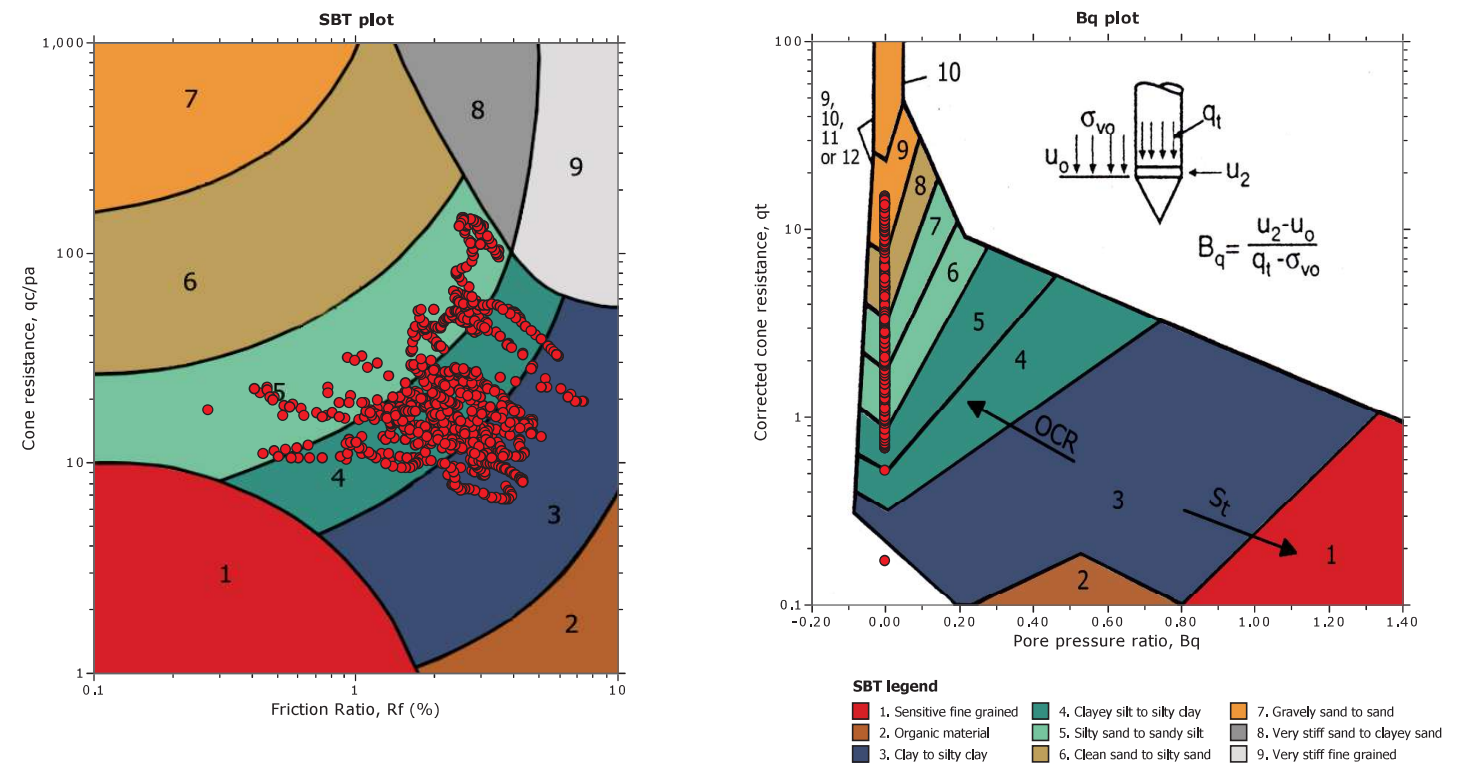
Calculation parameters
Soil Sensitivity factor, N_s : 7.00
● User defined estimation data



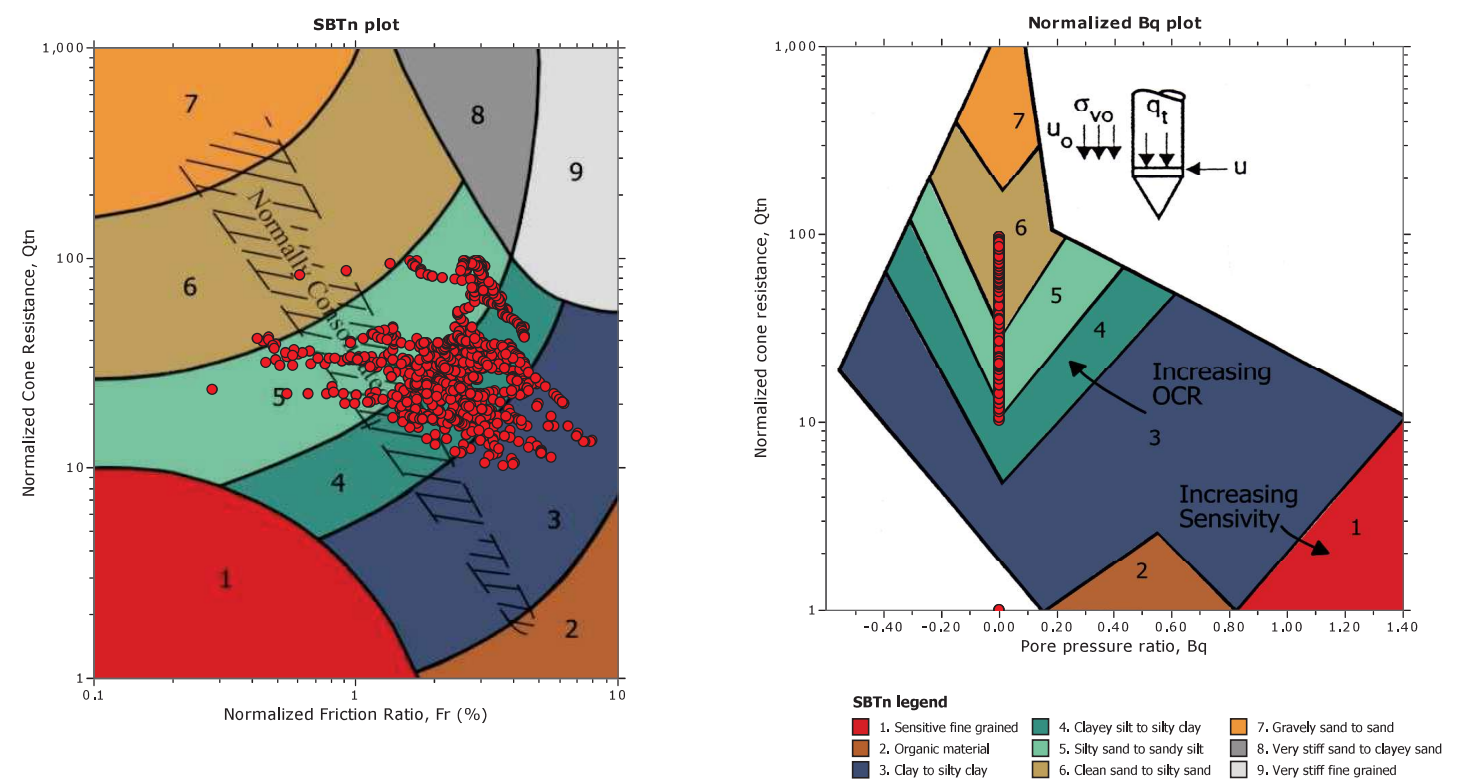
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



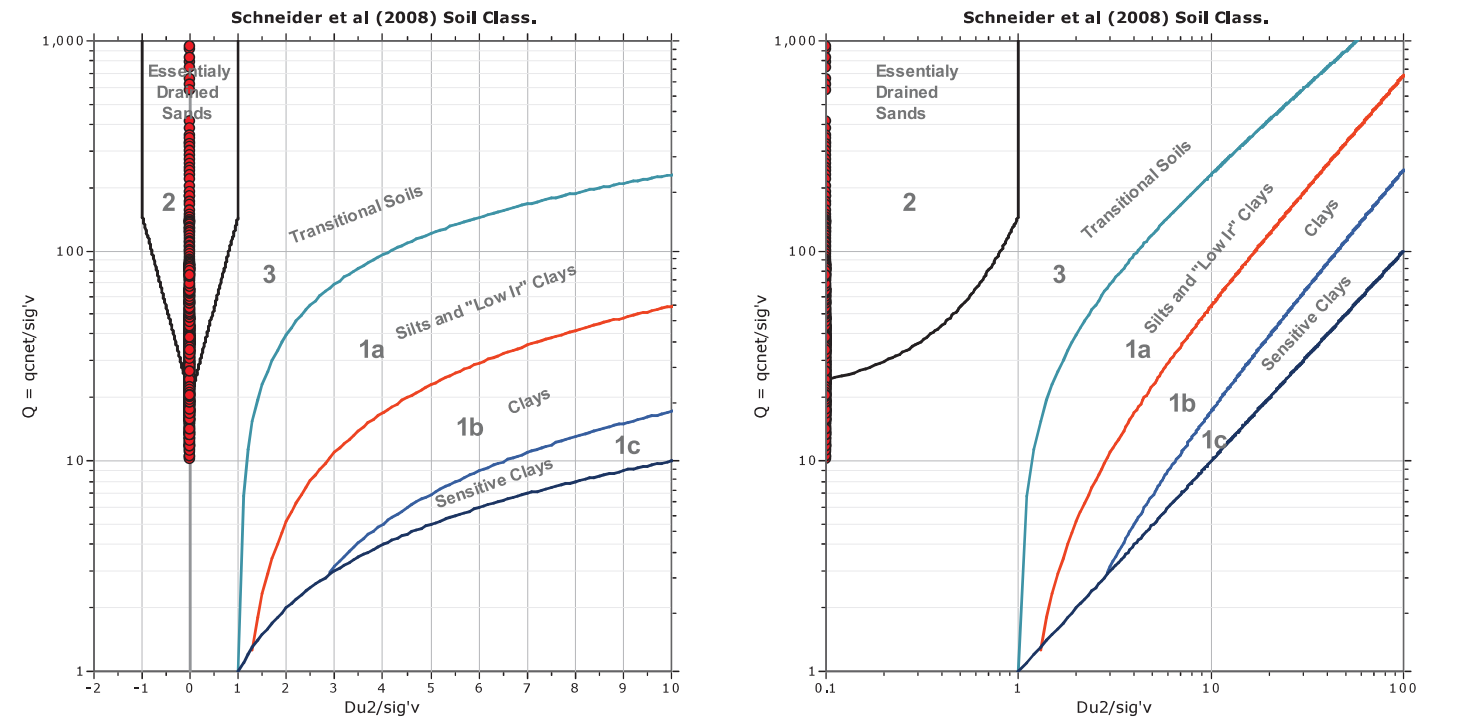
SBT - Bq plots

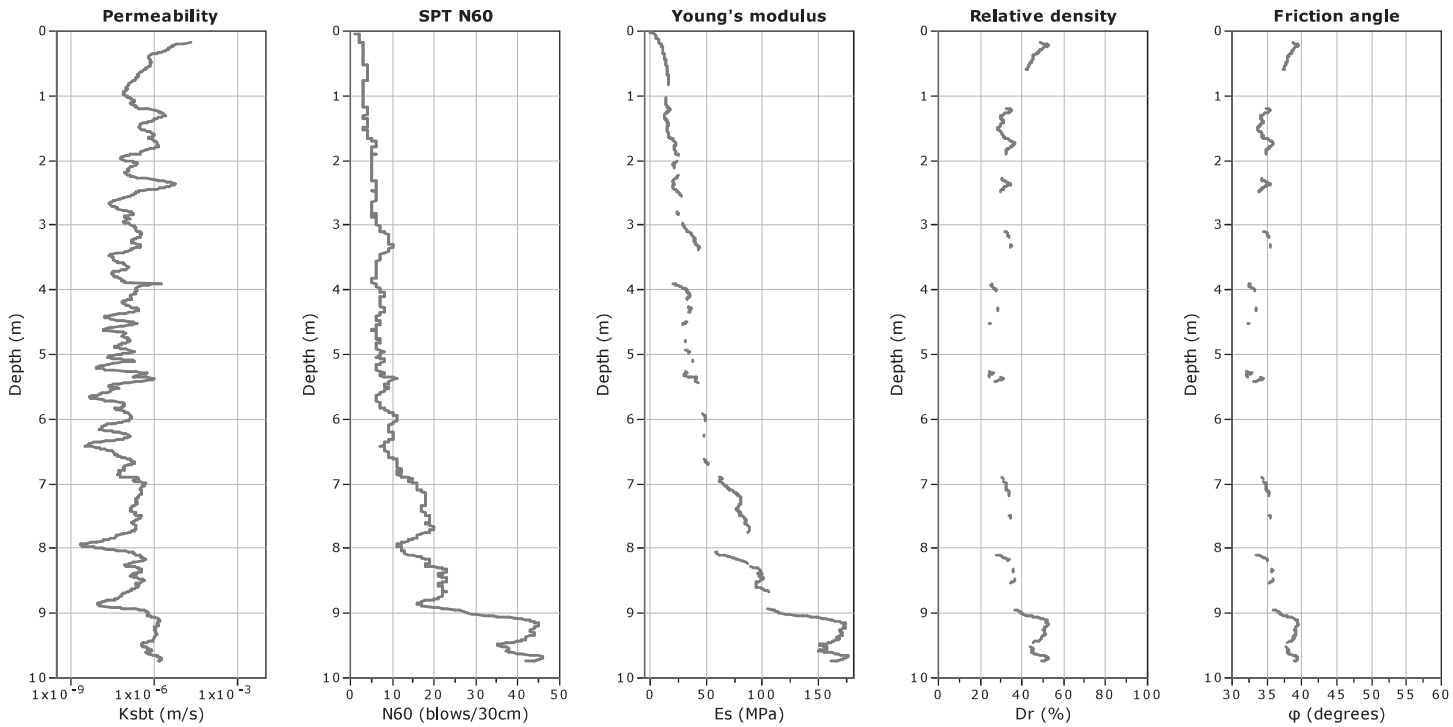


SBT - Bq plots (normalized)



Bq plots (Schneider)





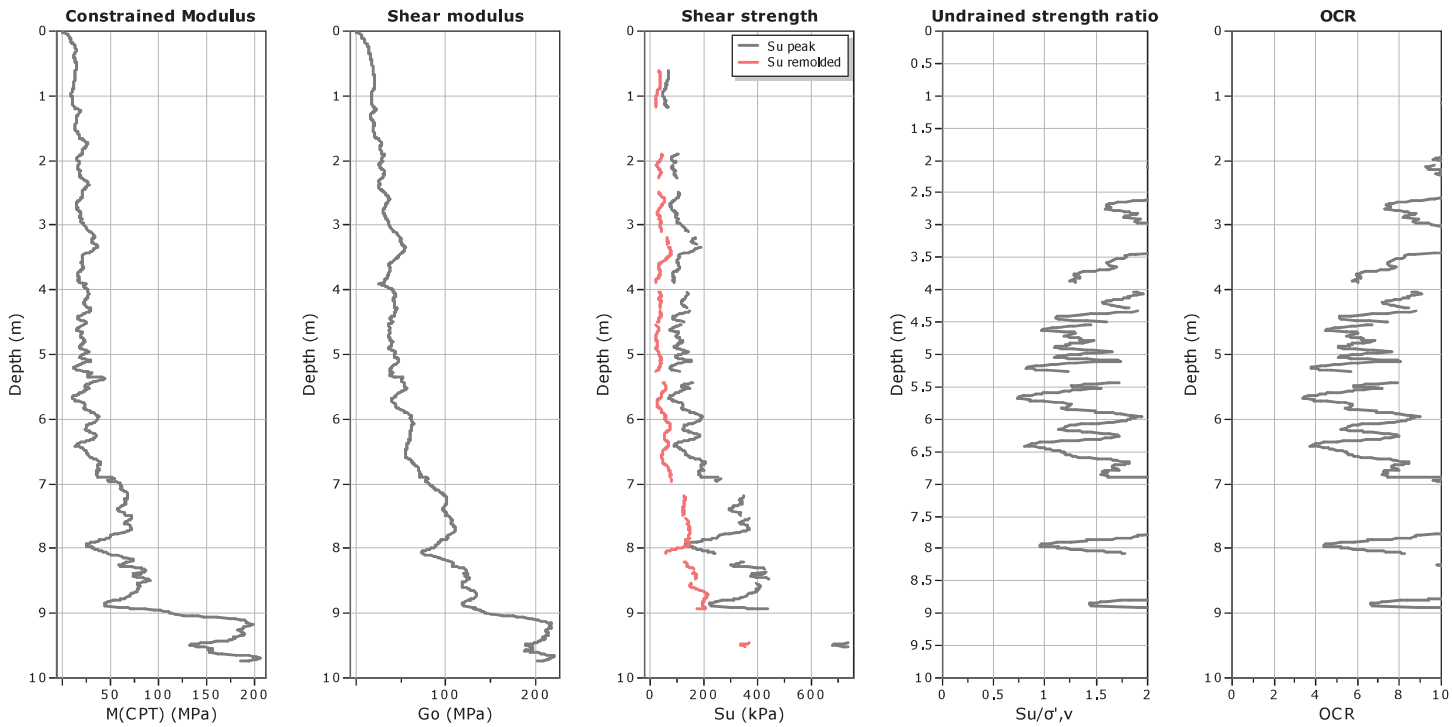
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative density constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
● — User defined estimation data

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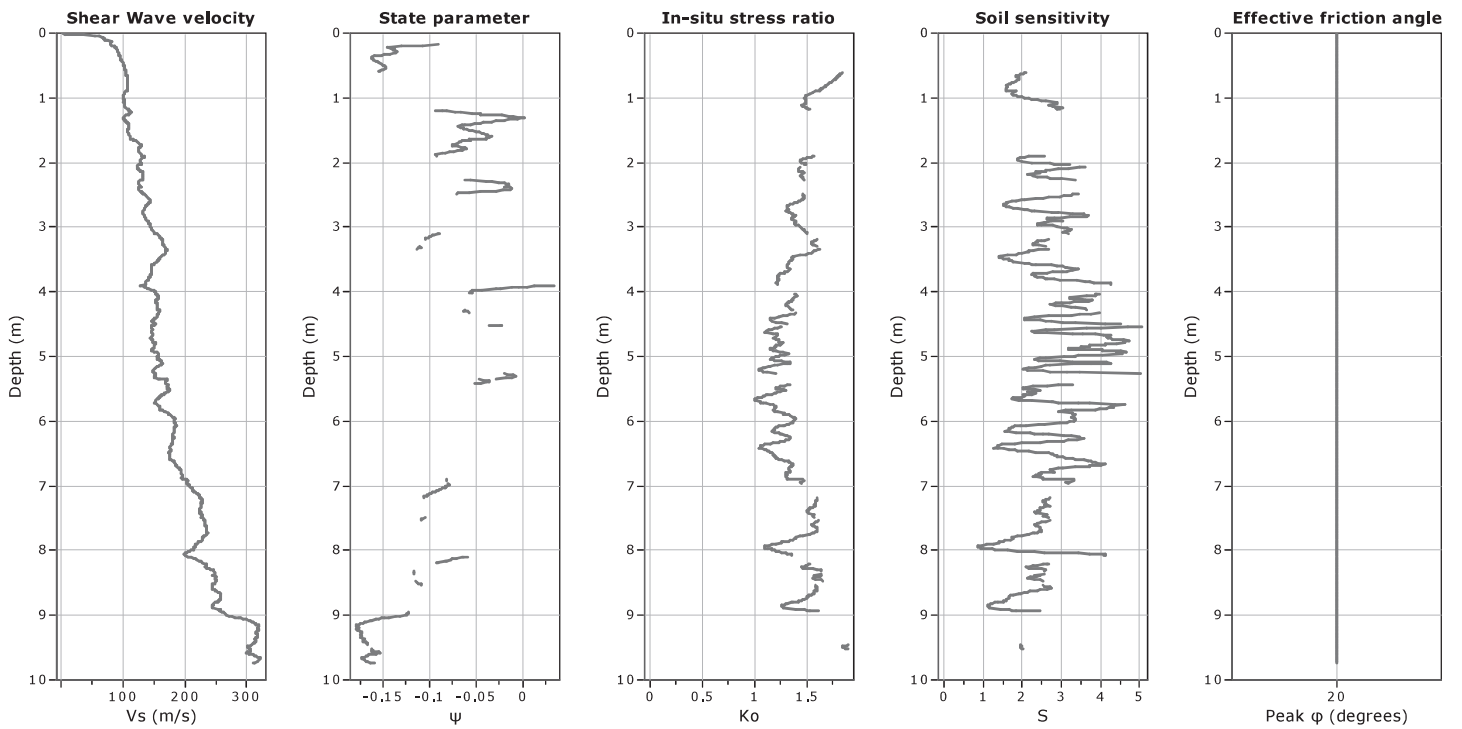
Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P8
Total depth: 9.74 m, Date: 10/01/2025
Coords: X:1642272.03, Y:4818806.24
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

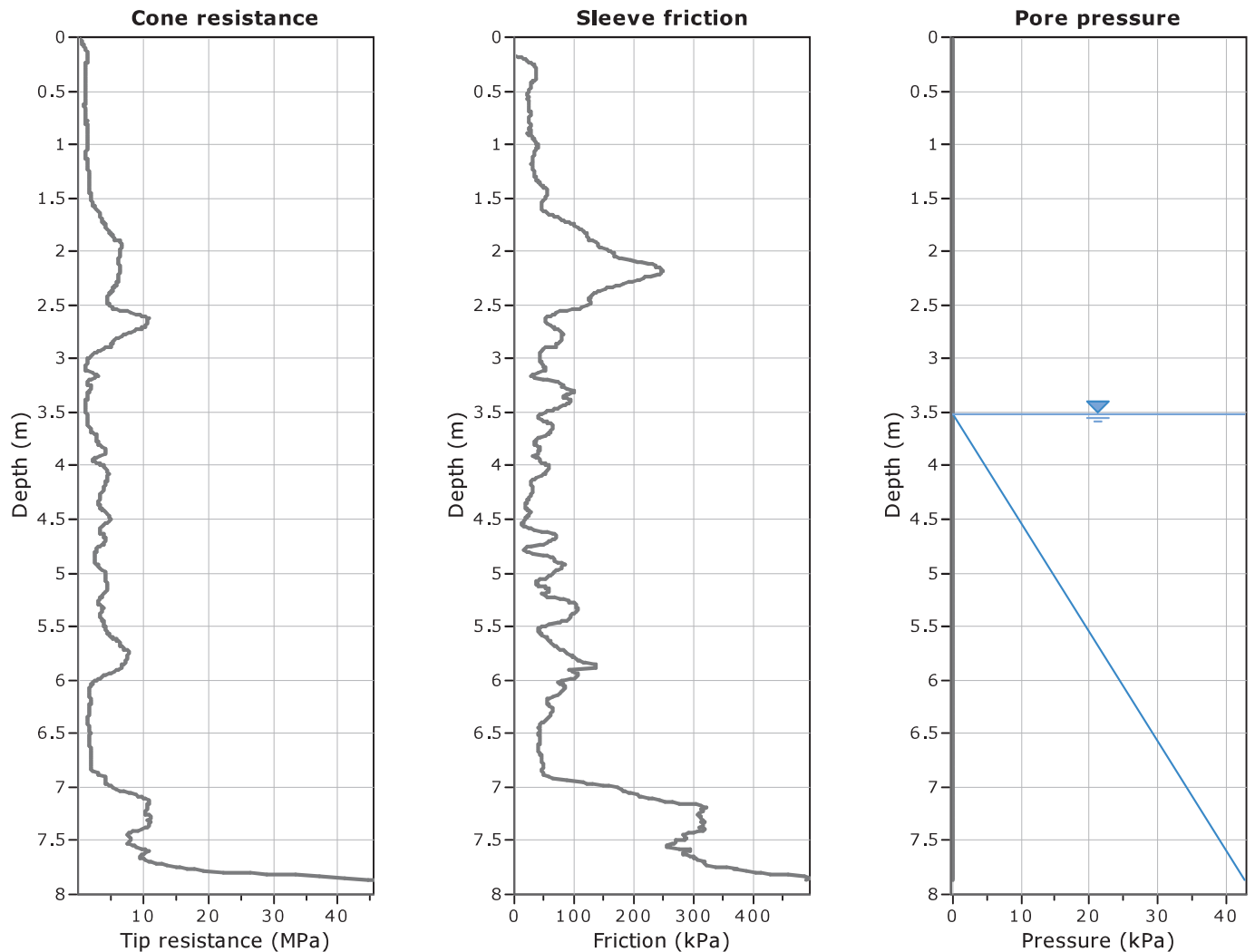


Calculation parameters
Constrained modulus: Based on variable α using I_c and $Q_{m, \nu}$ (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, $N_{k, \nu}$: 14

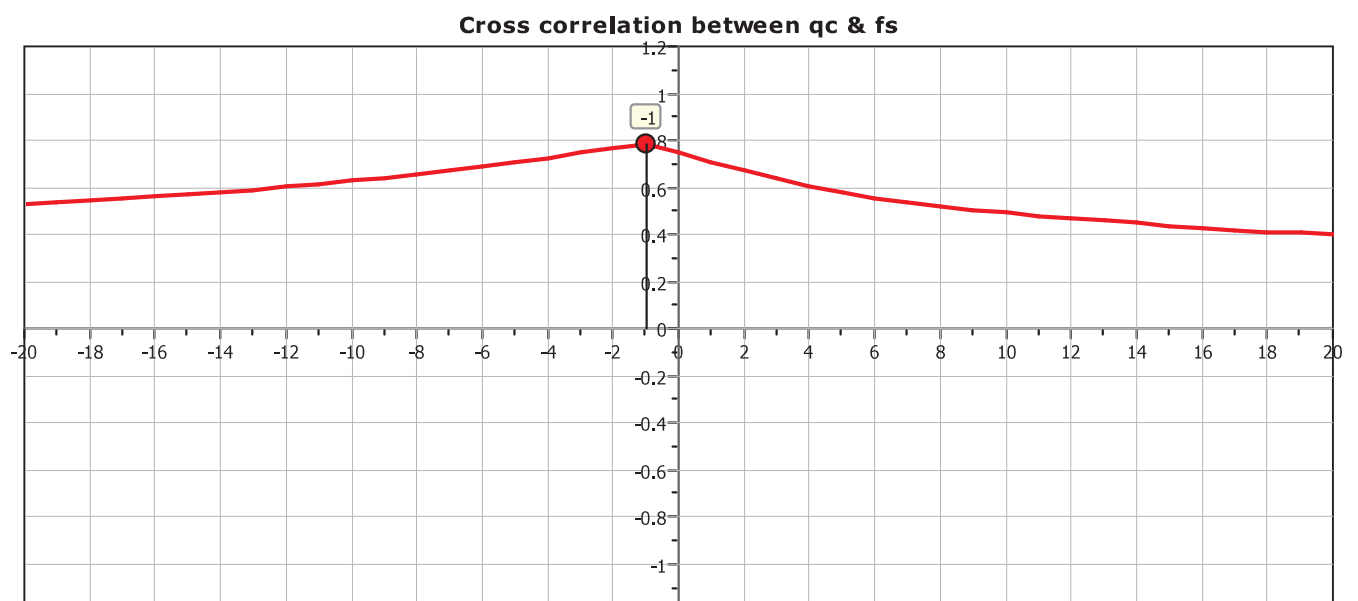
OCR factor for clays, $N_{k, \nu}$: 0.33
—●— User defined estimation data



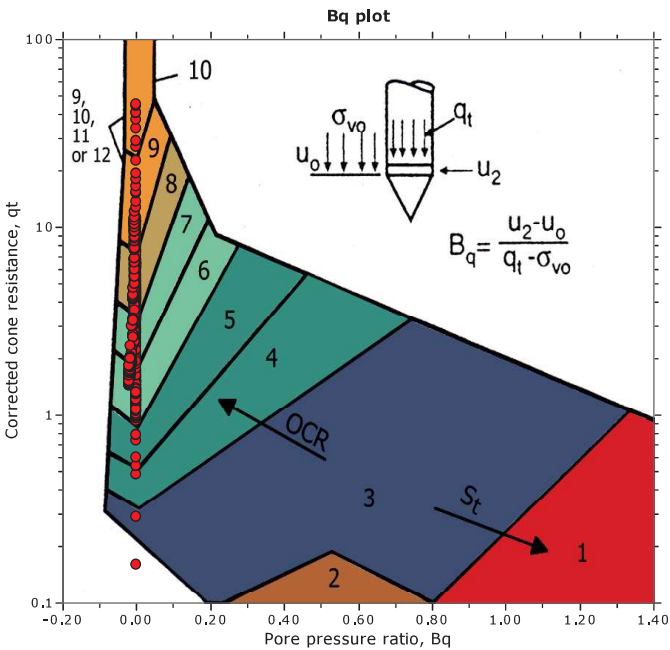
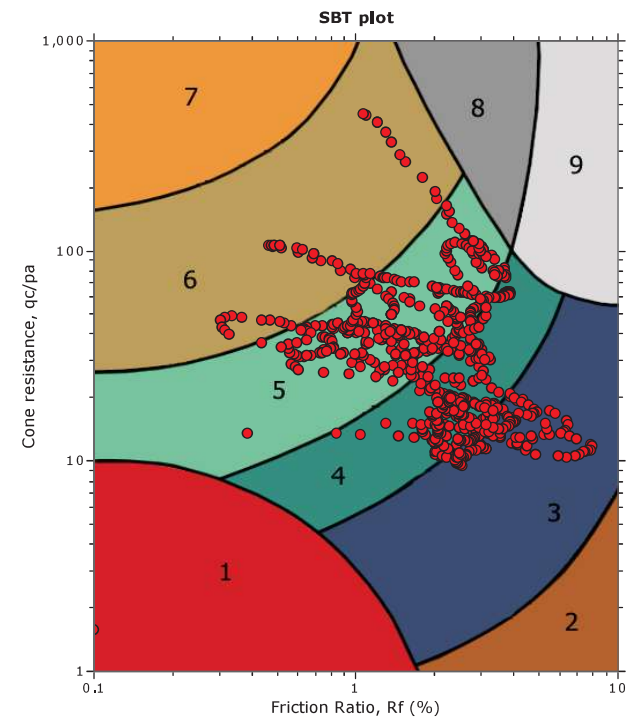
Calculation parameters
Soil Sensitivity factor, N_s : 7.00
● User defined estimation data



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



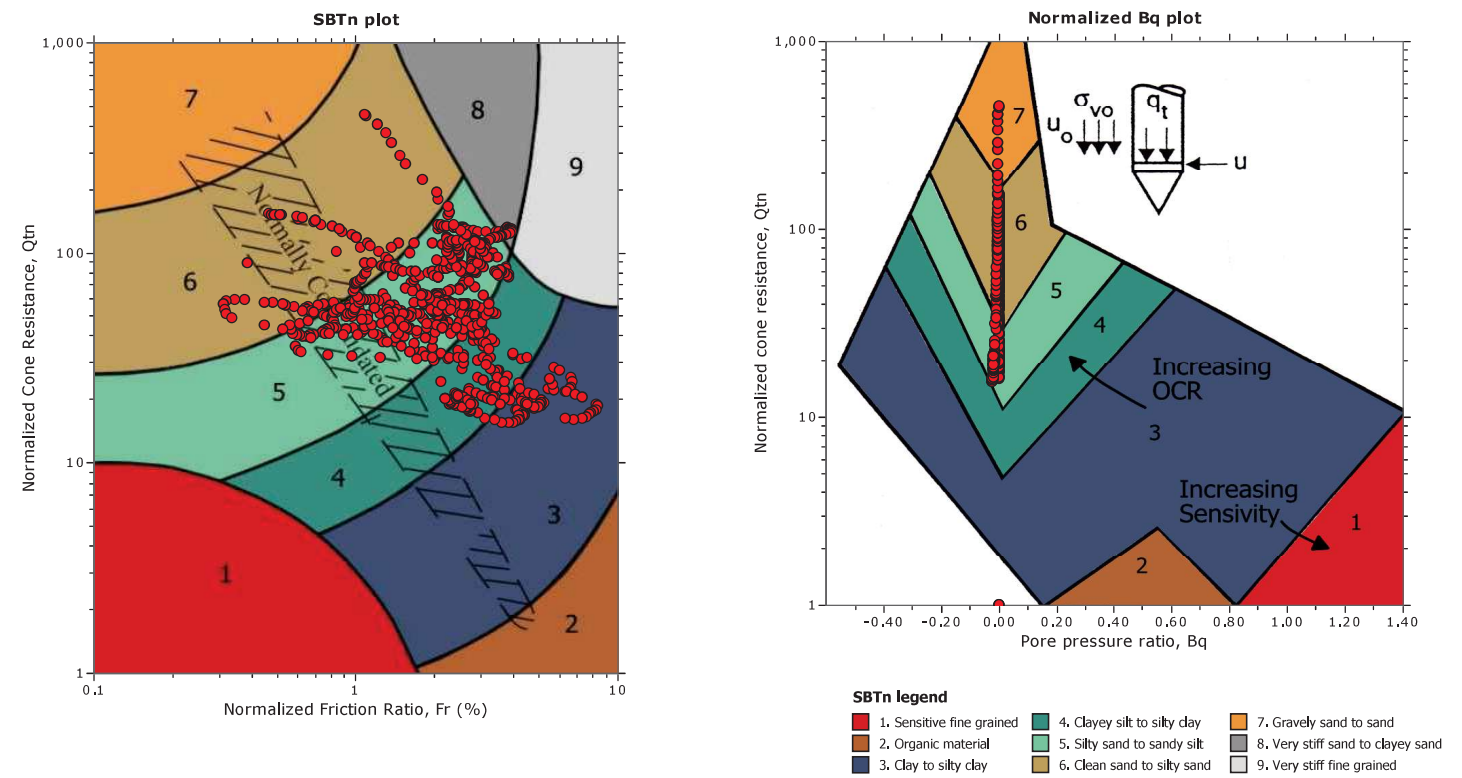
SBT - Bq plots



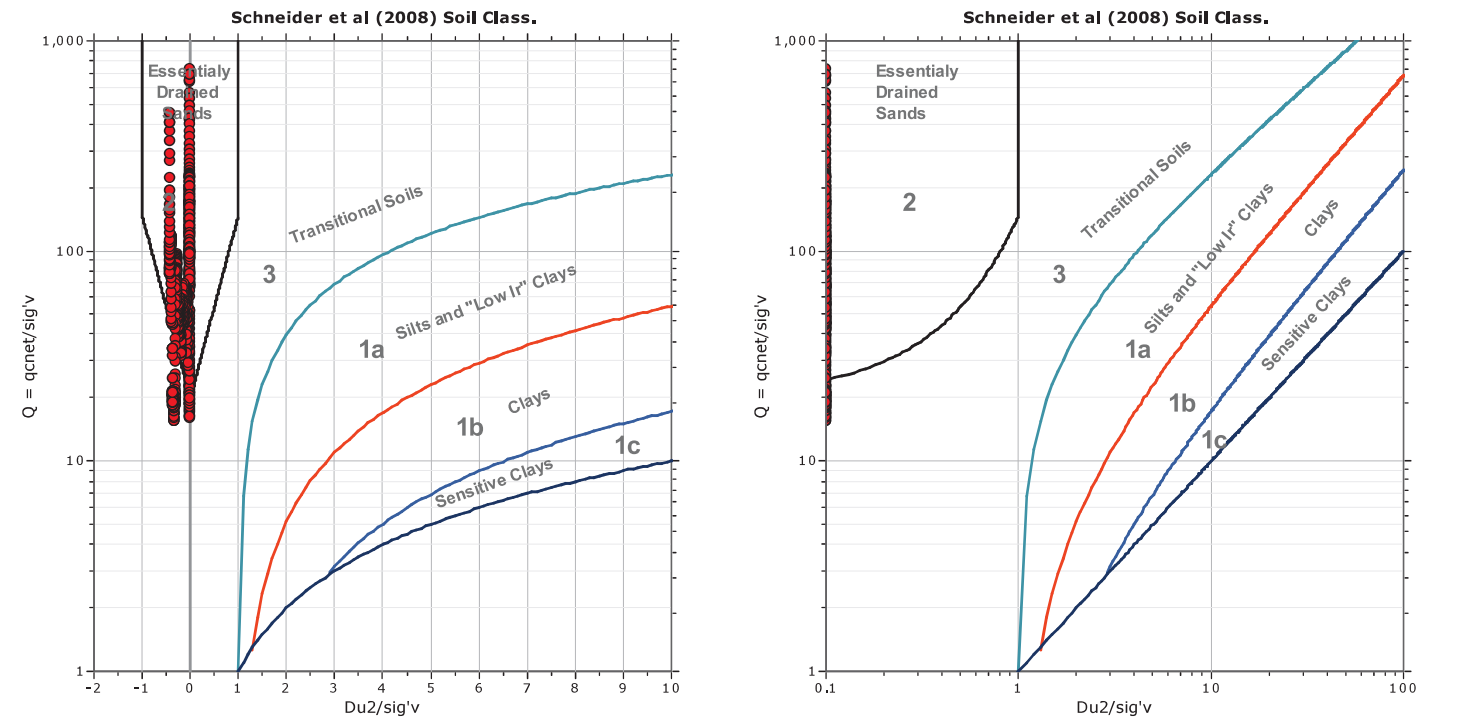
SBT legend

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

SBT - Bq plots (normalized)



Bq plots (Schneider)

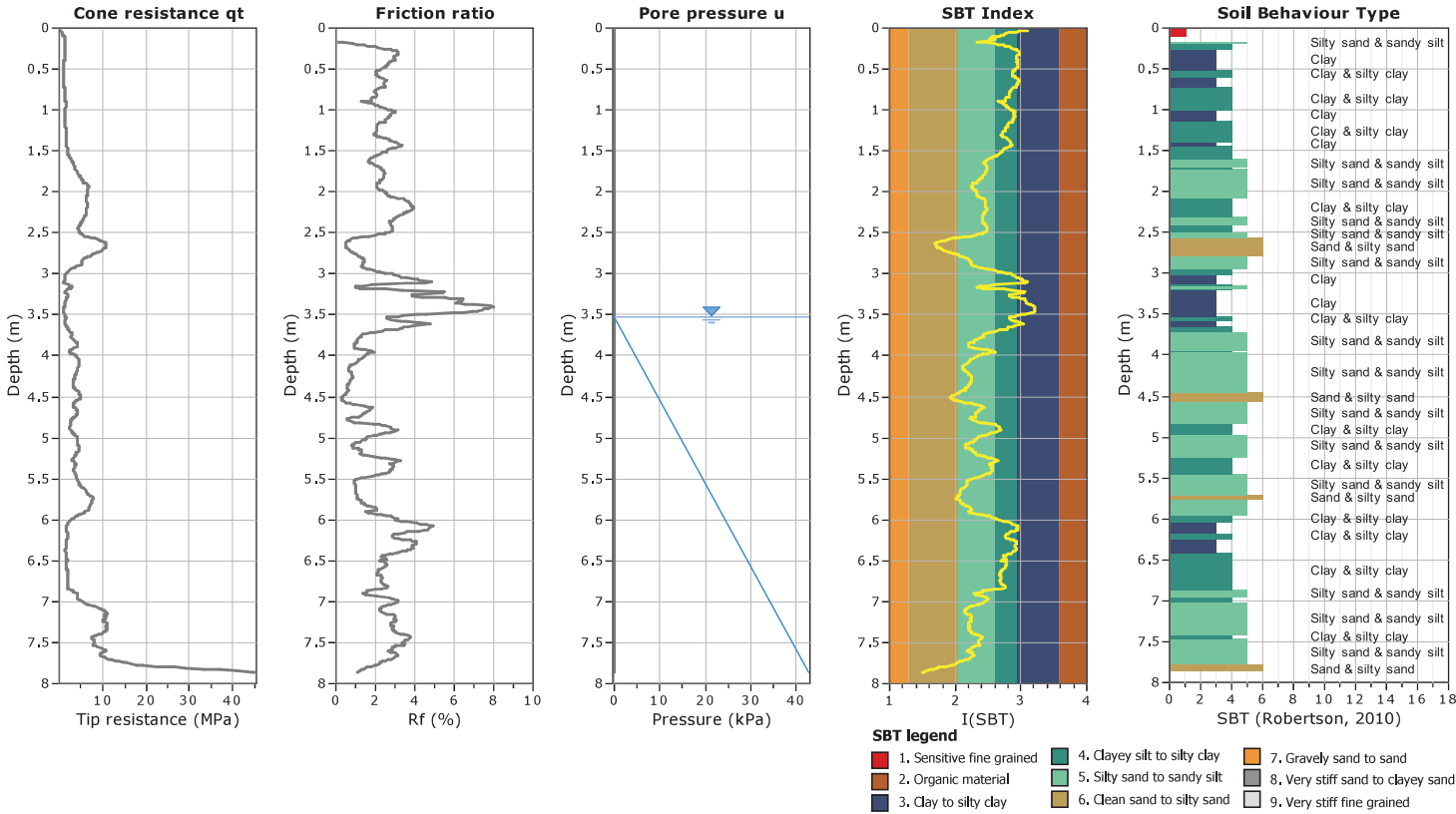


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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

CPT: P10

Total depth: 7.87 m, Date: 10/01/2025
Coords: X:1642244,25, Y:4818828,93
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



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Project: NUOVA VIABILITA' FABBRICA

Location: Fabbrica - Peccioli (PI)

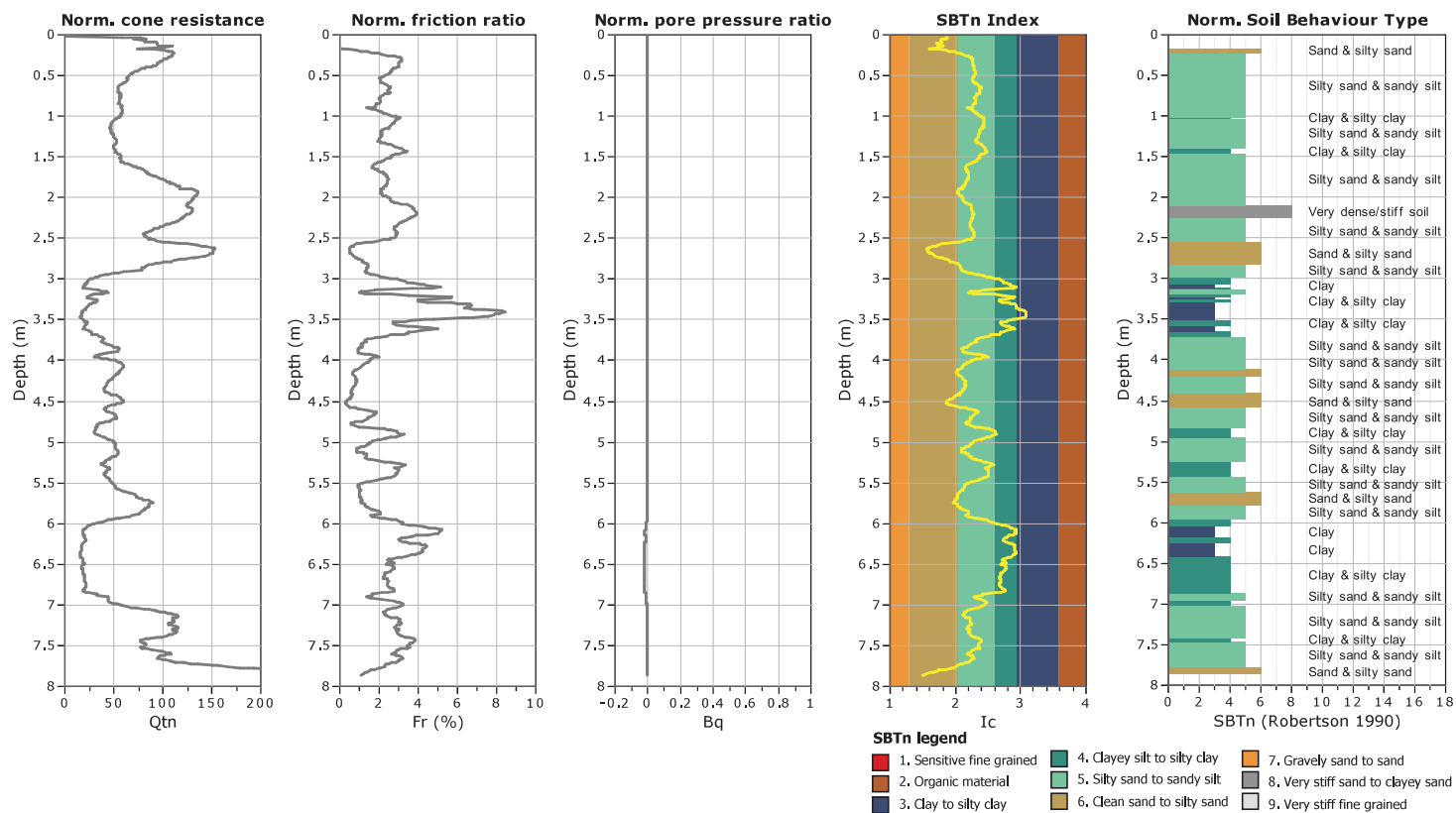
* 10/01/2025

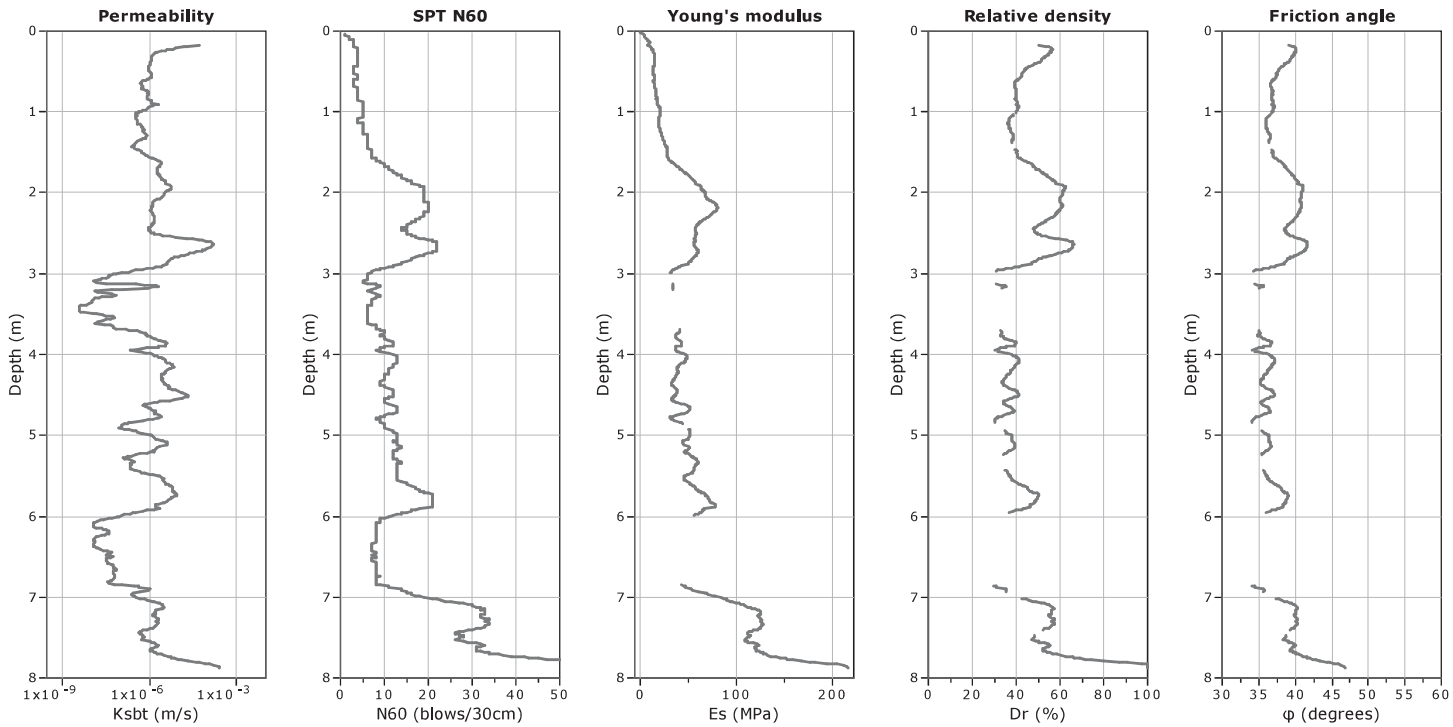
Total depth: 7.87 m. Date: 10/01/2025

Coords: X:1642244.25, Y:4818828.93

Cone Type: P-C 001251

Cone Operator: Geol. Jacopo Civita





Calculation parameters

Permeability: Based on SBT_n

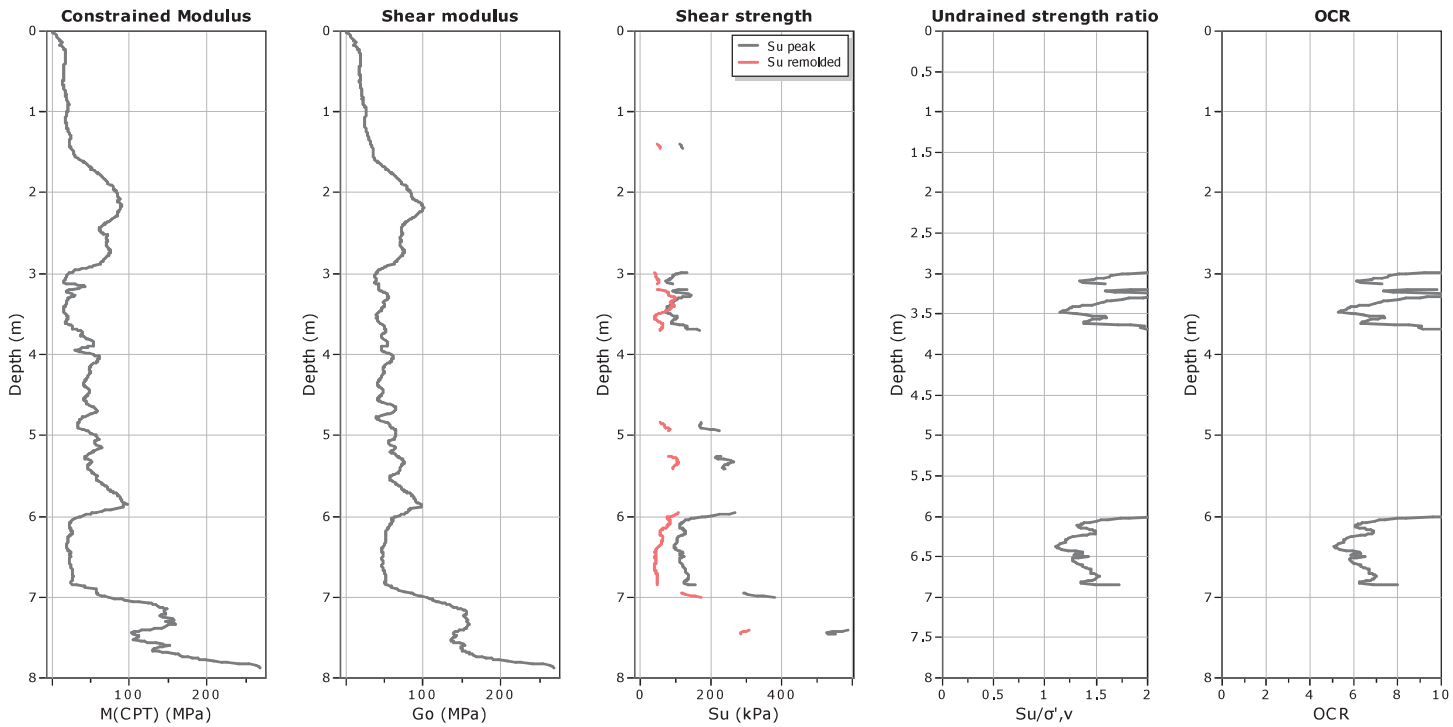
SPT N_{60} : Based on I_c and q_t

Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

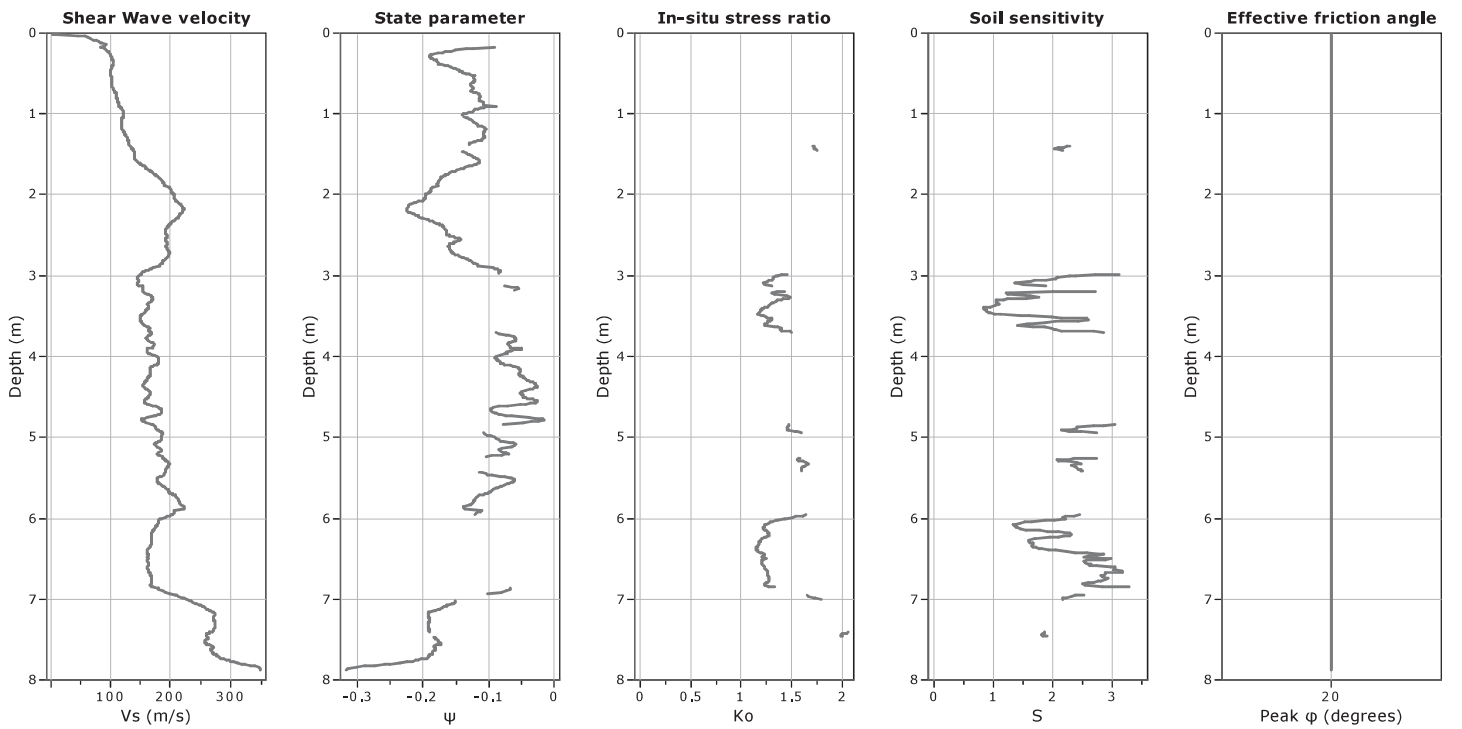
Relative desnisty constant, C_{Dr} : 350.0

Phi: Based on Kulhawy & Mayne (1990)

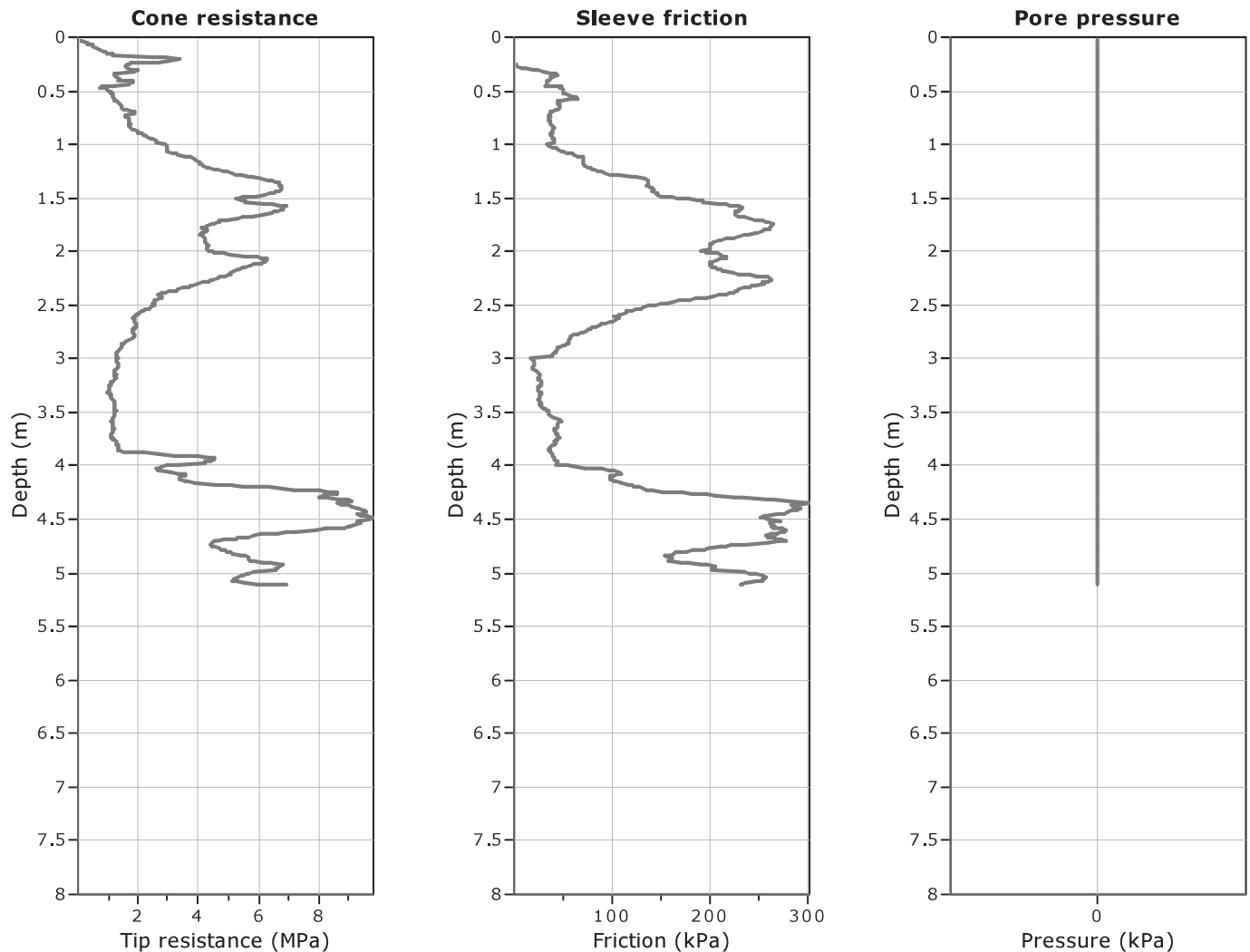
—●— User defined estimation data



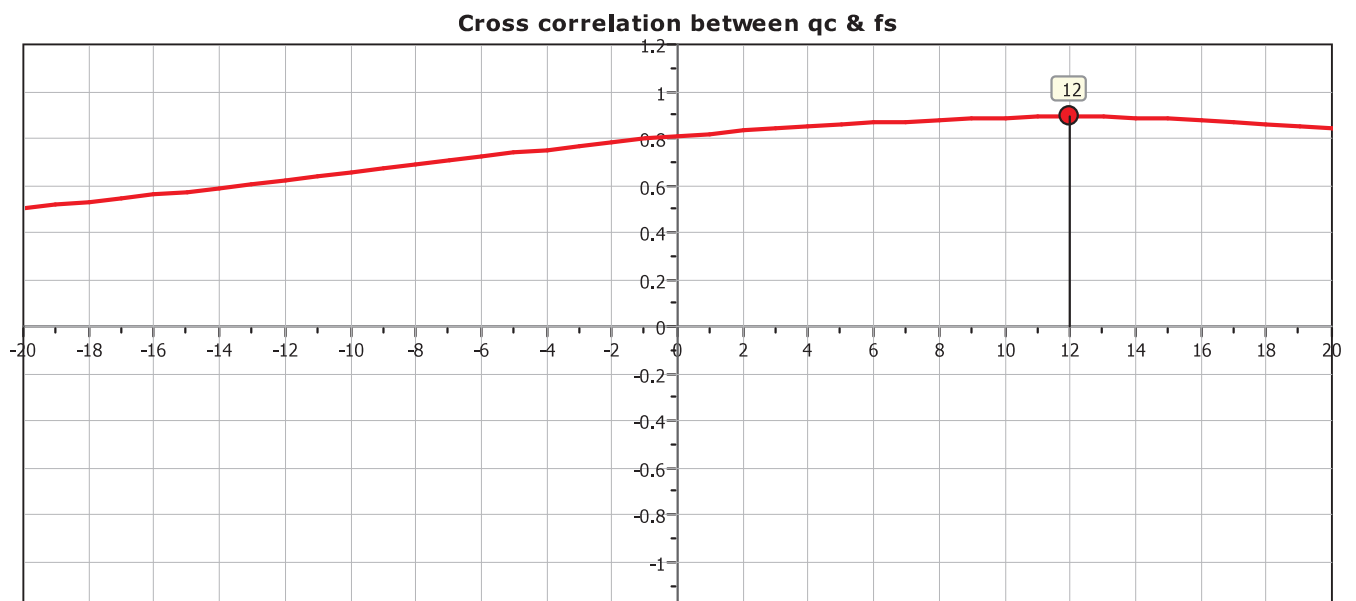
Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14
OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data



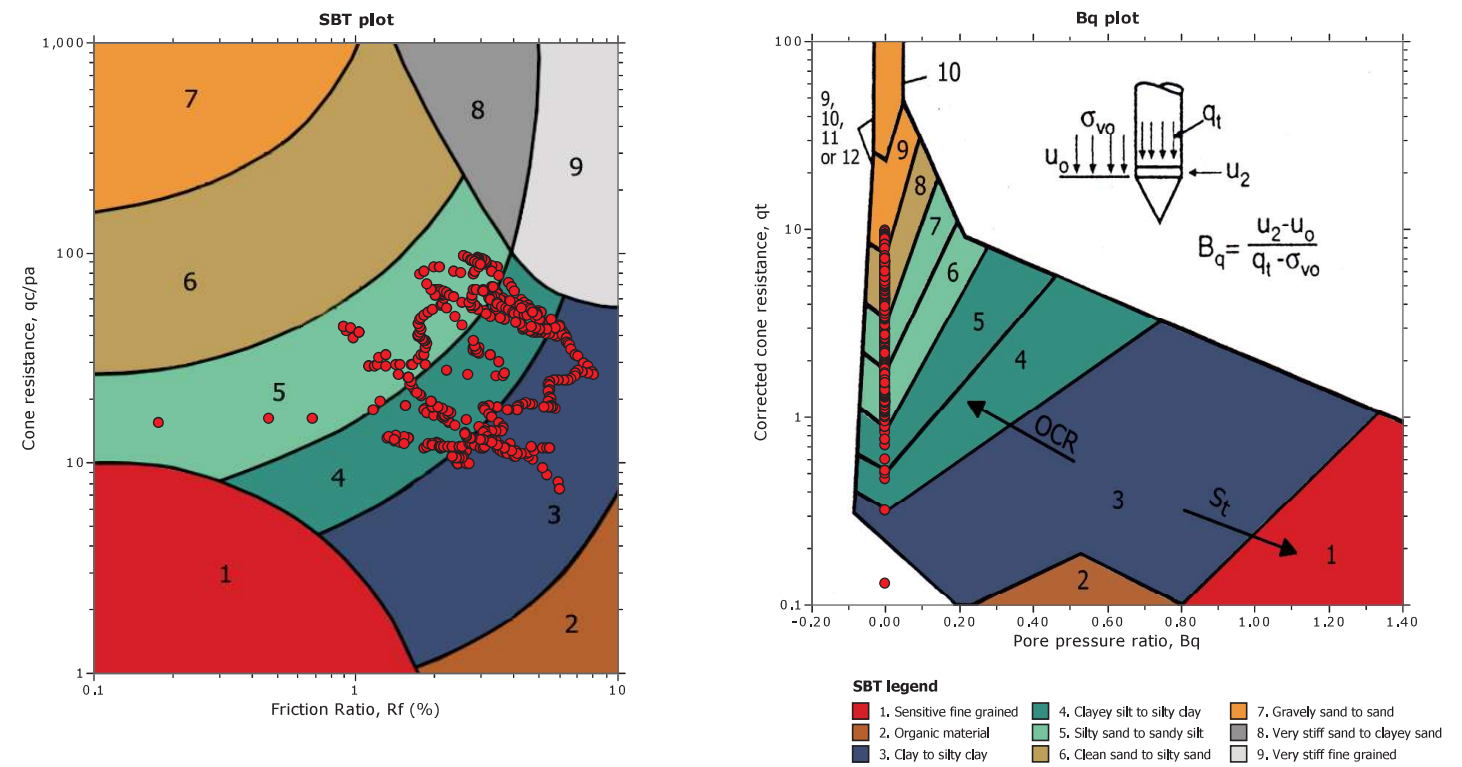
Calculation parameters
Soil Sensitivity factor, N_s : 7,00
—●— User defined estimation data



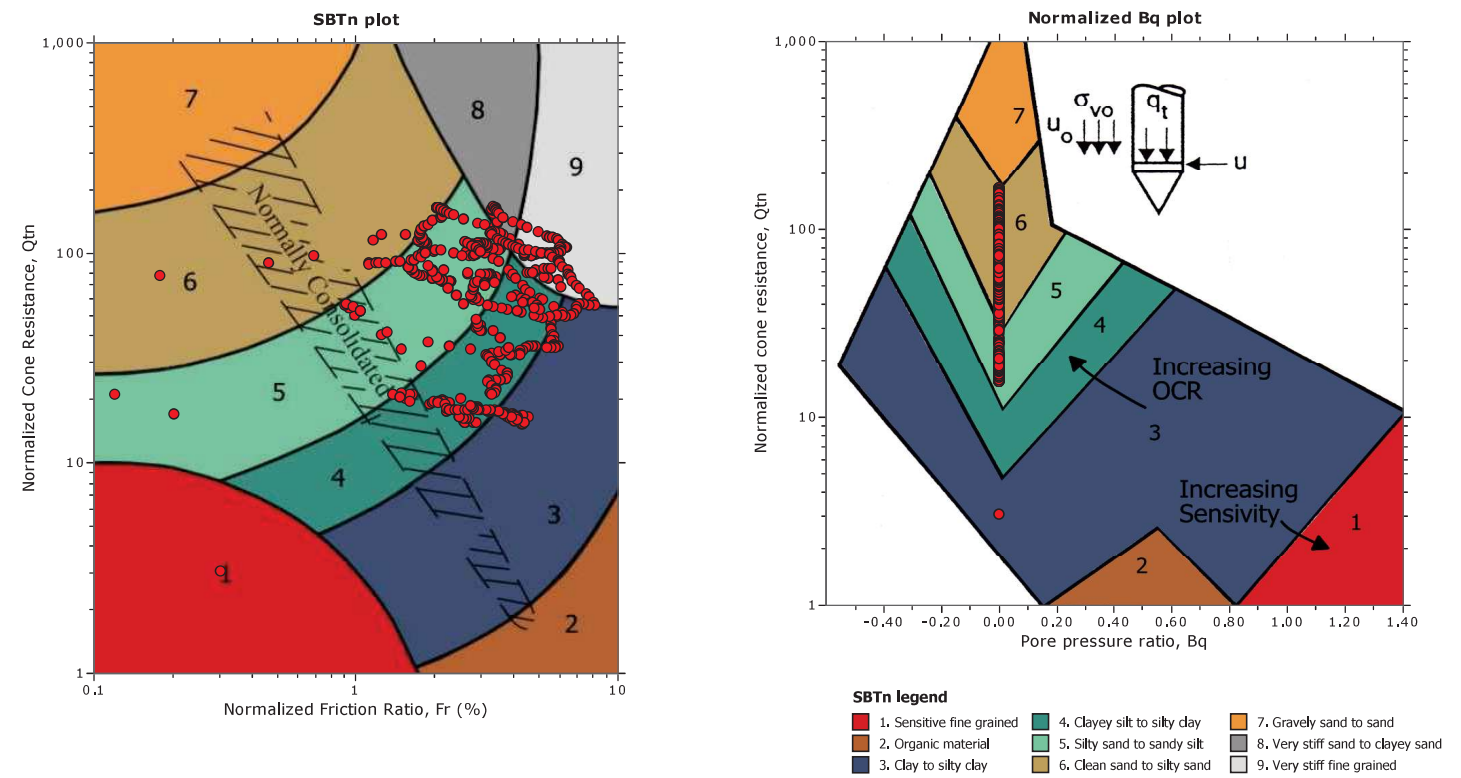
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



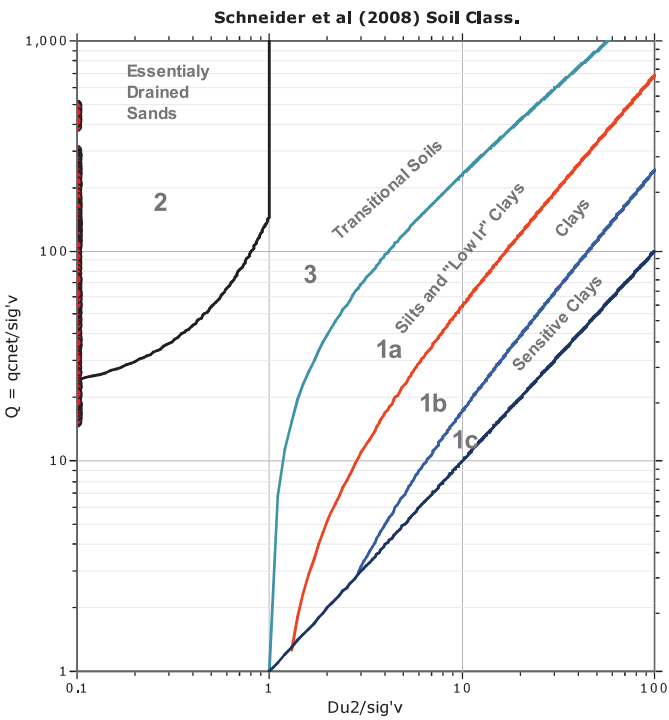
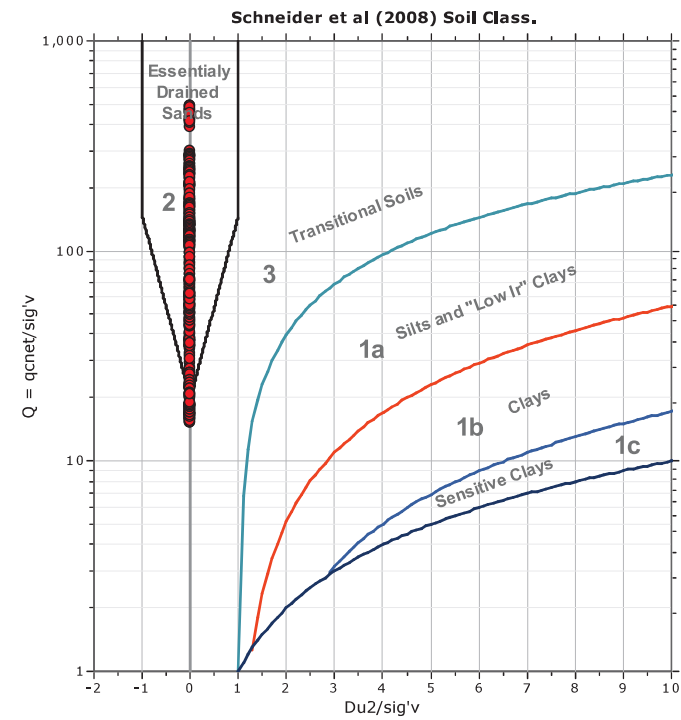
SBT - Bq plots



SBT - Bq plots (normalized)



Bq plots (Schneider)



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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

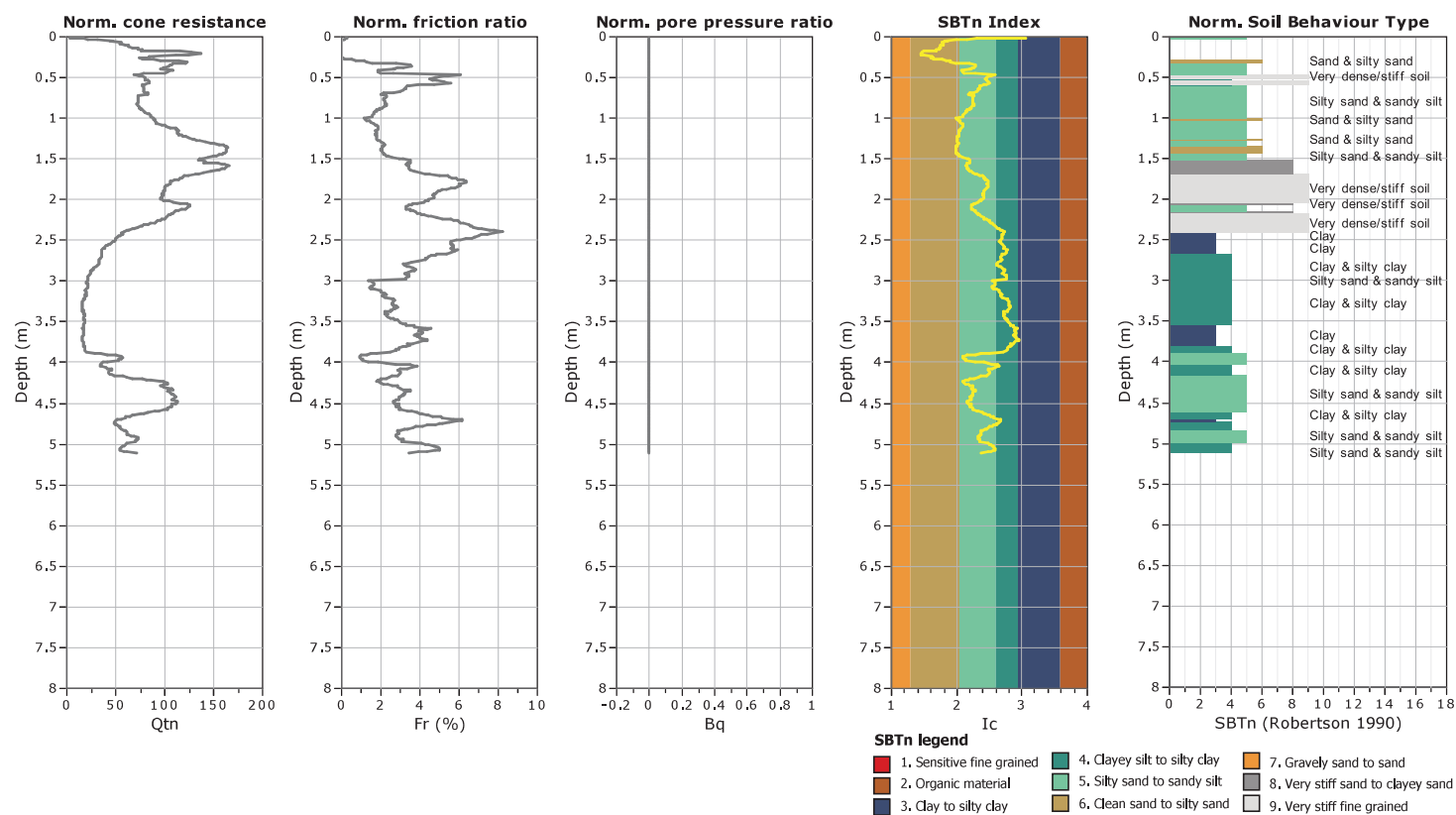
CPT: P13

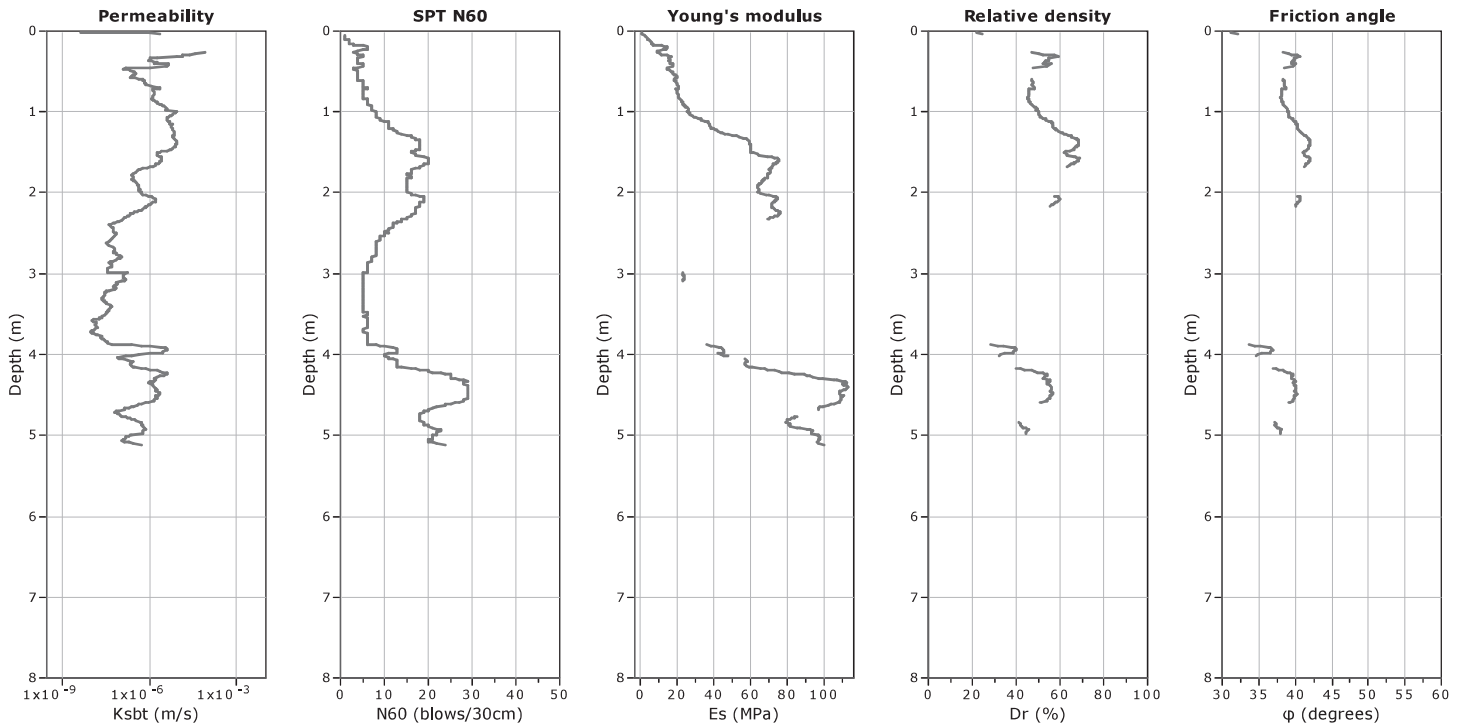
Total depth: 5.11 m, Date: 13/01/2025

Coords: X:1642196.40, Y:4818860.78

Cone Type: P-C 001251

Cone Operator: Geol. Jacopo Civita





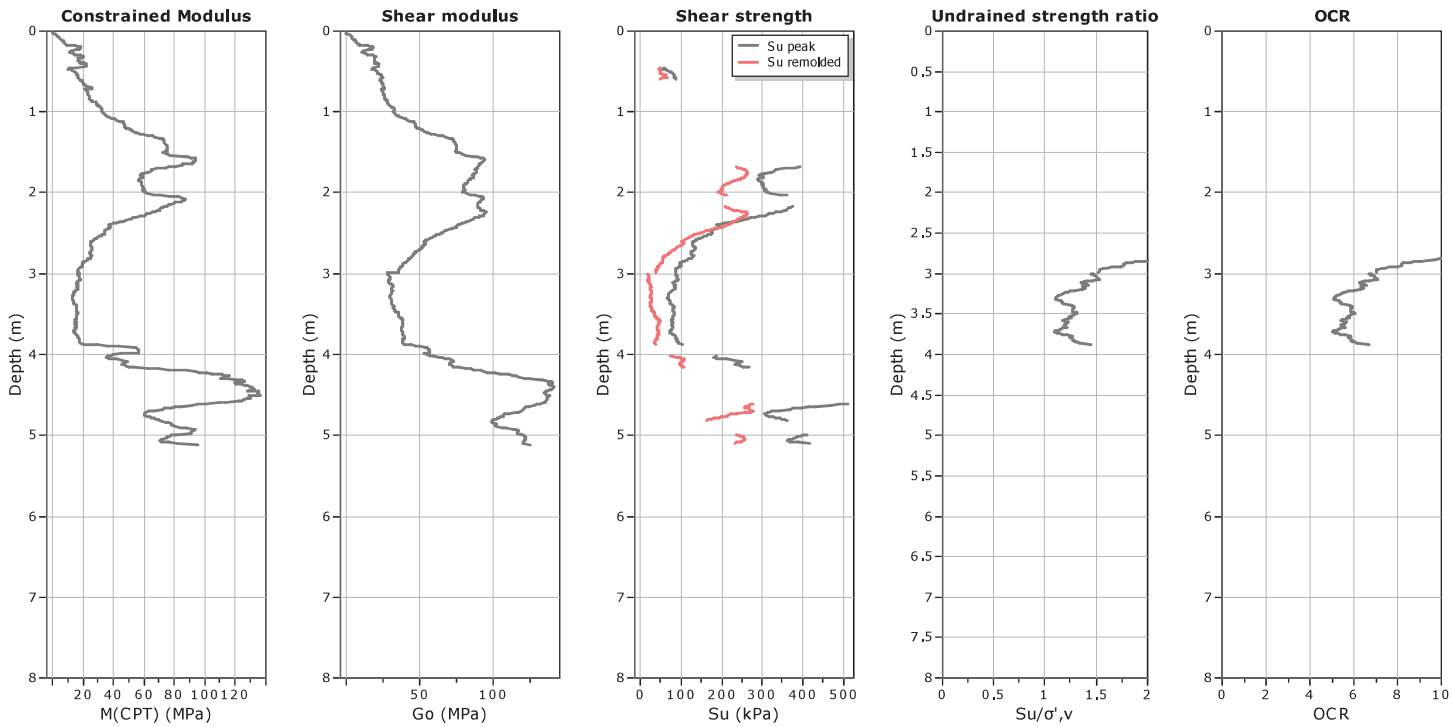
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative desnisty constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
● — User defined estimation data

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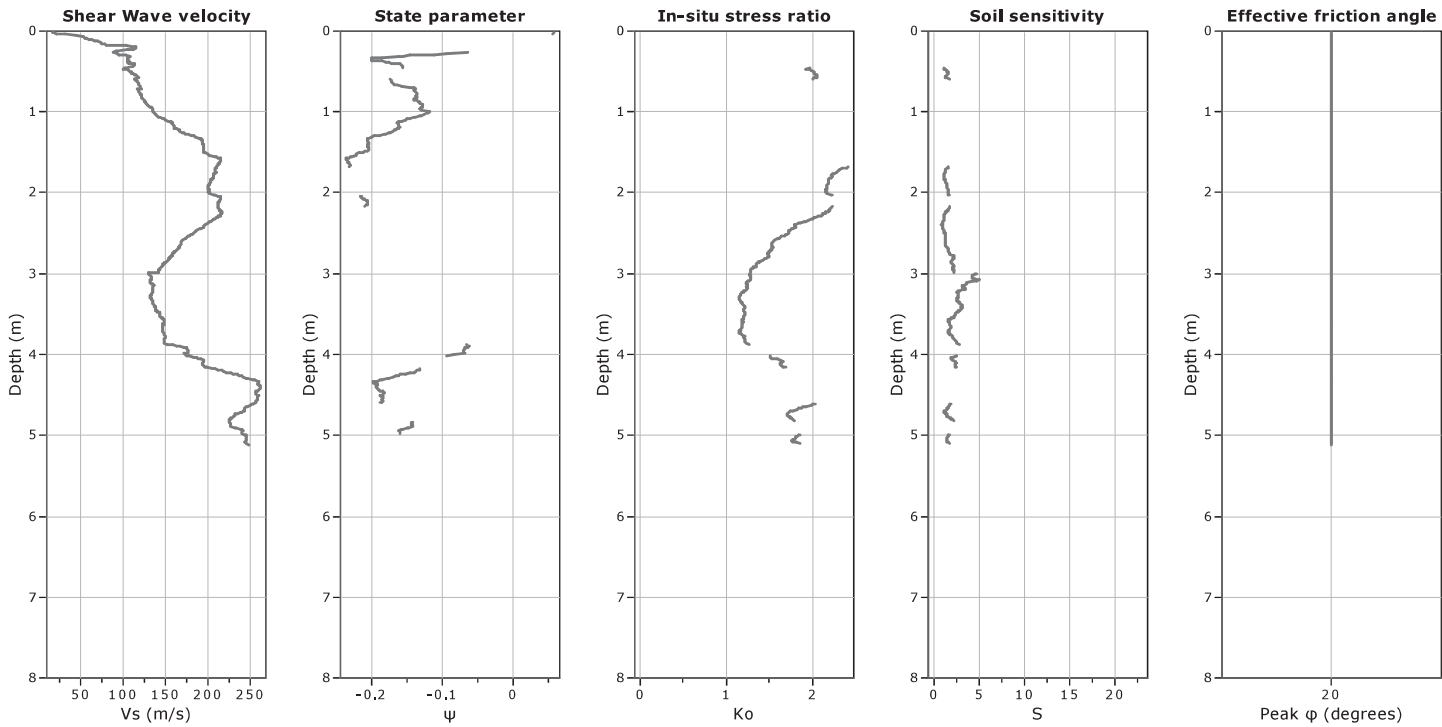
Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P13
Total depth: 5.11 m, Date: 13/01/2025
Coords: X:1642196,40, Y:4818860,78
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

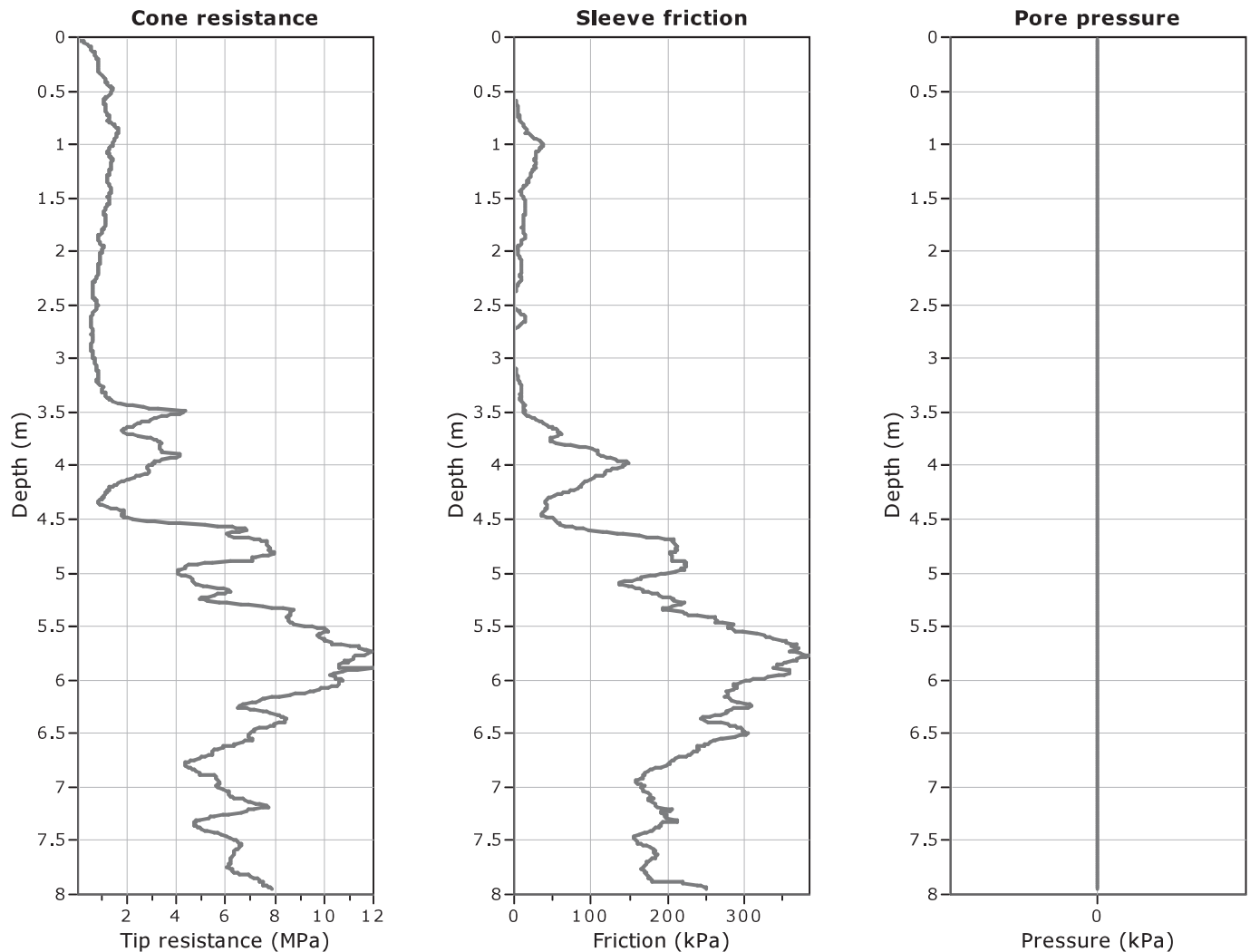


Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14

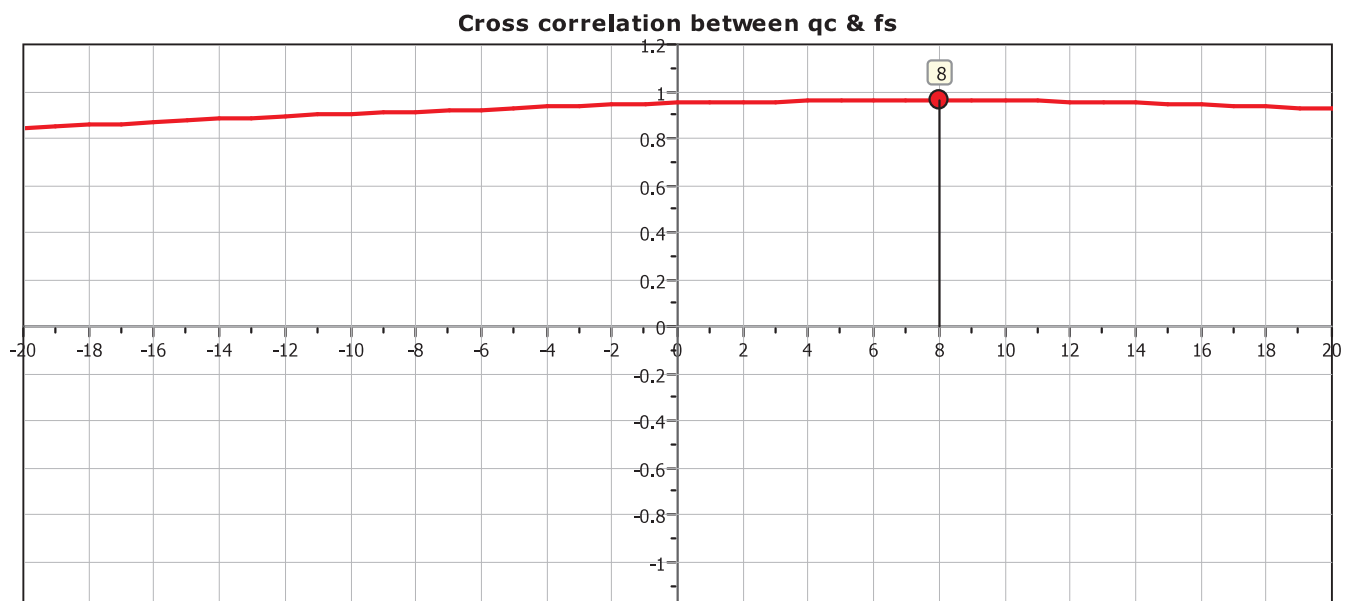
OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data



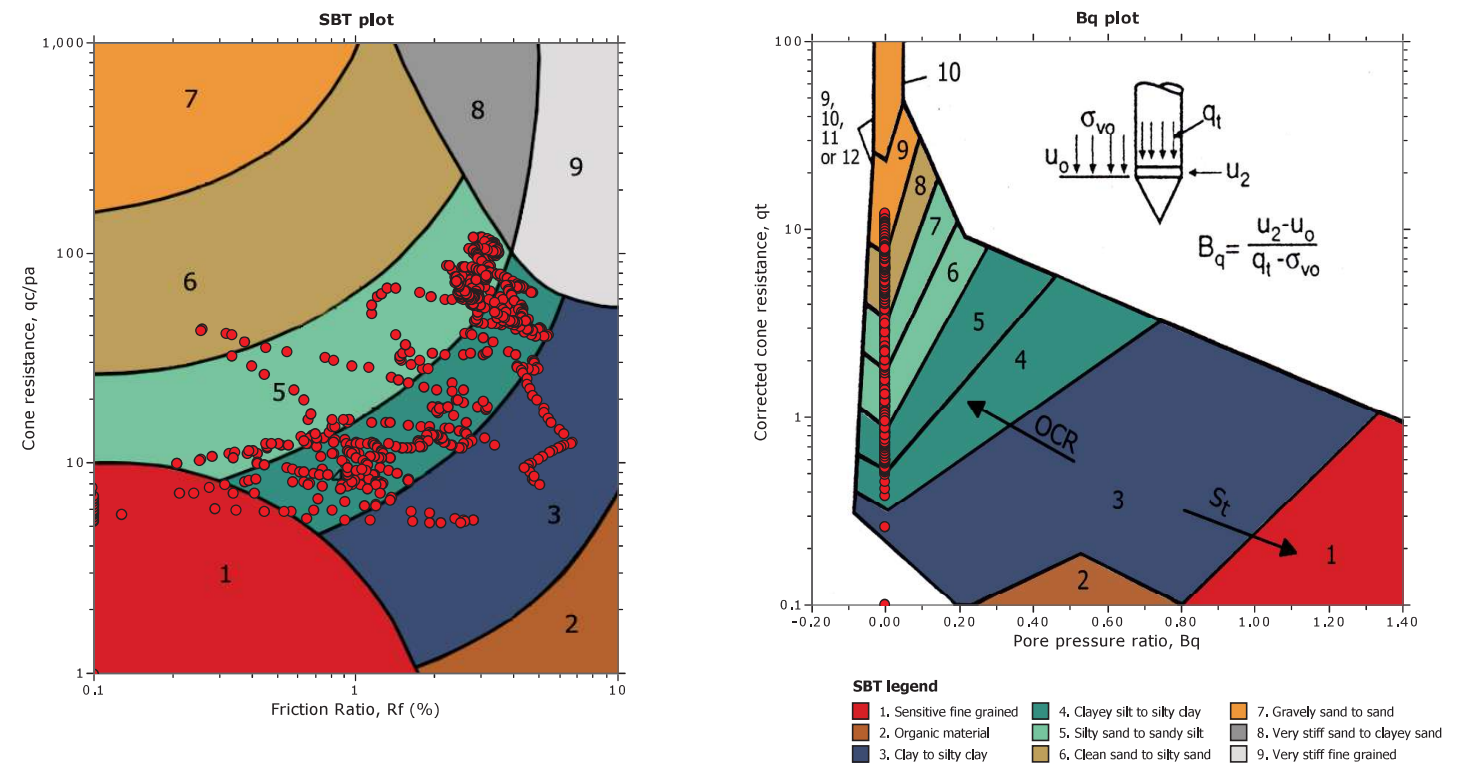
Calculation parameters
Soil Sensitivity factor, N_s : 7,00
—●— User defined estimation data



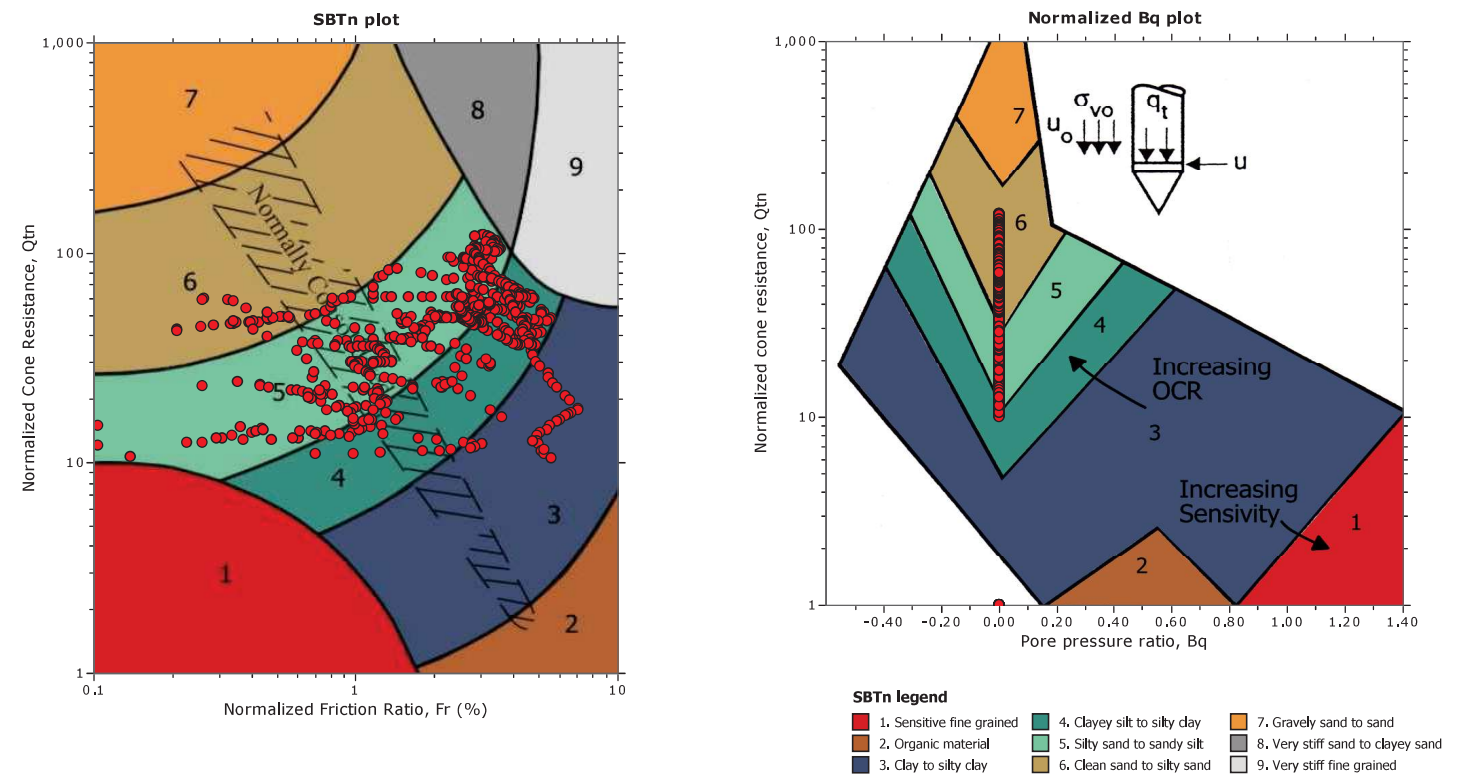
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



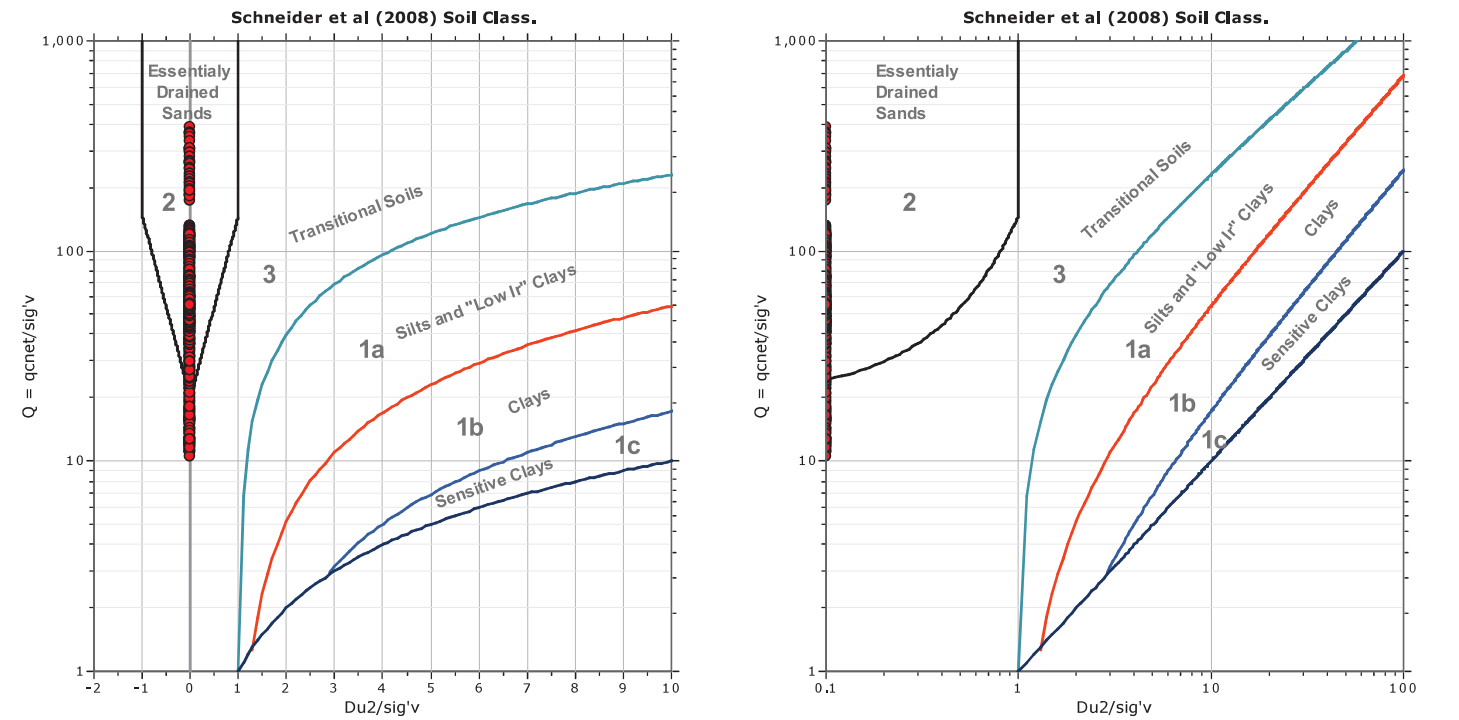
SBT - Bq plots

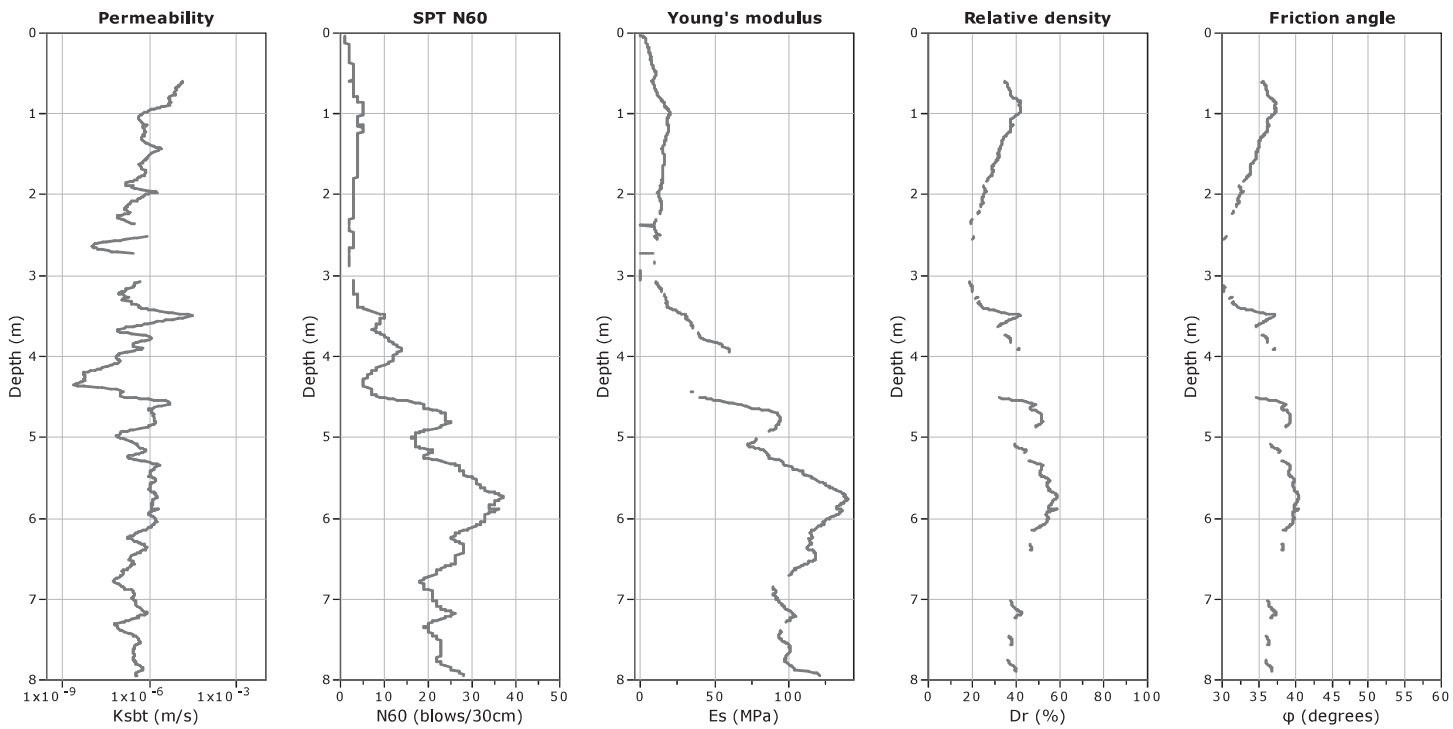


SBT - Bq plots (normalized)



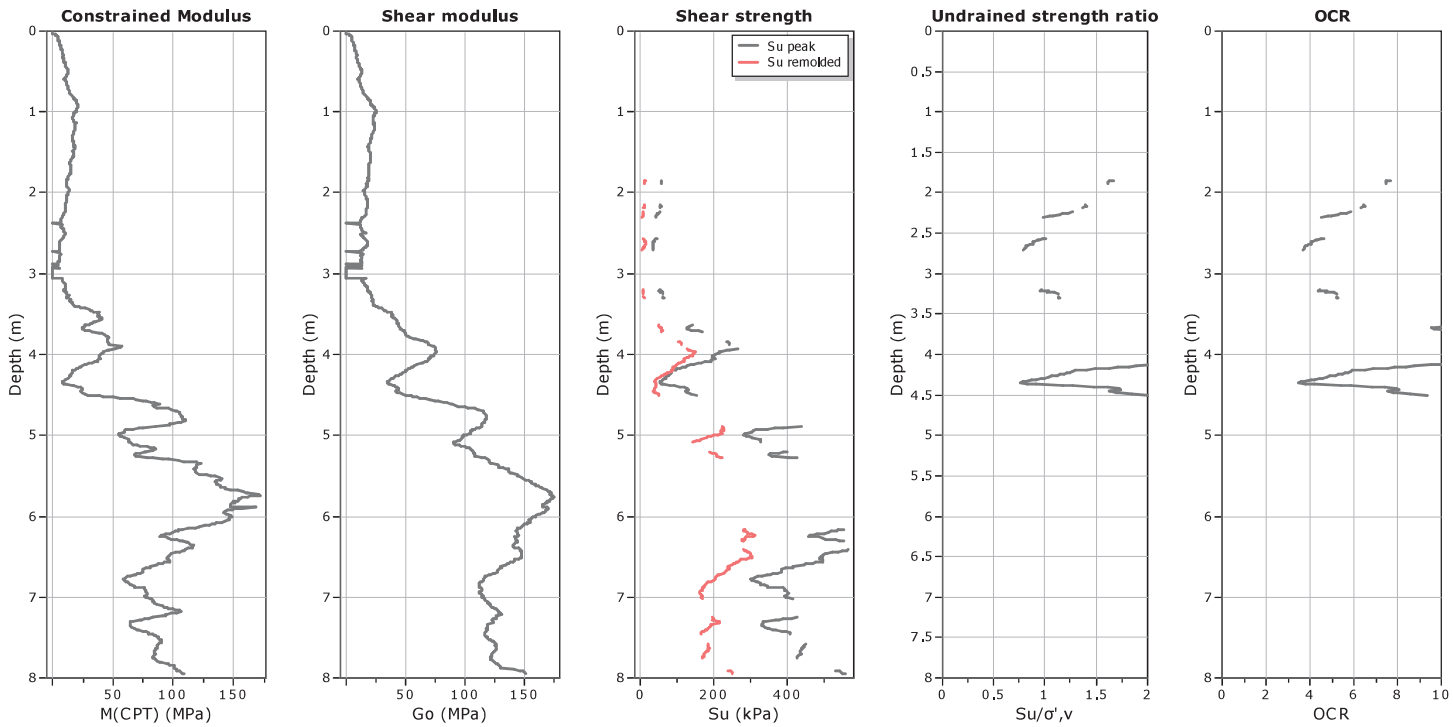
Bq plots (Schneider)





Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative density constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
—●— User defined estimation data

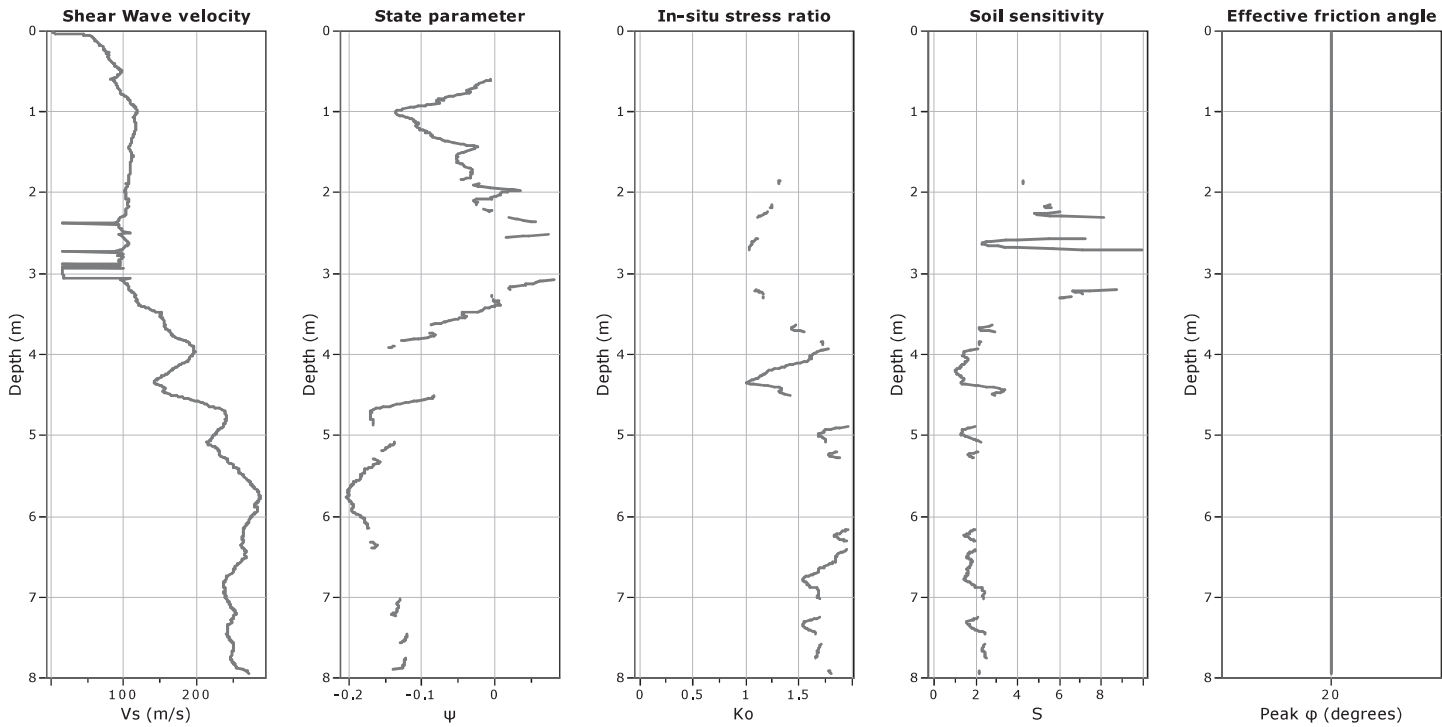


Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14
OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data

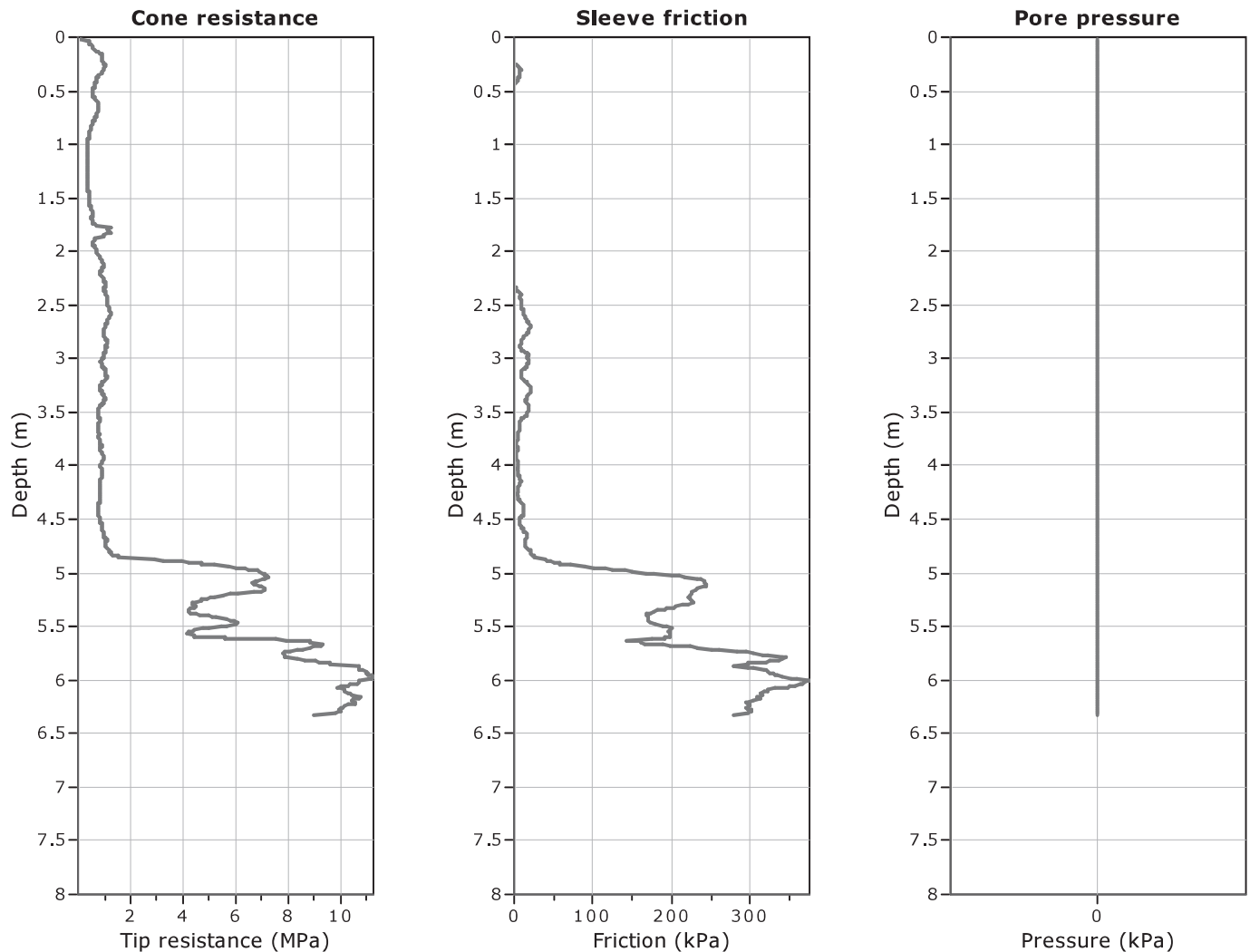
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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

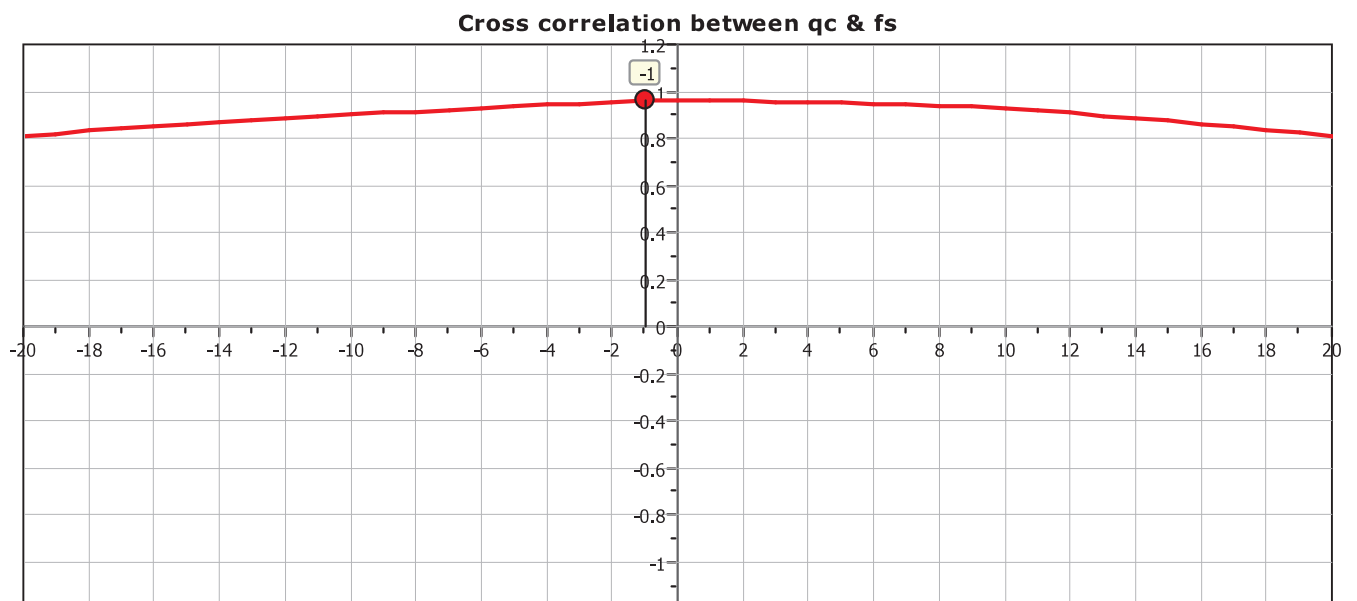
CPT: P16
Total depth: 7.95 m, Date: 13/01/2025
Coords: X:1642170.87, Y:4818908.10
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



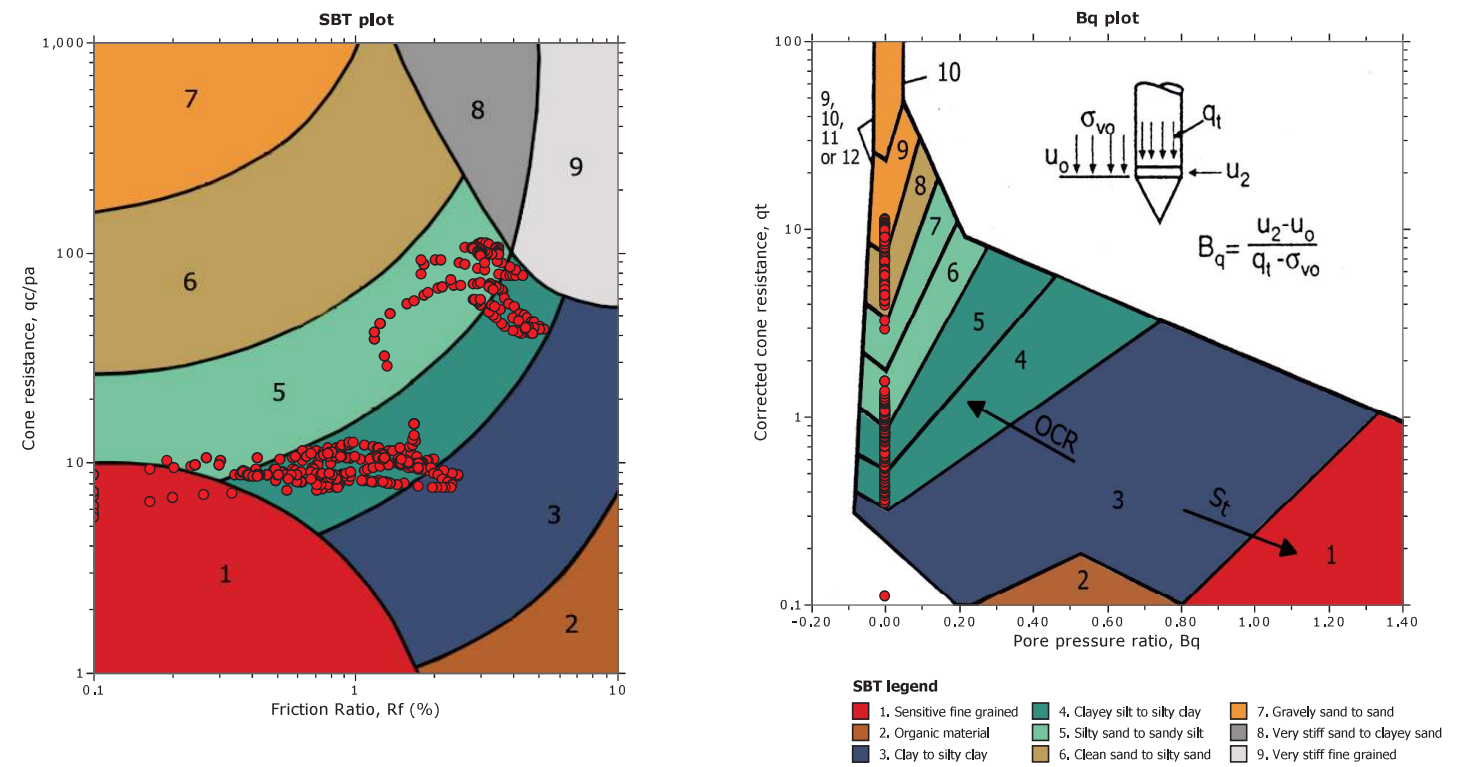
Calculation parameters
Soil Sensitivity factor, N_s : 7.00
—●— User defined estimation data



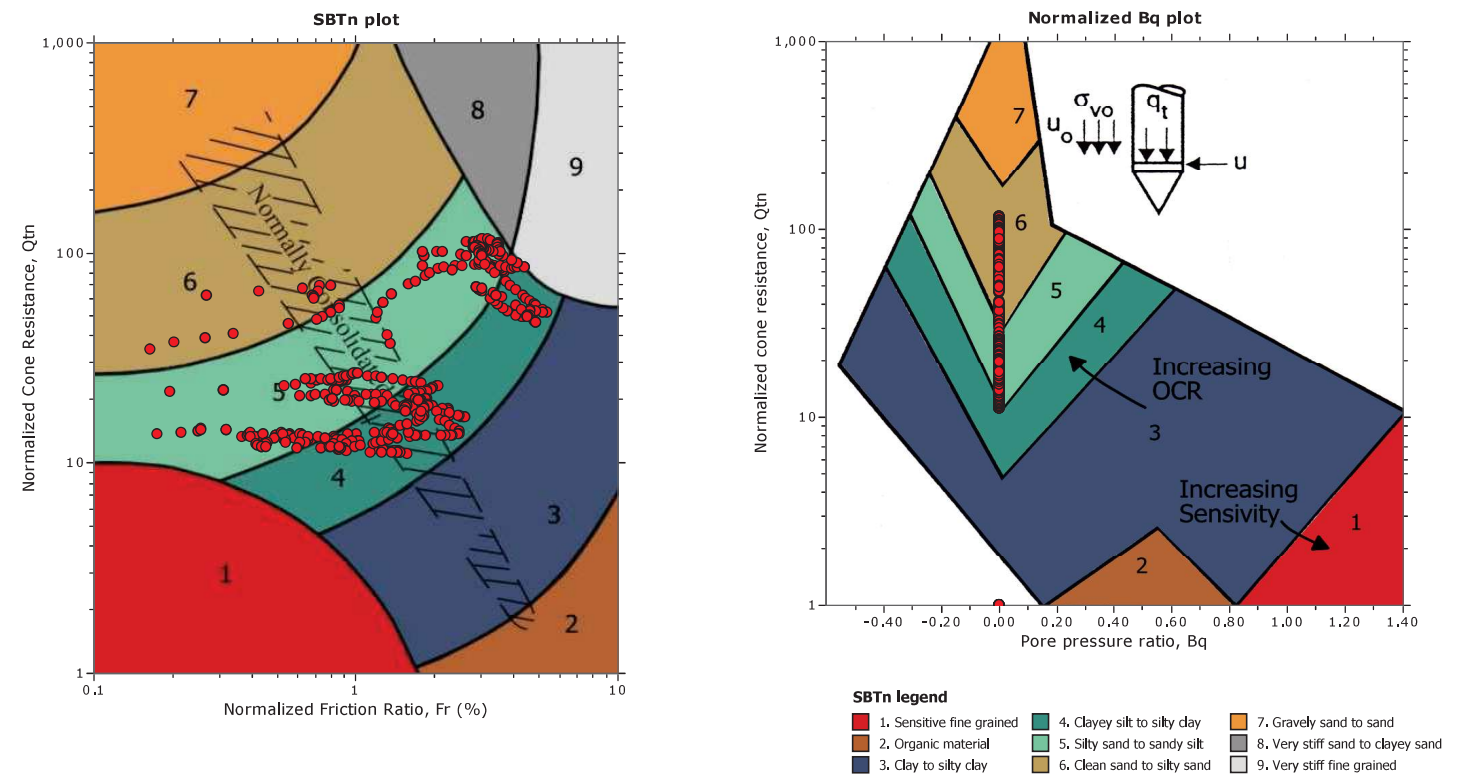
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



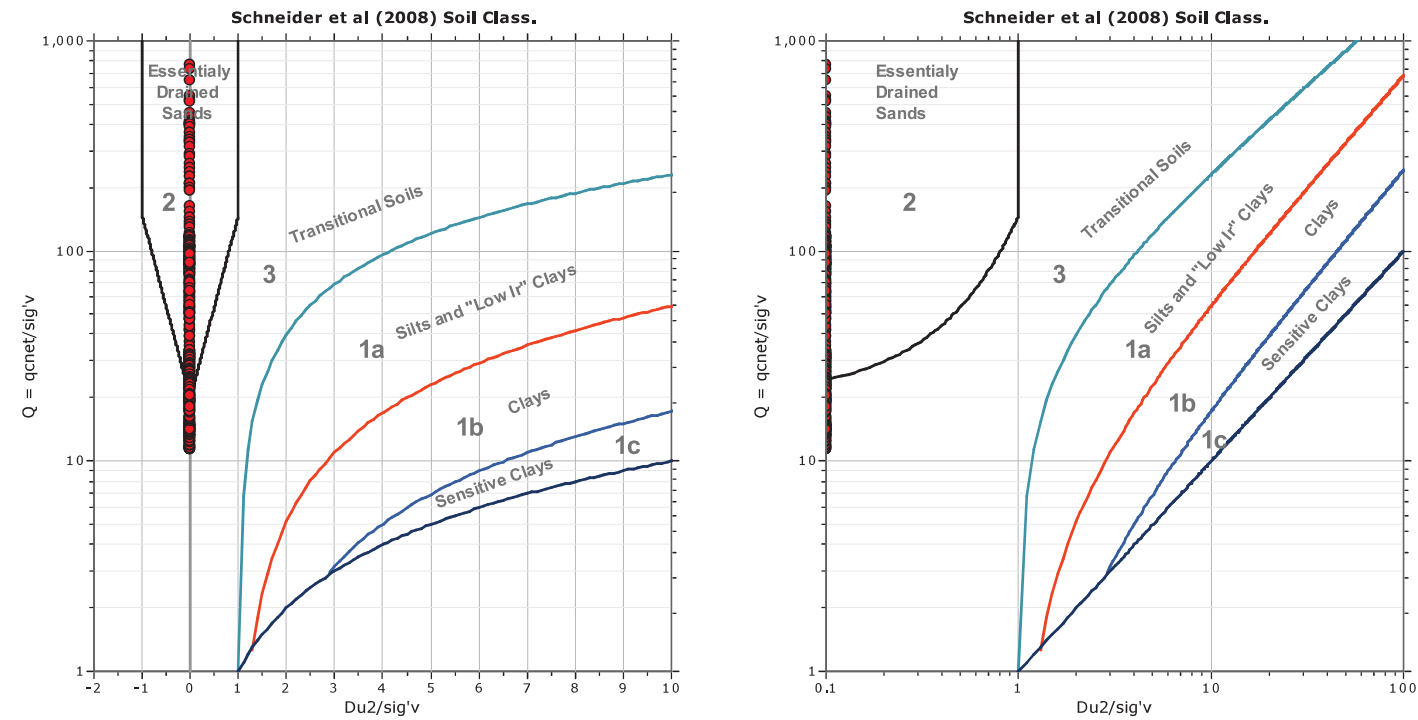
SBT - Bq plots

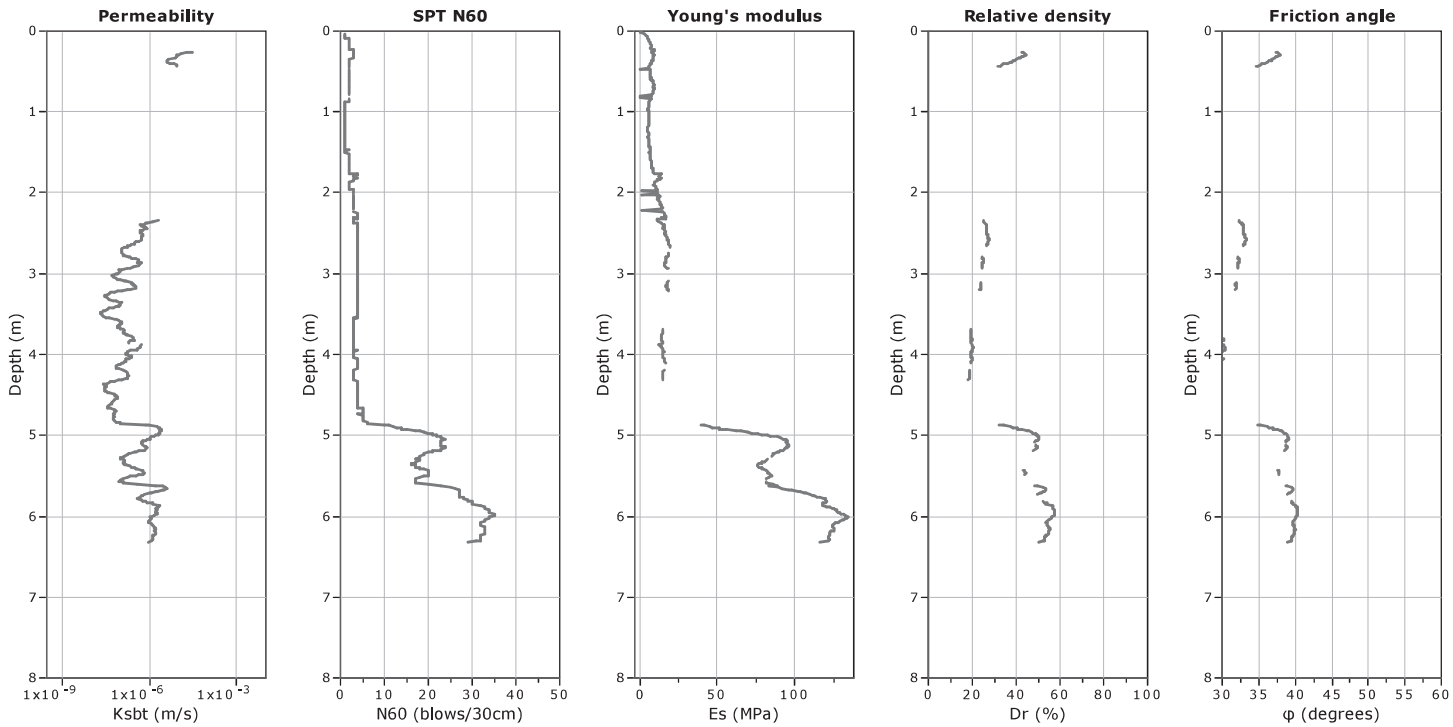


SBT - Bq plots (normalized)



Bq plots (Schneider)





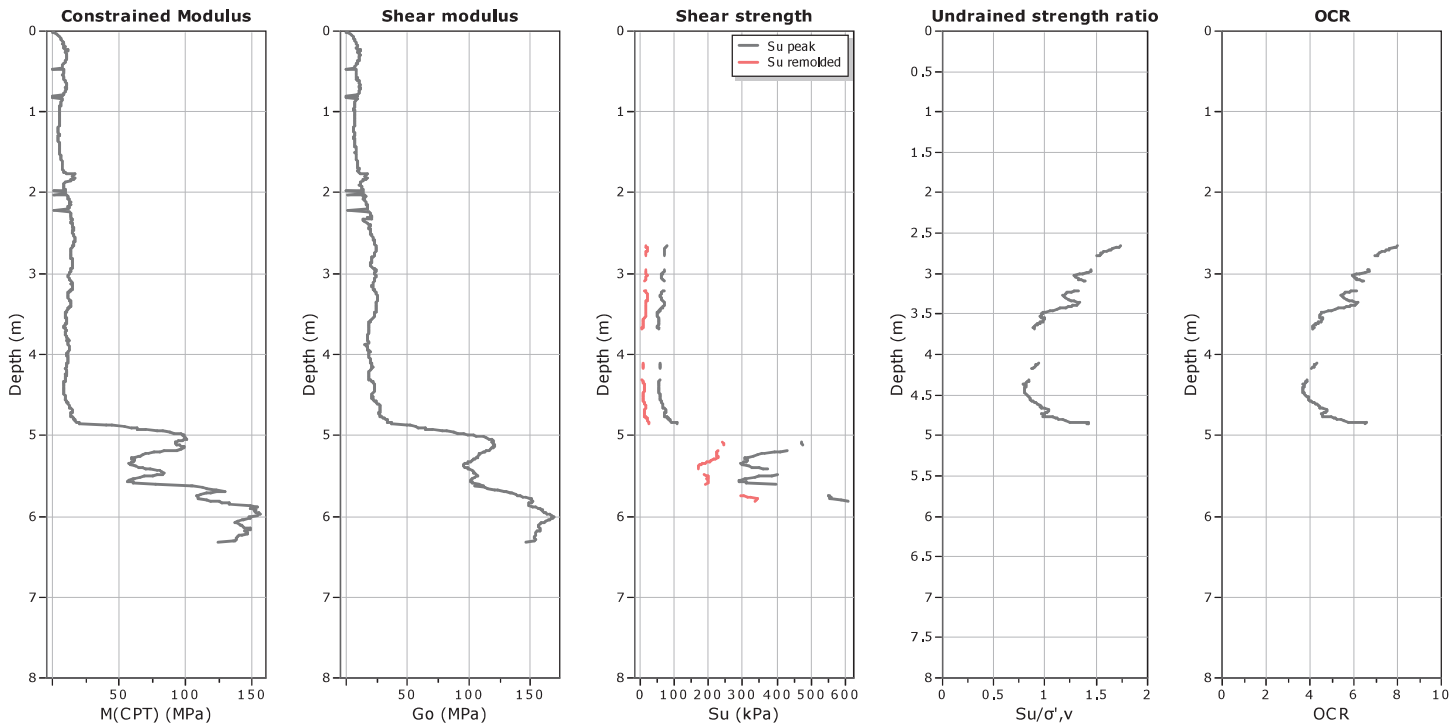
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative desnisty constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
—●— User defined estimation data

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Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P18
Total depth: 6.32 m, Date: 13/01/2025
Coords: X:1642151.53, Y:4818947.32
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



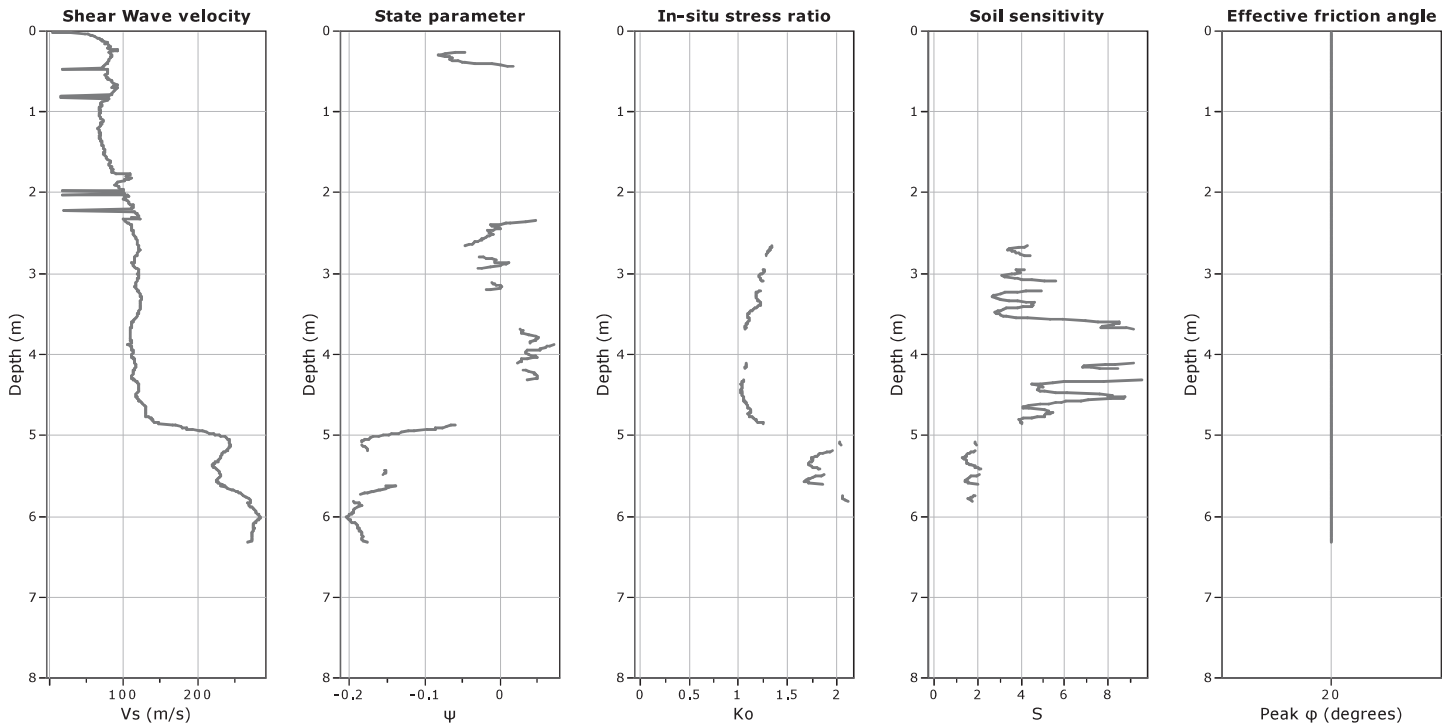
Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14

OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data

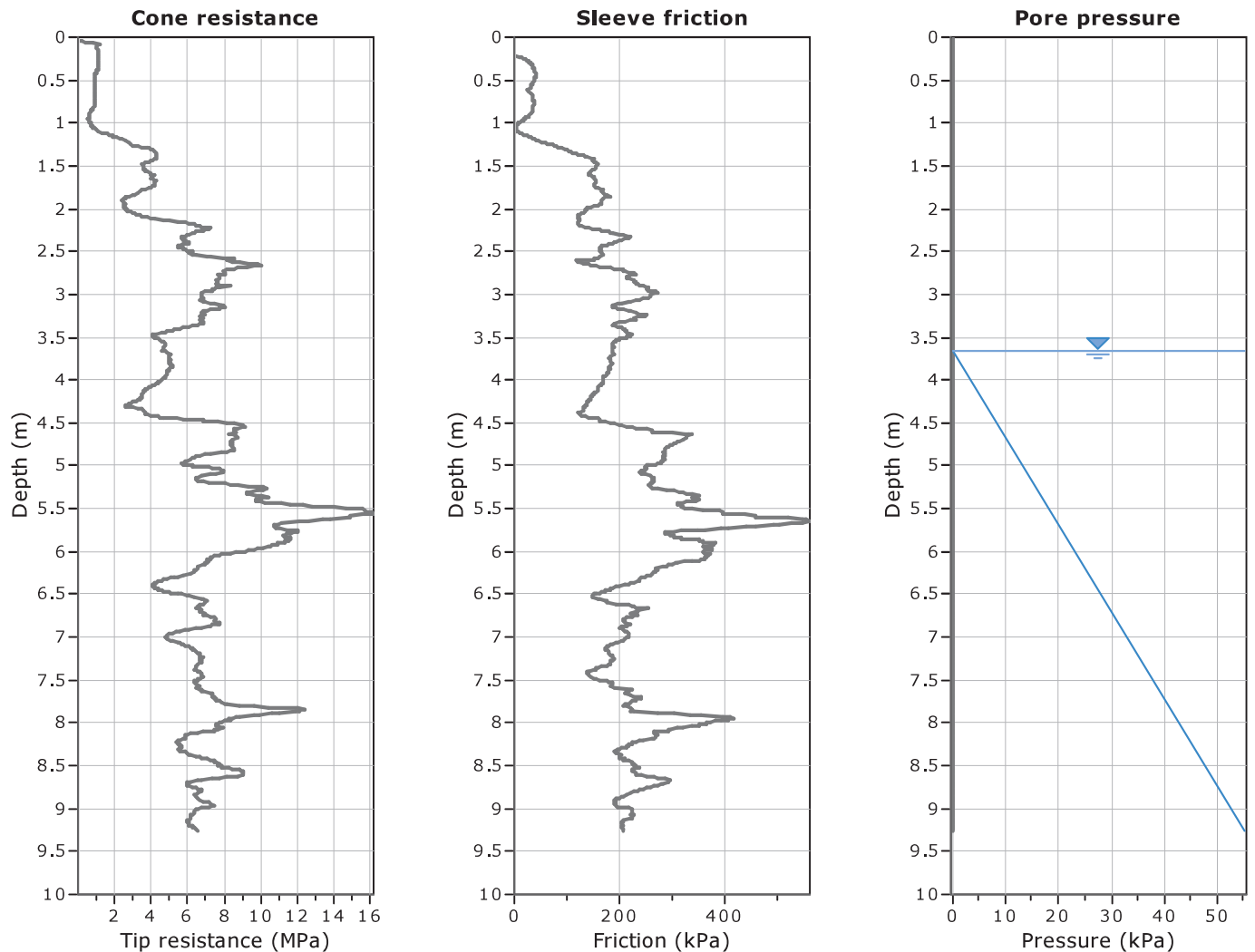
BIERREGI SRL
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55100 Lucca
info@bierregilucca.it

Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

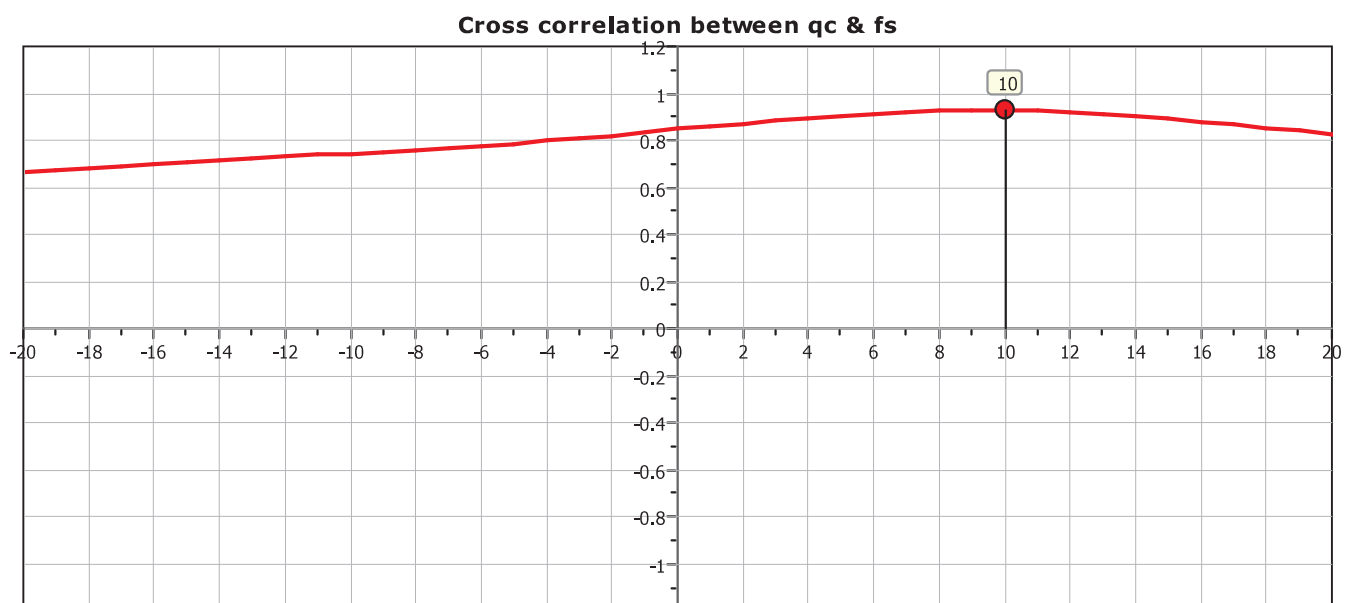
CPT: P18
Total depth: 6.32 m, Date: 13/01/2025
Coords: X:1642151.53, Y:4818947.32
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



Calculation parameters
Soil Sensitivity factor, N_s : 7.00
—●— User defined estimation data



The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



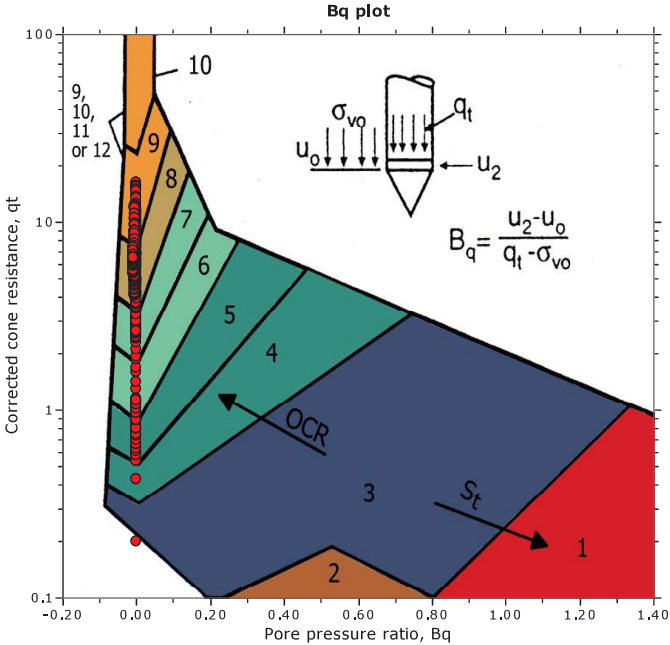
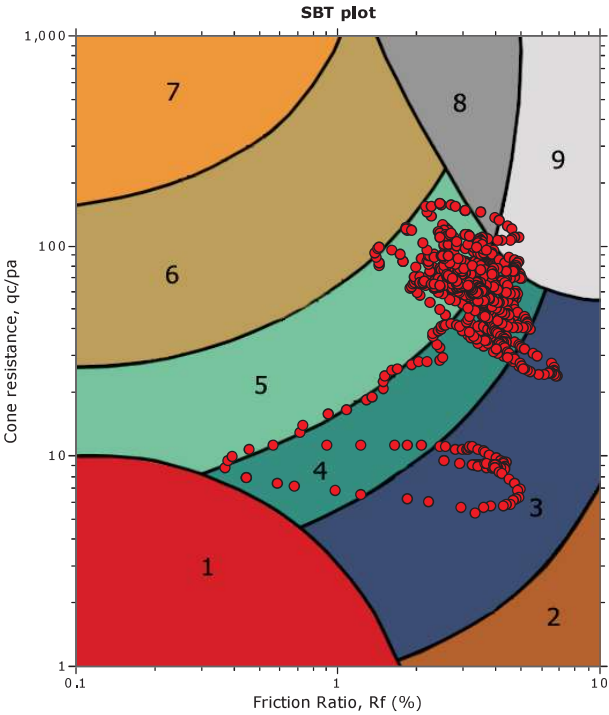
BIERREGI SRL
Via dell'Acquacalda 840/a
55100 Lucca
info@bierregilucca.it

Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

CPT: P20

Total depth: 9.27 m, Date: 13/01/2025
Coords: X:1642140.97, Y:4818962.95
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

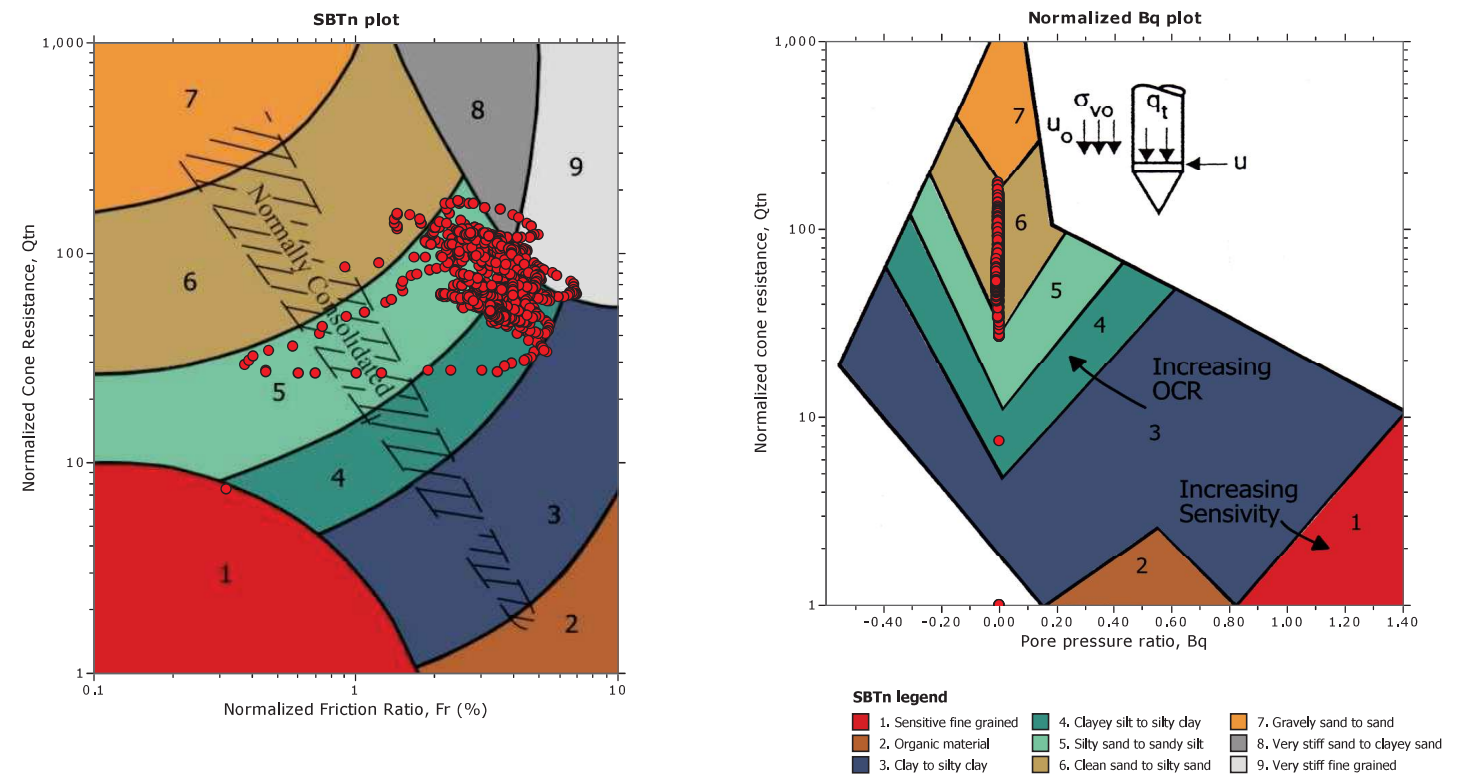
SBT - Bq plots



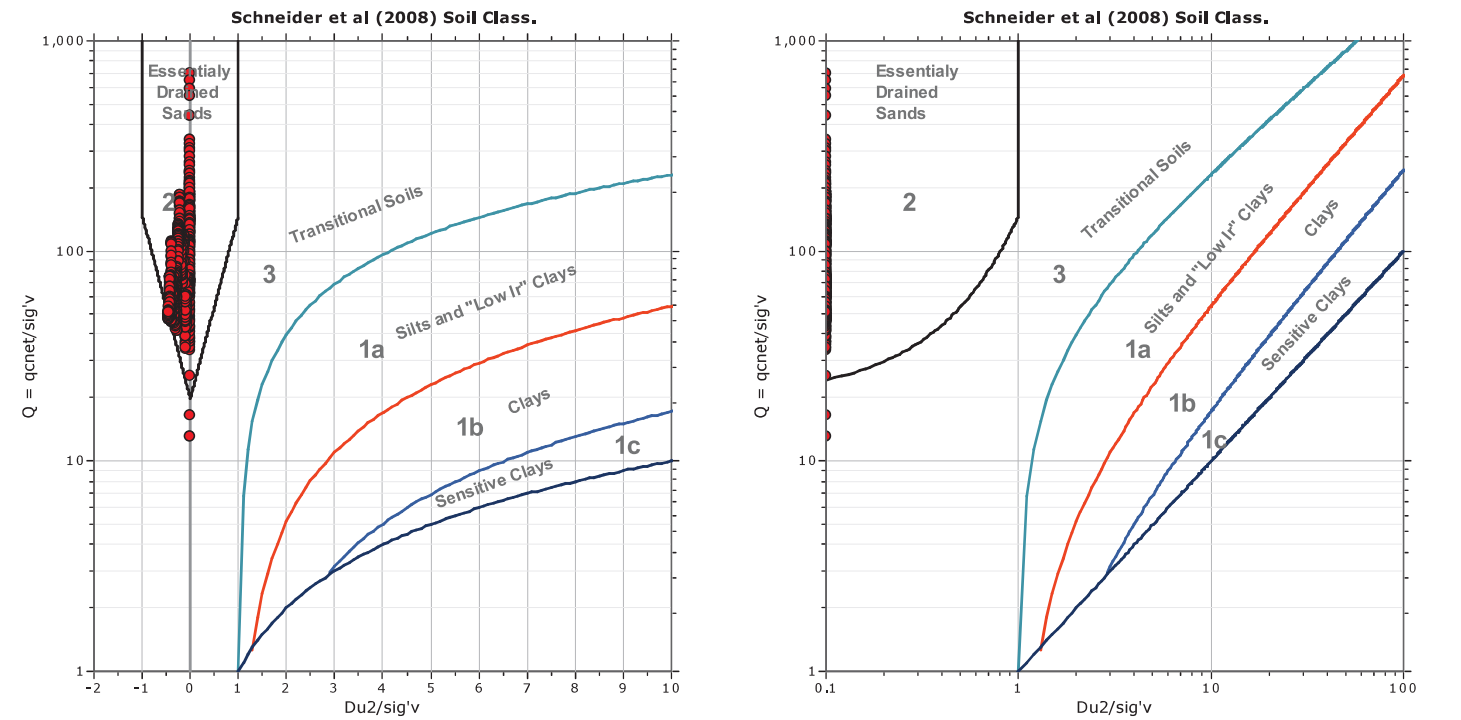
SBT legend

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

SBT - Bq plots (normalized)



Bq plots (Schneider)



Via dell'Acquacalda 840/a
55100 Lucca
info@bierregilucca.it

Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

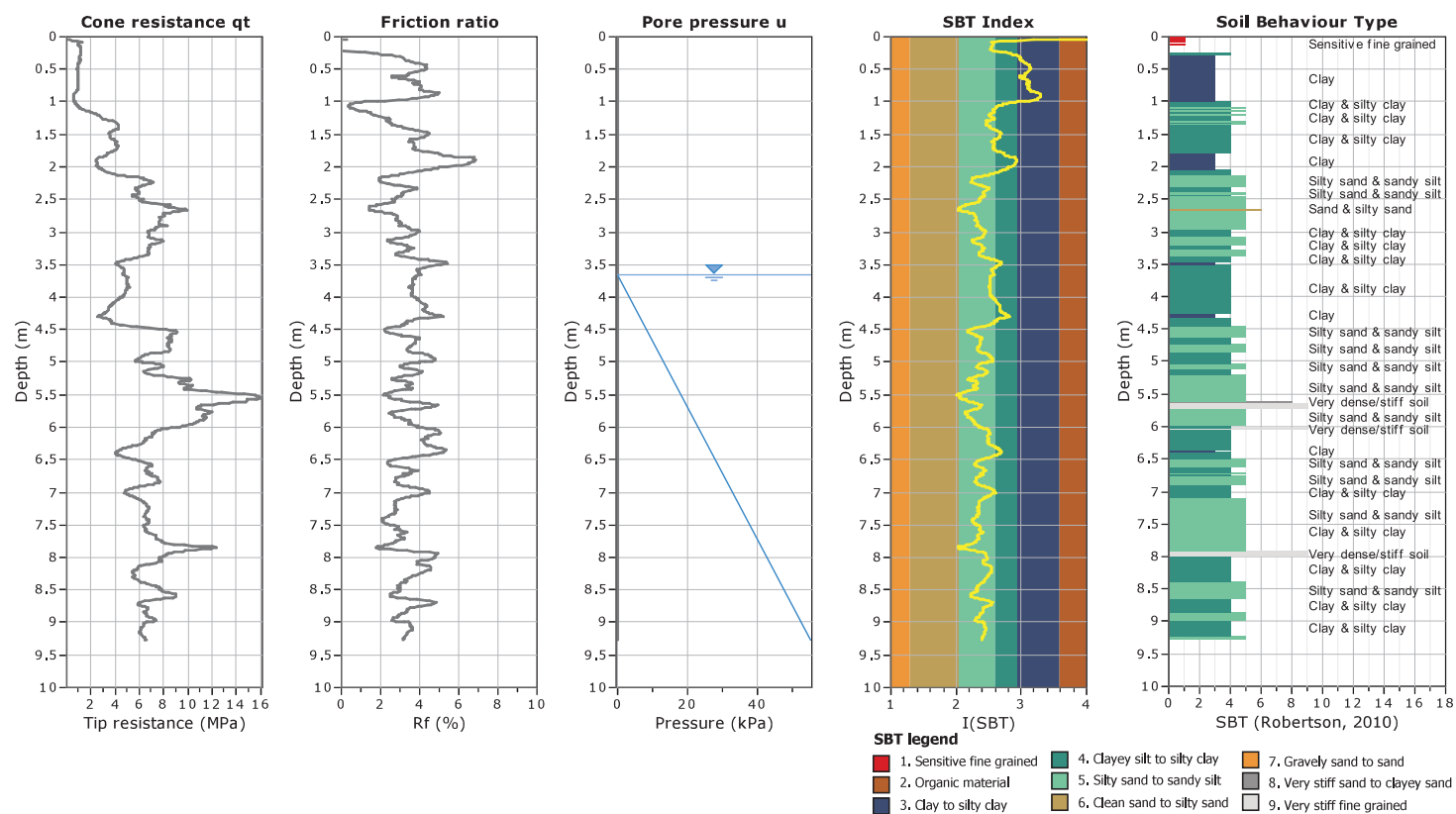
CPT: P20

Total depth: 9.27 m. Date: 13/01/2025

Coords: X:1642140.97, Y:4818962.95

Cone Type: P-C 001251

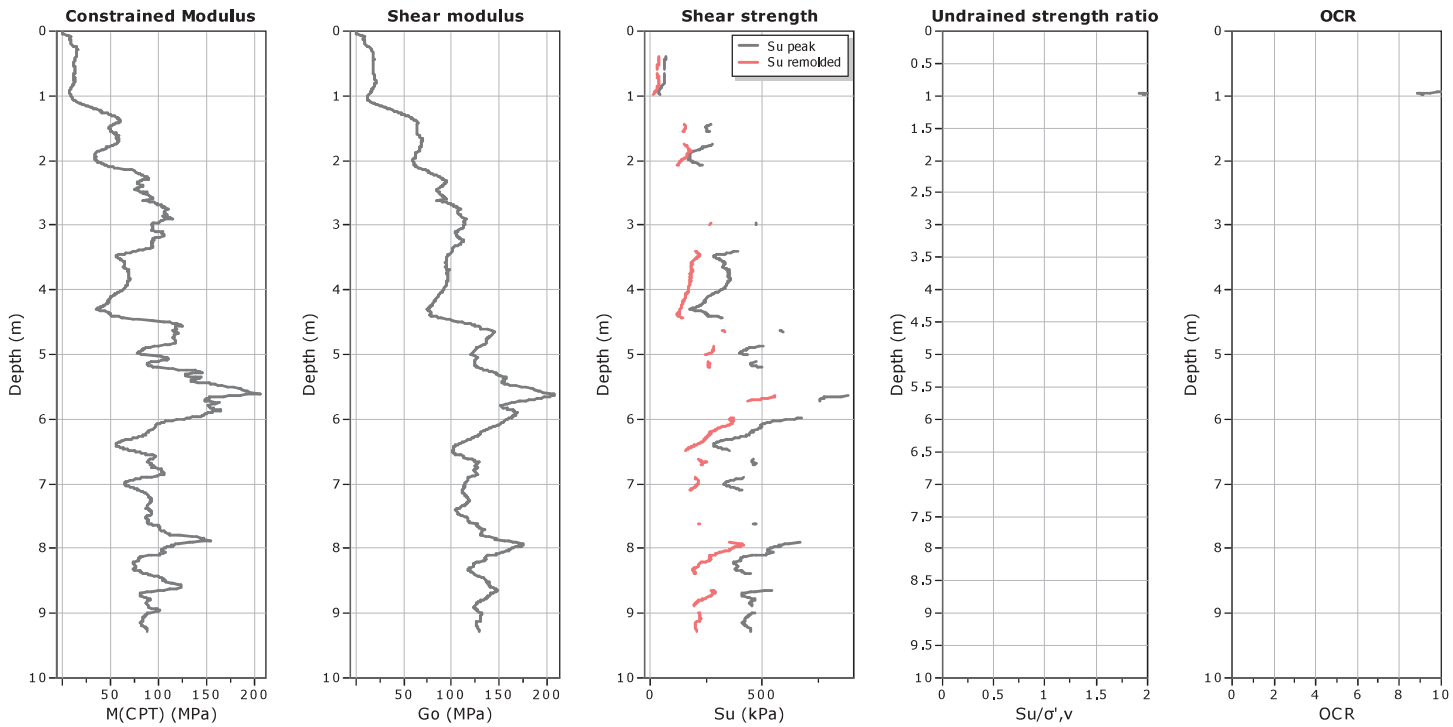
Cone Operator: Geol. Jacopo Civita



BIERREGI SRL
Via dell'Acquacalda 840/a
55100 Lucca
info@bierregilucca.it

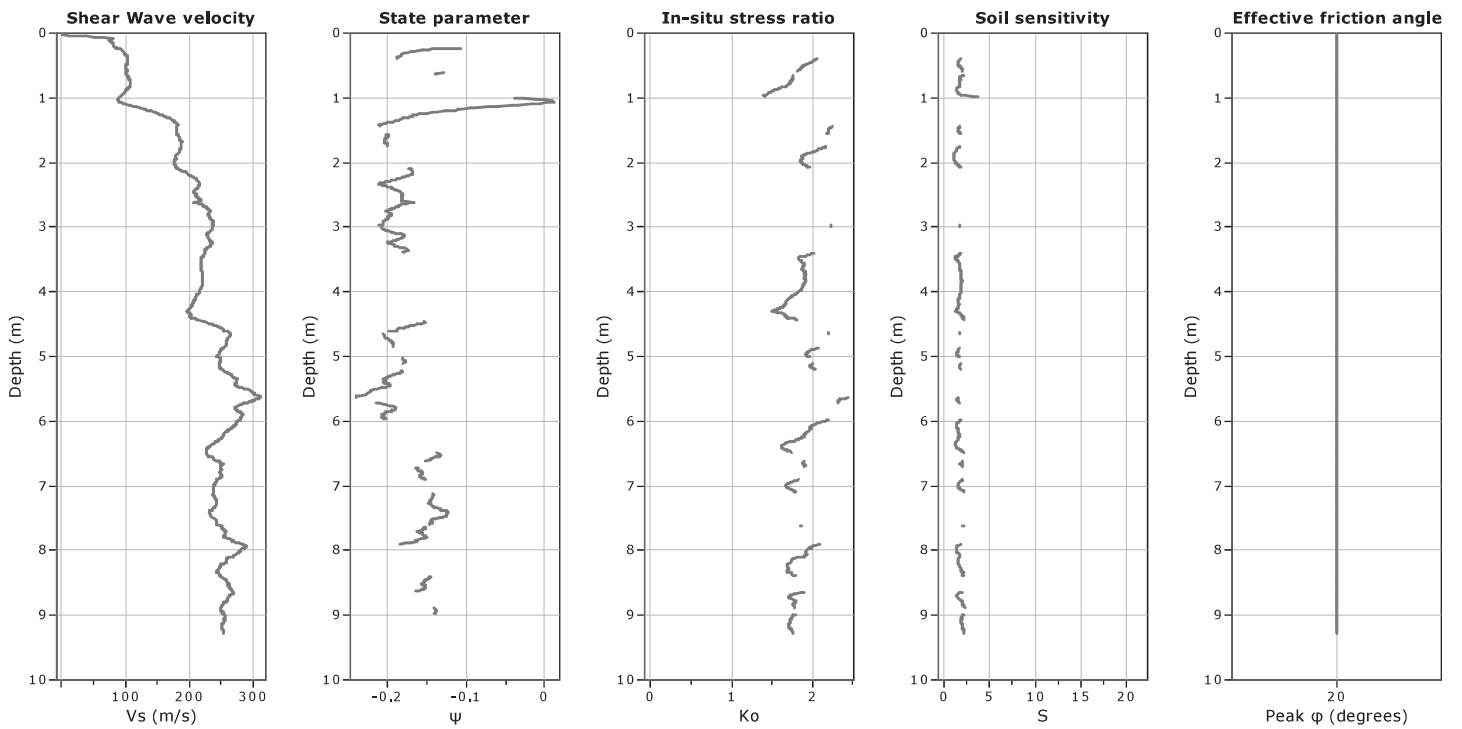
Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P20
Total depth: 9.27 m, Date: 13/01/2025
Coords: X:1642140.97, Y:4818962.95
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita



Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
 G_0 : Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14

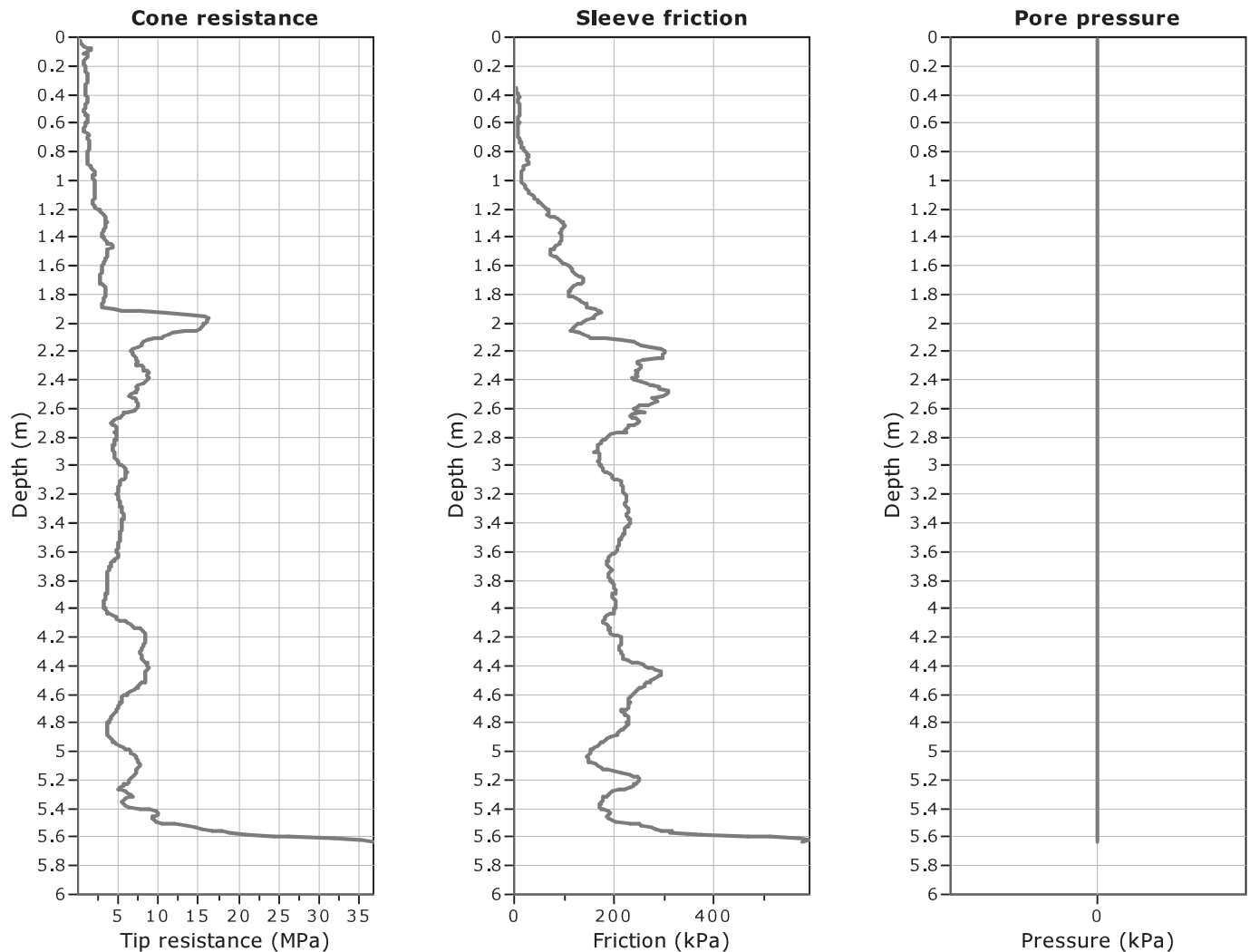
OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data



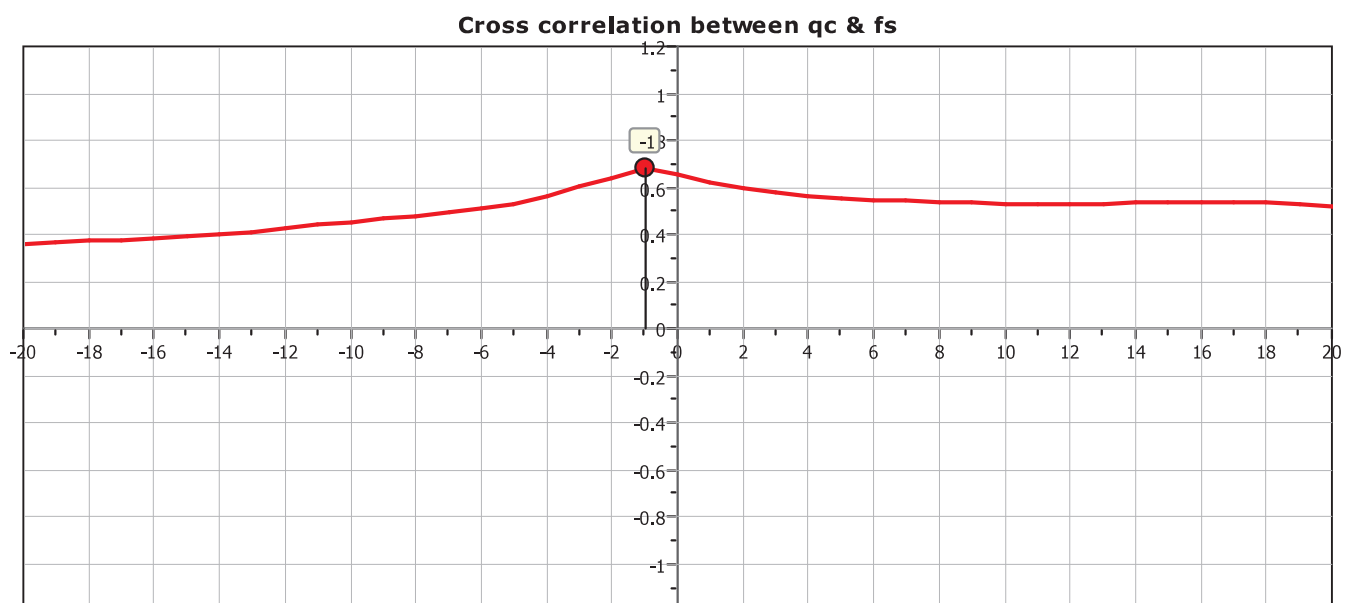
Calculation parameters
Soil Sensitivity factor, N_s : 7.00
—●— User defined estimation data

Project: NUOVA VIABILITA' FABBRICA

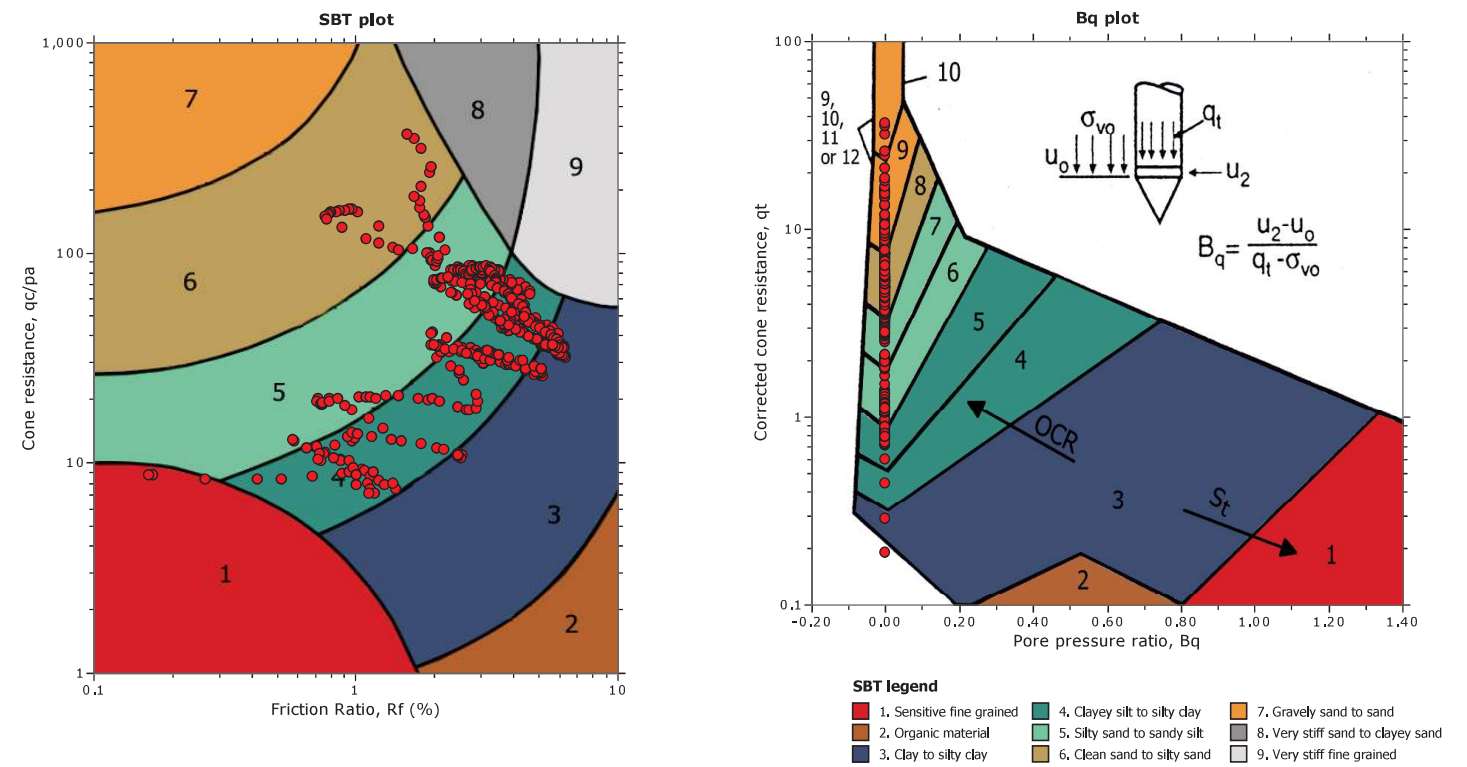
Location: Fabbrica - Peccioli (PI)



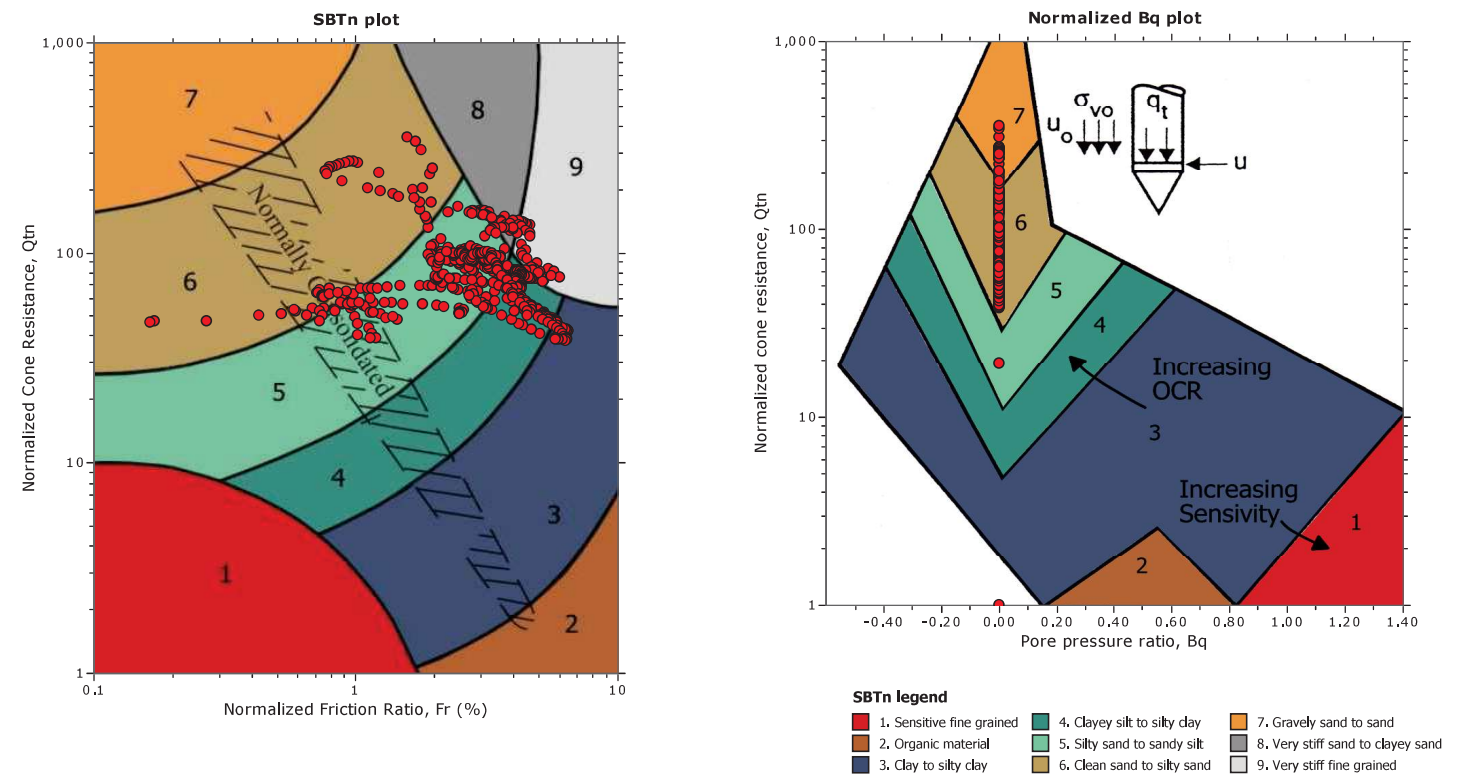
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



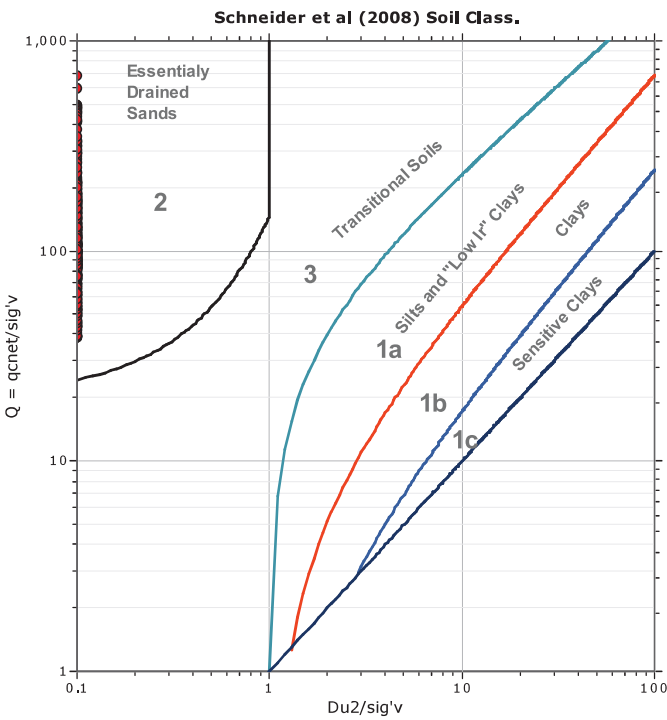
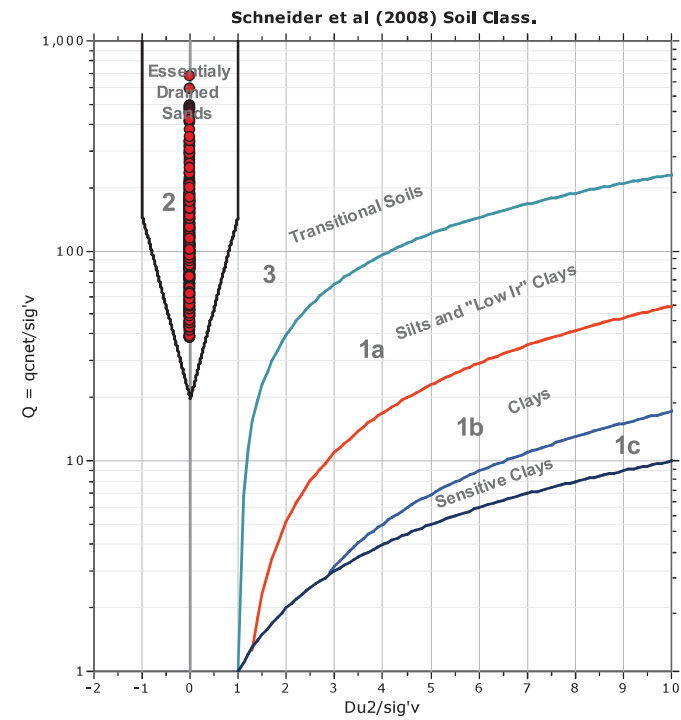
SBT - Bq plots

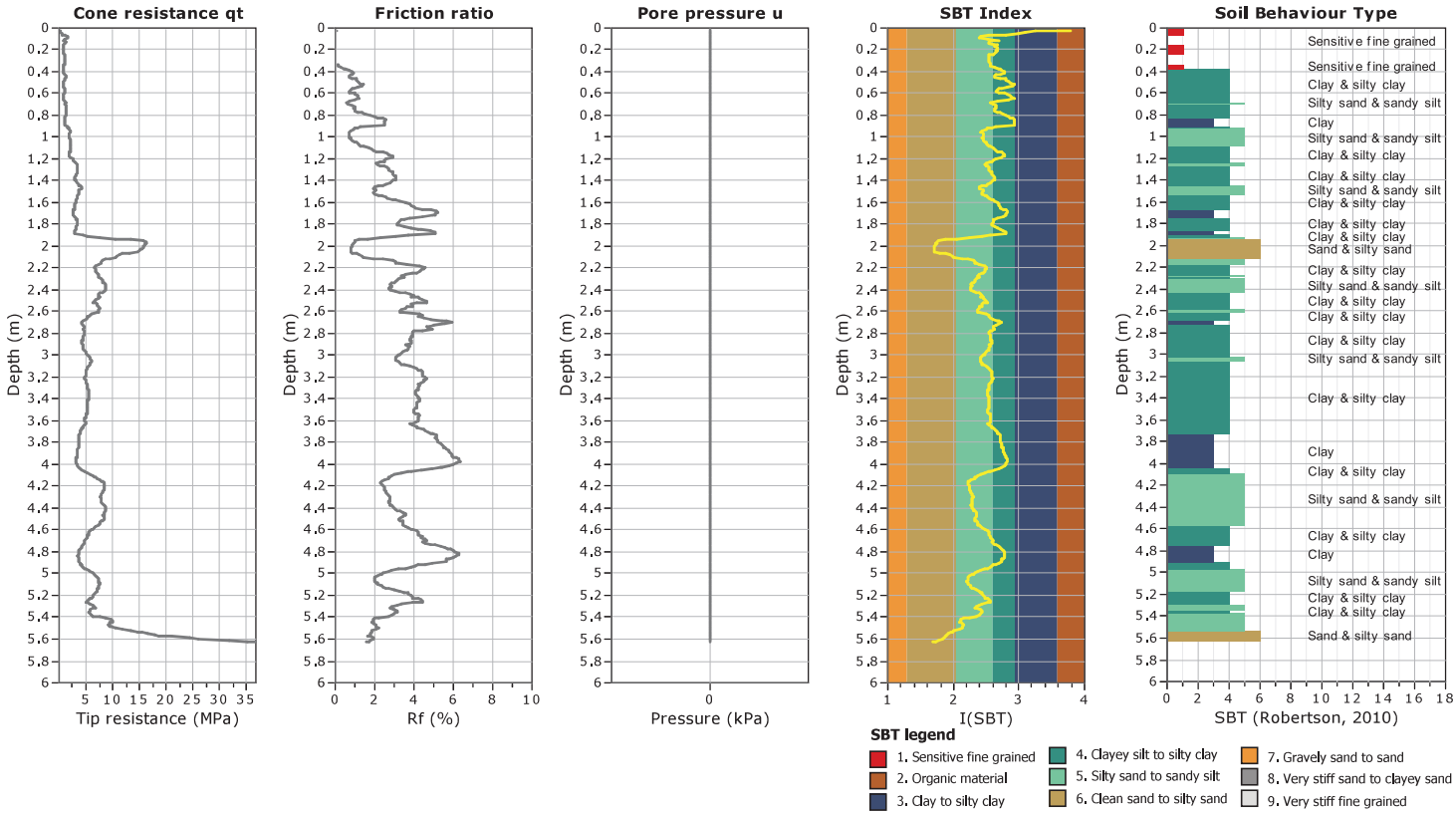


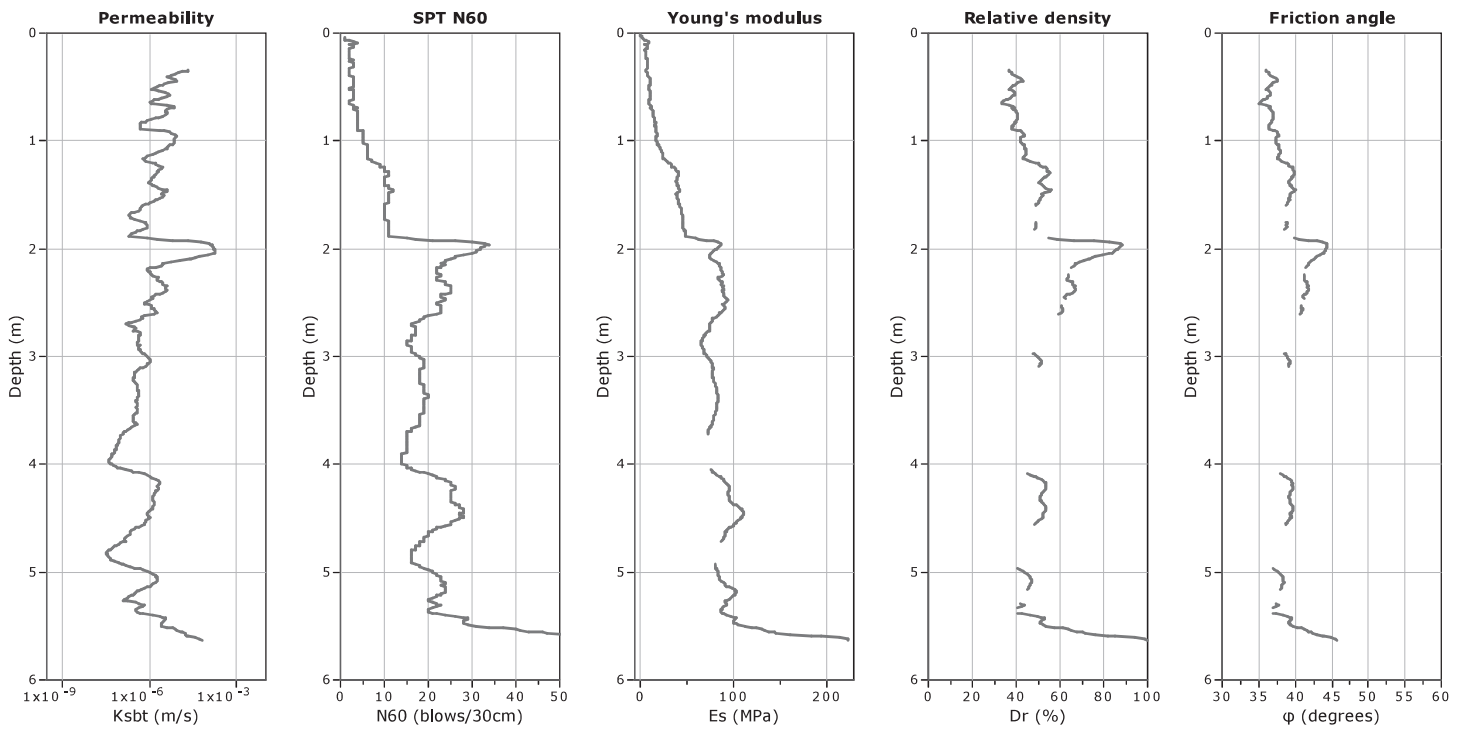
SBT - Bq plots (normalized)



Bq plots (Schneider)







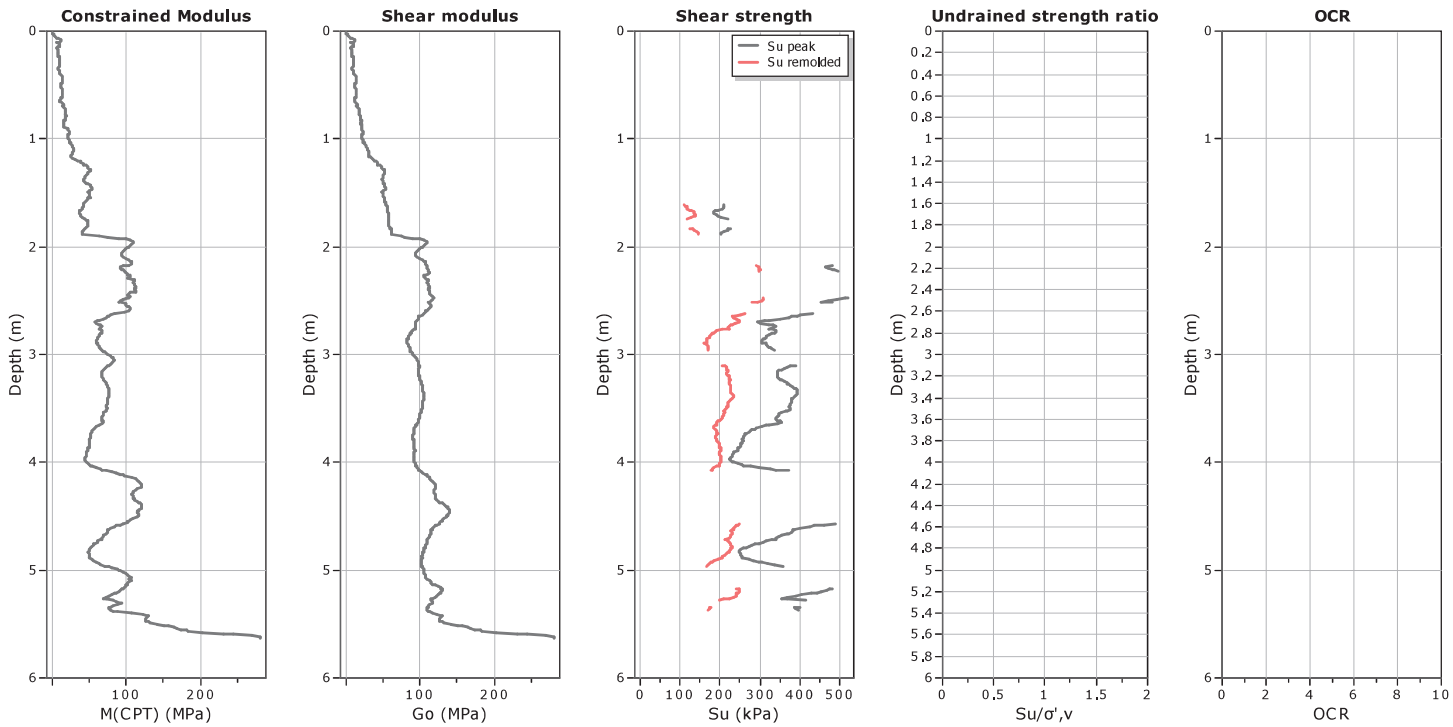
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative density constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
● — User defined estimation data

BIERREGI SRL
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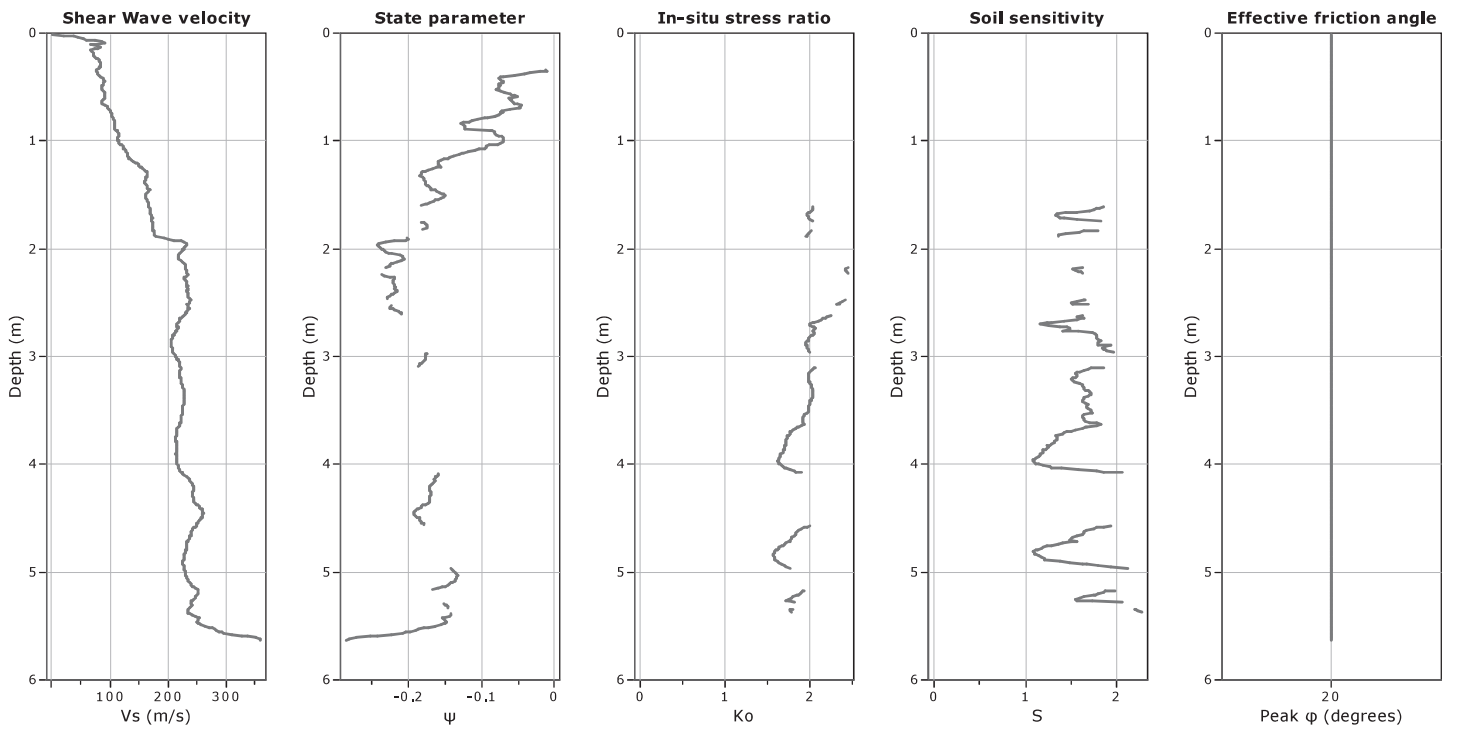
Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PT)

CPT: P22
Total depth: 5.63 m, Date: 15/01/2025
Coords: X:1642121.52, Y:4818976.59
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

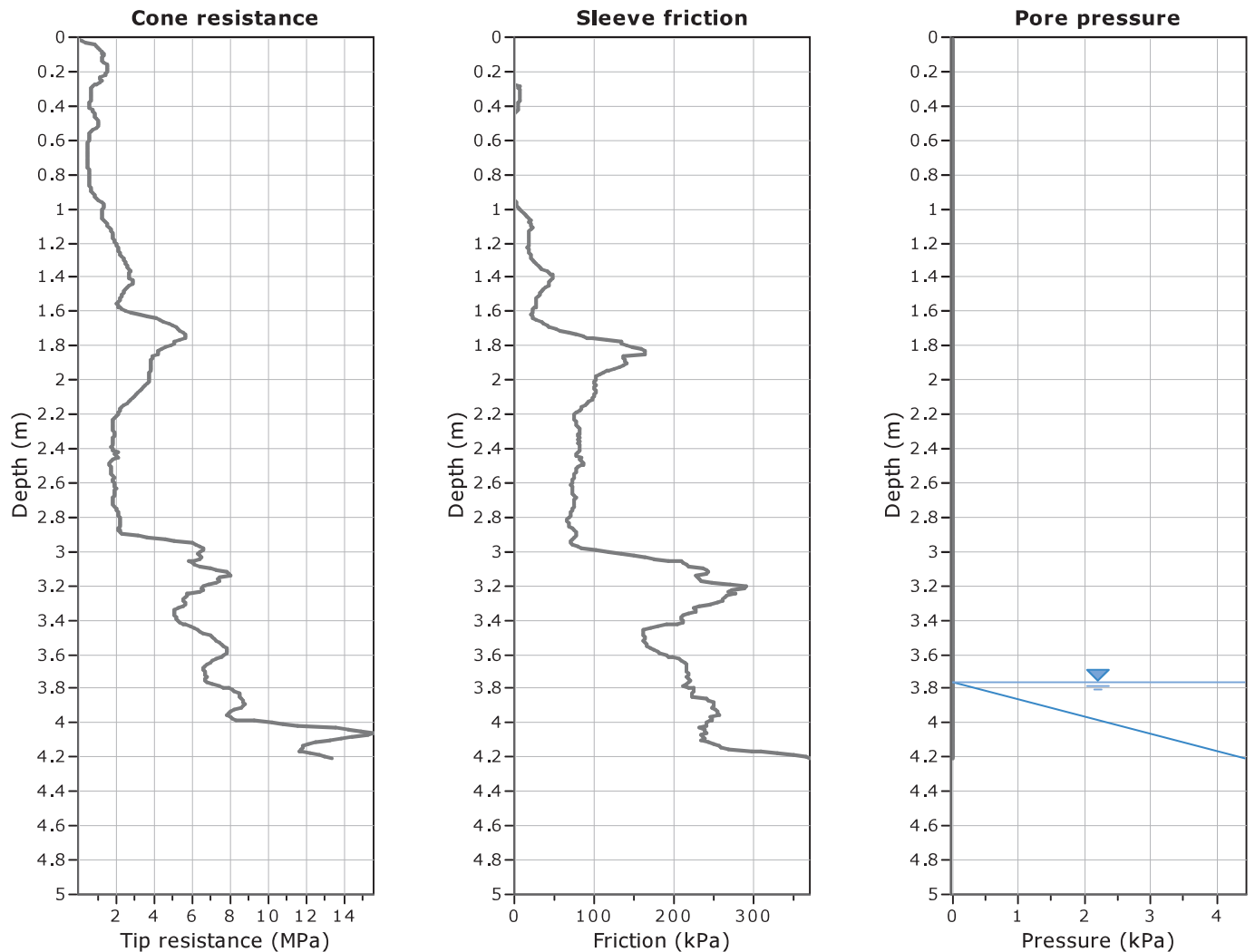


Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14

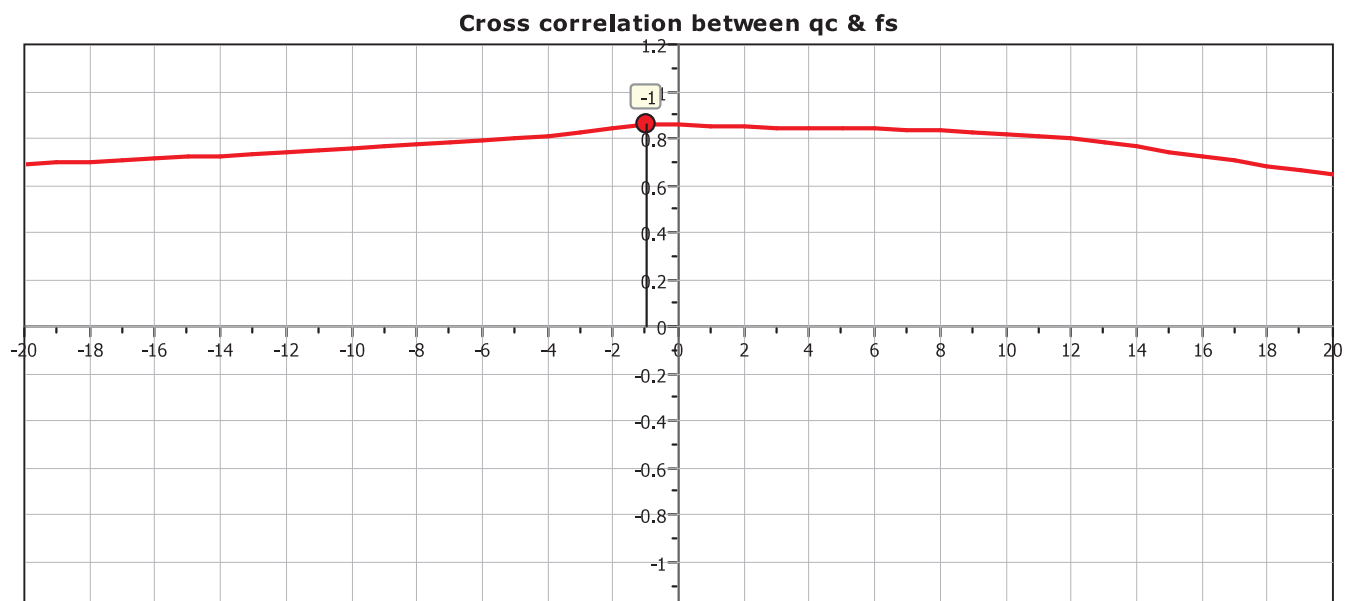
OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data



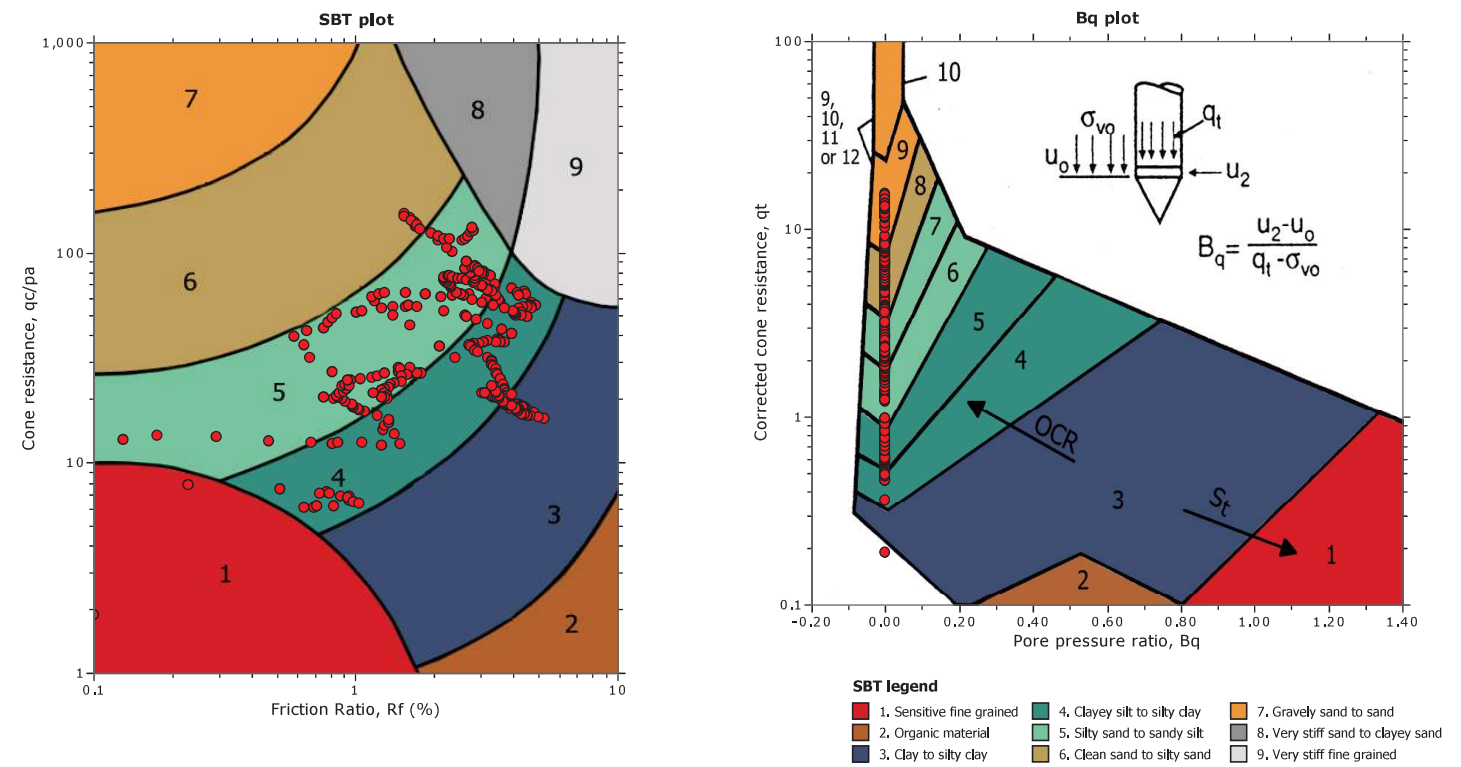
Calculation parameters
Soil Sensitivity factor, N_s : 7.00
—●— User defined estimation data



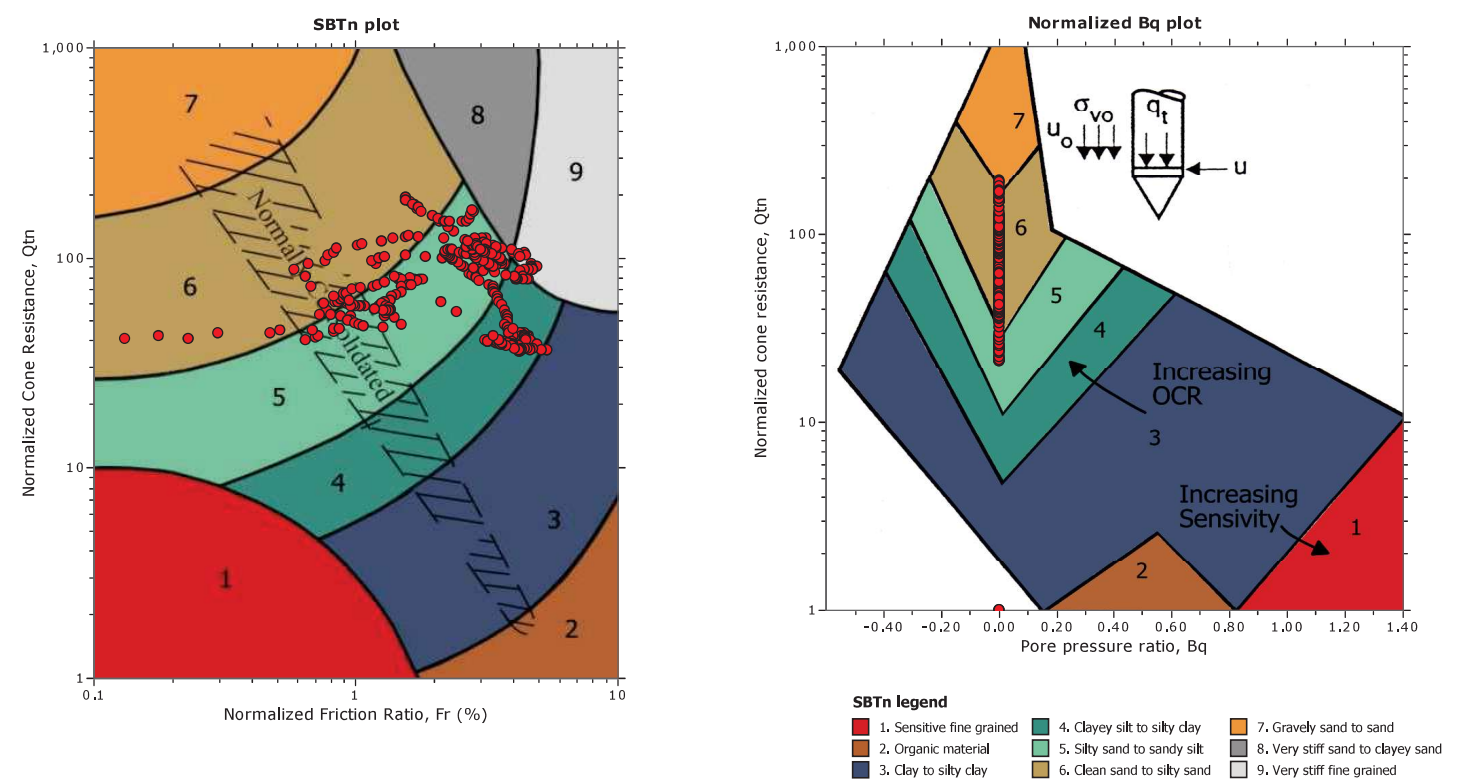
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



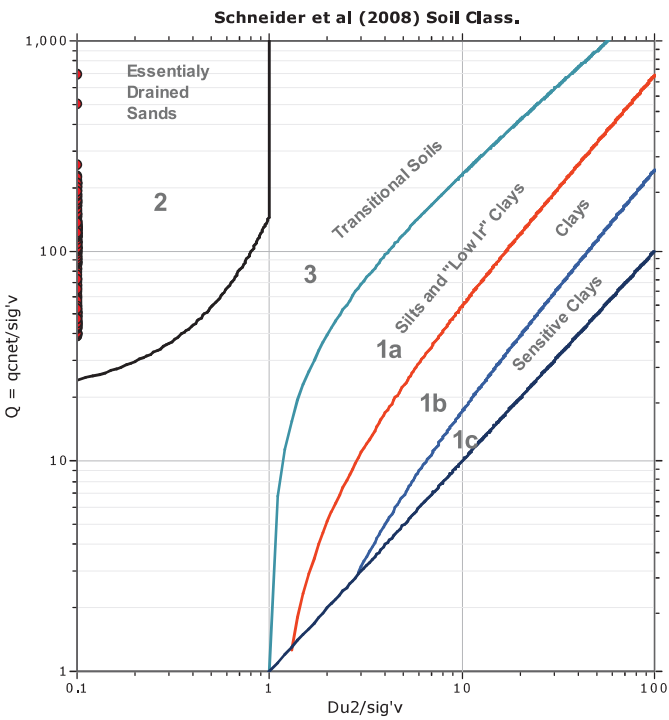
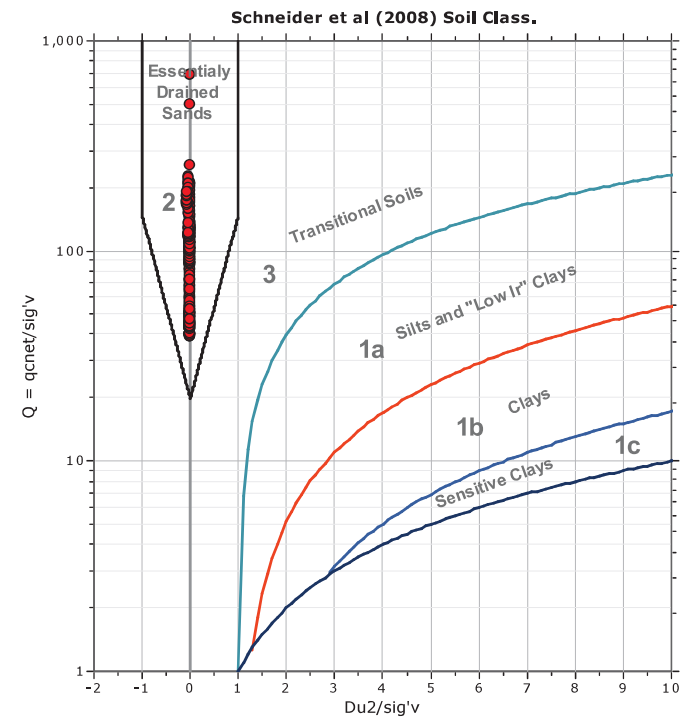
SBT - Bq plots



SBT - Bq plots (normalized)



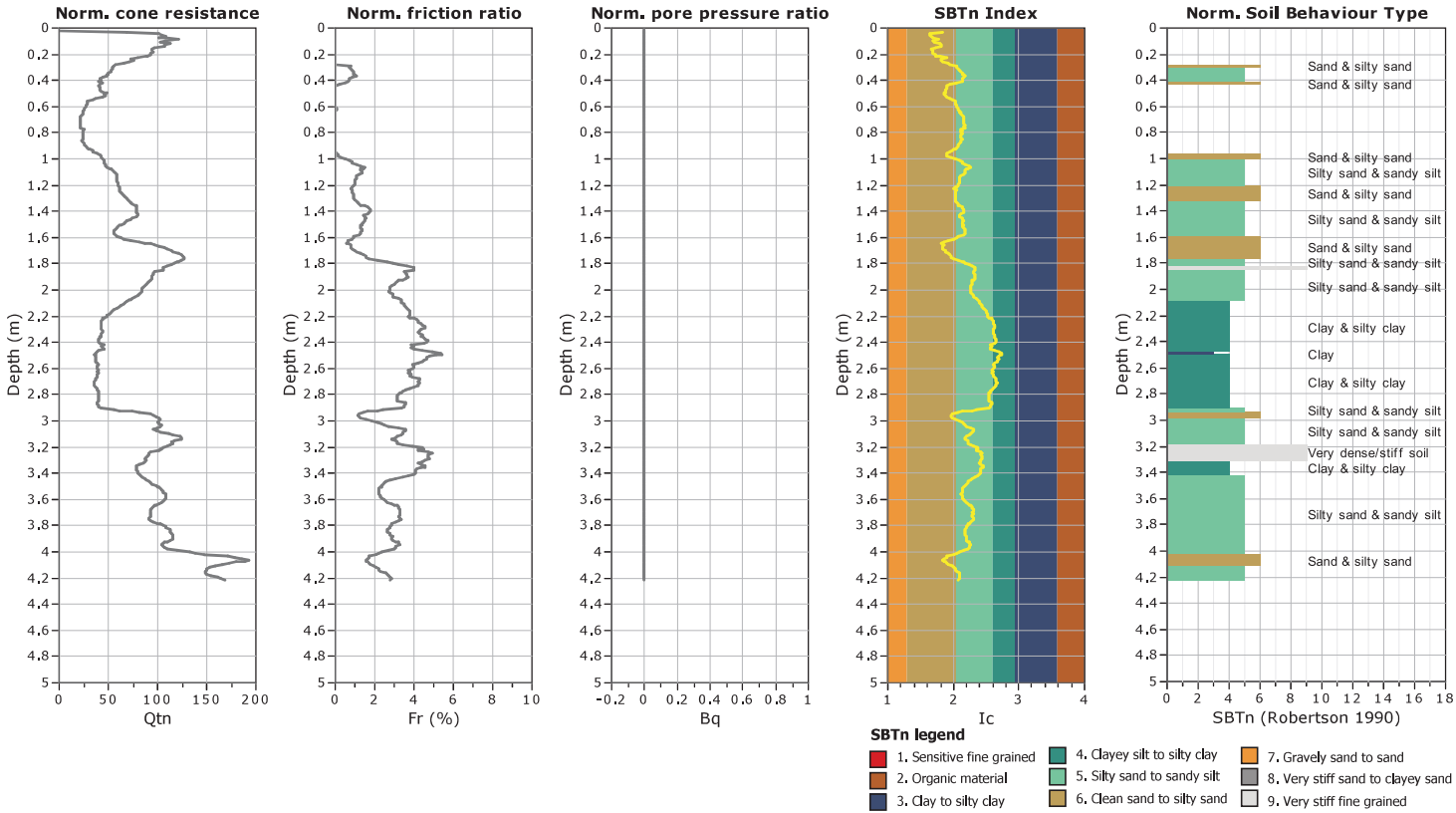
Bq plots (Schneider)

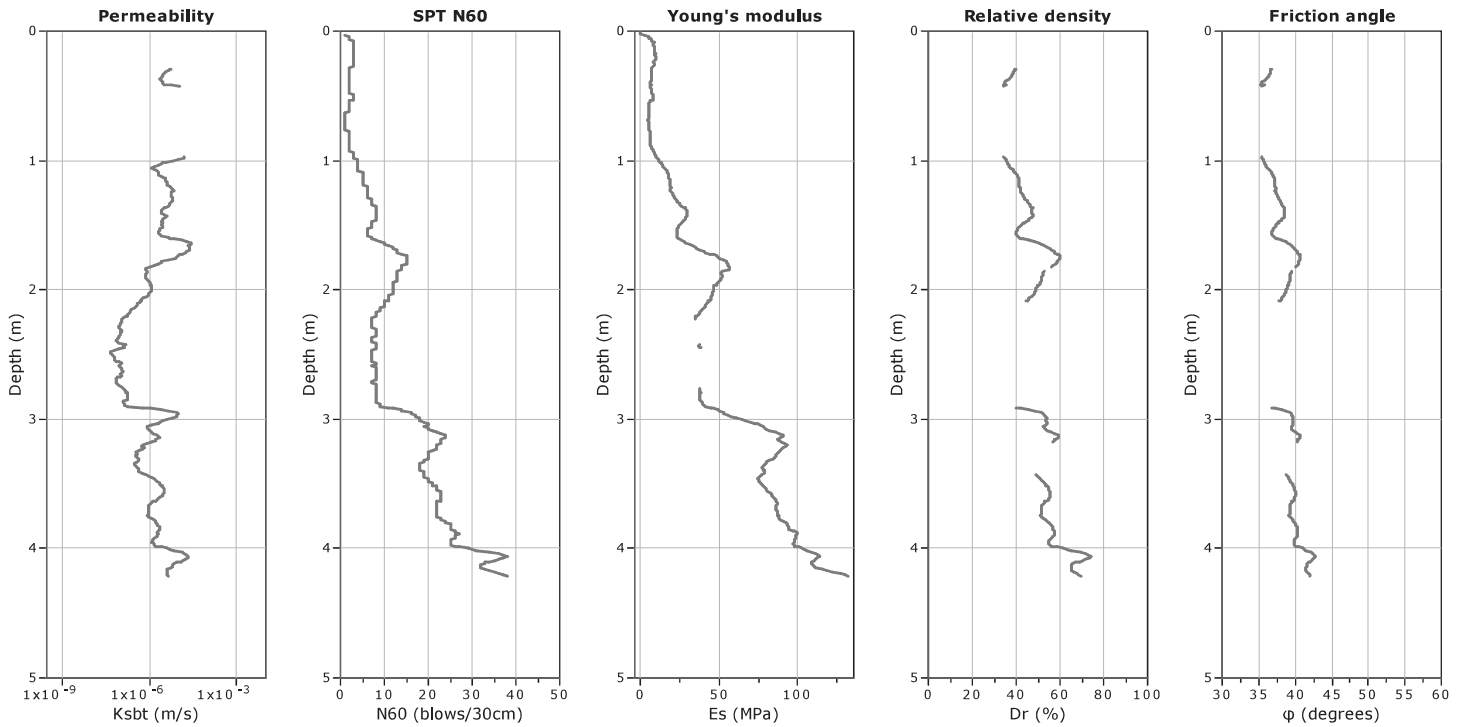


Project: NUOVA VIABILITA' FABBRICA
Location: Fabbrica - Peccioli (PI)

Total depth: 4.21 m, Date: 15/01/2025
Coords: X:1642105.45, Y:4818980.90
Cone Type: P-C 001251
Cone Operator: Geol. Jacopo Civita

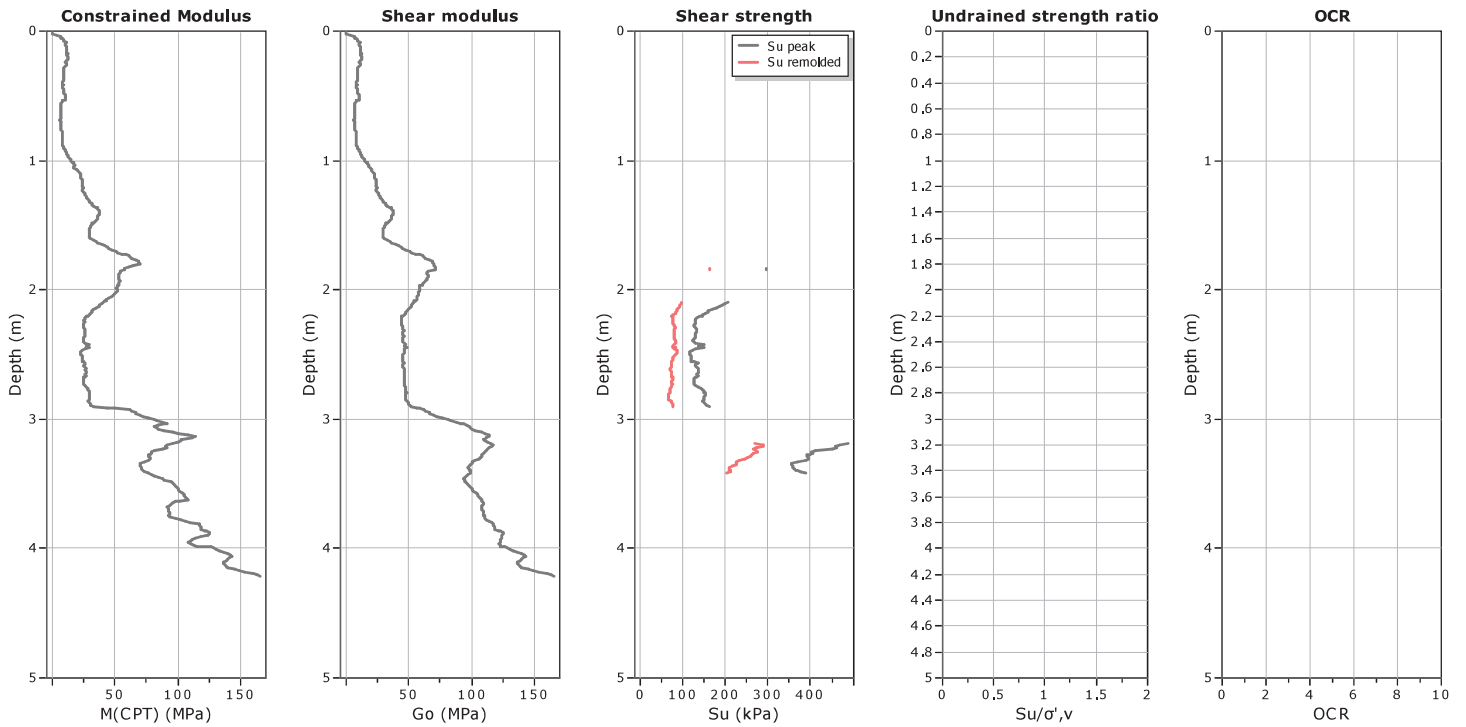






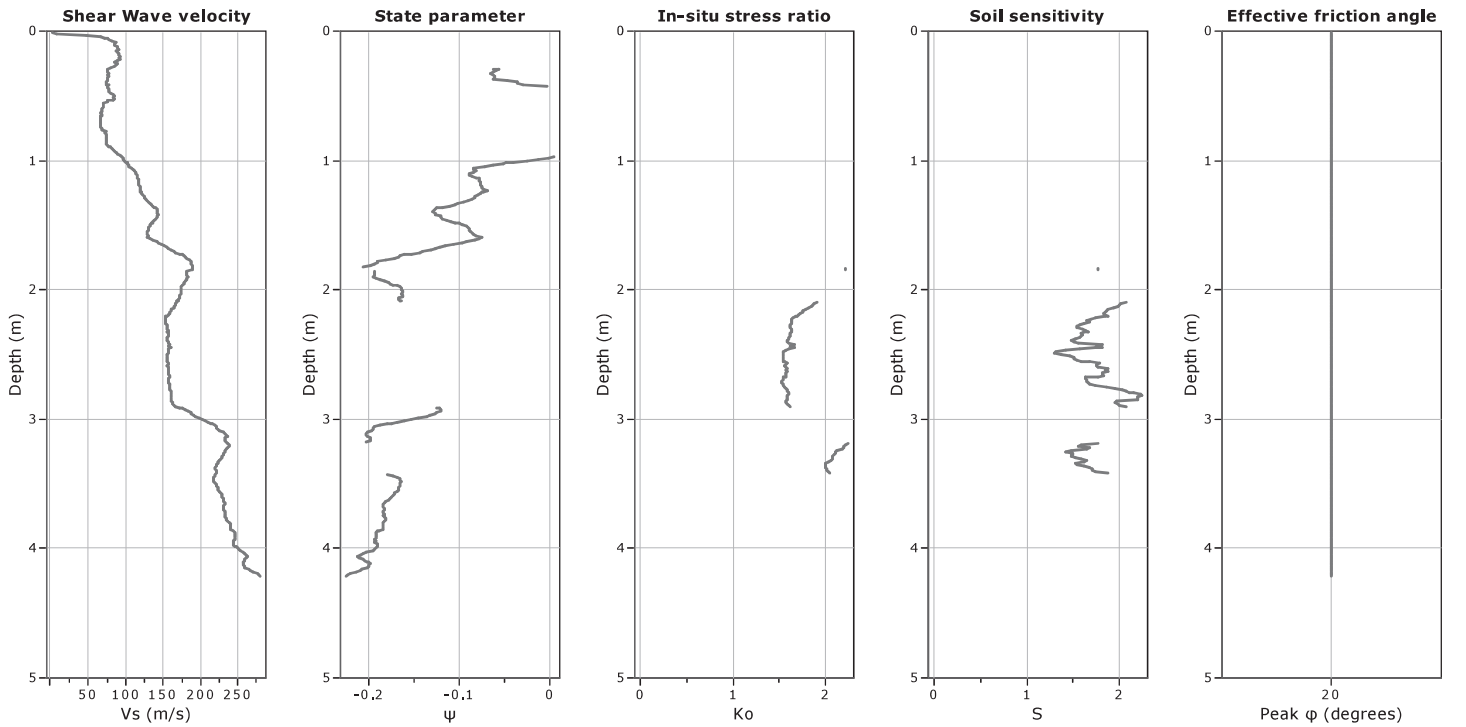
Calculation parameters
Permeability: Based on SBT_n
SPT N_{60} : Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative desnisty constant, C_{Dr} : 350.0
Phi: Based on Kulhawy & Mayne (1990)
● User defined estimation data



Calculation parameters
Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)
Go: Based on variable α using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt} : 14

OCR factor for clays, N_{kt} : 0.33
—●— User defined estimation data



Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

:: Unit Weight, g (kN/m³) ::

$$g = g_w \cdot \left(0.27 \cdot \log(R_f) + 0.36 \cdot \log\left(\frac{q_t}{p_a}\right) + 1.236 \right)$$

where g_w = water unit weight

:: Permeability, k (m/s) ::

$$I_c < 3.27 \text{ and } I_c > 1.00 \text{ then } k = 10^{0.952 - 3.04 \cdot I_c}$$

$$I_c \leq 4.00 \text{ and } I_c > 3.27 \text{ then } k = 10^{-4.52 - 1.37 \cdot I_c}$$

:: N_{SPT} (blows per 30 cm) ::

$$N_{60} = \left(\frac{q_c}{p_a} \right) \cdot \frac{1}{10^{1.1268 - 0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268 - 0.2817 \cdot I_c}}$$

:: Young's Modulus, E_s (MPa) ::

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c_cutoff}$)

:: Relative Density, Dr (%) ::

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}} \quad \text{(applicable only to } SBT_n: 5, 6, 7 \text{ and } 8 \text{ or } I_c < I_{c_cutoff})$$

:: State Parameter, ψ ::

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

:: Peak drained friction angle, ϕ (°) ::

$$\phi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n: 5, 6, 7 \text{ and } 8$)

:: 1-D constrained modulus, M (MPa) ::

If $I_c > 2.20$

$$a = 14 \text{ for } Q_{tn} > 14$$

$$a = Q_{tn} \text{ for } Q_{tn} \leq 14$$

$$M_{CPT} = a \cdot (q_t - \sigma_v)$$

If $I_c \leq 2.20$

$$M_{CPT} = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 \cdot I_c + 1.68}$$

:: Small strain shear Modulus, G_0 (MPa) ::

$$G_0 = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 \cdot I_c + 1.68}$$

:: Shear Wave Velocity, V_s (m/s) ::

$$V_s = \left(\frac{G_0}{\rho} \right)^{0.50}$$

:: Undrained peak shear strength, S_u (kPa) ::

$$N_{kt} = 10.50 + 7 \cdot \log(F_r) \text{ or user defined}$$

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Remolded undrained shear strength, $S_u(rem)$ (kPa) ::

$$S_{u(rem)} = f_s \quad \text{(applicable only to } SBT_n: 1, 2, 3, 4 \text{ and } 9 \text{ or } I_c > I_{c_cutoff})$$

:: Overconsolidation Ratio, OCR ::

$$k_{OCR} = \left[\frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 + 7 \cdot \log(F_r))} \right]^{1.25} \text{ or user defined}$$

$$OCR = k_{OCR} \cdot Q_{tn}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: In situ Stress Ratio, K_0 ::

$$K_0 = (1 - \sin \phi') \cdot OCR^{\sin \phi'}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Soil Sensitivity, S_t ::

$$S_t = \frac{N_s}{F_r}$$

(applicable only to $SBT_n: 1, 2, 3, 4 \text{ and } 9$ or $I_c > I_{c_cutoff}$)

:: Effective Stress Friction Angle, ϕ' (°) ::

$$\phi' = 29.5^\circ \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

References

- Robertson, P.K., Cabal K.L., Guide to Cone Penetration Testing for Geotechnical Engineering, Gregg Drilling & Testing, Inc., 5th Edition, November 2012
- Robertson, P.K., Interpretation of Cone Penetration Tests - a unified approach., Can. Geotech. J. 46(11): 1337–1355 (2009)

Allegato F

**Certificati di taratura del
Piezocono**

CONE CALIBRATION CERTIFICATE

N° Z163/24 **10/07/2024**

Calibrated system (Sistema tarato):

Type P-C

Serial number

001251

Sensor

TIP RESISTANCE

Max. Capacity [MPa]:

50

Scaling Factor:

183700

Tip net area ratio (a_n):

0,79

Sleeve net ratio (b_n):

0,00

Addressee (destinatario):

Bierregi srl

via dell'Acqua Calda 840a

55100 Lucca

Applied load measurement system:

(Sistema di rilevamento del carico applicato)

Load cell:

Manufacturer

AEP transducers

Model

KAL 50 kN

Serial Number

65495

Power press:

Manufacturer

Easydur Italiana

Model

Aura 10T

Serial Number

29002

The measurement system is periodically checked in a SIT

calibration center. (Il sistema di rilevamento è sottoposto a

verifica periodica presso un centro SIT)

Last verification date:

11/01/2024

Certificate N.

LAT 091 2024-009

Temperature of calibration

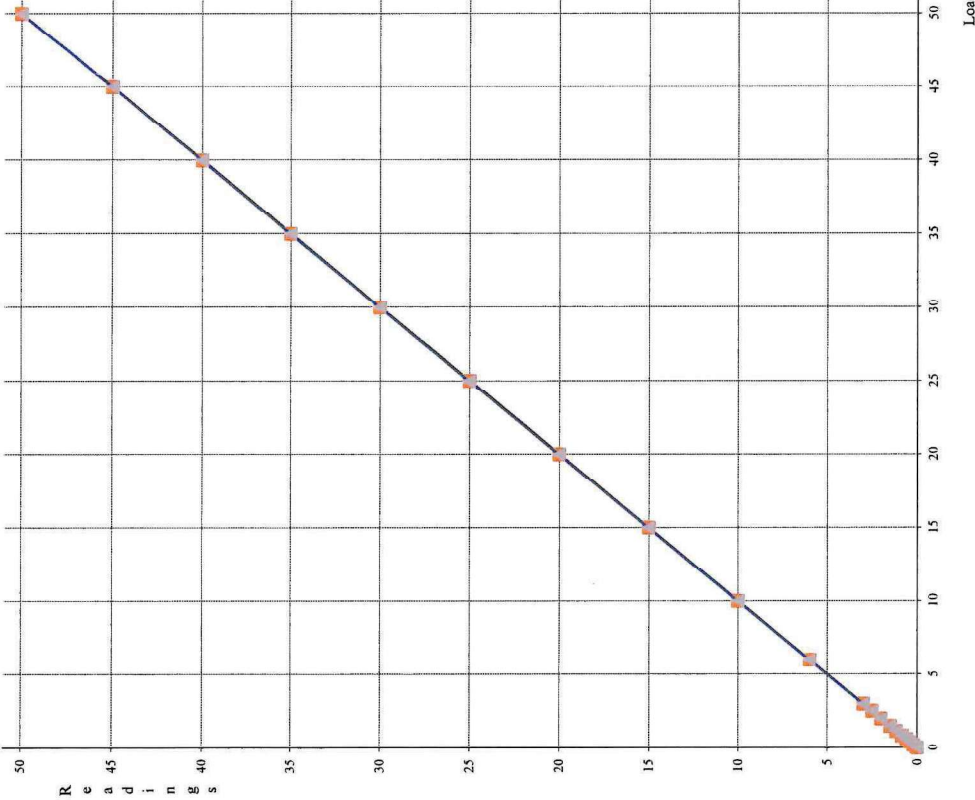
22°C

Humidity

45%

Factory calibration in accordance with:

ASTM D5778-12 Validity 12 Months



	Ascending		Descending	
	Load	Readings	Load	Readings
1	0,00	0,01	0,00	0,01
2	0,03	0,03	0,03	0,03
3	0,20	0,20	0,20	0,21
4	0,40	0,40	0,40	0,40
5	0,60	0,60	0,60	0,60
6	0,85	0,85	0,85	0,86
7	1,15	1,15	1,15	1,15
8	1,50	1,50	1,50	1,51
9	2,00	2,00	2,00	2,01
10	2,50	2,50	2,50	2,51
11	3,00	3,00	3,00	3,01
12	6,00	6,00	6,00	6,02
13	10,00	10,00	10,00	10,02
14	15,00	15,00	15,00	15,04
15	20,00	20,01	20,00	20,04
16	25,00	25,01	25,00	25,05
17	30,00	30,01	30,00	30,04
18	35,00	35,01	35,00	35,04
19	40,00	40,02	40,00	40,04
20	45,00	45,01	45,00	45,02
21	50,00	50,00	50,00	50,00

Unit: Mpa			
Zero-load error:	=	0,000	% FSO
Zero-load thermal stability:	<=	1,000	% FSO
Nonlinearity:	=	0,032	% FSO
Hysteresis:	=	0,066	% FSO
Calibration error:	=	0,000	% MO
Apparent load:	=	0,011	% FSO

The adopted calibration procedure has been developed according to the suggestions given by
Prof. Paul W. Mayne (Georgia Institute of technology) and Prof. Diego Lo Presti (University of Pisa)

[Signature]

Cone calibrated by

Date of issue 10/07/2024

CONE CALIBRATION CERTIFICATE

N° Z163/24 **10/07/2024**

Calibrated system (Sistema tarato):

Type	P-C
Serial number	001251
Sensor	SLEEVE FRICTION
Max. Capacity [kPa]:	1600
Scaling Factor:	31558

Addressee (destinatario) :

Bierregi srl
via dell'Acqua Calda 840a
55100 Lucca

Applied load measurement system:

(Sistema di rilevamento del carico applicato)

Load cell:

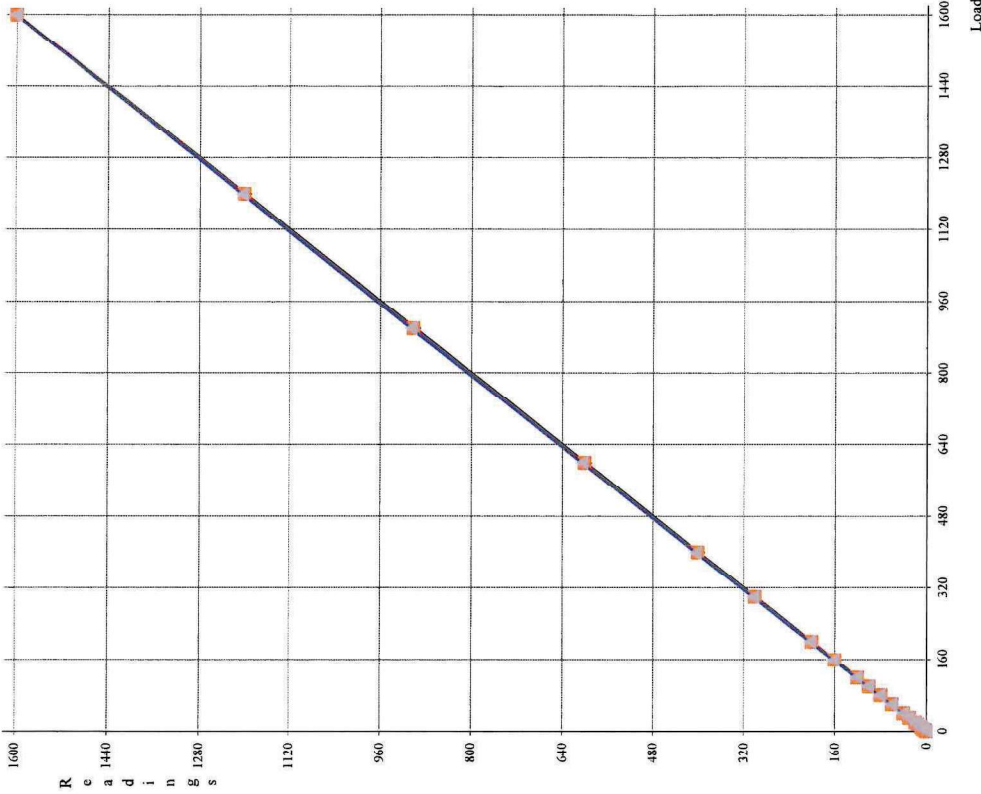
Manufacturer	AEP transducers
Model	KAL 50 kN
Serial Number	65495
Power press:	
Manufacturer	Easydur Italiana
Model	Aura 10T
Serial Number	29002

The measurement system is periodically checked in a SIT calibration center. (Il sistema di rilevamento è sottoposto a verifica periodica presso un centro SIT)

Last verification date:	11/01/2024
Certificate N.	LAT 091 2024-009
Temperature of calibration	22°C
Humidity	45%

Factory calibration in accordance with :

ASTM D5778-12 Validity 12 Months



Unit: kPa

Zero-load error:	=	0,025	% FSO
thermal stability:	<=	1,000	% FSO
Nonlinearity:	=	0,150	% FSO
Hysteresis:	=	0,271	% FSO
Calibration error:	=	0,000	% MO
Apparent load:	=	0,085	% FSO

The adopted calibration procedure has been developed according to the suggestions given by
Prof. Paul W. Mayne (Georgia Institute of technology) and Prof. Diego Lo Presti (University of Pisa)

Cone calibrated by

Date of issue 10/07/2024

CONE CALIBRATION CERTIFICATE

N° **Z163/24** 10/07/2024

Calibrated system (Sistema tarato):

Type	P-C
Serial number	001251
Sensor	PORE PRESSURE
Max. Capacity [kPa]:	2500
Sealing Factor:	10795

Sensor

Max. Inclination [°]:

Sealing Factor: **337368**

Addressee (destinatario):

Bierregi srl
via dell'Acqua Calda 840a
55100 Lucca

Applied load measurement system:
(Sistema di rilevamento del carico applicato)

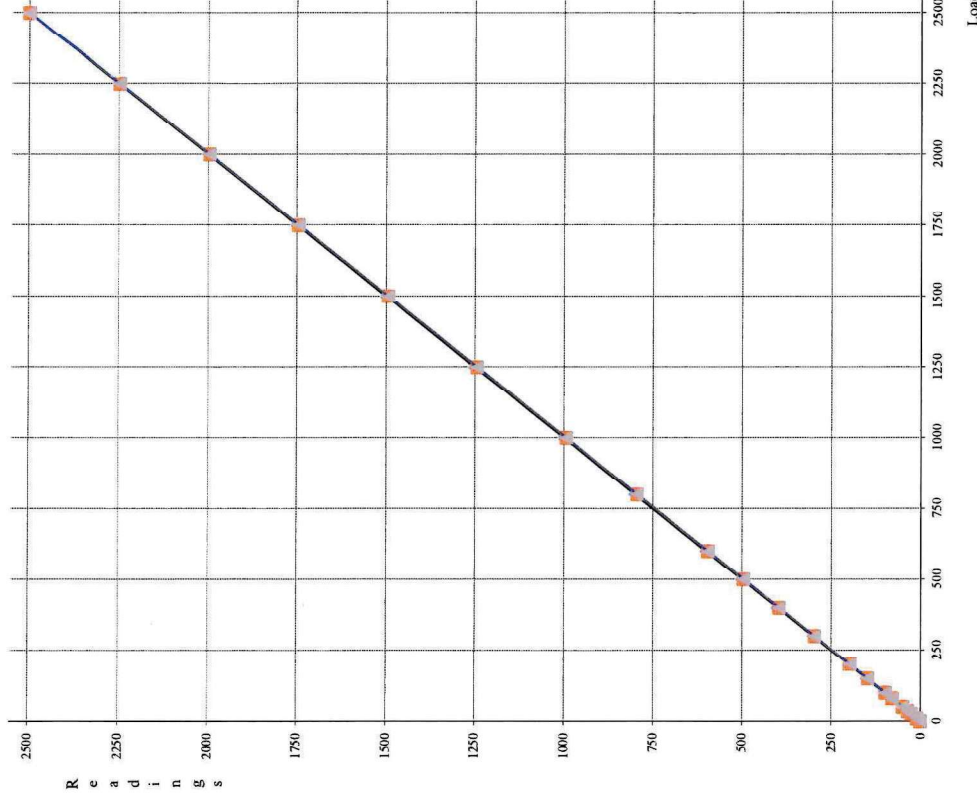
Pressure Generator:	MENSOR
Manufacturer	CPC 4000
Model	41000V56
Serial Number	Silicon Pressure Transducer
Sensor Descr	41000V3Y
Sensor Serial Number	

The measurement system is periodically checked in a SIT calibration center. (Il sistema di rilevamento è sottoposto a verifica periodica presso un centro SIT)

Last verification date:	09/05/2024
Certificate N.	0269-SP-24
Temperature of calibration	22°C
Humidity	45%

Factory calibration in accordance with:

ASTM D5778-12 Validity 12 Months



	Ascending		Descending	
	Load	Readings	Load	Readings
1	0,20	0,00	0,10	0,00
2	10,00	9,70	10,00	9,60
3	25,00	24,60	25,00	24,50
4	35,00	34,50	35,00	34,30
5	50,00	49,30	50,00	49,00
6	80,00	78,90	80,00	78,60
7	100,00	98,70	100,00	98,40
8	150,00	148,20	150,00	147,80
9	200,00	197,80	200,00	197,30
10	300,00	296,80	300,00	296,20
11	400,00	396,00	400,00	395,50
12	500,00	495,30	500,00	494,70
13	600,00	594,80	600,00	594,20
14	800,00	794,10	800,00	793,70
15	1000,00	994,00	1000,00	993,50
16	1250,00	1244,10	1250,00	1243,70
17	1500,00	1494,60	1499,90	1494,30
18	1750,00	1745,60	1750,00	1745,20
19	2000,00	1996,80	1999,90	1996,40
20	2250,00	2248,20	2249,90	2248,10
21	2500,00	2500,00	2500,00	2500,10

Unit: kPa

Zero-load error:	=	0,004	% FSO
Nonlinearity:	=	0,240	% FSO

The adopted calibration procedure has been developed according to the suggestions given by
Prof. Paul W. Mayne (Georgia Institute of technology) and Prof. Diego Lo Presti (University of Pisa)

Cone calibrated by

Date of issue 10/07/2024

CONE CALIBRATION CERTIFICATE

N° **Z163/24** 10/07/2024

Calibrated system (Sistema tarato):

Type **P-C**

Serial number **001251**

Tip net area ratio (a_n): **0,7894**

Sleeve net ratio (b_n): **0,0000**

Addresssee (destinatario):

Bierregi srl

via dell'Acqua Calda 840a

55100 Lucca

	u2 (kPa)	qc (kPa)	fs (kPa)	u2 (psi)	qc (psi)	fs (psi)
0 (0)	0,00	0,00	0,00	0,00	0,00	0,00
250 (36,26)	247,20	191,00	0,00	35,85	27,70	0,00
500 (72,52)	495,20	386,00	0,00	71,82	55,98	0,00
750 (108,78)	744,10	582,00	0,00	107,92	84,41	0,00
1000 (145,04)	993,80	778,00	0,00	144,14	112,84	0,00
1250 (181,30)	1243,90	980,00	0,10	180,41	142,14	0,01
1500 (217,56)	1494,50	1176,00	0,10	216,76	170,56	0,01
1750 (253,82)	1745,30	1377,00	0,10	253,13	199,72	0,01
2000 (290,08)	1996,70	1579,00	0,10	289,60	229,01	0,01
2250 (326,33)	2248,20	1780,00	0,10	326,07	258,17	0,01
2500 (362,59)	2499,90	1976,00	0,10	362,58	286,59	0,01

Unit: kPa - (psi)

Temperature of calibration

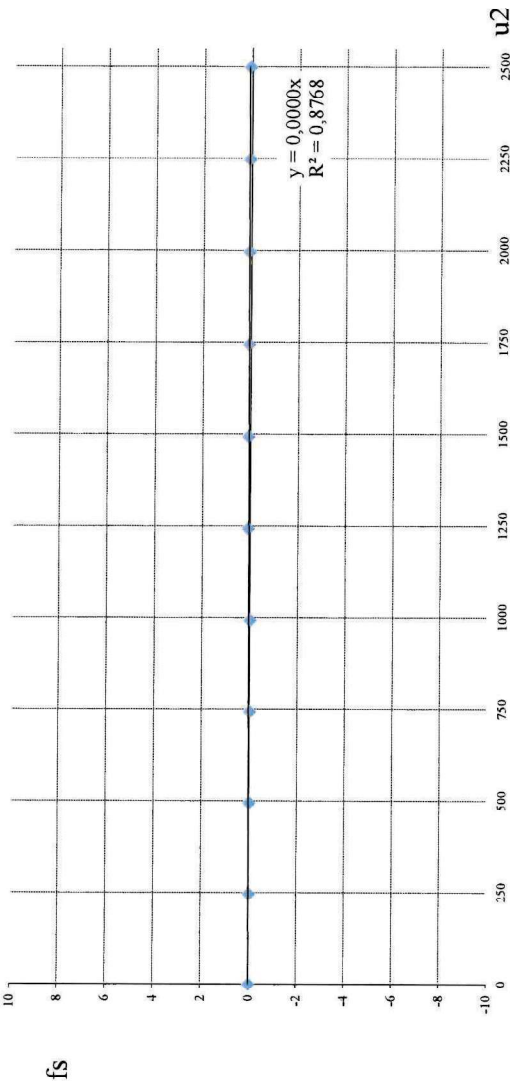
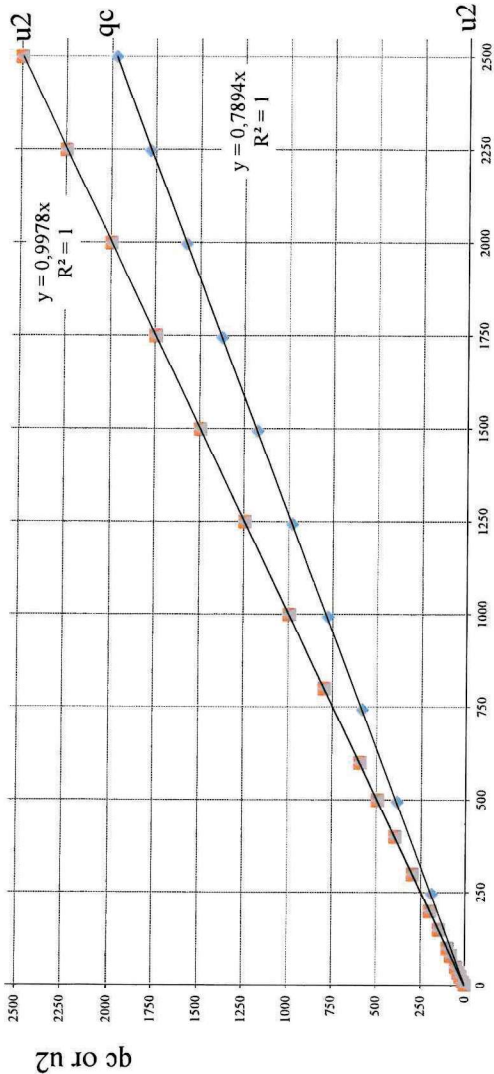
22°C

Humidity

45%

Factory calibration in accordance with :

ASTM D5778-12 Validity 12 Months



The adopted calibration procedure has been developed according to the suggestions given by
Prof. Paul W. Mayne (Georgia Institute of technology) and Prof. Diego Lo Presti (University of Pisa)

Cone calibrated by

[Signature]

Date of issue

10/07/2024

Elaborati Stesa Sismica - Onde P

Tomografia Sismica

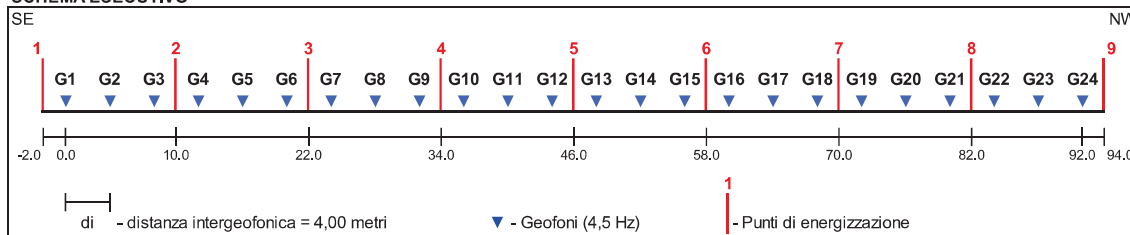
COMMITTENTE	CANTIERE	ID STESA
Comune di Peccioli	Fraz. Fabbrica - Peccioli (PI)	STP150125A

ONDE	CANALI (nr.)	D.I. (m)	L (m)	SPARI (nr.)	ELABORAZIONE
P	24	4,00	96,0	9	TOMOGRAFICA

D.I. - Passo intergeofonico; L - Lunghezza complessiva della stesa

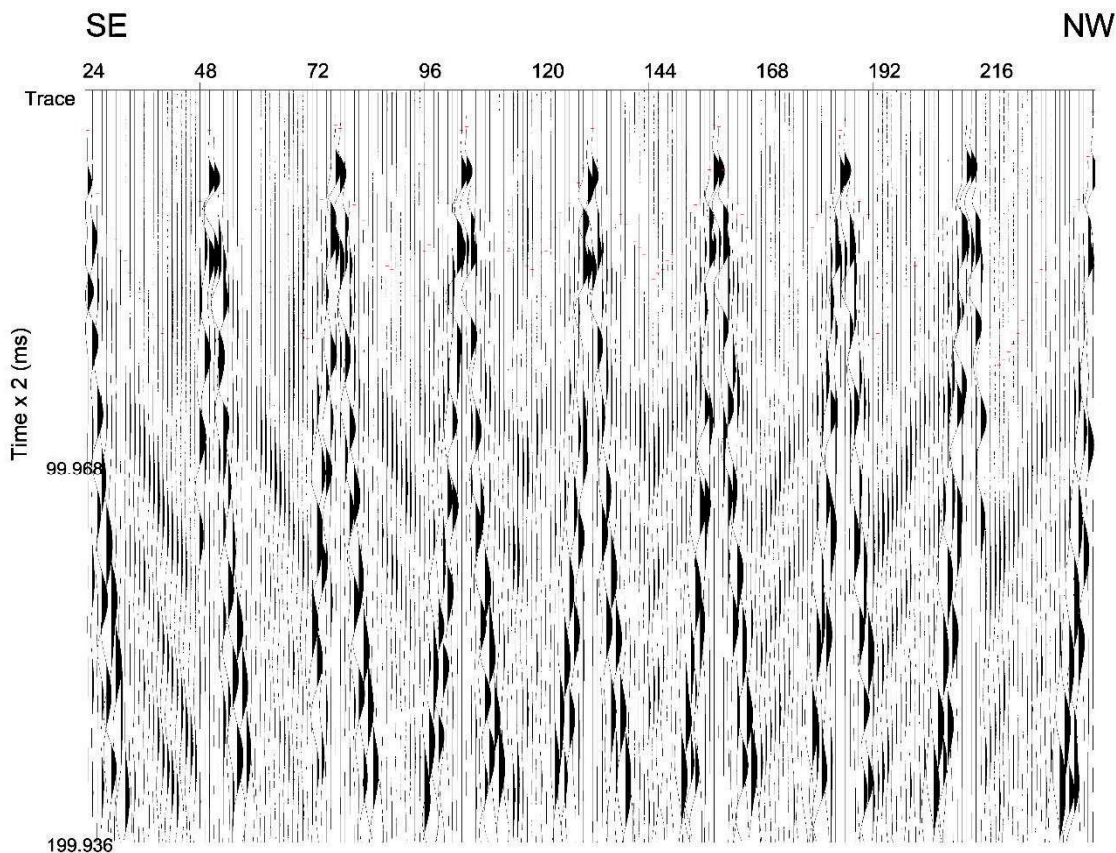
AZIMUT	COORDINATE GAUSS-BOAGA			
N 151° (SE-NW) riferito al G1 in senso orario	X _{G1}	Y _{G1}	X _{G24}	Y _{G24}
	1642195.2988	4818860.6361	1642149.3742	4818944.9387

SCHEMA ESECUTIVO

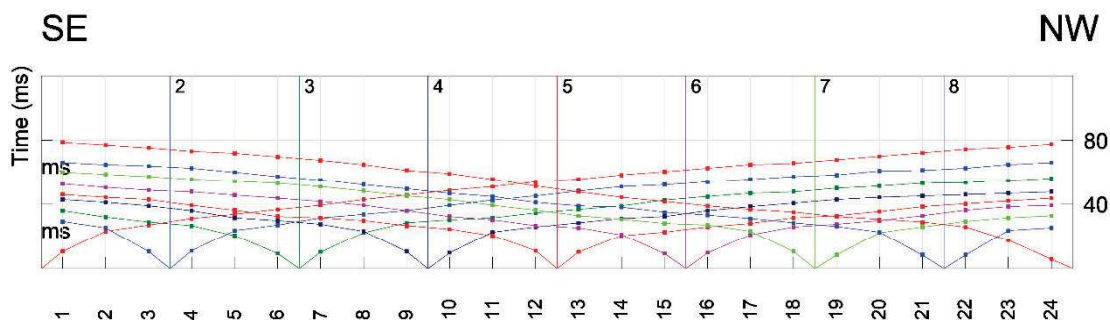


Sono state eseguite 9 registrazioni; sono stati utilizzati 24 geofoni interspaziati di 4,00 metri (lunghezza stesa 96 metri). L'azimuth della stesa (riferite al G1 in senso orario) è N 151° (SE-NW). Le registrazioni, per ciascun punto di sparo, sono state campionate con un intervallo di 0,128 millisecondi per un tempo totale di acquisizione pari a 1000 ms (per un totale di 7800 campioni).

SISMOGRAMMA



DROMOCRONE (Travel Time)

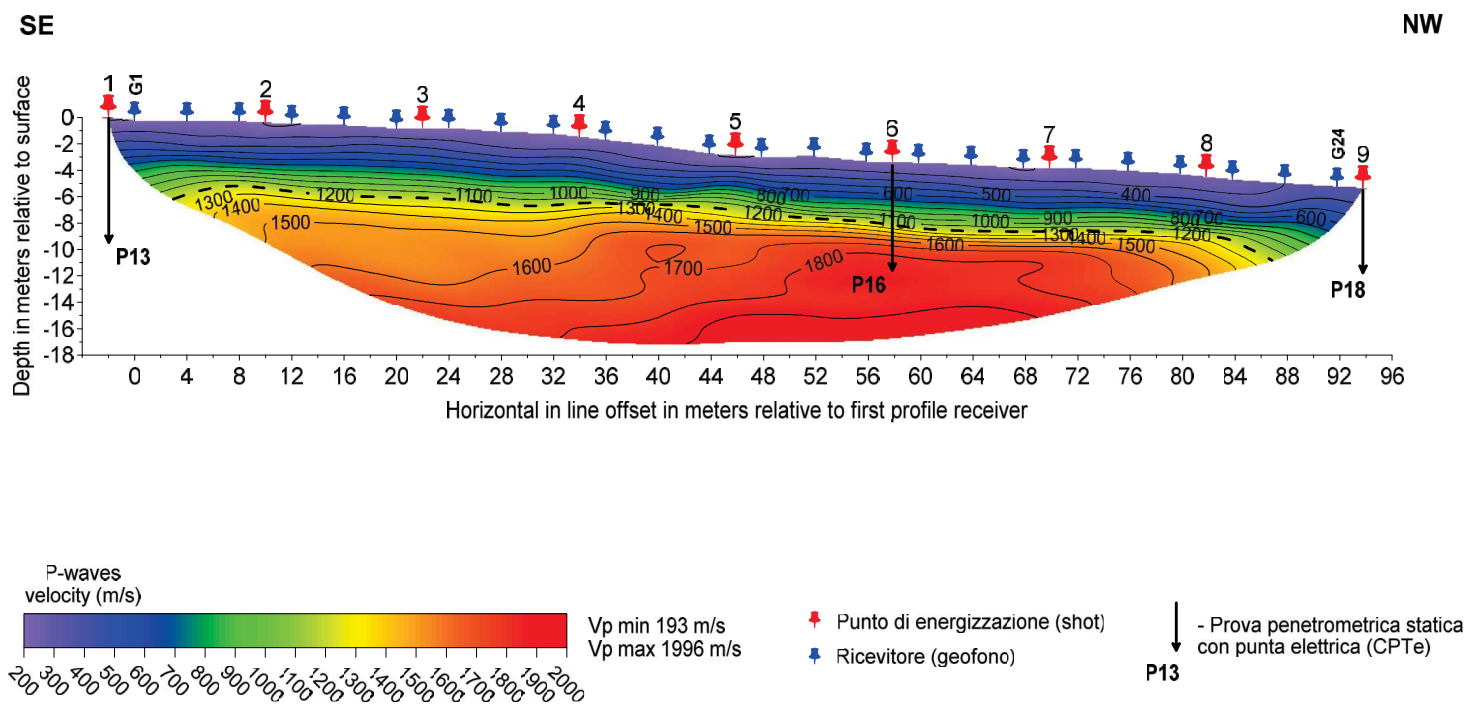


FABBRICA - ONDE P - SPREAD ARRAY/FIRST BREAK POINT VALUES

STP 150125A			Spread Array (m)		First Break Point Values (ms)								
Receiver Number	Receiver distances	Receiver elevation	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9		
1	1,500	0,050	10,600	29,370	35,930	42,900	45,970	52,520	59,930	66,050	78,690		
2	4,500	-0,100	23,270	25,450	32,000	41,150	44,220	50,330	58,630	64,730	76,940		
3	7,500	-0,250	27,190	10,600	28,940	38,970	42,900	48,590	57,310	63,860	75,220		
4	10,500	-0,400	31,120	11,020	26,760	35,930	39,400	47,700	55,560	62,560	73,010		
5	13,500	-0,500	33,740	23,700	20,630	31,540	36,360	45,520	54,250	59,930	71,720		
6	16,500	-0,650	36,790	27,190	9,300	29,790	32,430	43,770	52,950	57,310	69,540		
7	19,500	-0,800	39,400	31,540	10,170	27,620	31,540	41,590	50,770	55,130	67,360		
8	22,500	-0,950	42,900	33,740	22,370	23,270	29,790	39,400	48,150	52,080	64,730		
9	25,500	-1,050	45,520	35,930	28,500	10,600	26,760	35,930	45,090	49,450	61,250		
10	28,500	-1,150	48,590	39,400	30,250	9,720	24,560	32,430	42,900	46,840	59,060		
11	31,500	-1,300	50,770	42,470	31,540	22,810	20,630	30,250	39,400	44,650	55,560		
12	34,500	-1,400	53,810	45,090	34,610	25,870	11,020	26,760	36,360	41,150	51,200		
13	37,500	-1,500	55,560	48,150	36,790	28,500	10,170	25,450	32,860	38,970	47,700		
14	40,500	-1,600	58,180	50,770	38,970	31,120	20,630	21,060	30,690	38,110	44,220		
15	43,500	-1,650	60,360	52,080	42,470	32,430	22,810	9,300	28,050	35,040	41,590		
16	46,500	-1,700	62,560	53,810	44,650	35,930	25,870	9,720	27,190	33,310	38,970		
17	49,500	-1,750	64,730	55,560	46,840	38,540	28,050	21,060	23,270	31,120	36,790		
18	52,500	-1,750	65,610	57,310	47,700	40,720	31,540	25,870	10,600	28,500	35,040		
19	55,500	-1,750	67,790	58,180	49,900	42,900	32,860	27,620	8,420	26,300	32,430		
20	58,500	-1,750	69,980	60,810	51,200	44,220	35,490	29,790	22,370	22,810	30,690		
21	61,500	-1,800	72,160	61,250	52,950	45,090	38,540	32,860	25,870	8,420	28,940		
22	64,500	-1,850	74,330	62,560	53,380	45,970	40,290	36,360	29,370	8,420	25,870		
23	67,500	-1,900	75,650	64,730	54,700	46,840	42,040	38,540	31,540	23,700	17,590		
24	70,500	-1,950	77,400	66,050	56,000	47,700	43,770	39,400	32,860	25,450	5,800		

Shot Number	1	2	3	4	5	6	7	8	9
Shot Distance (m)	0,00	9,00	18,00	27,00	36,00	45,00	54,00	63,00	72,00
Shot Elevation (m)	0,050	-0,325	-0,725	-1,100	-1,450	-1,675	-1,750	-1,825	-2,000

Fraz. Fabbrica, Peccioli (PI)
Comune di Peccioli
SEZIONE TOMOGRAFICA - ONDE P



STP150125A RMS error 4.1%=1.64ms 20 WET itr. 50Hz Width 4.5% initial GRADIENT.GRD v. 4.01

Elaborati Stesa Sismica - Onde SH

Tomografia Sismica

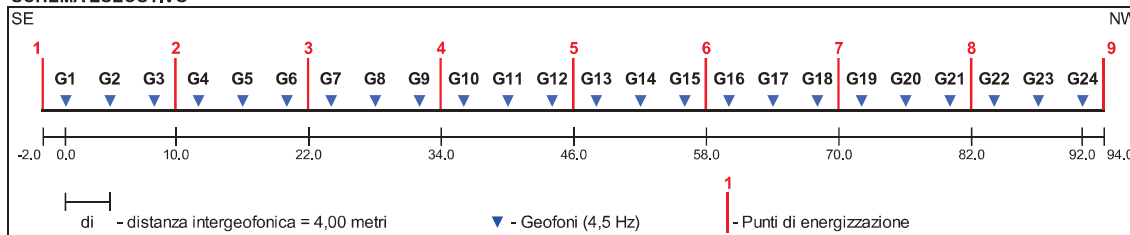
COMMITTENTE	CANTIERE	ID STESA
Comune di Peccioli	Fraz. Fabbrica - Peccioli (PI)	STSH150125A

ONDE	CANALI (nr.)	D.I. (m)	L (m)	SPARI (nr.)	ELABORAZIONE
SH	24	4,00	96,0	9	TOMOGRAFICA

D.I. - Passo intergeofonico; L - Lunghezza complessiva della stesa

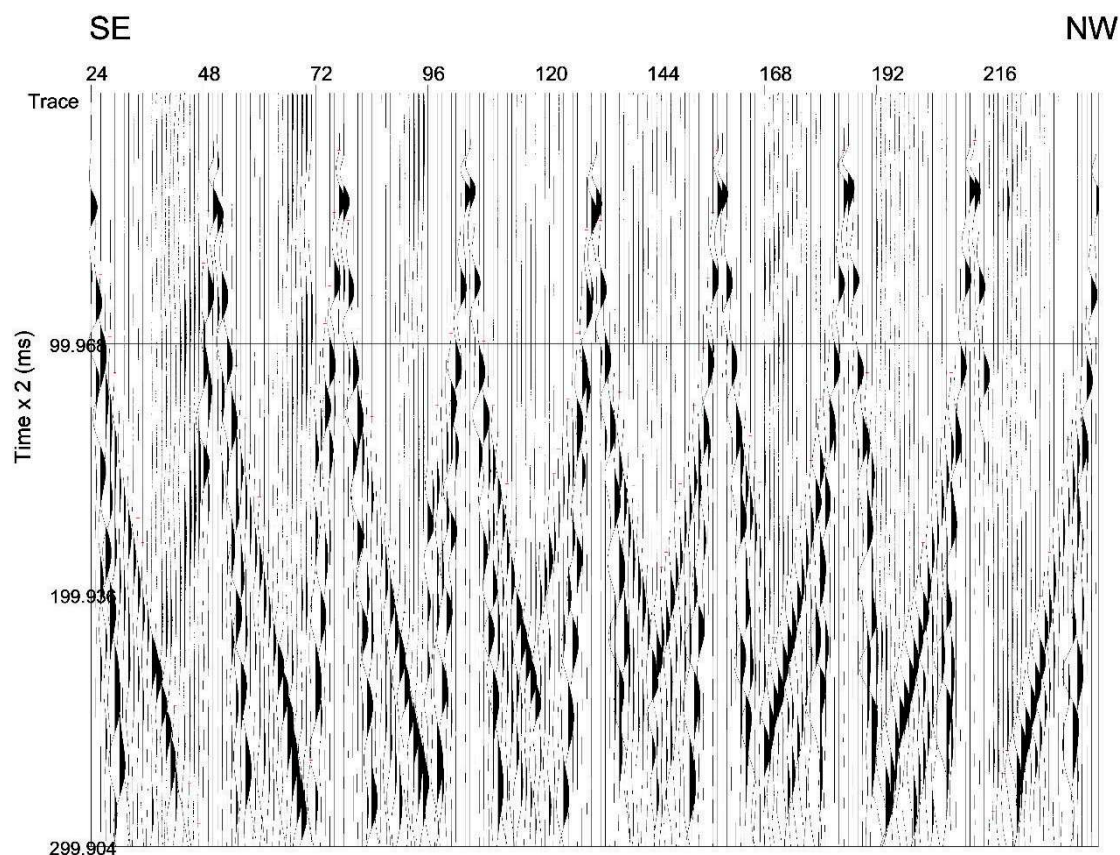
AZIMUT	COORDINATE GAUSS-BOAGA			
N 151° (SE-NW) riferito al G1 in senso orario	X _{G1}	Y _{G1}	X _{G24}	Y _{G24}
	1642195,2988	4818860,6361	1642149,3742	4818944,9387

SCHEMA ESECUTIVO

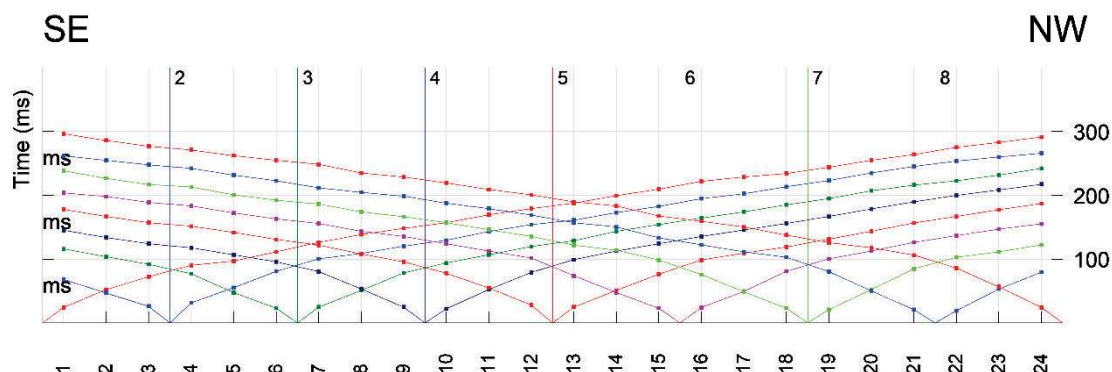


Sono state eseguite 9 registrazioni; sono stati utilizzati 24 geofoni interspaziati di 4,00 metri (lunghezza stesa 96 metri). L'azimuth della stesa (riferite al G1 in senso orario) è N 148° (SE-NW). Le registrazioni, per ciascun punto di sparo, sono state campionate con un intervallo di 0,128 millisecondi per un tempo totale di acquisizione pari a 500 ms (per un totale di 3900 campioni).

SISMOGRAMMA



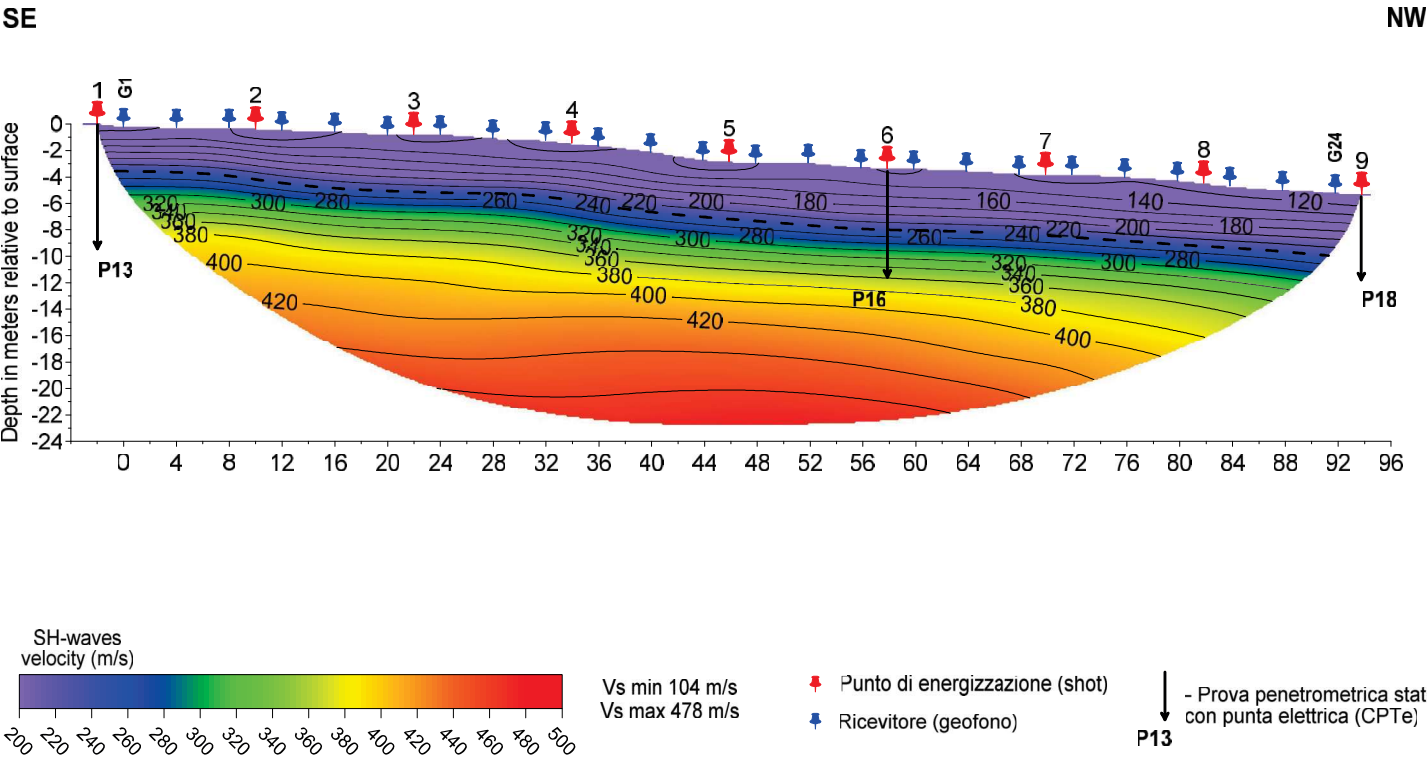
DROMOCRONE (Travel Time)


FABBRICA - ONDE SH - SPREAD ARRAY/FIRST BREAK POINT VALUES

STSH150125A Spread Array (m)			First Break Point Values (ms)								
Receiver Number	Receiver distances	Receiver elevation	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6	Shot 7	Shot 8	Shot 9
1	1,500	0,050	24,040	68,010	115,830	144,940	177,910	203,750	238,020	261,290	296,200
2	4,500	-0,100	51,840	46,650	103,550	133,940	166,910	197,940	226,380	254,830	285,850
3	7,500	-0,250	72,510	25,970	91,930	124,250	157,220	188,880	216,690	247,720	276,820
4	10,500	-0,400	89,980	31,140	77,050	117,760	151,380	183,080	212,820	241,910	271,000
5	13,500	-0,500	97,080	55,080	47,310	106,790	141,690	172,080	200,520	231,550	261,950
6	16,500	-0,650	111,300	80,940	22,750	95,800	130,710	163,020	192,130	222,500	254,830
7	19,500	-0,800	126,190	100,330	24,690	80,290	121,660	155,910	186,300	211,520	248,360
8	22,500	-0,950	138,470	108,730	50,540	53,130	108,080	143,630	174,020	204,410	234,800
9	25,500	-1,050	148,160	120,370	78,330	24,690	95,800	135,240	166,270	198,580	228,330
10	28,500	-1,150	157,220	129,410	93,870	22,110	77,690	124,250	157,220	187,600	219,270
11	31,500	-1,300	169,500	143,000	106,790	51,840	54,430	112,610	146,220	179,190	208,940
12	34,500	-1,400	179,190	153,990	119,720	79,000	27,930	101,620	135,240	168,860	200,520
13	37,500	-1,500	187,600	161,100	128,770	99,040	24,690	73,830	121,660	157,220	189,520
14	40,500	-1,600	199,240	172,720	143,630	112,610	50,540	47,310	113,910	150,110	183,080
15	43,500	-1,650	209,580	182,410	153,990	124,250	76,410	22,750	98,370	133,300	167,550
16	46,500	-1,700	221,860	194,710	164,330	135,240	98,370	24,040	75,760	122,300	159,160
17	49,500	-1,750	228,330	202,470	174,020	145,580	109,370	49,250	48,610	111,300	150,110
18	52,500	-1,750	234,130	213,460	185,020	155,910	119,080	80,940	22,750	102,910	137,830
19	55,500	-1,750	243,850	223,160	194,710	166,910	131,360	100,330	20,790	80,290	125,540
20	58,500	-1,750	254,830	234,800	207,000	178,550	143,630	112,610	51,840	49,900	117,760
21	61,500	-1,800	263,890	245,130	216,050	189,520	156,570	126,190	84,800	20,790	106,150
22	64,500	-1,850	274,880	253,520	222,500	199,880	166,910	136,520	102,910	18,870	86,110
23	67,500	-1,900	282,630	260,010	231,550	208,270	177,250	146,880	111,300	53,130	56,360
24	70,500	-1,950	291,040	265,820	241,910	217,330	186,960	155,270	122,300	79,620	24,040

Shot Number	1	2	3	4	5	6	7	8	9
Shot Distance (m)	0,00	9,00	18,00	27,00	36,00	45,00	54,00	63,00	72,00
Shot Elevation (m)	0,050	-0,325	-0,725	-1,100	-1,450	-1,675	-1,750	-1,825	-2,000

Fraz. Fabbrica, Peccioli (PI)
Comune di Peccioli
SEZIONE TOMOGRAFICA - ONDE SH



Elaborati Grafici MASW

- Spettro delle Velocità con "Picking"
- Grafico Misfit & Profilo Verticale Onde S
- Profilo verticale Vs (modello medio)

MASW STR150125A (Onde di Rayleigh)

Committente: Comune di Peccioli

Cantiere: Fraz. Fabbrica - Peccioli (PI)

Numero di canali	24
Distanza intergeofonica (m)	2.00
Lunghezza (m)	92.0
Azimut	N151° (SE-NW)

Geofono	Coordinate Gauss-Boaga	
Id	X	Y
G1	1642205.0654	4818847.3125
G24	1642161.0542	4818928.1025

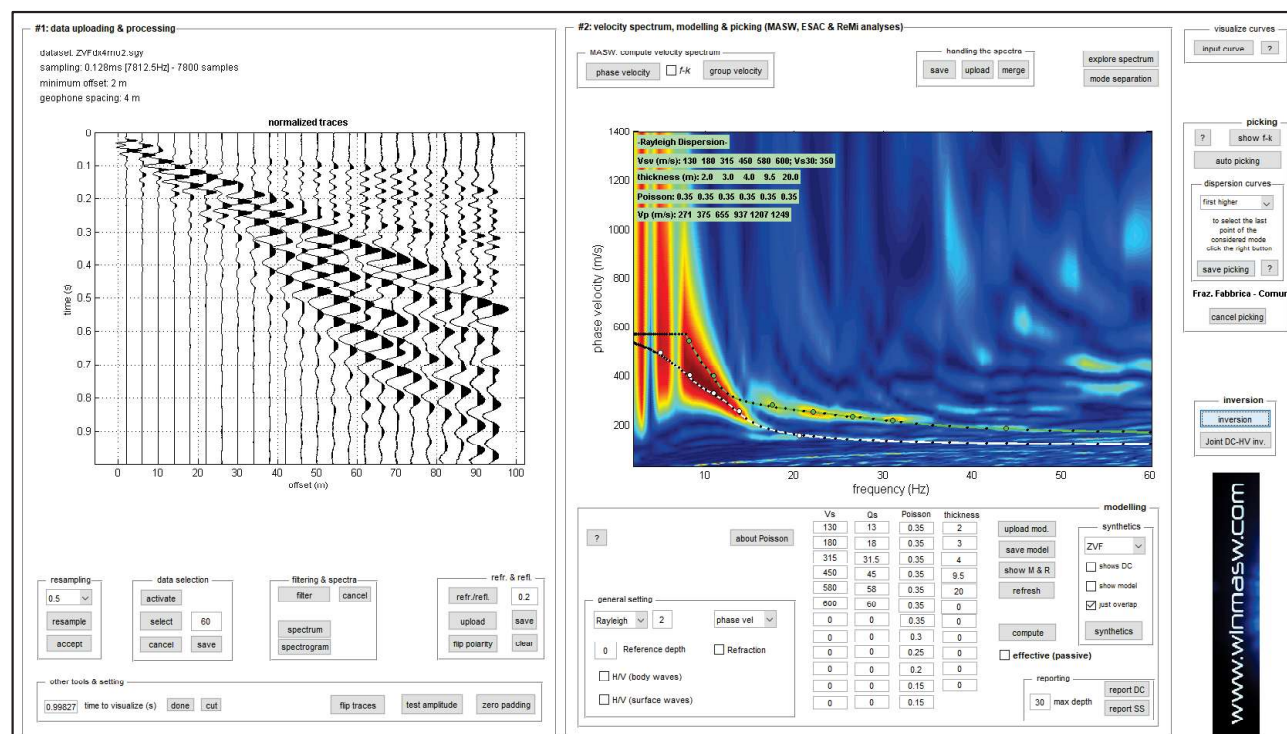


Fig.1: Sismogramma (Shot1 – ZVFDx4mo2) e spettro delle velocità con "picking"

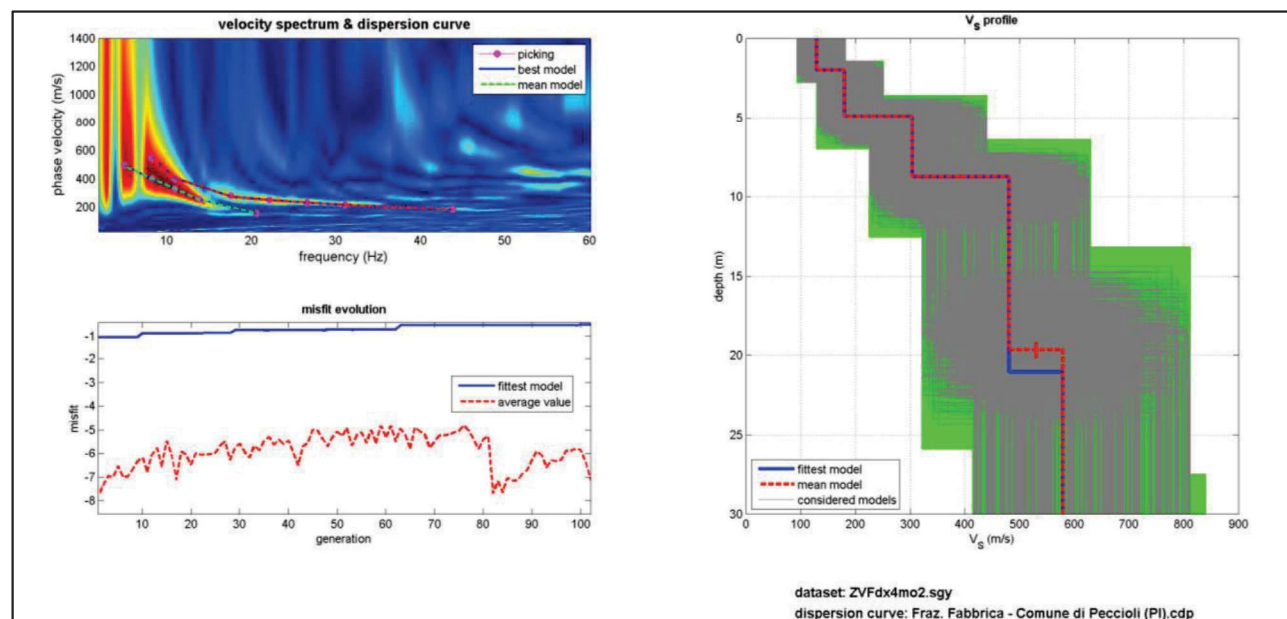


Fig.2: Grafico Misfit - Profilo verticale delle Onde S

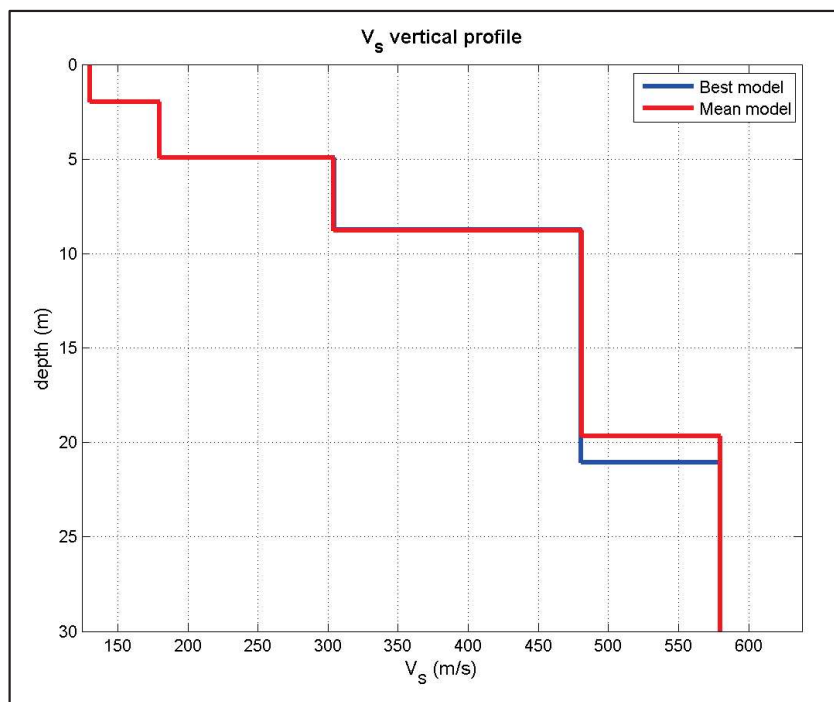


Fig.3: Profilo verticale Vs (Modello medio/Modello migliore)

MASW STR150125A - Comune di Peccioli Fabbrica - Peccioli (PI) (modello medio)	Profondità		Spessore (h_i)	Velocità ($V_{s,i}$)	$h_i/V_{s,i}$
	da (m)	a (m)	(metri)	(m/s)	(-)
Sismostrato 1	0.00	2.00	2.00	130	0,0154
Sismostrato 2	2.00	4.90	2.90	180	0,0161
Sismostrato 3	4.90	8.70	3.80	304	0,0125
Sismostrato 4	8.70	19.60	10.90	481	0,0227
Sismostrato 5	19.60	30.00	10.40	580	0,0179

$H = 30.0$ metri

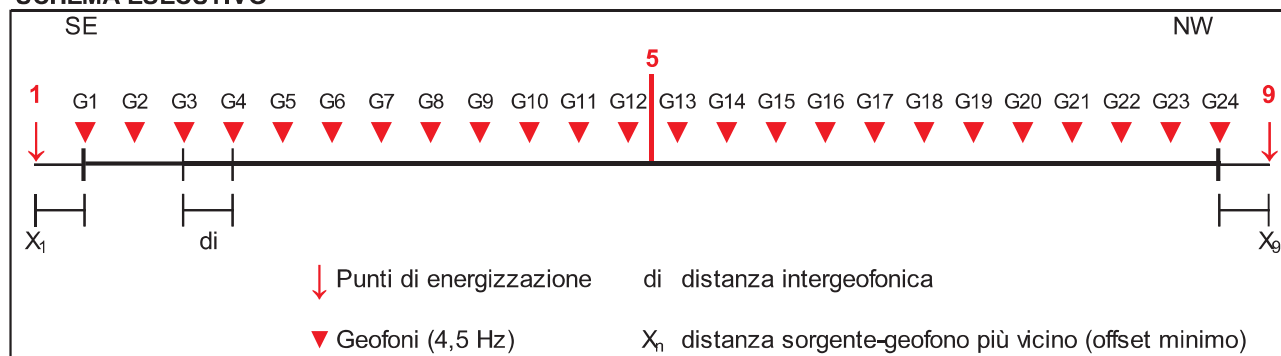
$\Sigma h_i/V_{s,i} = 0.0846$

$$V_{s,eq} = V_{s,30} = 30.0/0.0846 = 355 \text{ m/s}$$

Categoria di Sottosuolo C
(a partire dal piano campagna)

"Depositi di terreni a grana grossa mediamente addensati o terreni a grana fina mediamente consistenti con profondità del substrato superiori a 30 m, caratterizzati da un miglioramento delle proprietà meccaniche con la profondità e da valori di velocità equivalente compresi tra 180 m/s e 360 m/s".

SCHEMA ESECUTIVO



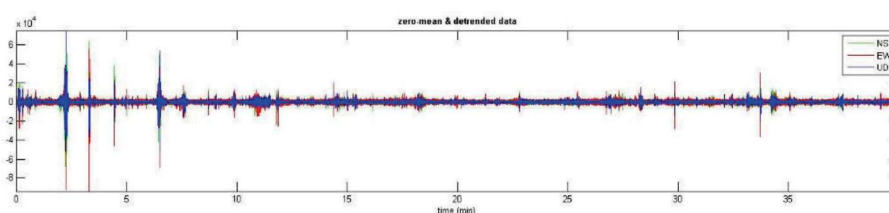
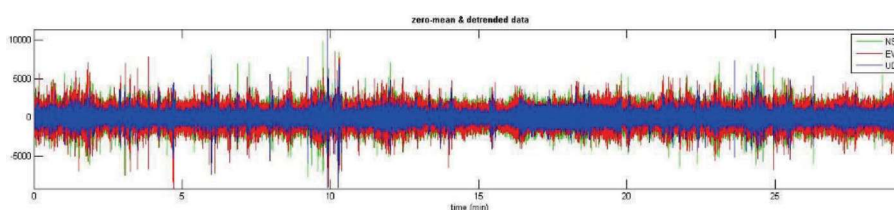
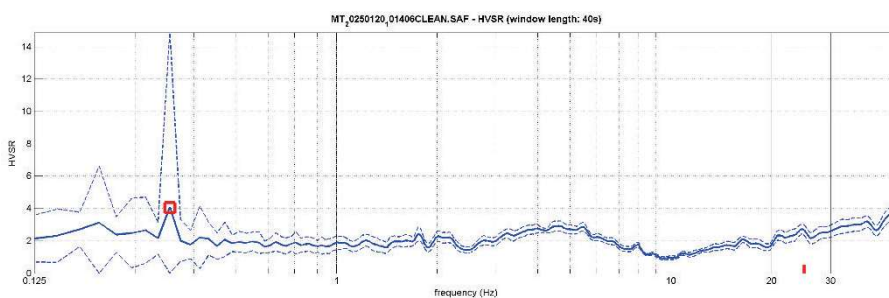
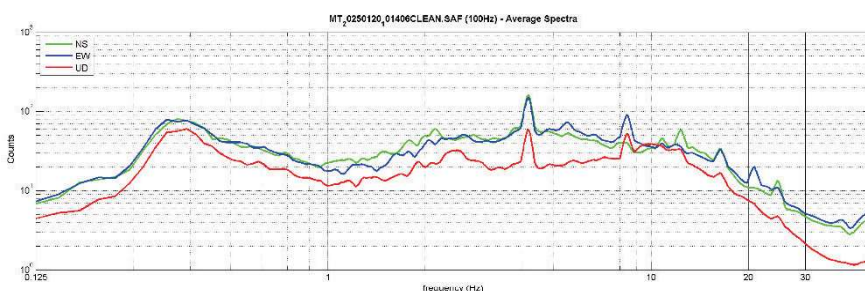
Sono state eseguite tre registrazioni, effettuate con mazza da 8 kg battente su piastra in duralluminio. I due punti sorgente (shot) sono stati effettuati esternamente alla stesa ad una distanza di 2,0 metri (X_1 - shot 1 e X_2 - shot 2) sia dal primo che dall'ultimo geofono (G.1-G.24). Azimut N151° (SE-NW) riferito al G1. Tempo di acquisizione 1,0 s - Intervallo di campionamento 0,128 s (N. campioni 7800).

Allegato L

Elaborati Misure di Rumore a Stazione Singola - HVSR

POSTAZIONE HVSR1 (Nk-003/25) – Comune di Peccioli
Fraz. Fabbrica – Comune di Peccioli (PI)

Dataset:	MT_20250120_101406CLEAN.SAF
Durata Totale della Registrazione:	0h 40' 00"
Lunghezza di analisi della sequenza temporale:	0h 29' 30" (dopo rimozione transienti)
Freq. Campionamento:	100 Hz
Lunghezza finestre:	40 s
Tipo di lisciamento:	triangolare
Lisciamento:	5%
Tapering:	8%
Coordinate Gauss-Boaga	X= 1642262.4276 Y = 4818819.5204

**Figura 1:** Dataset registrazione completa**Figura 2:** Dataset registrazione dopo rimozione transienti**Figura 3:** Rapporto spettrale orizzontale su verticale (Curva H/V)**Figura 4:** Spettri delle singole componenti (N-S verde, E-W blu e Z rosso)

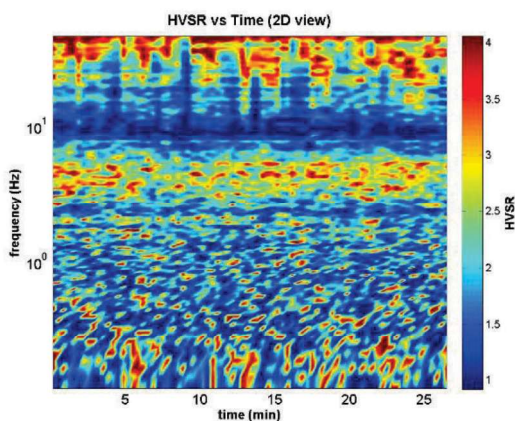


Figura 5: Serie temporale H/V (stazionarietà)

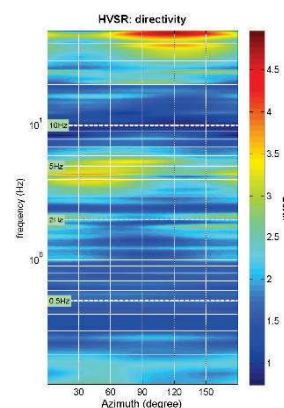


Figura 6: Direzionalità H/V

CRITERI SESAME - POSTAZIONE HVSr (Nk-003/25)

Risultati ottenuti considerando l'intervallo 0.1-25.0Hz

Peak frequency (Hz): 0.3 (± 2.4)Peak HVSr value: 4.1 (± 1.3)**=== Criteria for a reliable H/V curve ===**

- #1. $[f_0 > 10/Lw]$: $0.318 > 0.25$ (OK)
- #2. $[nc > 200]$: $1016 > 200$ (OK)
- #3. $[f_0 > 0.5\text{Hz}; \sigma_A(f) < 3 \text{ for } 0.5f_0 < f < 2f_0]$ (OK)

=== Criteria for a clear H/V peak (at least 5 should be fulfilled) ===

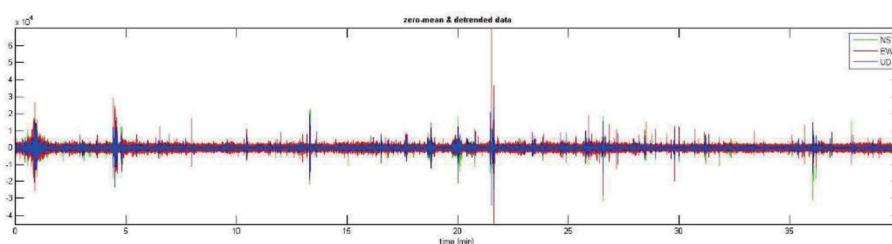
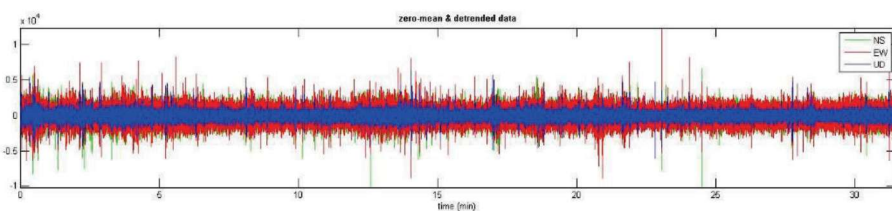
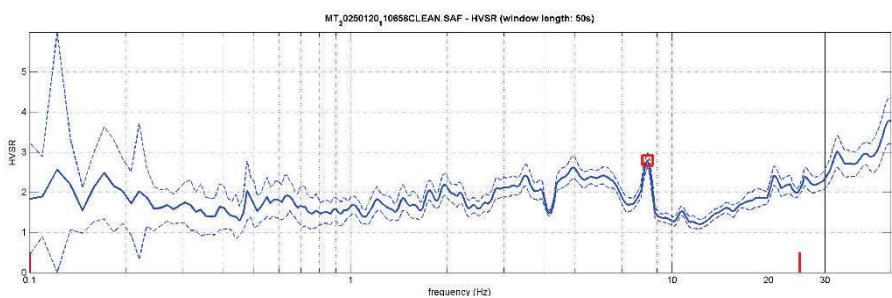
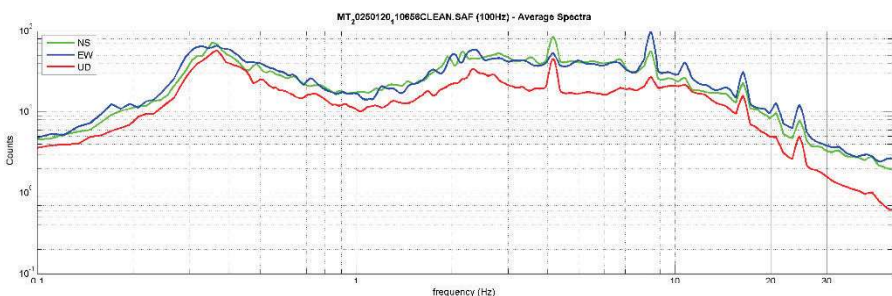
- #1. $[\text{exists } f_- \text{ in the range } [f_0/4, f_0] \mid A_{H/V}(f_-) < A_0/2]$: yes, at frequency 0.1Hz (OK)
- #2. $[\text{exists } f_+ \text{ in the range } [f_0, 4f_0] \mid A_{H/V}(f_+) < A_0/2]$: yes, at frequency 0.4Hz (OK)
- #3. $[A_0 > 2]$: $4.1 > 2$ (OK)
- #4. $[f_{\text{peak}}[A_{H/V}(f)] \neq \sigma_A(f) = f_0 \pm 5\%]$: (NO)
- #5. $[\sigma_A(f) < \epsilon(f_0)]$: $2.390 > 0.064$ (NO)
- #6. $[\sigma_A(f_0) < \theta(f_0)]$: $10.802 < 2.5$ (NO)



Figura 7: Postazione HVSr1

POSTAZIONE HVSR2 (Nk-004/25) – Comune di Peccioli
Fraz. Fabbrica – Comune di Peccioli (PI)

Dataset:	MT_20250120_110656CLEAN.SAF	
Durata Totale della Registrazione:	0h 40' 00"	
Lunghezza di analisi della sequenza temporale:	0h 31' 30" (dopo rimozione transienti)	
Freq. Campionamento:	100 Hz	
Lunghezza finestre:	50 s	
Tipo di lisciamento:	triangolare	
Lisciamento:	5%	
Tapering:	8%	
Coordinate Gauss-Boaga	X= 1642262.4276	Y = 4818819.5204

**Figura 1: Dataset registrazione completa****Figura 2: Dataset registrazione dopo rimozione transienti****Figura 3: Rapporto spettrale orizzontale su verticale (Curva H/V)****Figura 4: Spettri delle singole componenti (N-S verde, E-W blu e Z rosso)**

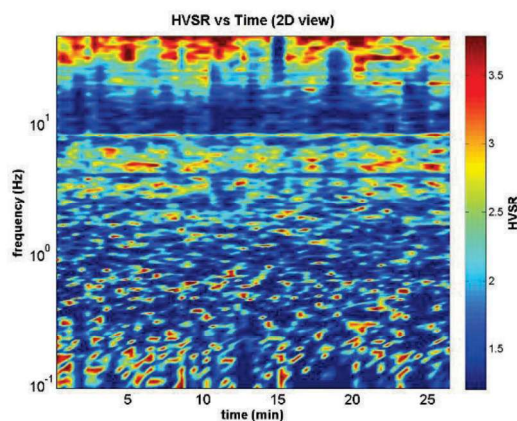


Figura 5: Serie temporale H/V (stazionarietà)

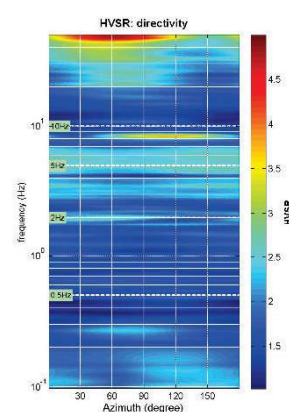


Figura 6: Direzionalità H/V

CRITERI SESAME - POSTAZIONE HVSr (Nk-004/25)

Risultati ottenuti considerando l'intervallo 0.1-25.0Hz

Peak frequency (Hz): 8.4 (± 1.1)Peak HVSr value: 2.8 (± 0.2)**=== Criteria for a reliable H/V curve ===**

- #1. $[f_0 > 10/Lw]$: $8.413 > 0.2$ (OK)
- #2. $[nc > 200]$: $26921 > 200$ (OK)
- #3. $[f_0 > 0.5\text{Hz}; \sigma_A(f) < 3 \text{ for } 0.5f_0 < f < 2f_0]$ (OK)

=== Criteria for a clear H/V peak (at least 5 should be fulfilled) ===

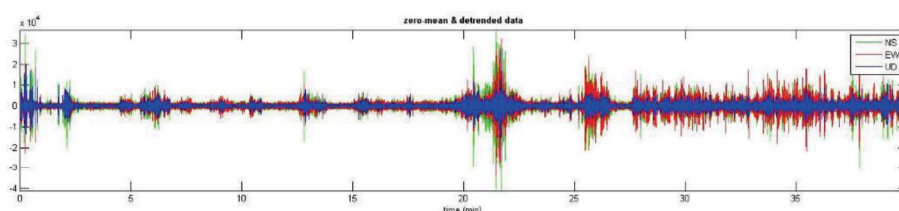
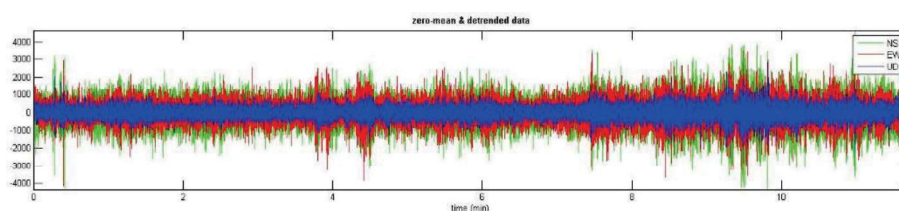
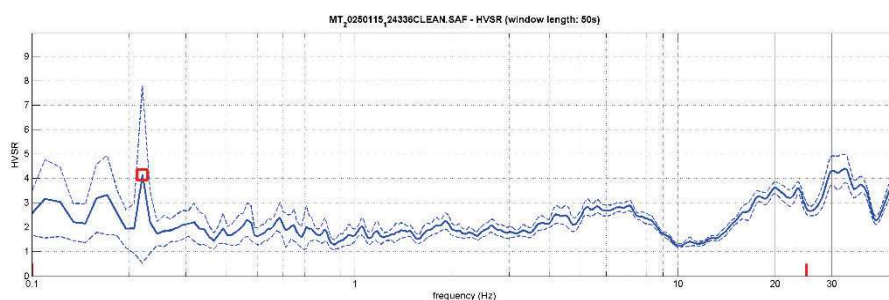
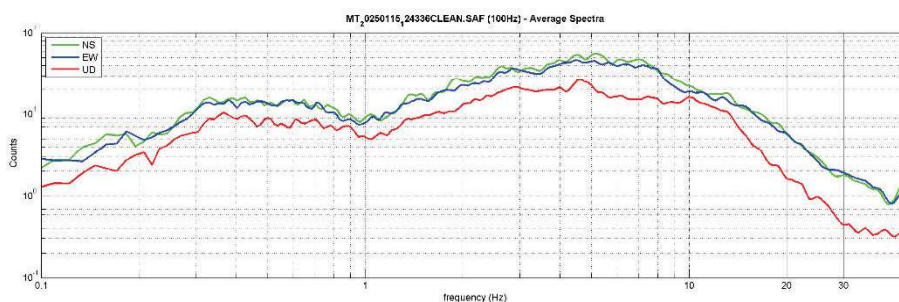
- #1. $[\text{exists } f_- \text{ in the range } [f_0/4, f_0] \mid A_{H/V}(f_-) < A_0/2]$: yes, at frequency 2.3Hz (OK)
- #2. $[\text{exists } f_+ \text{ in the range } [f_0, 4f_0] \mid A_{H/V}(f_+) < A_0/2]$: yes, at frequency 9.1Hz (OK)
- #3. $[A_0 > 2]$: $2.8 > 2$ (OK)
- #4. $[f_{\text{peak}}[A_{H/V}(f)] \neq \sigma_A(f) = f_0 \pm 5\%]$: (NO)
- #5. $[\sigma_A(f) < \epsilon(f_0)]$: $1.128 > 0.421$ (NO)
- #6. $[\sigma_A(f_0) < \theta(f_0)]$: $0.183 < 1.58$ (OK)



Figura 7: Postazione HVSr2

POSTAZIONE HVSR3 (Nk-001/25) – Comune di Peccioli
Fraz. Fabbrica – Comune di Peccioli (PI)

Dataset:	MT_20250115_124336CLEAN.SAF
Durata Totale della Registrazione:	0h 40' 00"
Lunghezza di analisi della sequenza temporale:	0h 11' 42" (dopo rimozione transienti)
Freq. Campionamento:	100 Hz
Lunghezza finestre:	40 s
Tipo di lisciamento:	triangolare
Lisciamento:	5%
Tapering:	8%
Coordinate Gauss-Boaga	X= 1642165,0258 Y = 4818916,6790

**Figura 1: Dataset registrazione completa****Figura 2: Dataset registrazione dopo rimozione transienti****Figura 3: Rapporto spettrale orizzontale su verticale (Curva H/V)****Figura 4: Spettri delle singole componenti (N-S verde, E-W blu e Z rosso)**

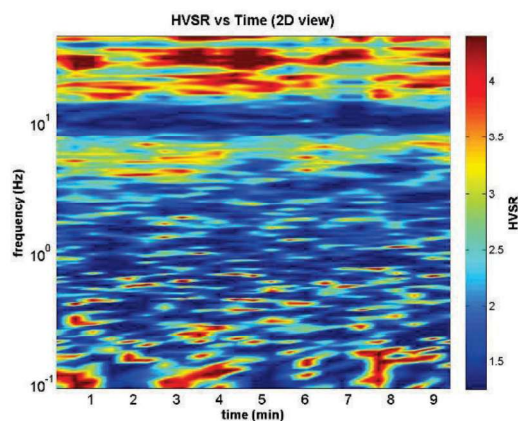


Figura 5: Serie temporale H/V (stazionarietà)

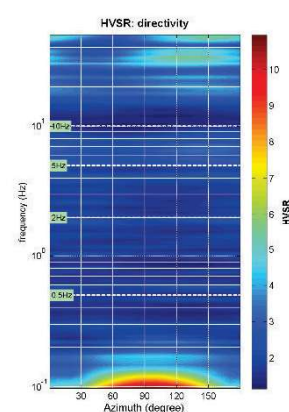


Figura 6: Direzionalità H/V

CRITERI SESAME - POSTAZIONE HVSr (Nk-037/24)

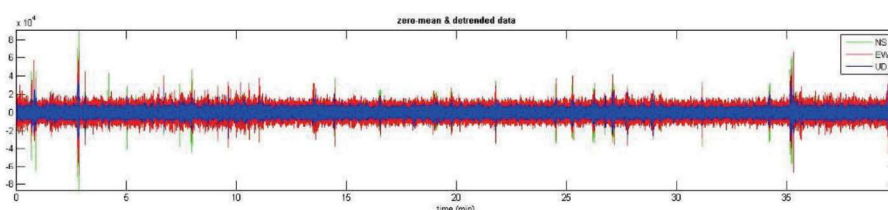
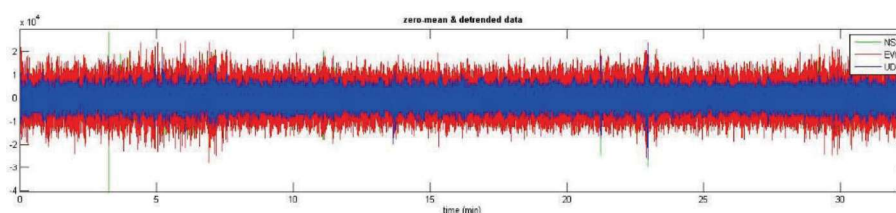
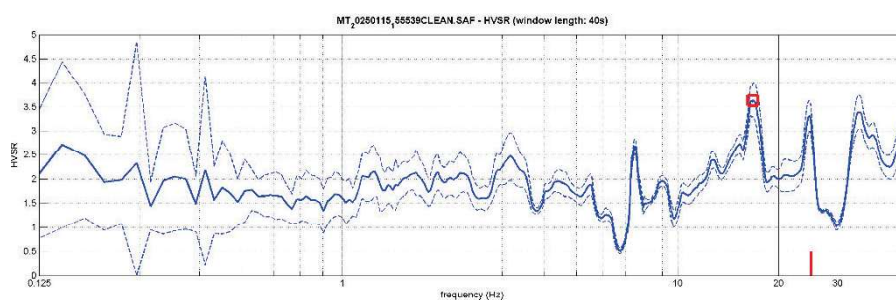
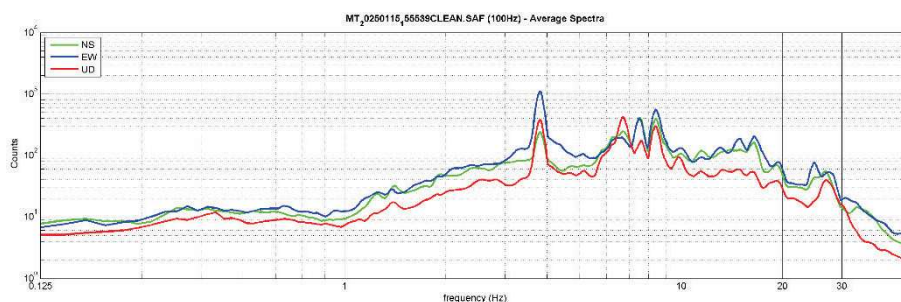
Risultati ottenuti considerando l'intervallo 0.1-25.0Hz

Peak frequency (Hz): 0.2 (± 5.6)Peak HVSr value: 4.2 (± 1.3)**=== Criteria for a reliable H/V curve ===**#1. $[f_0 > 10/Lw]$: $0.220 > 0.2$ (OK)#2. $[nc > 200]$: $253 > 200$ (OK)#3. $[f_0 > 0.5\text{Hz}; \sigma_A(f) < 3 \text{ for } 0.5f_0 < f < 2f_0]$ (OK)**=== Criteria for a clear H/V peak (at least 5 should be fulfilled) ===**#1. $[\text{exists } f_- \text{ in the range } [f_0/4, f_0] \mid A_{H/V}(f_-) < A_0/2]$: yes, at frequency 0.2Hz (OK)#2. $[\text{exists } f_+ \text{ in the range } [f_0, 4f_0] \mid A_{H/V}(f_+) < A_0/2]$: yes, at frequency 0.3Hz (OK)#3. $[A_0 > 2]$: $4.2 > 2$ (OK)#4. $[f_{\text{peak}}[A_{H/V}(f)] \neq \sigma_A(f)] = f_0 \pm 5\%$: (NO)#5. $[\sigma_A(f) < \epsilon(f_0)]$: $5.619 > 0.044$ (NO)#6. $[\sigma_A(f_0) < \theta(f_0)]$: $3.633 < 2.5$ (NO)

Figura 7: Postazione HVSr3

POSTAZIONE HVSR4 (Nk-002/25) – Comune di Peccioli
Fraz. Fabbrica – Comune di Peccioli (PI)

Dataset:	MT_20250115_155539CLEAN.SAF
Durata Totale della Registrazione:	0h 40' 00"
Lunghezza di analisi della sequenza temporale:	0h 32' 24" (dopo rimozione transienti)
Freq. Campionamento:	100 Hz
Lunghezza finestre:	40 s
Tipo di lisciamento:	triangolare
Lisciamento:	5%
Tapering:	8%
Coordinate Gauss-Boaga	X= 1642108,2822 Y = 4818984,2651

**Figura 1: Dataset registrazione completa****Figura 2: Dataset registrazione dopo rimozione transienti****Figura 3: Rapporto spettrale orizzontale su verticale (Curva H/V)****Figura 4: Spettri delle singole componenti (N-S verde, E-W blu e Z rosso)**

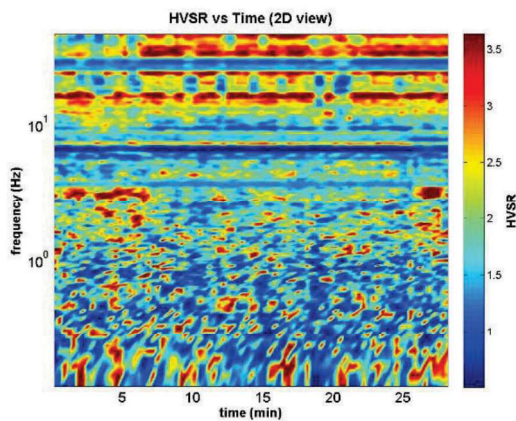


Figura 5: Serie temporale H/V (stazionarietà)

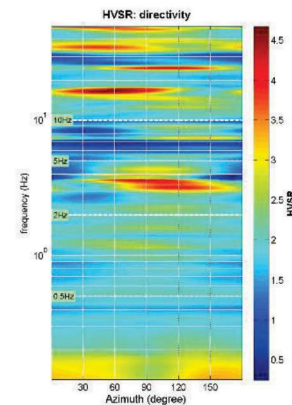


Figura 6: Direzionalità H/V

CRITERI SESAME - POSTAZIONE HVSr (Nk-037/24)

Risultati ottenuti considerando l'intervallo 0.1-25.0Hz

Peak frequency (Hz): 16.8 (± 4.9)Peak HVSr value: 3.6 (± 0.3)**=== Criteria for a reliable H/V curve ===**

- #1. $[f_0 > 10/Lw]$: 16.756 > 0.25 (OK)
- #2. $[nc > 200]$: 56971 > 200 (OK)
- #3. $[f_0 > 0.5\text{Hz}; \sigma_A(f) < 3 \text{ for } 0.5f_0 < f < 2f_0]$ (OK)

=== Criteria for a clear H/V peak (at least 5 should be fulfilled) ===

- #1. $[\text{exists } f_- \text{ in the range } [f_0/4, f_0] \mid A_{H/V}(f_-) < A_0/2]$: yes, at frequency 4.2Hz (OK)
- #2. $[\text{exists } f_+ \text{ in the range } [f_0, 4f_0] \mid A_{H/V}(f_+) < A_0/2]$: yes, at frequency 0.3Hz (OK)
- #3. $[A_0 > 2]$: .6 > 2 (OK)
- #4. $[f_{\text{peak}}[A_{H/V}(f)] \neq \sigma_A(f)] = f_0 \pm 5\%$: (NO)
- #5. $[\sigma_A(f) < \epsilon(f_0)]$: 4.943 > 0.838 (NO)
- #6. $[\sigma_A(f_0) < \theta(f_0)]$: 0.342 < 1.58 (OK)



Figura 7: Postazione HVSr4

Allegato M

Documentazione fotografica

COMMITTENTE

Comune di Peccioli

OGGETTO*"Incarico per indagini Geofisiche, Geognostiche e Geotecniche in sito presso cantiere nuova viabilità di Fabbrica"***CANTIERE**

Frazione di Fabbrica – Peccioli (PI)

DOCUMENTAZIONE FOTOGRAFICA - PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA (CPTe)**Fig 1:** Prova penetrometrica statica con punta elettrica (CPTe) CPTe 03**Fig 2:** Prova penetrometrica statica con punta elettrica (CPTe) CPTe 05



Fig 3: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 05b



Fig 4: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 08



Fig 5: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 10



Fig 6: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 13



Fig 7: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 16



Fig 8: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 18



Fig 9: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 20



Fig 10: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 22



Fig 11: Prova penetrometrica statica con punta elettrica (CPTe) CPTe 23

DOCUMENTAZIONE FOTOGRAFICA - INDAGINI GEOFISICHE



Fig 12: Postazione stesa sismica a rifrazione Onde P/SH/MASW



Fig 13: Postazione misura di rumore sismico ambientale a stazione singola HVSR 1



Fig 14: Postazione misura di rumore sismico ambientale a stazione singola HVSR 2



Fig 15: Postazione misura di rumore sismico ambientale a stazione singola HVSR 3



Fig 16: Postazione misura di rumore sismico ambientale a stazione singola HVSR 4



COMUNE DI PECCIOLI

Aprile 2025

REALIZZAZIONE NUOVA VIABILITA' A FABBRICA DI PECCIOLI



RELAZIONE GEOLOGICA E CARATTERIZZAZIONE GEOTECNICA DEL SOTTOSUOLO

Dott. Geol. Andrea Petresi

Vicolo Petresi, 7 – 56037 Peccioli (PI) - Tel. 0587.636054 - Cell. 338.9608019
e.mail : apetre@libero.it - P.E.C. : a.petresi@pec.geologitoscana.net

Dott. Geol. Carlo Meoni

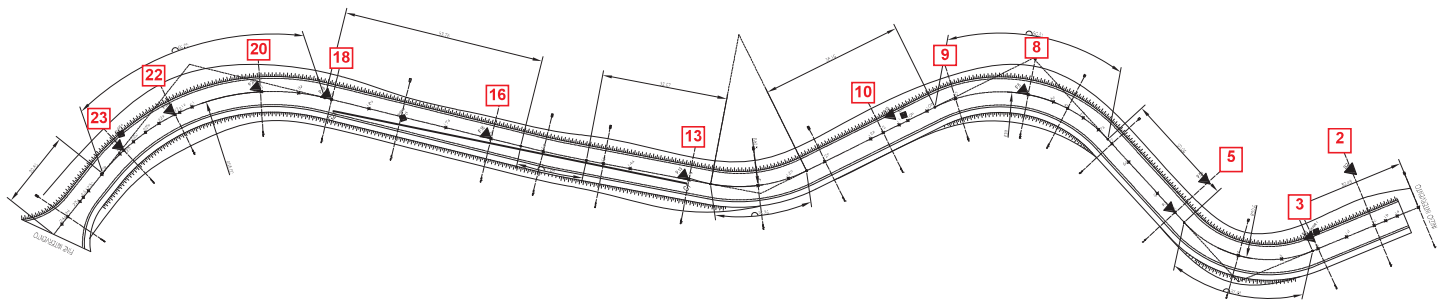
Via Giovanni Pascoli, 53/A - 56038 Ponsacco (PI) - Tel. 0587.732249 - Cell. 348.4135608
e.mail : carlo.meoni.geo@gmail.com - P.E.C. : c.meoni@pec.epap.it

Documento informatico firmato digitalmente ai sensi del T.U. 445/2000 e del D.LGS. 82/2005 e rispettive norme collegate, il quale sostituisce il documento cartaceo e la firma autografa.

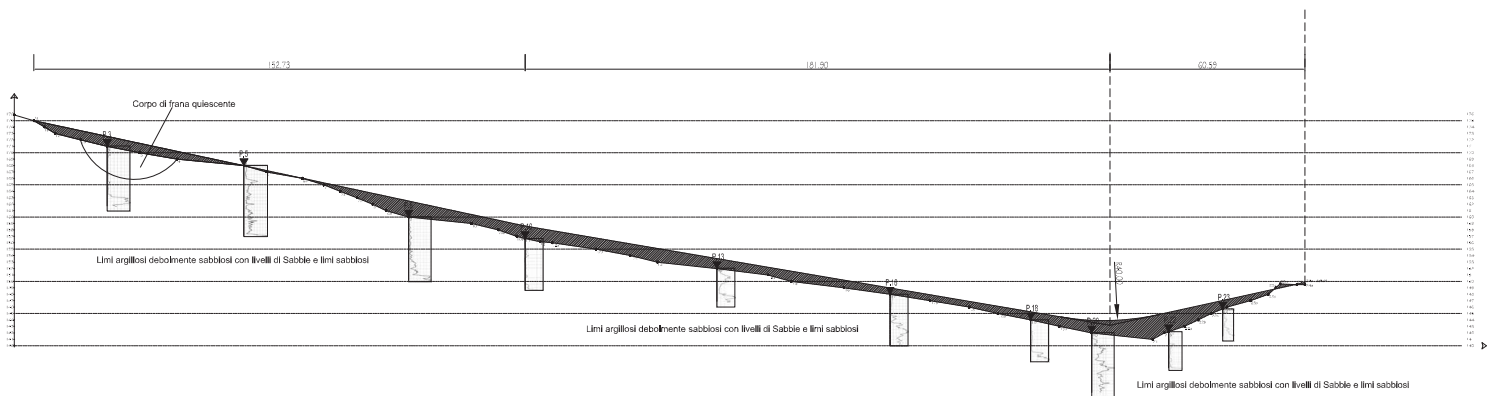
Allegato 3
INDAGINI GEOGNOSTICHE, GEOTECNICHE E GEOFISICHE
Sezioni litologiche

SEZIONI LITOLOGICHE

Quadro di unione

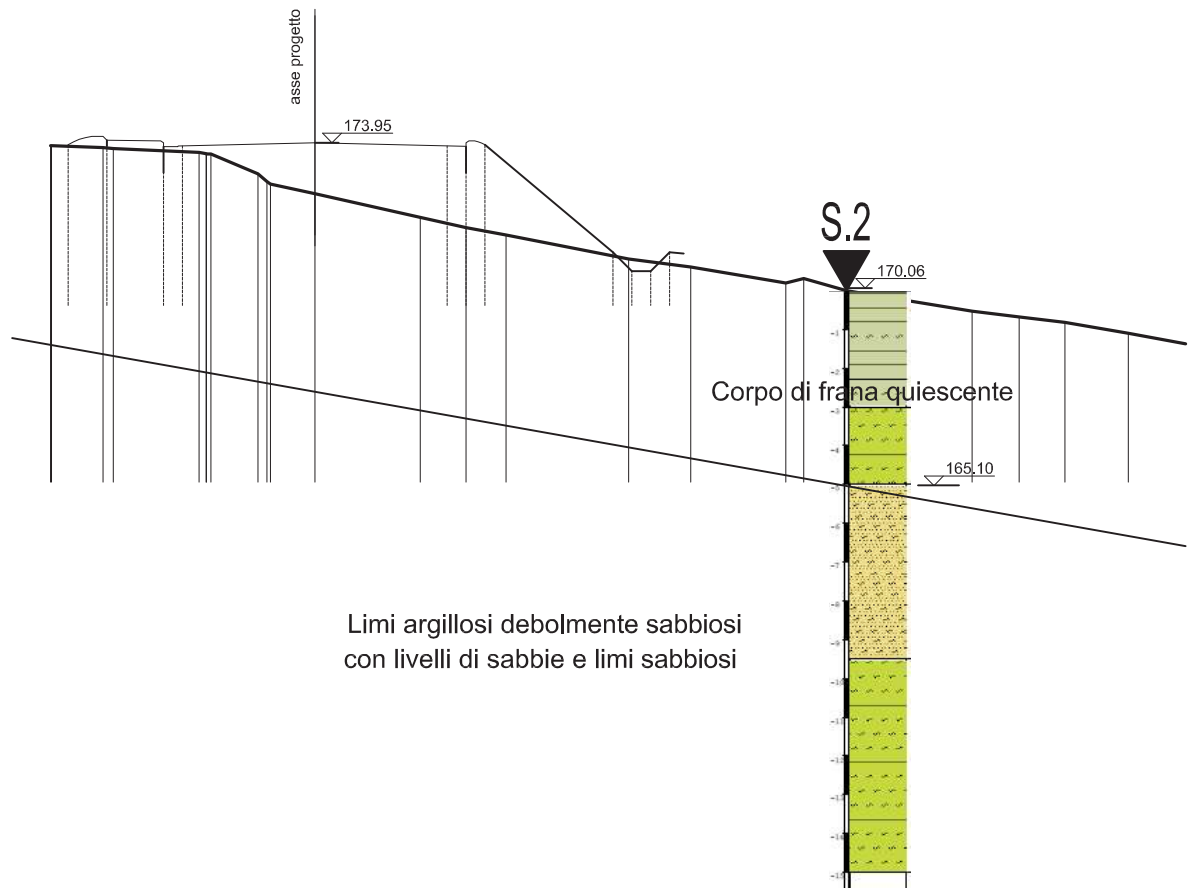


Sezione litologica longitudinale



Sezioni trasversali

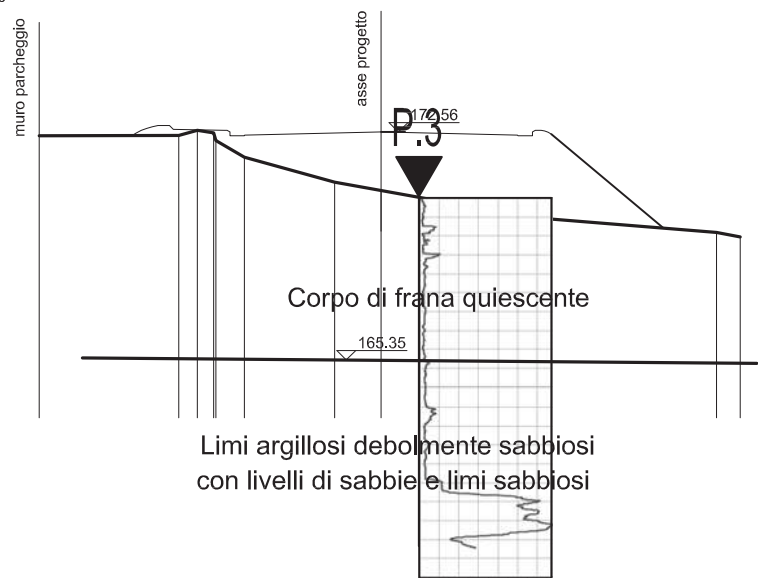
SEZIONE N. : 2 bis
DIST.PROG. : 15.90
scala 1:100

[illegible]

—— p.d.c. attuale

_____ p.d.c. di progetto

SEZIONE N. : 3
DIST.PROG. : 28.900
DIST.PREC. : 16.200
DIST.SUCC. : 21.800



QUOTE TERRENO	174.81	174.41	173.60	173.21	172.81	172.42	172.02	171.63	171.23	170.84	170.44	170.04	169.65	169.25
DIST.PARZIALI TERRENO		3.004	2.484	3.534	2.704	2.180	1.234	3.704		4.204		5.037		
DIST.PROGRESSIVA	0+000	0+304	0+552	0+906	1+176	1+386	1+620	1+990	2+360	2+780	3+180	3+684	4+191	4+691

—— p.d.c. attuale

—— p.d.c. di progetto

scala 1:100

asse progetto

P.5

168.00

P.5b

166.59

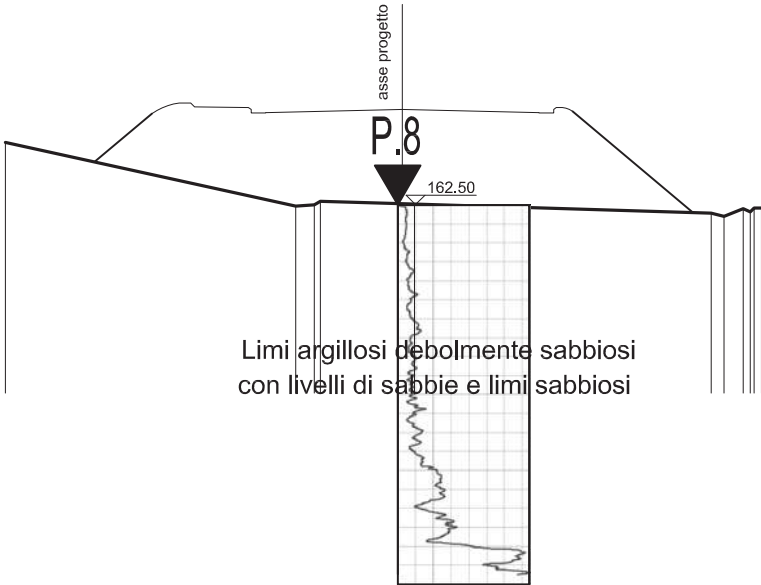
Corpo di frana quiescente

161.80

Limi argillosi debolmente sabbiosi
con livelli di sabbie e limi sabbiosi

———— p.d.c. attuale ————— p.d.c. di progetto

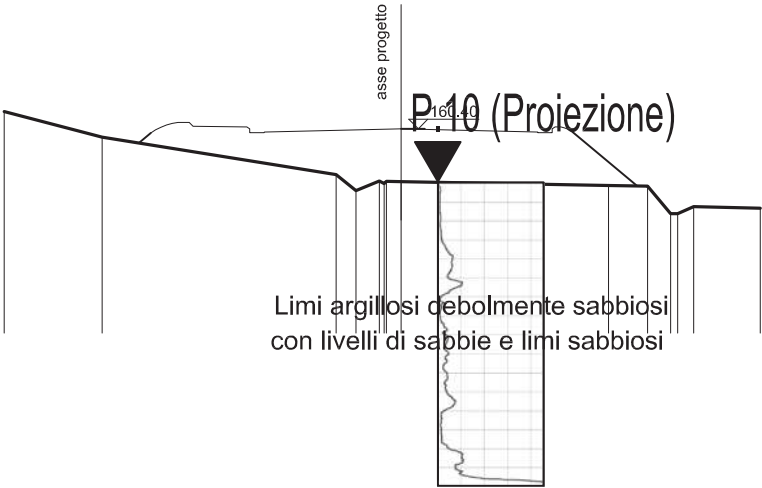
SEZIONE N. : 8
DIST.PROG. : 122.650
DIST.PREC. : 11.150
DIST.SUCC. : 19.600

[illegible]

———— p.d.c. attuale

_____ p.d.c. di progetto

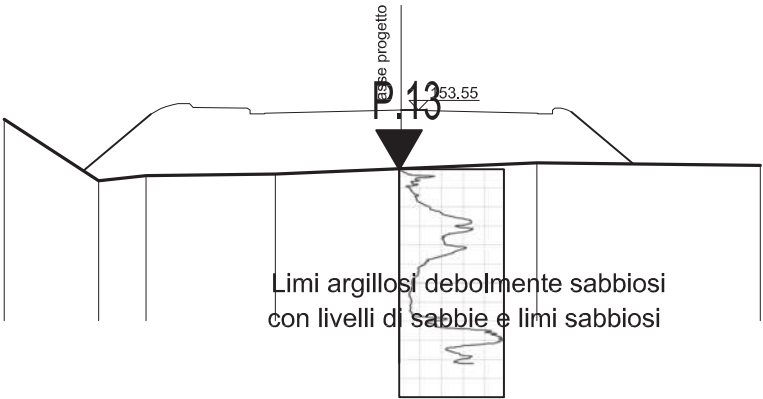
SEZIONE N. : 9
DIST.PROG. : 142.250
DIST.PREC. : 19.600
DIST.SUCC. : 21.300



QUOTE TERRENO	160.488	160.511	160.588	160.575	160.555	160.555	160.588	160.597	160.519	160.511	160.503
DIST.PARZIALI TERRENO	2.084	6.702	2.003	0.478	6.455.493	4.228	0.677	0.532	1.758		
DIST.PROGRESSIVA	+10.000	+10.206	+10.714	+10.890	+17.345.488	+17.349.713	+17.350.390	+17.351.022	+17.352.780	+17.354.538	+17.356.296

—— p.d.c. attuale —— p.d.c. di progetto

SEZIONE N. : 13
DIST.PROG. : 218,500
DIST.PREC. : 18,550
DIST.SUCC. : 23,200

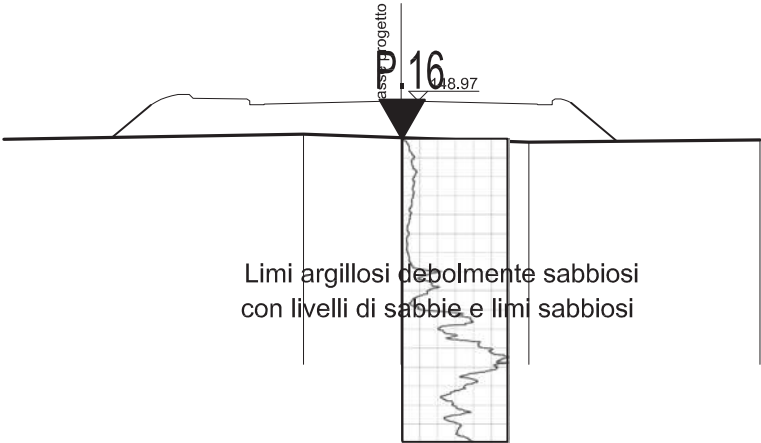


QUOTE TERRENO	113.318	113.668	113.208	113.023	113.023	113.214	113.214
DIST.PARZIALI TERRENO	2,462	1,259	3,418	3,207	3,499	3,411	
DIST.PROGRESSIVA	113,000	114,262	115,721	119,139	122,638	126,052	129,463

—— p.d.c. attuale

—— p.d.c. di progetto

SEZIONE N. : 16
DIST.PROG. : 272.350
DIST.PREC. : 14.300
DIST.SUCC. : 24.650

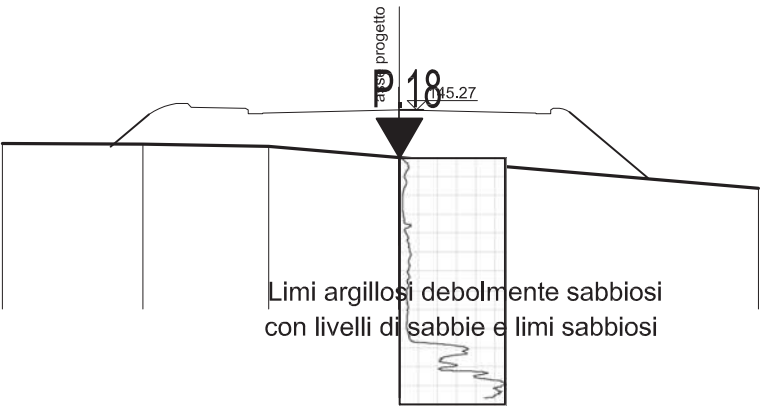


QUOTE TERRENO	14.300	14.300	14.300	14.300	14.300	14.300
DIST.PARZIALI TERRENO	1.000	2.000	3.000	4.000	5.000	6.000
DIST.PROGRESSIVA	14.300	16.300	19.300	23.300	28.300	34.300

— p.d.c. attuale

— p.d.c. di progetto

SEZIONE N. : 18
DIST.PROG. : 316,050
DIST.PREC. : 19,050
DIST.SUCC. : 19,150

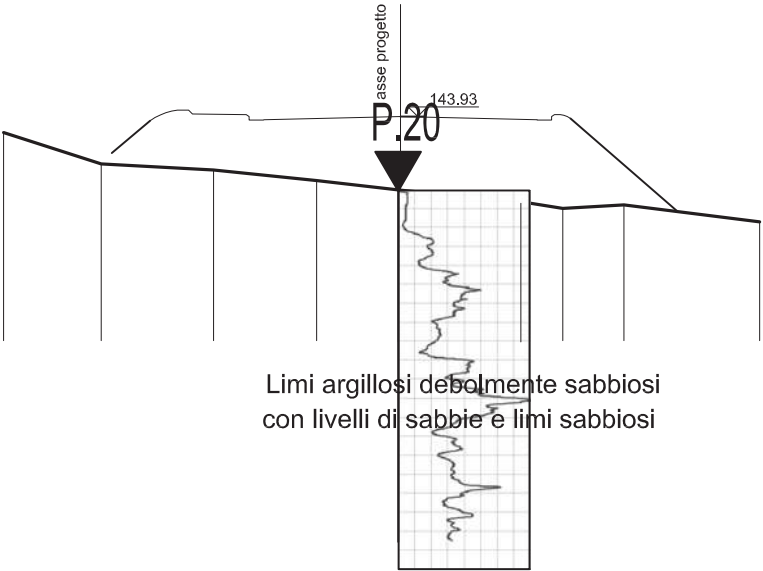


QUOTE TERRENO	142,278	142,284	142,292	142,305	142,318
DIST.PARZIALI TERRENO		0,006	0,008	0,013	0,013
DIST.PROGRESSIVA	142,278	142,284	142,292	142,305	142,318

—— p.d.c. attuale

—— p.d.c. di progetto

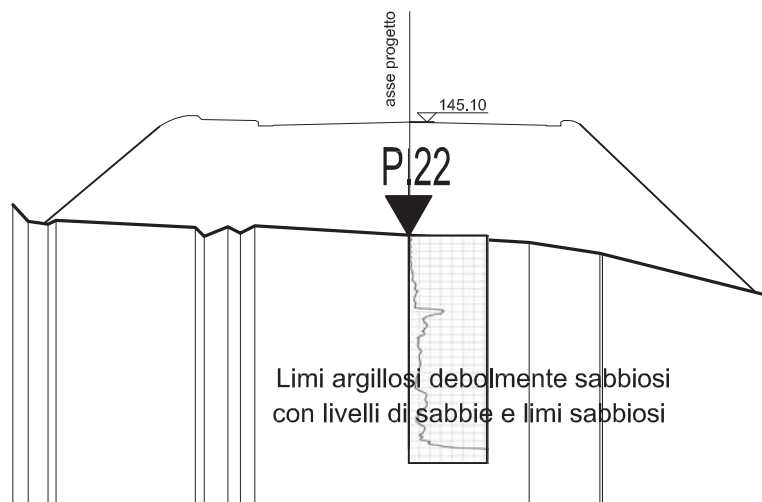
SEZIONE N. : 19
DIST.PROG. : 335.250
DIST.PREC. : 19.200
DIST.SUCC. : 23.700



QUOTE TERRENO	143.300	142.571	142.200	142.232	142.376	142.366	141.947	141.244	141.143
DIST.PARZIALI TERRENO	3.581	2.879	2.729	2.214	0.000	0.000	1.223	1.421	2.098
DIST.PROGRESSIVA	143.300	142.571	142.200	142.232	142.376	142.376	141.947	141.244	141.143

———— p.d.c. attuale ———— p.d.c. di progetto

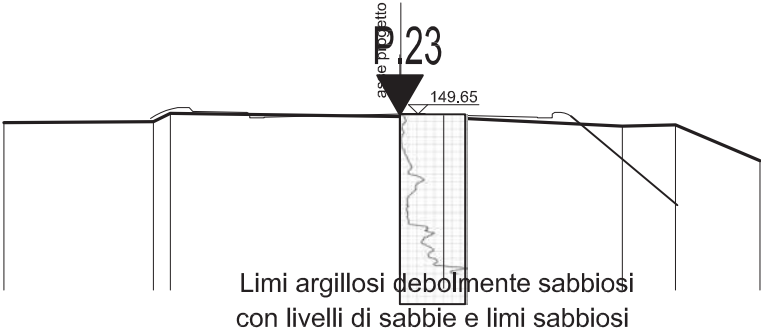
SEZIONE N. : 20
DIST.PROG. : 358.950
DIST.PREC. : 23.700
DIST.SUCC. : 16.700

[illegible]

—— p.d.c. attuale

_____ p.d.c. di progetto

SEZIONE N. : 22
DIST.PROG. : 398.800
DIST.PREC. : 23.150



QUOTE TERRENO	149.54	149.43	149.32	149.21	149.10	148.99	148.88	148.77	148.66
DIST.PARZIALI TERRENO		3.910	3.850	6.290	1.160	6.890	1.437	2.237	
DIST.PROGRESSIVA	0+000	4.200	4.296	10.586	11.746	18.636	20.073	22.310	24.547

———— p.d.c. attuale

———— p.d.c. di progetto