

**Supplementary material:**

**Table S1.** List of soil profiles and horizons, gypsum values, and Soil Organic Carbon calculations (including, where applicable, the pedotransfer function for calculating bulk densities).

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:									SOCDi	Σ SOCDi
	horizon		mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)								
		mg·g <sup>-1</sup>		g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
BG0044	Az	0	12.7	1.74	0.01	10									21.9	80.80	
BG0044	Btnyz	1	7.7	1.86	0.01	14									19.9		
BG0044	Btnyg1	30	3.2	1.91	0.01	16									9.7		
BG0044	Btnyg2	0	1.8	1.89	0.00	27									9.2		
BG0044	Bkg	0	1.4	1.94	0.00	33									9.0		
BG0044	Bkg1	0	1.1	1.99	0.01	28									6.1		
BG0044	Bkg2	0	0.6	1.93	0.05	47									5.2		
EG0005	Ak	6	0.1	1.60	0.25	16									0.2	1.13	
EG0005	1Ck	10	0.3	1.70	0.49	24									0.6		
EG0005	2Ck	15	0.0	1.60	0.48	35									0.0		
EG0005	3Cky	21	0.1	1.60	0.51	40									0.3		
EG0007	Av	1	0.7		0.08	2	44	1.398	0.138	0.070	0.0097	44	0.352	1.74	0.2	0.53	
EG0007	Rzk	13	0.1		0.80	23	54	1.398	0.138	0.010	0.0014	54	0.432	1.83	0.1		
EG0007	Rkz	54	0.4		0.90	30	52	1.398	0.138	0.040	0.0055	52	0.416	1.81	0.2		
EG0012	Ak	0	0.3	1.30	0.13	6									0.2	0.45	
EG0012	Bz	29	0.3	1.20	0.02	7									0.2		

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:									SOCDi	Σ SOCDi
	horizon		mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	BD = 1.398-0.138(SOC) + 0.008(Sand)									
								cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
EG0017	Aky	162	0.1	1.40	0.04	7	86	1.398	0.138	0.010	0.0014	86	0.688	2.08	0.1	6.16	
EG0017	Cky	156	0.1	1.30	0.01	18	90	1.398	0.138	0.010	0.0014	90	0.72	2.12	0.2		
EG0017	2Cmz	159	0.1		0.01	10	58	1.398	0.138	0.010	0.0014	58	0.464	1.86	0.2		
EG0017	3Ckz	54	2.0	1.60	0.03	15	90	1.398	0.138	0.200	0.0276	90	0.720	2.09	4.7		
EG0017	3Ckz	35	0.2		0.19	10	76	1.398	0.138	0.020	0.0028	76	0.608	2.00	0.3		
EG0017	Cyz	159	0.1		0.19	40	82	1.398	0.138	0.010	0.0014	82	0.656	2.05	0.7		
IL0008	A	0	6.1		0.70	22	31	1.398	0.138	0.610	0.0842	31	0.248	1.56	6.3	25.45	
IL0008	B2ca	0	5.0		0.30	38	14	1.398	0.138	0.500	0.0690	14	0.112	1.44	19.2		
IL0008	B3cs	230	0.0		0.05	11	18	1.398	0.138	0.000	0.0000	18	0.144	1.54	0.0		
IL0029	?	81	5.5		0.30	10	58	1.398	0.138	0.550	0.0759	58	0.464	1.79	6.9	13.16	
IL0029	?	31	1.7		0.10	20	85	1.398	0.138	0.170	0.0235	85	0.680	2.05	6.3		
IL0029	?	14	0.0		0.50	70	82	1.398	0.138	0.000	0.0000	82	0.656	2.05	0.0		
IL0031	A	4	1.1		0.20	3	47	1.398	0.138	0.110	0.0152	47	0.376	1.76	0.5	5.69	
IL0031	B21	8	0.8		0.20	5	56	1.398	0.138	0.080	0.0110	56	0.448	1.83	0.6		
IL0031	B22cs	195	0.8		0.20	14	44	1.398	0.138	0.080	0.0110	44	0.352	1.74	1.6		
IL0031	B23cs	148	1.0		0.20	16	65	1.398	0.138	0.100	0.0138	65	0.520	1.90	2.4		
IL0031	C11cs	135	1.1		0.80	15	72	1.398	0.138	0.110	0.0152	72	0.576	1.96	0.6		
IL0031	C12	71	0.0		0.80	23	83	1.398	0.138	0.000	0.0000	83	0.664	2.06	0.0		
IL0032	A1	0	0.7		0.05	2	38	1.398	0.138	0.070	0.0097	38	0.304	1.69	0.2	9.16	
IL0032	A3	14	0.7		0.10	4	53	1.398	0.138	0.070	0.0097	53	0.424	1.81	0.5		
IL0032	B2cs	189	1.5		0.20	15	48	1.398	0.138	0.150	0.0207	48	0.384	1.76	3.2		

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	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)									
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
IL0032	B31cs	205	1.6		0.30	17	47	1.398	0.138	0.160	0.0221	47	0.376	1.75	3.3		
IL0032	B32	152	1.9		0.50	12	45	1.398	0.138	0.190	0.0262	45	0.360	1.73	2.0		
IL0032	C1cs	245	0.0		0.50	44	25	1.398	0.138	0.000	0.0000	25	0.200	1.60	0.0		
IQ0001	Ah	11	5.4		0.01	6	30	1.398	0.138	0.540	0.0745	30	0.240	1.56	5.0	22.21	
IQ0001	Cy1	600	2.5		0.01	14	32	1.398	0.138	0.250	0.0345	32	0.256	1.62	5.6		
IQ0001	Cy2	482	1.5		0.05	30	35	1.398	0.138	0.150	0.0207	35	0.280	1.66	7.1		
IQ0001	Cy3	567	0.6		0.10	30	44	1.398	0.138	0.060	0.0083	44	0.352	1.74	2.8		
IQ0001	Cy4	551	0.4		0.20	30	44	1.398	0.138	0.040	0.0055	44	0.352	1.74	1.7		
IQ0001	Cy5	488	0.0		0.70	60	46	1.398	0.138	0.000	0.0000	46	0.368	1.77	0.0		
JO0014	A	176	4.7	1.44	0.00	20									13.5	41.26	
JO0014	Bw1	608	1.7	1.22	0.00	7									1.5		
JO0014	Bw2	697	1.0	1.36	0.00	35									4.8		
JO0014	Bym	599	1.4	1.46	0.00	22									4.5		
JO0014	Ck1	227	1.7	0.52	0.00	16									1.4		
JO0014	Ck2	25	4.0	0.61	0.00	44									10.7		
JO0014	C	42	3.3	0.63	0.10	26									4.9		
JO0047	?	14	7.2		0.30	18	18	1.398	0.138	0.720	0.0994	18	0.144	1.44	13.1	13.09	
JO0047	?	18	0.0		0.25	32	15	1.398	0.138	0.000	0.0000	15	0.120	1.52	0.0		
JO0047	?	13	0.0		0.02	50	14	1.398	0.138	0.000	0.0000	14	0.112	1.51	0.0		
OM0003	Aky	57	0.1		0.37	18	71	1.398	0.138	0.010	0.0014	71	0.568	1.96	0.2	1.07	
OM0003	C1y	57	0.1		0.30	42	74	1.398	0.138	0.010	0.0014	74	0.592	1.99	0.6		

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	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)									
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
OM0003	C1y	101	0.1		0.58	30	87	1.398	0.138	0.010	0.0014	87	0.696	2.09	0.3		
OM0004	A1z	116	17.6		0.36	4	48	1.398	0.138	1.760	0.2429	48	0.384	1.54	6.9	48.39	
OM0004	A2z	0	9.8		0.37	24	32	1.398	0.138	0.980	0.1352	32	0.256	1.52	22.5		
OM0004	C1	0	3.7		0.15	32	67	1.398	0.138	0.370	0.0511	67	0.536	1.88	18.9		
OM0004	C2kg	0	0.0		0.36	35	28	1.398	0.138	0.000	0.0000	28	0.224	1.62	0.0		
OM0004	C3g	0	0.0		0.33	5	23	1.398	0.138	0.000	0.0000	23	0.184	1.58	0.0		
OM0006	Ap	78	3.1		0.36	20	73	1.398	0.138	0.310	0.0428	73	0.584	1.94	7.7	26.27	
OM0006	C1y	129	1.4		0.44	25	85	1.398	0.138	0.140	0.0193	85	0.680	2.06	4.0		
OM0006	C2y	116	4.9		0.25	20	81	1.398	0.138	0.490	0.0676	81	0.648	1.98	14.5		
OM0006	C3y	108	0.0		0.51	25	86	1.398	0.138	0.000	0.0000	86	0.688	2.09	0.0		
OM0006	C4y	9	0.0		0.28	20	86	1.398	0.138	0.000	0.0000	86	0.688	2.09	0.0		
OM0006	C5y	24	0.0		0.44	50	83	1.398	0.138	0.000	0.0000	83	0.664	2.06	0.0		
SO0012	A	0	6.8	1.69	0.00	16									18.4	169.59	
SO0012	Bw1	0	5.1	1.52	0.01	23									17.7		
SO0012	Bw2	30	4.3	1.33	0.01	23									13.0		
SO0012	Bw3	10	6.0	1.61	0.00	45									43.5		
SO0012	Bw4	0	4.9	1.69	0.01	94									77.1		
SO0015	Ap1	0	8.5		0.01	10	7	1.398	0.138	0.850	0.1173	7	0.056	1.34	11.2	101.13	
SO0015	Ap2	0	6.7	1.62	0.00	10	9	1.398	0.138	0.670	0.0925	9	0.072	1.38	9.2		
SO0015	AB	0	6.2	1.63	0.01	17	8	1.398	0.138	0.620	0.0856	8	0.064	1.38	14.4		
SO0015	Bw1	40	4.4	1.65	0.01	53	12	1.398	0.138	0.440	0.0607	12	0.096	1.43	33.1		

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	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)									
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
SO0015	Bw2	30	3.7	1.69	0.00	20	11	1.398	0.138	0.370	0.0511	11	0.088	1.43	10.6		
SO0015	Nk	40	3.2	1.75	0.01	50	9	1.398	0.138	0.320	0.0442	9	0.072	1.43	22.6		
SY0026	Ap	1	2.9		0.25	20	52	1.398	0.138	0.290	0.0400	52	0.416	1.77	7.7	29.17	
SY0026	C1	0	1.8		0.28	35	61	1.398	0.138	0.180	0.0248	61	0.488	1.86	8.4		
SY0026	C2	80	1.1		0.65	45	89	1.398	0.138	0.110	0.0152	89	0.712	2.09	3.6		
SY0026	C3	110	1.2		0.75	15	62	1.398	0.138	0.120	0.0166	62	0.496	1.88	0.8		
SY0026	C4	60	1.1		0.02	45	47	1.398	0.138	0.110	0.0152	47	0.376	1.76	8.5		
SY0046	A	0	5.3		0.15	12	41	1.398	0.138	0.530	0.0731	41	0.328	1.65	8.9	21.02	
SY0046	B1ca	0	1.8		0.05	28	27	1.398	0.138	0.180	0.0248	27	0.216	1.59	7.6		
SY0046	B2ca	230	1.3		0.02	22	27	1.398	0.138	0.130	0.0179	27	0.216	1.60	4.5		
SY0058	?	0	6.2	1.40	0.04	15									12.5	53.92	
SY0058	?	0	4.3	1.41	0.10	15									8.2		
SY0058	?	0	4.2	1.42	0.10	48									25.8		
SY0058	?	70	3.3	1.43	0.28	22									7.5		
SY0060	Ap	0	10.1	1.44	0.01	18									25.9	64.78	
SY0060	B21ca	0	6	1.47	0.01	15									13.1		
SY0060	B22ca	1	4.2	1.46	0.01	24									14.6		
SY0060	Ccs	800	1.3	1.50	0.01	58									11.2		
SY0063	C1	1	7.4		0.00	1	55	1.398	0.138	0.740	0.1021	55	0.440	1.74	1.3	42.43	
SY0063	C2cs	890	2.7		0.00	39	68	1.398	0.138	0.270	0.0373	68	0.544	1.90	20.1		

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	horizon		mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	BD = 1.398-0.138(SOC) + 0.008(Sand)									
								cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
SY0063	C3cs	910	2.3		0.00	30	73	1.398	0.138	0.230	0.0317	73	0.584	1.95	13.5		
SY0063	C4cs	830	1.3		0.00	30	72	1.398	0.138	0.130	0.0179	72	0.576	1.96	7.6		
US0011	Ap	0	14.0		0.00	15	4	1.398	0.138	1.400	0.1932	4	0.032	1.24	26.0	121.22	
US0011	Bw	0	10.4		0.00	13	4	1.398	0.138	1.040	0.1435	4	0.032	1.29	17.4		
US0011	Bk	0	7.6		0.00	28	2	1.398	0.138	0.760	0.1049	2	0.016	1.31	27.9		
US0011	By	80	4.6		0.01	30	8	1.398	0.138	0.460	0.0635	8	0.064	1.40	19.1		
US0011	C	30	3.3		0.01	66	10	1.398	0.138	0.330	0.0455	10	0.080	1.43	30.9		
US0132	A	0	7.2	1.40	0	10	38								10.1	48.66	
US0132	By	60	2.3	1.41	0	43	39								13.9		
US0132	C1	30	2.9	1.57	0	18	3								8.2		
US0132	C2	20	1.3	1.53	0	64	33								12.7		
US0132	2C	60	3.6	1.52	0	5	4								2.7		
US0132	3C	20	0.2	1.51	0	43	40								1.0		
US0134	Ap	0	8.7	1.69	0	11	32	1.398	0.138	0.870	0.1201	32	0.256	1.53	14.7	140.71	
US0134	B	0	6.9	1.77	0	15	28	1.398	0.138	0.690	0.0952	28	0.224	1.53	15.8		
US0134	Bk	1	5.6	1.79	0	17	27	1.398	0.138	0.560	0.0773	27	0.216	1.54	14.6		
US0134	By1	1	5.3		0	15	23	1.398	0.138	0.530	0.0731	23	0.184	1.51	12.0		
US0134	By2	10	4.5	1.88	0	42	18	1.398	0.138	0.450	0.0621	18	0.144	1.48	28.0		
US0134	2C1	1	4.8	1.59	0	48	21	1.398	0.138	0.480	0.0662	21	0.168	1.50	34.6		
US0134	2C2	10	2.4		0	50	49	1.398	0.138	0.240	0.0331	49	0.392	1.76	21.1		
US0135	A	0	29.8	1.62	0.02	6	8	1.398	0.138	2.980	0.4112	8	0.064	1.05	18.4	139.62	

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	horizon		mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)								
		mg·g <sup>-1</sup>		g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
US0135	B1	0	11.0		0.03	21	6	1.398	0.138	1.100	0.1518	6	0.048	1.29	29.0		
US0135	B2		0	9.4	1.79		0.02	18	5	1.398	0.138	0.940	0.1297	5	0.040		1.31
US0135	B3	50	8.4		0.03	17	4	1.398	0.138	0.840	0.1159	4	0.032	1.31	18.2		
US0135	By1	210	6.4	1.67	0.05		26	3	1.398	0.138	0.640	0.0883	3	0.024	1.33		21.1
US0135	By2	110	5.3		0.02	27	2	1.398	0.138	0.530	0.0731	2	0.016	1.34	18.8		
US0135	By3	230	3.6	1.82	0.00		25	4	1.398	0.138	0.360	0.0497	4	0.032	1.38		12.4
US0153	A	0	14.3		0	10	22	1.398	0.138	1.430	0.1973	22	0.176	1.38	19.7	116.65	
US0153	Bw	0	9.3		0	18	15	1.398	0.138	0.930	0.1283	15	0.120	1.39	23.3		
US0153	Bk1	0	6.3		0	25	9	1.398	0.138	0.630	0.0869	9	0.072	1.38	21.8		
US0153	Bk2	0	8.6		0	23	2	1.398	0.138	0.860	0.1187	2	0.016	1.30	25.6		
US0153	Bky	70	2.5		0	15	5	1.398	0.138	0.250	0.0345	5	0.040	1.40	5.3		
US0153	BC	50	2.5		0	61	2	1.398	0.138	0.250	0.0345	2	0.016	1.38	21.0		
US0163	E	0	15.0	1.41	0	5	13	1.398	0.138	1.500	0.2070	13	0.104	1.30	9.7	95.53	
US0163	Bt	0	8.0	1.55	0	18		6	1.398	0.138	0.800	0.1104	6	0.048	1.34		19.2
US0163	Btz	20	5.0		0	41		4	1.398	0.138	0.500	0.0690	4	0.032	1.36		27.9
US0163	Bz	20	3.0		0	40		7	1.398	0.138	0.300	0.0414	7	0.056	1.41		17.0
US0163	Byz	10	3.0	1.95	0	51		8	1.398	0.138	0.300	0.0414	8	0.064	1.42		21.7
US0165	A	0	15.0	1.55	0	8	5	1.398	0.138	1.500	0.2070	5	0.040	1.23	14.8	83.34	
US0165	B1	0	7.0		0	18	4	1.398	0.138	0.700	0.0966	4	0.032	1.33	16.8		
US0165	B2	1	5.0	1.91	0	63	3	1.398	0.138	0.500	0.0690	3	0.024	1.35	42.6		
US0165	C	20	2.0		0	33	2	1.398	0.138	0.200	0.0276	2	0.016	1.39	9.2		

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:									SOCDi	Σ SOCDi
	horizon		mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)								
		mg·g <sup>-1</sup>		g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
US0199	Ap	0	12.9	1.60	0.01	13	16								26.6	226.41	
US0199	Bt1	0	11.3	1.61	0.00	20	14										
US0199	Bt2	0	6.3	1.64	0.00	26	23										
US0199	Bk	0	5.2	1.80	0.00	31	6										
US0199	C11	150	4.1	1.48	0.01	42	9										
US0199	C12	60	5.1	1.64	0.01	13	8										
US0199	C21	20	4.8	1.62	0.00	38	8										
US0199	C32	10	4.4	1.65	0.00	30	36										
US0199	C3	20	4.0	1.65	0.01	31	29										
US0206	A	0	14.1		0.00	10	33	1.398	0.138	1.410	0.1946	33	0.264	1.47	20.7	114.69	
US0206	Bt	0	9.8	1.65	0.00	13	19	1.398	0.138	0.980	0.1352	19	0.152	1.41	18.0		
US0206	Btz	240	4.0	1.51	0.00	30	16	1.398	0.138	0.400	0.0552	16	0.128	1.47	17.6		
US0206	Bz	10	3.5	1.93	0.00	31	24	1.398	0.138	0.350	0.0483	24	0.192	1.54	16.7		
US0206	C1	20	2.5	1.87	0.00	30	38	1.398	0.138	0.250	0.0345	38	0.304	1.67	12.5		
US0206	C2	0	1.7	1.68	0.00	31	51	1.398	0.138	0.170	0.0235	51	0.408	1.78	9.4		
US0206	2C	40	4.0	2.00	0.00	35	8	1.398	0.138	0.400	0.0552	8	0.064	1.41	19.7		
US0355	A	0	33.1		0.02	5	50	1.398	0.138	3.310	0.4568	50	0.400	1.34	21.8	160.25	
US0355	E	0	10		0.02	8	49	1.398	0.138	1.000	0.1380	49	0.392	1.65	13.0		
US0355	Bt1	0	7.9	1.67	0.02	15	30	1.398	0.138	0.790	0.1090	30	0.240	1.53	17.8		
US0355	Bt2	0	9	1.64	0.02	10	28	1.398	0.138	0.900	0.1242	28	0.224	1.50	13.2		
US0355	Bk	0	5.9	1.78	0.02	26	29	1.398	0.138	0.590	0.0814	29	0.232	1.55	23.3		



profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:									SOCDi	Σ SOCDi
	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)									
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
US0399	A1	0	8.6	1.80	0.00	13	7								20.1		
US0399	A2	0	7.5	1.82	0.00	25	7										
US0399	A3	0	6.2	1.84	0.00	16	6										
US0399	By1	30	5.6	1.73	0.00	22	10										
US0399	By2	20	4.3	1.66	0.00	31	10										
Villaconejos I	Ap		4.41	1.38	0.28	27									11.8	61.06	
	Byz1	*	5.28	1.35	0.28	45											
	Byz2	*	3.36	1.38	0.27	24											
	C		0.93	1.43	0.29	38											
	Cyz	*	2.61	1.40	0.12	45											
Villaconejos II	Ap		2.96	1.41	0.26	19									5.8	31.42	
	Cym	*	1.91	1.43	0.29	73											
	Cyz1	*	1.57	1.43	0.11	28											
	Cyz2	*	2.15	1.41	0.36	30											
Villaconejos IV	Ap		7.42	1.33	0.22	23									17.8	94.72	
	Byz	*	6.73	1.34	0.28	62											
	BCyz	*	5.16	1.36	0.20	35											
	Cyz	*	4.29	1.37	0.28	40											
Arganda	Ap		3.07	1.41	0.29	12									3.7	74.91	
	By	*	5.39	1.37	0.35	74											
	Cy1	*	3.89	1.40	0.37	29											
	Cy2	*	2.96	1.42	0.39	17											

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:								SOCDi	Σ SOCDi	
	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)									
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
	Cy3	*	3.94	1.40	0.35	28										10.1	
	Cy4	*	2.90	1.42	0.22	35										11.3	
Chinchón I	Ap1		15.49	1.21	0.32	10										12.7	113.83
	Ap2		11.43	1.26	0.36	12										11.1	
	By	*	6.61	1.35	0.39	103										56.0	
	Cy	*	6.55	1.35	0.30	45										27.9	
	Cy2	*	7.25	1.35	0.38	10										6.1	
Carabaña	Ap		5.05	1.39	0.37	21										9.3	66.73
	By	*	5.05	1.37	0.39	28										11.8	
	Cy1	*	4.41	1.39	0.19	33										16.4	
	Cy2	*	7.60	1.39	0.23	36										29.3	
Valdaracete	Ap		4.06	1.41	0.34	21										7.9	31.30
	Cky2	*	2.20	1.45	0.34	17										3.6	
	Cky3	*	1.04	1.51	0.30	62										6.8	
	2Cky1	*	2.38	1.42	0.36	60										13.0	
Colmenar I	Ap		3.19	1.43	0.32	14										4.4	35.33
	Cky1	*	2.90	1.42	0.26	26										7.9	
	Cky2	*	2.67	1.42	0.35	42										10.3	
	Cky3	*	2.49	1.44	0.26	48										12.7	
(*) secondary gypsum abundance: few; common																	
Castejón-SS	Ah	53	15.2	1.14	0.22	25	56.8									33.9	52.06
	Cy	79	8.2	1.07	0.17	25	59.8									18.1	

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:									SOCDi	Σ SOCDi
	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)									
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>	
Castejón-BS	Ah1	36	34.5	0.96	0.06	25	63.6								78.2	214.84	
	Ah2	27	29.2	0.99	0.01	25	62.7								71.4		
	By	84	7.4	1.01	0.00	50	61.9								37.4		
	Cy	61	10.4	1.19	0.25	30	55.1								27.8		
Castejón-FS	Ah1	6	32.9	1.02	0.03	30	61.4								97.9	190.82	
	Bwy	38	17.4	1.21	0.03	25	54.2								51.2		
	By	56	4.7	1.23	0.03	55	53.4								31.0		
	Cy	58	2.1	1.31	0.03	40	50.4								10.7		
Castejón-TS	Ah	11	20.2	1.04	0.39	15	60.6								19.3	93.13	
	By	44	9.2	1.33	0.60	45	50.0								21.9		
	Cy	27	5.4	1.12	0.57	40	57.8								10.4		
	2Az	15	8.1	1.13	0.09	50	57.5								41.5		

Porosity **45%**. i.e. for 1cm3 soil, assume RD of 2.65 g/cm3 1.00 cm3 - **0.45** cm3 = **0.55 x 2.65** g/cm3 = 1.46 g/cm3

Torre la Piedra	Ap1	2.1	17.5		0.06	10	9	1.398	0.138	1.750	0.2415	9	0.072	1.23	20.2	136.76
	Ap2	5.6	16.3		0.05	20	7	1.398	0.138	1.630	0.2249	7	0.056	1.23	38.1	
	By	61.4	5.7		0.04	30	43	1.398	0.138	0.570	0.0787	43	0.344	1.66	27.3	
	Cy1	26.6	4.5		0.06	40	15	1.398	0.138	0.450	0.0621	15	0.120	1.46	24.6	
	Cy2	11.4	3.4		0.07	60	6	1.398	0.138	0.340	0.0469	6	0.048	1.40	26.5	
Torre Fierro	Ap	0	25.6		0.15	10	17	1.398	0.138	2.560	0.3533	17	0.136	1.18	25.7	122.50
	ABk	0	14.3		0.07	20	16	1.398	0.138	1.430	0.1973	16	0.128	1.33	35.3	
	Bwk	0	8.2		0.01	40	8	1.398	0.138	0.820	0.1132	8	0.064	1.35	43.8	

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:								SOCDi	Σ SOCDi
			OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)								
	horizon	mg·g <sup>-1</sup>	mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>
	Cy	47.9	3.6		0.01	30	38	1.398	0.138	0.360	0.0497	38	0.304	1.65	17.7	
La Plana Yesosa	Ah	0	14.2		0.26	30	30	1.398	0.138	1.420	0.1960	30	0.240	1.44	45.5	112.47
	Bw	0	11.2		0.05	20	30	1.398	0.138	1.120	0.1546	30	0.240	1.48	31.6	
	By1	93.7	3.5		0.00	50	23	1.398	0.138	0.350	0.0483	23	0.184	1.53	26.8	
	By2	90.3	2.1		0.16	30	32	1.398	0.138	0.210	0.0290	32	0.256	1.63	8.6	
Colmenar II	Ap	60.6	5.2	1.23	0.19	17	48	1.398	0.138	0.520	0.0718	48	0.384	1.71	12.2	31.33
	ABy	59.6	3.7	1.59	0.22	15	44	1.398	0.138	0.370	0.0511	44	0.352	1.70	7.4	
	By	54.1	1.8	1.37	0.27	18	44	1.398	0.138	0.180	0.0248	44	0.352	1.73	4.1	
	Cy1	43.8	0.8		0.13	29	26	1.398	0.138	0.080	0.0110	26	0.208	1.59	3.2	
	Cy2	44.7	0.8		0.18	43	23	1.398	0.138	0.080	0.0110	23	0.184	1.57	4.4	
Mequinenza	Ap	17	11.0		0.34	20	32	1.398	0.138	1.100	0.1518	32	0.256	1.50	21.8	43.32
	By1	74	3.0		0.04	30	23	1.398	0.138	0.300	0.0414	23	0.184	1.54	13.3	
	By2	81	2.0		0.16	30	32	1.398	0.138	0.200	0.0276	32	0.256	1.63	8.2	
Raplee, Utah	A	13	3.8		0.18	3	56	1.398	0.138	0.380	0.0524	56	0.448	1.79	1.7	20.38
	By1	22	0.7		0.34	20	73	1.398	0.138	0.070	0.0097	73	0.584	1.97	1.8	
	By2	22	0.7	1.31	0.52	28	74	1.398	0.138	0.070	0.0097	74	0.592	1.98	1.9	
	By3	21	1.1	1.46	0.07	35	59	1.398	0.138	0.110	0.0152	59	0.472	1.85	6.6	
	By4	10	0.7	1.56	0.05	29	58	1.398	0.138	0.070	0.0097	58	0.464	1.85	3.6	
	By5	14	1		0.46	45	74	1.398	0.138	0.100	0.0138	74	0.592	1.98	4.8	
Arntz, Arizona	A	0	4.6	1.51	0.00	5	79	1.398	0.138	0.460	0.0635	79	0.632	1.97	4.5	48.99
	Bw1	0	2.7	1.53	0.00	10	80	1.398	0.138	0.270	0.0373	80	0.640	2.00	5.4	
	Bw2	0	3.1	1.51	0.00	15	65	1.398	0.138	0.310	0.0428	65	0.520	1.88	8.7	

profile CODE	genetic	gypsum	SOC stock components				pedotransfer function BULK DENSITY:								SOCDi	Σ SOCDi
	horizon	mg·g <sup>-1</sup>	OCi	BD	Gi	ti	sand	BD = 1.398-0.138(SOC) + 0.008(Sand)								
			mg·g <sup>-1</sup>	g·cm <sup>-3</sup>	decimal	cm	%	cons.1	cons.2	% SOC	c2*(%SOC)	sand	0.008*(% sand)	BD	Mg·ha <sup>-1</sup>	Mg·ha <sup>-1</sup>
	2By1	43	2.5	1.26	0.00	39	56	1.398	0.138	0.250	0.0345	56	0.448	1.81	17.7	
	2By2	32	1.6		0.00	12	50	1.398	0.138	0.160	0.0221	50	0.400	1.78	3.4	
	3CRy	28	0.8		0.03	26	48	1.398	0.138	0.080	0.0110	48	0.384	1.77	3.6	
	4CRy	31	0.4		0.00	33	46	1.398	0.138	0.040	0.0055	46	0.368	1.76	2.3	
	5CRy	12	0.5	1.71	0.00	38	48	1.398	0.138	0.050	0.0069	48	0.384	1.78	3.4	
Awall, Arizona	A	0	8.1		0.45	5	34	1.398	0.138	0.810	0.1118	34	0.272	1.56	3.5	31.96
	Bk1	0	3.9		0.33	20	50	1.398	0.138	0.390	0.0538	50	0.400	1.74	9.1	
	Bk2	0	3.5		0.49	21	50	1.398	0.138	0.350	0.0483	50	0.400	1.75	6.6	
	Bky	1	4.3		0.71	35	56	1.398	0.138	0.430	0.0593	56	0.448	1.79	7.8	
	2By	25	1.8		0.74	41	59	1.398	0.138	0.180	0.0248	59	0.472	1.85	3.5	
	3By	13	0.6		0.69	40	74	1.398	0.138	0.060	0.0083	74	0.592	1.98	1.5	