Appendix; Field and lithologic data; data listing

Appendix. Location and descriptive data

Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
A02	168	43.34567	-96.88451	09/27/04	Hobbs	Sioux Falls	Lennox	2.4	2.3	2.6	5Y	5	4	mod	loam	soft	Riding Mtn	Y	N	W old grey
A03	68	43.41869	-96.46663	09/28/04	Hobbs	Sioux Falls	Larchwood	4.7	4.6	4.9	5Y	5	4	mod	loam	soft	Riding Mtn	Y	N	W old grey
A04	35	43.46936	-95.88044	09/29/04	Hobbs	Fairmont	Little Rock	1.7	1.5	1.8	2.5Y	5	4	strong	clayey	soft	Winnipeg	Y	Y	W old grey
A05	38	43.43036	-95.27969	09/29/04	Hobbs	Fairmont	Okoboji	2.6	2.4	2.7	2.5Y	5	4	mod	loam	soft	Riding Mtn	Y	N	New Ulm
A06	209	43.45976	-94.86233	09/29/04	Hobbs	Fairmont	Estherville	4.2	4.0	4.4	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
A07	255	43.44998	-94.26572	09/30/04	Hobbs	Fairmont	Ledyard	3.8	3.7	4.0	2.5Y	4	4	strong	loam	soft	Riding Mtn	Y	N	New Ulm
A08	119	43.38568	-93.88569	09/30/04	Hobbs	Mason City	Buffalo Center	3.9	3.7	4.1	5Y	5	3	mod	loam	soft	Riding Mtn	Y	N	New Ulm
A09	241	43.28314	-93.06408	09/30/04	Hobbs	Mason City	Manly	2.0	1.8	2.1	2.5Y	5	4	weak	loam	soft	Winnipeg	Y	N	Old gray
A10	133	43.43605	-92.71145	10/01/04	Hobbs	Mason City	Stacyville	2.1	1.8	2.3	2.5Y	5	6	none	loam	soft	Winnipeg	N	N	Old gray
A11	5	43.44361	-92.30479	10/14/04	Hobbs	Mason City	Lime Springs	4.3	4.0	4.5	2.5Y	5	4	none	loam	soft	Winnipeg	N	N	Old gray
A12	126	43.32071	-91.77011	10/11/04	Hobbs	La Crosse	Decorah	5.5	5.0	6.0	10YR	5	6	none	loam	firm	Winnipeg	N	N	Old gray
A13	137	43.25087	-91.48106	10/12/04	Hobbs	La Crosse	Waukon	7.5	7.0	8.0	7.5YR	4	6	none	loam	soft	Winnipeg	N	N	Old gray
B02	118	43.64524	-96.66706	09/28/04	Hobbs	Sioux Falls	Sioux Falls	1.7	1.5	1.8	2.5Y	5	3	strong	loam	soft	Riding Mtn	Y	Y	W old grey
B03	82	43.63111	-96.32444	09/28/04	Hobbs	Sioux Falls	Beaver Creek	1.7	1.5	1.8	10YR	5	4	strong	loam	soft	Winnipeg	Y	Y	W old grey
B04	91	43.68903	-95.61295	09/29/04	Hobbs	Fairmont	Worthington	2.0	1.8	2.1	5Y	5	4	strong	loam	soft	Riding Mtn	Y	N	New Ulm
B05	240	43.67059	-95.05302	09/29/04	Hobbs	Fairmont	Lakefield	1.6	1.5	1.7	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
B06	153	43.64305	-94.87231	09/29/04	Hobbs	Fairmont	Jackson	2.0	1.8	2.1	2.5Y	5	4	strong	clayey	soft	Riding Mtn	Y	N	New Ulm
B07	233	43.54366	-94.11131	09/30/04	Hobbs	Fairmont	Blue Earth	2.6	2.4	2.7	5Y	5	3	strong	silty	soft	Riding Mtn	N	Y	New Ulm
B08	245	43.57288	-93.69843	09/30/04	Hobbs	Mason City	Kiester	0.7	0.5	0.9	2.5Y	5	5	none	silty	soft	Riding Mtn	N	N	New Ulm
B09	98	43.51416	-93.13633	09/30/04	Hobbs	Mason City	Elk Lake	2.7	2.6	2.9	2.5Y	5	4	mod	loam	soft	Riding Mtn	Y	Y	New Ulm
B10	11	43.67389	-92.71748	10/15/04	Hobbs	Mason City	Elkton	4.3	4.0	4.5	2.5Y	5	4	mod	loam	soft	Winnipeg	Y	Y	Old gray
B11	56	43.50261	-92.40897	10/14/04	Hobbs	Mason City	Leroy	6.5	6.0	7.0	10YR	4	6	none	loam	soft	Winnipeg	N	N	Old gray
B12	173	43.70474	-91.82030	10/12/04	Hobbs	La Crosse	Bratsberg	12.5	12.0	13.0	10YR	4	6	none	loam	soft	Winnipeg	N	N	Old gray
C02	189	43.81938	-96.73932	09/27/04	Hobbs	Sioux Falls	Dell Rapids	2.0	1.8	2.1	2.5Y	4	4	strong	loam	soft	Winnipeg	Y	Y	W old grey
C03	51	43.88516	-96.09130	09/28/04	Hobbs	Sioux Falls	Edgerton	2.3	2.1	2.4	10YR	5	4	strong	clayey	soft	Winnipeg	Y	Y	W old grey
C04	6	43.77758	-95.87201	09/29/04	Hobbs	Fairmont	Wilmont	1.8	1.5	2.0	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	N	New Ulm
C05a	93	43.79115	-95.09064	09/29/04	Hobbs	Fairmont	Windom	2.1	1.8	2.3	2.5Y	4	4	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
C05b	46	43.79115	-95.09068	09/29/04	Hobbs	Fairmont	Windom	3.9	3.7	4.1	2.5Y	3	1	strong	loam	firm	Winnipeg	Y	N	New Ulm
C06	237	43.89306	-94.95918	09/29/04	Hobbs	Fairmont	Mountain Lake	6.3	6.1	6.4	2.5Y	4	4	mod	loam	soft	Riding Mtn	Y	N	New Ulm
C07	145	43.89495	-94.20105	09/30/04	Hobbs	Fairmont	Amboy	5.0	4.9	5.2	2.5Y	5	1	strong	loam	soft	Riding Mtn	Y	N	New Ulm
C08	136	43.89172	-93.75159	09/30/04	Hobbs	Mason City	Mapleton	2.0	1.8	2.1	2.5Y	4	3	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
C09	131	43.87721	-93.33675	09/30/04	Hobbs	Mason City	Ellendale	8.1	7.9	8.2	2.5Y	3	1	mod	loam	soft	Riding Mtn	Y	N	New Ulm
C10	210	43.97329	-92.76336	10/15/04	Hobbs	Mason City	Hayfield	11.0	10.0	12.0	10YR	5	6	strong	sandy	hard	Winnipeg	Y	Y	T des Sioux
C11	169	43.98433	-92.08457	10/13/04	Hobbs	Mason City	St. Charles	5.3	5.0	5.5	5Y	5	4	mod	clayey	firm	Winnipeg	Y	Y	Old gray
C12	166	43.96603	-91.95399	10/13/04	Hobbs	La Crosse	Utica	7.3	7.0	7.5	5Y	6	2	strong	loam	soft	Winnipeg	Y	Y	Old gray
D02	143	44.20996	-96.67199	10/28/04	Meyer	Watertown	Meadary	0.9	0.7	1.0	10YR	5	3	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
D03	149	44.09423	-96.16490	10/28/04	Meyer	Watertown	Holland	0.7	0.5	0.8	10YR	5	4	strong	clayey	firm	Riding Mtn	Y	Y	New Ulm
D04	9	44.13533	-95.82316	10/28/04	Meyer	New Ulm	Lake Sarah	0.8	0.6	0.9	2.5Y	6	3	strong	silty	firm	Riding Mtn	Y	Y	New Ulm
D05	106	44.11044	-95.28071	10/28/04	Meyer	New Ulm	Hurricane Lk	3.0	3.0	3.0	2.5Y	4	2	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
D06	3	44.24262	-94.69651	10/28/04	Meyer	New Ulm	Sleepy Eye	5.0	5.0	5.0	2.5Y	4	2	strong	loam	firm	Riding Mtn	Y	N	New Ulm
D07	14	44.18567	-94.20106	10/20/04	Hobbs	New Ulm	Mankato 2	2.9	2.7	3.1	2.5Y	5	4	strong	loam	hard	Riding Mtn	Y	Y	New Ulm
D08	230	44.13477	-93.88273	09/14/04	Hobbs	St. Paul	Mankato 1	3.2	3.0	3.3	2.5Y	4	2	weak	loam	soft	Winnipeg	Y	N	Old gray
D09	139	44.09752	-93.30683	09/14/04	Hobbs	St. Paul	Owatonna	1.7	1.5	1.8	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	N	New Ulm
D10	127	44.05412	-92.74994	09/17/04	Hobbs	St. Paul	Kasson	10.2	10.0	10.3	5Y	4	1	strong	silty	hard	Winnipeg	Y	N	Old gray
D11	39	44.15449	-92.25948	09/17/04	Hobbs	St. Paul	Elgin	4.9	4.8	5.0	2.5Y	4	1	strong	loam	firm	Winnipeg	Y	N	Old gray
D12	225	44.02379	-91.93955	10/13/04	Hobbs	Eau Claire	Altura	10.3	10.0	10.5	10YR	5	6	none	loam	firm	Winnipeg	Y	N	Old gray

Appendix. Location and descriptive data

Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
E02	92	44.38345	-96.55856	10/28/04	Meyer	Watertown	White	0.8	0.6	0.9	10YR	6	4	strong	clayey	firm	Riding Mtn	Y	Y	New Ulm
E03	190	44.25962	-96.30433	10/28/04	Meyer	Watertown	Lake Benton	1.9	1.7	2.0	10YR	5	3	strong	loam	hard	Riding Mtn	Y	Y	New Ulm
E04	186	44.29818	-95.63690	10/28/04	Meyer	New Ulm	Tracy	1.8	1.6	2.0	2.5Y	6	3	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
E05	61	44.27535	-95.26928	10/28/04	Meyer	New Ulm	Lamberton	2.2	2.0	2.3	2.5Y	6	2	strong	sandy	firm	Riding Mtn	Y	Y	New Ulm
E06	12	44.44054	-94.77477	10/20/04	Hobbs	New Ulm	Fort Ridgely	3.8	3.7	4.0	2.5Y	5	3	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
E07	195	44.32600	-94.43731	10/20/04	Hobbs	New Ulm	New Ulm	2.6	2.4	2.7	5Y	4	2	strong	loam	soft	Riding Mtn	Y	N	New Ulm
E08	113	44.41942	-93.95617	09/14/04	Hobbs	St. Paul	Le Soeur	3.1	3.0	3.2	2.5Y	5	4	strong	loam	hard	Riding Mtn	Y	N	New Ulm
E09	181	44.33532	-93.25800	09/14/04	Hobbs	St. Paul	Faribault	4.2	4.0	4.3	5Y	4	2	mod	loam	firm	Winnipeg	Y	N	Old gray
E10	101	44.29586	-92.60751	09/17/04	Hobbs	St. Paul	Mazeppa	4.2	4.0	4.4	10YR	5	4	mod	loam	hard	Winnipeg	Y	N	Old gray
E11	167	44.26840	-92.43103	09/17/04	Hobbs	St. Paul	Zumbro Falls	7.2	7.0	7.3	10YR	5	5	mod	loam	firm	Winnipeg	Y	Y	Old gray
F02	185	44.70805	-96.75378	10/29/04	Meyer	Watertown	Clear Lake	1.9	1.7	2.0	2.5Y	6	3	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
F03	198	44.54749	-96.19476	10/28/04	Meyer	Watertown	Ivanhoe	1.2	1.0	1.3	2.5Y	5	3	strong	silty	firm	Riding Mtn	Y	Y	New Ulm
F04	211	44.70593	-95.58311	10/29/04	Meyer	New Ulm	Hamlay Falls	8.0	8.0	8.0	2.5Y	5	2	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
F05	142	44.66452	-95.22843	10/19/04	Hobbs	New Ulm	Redwood Flls	6.3	6.1	6.4	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	N	New Ulm
F06	57	44.53882	-94.93770	10/20/04	Hobbs	New Ulm	Morton	11.0	10.7	11.3	2.5Y	4	2	strong	loam	hard	Riding Mtn	Y	N	New Ulm
F07	64	44.54296	-94.35568	10/20/04	Hobbs	New Ulm	Winthrop	2.0	1.8	2.1	2.5Y	5	4	mod	clayey	soft	Riding Mtn	Y	N	New Ulm
F08A	269	44.57534	-93.93182	09/16/04	Hobbs	St. Paul	Henderson 2	1.1	1.0	1.2	5Y	4	4	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
F08B	264	44.57534	-93.93182	09/16/04	Hobbs	St. Paul	Henderson 1	5.6	5.5	5.7	2.5Y	4	1	strong	sandy	firm	Winnipeg	Y	N	N/A
F09	229	44.54515	-93.23853	09/14/04	Hobbs	St. Paul	Castle Rock	1.7	1.5	1.8	10YR	5	5	mod	loam	firm	Winnipeg	Y	Y	Old gray
F10	158	44.54319	-92.82920	09/17/04	Hobbs	St. Paul	Miesville	1.9	1.7	2.0	7.5YR	5	6	weak	loam	soft	Superior	N	N	Old red
G02	125	44.86264	-96.51485	10/29/04	Meyer	Watertown	Lake Fremont	0.9	0.7	1.0	2.5Y	5	4	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
G03	94	44.80337	-96.39968	10/29/04	Meyer	Watertown	Gary	1.0	0.8	1.1	2.5Y	5	4	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
G04	163	44.78881	-95.93027	10/29/04	Meyer	New Ulm	Clarkfield	2.0	2.0	2.0	2.5Y	6	3	strong	clayey	soft	Riding Mtn	Y	N	New Ulm
G05	236	44.89116	-95.22481	10/19/04	Hobbs	New Ulm	Prinsburg	0.8	0.6	0.9	5Y	4	2	mod	loam	soft	Riding Mtn	Y	N	New Ulm
G06	90	44.90602	-94.69683	10/19/04	Hobbs	New Ulm	Cosmos	1.4	1.2	1.5	2.5Y	6	4	strong	silty	soft	Riding Mtn	Y	Y	New Ulm
G07	174	44.91273	-94.18567	10/19/04	Hobbs	New Ulm	Sliver Lake	1.7	1.5	1.8	2.5Y	5	5	mod	loam	soft	Riding Mtn	Y	Y	New Ulm
G08	193	44.90150	-93.87337	09/16/04	Hobbs	St. Paul	Waconia	1.7	1.5	1.8	5Y	5	4	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
G09	232	44.86549	-93.39490	09/23/04	Hobbs	St. Paul	Edina	1.9	1.8	2.0	2.5Y	5	4	mod	sandy	soft	Riding Mtn	Y	Y	New Ulm
G10	22	44.96057	-92.80581	09/15/04	Hobbs	St. Paul	Lakeland	3.4	3.2	3.5	7.5YR	4	4	weak	sandy	soft	Superior	Y	N	Cromwell
H02	222	45.19837	-96.84409	10/13/04	Meyer	Milbank	Twin Brooks	2.0	2.0	2.0	2.5Y	5	3	strong	silty	firm	Riding Mtn	Y	N	New Ulm
H03	179	45.19252	-96.43999	10/13/04	Meyer	Milbank	Rosen	1.7	1.5	1.8	2.5Y	5	2	strong	loam	firm	Riding Mtn	Y	N	New Ulm
H04	105	45.20982	-95.77261	10/12/04	Meyer	St. Cloud	Danros	1.2	1.0	1.3	2.5Y	5	4	strong	clayey	firm	Riding Mtn	Y	Y	New Ulm
H05	124	45.18719	-95.25714	10/12/04	Meyer	St. Cloud	Kerkhover	0.7	0.5	0.8	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
H06	77	45.18188	-94.69055	10/14/04	Meyer	St. Cloud	Grove City	1.2	1.0	1.3	2.5Y	6	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
H07	170	45.09553	-94.31344	10/14/04	Meyer	St. Cloud	Dassel	1.5	1.3	1.6	2.5Y	6	4	strong	loam	firm	Riding Mtn	Y	N	New Ulm
H08	132	45.05089	-93.72778	10/14/04	Meyer	Stillwater	Lake Rebecca	5.0	5.0	5.0	2.5Y	5	4	strong	loam	hard	Riding Mtn	Y	N	New Ulm
H09	271	45.17365	-93.35462	10/11/04	Meyer	Stillwater	Coon Rapids	5.0	5.0	5.0	5YR	4	4	none	sandy	firm	Superior	N	N	Cromwell
H10	7	45.19958	-92.79449	10/11/04	Meyer	Stillwater	Marine StCroix	1.1	1.1	1.1	5YR	4	4	none	gravelly	hard	Superior	N	N	Cromwell
I02	34	45.41985	-96.63701	10/13/04	Meyer	Milbank	Big Stone Lk	2.0	2.0	2.0	2.5Y	6	4	strong	silty	firm	Riding Mtn	Y	N	New Ulm
I03	87	45.41003	-96.01482	10/13/04	Meyer	Milbank	Drywood Lake	1.2	1.0	1.3	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
I04	165	45.47784	-95.64751	10/12/04	Meyer	St. Cloud	Lake Emily 2	0.7	0.5	0.8	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	N	New Ulm
I05	217	45.41790	-95.23230	10/12/04	Meyer	St. Cloud	Lake Johanna	5.0	5.0	5.0	2.5Y	5	4	strong	loam	hard	Riding Mtn	Y	N	New Ulm
I06	13	45.34707	-94.73204	10/12/04	Meyer	St. Cloud	Lake Keronis	2.6	2.4	2.7	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
I07	86	45.33314	-94.04352	10/12/04	Meyer	St. Cloud	Sugar Lake	0.8	0.7	0.9	2.5Y	5	4	mod	loam	firm	Riding Mtn	Y	Y	New Ulm
I08	73	45.37790	-93.67249	10/11/04	Meyer	Stillwater	Bird Lake	1.4	1.2	1.5	2.5Y	6	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
I09	60	45.38362	-93.44165	10/11/04	Meyer	Stillwater	St. Francis	1.3	1.1	1.4	10YR	5	4	mod	loam	firm	Riding Mtn	Y	N	New Ulm

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Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
I10	155	45.41945	-92.90651	09/24/04	Meyer	Stillwater	North Pool	1.3	1.1	1.4	10YR	5	4	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
J02	66	45.69802	-96.70929	10/13/04	Meyer	Milbank	Lake Traverse	2.4	1.8	3.0	2.5Y	5	4	strong	silty	hard	Riding Mtn	Y	Y	New Ulm
J03	47	45.58570	-96.06059	10/13/04	Meyer	Milbank	Alberta	1.1	0.9	1.2	2.5Y	5	4	strong	clayey	firm	Riding Mtn	Y	Y	New Ulm
J04	103	45.54628	-95.55796	10/12/04	Meyer	St. Cloud	Lake Emily 1	1.2	1.0	1.3	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	N	New Ulm
J05	226	45.65805	-95.05804	10/12/04	Meyer	St. Cloud	Padua	0.8	0.6	0.9	2.5Y	5	2	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
J06	183	45.54895	-94.78753	10/12/04	Meyer	St. Cloud	Spring Hill	0.8	0.6	0.9	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
J07	204	45.59893	-94.12814	10/11/04	Meyer	St. Cloud	Sauk Rapids	0.9	0.7	1.0	7.5YR	5	4	none	sandy	hard	Superior	N	N	Cromwell
J08	107	45.54474	-93.95589	10/11/04	Meyer	Stillwater	Briggs Lake	1.3	1.1	1.4	10YR	6	4	weak	loam	firm	Riding Mtn	Y	N	New Ulm
J09	130	45.53608	-93.08860	09/24/04	Meyer	Stillwater	Spring Lake	1.4	1.2	1.5	10YR	6	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
J10	20	45.51354	-92.98948	09/24/04	Meyer	Stillwater	North Branch	9.0	9.0	9.0	10YR	4	1	strong	loam	firm	Riding Mtn	Y	N	New Ulm
K02	273	45.78859	-96.54533	10/13/04	Meyer	Milbank	Wheaton	2.5	2.5	2.5	2.5Y	5	1	strong	loam	firm	Riding Mtn	Y	N	New Ulm
K03	41	45.75950	-96.02831	10/13/04	Meyer	Milbank	Herman	1.2	1.0	1.3	2.5Y	5	4	mod	clayey	soft	Riding Mtn	Y	N	New Ulm
K04	250	45.89619	-95.61399	10/12/04	Meyer	St. Cloud	Lake Thorstad	0.7	0.5	0.8	2.5Y	5	4	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
K05	21	45.91982	-95.08869	10/12/04	Meyer	St. Cloud	Lake Osakis	1.6	1.4	1.7	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
K06	261	45.94427	-94.77174	10/12/04	Meyer	St. Cloud	Long Prairie	1.4	1.2	1.5	7.5YR	4	4	none	sandy	hard	Superior	N	N	Cromwell
K07	148	45.91154	-94.00576	10/11/04	Meyer	St. Cloud	Buckman	2.2	1.9	2.4	7.5YR	5	4	none	sandy	firm	Superior	N	N	Cromwell
K08	121	45.92539	-93.66353	10/11/04	Meyer	Stillwater	Page	0.7	0.5	0.8	5YR	4	4	none	gravelly	hard	Superior	N	N	Cromwell
K09	111	45.90206	-93.09361	09/24/04	Meyer	Stillwater	Henriette	1.4	1.2	1.5	5YR	4	4	weak	sandy	hard	Superior	N	N	Cromwell
K10	228	45.81727	-92.82881	09/24/04	Meyer	Stillwater	Pine City	1.4	1.2	1.5	10YR	5	4	strong	loam	firm	Riding Mtn	Y	Y	New Ulm
L02	18	46.05519	-96.96377	10/29/04	Hobbs	Fargo	Hawkinson	0.6	0.5	0.8	5Y	5	3	strong	loam	soft	Riding Mtn	Y	N	Dahlen
L03	251	46.03587	-96.16172	10/29/04	Hobbs	Fargo	Wendell	1.7	1.5	1.8	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	N	Big Stone
L04	220	46.16969	-95.58352	10/22/04	Knaeble	Brainerd	Inspiration Pk	2.3	2.1	2.4	2.5Y	5	4	strong	sandy	soft	Shield	Y	N	New Ulm
L05E	23	46.23623	-95.14638	10/28/04	Knaeble	Brainerd	Eagle Bend	2.3	2.1	2.4	2.5Y	5	4	strong	sandy	soft	Shield	Y	N	Hewitt
L05W	4	46.17478	-95.48069	10/22/04	Knaeble	Brainerd	Block Lake	2.0	1.8	2.1	2.5Y	5	4	mod	silty	soft	Riding Mtn	Y	Y	New Ulm
L06E	40	46.01971	-94.71995	10/28/04	Knaeble	Brainerd	Lake Beauty	2.3	2.1	2.4	7.5YR	4	1	weak	sandy	soft	Superior	N	N	Cromwell
L06WA	218	46.06948	-94.86995	10/28/04	Knaeble	Brainerd	Browerville 1	2.0	1.8	2.1	2.5Y	5	4	strong	sandy	firm	Shield	Y	N	Hewitt
L06WB	184	46.06948	-94.86995	10/28/04	Knaeble	Brainerd	Browerville 2	4.7	4.6	4.9	2.5Y	3	1	strong	loam	firm	Winnipeg	Y	N	Browerville
L07	44	46.18532	-94.16133	10/21/04	Knaeble	Brainerd	S Long Lake	1.7	1.5	1.8	7.5YR	4	4	none	sandy	soft	Shield	N	N	Brainerd
L08	267	46.14209	-93.98550	09/22/04	Meyer	Duluth	Sullivan Lake	1.6	1.4	1.7	7.5YR	5	6	none	sandy	firm	Shield	N	N	Brainerd
L09	19	46.08633	-93.22622	09/22/04	Meyer	Duluth	Woodland	0.9	0.7	1.0	5YR	4	4	none	sandy	hard	Superior	N	N	Cromwell
L10	99	46.01161	-92.83329	09/24/04	Meyer	Duluth	Hinckley	1.7	1.5	1.8	5YR	4	4	mod	sandy	hard	Superior	N	N	Cromwell
L11	150	46.08433	-92.24657	09/24/04	Meyer	Duluth	Riverside	9.0	9.0	9.0	5YR	4	4	mod	sandy	hard	Superior	N	N	Cromwell
M02	78	46.33073	-96.59826	10/29/04	Hobbs	Fargo	Breckinridge	1.7	1.5	1.8	2.5Y	5	4	strong	loam	firm	Riding Mtn	Y	N	Ottertail
M03	152	46.46768	-96.19745	10/29/04	Hobbs	Fargo	Rothsay	0.7	0.6	0.8	2.5Y	6	4	strong	loam	soft	Riding Mtn	Y	N	Barnesville
M04	248	46.36919	-95.88120	10/22/04	Knaeble	Brainerd	Fish Lake	2.0	1.8	2.1	2.5Y	5	4	strong	sandy	firm	Riding Mtn	Y	Y	New Ulm
M05	29	46.32511	-95.02078	10/28/04	Knaeble	Brainerd	Hewitt	1.4	1.2	1.5	2.5Y	5	4	mod	sandy	soft	Shield	Y	N	Hewitt
M06	49	46.25927	-94.83685	10/28/04	Knaeble	Brainerd	Staples	4.4	4.3	4.6	2.5Y	5	4	strong	sandy	firm	Shield	Y	N	Hewitt
M07	172	46.24733	-94.26458	10/21/04	Knaeble	Brainerd	Crow Wing Lk	9.3	9.1	9.5	7.5YR	5	4	mod	sandy	firm	Shield	Y	N	Brainerd
M08	128	46.25732	-93.85188	09/22/04	Meyer	Duluth	Smith Lake	1.6	1.4	1.7	5YR	4	4	none	silty	firm	Superior	N	N	Mille Lacs
M09	180	46.45564	-93.15938	09/22/04	Meyer	Duluth	Lawler	1.4	1.4	1.4	2.5YR	4	4	none	sandy	soft	Superior	N	N	Cromwell
M10	188	46.49059	-92.66709	09/22/04	Meyer	Duluth	Barnum	1.2	1.1	1.3	2.5YR	4	4	none	clayey	firm	Superior	N	N	N/A
M11	120	46.44331	-92.36246	09/22/04	Meyer	Duluth	Holyoke	1.9	1.7	2.0	10R	4	4	none	sandy	soft	Superior	N	N	N/A
N03	215	46.65930	-96.27664	10/29/04	Hobbs	Fargo	Barnesville	1.4	1.2	1.5	5Y	5	4	strong	loam	soft	Riding Mtn	Y	N	St. Hilaire
N04	147	46.65741	-95.83649	10/22/04	Knaeble	Brainerd	Vargas	2.3	2.1	2.4	2.5Y	5	4	strong	loam	soft	Riding Mtn	Y	Y	New Ulm
N05	138	46.64334	-95.22610	10/21/04	Knaeble	Brainerd	Sebeka	1.7	1.5	1.8	2.5Y	5	4	strong	sandy	soft	Shield	Y	Y	Hewitt
N06	202	46.66588	-94.89074	10/21/04	Knaeble	Brainerd	Nimrod	0.9	0.8	1.1	2.5Y	5	4	weak	sandy	soft	Shield	Y	N	Hewitt

Appendix. Location and descriptive data

Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
N07	16	46.59541	-94.30529	10/21/04	Knaeble	Brainerd	Pequot Lakes	2.3	2.1	2.4	10YR	5	4	none	sandy	firm	Shield	N	N	Brainerd
N08	259	46.60252	-93.97119	09/21/04	Meyer	Duluth	Perry Lake	1.9	1.8	2.0	5YR	4	4	mod	silty	firm	Superior	N	N	Mille Lacs
N09	32	46.63093	-93.40097	09/21/04	Meyer	Duluth	Rock Lake	1.1	1.0	1.2	7.5YR	5	4	none	clayey	firm	Shield	N	N	N/A
N10	242	46.62436	-92.60759	09/21/04	Meyer	Duluth	Bob Lake	1.7	1.6	1.8	5YR	5	4	none	silty	firm	Superior	N	N	Mille Lacs
N11	266	46.60767	-92.45522	09/22/04	Meyer	Duluth	Chub Lake	1.3	1.2	1.4	2.5YR	4	5	weak	silty	soft	Superior	N	N	N/A
N12	270	46.58896	-91.88884	09/22/04	Meyer	Ashland	Amnidon Falls	0.8	0.7	0.9	2.5YR	4	4	weak	clayey	soft	Superior	N	N	N/A
O03	177	46.84846	-96.25878	10/28/04	Hobbs	Fargo	Hawley	1.7	1.5	1.8	2.5Y	4	3	mod	sandy	soft	Riding Mtn	Y	Y	St. Hilaire
O04	8	46.97710	-95.84567	10/22/04	Knaeble	Brainerd	Richwood	1.1	0.9	1.2	2.5Y	5	4	strong	clayey	firm	Riding Mtn	Y	N	New Ulm
O05	272	46.85340	-95.33276	10/21/04	Knaeble	Brainerd	Wolf Lake	2.9	2.7	3.1	2.5Y	5	4	strong	sandy	firm	Winnipeg	Y	N	Hewitt
O06	207	46.77562	-94.95090	10/21/04	Knaeble	Brainerd	Huntersville	2.3	2.1	2.4	2.5Y	6	4	strong	sandy	soft	Shield	Y	N	Hewitt
O07	182	46.78635	-94.30629	10/21/04	Knaeble	Brainerd	Clough Lake	1.7	1.5	1.8	7.5YR	4	4	none	sandy	soft	Shield	N	N	Brainerd
O08	212	46.89256	-93.71688	09/21/04	Meyer	Duluth	Swatara	1.1	1.0	1.2	7.5YR	5	4	none	gravelly	firm	Shield	N	N	Independence
O09	246	46.85446	-93.31655	09/21/04	Meyer	Duluth	Wakefield Lk	1.3	1.2	1.4	7.5YR	5	4	none	loam	firm	Shield	N	N	N/A
O10	162	46.80701	-92.91253	09/21/04	Meyer	Duluth	Prairie Lake	1.2	1.1	1.3	5YR	4	4	weak	silty	firm	Superior	N	N	Mille Lacs
O11	221	46.76478	-92.37855	09/21/04	Meyer	Duluth	Murgo	1.9	1.8	2.0	2.5YR	4	4	none	sandy	soft	Superior	N	N	N/A
O12	65	46.89420	-91.90073	09/22/04	Meyer	Ashland	French River	2.9	2.7	3.0	2.5YR	5	4	mod	clayey	hard	Superior	N	N	N/A
P03	37	47.19558	-96.16916	10/28/04	Hobbs	Grand Forks	Frenchman	1.7	1.5	1.8	2.5Y	5	4	strong	silty	soft	Riding Mtn	Y	Y	Red Lake Flls
P04	28	47.17916	-95.86225	10/03/04	Thor	Bemidji	Wauburn	3.2	3.0	3.3	10YR	4	2	strong	clayey	firm	Winnipeg	Y	N	LwrRdLkFlls
P05	206	47.16272	-95.14691	10/03/04	Thor	Bemidji	Itasca	1.9	1.8	2.0	2.5Y	4	3	mod	sandy	firm	Shield	N	Y	Marcoux
P06	268	47.19315	-94.64310	10/03/04	Thor	Bemidji	Steamboat	1.6	1.5	1.7	2.5Y	4	3	mod	sandy	firm	Shield	Y	Y	Marcoux
P07	48	47.05584	-94.48643	10/03/04	Thor	Bemidji	Walker	1.3	1.2	1.4	2.5Y	5	4	mod	sandy	firm	Shield	N	N	Marcoux
P08	247	47.17115	-93.95630	09/17/04	Jennings	Hibbing	Dead Horse Lk	1.0	0.8	1.1	2.5Y	5	3	strong	clayey	soft	Shield	N	N	N/A
P09	154	47.18220	-93.13592	09/27/04	Jennings	Hibbing	New Lake	1.0	0.9	1.0	10YR	4	4	none	sandy	soft	Shield	N	N	N/A
P10	157	47.00110	-92.51255	10/24/04	Jennings	Hibbing	Canyon	1.5	1.4	1.6	7.5YR	3	4	none	clayey	firm	Shield	N	N	Toimi
P11	123	47.10399	-92.28470	09/27/04	Jennings	Hibbing	Highway 49	2.9	2.8	3.0	7.5YR	3	3	none	loam	soft	Superior	N	N	Toimi
P12	62	47.04993	-91.63012	09/27/04	Jennings	TwoHarbours	Hwy3&Hwy61	2.8	2.5	3.0	5YR	4	4	strong	clayey	firm	Superior	N	N	N/A
P13	10	47.18096	-91.40915	09/27/04	Jennings	TwoHarbours	Split Rock R	2.8	2.5	3.0	5YR	4	4	none	clayey	firm	Superior	N	N	N/A
Q02	72	47.45490	-96.85388	10/28/04	Hobbs	Grand Forks	Caledonia	2.0	1.8	2.1	5Y	5	3	strong	clayey	hard	Winnipeg	Y	Y	Huot
Q03	200	47.28239	-96.27874	10/28/04	Hobbs	Grand Forks	Heiberg Dam2	6.4	6.1	6.7	5Y	4	2	strong	loam	hard	Riding Mtn	Y	N	Heiberg
Q03A	129	47.28272	-96.27848	10/28/04	Hobbs	Grand Forks	Heiberg Dam1	3.8	3.7	4.0	2.5Y	5	4	strong	silty	firm	Riding Mtn	Y	Y	Red Lake Flls
Q04	257	47.25815	-95.78483	10/03/04	Thor	Bemidji	Mahnomen	1.9	1.8	2.0	10YR	5	2	strong	clayey	firm	Winnipeg	Y	N	LwrRdLkFlls
Q05	203	47.36852	-95.03544	10/03/04	Thor	Bemidji	Becida	1.9	1.8	2.0	2.5Y	4	3	mod	sandy	firm	Shield	N	N	Marcoux
Q06	108	47.36697	-94.84942	10/03/04	Thor	Bemidji	Bemidji	1.3	1.2	1.4	2.5Y	4	3	mod	sandy	firm	Shield	N	N	Marcoux
Q07	17	47.34501	-94.49032	10/03/04	Thor	Bemidji	Cuba Hill	1.6	1.5	1.7	2.5Y	4	3	weak	sandy	firm	Shield	Y	N	Marcoux
Q08	156	47.47320	-93.84810	09/17/04	Jennings	Hibbing	Bowstring Lk	1.1	0.9	1.3	10YR	5	4	none	loam	soft	Shield	N	N	N/A
Q09	96	47.34751	-93.39195	09/17/04	Jennings	Hibbing	Reiley Lake	1.1	0.9	1.3	10YR	5	4	none	sandy	firm	Shield	N	N	N/A
Q10	275	47.39629	-92.88805	09/17/04	Jennings	Hibbing	Hibbing	1.6	1.5	1.7	5YR	4	3	none	clayey	soft	Shield	N	N	N/A
Q11	58	47.31424	-92.23127	09/27/04	Jennings	Hibbing	Markham Rd	1.0	0.7	1.2	7.5YR	4	4	none	clayey	firm	Superior	N	N	Toimi
Q12	97	47.37268	-91.74295	09/27/04	Jennings	TwoHarbours	Murphy Creek	1.1	1.0	1.2	10YR	4	3	none	sandy	soft	Superior	N	N	Toimi
Q13	263	47.29311	-91.32385	09/27/04	Jennings	TwoHarbours	Lake Superior	0.7	0.6	0.8	2.5YR	4	4	weak	clayey	firm	Superior	N	N	Beaver Bay
R02	253	47.54299	-96.62237	10/28/04	Hobbs	Grand Forks	Beltrami	2.0	1.8	2.1	2.5Y	6	2	weak	clayey	soft	Winnipeg	Y	Y	Huot
R03	15	47.61450	-96.13681	10/28/04	Hobbs	Grand Forks	Erskine	1.0	0.9	1.1	2.5Y	5	4	strong	silty	soft	Riding Mtn	Y	Y	Red Lake Flls
R04	199	47.50001	-95.81036	10/03/04	Thor	Bemidji	Fosston	1.1	1.0	1.2	10YR	5	3	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
R05	219	47.73126	-95.25888	10/03/04	Thor	Bemidji	Clearbrook	1.1	1.0	1.2	10YR	5	3	strong	silty	firm	Winnipeg	Y	Y	LwrRdLkFlls
R06	164	47.64204	-94.70752	10/03/04	Thor	Bemidji	Tenstrike	1.3	1.2	1.4	10YR	4	1	strong	silty	firm	Winnipeg	Y	N	Marcoux
R07	134	47.64398	-94.14291	10/03/04	Thor	Bemidji	Squaw Lake	1.9	1.8	2.0	2.5Y	5	3	strong	sandy	firm	Winnipeg	Y	N	Marcoux

Appendix. Location and descriptive data

Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
R08	24	47.62595	-93.77014	09/17/04	Jennings	Hibbing	Mush Lake	1.0	0.9	1.1	2.5Y	5	3	weak	clayey	soft	Shield	N	Y	N/A
R09	201	47.63621	-93.19547	09/16/04	Jennings	Hibbing	Sherry Lake	1.5	1.3	1.7	2.5Y	5	4	none	clayey	soft	Shield	N	N	N/A
R10	151	47.51559	-92.72402	10/24/04	Jennings	Hibbing	Kinney	0.8	0.7	0.9	7.5YR	4	4	none	clayey	firm	Winnipeg	N	N	Mille Lacs
R11	213	47.68310	-92.41524	09/14/04	Jennings	Hibbing	Little Rice Lk	1.0	0.9	1.1	10YR	4	3	none	silty	soft	Shield	N	N	N/A
R12	194	47.55673	-91.65563	09/28/04	Jennings	TwoHarbours	Highway 2&RR	1.1	0.9	1.3	7.5YR	4	4	none	sandy	soft	Shield	N	N	Toimi
R13	192	47.66561	-91.44991	09/28/04	Jennings	TwoHarbours	Lk Isabella Rd	1.5	1.3	1.7	10YR	4	3	none	sandy	soft	Shield	N	N	Toimi
R14	171	47.72949	-90.88052	09/28/04	Jennings	TwoHarbours	Temperance R	1.3	1.0	1.5	5YR	4	3	none	sandy	soft	Shield	N	N	N/A
R15	74	47.73824	-90.46847	09/28/04	Jennings	TwoHarbours	Hwy7&Hwy44	1.0	0.8	1.1	5YR	4	4	weak	clayey	hard	Superior	N	N	N/A
S01	75	47.93717	-97.49850	10/27/04	Hobbs	Grand Forks	Turtle River	3.8	3.7	4.0	5Y	4	1	strong	loam	soft	Riding Mtn	Y	N	Dahlen
S02	45	47.75980	-96.56733	10/27/04	Hobbs	Grand Forks	Crookston	1.1	0.9	1.2	5Y	4	1	mod	clayey	soft	Winnipeg	Y	N	Huot
S03	112	47.89363	-96.24064	10/28/04	Hobbs	Grand Forks	Red Lk Falls	5.9	5.8	6.1	2.5Y	4	3	strong	loam	firm	Riding Mtn	Y	N	LwrRdLkFlls
S04	79	47.76142	-95.73003	10/03/04	Thor	Bemidji	Trail	1.7	1.5	1.8	10YR	5	3	strong	silty	firm	Winnipeg	Y	Y	LwrRdLkFlls
S05	89	47.78590	-95.19397	10/03/04	Thor	Bemidji	Lower Red Lk	1.6	1.5	1.7	10YR	5	3	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
S06	53	47.87484	-94.53094	10/03/04	Thor	Bemidji	Shooks	1.1	1.0	1.2	10YR	5	3	mod	silty	firm	Winnipeg	Y	N	Marcoux
S07	224	47.85708	-94.34459	10/03/04	Thor	Bemidji	Northome	1.5	1.4	1.6	10YR	5	3	strong	silty	firm	Winnipeg	Y	Y	Marcoux
S08	81	47.88373	-93.62700	09/16/04	Jennings	Hibbing	Effie	1.8	1.4	2.1	2.5Y	5	3	strong	clayey	soft	Shield	Y	N	N/A
S09	249	47.88395	-93.47026	09/16/04	Jennings	Hibbing	Shine Lake	0.8	0.6	1.0	2.5Y	4	3	weak	clayey	soft	Shield	Y	N	N/A
S10	55	47.89341	-92.76934	09/14/04	Jennings	Hibbing	Gheen	1.0	0.9	1.1	2.5Y	5	3	none	sandy	soft	Shield	N	N	N/A
S11	84	47.81813	-92.37035	09/14/04	Jennings	Hibbing	Lost Lake	1.0	0.9	1.1	2.5Y	5	3	none	clayey	firm	Shield	N	N	N/A
S12	116	47.94833	-91.72400	09/14/04	Jennings	TwoHarbours	Fall Lake	1.3	1.0	1.5	2.5Y	5	4	none	sandy	firm	Shield	N	N	N/A
S13	146	47.77472	-91.34395	09/28/04	Jennings	TwoHarbours	Isabella Lake	1.8	1.5	2.0	7.5YR	3	3	none	sandy	soft	Shield	N	N	N/A
S14	80	47.80253	-90.95251	09/28/04	Jennings	TwoHarbours	Highway 3	2.8	2.5	3.0	5YR	4	4	none	sandy	soft	Shield	N	N	N/A
S15	187	47.77017	-90.32707	09/28/04	Jennings	TwoHarbours	Highway 12	1.9	1.7	2.0	5YR	4	4	none	clayey	firm	Superior	N	N	N/A
S16	256	47.87708	-89.96416	09/27/04	Jennings	Hancock	Hovland	2.3	2.0	2.5	5YR	4	3	mod	clayey	firm	Superior	N	N	Nickerson
T01	71	48.02675	-97.47140	10/27/04	Hobbs	Thief R Falls	Honeyford	0.5	0.5	0.6	2.5Y	5	4	mod	loam	soft	Riding Mtn	Y	N	Falconer
T02	144	48.20989	-96.59812	10/27/04	Hobbs	Thief R Falls	Warren	1.0	0.9	1.1	2.5Y	6	4	mod	clayey	soft	Winnipeg	Y	N	Huot
T03	254	48.03959	-96.21032	10/27/04	Hobbs	Thief R Falls	St. Hilaire	1.4	1.2	1.5	2.5Y	5	3	strong	loam	firm	Riding Mtn	Y	N	LwrRdLkFlls
T04	265	48.10965	-95.80907	10/06/04	Thor	Roseau	High Landing	1.1	1.0	1.2	2.5Y	5	2	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
T05	88	48.23020	-95.25181	10/06/04	Thor	Roseau	Thorhuit	1.4	1.3	1.5	2.5Y	6	3	mod	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
T06	140	48.07723	-94.55762	10/07/04	Thor	Roseau	Shotley Brook	0.9	0.8	1.0	2.5Y	6	2	strong	silty	firm	Winnipeg	Y	N	Marcoux
T07	117	48.00310	-94.07539	10/07/04	Thor	Roseau	Ridge	2.1	2.0	2.2	2.5Y	5	4	strong	silty	firm	Winnipeg	Y	N	Marcoux
T08	85	48.12125	-93.69624	09/16/04	Jennings	I Falls	Big Fk R 2	1.9	1.8	2.0	2.5Y	4	2	strong	clayey	soft	Shield	Y	N	N/A
T09	67	48.11367	-93.19038	09/16/04	Jennings	I Falls	Nett Lake R	0.9	0.8	1.0	2.5Y	4	2	strong	clayey	soft	Shield	Y	N	N/A
T10	27	48.16096	-92.90548	09/15/04	Jennings	I Falls	Lake Lk Rd	1.2	0.9	1.4	10YR	4	6	none	sandy	firm	Shield	N	N	N/A
T11	33	48.12670	-92.28031	09/14/04	Jennings	I Falls	Nigh Lake	1.7	1.6	1.8	10YR	4	4	none	sandy	firm	Shield	N	N	N/A
T11-2	260	48.14120	-92.36041	09/14/04	Jennings	I Falls	Pauline Lake	1.7	1.5	1.8	7.5YR	4	4	none	silty	soft	Shield	N	N	N/A
T12	216	48.04386	-91.92491	09/14/04	Jennings	Quetico	Hagman Lake	1.4	1.2	1.5	10YR	5	4	none	silty	firm	Shield	N	N	N/A
T14	208	48.16797	-90.88588	09/28/04	Jennings	Quetico	Saganaga Lk	1.6	1.4	1.8	2.5Y	6	3	none	silty	soft	Shield	N	N	N/A
T15	59	48.03718	-90.45323	09/28/04	Jennings	Quetico	Highway 315	0.9	0.7	1.1	2.5Y	3	2	none	sandy	soft	Shield	N	N	N/A
T16	25	47.99980	-89.70158	09/28/04	Jennings	Thunder Bay	Pigeon River	0.7	0.6	0.7	5YR	4	3	none	clayey	hard	Superior	N	N	Nickerson
U02	235	48.36512	-96.56775	10/27/04	Hobbs	Thief R Falls	Old Mill	1.8	1.8	1.8	5Y	5	3	strong	loam	firm	Winnipeg	Y	N	Marcoux
U03	191	48.35235	-96.32472	10/27/04	Hobbs	Thief R Falls	Newfolden	2.6	2.4	2.7	2.5Y	6	4	strong	loam	firm	Winnipeg	Y	N	Red Lake Flls
U04	83	48.30323	-95.67996	10/06/04	Thor	Roseau	Grygla	1.7	1.5	1.8	2.5Y	5	2	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
U05	54	48.29333	-95.40107	10/06/04	Thor	Roseau	Four Town	1.7	1.5	1.8	2.5Y	5	3	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
U08	234	48.41024	-93.78449	09/16/04	Jennings	I Falls	Big Fork R 1	3.8	3.5	4.0	2.5Y	5	1	strong	clayey	soft	Shield	Y	N	N/A
U09	31	48.40477	-93.35398	09/15/04	Jennings	I Falls	Moose Lake 1	1.0	0.9	1.1	10YR	4	2	strong	clayey	soft	Shield	Y	N	N/A

Appendix. Location and descriptive data

Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
U10	135	48.28329	-92.89018	09/15/04	Jennings	I Falls	Ash Lake	1.0	0.9	1.1	10YR	5	3	none	clayey	soft	Shield	N	N	N/A
U11	205	48.26465	-92.47387	09/15/04	Jennings	I Falls	Crane Lake	1.2	0.9	1.4	2.5Y	6	2	none	silty	soft	Shield	N	N	N/A
V02	70	48.62575	-96.58891	10/26/04	Hobbs	Thief R Falls	Halma	1.0	0.9	1.1	5Y	5	2	weak	loam	soft	Riding Mtn	Y	Y	Marchand
V03	231	48.64494	-96.38674	10/26/04	Hobbs	Thief R Falls	Pelan	3.2	3.1	3.4	5Y	5	3	weak	loam	soft	Winnipeg	Y	N	Marchand
V04	50	48.60034	-95.73338	10/06/04	Thor	Roseau	Wannaska	1.3	1.2	1.4	10YR	4	3	strong	silty	firm	Winnipeg	Y	N	Huot
V06	227	48.71065	-94.70034	10/06/04	Thor	Roseau	Baudette	2.1	2.0	2.2	2.5Y	5	3	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
V07	36	48.62743	-94.06792	10/07/04	Thor	Roseau	Birchdale	1.3	1.2	1.4	10YR	5	3	strong	clayey	firm	Winnipeg	Y	Y	Marcoux
V08	238	48.63353	-93.91260	09/16/04	Jennings	I Falls	Manitou	2.7	2.6	2.8	10YR	4	3	weak	clayey	soft	Shield	Y	N	N/A
V09	178	48.59837	-93.23238	09/15/04	Jennings	I Falls	I Falls	1.2	1.0	1.3	2.5Y	5	3	weak	sandy	firm	Shield	N	N	N/A
W02	104	48.78211	-96.81355	10/26/04	Hobbs	Thief R Falls	Hallock	0.5	0.5	0.6	5Y	5	2	mod	clayey	soft	Winnipeg	Y	Y	Huot
W03	102	48.78255	-96.09011	10/26/04	Hobbs	Thief R Falls	Badger	0.7	0.6	0.8	5Y	6	2	strong	silty	soft	Winnipeg	Y	N	Marchand
W04	175	48.79247	-95.68034	10/06/04	Thor	Roseau	Roseau	1.3	1.2	1.4	10YR	5	3	strong	silty	firm	Winnipeg	Y	N	Huot
W05	100	48.88969	-95.30388	10/06/04	Thor	Roseau	Warroad	1.3	1.2	1.4	2.5Y	6	2	strong	silty	firm	Winnipeg	Y	N	Huot
W06	196	48.77452	-94.95849	10/06/04	Thor	Roseau	Williams	0.8	0.7	0.9	2.5Y	5	3	strong	silty	firm	Winnipeg	Y	N	LwrRdLkFlls
X01	43	49.13128	-97.01078	10/06/04	Matile	Winnipeg	Green Ridge	0.8	0.6	0.9	2.5Y	6	4	strong	silty	soft	Winnipeg	Y	N	Roseau
X02	243	49.14713	-96.76367	10/06/04	Matile	Winnipeg	Stuartburn	1.4	1.2	1.5	2.5Y	5	4	strong	silty	soft	Winnipeg		N	Roseau
X03	274	49.06483	-96.27005	10/06/04	Matile	Winnipeg	Sundown	0.8	0.6	0.9	2.5Y	5	4	strong	silty	hard	Winnipeg	Y	N	Roseau
X04	110	49.03970	-95.77487	10/06/04	Matile	Kenora	S Junction	2.1	1.9	2.2	2.5Y	5	4	strong	silty	firm	Winnipeg	Y	N	Roseau
X05	244	49.19623	-95.38983	10/06/04	Matile	Kenora	Moose Lake 2	1.8	1.7	1.9	2.5Y	5	4	strong	silty	firm	Winnipeg	Y	N	Roseau
Y05	42	49.31350	-95.04832	10/06/04	Matile	Kenora	NW Angle	1.4	1.3	1.5	2.5Y	4	2	weak	sandy	soft	Shield	N	N	Roseau

Appendix. Location and descriptive data

Field	Lab	Latitude	Longitude	Date	Collector	Map	Site	Depth	Upper	Lower	Hue	Val	Chr	HCl	Texture	Cons	Lithology	CPeb	SCarb	Strat
Z01	109	49.48803	-96.71557	10/06/04	Matile	62H	Steinbach	1.0	0.8	1.1	2.5Y	6	4	mod	silty	soft	Winnipeg	Y	N	Roseau
Z02	160	50.21762	-97.67835	10/04/04	Matile	62I	Woodlands	1.1	1.0	1.2	2.5Y	6	3	strong	silty	hard	Winnipeg	Y	N	Arran
Z03	223	51.17393	-98.34998	10/04/04	Matile	62O	Ashern	1.2	1.1	1.3	2.5Y	5	3	strong	silty	hard	Winnipeg	Y	N	Arran
Z04	141	51.73017	-98.73528	10/04/04	Matile	62O	St. Martin	1.0	0.8	1.1	2.5Y	7	2	strong	silty	soft	Winnipeg	Y	N	Arran
Z05	161	52.31472	-98.91067	10/04/04	Matile	63B	Devils Lake	1.4	1.2	1.5	2.5Y	5	2	strong	silty	hard	Winnipeg	Y	N	Arran
Z06	176	53.15910	-99.25892	10/04/04	Matile	63G	Grand Rapids	2.3	2.0	2.5	2.5Y	7	4	strong	silty	soft	Winnipeg	Y	N	Arran
Z07	63	53.86495	-99.24318	10/04/04	Matile	63G	William Lake	0.9	0.8	1.0	5Y	6	1	strong	silty	firm	Winnipeg	Y	N	Arran
Z08	258	55.00357	-98.57412	10/05/04	Matile	63J	Wabowden	1.3	1.0	1.5	2.5Y	4	2	strong	sandy	soft	Shield	N	N	Sky Pilot
Z09	239	55.78998	-97.87577	10/05/04	Matile	63P	Thompson	1.3	1.0	1.5	2.5Y	4	2	mod	sandy	hard	Shield	N	N	Sky Pilot
Z10	26	56.35643	-94.59498	10/05/04	Matile	54D	Gillam	5.2	5.0	5.3	2.5Y	5	2	strong	sandy	soft	Hudson Bay	Y	N	Sky Pilot
Z11	262	48.73661	-92.40608	09/25/04	Thor	I Falls	Seine River	2.8	2.5	3.0	5Y	5	1	none	sandy	firm	Shield	N	N	Severn
Z12	76	49.44907	-91.58583	09/25/04	Thor	Ignace	Ignace	0.7	0.6	0.8	2.5Y	4	2	none	sandy	firm	Shield	N	N	Severn
Z13	159	49.96321	-91.06726	09/25/04	Thor	Ignace	Sturgeon Lake	0.9	0.8	1.0	5Y	5	2	none	sandy	firm	Shield	N	N	Severn
Z14	52	50.51611	-90.60313	09/25/04	Thor	Sioux Lkt	Savant Lake	0.9	0.8	1.0	5Y	6	2	none	sandy	firm	Shield	N	N	Severn
Z15	30	51.39773	-90.20767	09/25/04	Thor	Lk St. Joseph	Pickle Lake	0.9	0.8	1.0	2.5Y	6	2	strong	sandy	firm	Hudson Bay	Y	N	Severn
Z16	214	49.68391	-87.15436	09/26/04	Thor	Longlac	Geraldton	1.7	1.5	1.8	2.5Y	4	2	strong	silty	firm	Hudson Bay	Y	N	Severn
Z17	252	49.51541	-88.03346	09/26/04	Thor	Nipigon	Beardmore	3.2	3.0	3.3	2.5Y	5	2	strong	silty	firm	Shield	Y	N	Severn
Z18	69	49.08906	-88.64399	09/26/04	Thor	Nipigon	Blk Sturgeon	1.2	1.0	1.3	5YR	4	3	none	clayey	firm	Superior	N	N	Severn
Z19	122	48.80042	-89.09363	09/26/04	Thor	Thunder Bay	Doglake	1.4	1.2	1.5	2.5Y	3	2	none	sandy	firm	Shield	N	N	Severn
Z20	115	48.34319	-89.60827	09/26/04	Thor	Thunder Bay	Thunder Bay	0.9	0.8	1.0	10YR	3	3	none	clayey	firm	Superior	N	N	Severn
	114						96TCA18													
	197						96TCA19													
	95						96TCA23													

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
A02	168	22.0	20.3	1.1	19.2	467	384	0.82	446	362	0.81	359	289	0.80	331	269	0.81	108	151	247	232
A03	68	18.4	16.8	0.9	15.9	518	444	0.86	379	326	0.86	361	309	0.85	395	342	0.86	164	159	188	180
A04	35	19.4	17.7	1.1	16.6	435	373	0.86	456	389	0.85	339	286	0.84	447	377	0.84	168	198	272	294
A05	38	17.3	15.4	1.0	14.4	432	359	0.83	467	391	0.84	411	344	0.84	428	354	0.83	44	155	267	320
A06	209	17.8	16.3	1.2	15.1	446	380	0.85	498	425	0.85	264	223	0.85	294	251	0.85	87	308	319	244
A07	255	15.8	14.2	2.1	12.1	484	426	0.88	505	444	0.88	310	272	0.88	282	245	0.87	269	280	464	263
A08	119	20.7	19.1	1.2	17.9	502	413	0.82	446	367	0.82	335	277	0.83	349	289	0.83	58	237	274	355
A09	241	19.3	17.9	0.3	17.6	460	405	0.88	395	345	0.87	286	250	0.88	313	276	0.88	42	39	54	110
A10	133	18.2	16.7	0.7	16	545	483	0.89	438	390	0.89	312	277	0.89	275	244	0.89	41	95	112	179
A11	5	19.4	17.8	0.8	17	496	432	0.87	514	447	0.87	330	289	0.87	288	252	0.87	115	103	148	225
A12	126	21.0	19.2	0.8	18.4	460	432	0.94	556	519	0.93	350	327	0.93	358	333	0.93	73	117	148	238
A13	137	16.1	14.7	0.2	14.5	488	398	0.82	477	389	0.81	246	201	0.82	271	222	0.82	0	15	13	13
B02	118	18.2	16.5	0.7	15.8	486	429	0.88	517	456	0.88	334	295	0.88	336	296	0.88	106	92	134	189
B03	82	19.8	18.1	0.5	17.6	481	430	0.89	481	428	0.89	353	314	0.89	344	303	0.88	0	84	118	174
B04	91	16.9	15.3	0.9	14.4	450	386	0.86	444	382	0.86	317	273	0.86	308	265	0.86	169	118	182	254
B05	240	19.4	17.8	1.4	16.4	479	420	0.88	481	421	0.87	342	298	0.87	310	271	0.87	176	245	380	379
B06	153	21.9	20.2	1.1	19.1	502	390	0.78	457	351	0.77	341	259	0.76	275	210	0.76	173	276	303	276
B07	233	18.3	16.7	0.5	16.2	505	405	0.80	447	351	0.79	298	245	0.82	296	237	0.80	19	59	59	141
B08	245	17.1	15.5	0.9	14.6	480	430	0.89	448	402	0.90	301	270	0.90	304	270	0.89	72	84	162	262
B09	98	16.8	15.4	1.2	14.2	418	352	0.84	392	329	0.84	280	236	0.84	268	225	0.84	176	217	273	299
B10	11	20.5	18.8	1.0	17.8	483	424	0.88	474	414	0.87	338	297	0.88	335	294	0.88	23	82	166	206
B11	56	21.7	19.7	0.6	19.1	476	410	0.86	479	412	0.86	335	287	0.86	335	286	0.85	83	103	154	198
B12	173	18.1	16.4	0.9	15.5	515	446	0.87	488	422	0.87	403	352	0.87	332	294	0.88	262	166	128	85
C02	189	18.3	16.7	0.5	16.2	512	447	0.87	441	383	0.87	309	268	0.87	337	295	0.87	110	59	122	136
C03	51	18.3	16.9	0.9	16	423	365	0.86	490	419	0.85	313	266	0.85	353	300	0.85	192	180	201	199
C04	6	17.0	15.5	1.1	14.4	458	391	0.85	505	430	0.85	256	220	0.86	265	226	0.85	71	219	335	374
C05a	93	18.5	16.9	1.2	15.7	465	404	0.87	445	386	0.87	373	323	0.87	345	299	0.87	296	163	263	303
C05b	46	19.5	17.8	0.6	17.2	362	327	0.90	526	474	0.90	339	305	0.90	358	324	0.91	40	108	163	184
C06	237	19.3	17.6	2.1	15.5	492	423	0.86	448	386	0.86	311	269	0.86	309	265	0.86	412	504	602	444
C07	145	19.6	17.8	1.2	16.6	544	469	0.86	539	467	0.87	373	319	0.85	362	309	0.86	210	198	328	311
C08	136	18.6	17.1	1.4	15.7	497	407	0.82	418	340	0.81	281	227	0.81	324	262	0.81	257	150	244	304
C09	131	19.5	17.8	1.3	16.5	494	423	0.86	456	388	0.85	311	265	0.85	372	316	0.85	91	287	346	346
C10	210	24.8	22.9	4.8	18.1	527	500	0.95	519	491	0.95	389	370	0.95	421	398	0.95	725	982	1205	1463
C11	169	18.1	16.6	1.0	15.6	455	404	0.89	463	417	0.90	298	267	0.89	282	250	0.89	119	228	218	188
C12	166	18.2	16.6	2.5	14.1	437	386	0.88	496	440	0.89	304	271	0.89	268	236	0.88	1482	275	357	287
D02	143	17.7	16.1	0.3	15.8	428	366	0.85	477	409	0.86	322	276	0.86	333	288	0.86	41	65	92	113
D03	149	18.3	16.6	1.0	15.6	458	405	0.89	489	431	0.88	309	272	0.88	313	276	0.88	95	179	275	269
D04	9	18.1	16.6	1.3	15.3	435	376	0.86	492	425	0.86	286	247	0.87	265	229	0.86	361	212	251	298
D05	106	18.6	17.0	1.2	15.8	490	430	0.88	457	399	0.87	338	296	0.88	361	316	0.88	109	258	323	351
D06	3	19.4	17.8	1.3	16.5	474	422	0.89	505	450	0.89	305	271	0.89	292	260	0.89	137	251	350	377
D07	14	17.5	16.1	1.2	14.9	587	539	0.92	399	363	0.91	246	223	0.91	287	263	0.92	0	225	353	312
D08	230	25.6	24.0	1.4	22.6	474	387	0.82	552	452	0.82	313	267	0.85	337	280	0.83	154	221	379	406
D09	139	21.4	19.8	0.7	19.1	495	413	0.84	433	359	0.83	331	281	0.85	290	244	0.84	51	93	199	225
D10	127	17.8	16.0	0.6	15.4	428	379	0.89	468	413	0.88	375	332	0.88	394	345	0.88	31	95	126	173
D11	39	19.2	17.5	0.9	16.6	513	454	0.89	505	452	0.89	396	349	0.88	362	316	0.87	132	136	163	245

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
D12	225	20.1	18.3	0.5	17.8	511	464	0.91	475	430	0.91	347	316	0.91	331	301	0.91	39	93	101	125
E02	92	17.1	15.5	1.1	14.4	448	396	0.88	499	439	0.88	312	273	0.88	323	284	0.88	151	238	292	275
E03	190	17.6	16.0	1.2	14.8	406	371	0.91	476	434	0.91	314	287	0.91	338	309	0.92	132	192	336	340
E04	186	18.3	16.6	1.2	15.4	467	439	0.94	482	454	0.94	346	326	0.94	359	336	0.94	88	223	326	372
E05	61	19.3	17.7	1.0	16.7	549	487	0.89	470	412	0.88	340	298	0.88	337	295	0.88	177	194	210	305
E06	12	16.5	15.1	1.3	13.8	474	410	0.87	488	423	0.87	292	253	0.87	288	250	0.87	139	226	324	401
E07	195	17.9	16.3	1.6	14.7	407	365	0.90	483	433	0.90	344	308	0.90	287	257	0.89	262	269	426	342
E08	113	23.7	22.0	1.6	20.4	449	404	0.90	474	426	0.90	341	306	0.90	333	298	0.90	191	270	392	425
E09	181	24.5	22.8	1.5	21.3	506	433	0.85	520	444	0.85	371	326	0.88	376	330	0.88	302	252	344	372
E10	101	20.3	18.6	1.0	17.6	464	419	0.90	500	449	0.90	381	343	0.90	354	319	0.90	192	112	211	268
E11	167	18.2	16.5	0.9	15.6	481	433	0.90	548	495	0.90	332	298	0.90	362	326	0.90	129	174	193	231
F02	185	17.5	15.9	1.1	14.8	496	422	0.85	435	368	0.84	306	262	0.86	306	261	0.85	139	154	265	266
F03	198	17.2	15.5	0.9	14.6	476	417	0.88	548	483	0.88	326	286	0.88	345	302	0.88	150	109	197	206
F04	211	20.2	18.6	1.5	17.1	502	489	0.97	403	392	0.97	333	325	0.98	346	337	0.97	241	273	363	420
F05	142	16.7	15.1	1.1	14	426	389	0.91	434	393	0.91	336	307	0.92	367	337	0.92	104	178	293	302
F06	57	18.9	17.2	1.0	16.2	431	418	0.97	508	490	0.97	412	398	0.97	384	372	0.97	76	247	254	308
F07	64	20.3	18.8	1.0	17.8	500	412	0.82	457	407	0.89	285	234	0.82	341	280	0.82	56	182	319	338
F08A	269	17.7	16.0	1.3	14.7	486	433	0.89	495	440	0.89	333	297	0.89	338	301	0.89	39	270	344	403
F08B	264	22.1	20.2	1.7	18.5	462	427	0.93	510	471	0.92	395	365	0.92	426	394	0.93	96	340	484	505
F09	229	23.8	22.3	1.1	21.2	413	364	0.88	469	412	0.88	271	240	0.89	325	292	0.90	205	107	205	284
F10	158	17.7	16.0	0.7	15.3	536	472	0.88	478	421	0.88	322	283	0.88	334	294	0.88	236	109	143	185
G02	125	22.1	20.4	1.7	18.7	530	458	0.86	511	441	0.86	322	278	0.86	322	277	0.86	257	369	410	468
G03	94	16.6	15.1	0.9	14.2	510	444	0.87	467	403	0.86	316	276	0.87	219	188	0.86	39	170	330	259
G04	163	19.2	17.5	1.4	16.1	437	353	0.81	442	353	0.80	330	269	0.81	336	272	0.81	137	330	424	355
G05	236	21.3	19.7	1.5	18.2	506	409	0.81	443	354	0.80	343	278	0.81	358	295	0.82	226	255	375	377
G06	90	22.6	20.9	0.5	20.4	515	427	0.83	539	443	0.82	386	322	0.83	363	299	0.82	41	90	108	132
G07	174	18.0	16.5	1.2	15.3	464	403	0.87	468	404	0.86	308	271	0.88	296	260	0.88	100	224	284	313
G08	193	18.5	17.0	1.0	16	534	451	0.84	505	423	0.84	295	248	0.84	263	221	0.84	62	175	235	261
G09	232	22.8	21.0	1.8	19.2	529	501	0.95	553	525	0.95	400	379	0.95	385	366	0.95	176	384	473	490
G10	22	26.0	24.3	3.7	20.6	476	446	0.94	530	496	0.94	408	383	0.94	356	333	0.94	1000	961	828	668
H02	222	19.1	17.4	1.4	16	448	392	0.87	549	480	0.87	377	331	0.88	327	284	0.87	495	239	287	299
H03	179	17.4	15.8	1.2	14.6	441	366	0.83	468	388	0.83	312	257	0.82	334	276	0.83	320	160	252	311
H04	105	17.5	16.0	1.5	14.5	431	368	0.85	437	368	0.84	318	270	0.85	289	252	0.87	383	163	253	332
H05	124	18.8	17.1	1.6	15.5	470	409	0.87	471	411	0.87	338	294	0.87	309	268	0.87	261	269	387	434
H06	77	20.2	18.5	1.3	17.2	477	425	0.89	462	411	0.89	358	319	0.89	357	319	0.90	187	215	307	427
H07	170	18.9	17.3	1.4	15.9	520	456	0.88	460	402	0.87	298	264	0.89	377	331	0.88	129	197	343	449
H08	132	18.9	17.4	1.4	16	464	452	0.97	350	338	0.97	357	348	0.97	317	309	0.97	121	229	331	425
H09	271	22.0	20.2	3.1	17.1	455	439	0.97	470	454	0.97	395	380	0.96	428	413	0.97	1271	563	612	539
H10	7	19.9	17.9	3.5	14.4	505	484	0.96	580	555	0.96	423	405	0.96	454	434	0.96	1374	753	685	505
I02	34	17.1	15.4	1.0	14.4	476	419	0.88	490	429	0.88	305	266	0.87	351	307	0.88	297	142	228	289
I03	87	18.9	17.2	1.2	16	505	441	0.87	454	395	0.87	374	328	0.88	320	281	0.88	82	214	295	374
I04	165	19.5	17.9	1.6	16.3	473	414	0.87	485	425	0.88	352	308	0.87	340	299	0.88	222	372	377	450
I05	217	20.3	18.6	1.6	17	519	493	0.95	444	418	0.94	364	339	0.93	357	333	0.93	244	303	411	462
I06	13	19.8	18.1	1.8	16.3	507	478	0.94	531	503	0.95	379	358	0.94	329	309	0.94	194	340	471	574
I07	86	15.7	14.2	1.1	13.1	468	422	0.90	367	332	0.90	323	295	0.91	325	298	0.92	86	189	281	362

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
I08	73	19.5	17.8	1.5	16.3	529	483	0.91	452	412	0.91	374	341	0.91	376	343	0.91	220	266	398	436
I09	60	16.8	15.2	0.9	14.3	418	360	0.86	470	402	0.85	363	310	0.85	376	322	0.86	196	159	183	222
I10	155	16.3	14.7	1.0	13.7	501	438	0.87	429	373	0.87	343	298	0.87	335	290	0.87	224	144	199	265
J02	66	20.7	19.1	1.0	18.1	411	391	0.95	420	400	0.95	414	392	0.95	387	364	0.94	59	202	282	339
J03	47	18.5	16.9	1.0	15.9	480	410	0.85	485	414	0.85	330	279	0.85	342	290	0.85	256	139	242	234
J04	103	17.4	15.8	1.4	14.4	411	354	0.86	509	435	0.85	346	303	0.88	353	312	0.88	138	265	318	417
J05	226	20.4	18.7	1.5	17.2	540	482	0.89	540	481	0.89	343	308	0.90	291	259	0.89	468	186	323	419
J06	183	18.1	16.5	1.3	15.2	481	417	0.87	502	432	0.86	325	281	0.87	341	291	0.85	167	261	323	406
J07	204	19.7	17.9	2.8	15.1	471	434	0.92	472	433	0.92	373	345	0.93	392	361	0.92	1617	387	256	295
J08	107	16.3	14.7	1.1	13.6	446	386	0.86	512	437	0.85	333	297	0.89	324	283	0.87	148	134	212	277
J09	130	18.8	17.1	1.3	15.8	482	453	0.94	506	474	0.94	345	324	0.94	363	341	0.94	184	224	302	381
J10	20	19.3	17.8	1.1	16.7	500	423	0.85	465	395	0.85	247	209	0.84	319	268	0.84	174	271	280	256
K02	273	20.0	18.2	1.9	16.3	455	406	0.89	569	505	0.89	405	357	0.88	378	333	0.88	351	344	485	433
K03	41	19.7	18.0	1.1	16.9	512	420	0.82	400	324	0.81	416	338	0.81	373	303	0.81	119	195	261	258
K04	250	18.0	16.4	0.9	15.5	478	399	0.84	420	349	0.83	343	287	0.84	318	266	0.84	153	171	205	196
K05	21	18.3	16.6	1.1	15.5	503	447	0.89	508	450	0.89	326	290	0.89	344	306	0.89	146	203	358	290
K06	261	20.9	19.1	1.8	17.3	445	411	0.92	435	402	0.92	423	390	0.92	436	403	0.92	318	346	472	496
K07	148	20.9	19.0	2.1	16.9	511	491	0.96	533	513	0.96	448	430	0.96	411	395	0.96	615	436	485	516
K08	121	24.4	22.6	8.3	14.3	513	470	0.92	604	552	0.91	407	371	0.91	393	361	0.92	3204	1959	1508	994
K09	111	21.6	19.8	2.1	17.7	504	457	0.91	501	455	0.91	418	382	0.91	424	387	0.91	410	421	439	446
K10	228	19.8	18.1	1.0	17.1	475	408	0.86	429	365	0.85	370	316	0.85	348	298	0.86	254	192	237	280
L02	18	16.3	14.8	1.4	13.4	508	418	0.82	508	418	0.82	270	222	0.82	294	241	0.82	204	243	391	385
L03	251	21.3	19.6	1.8	17.8	465	412	0.89	478	423	0.89	335	296	0.88	372	332	0.89	105	328	536	599
L04	220	17.0	15.4	0.8	14.6	436	379	0.87	471	411	0.87	329	287	0.87	302	262	0.87	63	157	211	234
L05E	23	19.3	17.6	1.0	16.6	507	458	0.90	514	464	0.90	344	312	0.91	389	351	0.90	24	237	329	353
L05W	4	16.4	14.8	0.2	14.6	513	416	0.81	469	377	0.80	324	261	0.81	291	234	0.80	384	8	49	69
L06E	40	28.0	25.7	3.9	21.8	459	398	0.87	593	515	0.87	545	477	0.88	561	493	0.88	831	972	906	901
L06WA	218	20.6	18.8	1.5	17.3	519	478	0.92	555	513	0.92	370	341	0.92	377	347	0.92	249	247	381	495
L06WB	184	18.5	16.8	1.0	15.8	457	410	0.90	415	372	0.90	322	289	0.90	383	343	0.89	62	241	249	270
L07	44	20.8	19.3	2.2	17.1	519	485	0.93	480	451	0.94	320	289	0.90	302	264	0.87	346	672	506	522
L08	267	20.2	18.5	1.7	16.8	423	387	0.92	451	415	0.92	371	339	0.91	375	344	0.92	554	286	363	363
L09	19	21.2	19.4	1.7	17.7	493	443	0.90	581	523	0.90	364	326	0.90	364	328	0.90	336	347	421	410
L10	99	21.1	19.2	2.0	17.2	497	462	0.93	480	447	0.93	455	426	0.94	478	445	0.93	508	364	298	412
L11	150	20.1	18.2	2.7	15.5	518	486	0.94	454	425	0.94	409	383	0.94	421	393	0.93	1047	512	502	501
M02	78	17.0	15.3	1.4	13.9	426	367	0.86	532	460	0.87	322	281	0.87	357	311	0.87	321	269	301	267
M03	152	19.8	18.3	0.8	17.5	434	369	0.85	455	390	0.86	320	271	0.85	319	272	0.85	172	142	182	184
M04	248	17.2	15.5	1.0	14.5	533	514	0.96	527	506	0.96	343	331	0.96	351	337	0.96	35	153	255	282
M05	29	21.1	19.3	2.2	17.1	529	493	0.93	516	480	0.93	352	326	0.93	365	339	0.93	199	456	743	700
M06	49	22.4	20.7	2.3	18.4	478	448	0.94	500	470	0.94	334	314	0.94	365	345	0.94	327	500	619	725
M07	172	25.5	23.5	2.1	21.4	463	440	0.95	576	545	0.95	463	439	0.95	467	443	0.95	351	500	557	653
M08	128	19.0	17.1	1.0	16.1	525	454	0.87	525	461	0.88	337	295	0.88	337	295	0.88	216	187	206	231
M09	180	22.0	20.3	2.4	17.9	483	428	0.89	518	458	0.88	368	325	0.88	391	346	0.89	1067	366	426	414
M10	188	18.7	17.0	1.0	16	530	464	0.88	544	475	0.87	369	319	0.86	356	311	0.87	215	195	199	162
M11	120	19.9	18.1	1.5	16.6	484	441	0.91	517	470	0.91	422	385	0.91	413	376	0.91	592	228	227	238
N03	215	19.7	18.1	0.3	17.8	504	423	0.84	518	430	0.83	316	266	0.84	317	267	0.84	67	51	75	98

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
N04	147	16.1	14.5	1.6	12.9	418	348	0.83	497	419	0.84	332	269	0.81	325	265	0.81	247	256	362	431
N05	138	20.5	18.8	2.3	16.5	485	448	0.93	497	462	0.93	350	325	0.93	390	363	0.93	285	462	568	684
N06	202	23.8	21.9	1.2	20.7	577	537	0.93	601	557	0.93	411	382	0.93	456	424	0.93	209	227	274	438
N07	16	24.5	22.3	2.8	19.5	468	463	0.99	514	509	0.99	531	526	0.99	618	612	0.99	444	699	789	709
N08	259	16.3	14.7	0.7	14	508	441	0.87	471	409	0.87	346	301	0.87	325	284	0.87	142	161	139	135
N09	32	16.9	15.2	0.8	14.4	437	390	0.89	490	437	0.89	316	281	0.89	338	303	0.90	171	128	168	156
N10	242	18.4	16.5	1.7	14.8	566	539	0.95	571	546	0.96	428	410	0.96	378	362	0.96	392	365	373	358
N11	266	21.4	19.7	0.4	19.3	501	427	0.85	563	485	0.86	354	302	0.85	407	348	0.85	234	53	52	33
N12	270	16.1	14.4	0.4	14	409	352	0.86	463	391	0.84	430	358	0.83	355	296	0.83	144	47	50	45
O03	177	19.8	18.0	4.1	13.9	487	431	0.89	554	479	0.87	400	346	0.86	329	285	0.87	839	765	1087	892
O04	8	18.2	16.7	0.2	16.5	444	364	0.82	481	397	0.82	281	230	0.82	248	203	0.82	0	38	64	65
O05	272	22.2	20.4	2.0	18.4	522	489	0.94	595	560	0.94	412	386	0.94	432	405	0.94	474	391	453	493
O06	207	20.6	18.8	2.1	16.7	464	442	0.95	500	476	0.95	409	389	0.95	402	382	0.95	414	367	471	598
O07	182	24.8	22.8	3.1	19.7	602	559	0.93	579	539	0.93	437	407	0.93	409	379	0.92	613	679	819	876
O08	212	21.5	19.7	5.9	13.8	486	441	0.91	560	505	0.90	406	373	0.92	409	371	0.91	2867	1257	831	541
O09	246	18.9	17.1	1.0	16.1	503	456	0.91	482	437	0.91	376	340	0.90	376	340	0.91	303	216	227	247
O10	162	17.5	15.9	1.0	14.9	527	445	0.84	492	416	0.85	284	239	0.84	311	263	0.84	292	160	194	204
O11	221	19.4	17.6	4.4	13.2	480	455	0.95	525	496	0.95	423	402	0.95	437	414	0.95	758	919	1229	1314
O12	65	18.6	16.9	0.5	16.4	517	448	0.87	531	460	0.87	377	326	0.86	345	297	0.86	55	149	131	120
P03	37	22.4	20.5	1.0	19.5	436	393	0.90	507	462	0.91	426	393	0.92	391	355	0.91	68	190	354	230
P04	28	25.3	23.9	0.4	23.5	490	411	0.84	432	361	0.83	248	207	0.83	266	221	0.83	26	95	120	95
P05	206	30.2	28.6	4.6	24	481	445	0.92	501	463	0.92	350	323	0.92	360	332	0.92	2157	597	757	856
P06	268	30.6	28.9	1.6	27.3	548	498	0.91	494	449	0.91	345	314	0.91	337	306	0.91	254	319	391	426
P07	48	29.8	28.0	1.4	26.6	479	435	0.91	525	477	0.91	376	341	0.91	363	329	0.91	213	268	374	431
P08	247	17.7	16.0	0.6	15.4	442	381	0.86	529	453	0.86	326	279	0.86	311	266	0.86	105	74	119	140
P09	154	21.2	19.3	4.0	15.3	501	469	0.94	470	438	0.93	426	397	0.93	445	414	0.93	1649	772	694	639
P10	157	14.9	13.2	0.8	12.4	473	389	0.82	534	446	0.84	311	255	0.82	322	266	0.83	211	14	100	94
P11	123	20.2	18.5	4.5	14	472	434	0.92	492	446	0.91	354	323	0.91	348	318	0.91	1864	904	720	585
P12	62	16.0	14.3	2.1	12.2	426	347	0.82	501	409	0.82	332	270	0.81	371	298	0.80	1037	353	349	192
P13	10	17.8	16.2	1.8	14.4	479	398	0.83	460	383	0.83	298	254	0.85	313	260	0.83	375	373	388	354
Q02	72	16.8	15.2	0.3	14.9	440	402	0.92	381	352	0.93	317	286	0.90	324	291	0.90	79	51	71	57
Q03	200	17.1	15.4	1.0	14.4	490	449	0.92	495	456	0.92	335	306	0.92	303	279	0.92	52	210	272	283
Q03A	129	22.7	20.9	1.0	19.9	540	502	0.93	501	464	0.93	394	366	0.93	346	322	0.93	80	202	327	305
Q04	257	26.0	24.3	0.6	23.7	450	389	0.86	637	551	0.87	398	344	0.86	375	324	0.86	89	133	149	164
Q05	203	30.2	28.3	2.2	26.1	527	493	0.94	481	449	0.93	374	347	0.93	365	337	0.92	287	454	576	715
Q06	108	29.9	28.3	2.0	26.3	457	418	0.92	527	483	0.92	298	272	0.91	310	284	0.92	311	378	480	614
Q07	17	24.7	23.1	1.8	21.3	539	456	0.85	478	399	0.83	293	243	0.83	290	243	0.84	239	293	524	482
Q08	156	16.4	14.7	1.4	13.3	538	490	0.91	448	403	0.90	338	306	0.91	377	334	0.89	648	183	196	222
Q09	96	19.8	18.1	1.4	16.7	519	465	0.90	482	428	0.89	432	384	0.89	363	324	0.89	466	245	256	312
Q10	275	15.3	13.8	1.4	12.4	453	380	0.84	452	380	0.84	298	248	0.83	291	242	0.83	73	105	88	85
Q11	58	14.9	13.3	1.1	12.2	431	377	0.87	521	455	0.87	349	303	0.87	313	272	0.87	378	177	152	161
Q12	97	20.8	19.1	7.1	12	483	447	0.93	478	444	0.93	356	330	0.93	350	322	0.92	3059	1296	1159	915
Q13	263	14.0	12.3	0.4	11.9	490	388	0.79	500	400	0.80	339	267	0.79	382	307	0.80	40	79	71	73
R02	253	17.3	15.6	0.2	15.4	451	336	0.75	493	354	0.72	450	357	0.79	323	243	0.75	1	17	35	35
R03	15	21.9	20.1	1.4	18.7	461	411	0.89	481	428	0.89	310	276	0.89	393	350	0.89	131	324	345	400

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
R04	199	34.7	32.8	1.1	31.7	563	486	0.86	615	532	0.87	367	316	0.86	395	338	0.86	108	284	359	343
R05	219	26.9	25.3	1.5	23.8	475	418	0.88	520	456	0.88	296	258	0.87	340	296	0.87	247	266	350	355
R06	164	24.3	22.7	0.8	21.9	469	403	0.86	493	426	0.86	297	256	0.86	305	262	0.86	202	109	168	147
R07	134	33.8	32.1	2.9	29.2	490	432	0.88	529	467	0.88	376	335	0.89	345	306	0.89	797	476	582	689
R08	24	16.0	14.4	0.1	14.3	367	302	0.82	463	385	0.83	277	229	0.83	278	229	0.82	0	29	21	28
R09	201	15.5	13.8	1.8	12	486	433	0.89	531	476	0.90	321	283	0.88	400	352	0.88	772	295	232	276
R10	151	13.0	11.2	0.9	10.3	454	390	0.86	457	391	0.86	404	341	0.84	395	337	0.85	508	73	69	52
R11	213	22.8	20.8	14.0	6.8	558	548	0.98	465	454	0.98	469	459	0.98	404	396	0.98	7541	3162	1576	862
R12	194	22.8	21.0	8.2	12.8	564	535	0.95	503	478	0.95	401	380	0.95	387	370	0.96	3346	1593	1510	1153
R13	192	18.0	16.3	6.0	10.3	496	471	0.95	447	426	0.95	404	383	0.95	345	326	0.95	1435	1307	1438	1254
R14	171	23.7	21.8	9.2	12.6	474	460	0.97	434	419	0.97	513	496	0.97	506	490	0.97	3027	2007	1871	1616
R15	74	15.4	13.7	1.1	12.6	417	356	0.85	429	362	0.84	360	308	0.85	394	337	0.85	251	188	241	135
S01	75	17.1	15.3	0.9	14.4	497	423	0.85	462	393	0.85	338	286	0.85	367	310	0.84	123	122	308	214
S02	45	15.7	14.1	0.2	13.9	480	431	0.90	574	516	0.90	320	283	0.88	351	312	0.89	26	53	48	47
S03	112	20.2	18.7	2.0	16.7	482	432	0.90	484	442	0.91	300	273	0.91	301	274	0.91	486	393	465	391
S04	79	29.6	28.0	1.5	26.5	444	401	0.90	484	436	0.90	305	272	0.89	336	300	0.89	154	323	610	236
S05	89	26.2	24.6	3.9	20.7	455	399	0.88	583	493	0.85	315	264	0.84	319	267	0.84	253	948	1171	1089
S06	53	33.1	31.5	1.2	30.3	490	416	0.85	436	372	0.85	278	235	0.85	315	268	0.85	193	233	350	336
S07	224	28.6	27.0	0.7	26.3	508	435	0.86	555	477	0.86	297	252	0.85	348	296	0.85	87	143	188	209
S08	81	16.3	14.6	0.4	14.2	419	345	0.82	498	414	0.83	386	315	0.81	382	311	0.81	61	50	89	107
S09	249	12.4	10.5	0.2	10.3	483	402	0.83	502	404	0.80	462	392	0.85	446	374	0.84	8	8	15	19
S10	55	21.0	19.3	7.4	11.9	459	440	0.96	491	470	0.96	364	347	0.95	352	335	0.95	3370	1443	1353	765
S11	84	14.3	12.6	0.4	12.2	454	395	0.87	429	372	0.87	331	281	0.85	381	322	0.84	53	62	90	112
S12	116	20.8	19.0	4.5	14.5	497	458	0.92	522	478	0.91	370	342	0.92	338	311	0.92	1227	970	910	923
S13	146	19.0	17.1	7.1	10	570	540	0.95	517	487	0.94	451	428	0.95	387	365	0.94	1152	1481	2379	1314
S14	80	21.9	20.1	12.6	7.5	514	490	0.95	407	389	0.96	354	332	0.94	403	380	0.94	5568	2972	1994	1649
S15	187	18.9	17.1	2.3	14.8	531	480	0.90	463	422	0.91	390	355	0.91	411	376	0.92	671	537	482	419
S16	256	16.1	14.6	0.7	13.9	409	345	0.84	491	416	0.85	307	258	0.84	318	271	0.85	225	69	76	82
T01	71	19.8	18.2	1.5	16.7	495	413	0.84	390	329	0.84	334	277	0.83	338	280	0.83	356	383	549	150
T02	144	21.6	19.9	2.1	17.8	433	378	0.87	407	354	0.87	468	407	0.87	387	339	0.88	532	430	417	413
T03	254	18.6	17.0	1.3	15.7	494	463	0.94	482	451	0.94	342	319	0.93	365	340	0.93	79	216	395	374
T04	265	30.0	28.4	2.0	26.4	410	354	0.86	431	374	0.87	339	293	0.87	325	281	0.87	269	344	513	538
T05	88	34.7	32.8	2.7	30.1	466	401	0.86	516	439	0.85	372	316	0.85	427	361	0.85	439	836	665	513
T06	140	34.0	31.9	1.9	30	526	461	0.88	514	453	0.88	446	388	0.87	442	390	0.88	214	315	509	558
T07	117	28.3	26.5	1.0	25.5	488	421	0.86	511	437	0.85	326	280	0.86	338	291	0.86	31	161	290	318
T08	85	16.1	14.6	0.9	13.7	481	422	0.88	462	404	0.87	356	309	0.87	330	285	0.87	108	182	183	189
T09	67	16.1	14.6	0.3	14.3	381	314	0.82	477	390	0.82	361	296	0.82	379	312	0.82	51	76	110	89
T10	27	17.7	15.8	8.0	7.8	498	472	0.95	498	474	0.95	430	410	0.95	407	386	0.95	2514	1820	1657	1224
T11	33	20.7	18.8	12.0	6.8	398	391	0.98	414	406	0.98	478	470	0.98	566	560	0.99	1867	2521	3105	3701
T11-2	260	21.4	19.6	10.5	9.1	477	447	0.94	540	509	0.94	359	339	0.95	341	320	0.94	4058	2246	1865	1721
T12	216	19.1	17.5	7.0	10.5	495	471	0.95	426	401	0.94	318	300	0.94	360	344	0.96	3389	1403	1136	690
T14	208	22.4	20.3	8.8	11.5	570	558	0.98	541	523	0.97	437	425	0.97	481	470	0.98	3505	1622	1587	1207
T15	59	23.7	21.6	9.7	11.9	496	483	0.97	489	471	0.96	408	397	0.97	394	383	0.97	2504	2353	2398	1802
T16	25	14.6	13.1	0.1	13	474	378	0.80	486	386	0.79	229	180	0.78	220	177	0.81	0	7	8	9
U02	235	22.3	20.5	1.7	18.8	459	433	0.94	515	487	0.95	391	368	0.94	389	367	0.94	408	350	374	335

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
U03	191	20.7	19.1	2.8	16.3	438	386	0.88	522	459	0.88	326	287	0.88	327	285	0.87	784	667	575	482
U04	83	33.9	31.6	2.6	29	468	394	0.84	577	474	0.82	525	440	0.84	506	425	0.84	468	557	769	564
U05	54	35.7	34.0	3.0	31	382	338	0.88	464	409	0.88	381	337	0.88	409	362	0.89	966	588	785	537
U08	234	17.1	15.3	1.4	13.9	478	379	0.79	511	414	0.81	370	293	0.79	414	337	0.81	195	80	122	131
U09	31	14.2	12.8	0.2	12.6	407	342	0.84	431	360	0.83	252	205	0.81	215	175	0.81	31	53	74	76
U10	135	15.1	13.4	1.7	11.7	510	445	0.87	477	422	0.88	315	279	0.88	346	307	0.89	387	203	324	506
U11	205	17.4	15.7	2.1	13.6	527	462	0.88	469	413	0.88	364	333	0.91	377	338	0.90	762	510	300	277
V02	70	16.8	15.0	1.0	14	452	392	0.87	447	388	0.87	453	399	0.88	422	367	0.87	390	120	232	157
V03	231	24.0	22.0	1.6	20.4	491	434	0.88	535	472	0.88	563	497	0.88	437	390	0.89	443	336	378	387
V04	50	23.8	28.1	3.0	25.1	520	485	0.93	540	502	0.93	389	363	0.93	381	355	0.93	511	609	955	729
V06	227	29.7	28.0	1.2	26.8	508	443	0.87	577	502	0.87	352	308	0.88	359	314	0.87	157	348	312	285
V07	36	24.2	22.6	0.8	21.8	513	450	0.88	452	396	0.88	341	291	0.85	316	273	0.86	116	147	178	201
V08	238	13.1	11.5	0.4	11.1	437	375	0.86	516	445	0.86	314	267	0.85	287	243	0.85	21	56	82	91
V09	178	16.0	14.4	1.7	12.7	498	445	0.89	487	435	0.89	395	356	0.90	352	319	0.91	776	225	243	260
W02	104	18.6	17.2	0.9	16.3	466	403	0.87	448	384	0.86	304	260	0.86	306	262	0.85	188	201	225	134
W03	102	23.2	21.4	2.1	19.3	465	416	0.89	476	426	0.89	370	330	0.89	412	368	0.89	309	523	554	438
W04	175	27.7	25.6	0.7	24.9	545	482	0.88	486	426	0.88	372	327	0.88	357	314	0.88	222	101	126	126
W05	100	36.2	34.1	3.3	30.8	392	347	0.88	504	441	0.88	540	478	0.89	464	410	0.88	928	664	713	748
W06	196	34.9	32.7	2.5	30.2	537	456	0.85	540	458	0.85	562	485	0.86	560	486	0.87	409	542	601	586
X01	43	22.2	20.6	2.2	18.4	440	390	0.89	500	444	0.89	330	292	0.89	304	268	0.88	401	563	597	460
X02	243	26.2	24.4	2.0	22.4	436	391	0.90	551	491	0.89	378	340	0.90	427	383	0.90	231	503	527	531

Appendix. Lithological analyses, sample processing

Field	Lab	Total	Split	>2mm	<2 mm	Damp 1	Dry 1	Moist 1	Damp 2	Dry 2	Moist 2	Damp 3	Dry 3	Moist 3	Damp 4	Dry 4	Moist 4	>16 mm	8-16 mm	4-8 mm	2-4 mm
#	#	kg	kg	kg	kg	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	dry/moist	g	g	g	g
X03	274	26.8	25.0	3.1	21.9	491	451	0.92	548	502	0.92	362	332	0.92	386	352	0.91	775	179	685	532
X04	110	24.8	23.2	1.5	21.7	473	432	0.91	466	426	0.91	316	287	0.91	294	268	0.91	149	367	388	422
X05	244	21.3	19.6	1.5	18.1	484	431	0.89	522	465	0.89	330	292	0.88	327	294	0.90	259	393	324	301
Y05	42	23.5	22.0	1.9	20.1	471	411	0.87	448	387	0.86	268	235	0.88	316	278	0.88	467	459	421	351
Z01	109	27.7	26.0	3.6	22.4	407	367	0.90	436	395	0.91	417	379	0.91	376	341	0.91	671	811	867	910
Z02	160	27.6	25.8	3.8	22	592	550	0.93	540	504	0.93	392	365	0.93	391	363	0.93	1130	786	792	705
Z03	223	22.2	20.4	2.0	18.4	531	487	0.92	470	430	0.91	404	371	0.92	361	331	0.92	368	481	572	473
Z04	141	30.3	28.4	3.2	25.2	495	440	0.89	542	484	0.89	471	422	0.90	490	435	0.89	916	875	773	564
Z05	161	26.6	24.7	3.7	21	545	498	0.91	577	526	0.91	349	319	0.91	355	325	0.91	847	929	952	734
Z06	176	25.3	23.3	5.0	18.3	492	454	0.92	517	475	0.92	465	429	0.92	450	413	0.92	1371	1330	1117	795
Z07	63	23.5	21.9	2.9	19	526	492	0.94	436	419	0.96	297	275	0.93	336	311	0.93	755	773	644	507
Z08	258	25.8	24.0	2.9	21.1	481	440	0.92	505	462	0.91	396	362	0.91	414	379	0.92	1020	716	525	449
Z09	239	27.8	25.7	11.3	14.4	481	463	0.96	496	477	0.96	520	503	0.97	496	479	0.97	1031	3976	3381	2338
Z10	26	24.5	22.7	3.9	18.8	488	460	0.94	564	528	0.94	432	408	0.94	433	407	0.94	698	801	1055	1136
Z11	262	29.6	27.8	7.0	20.8	481	443	0.92	544	494	0.91	397	369	0.93	406	370	0.91	2771	1235	1373	1354
Z12	76	27.0	25.1	6.9	18.2	521	487	0.93	586	546	0.93	426	398	0.93	386	360	0.93	2748	1242	1155	1283
Z13	159	31.4	29.5	5.4	24.1	474	442	0.93	459	429	0.93	390	364	0.93	454	420	0.93	1630	947	1234	1340
Z14	52	29.6	27.9	5.0	22.9	459	421	0.92	462	421	0.91	321	296	0.92	337	306	0.91	2734	806	662	613
Z15	30	31.5	29.7	3.0	26.7	490	444	0.91	514	468	0.91	358	325	0.91	393	357	0.91	585	665	882	748
Z16	214	27.8	25.8	1.9	23.9	535	479	0.90	590	529	0.90	417	372	0.89	387	347	0.90	705	175	378	422
Z17	252	27.3	25.5	3.5	22	525	487	0.93	549	510	0.93	418	390	0.93	386	359	0.93	761	836	883	776
Z18	69	29.9	28.2	12.3	15.9	469	423	0.90	452	408	0.90	375	340	0.90	374	339	0.91	2436	3598	3006	2042
Z19	122	31.2	29.4	7.2	22.2	441	425	0.96	596	574	0.96	419	402	0.96	444	427	0.96	1855	1617	1599	1601
Z20	115	30.1	28.3	7.0	21.3	597	522	0.87	472	410	0.87	385	340	0.88	351	310	0.88	4947	1526	1538	1312
96TCA18	114	20.9	19.1	3.4	15.7	492	468	0.95	524	498	0.95	385	367	0.95	380	361	0.95	761	678	879	848
96TCA19	197	19.8	18.0	2.6	15.4	463	443	0.96	542	519	0.96	446	426	0.96	456	436	0.96	455	527	734	906
96TCA23	95	18.8	17.0	2.9	14.1	542	516	0.95	469	449	0.96	428	399	0.93	365	338	0.93	477	582	748	774

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
A02	168	04/12/05	2.5 Y 6/4	50	0.96	49.040	1.9	1.07	13.45	14.52	**29.6**	25.0	5.0	20.0	**40.8**	34.52	14.52	**29.6**
A03	68	03/31/05	2.5 Y 6/4	50	0.78	49.220	1.6	1.060	14.64	15.70	**31.9**	24.0	5.0	19.0	**38.6**	34.70	14.52	**29.5**
A04	35	03/31/05	2.5 Y 6/4	50	4.77	45.230	9.5	1.310	12.23	13.54	**29.9**	21.0	6.0	15.0	**33.2**	28.54	16.69	**36.9**
A05	38	03/31/05	2.5 Y 6/4	50	7.54	42.460	15.1	1.370	16.38	17.75	**41.8**	16.0	6.0	10.0	**23.6**	27.75	14.71	**34.6**
A06	209	03/02/05		50	2.08	47.920	4.2	1.410	12.99	14.40	**30.1**	14.5	6.0	8.5	**17.7**	22.90	25.02	**52.2**
A07	255	03/04/05	2.5 Y 4/4	50	3.33	46.670	6.7	2.130	18.37	20.50	**43.9**	13.0	5.5	7.5	**16.1**	28.00	18.67	**40.0**
A08	119	03/31/05	10 YR 6/6	50	3.52	46.480	7.0	1.150	19.88	21.03	**45.2**	14.0	6.0	8.0	**17.2**	29.03	17.45	**37.5**
A09	241	03/03/05	10 YR 6/6	50	0.30	49.700	0.6	1.060	17.60	18.66	**37.5**	18.5	6.0	12.5	**25.2**	31.16	18.54	**37.3**
A10	133	03/31/05	10 YR 6/6	50	2.26	47.740	4.5	1.440	19.73	21.17	**44.3**	18.5	5.0	13.5	**28.3**	34.67	13.07	**27.4**
A11	5	03/31/05	2.5 Y 6/6	50	2.01	47.990	4.0	2.110	23.91	26.02	**54.2**	15.0	5.0	10.0	**20.8**	36.02	11.97	**24.9**
A12	126	03/31/05	2.5 Y 7/8	50	2.33	47.670	4.7	1.630	17.70	19.33	**40.5**	18.0	5.0	13.0	**27.3**	32.33	15.34	**32.2**
A13	137	03/31/05	7.5 YR 5/6	50	0.03	49.970	0.1	0.280	1.85	2.13	**4.3**	37.0	5.0	32.0	**64.0**	34.13	15.84	**31.7**
B02	118	03/31/05	10 YR 6/6	50	1.60	48.400	3.2	1.110	14.07	15.18	**31.4**	20.5	6.0	14.5	**30.0**	29.68	18.72	**38.7**
B03	82	03/31/05	10 YR 6/3	50	0.46	49.540	0.9	1.310	18.28	19.59	**39.5**	19.0	5.0	14.0	**28.3**	33.59	15.95	**32.2**
B04	91	03/31/05	2.5 Y 6/4	50	2.58	47.420	5.2	1.510	16.53	18.04	**38.0**	21.0	5.5	15.5	**32.7**	33.54	13.88	**29.3**
B05	240	03/03/05	10 YR 6/6	50	2.47	47.530	4.9	1.840	20.43	22.27	**46.9**	14.0	5.5	8.5	**17.9**	30.77	16.76	**35.3**
B06	153	02/24/05	2.5 Y 6/4	50	0.64	49.360	1.3	0.770	9.46	10.23	**20.7**	17.0	5.0	12.0	**24.3**	22.23	27.13	**55.0**
B07	233	03/03/05	10 YR 6/6	50	0.35	49.650	0.7	0.980	9.21	10.19	**20.5**	19.0	6.0	13.0	**26.2**	23.19	26.46	**53.3**
B08	245	03/04/05	2.5 Y 6/6	50	1.75	48.250	3.5	1.400	19.97	21.37	**44.3**	15.0	5.0	10.0	**20.7**	31.37	16.88	**35.0**
B09	98	03/31/05	2.5 Y 4/4	50	2.47	47.530	4.9	1.500	12.24	13.74	**28.9**	22.0	6.0	16.0	**33.7**	29.74	17.79	**37.4**
B10	11	03/31/05	2.5 Y 6/8	50	1.02	48.980	2.0	1.220	20.45	21.67	**44.2**	17.0	5.0	12.0	**24.5**	33.67	15.31	**31.3**
B11	56	03/31/05	10 YR 6/6	50	1.43	48.570	2.9	1.410	21.00	22.41	**46.1**	18.0	5.5	12.5	**25.7**	34.91	13.66	**28.1**
B12	173	02/24/05	2.5Y 6/6	50	0.68	49.320	1.4	0.670	16.59	17.26	**35.0**	22.0	5.5	16.5	**33.5**	33.76	15.56	**31.5**
C02	189	02/25/05	2.5 Y 6/6	50	0.95	49.050	1.9	0.910	17.46	18.37	**37.5**	22.5	5.0	17.5	**35.7**	35.87	13.18	**26.9**
C03	51	03/31/05	10 YR 6/4	50	1.10	48.900	2.2	1.100	12.03	13.13	**26.9**	20.0	5.0	15.0	**30.7**	28.13	20.77	**42.5**
C04	6	03/31/05	2.5 Y 6/4	50	4.79	45.210	9.6	1.750	15.77	17.52	**38.8**	17.5	5.5	12.0	**26.5**	29.52	15.69	**34.7**
C05a	93	03/31/05	2.5 Y 6/6	50	1.27	48.730	2.5	1.470	17.51	18.98	**38.9**	16.0	6.0	10.0	**20.5**	28.98	19.75	**40.5**
C05b	46	03/31/05	2.5 Y 6/4	50	2.30	47.700	4.6	1.060	18.02	19.08	**40.0**	19.0	5.5	13.5	**28.3**	32.58	15.12	**31.7**
C06	237	03/03/05	10 YR 6/6	50	3.23	46.770	6.5	1.070	13.71	14.78	**31.6**	21.0	5.5	15.5	**33.1**	30.28	16.49	**35.3**
C07	145	02/23/05	10 YR 5/6	50	2.06	47.940	4.1	1.970	21.19	23.16	**48.3**	13.5	5.0	8.5	**17.7**	31.66	16.28	**34.0**
C08	136	03/31/05	2.5 Y 6/4	50	2.31	47.690	4.6	1.230	16.35	17.58	**36.9**	16.0	5.0	11.0	**23.1**	28.58	19.11	**40.1**
C09	131	03/31/05	10 YR 4/2	50	2.20	47.800	4.4	1.730	18.51	20.24	**42.3**	9.0	5.0	4.0	**8.4**	24.24	23.56	**49.3**
C10	210	03/02/05		50	6.04	43.960	12.1	5.410	26.27	31.68	**72.1**	9.0	6.0	3.0	**6.8**	34.68	9.28	**21.1**
C11	169	02/24/05	2.5 Y 6/4	50	3.25	46.750	6.5	1.510	15.43	16.94	**36.2**	18.0	6.0	12.0	**25.7**	28.94	17.81	**38.1**
C12	166	02/24/05	2.5 Y 7/4	50	5.17	44.830	10.3	1.330	18.14	19.47	**43.4**	16.0	6.0	10.0	**22.3**	29.47	15.36	**34.3**
D02	143	02/23/05	2.5 Y 6/4	50	0.99	49.010	2.0	0.750	13.61	14.36	**29.3**	26.0	5.0	21.0	**42.8**	35.36	13.65	**27.9**
D03	149	02/23/05	10 YR 6/8	50	2.16	47.840	4.3	1.280	13.13	14.41	**30.1**	20.0	5.0	15.0	**31.4**	29.41	18.43	**38.5**
D04	9	03/31/05	2.5 Y 6/6	50	3.11	46.890	6.2	1.520	15.92	17.44	**37.2**	18.5	5.5	13.0	**27.7**	30.44	16.45	**35.1**
D05	106	03/31/05	2.5 Y 4/2	50	3.78	46.220	7.6	1.740	16.53	18.27	**39.5**	17.0	6.0	11.0	**23.8**	29.27	16.95	**36.7**
D06	3	03/31/05	10 YR 3/3	50	3.69	46.310	7.4	1.700	21.28	22.98	**49.6**	13.0	5.5	7.5	**16.2**	30.48	15.83	**34.2**
D07	14	03/31/05	2.5 Y 6/4	50	2.83	47.175	5.7	1.640	14.60	16.24	**34.4**	18.0	5.0	13.0	**27.6**	29.24	17.94	**38.0**
D08	230	03/03/05	10 YR 4/3	50	2.37	47.630	4.7	1.320	18.03	19.35	**40.6**	17.0	6.0	11.0	**23.1**	30.35	17.28	**36.3**
D09	139	03/31/05	2.5 Y 5/4	50	0.69	49.310	1.4	1.160	13.66	14.82	**30.1**	19.0	5.0	14.0	**28.4**	28.82	20.49	**41.6**
D10	127	03/31/05	2.5 Y 6/4	50	2.31	47.690	4.6	1.000	14.72	15.72	**33.0**	15.0	5.0	10.0	**21.0**	25.72	21.97	**46.1**
D11	39	03/31/05	2.5 Y 4/4	50	1.79	48.210	3.6	1.590	18.96	20.55	**42.6**	17.0	5.5	11.5	**23.9**	32.05	16.16	**33.5**
D12	225	03/03/05	2.5 Y 7/6	50	1.16	48.840	2.3	1.230	17.46	18.69	**38.3**	16.0	5.5	10.5	**21.5**	29.19	19.65	**40.2**

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
E02	92	03/31/05	2.5 Y 6/4	50	6.60	43.400	13.2	1.720	13.35	15.07	**34.7**	21.0	6.0	15.0	**34.6**	30.07	13.33	**30.7**
E03	190	02/25/05	2.5 Y 6/6	50	3.61	46.390	7.2	1.630	13.74	15.37	**33.1**	19.0	5.0	14.0	**30.2**	29.37	17.02	**36.7**
E04	186	02/25/05	2.5 Y 6/4	50	4.52	45.480	9.0	1.780	16.61	18.39	**40.4**	17.0	5.0	12.0	**26.4**	30.39	15.09	**33.2**
E05	61	03/31/05	10 YR 5/6	50	2.78	47.220	5.6	1.460	22.94	24.40	**51.7**	11.0	5.5	5.5	**11.6**	29.90	17.32	**36.7**
E06	12	03/31/05	2.5 Y 5/4	50	4.29	45.710	8.6	1.740	17.28	19.02	**41.6**	16.0	5.5	10.5	**23.0**	29.52	16.19	**35.4**
E07	195	02/25/05	10 YR 4/2	50	2.66	47.340	5.3	1.570	20.85	22.42	**47.4**	17.0	5.0	12.0	**25.3**	34.42	12.92	**27.3**
E08	113	03/31/05	2.5 Y 6/6	50	1.66	48.340	3.3	1.390	17.27	18.66	**38.6**	18.0	6.0	12.0	**24.8**	30.66	17.68	**36.6**
E09	181	02/24/05	2.5 Y 5/4	50	6.41	43.590	12.8	1.840	15.90	17.74	**40.7**	14.0	6.0	8.0	**18.4**	25.74	17.85	**40.9**
E10	101	03/31/05	2.5 Y 6/8	50	1.10	48.900	2.2	1.630	17.33	18.96	**38.8**	17.0	6.0	11.0	**22.5**	29.96	18.94	**38.7**
E11	167	02/24/05	2.5 Y 7/6	50	1.40	48.600	2.8	1.900	23.03	24.93	**51.3**	14.5	5.5	9.0	**18.5**	33.93	14.67	**30.2**
F02	185	02/25/05	2.5 Y 6/4	50	2.12	47.880	4.2	1.590	12.35	13.94	**29.1**	21.0	5.0	16.0	**33.4**	29.94	17.94	**37.5**
F03	198	02/25/05	10 YR 5/4	50	1.58	48.420	3.2	1.100	12.27	13.37	**27.6**	23.0	5.0	18.0	**37.2**	31.37	17.05	**35.2**
F04	211	03/02/05		50	3.27	46.730	6.5	1.510	15.64	17.15	**36.7**	16.5	5.5	11.0	**23.5**	28.15	18.58	**39.8**
F05	142	03/31/05	2.5 Y 6/6	50	3.69	46.310	7.4	1.240	14.34	15.58	**33.6**	17.0	5.0	12.0	**25.9**	27.58	18.73	**40.4**
F06	57	03/31/05	10 YR 4/2	50	1.50	48.500	3.0	1.350	17.22	18.57	**38.3**	15.5	5.5	10.0	**20.6**	28.57	19.93	**41.1**
F07	64	03/31/05	2.5 Y 5/4	50	2.52	47.480	5.0	1.530	16.20	17.73	**37.3**	12.0	5.0	7.0	**14.7**	24.73	22.75	**47.9**
F08A	269	03/09/05	2.5 Y 5/4	50	3.28	46.720	6.6	2.030	19.77	21.80	**46.7**	15.0	5.0	10.0	**21.4**	31.80	14.92	**31.9**
F08B	264	03/09/05	2.5 Y 5/2	50	4.78	45.220	9.6	1.810	1.73	3.54	**7.8**	12.0	6.0	6.0	**13.3**	9.54	35.68	**78.9**
F09	229	03/03/05	2.5 Y 7/6	50	1.33	48.670	2.7	1.590	15.67	17.26	**35.5**	20.5	6.0	14.5	**29.8**	31.76	16.91	**34.7**
F10	158	02/23/05	2.5 Y 8/8	50	1.38	48.620	2.8	1.820	15.82	17.64	**36.3**	20.0	5.0	15.0	**30.9**	32.64	15.98	**32.9**
G02	125	03/31/05	2.5 Y 6/4	50	1.98	48.020	4.0	1.900	15.98	17.88	**37.2**	20.0	5.0	15.0	**31.2**	32.88	15.14	**31.5**
G03	94	03/31/05	2.5 Y 5/6	50	1.84	48.160	3.7	1.500	13.64	15.14	**31.4**	21.5	5.5	16.0	**33.2**	31.14	17.02	**35.3**
G04	163	02/24/05	2.5 Y 6/6	50	2.43	47.570	4.9	1.980	16.00	17.98	**37.8**	15.5	5.0	10.5	**22.1**	28.48	19.09	**40.1**
G05	236	03/03/05	2.5 Y 5/4	50	5.00	45.000	10.0	1.480	23.22	24.70	**54.9**	20.0	6.0	14.0	**31.1**	38.70	6.30	**14.0**
G06	90	03/31/05	2.5 Y 5/6	50	0.10	49.900	0.2	0.460	20.72	21.18	**42.4**	13.0	6.0	7.0	**14.0**	28.18	21.72	**43.5**
G07	174	02/24/05	2.5 Y 6/4	50	5.56	44.440	11.1	1.610	16.85	18.46	**41.5**	14.0	5.0	9.0	**20.3**	27.46	16.98	**38.2**
G08	193	02/25/05	2.5 Y 6/4	50	2.36	47.640	4.7	1.400	16.66	18.06	**37.9**	18.0	5.0	13.0	**27.3**	31.06	16.58	**34.8**
G09	232	03/03/05	10 YR 6/6	50	7.31	42.690	14.6	2.460	29.39	31.85	**74.6**	9.0	6.0	3.0	**7.0**	34.85	7.84	**18.4**
G10	22	03/31/05	7.5 YR 6/6	50	11.90	38.100	23.8	1.800	28.82	30.62	**80.4**	9.0	6.0	3.0	**7.9**	33.62	4.48	**11.8**
H02	222	03/02/05		50	3.90	46.100	7.8	1.400	13.68	15.08	**32.7**	20.5	6.0	14.5	**31.5**	29.58	16.52	**35.8**
H03	179	02/24/05	2.5 Y 6/6	50	1.35	48.650	2.7	1.360	16.61	17.97	**36.9**	16.5	5.5	11.0	**22.6**	28.97	19.68	**40.5**
H04	105	03/31/05	10 YT 6/6	50	8.74	41.260	17.5	1.030	12.24	13.27	**32.2**	18.0	5.5	12.5	**30.3**	25.77	15.49	**37.5**
H05	124	03/31/05	2.5 Y 6/6	50	4.43	45.570	8.9	1.690	17.60	19.29	**42.3**	15.5	5.0	10.5	**23.0**	29.79	15.78	**34.6**
H06	77	03/31/05	2.5 Y 6/4	50	1.99	48.010	4.0	2.130	22.92	25.05	**52.2**	14.0	5.0	9.0	**18.7**	34.05	13.96	**29.1**
H07	170	02/24/05	2.5 Y 6/6	50	1.91	48.090	3.8	1.780	20.33	22.11	**46.0**	13.0	5.5	7.5	**15.6**	29.61	18.48	**38.4**
H08	132	03/31/05	10 YR 5/6	50	3.62	46.380	7.2	1.190	17.81	19.00	**41.0**	11.0	5.0	6.0	**12.9**	25.00	21.38	**46.1**
H09	271	03/09/05	10 YR 5/4	50	4.58	45.420	9.2	2.770	31.18	33.95	**74.7**	9.0	5.0	4.0	**8.8**	37.95	7.47	**16.4**
H10	7	03/31/05	7.5 YR 5/8	50	7.62	42.380	15.2	3.030	21.92	24.95	**58.9**	12.0	6.0	6.0	**14.2**	30.95	11.43	**27.0**
I02	34	03/31/05	2.5 Y 6/4	50	1.54	48.460	3.1	1.290	13.52	14.81	**30.6**	14.0	5.0	9.0	**18.6**	23.81	24.65	**50.9**
I03	87	03/31/05	2.5 Y 6/6	50	2.74	47.260	5.5	1.670	17.91	19.58	**41.4**	11.5	6.0	5.5	**11.6**	25.08	22.18	**46.9**
I04	165	02/24/05	2.5 Y 6/6	50	4.02	45.980	8.0	2.140	18.69	20.83	**45.3**	14.0	5.0	9.0	**19.6**	29.83	16.15	**35.1**
I05	217	03/02/05		50	2.26	47.740	4.5	2.210	23.44	25.65	**53.7**	14.5	5.5	9.0	**18.9**	34.65	13.09	**27.4**
I06	13	03/31/05	2.5 Y 6/6	50	6.60	43.400	13.2	2.820	20.37	23.19	**53.4**	13.0	6.0	7.0	**16.1**	30.19	13.21	**30.4**
I07	86	03/31/05	2.5 Y 6/6	50	3.47	46.530	6.9	1.900	18.55	20.45	**44.0**	17.5	6.0	11.5	**24.7**	31.95	14.58	**31.3**
I08	73	03/31/05	2.5 Y 6/6	50	2.49	47.510	5.0	2.420	21.70	24.12	**50.8**	13.0	5.0	8.0	**16.8**	32.12	15.39	**32.4**
I09	60	03/31/05	10 YR 5/6	50	1.86	48.140	3.7	1.630	23.40	25.03	**52.0**	14.0	5.0	9.0	**18.7**	34.03	14.11	**29.3**

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
I10	155	02/23/05	2.5 Y 6/4	50	2.57	47.430	5.1	1.640	20.97	22.61	**47.7**	16.0	5.0	11.0	**23.2**	33.61	13.82	**29.1**
J02	66	03/31/05	2.5 Y 5/4	50	1.25	48.750	2.5	1.490	16.72	18.21	**37.4**	19.0	5.0	14.0	**28.7**	32.21	16.54	**33.9**
J03	47	03/31/05	2.5 Y 6/4	50	1.47	48.530	2.9	1.180	11.40	12.58	**25.9**	22.0	5.5	16.5	**34.0**	29.08	19.45	**40.1**
J04	103	03/31/05	10 YR 6/6	50	3.65	46.350	7.3	1.640	17.91	19.55	**42.2**	16.0	6.0	10.0	**21.6**	29.55	16.80	**36.2**
J05	226	03/03/05	2.5 Y 5/6	50	4.13	45.870	8.3	1.600	21.69	23.29	**50.8**	14.0	6.0	8.0	**17.4**	31.29	14.58	**31.8**
J06	183	02/25/05	2.5 Y 6/4	50	4.84	45.160	9.7	2.530	18.42	20.95	**46.4**	15.0	5.0	10.0	**22.1**	30.95	14.21	**31.5**
J07	204	03/02/05		50	2.67	47.330	5.3	1.970	31.61	33.58	**70.9**	10.5	6.0	4.5	**9.5**	38.08	9.25	**19.5**
J08	107	03/31/05	10 YR 5/6	50	1.28	48.720	2.6	1.210	21.03	22.24	**45.6**	19.0	6.0	13.0	**26.7**	35.24	13.48	**27.7**
J09	130	03/31/05	10 YR 5/6	50	4.29	45.710	8.6	1.710	21.32	23.03	**50.4**	15.0	5.0	10.0	**21.9**	33.03	12.68	**27.7**
J10	20	03/31/05	2.5 Y 4/2	50	2.28	47.720	4.6	1.810	19.43	21.24	**44.5**	16.0	5.0	11.0	**23.1**	32.24	15.48	**32.4**
K02	273	03/09/05	2.5 Y 4/4	50	5.39	44.610	10.8	2.070	19.82	21.89	**49.1**	15.0	6.0	9.0	**20.2**	30.89	13.72	**30.8**
K03	41	03/31/05	2.5 Y 6/4	50	3.60	46.400	7.2	1.150	11.85	13.00	**28.0**	20.0	6.0	14.0	**30.2**	27.00	19.40	**41.8**
K04	250	03/04/05	10 YR 6/4	50	2.14	47.860	4.3	0.930	12.88	13.81	**28.9**	23.0	5.0	18.0	**37.6**	31.81	16.05	**33.5**
K05	21	03/31/05	2.5 Y 6/4	50	6.19	43.810	12.4	2.080	19.74	21.82	**49.8**	14.0	5.5	8.5	**19.4**	30.32	13.49	**30.8**
K06	261	03/09/05	10 YR 6/8	50	7.50	42.500	15.0	2.600	20.90	23.50	**55.3**	12.0	6.0	6.0	**14.1**	29.50	13.00	**30.6**
K07	148	02/23/05	2.5 Y 7/4	50	2.41	47.590	4.8	2.700	35.04	37.74	**79.3**	7.0	5.0	2.0	**4.2**	39.74	7.85	**16.5**
K08	121	04/12/05	10 YR 4/4	50	20.68	29.320	41.4	2.68	16.81	19.49	**66.5**	7.5	6.0	1.5	**5.1**	20.99	8.33	**28.4**
K09	111	03/31/05	5 YR 5/8	50	5.10	44.900	10.2	1.670	26.34	28.01	**62.4**	9.0	5.5	3.5	**7.8**	31.51	13.39	**29.8**
K10	228	03/03/05	10 YR 5/4	50	2.31	47.690	4.6	1.570	20.55	22.12	**46.4**	16.0	5.5	10.5	**22.0**	32.62	15.07	**31.6**
L02	18	03/31/05	2.5 Y 6/4	50	6.48	43.520	13.0	1.950	13.24	15.19	**34.9**	18.5	5.5	13.0	**29.9**	28.19	15.33	**35.2**
L03	251	03/04/05	10 YR 6/6	50	6.85	43.150	13.7	2.290	20.49	22.78	**52.8**	11.5	5.0	6.5	**15.1**	29.28	13.87	**32.1**
L04	220	03/02/05		50	1.90	48.100	3.8	1.740	17.82	19.56	**40.7**	18.5	5.5	13.0	**27.0**	32.56	15.54	**32.3**
L05E	23	03/31/05	10 YR 6/6	50	6.41	43.590	12.8	2.390	20.13	22.52	**51.7**	13.0	6.0	7.0	**16.1**	29.52	14.07	**32.3**
L05W	4	03/31/05	10 YR 3/3	50	0.60	49.400	1.2	0.820	5.75	6.57	**13.3**	16.0	6.0	10.0	**20.2**	16.57	32.83	**66.5**
L06E	40	03/31/05	2.5 Y 4/4	50	7.31	42.690	14.6	2.790	27.51	30.30	**71.0**	10.0	5.0	5.0	**11.7**	35.30	7.39	**17.3**
L06WA	218	03/02/05		50	4.67	45.330	9.3	2.480	22.38	24.86	**54.8**	12.0	6.0	6.0	**13.2**	30.86	14.47	**31.9**
L06WB	184	02/25/05	2.5 Y 4/2	50	3.32	46.680	6.6	1.640	19.40	21.04	**45.1**	16.0	5.0	11.0	**23.6**	32.04	14.64	**31.4**
L07	44	03/31/05	10 YR 6/8	50	1.91	48.090	3.8	2.880	31.10	33.98	**70.7**	10.0	5.5	4.5	**9.4**	38.48	9.61	**20.0**
L08	267	03/09/05	10 YR 58	50	3.22	46.780	6.4	2.680	31.78	34.46	**73.7**	11.0	6.0	5.0	**10.7**	39.46	7.32	**15.6**
L09	19	03/31/05	7.5 YR 5/8	50	5.01	44.990	10.0	2.900	25.94	28.84	**64.1**	10.0	6.0	4.0	**8.9**	32.84	12.15	**27.0**
L10	99	03/31/05	5 YR 4/6	50	2.10	47.900	4.2	1.520	22.59	24.11	**50.3**	13.0	6.0	7.0	**14.6**	31.11	16.79	**35.1**
L11	150	02/23/05	2.5 Y 7/4	50	3.83	46.170	7.7	2.120	28.07	30.19	**65.4**	9.0	5.0	4.0	**8.7**	34.19	11.98	**25.9**
M02	78	03/31/05	10 YR 5/6	50	2.81	47.190	5.6	1.410	14.42	15.83	**33.5**	19.0	5.0	14.0	**29.7**	29.83	17.36	**36.8**
M03	152	02/23/05	5 YR 6/4	50	1.41	48.590	2.8	0.810	9.79	10.60	**21.8**	23.0	5.0	18.0	**37.0**	28.60	19.99	**41.1**
M04	248	03/04/05	2.5 Y 6/6	50	4.29	45.710	8.6	1.120	12.46	13.58	**29.7**	20.0	5.0	15.0	**32.8**	28.58	17.13	**37.5**
M05	29	03/31/05	10 YR 6/6	50	5.42	44.580	10.8	4.230	26.61	30.84	**69.2**	10.0	6.0	4.0	**9.0**	34.84	9.74	**21.8**
M06	49	03/31/05	10 YR 6/4	50	3.21	46.790	6.4	4.320	28.94	33.26	**71.1**	10.0	5.5	4.5	**9.6**	37.76	9.03	**19.3**
M07	172	02/24/05	10 YR 5/6	50	5.94	44.060	11.9	4.770	29.74	34.51	**78.3**	10.0	6.0	4.0	**9.1**	38.51	5.55	**12.6**
M08	128	03/31/05	2.5 Y 6/6	50	1.27	48.730	2.5	1.070	13.13	14.20	**29.1**	19.0	5.0	14.0	**28.7**	28.20	20.53	**42.1**
M09	180	02/24/05	5 YR 5/4	50	2.95	47.050	5.9	1.740	26.25	27.99	**59.5**	11.0	5.0	6.0	**12.8**	33.99	13.06	**27.8**
M10	188	02/25/05	5 YR 5/4	50	1.25	48.750	2.5	0.790	23.47	24.26	**49.8**	16.5	5.0	11.5	**23.6**	35.76	12.99	**26.6**
M11	120	03/31/05	5 YR 4/6	50	1.79	48.210	3.6	1.440	32.10	33.54	**69.6**	12.0	5.5	6.5	**13.5**	40.04	8.17	**16.9**
N03	215	03/02/05		50	0.70	49.300	1.4	0.930	10.46	11.39	**23.1**	21.0	6.0	15.0	**30.4**	26.39	22.91	**46.5**
N04	147	02/23/05	2.5 Y 6/4	50	3.43	46.570	6.9	1.930	10.52	12.45	**26.7**	22.5	5.0	17.5	**37.6**	29.95	16.62	**35.7**
N05	138	03/31/05	2.5 Y 7/4	50	8.56	41.440	17.1	2.850	22.55	25.40	**61.3**	11.0	5.0	6.0	**14.5**	31.40	10.04	**24.2**
N06	202	02/25/05	2.5 Y 6/4	50	2.47	47.530	4.9	2.680	31.90	34.58	**72.8**	10.0	5.0	5.0	**10.5**	39.58	7.95	**16.7**

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
N07	16	03/31/05	10 YR 6/8	50	2.75	47.250	5.5	1.620	21.72	23.34	**49.4**	9.0	6.0	3.0	**6.3**	26.34	20.91	**44.3**
N08	259	03/04/05	5 YR 5/4	50	1.39	48.610	2.8	1.030	12.84	13.87	**28.5**	17.0	5.0	12.0	**24.7**	25.87	22.74	**46.8**
N09	32	03/31/05	7.5 YR 5/8	50	1.43	48.570	2.9	1.440	14.78	16.22	**33.4**	20.0	6.0	14.0	**28.8**	30.22	18.35	**37.8**
N10	242	03/03/05	5 YR 5/4	50	5.61	44.390	11.2	2.590	25.05	27.64	**62.3**	10.0	6.0	4.0	**9.0**	31.64	12.75	**28.7**
N11	266	03/09/05	5 YR 5/4	50	0.25	49.750	0.5	0.210	19.71	19.92	**40.0**	13.0	5.0	8.0	**16.1**	27.92	21.83	**43.9**
N12	270	03/09/05	5 YR 5/6	50	0.60	49.400	1.2	0.620	8.84	9.46	**19.1**	36.0	6.0	30.0	**60.7**	39.46	9.94	**20.1**
O03	177	02/24/05	10 YR 6/4	50	8.26	41.740	16.5	3.630	20.41	24.04	**57.6**	11.0	5.0	6.0	**14.4**	30.04	11.70	**28.0**
O04	8	03/31/05	2.5 Y 6/4	50	0.79	49.210	1.6	0.210	4.85	5.06	**10.3**	26.0	5.0	21.0	**42.7**	26.06	23.15	**47.0**
O05	272	03/09/05	2.5 Y 7/4	50	3.96	46.040	7.9	2.840	30.05	32.89	**71.4**	10.5	5.0	5.5	**11.9**	38.39	7.65	**16.6**
O06	207	03/02/05		50	2.32	47.680	4.6	3.860	32.63	36.49	**76.5**	10.0	6.0	4.0	**8.4**	40.49	7.19	**15.1**
O07	182	02/24/05	10 YR 6/8	50	7.69	42.310	15.4	4.350	29.74	34.09	**80.6**	8.0	5.5	2.5	**5.9**	36.59	5.72	**13.5**
O08	212	03/02/05		50	5.79	44.210	11.6	2.980	30.09	33.07	**74.8**	10.0	6.0	4.0	**9.0**	37.07	7.14	**16.2**
O09	246	03/04/05	10 YR 5/8	50	3.73	46.270	7.5	1.420	20.08	21.50	**46.5**	12.0	5.5	6.5	**14.0**	28.00	18.27	**39.5**
O10	162	02/23/05	5 YR 5/4	50	0.29	49.710	0.6	0.720	14.90	15.62	**31.4**	21.0	5.0	16.0	**32.2**	31.62	18.09	**36.4**
O11	221	03/02/05		50	7.80	42.200	15.6	5.810	16.44	22.25	**52.7**	7.0	6.0	1.0	**2.4**	23.25	18.95	**44.9**
O12	65	03/31/05	7.5 YR 4/6	50	1.10	48.900	2.2	0.720	6.06	6.78	**13.9**	21.0	5.0	16.0	**32.7**	22.78	26.12	**53.4**
P03	37	03/31/05	2.5 Y 6/4	50	4.43	45.570	8.9	1.800	23.45	25.25	**55.4**	11.0	5.0	6.0	**13.2**	31.25	14.32	**31.4**
P04	28	03/31/05	10 YR 6/4	50	0.66	49.340	1.3	0.310	8.09	8.40	**17.0**	27.5	5.0	22.5	**45.6**	30.90	18.44	**37.4**
P05	206	03/02/05		50	4.31	45.687	8.6	3.220	25.81	29.03	**63.5**	10.0	6.0	4.0	**8.8**	33.03	12.66	**27.7**
P06	268	03/09/05	2.5 Y 7/4	50	2.95	47.050	5.9	2.240	25.38	27.62	**58.7**	12.0	5.0	7.0	**14.9**	34.62	12.43	**26.4**
P07	48	03/31/05	10 YR 6/4	50	1.27	48.730	2.5	1.590	22.74	24.33	**49.9**	14.0	5.0	9.0	**18.5**	33.33	15.40	**31.6**
P08	247	03/04/05	2.5 Y 6/4	50	1.00	49.000	2.0	0.790	13.18	13.97	**28.5**	19.0	5.0	14.0	**28.6**	27.97	21.03	**42.9**
P09	154	02/23/05	10 YR 5/6	50	3.91	46.090	7.8	4.770	29.79	34.56	**75.0**	9.5	5.0	4.5	**9.8**	39.06	7.03	**15.3**
P10	157	02/23/05	5 YR 5/3	50	0.24	49.760	0.5	0.570	6.86	7.43	**14.9**	30.0	5.0	25.0	**50.2**	32.43	17.33	**34.8**
P11	123	03/31/05	7.5 YR 6/8	50	10.47	39.530	20.9	4.340	19.59	23.93	**60.5**	7.5	5.0	2.5	**6.3**	26.43	13.10	**33.1**
P12	62	03/31/05	7.5 YR 5/6	50	2.55	47.450	5.1	1.450	7.39	8.84	**18.6**	33.0	5.5	27.5	**58.0**	36.34	11.11	**23.4**
P13	10	03/31/05	7.5 YR 5/6	50	3.00	47.000	6.0	1.450	16.41	17.86	**38.0**	15.0	6.0	9.0	**19.1**	26.86	20.14	**42.9**
Q02	72	03/31/05	2.5 Y 6/4	50	0.22	49.780	0.4	0.220	2.71	2.93	**5.9**	39.0	5.0	34.0	**68.3**	36.93	12.85	**25.8**
Q03	200	02/25/05	10 YR 3/2	50	2.64	47.360	5.3	1.380	16.16	17.54	**37.0**	18.0	5.0	13.0	**27.4**	30.54	16.82	**35.5**
Q03A	129	03/31/05	2.5 Y 6/4	50	3.29	46.710	6.6	1.350	20.62	21.97	**47.0**	12.5	5.0	7.5	**16.1**	29.47	17.24	**36.9**
Q04	257	03/04/05	2.5 Y 7/4	50	1.66	48.340	3.3	0.710	10.45	11.16	**23.1**	21.5	5.0	16.5	**34.1**	27.66	20.68	**42.8**
Q05	203	03/02/05		50	2.54	47.460	5.1	2.900	26.88	29.78	**62.7**	10.5	6.0	4.5	**9.5**	34.28	13.18	**27.8**
Q06	108	03/31/05	10 YR 6/6	50	4.50	45.500	9.0	2.010	22.44	24.45	**53.7**	13.0	5.5	7.5	**16.5**	31.95	13.55	**29.8**
Q07	17	03/31/05	10 YR 6/4	50	4.00	46.000	8.0	2.250	19.33	21.58	**46.9**	16.5	5.0	11.5	**25.0**	33.08	12.92	**28.1**
Q08	156	02/23/05	2.5 Y 6/4	50	1.42	48.580	2.8	1.830	18.94	20.77	**42.8**	10.5	5.0	5.5	**11.3**	26.27	22.31	**45.9**
Q09	96	03/31/05	2.5 Y 76/6	50	1.58	48.420	3.2	3.050	23.96	27.01	**55.8**	15.0	6.0	9.0	**18.6**	36.01	12.41	**25.6**
Q10	275	03/09/05	5 YR 5/6	50	2.00	48.000	4.0	0.840	9.39	10.23	**21.3**	26.0	5.0	21.0	**43.8**	31.23	16.77	**34.9**
Q11	58	03/31/05	7.5 YR 5/6	50	1.11	48.890	2.2	1.400	12.76	14.16	**29.0**	25.0	5.5	19.5	**39.9**	33.66	15.23	**31.2**
Q12	97	03/31/05	2.5 Y 5/6	50	9.08	40.920	18.2	4.280	22.87	27.15	**66.3**	8.0	5.5	2.5	**6.1**	29.65	11.27	**27.5**
Q13	263	03/09/05	5 YR 5/6	50	0.80	49.200	1.6	1.050	11.20	12.25	**24.9**	30.5	5.0	25.5	**51.8**	37.75	11.45	**23.3**
R02	253	03/04/05	2.5 Y 4/2	50	0.29	49.710	0.6	0.290	5.58	5.87	**11.8**	39.0	5.0	34.0	**68.4**	39.87	9.84	**19.8**
R03	15	03/31/05	10 YR 6/4	50	7.16	42.840	14.3	4.290	30.39	34.68	**81.0**	13.5	5.5	8.0	**18.7**	42.68	0.16	**0.4**
R04	199	02/25/05	10 YR 6/4	50	1.82	48.180	3.6	0.980	17.17	18.15	**37.7**	17.0	5.0	12.0	**24.9**	30.15	18.03	**37.4**
R05	219	03/02/05		50	2.59	47.410	5.2	1.130	12.99	14.12	**29.8**	21.0	6.0	15.0	**31.6**	29.12	18.29	**38.6**
R06	164	02/24/05	10 YR 7/3	50	3.46	46.540	6.9	0.480	10.18	10.66	**22.9**	23.5	5.5	18.0	**38.7**	28.66	17.88	**38.4**
R07	134	03/31/05	2.5 Y 6/4	50	3.93	46.070	7.9	1.900	20.59	22.49	**48.8**	13.5	5.0	8.5	**18.5**	30.99	15.08	**32.7**

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
R08	24	03/31/05	10 YR 6/4	50	0.29	49.710	0.6	0.230	9.82	10.05	**20.2**	24.0	5.5	18.5	**37.2**	28.55	21.16	**42.6**
R09	201	02/25/05	2.5 Y 6/4	50	2.61	47.390	5.2	2.700	17.52	20.22	**42.7**	20.0	5.0	15.0	**31.7**	35.22	12.17	**25.7**
R10	151	02/23/05	5 YR 5/4	50	0.92	49.080	1.8	0.400	6.38	6.78	**13.8**	33.0	5.0	28.0	**57.0**	34.78	14.30	**29.1**
R11	213	03/02/05		50	2.84	47.160	5.7	9.060	22.03	31.09	**65.9**	7.0	6.0	1.0	**2.1**	32.09	15.07	**32.0**
R12	194	02/25/05	10 YR 5/4	50	14.66	35.340	29.3	3.600	24.86	28.46	**80.5**	6.5	5.0	1.5	**4.2**	29.96	5.38	**15.2**
R13	192	02/25/05	10 YR 4/4	50	13.31	36.690	26.6	6.820	22.27	29.09	**79.3**	7.0	5.0	2.0	**5.5**	31.09	5.60	**15.3**
R14	171	02/24/05	2.5 Y 5/6	50	17.46	32.540	34.9	6.640	20.80	27.44	**84.3**	6.0	5.0	1.0	**3.1**	28.44	4.10	**12.6**
R15	74	03/31/05	7.5 YR 5/8	50	1.69	48.310	3.4	0.850	11.55	12.40	**25.7**	27.0	5.0	22.0	**45.5**	34.40	13.91	**28.8**
S01	75	03/31/05	2.5 Y 4/2	50	2.06	47.940	4.1	1.370	13.33	14.70	**30.7**	16.0	5.0	11.0	**22.9**	25.70	22.24	**46.4**
S02	45	03/31/05	10 YR 3/3	50	0.15	49.850	0.3	0.260	8.31	8.57	**17.2**	23.0	5.0	18.0	**36.1**	26.57	23.28	**46.7**
S03	112	03/31/05	2.5 Y 5/2	50	3.41	46.590	6.8	1.690	21.77	23.46	**50.4**	15.0	6.0	9.0	**19.3**	32.46	14.13	**30.3**
S04	79	03/31/05	2.5 Y 7/4	50	1.81	48.190	3.6	1.530	21.19	22.72	**47.1**	14.0	5.0	9.0	**18.7**	31.72	16.47	**34.2**
S05	89	03/31/05	2.5 Y 7/6	50	11.49	38.510	23.0	2.900	9.72	12.62	**32.8**	12.0	6.0	6.0	**15.6**	18.62	19.89	**51.6**
S06	53	03/31/05	10 YR 6/4	50	1.08	48.920	2.2	1.010	15.98	16.99	**34.7**	17.0	5.5	11.5	**23.5**	28.49	20.43	**41.8**
S07	224	03/03/05	2.5 Y 6/6	50	1.63	48.370	3.3	0.700	11.12	11.82	**24.4**	22.0	6.0	16.0	**33.1**	27.82	20.55	**42.5**
S08	81	03/31/05	10 YR 6/3	50	0.55	49.450	1.1	0.510	7.98	8.49	**17.2**	31.0	5.0	26.0	**52.6**	34.49	14.96	**30.3**
S09	249	03/04/05	10 YR 5/3	50	0.29	49.710	0.6	0.390	8.15	8.54	**17.2**	12.0	5.5	6.5	**13.1**	15.04	34.67	**69.7**
S10	55	03/31/05	10 YR 6/6	50	11.42	38.580	22.8	4.540	22.30	26.84	**69.6**	8.0	5.5	2.5	**6.5**	29.34	9.24	**24.0**
S11	84	03/31/05	2.5 Y 6/6	50	1.72	48.280	3.4	0.890	9.24	10.13	**21.0**	23.5	6.0	17.5	**36.2**	27.63	20.65	**42.8**
S12	116	03/31/05	2.5 Y 6/8	50	12.49	37.510	25.0	5.700	21.78	27.48	**73.3**	7.0	6.0	1.0	**2.7**	28.48	9.03	**24.1**
S13	146	04/12/05	10 YR 5/6	50	8.95	41.050	17.9	5.1	23.44	28.54	**69.5**	8.0	5.0	3.0	**7.3**	31.54	9.51	**23.2**
S14	80	03/31/05	7.5 Y 3/4	50	18.96	31.040	37.9	6.200	17.85	24.05	**77.5**	7.0	5.0	2.0	**6.4**	26.05	4.99	**16.1**
S15	187	02/25/05	5 YR 5/6	50	8.06	41.940	16.1	2.410	21.16	23.57	**56.2**	10.0	5.0	5.0	**11.9**	28.57	13.37	**31.9**
S16	256	03/04/05	5 YR 5/4	50	2.61	47.390	5.2	0.490	4.09	4.58	**9.7**	22.0	5.0	17.0	**35.9**	21.58	25.81	**54.5**
T01	71	03/31/05	7.5 YR 5/4	50	1.95	48.050	3.9	1.680	15.09	16.77	**34.9**	23.5	5.0	18.5	**38.5**	35.27	12.78	**26.6**
T02	144	02/23/05	2.5 y 7/4	50	1.88	48.120	3.8	1.670	17.55	19.22	**39.9**	15.5	5.0	10.5	**21.8**	29.72	18.40	**38.2**
T03	254	03/04/05	2.5 Y 6/4	50	2.68	47.320	5.4	1.660	16.15	17.81	**37.6**	17.0	5.0	12.0	**25.4**	29.81	17.51	**37.0**
T04	265	03/09/05	2.5 Y 6/4	50	2.98	47.020	6.0	1.820	18.33	20.15	**42.9**	8.5	5.0	3.5	**7.4**	23.65	23.37	**49.7**
T05	88	03/31/05	2.5 Y 5/6	50	1.82	48.180	3.6	1.200	19.51	20.71	**43.0**	10.0	5.5	4.5	**9.3**	25.21	22.97	**47.7**
T06	140	03/31/05	2.5 Y 7/4	50	2.10	47.900	4.2	1.890	25.36	27.25	**56.9**	12.0	5.0	7.0	**14.6**	34.25	13.65	**28.5**
T07	117	03/31/05	10 YR 6/6	50	3.32	46.680	6.6	1.600	17.84	19.44	**41.6**	15.0	5.5	9.5	**20.4**	28.94	17.74	**38.0**
T08	85	03/31/05	2.5 Y 6/2	50	1.58	48.420	3.2	1.010	15.08	16.09	**33.2**	22.0	5.5	16.5	**34.1**	32.59	15.83	**32.7**
T09	67	03/31/05	2.5 Y 5/2	50	1.41	48.590	2.8	0.710	7.92	8.63	**17.8**	30.5	5.0	25.5	**52.5**	34.13	14.46	**29.8**
T10	27	03/31/05	7.5 YR 4/4	50	21.24	28.760	42.5	5.190	17.34	22.53	**78.3**	7.5	5.5	2.0	**7.0**	24.53	4.23	**14.7**
T11	33	03/31/05	10 YR 5/4	50	22.25	27.750	44.5	14.080	11.63	25.71	**92.6**	7.0	5.5	1.5	**5.4**	27.21	0.54	**1.9**
T11-2	260	03/04/05	10 YR 4/4	50	20.67	29.330	41.3	6.520	17.63	24.15	**82.3**	7.5	5.0	2.5	**8.5**	26.65	2.68	**9.1**
T12	216	03/02/05		50	9.24	40.760	18.5	3.270	23.00	26.27	**64.5**	7.0	6.0	1.0	**2.5**	27.27	13.49	**33.1**
T14	208	03/02/05		50	12.02	37.980	24.0	5.340	23.33	28.67	**75.5**	6.0	5.5	0.5	**1.3**	29.17	8.81	**23.2**
T15	59	03/31/05	10 YR 4/6	50	11.86	38.140	23.7	8.070	23.57	31.64	**83.0**	7.0	5.5	1.5	**3.9**	33.14	5.00	**13.1**
T16	25	03/31/05	7.5 YR 5/6	50	0.08	49.920	0.2	0.040	0.41	0.45	**0.9**	39.0	5.0	34.0	**68.1**	34.45	15.47	**31.0**
U02	235	03/03/05	10 YR 7/2	50	2.52	47.480	5.0	1.560	25.05	26.61	**56.0**	11.0	6.0	5.0	**10.5**	31.61	15.87	**33.4**
U03	191	02/25/05	2.53 Y 6/4	50	5.04	44.960	10.1	1.890	13.13	15.02	**33.4**	19.0	5.0	14.0	**31.1**	29.02	15.94	**35.5**
U04	83	03/31/05	2.5 Y 6/4	50	4.06	45.940	8.1	1.740	18.41	20.15	**43.9**	14.0	6.0	8.0	**17.4**	28.15	17.79	**38.7**
U05	54	03/31/05	10 YR 6/4	50	3.06	46.940	6.1	1.580	22.08	23.66	**50.4**	13.0	5.0	8.0	**17.0**	31.66	15.28	**32.6**
U08	234	03/03/05	10 YR 4/2	50	1.68	48.320	3.4	0.680	9.26	9.94	**20.6**	29.0	5.5	23.5	**48.6**	33.44	14.88	**30.8**
U09	31	03/31/05	2.5 Y 6/2	50	0.53	49.470	1.1	0.530	7.34	7.87	**15.9**	33.5	5.0	28.5	**57.6**	36.37	13.10	**26.5**

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
U10	135	03/31/05	2.5 Y 6/4	50	10.58	39.420	21.2	2.700	13.24	15.94	**40.4**	16.0	5.0	11.0	**27.9**	26.94	12.48	**31.7**
U11	205	03/02/05		50	3.50	46.500	7.0	2.140	14.25	16.39	**35.2**	21.0	5.5	15.5	**33.3**	31.89	14.61	**31.4**
V02	70	03/31/05	7.5 YR 5/4	50	1.17	48.830	2.3	1.360	18.79	20.15	**41.3**	20.0	5.0	15.0	**30.7**	35.15	13.68	**28.0**
V03	231	03/03/05	10 YR 6/4	50	4.98	45.020	10.0	1.400	21.12	22.52	**50.0**	13.0	5.5	7.5	**16.7**	30.02	15.00	**33.3**
V04	50	03/31/05	10 YR 6/4	50	2.95	47.050	5.9	2.430	16.07	18.50	**39.3**	11.0	5.5	5.5	**11.7**	24.00	23.05	**49.0**
V06	227	03/03/05	2.5 Y 6/6	50	1.98	48.020	4.0	0.920	10.67	11.59	**24.1**	14.0	6.0	8.0	**16.7**	19.59	28.43	**59.2**
V07	36	03/31/05	2.5 Y 6/4	50	1.54	48.460	3.1	0.710	11.21	11.92	**24.6**	28.0	5.5	22.5	**46.4**	34.42	14.04	**29.0**
V08	238	03/03/05	2.5 Y 5/2	50	1.10	48.900	2.2	0.650	10.63	11.28	**23.1**	31.0	6.0	25.0	**51.1**	36.28	12.62	**25.8**
V09	178	02/24/05	10 YR 5/2	50	6.42	43.580	12.8	1.730	20.23	21.96	**50.4**	15.0	6.0	9.0	**20.7**	30.96	12.62	**29.0**
W02	104	03/31/05	2.5 Y 6/2	50	4.00	46.000	8.0	0.840	10.39	11.23	**24.4**	26.0	6.0	20.0	**43.5**	31.23	14.77	**32.1**
W03	102	03/31/05	2.5 Y 7/4	50	3.00	47.000	6.0	1.670	17.70	19.37	**41.2**	16.0	6.0	10.0	**21.3**	29.37	17.63	**37.5**
W04	175	02/24/05	10 YR 7/4	50	10.62	39.380	21.2	0.460	4.71	5.17	**13.1**	23.0	6.0	17.0	**43.2**	22.17	17.21	**43.7**
W05	100	03/31/05	2.5 Y 6/6	50	2.41	47.590	4.8	2.030	21.64	23.67	**49.7**	13.0	5.5	7.5	**15.8**	31.17	16.42	**34.5**
W06	196	02/25/05	2.5 Y 8/2	50	4.76	45.240	9.5	1.640	14.90	16.54	**36.6**	14.0	5.0	9.0	**19.9**	25.54	19.70	**43.5**
X01	43	03/31/05	10 YR 8/3	50	1.84	48.160	3.7	1.720	12.99	14.71	**30.5**	27.5	5.5	22.0	**45.7**	36.71	11.45	**23.8**
X02	243	03/04/05	10 YR 8/3	50	5.36	44.640	10.7	1.730	14.44	16.17	**36.2**	15.0	5.5	9.5	**21.3**	25.67	18.97	**42.5**
X03	274	03/09/05	10 YR 7/4	50	3.14	46.860	6.3	1.930	15.36	17.29	**36.9**	16.0	5.0	11.0	**23.5**	28.29	18.57	**39.6**
X04	110	03/31/05	2.5 Y 7/6	50	4.89	45.110	9.8	1.260	22.03	23.29	**51.6**	10.0	6.0	4.0	**8.9**	27.29	17.82	**39.5**
X05	244	03/04/05	10 YR 8/3	50	5.44	44.560	10.9	0.980	13.09	14.07	**31.6**	17.0	5.0	12.0	**26.9**	26.07	18.49	**41.5**
Y05	42	03/31/05	2.5 Y 6/4	50	2.92	47.080	5.8	2.020	15.97	17.99	**38.2**	16.0	5.5	10.5	**22.3**	28.49	18.59	**39.5**

Appendix. Lithological analyses; texture

Field	Lab	Date	Wet color	Weight	Gravel wt	Adjusted wt	% gravel	Wt 1-2 mm	Wt other	Wt sand	% sand	Hydrometer	Control	Wt clay	% clay	Wt sand + clay	Wt silt	% silt
Z01	109	03/31/05	10 YR 8/3	50	5.61	44.390	11.2	2.020	12.51	14.53	**32.7**	16.0	6.0	10.0	**22.5**	24.53	19.86	**44.7**
Z02	160	02/23/05	10 YR 8/2	50	3.35	46.650	6.7	2.120	16.52	18.64	**40.0**	13.5	5.0	8.5	**18.2**	27.14	19.51	**41.8**
Z03	223	03/03/05	10 YR 7/4	50	4.57	45.430	9.1	1.710	9.31	11.02	**24.3**	20.0	6.0	14.0	**30.8**	25.02	20.41	**44.9**
Z04	141	03/31/05	10 YR 8/2	50	5.85	44.150	11.7	2.030	10.33	12.36	**28.0**	18.0	5.0	13.0	**29.4**	25.36	18.79	**42.6**
Z05	161	02/23/05	10 YR 8/1	50	4.94	45.060	9.9	2.430	10.67	13.10	**29.1**	17.0	5.0	12.0	**26.6**	25.10	19.96	**44.3**
Z06	176	02/24/05	10 YR 8/2	50	13.56	36.440	27.1	1.910	4.80	6.71	**18.4**	12.0	5.5	6.5	**17.8**	13.21	23.23	**63.7**
Z07	63	03/31/05	10 YR 8/2	50	3.66	46.340	7.3	2.280	18.10	20.38	**44.0**	16.0	5.0	11.0	**23.7**	31.38	14.96	**32.3**
Z08	258	03/04/05	2.5 Y 8/2	50	4.63	45.370	9.3	1.800	27.09	28.89	**63.7**	7.0	5.5	1.5	**3.3**	30.39	14.98	**33.0**
Z09	239	03/03/05	10 YR 7/3	50	20.23	29.770	40.5	6.880	13.86	20.74	**69.7**	10.0	6.0	4.0	**13.4**	24.74	5.03	**16.9**
Z10	26	03/31/05	2.5 Y 8/2	50	6.76	43.240	13.5	3.040	23.59	26.63	**61.6**	10.0	6.0	4.0	**9.3**	30.63	12.61	**29.2**
Z11	262	03/09/05	2.5 Y 8/4	50	7.25	42.750	14.5	4.330	22.02	26.35	**61.6**	6.5	5.0	1.5	**3.5**	27.85	14.90	**34.9**
Z12	76	03/31/05	2.5 Y 6/4	50	6.61	43.390	13.2	5.110	24.71	29.82	**68.7**	7.0	5.0	2.0	**4.6**	31.82	11.57	**26.7**
Z13	159	02/23/05	2.5 Y 6/2	50	10.84	39.160	21.7	5.710	22.42	28.13	**71.8**	7.0	5.0	2.0	**5.1**	30.13	9.03	**23.1**
Z14	52	03/31/05	2.5 Y 7/4	50	8.16	41.840	16.3	1.920	25.44	27.36	**65.4**	6.0	5.5	0.5	**1.2**	27.86	13.98	**33.4**
Z15	30	03/31/05	2.5 Y 8/2	50	3.71	46.290	7.4	1.310	21.92	23.23	**50.2**	9.0	5.5	3.5	**7.6**	26.73	19.56	**42.3**
Z16	214	03/02/05		50	2.03	47.970	4.1	1.410	11.00	12.41	**25.9**	11.0	5.5	5.5	**11.5**	17.91	30.06	**62.7**
Z17	252	03/04/05	2.5 Y 7/2	50	6.52	43.480	13.0	2.250	17.78	20.03	**46.1**	12.5	5.5	7.0	**16.1**	27.03	16.45	**37.8**
Z18	69	03/31/05	7.5 YR 5/6	50	15.29	34.710	30.6	7.250	14.18	21.43	**61.7**	8.0	5.0	3.0	**8.6**	24.43	10.28	**29.6**
Z19	122	03/31/05	2.5 Y 8/4	50	4.78	45.220	9.6	5.700	35.11	40.81	**90.2**	6.0	6.0	0.0	**0.0**	40.81	4.41	**9.8**
Z20	115	03/31/05	10 YR 3/6	50	16.35	33.650	32.7	3.030	9.89	12.92	**38.4**	11.0	6.0	5.0	**14.9**	17.92	15.73	**46.7**
Control	95	03/31/05	2.5 Y 7/4	50	4.42	45.580	8.8	2.770	28.91	31.68	**69.5**	8.0	6.0	2.0	**4.4**	33.68	11.90	**26.1**
Control	114	03/31/05	10 YR 7/4	50	4.02	45.980	8.0	3.490	30.14	33.63	**73.1**	7.0	5.5	1.5	**3.3**	35.13	10.85	**23.6**
Control	197	02/25/05	10 YR 8/1	50	7.15	42.850	14.3	2.690	24.21	26.90	**62.8**	8.0	5.0	3.0	**7.0**	29.90	12.95	**30.2**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
A02	168	0.863	24.0	24.5	29.91	25	1.02886	25.722	24.0	29.91	34	1.03165	35.076	25.3	9.7	**11.4**	**4.0**	**15.4**
A03	68	1.694	24.5	25.0	30.00	34	1.02882	34.980	24.5	30.00	50	1.03164	51.582	34.3	17.3	**7.8**	**3.6**	**11.5**
A04	35	0.855	24.5	25.0	29.74	24	1.02047	24.491	24.5	29.74	57	1.02326	58.326	23.1	35.2	**10.5**	**14.7**	**25.1**
A05	38	0.854	24.5	25.0	29.74	16	1.02047	16.328	24.5	29.74	32	1.02326	32.744	15.7	17.1	**7.1**	**7.1**	**14.2**
A06	209	1.707	24.0	24.5	30.42	34	1.04282	35.456	24.0	30.42	70	1.04564	73.195	33.9	39.2	**7.7**	**8.2**	**15.9**
A07	255	0.848	24.5	25.0	29.81	15	1.02329	15.349	23.5	29.79	37	1.02883	38.067	14.4	23.6	**6.6**	**9.9**	**16.5**
A08	119	0.845	23.5	24.0	30.21	13	1.04282	13.557	24.0	30.21	33	1.04282	34.413	12.7	21.7	**5.8**	**9.1**	**15.0**
A09	241	1.694	24.5	25.0	30.06	3	1.03165	3.095	23.0	30.04	3	1.04282	3.128	3.1	0.0	**0.7**	**0.0**	**0.7**
A10	133	1.693	24.0	24.5	30.18	4	1.03723	4.149	24.0	30.18	4	1.04005	4.160	4.1	0.0	**1.0**	**0.0**	**1.0**
A11	5	1.700	24.5	25.0	30.04	4	1.03165	4.127	24.5	30.04	9	1.03444	9.310	3.9	5.4	**0.9**	**1.1**	**2.0**
A12	126	1.703	24.0	24.5	30.21	4	1.04003	4.160	24.0	30.21	5	1.04282	5.214	4.1	1.1	**0.9**	**0.2**	**1.2**
A13	137	1.701	24.0	24.5	30.18	3	1.03723	3.112	24.0	30.16	3	1.04005	3.120	3.1	0.0	**0.7**	**0.0**	**0.7**
B02	118	1.716	23.5	24.5	30.21	61	1.04003	63.442	23.5	30.21	113	1.04562	118.155	61.3	56.9	**13.8**	**11.8**	**25.6**
B03	82	0.857	25.0	25.5	29.99	15	1.02600	15.390	24.0	29.97	23	1.03447	23.793	15.1	8.7	**6.8**	**3.6**	**10.4**
B04	91	0.865	24.0	24.5	29.70	24	1.02050	24.492	24.0	29.70	44	1.02329	45.025	23.7	21.4	**10.6**	**8.8**	**19.4**
B05	240	0.848	24.5	25.0	30.06	14	1.03165	14.443	23.0	30.04	37	1.04282	38.584	13.5	25.1	**6.2**	**10.5**	**16.7**
B06	153	1.694	24.0	24.5	29.91	25	1.02886	25.722	24.0	29.93	74	1.03165	76.342	23.7	52.6	**5.4**	**11.1**	**16.5**
B07	233	1.706	24.0	24.5	30.06	27	1.03444	27.930	24.0	30.06	81	1.03723	84.016	25.7	58.3	**5.8**	**12.2**	**18.0**
B08	245	1.696	23.0	23.5	30.04	4	1.04003	4.160	23.5	30.03	5	1.03724	5.186	4.1	1.1	**0.9**	**0.2**	**1.2**
B09	98	1.706	24.0	24.5	29.66	30	1.02050	30.615	24.0	29.67	72	1.02329	73.677	28.9	44.8	**6.6**	**9.4**	**15.9**
B10	11	1.719	24.5	25.0	30.04	15	1.03165	15.475	24.5	30.03	45	1.03164	46.424	14.2	32.2	**3.2**	**6.7**	**9.9**
B11	56	1.717	24.5	25.0	29.96	3	1.02882	3.086	24.5	29.96	4	1.03164	4.127	3.0	1.1	**0.7**	**0.2**	**0.9**
B12	173	1.701	24.0	24.5	29.91	4	1.02886	4.115	24.0	29.90	21	1.03165	21.665	3.4	18.3	**0.8**	**3.8**	**4.6**
C02	189	0.845	24.0	24.5	30.10	29	1.03444	29.999	24.0	30.10	35	1.03723	36.303	29.7	6.6	**13.6**	**2.8**	**16.4**
C03	51	0.854	24.5	25.0	29.96	25	1.02882	25.721	24.5	29.96	56	1.03164	57.772	24.4	33.3	**11.1**	**13.9**	**25.0**
C04	6	1.698	24.5	25.0	30.04	41	1.03165	42.298	24.5	30.04	80	1.03444	82.755	40.7	42.1	**9.3**	**8.8**	**18.1**
C05a	93	0.859	24.0	24.5	29.70	11	1.02050	11.226	24.0	29.70	32	1.02329	32.745	10.4	22.4	**4.7**	**9.3**	**14.0**
C05b	46	1.695	24.5	25.0	29.78	42	1.02047	42.860	24.5	29.78	83	1.02326	84.931	41.2	43.8	**9.4**	**9.2**	**18.6**
C06	237	0.847	24.0	24.5	30.06	19	1.03444	19.654	24.5	30.06	30	1.03444	31.033	19.2	11.8	**8.8**	**5.0**	**13.8**
C07	145	1.697	24.0	24.5	30.00	23	1.03164	23.728	24.0	30.00	78	1.03447	80.689	21.4	59.2	**4.9**	**12.4**	**17.3**
C08	136	1.698	24.0	24.5	30.18	26	1.03723	26.968	24.0	30.16	60	1.04005	62.403	25.6	36.9	**5.8**	**7.7**	**13.6**
C09	131	1.703	24.0	24.5	30.18	26	1.03723	26.968	24.0	30.18	84	1.04005	87.364	24.6	62.8	**5.6**	**13.1**	**18.7**
C10	210	1.702	24.0	25.0	30.42	53	1.04000	55.120	24.0	30.42	97	1.04564	101.427	53.3	48.2	**12.1**	**10.1**	**22.2**
C11	169	0.843	24.0	24.5	29.91	23	1.02886	23.664	24.0	29.91	80	1.03165	82.532	21.3	61.2	**9.8**	**25.9**	**35.7**
C12	166	1.694	24.0	24.5	29.93	46	1.02886	47.328	24.0	29.91	49	1.03165	50.551	47.2	3.4	**10.8**	**0.7**	**11.5**
D02	143	0.860	24.0	24.5	30.09	15	1.03444	15.517	24.0	30.05	22	1.03723	22.819	15.2	7.6	**6.9**	**3.2**	**10.0**
D03	149	0.853	24.0	24.5	29.91	25	1.02886	25.722	24.0	29.91	59	1.03165	60.867	24.3	36.6	**11.0**	**15.3**	**26.3**
D04	9	1.702	24.5	25.5	30.04	58	1.02880	59.670	24.5	30.04	97	1.03444	100.341	58.0	42.3	**13.2**	**8.9**	**22.0**
D05	106	1.701	24.0	24.5	29.63	29	1.01771	29.514	24.5	29.61	70	1.01771	71.240	27.8	43.4	**6.3**	**9.1**	**15.4**
D06	3	1.701	24.5	25.0	30.04	28	1.03165	28.886	24.5	30.04	84	1.03444	86.893	26.6	60.3	**6.0**	**12.6**	**18.7**
D07	14	1.701	24.5	25.0	30.03	28	1.02882	28.807	23.5	30.00	78	1.03724	80.905	26.7	54.2	**6.1**	**11.3**	**17.4**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
D08	230	1.720	24.0	24.5	30.06	26	1.03444	26.895	24.0	30.06	90	1.03723	93.351	24.2	69.1	**5.5**	**14.3**	**19.8**
D09	139	0.873	24.0	24.5	30.16	9	1.03723	9.335	24.0	30.15	27	1.04005	28.081	8.6	19.5	**3.8**	**8.0**	**11.8**
D10	127	1.703	24.0	24.5	30.21	18	1.04003	18.721	24.0	30.19	55	1.04005	57.203	17.2	40.0	**3.9**	**8.4**	**12.3**
D11	39	0.853	24.5	25.0	29.74	13	1.02047	13.266	24.5	29.74	22	1.02326	22.512	12.9	9.6	**5.9**	**4.0**	**9.9**
D12	225	1.713	23.5	24.0	30.06	5	1.03723	5.186	24.0	30.06	11	1.03723	11.410	4.9	6.5	**1.1**	**1.4**	**2.5**
E02	92	0.856	24.0	24.5	29.70	22	1.02050	22.451	24.0	29.70	52	1.02329	53.211	21.2	32.0	**9.6**	**13.3**	**22.9**
E03	190	1.699	24.0	25.0	30.12	69	1.03441	71.374	24.0	30.13	133	1.04005	138.327	68.7	69.6	**15.6**	**14.6**	**30.2**
E04	186	0.853	24.5	25.0	30.10	21	1.03165	21.665	24.0	30.10	33	1.03723	34.229	21.2	13.1	**9.6**	**5.5**	**15.1**
E05	61	0.850	24.5	25.0	29.96	11	1.02882	11.317	24.5	29.96	29	1.03164	29.918	10.6	19.3	**4.8**	**8.1**	**12.9**
E06	12	1.711	24.5	25.0	30.04	25	1.03165	25.791	24.5	30.03	61	1.03164	62.930	24.3	38.6	**5.5**	**8.0**	**13.5**
E07	195	1.701	24.0	24.5	30.13	23	1.03723	23.856	23.5	30.13	75	1.04285	78.214	21.7	56.5	**4.9**	**11.8**	**16.8**
E08	113	1.690	24.0	24.5	29.83	22	1.02608	22.574	24.0	29.84	68	1.02888	69.964	20.7	49.3	**4.7**	**10.4**	**15.1**
E09	181	1.715	24.5	25.0	30.10	18	1.03165	18.570	24.5	30.10	88	1.03444	91.031	15.7	75.4	**3.5**	**15.7**	**19.2**
E10	101	1.694	24.0	24.5	29.66	16	1.02050	16.328	24.0	29.67	27	1.02329	27.629	15.9	11.8	**3.6**	**2.5**	**6.1**
E11	167	1.706	24.0	24.5	29.91	22	1.02886	22.635	24.0	29.91	46	1.03165	47.456	21.6	25.8	**4.9**	**5.4**	**10.3**
F02	185	0.849	24.5	25.0	30.10	30	1.03165	30.950	24.0	30.10	49	1.03723	50.824	30.2	20.7	**13.7**	**8.7**	**22.4**
F03	198	0.843	23.5	24.0	30.13	25	1.04005	26.001	23.0	30.13	35	1.04565	36.598	25.6	11.0	**11.7**	**4.7**	**16.4**
F04	211	1.704	24.0	25.0	30.42	62	1.04000	64.480	24.0	30.42	149	1.04564	155.800	60.8	95.0	**13.8**	**19.9**	**33.7**
F05	142	1.720	24.0	24.5	30.09	21	1.03444	21.723	24.0	30.05	67	1.03723	69.494	19.8	49.7	**4.5**	**10.3**	**14.7**
F06	57	0.861	24.5	25.0	29.96	16	1.02882	16.461	24.5	29.96	37	1.03164	38.171	15.6	22.6	**7.0**	**9.3**	**16.3**
F07	64	0.865	24.5	25.0	30.00	16	1.02882	16.461	24.5	30.00	37	1.03164	38.171	15.6	22.6	**7.0**	**9.3**	**16.3**
F08A	269	1.696	23.5	24.0	29.68	22	1.02329	22.512	23.5	29.66	84	1.02603	86.187	20.0	66.2	**4.6**	**13.9**	**18.5**
F08B	264	0.848	24.5	25.0	29.73	18	1.02047	18.368	24.0	29.70	62	1.02329	63.444	16.6	46.9	**7.6**	**19.7**	**27.3**
F09	229	0.857	24.0	24.5	30.06	13	1.03444	13.448	24.0	30.06	22	1.03723	22.819	13.1	9.7	**5.9**	**4.1**	**10.0**
F10	158	1.707	24.0	24.5	29.91	10	1.02886	10.289	24.0	29.94	18	1.03165	18.570	10.0	8.6	**2.3**	**1.8**	**4.1**
G02	125	0.846	24.0	24.5	30.21	27	1.04003	28.081	24.0	30.21	42	1.04282	43.798	27.5	16.3	**12.6**	**6.9**	**19.4**
G03	94	0.861	24.0	24.5	29.70	25	1.02050	25.513	24.0	29.70	35	1.02329	35.815	25.1	10.7	**11.3**	**4.4**	**15.7**
G04	163	1.700	24.0	24.5	29.94	21	1.02886	21.606	24.0	29.93	57	1.03165	58.804	20.1	38.7	**4.6**	**8.1**	**12.7**
G05	236	1.687	24.0	24.5	30.06	30	1.03444	31.033	24.5	30.06	83	1.03444	85.859	28.8	57.0	**6.6**	**12.0**	**18.7**
G06	90	0.852	23.5	24.0	29.70	14	1.02329	14.326	24.0	29.70	53	1.02329	54.234	12.7	41.5	**5.8**	**17.4**	**23.1**
G07	174	0.843	24.0	24.5	29.90	25	1.02886	25.722	24.0	29.90	51	1.03165	52.614	24.6	28.0	**11.3**	**11.8**	**23.1**
G08	193	0.848	23.5	24.0	30.13	32	1.04005	33.282	23.0	30.13	52	1.04565	54.374	32.4	21.9	**14.8**	**9.2**	**24.0**
G09	232	0.849	24.0	24.5	30.06	21	1.03444	21.723	24.0	30.06	54	1.03723	56.010	20.4	35.7	**9.3**	**15.0**	**24.2**
G10	22	1.719	24.5	25.0	29.85	6	1.02329	6.140	24.5	29.84	11	1.02608	11.287	5.9	5.4	**1.3**	**1.1**	**2.5**
H02	222	0.848	23.0	23.5	30.40	21	1.04844	22.017	23.0	30.40	34	1.05123	35.742	21.5	14.3	**9.8**	**6.0**	**15.8**
H03	179	1.695	24.0	24.5	30.10	16	1.03444	16.551	24.5	30.07	45	1.03444	46.550	15.4	31.2	**3.5**	**6.6**	**10.1**
H04	105	1.707	24.0	24.5	29.63	35	1.01771	35.620	24.0	29.63	87	1.02047	88.781	33.5	55.3	**7.6**	**11.5**	**19.1**
H05	124	0.850	24.0	24.5	30.21	28	1.04003	29.121	24.0	30.21	57	1.04282	59.441	27.9	31.5	**12.7**	**13.2**	**25.9**
H06	77	0.855	25.0	25.5	30.00	20	1.02600	20.520	25.0	30.00	51	1.02882	52.470	19.2	33.2	**8.7**	**13.8**	**22.5**
H07	170	1.696	24.0	24.5	29.91	14	1.02886	14.404	24.0	29.91	20	1.03165	20.633	14.2	6.5	**3.2**	**1.4**	**4.6**
H08	132	1.701	24.0	24.5	30.18	25	1.03723	25.931	24.0	30.18	76	1.04005	79.044	23.8	55.2	**5.4**	**11.6**	**17.0**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
H09	271	1.702	23.5	24.0	29.68	3	1.02329	3.070	23.5	29.66	3	1.02603	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
H10	7	1.710	24.5	25.0	30.04	2	1.03165	2.063	24.5	30.04	3	1.03444	3.103	2.0	1.1	**0.5**	**0.2**	**0.7**
I02	34	0.857	24.5	25.0	29.74	22	1.02047	22.450	24.5	29.74	59	1.02326	60.372	20.9	39.4	**9.5**	**16.4**	**25.8**
I03	87	0.875	23.5	24.0	29.70	21	1.02329	21.489	24.0	29.70	55	1.02329	56.281	20.1	36.2	**8.9**	**14.7**	**23.6**
I04	165	1.699	24.0	24.5	29.93	35	1.02886	36.010	24.0	29.91	106	1.03165	109.355	33.1	76.3	**7.5**	**16.0**	**23.5**
I05	217	1.702	24.0	24.5	30.40	29	1.04282	30.242	23.0	30.40	81	1.05123	85.150	28.0	57.1	**6.4**	**12.0**	**18.3**
I06	13	1.702	24.5	25.0	30.04	39	1.03165	40.234	24.5	30.03	97	1.03164	100.069	37.8	62.2	**8.6**	**13.0**	**21.6**
I07	86	0.851	23.5	24.0	29.70	12	1.02329	12.279	23.5	29.70	28	1.02603	28.729	11.6	17.1	**5.3**	**7.2**	**12.4**
I08	73	1.713	24.5	25.0	30.00	39	1.02882	40.124	25.0	30.00	92	1.02882	94.651	37.9	56.7	**8.6**	**11.8**	**20.4**
I09	60	1.698	24.5	25.0	29.96	4	1.02882	4.115	24.5	29.96	13	1.03164	13.411	3.7	9.7	**0.9**	**2.0**	**2.9**
I10	155	1.700	24.0	24.5	29.91	18	1.02886	18.519	24.0	29.93	58	1.03165	59.836	16.9	43.0	**3.8**	**9.0**	**12.8**
J02	66	0.850	24.5	25.0	30.00	14	1.02882	14.403	24.5	30.00	38	1.03164	39.202	13.4	25.8	**6.1**	**10.8**	**16.9**
J03	47	1.700	24.0	24.5	29.94	49	1.02886	50.414	24.5	29.96	107	1.03164	110.385	48.0	62.4	**10.9**	**13.1**	**24.0**
J04	103	1.696	24.0	24.5	29.63	25	1.01771	25.443	24.0	29.63	82	1.02047	83.679	23.1	60.6	**5.3**	**12.7**	**18.0**
J05	226	0.859	23.5	24.0	30.06	19	1.03723	19.707	24.0	30.06	41	1.03723	42.526	18.8	23.7	**8.5**	**9.8**	**18.3**
J06	183	0.856	24.0	24.5	30.10	28	1.03444	28.964	24.0	30.10	52	1.03723	53.936	28.0	26.0	**12.6**	**10.8**	**23.5**
J07	204	1.704	24.0	24.5	30.43	3	1.04282	3.128	24.0	30.42	4	1.04564	4.183	3.1	1.1	**0.7**	**0.2**	**0.9**
J08	107	1.702	24.0	24.5	29.63	3	1.01771	3.053	24.5	29.61	3	1.01771	3.053	3.1	0.0	**0.7**	**0.0**	**0.7**
J09	130	1.705	24.0	24.5	30.18	25	1.03723	25.931	24.0	30.19	66	1.04005	68.643	24.2	44.4	**5.5**	**9.3**	**14.8**
J10	20	1.695	24.0	24.5	29.99	24	1.03164	24.759	24.0	29.98	69	1.03447	71.378	22.9	48.5	**5.2**	**10.2**	**15.4**
K02	273	1.698	24.0	24.5	29.69	41	1.02050	41.841	24.0	29.70	121	1.02329	123.818	38.6	85.3	**8.8**	**17.9**	**26.7**
K03	41	0.845	23.5	24.0	30.21	17	1.04282	17.728	24.0	30.21	48	1.04282	50.055	16.4	33.6	**7.5**	**14.2**	**21.7**
K04	250	1.699	24.5	25.0	30.02	38	1.02882	39.095	24.5	30.00	89	1.03164	91.816	37.0	54.8	**8.4**	**11.5**	**19.9**
K05	21	1.712	24.0	25.0	29.99	51	1.02882	52.470	24.0	29.98	98	1.03447	101.378	50.5	50.9	**11.4**	**10.6**	**22.0**
K06	261	1.701	24.5	25.0	29.73	2	1.02047	2.041	24.0	29.70	3	1.02329	3.070	2.0	1.1	**0.5**	**0.2**	**0.7**
K07	148	1.692	24.0	24.5	30.00	4	1.03164	4.127	24.0	30.00	4	1.03447	4.138	4.1	0.0	**0.9**	**0.0**	**0.9**
K08	121	1.697	24.0	24.5	30.21	3	1.04003	3.120	24.0	30.21	4	1.04282	4.171	3.1	1.1	**0.7**	**0.2**	**0.9**
K09	111	1.691	24.5	25.0	29.61	3	1.01494	3.045	24.0	29.61	3	1.02047	3.061	3.0	0.0	**0.7**	**0.0**	**0.7**
K10	228	1.695	23.5	24.0	30.06	22	1.03723	22.819	24.0	30.06	61	1.03723	63.271	21.2	42.1	**4.8**	**8.8**	**13.7**
L02	18	1.705	24.0	25.0	29.99	56	1.02882	57.614	24.0	29.98	98	1.03447	101.378	55.9	45.5	**12.7**	**9.5**	**22.2**
L03	251	0.849	24.5	25.0	30.02	17	1.02882	17.490	24.5	30.00	53	1.03164	54.677	16.0	38.7	**7.3**	**16.2**	**23.5**
L04	220	1.704	23.0	24.0	30.40	74	1.04564	77.377	23.0	30.40	147	1.05123	154.531	74.3	80.2	**16.9**	**16.8**	**33.6**
L05E	23	1.709	24.5	25.0	29.85	19	1.02329	19.443	24.5	29.84	59	1.02608	60.539	17.8	42.7	**4.0**	**8.9**	**12.9**
L05W	4	1.700	24.5	25.0	30.04	26	1.03165	26.823	24.5	30.04	89	1.03444	92.065	24.2	67.9	**5.5**	**14.2**	**19.7**
L06E	40	1.706	24.5	25.0	29.74	7	1.02047	7.143	24.5	29.78	16	1.02326	16.372	6.8	9.6	**1.5**	**2.0**	**3.5**
L06WA	218	1.695	23.0	23.5	30.40	19	1.04844	19.920	23.0	30.40	53	1.05123	55.715	18.5	37.2	**4.2**	**7.8**	**12.0**
L06WB	184	1.697	24.5	25.0	30.10	30	1.03165	30.950	24.0	30.10	70	1.03723	72.606	29.3	43.3	**6.7**	**9.1**	**15.8**
L07	44	1.702	24.5	25.0	29.78	2	1.02047	2.041	24.5	29.78	3	1.02326	3.070	2.0	1.1	**0.5**	**0.2**	**0.7**
L08	267	1.698	24.0	24.5	29.70	3	1.02050	3.062	23.5	29.68	3	1.02603	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
L09	19	1.723	24.0	24.5	29.99	3	1.03164	3.095	24.0	29.98	3	1.03447	3.103	3.1	0.0	**0.7**	**0.0**	**0.7**
L10	99	0.860	24.0	24.5	29.66	10	1.02050	10.205	24.0	29.67	17	1.02329	17.396	9.9	7.5	**4.5**	**3.1**	**7.6**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
L11	150	1.690	24.0	24.5	29.91	13	1.02886	13.375	24.0	29.91	23	1.03165	23.728	13.0	10.8	**3.0**	**2.3**	**5.2**
M02	78	0.859	25.0	25.5	30.00	18	1.02600	18.468	25.0	30.00	47	1.02882	48.355	17.3	31.1	**7.8**	**12.9**	**20.7**
M03	152	1.713	24.0	25.0	29.91	73	1.02606	74.902	24.0	29.91	150	1.03165	154.748	71.7	83.0	**16.2**	**17.3**	**33.5**
M04	248	1.701	23.5	24.0	30.03	46	1.03447	47.586	24.5	30.02	111	1.03164	114.512	44.9	69.6	**10.2**	**14.6**	**24.8**
M05	29	1.695	24.5	25.0	29.80	23	1.02329	23.536	24.5	29.78	57	1.02326	58.326	22.1	36.2	**5.1**	**7.6**	**12.7**
M06	49	0.856	24.0	24.5	29.94	11	1.02886	11.317	24.5	29.96	26	1.03164	26.823	10.7	16.1	**4.8**	**6.7**	**11.5**
M07	172	1.699	24.0	24.5	29.91	11	1.02886	11.317	24.0	29.90	25	1.03165	25.791	10.7	15.1	**2.4**	**3.2**	**5.6**
M08	128	1.696	24.0	24.5	30.21	3	1.04003	3.120	24.0	30.19	4	1.04005	4.160	3.1	1.1	**0.7**	**0.2**	**0.9**
M09	180	1.710	24.5	25.0	30.10	3	1.03165	3.095	24.5	30.10	4	1.03444	4.138	3.1	1.1	**0.7**	**0.2**	**0.9**
M10	188	1.699	24.0	24.5	30.10	3	1.03444	3.103	24.0	30.10	3	1.03723	3.112	3.1	0.0	**0.7**	**0.0**	**0.7**
M11	120	1.715	24.0	24.5	30.21	4	1.04003	4.160	24.0	30.21	4	1.04282	4.171	4.2	0.0	**0.9**	**0.0**	**0.9**
N03	215	1.696	24.0	24.5	30.40	45	1.04282	46.927	23.0	30.40	131	1.05123	137.711	43.3	94.4	**9.9**	**19.8**	**29.7**
N04	147	0.850	24.0	24.5	30.00	17	1.03164	17.538	24.0	30.00	33	1.03447	34.138	16.9	17.3	**7.7**	**7.2**	**14.9**
N05	138	0.860	24.0	24.5	30.16	24	1.03723	24.894	24.0	30.15	48	1.04005	49.922	23.9	26.0	**10.7**	**10.8**	**21.5**
N06	202	1.712	23.5	24.0	30.40	4	1.04564	4.183	24.0	30.40	4	1.04564	4.183	4.2	0.0	**0.9**	**0.0**	**0.9**
N07	16	1.698	24.5	25.0	30.03	2	1.02882	2.058	23.5	30.00	4	1.03724	4.149	2.0	2.2	**0.5**	**0.5**	**0.9**
N08	259	1.694	23.5	24.0	29.79	8	1.02606	8.208	23.5	29.77	15	1.02883	15.432	7.9	7.5	**1.8**	**1.6**	**3.4**
N09	32	1.713	24.5	25.0	29.84	3	1.02329	3.070	24.5	29.81	3	1.02608	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
N10	242	1.693	24.5	25.0	30.06	4	1.03165	4.127	23.0	30.04	4	1.04282	4.171	4.1	0.0	**0.9**	**0.0**	**1.0**
N11	266	1.709	24.0	24.5	29.70	3	1.02050	3.062	23.5	29.68	3	1.02603	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
N12	270	1.697	23.5	24.0	29.68	13	1.02329	13.303	23.5	29.66	23	1.02603	23.599	12.9	10.7	**2.9**	**2.3**	**5.2**
O03	177	1.696	24.0	24.5	29.90	30	1.02886	30.866	24.0	29.90	89	1.03165	91.817	28.4	63.4	**6.5**	**13.3**	**19.8**
O04	8	1.702	24.5	25.5	30.04	64	1.02880	65.843	24.5	30.04	138	1.03444	142.753	62.8	80.0	**14.3**	**16.7**	**31.0**
O05	272	0.853	24.0	24.5	29.69	13	1.02050	13.267	24.0	29.70	39	1.02329	39.908	12.2	27.7	**5.5**	**11.6**	**17.1**
O06	207	1.697	24.0	24.5	30.42	28	1.04282	29.199	24.0	30.42	54	1.04564	56.465	28.1	28.4	**6.4**	**6.0**	**12.4**
O07	182	1.695	24.5	25.0	30.10	3	1.03165	3.095	24.5	30.10	3	1.03444	3.103	3.1	0.0	**0.7**	**0.0**	**0.7**
O08	212	1.703	24.0	24.5	30.42	3	1.04282	3.128	24.0	30.42	4	1.04564	4.183	3.1	1.1	**0.7**	**0.2**	**0.9**
O09	246	1.707	23.0	23.5	30.04	4	1.04003	4.160	23.5	30.03	4	1.03724	4.149	4.2	0.0	**0.9**	**0.0**	**0.9**
O10	162	1.692	24.0	24.5	29.94	4	1.02886	4.115	24.0	29.93	9	1.03165	9.285	3.9	5.4	**0.9**	**1.1**	**2.0**
O11	221	1.706	23.0	23.5	30.40	4	1.04844	4.194	23.0	30.40	4	1.05123	4.205	4.2	0.0	**1.0**	**0.0**	**1.0**
O12	65	1.696	24.5	25.0	30.00	15	1.02882	15.432	24.5	30.00	22	1.03164	22.696	15.1	7.6	**3.5**	**1.6**	**5.0**
P03	37	0.853	24.5	25.0	29.74	20	1.02047	20.409	24.5	29.74	63	1.02326	64.465	18.6	45.8	**8.5**	**19.1**	**27.6**
P04	28	0.852	24.5	25.0	29.80	32	1.02329	32.745	24.5	29.78	68	1.02326	69.582	31.3	38.3	**14.2**	**16.0**	**30.2**
P05	206	1.706	24.0	24.5	30.43	35	1.04282	36.499	24.0	30.42	77	1.04564	80.514	34.7	45.8	**7.9**	**9.6**	**17.4**
P06	268	0.854	24.0	24.5	29.70	14	1.02050	14.287	23.5	29.68	30	1.02603	30.781	13.6	17.2	**6.2**	**7.2**	**13.3**
P07	48	1.696	24.0	24.5	29.94	19	1.02886	19.548	24.5	29.96	54	1.03164	55.709	18.1	37.6	**4.1**	**7.9**	**12.0**
P08	247	1.709	23.5	24.0	30.03	23	1.03447	23.793	24.5	30.02	76	1.03164	78.405	21.6	56.8	**4.9**	**11.8**	**16.7**
P09	154	1.695	24.0	24.5	29.91	3	1.02886	3.087	24.0	29.93	3	1.03165	3.095	3.1	0.0	**0.7**	**0.0**	**0.7**
P10	157	1.694	24.0	24.5	29.91	3	1.02886	3.087	24.0	29.94	4	1.03165	4.127	3.0	1.1	**0.7**	**0.2**	**0.9**
P11	123	1.703	24.0	24.5	30.21	3	1.04003	3.120	24.0	30.21	3	1.04282	3.128	3.1	0.0	**0.7**	**0.0**	**0.7**
P12	62	0.852	24.5	25.0	30.00	16	1.02882	16.461	24.5	30.00	22	1.03164	22.696	16.2	6.5	**7.4**	**2.7**	**10.1**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
P13	10	1.701	24.5	25.0	30.04	4	1.03165	4.127	24.5	30.04	4	1.03444	4.138	4.1	0.0	**0.9**	**0.0**	**0.9**
Q02	72	0.867	24.0	24.5	29.86	27	1.02608	27.704	24.0	29.86	70	1.02888	72.022	25.9	46.1	**11.6**	**18.9**	**30.5**
Q03	200	1.700	23.5	24.0	30.40	23	1.04564	24.050	24.0	30.40	79	1.04564	82.606	21.7	60.9	**4.9**	**12.8**	**17.7**
Q03A	129	0.852	24.0	24.5	30.21	21	1.04003	21.841	24.0	30.19	74	1.04005	76.964	19.6	57.3	**8.9**	**24.0**	**32.9**
Q04	257	0.851	24.5	25.0	29.81	25	1.02329	25.582	23.5	29.79	61	1.02883	62.759	24.1	38.7	**11.0**	**16.2**	**27.1**
Q05	203	1.713	24.0	24.5	30.43	33	1.04282	34.413	24.0	30.42	81	1.04564	84.697	32.4	52.3	**7.3**	**10.9**	**18.2**
Q06	108	1.694	24.0	24.5	29.63	26	1.01771	26.460	24.5	29.61	71	1.01771	72.257	24.6	47.6	**5.6**	**10.0**	**15.6**
Q07	17	1.709	24.5	25.0	30.03	9	1.02882	9.259	23.5	30.00	37	1.03724	38.378	8.1	30.3	**1.8**	**6.3**	**8.1**
Q08	156	1.702	24.0	24.5	29.91	4	1.02886	4.115	24.0	29.94	4	1.03165	4.127	4.1	0.0	**0.9**	**0.0**	**0.9**
Q09	96	1.704	24.0	24.5	29.70	2	1.02050	2.041	24.0	29.66	2	1.02329	2.047	2.0	0.0	**0.5**	**0.0**	**0.5**
Q10	275	1.700	24.0	24.5	29.69	3	1.02050	3.062	24.0	29.70	4	1.02329	4.093	3.0	1.1	**0.7**	**0.2**	**0.9**
Q11	58	1.709	24.5	25.0	29.96	4	1.02882	4.115	24.5	29.96	4	1.03164	4.127	4.1	0.0	**0.9**	**0.0**	**0.9**
Q12	97	1.693	24.0	24.5	29.70	4	1.02050	4.082	24.0	29.66	4	1.02329	4.093	4.1	0.0	**0.9**	**0.0**	**0.9**
Q13	263	1.694	24.5	25.0	29.73	10	1.02047	10.205	24.0	29.70	15	1.02329	15.349	10.0	5.4	**2.3**	**1.1**	**3.4**
R02	253	1.702	24.5	25.0	30.02	28	1.02882	28.807	24.5	30.00	73	1.03164	75.310	26.9	48.4	**6.1**	**10.1**	**16.2**
R03	15	1.706	24.5	25.5	30.03	51	1.02600	52.326	23.5	30.00	133	1.03724	137.953	48.9	89.1	**11.1**	**18.6**	**29.7**
R04	199	0.845	23.5	24.0	30.40	30	1.04564	31.369	24.0	30.40	75	1.04564	78.423	29.5	48.9	**13.5**	**20.6**	**34.1**
R05	219	1.693	23.0	23.5	30.40	23	1.04844	24.114	23.0	30.40	59	1.05123	62.023	22.6	39.4	**5.2**	**8.3**	**13.5**
R06	164	1.699	24.0	25.0	29.93	73	1.02606	74.902	24.0	29.91	142	1.03165	146.494	72.0	74.5	**16.4**	**15.6**	**32.0**
R07	134	1.692	24.0	24.5	30.18	35	1.03723	36.303	24.0	30.16	95	1.04005	98.805	33.8	65.0	**7.7**	**13.7**	**21.4**
R08	24	1.714	24.5	25.0	29.85	23	1.02329	23.536	24.5	29.84	66	1.02608	67.721	21.8	46.0	**4.9**	**9.6**	**14.5**
R09	201	1.704	23.5	24.0	30.40	3	1.04564	3.137	24.0	30.40	3	1.04564	3.137	3.1	0.0	**0.7**	**0.0**	**0.7**
R10	151	1.691	24.0	24.5	29.91	2	1.02886	2.058	24.0	29.91	3	1.03165	3.095	2.0	1.1	**0.5**	**0.2**	**0.7**
R11	213	1.701	24.0	24.5	30.42	4	1.04282	4.171	24.0	30.42	4	1.04564	4.183	4.2	0.0	**1.0**	**0.0**	**1.0**
R12	194	1.697	24.0	24.5	30.13	5	1.03723	5.186	23.5	30.13	5	1.04285	5.214	5.2	0.0	**1.2**	**0.0**	**1.2**
R13	192	1.695	24.0	24.5	30.12	3	1.03723	3.112	24.0	30.13	4	1.04005	4.160	3.1	1.1	**0.7**	**0.2**	**0.9**
R14	171	1.700	24.0	24.5	29.91	3	1.02886	3.087	24.0	29.90	4	1.03165	4.127	3.0	1.1	**0.7**	**0.2**	**0.9**
R15	74	1.691	24.5	25.0	30.00	2	1.02882	2.058	25.0	30.00	2	1.02882	2.058	2.1	0.0	**0.5**	**0.0**	**0.5**
S01	75	0.854	24.0	24.5	29.86	15	1.02608	15.391	24.0	29.86	47	1.02888	48.357	14.1	34.3	**6.4**	**14.3**	**20.7**
S02	45	0.851	24.5	25.0	29.78	15	1.02047	15.307	24.5	29.78	63	1.02326	64.465	13.3	51.1	**6.1**	**21.4**	**27.5**
S03	112	1.705	24.5	25.0	29.61	47	1.01494	47.702	24.0	29.61	129	1.02047	131.641	44.3	87.3	**10.1**	**18.2**	**28.3**
S04	79	0.855	25.0	25.5	30.00	33	1.02600	33.858	25.0	30.00	75	1.02882	77.162	32.1	45.0	**14.5**	**18.8**	**33.3**
S05	89	0.855	23.5	24.0	29.70	34	1.02329	34.792	24.0	29.70	69	1.02329	70.607	33.4	37.2	**15.1**	**15.5**	**30.6**
S06	53	1.693	24.5	25.0	29.96	18	1.02882	18.519	24.5	29.96	102	1.03164	105.227	15.1	90.2	**3.4**	**19.0**	**22.4**
S07	224	0.856	23.0	23.5	30.40	35	1.04844	36.695	23.0	30.40	67	1.05123	70.432	35.3	35.1	**16.0**	**14.6**	**30.6**
S08	81	0.853	25.0	25.5	29.99	36	1.02600	36.936	24.0	29.97	64	1.03447	66.206	35.8	30.4	**16.2**	**12.7**	**28.9**
S09	249	1.709	23.5	24.0	30.03	7	1.03447	7.241	24.5	30.02	28	1.03164	28.886	6.4	22.5	**1.4**	**4.7**	**6.1**
S10	55	1.698	24.5	25.0	29.96	2	1.02882	2.058	24.5	29.96	2	1.03164	2.063	2.1	0.0	**0.5**	**0.0**	**0.5**
S11	84	1.696	23.5	24.0	29.70	2	1.02329	2.047	23.5	29.70	2	1.02603	2.052	2.0	0.0	**0.5**	**0.0**	**0.5**
S12	116	1.694	24.0	24.5	29.83	4	1.02608	4.104	24.0	29.84	4	1.02888	4.116	4.1	0.0	**0.9**	**0.0**	**0.9**
S13	146	1.709	24.0	24.5	30.00	4	1.03164	4.127	24.0	30.00	4	1.03447	4.138	4.1	0.0	**0.9**	**0.0**	**0.9**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
S14	80	1.694	25.0	25.5	29.99	3	1.02600	3.078	24.0	29.97	3	1.03447	3.103	3.1	0.0	**0.7**	**0.0**	**0.7**
S15	187	1.698	24.0	24.5	30.13	4	1.03723	4.149	23.5	30.13	4	1.04285	4.171	4.1	0.0	**0.9**	**0.0**	**0.9**
S16	256	0.849	24.5	25.0	29.81	12	1.02329	12.279	23.5	29.79	16	1.02883	16.461	12.1	4.3	**5.5**	**1.8**	**7.3**
T01	71	0.853	24.0	24.5	29.86	21	1.02608	21.548	24.0	29.86	55	1.02888	56.588	20.1	36.4	**9.1**	**15.2**	**24.4**
T02	144	0.856	24.0	24.5	30.09	22	1.03444	22.758	24.0	30.05	74	1.03723	76.755	20.6	56.2	**9.3**	**23.4**	**32.7**
T03	254	0.855	24.5	25.0	29.81	15	1.02329	15.349	23.5	29.79	44	1.02883	45.269	14.2	31.1	**6.4**	**13.0**	**19.4**
T04	265	0.851	24.0	24.5	29.70	25	1.02050	25.513	23.5	29.68	54	1.02603	55.406	24.3	31.1	**11.1**	**13.0**	**24.1**
T05	88	0.855	23.5	24.0	29.70	11	1.02329	11.256	24.0	29.70	60	1.02329	61.397	9.3	52.1	**4.2**	**21.7**	**25.9**
T06	140	1.689	24.0	25.0	30.16	67	1.03441	69.305	24.0	30.15	143	1.04005	148.727	66.1	82.6	**15.1**	**17.4**	**32.6**
T07	117	0.847	23.5	24.0	30.21	21	1.04282	21.899	23.5	30.21	55	1.04562	57.509	20.5	37.0	**9.4**	**15.6**	**24.9**
T08	85	0.854	23.5	24.0	29.70	25	1.02329	25.582	23.5	29.70	57	1.02603	58.484	24.3	34.2	**11.0**	**14.3**	**25.3**
T09	67	0.860	24.5	25.0	30.00	25	1.02882	25.721	24.5	30.00	55	1.03164	56.740	24.5	32.3	**11.0**	**13.4**	**24.4**
T10	27	1.700	24.5	25.0	29.80	4	1.02329	4.093	24.5	29.78	4	1.02326	4.093	4.1	0.0	**0.9**	**0.0**	**0.9**
T11	33	1.694	24.5	25.0	29.81	3	1.02329	3.070	24.5	29.80	3	1.02608	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
T11-2	260	1.695	23.5	24.0	29.79	3	1.02606	3.078	23.5	29.77	3	1.02883	3.086	3.1	0.0	**0.7**	**0.0**	**0.7**
T12	216	1.701	24.0	24.5	30.40	4	1.04282	4.171	23.0	30.40	4	1.05123	4.205	4.2	0.0	**1.0**	**0.0**	**1.0**
T14	208	1.718	24.0	24.5	30.42	3	1.04282	3.128	24.0	30.42	4	1.04564	4.183	3.1	1.1	**0.7**	**0.2**	**0.9**
T15	59	1.701	24.5	25.0	29.96	3	1.02882	3.086	24.5	29.96	3	1.03164	3.095	3.1	0.0	**0.7**	**0.0**	**0.7**
T16	25	1.712	24.5	25.0	29.84	7	1.02329	7.163	24.5	29.84	11	1.02608	11.287	7.0	4.3	**1.6**	**0.9**	**2.5**
U02	235	0.861	24.0	24.5	30.06	27	1.03444	27.930	24.0	30.06	50	1.03723	51.862	27.0	24.9	**12.1**	**10.3**	**22.4**
U03	191	1.696	24.0	25.0	30.12	59	1.03441	61.030	24.0	30.13	161	1.04005	167.448	56.8	110.7	**13.0**	**23.2**	**36.2**
U04	83	0.853	25.0	25.5	29.99	21	1.02600	21.546	24.0	29.97	75	1.03447	77.585	19.3	58.3	**8.8**	**24.3**	**33.1**
U05	54	0.850	24.5	25.0	29.96	35	1.02882	36.009	24.5	29.96	82	1.03164	84.594	34.1	50.5	**15.5**	**21.2**	**36.7**
U08	234	0.858	24.0	24.5	30.06	23	1.03444	23.792	24.0	30.06	40	1.03723	41.489	23.1	18.4	**10.4**	**7.6**	**18.1**
U09	31	0.851	24.5	25.0	29.74	37	1.02047	37.757	24.5	29.74	61	1.02326	62.419	36.8	25.6	**16.7**	**10.7**	**27.4**
U10	135	1.693	24.0	24.5	30.18	3	1.03723	3.112	24.0	30.16	4	1.04005	4.160	3.1	1.1	**0.7**	**0.2**	**0.9**
U11	205	1.701	24.0	24.5	30.43	4	1.04282	4.171	24.0	30.42	4	1.04564	4.183	4.2	0.0	**1.0**	**0.0**	**1.0**
V02	70	1.702	24.5	25.0	30.00	6	1.02882	6.173	24.5	30.00	17	1.03164	17.538	5.7	11.8	**1.3**	**2.5**	**3.8**
V03	231	0.854	24.0	24.5	30.06	20	1.03444	20.689	24.0	30.06	59	1.03723	61.197	19.1	42.1	**8.6**	**17.6**	**26.2**
V04	50	0.862	24.0	24.5	29.94	32	1.02886	32.924	24.5	29.96	100	1.03164	103.164	30.1	73.1	**13.5**	**30.2**	**43.7**
V06	227	0.850	23.5	24.0	30.06	22	1.03723	22.819	24.0	30.06	93	1.03723	96.462	19.9	76.6	**9.0**	**32.1**	**41.1**
V07	36	0.856	24.5	25.0	29.74	45	1.02047	45.921	24.5	29.74	75	1.02326	76.745	44.7	32.1	**20.2**	**13.3**	**33.5**
V08	238	1.682	24.0	24.5	30.06	10	1.03444	10.344	24.5	30.06	46	1.03444	47.584	8.9	38.7	**2.0**	**8.2**	**10.2**
V09	178	1.700	24.0	24.5	30.10	3	1.03444	3.103	24.5	30.07	5	1.03444	5.172	3.0	2.2	**0.7**	**0.5**	**1.1**
W02	104	0.843	23.5	24.0	30.21	26	1.04282	27.113	23.5	30.21	73	1.04562	76.330	25.1	51.2	**11.5**	**21.6**	**33.2**
W03	102	0.842	24.0	24.5	29.63	42	1.01771	42.744	24.0	29.63	113	1.02047	115.313	39.8	75.5	**18.3**	**31.9**	**50.2**
W04	175	0.848	24.0	24.5	30.07	41	1.03444	42.412	24.5	30.07	100	1.03444	103.444	40.0	63.5	**18.2**	**26.7**	**44.9**
W05	100	0.855	24.0	24.5	29.66	38	1.02050	38.779	24.0	29.67	108	1.02329	110.515	35.9	74.6	**16.2**	**31.1**	**47.3**
W06	196	0.842	23.5	24.0	30.13	41	1.04005	42.642	23.0	30.13	106	1.04565	110.839	39.9	70.9	**18.3**	**30.0**	**48.3**
X01	43	0.856	24.5	25.5	29.78	61	1.01764	62.076	24.5	29.78	108	1.02326	110.512	60.1	50.4	**27.2**	**21.0**	**48.1**
X02	243	0.857	23.0	24.0	30.04	51	1.03723	52.899	23.5	30.03	115	1.03724	119.283	50.2	69.0	**22.7**	**28.7**	**51.4**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
X03	274	0.858	24.0	24.5	29.69	40	1.02050	40.820	24.0	29.70	111	1.02329	113.585	37.9	75.7	**17.1**	**31.4**	**48.5**
X04	110	0.850	23.5	24.0	30.21	28	1.04282	29.199	24.0	30.21	84	1.04282	87.597	26.9	60.7	**12.2**	**25.5**	**37.7**
X05	244	0.852	23.0	24.0	30.04	54	1.03723	56.010	23.5	30.03	104	1.03724	107.873	53.9	53.9	**24.5**	**22.6**	**47.0**
Y05	42	1.711	24.5	25.0	29.74	10	1.02047	10.205	24.5	29.78	36	1.02326	36.837	9.1	27.7	**2.1**	**5.8**	**7.8**
Z01	109	0.428	23.5	24.0	30.21	29	1.04282	30.242	24.0	30.21	67	1.04282	69.869	28.7	41.2	**25.9**	**34.3**	**60.2**
Z02	160	0.841	24.0	24.5	29.94	48	1.02886	49.385	24.0	29.93	138	1.03165	142.368	45.7	96.7	**21.0**	**41.0**	**62.0**
Z03	223	0.854	23.0	23.5	30.40	27	1.04844	28.308	23.0	30.40	102	1.05123	107.225	25.2	82.1	**11.4**	**34.2**	**45.6**
Z04	141	0.859	24.0	24.5	30.16	46	1.03723	47.713	24.0	30.15	144	1.04005	149.767	43.6	106.1	**19.6**	**44.0**	**63.7**
Z05	161	0.840	24.0	24.5	29.94	48	1.02886	49.385	24.0	29.93	145	1.03165	149.589	45.4	104.2	**20.9**	**44.2**	**65.1**
Z06	176	0.425	24.0	24.5	30.07	21	1.03444	21.723	24.5	30.07	93	1.03444	96.203	18.7	77.5	**17.1**	**64.9**	**82.0**
Z07	63	0.842	24.5	25.5	30.00	54	1.02600	55.404	24.5	30.00	120	1.03164	123.797	52.7	71.1	**24.2**	**30.1**	**54.3**
Z08	258	0.848	23.5	24.0	29.79	18	1.02606	18.469	23.5	29.77	42	1.02883	43.211	17.5	25.7	**8.0**	**10.8**	**18.8**
Z09	239	0.852	24.0	24.5	30.06	26	1.03444	26.895	24.5	30.06	39	1.03444	40.343	26.4	14.0	**12.0**	**5.9**	**17.8**
Z10	26	0.850	24.5	25.5	29.80	52	1.02047	53.064	24.5	29.78	99	1.02326	101.303	51.1	50.2	**23.3**	**21.0**	**44.3**
Z11	262	1.701	24.5	25.0	29.73	2	1.02047	2.041	24.0	29.70	2	1.02329	2.047	2.0	0.0	**0.5**	**0.0**	**0.5**
Z12	76	1.714	25.0	25.5	30.00	2	1.02600	2.052	25.0	30.00	3	1.02882	3.086	2.0	1.1	**0.5**	**0.2**	**0.7**
Z13	159	1.704	24.0	24.5	29.91	2	1.02886	2.058	24.0	29.94	2	1.03165	2.063	2.1	0.0	**0.5**	**0.0**	**0.5**
Z14	52	1.710	24.5	25.0	29.96	2	1.02882	2.058	24.5	29.96	2	1.03164	2.063	2.1	0.0	**0.5**	**0.0**	**0.5**
Z15	30	0.857	24.5	25.0	29.74	29	1.02047	29.594	24.5	29.74	56	1.02326	57.303	28.5	28.8	**12.9**	**12.0**	**24.8**
Z16	214	0.845	24.0	24.5	30.40	45	1.04282	46.927	23.0	30.40	76	1.05123	79.893	45.6	34.3	**20.9**	**14.5**	**35.3**
Z17	252	0.852	24.5	25.0	30.02	35	1.02882	36.009	24.5	30.00	56	1.03164	57.772	35.1	22.6	**16.0**	**9.5**	**25.4**
Z18	69	1.698	24.5	25.0	30.00	3	1.02882	3.086	24.5	30.00	3	1.03164	3.095	3.1	0.0	**0.7**	**0.0**	**0.7**
Z19	122	1.698	24.0	24.5	30.21	4	1.04003	4.160	24.0	30.21	4	1.04282	4.171	4.2	0.0	**1.0**	**0.0**	**1.0**
Z20	115	1.722	24.0	24.5	29.83	3	1.02608	3.078	24.0	29.84	3	1.02888	3.087	3.1	0.0	**0.7**	**0.0**	**0.7**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
Z06	176	0.425	24.0	24.5	30.07	21	1.03444	21.723	24.5	30.07	93	1.03444	96.203	18.7	77.5	**17.1**	**64.9**	**82.0**
D176	276	0.425	23.0	23.5	29.70	24	1.02603	24.625	23.5	29.70	99	1.02603	101.577	21.5	80.0	**19.6**	**67.1**	**86.7**
Z05	161	0.840	24.0	24.5	29.94	48	1.02886	49.385	24.0	29.93	145	1.03165	149.589	45.4	104.2	**20.9**	**44.2**	**65.1**
D161	277	0.847	24.0	25.0	29.70	50	1.01771	50.886	24.0	29.70	144	1.02329	147.354	47.0	100.3	**21.5**	**42.2**	**63.7**
H03	179	1.695	24.0	24.5	30.10	16	1.03444	16.551	24.5	30.07	45	1.03444	46.550	15.4	31.2	**3.5**	**6.6**	**10.1**
D179	278	1.695	24.0	24.5	29.70	15	1.02050	15.308	24.0	29.70	45	1.02329	46.048	14.1	32.0	**3.2**	**6.7**	**9.9**
W06	196	0.842	23.5	24.0	30.13	41	1.04005	42.642	23.0	30.13	106	1.04565	110.839	39.9	70.9	**18.3**	**30.0**	**48.3**
D196	279	0.852	24.0	24.5	29.70	42	1.02050	42.861	24.0	29.70	107	1.02329	109.492	40.2	69.3	**18.3**	**29.0**	**47.2**
Q03A	129	0.852	24.0	24.5	30.21	21	1.04003	21.841	24.0	30.19	74	1.04005	76.964	19.6	57.3	**8.9**	**24.0**	**32.9**
D129	280	0.846	23.0	23.5	29.70	22	1.02603	22.573	23.5	29.70	68	1.02603	69.770	20.7	49.1	**9.5**	**20.7**	**30.1**
J03	47	1.700	24.0	24.5	29.94	49	1.02886	50.414	24.5	29.96	107	1.03164	110.385	48.0	62.4	**10.9**	**13.1**	**24.0**
D47	281	0.847	23.0	23.5	29.70	20	1.02603	20.521	23.0	29.70	46	1.02876	47.323	19.4	27.9	**8.9**	**11.7**	**20.6**
Q04	257	0.851	24.5	25.0	29.81	25	1.02329	25.582	23.5	29.79	61	1.02883	62.759	24.1	38.7	**11.0**	**16.2**	**27.1**
D257	282	0.854	23.0	23.5	29.70	22	1.02603	22.573	23.0	29.70	59	1.02876	60.697	21.0	39.6	**9.5**	**16.5**	**26.1**
E05	61	0.850	24.5	25.0	29.96	11	1.02882	11.317	24.5	29.96	29	1.03164	29.918	10.6	19.3	**4.8**	**8.1**	**12.9**
D61	283	0.849	23.0	23.5	29.70	9	1.02603	9.234	23.5	29.70	29	1.02603	29.755	8.4	21.3	**3.8**	**9.0**	**12.8**
O12	65	1.696	24.5	25.0	30.00	15	1.02882	15.432	24.5	30.00	22	1.03164	22.696	15.1	7.6	**3.5**	**1.6**	**5.0**
D65	284	1.707	23.0	23.5	29.70	15	1.02603	15.390	23.5	29.70	18	1.02603	18.469	15.3	3.2	**3.5**	**0.7**	**4.1**
E02	92	0.856	24.0	24.5	29.70	22	1.02050	22.451	24.0	29.70	52	1.02329	53.211	21.2	32.0	**9.6**	**13.3**	**22.9**
D92	285	0.847	23.5	24.0	29.70	24	1.02329	24.559	23.5	29.70	56	1.02603	57.458	23.2	34.2	**10.6**	**14.4**	**25.0**
Z04	141	0.859	24.0	24.5	30.16	46	1.03723	47.713	24.0	30.15	144	1.04005	149.767	43.6	106.1	**19.6**	**44.0**	**63.7**
D141	286	0.845	23.5	24.0	29.70	43	1.02329	44.001	23.5	29.70	141	1.02603	144.670	40.0	104.7	**18.3**	**44.1**	**62.4**
L05W	4	1.700	24.5	25.0	30.04	26	1.03165	26.823	24.5	30.04	89	1.03444	92.065	24.2	67.9	**5.5**	**14.2**	**19.7**
D04	287	1.699	23.5	24.0	29.70	25	1.02329	25.582	23.5	29.70	84	1.02603	86.187	23.2	63.0	**5.3**	**13.2**	**18.5**
S02	45	0.851	24.5	25.0	29.78	15	1.02047	15.307	24.5	29.78	63	1.02326	64.465	13.3	51.1	**6.1**	**21.4**	**27.5**
D45	288	0.850	23.5	24.0	29.70	16	1.02329	16.373	23.5	29.70	50	1.02603	51.302	15.0	36.3	**6.8**	**15.2**	**22.0**
A04	35	0.855	24.5	25.0	29.74	24	1.02047	24.491	24.5	29.74	57	1.02326	58.326	23.1	35.2	**10.5**	**14.7**	**25.1**
D35	289	1.706	24.0	25.0	29.73	57	1.02047	58.167	24.0	29.74	123	1.02606	126.205	55.4	70.8	**12.6**	**14.8**	**27.3**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
	12	1.711	24.5	25.0	30.04	25	1.03165	25.791	24.5	30.03	61	1.03164	62.930	24.3	38.6	**5.5**	**8.0**	**13.5**
	12 dup	1.703	24.5	25.0	30.04	26	1.03165	26.823	24.5	30.03	62	1.03164	63.962	25.3	38.6	**5.8**	**8.1**	**13.8**
	22	1.719	24.5	25.0	29.85	6	1.02329	6.140	24.5	29.84	11	1.02608	11.287	5.9	5.4	**1.3**	**1.1**	**2.5**
	22 dup	1.706	24.5	25.0	29.85	6	1.02329	6.140	24.5	29.84	10	1.02608	10.261	6.0	4.3	**1.4**	**0.9**	**2.2**
	32	1.713	24.5	25.0	29.84	3	1.02329	3.070	24.5	29.81	3	1.02608	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
	32 dup	1.699	24.5	25.0	29.81	3	1.02329	3.070	24.5	29.80	3	1.02608	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
	42	1.711	24.5	25.0	29.74	10	1.02047	10.205	24.5	29.78	36	1.02326	36.837	9.1	27.7	**2.1**	**5.8**	**7.8**
	42 dup	1.700	24.5	25.0	29.74	13	1.02047	13.266	24.5	29.78	32	1.02326	32.744	12.5	20.3	**2.8**	**4.2**	**7.1**
	53	1.693	24.5	25.0	29.96	18	1.02882	18.519	24.5	29.96	102	1.03164	105.227	15.1	90.2	**3.4**	**19.0**	**22.4**
	53 dup	1.713	24.5	25.0	29.96	21	1.02882	21.605	24.5	29.96	102	1.03164	105.227	18.3	87.0	**4.1**	**18.1**	**22.2**
	64	0.865	24.5	25.0	30.00	16	1.02882	16.461	24.5	30.00	37	1.03164	38.171	15.6	22.6	**7.0**	**9.3**	**16.3**
	64 dup	0.846	24.5	25.0	30.00	14	1.02882	14.403	24.5	30.00	34	1.03164	35.076	13.6	21.5	**6.2**	**9.1**	**15.3**
	75	0.854	24.0	24.5	29.86	15	1.02608	15.391	24.0	29.86	47	1.02888	48.357	14.1	34.3	**6.4**	**14.3**	**20.7**
	75dup	0.744	23.5	24.0	30.21	11	1.04282	11.471	23.5	30.21	39	1.04562	40.779	10.3	30.5	**5.4**	**14.6**	**19.9**
	86	0.851	23.5	24.0	29.70	12	1.02329	12.279	23.5	29.70	28	1.02603	28.729	11.6	17.1	**5.3**	**7.2**	**12.4**
	86 dup	0.852	23.5	24.0	29.70	11	1.02329	11.256	23.5	29.70	27	1.02603	27.703	10.6	17.1	**4.8**	**7.2**	**12.0**
	97	1.693	24.0	24.5	29.70	4	1.02050	4.082	24.0	29.66	4	1.02329	4.093	4.1	0.0	**0.9**	**0.0**	**0.9**
	97 dup	1.704	24.0	24.5	29.70	3	1.02050	3.062	24.0	29.66	4	1.02329	4.093	3.0	1.1	**0.7**	**0.2**	**0.9**
	108	1.694	24.0	24.5	29.63	26	1.01771	26.460	24.5	29.61	71	1.01771	72.257	24.6	47.6	**5.6**	**10.0**	**15.6**
	108 dup	1.720	24.0	24.5	29.63	25	1.01771	25.443	24.5	29.61	71	1.01771	72.257	23.6	48.7	**5.3**	**10.1**	**15.4**
	119	0.845	23.5	24.0	30.21	13	1.04282	13.557	24.0	30.21	33	1.04282	34.413	12.7	21.7	**5.8**	**9.1**	**15.0**
	119 dup	0.869	24.0	24.5	30.21	13	1.04003	13.520	24.0	30.21	39	1.04282	40.670	12.4	28.2	**5.5**	**11.6**	**17.1**
	130	1.705	24.0	24.5	30.18	25	1.03723	25.931	24.0	30.19	66	1.04005	68.643	24.2	44.4	**5.5**	**9.3**	**14.8**
	130 dup	1.697	24.0	24.5	30.18	27	1.03723	28.005	24.0	30.18	71	1.04005	73.844	26.2	47.7	**6.0**	**10.0**	**16.0**
	141	0.859	24.0	24.5	30.16	46	1.03723	47.713	24.0	30.15	144	1.04005	149.767	43.6	106.1	**19.6**	**44.0**	**63.7**
	141 dup	0.841	24.0	24.5	30.09	47	1.03444	48.619	24.0	30.05	146	1.03723	151.436	44.5	106.9	**20.5**	**45.3**	**65.8**
	152	1.713	24.0	25.0	29.91	73	1.02606	74.902	24.0	29.91	150	1.03165	154.748	71.7	83.0	**16.2**	**17.3**	**33.5**
	152 dup	0.856	24.0	24.5	29.91	35	1.02886	36.010	24.0	29.93	75	1.03165	77.374	34.4	43.0	**15.5**	**17.9**	**33.4**

Appendix. Lithological analyses; matrix carbonate

Field	Lab	Wt	Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
			Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
	163	1.700	24.0	24.5	29.94	21	1.02886	21.606	24.0	29.93	57	1.03165	58.804	20.1	38.7	**4.6**	**8.1**	**12.7**
	163 dup	1.694	24.0	24.5	29.93	20	1.02886	20.577	24.0	29.91	61	1.03165	62.931	18.9	44.0	**4.3**	**9.3**	**13.6**
	173	1.701	24.0	24.5	29.91	4	1.02886	4.115	24.0	29.90	21	1.03165	21.665	3.4	18.3	**0.8**	**3.8**	**4.6**
	173 dup	1.698	24.0	24.5	29.91	5	1.02886	5.144	24.0	29.90	20	1.03165	20.633	4.5	16.1	**1.0**	**3.4**	**4.4**
	184	1.697	24.5	25.0	30.10	30	1.03165	30.950	24.0	30.10	70	1.03723	72.606	29.3	43.3	**6.7**	**9.1**	**15.8**
	184 dup	1.691	24.5	25.0	30.10	30	1.03165	30.950	24.0	30.10	65	1.03723	67.420	29.5	37.9	**6.7**	**8.0**	**14.7**
	195	1.701	24.0	24.5	30.13	23	1.03723	23.856	23.5	30.13	75	1.04285	78.214	21.7	56.5	**4.9**	**11.8**	**16.8**
	195 dup	1.700	24.0	24.5	30.13	23	1.03723	23.856	23.5	30.13	74	1.04285	77.171	21.7	55.4	**4.9**	**11.6**	**16.6**
	206	1.706	24.0	24.5	30.43	35	1.04282	36.499	24.0	30.42	77	1.04564	80.514	34.7	45.8	**7.9**	**9.6**	**17.4**
	206 dup	1.706	24.0	24.5	30.42	37	1.04282	38.584	24.0	30.42	81	1.04564	84.697	36.7	48.0	**8.3**	**10.0**	**18.3**
	217	1.702	24.0	24.5	30.40	29	1.04282	30.242	23.0	30.40	81	1.05123	85.150	28.0	57.1	**6.4**	**12.0**	**18.3**
	217 dup	1.704	23.0	23.5	30.40	30	1.04844	31.453	23.0	30.40	86	1.05123	90.406	29.1	61.3	**6.6**	**12.8**	**19.4**
	228	1.695	23.5	24.0	30.06	22	1.03723	22.819	24.0	30.06	61	1.03723	63.271	21.2	42.1	**4.8**	**8.8**	**13.7**
	228 dup	1.692	24.0	24.5	30.06	23	1.03444	23.792	24.0	30.06	66	1.03723	68.457	22.0	46.5	**5.0**	**9.8**	**14.8**
	239	0.852	24.0	24.5	30.06	26	1.03444	26.895	24.5	30.06	39	1.03444	40.343	26.4	14.0	**12.0**	**5.9**	**17.8**
	239 dup	0.844	24.5	25.0	30.06	29	1.03165	29.918	23.0	30.04	45	1.04282	46.927	29.2	17.7	**13.4**	**7.5**	**20.9**
	249	1.709	23.5	24.0	30.03	7	1.03447	7.241	24.5	30.02	28	1.03164	28.886	6.4	22.5	**1.4**	**4.7**	**6.1**
	249 dup	1.700	23.5	24.0	30.03	8	1.03447	8.276	24.5	30.02	26	1.03164	26.823	7.5	19.3	**1.7**	**4.0**	**5.8**
	260	1.695	23.5	24.0	29.79	3	1.02606	3.078	23.5	29.77	3	1.02883	3.086	3.1	0.0	**0.7**	**0.0**	**0.7**
	260 dup	1.696	23.5	24.0	29.79	3	1.02606	3.078	23.5	29.77	3	1.02883	3.086	3.1	0.0	**0.7**	**0.0**	**0.7**
	271	1.702	23.5	24.0	29.68	3	1.02329	3.070	23.5	29.66	3	1.02603	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
	271 dup	1.705	23.5	24.0	29.68	3	1.02329	3.070	23.5	29.66	3	1.02603	3.078	3.1	0.0	**0.7**	**0.0**	**0.7**
	282	0.854	23.0	23.5	29.70	22	1.02603	22.573	23.0	29.70	59	1.02876	60.697	21.0	39.6	**9.5**	**16.5**	**26.1**
	282 dup	0.848	23.0	23.5	29.70	21	1.02603	21.547	23.0	29.70	59	1.02876	60.697	20.0	40.7	**9.1**	**17.1**	**26.2**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
	Std-03-30	1.700	24.5	25.0	30.04	35	1.03165	36.108	24.5	30.04	75	1.03444	77.583	34.4	43.1	**7.8**	**9.0**	**16.9**
	Std-03-30	1.700	24.5	25.0	30.04	34	1.03165	35.076	24.5	30.04	70	1.03444	72.411	33.6	38.8	**7.6**	**8.1**	**15.8**
	Std-03-30	1.700	24.5	25.0	30.04	37	1.03165	38.171	24.5	30.04	73	1.03444	75.514	36.7	38.8	**8.3**	**8.1**	**16.5**
	Std-03-30	1.700	24.5	25.0	30.04	34	1.03165	35.076	24.5	30.04	68	1.03444	70.342	33.7	36.7	**7.7**	**7.7**	**15.3**
	Std-04-01	0.862	24.0	24.5	29.74	16	1.02326	16.372	24.0	29.74	35	1.02606	35.912	15.6	20.3	**7.0**	**8.4**	**15.4**
	Std-04-01	0.853	24.0	24.5	29.74	16	1.02326	16.372	24.0	29.74	30	1.02606	30.782	15.8	15.0	**7.2**	**6.3**	**13.4**
	Std-04-01	0.846	24.0	24.5	29.74	17	1.02326	17.395	24.0	29.74	31	1.02606	31.808	16.8	15.0	**7.7**	**6.3**	**14.0**
	Std-04-01	0.847	24.0	24.5	29.74	16	1.02326	16.372	24.0	29.74	30	1.02606	30.782	15.8	15.0	**7.2**	**6.3**	**13.5**
	Std-04-05	0.851	24.0	24.5	29.94	17	1.02886	17.491	24.0	29.94	36	1.03165	37.139	16.7	20.4	**7.6**	**8.6**	**16.1**
	Std-04-05	0.856	24.0	24.5	29.94	13	1.02886	13.375	24.0	29.94	28	1.03165	28.886	12.8	16.1	**5.8**	**6.7**	**12.5**
	Std-04-05	0.858	24.0	24.5	29.94	14	1.02886	14.404	24.0	29.94	28	1.03165	28.886	13.8	15.1	**6.2**	**6.3**	**12.5**
	Std-04-05	0.858	24.0	24.5	29.94	17	1.02886	17.491	24.0	29.94	30	1.03165	30.950	17.0	14.0	**7.6**	**5.8**	**13.5**
	Std-04-06	0.855	24.0	24.5	29.98	18	1.03164	18.570	24.5	30.00	35	1.03164	36.107	17.9	18.2	**8.1**	**7.6**	**15.7**
	Std-04-06	0.851	24.0	24.5	29.98	15	1.03164	15.475	24.5	30.00	29	1.03164	29.918	14.9	15.0	**6.8**	**6.3**	**13.1**
	Std-04-06	0.854	24.0	24.5	29.98	18	1.03164	18.570	24.5	30.00	30	1.03164	30.949	18.1	12.9	**8.2**	**5.4**	**13.6**
	Std-04-06	0.848	24.0	24.5	29.98	16	1.03164	16.506	24.5	30.00	29	1.03164	29.918	16.0	13.9	**7.3**	**5.9**	**13.1**
	Std-04-07	0.850	23.0	23.5	29.70	15	1.02603	15.390	23.5	29.70	35	1.02603	35.911	14.6	21.3	**6.6**	**8.9**	**15.6**
	Std-04-07	0.860	23.0	23.5	29.70	15	1.02603	15.390	23.5	29.70	30	1.02603	30.781	14.8	16.0	**6.6**	**6.6**	**13.3**
	Std-04-07	0.858	23.0	23.5	29.70	17	1.02603	17.443	23.5	29.70	31	1.02603	31.807	16.9	14.9	**7.6**	**6.2**	**13.8**
	Std-04-07	0.849	23.0	23.5	29.70	17	1.02603	17.443	23.5	29.70	30	1.02603	30.781	16.9	13.9	**7.7**	**5.8**	**13.5**
	Std-04-08	0.850	23.5	24.0	29.82	16	1.02888	16.462	24.0	29.83	34	1.02888	34.982	15.7	19.3	**7.2**	**8.1**	**15.2**
	Std-04-08	0.849	23.5	24.0	29.82	15	1.02888	15.433	24.0	29.83	30	1.02888	30.866	14.8	16.1	**6.8**	**6.7**	**13.5**
	Std-04-08	0.858	23.5	24.0	29.82	16	1.02888	16.462	24.0	29.83	31	1.02888	31.895	15.8	16.1	**7.1**	**6.7**	**13.8**
	Std-04-08	0.852	23.5	24.0	29.82	18	1.02888	18.520	24.0	29.83	31	1.02888	31.895	18.0	13.9	**8.2**	**5.8**	**14.0**
	Std-04-11	0.844	23.0	23.5	30.21	16	1.04562	16.730	23.5	30.21	30	1.04562	31.369	16.1	15.2	**7.4**	**6.4**	**13.8**
	Std-04-11	0.856	23.0	23.5	30.21	17	1.04562	17.776	23.5	30.21	32	1.04562	33.460	17.1	16.3	**7.8**	**6.8**	**14.5**
	Std-04-11	0.863	23.0	23.5	30.21	19	1.04562	19.867	23.5	30.21	30	1.04562	31.369	19.4	12.0	**8.7**	**4.9**	**13.6**
	Std-04-11	0.847	23.0	23.5	30.21	17	1.04562	17.776	23.5	30.21	30	1.04562	31.369	17.2	14.1	**7.9**	**5.9**	**13.8**
	Std-04-12	0.853	23.5	24.0	30.12	18	1.04005	18.721	24.0	30.10	37	1.03723	38.378	17.9	20.4	**8.1**	**8.5**	**16.7**
	Std-04-12	0.849	23.5	24.0	30.12	17	1.04005	17.681	24.0	30.10	32	1.03723	33.191	17.1	16.1	**7.8**	**6.8**	**14.5**
	Std-04-12	0.853	23.5	24.0	30.12	18	1.04005	18.721	24.0	30.10	33	1.03723	34.229	18.1	16.1	**8.2**	**6.7**	**14.9**
	Std-04-12	0.846	23.5	24.0	30.12	18	1.04005	18.721	24.0	30.10	31	1.03723	32.154	18.2	14.0	**8.3**	**5.9**	**14.2**
	Std-04-13	0.855	23.5	24.0	29.91	18	1.03165	18.570	24.0	29.91	37	1.03165	38.171	17.8	20.4	**8.1**	**8.5**	**16.5**
	Std-04-13	0.846	23.5	24.0	29.91	15	1.03165	15.475	24.0	29.91	30	1.03165	30.950	14.9	16.1	**6.8**	**6.8**	**13.6**
	Std-04-13	0.843	23.5	24.0	29.91	13	1.03165	13.411	24.0	29.91	35	1.03165	36.108	12.5	23.6	**5.7**	**10.0**	**15.7**
	Std-04-13	0.847	23.5	24.0	29.91	17	1.03165	17.538	24.0	29.91	30	1.03165	30.950	17.0	13.9	**7.8**	**5.9**	**13.6**
	Std-04-14	0.854	24.0	24.5	30.07	16	1.03444	16.551	24.0	30.07	29	1.03723	30.080	16.0	14.1	**7.3**	**5.9**	**13.1**
	Std-04-14	0.844	24.0	24.5	30.07	17	1.03444	17.585	24.0	30.07	30	1.03723	31.117	17.0	14.1	**7.8**	**5.9**	**13.8**
	Std-04-14	0.853	24.0	24.5	30.07	16	1.03444	16.551	24.0	30.07	29	1.03723	30.080	16.0	14.1	**7.3**	**5.9**	**13.1**
	Std-04-15	0.849	23.5	24.0	30.40	16	1.04564	16.730	23.5	30.40	33	1.04844	34.599	16.0	18.6	**7.3**	**7.8**	**15.1**
	Std-04-15	0.849	23.5	24.0	30.40	15	1.04564	15.685	23.5	30.40	29	1.04844	30.405	15.1	15.3	**6.9**	**6.4**	**13.3**

Appendix. Lithological analyses; matrix carbonate

			Temp			1 st. Reading			Temp		2nd Reading			% CO2	% CO2	**Calcite**	**Dolomite**	**Total**
Field	Lab	Wt	Room	System	Pressure	ml.	Correction	Corr Ml.	Room	Pressure	ml.	Correction	Corr. ml.	calcite	dolomite	**%**	**%**	
	Std-04-15	0.842	23.5	24.0	30.40	14	1.04564	14.639	23.5	30.40	27	1.04844	28.308	14.1	14.2	**6.5**	**6.0**	**12.5**
	Std-04-15	0.860	23.5	24.0	30.40	17	1.04564	17.776	23.5	30.40	31	1.04844	32.502	17.2	15.3	**7.7**	**6.3**	**14.1**
	Std-04-18	0.857	23.5	24.0	30.06	17	1.03723	17.633	23.5	30.06	36	1.04003	37.441	16.8	20.6	**7.6**	**8.6**	**16.2**
	Std-04-18	0.848	23.5	24.0	30.06	15	1.03723	15.558	23.5	30.06	28	1.04003	29.121	15.0	14.1	**6.9**	**5.9**	**12.8**
	Std-04-18	0.870	23.5	24.0	30.06	15	1.03723	15.558	23.5	30.06	27	1.04003	28.081	15.1	13.0	**6.7**	**5.3**	**12.0**
	Std-04-18	0.856	23.5	24.0	30.06	18	1.03723	18.670	23.5	30.06	31	1.04003	32.241	18.1	14.1	**8.2**	**5.9**	**14.1**
	Std-04-19	0.859	24.0	24.5	29.81	18	1.02608	18.469	24.5	29.81	37	1.02608	37.965	17.7	20.3	**8.0**	**8.4**	**16.4**
	Std-04-19	0.856	24.0	24.5	29.81	14	1.02608	14.365	24.5	29.81	29	1.02608	29.756	13.7	16.0	**6.2**	**6.7**	**12.9**
	Std-04-19	0.851	24.0	24.5	29.81	18	1.02608	18.469	24.5	29.81	32	1.02608	32.835	17.9	14.9	**8.1**	**6.3**	**14.4**
	Std-04-19	0.856	24.0	24.5	29.81	18	1.02608	18.469	24.5	29.81	32	1.02608	32.835	17.9	14.9	**8.1**	**6.2**	**14.3**
	Std-04-20	0.847	24.0	24.5	29.69	15	1.02050	15.308	25.0	29.69	34	1.01771	34.602	14.5	20.1	**6.6**	**8.4**	**15.1**
	Std-04-20	0.850	24.0	24.5	29.69	16	1.02050	16.328	24.0	29.69	29	1.02329	29.675	15.8	13.9	**7.2**	**5.8**	**13.0**
	Std-04-20	0.850	24.0	24.5	29.69	15	1.02050	15.308	24.0	29.69	29	1.02329	29.675	14.7	14.9	**6.7**	**6.3**	**13.0**
	Std-04-20	0.853	24.0	24.5	29.69	17	1.02050	17.349	24.0	29.69	30	1.02329	30.699	16.8	13.9	**7.6**	**5.8**	**13.4**
92TCA	95	1.699	24.0	24.5	29.70	38	1.02050	38.779	24.0	29.66	95	1.02329	97.213	36.4	60.8	**8.3**	**12.7**	**21.0**
92TCA	114	1.702	24.0	25.0	29.83	55	1.02329	56.281	24.0	29.84	105	1.02888	108.032	54.2	53.8	**12.3**	**11.3**	**23.6**
92TCA	197	0.860	23.5	24.0	30.13	24	1.04005	24.961	23.0	30.13	47	1.04565	49.146	24.0	25.2	**10.8**	**10.4**	**21.2**

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
A02	168	22.8	6.7		27.4	15.1		7		94.2	8.6	6.9	13.3			
A03	68	47	11.3		32.3	13.1				67.2	8.8	6.6	18.2			
A04	35	58.7			18.4	9				126.8		15				
A05	38	28.4			30.2	14.8				92.6		17.3				5.3
A06	209	33.6	9		15.1	21.3				96.4	6.4	23.2	12.5			142.4
A07	255	36.5			26.1	8.7		7.3		213.7	8.4	15.2	7.7			8.7
A08	119	41.2	11.2		17.1	12.2	6.8			144.1	7.1	41.5	9.6			
A09	241	21.6		9.4	23.7					7.1						
A10	133	20.9		7.1	53.7		8.3	8.6		10.7		8.6	18.9			8.4
A11	5	25.2	14.2	12.8	52.7		8.8	6.6		12.1			15			6.5
A12	126	35.7		13	61.3	14.1	13.2	7.4	9.9				10.2			
A13	137	7.5								13.8			6.2		8.9	
B02	118	17.1			18.6	10.7	12.7			63.2						6.1
B03	82	16.9			25.8	6.7		6.2		41.3	15.9	6.3	11.1			6.6
B04	91	31.9	7.5		21.1		6.5	6.3		68	10	8.7	8.9			
B05	240	34.8	8.5		23.2	17				174.3	7.1	18.6	6.8			5.7
B06	153	29.7			38.8			6.9		186.1	8	32.9	8.5			11.3
B07	233	17.4	12.4		7		8.2			31.1	6.5	7.3				14.7
B08	245	35.6	10.8		29.1	6	7.1			7.5		20.1	11.6			5.6
B09	98	34.3			15	7.7	7.8	6.7		136.8	10.6	42.7			8.7	
B10	11	19.7			42	7.6	7.7	6.5		23.9	7.3		10.1			8.9
B11	56	54.7		7.4	36.1	8.2		13.6	8	6.4			10.6			
B12	173		7		14.2	7.8	89.6			66			16.9			
C02	189	8.6		7.3	27.3	8.7				30.8	10		6.5			
C03	51	17.8			14.2	8.6				149.9		14.7	7.9			
C04	6	40.1	18.6		25.8	14.5	9.2			135.2	7.3	9.4	10			
C05a	93	37.9			19.1	24.4				93.9		14.1	8.1			6.5
C05b	46	43.8			22	11.4				52		6.7				
C06	237	83.1			62.6	16.1	45.1	7.9		233.1		66.1	32.3			7.4
C07	145	45.2			22.8					118.2		33.4				6.6
C08	136	30.5	8		11.5	7.4				63.6		61.2	7.2			6.3
C09	131	67	15.8		35.6	12.5	9.9		6.7	157.4	9.4	23.4	7.1			8.1
C10	210	113.3	21.7	18.9	327.9	10.4		7		271.5	113.6		72.4			83.7
C11	169	50.4	11.7	11.4	57.9	12	10.4			95.2	15.5		13.2		7.6	6.9
C12	166	20	8	7.7	24.6			7.8		215.8			6.1			31.3
D02	143	19.8			18.8					39.8	7.7	6.1				
D03	149	20.6	8.4		14.1		9.9			117.1	12	28.7				14.7
D04	9	54.8	7.8		36.3			6.9		121.2	6.7	13.3	7.4			7.2
D05	106	76.5			20	8.6	6.1			154.8	10	17.7	7.7	7.4		
D06	3	56.7	13.2	11.1	27.2	19.5				135.8		22.6	9.2	6.8	6	
D07	14	43.7			33.8	10.7		7.5		109.2	7.5	50.4	9			
D08	230	55.4	9.7		18	11.3	6.6			123		29.7	13.1	6.6		

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
D09	139	13			17.9					56.3	6.5	25.5	8.5			
D10	127	15.8		9.8	24.2	24	10.3			43	5.6		6.8			5.8
D11	39	33		9.1	51.7	9.4		14		54.9			7			
D12	225	21.4	14.2	7.3	37.4					27.4			17.3			6.7
E02	92	31.7			24.5			7.7		135.3	19.3	43.3	9.4			14.6
E03	190	25.5	10.2		26.1	7.5	7.3			119.8	15.8	20.9	8.5			7.9
E04	186	50.9			33.3	8.8				139.8	7.6	14.6	8.3			
E05	61	27.6	11.8		30.4	6.8				122.7	9.1	17.7	7.9			9.9
E06	12	40	9.9		25.2	6.6				115.2	13	54	6.6			7.8
E07	195	57.7	9.1		28.8	18.1	8.6			130.3	10.4	48.8	8.3	6		6
E08	113	64.9			32	11.4				116.6	7.7	62.5	15.9			
E09	181	48.9		13.2	46.1	6.8				141.9	7.6	18	10.8			7.4
E10	101	41.8			35.7	7.8	10.6			40.6						8.7
E11	167	27.3		28.7	55.8	8.2	9.8	9	13.4	62.5	7.7		8.1			
F02	185	21.3	6.9		10.7	11.5		6.4		110.1	11	15.5	7.5			10.4
F03	198	18.1	9.8		14.1					77.4		13.5	10.4		6.2	5.9
F04	211	54.5			25.9		7.6			195.8	9.2	13.9				
F05	142	28.5			18.6					98.4	7.7	52.5	7.9			
F06	57	59.4	9.9		26.4	8.5	6.1	9.4		150.4		14.9	9.6		7.5	
F07	64	22.8			12.8	10.6				110.1		54.5				6.9
F08A	269	45.5			31.6		8.6			188.4	7.6	18	9			
F08B	264	82.2	21.3	21.2	78.3					160.6		8.4				6.3
F09	229	16	6.7	7.7	28.4					64.1	11.5		12.9			
F10	158		10	6.8	52	6.7	13.8	41.2		15.9			7.2			7.7
G02	125	63.6			68.1					245.4	7.9	12.8	7.1			5.7
G03	94	23.1			24.8			6.9		103.7	16.2	17.2	14.2		10.3	
G04	163	37.2	13.5		28.8	11.3				183.7	6.9	86.9	8.7			5.9
G05	236	17.2	8.4		20.3					144.5		90.9	8.3			5.9
G06	90	10.7			9.9			8.1		68.2	6.4	21.3	6.6			
G07	174	43.5	6.6		25.7	8.6				142.6		23	6.2			13.1
G08	193	26.8	7.9		17.5	11.3				119.5		23.2	9.1			5.8
G09	232	44.5		23.3	85.9	19.9		6.7		221.9		10.6	8.5			14.6
G10	22	109.4	46.6	200.8	475.7	20.7	72.9	22		53.3						8.8
H02	222	65.5	15.8		29.2	6.8				136.7		11	14.1			5.9
H03	179	13	7.5		16.7	6.9				67.2		46.2	7.1			37.3
H04	105	24.3			9.7	12.9				107.7	8.6	31.4				8.8
H05	124	27.9			20.5					208.7		28.3	12.6			5.7
H06	77	42.3	12.1	8.2	29.8			7.3		141.1		7.9	10.3			
H07	170	28.3	9.7	8.6	35.2	10.1				101.7		35.6	12.5			8
H08	132	35.3	17.7		30.8		8.1			142.5		25.2	9.3			6.3
H09	271	76.8	14	152.7	277.1	18.3	44.2	17.6					6.9			
H10	7	90.8	46.5	133.6	443.2	14.7	44.7									19.4

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
I02	34	25.1			7.4					111.7	10.9	12.7				
I03	87	21.5			22.5	16.6				165.7		16.2				
I04	165	85.3	7.9		35.7	15.1	9.2			236.7		22.1				
I05	217	86.3		8.2	51.1	11.5		7.7		158.2	8.3	14.2	6.6			8.2
I06	13	73.1	10.5	19.6	61.5		9.9	8.7		183.2		13.5	9.2			7.7
I07	86	32.5			22.2	12.3		7.1		110.6		39.5				6
I08	73	37.6	30.7	31.7	52.7			8.3		122.4		22.4				5.5
I09	60	57.2		17.1	62.3	12.4	28.4			8.1		9.6	6.6			
I10	155	16.9	18.5	8.3	25.8	12.1	8.8			71.8	11.4	17.3	9.9			6
J02	66	35.7	14.3			6.4		6.9	6.8	119	12.9	34.3	16.5			5.5
J03	47	19.4			18.1					95.1		27.7	6			
J04	103	35	8.6		27.3				6.1	174.2	10.1	36.5	10.2			5.6
J05	226	63.8	7.6		32.6	11		6.7		95		6.5	9.2			
J06	183	50.3	14.1		29.4	10.7				154.2		26.2	8.9			9.3
J07	204	65.2	33.2	122.6	145	26.2	16.4	13.1	11.8							5.8
J08	107	55.6	13.5	13.4	50.4	8.3	6.4	6.6	6.8			12.8	15.6			5.7
J09	130	35.2	13.2	19.1	46.4	14.6	25.3			96.1		14.8	10.6			7.2
J10	20	63.3		13	40	7.9	9.3			140.7	16.1	24.5		6		7.9
K02	273	57.5		6.2	37.8					235	8.5	23.8				13.2
K03	41	23.9			18.3					130.5		44.1				7.4
K04	250	17.5			8.9	15	12.1			98.2	6.1	51.3	6.2			6.1
K05	21	36.9	8.4		28.8	17.6				130.6	8.3	10.5				7.4
K06	261	58	6.7	102	172.8	10	26.4	8					6.4			
K07	148	69.6	32.8	89.9	248.7	12.2	14.5	8.6					6.7			
K08	121	292.9	85.2	583	880.2	13.9	115.6	9.3	16.8							13.8
K09	111	49.2	72	94.3	188	7.5	43.4	7.2								5.8
K10	228	32.9	13.8	15.3	42.5	8.8	10.7			94.5		17.1	6.3			7.4
L02	18	53.2	10.6		18.6		8	6.9		162.2		18.4	7.2			8.5
L03	251	58.8	49			9.5				211.6		21.2	8.9			6.5
L04	220	26.4			27.8	10.5	6.7	7.9		101.5		11.9	9.2			6.5
L05E	23	66.6	26.6	8.8	40.5			6.8		114.9	11.7					5.9
L05W	4	6.4								8		9.4	6.1			6.2
L06E	40	224		136.3	493.3	52	50.1	21.3	29	13.8			5.9			5.4
L06WA	218	77.4	10.8	12.2	70.4	9.9	6.7			90.7	9.3		11.3			
L06WB	184	46.5	6.6		51.2	6.8				118.5	33				8.3	15.7
L07	44	238.3		102.4	215.7	15.6	70.7	20.6	26.9	13.5			15.2			6.7
L08	267	55		63.9	147.5		19.7	8.6		8.3			22.3			
L09	19	50.6	18.4	89.5	178.8	7.1	32.8		8.5							6.7
L10	99	75.1		63.5	177.1		57.7									19.1
L11	150	34.2	34.7	83.3	309.3	8.3	71.3			12.1						6
M02	78	60.9			21.5	7.5				193.1	8.4	40				7.8
M03	152	11.5			15.1					129.7		8.7				

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
M04	248	27.7			10.9					115.3	7.5	15.8	7			5.8
M05	29	67.2	24.8	12.1	135.9	14.4	7.7	13.9	12.4	201.8	19.6		8.3			6.3
M06	49	141.5	28.9	22.6	110.3	12.8	6.4	12.1		204	8.3		8.1			
M07	172	128.2	30.5	101.8	199.4	26.8	15.1	6.5	7.6	29			10.2			6.8
M08	128	60.4	10.7	29.1	101.1	14.2										6.5
M09	180	52.7	19.2	87.4	194.6	7.4	25.6	14					6.7			10.9
M10	188	10.8	12	25.5	31.7		141.6								7.3	6
M11	120	13.8	22.4	16.2	37.2		166.7	6.8								6.1
N03	215	16.9			8.7					38.3		8.6				
N04	147	17.8		7.7	29.3	7.3				103.1		120.2	8.3			9.4
N05	138	73.3	11.3	7.7	157	11.8		11.3		219.6			6.3			16.5
N06	202	85.6	9.7	18.2	116.2		9.9	15.5		6.6						10.6
N07	16	147.4	62.8	156.4	299.7	16.6	34.3	19		6.5						7.5
N08	259	31.6	15.2	24.1	90.3	13.6	15.9	8.7								
N09	32	53.7	12.4	19.2	58.9	9.2	8									6.2
N10	242	29.4	14.4	125.9	186.9		36									5.6
N11	266	8.6		17.5	26		23.8									
N12	270	7.4	7.4	25.1	23		11.2									
O03	177	74.8	11		25.3	17.4		6.5		506.7	11.9	148.5	13.6			5.9
O04	8	8.8								38.8						
O05	272	100			129.5	7.8		9.1		172.1		6.8				
O06	207	108.2	16.8	13	157.5	11.5		9.8		88.5						6.7
O07	182	193.7	48	137.9	288.3	12.4	17.9	8.2	10.1				13.6			
O08	212	274.9	108	212.5	539.1	45.9	40	21.8		38.5			24.7			8.2
O09	246	77.5	12.1	53.4	80.9	18.6										5.9
O10	162	45.1	14	20.7	91	9.1	7.5		8	10.6						5.9
O11	221	107.5	34.1	330	448	12.1	20.2						8.7			
O12	65	10.8	42.5	51.1	39.3	7.1	29.7		7.3							5.5
P03	37	36.5	7.7		15.3	6.7				145	8.6	7.3				
P04	28	7.9			9.5					91.1		8.7				5.8
P05	206	172.1	49.5	11.2	218.8	29.7		8.8		147.4	8.6					8.3
P06	268	129.7		6.2	114.6	8.2				88.5			8.4			5.6
P07	48	105.9		10.2	111.5	13.6		6.5	6.8	51						5.7
P08	247	16.1	11.2		19.6			8.3		47.9		5.8				6.1
P09	154	240.3	44	131.9	363.7	10.3	9.6		10.8				7.2			7.7
P10	157	29.6	31.5	21.7	79.7											5.8
P11	123	182.7	30	330.8	288.1	9.3	80.1		15.7	10.7			7.2			9.1
P12	62	49.5		93.5	196.5	8.1	25.8	7.9		8.5						6.1
P13	10	46.6	21.1	96.4	212.1	10	19.2		6.7							
Q02	72	15.2								45.8						
Q03	200	45.9	13.1		10.2	10.2	7.6			109.4	13.7	44.6		6.8		
Q03A	129	77.4	7.8		18	10.2				112.1	7.2	7.2	7.7			

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
Q04	257	32.1			14.2	6.9				99.9		10.1				
Q05	203	149.4	29.5		141.1			7		157.9		6.1	7.8			6.2
Q06	108	143.4			100.4	11.3		10.6		135.7	7.2	6.1				5.6
Q07	17	39.9			55.3			7.9		97.5	8.3	107.5	17.3			5.8
Q08	156	77.7	9.2	8.5	79.3	22.4	13.4			11.6					6.6	6.1
Q09	96	134.6		12.9	92.1	8.5		8.3	13.2	14.9						6
Q10	275	34.7	25.5	14.3	47.6		6.6					7.7				8.7
Q11	58	79.6		14.8	88.2	13.4										
Q12	97	320.1	103.7	370.6	514.1		12.4									9.3
Q13	263	8.9	8.1	38.7	36	7.6	15.7									5.4
R02	253	9.5			9.8					16.8	6.5	7.2				
R03	15	39.1	10		24.7	6.6				269.5		8				5.8
R04	199	43.5			12.3					243.4	6.2	6.3				
R05	219	54.9	7.5		11.2	16.5				198.3		10.1	8.6			
R06	164	32.2								86.6		7.2				
R07	134	85	8.1		69.1		9.5			325.5		12.9				5.9
R08	24	8.1								30.4		7.1				
R09	201	156.1	35		107	19.3										6.6
R10	151	19	9.3	10.1	48.6	10.9		6.4	7.2							6.2
R11	213	1049.4	29.8	83.1	1975.7	10.2		21								13.9
R12	194	241.4	140.7	540.1	687.3				8.5							15.7
R13	192	84.1	306.9	284.1	631.4		12.2									19.5
R14	171	79.6	509.2	705.7	719.1											10.8
R15	74	48.9		83.1	56		21.4									
S01	75	29.2			18.8		7.7			61.8		32.2				
S02	45	12.5			6					42.9						9.8
S03	112	114.4			64.9	6.9	6.8	8.9		207.9		20.6				6.5
S04	79	36.7	14.1		19.7					268.6	6.3	10.1				5.6
S05	89	108.7			75.1	10.8	9.5	17.9	11.8	712.5	9.3	22.3	23.5			5.7
S06	53	27.7			10.6	9			6.4	204.9		6.6				5.7
S07	224	11.9	9.1		21.9					122.6						
S08	81	18.2								38.6			8.4			5.5
S09	249	8.9			7.4					10.9						
S10	55	292.4			1132.1		9.4	18								12.5
S11	84	23			46.4			8								5.9
S12	116	430.5	23.4	16.2	509.2		9.4									
S13	146	17.6	1355.4	39.4	89.7											8.2
S14	80	678.2		1017.6	1236.7	14.6	54.7									7.6
S15	187															
S16	256	6.8	12.1	16	47.1		18.9									
T01	71	70.3	30.1		35.1	10.1		12.8		242.6	6.2	14.4	6.6			7.4
T02	144	94.6			24.8		6.8			321.5		12.4				

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
T03	254	53.7			29.6	12.7		6.7		125.7		20.2	7.1			
T04	265	41.4			54.2	20.2	9.2			208.4	11.3	39.1	7.5			6.2
T05	88	142	7.2		94.5	12.2		8.7		581.1	15.7	11.7	13.6			6.3
T06	140	59.6	6.5		24	9.6		9.8		233.5		11.8	6.7			5.9
T07	117	18.7	12.9		12.2	11.6	7.4			120.5		12.1	8.4		6.9	6.9
T08	85	60.9			10.4					120.7		11.6				5.9
T09	67	32.8			8.4					51.8						
T10	27	1510.1	310.4													10
T11	33	2130.6			393.8											23.8
T11-2	260	2025.1			226											
T12	216	1274.6	61.2		84.7									5.8		8.4
T14	208	1119.8	126.9		333.5			6.8								65
T15	59	211.2			2145.1	8.4			10.5							14.9
T16	25	7.5		6.4	8.6		6.3									
U02	235	175.7			23.5	10.1		7.4		162.8						
U03	191	96.2	8	13.4	30.4	10.7				533.2		12.8	9.2			5.9
U04	83	60.8	9.5		28.9	7.6				428	8.8	42.4	11.1			6.9
U05	54	139.1	9.9		51.3		7.3			403.4	5.8					7.2
U08	234	20.2			17.1					56.7		9.7				
U09	31	14.2			8.8	7.5				44.7						5.8
U10	135	109.3	9.3		101.1											
U11	205	491.3			33.6			7.4								
V02	70	43.7	7.1		26.8	8.5				54.7		7.3	10.2			5.9
V03	231	58.9	11.3		16.2					272.3	7.2					
V04	50	69.3			13.7					539.1						7.9
V06	227	73.5	8.6		12.2	8.6				269.1	8.7	6.4	7.5			
V07	36	16.1			7.7	8.7				133.7						
V08	238	14.7	6.7		17.9					38.6	7.5					
V09	178	62.2			160.8	9.8				13.6						6
W02	104	15.6	6.6							192.6						5.2
W03	102	33.9			20.8					483.1						5.7
W04	175	10			7.1					99.4						6.6
W05	100	68.2			48					563.8						6.6
W06	196	71.8	13.1		33.6	7.1				444.9						10.8
X01	43	48.3			31.1					499						5.8
X02	243	32.7			23.8					463.7						5.5
X03	274	53.3			21.6	7.5		7.5		656.3						8.7
X04	110	42.4			11.5	6.2				327.6						
X05	244	23.9			13.8					372.1						
Y05	42	222.5			201.3		18.1	6		38						5.5

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; total weight

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
Z01	109	47.1			19.9					761.3						6.1
Z02	160	153.7			32.6	7				598.9						22.5
Z03	223	38.6	10		16.4	13				424.6					7	10.3
Z04	141	57.8	9.3		30.6					801.2						
Z05	161	73.8	23.4		31.2		8			820.7						7.4
Z06	176									1335.2						6.2
Z07	63	39			50.7		11.2			696.3						
Z08	258	533.2	125.3		34.6	39.8				10.1						
Z09	239	3330.4	218.2		392.7	41.4	7.5			22						
Z10	26	234.5	29.7	7.7	134.4		5.6	13.3	7.3	410.3						5.8
Z11	262	873.4	27.6		348.8	8.5										5.7
Z12	76	1078.3			180.3											
Z13	159	455	98.1	9.1	405.6			7.9								6.1
Z14	52	541.8	22.5		238.3	10.8		8.3		9.9						12.9
Z15	30	183.2	19		313.2			10.8		159.1			9.1			6.3
Z16	214	33.2	12.9		75	8.4			8.3	69.9						5.8
Z17	252	169.7	13.6		517.9	18.3	15.3			133.5						5.7
Z18	69	22.6	10.2	10.2			3577									
Z19	122	1074	250.2	49.4	208.6	17.5	35.7	7.5					11.9			14.5
Z20	115	28.9	30.6	95.4	1319.6		44.1						41.6			
	95															
	114															
	197															

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
A02	168	11.3	3.3	0.0	13.6	7.5	0.0	3.5	0.0	46.6	4.3	3.4	6.6	0.0	0.0	
A03	68	23.0	5.5	0.0	15.8	6.4	0.0	0.0	0.0	32.9	4.3	3.2	8.9	0.0	0.0	
A04	35	25.8	0.0	0.0	8.1	3.9	0.0	0.0	0.0	55.6	0.0	6.6	0.0	0.0	0.0	
A05	38	15.5	0.0	0.0	16.5	8.1	0.0	0.0	0.0	50.5	0.0	9.4	0.0	0.0	0.0	
A06	209	15.4	4.1	0.0	6.9	9.8	0.0	0.0	0.0	44.3	2.9	10.7	5.7	0.0	0.0	
A07	255	11.3	0.0	0.0	8.1	2.7	0.0	2.3	0.0	66.0	2.6	4.7	2.4	0.0	0.0	
A08	119	14.2	3.9	0.0	5.9	4.2	2.3	0.0	0.0	49.6	2.4	14.3	3.3	0.0	0.0	
A09	241	35.0	0.0	15.2	38.3	0.0	0.0	0.0	0.0	11.5	0.0	0.0	0.0	0.0	0.0	
A10	133	15.3	0.0	5.2	39.3	0.0	6.1	6.3	0.0	7.8	0.0	6.3	13.8	0.0	0.0	
A11	5	17.1	9.6	8.7	35.8	0.0	6.0	4.5	0.0	8.2	0.0	0.0	10.2	0.0	0.0	
A12	126	21.7	0.0	7.9	37.2	8.6	8.0	4.5	6.0	0.0	0.0	0.0	6.2	0.0	0.0	
A13	137	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.9	0.0	0.0	17.0	0.0	24.5	
B02	118	14.0	0.0	0.0	15.2	8.7	10.4	0.0	0.0	51.7	0.0	0.0	0.0	0.0	0.0	
B03	82	13.0	0.0	0.0	19.8	5.1	0.0	4.8	0.0	31.7	12.2	4.8	8.5	0.0	0.0	
B04	91	18.9	4.4	0.0	12.5	0.0	3.8	3.7	0.0	40.3	5.9	5.2	5.3	0.0	0.0	
B05	240	12.0	2.9	0.0	8.0	5.9	0.0	0.0	0.0	60.0	2.4	6.4	2.3	0.0	0.0	
B06	153	9.6	0.0	0.0	12.5	0.0	0.0	2.2	0.0	59.9	2.6	10.6	2.7	0.0	0.0	
B07	233	19.4	13.8	0.0	7.8	0.0	9.1	0.0	0.0	34.6	7.2	8.1	0.0	0.0	0.0	
B08	245	27.9	8.5	0.0	22.8	4.7	5.6	0.0	0.0	5.9	0.0	15.7	9.1	0.0	0.0	
B09	98	12.7	0.0	0.0	5.5	2.8	2.9	2.5	0.0	50.6	3.9	15.8	0.0	0.0	3.2	
B10	11	15.8	0.0	0.0	33.7	6.1	6.2	5.2	0.0	19.2	5.8	0.0	8.1	0.0	0.0	
B11	56	37.7	0.0	5.1	24.9	5.7	0.0	9.4	5.5	4.4	0.0	0.0	7.3	0.0	0.0	
B12	173	0.0	3.5	0.0	7.0	3.9	44.5	0.0	0.0	32.8	0.0	0.0	8.4	0.0	0.0	
C02	189	8.7	0.0	7.4	27.5	8.8	0.0	0.0	0.0	31.0	10.1	0.0	6.6	0.0	0.0	
C03	51	8.4	0.0	0.0	6.7	4.0	0.0	0.0	0.0	70.3	0.0	6.9	3.7	0.0	0.0	
C04	6	14.8	6.9	0.0	9.6	5.4	3.4	0.0	0.0	50.1	2.7	3.5	3.7	0.0	0.0	
C05a	93	19.2	0.0	0.0	9.7	12.4	0.0	0.0	0.0	47.5	0.0	7.1	4.1	0.0	0.0	
C05b	46	32.2	0.0	0.0	16.2	8.4	0.0	0.0	0.0	38.3	0.0	4.9	0.0	0.0	0.0	
C06	237	15.2	0.0	0.0	11.5	2.9	8.3	1.4	0.0	42.7	0.0	12.1	5.9	0.0	0.0	
C07	145	20.6	0.0	0.0	10.4	0.0	0.0	0.0	0.0	53.8	0.0	15.2	0.0	0.0	0.0	
C08	136	16.1	4.2	0.0	6.1	3.9	0.0	0.0	0.0	33.6	0.0	32.3	3.8	0.0	0.0	
C09	131	19.4	4.6	0.0	10.3	3.6	2.9	0.0	1.9	45.6	2.7	6.8	2.1	0.0	0.0	
C10	210	11.8	2.3	2.0	34.3	1.1	0.0	0.7	0.0	28.4	11.9	0.0	7.6	0.0	0.0	
C11	169	17.7	4.1	4.0	20.3	4.2	3.6	0.0	0.0	33.4	5.4	0.0	4.6	0.0	2.7	
C12	166	6.9	2.8	2.7	8.5	0.0	0.0	2.7	0.0	74.4	0.0	0.0	2.1	0.0	0.0	
D02	143	21.5	0.0	0.0	20.4	0.0	0.0	0.0	0.0	43.2	8.4	6.6	0.0	0.0	0.0	
D03	149	9.8	4.0	0.0	6.7	0.0	4.7	0.0	0.0	55.6	5.7	13.6	0.0	0.0	0.0	
D04	9	21.5	3.1	0.0	14.3	0.0	0.0	2.7	0.0	47.6	2.6	5.2	2.9	0.0	0.0	
D05	106	24.8	0.0	0.0	6.5	2.8	2.0	0.0	0.0	50.1	3.2	5.7	2.5	2.4	0.0	
D06	3	18.4	4.3	3.6	8.8	6.3	0.0	0.0	0.0	44.1	0.0	7.3	3.0	2.2	1.9	
D07	14	16.1	0.0	0.0	12.4	3.9	0.0	2.8	0.0	40.2	2.8	18.5	3.3	0.0	0.0	
D08	230	20.3	3.5	0.0	6.6	4.1	2.4	0.0	0.0	45.0	0.0	10.9	4.8	2.4	0.0	

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
D09	139	10.2	0.0	0.0	14.0	0.0	0.0	0.0	0.0	44.1	5.1	20.0	6.7	0.0	0.0	
D10	127	11.3	0.0	7.0	17.3	17.2	7.4	0.0	0.0	30.8	4.0	0.0	4.9	0.0	0.0	
D11	39	18.4	0.0	5.1	28.9	5.2	0.0	7.8	0.0	30.7	0.0	0.0	3.9	0.0	0.0	
D12	225	17.1	11.4	5.8	29.9	0.0	0.0	0.0	0.0	21.9	0.0	0.0	13.8	0.0	0.0	
E02	92	11.7	0.0	0.0	9.0	0.0	0.0	2.8	0.0	49.9	7.1	16.0	3.5	0.0	0.0	
E03	190	10.6	4.2	0.0	10.8	3.1	3.0	0.0	0.0	49.6	6.5	8.7	3.5	0.0	0.0	
E04	186	19.3	0.0	0.0	12.6	3.3	0.0	0.0	0.0	53.1	2.9	5.5	3.2	0.0	0.0	
E05	61	11.8	5.0	0.0	13.0	2.9	0.0	0.0	0.0	52.4	3.9	7.6	3.4	0.0	0.0	
E06	12	14.8	3.7	0.0	9.3	2.4	0.0	0.0	0.0	42.6	4.8	20.0	2.4	0.0	0.0	
E07	195	17.7	2.8	0.0	8.8	5.6	2.6	0.0	0.0	40.0	3.2	15.0	2.5	1.8	0.0	
E08	113	20.9	0.0	0.0	10.3	3.7	0.0	0.0	0.0	37.5	2.5	20.1	5.1	0.0	0.0	
E09	181	16.7	0.0	4.5	15.7	2.3	0.0	0.0	0.0	48.4	2.6	6.1	3.7	0.0	0.0	
E10	101	30.6	0.0	0.0	26.2	5.7	7.8	0.0	0.0	29.7	0.0	0.0	0.0	0.0	0.0	
E11	167	11.8	0.0	12.5	24.2	3.6	4.3	3.9	5.8	27.1	3.3	0.0	3.5	0.0	0.0	
F02	185	10.6	3.4	0.0	5.3	5.7	0.0	3.2	0.0	54.8	5.5	7.7	3.7	0.0	0.0	
F03	198	12.1	6.6	0.0	9.4	0.0	0.0	0.0	0.0	51.8	0.0	9.0	7.0	0.0	4.1	
F04	211	17.8	0.0	0.0	8.4	0.0	2.5	0.0	0.0	63.8	3.0	4.5	0.0	0.0	0.0	
F05	142	13.3	0.0	0.0	8.7	0.0	0.0	0.0	0.0	46.1	3.6	24.6	3.7	0.0	0.0	
F06	57	19.7	3.3	0.0	8.7	2.8	2.0	3.1	0.0	49.8	0.0	4.9	3.2	0.0	2.5	
F07	64	10.8	0.0	0.0	6.1	5.0	0.0	0.0	0.0	52.2	0.0	25.9	0.0	0.0	0.0	
F08A	269	14.7	0.0	0.0	10.2	0.0	2.8	0.0	0.0	61.0	2.5	5.8	2.9	0.0	0.0	
F08B	264	22.1	5.7	5.7	21.0	0.0	0.0	0.0	0.0	43.2	0.0	2.3	0.0	0.0	0.0	
F09	229	10.9	4.5	5.2	19.3	0.0	0.0	0.0	0.0	43.5	7.8	0.0	8.8	0.0	0.0	
F10	158	0.0	6.5	4.4	33.9	4.4	9.0	26.8	0.0	10.4	0.0	0.0	4.7	0.0	0.0	
G02	125	15.7	0.0	0.0	16.8	0.0	0.0	0.0	0.0	60.6	2.0	3.2	1.8	0.0	0.0	
G03	94	10.7	0.0	0.0	11.5	0.0	0.0	3.2	0.0	47.9	7.5	7.9	6.6	0.0	4.8	
G04	163	9.9	3.6	0.0	7.6	3.0	0.0	0.0	0.0	48.7	1.8	23.1	2.3	0.0	0.0	
G05	236	5.9	2.9	0.0	7.0	0.0	0.0	0.0	0.0	49.9	0.0	31.4	2.9	0.0	0.0	
G06	90	8.2	0.0	0.0	7.5	0.0	0.0	6.2	0.0	52.0	4.9	16.2	5.0	0.0	0.0	
G07	174	17.0	2.6	0.0	10.0	3.4	0.0	0.0	0.0	55.7	0.0	9.0	2.4	0.0	0.0	
G08	193	12.4	3.7	0.0	8.1	5.2	0.0	0.0	0.0	55.5	0.0	10.8	4.2	0.0	0.0	
G09	232	10.6	0.0	5.5	20.4	4.7	0.0	1.6	0.0	52.7	0.0	2.5	2.0	0.0	0.0	
G10	22	10.9	4.7	20.1	47.5	2.1	7.3	2.2	0.0	5.3	0.0	0.0	0.0	0.0	0.0	
H02	222	23.5	5.7	0.0	10.5	2.4	0.0	0.0	0.0	49.0	0.0	3.9	5.1	0.0	0.0	
H03	179	7.9	4.6	0.0	10.1	4.2	0.0	0.0	0.0	40.8	0.0	28.1	4.3	0.0	0.0	
H04	105	12.5	0.0	0.0	5.0	6.6	0.0	0.0	0.0	55.3	4.4	16.1	0.0	0.0	0.0	
H05	124	9.4	0.0	0.0	6.9	0.0	0.0	0.0	0.0	70.0	0.0	9.5	4.2	0.0	0.0	
H06	77	16.3	4.7	3.2	11.5	0.0	0.0	2.8	0.0	54.5	0.0	3.1	4.0	0.0	0.0	
H07	170	11.7	4.0	3.6	14.6	4.2	0.0	0.0	0.0	42.1	0.0	14.7	5.2	0.0	0.0	
H08	132	13.1	6.6	0.0	11.5	0.0	3.0	0.0	0.0	53.0	0.0	9.4	3.5	0.0	0.0	
H09	271	12.6	2.3	25.1	45.6	3.0	7.3	2.9	0.0	0.0	0.0	0.0	1.1	0.0	0.0	
H10	7	11.7	6.0	17.3	57.3	1.9	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
I02	34	15.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	66.6	6.5	7.6	0.0	0.0	0.0	
I03	87	8.9	0.0	0.0	9.3	6.8	0.0	0.0	0.0	68.3	0.0	6.7	0.0	0.0	0.0	
I04	165	20.7	1.9	0.0	8.7	3.7	2.2	0.0	0.0	57.5	0.0	5.4	0.0	0.0	0.0	
I05	217	24.5	0.0	2.3	14.5	3.3	0.0	2.2	0.0	44.9	2.4	4.0	1.9	0.0	0.0	
I06	13	18.8	2.7	5.0	15.8	0.0	2.5	2.2	0.0	47.1	0.0	3.5	2.4	0.0	0.0	
I07	86	14.5	0.0	0.0	9.9	5.5	0.0	3.2	0.0	49.3	0.0	17.6	0.0	0.0	0.0	
I08	73	12.3	10.0	10.4	17.2	0.0	0.0	2.7	0.0	40.0	0.0	7.3	0.0	0.0	0.0	
I09	60	28.4	0.0	8.5	30.9	6.1	14.1	0.0	0.0	4.0	0.0	4.8	3.3	0.0	0.0	
I10	155	8.4	9.2	4.1	12.8	6.0	4.4	0.0	0.0	35.8	5.7	8.6	4.9	0.0	0.0	
J02	66	14.1	5.7	0.0	0.0	2.5	0.0	2.7	2.7	47.1	5.1	13.6	6.5	0.0	0.0	
J03	47	11.7	0.0	0.0	10.9	0.0	0.0	0.0	0.0	57.2	0.0	16.7	3.6	0.0	0.0	
J04	103	11.4	2.8	0.0	8.9	0.0	0.0	0.0	2.0	56.6	3.3	11.9	3.3	0.0	0.0	
J05	226	27.5	3.3	0.0	14.0	4.7	0.0	2.9	0.0	40.9	0.0	2.8	4.0	0.0	0.0	
J06	183	17.1	4.8	0.0	10.0	3.6	0.0	0.0	0.0	52.5	0.0	8.9	3.0	0.0	0.0	
J07	204	15.0	7.7	28.3	33.4	6.0	3.8	3.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	
J08	107	29.4	7.1	7.1	26.6	4.4	3.4	3.5	3.6	0.0	0.0	6.8	8.2	0.0	0.0	
J09	130	12.8	4.8	6.9	16.9	5.3	9.2	0.0	0.0	34.9	0.0	5.4	3.9	0.0	0.0	
J10	20	19.7	0.0	4.1	12.5	2.5	2.9	0.0	0.0	43.9	5.0	7.6	0.0	1.9	0.0	
K02	273	15.6	0.0	1.7	10.2	0.0	0.0	0.0	0.0	63.7	2.3	6.5	0.0	0.0	0.0	
K03	41	11.0	0.0	0.0	8.4	0.0	0.0	0.0	0.0	60.2	0.0	20.3	0.0	0.0	0.0	
K04	250	8.1	0.0	0.0	4.1	7.0	5.6	0.0	0.0	45.6	2.8	23.8	2.9	0.0	0.0	
K05	21	15.3	3.5	0.0	11.9	7.3	0.0	0.0	0.0	54.2	3.4	4.4	0.0	0.0	0.0	
K06	261	14.9	1.7	26.1	44.3	2.6	6.8	2.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	
K07	148	14.4	6.8	18.6	51.5	2.5	3.0	1.8	0.0	0.0	0.0	0.0	1.4	0.0	0.0	
K08	121	14.7	4.3	29.2	44.1	0.7	5.8	0.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	
K09	111	10.7	15.6	20.4	40.7	1.6	9.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
K10	228	13.6	5.7	6.3	17.6	3.6	4.4	0.0	0.0	39.1	0.0	7.1	2.6	0.0	0.0	
L02	18	18.7	3.7	0.0	6.5	0.0	2.8	2.4	0.0	56.9	0.0	6.5	2.5	0.0	0.0	
L03	251	16.4	13.6	0.0	0.0	2.6	0.0	0.0	0.0	58.9	0.0	5.9	2.5	0.0	0.0	
L04	220	13.1	0.0	0.0	13.8	5.2	3.3	3.9	0.0	50.3	0.0	5.9	4.6	0.0	0.0	
L05E	23	24.1	9.6	3.2	14.7	0.0	0.0	2.5	0.0	41.6	4.2	0.0	0.0	0.0	0.0	
L05W	4	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8	0.0	31.4	20.4	0.0	0.0	
L06E	40	21.8	0.0	13.3	48.1	5.1	4.9	2.1	2.8	1.3	0.0	0.0	0.6	0.0	0.0	
L06WA	218	25.9	3.6	4.1	23.6	3.3	2.2	0.0	0.0	30.4	3.1	0.0	3.8	0.0	0.0	
L06WB	184	17.2	2.4	0.0	18.9	2.5	0.0	0.0	0.0	43.7	12.2	0.0	0.0	0.0	3.1	
L07	44	33.1	0.0	14.2	30.0	2.2	9.8	2.9	3.7	1.9	0.0	0.0	2.1	0.0	0.0	
L08	267	16.9	0.0	19.6	45.3	0.0	6.1	2.6	0.0	2.6	0.0	0.0	6.9	0.0	0.0	
L09	19	13.1	4.8	23.2	46.4	1.8	8.5	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	
L10	99	20.1	0.0	17.0	47.4	0.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
L11	150	6.2	6.3	15.1	55.9	1.5	12.9	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	
M02	78	18.4	0.0	0.0	6.5	2.3	0.0	0.0	0.0	58.3	2.5	12.1	0.0	0.0	0.0	
M03	152	7.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0	78.6	0.0	5.3	0.0	0.0	0.0	

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
M04	248	15.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	62.6	4.1	8.6	3.8	0.0	0.0	
M05	29	13.0	4.8	2.3	26.2	2.8	1.5	2.7	2.4	39.0	3.8	0.0	1.6	0.0	0.0	
M06	49	25.5	5.2	4.1	19.9	2.3	1.2	2.2	0.0	36.8	1.5	0.0	1.5	0.0	0.0	
M07	172	23.1	5.5	18.3	35.9	4.8	2.7	1.2	1.4	5.2	0.0	0.0	1.8	0.0	0.0	
M08	128	28.0	5.0	13.5	46.9	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
M09	180	12.9	4.7	21.4	47.7	1.8	6.3	3.4	0.0	0.0	0.0	0.0	1.6	0.0	0.0	
M10	188	4.7	5.2	11.1	13.8	0.0	61.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	
M11	120	5.2	8.5	6.2	14.1	0.0	63.4	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
N03	215	23.3	0.0	0.0	12.0	0.0	0.0	0.0	0.0	52.8	0.0	11.9	0.0	0.0	0.0	
N04	147	6.1	0.0	2.6	10.0	2.5	0.0	0.0	0.0	35.1	0.0	40.9	2.8	0.0	0.0	
N05	138	14.7	2.3	1.5	31.5	2.4	0.0	2.3	0.0	44.1	0.0	0.0	1.3	0.0	0.0	
N06	202	32.7	3.7	7.0	44.4	0.0	3.8	5.9	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
N07	16	19.8	8.5	21.1	40.4	2.2	4.6	2.6	0.0	0.9	0.0	0.0	0.0	0.0	0.0	
N08	259	15.8	7.6	12.1	45.3	6.8	8.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
N09	32	33.3	7.7	11.9	36.5	5.7	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
N10	242	7.5	3.7	32.1	47.6	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
N11	266	11.3	0.0	23.1	34.3	0.0	31.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
N12	270	10.0	10.0	33.9	31.0	0.0	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
O03	177	9.2	1.3	0.0	3.1	2.1	0.0	0.8	0.0	62.1	1.5	18.2	1.7	0.0	0.0	
O04	8	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.5	0.0	0.0	0.0	0.0	0.0	
O05	272	23.5	0.0	0.0	30.4	1.8	0.0	2.1	0.0	40.5	0.0	1.6	0.0	0.0	0.0	
O06	207	26.7	4.1	3.2	38.9	2.8	0.0	2.4	0.0	21.8	0.0	0.0	0.0	0.0	0.0	
O07	182	26.5	6.6	18.9	39.5	1.7	2.5	1.1	1.4	0.0	0.0	0.0	1.9	0.0	0.0	
O08	212	21.1	8.3	16.3	41.3	3.5	3.1	1.7	0.0	2.9	0.0	0.0	1.9	0.0	0.0	
O09	246	32.0	5.0	22.0	33.4	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
O10	162	21.9	6.8	10.0	44.2	4.4	3.6	0.0	3.9	5.1	0.0	0.0	0.0	0.0	0.0	
O11	221	11.2	3.5	34.4	46.6	1.3	2.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	
O12	65	5.8	22.6	27.2	20.9	3.8	15.8	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	
P03	37	16.1	3.4	0.0	6.7	3.0	0.0	0.0	0.0	63.8	3.8	3.2	0.0	0.0	0.0	
P04	28	6.7	0.0	0.0	8.1	0.0	0.0	0.0	0.0	77.7	0.0	7.4	0.0	0.0	0.0	
P05	206	26.6	7.7	1.7	33.9	4.6	0.0	1.4	0.0	22.8	1.3	0.0	0.0	0.0	0.0	
P06	268	36.5	0.0	1.7	32.2	2.3	0.0	0.0	0.0	24.9	0.0	0.0	2.4	0.0	0.0	
P07	48	34.7	0.0	3.3	36.5	4.5	0.0	2.1	2.2	16.7	0.0	0.0	0.0	0.0	0.0	
P08	247	14.8	10.3	0.0	18.0	0.0	0.0	7.6	0.0	44.0	0.0	5.3	0.0	0.0	0.0	
P09	154	29.4	5.4	16.1	44.5	1.3	1.2	0.0	1.3	0.0	0.0	0.0	0.9	0.0	0.0	
P10	157	18.2	19.4	13.4	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
P11	123	19.1	3.1	34.7	30.2	1.0	8.4	0.0	1.6	1.1	0.0	0.0	0.8	0.0	0.0	
P12	62	12.7	0.0	24.0	50.4	2.1	6.6	2.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	
P13	10	11.3	5.1	23.4	51.5	2.4	4.7	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	
Q02	72	24.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.1	0.0	0.0	0.0	0.0	0.0	
Q03	200	17.6	5.0	0.0	3.9	3.9	2.9	0.0	0.0	41.8	5.2	17.1	0.0	2.6	0.0	
Q03A	129	31.3	3.2	0.0	7.3	4.1	0.0	0.0	0.0	45.3	2.9	2.9	3.1	0.0	0.0	

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
Q04	257	19.7	0.0	0.0	8.7	4.2	0.0	0.0	0.0	61.2	0.0	6.2	0.0	0.0	0.0	
Q05	203	30.0	5.9	0.0	28.3	0.0	0.0	1.4	0.0	31.7	0.0	1.2	1.6	0.0	0.0	
Q06	108	34.6	0.0	0.0	24.2	2.7	0.0	2.6	0.0	32.7	1.7	1.5	0.0	0.0	0.0	
Q07	17	12.0	0.0	0.0	16.6	0.0	0.0	2.4	0.0	29.2	2.5	32.2	5.2	0.0	0.0	
Q08	156	34.0	4.0	3.7	34.7	9.8	5.9	0.0	0.0	5.1	0.0	0.0	0.0	0.0	2.9	
Q09	96	47.3	0.0	4.5	32.4	3.0	0.0	2.9	4.6	5.2	0.0	0.0	0.0	0.0	0.0	
Q10	275	25.4	18.7	10.5	34.9	0.0	4.8	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0	
Q11	58	40.6	0.0	7.6	45.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Q12	97	24.2	7.9	28.1	38.9	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Q13	263	7.7	7.0	33.7	31.3	6.6	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R02	253	19.1	0.0	0.0	19.7	0.0	0.0	0.0	0.0	33.7	13.1	14.5	0.0	0.0	0.0	
R03	15	10.9	2.8	0.0	6.9	1.8	0.0	0.0	0.0	75.3	0.0	2.2	0.0	0.0	0.0	
R04	199	14.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	78.1	2.0	2.0	0.0	0.0	0.0	
R05	219	17.9	2.4	0.0	3.6	5.4	0.0	0.0	0.0	64.6	0.0	3.3	2.8	0.0	0.0	
R06	164	25.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.7	0.0	5.7	0.0	0.0	0.0	
R07	134	16.7	1.6	0.0	13.5	0.0	1.9	0.0	0.0	63.8	0.0	2.5	0.0	0.0	0.0	
R08	24	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	15.6	0.0	0.0	0.0	
R09	201	49.2	11.0	0.0	33.7	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R10	151	17.0	8.3	9.1	43.6	9.8	0.0	5.7	6.5	0.0	0.0	0.0	0.0	0.0	0.0	
R11	213	33.1	0.9	2.6	62.3	0.3	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R12	194	14.9	8.7	33.4	42.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	
R13	192	6.4	23.3	21.5	47.9	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R14	171	4.0	25.3	35.0	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R15	74	23.4	0.0	39.7	26.7	0.0	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S01	75	19.5	0.0	0.0	12.6	0.0	5.1	0.0	0.0	41.3	0.0	21.5	0.0	0.0	0.0	
S02	45	20.4	0.0	0.0	9.8	0.0	0.0	0.0	0.0	69.9	0.0	0.0	0.0	0.0	0.0	
S03	112	26.6	0.0	0.0	15.1	1.6	1.6	2.1	0.0	48.3	0.0	4.8	0.0	0.0	0.0	
S04	79	10.3	4.0	0.0	5.5	0.0	0.0	0.0	0.0	75.6	1.8	2.8	0.0	0.0	0.0	
S05	89	10.9	0.0	0.0	7.5	1.1	0.9	1.8	1.2	71.2	0.9	2.2	2.3	0.0	0.0	
S06	53	10.4	0.0	0.0	4.0	3.4	0.0	0.0	2.4	77.3	0.0	2.5	0.0	0.0	0.0	
S07	224	7.2	5.5	0.0	13.2	0.0	0.0	0.0	0.0	74.1	0.0	0.0	0.0	0.0	0.0	
S08	81	27.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.2	0.0	0.0	12.9	0.0	0.0	
S09	249	32.7	0.0	0.0	27.2	0.0	0.0	0.0	0.0	40.1	0.0	0.0	0.0	0.0	0.0	
S10	55	20.1	0.0	0.0	78.0	0.0	0.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S11	84	29.7	0.0	0.0	59.9	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S12	116	43.5	2.4	1.6	51.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S13	146	1.2	90.2	2.6	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S14	80	22.6	0.0	33.9	41.2	0.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S15	187	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S16	256	6.7	12.0	15.9	46.7	0.0	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T01	71	16.4	7.0	0.0	8.2	2.4	0.0	3.0	0.0	56.7	1.4	3.4	1.5	0.0	0.0	
T02	144	20.6	0.0	0.0	5.4	0.0	1.5	0.0	0.0	69.9	0.0	2.7	0.0	0.0	0.0	

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
T03	254	21.0	0.0	0.0	11.6	5.0	0.0	2.6	0.0	49.2	0.0	7.9	2.8	0.0	0.0	
T04	265	10.6	0.0	0.0	13.9	5.2	2.4	0.0	0.0	53.3	2.9	10.0	1.9	0.0	0.0	
T05	88	16.0	0.8	0.0	10.7	1.4	0.0	1.0	0.0	65.5	1.8	1.3	1.5	0.0	0.0	
T06	140	16.5	1.8	0.0	6.6	2.7	0.0	2.7	0.0	64.6	0.0	3.3	1.9	0.0	0.0	
T07	117	8.9	6.1	0.0	5.8	5.5	3.5	0.0	0.0	57.2	0.0	5.7	4.0	0.0	3.3	
T08	85	29.9	0.0	0.0	5.1	0.0	0.0	0.0	0.0	59.3	0.0	5.7	0.0	0.0	0.0	
T09	67	35.3	0.0	0.0	9.0	0.0	0.0	0.0	0.0	55.7	0.0	0.0	0.0	0.0	0.0	
T10	27	82.9	17.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T11	33	84.4	0.0	0.0	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T11-2	260	90.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T12	216	89.4	4.3	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	
T14	208	70.6	8.0	0.0	21.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T15	59	8.9	0.0	0.0	90.3	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	
T16	25	26.0	0.0	22.2	29.9	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
U02	235	46.3	0.0	0.0	6.2	2.7	0.0	1.9	0.0	42.9	0.0	0.0	0.0	0.0	0.0	
U03	191	13.5	1.1	1.9	4.3	1.5	0.0	0.0	0.0	74.7	0.0	1.8	1.3	0.0	0.0	
U04	83	10.2	1.6	0.0	4.8	1.3	0.0	0.0	0.0	71.7	1.5	7.1	1.9	0.0	0.0	
U05	54	22.6	1.6	0.0	8.3	0.0	1.2	0.0	0.0	65.4	0.9	0.0	0.0	0.0	0.0	
U08	234	19.5	0.0	0.0	16.5	0.0	0.0	0.0	0.0	54.7	0.0	9.4	0.0	0.0	0.0	
U09	31	18.9	0.0	0.0	11.7	10.0	0.0	0.0	0.0	59.4	0.0	0.0	0.0	0.0	0.0	
U10	135	49.7	4.2	0.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
U11	205	92.3	0.0	0.0	6.3	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
V02	70	27.6	4.5	0.0	16.9	5.4	0.0	0.0	0.0	34.6	0.0	4.6	6.4	0.0	0.0	
V03	231	16.1	3.1	0.0	4.4	0.0	0.0	0.0	0.0	74.4	2.0	0.0	0.0	0.0	0.0	
V04	50	11.1	0.0	0.0	2.2	0.0	0.0	0.0	0.0	86.7	0.0	0.0	0.0	0.0	0.0	
V06	227	18.6	2.2	0.0	3.1	2.2	0.0	0.0	0.0	68.2	2.2	1.6	1.9	0.0	0.0	
V07	36	9.7	0.0	0.0	4.6	5.2	0.0	0.0	0.0	80.4	0.0	0.0	0.0	0.0	0.0	
V08	238	17.2	7.8	0.0	21.0	0.0	0.0	0.0	0.0	45.2	8.8	0.0	0.0	0.0	0.0	
V09	178	25.2	0.0	0.0	65.3	4.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	
W02	104	7.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0	89.7	0.0	0.0	0.0	0.0	0.0	
W03	102	6.3	0.0	0.0	3.9	0.0	0.0	0.0	0.0	89.8	0.0	0.0	0.0	0.0	0.0	
W04	175	8.6	0.0	0.0	6.1	0.0	0.0	0.0	0.0	85.3	0.0	0.0	0.0	0.0	0.0	
W05	100	10.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0	82.9	0.0	0.0	0.0	0.0	0.0	
W06	196	12.6	2.3	0.0	5.9	1.2	0.0	0.0	0.0	78.0	0.0	0.0	0.0	0.0	0.0	
X01	43	8.4	0.0	0.0	5.4	0.0	0.0	0.0	0.0	86.3	0.0	0.0	0.0	0.0	0.0	
X02	243	6.3	0.0	0.0	4.6	0.0	0.0	0.0	0.0	89.1	0.0	0.0	0.0	0.0	0.0	
X03	274	7.1	0.0	0.0	2.9	1.0	0.0	1.0	0.0	88.0	0.0	0.0	0.0	0.0	0.0	
X04	110	10.9	0.0	0.0	3.0	1.6	0.0	0.0	0.0	84.5	0.0	0.0	0.0	0.0	0.0	
X05	244	5.8	0.0	0.0	3.4	0.0	0.0	0.0	0.0	90.8	0.0	0.0	0.0	0.0	0.0	
Y05	42	45.8	0.0	0.0	41.4	0.0	3.7	1.2	0.0	7.8	0.0	0.0	0.0	0.0	0.0	

Appendix. Lithological analyses; lithology of the 8-16 mm gravel fraction; weight percent

Field	Lab	Felsic_IHGM	Mafic_IHGM	Reddish_volc	Dark_meta_volc	Quartzite	Sandstone	Quartz	Iron_Fm	Pz_carbonate	Mz_carbonate	Shale	Ironstone	Lignite	Fossils	Reject
Z01	109	5.7	0.0	0.0	2.4	0.0	0.0	0.0	0.0	91.9	0.0	0.0	0.0	0.0	0.0	
Z02	160	19.4	0.0	0.0	4.1	0.9	0.0	0.0	0.0	75.6	0.0	0.0	0.0	0.0	0.0	
Z03	223	7.6	2.0	0.0	3.2	2.6	0.0	0.0	0.0	83.3	0.0	0.0	0.0	0.0	1.4	
Z04	141	6.4	1.0	0.0	3.4	0.0	0.0	0.0	0.0	89.1	0.0	0.0	0.0	0.0	0.0	
Z05	161	7.7	2.4	0.0	3.3	0.0	0.8	0.0	0.0	85.7	0.0	0.0	0.0	0.0	0.0	
Z06	176	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	
Z07	63	4.9	0.0	0.0	6.4	0.0	1.4	0.0	0.0	87.3	0.0	0.0	0.0	0.0	0.0	
Z08	258	71.8	16.9	0.0	4.7	5.4	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	
Z09	239	83.0	5.4	0.0	9.8	1.0	0.2	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	
Z10	26	27.8	3.5	0.9	15.9	0.0	0.7	1.6	0.9	48.7	0.0	0.0	0.0	0.0	0.0	
Z11	262	69.4	2.2	0.0	27.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Z12	76	85.7	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Z13	159	46.6	10.1	0.9	41.6	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Z14	52	65.2	2.7	0.0	28.7	1.3	0.0	1.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	
Z15	30	26.4	2.7	0.0	45.1	0.0	0.0	1.6	0.0	22.9	0.0	0.0	1.3	0.0	0.0	
Z16	214	16.0	6.2	0.0	36.1	4.0	0.0	0.0	4.0	33.7	0.0	0.0	0.0	0.0	0.0	
Z17	252	19.5	1.6	0.0	59.6	2.1	1.8	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0	
Z18	69	0.6	0.3	0.3	0.0	0.0	98.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Z19	122	64.9	15.1	3.0	12.6	1.1	2.2	0.5	0.0	0.0	0.0	0.0	0.7	0.0	0.0	
Z20	115	1.9	2.0	6.1	84.6	0.0	2.8	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	
	95															
	114															
	197															