APPENDIX 4: GEOCHEMICAL DATA ON THE TRANSPORTED OVERBURDEN

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Table A4.1: Raw geochemical data on the transported overburden, Federal

Sample	Code	Depth (m)	SiO2* (%)	Al2O3* (%)	Fe2O3* (%)	MnO* (%)	MgO* (%)	CaO* (%)	Na2O* (%)	K2O* (%)	TiO2* (%)	P2O5* (%)	Ba* (ppm)	Cl* (ppm)	Cu* (ppm)	Ga* (ppm)
F11	s	0.1	62.56	14.04	7.33	0.056	1.83	0.61	0.42	0.71	0.489	0.022	151	1170	54	20
F12	s	0.4	57.65	11.05	6.1	0.05	1.58	7.53	0.37	0.62	0.428	0.018	366	500	43	14
F13	s	0.8	59.69	12.3	7.65	0.056	1.22	3.87	0.58	0.64	0.487	0.016	292	3450	36	15
F14	h	1.2	65.16	8.94	14.17	0.045	0.7	1.64	0.28	0.36	0.397	0.014	109	1460	39	15
F15	h	1.7	48.73	10.67	13.27	0.031	0.82	9.33	0.25	0.32	0.389	0.013	345	1100	41	20
F16	h	2.1	43.34	9.77	8.67	0.037	1.59	15.36	0.48	0.39	0.356	0.009	915	3700	35	18
F17	h	2.6	51.53	12.56	9.36	0.027	0.95	7.21	0.55	0.51	0.388	0.014	847	710	40	17
F18	h	3.1	49.04	13.98	20.98	0.064	0.86	0.86	0.52	0.54	0.56	0.015	679	700	44	27
F19	h	3.5	56.14	17.31	7.33	0.017	1.1	0.16	0.64	0.69	0.449	0.011	395	1570	45	23
F110	co	4	70.16	11.8	6.23	0.014	0.39	0.16	0.28	0.38	0.505	0.013	608	760	47	16
F111	co	4.7	63.39	13.82	6.81	0.015	0.75	0.21	0.38	0.48	0.455	0.012	233	1670	33	20
F112	co	5.4	62.83	13.87	6.45	0.014	0.77	0.13	0.42	0.47	0.476	0.012	104	2970	31	19
F113	co	6.2	72.76	11.96	5.75	0.013	0.26	0.07	0.18	0.31	0.507	0.013	130	1190	43	14
F114	d	7.2	52.56	18.77	17.22	0.007	0.11	0.03	0.1	0.1	0.543	0.008	137	350	23	46
F115	d	8	51.42	14.22	22.95	0.006	0.13	0.02	0.1	0.11	0.438	0.006	296	810	29	30
F116	ssa	8.5	67.2	19.92	1.96	0.004	0.21	0.01	0.18	0.43	0.546	0.002	1123	530	30	24
F117	sa	9.1	63.45	22.75	1.04	0.003	0.15	0.01	0.48	0.25	0.597	0.007	198	5530	5	30
F118	sa	9.6	61.46	22.66	1.06	0.004	0.27	0.02	0.91	0.3	0.598	0.01	170	14000	5	28
F2/1	co	5.3	70.2	15.91	3.49	0.009	0.16	0.01	0.18	0.15	0.467	0.002	383	60	19	20
F2/2	co	5.6	70.38	12.97	4.89	0.008	0.46	0.03	0.29	0.37	0.439	0.003	263	400	26	19
F2/3	co	5.9	72.88	12.01	4.67	0.009	0.37	0.03	0.24	0.33	0.413	0.004	330	240	25	16
F2/4	d	6.2	68.72	12.05	7.51	0.017	0.65	0.03	0.3	0.34	0.526	0.006	284	610	35	15
F2/5	co	6.6	75.06	12.82	3.18	0.046	0.2	0.02	0.21	0.13	0.42	0.003	163	670	18	14
F2/6	co	6.9	69.56	11.29	5.11	0.015	1.28	0.05	0.47	0.43	0.451	0.005	373	1570	35	18
F2/7	co	7.3	66.58	10	3.53	0.015	2.96	0.03	0.47	0.36	0.417	0.006	120	1330	36	14
F2/8	co	7.6	64.67	9.03	3.2	0.013	3.82	0.03	0.83	0.35	0.465	0.006	112	6990	40	15
F2/9	ssa	8.1	80.02	4.89	1.12	0.007	0.31	0.03	0.39	0.6	8.168	0.031	314	2580	13	18
F2/10	sa	9.2	49.72	30.95	2.16	0.004	0.39	0.03	1.05	0.55	0.485	0.001	236	17540	5	144
5058	h	3	57.39	16.22	8.23	0.02	1.05	0.79	0.31	0.66	0.46	0.01	232	170	35	23
5059	h	3.3	56.69	14.33	11.31	0.019	0.93	1.51	0.26	0.56	0.48	0.008	261	20	38	22
5060	h	3.6	61.09	14.16	9.19	0.02	0.78	1.13	0.24	0.51	0.47	0.013	360	360	32	18
5061	h	4	59.52	11.97	10.17	0.025	0.7	3.96	0.19	0.43	0.47	0.013	264	660	28	18
5062	h	4.2	63.71	13.34	7.42	0.024	0.72	1.64	0.25	0.52	0.48	0.014	277	670	30	19
5063	h	4.4	64.34	12.92	7.24	0.022	0.7	1.54	0.29	0.5	0.49	0.013	189	3090	30	19
5064	h	4.8	61.55	11.96	8.94	0.035	0.83	3.43	0.2	0.49	0.5	0.013	543	1160	29	16
5065	co	5	68.49	11.16	7.11	0.02	0.59	1.32	0.33	0.46	0.47	0.012	324	1930	26	15

* - analysis by XRF (others by neutron activation). Key: s - soil, h - hardpanised colluvium,sa - clay saprolite, ssa - silicified clay saprolite, d - duricrust colluvium, co - silicified colluvium.

Table A4.1: (Contd)

Sample	Code	Depth (m)	SiO2* (%)	Al2O3* (%)	Fe2O3* (%)	MnO* (%)	MgO* (%)	CaO* (%)	Na2O* (%)	K2O* (%)	TiO2* (%)	P2O5* (%)	Ba* (ppm)	Cl* (ppm)	Cu* (ppm)	Ga* (ppm)
5066	co	5.3	65.64	12.17	7.06	0.028	0.66	2.26	0.24	0.48	0.51	0.015	592	1130	27	16
5067	co	5.6	66.87	13.26	7.15	0.018	0.46	1.2	0.22	0.44	0.56	0.013	325	850	27	17
5068	co	6	76.03	11.15	4.72	0.013	0.25	0.24	0.12	0.3	0.47	0.008	143	230	16	13
5069	co	6.5	72.25	11.35	5.54	0.017	0.39	1.01	0.16	0.35	0.46	0.011	244	140	23	16
5070	co	6.7	73.52	11.21	5.2	0.017	0.34	0.91	0.16	0.33	0.46	0.007	135	50	25	12
5071	co	7	75.03	11.58	4.63	0.012	0.27	0.2	0.19	0.32	0.46	0.005	132	170	25	14
5072	d	7.4	50.85	13.39	24.59	0.01	0.24	0.06	0.26	0.11	0.5	0.003	630	2300	11	29
5073	d	8.7	57.67	12.39	19.63	0.006	0.18	0.08	0.18	0.12	0.4	0.011	755	110	16	17
5074	ssa	9	63.48	19.66	5.41	0.003	0.2	0.08	0.25	0.27	0.51	0.004	1005	130	11	20
5075	ssa	9.8	66.69	19.82	2.78	0.003	0.17	0.05	0.19	0.26	0.53	0.004	481	110	11	23
5076	ssa	10	63.55	20.91	4.03	0.003	0.23	0.07	0.22	0.33	0.48	0.008	368	70	9	24
5077	ssa	10.8	67.83	19.08	1.84	0.005	0.33	0.04	0.19	1.33	0.42	0.002	1525	480	20	22
5078	s	0.1	78.44	7.69	7.56	0.028	0.27	0.15	0.12	0.46	0.45	0.026	104	90	26	12
5079	s	0.2	61.35	14.79	7.21	0.051	1.47	0.39	0.26	0.74	0.5	0.02	177	60	42	18
5080	h	0.7	67.36	11.55	6.76	0.048	1.66	0.49	0.27	0.63	0.44	0.018	203	15	33	17
5081	h	1	61.6	9.52	7.58	0.043	1.34	5.92	0.23	0.48	0.4	0.012	288	5	28	16
5082	co	1.3	65.86	8.41	14.81	0.04	0.85	1.29	0.19	0.33	0.41	0.011	221	10	32	21
5083	co	1.6	47.72	8.79	6.49	0.034	1.58	13.98	0.3	0.41	0.34	0.009	294	880	25	12
5084	h	2	65.88	10.93	10.5	0.056	0.98	1.03	0.27	0.49	0.49	0.015	381	200	29	17
5085	h	2.3	50.77	16.16	8.42	0.055	1.5	4.58	0.51	0.68	0.42	0.019	627	2200	42	21
5086	h	2.6	60.79	14.05	11.07	0.021	0.72	0.77	0.39	0.57	0.51	0.014	848	500	34	20
5087	h	3.1	52.49	17.36	13.2	0.022	0.82	0.64	0.36	0.59	0.47	0.019	487	250	38	26
5088	h	3.6	54.93	16.97	9.6	0.022	0.9	1.03	0.32	0.63	0.48	0.015	214	200	37	21
5089	h	4	57.45	15.78	10.14	0.019	0.65	0.34	0.39	0.58	0.47	0.016	171	1570	34	24
5090	h	4.4	55.27	16.05	11.56	0.018	0.73	0.29	0.36	0.6	0.51	0.019	677	860	40	24
5091	co	4.7	51.05	13.54	22.9	0.022	0.53	0.53	0.2	0.39	0.54	0.015	333	390	35	28
5092	co	5	61.3	14.09	11.91	0.016	0.61	0.11	0.21	0.45	0.48	0.012	159	1130	35	22
5093	co	5.8	62.96	14.18	9.81	0.016	0.57	0.14	0.23	0.46	0.5	0.01	209	1770	27	18
431/1	s	1	67.36	8.83	7.06	0.051	1	3.62	0.18	0.85	0.444	0.034	135	180	26	13
431/2	s	2	46.74	8.64	4.85	0.036	1.76	15.11	0.55	0.75	0.36	0.02	554	2430	22	13
431/3	h	3	34.86	9.37	4.86	0.023	1.61	21.32	0.39	0.563	0.328	0.014	371	1050	21	12
431/4	h	4	37.3	9.28	5.09	0.03	2.15	18.78	0.73	0.53	0.308	0.013	340	3290	27	12
431/5	h	5	30.2	8.029	4.76	0.016	2.3	24.96	0.49	0.448	0.464	0.013	231	680	22	12
431/6	h	6	35.79	8.473	5.46	0.011	2.55	20.25	0.45	0.372	1.006	0.009	207	1060	21	14
431/7	d	7	47.66	10.79	9.5	0.01	2.72	9.5	0.27	0.22	1.684	0.01	286	350	15	25
431/9	d	9	57.28	15.15	4.95	0.006	2.82	4.58	0.24	0.23	1.048	0.006	461	280	8	20
431/11	sa	11	63.68	20.17	4.68	0.006	0.24	0.05	0.38	0.31	0.559	0.008	161	4210	12	24

Table A4.1: (Contd)

Sample	Code	Depth (m)	Ni* (ppm)	Pb* (ppm)	Rb* (ppm)	S* (ppm)	Sr* (ppm)	V* (ppm)	Y* (ppm)	Zn* (ppm)	Zr* (ppm)	Au (ppb)	Sb (ppm)	As (ppm)	Br (ppm)	Ce (ppm)
F11	s	0.1	103	26	43	140	66	106	15	41	110	38.6	0.62	7.95	15.5	38.4
F12	s	0.4	77	24	36	460	168	105	14	32	99	28.3	0.67	9.24	15.1	33.4
F13	s	0.8	80	25	34	610	121	119	17	34	108	32	0.75	9.2	26.4	42.4
F14	h	1.2	64	30	17	310	95	217	11	21	89	19.4	1.51	14.7	10.9	39.1
F15	h	1.7	70	26	17	320	110	214	16	18	104	26.8	1.14	14.2	9.73	34.6
F16	h	2.1	59	24	17	690	221	143	18	17	79	50.2	0.64	8.58	22.6	40.9
F17	h	2.6	81	17	27	450	226	151	16	22	90	38.4	0.87	9.39	7.62	24.7
F18	h	3.1	119	39	27	230	106	340	31	25	112	21.1	2	18.9	4.29	115
F19	h	3.5	150	24	36	240	56	121	9	31	93	2.5	0.79	6.92	14.4	39.3
F110	co	4	57	17	17	300	41	112	10	20	118	12	0.39	7.96	8.1	22
F111	co	4.7	75	22	25	210	31	105	6	24	100	8.4	0.57	7.63	14.7	15.3
F112	co	5.4	71	19	28	200	21	109	8	25	106	10	0.4	7.99	21.4	10.2
F113	co	6.2	56	17	17	200	16	116	7	15	131	2.5	0.48	8.89	12.7	14.6
F114	d	7.2	70	41	3	500	8	452	8	3	225	13.4	1	26.6	2.3	15.7
F115	d	8	45	31	3	600	14	413	6	5	194	64.2	0.86	23.3	4.33	9.89
F116	ssa	8.5	31	18	11	290	32	39	5	13	182	2.5	0.29	1.29	2.53	7.12
F117	sa	9.1	19	12	3	300	17	22	3	14	189	2.5	0.24	0.5	14.7	8.52
F118	sa	9.6	28	20	3	570	22	22	6	13	169	5.8	0.1	0.5	38.4	13.9
F2/1	co	5.3	76	15	9	230	18	58	3	5	104	15	0.4	4.67	1.74	24.4
F2/2	co	5.6	84	18	20	270	59	76	6	10	113	17.6	0.37	5.29	6.06	11.6
F2/3	co	5.9	72	22	16	370	78	72	7	9	109	20.3	0.36	6.34	4.72	12.8
F2/4	d	6.2	118	25	19	290	39	131	11	9	137	103	0.62	10.6	3.69	40.3
F2/5	co	6.6	83	20	5	150	18	62	12	3	120	10.7	0.39	4.59	3.32	60.2
F2/6	co	6.9	140	16	21	420	122	86	11	6	109	53.8	0.29	5.61	4.86	29.4
F2/7	co	7.3	180	15	38	270	20	92	11	5	97	32.9	0.46	3.82	6.36	43.6
F2/8	co	7.6	219	14	32	660	18	101	10	5	98	55.4	0.38	1.99	23.3	20.6
F2/9	ssa	8.1	16	36	11	370	27	234	16	6	906	54.5	2.1	3.3	17.8	30.1
F2/10	sa	9.2	15	13	7	600	11	28	7	3	107	17.9	0.1	0.5	46.5	7.42
5058	h	3	102	19	36	280	58	115	7	27	92	2.5	0.83	7.61	8.99	21.1
5059	h	3.3	96	21	28	200	66	182	9	23	109	2.5	1.14	12.8	4.79	15.4
5060	h	3.6	98	24	31	230	56	153	8	24	106	11.3	1	10.8	9.5	20.9
5061	h	4	75	24	22	210	70	172	11	21	111	31.5	0.94	11.9	10.3	20.5
5062	h	4.2	78	18	27	240	55	115	8	24	116	18.6	0.66	8.15	16.1	21.3
5063	h	4.4	82	19	21	340	53	121	11	23	113	13.2	0.65	8.5	22.5	19.5
5064	h	4.8	85	22	26	310	80	140	15	21	113	24.9	0.86	10.9	10.4	34.7
5065	co	5	87	17	19	260	52	102	7	18	116	11.2	0.54	8.6	14.1	20

Table A4.1: (Contd)

Sample	Code	Depth (m)	Ni* (ppm)	Pb* (ppm)	Rb* (ppm)	S* (ppm)	Sr* (ppm)	V* (ppm)	Y* (ppm)	Zn* (ppm)	Zr* (ppm)	Au (ppb)	Sb (ppm)	As (ppm)	Br (ppm)	Ce (ppm)
5066	co	5.3	98	13	24	290	68	118	12	20	121	13.3	0.82	9.01	9.5	29.5
5067	co	5.6	110	20	21	240	46	115	13	17	139	10.2	0.6	8.2	8.32	24.1
5068	co	6	61	15	13	120	25	90	7	7	125	8.6	0.44	6.85	6.34	15
5069	co	6.5	73	14	17	130	39	96	10	13	120	8.6	0.56	7.22	7.18	19.2
5070	co	6.7	73	19	13	100	30	91	8	12	120	6.6	0.58	7.26	4.58	21.1
5071	co	7	95	20	13	100	25	87	8	10	124	7.5	0.35	5.98	3.9	20.7
5072	d	7.4	36	34	1	410	51	576	6	2	232	318	0.88	30.5	10.2	7.04
5073	d	8.7	32	41	1	430	65	659	7	1	132	66.8	0.64	29.8	1.96	8.35
5074	ssa	9	9	24	5	290	77	92	4	3	128	56.7	0.24	2.03	1.02	7.06
5075	ssa	9.8	10	17	2	140	23	53	3	4	145	445	0.33	0.5	0.5	9.81
5076	ssa	10	11	18	4	80	24	49	4	3	131	31.8	0.4	1.73	1.15	12.2
5077	ssa	10.8	52	20	30	290	55	29	3	34	128	178	0.1	0.5	2.49	2.76
5078	s	0.1	57	22	22	50	25	111	13	23	123	19.3	0.87	7.55	2.37	25.1
5079	s	0.2	137	24	50	50	65	104	19	39	110	31.8	0.72	6.34	2.43	51.1
5080	h	0.7	85	22	36	60	60	118	15	29	104	22.1	0.73	8.9	3	37.5
5081	h	1	69	20	26	160	126	119	16	24	90	30.3	0.82	9.19	6.29	37.9
5082	co	1.3	63	29	15	370	52	254	12	20	93	8	1.85	15.6	2.83	30.9
5083	co	1.6	58	24	21	340	160	104	14	20	76	29.5	0.71	8.38	10.8	34.1
5084	h	2	77	24	24	120	50	183	12	23	121	24.8	0.99	13.4	3.57	51.2
5085	h	2.3	177	21	41	410	143	137	30	31	90	53.2	0.73	8.69	12.9	50.6
5086	h	2.6	100	25	29	290	89	175	12	21	120	9.6	0.92	12.5	6.96	27.6
5087	h	3.1	97	25	35	270	55	237	9	28	98	15.1	1.25	15.4	7.59	20.1
5088	h	3.6	95	21	36	180	46	149	9	31	101	10.5	0.75	11.2	7.59	23.2
5089	h	4	77	24	33	270	33	178	9	28	110	6.3	0.8	13.9	13.9	16.9
5090	h	4.4	82	26	34	330	55	200	6	28	109	8.4	1.03	14.9	14.4	23.1
5091	co	4.7	73	37	18	340	29	421	11	19	140	2.5	2.51	28.2	5.46	17.1
5092	co	5	73	30	26	280	22	197	6	20	110	2.5	1.19	15.3	9.39	11.5
5093	co	5.8	73	29	23	260	24	168	8	18	116	9.1	0.94	11.9	12.8	13.4
431/1	s	1	65	16	30	220	72	110	11	38	111	19.2	0.87	7.71	4.32	32.5
431/2	s	2	55	18	29	780	311	82	13	27	90	49.7	0.6	7.27	16.3	29
431/3	h	3	46	4	25	890	764	84	12	24	64	102	0.6	5.64	13.4	25.9
431/4	h	4	56	15	17	1100	969	86	12	18	64	157	0.37	5.68	19.3	21.4
431/5	h	5	34	5	15	750	583	107	17	17	149	237	0.41	7.34	10.8	22.2
431/6	h	6	22	10	11	760	600	152	14	13	202	160	0.83	9.85	10.2	20.6
431/7	d	7	34	30	5	300	330	324	11	7	327	111	0.68	15.6	4.7	22.8
431/9	d	9	12	16	1	220	218	131	7	7	230	66.6	0.37	6.41	4.84	12.9
431/11	sa	11	0.5	14	0	390	7	83	3	6	164	2.5	0.23	4.6	14.7	1

Table A4.1: (Contd)

Sample	Code	Depth (m)	Eu (ppm)	La (ppm)	Sm (ppm)	Yb (ppm)	Cs (ppm)	Cr (ppm)	Co (ppm)	Hf (ppm)	Sc (ppm)	Th (ppm)
F11	s	0.1	0.82	20.9	3.38	1.5	2.65	310	15.6	3	16.5	11.1
F12	s	0.4	0.86	17.6	3.03	1.24	1.67	255	13.2	2.86	12.6	8.85
F13	s	0.8	0.68	20.7	3.51	1.36	2.25	288	15.9	3.27	15	9.72
F14	h	1.2	0.71	18	3.01	1.18	1.81	432	11.1	2.69	15	10.9
F15	h	1.7	0.55	15	2.55	1.15	1.76	443	12.8	2.53	16.1	13.9
F16	h	2.1	0.95	21.5	3.76	1.39	1.15	310	13.6	2.51	13	10
F17	h	2.6	0.67	21.8	2.87	1.05	2.27	314	11.8	2.54	14.1	9.86
F18	h	3.1	1.19	40.7	6.01	3.02	1.51	600	55.7	2.92	22.1	14.3
F19	h	3.5	0.25	12.9	1.79	1.02	2.64	283	26.2	2.34	18.6	8.43
F110	co	4	0.25	7.44	0.99	0.68	1.51	303	9.04	3.58	13.9	9.59
F111	co	4.7	0.25	6.83	0.88	0.65	1.15	290	12.3	2.9	17.4	8.32
F112	co	5.4	0.25	6.37	0.75	0.67	2.52	276	13.8	3.1	17	7.73
F113	co	6.2	0.25	5.96	0.86	0.75	2.12	312	7.09	3.89	14.7	9.79
F114	d	7.2	0.25	3.29	0.83	0.25	1.05	531	13.8	5.79	23	44.4
F115	d	8	0.25	3.66	0.68	0.25	0.5	275	9.08	4.86	16.9	39.7
F116	ssa	8.5	0.25	4.95	0.49	0.25	0.5	97.7	3.85	5.76	7.94	9.29
F117	sa	9.1	0.25	6.15	0.56	0.25	0.5	72.3	2.86	5.82	5.61	10
F118	sa	9.6	0.25	11.8	0.94	0.25	0.5	64.9	2.59	5.21	5.46	10.6
F2/1	co	5.3	0.25	3.57	0.63	0.61	1.81	222	13.3	3.34	13.4	8.34
F2/2	co	5.6	0.25	4.66	0.71	0.6	2.55	241	18.5	2.84	15.7	7.32
F2/3	co	5.9	0.25	4.9	0.78	0.58	1.2	219	17.2	3.42	13.6	7.37
F2/4	d	6.2	0.56	9.07	1.92	1.2	2.13	276	35.7	3.84	15.6	11.6
F2/5	co	6.6	0.25	4.4	1.53	1.19	1.71	159	30.4	3.25	10.4	8.09
F2/6	co	6.9	0.25	14.2	2.7	1.09	1.2	184	40.5	3.28	12	7.96
F2/7	co	7.3	0.8	24.1	3.49	1.15	0.5	144	70.3	2.76	9.57	9.17
F2/8	co	7.6	0.66	30.2	3.68	1.11	1.02	139	95	2.5	9.33	7.93
F2/9	ssa	8.1	0.71	24.7	2.39	2	0.5	106	4.1	24.7	14	16.1
F2/10	sa	9.2	0.25	4.43	0.65	0.25	1.27	34.3	2.69	2.92	3.42	2.39
5058	h	3	0.25	8.97	1.2	1	2.73	320	14.9	3.13	18.6	9.6
5059	h	3.3	0.25	9.25	1.3	1	1.47	430	13.1	3.13	19.2	11.1
5060	h	3.6	0.25	10.1	1.39	1	1.68	374	12	2.8	18.5	9.81
5061	h	4	0.25	13.3	2.12	1	1.42	382	11.3	3.16	15.7	11
5062	h	4.2	0.25	10.4	1.59	1	1.99	334	14.4	3.01	16.8	9.41
5063	h	4.4	0.25	9.58	1.36	1	1.86	341	13.4	3.19	15.8	9.3
5064	h	4.8	0.6	14.3	2.31	1	1.33	367	17.3	3.36	15.6	10.3
5065	co	5	0.25	8.51	1.3	1	1.18	312	14.7	3.32	14.1	8.07

Table A4.1: (Contd)

Sample	Code	Depth (m)	Eu (ppm)	La (ppm)	Sm (ppm)	Yb (ppm)	Cs (ppm)	Cr (ppm)	Co (ppm)	Hf (ppm)	Sc (ppm)	Th (ppm)
5066	co	5.3	0.25	11.8	1.9	1	0.5	321	15.9	3.41	14.5	9.67
5067	co	5.6	0.25	10.6	1.58	1	2.13	354	14.5	4.09	17.1	10.9
5068	co	6	0.25	5.52	0.85	1	1.23	256	9.24	3.49	12.8	8.68
5069	co	6.5	0.25	7.55	1.25	1	1.4	270	12	3.38	12.8	8.4
5070	co	6.7	0.25	7.35	1.2	1	1.83	259	12.2	3.16	12.9	8.21
5071	co	7	0.25	6.43	1.17	1	1.92	256	11.4	3.61	14.1	8.52
5072	d	7.4	0.25	3.54	0.65	1	0.5	223	9.16	5.87	14.3	46.1
5073	d	8.7	0.25	5.15	0.56	1	0.5	176	6.02	3.65	9.81	19.2
5074	ssa	9	0.25	5.84	0.53	1	1.81	76.2	2.31	4.08	5.13	7.35
5075	ssa	9.8	0.25	10.5	0.7	1	1.5	68.6	2.55	3.97	5.34	6.92
5076	ssa	10	0.25	11.2	0.87	1	0.5	75.6	2.66	3.58	4.93	6.77
5077	ssa	10.8	0.25	7.28	0.32	1	1.7	58.3	2.52	3.82	4.47	3.61
5078	s	0.1	0.25	10.6	2.1	1.08	1.41	353	11.6	3.53	10.4	8.67
5079	s	0.2	0.95	30	4.19	1.73	3.33	294	17.6	3.31	16.7	10.5
5080	h	0.7	0.91	19.9	3.39	1.4	2.09	279	15	2.97	13.6	8.9
5081	h	1	0.96	20.7	3.6	1.41	1.44	284	13.2	2.96	12.3	9.83
5082	co	1.3	0.56	17.9	2.83	1	0.5	459	9.8	2.91	14.6	11.6
5083	co	1.6	0.61	19	3.3	1.29	1.75	240	11.2	2.21	11.1	7.38
5084	h	2	0.67	15.8	2.88	1.31	1.56	451	17.3	3.43	14.8	12.2
5085	h	2.3	0.93	49.3	5.6	1.83	2.68	328	31	2.96	18.7	9.85
5086	h	2.6	0.25	12.8	1.98	1.01	2.14	445	15.9	3.29	17.6	12.7
5087	h	3.1	0.25	10.5	1.47	0.83	2.83	446	14.6	2.95	22.9	13
5088	h	3.6	0.25	11.2	1.55	0.75	2.9	342	13.5	2.96	19.6	10.8
5089	h	4	0.25	7.79	1.02	0.6	2.33	352	11.1	3.11	17.2	10.4
5090	h	4.4	0.25	8.79	1.15	0.71	3.19	389	13	3.06	18.7	11.3
5091	co	4.7	0.25	8.7	1.37	0.74	0.5	707	10.3	3.64	23.2	18.8
5092	co	5	0.25	7.32	0.97	0.65	1.85	432	10	3.16	19.3	12.2
5093	co	5.8	0.25	7.4	0.98	0.63	2.63	383	9.84	3.3	18.3	10.7
431/1	s	1	0.25	15	2.53	1.07	1.81	308	10.7	3.49	11.1	9.07
431/2	s	2	0.56	15.1	2.43	0.93	1.23	199	10.3	2.45	9.25	6.54
431/3	h	3	0.61	15.4	2.62	1	2.3	190	11	1.51	10.5	6.22
431/4	h	4	0.25	13.4	2.38	0.92	1.53	204	9.59	1.85	10.5	7.27
431/5	h	5	0.92	20.8	3.81	1.27	1.3	224	7.48	3.71	10.6	9.84
431/6	h	6	0.53	11.5	2.2	1.05	0.5	218	8.21	5.02	12.2	15.6
431/7	d	7	0.25	7.8	1.57	1.07	0.5	268	8.23	8.51	15.3	24.9
431/9	d	9	0.25	5.86	1.15	0.58	0.5	126	5.64	6.18	8.56	12
431/11	sa	11	0.25	0.25	0.1	0.25	0.5	81.1	0.5	4.21	6.77	3.48

Table A4.2: Summary statistics for the transported overburden, Federal.

Element	Soil, N=7			Hardpanised colluvium, N=26			Silicified colluvium, N=16		
	Mean	Geo-metric Mean	Stand. Deviat.	Mean	Geo-metric Mean	Stand. Deviat.	Mean	Geo-metric Mean	Stand. Deviat.
SiO2	62	61	10	54	53	10	66	66	8
Al2O3	11.1	10.8	2.8	12.8	12.4	3.0	12.0	11.9	1.8
Fe2O3	6.8	6.7	1.0	9.4	8.9	3.5	8.3	7.5	4.8
MnO	0.05	0.05	0.01	0.03	0.03	0.01	0.02	0.02	0.01
MgO	1.3	1.1	0.5	1.1	1.0	0.5	0.6	0.5	0.3
CaO	4.5	1.8	5.0	5.7	2.3	7.7	1.5	0.5	3.4
Na2O	0.35	0.31	0.18	0.37	0.35	0.14	0.24	0.23	0.08
K2O	0.68	0.67	0.12	0.52	0.52	0.10	0.40	0.39	0.07
TiO2	0.45	0.45	0.05	0.47	0.46	0.12	0.48	0.47	0.05
P2O5	0.02	0.02	0.01	0.01	0.01	0.00	0.01	0.01	0.00
Ba	250	220	160	400	350	230	260	230	150
Cl	1100	500	1300	1100	500	1000	1000	500	800
Cu	36	34	12	34	33	7	30	29	8
Ga	15	15	3	19	18	4	17	17	4
Ni	82	78	29	84	78	32	75	73	16
Pb	22	22	4	21	19	7	21	20	7
Rb	35	34	9	27	25	8	19	19	5
S	330	208	290	371	305	255	230	220	90
Sr	118	90	100	186	107	250	43	36	34
V	105	105	11	158	150	54	143	128	87
Y	15	14	3	13	12	6	9	9	3
Zn	33	33	7	24	23	5	17	17	5
Zr	107	107	10	106	103	26	116	115	16
Au	31	30	11	42	21	58	9	8	6
Sb	0.73	0.72	0.11	0.89	0.84	0.33	0.81	0.68	0.59
As	7.9	7.8	1.0	10.8	10.3	3.3	10.3	9.4	5.5
Br	12	8	9	11	10	5	10	8	5
Ce	36	35	9	32	28	20	20	19	7
Eu	0.62	0.55	0.29	0.50	0.40	0.30	0.29	0.28	0.11
La	19	18	6	16	15	10	9	8	4
Sm	3.0	3.0	0.7	2.5	2.2	1.3	1.4	1.3	0.7
Yb	1.27	1.25	0.28	1.20	1.10	0.50	0.88	0.86	0.20
Cs	2.10	1.90	0.70	1.90	1.80	0.60	1.5	1.4	0.7
Cr	290	280	50	350	340	90	340	330	120
Co	13.6	13.3	2.9	15.7	14.2	9.5	11.5	11.2	2.4
Hf	3.1	3.1	0.4	3.0	2.9	0.6	3.3	3.3	0.4
Sc	13.1	12.8	3.0	16.1	15.7	3.4	15.5	15.2	3.1
Th	9.2	9.1	1.5	10.6	10.4	2.1	9.9	9.6	2.8

Table A4.2: (Contd)

Element	Duricrust colluvium, N=7			Silicified clay saprolite, N=6			Clay saprolite, N=4		
	Mean	Geo-metric Mean	Stand. Deviat.	Mean	Geo-metric Mean	Stand. Deviat.	Mean	Geo-metric Mean	Stand. Deviat.
SiO2	55	55	7	68	68	6	60	59	7
Al2O3	13.8	13.6	2.6	17.4	15.7	6.1	24.1	23.8	4.7
Fe2O3	15.2	13.1	7.8	2.9	2.5	1.6	2.2	1.8	1.7
MnO	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	1.0	0.4	1.2	0.2	0.2	0.1	0.3	0.2	0.1
CaO	2.04	0.17	3.70	0.05	0.04	0.03	0.03	0.02	0.02
Na2O	0.21	0.19	0.08	0.24	0.23	0.08	0.71	0.65	0.33
K2O	0.18	0.16	0.09	0.54	0.45	0.41	0.35	0.34	0.13
TiO2	0.73	0.64	0.47	1.78	0.79	3.13	0.56	0.56	0.05
P2O5	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Ba	400	360	220	800	700	500	191	189	34
Cl	700	460	750	700	300	1000	10000	9000	7000
Cu	20	17	10	16	14	8	7	6	4
Ga	26	24	11	22	22	2	57	41	58
Ni	50	40	35	22	17	17	16	8	11
Pb	31	30	9	22	21	7	15	14	4
Rb	5	3	6	11	7	10	3	--	3
S	390	370	130	240	220	110	470	450	140
Sr	100	50	120	40	36	22	14	13	7
V	380	330	200	83	63	77	39	33	30
Y	8	8	2	6	5	5	5	4	2
Zn	5	4	3	11	7	12	9	8	5
Zr	211	202	66	270	190	310	157	154	35
Au	106.14	75.45	98.65	128	52	166	7.18	5.05	7.32
Sb	0.7	0.7	0.2	0.6	0.4	0.8	0.17	0.15	0.08
As	20.4	17.9	9.6	1.6	1.2	1.1	1.53	0.87	2.05
Br	4.6	4.0	2.7	4.2	2.0	6.7	28.58	24.92	16.36
Ce	16.7	14.1	11.7	11.5	8.9	9.6	7.71	5.44	5.29
Eu	0.3	0.3	0.1	0.3	0.3	0.2	0.25	0.25	--
La	5.5	5.1	2.3	10.7	9.2	7.3	5.66	2.99	4.79
Sm	1.1	1.0	0.5	0.9	0.7	0.8	0.56	0.43	0.35
Yb	0.8	0.6	0.4	1.0	0.9	0.6	0.25	0.25	--
Cs	0.8	0.7	0.6	1.1	0.9	0.6	0.69	0.63	0.39
Cr	268	245	129	80	79	18	63	60	20
Co	12.5	10.2	10.6	3.0	2.9	0.8	2.2	1.8	1.1
Hf	5.5	5.3	1.6	7.7	5.6	8.4	4.5	4.4	1.3
Sc	14.8	14.1	4.8	7.0	6.4	3.7	5.3	5.2	1.4
Th	28.3	24.6	15.0	8.3	7.6	4.2	6.6	5.4	4.3

Table A4.3: Correlation coefficients for soil, harpanised and silicified colluvium, Federal

	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Ba	Cl	Cu	Ga
SiO2		0.1	-0.23	-0.1	**-0.52**	**-0.82**	**-0.54**	*-0.33*	0.0	-0.2	*-0.36*	-0.30	-0.1	-0.1
Al2O3	0.1		0.26	-0.1	*-0.37*	**-0.53**	0.0	0.27	0.1	0.0	0.2	0.0	*0.39*	**0.75**
Fe2O3	-0.23	0.26		0.29	-0.24	-0.2	-0.1	0.1	0.1	0.29	0.27	-0.1	*0.40*	**0.71**
MnO	-0.1	-0.1	0.29		0.2	0.1	0.1	**0.44**	-0.2	**0.54**	0.2	-0.1	0.29	0.0
MgO	**-0.52**	*-0.37*	-0.24	0.2		**0.50**	**0.72**	0.25	0.0	0.0	0.0	0.27	0.2	-0.24
CaO	**-0.82**	**-0.53**	-0.2	0.1	**0.50**		*0.37*	0.1	0.0	0.1	0.2	0.22	-0.29	*-0.43*
Na2O	**-0.54**	0.0	-0.1	0.1	**0.72**	*0.37*		*0.32*	-0.1	0.0	0.29	**0.57**	*0.34*	0.0
K2O	*-0.33*	0.27	0.1	**0.44**	0.25	0.1	*0.32*		-0.1	**0.75**	0.2	0.0	*0.39*	0.2
TiO2	0.0	0.1	0.1	-0.2	0.0	0.0	-0.1	-0.1		0.0	-0.1	0.0	0.0	0.2
P2O5	-0.2	0.0	0.29	**0.54**	0.0	0.1	0.0	**0.75**	0.0		0.1	0.0	0.30	0.1
Ba	*-0.36*	0.2	0.27	0.2	0.0	0.2	0.29	0.2	-0.1	0.1		0.2	0.2	0.26
Cl	-0.30	0.0	-0.1	-0.1	0.27	0.22	**0.57**	0.0	0.0	0.0	0.2		0.2	-0.1
Cu	-0.1	*0.39*	*0.40*	0.29	0.2	-0.29	*0.34*	*0.39*	0.0	0.30	0.2	0.2		**0.49**
Ga	-0.1	**0.75**	**0.71**	0.0	-0.24	*-0.43*	0.0	0.2	0.2	0.1	0.26	-0.1	**0.49**	
Ni	0.2	*0.35*	0.0	0.1	*0.36*	**-0.45**	*0.40*	0.2	-0.1	-0.1	0.0	0.2	**0.45**	0.27
Pb	0.1	*0.35*	**0.79**	*0.39*	-0.31	**-0.44**	-0.1	0.1	0.0	0.2	0.1	-0.1	**0.47**	**0.62**
Rb	-0.1	**0.44**	0.1	*0.36*	*0.37*	-0.2	*0.34*	**0.81**	-0.1	**0.52**	0.1	0.0	**0.61**	*0.34*
S	**-0.73**	*-0.40*	-0.1	0.0	**0.58**	**0.79**	**0.67**	0.1	-0.1	0.0	0.28	**0.49**	-0.1	-0.27
Sr	**-0.75**	*-0.42*	-0.2	0.0	**0.48**	**0.88**	**0.46**	0.1	0.0	0.0	0.1	0.22	-0.25	*-0.37*
V	-0.28	0.2	**0.97**	0.2	-0.1	-0.1	-0.1	0.1	0.2	0.22	0.23	-0.1	*0.36*	**0.68**
Y	*-0.42*	-0.1	0.28	**0.72**	*0.33*	*0.32*	*0.33*	0.30	0.0	*0.33*	*0.38*	0.1	0.29	0.0
Zn	-0.28	0.30	*0.32*	**0.57**	0.1	0.0	0.1	**0.88**	0.0	**0.81**	0.1	-0.1	**0.50**	0.29
Zr	0.1	0.0	0.0	-0.26	-0.2	-0.1	-0.30	-0.25	**0.85**	-0.1	-0.2	-0.1	-0.2	0.0
Au	**-0.51**	**-0.54**	*-0.32*	0.29	**0.65**	**0.70**	**0.48**	0.1	0.0	0.1	0.2	0.25	-0.2	**-0.48**
Sb	-0.2	0.1	**0.95**	*0.32*	-0.2	-0.1	-0.2	0.1	0.2	0.29	0.2	-0.2	0.28	**0.60**
As	-0.23	0.23	**0.95**	0.2	-0.28	-0.1	-0.2	0.1	0.2	0.27	0.2	-0.1	0.28	**0.65**
Br	*-0.42*	0.0	-0.1	-0.1	*0.33*	*0.33*	**0.54**	0.25	0.0	0.1	0.1	**0.76**	0.23	0.0
Ce	-0.1	0.0	0.30	**0.76**	0.2	0.0	0.2	0.2	0.0	0.2	0.29	0.0	0.27	0.1
Eu	*-0.37*	-0.1	0.2	**0.64**	**0.57**	0.2	**0.50**	*0.37*	-0.1	0.29	0.28	0.1	*0.43*	0.1
La	-0.22	-0.1	0.26	**0.73**	0.30	0.1	0.25	0.25	0.0	0.23	0.2	-0.1	0.28	0.0
Lu	0.0	**0.63**	0.0	0.1	-0.2	-0.2	0.0	**0.47**	-0.1	0.26	0.0	0.0	*0.34*	0.29
Sm	-0.1	*0.31*	**0.95**	0.23	*-0.40*	-0.29	-0.29	0.1	0.2	*0.32*	0.24	-0.2	*0.34*	**0.68**
Yb	0.1	0.0	-0.1	0.0	**0.55**	-0.22	**0.51**	-0.1	0.0	-0.25	0.0	0.26	0.26	0.1
Hf	*0.32*	0.0	0.0	-0.2	-0.28	-0.23	**-0.43**	-0.2	**0.78**	0.0	-0.2	-0.2	-0.2	0.0
Sc	-0.1	**0.79**	**0.72**	0.0	*-0.40*	**-0.44**	-0.1	0.26	0.24	0.1	0.2	0.0	**0.47**	**0.88**
Th	-0.27	0.2	**0.80**	0.2	-0.1	-0.1	-0.1	0.0	**0.55**	0.2	0.2	-0.1	*0.33*	**0.59**

Correlations significant to 99.9% are listed in a large bold font, those significant to 99% in a large italics font and those significant to 95% in a large font. Correlations with significance less than 95% are listed in a small font.

Table A4.3: (Contd)

	Ni	Pb	Rb	S	Sr	V	Y	Zn	Zr	Au	Sb	As	Br	Ce
SiO2	0.2	0.1	-0.1	**-0.73**	**-0.75**	-0.28	*-0.42*	-0.28	0.1	**-0.51**	-0.2	-0.23	*-0.42*	-0.1
Al2O3	*0.35*	*0.35*	**0.44**	*-0.40*	*-0.42*	0.2	-0.1	0.30	0.0	**-0.54**	0.1	0.23	0.0	0.0
Fe2O3	0.0	**0.79**	0.1	-0.1	-0.2	**0.97**	0.28	*0.32*	0.0	*-0.32*	**0.95**	**0.95**	-0.1	0.30
MnO	0.1	*0.39*	*0.36*	0.0	0.0	0.2	**0.72**	**0.57**	-0.26	0.29	*0.32*	0.2	-0.1	**0.76**
MgO	*0.36*	-0.31	*0.37*	**0.58**	**0.48**	-0.1	*0.33*	0.1	-0.2	**0.65**	-0.2	-0.28	*0.33*	0.2
CaO	**-0.45**	**-0.44**	-0.2	**0.79**	**0.88**	-0.1	*0.32*	0.0	-0.1	**0.70**	-0.1	-0.1	*0.33*	0.0
Na2O	*0.40*	-0.1	*0.34*	**0.67**	**0.46**	-0.1	*0.33*	0.1	-0.30	**0.48**	-0.2	-0.2	**0.54**	0.2
K2O	0.2	0.1	**0.81**	0.1	0.1	0.1	0.30	**0.88**	-0.25	0.1	0.1	0.1	0.25	0.2
TiO2	-0.1	0.0	-0.1	-0.1	0.0	0.2	0.0	0.0	**0.85**	0.0	0.2	0.2	0.0	0.0
P2O5	-0.1	0.2	**0.52**	0.0	0.0	0.22	*0.33*	**0.81**	-0.1	0.1	0.29	0.27	0.1	0.2
Ba	0.0	0.1	0.1	0.28	0.1	0.23	*0.38*	0.1	-0.2	0.2	0.2	0.2	0.1	0.29
Cl	0.2	-0.1	0.0	**0.49**	0.22	-0.1	0.1	-0.1	-0.1	0.25	-0.2	-0.1	**0.76**	0.0
Cu	**0.45**	**0.47**	**0.61**	-0.1	-0.25	*0.36*	0.29	**0.50**	-0.2	-0.2	0.28	0.28	0.23	0.27
Ga	0.27	**0.62**	*0.34*	-0.27	*-0.37*	**0.68**	0.0	0.29	0.0	**-0.48**	**0.60**	**0.65**	0.0	0.1
Ni		0.1	**0.55**	-0.2	*-0.36*	0.0	0.2	0.0	-0.2	-0.1	-0.1	-0.2	0.0	0.29
Pb	0.1		0.2	*-0.36*	**-0.46**	**0.72**	0.2	*0.32*	-0.1	*-0.42*	**0.72**	**0.73**	-0.1	*0.36*
Rb	**0.55**	0.2		-0.1	-0.2	0.1	0.27	**0.73**	*-0.32*	0.0	0.1	0.0	0.2	0.2
S	-0.2	*-0.36*	-0.1		**0.84**	-0.1	0.2	-0.1	-0.2	**0.63**	-0.1	-0.1	**0.52**	-0.1
Sr	*-0.36*	**-0.46**	-0.2	**0.84**		-0.1	0.24	0.0	-0.1	**0.68**	-0.1	-0.2	0.28	0.0
V	0.0	**0.72**	0.1	-0.1	-0.1		0.26	0.2	0.1	-0.27	**0.95**	**0.96**	-0.1	0.25
Y	0.2	0.2	0.27	0.2	0.24	0.26		*0.33*	-0.1	**0.49**	0.26	0.2	0.0	**0.76**
Zn	0.0	*0.32*	**0.73**	-0.1	0.0	0.2	*0.33*		-0.23	0.0	0.29	0.27	0.2	0.2
Zr	-0.2	-0.1	*-0.32*	-0.2	-0.1	0.1	-0.1	-0.23		-0.1	0.0	0.2	-0.2	-0.1
Au	-0.1	*-0.42*	0.0	**0.63**	**0.68**	-0.27	**0.49**	0.0	-0.1		-0.29	*-0.35*	0.2	0.24
Sb	-0.1	**0.72**	0.1	-0.1	-0.1	**0.95**	0.26	0.29	0.0	-0.29		**0.91**	-0.2	0.30
As	-0.2	**0.73**	0.0	-0.1	-0.2	**0.96**	0.2	0.27	0.2	*-0.35*	**0.91**		-0.1	0.1
Br	0.0	-0.1	0.2	**0.52**	0.28	-0.1	0.0	0.2	-0.2	0.2	-0.2	-0.1		-0.22
Ce	0.29	*0.36*	0.2	-0.1	0.0	0.25	**0.76**	0.2	-0.1	0.24	0.30	0.1	-0.22	
Eu	**0.50**	0.2	**0.49**	0.2	0.2	0.2	**0.87**	*0.33*	-0.27	**0.50**	0.2	0.0	0.1	**0.68**
La	0.30	0.26	0.27	0.0	0.1	0.2	**0.87**	0.27	-0.1	*0.35*	0.26	0.1	-0.1	**0.89**
Lu	0.1	0.1	**0.52**	-0.23	-0.1	-0.1	0.0	**0.52**	-0.24	-0.2	-0.1	-0.1	0.1	0.0
Sm	-0.1	**0.76**	0.1	-0.29	-0.30	**0.91**	0.2	*0.33*	0.1	**-0.44**	**0.89**	**0.93**	-0.1	0.2
Yb	**0.81**	0.0	0.25	0.1	-0.2	0.0	0.23	-0.30	-0.1	0.2	-0.1	-0.24	0.0	*0.41*
Hf	-0.2	-0.1	-0.27	*-0.33*	-0.28	0.1	-0.1	-0.2	**0.91**	-0.2	0.0	0.1	-0.29	-0.2
Sc	0.2	**0.65**	*0.34*	*-0.36*	*-0.38*	**0.67**	0.0	*0.39*	0.1	**-0.56**	**0.59**	**0.69**	0.0	0.0
Th	-0.1	**0.56**	0.0	-0.1	-0.1	**0.86**	0.25	0.2	**0.46**	-0.2	**0.78**	**0.83**	-0.1	0.2

Table A4.3: (Contd)

	La	Yb	Cs	Cr	Co	Hf	Sc	Th
SiO2	*-0.37*	-0.22	0.0	-0.1	0.1	*0.32*	-0.1	-0.27
Al2O3	-0.1	-0.1	**0.63**	*0.31*	0.0	0.0	**0.79**	0.2
Fe2O3	0.2	0.26	0.0	**0.95**	-0.1	0.0	**0.72**	**0.80**
MnO	**0.64**	**0.73**	0.1	0.23	0.0	-0.2	0.0	0.2
MgO	**0.57**	0.30	-0.2	*-0.40*	**0.55**	-0.28	*-0.40*	-0.1
CaO	0.2	0.1	-0.2	-0.29	-0.22	-0.23	**-0.44**	-0.1
Na2O	**0.50**	0.25	0.0	-0.29	**0.51**	**-0.43**	-0.1	-0.1
K2O	*0.37*	0.25	**0.47**	0.1	-0.1	-0.2	0.26	0.0
TiO2	-0.1	0.0	-0.1	0.2	0.0	**0.78**	0.24	**0.55**
P2O5	0.29	0.23	0.26	*0.32*	-0.25	0.0	0.1	0.2
Ba	0.28	0.2	0.0	0.24	0.0	-0.2	0.2	0.2
Cl	0.1	-0.1	0.0	-0.2	0.26	-0.2	0.0	-0.1
Cu	*0.43*	0.28	*0.34*	*0.34*	0.26	-0.2	**0.47**	*0.33*
Ga	0.1	0.0	0.29	**0.68**	0.1	0.0	**0.88**	**0.59**
Ni	**0.50**	0.30	0.1	-0.1	**0.81**	-0.2	0.2	-0.1
Pb	0.2	0.26	0.1	**0.76**	0.0	-0.1	**0.65**	**0.56**
Rb	**0.49**	0.27	**0.52**	0.1	0.25	-0.27	*0.34*	0.0
S	0.2	0.0	-0.23	-0.29	0.1	*-0.33*	*-0.36*	-0.1
Sr	0.2	0.1	-0.1	-0.30	-0.2	-0.28	*-0.38*	-0.1
V	0.2	0.2	-0.1	**0.91**	0.0	0.1	**0.67**	**0.86**
Y	**0.87**	**0.87**	0.0	0.2	0.23	-0.1	0.0	0.25
Zn	*0.33*	0.27	**0.52**	*0.33*	-0.30	-0.2	*0.39*	0.2
Zr	-0.27	-0.1	-0.24	0.1	-0.1	**0.91**	0.1	**0.46**
Au	**0.50**	*0.35*	-0.2	**-0.44**	0.2	-0.2	**-0.56**	-0.2
Sb	0.2	0.26	-0.1	**0.89**	-0.1	0.0	**0.59**	**0.78**
As	0.0	0.1	-0.1	**0.93**	-0.24	0.1	**0.69**	**0.83**
Br	0.1	-0.1	0.1	-0.1	0.0	-0.29	0.0	-0.1
Ce	**0.68**	**0.89**	0.0	0.2	*0.41*	-0.2	0.0	0.2
Eu		**0.81**	0.0	0.1	**0.50**	-0.28	0.0	0.1
La	**0.81**		0.0	0.2	*0.37*	-0.1	0.0	0.2
Lu	0.0	0.0		0.0	-0.2	-0.2	*0.42*	-0.1
Sm	0.1	0.2	0.0		-0.2	0.1	**0.77**	**0.79**
Yb	**0.50**	*0.37*	-0.2	-0.2		-0.2	-0.1	-0.1
Hf	-0.28	-0.1	-0.2	0.1	-0.2		0.1	*0.40*
Sc	0.0	0.0	*0.42*	**0.77**	-0.1	0.1		**0.61**
Th	0.1	0.2	-0.1	**0.79**	-0.1	*0.40*	**0.61**	

Table A 4.4: Chemical composition of carbonate and ferruginous nodules.

Carbonate nodules

Sample	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Calculated CO2 as calcite	Calculated CO2 as dolomite	Total
431/3	22.25	6.605	2.74	0.014	1.45	31.6	0.19	0.353	0.207	0.013	23.210	3.167	91.799
431/4	30.12	7.561	3.73	0.017	2.23	26.34	0.37	0.434	0.256	0.008	18.231	4.870	94.167
431/5	20.32	5.507	2.77	0.01	2.41	34.1	0.25	0.304	0.191	0.003	24.123	5.263	95.251
431/6	18.97	5.412	1.92	0.005	3.2	34.35	0.21	0.274	0.185	0.001	23.456	6.989	94.972
431/7	19.84	5.626	2.07	0.003	6.93	29	0.2	0.23	0.195	0.002	15.185	15.135	94.416
F15	12.19	2.973	1.79	0.001	1.07	43.43	0.06	0.097	0.104	0.004	32.907	2.337	96.962
F16	8.14	2.356	1.04	0.006	1.36	45.74	0.06	0.097	0.085	0	34.402	2.970	96.257
F17	39.7	11.82	5.08	0.018	1.27	16.56	0.57	0.49	0.266	0.009	11.606	2.774	90.163

Ferruginous nodules

Sample	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Calculated CO2 as calcite	Calculated CO2 as dolomite	Total
431/3	23.2	12.727	55.23	0.037	0.2	0.34	0.06	0.125	0.819	0.024	0.250	0.437	93.449
431/4	33.96	14.95	41.9	0.043	0.25	0.24	0.13	0.18	0.611	0.021	0.176	0.546	93.007
431/5	36.39	16.69	34.06	0.019	0.33	1.3	0.18	0.12	1.054	0.016	0.955	0.721	91.835
431/6	54.48	13.17	20.19	0.005	0.21	0.22	0.12	0.08	3.949	0.018	0.162	0.459	93.062
431/7	63.54	9.56	16.16	0.004	0.15	0.14	0.08	0.04	4.082	0.015	0.103	0.328	94.201
F15	32.18	12.44	47.9	0.047	0.13	0.1	0.11	0.08	0.6	0.02	0.073	0.284	93.964
F16	29.48	12.327	51.41	0.026	0.16	0.09	0.07	0.09	0.667	0.021	0.066	0.349	94.757
F17	32.69	13.83	43.68	0.03	0.21	0.15	0.12	0.13	0.716	0.02	0.110	0.459	92.145
F115	35.05	12.69	40.29	0.006	0.1	0.01	0.01	0.05	0.371	0.008	0.007	0.218	88.811

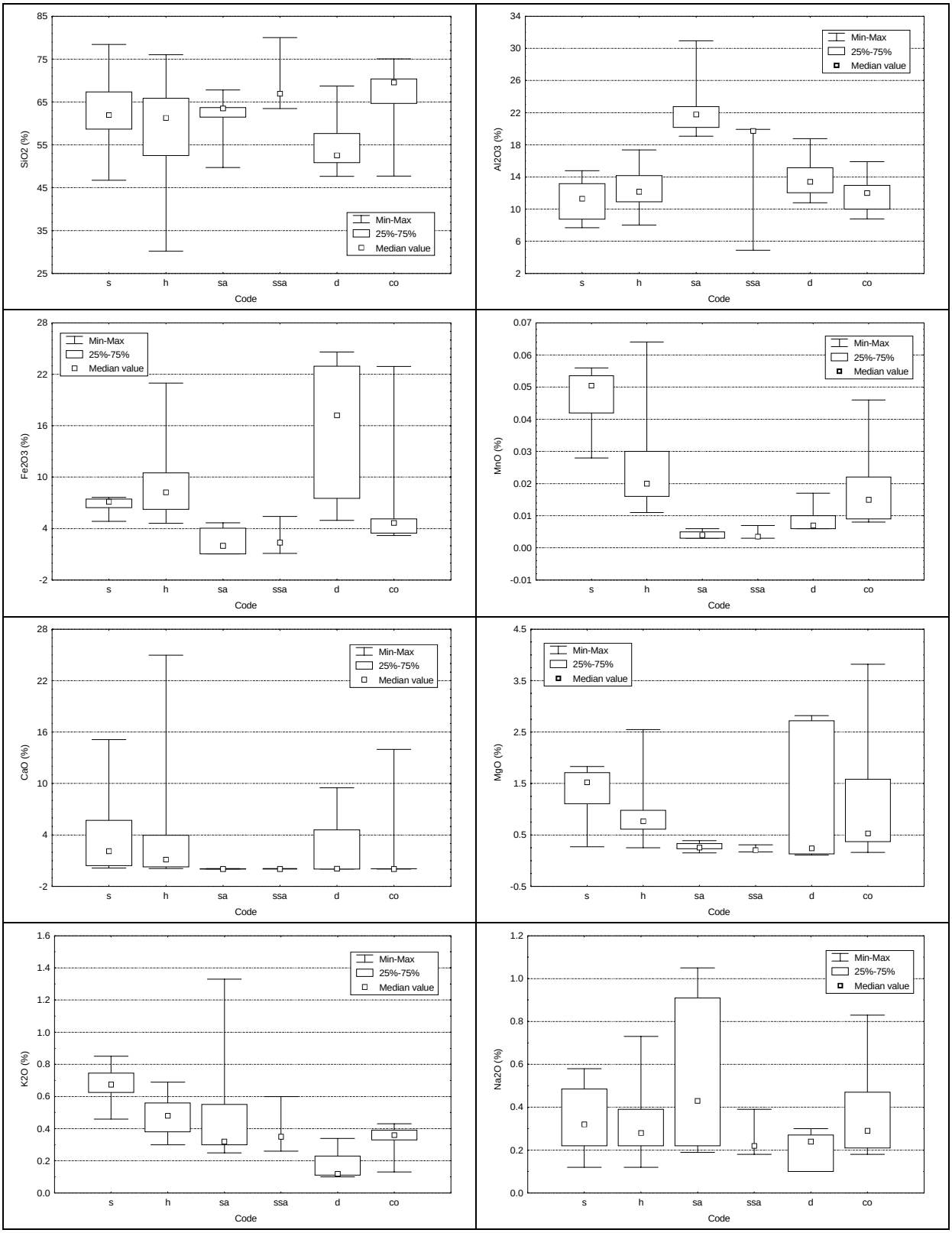

Figure A4.1: Box-Whisker plots on selected element concentrations in transported overburden, Federal. Key: s – soil, h – hardpanised colluvium, sa – clay saprolite, ssa – silicified clay saprolite, d –duricrust colluvium, co – silicified colluvium.

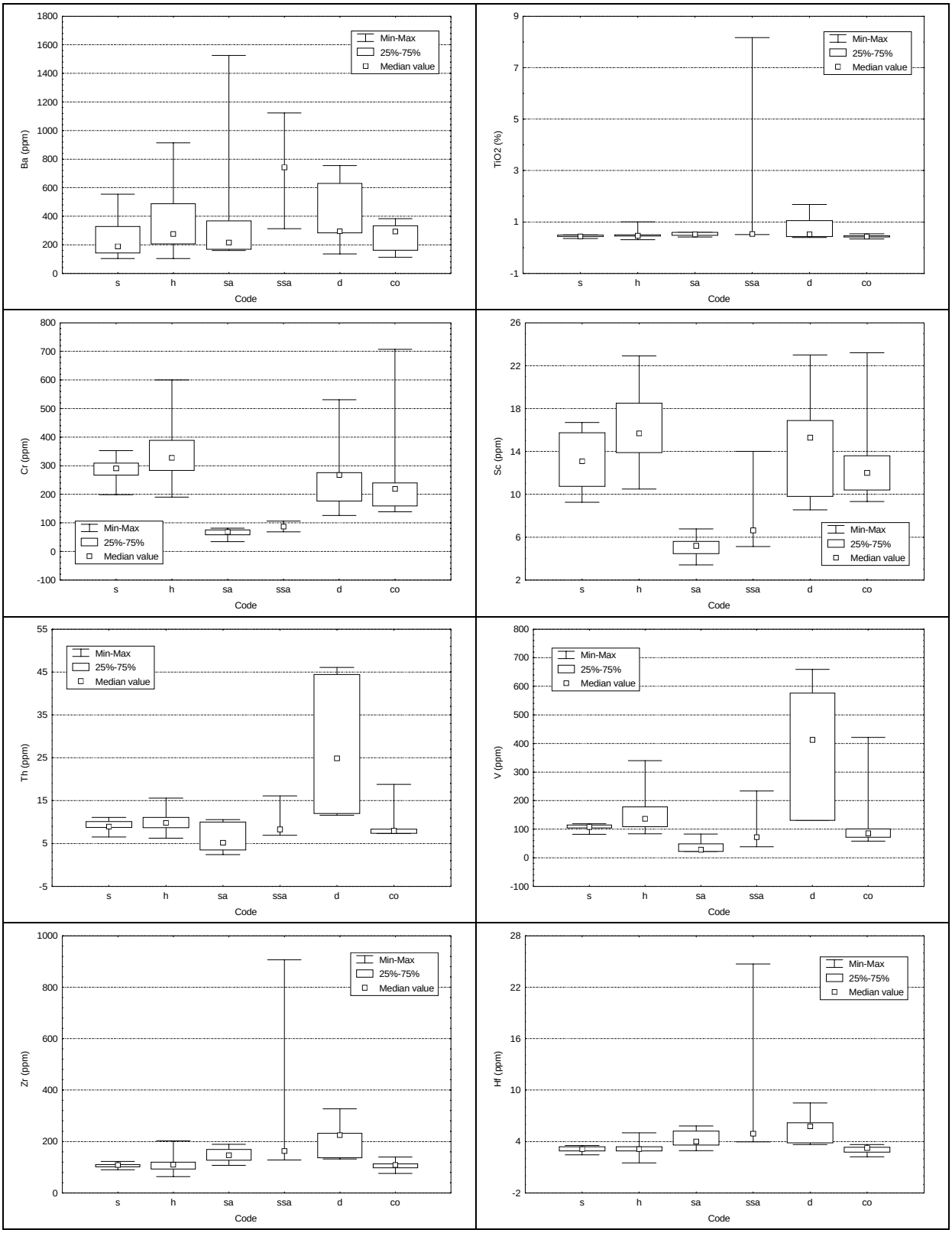

Figure A4.1: Box-Whisker plots on selected element concentrations in transported overburden, Federal (Contd).

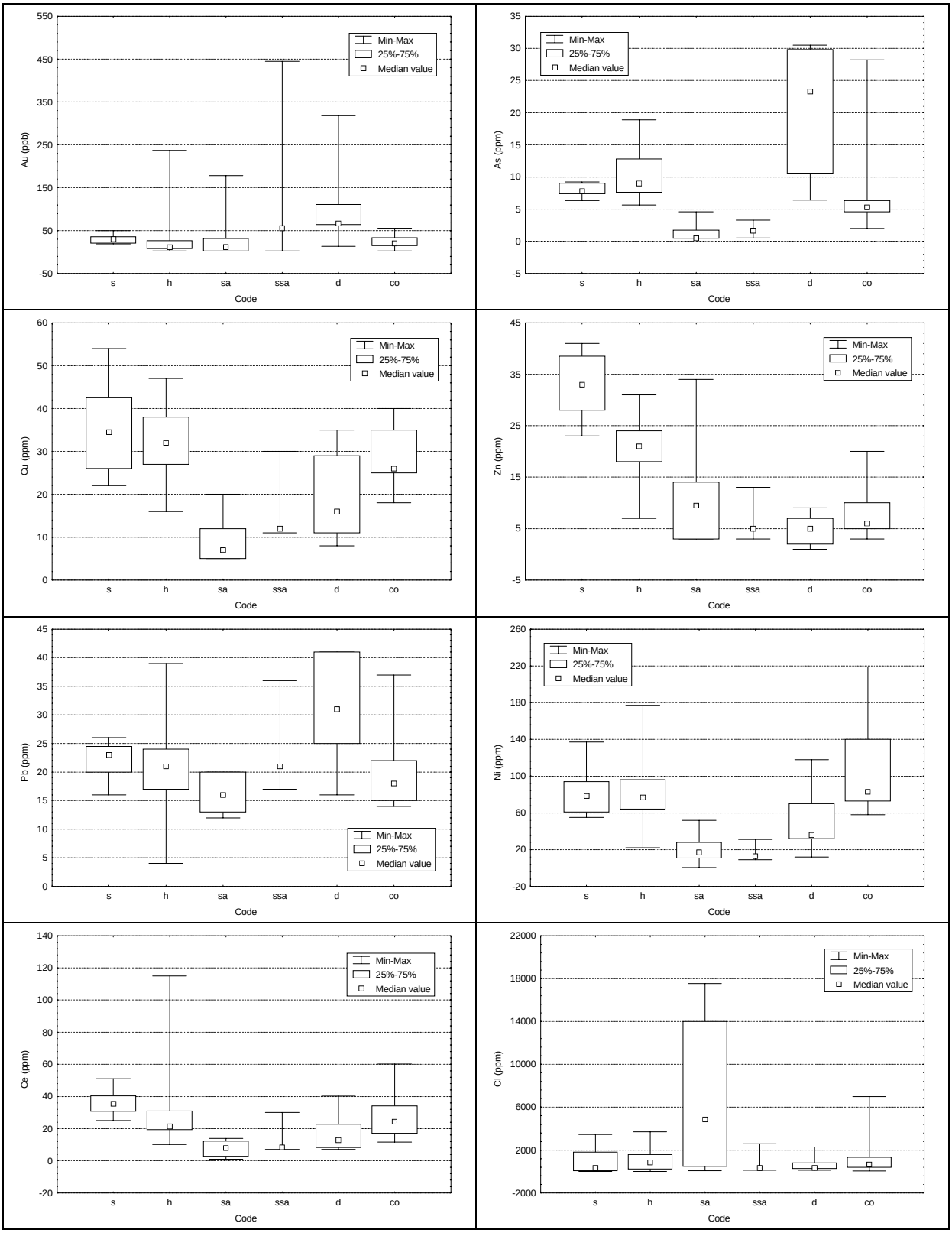

Figure A4.1: Box-Whisker plots on selected element concentrations in transported overburden, Federal (Contd).

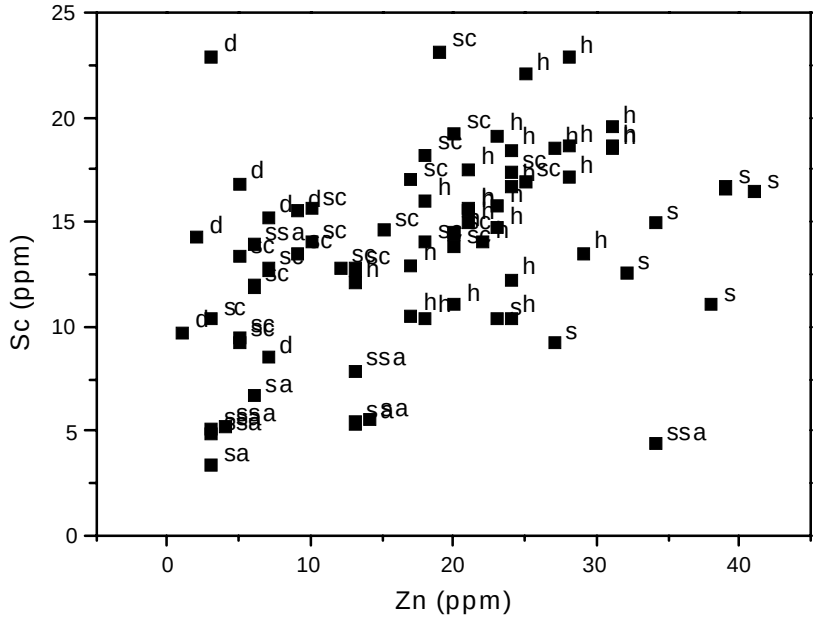

Figure A4.2: Zn-Sc plot of transported overburden, Federal. Key: S – soil; H – hardpanised colluvium; SC – silicified colluvium; D – duricrust colluvium; SSA – silicified clay saprolite; SA – clay saprolite.

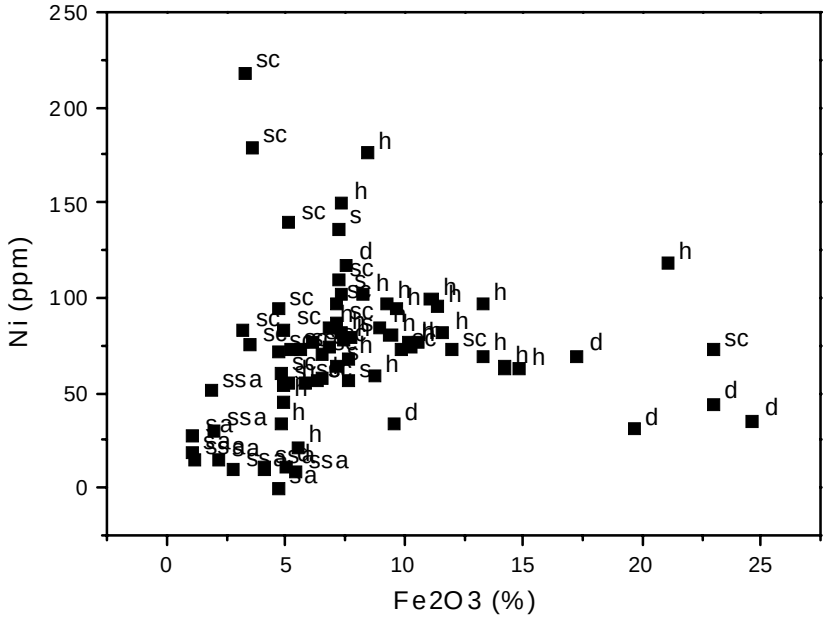

Figure A4.3: Fe_2O_3-Ni plot of transported overburden, Federal. Key: S – soil; H – hardpanised colluvium; SC – silicified colluvium; D – duricrust colluvium; SSA – silicified clay saprolite; SA – clay saprolite.

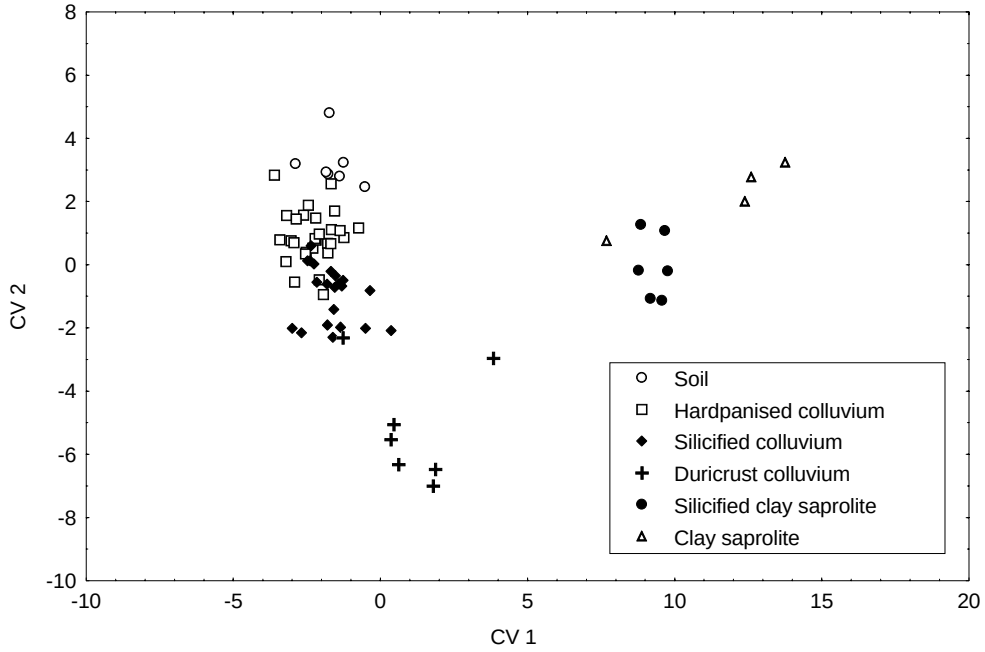

Figure A4.4: Discriminant analysis of transported overburden geochemistry, canonical variate 1 vs. canonical variate 2, Federal.

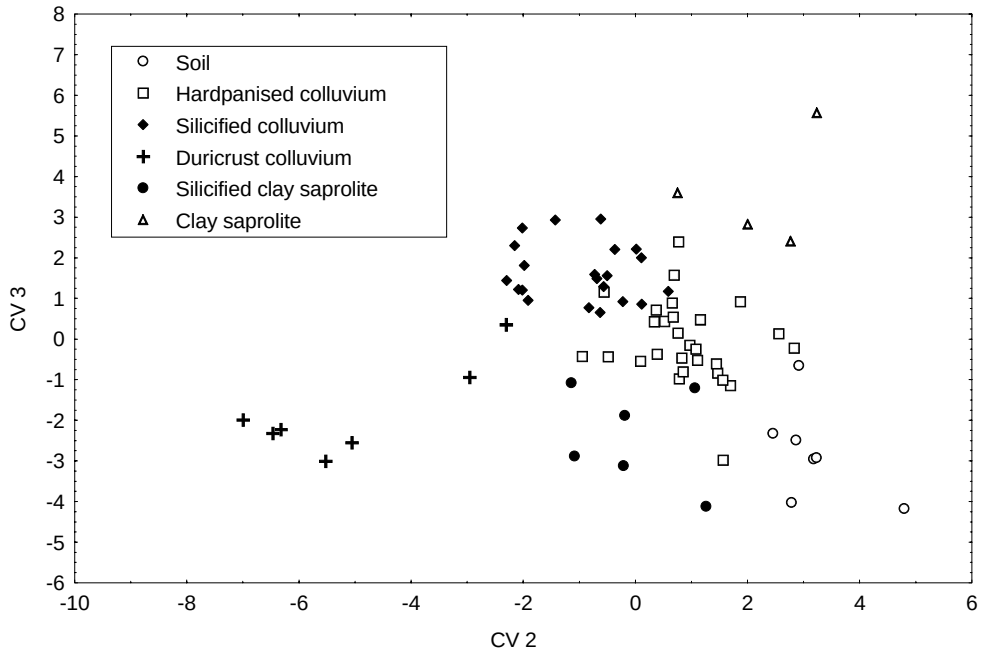

Figure A4.5: Discriminant analysis of transported overburden geochemistry, canonical variate 2 vs. canonical variate 3, Federal.

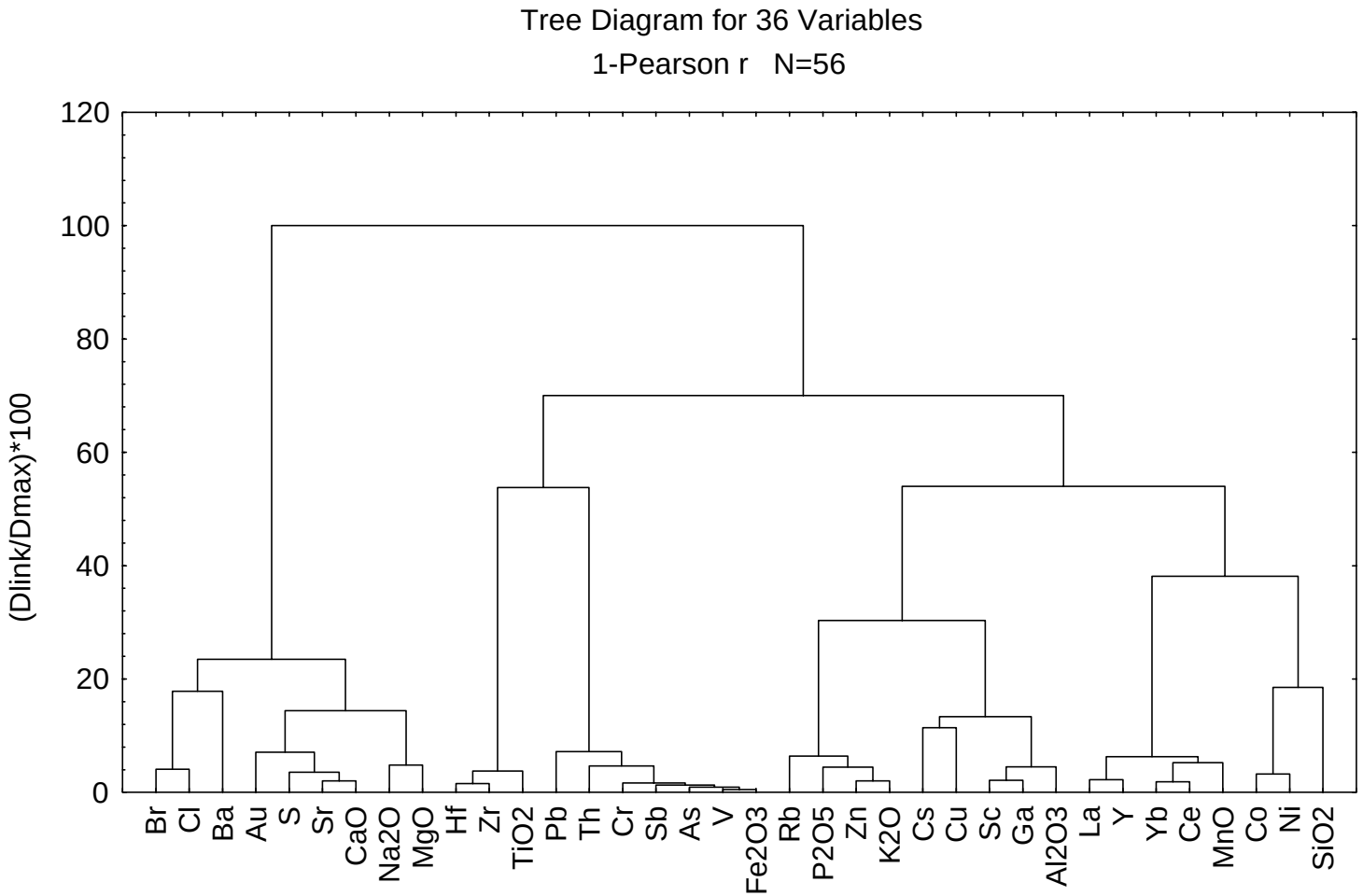

Figure A4.6: Associations of elements within soil, hardpanised and silicified colluvium, Federal.