

Regione Emilia-Romagna
Direzione Generale Cura del Territorio e dell'Ambiente

IDROVIA FERRARESE - 1° LOTTO 1° STRALCIO
DEMOLIZIONE E RICOSTRUZIONE BOTTE SIFONE DEL CANALE CITTADINO
ALL'ATTRAVERSAMENTO DEL CANALE BOICELLI

PROGETTO ESECUTIVO

RUP:

Dott. Claudio Miccoli
REGIONE EMILIA-ROMAGNA
AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE
SERVIZIO AREA RENO PO DI VOLANO - SEDE DI FERRARA

PROGETTAZIONE:

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Gruppo di lavoro:
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Ing. Cristina Osti
Geom. Dario Calvanese



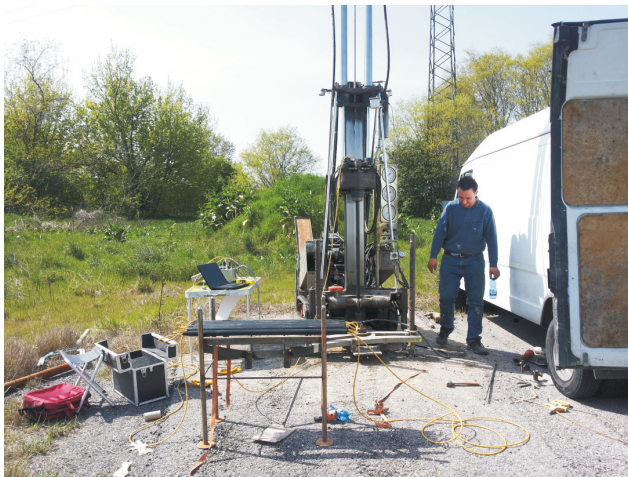
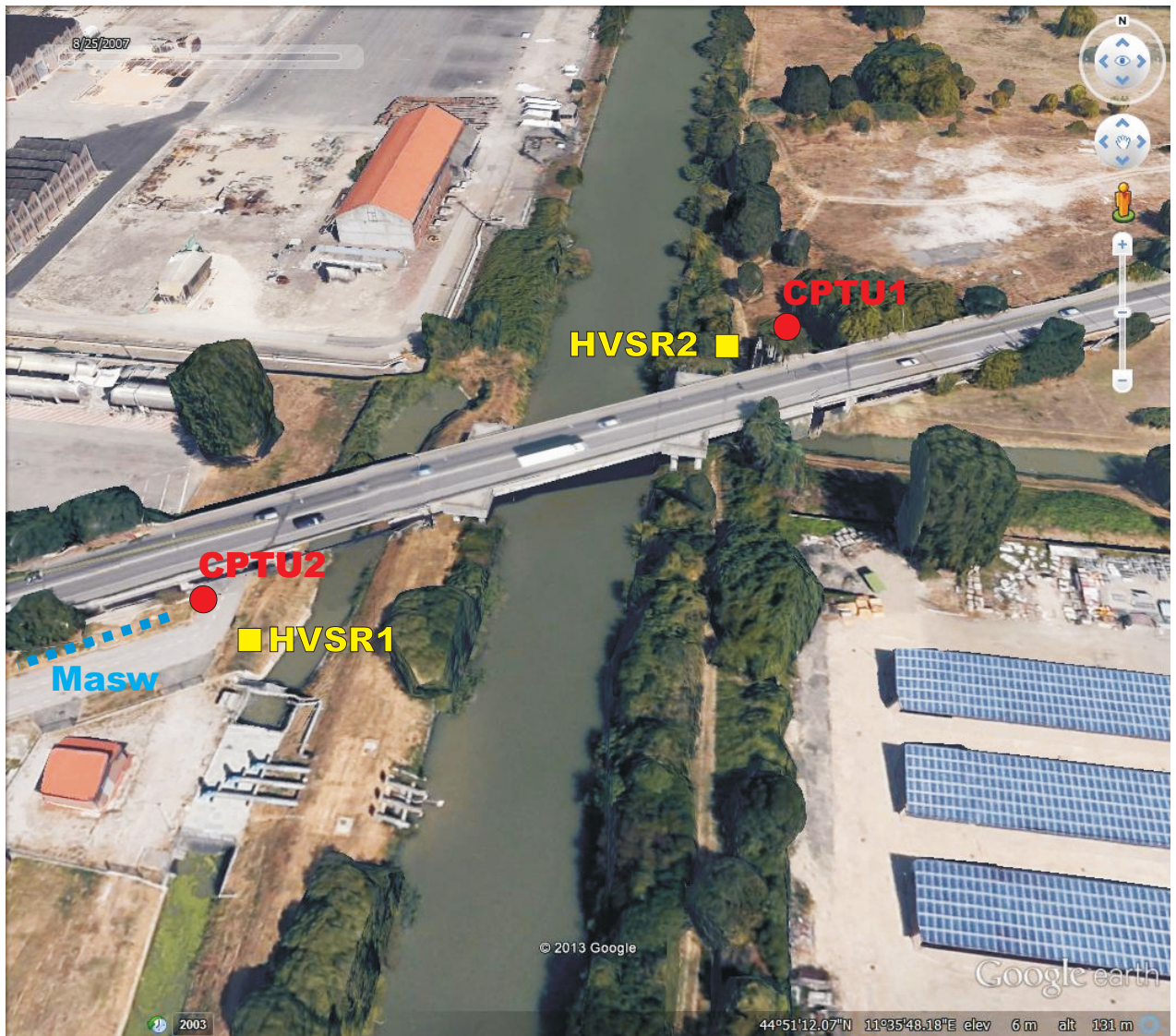
Titolo:

INDAGINI GEOGNOSTICHE

Codice elaborato

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Data	04/06/2018	Archivio	1316_R_6011_E_1.pdf	Scala		
01	04/06/2018	Aggiornamento per passaggio competenza RER		RC	MC	MC
00	16/01/2018	Emissione		RC	MC	MC
Rev.	Data	Oggetto		Redatto	Controllato	Approvato



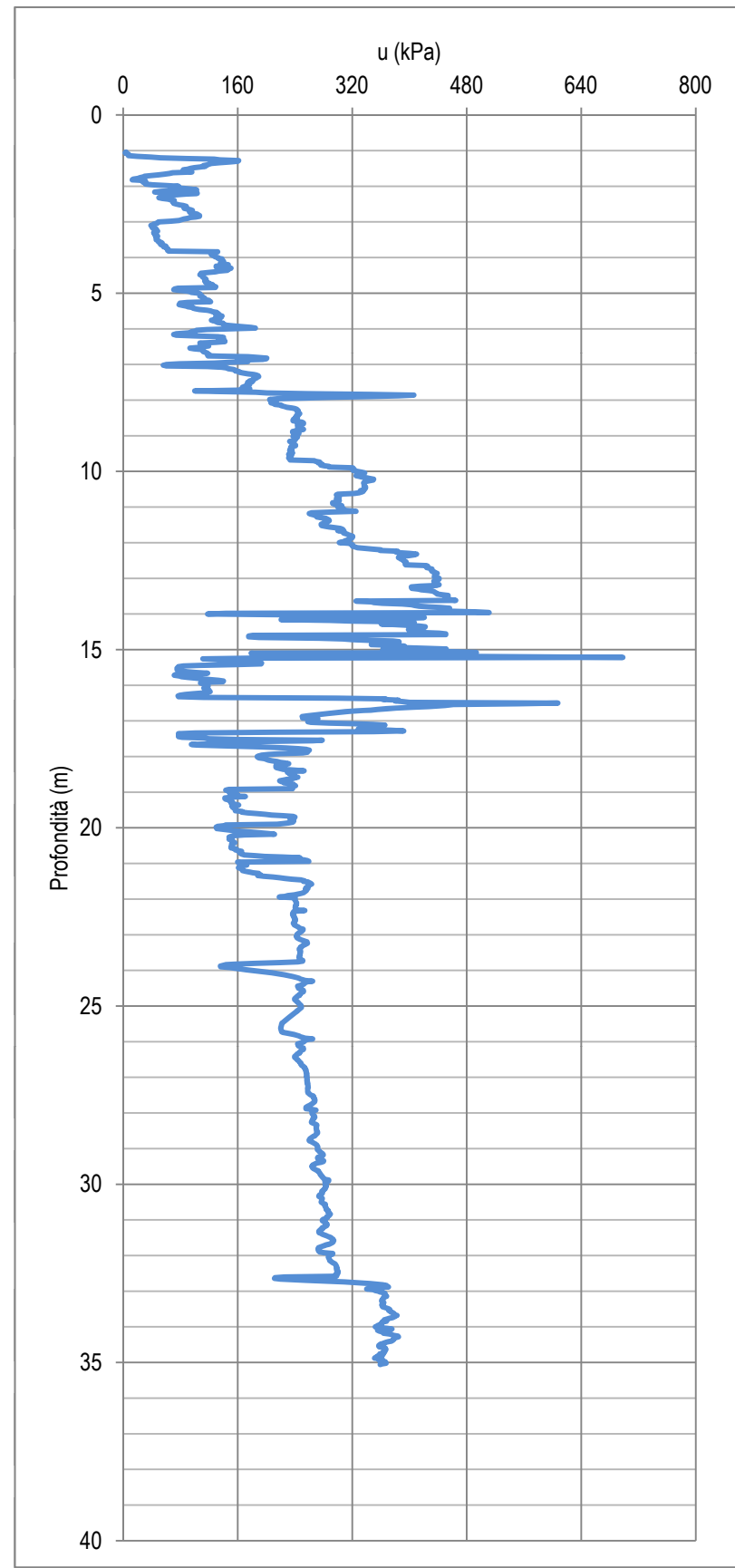
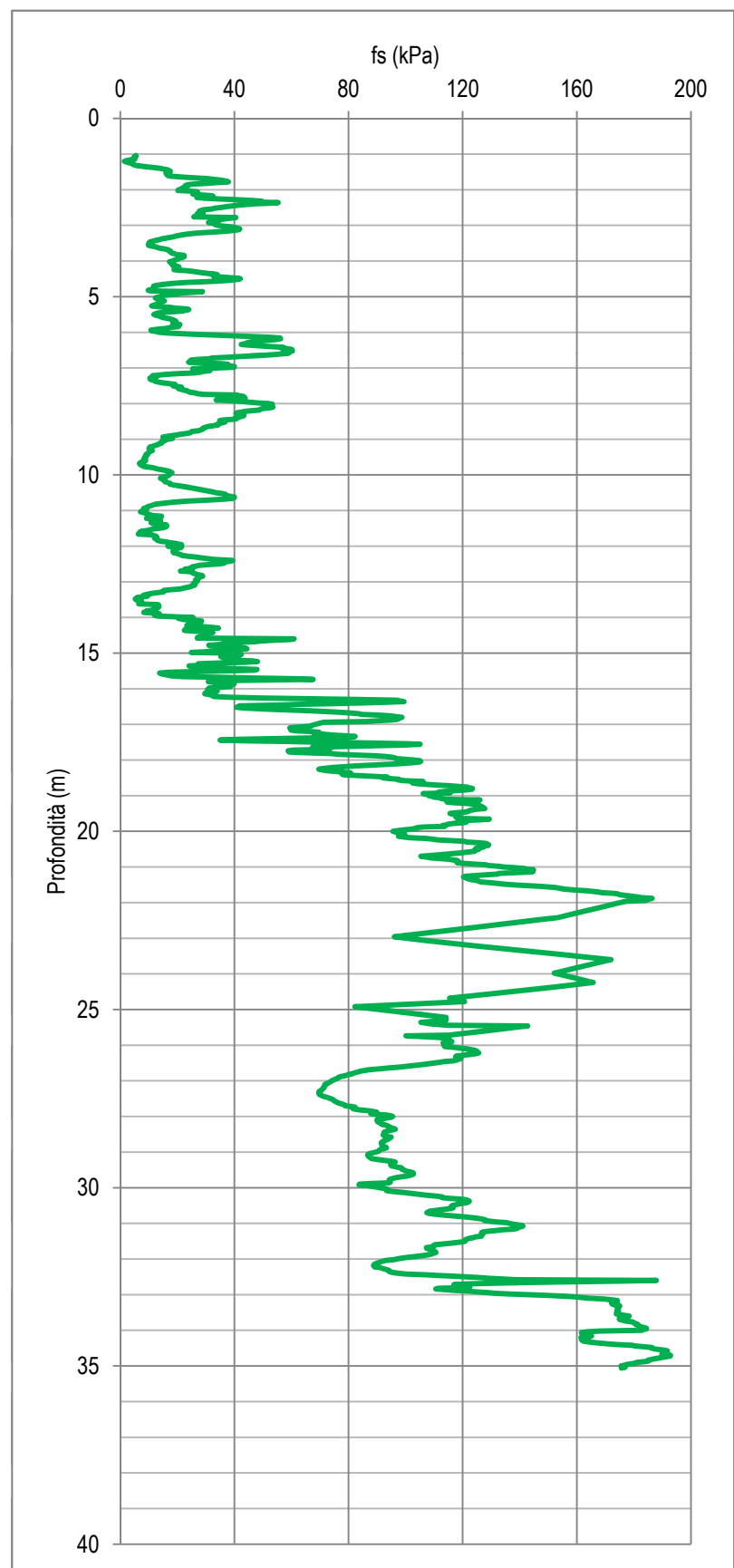
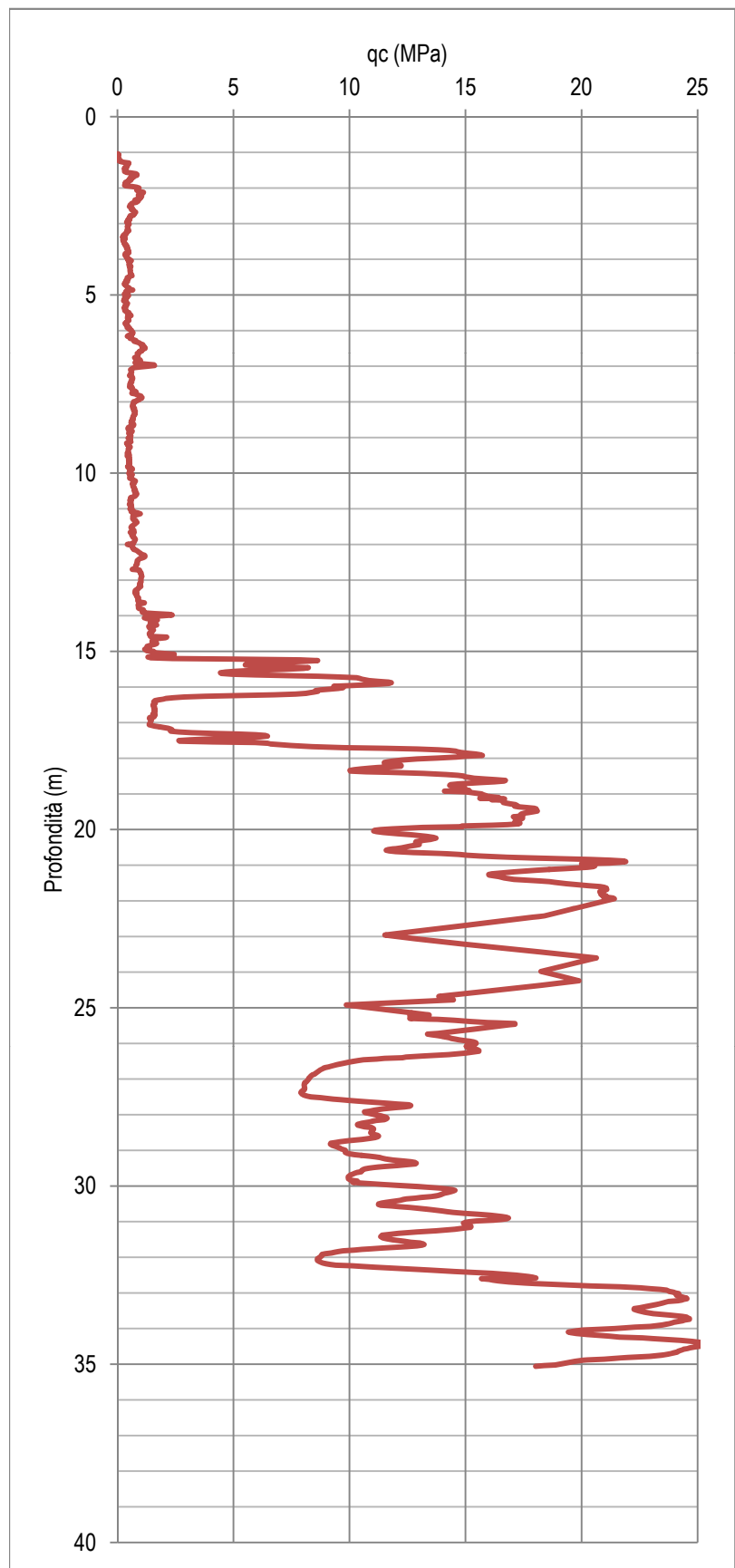
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**Ubicazione indagini e
 documentazione fotografica**



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Committente MC Engineering Srl	Località Ferrara	Data 31/03/2014	CPTU 01
Tecnico PANCANI-CARBONELLA	Cantiere Boicelli/Michelini	Preforo 1.04	Livello Falda 1.47





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Committente	Località	Data	CPTU 01
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
1.04	0.0080	5.4224	4.0000	-0.5320	-0.7296	1.9600	22.2222
1.06	0.0399	5.4224	3.2140	-0.5320	-0.6688	1.9500	22.2222
1.08	0.0399	4.8669	4.0000	-0.7296	-0.5016	1.9600	22.2222
1.10	0.0090	5.0918	7.3333	-0.6460	-0.5548	1.9800	22.1778
1.12	0.0090	5.0918	7.3333	-0.5776	-0.5548	1.9300	22.1778
1.14	0.0226	5.0998	7.3333	-0.6080	-0.6156	1.9100	22.0444
1.16	0.0661	3.6580	19.3333	-0.6156	-0.5852	1.8900	22.0000
1.18	0.0555	2.2136	38.6667	-0.6004	-0.6080	1.9100	22.0000
1.20	0.0023	1.4358	52.0000	-0.6232	-0.6080	1.9100	22.0000
1.22	0.0235	2.1024	88.0000	-0.6080	-0.5852	1.9300	22.0000
1.24	0.1319	2.8856	127.3333	-0.6384	-0.5852	1.9300	21.9111
1.26	0.1212	3.6633	134.6667	-0.6688	-0.6080	1.9500	21.9111
1.28	0.2509	4.5576	161.3333	-0.6916	-0.6004	1.8900	21.8222
1.30	0.4869	4.6740	160.0000	-0.6688	-0.6004	1.8700	21.7333
1.32	0.4666	5.4544	148.6667	-0.6612	-0.6080	1.8900	21.6889
1.34	0.4666	7.5656	134.6667	-0.6384	-0.6080	1.8900	21.6889
1.36	0.4057	9.4624	123.3333	-0.6460	-0.6156	1.9200	21.5556
1.38	0.4057	12.1291	120.0000	-0.6080	-0.6536	1.9000	21.5556
1.40	0.4057	14.0180	117.3333	-0.6156	-0.6612	1.8800	21.5556
1.42	0.3331	15.1344	112.0000	-0.6232	-0.6688	1.9500	21.4667
1.44	0.3757	16.5789	114.6667	-0.6080	-0.6688	1.8700	21.4667
1.46	0.2916	16.5816	106.6667	-0.6004	-0.6992	1.8600	21.4222
1.48	0.2935	17.4758	99.3333	-0.6004	-0.7068	1.8900	21.3333
1.50	0.3593	17.4811	94.0000	-0.6080	-0.7296	1.8700	21.2444
1.52	0.3603	16.5949	90.0000	-0.5776	-0.7676	1.8900	21.2000
1.54	0.3081	16.0420	84.0000	-0.5700	-0.7676	1.8600	21.1556
1.56	0.3739	16.3807	86.0000	-0.5624	-0.7904	1.9300	21.0667
1.58	0.6002	16.6109	90.0000	-0.5700	-0.8132	1.9300	20.9333
1.60	0.7936	16.6162	96.0000	-0.5548	-0.8284	1.7700	20.8444
1.62	0.8372	17.8411	69.3333	-0.5396	-0.8284	1.8200	20.8000
1.64	0.8391	21.5131	64.6667	-0.5244	-0.8360	1.8500	20.7111
1.66	0.7550	25.7380	57.3333	-0.5168	-0.8740	1.8600	20.6667
1.68	0.6941	28.5238	48.6667	-0.5168	-0.8740	1.8400	20.5333
1.70	0.6854	32.1958	40.0000	-0.5016	-0.8740	1.8100	20.4444
1.72	0.5471	33.8624	30.0000	-0.4940	-0.8816	1.7300	20.4444
1.74	0.5820	36.2038	28.0000	-0.5168	-0.9044	1.8500	20.3111
1.76	0.5230	37.2171	23.3333	-0.4940	-0.9120	0.9000	20.0889
1.78	0.5762	37.8838	20.6667	-0.4484	-0.9348	1.5800	20.0889
1.80	0.4495	33.6642	14.0000	-0.4788	-0.9424	1.8600	20.0444
1.82	0.4641	30.7860	12.6667	-0.4560	-0.9424	1.0400	19.8667
1.84	0.3429	25.3931	30.6667	-0.3344	-0.7676	4.3000	17.1556
1.86	0.3970	23.5069	31.3333	-0.3344	-0.7752	2.3100	17.1111
1.88	0.3332	22.8402	27.3333	-0.3344	-0.7752	2.3200	17.1111
1.90	0.3545	23.6180	31.3333	-0.3192	-0.7828	2.3600	17.1111
1.92	0.3090	22.9433	30.6667	-0.3040	-0.7904	2.3500	17.2444
1.94	0.3535	22.1709	31.3333	-0.3040	-0.7904	2.2800	17.1556



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Località

Ferrara

Data

31/03/2014

CPTU 01

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
1.96	0.6417	21.6180	40.6667	-0.2812	-0.8208	2.2500	17.1111
1.98	0.8332	21.7291	60.0000	-0.2736	-0.8132	2.2700	17.1111
2.00	0.9290	20.5069	77.3333	-0.2888	-0.8284	2.2400	17.1111
2.02	0.8854	20.1709	66.6667	-0.2812	-0.8284	2.2900	17.1556
2.04	0.8661	25.0651	70.0000	-0.2660	-0.8512	2.3200	17.0667
2.06	0.8342	27.0651	85.3333	-0.2888	-0.8588	2.2700	17.0667
2.08	0.8777	26.5122	95.3333	-0.2812	-0.8664	2.3600	17.0222
2.10	0.9735	26.4011	102.6667	-0.2736	-0.8816	2.2500	17.0222
2.12	1.1224	25.4011	82.6667	-0.2660	-0.9044	2.2400	17.0222
2.14	1.0905	27.8456	52.6667	-0.2508	-0.9120	2.2900	17.0222
2.16	0.9957	31.1816	44.0000	-0.2508	-0.9348	2.2700	16.9778
2.18	0.9425	32.5149	60.6667	-0.2356	-0.9196	2.2700	16.9778
2.20	0.8990	28.7344	103.3333	-0.2280	-0.9500	2.2800	17.0222
2.22	1.0373	26.8456	88.0000	-0.2204	-0.9348	2.3100	17.0222
2.24	1.0373	29.9567	74.6667	-0.2280	-0.9500	2.3500	17.0222
2.26	0.9957	35.0704	53.3333	-0.2204	-0.9652	2.2200	16.9778
2.28	0.9880	41.1896	53.3333	-0.2356	-0.9804	2.2200	16.8444
2.30	0.9551	46.0758	52.6667	-0.2052	-0.9956	2.2700	16.8889
2.32	0.8275	49.6313	50.0000	-0.2052	-0.9956	2.2300	16.8889
2.34	0.7550	47.3033	54.6667	-0.1900	-0.9956	4.0800	16.8000
2.36	0.8942	55.3060	62.6667	-0.1672	-0.9956	1.6200	16.7556
2.38	0.8217	51.5336	66.0000	-0.1596	-1.0032	2.3600	16.6667
2.40	0.8217	46.9780	71.3333	-0.1824	-1.0184	2.2700	16.6667
2.42	0.6728	43.2002	70.0000	-0.1596	-1.0336	2.2400	16.6667
2.44	0.6099	41.0918	69.3333	-0.1444	-1.0336	2.2800	16.6222
2.46	0.5877	38.0891	70.6667	-0.1520	-1.0488	2.2200	16.6667
2.48	0.5451	36.9780	70.6667	-0.1140	-1.0640	2.3200	16.6667
2.50	0.5345	35.2002	74.0000	-0.0836	-1.0488	2.2700	16.6667
2.52	0.5132	32.8669	78.0000	-0.0760	-1.0716	2.2300	16.6667
2.54	0.5877	32.0891	84.0000	-0.0684	-1.0792	2.4200	16.6667
2.56	0.6312	29.2029	88.0000	-0.0532	-1.0868	2.2700	16.6222
2.58	0.6515	28.3113	88.6667	-0.0532	-1.0792	2.2300	16.6667
2.60	0.5993	27.6473	84.6667	-0.0532	-1.1172	2.1600	16.6222
2.62	0.6738	27.6473	85.3333	-0.0532	-1.1248	2.3600	16.6222
2.64	0.6747	28.8722	88.6667	-0.0532	-1.1476	2.2700	16.5778
2.66	0.7067	28.9833	94.0000	-0.0228	-1.1324	2.2500	16.5778
2.68	0.7821	26.8749	96.6667	-0.0304	-1.1628	2.2400	16.5333
2.70	0.7598	27.6500	96.0000	-0.0228	-1.1552	2.4300	16.5778
2.72	0.7279	27.6500	92.6667	-0.0152	-1.1704	2.2800	16.5778
2.74	0.6960	27.0944	94.0000	-0.0228	-1.1704	2.2700	16.5778
2.76	0.6970	25.7638	98.0000	-0.0228	-1.1932	2.3100	16.5333
2.78	0.5454	40.4811	103.3333	0.1292	-1.1172	3.8400	15.6889
2.82	0.5454	36.2589	106.6667	0.1444	-1.1248	2.6400	15.6889
2.84	0.5028	35.2589	106.6667	0.1444	-1.1324	2.7000	15.6889
2.86	0.5347	34.5922	101.3333	0.1596	-1.1552	2.7000	15.6889
2.88	0.5347	33.1478	93.3333	0.1520	-1.1552	2.6100	15.6889



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Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
2.90	0.4390	31.7033	90.6667	0.1748	-1.1552	1.5800	15.6889
2.92	0.4931	30.9282	84.6667	0.1596	-1.1856	2.2200	15.6444
2.94	0.4283	32.8144	81.3333	0.1748	-1.1856	2.2700	15.6889
2.96	0.3964	33.8144	78.0000	0.1976	-1.1932	2.2400	15.6889
2.98	0.4177	33.2589	66.6667	0.1976	-1.2008	2.2400	15.6889
3.00	0.4477	34.1424	49.3333	0.2128	-1.2008	2.3100	15.7778
3.02	0.5009	35.9202	48.0000	0.1976	-1.2084	2.2700	15.7778
3.04	0.4583	38.9202	47.3333	0.2204	-1.2160	2.1800	15.7778
3.06	0.4390	40.2589	42.6667	0.2280	-1.2312	2.2300	15.6889
3.08	0.4187	41.2616	41.3333	0.2432	-1.2464	2.1900	15.6444
3.10	0.4400	41.8171	38.6667	0.2204	-1.2540	2.2300	15.6444
3.12	0.4477	41.6980	40.6667	0.2584	-1.2540	2.2000	15.7778
3.14	0.4573	39.9176	41.3333	0.2584	-1.2768	2.2500	15.8222
3.16	0.4293	37.7060	40.6667	0.2432	-1.2844	2.2700	15.6444
3.18	0.4157	33.9202	42.0000	0.2736	-1.2768	2.2200	15.7778
3.20	0.4902	30.2536	46.0000	0.2660	-1.2920	2.1900	15.7778
3.22	0.4370	26.0313	44.6667	0.2812	-1.2996	2.2400	15.7778
3.24	0.3829	23.5842	46.0000	0.2812	-1.2996	2.2200	15.8222
3.26	0.3819	22.2482	48.0000	0.3040	-1.3148	2.2500	15.8667
3.28	0.3829	20.5842	44.6667	0.2964	-1.3300	2.2700	15.8222
3.30	0.3094	19.3647	42.6667	0.2964	-1.3376	2.2400	15.7778
3.32	0.2668	18.5869	44.0000	0.3040	-1.3604	2.2800	15.7778
3.34	0.2455	17.2536	44.0000	0.2964	-1.3680	2.2500	15.7778
3.36	0.2987	16.0313	44.0000	0.3116	-1.3680	2.1900	15.7778
3.38	0.2117	14.4704	45.3333	0.3268	-1.3604	2.2200	15.8667
3.40	0.3297	13.8064	48.0000	0.3268	-1.3756	2.2300	15.8222
3.42	0.2668	12.3647	46.0000	0.3496	-1.3984	2.2300	15.7778
3.44	0.3190	11.6953	47.3333	0.3496	-1.3984	2.2700	15.8222
3.46	0.2339	10.5842	46.0000	0.3496	-1.3984	2.2300	15.8222
3.48	0.2668	10.1424	46.0000	0.3648	-1.4136	2.3300	15.7778
3.50	0.2562	10.3647	46.0000	0.3572	-1.4136	2.2400	15.7778
3.52	0.2774	10.4758	48.6667	0.3648	-1.4364	2.2000	15.7778
3.54	0.3113	9.8144	50.0000	0.3800	-1.4440	2.2400	15.6889
3.56	0.2987	9.9202	49.3333	0.3800	-1.4440	2.2400	15.7778
3.58	0.3190	10.6953	53.3333	0.4028	-1.4516	2.2500	15.8222
3.60	0.3838	12.3647	54.6667	0.3952	-1.4592	2.2900	15.7778
3.62	0.3432	13.0367	52.0000	0.3800	-1.4668	2.2900	15.6889
3.64	0.3626	13.8091	52.6667	0.4104	-1.4820	2.3200	15.7778
3.66	0.4283	15.3700	56.6667	0.4028	-1.4820	2.2200	15.6889
3.68	0.4390	16.5922	59.3333	0.4256	-1.4896	2.1900	15.6889
3.70	0.3964	16.9256	56.6667	0.4256	-1.4972	2.2200	15.6889
3.72	0.4264	17.5869	60.6667	0.4484	-1.4972	2.2900	15.7778
3.74	0.4370	17.4758	60.6667	0.4484	-1.5048	2.2700	15.7778
3.76	0.4815	17.8144	62.6667	0.4408	-1.5428	2.1800	15.6889
3.78	0.4477	18.1424	62.0000	0.4484	-1.5352	2.5000	15.7778
3.80	0.4477	19.0313	62.0000	0.4636	-1.5428	2.2400	15.7778



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
3.82	0.4922	19.7033	63.3333	0.4636	-1.5732	2.2700	15.6889
3.84	0.3403	22.2509	132.0000	0.5320	-1.5504	36.3600	15.8222
3.86	0.3297	22.0287	126.6667	0.5472	-1.5504	2.3200	15.8222
3.88	0.4157	22.3647	126.6667	0.5548	-1.5732	2.3200	15.7778
3.90	0.3413	21.8091	122.6667	0.5472	-1.5732	2.2900	15.7778
3.92	0.3964	20.5922	123.3333	0.5548	-1.5808	2.2700	15.6889
3.94	0.3964	20.2589	125.3333	0.5776	-1.5884	2.2700	15.6889
3.96	0.4283	19.7033	127.3333	0.5624	-1.5884	2.2700	15.6889
3.98	0.4264	18.6980	128.6667	0.5776	-1.6036	2.3100	15.7778
4.00	0.5115	18.3647	132.6667	0.5928	-1.6112	2.3300	15.7778
4.02	0.4496	17.2589	132.6667	0.5928	-1.6188	2.3100	15.6889
4.04	0.5966	17.9202	138.0000	0.5928	-1.6188	2.3200	15.7778
4.06	0.4892	18.3620	138.0000	0.6156	-1.6188	2.2700	15.8222
4.08	0.5318	18.0287	136.6667	0.6156	-1.6264	2.2800	15.8222
4.10	0.5318	18.8064	140.0000	0.6156	-1.6264	2.2500	15.8222
4.12	0.4989	18.3593	137.3333	0.6384	-1.6340	2.2700	15.8667
4.14	0.5318	19.5842	136.0000	0.6308	-1.6492	2.2700	15.8222
4.16	0.4999	20.4731	137.3333	0.6156	-1.6568	2.3200	15.8222
4.18	0.5105	20.4731	140.0000	0.6460	-1.6720	2.2700	15.8222
4.20	0.5743	20.0287	146.6667	0.6460	-1.6872	2.3500	15.8222
4.22	0.5540	19.1424	142.0000	0.6612	-1.6948	2.2400	15.7778
4.24	0.5318	18.8064	130.0000	0.6612	-1.6948	2.2400	15.8222
4.26	0.5424	20.9176	130.0000	0.6536	-1.7100	2.2700	15.8222
4.28	0.5434	24.0313	141.3333	0.6536	-1.7176	2.2700	15.7778
4.30	0.5521	26.3593	150.6667	0.6764	-1.7100	2.2900	15.8667
4.32	0.5414	27.8038	148.0000	0.6916	-1.7328	2.2700	15.8667
4.34	0.5521	29.5816	145.3333	0.6840	-1.7404	2.3300	15.8667
4.36	0.5521	32.6927	145.3333	0.6992	-1.7404	2.3100	15.8667
4.38	0.5521	33.9149	134.0000	0.6764	-1.7632	2.2200	15.8667
4.40	0.5734	33.2482	128.6667	0.6840	-1.7632	2.2500	15.8667
4.42	0.5946	32.5816	118.0000	0.6992	-1.7632	2.2500	15.8667
4.44	0.5946	34.1371	108.6667	0.7144	-1.7860	2.2300	15.8667
4.46	0.6256	37.5789	110.0000	0.7220	-1.8012	2.2700	15.9111
4.48	0.5066	41.1291	107.3333	0.7220	-1.7936	2.2200	16.0000
4.50	0.4979	42.0233	110.6667	0.7144	-1.8164	2.3600	15.9111
4.52	0.4234	40.6900	110.0000	0.7296	-1.8012	2.2800	15.9111
4.54	0.4766	39.0233	110.6667	0.7372	-1.8164	2.2400	15.9111
4.56	0.4341	34.3567	112.0000	0.7372	-1.8240	2.2400	15.9111
4.58	0.4109	29.1291	114.0000	0.7372	-1.8392	2.2400	16.0000
4.60	0.3673	24.5709	115.3333	0.7372	-1.8392	2.3200	16.0444
4.62	0.4321	19.9069	116.0000	0.7600	-1.8392	2.2800	16.0000
4.64	0.3577	16.3513	115.3333	0.7448	-1.8620	2.1900	16.0000
4.66	0.3141	14.1264	114.0000	0.7448	-1.8620	2.4300	16.0444
4.68	0.3673	13.0153	116.0000	0.7600	-1.8696	2.2900	16.0444
4.70	0.2929	11.6820	115.3333	0.7600	-1.8848	2.2400	16.0444
4.72	0.3567	11.9042	120.0000	0.7752	-1.8848	2.1800	16.0444



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prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
4.74	0.3673	11.9042	119.3333	0.7600	-1.9152	2.3600	16.0444
4.76	0.3876	11.9016	124.6667	0.7752	-1.9152	2.2900	16.0889
4.78	0.4418	11.2376	123.3333	0.7676	-1.9304	2.2800	16.0444
4.80	0.4940	11.2349	126.0000	0.7676	-1.9304	2.2500	16.0889
4.82	0.5046	9.7904	129.3333	0.7828	-1.9304	2.4300	16.0889
4.84	0.5366	10.5682	128.6667	0.7676	-1.9532	2.2700	16.0889
4.86	0.6593	28.7771	76.6667	0.8132	-1.9684	50.0000	16.3111
4.88	0.4688	24.6687	72.0000	0.8056	-1.9912	2.3600	16.2667
4.90	0.3615	21.2216	70.6667	0.8208	-1.9912	2.2400	16.3111
4.92	0.3624	19.6687	78.6667	0.8208	-1.9988	2.2400	16.2667
4.94	0.4146	18.1104	89.3333	0.8284	-2.0140	2.2400	16.3111
4.96	0.3199	15.5576	93.3333	0.8208	-2.0292	2.2900	16.2667
4.98	0.2976	14.4438	95.3333	0.8588	-2.0292	2.3100	16.3111
5.00	0.4466	14.4438	104.6667	0.8512	-2.0368	2.2800	16.3111
5.02	0.4785	12.7771	107.3333	0.8512	-2.0444	2.3100	16.3111
5.04	0.4050	12.3353	108.0000	0.8664	-2.0520	2.3200	16.2667
5.06	0.4156	13.1131	108.6667	0.8740	-2.0748	2.2700	16.2667
5.08	0.3083	13.2216	107.3333	0.8892	-2.0900	2.2300	16.3111
5.10	0.3827	14.8882	110.6667	0.8664	-2.0976	2.2400	16.3111
5.12	0.3083	15.4438	111.3333	0.8968	-2.0976	2.2700	16.3111
5.14	0.3295	14.6660	114.0000	0.8740	-2.0976	2.2700	16.3111
5.16	0.2647	13.7744	111.3333	0.8968	-2.1280	2.2700	16.3556
5.18	0.3083	14.1104	112.0000	0.8968	-2.1280	2.3300	16.3111
5.20	0.3711	14.1078	119.3333	0.9348	-2.1280	2.2900	16.3556
5.22	0.3818	12.4411	118.6667	0.9044	-2.1584	2.2200	16.3556
5.24	0.4359	11.7771	122.0000	0.9348	-2.1660	2.2400	16.3111
5.26	0.4137	10.9967	89.3333	0.9500	-2.1660	2.2700	16.3556
5.28	0.4040	13.2216	79.3333	0.9424	-2.1812	2.2700	16.3111
5.30	0.3286	17.5522	78.6667	0.9576	-2.1964	2.2700	16.3556
5.32	0.3605	18.9967	78.0000	0.9500	-2.2116	2.2800	16.3556
5.34	0.3605	22.6633	82.6667	0.9576	-2.2192	2.3300	16.3556
5.36	0.2860	23.9967	88.0000	0.9576	-2.2116	2.2900	16.3556
5.38	0.3169	22.6607	90.6667	0.9576	-2.2420	2.2200	16.4000
5.40	0.3286	22.1078	97.3333	0.9804	-2.2496	2.2400	16.3556
5.42	0.3605	18.7744	98.0000	0.9880	-2.2648	2.2400	16.3556
5.44	0.3169	15.1051	100.6667	1.0108	-2.2876	2.2500	16.4000
5.46	0.3605	13.1078	106.6667	1.0184	-2.2952	2.2700	16.3556
5.48	0.4233	12.3273	117.3333	1.0184	-2.2952	2.2300	16.4000
5.50	0.4978	11.7718	122.6667	1.0108	-2.3028	2.3900	16.4000
5.52	0.4349	12.3300	124.6667	1.0260	-2.3256	2.2500	16.3556
5.54	0.4639	13.5442	130.6667	1.0412	-2.3256	2.2400	16.4889
5.56	0.5510	14.1051	128.6667	1.0260	-2.3408	2.2400	16.4000
5.58	0.5829	14.6607	133.3333	1.0336	-2.3484	2.2700	16.4000
5.60	0.4852	16.0998	134.0000	1.0564	-2.3636	2.2900	16.4889
5.62	0.4310	17.3193	130.0000	1.0564	-2.3636	2.2700	16.5333
5.64	0.4852	18.3220	138.0000	1.0716	-2.3864	2.2400	16.4889



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Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
5.66	0.4320	18.0998	134.0000	1.0716	-2.3864	2.4000	16.4889
5.68	0.4639	19.3220	136.6667	1.0716	-2.4092	2.2700	16.4889
5.70	0.4427	19.5442	128.6667	1.0792	-2.4320	2.2200	16.4889
5.72	0.4872	19.3273	134.6667	1.1172	-2.4320	2.2400	16.4000
5.74	0.4233	18.4384	130.0000	1.1096	-2.4548	2.3500	16.4000
5.76	0.4233	19.5496	123.3333	1.1096	-2.4472	2.2200	16.4000
5.78	0.3575	20.8776	127.3333	1.1248	-2.4624	2.2800	16.4889
5.80	0.3247	20.3193	130.0000	1.1096	-2.4700	2.3300	16.5333
5.82	0.3469	20.5442	132.0000	1.1172	-2.4928	2.3300	16.4889
5.84	0.3991	20.3193	139.3333	1.1400	-2.4928	2.2500	16.5333
5.86	0.4098	17.4304	139.3333	1.1248	-2.5004	2.2700	16.5333
5.88	0.4639	16.5442	142.0000	1.1248	-2.5156	2.2900	16.4889
5.90	0.4610	15.0918	144.0000	1.1780	-2.5384	11.4200	16.6222
5.92	0.4194	12.5389	154.6667	1.1856	-2.5536	2.2500	16.5778
5.94	0.5345	10.7558	166.6667	1.1932	-2.5612	2.2200	16.6667
5.96	0.4929	10.9807	178.6667	1.1856	-2.5840	2.2900	16.6222
5.98	0.5461	12.8696	184.6667	1.2008	-2.5916	2.2900	16.6222
6.00	0.6099	13.5362	150.6667	1.2084	-2.5992	2.2900	16.6222
6.02	0.6283	16.6393	117.3333	1.2008	-2.6144	2.3100	16.7556
6.04	0.6515	21.9780	102.6667	1.2084	-2.6296	2.3100	16.6667
6.06	0.6728	27.6447	101.3333	1.2084	-2.6372	2.2500	16.6667
6.08	0.6302	33.8669	95.3333	1.2236	-2.6676	2.2300	16.6667
6.10	0.6389	41.0838	98.0000	1.2312	-2.6752	2.2300	16.7556
6.12	0.5770	47.5336	85.3333	1.2388	-2.6980	2.2300	16.6667
6.14	0.4707	52.3113	74.0000	1.2388	-2.7056	2.2200	16.6667
6.16	0.4281	55.9780	70.6667	1.2616	-2.7208	2.2400	16.6667
6.18	0.5857	56.1949	74.0000	1.2616	-2.7208	2.2800	16.7556
6.20	0.5325	54.8616	100.0000	1.2768	-2.7284	2.2700	16.7556
6.22	0.5432	52.5282	132.6667	1.2616	-2.7512	2.2000	16.7556
6.24	0.6496	49.0838	140.0000	1.2388	-2.7664	2.1800	16.7556
6.26	0.7027	46.8616	134.0000	1.2768	-2.7816	2.1800	16.7556
6.28	0.7869	44.9700	133.3333	1.2616	-2.7968	2.1800	16.8000
6.30	0.7221	44.3007	134.6667	1.2920	-2.8120	2.1700	16.8444
6.32	0.8178	43.5229	141.3333	1.2844	-2.8272	2.2000	16.8444
6.34	0.9252	42.4144	138.0000	1.2920	-2.8348	2.2400	16.8000
6.36	0.9561	44.8562	142.0000	1.3072	-2.8500	2.2300	16.8444
6.38	1.0209	48.5256	130.0000	1.2920	-2.8500	2.1600	16.8000
6.40	1.0954	52.4144	107.3333	1.2920	-2.8728	2.2000	16.8000
6.42	1.1041	57.0758	111.3333	1.3148	-2.8728	2.1900	16.8889
6.44	1.0489	56.4038	110.0000	1.3224	-2.8804	2.2000	16.9778
6.46	1.1659	58.5149	118.6667	1.3224	-2.8804	2.2300	16.9778
6.48	1.1582	60.0784	119.3333	1.3148	-2.9108	2.1700	16.8444
6.50	1.1872	59.4038	112.0000	1.3300	-2.8956	2.3200	16.9778
6.52	1.0915	60.2927	105.3333	1.3300	-2.8956	2.2300	16.9778
6.54	1.0509	58.2980	93.3333	1.3300	-2.9260	2.1700	16.8889
6.56	1.0586	57.1789	99.3333	1.3452	-2.9184	2.1800	17.0222



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prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
6.58	0.9512	59.0651	110.0000	1.3604	-2.9336	2.2200	17.0667
6.60	0.9715	57.2847	112.0000	1.3300	-2.9336	2.2500	17.1111
6.62	0.9299	54.9540	112.0000	1.3452	-2.9564	2.2000	17.0667
6.64	0.8565	51.5122	112.0000	1.3300	-2.9640	2.1800	17.0222
6.66	0.8970	46.8402	114.6667	1.3604	-2.9716	2.3800	17.1111
6.68	0.8758	42.2847	117.3333	1.3756	-2.9716	2.1900	17.1111
6.70	0.8661	37.3984	118.0000	1.3528	-3.0096	2.1600	17.0667
6.72	0.8854	32.0598	120.0000	1.3756	-3.0020	2.1600	17.1556
6.74	0.8013	31.3958	118.0000	1.3680	-3.0096	2.3100	17.1111
6.76	0.7365	26.9487	118.6667	1.3908	-3.0324	2.1800	17.1556
6.78	0.8003	24.7264	174.6667	1.4060	-3.0324	2.2200	17.1556
6.80	0.8854	24.7264	188.0000	1.4136	-3.0476	2.3100	17.1556
6.82	0.9715	25.0624	200.6667	1.4136	-3.0780	2.2700	17.1111
6.84	0.9918	23.9487	200.0000	1.4288	-3.0780	2.1900	17.1556
6.86	0.9357	28.2740	194.6667	1.4516	-3.0628	2.2000	17.2889
6.88	0.7771	35.7211	159.3333	1.4820	-3.0932	2.6400	17.2444
6.90	0.7588	37.7291	166.0000	1.4820	-3.1008	2.2800	17.1111
6.92	0.9290	37.2847	174.0000	1.4744	-3.1008	2.2800	17.1111
6.94	1.2056	38.1736	146.6667	1.4896	-3.1236	2.2500	17.1111
6.96	1.5663	39.9487	127.3333	1.4820	-3.1312	2.1800	17.1556
6.98	1.5982	39.8376	78.0000	1.4972	-3.1312	2.2000	17.1556
7.00	1.3003	33.7264	60.0000	1.5124	-3.1464	2.2300	17.1556
7.02	0.9812	25.3931	56.0000	1.5124	-3.1768	2.2700	17.1556
7.04	0.7046	30.2820	60.0000	1.5200	-3.1996	2.2400	17.1556
7.06	0.6514	31.5042	117.3333	1.5276	-3.1844	2.2400	17.1556
7.08	0.6282	31.2767	137.3333	1.5428	-3.1768	2.3200	17.2444
7.10	0.5673	28.7291	145.3333	1.5276	-3.2148	2.1900	17.1111
7.12	0.5750	28.1656	146.6667	1.5352	-3.2224	2.2000	17.2444
7.14	0.5962	25.9433	154.0000	1.5580	-3.2224	2.2400	17.2444
7.16	0.6175	20.1656	156.6667	1.5580	-3.2224	2.2400	17.2444
7.18	0.5876	15.9487	156.6667	1.5580	-3.2528	2.2700	17.1556
7.20	0.5779	13.3958	162.0000	1.5656	-3.2604	2.2500	17.1111
7.22	0.5769	11.2820	162.6667	1.5732	-3.2528	2.3100	17.1556
7.24	0.5962	12.7211	168.0000	1.5960	-3.2604	2.2700	17.2444
7.26	0.5237	10.9487	174.0000	1.5808	-3.2832	2.2200	17.1556
7.28	0.5779	10.3958	182.6667	1.6036	-3.2832	2.2000	17.1111
7.30	0.6301	10.7264	186.0000	1.6036	-3.2984	2.2400	17.1556
7.32	0.6494	10.4989	188.6667	1.6188	-3.3060	2.2200	17.2444
7.34	0.6388	11.1656	189.3333	1.6264	-3.3136	2.2400	17.2444
7.36	0.6494	12.1656	187.3333	1.6492	-3.3288	2.2300	17.2444
7.38	0.6195	12.3931	186.0000	1.6416	-3.3364	2.3200	17.1556
7.40	0.5982	13.6153	182.6667	1.6416	-3.3440	2.2500	17.1556
7.42	0.5876	15.0598	182.6667	1.6568	-3.3668	2.2200	17.1556
7.44	0.6175	17.2767	180.0000	1.6872	-3.3668	2.2000	17.2444
7.46	0.5643	19.1656	176.6667	1.6872	-3.3516	2.2500	17.2444
7.48	0.5769	18.5042	180.6667	1.6872	-3.3744	2.2900	17.1556



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prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
7.50	0.5344	18.5042	174.0000	1.7024	-3.3896	2.2700	17.1556
7.52	0.5643	19.9433	176.6667	1.7252	-3.3896	2.1900	17.2444
7.54	0.5750	21.3878	174.6667	1.7252	-3.3896	2.4300	17.2444
7.56	0.5324	20.2767	176.6667	1.7556	-3.3972	2.2700	17.2444
7.58	0.5237	20.3931	172.6667	1.7404	-3.4276	2.1900	17.1556
7.60	0.6301	21.1709	171.3333	1.7404	-3.4276	2.1600	17.1556
7.62	0.6301	22.2820	169.3333	1.7556	-3.4428	2.3300	17.1556
7.64	0.6195	23.3931	166.6667	1.7556	-3.4656	2.2400	17.1556
7.66	0.6514	23.8376	172.6667	1.7936	-3.4656	2.2400	17.1556
7.68	0.6939	24.3931	176.6667	1.8088	-3.4808	2.2900	17.1556
7.70	0.7578	26.2820	174.0000	1.7936	-3.4808	2.3800	17.1556
7.72	0.8003	26.9487	158.0000	1.8164	-3.4960	2.2500	17.1556
7.74	0.7578	29.1709	100.0000	1.8088	-3.4960	2.2400	17.1556
7.76	0.6214	40.8429	129.3333	1.8392	-3.5036	2.9400	17.0667
7.78	0.7800	41.6180	185.3333	1.8544	-3.4960	2.2300	17.1111
7.80	0.8245	43.1789	200.6667	1.8544	-3.4808	2.2900	17.0222
7.82	0.9309	43.1789	257.3333	1.8696	-3.4808	2.2400	17.0222
7.84	1.0160	43.7344	346.6667	1.9000	-3.4580	2.2700	17.0222
7.86	1.0353	40.0624	406.0000	1.9152	-3.4276	2.3200	17.1111
7.88	1.0566	35.1736	384.6667	1.9380	-3.4200	2.2800	17.1111
7.90	1.0373	33.6233	343.3333	1.9456	-3.3972	2.1800	17.0222
7.92	0.9299	38.8429	291.3333	1.9456	-3.3668	2.2000	17.0667
7.94	0.9309	43.0678	255.3333	1.9532	-3.3972	2.2000	17.0222
7.96	0.8342	45.5096	215.3333	1.9836	-3.3668	2.2400	17.0667
7.98	0.8033	48.4011	204.6667	1.9912	-3.3668	2.1900	17.0222
8.00	0.6959	51.8429	210.6667	2.0064	-3.3668	2.2900	17.0667
8.02	0.6920	53.2767	214.0000	2.0444	-3.3440	2.2900	17.2444
8.04	0.7046	51.6153	206.0000	2.0444	-3.3516	2.2700	17.1556
8.06	0.6920	50.4989	207.3333	2.0748	-3.3516	2.2200	17.2444
8.08	0.6494	51.8322	206.6667	2.0900	-3.3516	2.2400	17.2444
8.10	0.6494	53.4989	210.6667	2.1280	-3.3744	2.2400	17.2444
8.12	0.6388	52.3878	212.0000	2.1052	-3.3896	2.2700	17.2444
8.14	0.6494	49.8322	220.6667	2.1128	-3.3972	2.2900	17.2444
8.16	0.6601	49.0544	221.3333	2.1204	-3.4124	2.2700	17.2444
8.18	0.7336	48.7184	225.3333	2.1432	-3.4200	2.3300	17.2889
8.20	0.7133	45.4989	228.6667	2.1508	-3.4276	2.2400	17.2444
8.22	0.6920	43.4989	236.0000	2.1584	-3.4428	2.2200	17.2444
8.24	0.7026	42.6100	240.0000	2.1584	-3.4428	2.2400	17.2444
8.26	0.7665	40.8322	242.6667	2.1736	-3.4732	2.2300	17.2444
8.28	0.7665	40.4989	242.6667	2.1888	-3.4808	2.2500	17.2444
8.30	0.7336	42.8296	244.6667	2.1964	-3.4656	2.2700	17.2889
8.32	0.7336	43.2740	243.3333	2.2040	-3.4808	2.2000	17.2889
8.34	0.7645	43.2713	244.6667	2.2116	-3.4732	2.3900	17.3333
8.36	0.7432	42.4936	244.6667	2.2268	-3.4732	2.2200	17.3333
8.38	0.7007	41.6047	246.6667	2.2496	-3.4656	2.2200	17.3333
8.40	0.6784	40.3798	244.6667	2.2572	-3.4808	2.2400	17.3778



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Località

Ferrara

Data

31/03/2014

CPTU 01

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
8.42	0.6900	40.7158	242.6667	2.2724	-3.5036	2.2700	17.3333
8.44	0.6581	39.3824	244.0000	2.2724	-3.5188	2.2700	17.3333
8.46	0.6581	36.2713	242.6667	2.2572	-3.5188	2.2900	17.3333
8.48	0.6368	34.8269	240.6667	2.2800	-3.5036	2.2700	17.3333
8.50	0.6794	35.4936	243.3333	2.2952	-3.5188	2.3600	17.3333
8.52	0.6465	36.7131	240.6667	2.2952	-3.5188	2.2400	17.3778
8.54	0.5933	35.7131	238.0000	2.3104	-3.5188	2.1900	17.3778
8.56	0.6146	34.8242	237.3333	2.3104	-3.5416	2.2700	17.3778
8.58	0.5837	34.0491	237.3333	2.3256	-3.5568	2.3100	17.3333
8.60	0.6252	34.2687	244.0000	2.3256	-3.5568	2.2400	17.3778
8.62	0.6891	32.6020	250.0000	2.3256	-3.5568	2.2400	17.3778
8.64	0.6997	30.7131	252.0000	2.3332	-3.5644	2.4300	17.3778
8.66	0.6891	29.9353	252.0000	2.3408	-3.5644	2.2800	17.3778
8.68	0.6571	29.1576	250.0000	2.3408	-3.5796	2.2400	17.3778
8.70	0.5218	29.1656	243.3333	2.3788	-3.5872	30.7600	17.2444
8.72	0.4705	28.8376	244.6667	2.4016	-3.5872	2.2800	17.1556
8.74	0.4493	28.1709	244.0000	2.4016	-3.5948	2.2400	17.1556
8.76	0.5034	27.6180	247.3333	2.4092	-3.6100	2.2300	17.1111
8.78	0.4705	25.2820	244.0000	2.4016	-3.6252	2.2700	17.1556
8.80	0.5750	24.8322	247.3333	2.4244	-3.6328	2.3200	17.2444
8.82	0.6301	24.5042	252.0000	2.4244	-3.6404	2.2700	17.1556
8.84	0.6214	22.9540	247.3333	2.4168	-3.6480	2.2900	17.0667
8.86	0.5450	21.0598	241.3333	2.4396	-3.6480	2.3300	17.1556
8.88	0.4822	19.7291	236.6667	2.4168	-3.6708	2.3200	17.1111
8.90	0.5034	17.7291	236.6667	2.4244	-3.6860	2.2000	17.1111
8.92	0.5141	16.1736	242.6667	2.4396	-3.6784	2.2800	17.1111
8.94	0.5673	14.9513	245.3333	2.4396	-3.6936	2.2500	17.1111
8.96	0.5769	15.0598	243.3333	2.4548	-3.6936	2.2500	17.1556
8.98	0.5344	18.2820	240.0000	2.4548	-3.6860	2.2400	17.1556
9.00	0.5025	16.6153	239.3333	2.4624	-3.7088	2.3100	17.1556
9.02	0.4609	15.6180	237.3333	2.4776	-3.7164	2.3100	17.1111
9.04	0.5237	15.6153	243.3333	2.4852	-3.7316	2.2700	17.1556
9.06	0.5673	14.6180	241.3333	2.4776	-3.7240	2.2300	17.1111
9.08	0.5218	14.3878	241.3333	2.4852	-3.7316	2.2700	17.2444
9.10	0.5344	14.6153	240.0000	2.4928	-3.7468	2.2400	17.1556
9.12	0.5779	13.9513	240.0000	2.4852	-3.7696	2.2700	17.1111
9.14	0.4619	13.1762	238.0000	2.4928	-3.7696	2.3100	17.0667
9.16	0.3980	12.9540	232.6667	2.5004	-3.7696	2.2700	17.0667
9.18	0.4715	11.9513	236.0000	2.4928	-3.7772	2.3300	17.1111
9.20	0.4299	11.5096	235.3333	2.5080	-3.8000	2.2700	17.0667
9.22	0.4725	10.3984	236.0000	2.5080	-3.8076	2.2400	17.0667
9.24	0.4735	10.2900	236.6667	2.5080	-3.8152	2.2400	17.0222
9.26	0.5479	10.0678	240.6667	2.5080	-3.8152	2.2400	17.0222
9.28	0.5373	10.0678	240.6667	2.5308	-3.8380	2.2500	17.0222
9.30	0.4831	11.0651	237.3333	2.5308	-3.8304	2.2700	17.0667
9.32	0.4628	11.1789	234.0000	2.5536	-3.8532	2.2400	17.0222



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
9.34	0.4628	10.4011	234.0000	2.5384	-3.8456	2.3900	17.0222
9.36	0.4638	10.0704	234.0000	2.5460	-3.8608	2.2500	16.9778
9.38	0.4638	9.8482	233.3333	2.5536	-3.8760	2.2300	16.9778
9.40	0.4735	9.7344	236.0000	2.5764	-3.8608	2.2700	17.0222
9.42	0.4831	9.1762	232.6667	2.5916	-3.8760	2.2800	17.0667
9.44	0.4193	9.3984	233.3333	2.6068	-3.8608	2.2700	17.0667
9.46	0.4735	8.8456	235.3333	2.6144	-3.8836	2.2900	17.0222
9.48	0.5054	8.7344	236.6667	2.6220	-3.8988	2.3600	17.0222
9.50	0.4203	8.8456	232.6667	2.6296	-3.9140	2.3200	17.0222
9.52	0.4213	8.6260	231.3333	2.6068	-3.9140	2.2400	16.9778
9.54	0.5064	8.2927	235.3333	2.6144	-3.9292	2.2200	16.9778
9.56	0.4764	8.8536	234.0000	2.6372	-3.9292	2.2400	16.8889
9.58	0.5083	8.8536	233.3333	2.6524	-3.9368	2.3300	16.8889
9.60	0.5170	8.8482	234.0000	2.6676	-3.9444	2.2700	16.9778
9.62	0.4764	8.5202	231.3333	2.6600	-3.9596	2.1600	16.8889
9.64	0.5083	7.4091	232.6667	2.6752	-3.9672	2.5600	16.8889
9.66	0.5190	7.0758	233.3333	2.6752	-3.9672	2.2500	16.8889
9.68	0.4870	6.7424	233.3333	2.6752	-3.9672	2.2700	16.8889
9.70	0.4823	7.5362	266.6667	2.7436	-3.9748	9.3000	16.6222
9.72	0.5258	7.0944	269.3333	2.7436	-3.9824	2.2300	16.5778
9.74	0.5152	7.8722	274.6667	2.7512	-3.9748	2.2400	16.5778
9.76	0.4929	8.0918	272.6667	2.7740	-3.9824	2.2500	16.6222
9.78	0.4687	9.8616	276.0000	2.7740	-3.9748	2.2400	16.7556
9.80	0.5345	11.6447	278.0000	2.7740	-3.9976	2.2700	16.6667
9.82	0.4397	12.4251	276.0000	2.7588	-3.9976	2.3200	16.6222
9.84	0.4687	13.4171	280.6667	2.7892	-3.9976	2.2900	16.7556
9.86	0.5983	14.7558	287.3333	2.7968	-4.0128	2.2700	16.6667
9.88	0.6409	15.8669	288.0000	2.7968	-4.0128	2.2300	16.6667
9.90	0.6409	17.0891	320.6667	2.8196	-4.0280	2.2200	16.6667
9.92	0.5780	17.5362	320.6667	2.8272	-4.0204	2.2200	16.6222
9.94	0.5345	18.0891	322.6667	2.8424	-4.0508	2.2400	16.6667
9.96	0.5238	17.3113	320.6667	2.8348	-4.0584	2.2400	16.6667
9.98	0.5248	17.3140	322.0000	2.8348	-4.0660	2.2400	16.6222
10.00	0.4919	17.2002	327.3333	2.8576	-4.0660	2.3300	16.6667
10.02	0.5770	16.7558	332.6667	2.8728	-4.0660	2.2500	16.6667
10.04	0.6409	16.2002	337.3333	2.8728	-4.0660	2.2300	16.6667
10.06	0.5432	15.0838	335.3333	2.8880	-4.0812	2.2700	16.7556
10.08	0.5780	14.2029	330.0000	2.8880	-4.0964	2.2700	16.6222
10.10	0.5461	14.0918	329.3333	2.8804	-4.1268	2.2700	16.6222
10.12	0.5258	14.6500	325.3333	2.8880	-4.1344	2.2700	16.5778
10.14	0.5248	15.5362	330.0000	2.9184	-4.1268	2.3300	16.6222
10.16	0.6003	15.5389	333.3333	2.9108	-4.1496	2.3300	16.5778
10.18	0.6641	15.5389	340.0000	2.9108	-4.1648	2.2400	16.5778
10.20	0.7163	15.9807	344.6667	2.9260	-4.1800	2.2200	16.6222
10.22	0.7695	16.8696	350.0000	2.9412	-4.1800	2.2400	16.6222
10.24	0.7598	17.5389	349.3333	2.9412	-4.1952	2.2400	16.5778



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Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
10.26	0.7173	17.4278	344.0000	2.9564	-4.1952	2.2500	16.5778
10.28	0.6428	18.4278	339.3333	2.9488	-4.2104	2.2500	16.5778
10.30	0.7057	20.4251	337.3333	2.9640	-4.2104	2.3500	16.6222
10.32	0.6535	21.6500	336.0000	2.9640	-4.2256	2.2900	16.5778
10.34	0.6641	22.7611	336.6667	2.9640	-4.2256	2.2400	16.5778
10.36	0.6641	24.6500	336.6667	2.9640	-4.2332	2.2300	16.5778
10.38	0.6738	25.8696	336.6667	2.9716	-4.2560	2.2700	16.6222
10.40	0.7173	27.2056	337.3333	2.9564	-4.2408	2.2700	16.5778
10.42	0.7057	28.4251	336.6667	2.9868	-4.2408	2.2900	16.6222
10.44	0.7482	29.6473	338.6667	2.9944	-4.2636	2.2000	16.6222
10.46	0.7163	31.2029	338.6667	3.0020	-4.2560	2.4300	16.6222
10.48	0.7163	32.6473	337.3333	2.9944	-4.2712	2.2700	16.6222
10.50	0.7801	33.4251	337.3333	3.0096	-4.2788	2.2400	16.6222
10.52	0.7589	35.7584	336.0000	3.0248	-4.2940	2.1900	16.6222
10.54	0.7482	36.7584	331.3333	3.0020	-4.2940	2.2500	16.6222
10.56	0.7801	36.5362	335.3333	3.0020	-4.3016	2.3100	16.6222
10.58	0.8333	36.8696	333.3333	3.0324	-4.3092	2.2700	16.6222
10.60	0.8227	38.3140	330.0000	3.0476	-4.3092	2.1600	16.6222
10.62	0.7908	39.9807	322.6667	3.0476	-4.3168	2.5300	16.6222
10.64	0.7685	39.9780	300.0000	3.0476	-4.3168	2.2400	16.6667
10.66	0.7153	39.3113	298.0000	3.0704	-4.3396	2.2700	16.6667
10.68	0.5896	36.4278	301.3333	3.0780	-4.3548	3.1700	16.5778
10.70	0.5577	32.2056	300.0000	3.0856	-4.3472	2.2200	16.5778
10.72	0.5577	27.0944	302.0000	3.0856	-4.3548	2.2300	16.5778
10.74	0.5896	22.7611	301.3333	3.0932	-4.3852	2.2300	16.5778
10.76	0.5355	18.9807	298.0000	3.1160	-4.3776	2.2400	16.6222
10.78	0.5887	16.5362	298.6667	3.1236	-4.3776	2.2700	16.6222
10.80	0.5780	14.9807	300.0000	3.1312	-4.3852	2.2900	16.6222
10.82	0.5461	12.5362	302.0000	3.1388	-4.3928	2.2500	16.6222
10.84	0.5558	11.5336	301.3333	3.1540	-4.3928	2.2400	16.6667
10.86	0.5887	10.9807	299.3333	3.1616	-4.3928	2.1800	16.6222
10.88	0.5142	9.9807	292.6667	3.1616	-4.4004	2.2300	16.6222
10.90	0.5780	9.4251	292.6667	3.1692	-4.4232	2.1900	16.6222
10.92	0.5780	9.5362	295.3333	3.1616	-4.4308	2.2300	16.6222
10.94	0.6109	8.2056	301.3333	3.1768	-4.4460	2.2700	16.5778
10.96	0.6099	9.0918	305.3333	3.1768	-4.4308	2.2000	16.6222
10.98	0.6109	8.8722	301.3333	3.1920	-4.4460	2.3100	16.5778
11.00	0.5374	8.3193	300.0000	3.1996	-4.4612	2.2900	16.5333
11.02	0.5790	7.5389	303.3333	3.2148	-4.4688	2.2300	16.5778
11.04	0.6544	7.0971	307.3333	3.2072	-4.4764	2.2000	16.5333
11.06	0.6013	8.0971	306.0000	3.2148	-4.4764	2.2400	16.5333
11.08	0.5906	9.3193	304.0000	3.2072	-4.4764	2.2400	16.5333
11.10	0.7502	9.0971	314.0000	3.2376	-4.4688	2.2400	16.5333
11.12	0.8875	10.5389	325.3333	3.2452	-4.4840	2.2400	16.5778
11.14	0.9842	11.3193	290.6667	3.2148	-4.5068	2.3100	16.5333
11.16	0.8778	14.4304	263.3333	3.2452	-4.5068	2.2500	16.5333



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Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
11.18	0.7076	14.0971	260.0000	3.2452	-4.5144	2.2200	16.5333
11.20	0.6661	13.5442	262.0000	3.2756	-4.5296	2.2300	16.4889
11.22	0.6767	9.2109	266.0000	3.2528	-4.5296	2.2200	16.4889
11.24	0.6661	11.9887	270.0000	3.2528	-4.5448	2.2200	16.4889
11.26	0.6661	12.7664	270.0000	3.2756	-4.5524	2.2400	16.4889
11.28	0.6554	14.0998	270.6667	3.2908	-4.5524	2.2000	16.4889
11.30	0.6757	13.5416	276.6667	3.2984	-4.5524	2.3600	16.5333
11.32	0.7618	11.7664	283.3333	3.2984	-4.5676	2.2400	16.4889
11.34	0.7937	10.7664	285.3333	3.3060	-4.5752	2.2200	16.4889
11.36	0.8150	11.3220	287.3333	3.3288	-4.5904	2.2000	16.4889
11.38	0.8363	13.5442	288.0000	3.3364	-4.5904	2.2400	16.4889
11.40	0.7831	16.0998	286.6667	3.3288	-4.5980	2.2700	16.4889
11.42	0.7618	16.2109	283.3333	3.3592	-4.6132	2.2300	16.4889
11.44	0.7192	16.2109	280.6667	3.3592	-4.5980	2.2000	16.4889
11.46	0.6767	15.8776	279.3333	3.3440	-4.6056	2.4000	16.4889
11.48	0.6467	14.9940	276.6667	3.3820	-4.6284	2.2400	16.4000
11.50	0.6022	13.6553	276.6667	3.4048	-4.6284	2.1700	16.4889
11.52	0.5829	11.3273	277.3333	3.3744	-4.6512	2.1800	16.4000
11.54	0.5935	10.4384	282.0000	3.4048	-4.6512	1.3700	16.4000
11.56	0.6148	9.4384	288.0000	3.4124	-4.6512	1.8000	16.4000
11.58	0.6467	7.4384	296.0000	3.3896	-4.6740	1.7800	16.4000
11.60	0.6999	6.8829	303.3333	3.4124	-4.6816	1.8600	16.4000
11.62	0.7106	6.9940	306.0000	3.4276	-4.6892	1.8300	16.4000
11.64	0.7106	6.9940	307.3333	3.4504	-4.6968	1.7300	16.4000
11.66	0.5529	6.3327	300.0000	3.4352	-4.7120	1.6800	16.3111
11.68	0.7058	11.1211	308.6667	3.4656	-4.6892	0.9400	16.1333
11.70	0.6516	11.6740	307.3333	3.4732	-4.6968	1.1500	16.1778
11.72	0.6729	12.4518	307.3333	3.4884	-4.6892	1.2800	16.1778
11.74	0.6207	12.4544	309.3333	3.5036	-4.7196	1.6700	16.1333
11.76	0.6526	12.8989	312.6667	3.4884	-4.7196	2.2400	16.1333
11.78	0.6729	12.0073	314.6667	3.4960	-4.7272	2.3200	16.1778
11.80	0.6729	12.7851	318.0000	3.5188	-4.7272	2.2500	16.1778
11.82	0.7377	12.8989	320.6667	3.5112	-4.7348	2.1900	16.1333
11.84	0.7590	13.1211	320.6667	3.5340	-4.7652	2.2000	16.1333
11.86	0.7696	14.0100	320.0000	3.5036	-4.7652	2.2000	16.1333
11.88	0.7590	16.2322	318.0000	3.5416	-4.7728	2.2000	16.1333
11.90	0.7377	17.2322	315.3333	3.5416	-4.7804	2.1800	16.1333
11.92	0.7271	19.2322	314.0000	3.5568	-4.7956	2.2200	16.1333
11.94	0.7058	20.4544	310.6667	3.5568	-4.8032	2.2200	16.1333
11.96	0.6845	21.4544	309.3333	3.5720	-4.8108	2.2000	16.1333
11.98	0.6845	21.4544	306.6667	3.5568	-4.8184	2.1600	16.1333
12.00	0.4282	16.6740	302.0000	3.5872	-4.8108	2.2000	16.1778
12.02	0.6207	21.4544	316.6667	3.5872	-4.8260	0.2600	16.1333
12.04	0.6420	21.2322	318.0000	3.5948	-4.8412	2.0100	16.1333
12.06	0.6420	20.0100	320.6667	3.5948	-4.8488	2.2000	16.1333
12.08	0.6420	19.3433	320.6667	3.5948	-4.8564	2.2000	16.1333



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
12.10	0.6729	18.6740	320.6667	3.6176	-4.8640	2.2900	16.1778
12.12	0.7048	18.5629	324.0000	3.6328	-4.8640	2.1800	16.1778
12.14	0.7048	18.4518	327.3333	3.6176	-4.8640	2.1800	16.1778
12.16	0.8015	18.6767	338.6667	3.6404	-4.8944	2.1800	16.1333
12.18	0.8547	18.6767	349.3333	3.6632	-4.9020	2.1800	16.1333
12.20	0.8857	19.6740	359.3333	3.6556	-4.9020	2.1800	16.1778
12.22	0.9186	20.3433	359.3333	3.6708	-4.9248	2.2000	16.1333
12.24	0.9718	21.2322	383.3333	3.6632	-4.9096	2.1800	16.1333
12.26	1.0037	21.5656	380.6667	3.6784	-4.9248	2.2900	16.1333
12.28	1.0559	23.4518	384.6667	3.6860	-4.9248	2.1800	16.1778
12.30	1.1516	26.1184	400.0000	3.6860	-4.9400	2.1600	16.1778
12.32	1.1835	27.5629	410.0000	3.6708	-4.9476	2.2000	16.1778
12.34	1.1835	29.2296	406.6667	3.7012	-4.9476	2.2000	16.1778
12.36	1.1410	32.0073	400.0000	3.6784	-4.9476	2.1800	16.1778
12.38	1.0559	35.1184	391.3333	3.7088	-4.9704	2.2200	16.1778
12.40	0.9495	39.3407	385.3333	3.7088	-4.9856	2.2800	16.1778
12.42	0.9176	38.7851	384.6667	3.6860	-4.9780	2.2400	16.1778
12.44	0.8857	37.0073	386.6667	3.7164	-4.9932	2.1800	16.1778
12.46	0.8538	36.2296	388.0000	3.7164	-4.9932	2.1500	16.1778
12.48	0.8538	36.2296	391.3333	3.7164	-5.0084	2.1800	16.1778
12.50	0.8412	34.3353	391.3333	3.7392	-5.0084	2.2800	16.2667
12.52	0.8518	30.3353	392.6667	3.7164	-5.0160	2.1700	16.2667
12.54	0.8518	27.3353	395.3333	3.7392	-5.0160	2.0800	16.2667
12.56	0.8412	26.6687	395.3333	3.7392	-5.0236	2.5100	16.2667
12.58	0.7986	25.2242	394.6667	3.7468	-5.0312	2.1900	16.2667
12.60	0.7986	24.8909	394.0000	3.7468	-5.0312	2.1900	16.2667
12.62	0.7773	25.4464	394.6667	3.7544	-5.0464	2.2000	16.2667
12.64	0.7793	22.6740	423.3333	3.7620	-5.0616	8.0000	16.1778
12.66	0.8006	24.1184	425.3333	3.7848	-5.0616	1.3900	16.1778
12.68	0.8199	23.2242	424.0000	3.7848	-5.0616	1.5300	16.2667
12.70	0.6390	21.1131	424.0000	3.8076	-5.0616	1.6300	16.2667
12.72	0.9466	25.1104	428.0000	3.8000	-5.0692	2.1800	16.3111
12.74	0.9582	25.4464	431.3333	3.8076	-5.0768	2.2400	16.2667
12.76	0.9708	25.4518	431.3333	3.8228	-5.0996	2.2300	16.1778
12.78	0.9708	26.5629	430.6667	3.8304	-5.1148	2.1900	16.1778
12.80	1.0114	27.1131	431.3333	3.8304	-5.1072	2.1700	16.2667
12.82	1.0220	28.5576	434.6667	3.8228	-5.1148	2.1600	16.2667
12.84	1.0133	28.8962	436.0000	3.8380	-5.1376	2.1600	16.1778
12.86	1.0240	27.7851	438.6667	3.8380	-5.1376	2.1800	16.1778
12.88	1.0240	27.1184	435.3333	3.8456	-5.1452	2.2000	16.1778
12.90	1.0539	27.5576	436.6667	3.8456	-5.1376	2.1600	16.2667
12.92	1.0326	26.8909	435.3333	3.8456	-5.1604	2.2500	16.2667
12.94	1.0220	26.4464	435.3333	3.8532	-5.1604	2.1600	16.2667
12.96	1.0027	26.4518	434.6667	3.8532	-5.1756	2.1600	16.1778
12.98	1.0027	27.0073	438.0000	3.8760	-5.1832	2.1300	16.1778
13.00	1.0133	26.5629	441.3333	3.8684	-5.1984	2.2000	16.1778



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
13.02	1.0114	26.4464	441.3333	3.8836	-5.1984	2.1900	16.2667
13.04	1.0114	25.6687	440.0000	3.8836	-5.1984	2.1700	16.2667
13.06	1.0027	26.1184	436.0000	3.8836	-5.2212	2.2400	16.1778
13.08	0.9901	26.1131	434.0000	3.8836	-5.2212	2.2400	16.2667
13.10	0.9495	25.7851	434.6667	3.9064	-5.2060	2.1700	16.1778
13.12	0.9901	24.8909	436.0000	3.8912	-5.2288	2.1300	16.2667
13.14	0.9901	24.5576	438.6667	3.8912	-5.2364	2.1900	16.2667
13.16	0.9688	23.2242	438.0000	3.8912	-5.2364	2.1700	16.2667
13.18	1.0007	22.1131	441.3333	3.9140	-5.2364	2.1800	16.2667
13.20	0.9475	21.2242	438.0000	3.9216	-5.2440	2.1300	16.2667
13.22	0.9050	17.8909	414.6667	3.9368	-5.2668	2.2700	16.2667
13.24	0.8944	15.3353	402.6667	3.9292	-5.2668	2.2300	16.2667
13.26	0.8518	15.0020	404.6667	3.9368	-5.2592	2.1300	16.2667
13.28	0.7986	15.1131	403.3333	3.9368	-5.2744	2.1600	16.2667
13.30	0.7667	13.4464	412.0000	3.9292	-5.2744	2.1700	16.2667
13.32	0.7580	11.2296	416.0000	3.9520	-5.2820	2.2000	16.1778
13.34	0.7880	10.0020	426.6667	3.9520	-5.2896	2.2000	16.2667
13.36	0.8305	9.1131	432.6667	3.9520	-5.3048	2.1000	16.2667
13.38	0.7667	8.1131	434.6667	3.9672	-5.3124	2.3800	16.2667
13.40	0.8305	9.5576	436.0000	3.9672	-5.3200	2.1600	16.2667
13.42	0.8305	8.0020	438.0000	3.9900	-5.3200	2.1800	16.2667
13.44	0.8218	5.8962	438.6667	3.9900	-5.3276	2.0900	16.1778
13.46	0.8325	5.8962	445.3333	3.9976	-5.3428	2.2400	16.1778
13.48	0.8857	5.2296	454.0000	4.0128	-5.3580	2.2400	16.1778
13.50	0.9069	5.4518	454.0000	4.0052	-5.3580	2.1900	16.1778
13.52	0.9069	6.8962	450.0000	4.0204	-5.3580	2.0800	16.1778
13.54	0.8750	7.4518	450.0000	4.0356	-5.3580	2.4500	16.1778
13.56	0.8750	6.6740	450.0000	4.0356	-5.3732	2.2000	16.1778
13.58	0.8750	6.8962	451.3333	4.0432	-5.3960	2.2000	16.1778
13.60	0.9069	6.7851	456.0000	4.0584	-5.3960	2.1900	16.1778
13.62	1.0027	6.4518	464.6667	4.0508	-5.4036	2.2400	16.1778
13.64	1.1555	13.1291	325.3333	4.1040	-5.4036	2.3500	16.0000
13.66	1.0192	13.4678	346.0000	4.0964	-5.4112	2.1900	15.9111
13.68	0.9128	13.0233	350.0000	4.0964	-5.4264	2.1900	15.9111
13.70	0.8896	13.4624	362.0000	4.1268	-5.4340	2.2200	16.0000
13.72	0.9002	13.2402	390.0000	4.1192	-5.4112	2.2700	16.0000
13.74	0.9022	11.9122	402.6667	4.1344	-5.4340	2.2000	15.9111
13.76	0.9234	12.5789	407.3333	4.1268	-5.4340	2.1600	15.9111
13.78	0.9022	12.4678	413.3333	4.1268	-5.4492	2.1600	15.9111
13.80	0.9447	10.6900	427.3333	4.1648	-5.4720	2.1800	15.9111
13.82	1.0414	9.1371	444.0000	4.1648	-5.4796	2.1800	15.8667
13.84	1.1159	8.6927	456.0000	4.1648	-5.4796	2.1800	15.8667
13.86	1.1256	8.2456	453.3333	4.1572	-5.4568	2.1900	15.9111
13.88	1.1256	12.2456	450.6667	4.1800	-5.4796	2.2000	15.9111
13.90	1.0734	13.6927	446.0000	4.1724	-5.4948	2.1600	15.8667
13.92	1.1469	12.0233	454.0000	4.1800	-5.5100	2.1600	15.9111



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Tecnico

PANCANI-CARBONELLA

Cantiere

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Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
13.94	1.6053	12.0260	492.0000	4.2028	-5.5176	2.1600	15.8667
13.96	2.2000	13.0233	511.3333	4.2028	-5.5252	2.1300	15.9111
13.98	2.3596	19.2456	143.3333	4.2104	-5.5252	2.1800	15.9111
14.00	1.9563	25.4704	118.0000	4.2104	-5.5252	2.1800	15.8667
14.02	1.4244	20.3593	218.6667	4.2256	-5.5404	2.1800	15.8667
14.04	1.2117	21.1371	331.3333	4.2180	-5.5328	2.2500	15.8667
14.06	1.1585	22.2482	330.0000	4.2256	-5.5556	2.1600	15.8667
14.08	1.2532	25.9122	366.0000	4.2332	-5.5632	2.1100	15.9111
14.10	1.5086	28.4678	420.6667	4.2484	-5.5708	2.1600	15.9111
14.12	1.7223	28.3593	402.0000	4.2484	-5.5936	2.1500	15.8667
14.14	1.6149	27.9122	333.3333	4.2636	-5.6088	2.1500	15.9111
14.16	1.5298	24.1344	220.6667	4.2636	-5.6012	2.1800	15.9111
14.18	1.4234	24.4678	288.6667	4.2636	-5.6240	2.1600	15.9111
14.20	1.4128	24.2456	320.0000	4.2712	-5.6164	2.2400	15.9111
14.22	1.4128	23.3567	388.6667	4.3092	-5.6468	2.1300	15.9111
14.24	1.6149	24.4678	406.6667	4.3168	-5.6392	2.1100	15.9111
14.26	1.6894	29.4678	402.6667	4.3016	-5.6620	2.1600	15.9111
14.28	1.5704	32.5736	360.6667	4.3396	-5.6620	2.1600	16.0000
14.30	1.3490	34.3567	379.3333	4.3472	-5.6848	2.1700	15.9111
14.32	1.3577	23.0180	398.6667	4.3472	-5.6924	2.1800	16.0000
14.34	1.3789	24.5736	414.0000	4.3472	-5.7076	2.2900	16.0000
14.36	1.4534	22.4624	422.0000	4.3700	-5.7228	2.1800	16.0000
14.38	1.5279	24.7958	420.6667	4.3776	-5.7380	2.1100	16.0000
14.40	1.5492	28.9069	410.6667	4.3852	-5.7304	2.0900	16.0000
14.42	1.5066	32.4624	402.0000	4.3852	-5.7456	2.1600	16.0000
14.44	1.4747	29.4624	398.6667	4.3928	-5.7608	2.2000	16.0000
14.46	1.4853	30.0180	405.3333	4.4004	-5.7760	2.1600	16.0000
14.48	1.3896	29.2402	406.6667	4.4232	-5.7836	2.0600	16.0000
14.50	1.3683	29.4624	407.3333	4.4232	-5.7912	2.4200	16.0000
14.52	1.3896	29.2402	414.6667	4.4308	-5.8140	2.1300	16.0000
14.54	1.3886	28.7931	442.0000	4.4232	-5.8140	2.1600	16.0444
14.56	1.4099	27.1264	450.6667	4.4232	-5.8444	2.1300	16.0444
14.58	1.4205	27.0153	450.6667	4.4308	-5.8292	2.2000	16.0444
14.60	2.1179	60.9202	181.3333	4.4688	-5.8444	16.6600	15.7778
14.62	2.0434	59.5869	175.3333	4.4536	-5.8596	0.7700	15.7778
14.64	1.7455	53.4758	175.3333	4.4688	-5.8596	1.3400	15.7778
14.66	1.6072	49.3647	190.0000	4.4536	-5.8672	1.3200	15.7778
14.68	1.5105	47.2509	273.3333	4.4612	-5.8748	1.3600	15.8222
14.70	1.4999	40.9176	307.3333	4.4612	-5.8748	1.4000	15.8222
14.72	1.4892	36.8064	320.6667	4.4536	-5.8900	1.4100	15.8222
14.74	1.5434	35.5869	346.0000	4.4612	-5.9052	1.7800	15.7778
14.76	1.6063	34.9176	377.3333	4.4536	-5.9128	2.0100	15.8222
14.78	1.6914	31.0287	385.3333	4.4612	-5.9204	2.0800	15.8222
14.80	1.6275	31.3620	368.6667	4.4764	-5.9204	2.1800	15.8222
14.82	1.4786	38.3620	352.0000	4.4764	-5.9508	2.0600	15.8222
14.84	1.3722	41.6953	348.0000	4.4840	-5.9508	2.0200	15.8222



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1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
14.86	1.2765	43.9176	346.6667	4.5068	-5.9584	2.0400	15.8222
14.88	1.3500	44.3593	377.3333	4.4840	-5.9584	2.1100	15.8667
14.90	1.3819	40.4704	392.6667	4.4992	-5.9736	2.0000	15.8667
14.92	1.2755	41.1371	384.0000	4.5144	-5.9812	2.0200	15.8667
14.94	1.1797	37.4704	387.3333	4.5068	-5.9812	2.1600	15.8667
14.96	1.2117	30.0260	420.6667	4.5068	-5.9964	1.9900	15.8667
14.98	1.2649	24.9149	451.3333	4.4992	-5.9888	1.8100	15.8667
15.00	1.5511	36.8011	362.6667	4.5144	-6.0192	2.2800	15.9111
15.02	1.5308	40.0260	376.0000	4.4992	-6.0268	1.9300	15.8667
15.04	1.5937	42.3567	405.3333	4.4992	-6.0420	2.0400	15.9111
15.06	2.0308	39.5816	462.0000	4.5144	-6.0420	2.0100	15.8667
15.08	2.4447	36.9122	493.3333	4.5144	-6.0572	2.0300	15.9111
15.10	2.1894	35.2456	178.6667	4.5068	-6.0648	2.1000	15.9111
15.12	1.7329	38.5816	188.6667	4.5068	-6.0800	2.0600	15.8667
15.14	1.4447	41.4678	301.3333	4.5220	-6.0800	2.0800	15.9111
15.16	1.3171	36.4678	322.6667	4.5068	-6.0876	2.1100	15.9111
15.18	1.4341	38.3567	421.3333	4.5220	-6.0876	2.0300	15.9111
15.20	2.3703	40.2456	571.3333	4.5068	-6.0876	2.0300	15.9111
15.22	5.2000	46.2456	698.0000	4.5068	-6.0876	1.9700	15.9111
15.24	7.8809	48.0233	181.3333	4.5448	-6.1180	1.9400	15.9111
15.26	8.6256	43.2456	111.3333	4.5448	-6.1256	1.9900	15.9111
15.28	8.0811	33.7958	130.6667	4.5372	-6.1180	1.9600	16.0000
15.30	7.3045	27.3513	140.6667	4.5524	-6.1256	2.0300	16.0000
15.32	6.5279	27.7958	143.3333	4.5372	-6.1256	2.0400	16.0000
15.34	5.8896	29.1291	156.6667	4.5600	-6.1484	1.9600	16.0000
15.36	5.5492	24.1291	190.0000	4.5448	-6.1560	1.9600	16.0000
15.38	5.5066	30.2402	193.3333	4.5600	-6.1636	1.9700	16.0000
15.40	5.8896	32.2402	192.6667	4.5676	-6.1712	1.9900	16.0000
15.42	6.6768	35.5736	156.6667	4.5676	-6.1940	1.9800	16.0000
15.44	7.6120	42.1264	108.6667	4.5828	-6.2092	1.9800	16.0444
15.46	8.2290	47.9042	84.0000	4.5904	-6.2244	1.9700	16.0444
15.48	8.0163	47.0153	77.3333	4.5904	-6.2320	1.9900	16.0444
15.50	7.3770	37.7904	78.0000	4.5980	-6.2320	1.9400	16.0889
15.52	6.4621	25.3460	75.3333	4.6056	-6.2472	1.9600	16.0889
15.54	5.6429	16.5682	75.3333	4.6056	-6.2472	2.0100	16.0889
15.56	5.0356	13.7878	75.3333	4.6056	-6.2548	1.9900	16.1333
15.58	4.6526	14.3433	78.0000	4.6056	-6.2548	2.0100	16.1333
15.60	4.4398	15.5656	82.0000	4.6056	-6.2776	1.9600	16.1333
15.62	4.4921	16.8962	89.3333	4.5980	-6.2776	2.1000	16.1778
15.64	4.9282	18.0073	101.3333	4.6284	-6.2852	2.0000	16.1778
15.66	5.9369	22.1131	118.0000	4.6056	-6.2928	1.9600	16.2667
15.68	7.3837	37.3353	102.6667	4.6056	-6.3080	1.9400	16.2667
15.70	8.6497	46.2242	73.3333	4.6056	-6.3308	1.9600	16.2667
15.72	9.5423	61.5549	71.3333	4.6056	-6.3384	1.9900	16.3111
15.74	10.2976	67.5549	78.0000	4.5980	-6.3612	1.9600	16.3111
15.76	10.4233	47.4384	81.3333	4.6056	-6.3612	1.9500	16.4000



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15.78	10.5404	31.5496	90.0000	4.6360	-6.3916	2.1000	16.4000
15.80	10.6690	30.8856	100.6667	4.6436	-6.4068	1.9800	16.3556
15.82	10.8382	32.7718	110.0000	4.6740	-6.4068	1.9200	16.4000
15.84	11.2192	37.9887	121.3333	4.7044	-6.4144	1.8700	16.4889
15.86	11.6651	39.8749	133.3333	4.6892	-6.4144	2.0400	16.5333
15.88	11.8034	38.5416	140.0000	4.6892	-6.4372	1.9200	16.5333
15.90	11.6864	37.0971	139.3333	4.7044	-6.4752	1.9500	16.5333
15.92	11.3353	38.2082	110.6667	4.7044	-6.4828	2.0400	16.5333
15.94	10.7386	38.6500	108.0000	4.6816	-6.4980	2.0200	16.5778
15.96	10.0674	35.2029	111.3333	4.7272	-6.5056	1.9600	16.6222
15.98	9.3275	31.1869	115.3333	4.7576	-6.5436	3.7700	16.8889
16.00	9.5190	30.9647	117.3333	4.7576	-6.5588	0.7700	16.8889
16.02	9.7221	30.6340	118.6667	4.7728	-6.5816	0.6100	16.8444
16.04	9.5083	32.7424	115.3333	4.7956	-6.5816	0.6400	16.8889
16.06	9.1466	33.9647	115.3333	4.7728	-6.5892	0.5700	16.8889
16.08	8.7530	33.6313	112.6667	4.7728	-6.6044	0.6200	16.8889
16.10	8.5383	31.6260	114.0000	4.7728	-6.6120	0.6700	16.9778
16.12	8.6340	29.7371	119.3333	4.7652	-6.6272	0.9600	16.9778
16.14	8.4638	29.6260	119.3333	4.7880	-6.6272	1.2800	16.9778
16.16	8.3033	30.8456	120.0000	4.8032	-6.6500	1.2700	17.0222
16.18	8.1224	32.0678	121.3333	4.7956	-6.6500	1.2500	17.0222
16.20	7.6756	32.4011	118.0000	4.7880	-6.6652	1.2500	17.0222
16.22	6.7501	32.8456	110.0000	4.8032	-6.6728	1.5000	17.0222
16.24	5.2288	38.7344	96.6667	4.8108	-6.6728	1.6600	17.0222
16.26	3.7704	49.6207	86.0000	4.8108	-6.6880	1.8500	17.0667
16.28	2.8651	65.9513	79.3333	4.8108	-6.6956	1.9400	17.1111
16.30	2.4183	83.3958	76.6667	4.8184	-6.7108	2.0500	17.1111
16.32	2.0885	97.0624	77.3333	4.8412	-6.7260	1.9600	17.1111
16.34	1.9705	97.7264	112.0000	4.8108	-6.7336	1.9500	17.1556
16.36	1.7694	99.3958	298.6667	4.8108	-6.7488	1.9900	17.1111
16.38	1.6205	92.1736	366.6667	4.8032	-6.7716	1.9700	17.1111
16.40	1.5982	84.8376	362.6667	4.8184	-6.7944	1.9700	17.1556
16.42	1.5643	74.2767	384.6667	4.8412	-6.7868	1.9500	17.2444
16.44	1.5750	61.6100	380.0000	4.8412	-6.8172	2.0100	17.2444
16.46	1.6272	54.0518	391.3333	4.8412	-6.8248	1.9900	17.2889
16.48	1.5846	41.7184	400.0000	4.8488	-6.8324	1.9200	17.2889
16.50	1.5305	41.6047	607.3333	4.8488	-6.8552	1.9700	17.3333
16.52	1.5305	40.7158	552.0000	4.8716	-6.8628	1.9500	17.3333
16.54	1.5740	43.1629	461.3333	4.8564	-6.8780	1.9700	17.2889
16.56	1.5943	48.3824	451.3333	4.8716	-6.8856	2.0000	17.3333
16.58	1.5614	54.0464	442.0000	4.8716	-6.9008	1.9500	17.3778
16.60	1.5827	61.4909	423.3333	4.8792	-6.9160	2.0900	17.3778
16.62	1.6146	65.8242	400.0000	4.8944	-6.9236	1.9800	17.3778
16.64	1.6146	72.0464	384.6667	4.8944	-6.9236	1.9600	17.3778
16.66	1.5827	76.9353	369.3333	4.8944	-6.9388	1.9600	17.3778
16.68	1.6146	80.3798	355.3333	4.9172	-6.9464	1.9200	17.3778



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16.70	1.6146	83.4909	346.0000	4.8944	-6.9464	1.9200	17.3778
16.72	1.5914	84.3744	325.3333	4.9248	-6.9616	1.8800	17.4667
16.74	1.5594	90.9300	309.3333	4.9248	-6.9616	1.8400	17.4667
16.76	1.5275	94.5967	302.0000	4.9400	-6.9616	2.0200	17.4667
16.78	1.6233	96.3744	292.6667	4.9324	-6.9844	1.8700	17.4667
16.80	1.5585	98.7051	281.3333	4.9552	-6.9844	1.8400	17.5111
16.82	1.5904	98.1496	273.3333	4.9628	-6.9920	1.7800	17.5111
16.84	1.5575	96.8136	264.6667	4.9552	-6.9920	1.9300	17.5556
16.86	1.3892	97.0411	257.3333	4.9552	-7.0072	1.8600	17.4667
16.88	1.3776	94.8162	250.0000	4.9704	-7.0376	1.8500	17.5111
16.90	1.4511	90.1469	252.0000	4.9704	-7.0300	1.8400	17.5556
16.92	1.4608	86.3664	250.6667	4.9856	-7.0452	2.0200	17.6000
16.94	1.4561	71.1896	272.0000	4.9856	-7.1060	2.7000	16.8444
17.02	1.3933	67.4144	258.0000	5.0084	-7.1592	1.0100	16.8000
17.04	1.3710	66.9673	262.6667	5.0160	-7.1516	1.0000	16.8444
17.06	1.3720	65.4144	287.3333	5.0084	-7.1668	1.0200	16.8000
17.08	1.4667	61.8562	320.6667	5.0160	-7.1744	1.0400	16.8444
17.10	1.6050	59.4118	350.0000	5.0084	-7.1744	1.0600	16.8444
17.12	1.8178	63.8562	365.3333	5.0388	-7.1972	1.2300	16.8444
17.14	2.0093	59.7451	354.6667	5.0160	-7.2124	1.7700	16.8444
17.16	2.1902	59.8562	354.0000	5.0160	-7.2048	1.9100	16.8444
17.18	2.2965	61.5229	353.3333	5.0388	-7.2200	1.9400	16.8444
17.20	2.3497	66.6340	346.6667	5.0388	-7.2352	1.9300	16.8444
17.22	2.2762	69.6367	328.6667	5.0388	-7.2504	2.0100	16.8000
17.24	2.3072	67.7451	340.6667	5.0464	-7.2504	2.0200	16.8444
17.26	2.6370	69.6340	374.0000	5.0464	-7.2808	2.0100	16.8444
17.28	3.1805	71.8589	392.0000	5.0616	-7.2808	2.0700	16.8000
17.30	4.1157	74.8562	350.0000	5.0844	-7.2732	1.9800	16.8444
17.32	5.1689	78.6340	206.6667	5.0844	-7.2732	1.9600	16.8444
17.34	5.9561	82.3007	100.6667	5.0996	-7.2808	1.9600	16.8444
17.36	6.3710	80.9673	77.3333	5.0920	-7.2808	2.0000	16.8444
17.38	6.4667	67.1896	81.3333	5.1300	-7.2884	1.9900	16.8444
17.40	6.1370	53.6340	78.6667	5.1300	-7.2884	1.9800	16.8444
17.42	5.4774	40.6340	77.3333	5.1148	-7.2960	2.0600	16.8444
17.44	4.7221	34.9673	77.3333	5.1148	-7.3036	2.0400	16.8444
17.46	3.8072	42.8562	82.6667	5.1148	-7.3188	2.0100	16.8444
17.48	3.1263	59.4118	114.0000	5.1376	-7.3188	1.9900	16.8444
17.50	2.6476	69.9673	119.3333	5.1680	-7.3340	2.0200	16.8444
17.52	2.6902	87.4118	162.0000	5.1680	-7.3416	2.0100	16.8444
17.54	4.1157	100.3007	278.0000	5.1680	-7.3644	2.0100	16.8444
17.56	5.9339	105.0758	264.6667	5.1680	-7.3644	1.9200	16.8889
17.58	6.4764	100.1869	191.3333	5.1680	-7.3644	2.0800	16.8889
17.60	6.6021	89.5149	144.6667	5.1452	-7.3796	2.0100	16.9778
17.62	7.0276	79.7371	146.6667	5.1680	-7.3720	1.9600	16.9778
17.64	7.3884	67.4011	126.6667	5.1756	-7.3872	1.9600	17.0222
17.66	7.8245	73.8456	95.3333	5.1832	-7.4100	1.9900	17.0222



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17.68	8.7501	73.1789	105.3333	5.2136	-7.4176	1.9700	17.0222
17.70	9.8671	72.5122	141.3333	5.1984	-7.4252	1.9600	17.0222
17.72	11.5267	60.6233	177.3333	5.2136	-7.4556	1.8900	17.0222
17.74	12.9406	58.8429	209.3333	5.2212	-7.4556	2.0800	17.0667
17.76	13.8023	58.9540	229.3333	5.2136	-7.4556	1.9200	17.0667
17.78	14.2800	59.3958	244.6667	5.2212	-7.4632	1.9100	17.1111
17.80	14.5673	65.8402	256.0000	5.2288	-7.4708	1.8400	17.1111
17.82	14.6736	73.9513	260.0000	5.2516	-7.4860	1.9500	17.1111
17.84	14.8110	76.1709	258.0000	5.2516	-7.4708	1.9300	17.1556
17.86	15.1088	82.3931	258.0000	5.2744	-7.4936	1.9000	17.1556
17.88	15.4367	89.0544	257.3333	5.2744	-7.5012	1.8600	17.2444
17.90	15.6282	92.9433	250.6667	5.2744	-7.5012	2.1000	17.2444
17.92	15.7239	95.1656	218.6667	5.3048	-7.5088	1.9100	17.2444
17.94	15.0450	96.2820	202.6667	5.3352	-7.5392	0.9000	17.1556
17.96	14.7345	96.6100	193.3333	5.3124	-7.5392	0.8700	17.2444
17.98	14.1707	100.2767	189.3333	5.3124	-7.5392	0.8900	17.2444
18.00	13.5218	103.1656	187.3333	5.3352	-7.5544	0.8800	17.2444
18.02	12.8835	104.9433	188.0000	5.3428	-7.5544	0.9100	17.2444
18.04	12.3931	105.2740	190.0000	5.3428	-7.5545	0.9400	17.2889
18.06	12.2007	104.6047	197.3333	5.3580	-7.5547	1.3300	17.3333
18.08	11.8709	101.8269	200.0000	5.3580	-7.5548	1.6300	17.3333
18.10	11.6368	98.1602	202.6667	5.3884	-7.5549	1.8200	17.3333
18.12	11.4976	94.4909	208.0000	5.3808	-7.5550	1.8300	17.3778
18.14	11.5062	89.1522	215.3333	5.3960	-7.5552	1.8300	17.4667
18.16	11.6339	82.9300	219.3333	5.3960	-7.5553	1.8900	17.4667
18.18	11.9308	78.7051	226.0000	5.4036	-7.5554	1.9100	17.5111
18.20	12.2277	76.1469	231.3333	5.4264	-7.5555	1.9100	17.5556
18.22	12.2171	73.0358	226.6667	5.4416	-7.5557	1.9100	17.5556
18.24	11.7171	70.4802	217.3333	5.4492	-7.5558	1.9200	17.5556
18.26	11.2045	69.5860	213.3333	5.4644	-7.5559	1.9300	17.6444
18.28	10.8321	70.5860	213.3333	5.4492	-7.5560	1.8900	17.6444
18.30	10.4888	72.3558	213.3333	5.4492	-7.5562	1.8200	17.7778
18.32	10.2122	75.3558	215.3333	5.4644	-7.5563	1.8300	17.7778
18.34	10.0197	78.0198	219.3333	5.4644	-7.5564	1.8100	17.8222
18.36	10.0410	80.6864	224.0000	5.4416	-7.5565	1.8600	17.8222
18.38	10.7102	79.3504	239.3333	5.4340	-7.5567	1.8300	17.8667
18.40	12.0294	77.7949	252.6667	5.4340	-7.5568	1.8300	17.8667
18.42	13.0903	79.1202	236.0000	5.4264	-7.5569	1.8900	18.0000
18.44	13.7412	84.7922	229.3333	5.4264	-7.5570	1.8000	17.9111
18.46	14.2595	89.6731	232.6667	5.4340	-7.5572	1.7800	18.0444
18.48	14.6628	93.5593	232.0000	5.4644	-7.5573	1.8000	18.0889
18.50	14.9181	92.0038	237.3333	5.4720	-7.5574	1.7900	18.0889
18.52	14.9597	94.1122	238.0000	5.4872	-7.5575	1.7900	18.1333
18.54	15.1811	97.5513	239.3333	5.4720	-7.5577	1.7700	18.2222
18.56	15.3620	97.5513	240.0000	5.5024	-7.5578	1.7900	18.2222
18.58	15.8175	99.4349	244.0000	5.5176	-7.5579	1.8000	18.3111



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18.60	16.3058	106.0989	240.0000	5.5252	-7.5580	1.7000	18.3556
18.62	16.7207	105.5433	236.6667	5.5480	-7.5582	1.7000	18.3556
18.64	16.6453	102.4296	228.6667	5.5556	-7.5583	1.7500	18.4000
18.66	16.2517	103.7629	224.0000	5.5556	-7.5584	1.7000	18.4000
18.68	15.6636	106.9771	218.6667	5.5708	-7.5585	1.7000	18.5333
18.70	15.1414	110.6411	220.6667	5.5708	-7.5587	1.6800	18.5778
18.72	14.6936	114.9718	226.0000	5.5936	-7.5588	1.7600	18.6222
18.74	14.3618	118.0776	224.6667	5.6012	-7.5589	1.6800	18.7111
18.76	14.3183	121.5193	233.3333	5.6088	-7.5590	1.6100	18.7556
18.78	14.4566	122.2971	238.0000	5.6088	-7.5592	1.6000	18.7556
18.80	14.7632	123.4029	238.0000	5.6316	-7.5593	1.6100	18.8444
18.82	14.9537	123.1780	240.6667	5.6164	-7.5594	1.6700	18.8889
18.84	14.9401	121.0589	236.6667	5.6316	-7.5595	1.6000	19.0222
18.86	14.8859	117.0562	236.0000	5.6392	-7.5597	1.5500	19.0667
18.88	14.9807	113.6091	236.0000	5.6468	-7.5598	1.8000	19.1111
18.90	15.1480	111.6011	236.6667	5.6392	-7.5599	1.6000	19.2444
18.92	14.0914	115.5967	147.3333	5.6544	-7.5600	0.2600	17.4667
18.94	14.9763	106.1576	143.3333	5.6696	-7.5602	0.4300	17.3778
18.96	15.2084	107.2633	148.0000	5.6696	-7.5603	0.4600	17.4667
18.98	15.4308	107.9273	148.0000	5.6772	-7.5604	0.4900	17.5111
19.00	15.6871	108.1522	150.6667	5.6696	-7.5605	0.5500	17.4667
19.02	15.7509	109.2633	148.6667	5.6696	-7.5607	0.6400	17.4667
19.04	15.8467	109.9300	151.3333	5.6696	-7.5608	0.8700	17.4667
19.06	15.8776	112.1496	159.3333	5.6696	-7.5609	0.8200	17.5111
19.08	16.1416	112.4776	158.6667	5.6544	-7.5610	0.7900	17.6000
19.10	16.4288	114.0331	154.0000	5.6772	-7.5612	0.8300	17.6000
19.12	15.6174	126.0251	170.6667	5.6544	-7.5613	0.3100	17.7333
19.14	16.6793	117.9087	151.3333	5.6772	-7.5614	0.5500	17.8222
19.16	16.1165	116.7184	142.0000	5.6772	-7.5615	0.2900	17.2889
19.18	16.6282	114.4989	142.0000	5.6848	-7.5617	0.5000	17.2444
19.20	16.6378	116.8296	143.3333	5.6696	-7.5618	0.5800	17.2889
19.22	16.6165	121.6073	147.3333	5.6924	-7.5619	0.6000	17.2889
19.24	16.6272	123.4962	148.6667	5.6848	-7.5620	0.6500	17.2889
19.26	16.7655	125.1629	152.0000	5.6848	-7.5622	0.9000	17.2889
19.28	16.9357	126.0518	152.0000	5.6772	-7.5623	1.1700	17.2889
19.30	17.1475	126.4936	150.6667	5.6924	-7.5624	1.2300	17.3333
19.32	17.2210	127.0464	154.0000	5.6924	-7.5626	1.3000	17.3778
19.34	17.1126	127.0411	156.6667	5.6772	-7.5627	1.3000	17.4667
19.36	17.2722	127.7078	161.3333	5.7000	-7.5628	1.3400	17.4667
19.38	17.6320	124.5913	152.0000	5.7000	-7.5629	1.3500	17.5556
19.40	17.9617	123.3691	156.0000	5.7304	-7.5631	1.2900	17.5556
19.42	18.0459	122.3664	152.6667	5.7304	-7.5632	1.2600	17.6000
19.44	18.0343	122.0304	154.0000	5.7152	-7.5633	1.3900	17.6444
19.46	18.0207	120.9113	156.0000	5.7380	-7.5634	1.3700	17.7778
19.48	18.0951	117.6891	156.6667	5.7228	-7.5636	1.3800	17.7778
19.50	17.9230	115.5727	156.6667	5.7228	-7.5637	1.3600	17.8667



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19.52	17.7412	116.5700	156.6667	5.7304	-7.5638	1.4400	17.9111
19.54	17.5255	117.8953	166.0000	5.7380	-7.5639	1.3900	18.0444
19.56	17.4181	118.0038	166.0000	5.7608	-7.5641	1.3700	18.0889
19.58	17.3726	118.6624	174.0000	5.7760	-7.5642	1.3600	18.2222
19.60	17.4674	117.6598	187.3333	5.7760	-7.5643	1.3600	18.2667
19.62	17.3697	118.8767	198.6667	5.7684	-7.5644	1.3600	18.3556
19.64	17.0602	120.5407	207.3333	5.7760	-7.5646	1.3800	18.4000
19.66	17.2391	129.3131	222.6667	5.7760	-7.5647	1.3200	18.4889
19.68	17.4615	125.9771	237.3333	5.7836	-7.5648	1.4600	18.5333
19.70	17.4170	118.4162	240.0000	5.7988	-7.5649	1.3500	18.6222
19.72	17.2864	119.6304	239.3333	5.7760	-7.5651	1.3700	18.7556
19.74	17.2322	121.2944	237.3333	5.8216	-7.5652	1.3500	18.8000
19.76	17.1345	120.1780	233.3333	5.8064	-7.5653	1.4600	18.8889
19.78	17.1984	116.6224	238.0000	5.8368	-7.5654	1.4300	18.8889
19.80	17.2167	114.8367	236.6667	5.8216	-7.5656	1.4000	19.0222
19.82	17.3424	114.1647	238.0000	5.8520	-7.5657	1.3500	19.1111
19.84	17.2786	112.9424	236.6667	5.8520	-7.5658	1.5600	19.1111
19.86	16.8076	113.7122	231.3333	5.8520	-7.5659	1.4300	19.2444
19.88	16.1576	106.1540	224.6667	5.8824	-7.5661	1.4000	19.2889
19.90	14.8578	103.9264	215.3333	5.8976	-7.5662	1.3700	19.3778
19.92	14.8578	103.9264	143.3333	5.9128	-7.5663	0.3700	17.7778
19.94	13.1483	101.9113	141.3333	5.9356	-7.5664	0.2300	17.7778
19.96	12.4897	99.4696	132.0000	5.9052	-7.5666	0.5200	17.7333
19.98	11.8302	97.2473	130.0000	5.9128	-7.5667	0.5700	17.7333
20.00	11.3408	95.5807	130.6667	5.9356	-7.5668	0.9400	17.7333
20.02	11.0845	96.4669	130.6667	5.9280	-7.5669	1.1700	17.7778
20.04	11.0429	99.2473	139.3333	5.9280	-7.5671	1.1700	17.7333
20.06	11.1696	98.2447	146.6667	5.9356	-7.5672	1.1800	17.7778
20.08	11.4356	99.6891	156.6667	5.9356	-7.5673	1.2200	17.7778
20.10	11.7963	99.0198	167.3333	5.9356	-7.5674	1.3900	17.8222
20.12	12.1367	97.6864	180.6667	5.9508	-7.5676	1.3600	17.8222
20.14	12.5091	97.4642	188.0000	5.9280	-7.5677	1.3900	17.8222
20.16	12.8379	99.3504	202.0000	5.9432	-7.5678	1.3600	17.8667
20.18	13.1986	101.4589	211.3333	5.9432	-7.5679	1.4100	17.9111
20.20	13.4307	107.0091	169.3333	5.9508	-7.5681	1.4700	18.0000
20.22	13.6222	109.4536	155.3333	5.9432	-7.5682	1.5000	18.0000
20.24	13.7276	111.1176	150.6667	5.9508	-7.5683	1.5000	18.0444
20.26	13.6096	116.0038	148.0000	5.9432	-7.5684	1.4800	18.0889
20.28	13.4819	120.5593	149.3333	5.9432	-7.5686	1.4500	18.0889
20.30	13.1937	121.4456	152.0000	5.9508	-7.5687	1.4700	18.1333
20.32	13.0322	125.9958	148.0000	5.9432	-7.5688	1.4700	18.2222
20.34	12.8610	128.3264	151.3333	5.9432	-7.5689	1.4800	18.2667
20.36	12.8494	128.4349	152.6667	5.9128	-7.5691	1.5000	18.3111
20.38	12.8590	129.0989	152.6667	5.9280	-7.5692	1.4700	18.3556
20.40	12.9751	128.8740	154.0000	5.9280	-7.5693	1.5100	18.4000
20.42	13.0050	126.3131	156.0000	5.9280	-7.5694	1.4500	18.4889



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20.44	12.8445	127.3104	152.0000	5.9280	-7.5696	1.4200	18.5333
20.46	12.6191	125.7496	151.3333	5.9128	-7.5697	1.4200	18.6222
20.48	12.5001	124.6331	151.3333	5.9280	-7.5698	1.4200	18.7111
20.50	12.3715	125.7416	152.0000	5.9128	-7.5699	1.4400	18.7556
20.52	12.1481	124.9638	152.0000	5.9128	-7.5701	1.4800	18.7556
20.54	11.8705	124.0722	150.6667	5.9052	-7.5702	1.4700	18.8000
20.56	11.6558	124.0669	150.6667	5.8900	-7.5703	1.5300	18.8889
20.58	11.5813	122.2891	155.3333	5.9052	-7.5705	1.4700	18.8889
20.60	11.7167	120.5033	158.0000	5.9280	-7.5706	1.4700	19.0222
20.62	11.9923	117.3896	156.6667	5.9280	-7.5707	1.5200	19.0667
20.64	12.5987	114.1673	160.0000	5.9128	-7.5708	1.5200	19.0667
20.66	13.4275	112.1647	165.3333	5.9356	-7.5710	1.5100	19.1111
20.68	14.2341	108.4927	163.3333	5.9280	-7.5711	1.5100	19.2000
20.70	14.7756	105.3789	162.6667	5.9128	-7.5712	1.5800	19.2444
20.72	15.0725	107.1540	164.0000	5.9356	-7.5713	1.5400	19.2889
20.74	15.5938	108.5984	166.0000	5.9356	-7.5715	1.4800	19.2889
20.76	16.3056	111.5958	169.3333	5.9280	-7.5716	1.4700	19.3333
20.78	17.1238	114.7042	184.6667	5.9280	-7.5717	1.4800	19.3778
20.80	18.0580	116.5878	197.3333	5.9356	-7.5718	1.5200	19.4667
20.82	19.2379	118.0296	222.6667	5.9280	-7.5720	1.4600	19.5111
20.84	20.4071	118.3602	246.6667	5.9128	-7.5721	1.4100	19.5556
20.86	21.2369	118.4713	234.0000	5.9052	-7.5722	1.6000	19.5556
20.88	21.7678	118.0242	244.6667	5.9356	-7.5723	1.4600	19.6000
20.90	21.9042	120.2411	252.6667	5.9356	-7.5725	1.5000	19.6889
20.92	21.6266	124.1273	257.3333	5.9356	-7.5726	1.4800	19.7333
20.94	21.1904	128.2384	259.3333	5.9128	-7.5727	1.5300	19.7333
20.96	20.0052	129.1202	160.0000	5.9736	-7.5728	0.5800	18.0000
20.98	20.0690	132.6758	164.0000	5.9508	-7.5730	0.5100	18.0000
21.00	20.3881	134.3424	163.3333	5.9052	-7.5731	0.5400	18.0000
21.02	20.5690	138.3424	166.6667	5.9356	-7.5732	0.7200	18.0000
21.04	20.4819	141.4482	172.6667	5.9508	-7.5733	0.8400	18.0889
21.06	20.2595	141.7842	166.0000	5.9280	-7.5735	1.1100	18.0444
21.08	19.7692	144.7816	164.0000	5.9508	-7.5736	1.1200	18.0889
21.10	19.2150	143.8900	162.0000	5.9432	-7.5737	1.1500	18.1333
21.12	18.6066	144.6624	161.3333	5.9356	-7.5738	1.1300	18.2222
21.14	18.0844	144.3264	166.6667	5.9356	-7.5740	1.1500	18.2667
21.16	17.6047	138.7682	166.6667	5.9356	-7.5741	1.1500	18.3111
21.18	17.2536	132.6571	166.6667	5.9432	-7.5742	1.4100	18.3111
21.20	16.9016	132.2100	166.6667	5.9356	-7.5743	1.4500	18.3556
21.22	16.3987	128.0909	170.6667	5.9432	-7.5745	1.4200	18.4889
21.24	16.1327	124.2020	176.6667	5.9280	-7.5746	1.5000	18.4889
21.26	16.0031	121.0856	181.3333	5.9128	-7.5747	1.4500	18.5778
21.28	16.0234	120.3051	189.3333	5.9280	-7.5748	1.4300	18.6222
21.30	16.2236	120.8553	188.0000	5.9052	-7.5750	1.4800	18.7111
21.32	16.4334	121.5140	192.0000	5.9052	-7.5751	1.4800	18.8444
21.34	16.5813	122.1780	188.0000	5.9052	-7.5752	1.4800	18.8889



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21.36	16.6954	123.2811	196.6667	5.8900	-7.5753	1.4600	19.0222
21.38	16.8337	125.2811	209.3333	5.8900	-7.5755	1.5000	19.0222
21.40	17.1296	125.6091	218.6667	5.8976	-7.5756	1.5100	19.1111
21.42	17.6374	126.3789	226.0000	5.8824	-7.5757	1.4600	19.2444
21.44	18.1799	129.4900	235.3333	5.8900	-7.5758	1.4300	19.2444
21.46	18.6248	132.0402	248.6667	5.8672	-7.5760	1.4500	19.3333
21.48	18.8472	134.4820	252.6667	5.8824	-7.5761	1.4300	19.3778
21.50	19.0996	137.5851	252.0000	5.8672	-7.5762	1.4400	19.5111
21.52	19.3965	141.5824	258.0000	5.8596	-7.5763	1.4300	19.5556
21.54	19.6508	145.4687	260.0000	5.8824	-7.5765	1.5200	19.6000
21.56	19.9680	149.9078	262.0000	5.8824	-7.5766	1.4700	19.6889
21.58	20.4457	152.7940	263.3333	5.8900	-7.5767	1.4100	19.7333
21.60	20.8055	154.0109	260.0000	5.8976	-7.5768	1.4100	19.8222
21.62	20.9757	155.3442	259.3333	5.9052	-7.5770	1.4000	19.8222
21.64	21.0675	158.8891	258.0000	5.9052	-7.5771	1.4000	20.0000
21.66	21.0453	161.2198	257.3333	5.9128	-7.5772	1.3900	20.0444
21.68	21.0878	165.4420	255.3333	5.9052	-7.5773	1.3400	20.0444
21.70	21.0211	167.3229	258.0000	5.9128	-7.5775	1.4800	20.1778
21.72	20.8712	168.8758	254.6667	5.9128	-7.5776	1.3400	20.2222
21.74	20.7841	173.2038	255.3333	5.9356	-7.5777	1.2500	20.3111
21.76	20.7938	174.4233	256.0000	5.9356	-7.5778	1.1600	20.3556
21.78	20.8440	174.9709	254.6667	5.9280	-7.5780	1.2300	20.4889
21.82	20.8391	179.1798	252.0000	5.9356	-7.5781	0.7600	20.7111
21.84	20.9648	181.0633	248.6667	5.9508	-7.5782	0.7100	20.8000
21.86	21.0596	182.3940	244.0000	5.9508	-7.5784	0.8400	20.8444
21.88	20.9280	186.3833	239.3333	5.9736	-7.5785	0.4200	21.0222
21.90	21.1185	185.2696	230.0000	5.9736	-7.5786	0.4400	21.0667
21.92	21.3526	184.1584	226.0000	5.9812	-7.5787	0.4900	21.0667
21.94	21.4135	184.1504	218.0000	6.0192	-7.5789	0.4800	21.2000
21.96	21.2880	177.4296	240.0200	6.0195	-7.5790	1.6300	17.4667
21.98	21.1625	176.3839	240.3000	6.0197	-7.5791	1.6200	17.4667
22.00	21.0371	175.3381	239.4600	6.0200	-7.5792	1.6300	17.4667
22.02	20.9116	174.2924	239.8800	6.0202	-7.5794	1.6500	17.4667
22.04	20.7861	173.2466	240.3000	6.0205	-7.5795	1.6500	17.4667
22.06	20.6607	172.2008	241.0100	6.0207	-7.5796	1.6400	17.4667
22.08	20.5352	171.1551	241.4300	6.0210	-7.5797	1.0300	17.5111
22.10	20.4097	170.1093	242.2700	6.0212	-7.5799	1.6600	17.5111
22.12	20.2842	169.0636	242.1300	6.0215	-7.5800	1.6100	17.5111
22.14	20.1588	168.0178	242.2700	6.0217	-7.5801	1.6400	17.5556
22.16	20.0333	166.9721	241.1500	6.0220	-7.5802	1.6000	17.5556
22.18	19.9078	165.9263	241.4300	6.0223	-7.5804	1.6300	17.5556
22.20	19.7824	164.8805	240.7200	6.0225	-7.5805	1.6100	17.5556
22.22	19.6569	163.8348	240.4400	6.0228	-7.5806	1.6300	17.5556
22.24	19.5314	162.7890	240.8600	6.0230	-7.5807	1.6700	17.6000
22.26	19.4060	161.7433	240.4400	6.0233	-7.5809	1.6300	17.6000
22.28	19.2805	160.6975	241.2900	6.0235	-7.5810	1.5900	17.6000



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22.30	19.1550	159.6518	240.4400	6.0238	-7.5811	1.6300	17.6000
22.32	19.0295	158.6060	253.6400	6.0240	-7.5812	1.6000	17.6000
22.34	18.9041	157.5602	240.4400	6.0243	-7.5814	1.6200	17.6444
22.36	18.7786	156.5145	237.9200	6.0245	-7.5815	1.6500	17.6000
22.38	18.6531	155.4687	237.5000	6.0248	-7.5816	1.6200	17.6000
22.40	18.5277	154.4230	236.6500	6.0251	-7.5817	1.6700	17.6444
22.42	18.4022	153.3772	237.2100	6.0253	-7.5819	1.6100	17.6444
22.44	18.1475	151.2544	236.7900	6.0256	-7.5820	1.6000	17.6444
22.46	17.8928	149.1315	237.3500	6.0258	-7.5821	1.6100	17.6444
22.48	17.6381	147.0086	239.0400	6.0261	-7.5822	1.6000	17.6444
22.50	17.3834	144.8858	238.4800	6.0263	-7.5824	1.6000	17.7333
22.52	17.1287	142.7629	238.7600	6.0266	-7.5825	1.6100	17.7333
22.54	16.8740	140.6401	239.6000	6.0268	-7.5826	1.5800	17.7333
22.56	16.6193	138.5172	240.5800	6.0271	-7.5827	1.7100	17.7333
22.58	16.3646	136.3944	240.1600	6.0274	-7.5829	1.6100	17.7333
22.60	16.1099	134.2715	240.8600	6.0276	-7.5830	1.5900	17.7333
22.62	15.8552	132.1487	239.3200	6.0279	-7.5831	1.5900	17.7333
22.64	15.6005	130.0258	238.9000	6.0281	-7.5832	1.6200	17.7333
22.66	15.3458	127.9030	238.6200	6.0284	-7.5834	1.6000	17.7333
22.68	15.0911	125.7801	237.7800	6.0286	-7.5835	1.6200	17.7333
22.70	14.8364	123.6573	238.4800	6.0289	-7.5836	1.6500	17.7778
22.72	14.5817	121.5344	238.9000	6.0291	-7.5837	1.6400	17.7333
22.74	14.3270	119.4115	240.7200	6.0294	-7.5839	1.5700	17.7333
22.76	14.0723	117.2887	242.4100	6.0296	-7.5840	1.5700	17.7333
22.78	13.8176	115.1658	244.3800	6.0299	-7.5841	57.1400	17.2444
22.80	13.5629	113.0430	245.6400	6.0302	-7.5842	1.6100	17.1556
22.82	13.3082	110.9201	247.1800	6.0304	-7.5844	1.6100	17.1556
22.84	13.0535	108.7973	251.4000	6.0307	-7.5845	1.6300	17.2444
22.86	12.7988	106.6744	251.2600	6.0309	-7.5846	1.6100	17.2444
22.88	12.5441	104.5516	250.2700	6.0312	-7.5847	1.6300	17.2444
22.90	12.2894	102.4287	249.4300	6.0314	-7.5849	1.6300	17.1556
22.92	12.0347	100.3059	248.0300	6.0317	-7.5850	1.6300	17.2889
22.94	11.7800	98.1830	246.0600	6.0319	-7.5851	1.5800	17.2889
22.96	11.5253	96.0602	245.6400	6.0322	-7.5852	1.5800	17.2889
22.98	11.7800	98.1830	243.3900	6.0324	-7.5854	1.5800	17.2444
23.00	12.0347	100.3059	243.3900	6.0327	-7.5855	1.6200	17.2889
23.02	12.2894	102.4287	242.4100	6.0330	-7.5856	1.6000	17.2444
23.04	12.5441	104.5516	241.8500	6.0332	-7.5857	1.6100	17.2444
23.06	12.7988	106.6744	242.2700	6.0335	-7.5859	1.6300	17.2444
23.08	13.0535	108.7973	242.6900	6.0337	-7.5860	1.6300	17.2444
23.10	13.3082	110.9201	244.5200	6.0340	-7.5861	1.5700	17.2889
23.12	13.5629	113.0430	246.3400	6.0342	-7.5863	1.5700	17.2444
23.14	13.8576	115.4992	248.5900	6.0345	-7.5864	1.5800	17.3333
23.16	14.1523	117.9555	250.9700	6.0347	-7.5865	1.6000	17.2444
23.18	14.4470	120.4117	253.9200	6.0350	-7.5866	1.5600	17.2444
23.20	14.7417	122.8680	256.8700	6.0352	-7.5868	1.5900	17.2444



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
23.22	15.0364	125.3242	257.0100	6.0355	-7.5869	1.6100	17.2444
23.24	15.3311	127.7804	257.2900	6.0358	-7.5870	1.5900	17.2889
23.26	15.6258	130.2367	255.6100	6.0360	-7.5871	1.5500	17.2889
23.28	15.9205	132.6929	253.6400	6.0363	-7.5873	1.5800	17.2889
23.30	16.2152	135.1492	251.1100	6.0365	-7.5874	1.5700	17.2444
23.32	16.5099	137.6054	250.1300	6.0368	-7.5875	1.5800	17.2444
23.34	16.8046	140.0617	248.1700	6.0370	-7.5876	1.5900	17.2444
23.36	17.0993	142.5179	248.4500	6.0373	-7.5878	1.5800	17.2889
23.38	17.3940	144.9741	246.9000	6.0375	-7.5879	1.6300	17.2444
23.40	17.6887	147.4304	246.0600	6.0378	-7.5880	1.5600	17.2889
23.42	17.9834	149.8866	246.0600	6.0380	-7.5881	1.5600	17.2889
23.44	18.2781	152.3429	246.9000	6.0383	-7.5883	1.5600	17.2889
23.46	18.5728	154.7991	247.8900	6.0386	-7.5884	1.5400	17.2889
23.48	18.8675	157.2554	247.7500	6.0388	-7.5885	1.5800	17.2444
23.50	19.1622	159.7116	247.7500	6.0391	-7.5886	1.5800	17.2889
23.52	19.4569	162.1678	247.1800	6.0393	-7.5888	1.5200	17.2889
23.54	19.7516	164.6241	247.1800	6.0396	-7.5889	1.6700	17.2444
23.56	20.0463	167.0803	246.3400	6.0398	-7.5890	1.5600	17.2889
23.58	20.3410	169.5366	246.7600	6.0401	-7.5891	1.5500	17.2444
23.60	20.6357	171.9928	246.4800	6.0403	-7.5893	1.5600	17.2444
23.62	20.5102	170.9470	245.9200	6.0406	-7.5894	1.5800	17.2444
23.64	20.3848	169.9013	245.6400	6.0408	-7.5895	1.5800	17.2889
23.66	20.2593	168.8555	246.2000	6.0411	-7.5896	1.5600	17.3333
23.68	20.1338	167.8098	247.6000	6.0414	-7.5898	1.5600	17.2889
23.70	20.0083	166.7640	248.5900	6.0416	-7.5899	1.6500	17.2889
23.72	19.8829	165.7183	250.8300	6.0419	-7.5900	1.5500	17.3333
23.74	19.7574	164.6725	250.6900	6.0421	-7.5901	1.5500	17.2444
23.76	19.6319	163.6267	244.2300	6.0424	-7.5903	1.5500	17.2889
23.78	19.5065	162.5810	218.9600	6.0426	-7.5904	2.5900	16.8000
23.80	19.3810	161.5352	184.7000	6.0429	-7.5905	1.5700	16.8889
23.82	19.2555	160.4895	158.5800	6.0431	-7.5906	1.5800	16.8000
23.84	19.1301	159.4437	143.2800	6.0434	-7.5908	1.5900	16.8444
23.86	19.0046	158.3980	139.2100	6.0437	-7.5909	1.6000	16.8444
23.88	18.8791	157.3522	135.8400	6.0439	-7.5910	1.5900	16.8444
23.90	18.7536	156.3064	136.1200	6.0442	-7.5911	1.5900	16.8889
23.92	18.6282	155.2607	148.9000	6.0444	-7.5913	1.5500	16.8889
23.94	18.5027	154.2149	154.9300	6.0447	-7.5914	1.5300	16.8889
23.96	18.3772	153.1692	163.0800	6.0449	-7.5915	1.5500	16.8889
23.98	18.2518	152.1234	172.2000	6.0452	-7.5916	1.5500	16.9778
24.00	18.3775	153.1711	181.3300	6.0454	-7.5918	1.5800	16.8889
24.02	18.5032	154.2188	189.0500	6.0457	-7.5919	1.5800	16.8889
24.04	18.6289	155.2664	196.5000	6.0459	-7.5920	1.5800	16.8889
24.06	18.7546	156.3141	202.9500	6.0462	-7.5921	1.5800	16.9778
24.08	18.8803	157.3618	213.2000	6.0465	-7.5923	1.5600	16.9778
24.10	19.0060	158.4095	218.8200	6.0467	-7.5924	1.5300	16.9778
24.12	19.1317	159.4571	223.1700	6.0470	-7.5925	1.5500	17.0222



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Committente

MC Engineering Srl

Località

Ferrara

Data

31/03/2014

CPTU 01

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
24.14	19.2574	160.5048	228.6500	6.0472	-7.5926	1.5400	16.9778
24.16	19.3831	161.5525	233.8400	6.0475	-7.5928	1.5300	16.9778
24.18	19.5088	162.6002	238.9000	6.0477	-7.5929	1.5600	17.0222
24.20	19.6345	163.6478	242.4100	6.0480	-7.5930	1.5200	17.0222
24.22	19.7602	164.6955	245.7800	6.0482	-7.5931	1.6000	16.9778
24.24	19.8859	165.7432	247.4600	6.0485	-7.5933	1.5100	17.0667
24.26	19.6312	163.6203	251.4000	6.0487	-7.5934	1.5200	17.0222
24.28	19.3765	161.4975	253.9200	6.0490	-7.5935	1.5300	17.0667
24.30	19.1218	159.3746	264.5900	6.0493	-7.5937	1.5300	17.0222
24.32	18.8671	157.2518	257.5700	6.0495	-7.5938	1.5300	17.1111
24.34	18.6124	155.1289	254.7700	6.0498	-7.5939	1.5300	17.0222
24.36	18.3577	153.0061	253.5000	6.0500	-7.5940	1.5500	17.0667
24.38	18.1030	150.8832	252.6600	6.0503	-7.5942	1.5600	17.1111
24.40	17.8483	148.7604	250.2700	6.0505	-7.5943	1.5200	17.1111
24.42	17.5936	146.6375	247.4600	6.0508	-7.5944	1.5000	17.1111
24.44	17.3056	144.2372	243.8100	6.0510	-7.5945	1.5100	17.1111
24.46	17.0176	141.8369	243.9500	6.0513	-7.5947	1.5200	17.1111
24.48	16.7296	139.4366	244.5200	6.0515	-7.5948	1.5200	17.1111
24.50	16.4416	137.0363	244.9400	6.0518	-7.5949	1.4900	17.1556
24.52	16.1536	134.6360	247.3200	6.0521	-7.5950	1.5900	17.1111
24.54	15.8656	132.2357	249.4300	6.0523	-7.5952	1.5500	17.1111
24.56	15.5777	129.8355	251.5400	6.0526	-7.5953	1.5100	17.1111
24.58	15.2897	127.4352	251.8200	6.0528	-7.5954	1.5000	17.1111
24.60	15.0017	125.0349	251.6800	6.0531	-7.5955	1.5000	17.1111
24.62	14.7137	122.6346	248.8700	6.0533	-7.5957	1.5300	17.1111
24.64	14.4257	120.2343	248.1700	6.0536	-7.5958	1.5200	17.1111
24.66	14.1377	117.8340	247.4600	6.0538	-7.5959	1.4400	17.0667
24.68	13.8497	115.4337	246.2000	6.0541	-7.5960	1.6800	17.1111
24.70	13.9751	116.4789	246.3400	6.0543	-7.5962	1.5100	17.1111
24.72	14.1005	117.5241	243.5300	6.0546	-7.5963	1.5100	17.1111
24.74	14.2259	118.5692	242.5500	6.0549	-7.5964	1.4700	17.1111
24.76	14.3513	119.6144	241.5700	6.0551	-7.5965	3.5300	16.6222
24.78	14.4767	120.6596	240.3000	6.0554	-7.5967	1.5100	16.5333
24.80	13.8180	115.1692	239.6000	6.0556	-7.5968	1.5000	16.5778
24.82	13.1593	109.6787	239.6000	6.0559	-7.5969	1.5400	16.6222
24.84	12.5005	104.1883	241.0100	6.0561	-7.5970	1.5300	16.5778
24.86	11.8418	98.6979	241.9900	6.0564	-7.5972	1.5600	16.6222
24.88	11.1830	93.2075	243.3900	6.0566	-7.5973	1.5800	16.5778
24.90	10.5243	87.7171	243.8100	6.0569	-7.5974	1.6000	16.5778
24.92	9.8656	82.2267	245.3600	6.0572	-7.5975	1.5300	16.6222
24.94	10.1203	84.3495	246.0600	6.0574	-7.5977	1.5300	16.5778
24.96	10.3750	86.4724	247.3200	6.0577	-7.5978	1.5300	16.6222
24.98	10.6297	88.5952	248.1700	6.0579	-7.5979	1.5800	16.5778
25.00	10.8844	90.7181	247.8900	6.0582	-7.5980	1.5600	16.6667
25.02	11.1391	92.8409	248.4500	6.0584	-7.5982	1.5800	16.5778
25.04	11.3938	94.9638	249.1500	6.0587	-7.5983	1.5800	16.6667



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
25.06	11.6485	97.0866	247.9100	6.0589	-7.5984	1.6000	16.6222
25.08	11.9032	99.2095	246.6700	6.0592	-7.5985	1.5500	16.6667
25.10	12.1579	101.3324	245.4300	6.0594	-7.5987	1.5200	16.6667
25.12	12.4126	103.4552	244.1900	6.0597	-7.5988	1.5500	16.6222
25.14	12.6673	105.5781	242.9500	6.0600	-7.5989	1.5600	16.6222
25.16	12.9220	107.7009	241.7100	6.0602	-7.5990	1.5200	16.6222
25.18	13.1767	109.8238	240.4700	6.0605	-7.5992	1.5600	16.6667
25.20	13.4314	111.9466	239.2300	6.0607	-7.5993	1.5800	16.6667
25.22	12.5987	114.1673	237.9900	6.0610	-7.5994	1.5600	16.7556
25.24	12.8487	114.1673	236.7500	6.0612	-7.5995	1.5200	16.7556
25.26	13.0987	114.1673	235.5100	6.0615	-7.5997	1.5300	16.6667
25.28	12.7895	114.1673	234.2700	6.0617	-7.5998	1.5300	16.6667
25.30	12.5987	114.1673	233.0300	6.0620	-7.5999	1.5500	16.6667
25.32	13.4275	112.1647	231.7900	6.0622	-7.6000	1.5500	16.7556
25.34	14.2341	108.4927	230.5500	6.0625	-7.6002	1.5400	16.7556
25.36	14.7756	105.3789	229.3100	6.0628	-7.6003	1.5800	16.7556
25.38	15.0725	107.1540	228.0700	6.0630	-7.6004	1.5300	16.6667
25.40	15.5938	108.5984	226.8300	6.0633	-7.6005	1.5100	16.7556
25.42	16.3056	111.5958	225.5900	6.0635	-7.6007	1.5300	16.7556
25.44	17.1238	114.7042	224.3500	6.0638	-7.6008	1.5000	16.7556
25.46	17.1287	142.7629	223.1100	6.0640	-7.6009	1.5300	16.7556
25.48	16.8740	140.6401	221.8700	6.0643	-7.6010	1.5300	16.7556
25.50	16.6193	138.5172	221.6160	6.0645	-7.6012	1.4800	16.7556
25.52	16.3646	136.3944	221.3620	6.0648	-7.6013	1.6200	16.7556
25.54	16.1099	134.2715	221.1080	6.0650	-7.6014	1.5500	16.8000
25.56	15.8552	132.1487	220.8540	6.0653	-7.6016	1.4900	16.7556
25.58	15.6005	130.0258	220.6000	6.0656	-7.6017	1.5300	16.8000
25.60	15.3458	127.9030	220.3460	6.0658	-7.6018	1.5200	16.8000
25.62	15.0911	125.7801	220.0920	6.0661	-7.6019	1.5500	16.8000
25.64	14.8364	123.6573	220.3467	6.0663	-7.6021	1.5200	16.8000
25.66	14.5817	121.5344	220.6014	6.0666	-7.6022	1.5000	16.8000
25.68	14.3270	119.4115	220.8561	6.0668	-7.6023	1.6100	16.8444
25.70	14.0723	117.2887	221.1108	6.0671	-7.6024	1.5000	16.8444
25.72	13.8176	115.1658	221.3655	6.0673	-7.6026	1.4800	16.8000
25.74	13.3620	100.1100	223.1700	6.0676	-7.6027	1.4000	16.8000
25.76	13.5580	105.1900	228.6500	6.0678	-7.6028	1.6300	16.5778
25.78	13.7960	110.5100	233.8400	6.0681	-7.6029	1.5500	16.5778
25.80	13.9880	113.8700	238.9000	6.0684	-7.6031	1.5700	16.5333
25.82	14.1480	115.1800	242.4100	6.0686	-7.6032	1.5700	16.5778
25.84	14.3080	115.1400	245.7800	6.0689	-7.6033	1.5600	16.5778
25.86	14.3900	114.7300	247.4600	6.0691	-7.6034	1.5700	16.5778
25.88	14.5680	114.5200	251.4000	6.0694	-7.6036	1.5800	16.5778
25.90	14.7320	116.2000	253.9200	6.0696	-7.6037	1.5300	16.6222
25.92	14.9610	115.3100	264.5900	6.0699	-7.6038	1.5300	16.6222
25.94	15.1800	113.1200	257.5700	6.0701	-7.6039	1.5300	16.6222
25.96	15.3490	113.2700	254.7700	6.0704	-7.6041	1.5800	16.6222



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Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
25.98	15.4410	113.4200	253.5000	6.0706	-7.6042	1.5500	16.6222
26.00	15.4540	113.7500	252.6600	6.0709	-7.6043	1.5600	16.6667
26.02	15.4130	113.5800	250.2700	6.0712	-7.6044	1.5800	16.6667
26.04	15.3080	113.7500	247.4600	6.0714	-7.6046	1.5700	16.6667
26.06	15.0570	116.7800	243.8100	6.0717	-7.6047	1.5200	16.7556
26.08	15.0340	118.8700	243.9500	6.0719	-7.6048	1.5200	16.7556
26.10	15.0520	120.5900	244.5200	6.0722	-7.6049	1.5200	16.7556
26.12	15.1390	122.7200	244.9400	6.0724	-7.6051	1.5300	16.8000
26.14	15.2490	124.1100	247.3200	6.0727	-7.6052	1.5100	16.8000
26.16	15.4040	124.7600	249.4300	6.0729	-7.6053	1.5200	16.8000
26.18	15.5270	124.9700	251.5400	6.0732	-7.6054	1.5500	16.8000
26.20	15.5780	125.3400	251.8200	6.0735	-7.6056	1.5300	16.8000
26.22	15.5730	125.5800	251.6800	6.0737	-7.6057	1.4900	16.8444
26.24	15.3490	124.6800	248.8700	6.0740	-7.6058	1.5200	16.8889
26.26	15.1620	122.6300	248.1700	6.0742	-7.6059	1.5200	16.8889
26.28	14.8920	120.6300	247.4600	6.0745	-7.6061	1.5200	16.8889
26.30	14.5220	118.0100	246.2000	6.0747	-7.6062	1.5200	16.8889
26.32	14.0470	117.5600	246.3400	6.0750	-7.6063	1.5200	16.8889
26.34	13.5490	118.7800	243.5300	6.0752	-7.6064	1.5600	16.9778
26.36	12.9870	119.3600	242.5500	6.0755	-7.6066	1.5100	16.9778
26.38	12.4390	119.3600	241.5700	6.0757	-7.6067	1.4900	16.9778
26.40	12.2760	118.4200	240.3000	6.0760	-7.6068	1.5000	16.9778
26.42	11.5120	117.9700	239.6000	6.0763	-7.6069	1.4900	17.0222
26.44	11.1740	117.0200	239.6000	6.0765	-7.6071	1.5100	17.0222
26.46	10.5980	113.5000	241.0100	6.0768	-7.6072	1.5300	16.9778
26.48	10.3840	112.1100	241.9900	6.0770	-7.6073	1.4700	16.9778
26.50	10.1920	109.9800	243.3900	6.0773	-7.6074	1.6100	17.0222
26.52	10.0140	108.4200	243.8100	6.0775	-7.6076	1.5000	17.0222
26.54	9.8630	106.2100	245.3600	6.0778	-7.6077	1.4900	17.0222
26.56	9.7170	103.7900	246.0600	6.0780	-7.6078	1.4900	17.0222
26.58	9.5660	101.9500	247.3200	6.0783	-7.6079	1.5000	17.0222
26.60	9.4330	99.4100	248.1700	6.0785	-7.6081	1.5300	17.0222
26.62	9.3050	96.9100	247.8900	6.0788	-7.6082	1.5000	17.0222
26.64	9.2050	94.1700	248.4500	6.0791	-7.6083	1.4900	17.0222
26.66	9.1040	91.7100	249.1500	6.0793	-7.6084	1.6000	17.0667
26.68	8.9450	88.2700	250.8300	6.0796	-7.6086	1.4700	17.0667
26.70	8.8670	86.3000	251.8200	6.0798	-7.6087	1.4600	17.0667
26.72	8.8170	84.8700	253.3600	6.0801	-7.6088	1.4900	17.0667
26.74	8.7530	83.8000	253.3600	6.0803	-7.6089	2.4600	16.2667
26.76	8.7020	82.8600	254.4800	6.0806	-7.6091	1.4800	16.2667
26.78	8.6610	81.9600	254.7700	6.0808	-7.6092	1.5000	16.2667
26.80	8.6110	81.3500	255.4700	6.0811	-7.6093	1.5200	16.2667
26.82	8.5790	80.2000	255.3300	6.0813	-7.6095	1.5100	16.2667
26.84	8.5330	79.3400	255.6100	6.0816	-7.6096	1.5000	16.2667
26.86	8.4920	78.6000	255.6100	6.0819	-7.6097	1.5300	16.3111
26.88	8.4150	77.3300	256.1700	6.0821	-7.6098	1.4900	16.3111



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
26.90	8.3690	76.7200	256.8700	6.0824	-7.6100	1.4800	16.3111
26.92	8.3280	76.1900	256.4500	6.0826	-7.6101	1.4700	16.3111
26.94	8.3050	75.9000	256.4500	6.0829	-7.6102	1.4900	16.3556
26.96	8.2780	75.2000	256.0300	6.0831	-7.6103	1.5200	16.3556
26.98	8.2460	74.7100	256.8700	6.0834	-7.6105	1.5000	16.3556
27.00	8.2360	74.1000	256.3100	6.0836	-7.6106	1.5200	16.4000
27.02	8.2140	73.7700	256.8700	6.0839	-7.6107	1.5100	16.4000
27.04	8.1910	73.3600	256.7300	6.0841	-7.6108	1.4900	16.4000
27.06	8.1590	72.9100	257.1500	6.0844	-7.6110	1.4700	16.4000
27.08	8.1310	72.2500	256.5900	6.0847	-7.6111	1.4700	16.4000
27.10	8.0720	71.7200	257.0100	6.0849	-7.6112	1.4700	16.4000
27.12	8.0720	71.7200	257.4300	6.0852	-7.6113	1.4800	16.4889
27.14	8.0540	71.7200	256.7300	6.0854	-7.6115	1.4700	16.4889
27.16	8.0450	71.6400	257.7100	6.0857	-7.6116	1.4900	16.4889
27.18	8.0540	71.2700	257.5700	6.0859	-7.6117	1.5000	16.4889
27.20	8.0540	71.2300	257.9900	6.0862	-7.6118	1.4500	16.4889
27.22	8.0580	71.1100	257.7100	6.0864	-7.6120	1.4500	16.5333
27.24	8.0630	70.7000	258.2800	6.0867	-7.6121	1.4600	16.5333
27.26	8.0720	70.5700	258.2800	6.0870	-7.6122	1.4700	16.4889
27.28	8.0450	70.0400	258.5600	6.0872	-7.6123	1.4700	16.5333
27.30	8.0490	69.7100	257.8500	6.0875	-7.6125	1.4800	16.5333
27.32	7.9810	69.5900	257.5700	6.0877	-7.6126	1.4900	16.5333
27.34	7.9490	69.8000	257.7100	6.0880	-7.6127	1.4800	16.4889
27.36	7.9170	69.8800	257.7100	6.0882	-7.6128	1.4300	16.5333
27.38	7.8980	69.7600	257.7100	6.0885	-7.6130	1.4500	16.5333
27.40	7.9230	70.2500	257.8100	6.0887	-7.6131	1.4500	16.5333
27.42	7.9490	70.7800	257.9900	6.0890	-7.6132	1.4500	16.5333
27.44	7.9990	71.4300	258.4200	6.0892	-7.6133	1.4400	16.5333
27.46	8.0810	72.1300	259.9600	6.0895	-7.6135	1.4500	16.5778
27.48	8.1910	73.0700	260.8000	6.0898	-7.6136	1.5200	16.5333
27.50	8.3420	73.7300	262.4900	6.0900	-7.6137	1.4400	16.5333
27.52	8.7480	74.4200	265.4400	6.0903	-7.6138	1.4100	16.5333
27.54	9.0090	74.7100	265.3000	6.0905	-7.6140	1.4000	16.5333
27.56	9.2870	74.9200	266.2800	6.0908	-7.6141	1.3800	16.5333
27.58	9.6070	75.3700	266.0000	6.0910	-7.6142	1.4400	16.4889
27.60	9.9540	75.8600	267.4000	6.0913	-7.6143	1.4300	16.5333
27.62	10.3520	76.4700	267.5400	6.0915	-7.6145	1.3500	16.5333
27.64	10.7760	77.0000	267.8200	6.0918	-7.6146	1.5600	16.5333
27.66	11.2330	78.0700	267.6800	6.0920	-7.6147	1.4100	16.5333
27.68	11.6630	78.6000	267.5400	6.0923	-7.6148	1.4100	16.5333
27.70	12.0510	78.8500	266.4200	6.0926	-7.6150	1.3600	16.5778
27.72	12.5580	81.0200	265.0200	6.0928	-7.6151	1.8300	16.7032
27.74	12.6360	82.2900	264.0300	6.0931	-7.6152	1.8700	16.8286
27.76	12.5950	81.8400	262.4900	6.0933	-7.6153	1.7400	16.9540
27.78	12.3660	81.5500	261.5100	6.0936	-7.6155	1.2900	17.0794
27.80	12.0010	82.8200	258.7000	6.0938	-7.6156	1.4800	17.2048



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
27.82	11.6760	84.0900	257.1500	6.0941	-7.6157	1.6500	17.3302
27.84	11.3980	86.8800	255.6100	6.0943	-7.6158	1.6300	17.4556
27.86	11.1880	88.5100	255.3300	6.0946	-7.6160	1.3600	17.5810
27.88	11.0510	89.8300	255.3300	6.0948	-7.6161	1.4600	17.7064
27.90	10.8850	88.5100	263.3900	6.0951	-7.6162	1.6800	17.8318
27.92	10.6440	87.7800	269.3700	6.0954	-7.6163	1.4500	17.9572
27.94	10.6670	89.7400	266.1400	6.0956	-7.6165	1.4000	17.6000
27.96	10.8270	93.3900	263.8900	6.0959	-7.6166	1.4700	17.6444
27.98	10.9590	94.8200	264.0300	6.0961	-7.6167	1.4200	17.6000
28.00	11.1140	95.4400	263.8900	6.0964	-7.6168	1.4600	17.6000
28.02	11.2610	95.0700	263.8900	6.0966	-7.6170	1.6200	17.6444
28.04	11.4020	93.6300	264.8800	6.0969	-7.6171	1.3800	17.6000
28.06	11.5120	92.6100	265.7200	6.0971	-7.6172	1.2600	17.7778
28.08	11.5940	90.1100	267.1200	6.0974	-7.6174	1.3300	17.7333
28.10	11.6170	89.9900	267.4000	6.0976	-7.6175	1.7000	17.7778
28.12	11.5760	90.1500	267.6800	6.0979	-7.6176	1.7000	17.7778
28.14	11.4940	90.1500	266.8400	6.0982	-7.6177	1.8000	17.7778
28.16	11.1600	90.4400	265.1600	6.0984	-7.6179	1.6100	17.7778
28.18	11.0000	91.4200	265.3000	6.0987	-7.6180	1.7600	17.7778
28.20	10.8770	91.3800	265.0200	6.0989	-7.6181	1.9700	17.9111
28.22	10.7080	91.6300	263.7500	6.0992	-7.6182	1.9000	17.8222
28.24	10.5160	92.9800	263.3300	6.0994	-7.6184	1.9600	17.8667
28.26	10.3880	93.6800	263.0500	6.0997	-7.6185	1.8300	17.8222
28.28	10.3470	94.0000	264.3100	6.0999	-7.6186	2.2700	17.9111
28.30	10.3740	94.5400	266.4200	6.1002	-7.6187	2.1600	17.8667
28.32	10.4980	94.9000	269.0900	6.1004	-7.6189	2.0800	17.8222
28.34	10.6530	95.9300	270.4900	6.1007	-7.6190	2.1200	18.0000
28.36	10.9500	96.3800	270.0700	6.1010	-7.6191	2.1100	17.9111
28.38	11.0090	95.3600	270.0700	6.1012	-7.6192	2.4800	17.9111
28.40	11.0370	94.0400	269.7900	6.1015	-7.6194	2.5000	17.8667
28.42	11.0280	93.0600	269.5100	6.1017	-7.6195	2.1600	17.8667
28.44	10.9960	92.5300	270.2100	6.1020	-7.6196	1.9200	18.0000
28.46	10.9550	92.6500	270.2100	6.1022	-7.6197	2.1000	17.9111
28.48	10.9320	92.4100	269.9300	6.1025	-7.6199	2.0100	17.9111
28.50	10.9130	92.4900	270.3500	6.1027	-7.6200	1.8700	18.0000
28.52	10.9360	92.1600	270.3500	6.1030	-7.6201	1.1900	17.6444
28.54	11.0000	92.3700	271.4700	6.1033	-7.6202	2.5800	17.6000
28.56	11.0730	93.3500	271.4700	6.1035	-7.6204	2.9800	17.7333
28.58	11.2060	94.9500	270.4900	6.1038	-7.6205	3.2500	17.6000
28.60	11.2520	94.5800	269.5100	6.1040	-7.6206	3.2500	17.7333
28.62	11.2150	94.2900	268.8100	6.1043	-7.6207	3.2200	17.6444
28.64	11.1140	93.8800	267.6800	6.1045	-7.6209	3.2200	17.6444
28.66	10.9130	93.0600	265.3000	6.1048	-7.6210	3.2700	17.6444
28.68	10.6670	92.6900	263.7500	6.1050	-7.6211	3.3000	17.5556
28.70	10.3970	92.0000	262.3500	6.1053	-7.6212	3.2500	17.6000
28.72	10.1050	91.7100	261.0800	6.1055	-7.6214	3.2500	17.6000



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Committente

MC Engineering Srl

Località

Ferrara

Data

31/03/2014

CPTU 01

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

1.04

Livello Falda

1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
28.74	9.8260	91.4600	260.5200	6.1058	-7.6215	3.2500	17.6000
28.76	9.5840	91.7500	259.8200	6.1061	-7.6216	3.2700	17.5556
28.78	9.4110	91.7900	259.9600	6.1063	-7.6217	3.3000	17.6000
28.80	9.1960	91.6300	262.4900	6.1066	-7.6219	3.3300	17.6444
28.82	9.1730	91.8300	264.1700	6.1068	-7.6220	3.2700	17.6444
28.84	9.2050	92.2400	265.8600	6.1071	-7.6221	3.2700	17.6444
28.86	9.2600	93.1000	267.5400	6.1073	-7.6222	3.1700	17.6444
28.88	9.3560	93.2700	269.2300	6.1076	-7.6224	3.0300	17.7333
28.90	9.4520	92.4900	270.6300	6.1078	-7.6225	3.1000	17.7778
28.92	9.5250	91.2200	271.1900	6.1081	-7.6226	3.1400	17.7333
28.94	9.5980	90.8900	271.6100	6.1083	-7.6227	3.1200	17.8222
28.96	9.6530	90.6400	271.9000	6.1086	-7.6229	3.2000	17.7778
28.98	9.7390	90.4000	271.7600	6.1089	-7.6230	3.0700	17.7778
29.00	9.8170	89.6200	271.7600	6.1091	-7.6231	3.0700	17.7778
29.02	9.8220	88.6000	271.1900	6.1094	-7.6232	2.8700	17.8222
29.04	9.8170	87.4100	271.9000	6.1096	-7.6234	2.8300	17.8667
29.06	9.8170	86.8800	273.1600	6.1099	-7.6235	2.7300	17.8667
29.08	9.8860	86.7500	274.7000	6.1101	-7.6236	2.7700	17.8667
29.10	10.0230	86.8400	274.9800	6.1104	-7.6237	2.7500	17.9111
29.12	10.2150	87.0400	277.0900	6.1106	-7.6239	2.7500	17.9111
29.14	10.5210	87.4900	278.0700	6.1109	-7.6240	2.7700	18.0000
29.16	10.8450	87.7000	279.3400	6.1111	-7.6241	2.7900	18.0000
29.18	11.1100	88.0600	279.4800	6.1114	-7.6242	2.6600	17.9111
29.20	11.3200	89.6600	277.7900	6.1117	-7.6244	2.5400	18.0000
29.22	11.4020	91.1800	276.1100	6.1119	-7.6245	1.3500	18.0000
29.24	11.5300	93.0600	272.3200	6.1122	-7.6246	1.4300	18.0000
29.26	11.7040	95.3600	271.4700	6.1124	-7.6247	1.2600	18.0444
29.28	12.0100	96.3400	272.0400	6.1127	-7.6249	1.1200	18.0444
29.30	12.3390	96.1300	275.5500	6.1129	-7.6250	1.2000	18.0444
29.32	12.6630	95.5200	278.4900	6.1132	-7.6251	1.2600	18.0889
29.34	12.8230	94.7800	280.0400	6.1134	-7.6253	1.2100	18.0889
29.36	12.8780	94.8200	279.7600	6.1137	-7.6254	1.0600	18.0444
29.38	12.8320	94.9900	276.9500	6.1139	-7.6255	1.1700	18.0889
29.40	12.4670	96.1300	271.3300	6.1142	-7.6256	1.2900	18.0889
29.42	12.1610	96.9100	268.8100	6.1145	-7.6258	1.9900	18.0889
29.44	11.7860	98.4300	267.1200	6.1147	-7.6259	2.4000	18.0889
29.46	11.4020	98.5900	265.0200	6.1150	-7.6260	2.8700	18.0444
29.48	11.0920	98.6300	264.8800	6.1152	-7.6261	0.7400	18.0444
29.50	10.8400	99.3700	263.4700	6.1155	-7.6263	1.7100	17.6000
29.52	10.6670	99.7400	264.1700	6.1157	-7.6264	2.2400	17.6000
29.54	10.5800	100.6000	264.7300	6.1160	-7.6265	1.9100	17.7333
29.56	10.5340	101.8700	265.8600	6.1162	-7.6266	3.1000	17.6000
29.58	10.5250	102.6100	267.8200	6.1165	-7.6268	3.1000	17.6000
29.60	10.4980	102.7300	269.5100	6.1168	-7.6269	3.1200	17.6444
29.62	10.3200	102.6900	272.3200	6.1170	-7.6270	3.1400	17.6444
29.64	10.2280	101.9900	272.4600	6.1173	-7.6271	3.1400	17.6444



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
29.66	10.1550	101.0100	273.7200	6.1175	-7.6273	3.0700	17.6444
29.68	10.0910	99.8200	274.4200	6.1178	-7.6274	2.8500	17.7333
29.70	10.0270	98.1800	274.9800	6.1180	-7.6275	2.4300	17.6444
29.72	9.9910	96.4200	275.2700	6.1183	-7.6276	2.3300	17.6444
29.74	9.9500	95.4400	276.2500	6.1185	-7.6278	2.2200	17.7333
29.76	9.9450	94.5400	276.5300	6.1188	-7.6279	2.2300	17.6444
29.78	9.9500	94.2500	278.0700	6.1190	-7.6280	2.1800	17.6444
29.80	9.9590	94.4100	278.3500	6.1193	-7.6281	2.1800	17.6444
29.82	10.0090	94.3300	279.4800	6.1196	-7.6283	2.2000	17.7778
29.84	10.0870	94.6200	280.1800	6.1198	-7.6284	2.2300	17.7333
29.86	10.3290	94.2100	281.3000	6.1201	-7.6285	2.1200	17.7333
29.88	10.2540	87.6900	287.1900	6.1203	-7.6286	2.1500	17.6444
29.90	10.1410	83.9300	287.1400	6.1206	-7.6288	2.1200	17.6444
29.92	10.4980	83.6800	286.0800	6.1208	-7.6289	2.1500	17.6444
29.94	11.1330	86.3800	281.8600	6.1211	-7.6290	2.1500	17.6444
29.96	11.5120	87.9800	282.4300	6.1213	-7.6291	2.1700	17.7333
29.98	11.9730	89.6600	282.9900	6.1216	-7.6293	2.1800	17.6444
30.00	12.4850	91.0500	282.0100	6.1218	-7.6294	2.1800	17.7333
30.02	13.0150	92.6500	283.6900	6.1221	-7.6295	2.1000	17.6444
30.04	13.5170	93.6300	283.5500	6.1224	-7.6296	2.1200	17.6444
30.06	13.9420	93.4700	282.7100	6.1226	-7.6298	2.1300	17.7333
30.08	14.2440	93.3900	283.4100	6.1229	-7.6299	2.1600	17.6444
30.10	14.4260	95.0300	282.7100	6.1231	-7.6300	2.1600	17.6444
30.12	14.5410	97.6900	282.2900	6.1234	-7.6301	2.1500	17.7333
30.14	14.4900	100.4300	280.6000	6.1236	-7.6303	2.2200	17.6444
30.16	14.3850	101.8300	280.1800	6.1239	-7.6304	2.1600	17.6000
30.18	14.2480	103.3800	278.6400	6.1241	-7.6305	2.1000	17.6444
30.20	14.1020	106.2900	277.5100	6.1244	-7.6306	2.1300	17.7778
30.22	14.0200	109.1200	278.0700	6.1246	-7.6308	2.1100	17.6444
30.24	13.9470	111.2900	278.3500	6.1249	-7.6309	2.1300	17.7778
30.26	13.8550	112.8500	277.3700	6.1252	-7.6310	2.1600	17.7333
30.28	13.7090	112.9700	276.9500	6.1254	-7.6311	2.0500	17.7778
30.30	13.4530	115.9200	274.4200	6.1257	-7.6313	2.3200	17.7333
30.32	13.1020	119.6900	273.5800	6.1259	-7.6314	2.1700	17.7333
30.34	12.8410	121.3200	273.3000	6.1262	-7.6315	2.1200	17.6444
30.36	12.4530	122.1000	274.9800	6.1264	-7.6316	2.1200	17.7333
30.38	12.3160	122.2700	276.8100	6.1267	-7.6318	2.1500	17.7333
30.40	12.2020	122.0200	278.2100	6.1269	-7.6319	2.2000	17.6444
30.42	12.0240	121.5300	277.6500	6.1272	-7.6320	2.1300	17.6444
30.44	11.7910	119.6000	277.6500	6.1274	-7.6321	2.0800	17.6444
30.46	11.5670	118.2500	277.2300	6.1277	-7.6323	2.3500	17.6444
30.48	11.3840	117.4700	277.0900	6.1280	-7.6324	2.1600	17.7333
30.50	11.2560	116.3700	276.5300	6.1282	-7.6325	2.1000	17.5111
30.52	11.2520	116.0400	278.0700	6.1285	-7.6326	2.0800	17.5111
30.54	11.3430	116.2900	279.6200	6.1287	-7.6328	2.3600	17.4667
30.56	11.8230	116.6500	282.2900	6.1290	-7.6329	2.1000	17.5111



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
30.58	12.1610	116.0800	282.0100	6.1292	-7.6330	2.1300	17.5556
30.60	12.5210	114.4000	282.7100	6.1295	-7.6332	2.1000	17.5556
30.62	12.8600	112.1500	281.8600	6.1297	-7.6333	2.1200	17.5111
30.64	13.1610	110.3900	282.4300	6.1300	-7.6334	2.1200	17.5556
30.66	13.4670	108.4200	283.2700	6.1302	-7.6335	2.1200	17.5556
30.68	13.7140	107.8500	284.1100	6.1305	-7.6337	2.0900	17.5111
30.70	13.9790	107.4400	283.5500	6.1308	-7.6338	2.0700	17.5556
30.72	14.2030	108.2200	284.5300	6.1310	-7.6339	2.0700	17.5556
30.74	14.4720	110.0200	286.5000	6.1313	-7.6340	2.1100	17.6000
30.76	14.7600	111.7800	285.9400	6.1315	-7.6342	2.1200	17.5556
30.78	15.3770	116.3300	287.0600	6.1318	-7.6343	2.1000	17.5556
30.80	15.7060	118.5400	287.0600	6.1320	-7.6344	2.1100	17.5556
30.82	16.0480	120.4600	288.0400	6.1323	-7.6345	2.1500	17.5556
30.84	16.3270	123.3300	289.4500	6.1325	-7.6347	2.0500	17.5556
30.86	16.5830	125.5400	288.6000	6.1328	-7.6348	2.0700	17.5111
30.88	16.7700	126.8500	287.7600	6.1331	-7.6349	2.1000	17.5556
30.90	16.8480	127.8400	285.3700	6.1333	-7.6350	2.1500	17.6000
30.92	16.7790	127.7100	284.1100	6.1336	-7.6352	2.1200	17.5556
30.94	16.5410	129.5600	284.9500	6.1338	-7.6353	2.1500	17.5556
30.96	16.1990	131.9700	283.4100	6.1341	-7.6354	2.1800	17.6000
30.98	15.4730	135.5400	279.7600	6.1343	-7.6355	2.1300	17.5556
31.00	15.1660	136.4400	278.3500	6.1346	-7.6357	2.1000	17.5556
31.02	14.9790	137.5800	278.2100	6.1348	-7.6358	2.1200	17.5556
31.04	14.9150	139.3500	279.7600	6.1351	-7.6359	2.1200	17.6444
31.06	14.9430	140.9000	282.0100	6.1353	-7.6360	2.1200	17.6000
31.08	15.0340	141.1100	282.9900	6.1356	-7.6362	2.1500	17.6000
31.10	15.1250	140.2900	283.1100	6.1359	-7.6363	2.1200	17.6000
31.12	15.2110	139.3100	284.7300	6.1361	-7.6364	2.2000	17.6444
31.14	15.2350	139.1000	284.9500	6.1364	-7.6365	2.1200	17.6000
31.16	15.2120	137.9500	284.3900	6.1366	-7.6367	2.0900	17.6444
31.18	14.9470	133.9400	282.5700	6.1369	-7.6368	2.0900	17.6444
31.20	14.6960	131.8100	280.7400	6.1371	-7.6369	2.0800	17.6000
31.22	14.4170	128.9000	278.0700	6.1374	-7.6370	2.1200	17.6444
31.24	14.0470	127.1000	278.7800	6.1376	-7.6372	2.1600	17.6444
31.26	13.6270	126.6100	276.3900	6.1379	-7.6373	2.0300	17.6444
31.28	13.1610	127.1000	275.1200	6.1381	-7.6374	2.2700	17.6444
31.30	12.6900	127.0600	274.8400	6.1384	-7.6375	2.1200	17.6444
31.32	12.3020	126.7700	273.4400	6.1387	-7.6377	2.1000	17.6444
31.34	11.9460	126.4800	273.4400	6.1389	-7.6378	2.1200	17.6444
31.36	11.7040	126.5700	273.7200	6.1392	-7.6379	2.1200	17.6444
31.38	11.4110	124.4000	276.6700	6.1394	-7.6380	2.1300	17.6444
31.40	11.3790	123.7300	278.0500	6.1397	-7.6382	2.1200	17.6444
31.42	11.3470	122.3100	280.7400	6.1399	-7.6383	2.1000	17.6444
31.44	11.3930	121.4500	283.5500	6.1402	-7.6384	2.2900	17.6444
31.46	11.4710	120.9600	285.8000	6.1404	-7.6385	2.1000	17.6444
31.48	11.6120	120.9600	288.1800	6.1407	-7.6387	2.0800	17.3333



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
31.50	11.7860	120.8700	290.5700	6.1409	-7.6388	2.1200	17.2889
31.52	11.9920	119.6400	291.1300	6.1412	-7.6389	2.2500	17.3333
31.54	12.2150	117.6400	292.9600	6.1415	-7.6390	2.0700	17.2889
31.56	12.4350	115.5100	293.3800	6.1417	-7.6392	2.1500	17.3333
31.58	12.6400	113.0500	294.2200	6.1420	-7.6393	2.1600	17.3333
31.60	13.0420	110.2600	293.6600	6.1422	-7.6394	2.1500	17.3333
31.62	13.1610	109.8600	293.2400	6.1425	-7.6395	2.1600	17.3333
31.64	13.2110	109.9800	292.1100	6.1427	-7.6397	2.1600	17.3778
31.66	13.1240	109.1600	290.0100	6.1430	-7.6398	2.0800	17.3333
31.68	12.9010	107.3200	287.9000	6.1432	-7.6399	2.0800	17.3333
31.70	12.4800	107.4000	283.5500	6.1435	-7.6400	2.0800	17.2889
31.72	11.9320	108.2600	281.0200	6.1437	-7.6402	2.1200	17.3333
31.74	11.3840	109.0400	278.0700	6.1440	-7.6403	2.1100	17.2889
31.76	10.9360	109.7300	275.5500	6.1443	-7.6404	2.1300	17.3333
31.78	10.5340	109.8100	273.0200	6.1445	-7.6405	2.1300	17.4667
31.80	10.2100	110.5100	272.4600	6.1448	-7.6407	2.1500	17.3778
31.82	9.7210	110.5900	272.6000	6.1450	-7.6408	2.1000	17.3778
31.84	9.5200	109.4000	272.4600	6.1453	-7.6409	2.0500	17.3778
31.86	9.3600	109.1200	273.1600	6.1455	-7.6411	2.1200	17.3778
31.88	9.2190	107.9300	273.3000	6.1458	-7.6412	2.1000	17.3333
31.90	8.9490	106.5500	274.7000	6.1460	-7.6413	2.0900	17.3333
31.92	8.8150	104.7800	280.7300	6.1463	-7.6414	2.1000	17.4667
31.94	8.7980	101.4600	292.9300	6.1466	-7.6416	2.1100	17.3778
31.96	8.7980	99.9000	292.5200	6.1468	-7.6417	2.1200	17.4667
31.98	8.7620	98.4300	289.5900	6.1471	-7.6418	2.0500	17.3778
32.00	8.7210	97.1600	288.0400	6.1473	-7.6419	2.0900	17.4667
32.02	8.6700	95.9300	287.2000	6.1476	-7.6421	2.1000	17.4667
32.04	8.6200	93.0600	286.6400	6.1478	-7.6422	2.0800	17.5111
32.06	8.6160	92.0800	287.0600	6.1481	-7.6423	2.1300	17.4667
32.08	8.6160	91.2200	287.3400	6.1483	-7.6424	2.0600	17.4667
32.10	8.6430	90.5600	288.0400	6.1486	-7.6426	2.1600	17.5556
32.12	8.6930	89.7400	288.3200	6.1488	-7.6427	2.0900	17.4667
32.14	8.7620	89.2100	288.6000	6.1491	-7.6428	2.0600	17.5111
32.16	8.8490	88.9700	290.0100	6.1494	-7.6429	2.0600	17.5111
32.18	8.9860	88.7600	291.4100	6.1496	-7.6431	2.0600	17.5111
32.20	9.1680	88.8800	292.8200	6.1499	-7.6432	2.0900	17.5111
32.22	9.4060	89.2100	294.9200	6.1501	-7.6433	2.0900	17.5111
32.24	10.1050	90.8100	296.0500	6.1504	-7.6434	2.0200	17.4667
32.26	10.5890	91.7500	296.8900	6.1506	-7.6436	2.2300	17.5111
32.28	11.1010	92.4500	297.5900	6.1509	-7.6437	2.0900	17.5111
32.30	11.7080	93.4700	297.8700	6.1511	-7.6438	2.0600	17.4667
32.32	12.2980	94.1700	298.2900	6.1514	-7.6439	2.0600	17.5111
32.34	12.9050	94.0900	297.8700	6.1516	-7.6441	2.0800	17.4667
32.36	13.4940	94.5800	298.7100	6.1519	-7.6442	2.1100	17.5111
32.38	14.0880	95.7200	298.5700	6.1522	-7.6443	2.0800	17.4667
32.40	14.6320	97.6100	298.1500	6.1524	-7.6444	2.0300	17.5111



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
32.42	15.1390	100.0200	299.1400	6.1527	-7.6446	2.2500	17.4667
32.44	16.0070	106.9900	300.2600	6.1529	-7.6447	2.0600	17.1556
32.46	16.3860	111.4500	299.9800	6.1532	-7.6448	2.0400	17.1556
32.48	16.7520	116.0800	300.1200	6.1534	-7.6449	2.0700	17.2889
32.50	17.0990	120.9600	299.9800	6.1537	-7.6451	2.8500	17.2444
32.52	17.4690	125.5800	297.3100	6.1539	-7.6452	1.4700	17.1556
32.54	17.7060	128.9000	298.2900	6.1542	-7.6453	1.4900	17.1556
32.56	17.9030	133.8600	298.2900	6.1544	-7.6454	1.5200	17.1556
32.58	18.0310	138.4000	297.8700	6.1547	-7.6456	1.5000	17.2444
32.60	15.6870	187.8400	225.5100	6.1550	-7.6457	1.5200	17.2444
32.62	16.0210	175.0200	212.2200	6.1552	-7.6458	1.5100	17.2444
32.64	16.1900	156.8000	211.3800	6.1555	-7.6459	1.4900	17.2889
32.66	16.4270	141.4400	219.9400	6.1557	-7.6461	1.4700	17.2444
32.68	16.6510	129.6000	238.9000	6.1560	-7.6462	1.4700	17.2444
32.70	17.0390	121.4100	261.6500	6.1562	-7.6463	1.4700	17.1556
32.72	17.4140	116.9400	284.2500	6.1565	-7.6464	1.4800	17.2444
32.74	18.0120	119.3600	306.3000	6.1567	-7.6466	1.4700	17.2889
32.76	18.7660	119.8100	325.3900	6.1570	-7.6467	1.4900	17.2444
32.78	19.5020	122.4700	341.8200	6.1572	-7.6468	1.5000	17.2889
32.80	20.2420	122.1800	351.7900	6.1575	-7.6469	1.4500	17.2444
32.82	21.3520	111.6600	362.7400	6.1578	-7.6471	1.4500	17.2444
32.84	22.0100	110.5900	367.8000	6.1580	-7.6472	1.4600	17.2444
32.86	22.6720	114.1100	362.8800	6.1583	-7.6473	1.4700	17.2444
32.88	22.9640	117.3900	370.6000	6.1585	-7.6474	1.4700	17.2444
32.90	23.3980	122.1800	354.3200	6.1588	-7.6476	1.4800	17.2444
32.92	23.6680	124.8500	347.0100	6.1590	-7.6477	1.4900	17.2889
32.94	23.7230	128.4900	340.2800	6.1593	-7.6478	1.4800	17.2889
32.96	23.7870	130.6600	349.9600	6.1595	-7.6479	1.4300	17.3333
32.98	23.9560	135.6600	351.5100	6.1598	-7.6481	1.4500	17.2444
33.00	24.0330	142.5800	356.4200	6.1600	-7.6482	1.4500	17.2889
33.02	24.1840	149.5500	358.3900	6.1603	-7.6483	1.4500	17.2889
33.04	24.1380	154.7100	363.5800	6.1606	-7.6484	1.4400	17.2889
33.06	24.0880	159.2100	365.8300	6.1608	-7.6486	1.4500	17.3333
33.08	24.1290	161.6300	365.8300	6.1611	-7.6487	1.5200	17.2889
33.10	24.2660	164.4500	366.3900	6.1613	-7.6488	1.4400	17.3333
33.12	24.3940	169.4900	365.2700	6.1616	-7.6490	1.4100	17.2889
33.14	24.5080	171.7500	367.8000	6.1618	-7.6491	1.4000	17.2889
33.16	24.5450	174.1600	365.1300	6.1621	-7.6492	1.3800	17.2444
33.18	24.4130	173.3400	364.0000	6.1623	-7.6493	1.4400	17.2889
33.20	24.3260	173.9600	364.0000	6.1626	-7.6495	1.4300	17.2889
33.22	24.1520	172.1600	362.6000	6.1629	-7.6496	1.3500	17.2889
33.24	23.7410	172.2000	362.3200	6.1631	-7.6497	1.5600	17.2889
33.26	23.6220	172.3600	361.2000	6.1634	-7.6498	1.4100	17.2889
33.28	23.5260	173.0200	361.0600	6.1636	-7.6500	1.4100	17.2444
33.30	23.3980	174.8600	362.7400	6.1639	-7.6501	1.3600	17.2889
33.32	23.2520	175.0200	364.1400	6.1641	-7.6502	1.8300	17.3333



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
33.34	23.1150	174.9000	363.1600	6.1644	-7.6503	1.8700	17.2444
33.36	22.9600	174.3700	363.0200	6.1646	-7.6505	1.7400	17.2889
33.38	22.7820	174.3700	361.3400	6.1649	-7.6506	1.2900	17.2889
33.40	22.6580	174.2000	362.6000	6.1651	-7.6507	1.4800	17.2889
33.42	22.4980	174.2900	361.9000	6.1654	-7.6508	1.6500	17.1556
33.44	22.2750	174.3300	362.6000	6.1657	-7.6510	2.0300	17.1111
33.46	22.2610	174.6100	365.6900	6.1659	-7.6511	1.9700	17.1556
33.48	22.3520	173.9600	368.7800	6.1662	-7.6512	1.9900	17.1556
33.50	22.4760	174.4500	371.3100	6.1664	-7.6513	2.0100	17.0667
33.52	22.5850	174.0800	372.5700	6.1667	-7.6515	2.0100	17.1111
33.54	22.7220	173.8800	371.0200	6.1669	-7.6516	2.0100	17.1111
33.56	22.8680	174.7400	372.9900	6.1672	-7.6517	2.0100	17.1556
33.58	23.0510	176.7800	373.9700	6.1674	-7.6518	2.0600	17.1111
33.60	23.4760	178.3400	376.5000	6.1677	-7.6520	2.0300	17.0667
33.62	23.7320	177.8100	377.9100	6.1679	-7.6521	1.9700	17.1556
33.64	24.0610	176.0900	378.7500	6.1682	-7.6522	1.9700	17.1111
33.66	24.3490	175.3900	379.0300	6.1685	-7.6523	1.9700	17.1111
33.68	24.5310	174.9000	382.5400	6.1687	-7.6525	1.9900	17.1556
33.70	24.5820	175.1000	378.1900	6.1690	-7.6526	2.0100	17.1111
33.72	24.6460	176.2500	378.7500	6.1692	-7.6527	1.9200	17.1111
33.74	24.6460	177.0300	376.7800	6.1695	-7.6528	2.1200	17.1556
33.76	24.4400	179.2800	372.0100	6.1697	-7.6530	2.0100	17.1111
33.78	24.3530	179.9400	368.5000	6.1700	-7.6531	1.9600	17.1556
33.80	24.1660	180.1800	364.9900	6.1702	-7.6532	2.0000	17.1111
33.82	23.9920	181.1300	364.9900	6.1705	-7.6533	2.0000	17.1556
33.84	23.9010	180.8000	367.9400	6.1707	-7.6535	2.0200	17.1111
33.86	23.7870	181.6200	361.9000	6.1710	-7.6536	2.0100	17.1556
33.88	23.6500	181.6600	361.7600	6.1713	-7.6537	1.9400	17.1556
33.90	23.4850	182.2700	361.9000	6.1715	-7.6538	2.1600	17.1111
33.92	23.2290	183.4200	359.9300	6.1718	-7.6540	1.9900	17.1556
33.94	22.9690	184.4000	358.8100	6.1720	-7.6541	1.9400	17.1111
33.96	22.2930	184.4000	355.8600	6.1723	-7.6542	1.9700	17.2444
33.98	21.8770	183.1300	354.3200	6.1725	-7.6543	2.6400	17.1556
34.00	21.4160	182.7600	352.2100	6.1728	-7.6545	2.0000	17.1556
34.02	20.7350	168.1000	358.5600	6.1730	-7.6546	2.0200	17.1111
34.04	20.0500	163.8800	368.2600	6.1733	-7.6547	2.0500	17.1556
34.06	19.7940	161.6700	375.5200	6.1735	-7.6548	2.0200	17.2444
34.08	19.5840	161.7100	363.7200	6.1738	-7.6550	2.0300	17.1556
34.10	19.4290	162.2400	355.4400	6.1741	-7.6551	2.0500	17.1556
34.12	19.5430	163.3900	357.6900	6.1743	-7.6552	2.0500	17.1556
34.14	19.7800	163.6800	362.1800	6.1746	-7.6553	1.9800	17.1556
34.16	20.0730	165.1900	364.4300	6.1748	-7.6555	1.9800	17.2444
34.18	20.5340	163.4300	363.7200	6.1751	-7.6556	2.0000	17.2444
34.20	20.9410	161.4600	371.4500	6.1753	-7.6557	2.0300	17.2444
34.22	21.2920	163.2300	375.6600	6.1756	-7.6558	2.0100	17.2444
34.24	21.6350	164.0500	377.9100	6.1758	-7.6560	2.0200	17.2889



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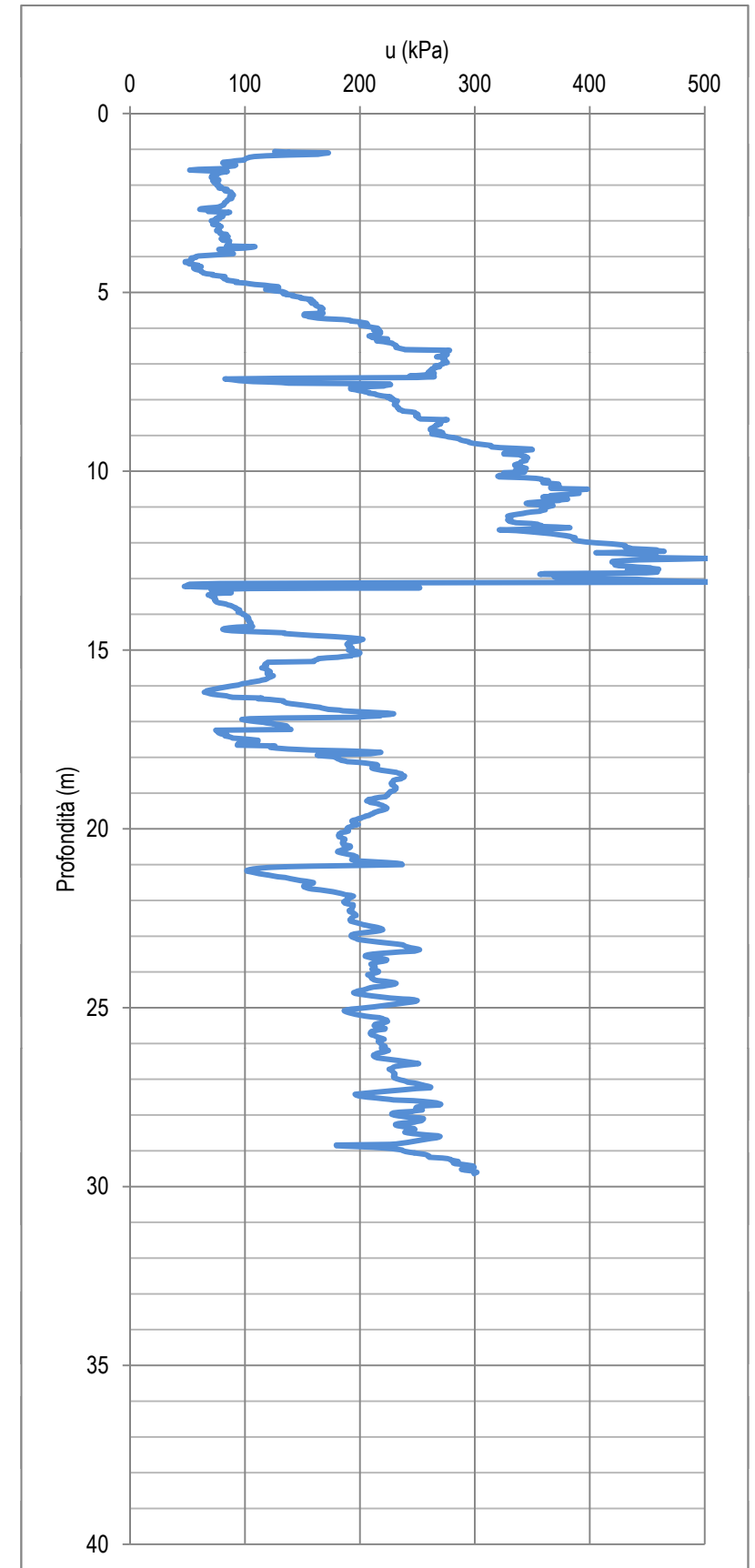
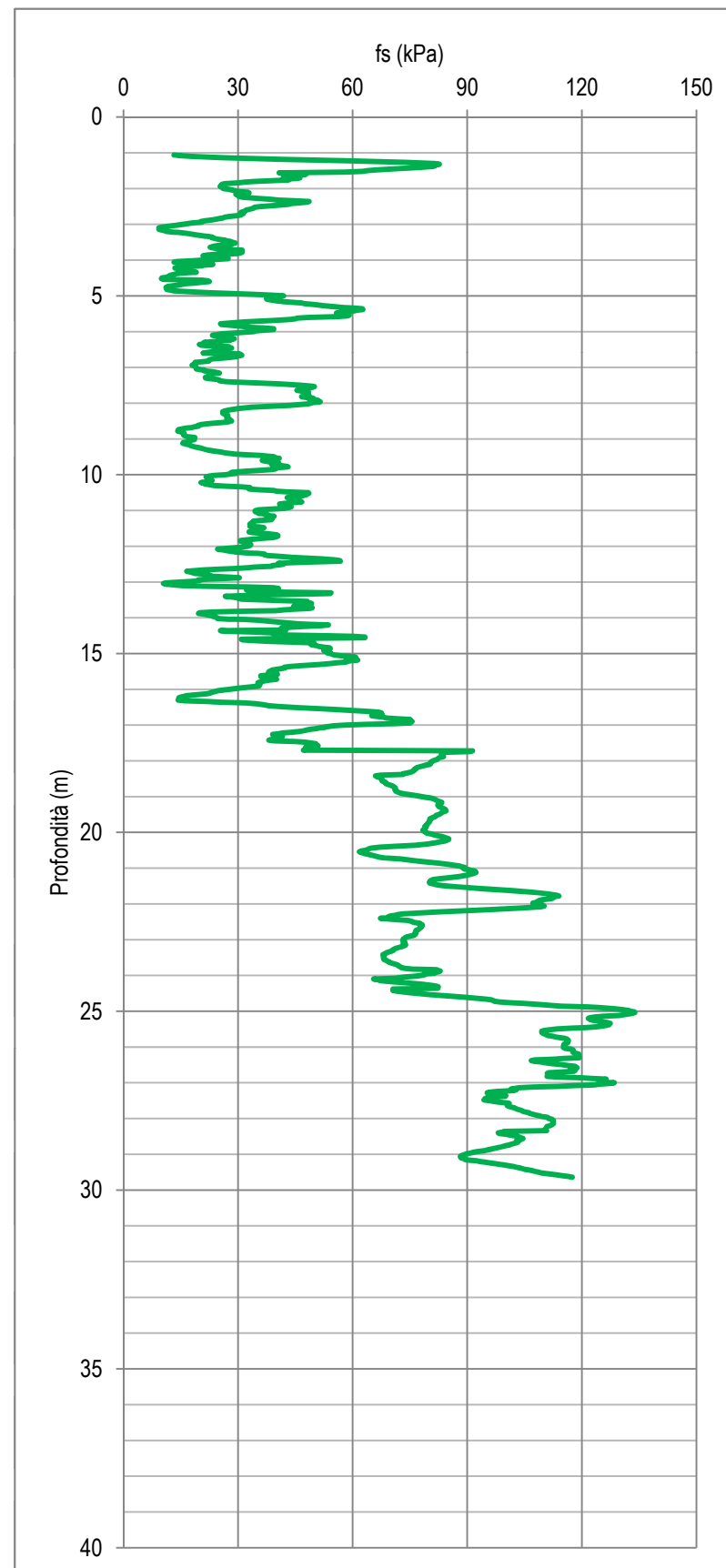
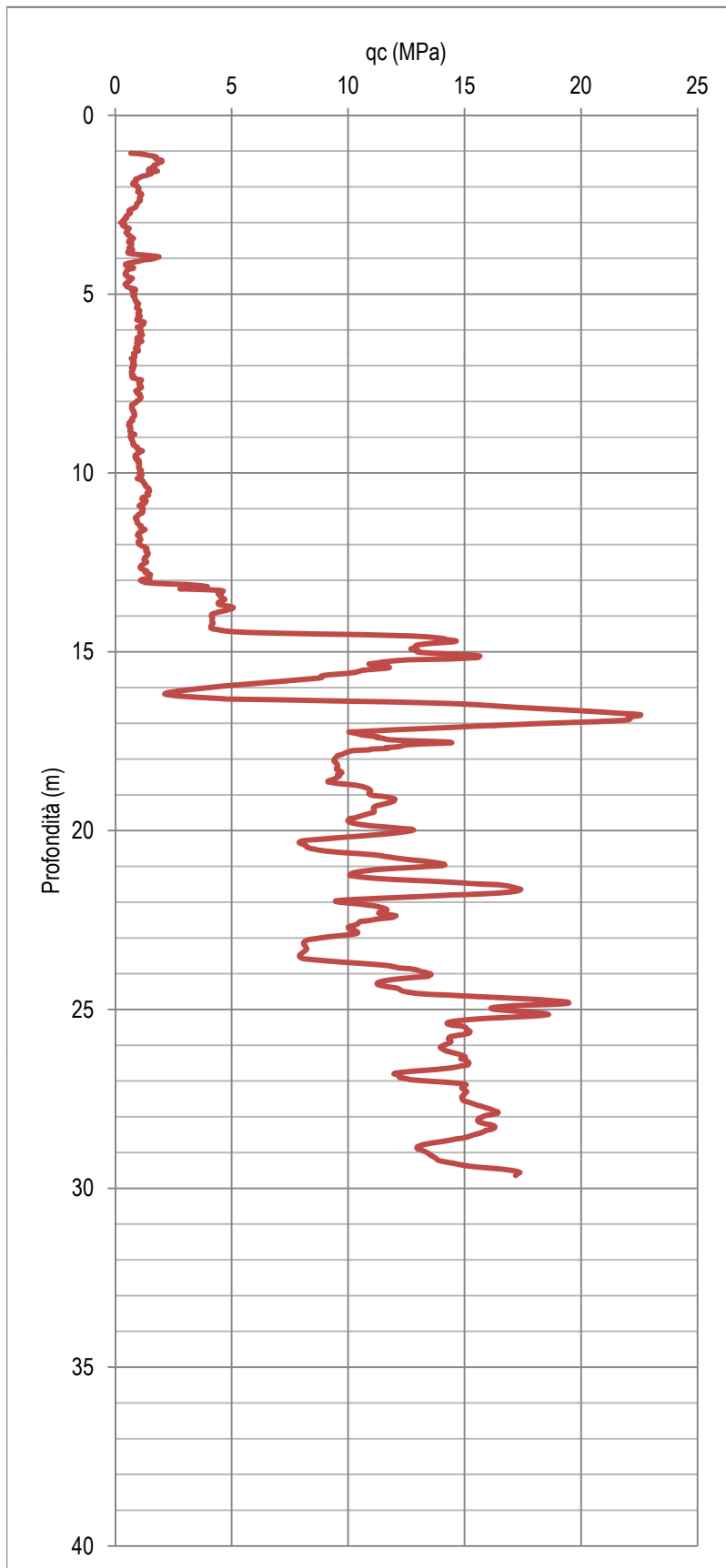
Committente	Località	Data	CPTU 01
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini	1.04	1.47

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
34.26	22.6260	161.6300	383.8000	6.1761	-7.6561	2.0500	17.2889
34.28	23.0560	162.6100	384.6400	6.1763	-7.6562	2.0200	17.2889
34.30	23.5860	162.2400	381.2700	6.1766	-7.6564	1.9700	17.2889
34.32	24.0430	163.8000	379.1700	6.1769	-7.6565	2.0000	17.2889
34.34	24.4170	165.2700	377.6200	6.1771	-7.6566	1.9800	17.2889
34.36	24.7600	167.9400	377.4800	6.1774	-7.6567	1.9800	17.3333
34.38	25.0060	170.7200	376.6400	6.1776	-7.6569	2.0000	17.3333
34.40	25.2670	173.9600	375.1000	6.1779	-7.6570	1.9900	17.0667
34.42	25.4950	179.3200	369.7600	6.1781	-7.6571	2.0300	17.1111
34.44	25.5040	180.4700	365.9700	6.1784	-7.6572	1.9900	17.1111
34.46	25.3760	183.4200	365.1300	6.1786	-7.6574	1.9400	17.0667
34.48	25.2300	186.3300	360.2100	6.1789	-7.6575	1.9900	17.1111
34.50	25.0430	186.2000	358.5300	6.1792	-7.6576	1.9800	17.0667
34.52	24.8150	187.1900	357.2600	6.1794	-7.6577	2.0000	17.1111
34.54	24.6770	189.0300	357.1000	6.1797	-7.6579	2.0300	17.0667
34.56	24.5630	191.1200	357.9700	6.1799	-7.6580	1.9500	17.0667
34.58	24.4080	191.7800	364.7700	6.1802	-7.6581	2.0600	17.1111
34.60	24.3350	191.1600	366.3900	6.1804	-7.6582	1.9800	17.1556
34.62	24.2340	191.4100	365.9700	6.1807	-7.6584	1.9600	17.1111
34.64	24.1610	190.2200	367.0900	6.1809	-7.6585	1.9700	17.1556
34.66	24.1160	189.8500	364.4300	6.1812	-7.6586	1.9600	17.1556
34.68	23.9790	191.9800	364.1400	6.1814	-7.6587	1.9800	17.1556
34.70	23.8640	192.8400	365.4100	6.1817	-7.6589	1.9700	17.1556
34.72	23.7090	192.7600	364.2900	6.1820	-7.6590	1.9800	17.1556
34.74	23.5310	191.3700	363.0200	6.1822	-7.6591	2.0700	17.2444
34.76	23.2750	189.8900	358.5300	6.1825	-7.6592	1.9700	17.1556
34.78	22.8230	188.5400	362.8800	6.1827	-7.6594	1.9800	17.1556
34.80	22.3610	187.2700	360.0700	6.1830	-7.6595	1.9600	17.2444
34.82	21.8820	186.0800	355.4400	6.1832	-7.6596	1.9700	17.1556
34.84	21.3840	184.9800	355.0200	6.1835	-7.6597	1.9900	17.1556
34.86	20.9730	185.1000	352.4900	6.1837	-7.6599	2.0000	17.1556
34.88	20.2460	183.6700	351.2300	6.1840	-7.6600	2.0500	17.1556
34.90	19.9400	181.0800	361.7600	6.1842	-7.6601	2.0200	17.1556
34.92	19.6940	180.6300	358.2500	6.1845	-7.6602	1.9400	17.2444
34.94	19.5340	179.0400	357.9700	6.1848	-7.6604	1.9600	17.2444
34.96	19.3740	177.3600	361.7600	6.1850	-7.6605	8.6900	17.2444
34.98	19.2090	176.5400	366.1100	6.1853	-7.6606	1.9600	17.2444
35.00	19.0490	175.5100	366.9500	6.1855	-7.6607	1.9800	17.2444
35.02	18.8670	176.3700	367.2300	6.1858	-7.6609	0.3700	17.2444
35.04	18.3820	176.9100	362.1800	6.1860	-7.6610	2.0100	17.2444
35.06	18.0260	175.6400	359.0900	6.1863	-7.6611	2.0000	17.2444



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Committente MC Engineering Srl	Località Ferrara	Data 31/03/2014	CPTU 02
Tecnico PANCANI-CARBONELLA	Cantiere Boicelli/Michelini	Preforo 1.5	Livello Falda





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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
1.06	0.6749	13.2251	126.0000	0.3572	-0.1596	2.2500	19.9556
1.08	1.1130	14.8971	138.0000	0.1292	-0.3192	2.2400	19.8667
1.10	1.3045	17.8971	172.6667	0.1520	-0.2432	2.2700	19.8667
1.12	1.4225	21.0109	167.3333	0.0988	-0.2660	2.2700	19.8222
1.14	1.6449	27.4527	163.3333	0.1444	-0.2812	2.1100	19.8667
1.16	1.7639	33.6802	137.3333	0.1520	-0.2812	2.2700	19.7778
1.18	1.7417	41.5664	118.6667	0.1292	-0.2888	2.4200	19.8222
1.20	1.7214	49.6802	108.0000	0.1292	-0.3496	2.3200	19.7778
1.22	1.7968	58.0162	104.0000	0.1596	-0.3344	2.2700	19.7333
1.24	1.8829	64.3522	102.6667	0.1444	-0.3572	2.2800	19.6889
1.26	2.0019	71.0242	100.6667	0.1520	-0.3724	2.3100	19.6000
1.28	1.9806	77.1353	100.0000	0.1444	-0.3724	2.2900	19.6000
1.30	2.0019	81.5798	99.3333	0.1596	-0.3724	2.3300	19.6000
1.32	1.8655	82.6962	92.0000	0.1596	-0.4028	2.3600	19.5111
1.34	1.8442	81.4740	88.0000	0.1596	-0.4104	2.3900	19.5111
1.36	1.7804	81.5851	81.3333	0.1748	-0.4180	2.2900	19.5111
1.38	1.7069	81.0322	80.6667	0.1824	-0.4180	2.2400	19.4667
1.40	1.6557	78.5931	84.6667	0.1748	-0.4408	2.2900	19.3778
1.42	1.6663	75.5931	90.0000	0.1824	-0.4332	2.3300	19.3778
1.44	1.7089	71.9264	92.0000	0.1976	-0.4408	2.1900	19.3778
1.46	1.6567	68.7069	90.6667	0.1976	-0.4408	2.2200	19.3333
1.48	1.5503	66.1513	86.0000	0.2128	-0.4484	2.5100	19.3333
1.50	1.4662	63.8207	84.0000	0.1976	-0.4484	2.2800	19.2889
1.52	1.4352	62.6011	82.0000	0.2204	-0.4560	2.2700	19.2444
1.54	1.4256	57.8260	80.6667	0.2280	-0.4560	2.2500	19.2000
1.56	1.8150	40.7664	59.3333	0.3116	-0.3496	28.5700	16.4889
1.58	1.6022	43.6553	52.0000	0.2812	-0.3572	2.3500	16.4889
1.60	1.4407	47.7611	66.0000	0.3040	-0.3572	2.3800	16.5778
1.62	1.5161	44.5416	84.6667	0.2964	-0.3724	2.3500	16.5333
1.64	1.5384	41.8776	80.6667	0.3116	-0.3724	2.2900	16.4889
1.66	1.4088	43.6500	77.3333	0.3192	-0.3724	2.3200	16.5778
1.68	1.3575	45.5442	76.6667	0.3116	-0.4104	2.3200	16.4889
1.70	1.1970	46.2082	74.0000	0.3192	-0.3952	2.3500	16.5333
1.72	1.1129	45.3220	72.0000	0.3268	-0.4104	2.3200	16.4889
1.74	1.0490	41.7664	71.3333	0.3116	-0.4180	2.3600	16.4889
1.76	0.9949	43.2082	74.6667	0.3420	-0.4104	2.3500	16.5333
1.78	0.8788	38.8776	70.6667	0.3192	-0.4180	2.3300	16.4889
1.80	0.8788	34.4331	71.3333	0.3116	-0.4484	2.2800	16.4889
1.82	0.8701	31.6607	73.3333	0.3192	-0.4408	2.2900	16.4000
1.84	0.9021	29.9940	76.6667	0.3420	-0.4484	2.3200	16.4000
1.86	0.8459	26.6527	77.3333	0.3420	-0.4332	2.3100	16.5333
1.88	0.7850	25.7718	72.0000	0.3420	-0.4560	2.3300	16.4000
1.90	0.7744	25.9940	74.0000	0.3192	-0.4712	2.3600	16.4000
1.92	0.7502	25.4304	73.3333	0.3420	-0.4712	2.3600	16.5333
1.94	0.8353	25.3193	73.3333	0.3420	-0.4788	2.2900	16.5333
1.96	0.8682	25.6553	76.6667	0.3648	-0.4788	2.2700	16.4889



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
1.98	0.9552	25.8829	76.6667	0.3496	-0.5016	2.2700	16.4000
2.00	0.9446	26.1051	75.3333	0.3420	-0.5168	2.2900	16.4000
2.02	0.9872	27.5496	76.6667	0.3572	-0.5016	2.2700	16.4000
2.04	1.0191	28.4384	78.6667	0.3572	-0.5244	2.2900	16.4000
2.06	1.0084	29.2162	79.3333	0.3648	-0.5168	2.2800	16.4000
2.08	1.0094	29.7744	77.3333	0.3572	-0.5320	2.3100	16.3556
2.10	1.0094	32.5522	81.3333	0.3648	-0.5244	2.2700	16.3556
2.12	0.9988	32.8856	84.6667	0.3800	-0.5396	2.2500	16.3556
2.14	0.9669	30.9967	82.6667	0.3800	-0.5396	2.2400	16.3556
2.16	1.0307	29.4411	82.6667	0.3800	-0.5396	2.2700	16.3556
2.18	1.0849	31.4438	84.6667	0.3800	-0.5624	2.2700	16.3111
2.20	1.1264	30.1078	88.0000	0.3876	-0.5548	2.2700	16.3556
2.22	1.1371	30.2189	88.0000	0.4028	-0.5700	2.2400	16.3556
2.24	1.1168	30.9993	88.6667	0.4028	-0.5624	2.3100	16.3111
2.26	1.0742	33.3327	89.3333	0.3952	-0.5776	2.2400	16.3111
2.28	1.0646	35.8909	90.0000	0.4332	-0.5700	2.2000	16.2667
2.30	1.0529	38.6660	89.3333	0.4332	-0.5700	2.2400	16.3111
2.32	1.0317	40.4438	86.6667	0.4408	-0.5776	2.2500	16.3111
2.34	1.0636	45.1104	88.6667	0.4408	-0.5852	2.2300	16.3111
2.36	1.0858	48.5576	88.6667	0.4408	-0.5852	2.2500	16.2667
2.38	1.0752	47.8909	88.0000	0.4408	-0.6004	2.2700	16.2667
2.40	1.0326	46.2242	86.0000	0.4408	-0.6080	2.3100	16.2667
2.42	1.0220	43.8909	84.6667	0.4484	-0.6080	2.2200	16.2667
2.44	0.9901	43.3353	84.6667	0.4712	-0.6004	2.2300	16.2667
2.46	0.9369	41.2242	84.0000	0.4712	-0.6080	2.2700	16.2667
2.48	0.9369	38.7798	82.6667	0.4788	-0.6156	2.2500	16.2667
2.50	0.9156	36.1131	82.6667	0.4788	-0.6080	2.2400	16.2667
2.52	0.9069	34.3407	82.0000	0.4940	-0.6156	2.2200	16.1778
2.54	0.9050	34.1131	81.3333	0.4940	-0.6384	2.3800	16.2667
2.56	0.8837	33.6687	81.3333	0.4864	-0.6384	2.2700	16.2667
2.58	0.8538	32.8962	79.3333	0.5092	-0.6536	2.2300	16.1778
2.60	0.7667	32.1131	78.6667	0.5092	-0.6460	2.1800	16.2667
2.62	0.7241	31.8909	75.3333	0.5168	-0.6536	2.2700	16.2667
2.64	0.6410	31.5629	68.0000	0.5320	-0.6536	2.3100	16.1778
2.66	0.5984	30.8962	62.0000	0.5776	-0.6460	2.2400	16.1778
2.68	0.5878	30.6740	60.6667	0.5776	-0.6536	2.1600	16.1778
2.70	0.6197	31.3407	68.0000	0.6080	-0.6460	2.5300	16.1778
2.72	0.6516	30.7851	68.0000	0.6080	-0.6688	2.2400	16.1778
2.74	0.6516	30.6740	68.0000	0.6156	-0.6688	2.2700	16.1778
2.76	0.5986	29.4811	86.6667	0.6916	-0.6080	3.2700	15.6889
2.78	0.5367	27.5976	84.0000	0.6612	-0.6384	2.2500	15.6000
2.80	0.5115	26.4758	82.0000	0.6916	-0.6156	2.2700	15.7778
2.82	0.4622	26.0420	79.3333	0.6840	-0.6536	2.2700	15.6000
2.84	0.4941	24.9309	79.3333	0.6840	-0.6536	2.2800	15.6000
2.86	0.4496	24.1478	78.0000	0.6916	-0.6612	2.3200	15.6889
2.88	0.4815	23.0367	80.6667	0.7144	-0.6688	2.3100	15.6889



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Committente

MC Engineering Srl

Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
2.90	0.4390	21.4811	77.3333	0.7220	-0.6612	2.3200	15.6889
2.92	0.3655	20.3727	75.3333	0.6992	-0.7068	2.2500	15.6444
2.94	0.3858	20.4811	78.0000	0.7372	-0.6916	2.2000	15.6889
2.96	0.3229	18.0393	74.0000	0.7296	-0.6992	2.1900	15.6444
2.98	0.3413	16.6980	74.0000	0.7220	-0.7068	2.1800	15.7778
3.00	0.2485	15.4838	70.6667	0.7220	-0.7296	2.2000	15.6444
3.02	0.3868	14.3727	75.3333	0.7600	-0.7296	2.2700	15.6444
3.04	0.3974	12.5949	74.0000	0.7372	-0.7524	2.2700	15.6444
3.06	0.3229	11.1504	72.0000	0.7448	-0.7676	2.3500	15.6444
3.08	0.3974	9.9282	74.0000	0.7448	-0.7676	2.2400	15.6444
3.10	0.3442	9.2616	72.0000	0.7676	-0.7676	2.2300	15.6444
3.12	0.4583	9.5869	77.3333	0.7676	-0.7524	2.2000	15.7778
3.14	0.4825	9.2616	76.6667	0.7828	-0.7752	2.2400	15.6444
3.16	0.5995	9.9282	79.3333	0.7828	-0.7828	2.2400	15.6444
3.18	0.5048	10.7087	76.6667	0.7828	-0.8056	2.2000	15.6000
3.20	0.5473	11.3753	77.3333	0.8132	-0.7904	2.2800	15.6000
3.22	0.5367	13.1531	76.6667	0.8132	-0.8056	2.3200	15.6000
3.24	0.5134	15.5922	77.3333	0.8284	-0.7904	2.2400	15.6889
3.26	0.4941	17.3753	75.3333	0.8436	-0.8056	2.2000	15.6000
3.28	0.4622	18.1531	75.3333	0.8436	-0.8284	2.2700	15.6000
3.30	0.5463	19.3727	78.0000	0.8588	-0.8208	2.2500	15.6444
3.32	0.5367	20.8198	78.6667	0.8512	-0.8360	2.2500	15.6000
3.34	0.5357	22.2616	78.0000	0.8892	-0.8284	2.2300	15.6444
3.36	0.5580	23.2642	78.6667	0.8740	-0.8360	2.3500	15.6000
3.38	0.6740	23.2616	84.0000	0.9044	-0.8360	2.2900	15.6444
3.40	0.6750	24.0420	81.3333	0.8968	-0.8512	2.1900	15.6000
3.42	0.6972	24.8224	82.0000	0.9044	-0.8588	2.2200	15.5556
3.44	0.7814	26.4864	85.3333	0.9272	-0.8664	2.2700	15.6000
3.46	0.6963	27.0420	82.0000	0.9348	-0.8740	2.2500	15.6000
3.48	0.7166	28.0393	84.6667	0.9500	-0.8664	2.2400	15.6444
3.50	0.6111	28.5976	79.3333	0.9272	-0.8968	2.2200	15.6000
3.52	0.6527	29.2616	82.0000	0.9348	-0.8816	2.4000	15.6444
3.54	0.5792	28.2642	80.6667	0.9424	-0.9044	2.2500	15.6000
3.56	0.6740	28.2616	86.6667	0.9728	-0.8968	2.2400	15.6444
3.58	0.7166	25.8171	85.3333	0.9804	-0.9044	2.1300	15.6444
3.60	0.6527	24.2616	86.0000	0.9956	-0.9044	2.2900	15.6444
3.62	0.6740	23.3727	85.3333	0.9880	-0.9196	2.3300	15.6444
3.64	0.6953	22.7060	85.3333	0.9956	-0.9348	2.3100	15.6444
3.66	0.6953	23.3727	85.3333	1.0108	-0.9348	2.1800	15.6444
3.68	0.6837	24.4811	86.0000	1.0184	-0.9500	2.5400	15.6889
3.70	0.5986	25.7033	84.0000	1.0108	-0.9500	2.2900	15.6889
3.72	0.6914	31.0287	108.6667	1.0412	-0.9576	2.4200	15.8222
3.74	0.7156	30.4811	105.3333	1.0564	-0.9956	2.2700	15.6889
3.76	0.7446	30.8064	99.3333	1.0640	-0.9880	2.2400	15.8222
3.78	0.6943	31.0367	84.0000	1.0640	-1.0184	2.2700	15.6889
3.80	0.5773	30.7033	77.3333	1.0640	-1.0260	2.2900	15.6889



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Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
3.82	0.5454	29.7033	78.6667	1.0716	-1.0412	2.2700	15.6889
3.84	0.5531	23.9176	81.3333	1.1020	-1.0260	2.2900	15.8222
3.86	0.5743	21.8064	81.3333	1.0944	-1.0336	2.3600	15.8222
3.88	0.7881	20.8091	84.0000	1.1020	-1.0412	2.3200	15.7778
3.90	1.0666	22.7033	86.6667	1.0792	-1.0640	2.2200	15.6889
3.92	1.4360	24.4731	90.0000	1.1248	-1.0412	2.2400	15.8222
3.94	1.7455	27.3647	79.3333	1.1096	-1.0716	2.2700	15.7778
3.96	1.8838	27.3647	70.0000	1.1172	-1.0868	2.2700	15.7778
3.98	1.7881	24.2536	60.0000	1.1476	-1.1096	2.2700	15.7778
4.00	1.6923	20.3647	57.3333	1.1476	-1.1096	2.2800	15.7778
4.02	1.5424	17.4731	57.3333	1.1932	-1.1096	2.3500	15.8222
4.04	1.2765	14.0287	53.3333	1.1856	-1.1096	2.3100	15.8222
4.06	1.1478	13.2482	54.6667	1.1932	-1.1096	2.2700	15.8667
4.08	1.0211	15.6953	53.3333	1.1856	-1.1096	2.2900	15.8222
4.10	0.8500	20.8038	52.6667	1.2236	-1.1096	2.2900	15.8667
4.12	0.7233	23.3620	53.3333	1.2236	-1.1096	2.2900	15.8222
4.14	0.5434	21.2536	48.0000	1.2008	-1.1476	2.3300	15.7778
4.16	0.4467	20.4731	48.0000	1.2312	-1.1324	2.2800	15.8222
4.18	0.4989	17.1371	53.3333	1.2464	-1.1248	2.4300	15.8667
4.20	0.4573	14.1398	51.3333	1.2464	-1.1476	2.3200	15.8222
4.22	0.5734	13.4704	55.3333	1.2692	-1.1324	2.2700	15.8667
4.24	0.6691	14.8038	59.3333	1.2692	-1.1476	2.2900	15.8667
4.26	0.7871	16.0287	59.3333	1.2464	-1.1552	2.2700	15.8222
4.28	0.7755	16.8038	62.0000	1.2844	-1.1552	2.2900	15.8667
4.30	0.6266	16.3593	56.6667	1.2920	-1.1552	2.2900	15.8667
4.32	0.5424	17.5842	55.3333	1.2844	-1.1704	2.2900	15.8222
4.34	0.4989	19.0260	56.0000	1.2920	-1.1856	2.4200	15.8667
4.36	0.4883	15.5816	57.3333	1.3224	-1.1856	2.2900	15.8667
4.38	0.4766	13.8011	60.0000	1.3300	-1.1932	2.2200	15.9111
4.40	0.4766	13.2456	62.0000	1.3300	-1.1856	2.2400	15.9111
4.42	0.4351	12.3593	62.0000	1.3452	-1.2084	2.4200	15.8667
4.44	0.4351	12.0260	63.3333	1.3528	-1.2160	2.2400	15.8667
4.46	0.4351	11.6927	64.0000	1.3528	-1.2160	2.2900	15.8667
4.48	0.4873	11.0233	66.6667	1.3680	-1.2312	2.4000	15.9111
4.50	0.5086	10.0233	72.0000	1.3756	-1.2388	2.3300	15.9111
4.52	0.5405	9.9122	72.0000	1.3908	-1.2464	2.2700	15.9111
4.54	0.6788	10.3567	77.3333	1.3680	-1.2540	2.2800	15.9111
4.56	0.7406	20.5736	82.6667	1.4440	-1.2540	2.7900	16.0000
4.58	0.6555	22.1291	80.6667	1.4592	-1.2692	2.3300	16.0000
4.60	0.6555	22.4624	82.0000	1.4744	-1.2540	2.2900	16.0000
4.62	0.5907	20.5709	82.0000	1.4592	-1.2768	2.2900	16.0444
4.64	0.6110	18.6793	84.0000	1.4820	-1.2768	2.3300	16.0889
4.66	0.5375	16.0153	84.6667	1.4744	-1.2920	2.3300	16.0444
4.68	0.4950	15.1264	89.3333	1.4896	-1.2844	2.2200	16.0444
4.70	0.5037	14.2322	93.3333	1.5124	-1.2844	2.2400	16.1333
4.72	0.4215	12.5736	92.0000	1.5124	-1.2996	2.2800	16.0000



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
4.74	0.4853	11.5736	100.0000	1.5200	-1.3148	2.2900	16.0000
4.76	0.4853	11.1291	104.0000	1.5428	-1.3148	2.2700	16.0000
4.78	0.4940	11.2349	108.6667	1.5428	-1.3148	2.3100	16.0889
4.80	0.5249	11.2322	117.3333	1.5428	-1.3148	2.3200	16.1333
4.82	0.6120	11.3487	122.0000	1.5352	-1.3224	2.2900	16.0444
4.84	0.7609	12.3487	128.6667	1.5732	-1.3376	2.2300	16.0444
4.86	0.8557	13.2349	129.3333	1.5808	-1.3300	2.2500	16.0889
4.88	0.8780	16.5709	124.6667	1.5808	-1.3528	2.2300	16.0444
4.90	0.8460	20.4598	118.6667	1.5808	-1.3376	2.2300	16.0444
4.92	0.7280	25.2349	118.0000	1.5960	-1.3376	2.2500	16.0889
4.94	0.7909	29.6767	122.6667	1.6112	-1.3224	2.2300	16.1333
4.96	0.8344	34.6793	126.0000	1.6188	-1.3300	2.2900	16.0889
4.98	0.7929	38.6820	132.6667	1.6264	-1.3528	2.2300	16.0444
5.00	0.8025	41.9016	134.6667	1.6264	-1.3528	2.2300	16.0889
5.02	0.8354	41.1264	136.0000	1.6188	-1.3528	2.2300	16.0444
5.04	0.7609	38.6820	133.3333	1.6492	-1.3604	2.2000	16.0444
5.06	0.7822	37.6820	136.0000	1.6492	-1.3604	2.2900	16.0444
5.08	0.8335	37.4544	142.0000	1.6644	-1.3300	2.2900	16.1333
5.10	0.8344	37.7904	141.3333	1.6644	-1.3376	2.2300	16.0889
5.12	0.8335	39.0100	145.3333	1.6872	-1.3376	2.3300	16.1333
5.14	0.8547	40.2322	148.6667	1.6872	-1.3300	2.2300	16.1333
5.16	0.8557	41.9016	148.6667	1.6948	-1.3604	2.2200	16.0889
5.18	0.8866	44.4544	154.0000	1.6872	-1.3528	2.1900	16.1333
5.20	0.8876	46.6793	158.0000	1.6948	-1.3604	2.2300	16.0889
5.22	0.9186	47.3433	156.0000	1.7024	-1.3604	2.2300	16.1333
5.24	0.9079	49.6767	156.6667	1.7252	-1.3680	2.2000	16.1333
5.26	1.0027	51.4518	160.0000	1.7100	-1.3680	2.2400	16.1778
5.28	0.9708	53.1184	159.3333	1.7024	-1.3680	2.2900	16.1778
5.30	0.9708	54.2296	158.0000	1.7328	-1.3832	2.1800	16.1778
5.32	0.9582	57.3353	162.0000	1.7556	-1.3604	2.1600	16.2667
5.34	0.9582	60.4464	161.3333	1.7480	-1.3756	2.1900	16.2667
5.36	0.9475	62.5576	161.3333	1.7480	-1.3756	2.2000	16.2667
5.38	0.9146	62.6660	162.6667	1.7708	-1.3832	2.1800	16.3111
5.40	0.9456	61.1078	164.0000	1.7784	-1.3756	2.2700	16.3556
5.42	0.9988	60.2189	166.6667	1.7708	-1.3756	2.4000	16.3556
5.44	0.9988	58.6633	166.6667	1.7860	-1.3984	2.2800	16.3556
5.46	1.0510	57.6607	168.0000	1.7860	-1.3984	2.2200	16.4000
5.48	1.0510	55.7718	166.0000	1.8088	-1.4060	2.1800	16.4000
5.50	1.0297	57.2162	166.6667	1.8164	-1.4136	2.2200	16.4000
5.52	1.0191	58.3273	165.3333	1.8088	-1.4212	2.3300	16.4000
5.54	0.9852	59.0998	166.0000	1.8316	-1.4212	2.2200	16.4889
5.56	1.0171	58.5442	167.3333	1.8316	-1.4212	2.1800	16.4889
5.58	0.9842	55.8749	168.0000	1.8316	-1.4136	2.5100	16.5333
5.60	1.0567	48.7584	152.0000	1.8696	-1.4440	36.3600	16.6222
5.62	1.0780	45.5362	151.3333	1.8772	-1.4516	2.3200	16.6222
5.64	1.0558	44.9780	151.3333	1.8772	-1.4516	2.3300	16.6667



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Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
5.66	1.0006	43.7504	154.0000	1.9076	-1.4516	2.2900	16.7556
5.68	0.9504	40.2029	155.3333	1.8772	-1.4668	2.2500	16.6222
5.70	0.9397	37.6473	159.3333	1.8772	-1.4592	2.2900	16.6222
5.72	0.9281	33.0891	163.3333	1.9000	-1.4820	2.3300	16.6667
5.74	1.0664	29.9780	171.3333	1.9000	-1.4896	2.2900	16.6667
5.76	1.1263	27.7451	185.3333	1.9228	-1.4820	2.3300	16.8444
5.78	1.2443	25.4144	191.3333	1.9076	-1.4972	2.3300	16.8000
5.80	1.1708	25.6393	192.0000	1.9228	-1.5048	2.3500	16.7556
5.82	1.2347	27.8616	198.6667	1.9228	-1.5200	2.2200	16.7556
5.84	1.1921	30.0838	202.0000	1.9380	-1.5276	2.2400	16.7556
5.86	1.1805	31.9700	206.0000	1.9228	-1.5352	2.2700	16.8000
5.88	1.0770	33.3113	206.0000	1.9380	-1.5352	2.2800	16.6667
5.90	1.0741	36.9700	206.6667	1.9456	-1.5352	2.2400	16.8000
5.92	0.9494	39.3113	200.6667	1.9380	-1.5656	2.2900	16.6667
5.94	0.9600	39.3113	204.0000	1.9456	-1.5656	2.3500	16.6667
5.96	1.0238	36.9780	208.0000	1.9456	-1.5732	2.2900	16.6667
5.98	1.0644	34.6393	210.6667	1.9532	-1.5504	2.2400	16.7556
6.00	1.1070	34.0838	215.3333	1.9608	-1.5504	2.2700	16.7556
6.02	1.1176	31.1949	214.0000	1.9532	-1.5656	2.2400	16.7556
6.04	1.1273	28.8589	216.6667	1.9836	-1.5732	2.2900	16.8000
6.06	1.0644	25.6393	212.0000	1.9760	-1.5732	2.3100	16.7556
6.08	1.0528	24.7478	214.6667	1.9912	-1.5732	2.2700	16.8000
6.10	1.1060	23.3033	218.0000	1.9988	-1.5732	2.3600	16.8000
6.12	1.0635	24.8589	217.3333	1.9988	-1.6036	2.2700	16.8000
6.14	1.1699	24.7478	218.0000	1.9988	-1.5884	2.2400	16.8000
6.16	1.0644	25.7504	214.6667	2.0064	-1.5884	2.2400	16.7556
6.18	1.1070	26.0838	215.3333	2.0216	-1.6112	2.2400	16.7556
6.20	1.0528	28.9700	213.3333	2.0292	-1.5884	2.2400	16.8000
6.22	0.9474	27.5282	208.0000	2.0064	-1.6036	2.2800	16.7556
6.24	0.9890	27.9700	213.3333	2.0292	-1.6036	2.1600	16.8000
6.26	0.9358	25.6367	210.6667	2.0292	-1.6112	2.3100	16.8000
6.28	0.9900	23.1949	215.3333	2.0216	-1.6188	2.2000	16.7556
6.30	1.1379	21.0811	224.0000	2.0292	-1.6188	2.2000	16.8000
6.32	1.1370	22.1896	222.0000	2.0444	-1.6188	2.2700	16.8444
6.34	1.0528	21.9700	216.6667	2.0748	-1.6264	2.2700	16.8000
6.36	0.9242	19.8562	214.6667	2.0672	-1.6340	2.2700	16.8444
6.38	0.9890	20.3033	220.6667	2.0748	-1.6492	2.3100	16.8000
6.40	0.9348	22.3007	224.0000	2.0824	-1.6492	2.3100	16.8444
6.42	0.9561	27.5229	228.0000	2.0900	-1.6568	2.3300	16.8444
6.44	0.9784	27.1922	228.6667	2.0900	-1.6720	2.2400	16.8000
6.46	0.9252	28.3033	230.0000	2.1052	-1.6644	2.2400	16.8000
6.48	0.9029	24.7451	231.3333	2.0900	-1.6644	2.2700	16.8444
6.50	0.9252	24.0811	231.3333	2.0900	-1.6872	2.3100	16.8000
6.52	0.8710	24.4118	232.0000	2.1128	-1.6872	2.2700	16.8444
6.54	0.9039	23.6367	231.3333	2.1280	-1.6948	2.2200	16.8000
6.56	0.9987	23.1896	234.0000	2.1128	-1.6872	2.4800	16.8444



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1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
6.58	0.9987	21.9673	236.6667	2.1432	-1.7024	2.2800	16.8444
6.60	0.9561	20.8562	239.3333	2.1432	-1.6948	2.2800	16.8444
6.62	0.9068	30.3113	278.0000	2.1584	-1.7100	3.2700	16.6667
6.64	0.8720	30.0811	276.0000	2.1660	-1.7100	2.2700	16.8000
6.66	0.7879	30.9727	272.6667	2.1736	-1.7328	2.2900	16.7556
6.68	0.8111	29.5336	273.3333	2.1888	-1.7404	2.3500	16.6667
6.70	0.8111	29.6447	272.6667	2.1660	-1.7556	2.3200	16.6667
6.72	0.8410	27.8616	276.0000	2.1888	-1.7556	2.3600	16.7556
6.74	0.8410	25.9727	276.0000	2.1888	-1.7632	2.3500	16.7556
6.76	0.8410	23.3060	272.6667	2.1660	-1.7556	2.3600	16.7556
6.78	0.8188	22.6367	270.0000	2.2040	-1.7480	2.2400	16.8000
6.80	0.6921	22.3060	266.6667	2.1888	-1.7784	2.2400	16.7556
6.82	0.7753	22.3007	274.0000	2.2116	-1.7632	2.2200	16.8444
6.84	0.7559	20.8616	273.3333	2.2116	-1.7860	2.2900	16.7556
6.86	0.8081	18.7478	273.3333	2.2116	-1.7860	2.2700	16.8000
6.88	0.7869	18.7478	272.6667	2.2040	-1.7936	2.3200	16.8000
6.90	0.8091	18.5282	272.6667	2.2116	-1.8164	2.3600	16.7556
6.92	0.7540	18.4118	274.6667	2.2268	-1.7936	2.3200	16.8444
6.94	0.7772	17.9727	272.6667	2.2040	-1.8012	2.2300	16.7556
6.96	0.8294	18.7478	276.0000	2.2344	-1.8012	2.3200	16.8000
6.98	0.7656	18.7478	272.6667	2.2344	-1.8316	2.2900	16.8000
7.00	0.7540	19.0784	272.0000	2.2420	-1.8316	2.2900	16.8444
7.02	0.8081	19.1922	270.0000	2.2420	-1.8316	2.3300	16.8000
7.04	0.7230	19.0811	269.3333	2.2420	-1.8392	2.3300	16.8000
7.06	0.7027	19.8616	265.3333	2.2344	-1.8696	2.3600	16.7556
7.08	0.7772	21.1949	269.3333	2.2420	-1.8696	2.3100	16.7556
7.10	0.7646	21.1896	265.3333	2.2420	-1.8772	2.2700	16.8444
7.12	0.7433	23.3007	265.3333	2.2496	-1.8848	2.2900	16.8444
7.14	0.7550	24.1922	262.6667	2.2496	-1.8848	2.2700	16.8000
7.16	0.7018	25.0811	263.3333	2.2420	-1.9000	2.2800	16.8000
7.18	0.7008	22.7451	261.3333	2.2420	-1.9000	2.3200	16.8444
7.20	0.7027	22.3060	261.3333	2.2572	-1.9228	2.2700	16.7556
7.22	0.7018	22.6367	260.0000	2.2268	-1.9228	2.4000	16.8000
7.24	0.7018	22.7478	259.3333	2.2420	-1.9304	2.2900	16.8000
7.26	0.7762	22.3033	264.6667	2.2572	-1.9304	2.2700	16.8000
7.28	0.7443	21.4144	262.0000	2.2268	-1.9684	2.2700	16.8000
7.30	0.7540	21.5229	260.0000	2.2420	-1.9684	2.2900	16.8444
7.32	0.7230	22.9700	252.6667	2.2344	-1.9912	2.3200	16.8000
7.34	0.7443	24.6367	243.3333	2.2344	-2.0064	2.3200	16.8000
7.36	0.8816	25.1896	264.6667	2.2420	-2.0292	2.3200	16.8444
7.38	0.9455	25.3007	250.0000	2.2268	-2.0368	2.4300	16.8444
7.40	1.1263	27.0784	132.0000	2.2344	-2.0748	2.2500	16.8444
7.42	1.1147	31.2980	82.6667	2.2116	-2.0900	2.2200	16.8889
7.44	1.0412	36.9673	88.6667	2.1964	-2.1128	2.2800	16.8444
7.46	1.0519	40.7451	93.3333	2.1964	-2.1280	2.3800	16.8444
7.48	1.0199	44.0784	99.3333	2.1736	-2.1584	2.2400	16.8444



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
7.50	1.0519	46.8562	118.6667	2.1736	-2.1660	2.3300	16.8444
7.52	1.0199	49.0784	130.0000	2.1584	-2.1736	2.4300	16.8444
7.54	1.0731	49.9673	138.0000	2.1584	-2.1964	2.3100	16.8444
7.56	1.0944	49.4118	226.0000	2.1432	-2.2040	1.7900	16.8444
7.58	1.0944	46.6340	226.6667	2.1280	-2.2192	1.4000	16.8444
7.60	1.1263	46.5229	222.6667	2.1204	-2.2344	1.2700	16.8444
7.62	1.1147	46.1869	220.6667	2.1280	-2.2344	2.1100	16.8889
7.64	1.0519	45.4118	204.0000	2.1052	-2.2572	2.2300	16.8444
7.66	0.9851	46.5149	192.0000	2.1432	-2.2572	2.2900	16.9778
7.68	0.9977	48.4091	194.6667	2.1204	-2.2648	2.3300	16.8889
7.70	0.8816	47.5229	192.0000	2.1204	-2.2876	2.3200	16.8444
7.72	0.9339	47.4091	196.0000	2.1052	-2.2952	2.3600	16.8889
7.74	0.9232	48.1869	198.6667	2.1204	-2.3028	2.3300	16.8889
7.76	0.9242	48.0784	202.0000	2.1052	-2.3180	2.2800	16.8444
7.78	0.9880	48.5229	204.0000	2.1052	-2.3332	2.2700	16.8444
7.80	1.0615	48.0758	208.0000	2.1128	-2.3408	2.2900	16.8889
7.82	1.0190	46.6313	208.0000	2.1128	-2.3408	2.2400	16.8889
7.84	1.0383	47.8482	213.3333	2.1280	-2.3332	2.2700	16.9778
7.86	1.1041	49.6313	214.0000	2.0900	-2.3408	2.3200	16.8889
7.88	1.0702	48.6260	216.6667	2.1052	-2.3636	2.2400	16.9778
7.90	1.0934	49.8536	220.6667	2.0900	-2.3712	2.3600	16.8889
7.92	1.0905	50.9567	226.6667	2.1128	-2.3484	2.2700	17.0222
7.94	1.0596	50.6260	224.0000	2.1128	-2.3712	2.2400	16.9778
7.96	1.0054	51.5122	228.0000	2.1204	-2.3712	2.2700	17.0222
7.98	0.9425	49.7371	226.6667	2.1052	-2.3788	2.2700	16.9778
8.00	0.9532	49.0704	229.3333	2.1052	-2.3788	2.2800	16.9778
8.02	0.8990	48.4011	230.0000	2.1052	-2.3864	2.2700	17.0222
8.04	0.8777	46.0678	232.6667	2.1128	-2.4016	2.3600	17.0222
8.06	0.8033	43.0678	230.0000	2.1128	-2.4016	2.3300	17.0222
8.08	0.7607	40.1789	231.3333	2.1128	-2.4092	2.2400	17.0222
8.10	0.7065	36.5096	231.3333	2.1280	-2.4168	2.2400	17.0667
8.12	0.7385	33.0651	231.3333	2.1128	-2.4168	2.2700	17.0667
8.14	0.7172	30.3984	230.0000	2.1280	-2.4244	2.2500	17.0667
8.16	0.7065	29.1762	231.3333	2.1280	-2.4320	2.2700	17.0667
8.18	0.7172	28.1762	232.0000	2.1432	-2.4320	2.2200	17.0667
8.20	0.7162	27.1736	232.6667	2.1280	-2.4320	2.3900	17.1111
8.22	0.7481	26.3958	232.6667	2.1280	-2.4472	2.2900	17.1111
8.24	0.7694	25.9513	234.0000	2.1280	-2.4548	2.2400	17.1111
8.26	0.7800	25.9513	234.0000	2.1280	-2.4548	2.2500	17.1111
8.28	0.7694	25.9513	234.0000	2.1508	-2.4624	2.2400	17.1111
8.30	0.8013	26.2847	236.6667	2.1584	-2.4624	2.2700	17.1111
8.32	0.8013	26.8402	237.3333	2.1584	-2.4700	2.2700	17.1111
8.34	0.8332	27.2847	244.6667	2.1660	-2.4700	2.2300	17.1111
8.36	0.8332	27.2847	248.0000	2.1736	-2.4928	2.4600	17.1111
8.38	0.8332	27.0624	248.0000	2.1660	-2.4928	2.2400	17.1111
8.40	0.8332	27.1736	250.0000	2.1964	-2.4928	2.2200	17.1111



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Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
8.42	0.8119	27.0624	250.6667	2.1888	-2.5004	2.1600	17.1111
8.44	0.7800	27.6180	250.6667	2.2040	-2.5080	2.2800	17.1111
8.46	0.7375	27.8402	248.6667	2.2116	-2.5156	2.2900	17.1111
8.48	0.7375	27.9513	250.0000	2.2344	-2.5156	2.2700	17.1111
8.50	0.7162	28.2847	250.6667	2.2116	-2.5308	2.1900	17.1111
8.52	0.7056	27.6180	251.3333	2.2420	-2.5384	2.4800	17.1111
8.54	0.7481	26.0624	252.6667	2.2420	-2.5536	2.2500	17.1111
8.56	0.6582	23.5229	276.0000	2.2724	-2.5536	57.1400	16.8444
8.58	0.6379	21.5256	270.6667	2.2572	-2.5764	1.8500	16.8000
8.60	0.5954	20.1922	270.0000	2.2724	-2.5840	1.8300	16.8000
8.62	0.6060	19.5256	270.0000	2.2724	-2.5840	1.8100	16.8000
8.64	0.6370	19.6340	270.6667	2.2800	-2.5840	1.8600	16.8444
8.66	0.5741	18.5256	269.3333	2.2800	-2.5916	1.9100	16.8000
8.68	0.6060	17.8589	270.0000	2.2876	-2.5916	1.9800	16.8000
8.70	0.6060	16.3033	266.6667	2.2876	-2.5916	2.0000	16.8000
8.72	0.6476	15.4118	267.3333	2.3180	-2.5992	1.9400	16.8444
8.74	0.6699	14.4144	265.3333	2.2876	-2.5992	1.9200	16.8000
8.76	0.6486	14.4144	264.6667	2.3256	-2.6144	1.9400	16.8000
8.78	0.6592	14.1922	263.3333	2.3256	-2.6144	1.9200	16.8000
8.80	0.6592	15.0811	262.0000	2.3256	-2.6220	1.9700	16.8000
8.82	0.6273	15.5256	261.3333	2.3332	-2.6296	1.9600	16.8000
8.84	0.6379	15.8589	261.3333	2.3332	-2.6296	1.9700	16.8000
8.86	0.6496	15.6393	263.3333	2.3560	-2.6372	2.0300	16.7556
8.88	0.7134	15.8616	267.3333	2.3560	-2.6600	1.9800	16.7556
8.90	0.7453	15.8616	270.6667	2.3560	-2.6676	1.9400	16.7556
8.92	0.8410	16.3060	272.0000	2.3560	-2.6676	1.9600	16.7556
8.94	0.7443	16.8589	270.0000	2.3560	-2.6600	1.9900	16.8000
8.96	0.6486	18.6367	262.6667	2.3408	-2.6600	1.9900	16.8000
8.98	0.6602	18.3060	267.3333	2.3636	-2.6676	1.9600	16.7556
9.00	0.6496	18.4171	270.0000	2.3712	-2.6676	2.0200	16.7556
9.02	0.7134	18.5282	274.6667	2.3712	-2.6752	2.0400	16.7556
9.04	0.7134	17.7504	276.6667	2.3712	-2.6828	1.9700	16.7556
9.06	0.7027	17.3060	281.3333	2.3940	-2.6828	1.9400	16.7556
9.08	0.7240	16.6393	284.6667	2.3940	-2.6980	1.9900	16.7556
9.10	0.7453	15.6393	286.6667	2.4016	-2.6980	1.9800	16.7556
9.12	0.7559	15.5282	287.3333	2.4168	-2.6980	1.9800	16.7556
9.14	0.7772	16.1949	289.3333	2.4016	-2.7056	1.9600	16.7556
9.16	0.7792	16.8669	292.0000	2.4092	-2.7132	2.1000	16.6667
9.18	0.7666	17.4171	294.6667	2.4244	-2.7132	2.0400	16.7556
9.20	0.7898	17.8669	295.3333	2.4396	-2.7284	1.9600	16.6667
9.22	0.7772	18.5282	298.0000	2.4244	-2.7284	2.0000	16.7556
9.24	0.8410	19.5282	303.3333	2.4472	-2.7284	1.9900	16.7556
9.26	0.8962	20.3113	308.6667	2.4548	-2.7436	2.0000	16.6667
9.28	0.9494	20.9780	314.0000	2.4548	-2.7284	2.0000	16.6667
9.30	0.9281	21.6447	314.0000	2.4776	-2.7588	1.9500	16.6667
9.32	0.9387	22.6447	314.6667	2.4928	-2.7436	2.1800	16.6667



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Località

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Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
9.34	1.0026	23.8669	322.0000	2.4928	-2.7512	2.0000	16.6667
9.36	1.0770	25.3113	336.6667	2.5080	-2.7512	1.9700	16.6667
9.38	1.1621	26.3113	349.3333	2.5080	-2.7588	1.8900	16.6667
9.40	1.1302	26.9780	350.0000	2.5080	-2.7588	2.0400	16.6667
9.42	1.0664	28.8669	342.6667	2.5080	-2.7512	2.0200	16.6667
9.44	1.0132	31.4224	335.3333	2.5308	-2.7512	2.0000	16.6667
9.46	0.9600	35.7558	329.3333	2.5384	-2.7588	1.9200	16.6667
9.48	0.9281	37.7558	328.0000	2.5460	-2.7588	2.2000	16.6667
9.50	0.8643	39.4224	325.3333	2.5536	-2.7588	2.0100	16.6667
9.52	0.8643	38.6447	325.3333	2.5460	-2.7664	1.9900	16.6667
9.54	0.8450	40.7611	340.0000	2.5764	-2.7588	3.8800	16.5778
9.56	0.8769	39.3167	340.0000	2.6144	-2.7588	2.2400	16.5778
9.58	0.9407	37.9833	344.0000	2.6068	-2.7664	2.2800	16.5778
9.60	0.8769	36.3167	342.6667	2.6144	-2.7816	2.2900	16.5778
9.62	0.9407	37.0944	346.0000	2.6068	-2.7816	2.2900	16.5778
9.64	0.9513	38.0944	342.6667	2.6220	-2.7664	2.3300	16.5778
9.66	1.0258	38.9833	344.6667	2.6372	-2.7892	2.3600	16.5778
9.68	0.9610	40.6473	344.0000	2.6296	-2.7968	2.3200	16.6222
9.70	1.0045	39.4278	344.6667	2.6372	-2.7892	2.2400	16.5778
9.72	1.0142	38.8696	342.0000	2.6600	-2.7968	2.2700	16.6222
9.74	1.0142	40.8696	340.0000	2.6600	-2.7968	2.2900	16.6222
9.76	1.0461	42.3140	340.0000	2.6676	-2.8044	2.2400	16.6222
9.78	1.0248	43.0918	339.3333	2.6676	-2.8044	2.2900	16.6222
9.80	1.0142	40.7584	336.6667	2.6752	-2.8120	2.2900	16.6222
9.82	1.0248	39.5362	334.6667	2.7056	-2.8120	2.3100	16.6222
9.84	1.0035	39.6473	335.3333	2.7056	-2.8044	2.2400	16.6222
9.86	1.0142	38.5362	335.3333	2.7132	-2.8272	2.2400	16.6222
9.88	1.0238	35.6447	337.3333	2.7208	-2.8120	2.2500	16.6667
9.90	1.0664	32.4224	342.6667	2.7208	-2.8120	2.2200	16.6667
9.92	1.1196	29.9780	344.6667	2.7360	-2.8424	2.2800	16.6667
9.94	1.1196	28.2002	342.6667	2.7512	-2.8348	2.2800	16.6667
9.96	1.0558	29.5336	336.0000	2.7436	-2.8348	2.2400	16.6667
9.98	1.0451	27.9780	335.3333	2.7512	-2.8500	2.3600	16.6667
10.00	1.0238	26.6447	338.6667	2.7588	-2.8500	2.2400	16.6667
10.02	1.0983	23.5336	343.3333	2.7816	-2.8652	2.2400	16.6667
10.04	1.1389	22.3060	325.3333	2.7588	-2.8728	2.2200	16.7556
10.06	1.1176	21.6393	326.0000	2.7892	-2.8728	2.2400	16.7556
10.08	1.1302	22.6447	327.3333	2.7816	-2.8728	2.2500	16.6667
10.10	1.0751	21.9727	325.3333	2.7968	-2.8804	2.2800	16.7556
10.12	1.0113	22.8616	321.3333	2.8044	-2.8880	2.2900	16.7556
10.14	0.9793	22.4171	320.0000	2.8196	-2.8804	2.3200	16.7556
10.16	0.9474	23.1949	321.3333	2.8196	-2.8880	2.2500	16.7556
10.18	1.0432	22.7504	342.6667	2.8272	-2.8804	2.2000	16.7556
10.20	1.1196	21.5336	353.3333	2.8348	-2.8804	2.2400	16.6667
10.22	1.1815	20.3060	358.0000	2.8424	-2.8880	2.2500	16.7556
10.24	1.1815	21.0838	358.0000	2.8576	-2.8880	2.2400	16.7556



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
10.26	1.2260	21.4224	364.0000	2.8652	-2.8880	2.2700	16.6667
10.28	1.2473	22.6447	364.0000	2.8576	-2.8880	2.3900	16.6667
10.30	1.2453	23.6393	359.3333	2.8576	-2.9108	2.2700	16.7556
10.32	1.2792	26.9780	359.3333	2.8652	-2.9108	2.2300	16.6667
10.34	1.3004	30.7558	365.3333	2.8728	-2.9108	2.1800	16.6667
10.36	1.3111	33.0891	372.6667	2.8804	-2.9184	2.2400	16.6667
10.38	1.3111	33.2002	372.0000	2.8728	-2.9108	2.3100	16.6667
10.40	1.3749	32.8669	373.3333	2.8728	-2.9260	2.2200	16.6667
10.42	1.4281	35.3113	370.0000	2.8728	-2.9336	2.1600	16.6667
10.44	1.4281	39.2002	368.6667	2.8804	-2.9336	2.4600	16.6667
10.46	1.4600	39.9780	366.0000	2.8728	-2.9564	2.2400	16.6667
10.48	1.4600	42.9780	366.6667	2.8804	-2.9640	2.2700	16.6667
10.50	1.4746	48.4331	398.0000	2.9108	-2.9564	5.1200	16.4889
10.52	1.4310	48.5416	390.6667	2.9108	-2.9564	2.2500	16.5333
10.54	1.3991	48.0971	384.6667	2.9108	-2.9640	2.2500	16.5333
10.56	1.3672	47.8749	388.0000	2.9184	-2.9640	2.2900	16.5333
10.58	1.3778	47.2082	387.3333	2.9184	-2.9716	2.2700	16.5333
10.60	1.4310	46.6527	390.0000	2.9260	-2.9716	2.3100	16.5333
10.62	1.4310	45.6527	390.6667	2.9412	-2.9792	2.3100	16.5333
10.64	1.3662	42.8722	384.0000	2.9412	-2.9716	2.3100	16.5778
10.66	1.3024	43.5389	374.0000	2.9564	-2.9944	2.2400	16.5778
10.68	1.1854	44.7611	366.0000	2.9868	-2.9792	2.2000	16.5778
10.70	1.2173	44.7611	366.0000	2.9944	-2.9792	2.1800	16.5778
10.72	1.1438	44.3193	359.3333	2.9868	-3.0020	2.1800	16.5333
10.74	1.1757	45.7638	364.6667	2.9640	-2.9944	2.1700	16.5333
10.76	1.2492	46.6500	377.3333	3.0020	-3.0020	2.2300	16.5778
10.78	1.3343	44.2056	380.6667	3.0020	-3.0020	2.2900	16.5778
10.80	1.3024	42.4278	375.3333	3.0020	-3.0172	2.2700	16.5778
10.82	1.2908	40.8696	373.3333	3.0324	-3.0096	2.2000	16.6222
10.84	1.2811	41.0944	362.0000	3.0400	-3.0172	2.2300	16.5778
10.86	1.1950	41.8696	355.3333	3.0400	-3.0400	2.2400	16.6222
10.88	1.0983	41.9780	347.3333	3.0476	-3.0324	2.2200	16.6667
10.90	1.0674	43.8696	344.6667	3.0552	-3.0172	2.2400	16.6222
10.92	1.0248	43.0918	346.6667	3.0552	-3.0172	2.2000	16.6222
10.94	1.1312	42.0918	356.6667	3.0780	-3.0628	2.2700	16.6222
10.96	1.1728	38.6447	368.0000	3.0780	-3.0476	2.1800	16.6667
10.98	1.1941	35.3113	365.3333	3.0704	-3.0628	2.1600	16.6667
11.00	1.1834	34.5336	362.0000	3.0552	-3.0628	2.2000	16.6667
11.02	1.1941	34.4224	358.0000	3.0780	-3.0780	2.1900	16.6667
11.04	1.1921	34.6393	358.6667	3.0704	-3.0780	2.2300	16.7556
11.06	1.1389	36.1949	360.6667	3.0704	-3.0856	2.2500	16.7556
11.08	1.1921	35.3060	361.3333	3.0704	-3.1160	2.2000	16.7556
11.10	1.1389	37.5282	358.6667	3.0856	-3.0932	2.3300	16.7556
11.12	1.1602	37.0838	356.6667	3.0780	-3.1160	2.2500	16.7556
11.14	1.0751	37.6393	349.3333	3.0932	-3.1236	2.2000	16.7556
11.16	1.0103	39.4144	344.6667	3.0932	-3.1160	2.2300	16.8000



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
11.18	0.9784	38.7478	342.0000	3.1160	-3.1236	2.2300	16.8000
11.20	0.9793	38.0838	337.3333	3.0932	-3.1312	2.2700	16.7556
11.22	0.9252	38.9700	333.3333	3.1160	-3.1312	2.2400	16.8000
11.24	0.8720	38.6367	330.0000	3.1236	-3.1388	2.2700	16.8000
11.26	0.8720	38.7478	328.6667	3.1160	-3.1388	2.3600	16.8000
11.28	0.9039	35.8589	329.3333	3.1312	-3.1388	2.2200	16.8000
11.30	0.8933	33.9700	331.3333	3.1312	-3.1616	2.1800	16.8000
11.32	0.9358	33.9700	331.3333	3.1388	-3.1616	2.2200	16.8000
11.34	0.9252	33.7478	329.3333	3.1312	-3.1692	2.3300	16.8000
11.36	0.9464	33.4144	328.6667	3.1616	-3.1768	2.1800	16.8000
11.38	0.9464	33.0811	330.0000	3.1540	-3.1844	2.2800	16.8000
11.40	0.9464	33.3033	330.0000	3.1692	-3.1996	2.3500	16.8000
11.42	0.9774	33.7451	332.6667	3.1692	-3.1996	2.2500	16.8444
11.44	1.0199	33.0784	336.0000	3.1616	-3.2072	2.2300	16.8444
11.46	1.0790	35.7611	349.3333	3.1768	-3.2300	2.8500	16.5778
11.48	1.1215	36.7611	354.6667	3.1920	-3.2224	2.1300	16.5778
11.50	1.0674	35.6473	354.0000	3.1920	-3.2452	2.1800	16.6222
11.52	1.1109	34.4278	358.0000	3.1768	-3.2452	2.1800	16.5778
11.54	1.1109	33.6500	352.0000	3.1768	-3.2680	2.1600	16.5778
11.56	1.1854	34.8722	371.3333	3.1920	-3.2680	2.1600	16.5778
11.58	1.2801	34.4251	382.6667	3.1920	-3.2528	2.2200	16.6222
11.60	1.2270	32.8696	374.0000	3.1920	-3.2832	2.2500	16.6222
11.62	1.1738	33.9807	346.6667	3.1920	-3.2832	2.2700	16.6222
11.64	1.1206	36.7584	321.3333	3.1920	-3.2832	2.2000	16.6222
11.66	1.0451	38.6447	336.0000	3.1996	-3.2832	2.2000	16.6667
11.68	1.0142	40.2029	343.3333	3.1996	-3.2908	2.2200	16.6222
11.70	0.9813	40.4224	352.0000	3.1996	-3.2984	2.2000	16.6667
11.72	0.9823	40.4251	358.6667	3.1996	-3.3060	2.2500	16.6222
11.74	0.9600	39.9780	362.6667	3.2148	-3.3060	2.1800	16.6667
11.76	1.0132	38.8669	368.6667	3.2148	-3.3136	2.2800	16.6667
11.78	1.0451	36.3113	373.3333	3.2224	-3.3136	2.2700	16.6667
11.80	1.0461	34.3140	379.3333	3.2148	-3.3288	2.1800	16.6222
11.82	1.0674	32.2029	382.6667	3.2452	-3.3364	2.1800	16.6222
11.84	1.0664	30.6447	384.6667	3.2452	-3.3440	2.2200	16.6667
11.86	1.0993	30.6473	387.3333	3.2452	-3.3440	2.2000	16.6222
11.88	1.0451	32.0891	385.3333	3.2452	-3.3516	2.2200	16.6667
11.90	1.0558	32.6447	387.3333	3.2452	-3.3516	2.2400	16.6667
11.92	0.9919	33.0891	386.6667	3.2756	-3.3516	2.2700	16.6667
11.94	1.0026	33.2002	388.6667	3.2528	-3.3668	2.2400	16.6667
11.96	0.9919	33.3113	392.0000	3.2604	-3.3744	2.1600	16.6667
11.98	1.0026	33.0891	396.0000	3.2756	-3.3896	2.2000	16.6667
12.00	1.0558	32.5336	404.6667	3.2604	-3.3820	2.1900	16.6667
12.02	1.0983	31.2002	414.0000	3.2756	-3.3820	2.1800	16.6667
12.04	1.1409	29.5336	421.3333	3.2832	-3.3820	2.2000	16.6667
12.06	1.2260	26.8669	428.0000	3.2984	-3.3896	2.1600	16.6667
12.08	1.3004	24.6447	430.6667	3.2984	-3.3896	2.3600	16.6667



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PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

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1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
12.10	1.3536	25.9780	431.3333	3.3212	-3.3972	2.2500	16.6667
12.12	1.3304	27.1949	430.6667	3.3212	-3.4276	2.2000	16.7556
12.14	1.3643	27.8669	434.6667	3.3212	-3.4200	2.2000	16.6667
12.16	1.3430	29.0891	435.3333	3.3060	-3.4276	2.2300	16.6667
12.18	1.3091	31.6393	448.6667	3.3364	-3.4200	2.2700	16.7556
12.20	1.3304	35.1949	458.0000	3.3364	-3.4352	2.2200	16.7556
12.22	1.3962	36.8669	458.6667	3.3592	-3.4428	2.1900	16.6667
12.24	1.3942	36.8616	464.6667	3.3592	-3.4428	2.3800	16.7556
12.26	1.4175	37.6447	441.3333	3.3440	-3.4580	2.2400	16.6667
12.28	1.3962	40.5336	405.3333	3.3592	-3.4580	2.1600	16.6667
12.30	1.3749	43.5336	428.0000	3.3668	-3.4656	2.1300	16.6667
12.32	1.3643	45.4224	436.6667	3.3668	-3.4732	2.3600	16.6667
12.34	1.3004	49.4224	457.3333	3.3744	-3.4656	2.2000	16.6667
12.36	1.2792	53.5336	454.0000	3.3896	-3.4732	2.2400	16.6667
12.38	1.2579	55.4224	450.6667	3.3820	-3.4732	2.2900	16.6667
12.40	1.2473	56.6447	454.6667	3.3896	-3.4656	2.2800	16.6667
12.42	1.2473	56.7558	462.0000	3.3896	-3.4732	2.2000	16.6667
12.44	1.2405	50.2109	504.6667	3.4124	-3.4732	44.4400	16.4889
12.46	1.3150	44.2109	478.6667	3.4200	-3.4960	1.3100	16.4889
12.48	1.3469	40.5442	442.6667	3.4200	-3.4960	1.3700	16.4889
12.50	1.3363	41.8776	428.0000	3.4200	-3.4960	1.3100	16.4889
12.52	1.2821	40.7638	420.0000	3.4276	-3.4960	1.3700	16.5333
12.54	1.2289	38.9860	419.3333	3.4200	-3.5112	1.3700	16.5333
12.56	1.1864	38.7638	421.3333	3.4352	-3.5112	1.4000	16.5333
12.58	1.1332	34.4304	422.0000	3.4504	-3.5112	1.3700	16.5333
12.60	1.1013	31.8749	423.3333	3.4580	-3.5264	1.3800	16.5333
12.62	1.1013	29.9860	422.0000	3.4656	-3.5416	1.3500	16.5333
12.64	1.0693	24.7638	425.3333	3.4656	-3.5492	1.3400	16.5333
12.66	1.0800	21.2082	434.0000	3.4732	-3.5416	1.3300	16.5333
12.68	1.1225	18.9860	441.3333	3.4732	-3.5492	1.3400	16.5333
12.70	1.2183	16.5416	452.6667	3.4960	-3.5416	1.3600	16.5333
12.72	1.2608	17.4304	454.6667	3.4960	-3.5416	1.3500	16.5333
12.74	1.3566	18.0971	460.0000	3.5112	-3.5492	1.4100	16.5333
12.76	1.3140	18.6527	452.6667	3.4884	-3.5416	1.3700	16.5333
12.78	1.2821	21.0971	432.6667	3.5340	-3.5416	1.3400	16.5333
12.80	1.3469	22.4331	450.0000	3.5188	-3.5644	1.3500	16.4889
12.82	1.4639	22.3220	458.6667	3.5036	-3.5644	1.3600	16.4889
12.84	1.5171	23.4331	449.3333	3.5036	-3.5644	1.3600	16.4889
12.86	1.4746	27.6553	360.6667	3.5188	-3.5568	1.3500	16.4889
12.88	1.4639	30.3220	356.6667	3.5112	-3.5796	1.3500	16.4889
12.90	1.4427	27.2109	380.0000	3.5188	-3.5796	1.4100	16.4889
12.92	1.4746	22.0998	392.6667	3.5112	-3.5872	1.3600	16.4889
12.94	1.4958	19.6553	387.3333	3.5416	-3.5872	1.3400	16.4889
12.96	1.3150	19.8776	369.3333	3.5416	-3.5948	1.3600	16.4889
12.98	1.1448	18.3220	380.0000	3.5416	-3.5948	1.3600	16.4889
13.00	1.0810	14.8776	412.6667	3.5568	-3.6024	1.3600	16.4889



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1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
13.02	1.1235	11.6553	441.3333	3.5568	-3.6100	1.4000	16.4889
13.04	1.2212	10.4384	451.3333	3.5568	-3.6024	1.3400	16.4000
13.06	1.2850	11.3273	460.0000	3.5720	-3.5948	1.4800	16.4000
13.08	1.6042	13.1051	487.3333	3.5720	-3.6024	1.3800	16.4000
13.10	2.2425	15.4384	523.3333	3.5872	-3.6024	1.3400	16.4000
13.12	3.0510	20.8829	254.0000	3.5872	-3.6252	1.3100	16.4000
13.14	3.4340	32.6607	78.0000	3.5872	-3.6404	1.3000	16.4000
13.16	3.7850	39.3273	52.0000	3.5872	-3.6404	1.3000	16.4000
13.18	3.9552	40.5496	50.0000	3.5948	-3.6404	1.2700	16.4000
13.20	3.8924	35.2189	52.6667	3.5948	-3.6632	1.2600	16.3556
13.22	3.0626	32.2189	47.3333	3.6176	-3.6708	1.2800	16.3556
13.24	2.7860	38.5522	64.6667	3.6404	-3.6632	1.2700	16.3556
13.26	3.7967	39.6633	252.0000	3.6556	-3.6784	1.2500	16.3556
13.28	4.5191	40.2162	104.6667	3.6404	-3.6784	1.3000	16.4000
13.30	4.6371	54.3300	76.6667	3.6784	-3.6860	1.2100	16.3556
13.32	4.6042	54.1051	70.6667	3.6708	-3.6860	1.2400	16.4000
13.34	4.4233	46.6607	73.3333	3.6860	-3.6860	1.2900	16.4000
13.36	4.4978	37.3273	77.3333	3.6784	-3.6936	1.2500	16.4000
13.38	4.4233	31.2162	73.3333	3.6860	-3.7088	0.9300	16.4000
13.40	4.5490	26.6553	88.0000	3.7164	-3.6936	3.7000	16.4889
13.42	4.4872	28.3273	73.3333	3.7088	-3.7240	1.5500	16.4000
13.44	4.5278	29.7664	70.6667	3.7240	-3.7164	1.5100	16.4889
13.46	4.5268	30.0971	68.0000	3.7468	-3.7316	1.4800	16.5333
13.48	4.5693	30.9860	71.3333	3.7620	-3.7240	1.4900	16.5333
13.50	4.6022	36.3220	70.6667	3.7468	-3.7316	1.5100	16.4889
13.52	4.6980	41.6553	73.3333	3.7620	-3.7544	1.7000	16.4889
13.54	4.7086	48.0998	74.0000	3.7848	-3.7468	1.9900	16.4889
13.56	4.6129	47.9887	74.0000	3.7696	-3.7544	1.9600	16.4889
13.58	4.5268	46.6527	73.3333	3.8000	-3.7544	1.9300	16.5333
13.60	4.5161	49.2082	74.6667	3.8076	-3.7544	1.9200	16.5333
13.62	4.4310	47.3193	74.0000	3.8000	-3.7696	1.9400	16.5333
13.64	4.4204	48.0971	74.6667	3.8228	-3.7620	1.9200	16.5333
13.66	4.4204	45.5416	75.3333	3.8228	-3.7696	1.9600	16.5333
13.68	4.4726	44.5389	77.3333	3.8304	-3.7772	1.9400	16.5778
13.70	4.6428	46.9833	81.3333	3.8380	-3.7924	1.9900	16.5778
13.72	4.8237	49.4278	84.0000	3.8456	-3.7924	1.9000	16.5778
13.74	4.9833	48.4278	85.3333	3.8380	-3.8152	1.9200	16.5778
13.76	5.0684	44.4278	88.0000	3.8532	-3.8076	1.9200	16.5778
13.78	5.0461	41.7584	89.3333	3.8912	-3.8152	1.8900	16.6222
13.80	5.0026	39.8669	90.6667	3.9064	-3.8152	1.9800	16.6667
13.82	4.8962	30.3113	92.0000	3.8836	-3.8152	1.9200	16.6667
13.84	4.7579	23.3113	92.0000	3.9140	-3.8304	1.9400	16.6667
13.86	4.6621	19.9780	94.0000	3.9140	-3.8380	2.0100	16.6667
13.88	4.5325	19.6393	95.3333	3.8912	-3.8380	1.9100	16.7556
13.90	4.3730	21.0838	94.0000	3.9292	-3.8456	1.8700	16.7556
13.92	4.2772	22.0838	94.0000	3.9292	-3.8608	1.9000	16.7556



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1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
13.94	4.1805	22.8589	94.0000	3.9520	-3.8532	1.9100	16.8000
13.96	4.1379	23.4144	96.0000	3.9520	-3.8608	1.9200	16.8000
13.98	4.1582	24.1896	98.0000	3.9596	-3.8532	1.9200	16.8444
14.00	4.1263	24.5229	98.0000	3.9748	-3.8608	1.9800	16.8444
14.02	4.1689	24.6340	100.0000	3.9748	-3.8912	1.9800	16.8444
14.04	4.1785	27.6313	100.6667	4.0052	-3.8912	1.9100	16.8889
14.06	4.1785	32.6313	101.3333	3.9900	-3.8988	1.8700	16.8889
14.08	4.1766	36.9593	102.6667	4.0204	-3.8988	1.9400	16.9778
14.10	4.1766	38.5149	101.3333	4.0128	-3.9140	1.9800	16.9778
14.12	4.1553	40.5149	103.3333	4.0356	-3.9292	1.9600	16.9778
14.14	4.1553	42.2927	103.3333	4.0432	-3.9368	1.9900	16.9778
14.16	4.1553	44.1816	102.6667	4.0584	-3.9444	2.0900	16.9778
14.18	4.1650	48.1789	103.3333	4.0508	-3.9596	1.9900	17.0222
14.20	4.2075	53.6233	104.0000	4.0736	-3.9444	1.9600	17.0222
14.22	4.1862	51.8456	104.0000	4.0812	-3.9596	1.9400	17.0222
14.24	4.1640	47.5096	105.3333	4.0964	-3.9672	2.0200	17.0667
14.26	4.1533	44.0651	105.3333	4.0888	-3.9748	2.0100	17.0667
14.28	4.1108	41.3984	104.0000	4.0964	-3.9748	1.9500	17.0667
14.30	4.1321	42.3984	105.3333	4.0964	-3.9976	1.9200	17.0667
14.32	4.1321	41.8429	105.3333	4.1192	-4.0052	2.1300	17.0667
14.34	4.1108	42.5096	106.6667	4.1268	-4.0128	1.9600	17.0667
14.36	4.1795	25.4118	92.6667	4.1572	-4.0204	2.3100	16.8444
14.38	4.4029	27.7451	86.0000	4.1648	-4.0280	0.5700	16.8444
14.40	4.5625	34.5229	82.0000	4.1648	-4.0432	0.5700	16.8444
14.42	4.7540	38.6340	80.6667	4.1724	-4.0432	0.5600	16.8444
14.44	5.1370	39.4118	82.6667	4.2028	-4.0508	0.5500	16.8444
14.46	5.8284	39.4118	88.6667	4.1876	-4.0584	0.5700	16.8444
14.48	7.1157	41.9673	102.6667	4.1724	-4.0660	0.5500	16.8444
14.50	8.6795	53.4118	121.3333	4.1724	-4.0964	0.8400	16.8444
14.52	10.4029	60.1896	134.0000	4.1876	-4.1040	0.8200	16.8444
14.54	11.6263	63.1896	134.6667	4.2104	-4.0964	0.7700	16.8444
14.56	12.7530	63.1869	143.3333	4.2256	-4.1116	0.7300	16.8889
14.58	13.3487	41.9647	154.0000	4.2560	-4.1344	0.7100	16.8889
14.60	13.6998	30.8536	162.6667	4.2636	-4.1648	0.7000	16.8889
14.62	13.9764	31.2980	174.0000	4.2940	-4.1496	0.7000	16.8889
14.64	14.1679	34.5202	186.0000	4.3016	-4.1724	0.7200	16.8889
14.66	14.2404	38.1816	193.3333	4.3092	-4.1800	0.7200	16.9778
14.68	14.5064	44.0704	199.3333	4.3320	-4.1876	0.7300	16.9778
14.70	14.6437	49.8456	202.6667	4.3700	-4.1800	0.7000	17.0222
14.72	14.4725	49.3984	200.6667	4.3852	-4.1800	0.7000	17.0667
14.74	14.0779	49.0624	199.3333	4.3928	-4.1800	0.7000	17.1111
14.76	13.6514	49.2820	195.3333	4.4232	-4.1800	0.7200	17.1556
14.78	13.3303	50.6100	192.6667	4.4384	-4.1876	0.7300	17.2444
14.80	13.0846	51.0518	190.0000	4.4536	-4.1952	0.7300	17.2889
14.82	12.9347	52.2713	190.0000	4.4764	-4.1952	0.7700	17.3333
14.84	12.9018	53.9353	188.6667	4.4992	-4.2104	0.7700	17.3778



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Committente

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Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
14.86	12.9318	54.1522	190.0000	4.5144	-4.2180	0.7400	17.4667
14.88	12.9192	53.2580	191.3333	4.5524	-4.2180	0.7400	17.5556
14.90	12.7799	53.2553	190.0000	4.5524	-4.2332	0.7600	17.6000
14.92	12.6938	52.4749	191.3333	4.5524	-4.2408	0.7500	17.6444
14.94	12.8079	53.2447	193.3333	4.5904	-4.2560	0.7500	17.7778
14.96	12.9559	54.0198	192.6667	4.5904	-4.2560	0.7400	17.8222
14.98	13.0400	53.3504	192.0000	4.6056	-4.2636	0.8200	17.8667
15.00	12.9539	54.1256	190.0000	4.6208	-4.2712	0.8300	17.9111
15.02	13.1222	54.5647	193.3333	4.6208	-4.2788	0.8000	18.0000
15.04	13.5893	55.1176	197.3333	4.6284	-4.2940	0.9200	18.0444
15.06	14.2479	56.6704	199.3333	4.6740	-4.2940	0.9100	18.0889
15.08	15.0661	59.0011	200.0000	4.6816	-4.3092	0.8700	18.1333
15.10	15.4886	60.7709	199.3333	4.7044	-4.3244	0.8500	18.2667
15.12	15.6579	59.5460	198.6667	4.7196	-4.3472	0.8300	18.3111
15.14	15.6153	58.5460	192.6667	4.7120	-4.3548	0.9000	18.3111
15.16	15.5824	58.3211	192.6667	4.7120	-4.3776	1.0300	18.3556
15.18	14.9644	61.3184	185.3333	4.7500	-4.4080	1.0600	18.4000
15.20	14.1965	59.4242	180.6667	4.7652	-4.4232	1.0800	18.4889
15.22	13.0785	58.7549	171.3333	4.7652	-4.4232	1.1300	18.5333
15.24	12.1955	58.1993	164.0000	4.7576	-4.4460	1.1500	18.5333
15.26	11.8329	55.8633	163.3333	4.7652	-4.4384	1.1700	18.5778
15.28	11.6095	53.9744	161.3333	4.7728	-4.4688	1.3800	18.5778
15.30	11.3638	51.7496	160.0000	4.8032	-4.4764	1.3000	18.6222
15.32	11.1810	50.0776	160.0000	4.7880	-4.4764	1.2800	18.7111
15.34	10.8967	45.8633	120.0000	4.8412	-4.5220	1.0800	18.5778
15.36	11.3435	43.7522	119.3333	4.8564	-4.5144	1.3200	18.5778
15.38	11.5882	42.1967	118.0000	4.8412	-4.5448	1.8300	18.5778
15.40	11.7052	42.1967	117.3333	4.8564	-4.5448	1.9000	18.5778
15.42	11.7584	41.3078	117.3333	4.8564	-4.5524	2.2200	18.5778
15.44	11.7690	40.0856	118.6667	4.8564	-4.5524	2.2800	18.5778
15.46	11.6414	39.0856	118.0000	4.8792	-4.5600	2.3600	18.5778
15.48	11.3010	38.6411	116.0000	4.8792	-4.5524	2.3200	18.5778
15.50	10.8870	38.1993	114.6667	4.8792	-4.5676	2.2900	18.5333
15.52	10.6095	37.9744	117.3333	4.9172	-4.5676	2.1900	18.5778
15.54	10.5031	38.8633	118.6667	4.9020	-4.5904	2.1800	18.5778
15.56	10.4073	40.0856	120.0000	4.9324	-4.5904	2.1900	18.5778
15.58	10.2361	40.3051	120.0000	4.9172	-4.5980	2.1800	18.6222
15.60	10.0021	37.8607	122.0000	4.9324	-4.6056	2.1900	18.6222
15.62	9.6085	35.9718	119.3333	4.9172	-4.6056	2.2000	18.6222
15.64	9.2361	35.9718	119.3333	4.9248	-4.6056	2.1600	18.6222
15.66	8.9595	37.5273	119.3333	4.9324	-4.6132	2.2700	18.6222
15.68	8.8299	38.5220	120.0000	4.9704	-4.6284	2.1700	18.7111
15.70	8.8512	39.7442	122.6667	4.9780	-4.6360	2.1600	18.7111
15.72	8.8725	40.0776	124.6667	4.9704	-4.6284	2.1600	18.7111
15.74	8.6810	38.4109	123.3333	4.9856	-4.6284	2.1800	18.7111
15.76	8.4034	37.1860	122.0000	5.0008	-4.6436	2.1900	18.7556



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
15.78	7.9566	36.2971	120.0000	5.0008	-4.6436	2.1900	18.7556
15.80	7.6056	35.5193	119.3333	5.0160	-4.6360	2.2800	18.7556
15.82	7.2864	35.1860	118.0000	5.0160	-4.6588	2.2800	18.7556
15.84	6.8821	35.6304	114.6667	5.0388	-4.6512	2.1900	18.7556
15.86	6.4876	35.7389	112.6667	5.0616	-4.6588	2.2000	18.8000
15.88	6.0195	35.6278	108.6667	5.0616	-4.6588	2.1900	18.8000
15.90	5.5620	35.5167	104.6667	5.0616	-4.6892	2.2200	18.8000
15.92	5.2429	34.7389	102.6667	5.0692	-4.6892	2.2900	18.8000
15.94	4.8918	32.6278	98.0000	5.0844	-4.6968	2.2000	18.8000
15.96	4.5930	30.8473	96.0000	5.0996	-4.6968	2.4000	18.8444
15.98	4.3270	29.4029	94.0000	5.1072	-4.6892	2.3100	18.8444
16.00	4.0610	27.8473	89.3333	5.0920	-4.7272	2.2300	18.8444
16.02	3.7419	26.1807	85.3333	5.1300	-4.7196	2.2300	18.8444
16.04	3.5175	24.6224	82.0000	5.1300	-4.7348	2.2200	18.8889
16.06	3.2419	24.0696	78.6667	5.1376	-4.7424	2.2900	18.8444
16.08	2.9324	23.1780	75.3333	5.1528	-4.7348	2.2400	18.8889
16.10	2.6452	22.7336	72.0000	5.1452	-4.7272	2.2200	18.8889
16.12	2.4111	22.0669	69.3333	5.1756	-4.7348	2.4300	18.8889
16.14	2.2516	20.0669	66.6667	5.1832	-4.7424	2.2900	18.8889
16.16	2.1664	18.2891	66.0000	5.1908	-4.7576	2.2200	18.8889
16.18	2.1239	16.4002	64.6667	5.1908	-4.7576	2.2000	18.8889
16.20	2.2632	15.7362	67.3333	5.2212	-4.7652	2.3600	18.8444
16.22	2.4750	14.9558	69.3333	5.2364	-4.7652	2.3300	18.8889
16.24	2.7632	14.5140	72.0000	5.2592	-4.7804	2.3100	18.8444
16.26	3.2303	14.6224	78.0000	5.2668	-4.7804	2.2800	18.8889
16.28	3.7844	14.7362	84.0000	5.2972	-4.8032	2.4800	18.8444
16.30	4.3483	14.2918	86.0000	5.2744	-4.8032	2.3200	18.8444
16.32	4.7951	16.0696	89.3333	5.2820	-4.8184	2.2400	18.8444
16.34	6.9946	22.1496	114.6667	5.3048	-4.8640	1.2500	17.5111
16.36	8.4937	26.4802	111.3333	5.3352	-4.8944	1.4900	17.5556
16.38	10.1329	31.3718	122.0000	5.3504	-4.9248	1.5800	17.5111
16.40	11.6426	34.2580	126.6667	5.3656	-4.9324	1.5500	17.5556
16.42	12.9298	36.1469	133.3333	5.3580	-4.9628	1.5800	17.5556
16.44	14.0372	37.0384	133.3333	5.3808	-4.9780	1.6800	17.5111
16.46	14.8989	38.0384	134.6667	5.3884	-4.9932	1.7400	17.5111
16.48	15.5053	40.4829	136.0000	5.4036	-5.0160	1.7300	17.5111
16.50	16.0691	43.5940	140.0000	5.3960	-5.0312	1.7300	17.5111
16.52	16.5585	47.2607	145.3333	5.4036	-5.0616	1.7300	17.5111
16.54	16.9946	51.0384	150.6667	5.4036	-5.0540	1.7400	17.5111
16.56	17.4298	54.9247	155.3333	5.4188	-5.0692	1.7400	17.5556
16.58	17.9192	58.4802	160.0000	5.4416	-5.0768	1.7600	17.5556
16.60	18.5681	61.4802	165.3333	5.4416	-5.1148	1.7200	17.5556
16.62	19.1629	64.1442	166.6667	5.4416	-5.1224	1.7200	17.6000
16.64	19.8331	66.8109	169.3333	5.4492	-5.1452	1.7000	17.6000
16.66	20.3640	67.4749	172.6667	5.4340	-5.1756	1.7600	17.6444
16.68	20.7238	67.3584	182.0000	5.4720	-5.1832	2.1800	17.7333



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Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
16.70	21.1280	67.6918	185.3333	5.4492	-5.1908	2.2200	17.7333
16.72	21.6803	66.9113	197.3333	5.4644	-5.1984	2.1600	17.7778
16.74	22.2963	65.0198	210.6667	5.4492	-5.2212	2.2700	17.8222
16.76	22.5613	66.5727	224.0000	5.4416	-5.2364	2.1700	17.8667
16.78	22.5390	68.1256	229.3333	5.4492	-5.2592	2.1600	17.9111
16.80	22.3137	68.7869	226.0000	5.4492	-5.2592	2.1800	18.0000
16.82	22.0371	71.4536	218.0000	5.4416	-5.2896	2.2300	18.0000
16.84	22.0670	75.0038	217.3333	5.4416	-5.2820	2.2000	18.0889
16.86	22.0661	74.6678	206.0000	5.4340	-5.3048	2.2300	18.1333
16.88	22.1066	73.6624	197.3333	5.4416	-5.3200	2.2800	18.2222
16.90	22.0515	75.5460	132.0000	5.4416	-5.3276	2.3200	18.3111
16.92	21.7739	73.5433	104.0000	5.4492	-5.3428	2.2300	18.3556
16.94	21.1433	75.0909	97.3333	5.4720	-5.3428	2.2300	18.4889
16.96	20.2807	70.9771	100.0000	5.4492	-5.3580	2.2900	18.5333
16.98	19.4073	63.1967	104.6667	5.4720	-5.3884	2.2900	18.5778
17.00	18.4789	57.8553	110.0000	5.4720	-5.3732	2.3200	18.7111
17.02	17.6481	54.8527	116.0000	5.4644	-5.3960	2.3300	18.7556
17.04	16.9344	53.6278	118.6667	5.4872	-5.4036	2.5100	18.8000
17.06	16.2419	52.6251	124.6667	5.4872	-5.4036	2.3800	18.8444
17.08	15.5156	51.3949	127.3333	5.4872	-5.4036	2.3300	18.9778
17.10	14.8444	50.3922	132.6667	5.5100	-5.4036	2.3100	19.0222
17.12	14.2476	48.8340	136.0000	5.5024	-5.4264	2.3600	19.0667
17.14	13.5639	47.9371	136.6667	5.5100	-5.4264	2.4600	19.2000
17.16	12.8076	47.1567	137.3333	5.5100	-5.4416	2.3600	19.2444
17.18	12.0184	45.9291	137.3333	5.5176	-5.4340	2.3300	19.3333
17.20	11.4110	44.1487	137.3333	5.5252	-5.4340	2.6600	19.3778
17.22	10.8578	41.5931	140.0000	5.5176	-5.4492	2.3500	19.3778
17.24	10.0387	40.7042	74.6667	5.5328	-5.5176	57.1400	19.3778
17.26	10.1557	39.0376	75.3333	5.5480	-5.5328	1.3700	19.3778
17.28	10.3578	39.2598	76.6667	5.5632	-5.5404	1.4600	19.3778
17.30	10.4652	40.2624	76.6667	5.5632	-5.5632	1.5100	19.3333
17.32	10.5397	41.5958	77.3333	5.5632	-5.5708	1.6200	19.3333
17.34	10.7514	39.9264	78.6667	5.5708	-5.5936	1.5800	19.3778
17.36	11.0503	39.3736	82.0000	5.5632	-5.5936	1.5700	19.3333
17.38	11.2950	39.4847	84.6667	5.5860	-5.6012	1.5800	19.3333
17.40	11.2282	38.8100	82.6667	5.6012	-5.5936	1.5800	19.4667
17.42	11.5280	38.0376	86.0000	5.5860	-5.6392	1.5200	19.3778
17.44	11.5812	39.3709	88.0000	5.5860	-5.6240	1.4800	19.3778
17.46	11.7940	45.1487	89.3333	5.5936	-5.6544	1.5300	19.3778
17.48	12.4410	47.8100	98.0000	5.6012	-5.6620	2.0700	19.4667
17.50	13.4729	49.0322	105.3333	5.6164	-5.6848	2.1200	19.4667
17.52	14.2708	50.3656	111.3333	5.6392	-5.6848	2.1100	19.4667
17.54	14.4516	50.4767	111.3333	5.6316	-5.6848	2.1500	19.4667
17.56	13.9961	48.5931	102.6667	5.6316	-5.7000	2.1200	19.3778
17.58	13.0686	50.9211	100.6667	5.6392	-5.7000	0.4800	19.4667
17.60	12.5580	48.4767	96.0000	5.6468	-5.7000	0.5700	19.4667



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Preforo

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1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
17.62	12.3578	47.7042	94.0000	5.6544	-5.7304	0.7800	19.3778
17.64	12.2727	48.8153	94.0000	5.6392	-5.7380	0.8300	19.3778
17.66	12.0716	50.8180	93.3333	5.6316	-5.7608	0.5600	19.3333
17.68	11.6096	47.7816	126.0000	5.6164	-5.7380	1.1000	18.0889
17.70	11.7160	47.1149	123.3333	5.6088	-5.7304	0.5900	18.0889
17.72	10.9680	91.3800	122.1350	5.6110	-5.7317	1.5700	18.8000
17.74	10.9230	90.6000	127.2506	5.6131	-5.7329	1.7200	18.8000
17.76	10.2050	83.9700	135.6075	5.6153	-5.7342	1.6100	18.7556
17.78	10.0910	83.6400	144.8906	5.6174	-5.7354	1.6000	18.8000
17.80	10.0090	83.5200	158.5175	5.6196	-5.7367	1.6300	18.8000
17.82	9.9080	83.2700	188.5496	5.6217	-5.7379	1.6100	18.8000
17.84	9.8400	83.3900	206.6636	5.6239	-5.7392	1.6300	18.8000
17.86	9.7670	83.5600	218.2730	5.6260	-5.7404	1.6500	18.7556
17.88	9.6890	83.8000	213.5984	5.6282	-5.7417	1.6300	18.7556
17.90	9.5660	82.9400	209.2876	5.6303	-5.7429	1.6800	18.8000
17.92	9.5200	82.5300	171.9900	5.6325	-5.7442	1.6100	18.8000
17.94	9.4970	82.2900	162.8503	5.6347	-5.7454	1.6100	18.8000
17.96	9.4700	82.1300	168.2746	5.6368	-5.7467	5.4000	18.5778
17.98	9.4330	81.5500	177.0946	5.6390	-5.7480	1.5600	18.5778
18.00	9.4200	81.0200	178.4837	5.6411	-5.7492	1.6000	18.6222
18.02	9.4010	80.7700	180.0383	5.6433	-5.7505	1.6000	18.5778
18.04	9.3970	80.4500	180.6557	5.6454	-5.7517	1.5800	18.6222
18.06	9.3970	80.4000	182.3535	5.6476	-5.7530	1.5800	18.7556
18.08	9.4240	80.4000	183.4450	5.6497	-5.7542	1.5800	18.7111
18.10	9.4740	80.1600	186.8407	5.6519	-5.7555	1.6200	18.7111
18.12	9.5060	79.0900	189.0126	5.6540	-5.7567	1.6300	18.7556
18.14	9.5200	78.4800	199.0784	5.6562	-5.7580	1.5800	18.7556
18.16	9.5340	77.7400	205.1091	5.6584	-5.7592	1.6000	18.7556
18.18	9.5480	77.0000	209.6073	5.6605	-5.7605	1.6000	18.7556
18.20	9.5570	76.6800	214.5575	5.6627	-5.7618	1.6200	18.7556
18.22	9.5380	76.6000	215.4836	5.6648	-5.7630	1.6300	18.7111
18.24	9.5110	76.1400	214.7119	5.6670	-5.7643	1.6500	18.7111
18.26	9.4930	76.0200	212.3856	5.6691	-5.7655	1.6200	18.7556
18.28	9.4930	75.9800	211.6139	5.6713	-5.7668	1.6300	18.7111
18.30	9.5340	75.6500	210.5334	5.6734	-5.7680	1.5800	18.8000
18.32	9.6210	75.1200	212.2313	5.6756	-5.7693	1.5900	18.8000
18.34	9.6660	74.2200	215.6380	5.6778	-5.7705	1.5900	18.8444
18.36	9.7120	73.2800	218.5817	5.6799	-5.7718	1.6000	18.8000
18.38	9.7300	73.1500	223.2232	5.6821	-5.7730	1.6400	18.8444
18.40	9.6800	67.1300	227.5560	5.6842	-5.7743	1.6000	18.7556
18.42	9.5520	65.9900	231.8888	5.6864	-5.7755	1.6500	18.8000
18.44	9.6120	66.3100	233.2890	5.6885	-5.7768	1.5900	18.8444
18.46	9.6300	66.8900	236.2327	5.6907	-5.7781	1.5800	18.8889
18.48	9.6120	67.4600	236.5414	5.6928	-5.7793	1.6000	18.8889
18.50	9.5700	67.5800	236.5414	5.6950	-5.7806	1.6000	18.8889
18.52	9.5020	67.5800	238.8566	5.6971	-5.7818	1.6100	18.9778



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
18.54	9.4540	67.6300	237.6218	5.6993	-5.7831	1.6100	19.0222
18.56	9.3970	67.7100	238.0849	5.7015	-5.7843	1.6300	19.0222
18.58	9.2920	68.0800	236.3870	5.7036	-5.7856	1.6500	18.9778
18.60	9.2100	68.6100	235.7586	5.7058	-5.7868	1.6000	19.0222
18.62	9.1320	68.6900	231.2714	5.7079	-5.7881	1.5800	19.0222
18.64	9.1360	68.7300	229.4192	5.7101	-5.7893	1.6000	19.0222
18.66	9.3650	69.3500	229.4192	5.7122	-5.7906	1.6100	19.0667
18.68	9.5980	69.8800	228.4931	5.7144	-5.7918	1.6100	19.0667
18.70	9.8950	70.4100	228.8018	5.7165	-5.7931	1.5700	19.0222
18.72	10.1640	70.6600	227.4017	5.7187	-5.7944	1.6900	19.0667
18.74	10.4060	70.9400	228.3278	5.7208	-5.7956	1.6100	19.0667
18.76	10.5710	71.1900	227.5560	5.7230	-5.7969	1.6000	19.0667
18.78	10.6850	71.1500	228.3278	5.7252	-5.7981	1.6000	19.0667
18.80	10.7630	71.0200	230.0366	5.7273	-5.7994	1.6000	19.0667
18.82	10.8400	71.1900	230.6540	5.7295	-5.8006	1.6000	19.0667
18.84	10.9000	71.2300	231.5801	5.7316	-5.8019	1.6200	19.0667
18.86	10.9360	71.6000	230.8084	5.7338	-5.8031	1.4900	19.0667
18.88	10.9640	72.0100	231.4258	5.7359	-5.8044	1.8300	19.0667
18.90	10.9640	72.5000	230.4997	5.7381	-5.8056	1.6100	19.0667
18.92	10.9550	73.4000	230.1910	5.7402	-5.8069	1.6000	19.0667
18.94	10.9180	74.7100	228.4931	5.7424	-5.8081	1.5600	19.0667
18.96	10.8910	75.7800	226.3212	5.7445	-5.8094	2.8700	18.6222
18.98	10.9090	76.8400	226.3212	5.7467	-5.8107	1.6000	18.7111
19.00	10.9590	77.9900	225.0864	5.7489	-5.8119	1.6300	18.7111
19.02	11.0730	79.0900	224.7777	5.7510	-5.8132	1.6300	18.7556
19.04	11.4570	80.5300	223.8406	5.7532	-5.8144	1.6300	18.7556
19.06	11.6490	81.1000	224.1493	5.7553	-5.8157	1.6300	18.8000
19.08	11.8180	81.6300	223.2232	5.7575	-5.8169	1.6200	18.7556
19.10	11.9370	81.8800	222.4514	5.7596	-5.8182	1.6000	18.8000
19.12	12.0100	82.2500	216.5641	5.7618	-5.8194	1.5800	18.8000
19.14	12.0010	82.7800	213.0030	5.7639	-5.8207	1.6000	18.8000
19.16	11.9820	83.3500	210.6878	5.7661	-5.8219	1.5900	18.7111
19.18	11.9410	83.3100	207.4354	5.7682	-5.8232	1.6300	18.7556
19.20	11.8550	83.0700	206.9723	5.7704	-5.8245	1.6300	18.8000
19.22	11.7720	82.6200	205.8919	5.7726	-5.8257	1.6300	18.7111
19.24	11.6580	82.2900	208.2071	5.7747	-5.8270	1.6200	18.7556
19.26	11.5160	82.4500	208.9789	5.7769	-5.8282	1.6000	18.8000
19.28	11.3930	82.5800	213.0030	5.7790	-5.8295	1.5800	18.7556
19.30	11.2520	82.9900	216.1010	5.7812	-5.8307	1.5700	18.7556
19.32	11.1600	83.4400	217.1925	5.7833	-5.8320	1.5700	18.7556
19.34	11.1140	83.9300	219.5078	5.7855	-5.8332	1.5900	18.7111
19.36	11.0870	84.3000	220.4339	5.7876	-5.8345	1.6100	18.7556
19.38	11.0820	84.3800	221.9884	5.7898	-5.8357	1.5800	18.7556
19.40	11.1190	84.4200	222.6058	5.7919	-5.8370	1.6500	18.7556
19.42	11.1140	83.8900	223.5319	5.7941	-5.8382	1.5800	18.7111
19.44	11.1140	83.4800	223.0688	5.7963	-5.8395	1.5800	18.7556



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
19.46	11.1240	83.2300	221.3710	5.7984	-5.8408	1.6000	18.8000
19.48	11.1140	82.9000	219.5078	5.8006	-5.8420	1.5800	18.8000
19.50	11.0370	82.6600	216.4097	5.8027	-5.8433	1.6200	18.8000
19.52	10.9130	81.8800	214.8662	5.8049	-5.8445	1.5900	18.8000
19.54	10.8130	81.7600	212.5400	5.8070	-5.8458	1.6300	18.8889
19.56	10.6990	81.5900	212.0769	5.8092	-5.8470	1.6300	18.8000
19.58	10.5940	81.1000	210.5334	5.8113	-5.8483	1.5900	18.8444
19.60	10.4790	80.6100	208.9789	5.8135	-5.8495	1.5600	18.8444
19.62	10.3840	80.2000	208.0528	5.8157	-5.8508	1.5800	18.8444
19.64	10.2920	80.2000	205.1091	5.8178	-5.8520	1.5800	18.8000
19.66	10.1050	80.3200	204.1830	5.8200	-5.8533	1.5900	18.8889
19.68	10.0450	80.2000	202.1765	5.8221	-5.8545	1.5400	18.8889
19.70	10.0140	80.0400	201.0850	5.8243	-5.8558	1.6800	18.8889
19.72	9.9910	80.0000	198.1413	5.8264	-5.8571	1.5900	18.8444
19.74	10.0180	79.7100	197.0609	5.8286	-5.8583	1.5600	18.9778
19.76	10.0590	79.5400	194.1172	5.8307	-5.8596	1.5900	18.8889
19.78	10.1460	79.4600	193.0367	5.8329	-5.8608	1.6100	18.9778
19.80	10.2740	79.4600	193.6541	5.8350	-5.8621	1.5900	18.9778
19.82	10.4380	79.0500	193.9628	5.8372	-5.8633	1.6100	18.8889
19.84	10.6620	78.8900	195.9804	5.8394	-5.8646	1.4900	18.9778
19.86	10.9270	79.1300	196.9065	5.8415	-5.8658	1.8100	18.8889
19.88	11.2420	79.0100	198.6154	5.8437	-5.8671	1.5900	18.9778
19.90	11.5990	78.9300	195.8922	5.8458	-5.8683	1.5800	18.9778
19.92	11.9640	78.6000	193.1139	5.8480	-5.8696	1.5000	18.9778
19.94	12.2980	78.3600	192.5296	5.8501	-5.8708	1.4200	18.9778
19.96	12.7360	78.9300	189.8395	5.8523	-5.8721	1.6000	18.8889
19.98	12.8050	78.8100	189.0347	5.8544	-5.8734	1.6000	18.8889
20.00	12.7220	79.0900	188.5496	5.8566	-5.8746	1.6100	18.9778
20.02	12.5350	79.4200	189.7844	5.8587	-5.8759	1.6300	18.9778
20.04	12.3200	80.4500	189.4757	5.8609	-5.8771	1.6300	18.8889
20.06	12.0650	81.0200	189.9387	5.8631	-5.8784	1.6000	18.8444
20.08	11.7910	81.7200	187.9322	5.8652	-5.8796	1.6400	18.8444
20.10	11.4840	82.5300	183.7537	5.8674	-5.8809	1.5800	18.8889
20.12	11.1460	83.5200	183.4450	5.8695	-5.8821	1.5700	18.8889
20.14	10.7720	84.0900	182.0448	5.8717	-5.8834	1.5800	18.8889
20.16	10.3740	84.5800	182.3535	5.8738	-5.8846	1.6000	18.8889
20.18	9.9500	85.1600	181.4274	5.8760	-5.8859	1.6100	18.8889
20.20	9.5610	85.1200	181.7361	5.8781	-5.8872	1.6100	18.8889
20.22	9.1960	84.6200	181.7361	5.8803	-5.8884	1.6000	18.8889
20.24	8.8670	84.1700	183.9080	5.8824	-5.8897	1.6100	18.8889
20.26	8.2680	83.0300	184.8341	5.8846	-5.8909	1.5800	18.9778
20.28	8.0670	82.3300	186.8407	5.8868	-5.8922	1.5500	19.0222
20.30	7.9490	80.9800	187.0061	5.8889	-5.8934	1.5500	19.0222
20.32	7.8980	79.7500	186.5320	5.8911	-5.8947	1.5500	19.0222
20.34	7.9080	78.1900	186.2233	5.8932	-5.8959	1.5600	19.0222
20.36	7.9670	76.7200	184.9885	5.8954	-5.8972	1.5600	19.0667



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Committente

MC Engineering Srl

Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
20.38	8.0400	72.7100	185.1428	5.8975	-5.8984	1.6000	19.0222
20.40	8.1190	69.7400	184.8341	5.8997	-5.8997	1.6000	19.0667
20.42	8.1990	66.1900	185.1428	5.9018	-5.9009	1.5500	19.0667
20.44	8.2180	64.8800	185.7602	5.9040	-5.9022	1.5500	19.0667
20.46	8.2230	64.1800	189.0126	5.9061	-5.9035	1.5700	19.0667
20.48	8.3000	63.9000	191.6476	5.9083	-5.9047	1.5700	19.0667
20.50	8.3960	63.4100	191.8019	5.9105	-5.9060	1.5900	19.1111
20.52	8.5880	62.2600	191.1845	5.9126	-5.9072	1.5600	19.1111
20.54	8.7070	61.7700	189.6300	5.9148	-5.9085	1.6200	19.1111
20.56	8.8900	62.0500	187.9322	5.9169	-5.9097	1.6000	19.2000
20.58	9.1460	62.7100	184.8341	5.9191	-5.9110	1.5500	19.1111
20.60	9.4970	63.2800	183.4450	5.9212	-5.9122	1.5600	19.2000
20.62	9.8990	64.1000	181.2731	5.9234	-5.9135	1.5500	19.2000
20.64	10.3610	65.1300	180.6557	5.9255	-5.9147	1.5700	19.2444
20.66	10.8040	65.7800	182.3535	5.9277	-5.9160	1.5700	19.2000
20.68	11.1780	66.4400	184.8341	5.9299	-5.9172	1.5000	19.2000
20.70	11.4160	67.3400	188.3952	5.9320	-5.9185	1.7000	19.2444
20.72	11.5440	69.3900	190.8758	5.9342	-5.9198	1.5700	19.2889
20.74	11.8040	72.4200	194.4259	5.9363	-5.9210	1.5500	19.2444
20.76	11.9870	73.9300	195.6717	5.9385	-5.9223	1.5600	19.2444
20.78	12.2200	75.5300	197.3696	5.9406	-5.9235	1.5800	19.2889
20.80	12.4850	76.9600	196.5978	5.9428	-5.9248	1.6000	19.2444
20.82	12.7540	78.5600	196.1348	5.9449	-5.9260	1.5900	19.2444
20.84	13.0470	80.2400	194.4259	5.9471	-5.9273	1.5000	19.2444
20.86	13.3350	82.2500	192.8824	5.9492	-5.9285	1.7500	19.2889
20.88	13.5900	84.0500	195.2087	5.9514	-5.9298	1.5800	19.2889
20.90	13.8140	85.4000	200.4676	5.9536	-5.9310	1.5500	19.2889
20.92	13.9880	86.5900	212.3856	5.9557	-5.9323	2.6600	19.0667
20.94	14.1340	88.0600	223.5319	5.9579	-5.9335	0.9100	19.1111
20.96	14.1480	88.4700	232.5173	5.9600	-5.9348	1.4700	19.0667
20.98	14.0380	89.3700	236.3870	5.9622	-5.9361	1.4800	19.0667
21.00	13.4120	89.0500	236.8501	5.9643	-5.9373	1.5800	19.0222
21.02	12.9230	89.2500	200.6219	5.9665	-5.9386	1.5500	19.0222
21.04	12.3800	90.3200	158.9805	5.9686	-5.9398	1.5700	19.0667
21.06	11.8910	90.7300	135.1445	5.9708	-5.9411	1.5700	19.0222
21.08	11.4430	91.9100	120.4371	5.9729	-5.9423	1.5800	19.0667
21.10	11.0600	92.1600	112.6976	5.9751	-5.9436	1.5100	19.0667
21.12	10.7950	92.2800	107.2733	5.9773	-5.9448	1.5200	19.0667
21.14	10.5660	91.9100	103.8776	5.9794	-5.9461	1.5200	19.0667
21.16	10.3840	91.3000	101.7056	5.9816	-5.9473	1.5300	19.0667
21.18	10.2330	90.6000	101.7056	5.9837	-5.9486	1.5300	19.0667
21.20	10.1460	89.6600	105.1124	5.9859	-5.9499	1.6300	19.0667
21.22	10.0960	88.5100	108.0560	5.9880	-5.9511	1.7000	19.0667
21.24	10.0770	87.4100	110.8343	5.9902	-5.9524	1.7800	19.0667
21.26	10.1050	86.1800	114.0867	5.9923	-5.9536	1.7300	19.1111
21.28	10.3470	83.8000	118.2652	5.9945	-5.9549	1.8000	19.1111



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
21.30	10.5620	82.5300	121.0545	5.9966	-5.9561	1.8200	19.0667
21.32	10.8810	81.1000	125.0786	5.9988	-5.9574	1.8800	19.0667
21.34	11.2830	80.5700	128.6397	6.0010	-5.9586	1.8900	19.0667
21.36	11.8090	80.2800	135.1445	6.0031	-5.9599	1.9300	19.1111
21.38	12.4300	80.3200	138.2425	6.0053	-5.9611	1.9600	19.2000
21.40	13.1150	80.0800	140.5577	6.0074	-5.9624	1.9300	19.1111
21.42	13.7960	80.2800	143.9645	6.0096	-5.9636	1.9100	19.1111
21.44	14.4080	81.1400	147.8342	6.0117	-5.9649	1.9300	19.1111
21.46	14.9380	81.7600	152.7845	6.0139	-5.9662	1.9200	19.0667
21.48	15.4360	82.9900	156.6542	6.0160	-5.9674	1.9600	19.0667
21.50	15.8930	84.6200	159.5979	6.0182	-5.9687	1.9800	19.1111
21.52	16.5830	87.4900	159.2892	6.0203	-5.9699	1.9200	19.2000
21.54	16.7840	89.7000	156.8196	6.0225	-5.9712	2.0100	19.2000
21.56	16.9440	92.0400	154.0303	6.0247	-5.9724	1.9500	19.1111
21.58	17.0760	94.4500	152.0127	6.0268	-5.9737	1.9100	19.2000
21.60	17.1860	97.3600	151.0866	6.0290	-5.9749	1.9400	19.1111
21.62	17.3140	100.4800	151.4063	6.0311	-5.9762	1.9200	19.2000
21.64	17.4140	102.8500	153.1042	6.0333	-5.9774	1.9300	19.2000
21.66	17.3820	105.6400	154.9564	6.0354	-5.9787	1.9500	19.2000
21.68	17.2910	108.2200	158.2088	6.0376	-5.9799	1.8700	19.2000
21.70	17.1630	110.0200	165.0222	6.0397	-5.9812	2.0700	19.2444
21.72	16.8930	111.3300	168.7376	6.0419	-5.9825	1.9300	19.2000
21.74	16.5000	112.4400	173.3792	6.0440	-5.9837	1.9100	19.1111
21.76	16.0300	113.4600	176.9402	6.0462	-5.9850	1.9500	19.2000
21.78	15.4950	113.9900	180.1926	6.0484	-5.9862	1.9500	19.2000
21.80	14.4310	112.4800	182.3535	6.0505	-5.9875	1.9300	19.1111
21.82	13.8780	111.8200	184.9885	6.0527	-5.9887	1.9600	19.2000
21.84	13.2390	112.3900	187.4691	6.0548	-5.9900	2.0000	19.2444
21.86	12.4480	111.4900	192.4193	6.0570	-5.9912	2.0000	19.2000
21.88	11.6990	109.6500	194.4259	6.0591	-5.9925	1.9300	19.2000
21.90	11.0320	108.9100	193.3785	6.0613	-5.9937	1.9300	19.2000
21.92	10.3290	108.6300	189.7844	6.0634	-5.9950	3.5000	18.7111
21.94	9.8030	108.2600	189.3213	6.0656	-5.9962	2.0100	18.7111
21.96	9.4740	108.0100	190.5561	6.0678	-5.9975	2.0100	18.7111
21.98	9.4560	107.1900	189.0126	6.0699	-5.9988	2.0200	18.7556
22.00	9.6340	108.0900	187.7778	6.0721	-6.0000	2.0300	18.7111
22.02	9.9360	109.5700	187.4691	6.0742	-6.0013	2.0200	18.6222
22.04	10.2780	109.8100	185.9146	6.0764	-6.0025	2.0400	18.7111
22.06	10.5710	110.1400	186.5320	6.0785	-6.0038	2.0600	18.7111
22.08	10.7810	109.2400	187.1604	6.0807	-6.0050	2.0200	18.7111
22.10	11.1010	106.7800	189.4757	6.0828	-6.0063	1.9700	18.7556
22.12	11.2700	103.2600	194.1172	6.0850	-6.0075	1.9900	18.7111
22.14	11.4160	98.8400	193.9628	6.0871	-6.0088	2.0000	18.7111
22.16	11.5210	95.0700	194.1172	6.0893	-6.0100	2.0400	18.7111
22.18	11.6030	92.3700	193.6541	6.0915	-6.0113	2.0400	18.7111
22.20	11.6580	86.3000	193.3454	6.0936	-6.0126	2.0500	18.7556



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Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
22.22	11.6670	83.1900	192.7280	6.0958	-6.0138	2.0400	18.7556
22.24	11.5710	80.7700	193.0367	6.0979	-6.0151	2.0000	18.7556
22.26	11.4840	76.5500	192.7280	6.1001	-6.0163	1.9700	18.7111
22.28	11.3700	73.0700	190.7215	6.1022	-6.0176	1.9500	18.7111
22.30	11.3150	71.7200	190.8758	6.1044	-6.0188	1.9600	18.7556
22.32	11.3610	71.0700	191.4932	6.1065	-6.0201	1.9800	18.7556
22.34	11.4800	69.7100	193.4998	6.1087	-6.0213	2.0000	18.7556
22.36	11.8860	69.3000	194.9000	6.1108	-6.0226	1.9400	18.7111
22.38	12.0560	70.8200	195.6717	6.1130	-6.0238	2.0500	18.7556
22.40	11.9920	67.3000	196.4435	6.1152	-6.0251	1.9600	18.7556
22.42	11.9410	69.3500	196.7522	6.1173	-6.0263	1.9700	18.7556
22.44	11.6950	71.7600	194.5913	6.1195	-6.0276	1.9800	18.8000
22.46	11.4110	74.2600	194.1172	6.1216	-6.0289	1.9800	18.8000
22.48	11.1650	75.1600	193.6541	6.1238	-6.0301	1.9900	18.8000
22.50	11.0410	75.6500	192.5737	6.1259	-6.0314	1.9600	18.8000
22.52	10.8370	76.0800	192.1106	6.1281	-6.0326	2.0000	18.8000
22.54	10.5110	77.5400	191.3389	6.1302	-6.0339	2.0500	18.8000
22.56	10.4700	77.5800	192.2650	6.1324	-6.0351	1.9500	18.8000
22.58	10.4480	78.1900	192.1106	6.1345	-6.0364	1.9200	18.8000
22.60	10.4250	78.0300	194.2715	6.1367	-6.0376	1.9700	18.8000
22.62	10.3610	78.1500	197.0609	6.1389	-6.0389	1.9600	18.8444
22.64	10.2830	77.7800	199.0784	6.1410	-6.0401	1.9800	18.8444
22.66	10.1600	77.8200	201.3937	6.1432	-6.0414	1.9300	18.8444
22.68	10.0500	77.6200	202.7939	6.1453	-6.0426	2.1000	18.8000
22.70	10.0040	77.3700	206.0462	6.1475	-6.0439	2.0100	18.8000
22.72	10.0140	77.1700	208.8245	6.1496	-6.0452	1.9800	18.8889
22.74	10.0270	76.6400	212.6943	6.1518	-6.0464	1.9700	18.8444
22.76	10.0770	76.6000	215.6380	6.1539	-6.0477	2.0000	18.8444
22.78	10.2280	76.6000	218.1186	6.1561	-6.0489	1.9800	18.8889
22.80	10.3100	76.3900	219.5078	6.1582	-6.0502	2.0200	18.8000
22.82	10.3610	76.5500	219.8165	6.1604	-6.0514	1.8600	18.8000
22.84	10.4110	76.3100	217.9643	6.1626	-6.0527	2.2300	18.8444
22.86	10.4110	76.3100	214.2488	6.1647	-6.0539	2.0200	18.8444
22.88	10.3200	75.9400	209.2876	6.1669	-6.0552	2.0000	18.8444
22.90	10.1460	75.0400	203.7200	6.1690	-6.0564	1.9100	18.8889
22.92	9.9040	74.2200	199.5415	6.1712	-6.0577	1.7000	18.6222
22.94	9.6120	73.8100	194.9000	6.1733	-6.0589	1.9600	18.7111
22.96	9.3100	73.6500	193.0367	6.1755	-6.0602	2.0200	18.7111
22.98	9.0270	73.2800	192.4193	6.1776	-6.0615	2.0300	18.6222
23.00	8.8080	73.2000	192.4193	6.1798	-6.0627	2.0000	18.6222
23.02	8.6200	73.1500	193.1911	6.1820	-6.0640	2.0000	18.6222
23.04	8.3550	73.2800	194.7456	6.1841	-6.0652	2.0100	18.7111
23.06	8.2500	73.6100	196.5978	6.1863	-6.0665	1.9600	18.6222
23.08	8.1730	73.5200	197.5239	6.1884	-6.0677	1.9300	18.6222
23.10	8.1270	73.2400	200.4676	6.1906	-6.0690	1.9200	18.6222
23.12	8.0990	73.7300	205.5722	6.1927	-6.0702	1.9500	18.7111



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
23.14	8.0860	73.8900	209.6073	6.1949	-6.0715	1.9600	18.7111
23.16	8.0950	73.7700	214.8662	6.1970	-6.0727	2.0000	18.6222
23.18	8.0950	73.3600	220.2795	6.1992	-6.0740	1.9800	18.6222
23.20	8.1310	72.7500	226.6299	6.2013	-6.0753	1.9600	18.5778
23.22	8.1590	71.9700	232.3629	6.2035	-6.0765	1.9600	18.7111
23.24	8.1680	71.3100	237.0044	6.2057	-6.0778	1.9100	18.5778
23.26	8.1910	70.9800	238.5479	6.2078	-6.0790	1.9100	18.5778
23.28	8.2050	70.5700	239.4740	6.2100	-6.0803	1.9400	18.6222
23.30	8.2270	70.5700	241.8003	6.2121	-6.0815	1.9500	18.6222
23.32	8.2140	70.1200	243.9722	6.2143	-6.0828	1.9700	18.7111
23.34	8.1860	69.5500	247.2136	6.2164	-6.0840	1.9100	18.7111
23.36	8.1540	68.8900	250.6203	6.2186	-6.0853	2.0100	18.6222
23.38	8.1220	68.7300	251.8661	6.2207	-6.0865	1.9300	18.6222
23.40	8.0720	68.4000	250.0029	6.2229	-6.0878	1.9000	18.7111
23.42	8.0350	67.9500	247.2136	6.2250	-6.0890	1.9300	18.6222
23.44	7.9940	67.9900	234.8325	6.2272	-6.0903	1.9300	18.6222
23.46	7.9490	68.0800	226.7843	6.2294	-6.0916	1.9200	18.5778
23.48	7.9210	68.1200	218.1186	6.2315	-6.0928	1.9200	18.6222
23.50	7.9120	68.0300	211.3052	6.2337	-6.0941	1.9400	18.6222
23.52	7.9210	68.2000	206.9723	6.2358	-6.0953	1.9700	18.6222
23.54	7.9490	68.1600	204.8004	6.2380	-6.0966	1.8900	18.5778
23.56	7.9900	68.3600	204.6461	6.2401	-6.0978	1.8900	18.5778
23.58	8.0860	68.8500	206.8180	6.2423	-6.0991	1.9200	18.5333
23.60	8.4060	69.1000	209.6073	6.2444	-6.1003	1.9100	18.5778
23.62	8.6610	69.5500	217.8099	6.2466	-6.1016	1.9500	18.5778
23.64	9.0180	69.6700	221.2166	6.2487	-6.1028	1.9000	18.5333
23.66	9.3920	70.2900	223.3775	6.2509	-6.1041	2.0700	18.5778
23.68	9.8260	70.9400	222.9145	6.2531	-6.1053	1.9700	18.4889
23.70	10.2780	71.6000	220.1252	6.2552	-6.1066	1.9500	18.5778
23.72	10.7440	71.9300	216.2554	6.2574	-6.1079	1.9300	18.4889
23.74	11.1510	72.1300	213.4771	6.2595	-6.1091	1.9400	18.5333
23.76	11.5160	72.5000	210.6878	6.2617	-6.1104	2.0000	18.4889
23.78	11.7810	72.7900	209.6073	6.2638	-6.1116	1.9600	18.5333
23.80	11.9180	73.6500	210.0704	6.2660	-6.1129	1.8300	18.4889
23.82	12.0780	75.4900	211.4595	6.2681	-6.1141	2.1900	18.4889
23.84	12.1700	81.8800	212.3856	6.2703	-6.1154	1.9400	18.5333
23.86	12.6310	82.3300	213.3007	6.2724	-6.1166	1.9600	18.5333
23.88	12.8230	82.9000	213.0140	6.2746	-6.1179	1.3600	18.4889
23.90	12.9780	82.4900	212.3856	6.2768	-6.1191	2.3500	18.1333
23.92	13.0420	80.8100	210.5334	6.2789	-6.1204	1.9500	18.1333
23.94	13.1560	81.4300	212.6943	6.2811	-6.1216	2.0000	18.1333
23.96	13.3070	78.8100	214.8662	6.2832	-6.1229	2.0400	18.2222
23.98	13.4080	78.8100	216.2554	6.2854	-6.1242	2.0100	18.2222
24.00	13.5310	77.8700	216.1010	6.2875	-6.1254	2.0400	18.2222
24.02	13.5630	76.3500	214.2488	6.2897	-6.1267	2.0400	18.1333
24.04	13.5220	73.8500	211.3052	6.2918	-6.1279	2.0400	18.1333



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Data

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CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
24.06	13.4720	72.1700	208.8245	6.2940	-6.1292	1.9700	18.2667
24.08	13.4030	71.1500	206.8180	6.2961	-6.1304	1.9800	18.2667
24.10	12.9280	65.5000	208.0528	6.2983	-6.1317	2.0000	18.2667
24.12	12.5490	66.6800	209.7617	6.3005	-6.1329	2.0000	18.2667
24.14	12.2340	67.0500	210.8421	6.3026	-6.1342	2.0000	18.2222
24.16	11.9460	68.4900	209.9160	6.3048	-6.1354	2.0400	18.3111
24.18	11.7170	70.6200	210.2247	6.3069	-6.1367	2.0400	18.3111
24.20	11.5480	73.6500	211.3052	6.3091	-6.1380	2.0000	18.2222
24.22	11.4070	75.1600	212.3856	6.3112	-6.1392	1.9700	18.2667
24.24	11.2970	77.7800	215.1749	6.3134	-6.1405	1.9700	18.2667
24.26	11.2560	79.5000	222.4514	6.3155	-6.1417	1.9700	18.2667
24.28	11.2420	80.9400	226.6299	6.3177	-6.1430	1.9800	18.3111
24.30	11.2740	82.0400	230.3453	6.3199	-6.1442	1.9800	18.2667
24.32	11.3470	82.4100	231.5801	6.3220	-6.1455	2.0000	18.3111
24.34	11.4840	82.1300	230.3453	6.3242	-6.1467	2.0000	18.3556
24.36	11.6440	82.2500	227.4017	6.3263	-6.1480	1.9800	18.3111
24.38	11.8590	70.5700	223.2232	6.3285	-6.1492	1.9300	18.3556
24.40	12.0740	70.7000	219.6621	6.3306	-6.1505	1.9600	18.4000
24.42	12.1700	70.5700	212.2313	6.3328	-6.1517	1.9400	18.3111
24.44	12.2200	71.6800	209.1332	6.3349	-6.1530	1.9900	18.3111
24.46	12.2570	73.2000	206.9723	6.3371	-6.1543	1.9900	18.3111
24.48	12.3250	74.7900	205.2635	6.3392	-6.1555	1.9400	18.4889
24.50	12.4390	76.8000	203.1026	6.3414	-6.1568	2.0500	18.4889
24.52	12.6130	78.7700	200.1589	6.3436	-6.1580	1.9500	18.4889
24.54	12.8280	80.3600	197.5239	6.3457	-6.1593	1.9200	18.4000
24.56	13.1020	82.8600	196.1348	6.3479	-6.1605	1.9500	18.4000
24.58	13.4580	84.9100	194.5913	6.3500	-6.1618	1.9300	18.3556
24.60	14.3490	88.6000	195.8261	6.3522	-6.1630	1.9700	18.4000
24.62	14.8920	90.3600	199.5415	6.3543	-6.1643	1.9500	18.4889
24.64	15.5320	92.8200	203.4113	6.3565	-6.1655	1.9500	18.4000
24.66	16.2170	94.7400	208.5158	6.3586	-6.1668	2.0500	18.4000
24.68	16.9210	96.2600	213.3117	6.3608	-6.1680	1.9500	18.4889
24.70	17.5510	96.7900	218.8904	6.3629	-6.1693	1.9500	18.4889
24.72	18.1080	97.0800	223.8406	6.3651	-6.1706	1.9500	18.4889
24.74	18.5380	98.4700	230.8084	6.3673	-6.1718	1.9800	18.4889
24.76	18.8900	101.1300	242.8808	6.3694	-6.1731	1.9600	18.4889
24.78	19.2410	104.1600	247.5333	6.3716	-6.1743	1.9800	18.4889
24.80	19.4510	107.1500	249.8486	6.3737	-6.1756	2.0300	18.4889
24.82	19.4740	109.8600	248.9225	6.3759	-6.1768	2.0000	18.4889
24.84	19.2500	112.1100	245.3614	6.3780	-6.1781	1.9400	18.4889
24.86	18.7750	114.6900	241.3373	6.3802	-6.1793	1.9100	18.4889
24.88	17.6100	121.6900	236.8501	6.3823	-6.1806	2.4000	18.0000
24.90	17.0170	125.1300	229.1105	6.3845	-6.1818	1.9700	18.0444
24.92	16.6050	127.3000	225.2408	6.3866	-6.1831	1.9900	18.0444
24.94	16.2540	129.5200	220.5882	6.3888	-6.1843	1.9900	18.0889
24.96	16.1300	131.1100	216.4097	6.3910	-6.1856	2.0200	18.0000



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Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
24.98	16.1760	132.2600	211.4595	6.3931	-6.1869	1.9800	18.0000
25.00	16.3540	132.9600	205.2635	6.3953	-6.1881	2.0000	18.0444
25.02	16.6650	133.7300	198.3067	6.3974	-6.1894	2.0100	18.0444
25.04	17.0530	133.8600	192.4193	6.3996	-6.1906	1.9800	18.0444
25.06	17.4780	133.2400	188.8583	6.4017	-6.1919	1.9300	18.0444
25.08	17.8940	132.1000	186.3776	6.4039	-6.1931	1.9700	18.0889
25.10	18.2550	130.9100	187.0061	6.4060	-6.1944	1.9500	18.0889
25.12	18.5290	129.7200	188.3952	6.4082	-6.1956	2.0000	18.0889
25.14	18.5970	125.5000	190.2474	6.4103	-6.1969	1.9800	18.0889
25.16	18.3870	123.3700	192.8824	6.4125	-6.1981	2.0000	18.0889
25.18	17.9940	122.1800	195.5174	6.4147	-6.1994	1.9900	18.0444
25.20	17.4410	121.7300	198.4610	6.4168	-6.2007	1.9700	18.0889
25.22	16.8570	122.1400	202.0221	6.4190	-6.2019	1.9400	18.0889
25.24	16.2900	122.2700	205.8919	6.4211	-6.2032	1.9500	18.1333
25.26	15.7370	123.0400	210.3791	6.4233	-6.2044	1.9400	18.1333
25.28	15.2620	124.5200	217.1925	6.4254	-6.2057	1.9500	18.1333
25.30	14.8970	125.6200	219.5078	6.4276	-6.2069	1.9700	18.1333
25.32	14.6140	126.7700	220.5882	6.4297	-6.2082	1.9500	18.1333
25.34	14.4400	127.4300	223.0688	6.4319	-6.2094	2.0000	18.0889
25.36	14.2990	127.2200	223.6862	6.4341	-6.2107	1.9100	18.2222
25.38	14.2480	127.1000	223.9949	6.4362	-6.2119	1.9100	18.2222
25.40	14.2620	126.2800	222.7601	6.4384	-6.2132	1.9400	18.2222
25.42	14.3490	125.0500	220.5882	6.4405	-6.2144	1.9100	18.2222
25.44	14.5040	123.6200	215.6380	6.4427	-6.2157	1.9400	18.2222
25.46	14.8330	119.0300	213.3117	6.4448	-6.2170	1.9500	18.2222
25.48	14.9650	116.3700	212.8487	6.4470	-6.2182	1.9800	18.2222
25.50	15.0290	113.6600	212.3856	6.4491	-6.2195	1.9800	18.2222
25.52	15.0710	111.5800	214.5575	6.4513	-6.2207	1.9000	18.2222
25.54	15.0750	110.1400	216.8728	6.4534	-6.2220	1.9200	18.2222
25.56	15.1030	109.5300	219.8165	6.4556	-6.2232	1.9000	18.2667
25.58	15.1660	110.1000	221.9884	6.4578	-6.2245	1.9300	18.2667
25.60	15.2080	109.5700	221.6797	6.4599	-6.2257	1.9300	18.3111
25.62	15.2400	109.8600	216.1010	6.4621	-6.2270	1.8800	18.3111
25.64	15.2210	110.3500	212.7935	6.4642	-6.2282	2.0300	18.3556
25.66	15.1890	110.8000	210.2247	6.4664	-6.2295	1.9500	18.3556
25.68	15.0840	111.2100	209.4419	6.4685	-6.2307	1.9100	18.3111
25.70	14.9380	112.5200	209.1332	6.4707	-6.2320	1.9100	18.3556
25.72	14.7510	113.0100	208.9789	6.4728	-6.2333	1.9100	18.3556
25.74	14.5770	114.2000	210.0152	6.4750	-6.2345	1.9600	18.3556
25.76	14.3990	115.5500	210.0704	6.4771	-6.2358	1.9500	18.3556
25.78	14.3350	116.0800	212.3856	6.4793	-6.2370	1.8000	18.4000
25.80	14.3300	116.3300	213.9401	6.4815	-6.2383	2.1600	18.3556
25.82	14.3080	116.4900	215.4836	6.4836	-6.2395	1.9300	18.4000
25.84	14.3670	116.4100	217.6556	6.4858	-6.2408	1.9100	18.3556
25.86	14.3720	116.2900	219.5078	6.4879	-6.2420	1.8600	18.3556
25.88	14.4080	116.2900	221.1395	6.4901	-6.2433	1.9100	17.9111



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Committente

MC Engineering Srl

Località

Ferrara

Data

31/03/2014

CPTU 02

Tecnico

PANCANI-CARBONELLA

Cantiere

Boicelli/Michelini

Preforo

Livello Falda

1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
25.90	14.4130	115.7900	219.1991	6.4922	-6.2445	1.9300	17.9111
25.92	14.3850	115.3800	216.7184	6.4944	-6.2458	1.9900	17.8667
25.94	14.3350	115.4700	215.9467	6.4965	-6.2470	1.9300	17.8667
25.96	14.2670	115.2200	216.5641	6.4987	-6.2483	1.9600	17.9111
25.98	14.1930	115.3000	217.5012	6.5008	-6.2496	1.9600	17.8667
26.00	14.1070	115.2200	217.9643	6.5030	-6.2508	1.9600	17.9111
26.02	14.0430	115.2200	218.7360	6.5052	-6.2521	1.8900	17.9111
26.04	13.9880	115.6700	219.1991	6.5073	-6.2533	1.9100	18.0000
26.06	13.9560	117.2700	220.9079	6.5095	-6.2546	1.9100	17.9111
26.08	13.9830	117.6800	221.9884	6.5116	-6.2558	1.9400	18.0000
26.10	14.0290	117.7600	218.8904	6.5138	-6.2571	1.9400	18.0444
26.12	14.0930	117.7200	219.5078	6.5159	-6.2583	1.9600	17.9111
26.14	14.1390	117.6800	219.0447	6.5181	-6.2596	1.9900	17.9111
26.16	14.2070	118.0100	222.6058	6.5202	-6.2608	1.9500	18.0000
26.18	14.3260	118.3300	223.8406	6.5224	-6.2621	1.9000	18.0000
26.20	14.4260	119.1500	224.7777	6.5245	-6.2634	1.9200	18.0000
26.22	14.5540	118.8700	222.9145	6.5267	-6.2646	1.9100	18.0000
26.24	14.6870	118.9100	221.0623	6.5289	-6.2659	1.9100	17.9111
26.26	14.8010	118.6200	216.7184	6.5310	-6.2671	1.9000	18.0000
26.28	14.8880	119.2300	214.4032	6.5332	-6.2684	1.9500	18.0444
26.30	14.9610	119.4000	213.6314	6.5353	-6.2696	1.9500	18.0000
26.32	15.0160	115.1500	212.0769	6.5375	-6.2709	1.9300	18.0000
26.34	15.0290	112.6000	211.7682	6.5396	-6.2721	1.8700	18.0000
26.36	14.9300	107.6400	212.3856	6.5418	-6.2734	1.9100	18.0000
26.38	14.8380	106.7800	213.4771	6.5439	-6.2746	1.8800	17.9111
26.40	14.9880	107.5200	215.1749	6.5461	-6.2759	1.9300	18.0000
26.42	15.0480	109.2800	219.0447	6.5482	-6.2771	1.9400	17.9111
26.44	15.0980	110.2600	224.7777	6.5504	-6.2784	1.9100	18.0000
26.46	15.1480	111.7400	228.3278	6.5526	-6.2797	1.9600	18.0000
26.48	15.1570	113.3400	234.0608	6.5547	-6.2809	1.9100	18.0000
26.50	15.1890	115.2200	238.7023	6.5569	-6.2822	1.9100	18.0000
26.52	15.1720	116.4700	242.5721	6.5590	-6.2834	1.8900	18.0000
26.54	15.1570	118.2100	247.0592	6.5612	-6.2847	1.8700	17.9111
26.56	15.0980	118.4600	251.0944	6.5633	-6.2859	1.9000	17.9111
26.58	14.8280	118.7400	246.1331	6.5655	-6.2872	1.9200	18.0000
26.60	14.7190	118.4600	239.4740	6.5676	-6.2884	1.8800	17.9111
26.62	14.5410	117.0600	234.8325	6.5698	-6.2897	2.0200	18.0000
26.64	14.3440	118.0100	231.2714	6.5720	-6.2909	1.8900	17.9111
26.66	14.0700	118.2100	229.4192	6.5741	-6.2922	1.8800	18.0000
26.68	13.7500	117.9200	228.4931	6.5763	-6.2934	1.8800	18.0000
26.70	13.3440	114.8900	227.4017	6.5784	-6.2947	1.9100	17.9111
26.72	12.9830	111.3300	225.3951	6.5806	-6.2960	1.8700	18.0000
26.74	12.4670	110.9600	227.2473	6.5827	-6.2972	1.9200	18.0000
26.76	12.2610	111.7000	227.7104	6.5849	-6.2985	1.9400	17.9111
26.78	12.0100	111.4500	228.4931	6.5870	-6.2997	1.9600	17.9111
26.80	11.9690	111.5300	228.9562	6.5892	-6.3010	1.8600	17.9111



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
26.82	12.0830	110.9200	229.4192	6.5913	-6.3022	1.8700	17.9111
26.84	12.2470	113.8300	230.4997	6.5935	-6.3035	6.0600	17.7778
26.86	12.2520	120.1000	230.3453	6.5957	-6.3047	1.9200	17.6444
26.88	12.1880	122.4300	230.3453	6.5978	-6.3060	1.9200	17.7778
26.90	12.2020	126.3600	229.5736	6.6000	-6.3072	1.9400	17.7333
26.92	12.3520	125.5800	229.2649	6.6021	-6.3085	1.9700	17.7778
26.94	12.5670	125.3400	229.8823	6.6043	-6.3097	1.9300	17.7333
26.96	12.6220	124.6000	229.8823	6.6064	-6.3110	1.9500	17.7778
26.98	12.9830	124.5600	231.5801	6.6086	-6.3123	1.9700	17.7778
27.00	13.4080	128.4900	233.4434	6.6107	-6.3135	1.9500	17.8222
27.02	13.8740	127.1400	235.6043	6.6129	-6.3148	1.9000	17.8222
27.04	14.3350	124.5200	238.2392	6.6150	-6.3160	1.9200	17.8222
27.06	14.6960	123.2900	240.2568	6.6172	-6.3173	1.9300	17.8222
27.08	14.9430	117.4700	241.4916	6.6194	-6.3185	1.9300	17.8667
27.10	15.0660	113.8700	246.9049	6.6215	-6.3198	1.9400	17.8222
27.12	14.9790	107.5200	249.3855	6.6237	-6.3210	1.9600	17.8667
27.14	14.9880	103.5900	251.8661	6.6258	-6.3223	1.9500	17.8667
27.16	14.9610	102.5200	254.7988	6.6280	-6.3235	1.9300	17.8667
27.18	14.8880	101.4200	256.8164	6.6301	-6.3248	1.9000	17.8667
27.20	14.8740	102.7700	259.9144	6.6323	-6.3261	1.9200	17.8667
27.22	14.9560	102.0700	261.6122	6.6344	-6.3273	1.8800	17.8667
27.24	14.9970	97.9400	261.1492	6.6366	-6.3286	1.9300	17.8667
27.26	15.0250	96.0900	249.2312	6.6387	-6.3298	1.9300	17.9111
27.28	15.0430	95.2300	241.3373	6.6409	-6.3311	1.9000	17.8667
27.30	15.0930	96.0500	235.6043	6.6431	-6.3323	1.9600	17.8222
27.32	15.0480	98.3900	228.6475	6.6452	-6.3336	1.8900	17.8667
27.34	15.0110	99.8600	222.6058	6.6474	-6.3348	1.9000	17.9111
27.36	14.9880	100.1100	214.4032	6.6495	-6.3361	1.8900	17.8667
27.38	14.9610	99.9400	207.5897	6.6517	-6.3373	1.8900	17.8667
27.40	14.9700	96.6700	201.8567	6.6538	-6.3386	1.9500	17.8667
27.42	14.9330	95.1100	195.8261	6.6560	-6.3398	1.9100	17.8667
27.44	14.8740	94.7000	196.5978	6.6581	-6.3411	1.9300	17.8667
27.46	14.8920	94.9500	198.3067	6.6603	-6.3424	1.9800	17.9111
27.48	14.8920	94.3700	201.8567	6.6624	-6.3436	1.8900	17.8667
27.50	14.9020	95.9300	206.6636	6.6646	-6.3449	1.8700	17.9111
27.52	14.9240	96.7500	213.6314	6.6668	-6.3461	1.9100	17.9111
27.54	14.9290	98.2200	219.3534	6.6689	-6.3474	1.9000	17.8667
27.56	15.0110	100.2300	225.8582	6.6711	-6.3486	1.8800	17.8667
27.58	15.0930	100.9700	229.4192	6.6732	-6.3499	1.8600	17.8667
27.60	15.1940	100.6400	246.5962	6.6754	-6.3511	1.9800	17.8667
27.62	15.3130	100.6800	254.7988	6.6775	-6.3524	1.9300	17.8667
27.64	15.3900	100.4800	261.3035	6.6797	-6.3536	1.8700	17.8222
27.66	15.4590	100.8800	266.7278	6.6818	-6.3549	1.8700	17.9111
27.68	15.5640	101.4200	268.8887	6.6840	-6.3561	1.8900	17.9111
27.70	15.7100	102.3200	270.4433	6.6862	-6.3574	1.9200	17.9111
27.72	15.7790	102.6900	269.3518	6.6883	-6.3587	1.8900	17.9111



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MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
27.74	15.8880	103.1000	257.2794	6.6905	-6.3599	1.8400	17.8667
27.76	15.9750	103.8300	252.1748	6.6926	-6.3612	2.0700	17.9111
27.78	16.1080	104.3300	249.3855	6.6948	-6.3624	1.8900	17.9111
27.80	16.1760	104.6900	248.7681	6.6969	-6.3637	1.8900	17.8667
27.82	16.2220	105.2300	249.0768	6.6991	-6.3649	1.8300	17.8222
27.84	16.2990	106.1700	252.4835	6.7012	-6.3662	1.1800	17.4667
27.86	16.4270	106.4100	254.3247	6.7034	-6.3674	1.9300	17.4667
27.88	16.4460	107.1500	248.2720	6.7055	-6.3687	1.9100	17.3778
27.90	16.4180	107.8500	245.6701	6.7077	-6.3699	1.9500	17.3778
27.92	16.2770	108.7100	234.5238	6.7099	-6.3712	1.9700	17.4667
27.94	16.1300	109.4000	229.1105	6.7120	-6.3724	1.9500	17.5111
27.96	15.9380	110.7200	227.8647	6.7142	-6.3737	1.9400	17.4667
27.98	15.8520	111.2100	227.7104	6.7163	-6.3750	1.9800	17.4667
28.00	15.7690	111.3700	229.5736	6.7185	-6.3762	1.9100	17.5111
28.02	15.7010	112.1900	233.2890	6.7206	-6.3775	1.9000	17.5111
28.04	15.6280	112.2300	237.0044	6.7228	-6.3787	1.9100	17.4667
28.06	15.5960	112.5600	242.1090	6.7249	-6.3800	1.9300	17.4667
28.08	15.5730	112.4800	252.1748	6.7271	-6.3812	1.9400	17.4667
28.10	15.5590	112.4400	255.2729	6.7292	-6.3825	1.9600	17.5111
28.12	15.5730	112.5200	255.1185	6.7314	-6.3837	1.9400	17.5556
28.14	15.5910	112.5600	254.1814	6.7336	-6.3850	1.9700	17.5556
28.16	15.6830	112.3500	253.2553	6.7357	-6.3862	1.8900	17.5111
28.18	15.7880	112.0700	249.5399	6.7379	-6.3875	1.9000	17.5556
28.20	15.9110	111.6600	247.5333	6.7400	-6.3888	1.8900	17.5556
28.22	16.1210	110.8800	238.2392	6.7422	-6.3900	1.9000	17.5556
28.24	16.2170	110.7600	233.1347	6.7443	-6.3913	1.9100	17.6000
28.26	16.2720	110.6700	230.9627	6.7465	-6.3925	1.9000	17.5111
28.28	16.2990	110.5900	230.9627	6.7486	-6.3938	1.9300	17.6000
28.30	16.2990	110.4300	232.6716	6.7508	-6.3950	1.9500	17.5556
28.32	16.2630	110.3500	236.6957	6.7529	-6.3963	1.8800	17.6000
28.34	16.2030	110.7600	240.8742	6.7551	-6.3975	1.8800	17.6000
28.36	16.1110	99.6600	244.1266	6.7573	-6.3988	1.8900	17.6444
28.38	15.9020	99.4000	247.0592	6.7594	-6.4000	1.9100	17.5556
28.40	15.8700	98.1200	247.8420	6.7616	-6.4013	1.9100	17.6000
28.42	15.8110	98.4700	245.6701	6.7637	-6.4025	1.8900	17.6000
28.44	15.7330	100.2300	244.2809	6.7659	-6.4038	1.9400	17.5556
28.46	15.6420	100.9300	240.2568	6.7680	-6.4051	1.9100	17.6000
28.48	15.5050	102.2800	239.1653	6.7702	-6.4063	1.8700	17.6000
28.50	15.4220	103.1800	241.6460	6.7723	-6.4076	1.8900	17.5556
28.52	15.3260	103.6700	245.9788	6.7745	-6.4088	1.8900	17.6000
28.54	15.2300	104.1200	252.0205	6.7766	-6.4101	1.8800	17.6000
28.56	15.1570	104.6100	258.9883	6.7788	-6.4113	1.8900	17.6000
28.58	15.0200	104.0400	267.8083	6.7810	-6.4126	1.8400	17.6000
28.60	14.9060	103.8700	269.8148	6.7831	-6.4138	2.0200	17.6444
28.62	14.6180	102.9300	268.7344	6.7853	-6.4151	1.9000	17.7333
28.64	14.4720	103.2600	266.4191	6.7874	-6.4163	1.8700	17.6444



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Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
28.66	14.3170	103.2600	261.9209	6.7896	-6.4176	1.8600	17.7333
28.68	14.1340	102.7300	257.2794	6.7917	-6.4188	1.8900	17.7333
28.70	13.9560	102.1100	252.4835	6.7939	-6.4201	1.9300	17.6444
28.72	13.7410	101.3800	248.7681	6.7960	-6.4214	1.9000	17.6444
28.74	13.5360	101.0900	245.9788	6.7982	-6.4226	1.8200	17.7333
28.76	13.3710	100.1100	243.3438	6.8003	-6.4239	2.0800	17.7333
28.78	13.2250	99.4500	240.1025	6.8025	-6.4251	1.8900	17.7333
28.80	13.1060	98.7100	233.2890	6.8047	-6.4264	1.8900	17.6444
28.82	13.0420	97.6900	226.3212	6.8068	-6.4276	1.8500	17.6444
28.84	12.9690	96.9500	179.4209	6.8090	-6.4289	2.2900	17.2889
28.86	12.9510	96.0500	179.7296	6.8111	-6.4301	1.9200	17.2444
28.88	12.9600	95.2300	195.5174	6.8133	-6.4314	1.9500	17.2889
28.90	12.9970	94.4900	211.1508	6.8154	-6.4326	1.9300	17.3333
28.92	13.1430	92.8200	221.0623	6.8176	-6.4339	1.9300	17.3333
28.94	13.1880	91.6300	228.6475	6.8197	-6.4351	1.9500	17.2889
28.96	13.2520	91.0100	233.4434	6.8219	-6.4364	1.9700	17.2889
28.98	13.3210	90.1500	236.6957	6.8241	-6.4377	1.8600	17.2889
29.00	13.3850	89.5000	237.6218	6.8262	-6.4389	1.8700	17.3333
29.02	13.4260	88.9700	239.4740	6.8284	-6.4402	1.9100	17.2889
29.04	13.4850	88.6400	243.0351	6.8305	-6.4414	1.9300	17.2889
29.06	13.5170	88.2300	247.5333	6.8327	-6.4427	1.9300	17.3333
29.08	13.5770	88.3100	252.3292	6.8348	-6.4439	1.9200	17.3333
29.10	13.6090	88.3500	256.6620	6.8370	-6.4452	1.9600	17.3333
29.12	13.6680	89.0500	258.6796	6.8391	-6.4464	1.9300	17.3333
29.14	13.7180	89.3700	260.0687	6.8413	-6.4477	1.8800	17.3333
29.16	13.7690	90.1900	259.4513	6.8434	-6.4489	1.8700	17.3333
29.18	13.8050	92.4900	260.5318	6.8456	-6.4502	1.8900	17.3333
29.20	13.8280	93.3100	271.8324	6.8478	-6.4515	1.8900	17.3333
29.22	13.8740	94.5400	276.1652	6.8499	-6.4527	1.8700	17.2889
29.24	13.9880	95.7600	278.8002	6.8521	-6.4540	1.9100	17.3333
29.26	14.1520	97.1200	279.1089	6.8542	-6.4552	1.9100	17.3778
29.28	14.3210	98.3500	282.2069	6.8564	-6.4565	1.9100	17.3333
29.30	14.5180	99.7400	285.6137	6.8585	-6.4577	1.8500	17.3333
29.32	14.6640	100.8400	283.7504	6.8607	-6.4590	1.8700	17.3333
29.34	14.8010	102.0300	281.2698	6.8628	-6.4602	1.8700	17.3778
29.36	14.9790	102.8100	282.9787	6.8650	-6.4615	1.9000	17.3778
29.38	15.2030	103.7900	289.3291	6.8671	-6.4627	1.9100	17.3333
29.40	15.5180	104.4900	293.8163	6.8693	-6.4640	1.8800	17.4667
29.42	15.8200	105.0600	298.1491	6.8715	-6.4652	1.9600	17.3778
29.44	16.1080	106.1700	298.9208	6.8736	-6.4665	1.8600	17.3778
29.46	16.5780	107.0700	299.3839	6.8758	-6.4678	1.8900	17.4667
29.48	16.7840	107.7700	295.6685	6.8779	-6.4690	1.8600	17.4667
29.50	17.0120	108.6700	291.6443	6.8801	-6.4703	1.8700	17.4667
29.52	17.2130	109.2400	288.3920	6.8822	-6.4715	1.8600	17.4667
29.54	17.3140	110.7200	291.3356	6.8844	-6.4728	1.9000	17.5111
29.56	17.3770	112.3100	296.9143	6.8865	-6.4740	1.8500	17.4667



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Committente	Località	Data	CPTU 02
MC Engineering Srl	Ferrara	31/03/2014	
Tecnico	Cantiere	Preforo	Livello Falda
PANCANI-CARBONELLA	Boicelli/Michelini		1.5

prof. (m)	punta (Mpa)	laterale (kPa)	u (kPa)	incli a (°)	incli b (°)	vel (cm/sec)	temp. (°)
29.58	17.3230	113.7500	299.8469	6.8887	-6.4753	2.0000	17.5111
29.60	17.2540	115.0600	301.8645	6.8908	-6.4765	1.8600	17.5111
29.62	17.2130	116.5300	300.1556	6.8930	-6.4778	1.8500	17.5111
29.64	17.1950	117.4700	299.4059	6.8952	-6.4790	1.8800	17.5111



Report indagini geofisiche

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1. PREMESSE

Nell'area ubicata nel Comune di Ferrara in Via Michelini, in corrispondenza del ponte che supera il Canale Boicelli, sono state eseguite le seguenti prove geofisiche:

- N° 1 Array lineare con acquisizione attiva e passiva
- N°2 letture a stazione singola HVSR



Figura 1 – Documentazione fotografica del profilo sismico e delle prove HVSR



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2. DATI SPERIMENTALI TECNICA MASW, REMI E RISULTATI OTTENUTI

Strumentazione utilizzata: Sismografo digitale 24 canali – 24 bit modello Soil Spy Rosina (Micromed)

Configurazione array lineare:

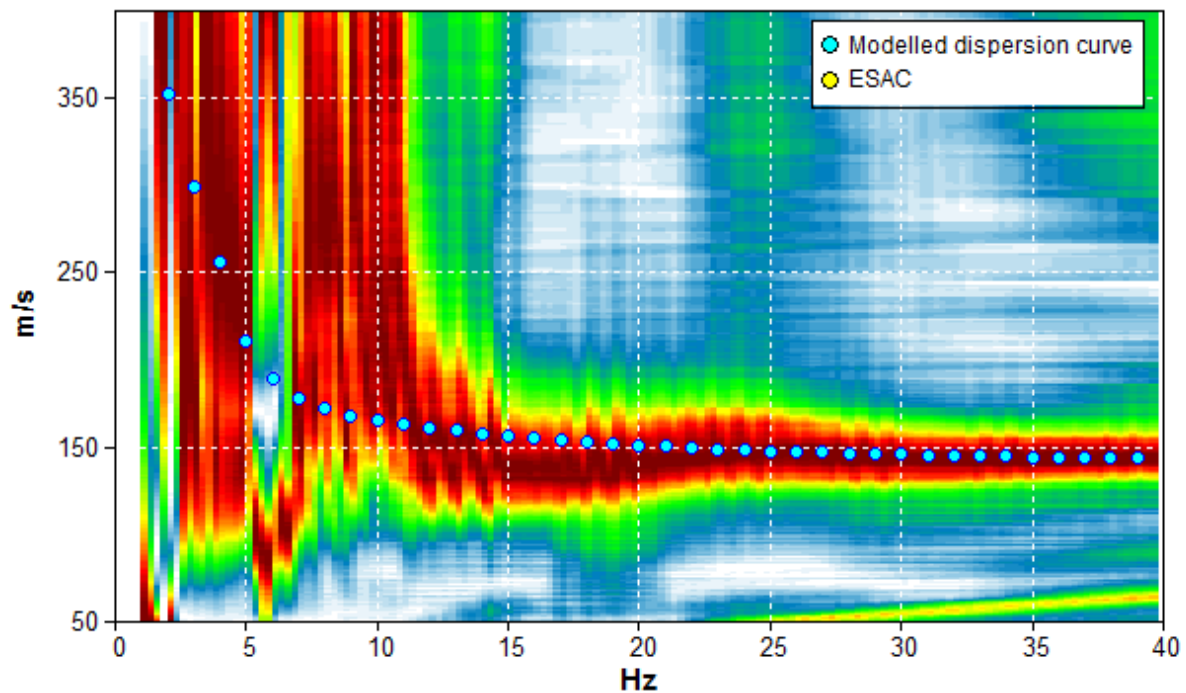
Numero di geofoni verticali (freq. Propria 4.5 Hz)..... 9

Spaziatura tra i geofoni:..... 3.00 m (MASW REMI)

Lunghezza traccia acquisita..... 1 sec (MASW)

Lunghezza traccia acquisita..... 8 min (passiva)

Figura 2 - Spettro di velocità di fase dell'onda di Rayleigh per il profilo sismico eseguito in array





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3. DATI SPERIMENTALI MISURE HVSR E RISULTATI

Strumento: TROMINO MODELLO 3G
Durata registrazione: 0h20'00".
Freq. campionamento: 128 Hz
Lunghezza finestre: 20 s
Tipo di lisciamento: Triangular window
Lisciamento: 10%

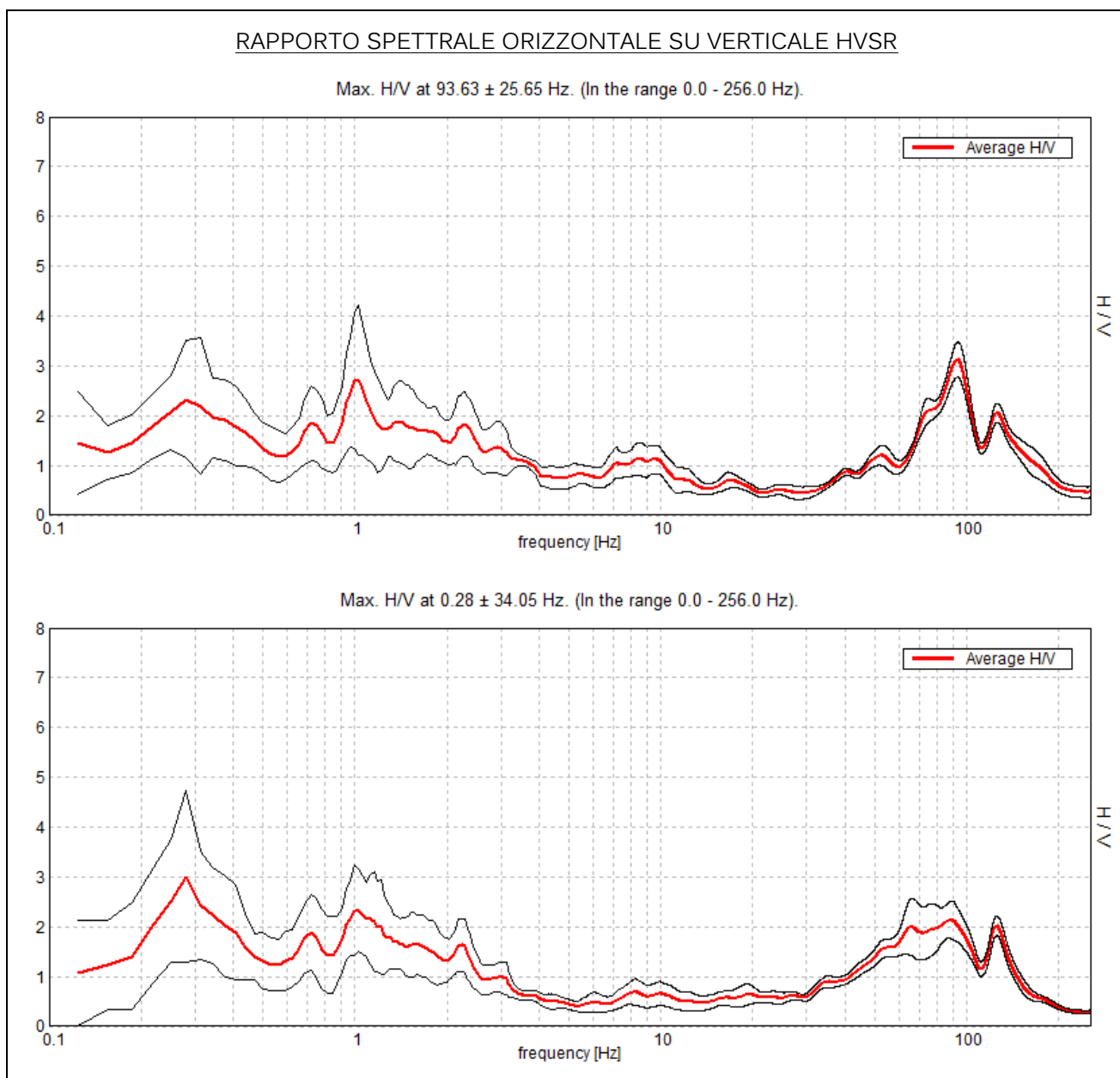


Figura 3– Curva H/V (HVSR) registrata nel sito in esame e serie temporale considerata nell'analisi.



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H/V SPERIMENTALE vs. H/V SINTETICO

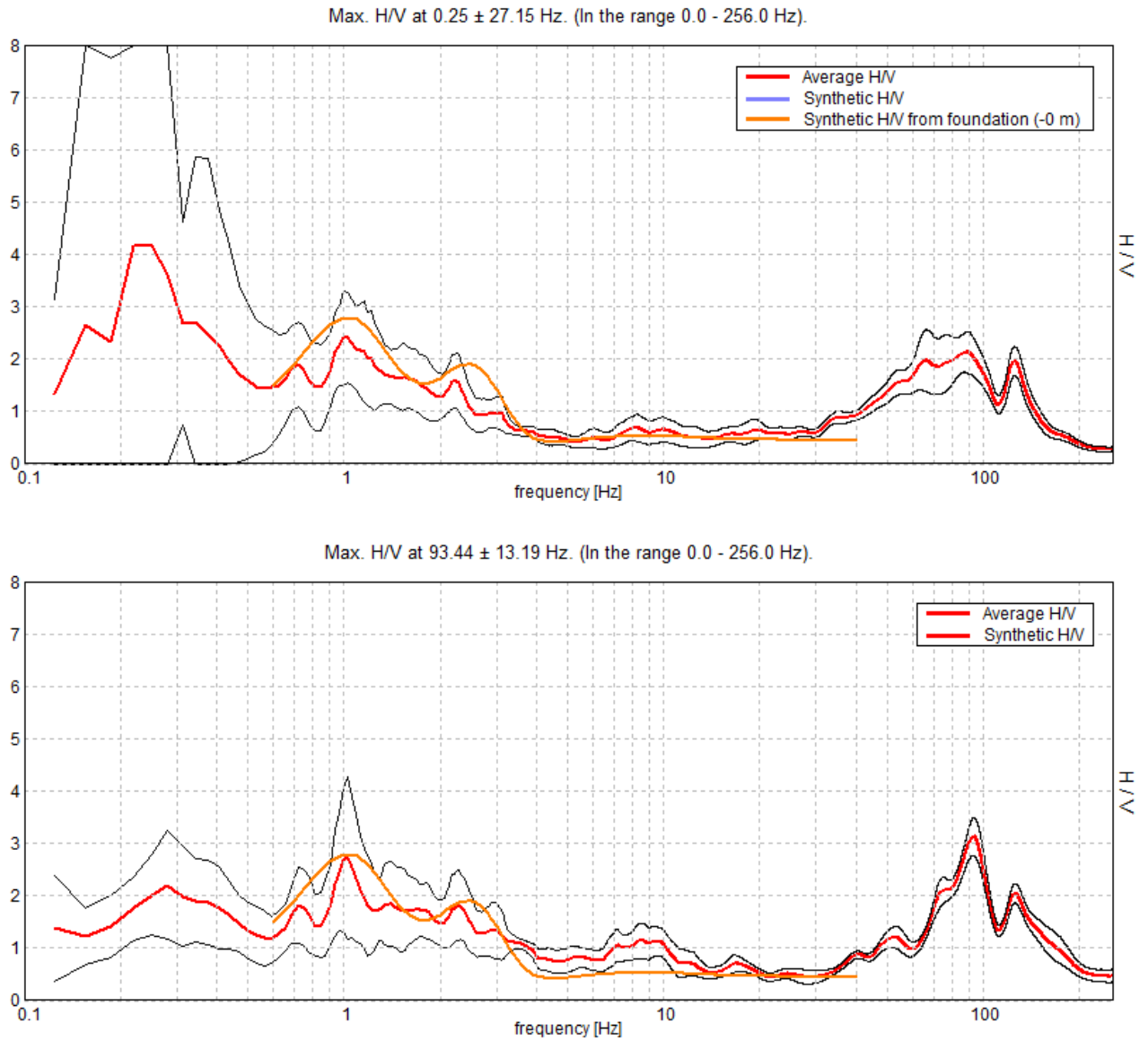


Figura 4– confronto tra curva HVSR sperimentale registrata nel sito e curva teorica (blu) relativa al modello di sottosuolo proposto per il sito.



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4. MODELLO DI SOTTOSUOLO

Depth at the bottom of the layer [m]	Thickness [m]	Vs [m/s]	Poisson ratio
2.50	2.50	150	0.43
5.00	2.50	160	0.49
15.00	10.00	180	0.49
23.00	8.00	240	0.49
31.00	8.00	300	0.49
86.00	55.00	340	0.49
inf.	inf.	500	0.49

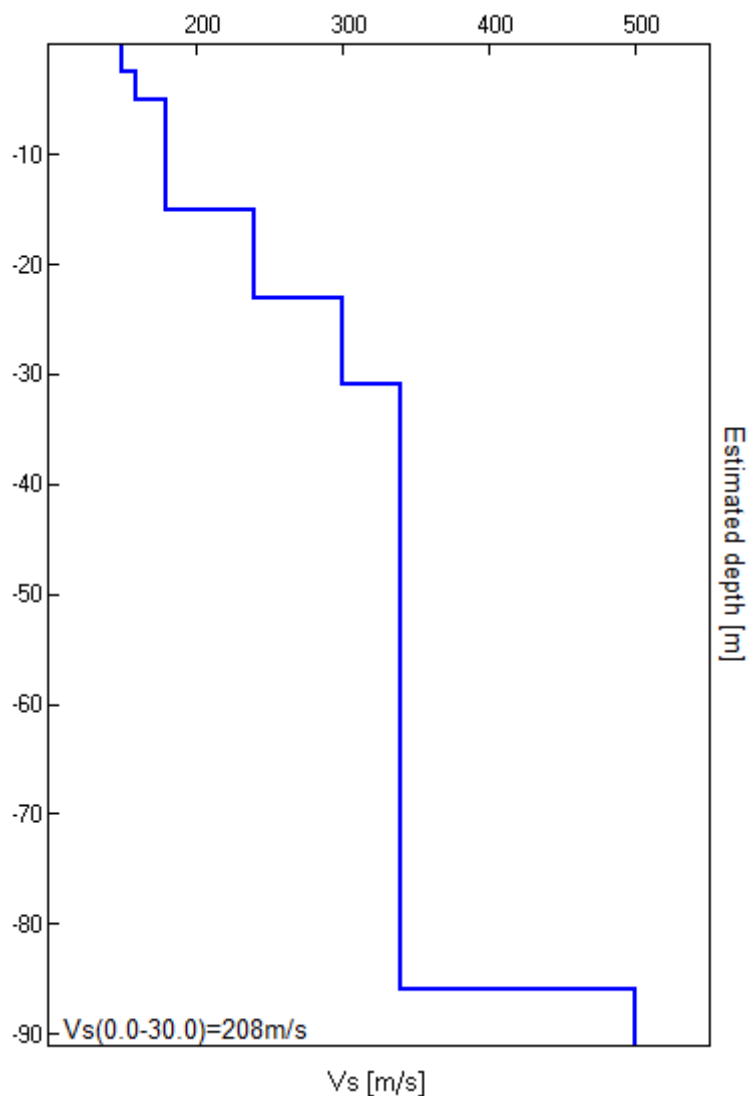


Figura 5-Modello di velocità delle onde di taglio S derivato da fit congiunto con acquisizione attiva, passiva e tecnica H/V



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5. CONCLUSIONI

L'analisi congiunta delle tecniche di acquisizione utilizzate, ha permesso sia di ricostruire il profilo verticale di velocità delle onde S nel sito in esame, sia di individuare la presenza di contrasti di impedenza-rigidezza nel sottosuolo medesimo. Il profilo sismico e la relativa elaborazione ha permesso di ricostruire il modello delle velocità delle onde di taglio fino ad una profondità di circa 18-20 m dal piano campagna. L'estensione in profondità è stata eseguita utilizzando l'analisi congiunta con le acquisizioni HVSR.

La V_{s30} [m/s] dalla quota del piano campagna su cui è stato eseguito il profilo è risultata pari a 208 m/s. L'incertezza sul valore calcolato di V_{s30} è dell'ordine del 20% (cfr. Mulargia e Castellaro, 2009, Seism. Res. Lett., 80, 985-989).

I valori di velocità delle onde di taglio S nei primi 30 m di profondità, secondo il modello di sottosuolo proposto dallo scrivente, sono caratteristici di materiali di rigidezza da bassa a media.