

Appendix 1

A1.1 Standard Reference Materials

NIST 2711a- Montana II Soil

The certificate for the reference material can be located at: <https://www-s.nist.gov/srmors/certificates/2711A.pdf>

2711a	Element	Value (ppm unless otherwise stated)
	Antimony	23.8
	Arsenic	107
	Barium	730
	Boron	50
	Cadmium	54.1
	Calcium	2.42 %
	Cerium	70
	Cesium	6.7
	Chromium	52.3
	Cobalt	9.89
	Copper	140
	Dysprosium	5
	Europium	<i>1.1</i>
	Gadolinium	5
	Hafnium	9.2
	Indium	1
	Iron (total)	2.82 %
	Lanthanum	38
	Lead	0.140 %
	Lutetium	0.5
	Magnesium	1.07 %
	Manganese	675
	Mercury	7.42
	Neodymium	29
	Nickel	21.7
	Phosphorus	842
	Potassium	2.53 %
	Rubidium	<i>120</i>
	Samarium	5.93
	Scandium	8.5
	Selenium	2
	Silicon	31.4 %
	Silver	6
	Sodium	1.20 %
	Strontium	242
	Tantalum	1
	Terbium	0.8
	Thallium	3
	Thorium	<i>15</i>
	Titanium	0.317 %
	Uranium	3.01
	Vanadium	80.7
	Ytterbium	3
	Zinc	414
	Aluminum	6.72 %
- Certified values are normal font - Reference values are italicized - Values in parentheses are for information only		

Appendix 1

NIST 2709a- San Joaquin Soil

The certificate for the reference material can be located at:

<https://www-s.nist.gov/srmors/certificates/2709A.pdf>

2709a	Element	Value (ppm unless otherwise stated)
	Antimony	1.55
	Arsenic	<i>10.5</i>
	Barium	979
	Boron	74
	Cadmium	0.371
	Calcium	1.91 %
	Cerium	<i>42</i>
	Cesium	5.0
	Chromium	130
	Cobalt	12.8
	Copper	33.9
	Dysprosium	3
	Europium	<i>0.83</i>
	Gadolinium	3.0
	Hafnium	4
	Iron (total)	3.36 %
	Lanthanum	<i>21.7</i>
	Lead	17.3
	Lutetium	0.3
	Magnesium	1.46 %
	Manganese	529
	Mercury	0.9
	Neodymium	17
	Nickel	85
	Phosphorus	0.0688 %
	Potassium	2.11 %
	Rubidium	99
	Samarium	4
	Scandium	<i>11.1</i>
	Selenium	1.5
	Silicon	30.3 %
	Sodium	1.22 %
	Strontium	239
	Tantalum	0.7
	Terbium	0.5
	Thallium	<i>0.58</i>
	Thorium	<i>10.9</i>
	Titanium	0.336 %
	Uranium	3.15
	Vanadium	110
	Ytterbium	2
	Zinc	<i>103</i>
	Zirconium	195
	Aluminum	7.37 %
- Certified values are normal font - Reference values are italicized - Values in parentheses are for information only		

Appendix 1

NIST1646a- Estuarine sediment

The certificate for the reference material can be located at:

<https://www-s.nist.gov/srmors/certificates/1646A.pdf>

1646a	Element	Value (ppm unless otherwise stated)
	Antimony	0.3
	Arsenic	6.23
	Barium	2.10
	Beryllium	<1
	Cadmium	0.148
	Calcium	0.519 %
	Cerium	34
	Chromium	40.9
	Cobalt	5
	Copper	10.01
	Gallium	5
	Iron (total)	2.008 %
	Lanthanum	17
	Lead	11.7
	Lithium	18
	Magnesium	0.388 %
	Manganese	234.5
	Mercury	0.04
	Molybdenum	1.8
	Neodymium	15
	Nickel	23
	Phosphorus	0.027 %
	Potassium	0.864 %
	Rubidium	38
	Scandium	5
	Selenium	0.193
	Silicon	40.0 %
	Silver	<0.3
	Sodium	0.741 %
	Strontium	68
	Sulfur	0.352 %
	Thallium	<0.5
	Thorium	5.8
	Titanium	0.456 %
	Uranium	2.0
	Vanadium	44.84
	Zinc	48.9
	Aluminum	2.297 %
- Certified values are normal font - Reference values are italicized - Values in parentheses are for information only		

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By Natural Resources Canada. The certificate for the reference material can be located at:

<http://www.nrcan.gc.ca/mining-materials/certified-reference-materials/certificate-price-list/8137>

Element/ parameter	Value (ppb unless otherwise stated, for total extraction)
As	111
Au (ppb)	5
Ba	395
Be	3.7
Bi	40
Br	8.6
Ce	78
Co	8
Cr	53
Cs	12
Cu	237
Eu	<1.0
Er	3.2
Fe (%)	3.97
Hf	10
La	41
Li	30
LOI (500°C) %	4.4
Lu	0.5
Mn	490
Mo	16
Nb	15
Nd	30
Ni	17
P	880
Pb	50
Rb	161
S (%)	0.08
Sb	1.0
Sc	10
Sm	6.1
Sr	109
Ta	1.6
Tb	1.1
Th	17.4
Ti	4840
U	5.0
V	67
W	204
Y	33
Yb	3.4
Zn	70
Zr	385

Appendix 1

Fluka Analytical/ Sigma-Aldrich Trace Metals Clay 2

Analyte	Units	Certified Values	Standard deviation	Confidence interval	Prediction Interval
Aluminum, Al Traceable to: NIST SRM 3101a Lot 992003	mg/Kg	12600 ± 1350	5390	11200 - 14000	1940 - 23300
Antimony, Sb Traceable to: NIST SRM 3102a Lot 061229	mg/Kg	105 ± 16.1	65.4	87.6 - 122	0.00 - 234
Arsenic, As Traceable to: NIST SRM 3103a Lot 010713	mg/Kg	79.4 ± 1.42	5.84	78.1 - 80.8	67.9 - 91.0
Barium, Ba Traceable to: NIST SRM 3104a Lot 070222	mg/Kg	391 ± 9.22	37.5	382 - 401	317 - 465
Beryllium, Be Traceable to: NIST SRM 3105a Lot 892707	mg/Kg	304 ± 17.4	19.1	299 - 308	266 - 341
Boron, B Traceable to: NIST SRM 3107 Lot 070514	mg/Kg	157 ± 4.51	15	153 - 162	128 - 187
Cadmium, Cd Traceable to: NIST SRM 3108 Lot 060531	mg/Kg	48.3 ± 0.796	3.33	47.6 - 49.1	41.8 - 54.9
Calcium, Ca Traceable to: NIST SRM 3109a Lot 050825	mg/Kg	8320 ± 166	609	8150 - 8480	7110 - 9520
Chromium, Cr (total) Traceable to: NIST SRM 3112a Lot 990607	mg/Kg	171 ± 3.22	11.9	168 - 174	147 - 194
Cobalt, Co Traceable to: NIST SRM 3113 Lot 000630	mg/Kg	59.2 ± 1.05	4.23	58.2 - 60.2	50.9 - 67.6
Copper, Cu Traceable to: NIST SRM 3114 Lot 891811	mg/Kg	327 ± 5.24	20.8	322 - 332	286 - 368
Iron, Fe Traceable to: NIST SRM 3126a Lot 051031	mg/Kg	6490 ± 162	597	6340 - 6650	5310 - 7670
Lead, Pb Traceable to: NIST SRM 3128 Lot 030721	mg/Kg	181 ± 3.53	15.3	177 - 184	151 - 211
Lithium, Li Traceable to: NIST SRM 3129a	mg/Kg	172 ± 16.3	35.3	155 - 188	97.1 - 246
Magnesium, Mg Traceable to: NIST SRM 3131a Lot 050302	mg/Kg	1440 ± 47.3	182	1390 - 1490	1080 - 1800
Manganese, Mn Traceable to: NIST SRM 3132 Lot 050429	mg/Kg	408 ± 21.8	91.4	385 - 430	385 - 430
Mercury, Hg Traceable to: NIST SRM 3133 Lot 061204	mg/Kg	4.08 ± 0.0939	0.374	3.99 - 4.17	3.34 - 4.82

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Molybdenum, Mo Traceable to: NIST SRM 3134 Lot 891307	mg/Kg	156 ± 3.22	12.2	153 - 159	132 - 181
	mg/Kg				
Nickel, Ni Traceable to: NIST SRM 3136 Lot 000612	mg/Kg	76.0 ± 1.41	5.82	74.6 - 77.4	64.5 - 87.5
Potassium, K Traceable to: NIST SRM 3141a Lot 051220	mg/Kg	7790 ± 163	579	7630 - 7950	6650 - 8940
Selenium, Se Traceable to: NIST SRM 3149 Lot 992106	mg/Kg	76.9 ± 2.56	11	74.4 - 79.4	55.2 - 98.5
Silicon, Si Traceable to: NIST SRM 3150	mg/Kg	453 ± 256	566	236 - 670	0.00 - 1640
Silver, Ag Traceable to: NIST SRM 3151 Lot 992212	mg/Kg	29.1 ± 0.708	2.83	28.4 - 29.7	23.5 - 34.6
Sodium, Na Traceable to: NIST SRM 3152a Lot 010728	mg/Kg	857 ± 26.7	99.9	829 - 885	659 - 1050
Strontium, Sr Traceable to: NIST SRM 3153a Lot 990906	mg/Kg	283 ± 15.6	49.4	267 - 299	185 - 381
Thallium, Tl Traceable to: NIST SRM 3158 Lot 993012	mg/Kg	192 ± 4.34	17.3	188 - 196	158 - 226
Tin, Sn Traceable to: NIST SRM 3161a Lot 070330	mg/Kg	218 ± 5.95	18.9	212 - 224	181 - 256
Titanium, Ti Traceable to: NIST SRM 3162a Lot 060808	mg/Kg	177 ± 15.4	49.2	162 - 192	79.0 - 274
Vanadium, V Traceable to: NIST SRM 3165 Lot 992706	mg/Kg	213 ± 4.08	16.6	209 - 217	180 - 246
Zinc, Zn Traceable to: NIST SRM 3168a Lot 001402	mg/Kg	256 ± 3.79	15.1	252 - 260	226 - 286
pH Traceable to: NIST SRM 191c	Units	4.34 ± 0.119	0.22	4.21 - 4.47	3.86 - 4.83
Phosphorus, P Traceable to: NIST SRM 3139a	mg/Kg	414 ± 25.1	64.2	385 - 444	279 - 550
Sulfur, S	mg/Kg	471 ± 71.2	78.1	396 - 547	281 - 661

Appendix 1

Fluka Analytical/ Sigma-Aldrich Trace Metals Loamy Clay 2

Analyte	Units	Certified Values	Standard deviation	Confidence interval	Prediction Interval
Aluminum, Al Traceable to: NIST SRM 3101a Lot 992003	mg/Kg	8180 ±1870	2240	6520-9840	2970-13400
Antimony, Sb Traceable to: NIST SRM 3102a Lot 061229	mg/Kg	88.5±56	67.3	28.4-149	0.0-248
Arsenic, As Traceable to: NIST SRM 3103a Lot 010713	mg/Kg	149±13.3	17.2	137-162q	110-189
Barium, Ba Traceable to: NIST SRM 3104a Lot 070222	mg/Kg	145±9.54	13.3	133-156	114-176
Beryllium, Be Traceable to: NIST SRM 3105a Lot 892707	mg/Kg	30.8±1.5	1.81	29.5-32.1	26.7-35
Boron, B Traceable to: NIST SRM 3107 Lot 070514	mg/Kg	143±28.7	28.4	115-171	73.2-213
Cadmium, Cd Traceable to: NIST SRM 3108 Lot 060531	mg/Kg	62.6±6.19	8.6	57.4-67.9	43.3-81.9
Chromium, Cr (total) Traceable to: NIST SRM 3112a Lot 990607	mg/Kg	128±18.2	23.6	111-146	74.2-183
Cobalt, Co Traceable to: NIST SRM 3113 Lot 000630	mg/Kg	42.0±5.4	7.5	36.5-47.6	24.9-59.2
Copper, Cu Traceable to: NIST SRM 3114 Lot 891811	mg/Kg	94.3±7.7	11.3	87.0-102	68.9-120
Iron, Fe Traceable to: NIST SRM 3126a Lot 051031	mg/Kg	19400±1660	2450	17800-20900	13900-24800
Lead, Pb Traceable to: NIST SRM 3128 Lot 030721	mg/Kg	109±9.06	13.4	99.5-118	78.6-139
Magnesium, Mg Traceable to: NIST SRM 3131a Lot 050302	mg/Kg	1490±145	174	1330-1650	1080-1910
Manganese, Mn Traceable to: NIST SRM 3132 Lot 050429	mg/Kg	222±18.3	25.5	203-240	163-280
Mercury, Hg Traceable to: NIST SRM 3133 Lot 061204	mg/Kg	10.7±2.24	2.47	8.48-13	4.8-16.7
Molybdenum, Mo	mg/Kg	9.08±2.13	2.35	6.94-11.2	3.43-14.7

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Traceable to: NIST SRM 3134 Lot 891307					
Nickel, Ni Traceable to: NIST SRM 3136 Lot 000612	mg/Kg	75.7±11	16.2	64.6-86.8	39.2-112
Potassium, K Traceable to: NIST SRM 3141a Lot 051220	mg/Kg	3690±446	579	3250-4130	2350-5020
Selenium, Se Traceable to: NIST SRM 3149 Lot 992106	mg/Kg	107±16.9	21.9	91.5-123	56.9-158
Silver, Ag Traceable to: NIST SRM 3151 Lot 992212	mg/Kg	78.9±19.7	27.3	59.2-98.6	16.7-141
Sodium, Na Traceable to: NIST SRM 3152a Lot 010728	mg/Kg	5480±688	827	4800-6160	3530-7420
Strontium, Sr Traceable to: NIST SRM 3153a Lot 990906	mg/Kg	51.7±17.7	17.5	33.7-69.7	8.13-95.3
Thallium, Tl Traceable to: NIST SRM 3158 Lot 993012	mg/Kg	80.1±6.85	8.24	73.3-87.0	60.8-99.5
Tin, Sn Traceable to: NIST SRM 3161a Lot 070330	mg/Kg	83.6±6.57	7.23	77.2-90	66.3-101
Titanium, Ti Traceable to: NIST SRM 3162a Lot 060808	mg/Kg	105±156	135	0.0-267	0.0-457
Vanadium, V Traceable to: NIST SRM 3165 Lot 992706	mg/Kg	95.3±10.2	14.2	85.7-105	63.1-128
Zinc, Zn Traceable to: NIST SRM 3168a Lot 001402	mg/Kg	403±41.5	57.6	360-446	271-534

A1.2 Avaldsnes

A1.2.1 Moisture content

Sample Number	Layer (depth is core)	Core sub-sample (CS) or surface sample (SS)	Notes	Start weight (g)	End weight (g)	moisture loss (g)	Loss as % of start weight
25011	0.19-0.23m	CS	lower A	25.21	20.04	5.17	20.51
25012	0.24-0.28	CS	A/anthro	19.43	14.65	4.78	24.60
25014	0.2-0.24m	CS	Ap	13	9.88	3.12	24.00
25015	0.27-0.3m	CS	poss feature	12	8.13	3.87	32.25
25015	0.19-0.23	CS	B	11.3	7.99	3.31	29.29
25015	0.24-0.27m	CS	B	18.12	12.61	5.51	30.41
25018	0.2-0.23	CS	Bw/anthro upper B	16.82	12.03	4.79	28.48
25018	0.27-0.3m	CS	Bw	17.35	13.21	4.14	23.86
25019	0.37-0.42	CS	lower Bp	15.95	13.1	2.85	17.87
25019	0.19-0.22	CS	lower A	14.31	10.68	3.63	25.37
25020	0.37-0.4m	CS	tree root	13.82	10.07	3.75	27.13
25055	0.25-0.3	CS	Bw	21.07	16.23	4.84	22.97
25055	0.6-0.65	CS	bA	35.04	28.26	6.78	19.35
25055	0.15-0.18	CS	A	24.52	18.87	5.65	23.04
25055	0.4-0.45	CS	Bw	30.44	24.36	6.08	19.97
25055	0.9-0.95	CS	C/R	31.77	25.61	6.16	19.39
25055	0.81-0.85	CS	C	43.72	34.85	8.87	20.29
25088	0.4-0.5	CS	Bw	19.54	14.52	5.02	25.69
25088	0.6-0.65	CS	bA/anthro	18.33	10.74	7.59	41.41
25088	0.2-0.24	CS	lower A	26.72	20.92	5.8	21.71
25088	0.75-0.8	CS	bA	23.11	13.52	9.59	41.50
25088	0.85-0.89	CS	C	29.73	24.66	5.07	17.05
25096	0.25-0.3	CS	modern A	24.25	19.23	5.02	20.70
26598	0.8-0.85	CS	B(p)	19.37	14.03	5.34	27.57
26957	0.6-0.65m	CS	feature	16.72	12.13	4.59	27.45
26957	0.8-0.85m	CS	feature?	22.88	17.37	5.51	24.08
26957	0.1-0.15m	CS	Ap	22.35	15.28	7.07	31.63
26957	0.45-0.5	CS	A/B	22.54	16.86	5.68	25.20
26958	0.2-0.25	CS	Ap	16.65	11.94	4.71	28.29
26958	0.95-1.0	CS	B(p)	17.75	14.42	3.33	18.76
26958	0.6-0.62	CS	B(p)	20.84	14.82	6.02	28.89
26958	0.37-0.4	CS	Ap base	22.16	16.58	5.58	25.18

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Sample Number	Layer (depth is core)	Core sub-sample (CS) or surface sample (SS)	Notes	Start weight (g)	End weight (g)	moisture loss (g)	Loss as % of start weight
26960	0.84-0.88	CS	anthro w/mortar	19.54	14.35	5.19	26.56
26960	0.25-0.3	CS	Ap	25.59	19.4	6.19	24.19
26960	0.69-0.73	CS	anthro	20.65	16.59	4.06	19.66
26960	0.54-0.58	CS	anthro	17.46	13.21	4.25	24.34
26960	0.47-0.5	CS	anthro	22.4	18.08	4.32	19.29
26962	0.25-0.3m	CS	Ap	26.63	19.28	7.35	27.60
26962	0.45-0.5	CS	Ap	32.51	23.37	9.14	28.11
26964	0.45-0.5	CS	Ap	19.92	15.55	4.37	21.94
26964	0.26-0.3	CS	Ap	26.72	20.21	6.51	24.36
26970	0.15-0.2	CS	Ap	21.63	16.12	5.51	25.47
26970	0.4-0.45	CS	A/B modern	29.32	22.93	6.39	21.79
26970	0.55-0.6	CS	Upper C	18.16	15.12	3.04	16.74
26973	0.15-0.2	CS	Ap	28.69	20.66	8.03	27.99
26973	0.4-0.44	CS	2Ap	18.28	14.82	3.46	18.93
32657	0.2-0.24	CS	anthro	16.93	14.35	2.58	15.24
32657	0.12-0.15	CS	anthro	15.91	13.49	2.42	15.21
32658	0.08-0.11m	CS	disturbed anthro	25.49	20.77	4.72	18.52
32989	0.36-0.39	CS		16.65	12.21	4.44	26.67
32989	0.2-0.24	CS		19.69	16.06	3.63	18.44
32989	0.42-0.45	CS		16.23	11.96	4.27	26.31
32989	0.1-0.15	CS		22.66	18.46	4.2	18.53
32990	0.4-0.45	CS	lower Bw/anthro	19.86	15.83	4.03	20.29
32990	0.21-0.25	CS	Bw/lower anthro	19.96	15.86	4.1	20.54
32990	0.53-0.58	CS	B/C interface anthro	23.82	18.82	5	20.99
32990	0.15-0.21	CS	anthro/up per B	29.05	23.77	5.28	18.18
32990	0.45-0.48	CS	Bw1/anthro	20.94	17.02	3.92	18.72
32990	0.1-0.15	CS	anthro	29.96	24.21	5.75	19.19
32990	0.48-0.53m	CS	Bw1/anthro	22.8	18.74	4.06	17.81
32991	0.15-0.18	CS	anthro	19.19	15.32	3.87	20.17
32991	0.08-0.1	CS	anthro	17.51	14.37	3.14	17.93
32991	0.25-0.27	CS	Bw/p	24.74	21.98	2.76	11.16
32991	0.2-0.23	CS	anthro	24.31	17.56	6.75	27.77

Appendix 1

Sample Number	Layer (depth is core)	Core sub-sample (CS) or surface sample (SS)	Notes	Start weight (g)	End weight (g)	moisture loss (g)	Loss as % of start weight
53024		SS		13.78	11.79	1.99	14.44
53026		SS		0	0	0	
53027		SS		14.37	12.63	1.74	12.11
53028		SS		16.41	13.21	3.2	19.50
53029		SS		0	0	0	
53030		SS		17.89	14.81	3.08	17.22
53031		SS		17.06	14.22	2.84	16.65
53033		SS		18.89	16.67	2.22	11.75
53034		SS		15.2	12.78	2.42	15.92
53035		SS		15.44	12.27	3.17	20.53
53036		SS		20.1	17.16	2.94	14.63
53037		SS		21.86	18.18	3.68	16.83
53038		SS		18.05	15	3.05	16.90
53039		SS		16.03	12.65	3.38	21.09
53040		SS		16.15	13.72	2.43	15.05
53041		SS		15.2	12.54	2.66	17.50
53042		SS		17.87	14.61	3.26	18.24
53043		SS		16.59	14.28	2.31	13.92
53044	25600/ 52702	SS		0	0	0	
53045	52702	SS		13.41	12.15	1.26	9.40
53047	52702	SS		13.03	10.06	2.97	22.79
53049		SS	Bk, near bedrock	17.56	14.56	3	17.08
53050		SS		15.33	12.16	3.17	20.68
53051		SS		16.62	13.48	3.14	18.89
53052		SS		14.62	11.78	2.84	19.43
53053		SS		16.29	13.99	2.3	14.12
53054		SS		19.52	15.87	3.65	18.70
53057		SS		18.07	15.62	2.45	13.56
53058	11999	SS		18.18	15.79	2.39	13.15
53059	11999	SS		15.41	12.47	2.94	19.08
53060	11999	SS		16.75	13.42	3.33	19.88
53062	11999	SS		16.08	12.62	3.46	21.52
53064		SS		14.94	12.06	2.88	19.28
53065	25600	SS		20.05	17.23	2.82	14.06
53066		SS		14.23	12.22	2.01	14.13
53070	11999	SS		15.58	13.45	2.13	13.67
53071		SS		24.46	20.41	4.05	16.56
53072		SS		15.36	13.56	1.8	11.72

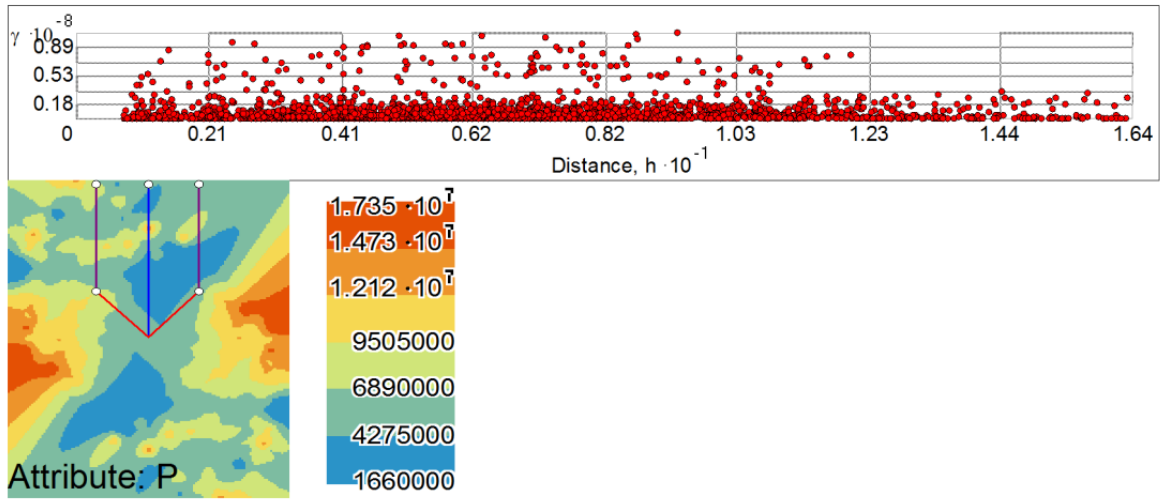
Appendix 1

Sample Number	Layer (depth is core)	Core sub-sample (CS) or surface sample (SS)	Notes	Start weight (g)	End weight (g)	moisture loss (g)	Loss as % of start weight
53076		SS		15.59	12.54	3.05	19.56
53080		SS		15.92	13.05	2.87	18.03
53081		SS		13.59	10.02	3.57	26.27
53092		SS		16.62	13.57	3.05	18.35
53102		SS		13.12	11.32	1.8	13.72
53106		SS		23.22	20.11	3.11	13.39
25007A	0.1-0.15m			0	0	0	
25007A	0.2-0.25	CS	A	16.21	10.76	5.45	33.62
25007A	0.05-0.1m	CS		21.16	15.7	5.46	25.80
25011A	0.24-0.28	CS	A/B	18.58	14.08	4.5	24.22
25016A	0.15-0.2m	CS		22.47	15.87	6.6	29.37
25016A	0.1-0.15m	CS		18.83	13.58	5.25	27.88
25020A	0.19-0.22	CS	A horizon	14.52	11.01	3.51	24.17
32770A	0.05-0.08m	CS		19.24	16.19	3.05	15.85
32770A	0.28-0.3	CS	C horizon	36.57	33.23	3.34	9.13
32770A	0.08-0.13m	CS	lower Bw	20.13	17.51	2.62	13.02
						Mean=	20.92
						STDEV	5.96
						plus 1 STDEV	26.88
						minus 1 STDEV	14.96

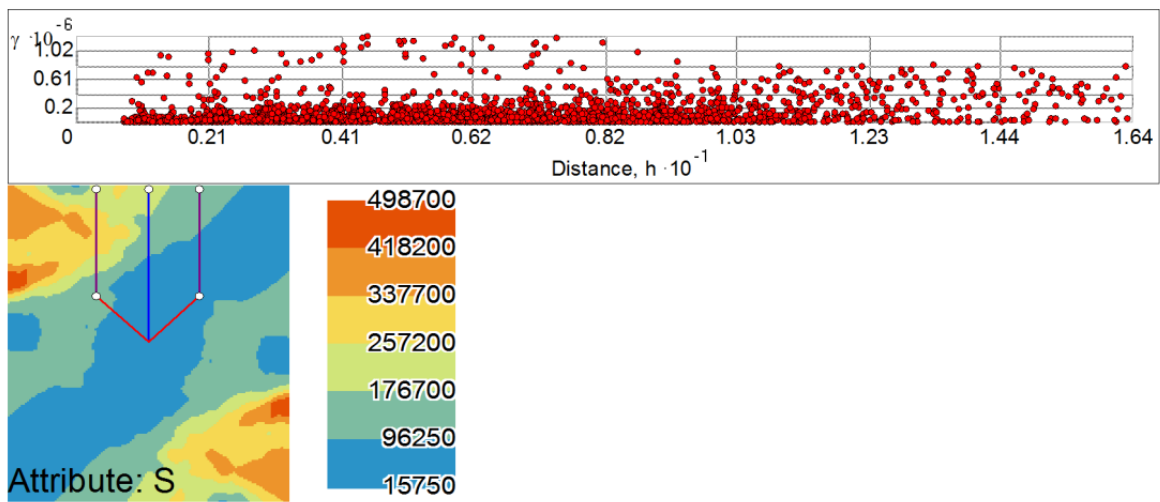
Table A1. 1. The moisture loss in % and grams for selected samples at Avaldsnes after drying for 24 hours at 40°C. Descriptive statistics are at the end of the table. Cells highlighted in deep orange indicate values over 1SRDEV from the mean, cells in light orange indicate values less than 1STDEV below the mean. Samples with no associated values indicate an error in processing, therefore values were not included.

A1.2.2 Semivariograms for elements of interest after PCA

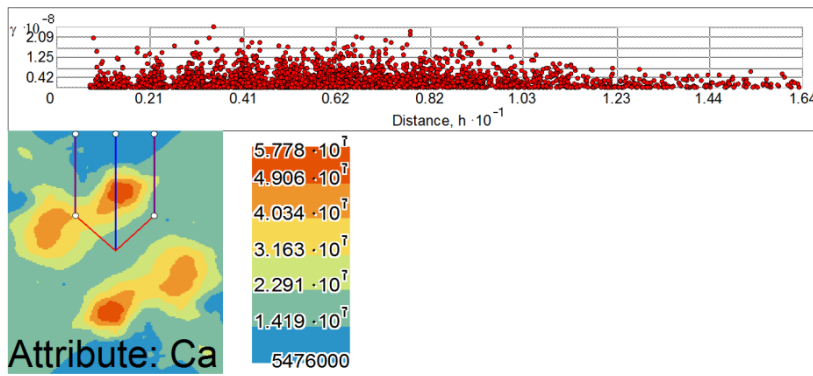
Semivariogram



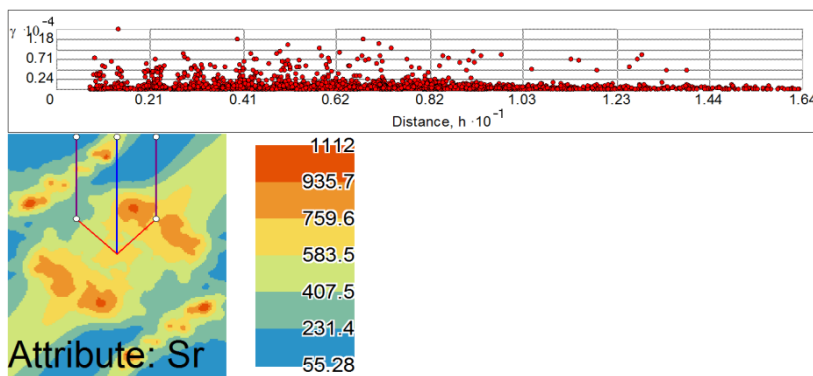
Semivariogram



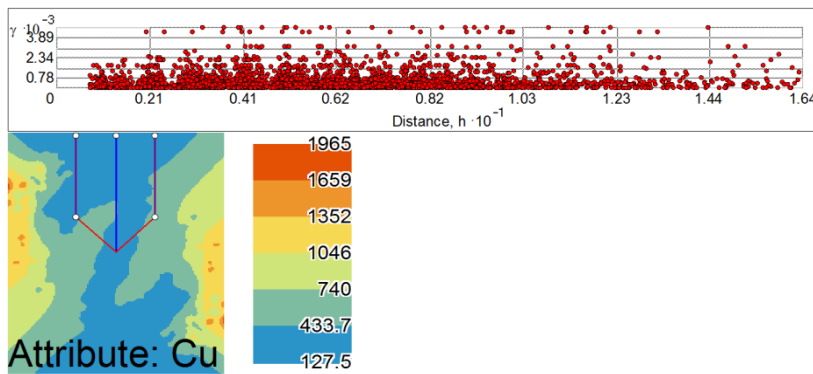
Semivariogram



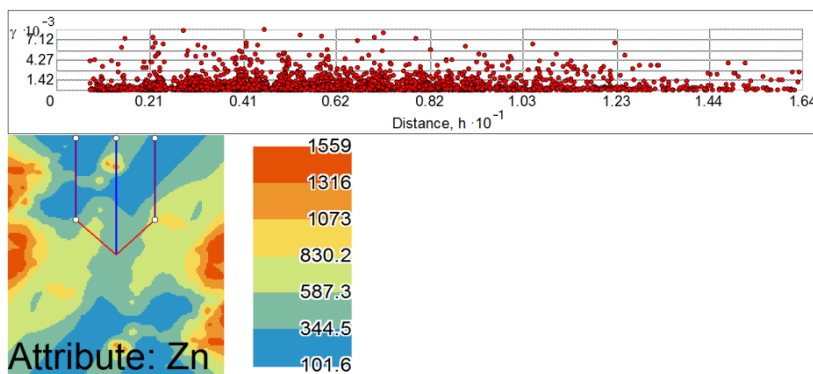
Semivariogram



Semivariogram



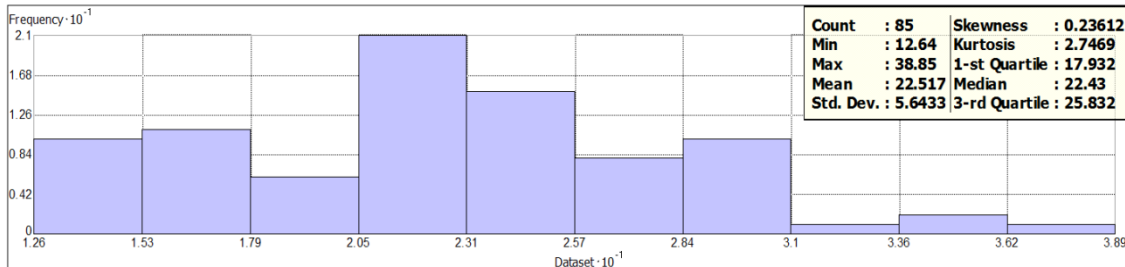
Semivariogram



A1.2.3 Histograms

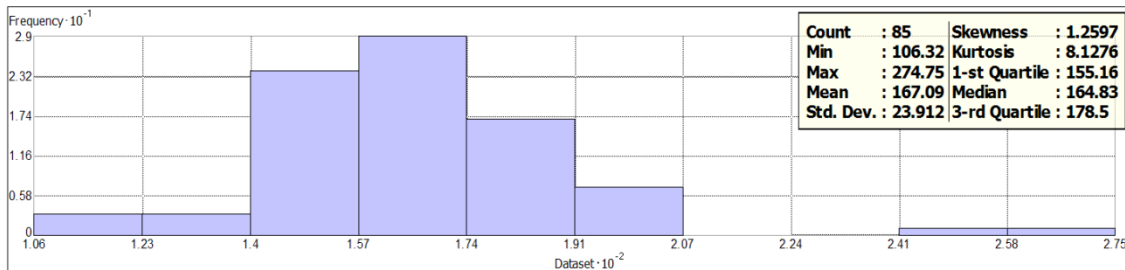
The following histograms represent the calibrated pXRF data used for Co-kriging in chapter 5, figures 5.16-5.18.

Histogram
Transformation: None



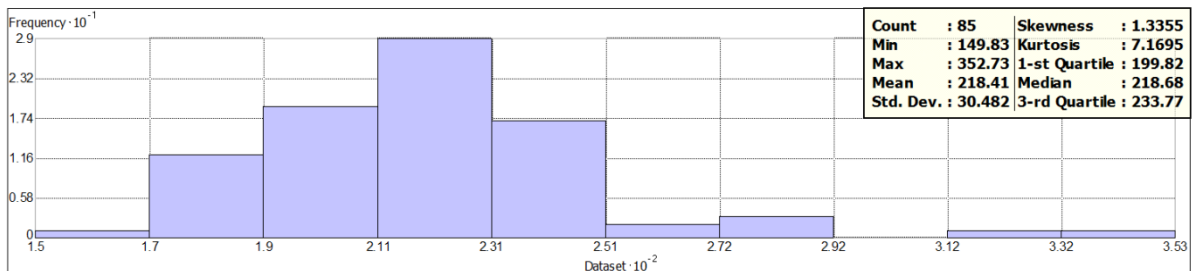
Dataset : Sample points Attribute: Rb

Histogram
Transformation: None



Dataset : Sample points Attribute: Sr

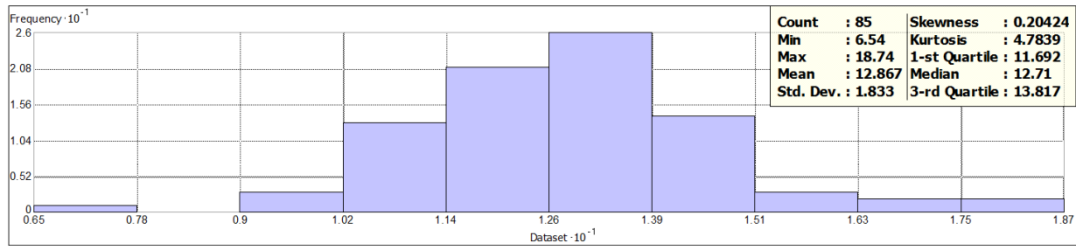
Histogram
Transformation: None



Dataset : Sample points Attribute: Cr

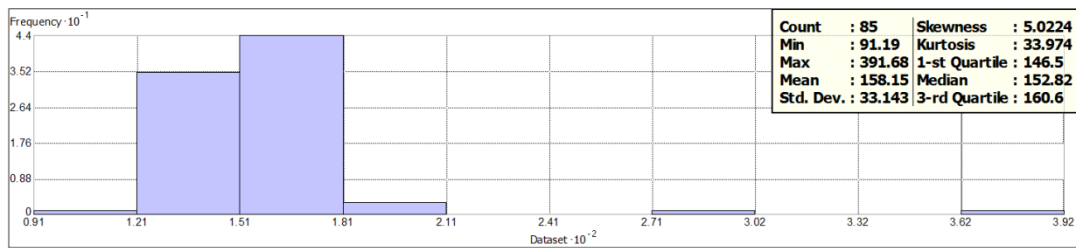
Appendix 1

Histogram
Transformation: None



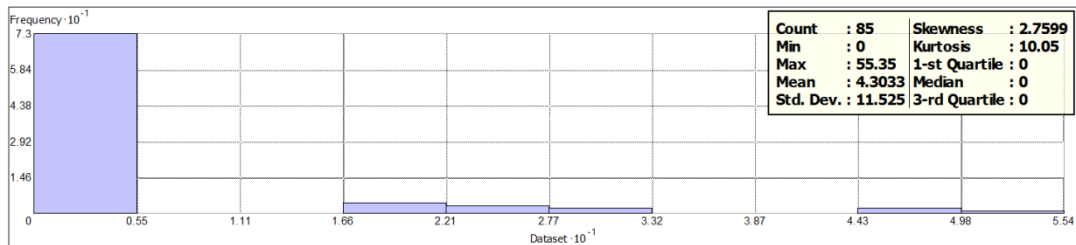
Dataset : Sample points Attribute: Nb

Histogram
Transformation: None



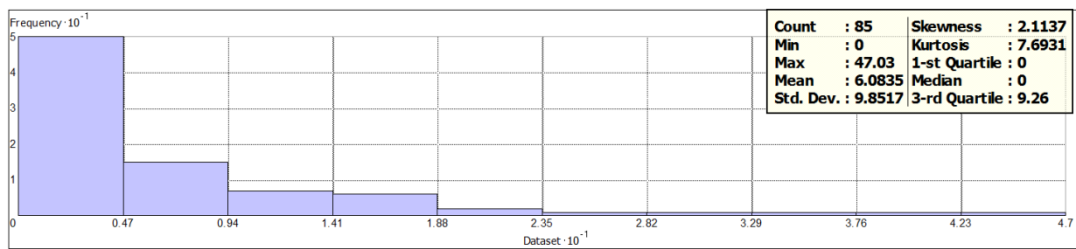
Dataset : Sample points Attribute: Zr

Histogram
Transformation: None



Dataset : Sample points Attribute: Sn

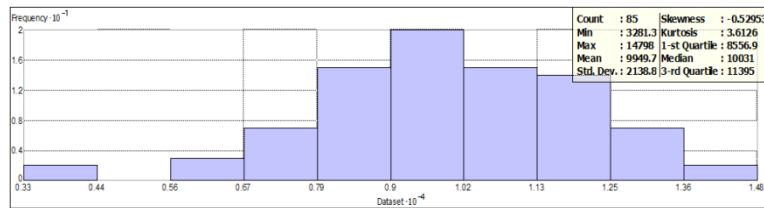
Histogram
Transformation: None



Dataset : Sample points Attribute: Pb

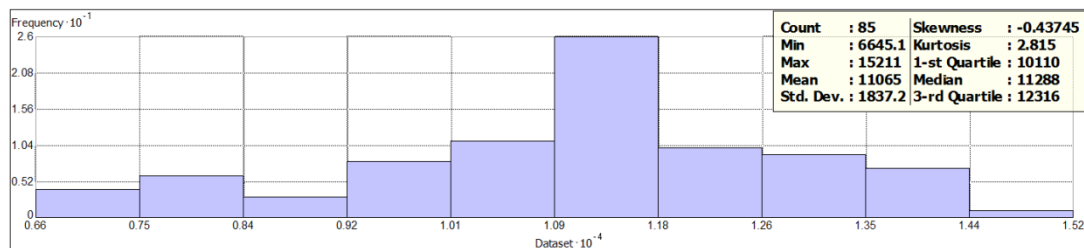
Appendix 1

Histogram
Transformation: None



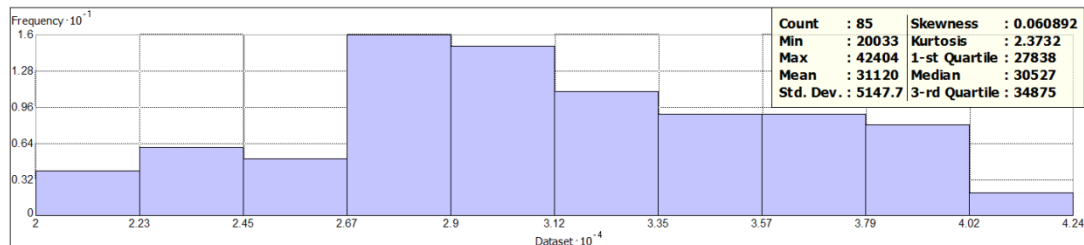
Dataset : Sample points Attribute: Mg

Histogram
Transformation: None



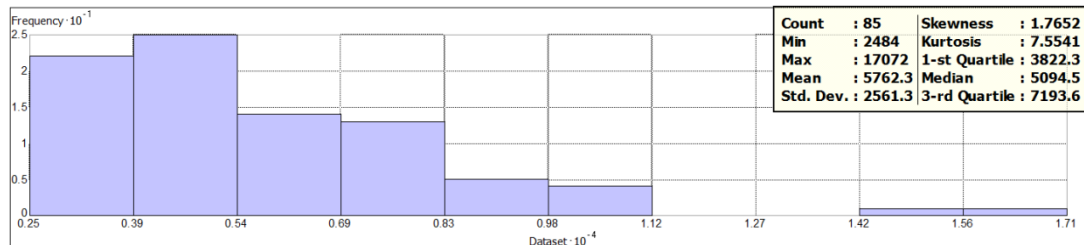
Dataset : Sample points Attribute: Ti

Histogram
Transformation: None



Dataset : Sample points Attribute: Ca

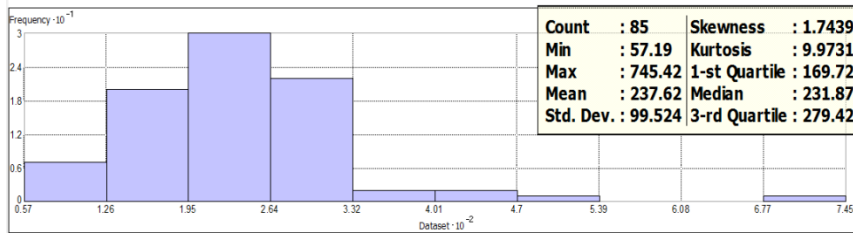
Histogram
Transformation: None



Dataset : Sample points Attribute: P

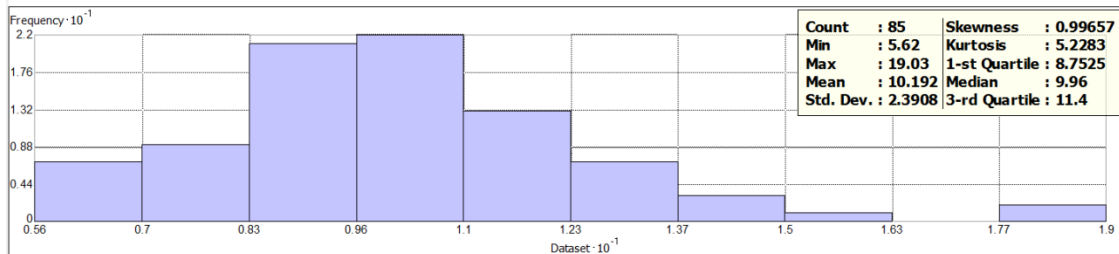
Appendix 1

Histogram
Transformation: None



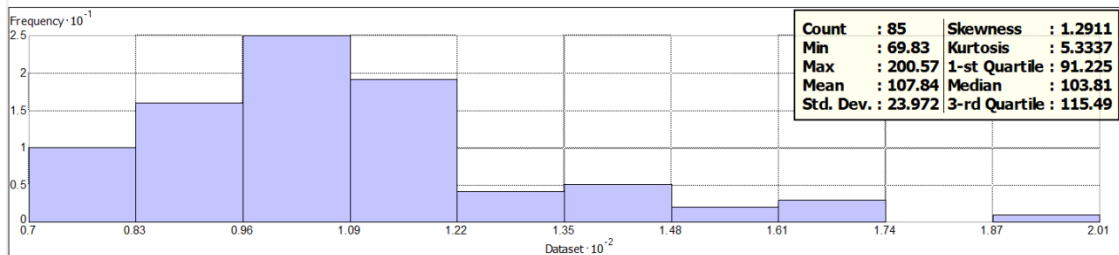
Dataset : Sample points Attribute: Ba

Histogram
Transformation: None



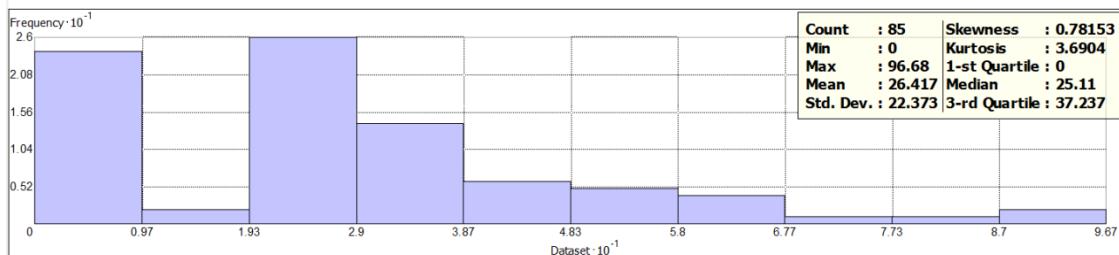
Dataset : Sample points Attribute: As

Histogram
Transformation: None



Dataset : Sample points Attribute: Zn

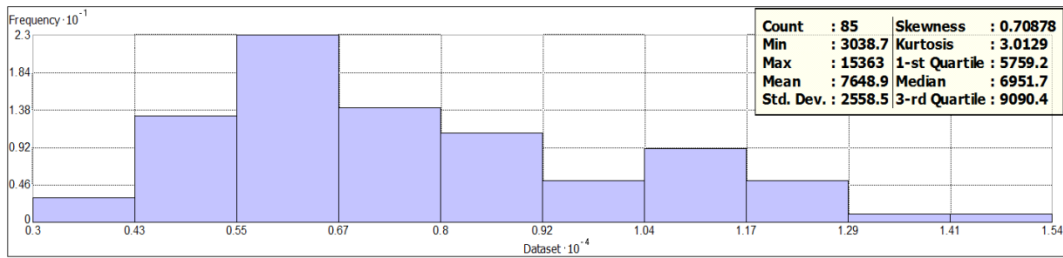
Histogram
Transformation: None



Dataset : Sample points Attribute: Cu

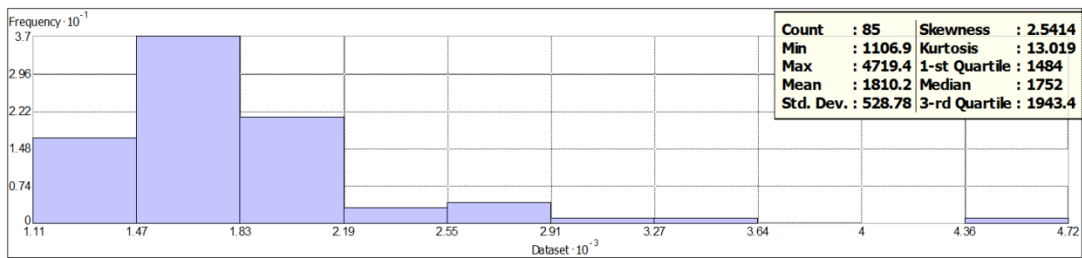
Appendix 1

Histogram
Transformation: None



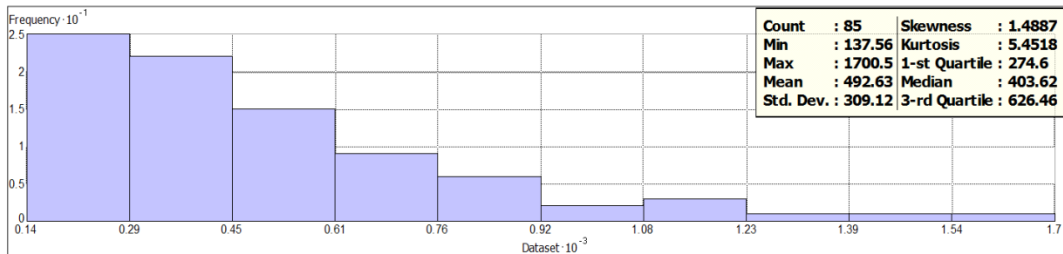
Dataset : Sample points Attribute: K

Histogram
Transformation: None



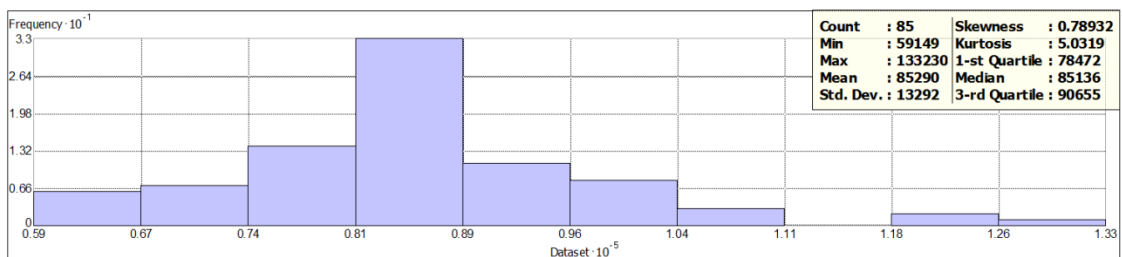
Dataset : Sample points Attribute: Mn

Histogram
Transformation: None



Dataset : Sample points Attribute: S

Histogram
Transformation: None



Dataset : Sample points Attribute: Fe

Appendix 1

A1.2.4 PCA parameters

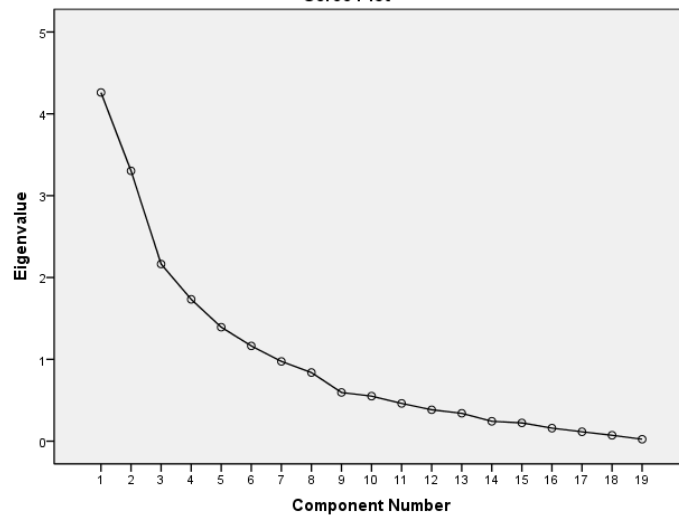
Varimax rotation, all elements

Here is the additional data on parameters for PCA analysis and descriptive statistics for the Avaldsnes selected elements data set.

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Al	35193.571139	6030.6825942	158
Ti	11475.852848	2575.5067249	158
Mn	1843.973291	669.8830935	158
Fe	84594.900823	13136.0292708	158
Cu	22.705443	21.2227789	158
Zn	103.9694937	23.90343465	158
As	9.997278	2.6531509	158
Rb	19.24246835	6.829549014	158
Sr	167.0532278	27.79027331	158
Cd	.1123	.99657	158
Sn	2.7558	9.53211	158
Pb	5.62088608	9.293691469	158
Si	124056.164937	19579.8671575	158
P	5931.233671	2763.3851616	158
S	583.0905696	381.88553276	158
K	6380.844557	2754.9047675	158
Ca	31459.334304	7324.3283604	158
Ba	208.8173418	95.07457184	158
Mg	9457.787911	2584.0365706	158

Scree Plot



Appendix 1

Correlation Matrix

		Al	Ti	Mn	Fe	Cu	Zn	As
Correlation	Al	1.000	.284	.257	.323	.196	.150	.115
	Ti	.284	1.000	.621	.702	.050	.125	.124
	Mn	.257	.621	1.000	.649	.157	.254	.217
	Fe	.323	.702	.649	1.000	.273	.369	.271
	Cu	.196	.050	.157	.273	1.000	.606	.084
	Zn	.150	.125	.254	.369	.606	1.000	.080
	As	.115	.124	.217	.271	.084	.080	1.000
	Rb	.390	-.194	.064	.090	.086	.046	.104
	Sr	.308	-.197	-.258	-.156	-.080	-.051	-.141
	Cd	-.131	-.041	-.061	-.037	-.055	-.085	.010
	Sn	.105	.006	.025	.066	.160	.130	-.022
	Pb	-.213	-.355	-.188	-.312	.185	.148	.174
	Si	.768	-.214	-.272	-.255	.068	-.055	-.028
	P	-.034	.232	.262	.187	-.002	.071	.309
	S	-.360	-.018	-.088	-.087	.064	.036	.207
	K	.527	-.224	.040	.100	.123	.078	-.018
	Ca	.136	.203	-.125	.096	.296	.271	-.064
	Ba	.555	-.176	.026	-.018	.133	.052	-.017
	Mg	.748	.392	.284	.509	.308	.311	.121

Appendix 1

Correlation Matrix

		Rb	Sr	Cd	Sn	Pb	Si	P
Correlation	Al	.390	.308	-.131	.105	-.213	.768	-.034
	Ti	-.194	-.197	-.041	.006	-.355	-.214	.232
	Mn	.064	-.258	-.061	.025	-.188	-.272	.262
	Fe	.090	-.156	-.037	.066	-.312	-.255	.187
	Cu	.086	-.080	-.055	.160	.185	.068	-.002
	Zn	.046	-.051	-.085	.130	.148	-.055	.071
	As	.104	-.141	.010	-.022	.174	-.028	.309
	Rb	1.000	-.009	-.078	.066	-.217	.365	.189
	Sr	-.009	1.000	-.081	-.116	.015	.415	-.152
	Cd	-.078	-.081	1.000	-.033	.302	-.100	-.022
	Sn	.066	-.116	-.033	1.000	-.022	.054	.016
	Pb	-.217	.015	.302	-.022	1.000	.036	-.158
	Si	.365	.415	-.100	.054	.036	1.000	-.233
	P	.189	-.152	-.022	.016	-.158	-.233	1.000
	S	-.319	-.071	.149	-.054	.357	-.369	.496
	K	.802	.173	-.114	.056	-.133	.543	-.212
	Ca	-.267	.468	-.033	-.035	.053	.100	-.012
	Ba	.525	.302	-.180	.002	-.191	.592	-.078
	Mg	.148	.276	-.075	.107	-.108	.423	-.088

Appendix 1

Correlation Matrix

		S	K	Ca	Ba	Mg
Correlation	Al	-.360	.527	.136	.555	.748
	Ti	-.018	-.224	.203	-.176	.392
	Mn	-.088	.040	-.125	.026	.284
	Fe	-.087	.100	.096	-.018	.509
	Cu	.064	.123	.296	.133	.308
	Zn	.036	.078	.271	.052	.311
	As	.207	-.018	-.064	-.017	.121
	Rb	-.319	.802	-.267	.525	.148
	Sr	-.071	.173	.468	.302	.276
	Cd	.149	-.114	-.033	-.180	-.075
	Sn	-.054	.056	-.035	.002	.107
	Pb	.357	-.133	.053	-.191	-.108
	Si	-.369	.543	.100	.592	.423
	P	.496	-.212	-.012	-.078	-.088
	S	1.000	-.499	.129	-.468	-.269
	K	-.499	1.000	-.271	.671	.303
	Ca	.129	-.271	1.000	-.131	.357
	Ba	-.468	.671	-.131	1.000	.255
	Mg	-.269	.303	.357	.255	1.000

Appendix 1

Moisture as a parameter in PCA

Number of samples= 62. Do note that this does not give a favourable observations to variables ration, and the data here should be viewed with caution for this reason. All samples were homogenised.

SAMPLE PREP= dried/not dried. The more significant correlations are with the lighter elements, suggesting moisture content disproportionality effects the measurement of these elements, however the pattern is not a perfect correlation between element weight and the attenuation of the signal. This is probably connected to relative proportions and forms within the sample matrix.

Correlation Matrix

		SAMPLE PREP	Mg	Al	Ti	Mn
Correlation	SAMPLE PREP	1.000	-.862	-.920	-.750	-.404
	Mg	-.862	1.000	.913	.792	.483
	Al	-.920	.913	1.000	.690	.398
	Ti	-.750	.792	.690	1.000	.671
	Mn	-.404	.483	.398	.671	1.000
	Cu	-.492	.647	.519	.667	.584
	As	-.534	.573	.572	.482	.580
	Sn	-.173	.175	.177	.117	.184
	P	-.579	.484	.472	.612	.508
	Pb	-.222	.249	.272	.021	.164
	S	-.479	.384	.353	.550	.451
	K	-.468	.526	.608	.130	-.092
	Ca	-.767	.811	.715	.834	.505
	Ba	-.543	.562	.663	.195	.086

Appendix 1

Correlation Matrix

		Cu	As	Sn	P	Pb	S
Correlation	SAMPLE PREP	-.492	-.534	-.173	-.579	-.222	-.479
	Mg	.647	.573	.175	.484	.249	.384
	Al	.519	.572	.177	.472	.272	.353
	Ti	.667	.482	.117	.612	.021	.550
	Mn	.584	.580	.184	.508	.164	.451
	Cu	1.000	.470	.274	.260	.085	.257
	As	.470	1.000	.434	.519	.345	.432
	Sn	.274	.434	1.000	.246	-.088	.192
	P	.260	.519	.246	1.000	.096	.913
	Pb	.085	.345	-.088	.096	1.000	.105
	S	.257	.432	.192	.913	.105	1.000
	K	.307	.260	.036	-.084	.152	-.200
	Ca	.624	.408	.133	.556	.177	.445
	Ba	.268	.315	.111	.132	.221	-.013

Correlation Matrix

		K	Ca	Ba
Correlation	SAMPLE PREP	-.468	-.767	-.543
	Mg	.526	.811	.562
	Al	.608	.715	.663
	Ti	.130	.834	.195
	Mn	-.092	.505	.086
	Cu	.307	.624	.268
	As	.260	.408	.315
	Sn	.036	.133	.111
	P	-.084	.556	.132
	Pb	.152	.177	.221
	S	-.200	.445	-.013
	K	1.000	.197	.673
	Ca	.197	1.000	.371
	Ba	.673	.371	1.000

Appendix 1

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.733	48.091	48.091	6.733
2	2.229	15.924	64.015	2.229
3	1.141	8.149	72.164	1.141
4	1.115	7.961	80.125	1.115
5	.969	6.918	87.043	
6	.482	3.443	90.486	
7	.384	2.746	93.232	
8	.345	2.462	95.694	
9	.199	1.420	97.114	
10	.140	.998	98.112	
11	.103	.738	98.850	
12	.074	.526	99.376	
13	.048	.341	99.717	
14	.040	.283	100.000	

Component Matrix^a

	Component			
	1	2	3	4
SAMPLE PREP	-.900	.158	.141	-.048
Mg	.926	-.218	-.109	-.063
Al	.897	-.328	-.062	.047
Ti	.857	.240	-.270	-.246
Mn	.647	.411	.069	-.080
Cu	.700	-.007	.085	-.416
As	.712	.090	.487	.206
Sn	.286	.155	.827	-.246
P	.686	.531	-.020	.244
Pb	.267	-.187	.075	.776
S	.585	.626	-.052	.268
K	.401	-.808	.085	-.047
Ca	.846	.056	-.273	-.134
Ba	.522	-.652	.093	.100

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Appendix 1

Rotated Component Matrix^a

	Component			
	1	2	3	4
SAMPLE PREP	-.650	-.647	-.032	-.121
Mg	.629	.720	.078	.021
Al	.531	.781	.082	.138
Ti	.879	.328	.008	-.209
Mn	.719	.045	.281	-.022
Cu	.523	.445	.302	-.326
As	.472	.309	.598	.343
Sn	.090	.042	.912	-.093
P	.837	-.056	.170	.282
Pb	.074	.235	-.026	.808
S	.820	-.193	.127	.286
K	-.166	.889	.057	.040
Ca	.767	.462	-.043	-.093
Ba	.013	.820	.090	.191

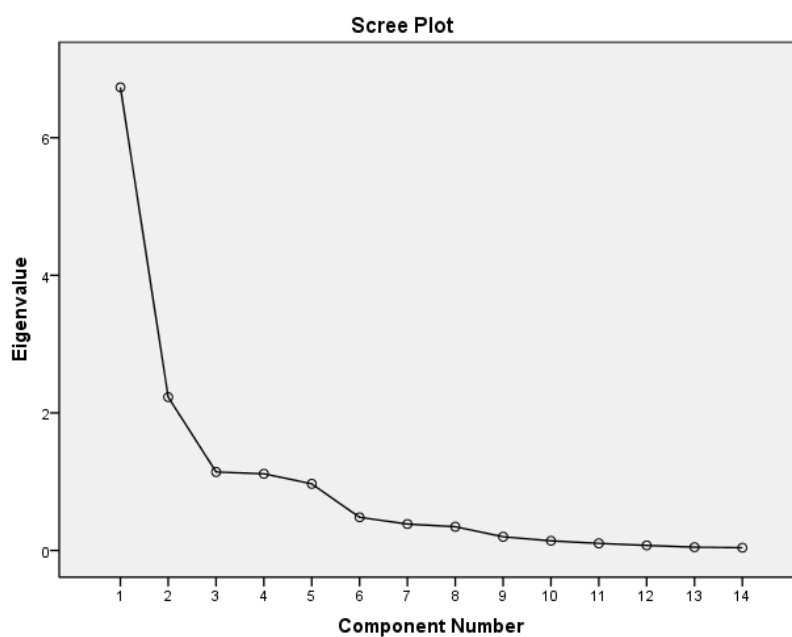
Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

In the component matrix tables for the rotated and non-rotated solutions, moisture content (sample prep) dominates the first principle component, which accounts for 48% of the variance. All the lighter elements are effected, and the results is that the soil processes are more difficult to interpret and the archaeological component are masked, as compared with the dried sample data presented in chapter 5.

By Scree plot:



Appendix 1

A1.3 Standard Reference material readings

NIST 2709a

Reading No	Duration	INSPECTOR (filter settings)	Mg	Mg Error	Al	Al Error	Bal	Bal Error	Ti	Ti Error	V	V Error
348	300.99	50-100-50-100	9282.39	1569.94	47088.45	695.52	653571.4	1283.65	3050.96	45.61	166.34	20.37
349	300.39	50-100-50-100	5849.49	1515.39	47616.19	694.8	655466.3	1268.19	3004.64	45.25	166.07	20.26
359	300.44	50-100-50-100	7142.92	1513.31	43422.72	653.59	669364.3	1201.15	3100.82	45.87	173.38	20.51
360	301.36	50-100-50-100	6853.53	1516.42	43290.54	653.79	667492.8	1202.9	3131.27	45.81	173.32	20.47
385	300.61	50-100-50-100	7431	1567.65	47847.07	704.53	651319.9	1272.44	3147.16	47.04	165.91	20.95
386	301.39	50-100-50-100	4911.85	1515.08	47124.49	690.42	654727.9	1254.24	3136.87	46.47	164.49	20.69
466	301.03	50-100-50-100	6433.91	1493.71	42540.6	645.5	674903.2	1201.19	2978.31	45.86	159.15	20.59
467	301.83	50-100-50-100	6734.11	1486.37	42507.19	642.29	673933.2	1217.01	2936.29	44.98	161.2	20.23
510	301.86	50-100-50-100	6990.93	1550.56	47966.16	701.78	651667.7	1272.52	3003.2	46.33	153.13	20.79
511	301.4	50-100-50-100	7369.48	1558.75	48267.38	704.95	649993.2	1267.67	3004.05	45.99	161.54	20.69
147	361.11	50-100-50-100	8069.85	1413.86	42812.32	599.8	667050.1	1111.75	3066.18	42.19	174.51	18.93
148	361.33	50-100-50-100	5275.56	1371.24	43718.35	600.91	666735.9	1093.78	3066.69	41.74	164.7	18.72
150	181.7	30-60-30-60	7565.66	2058.78	44323.79	892.17	662745.4	1631.18	3042.29	58.89	177.36	26.39
151	181.06	30-60-30-60	7375.16	2142.84	46284.36	943.58	656998.8	1667.78	2981.81	59.68	155.81	26.77
203	180.38	30-60-30-60	6929.8	2237.99	52549.88	1014.9	653056.8	1134.63	2588.34	288.57	< LOD	202.65
206	181.46	30-60-30-60	4815.26	1981.51	47243.52	907.87	654221.8	1649.02	3016.48	60.65	160.84	27.19
217	300.54	50-100-50-100	5821.35	1518.48	44236.17	667.83	664494.3	1226.39	3074.92	46.34	166.28	20.71
233	300.6	50-100-50-100	4219.12	1424.47	41569.39	624.24	680532.4	1165.43	2974.78	45.01	166.53	20.2
249	300.16	50-100-50-100	7584.86	1533.6	46587.8	688.16	659404.4	1255.27	2966.91	44.35	176.6	19.88
255	301.79	50-100-50-100	6550.87	1476	42612.9	639.36	673987.9	1206.32	3027.64	45.41	160.01	20.3
280	301.62	50-100-50-100	6916.35	1487.77	44388.68	656.77	667793.4	1232.15	2976.48	44.41	167.12	19.86
295	300.29	50-100-50-100	6983.27	1567.24	47485.45	701.17	651224.8	1286.47	3109.75	45.98	183.36	20.57

Appendix 1

300	300.92	50-100-50-100	7357.12	1526.7	43643.08	658.76	666013.2	1226.46	3159.66	46.84	173.22	20.93
310	301.25	50-100-50-100	6536.13	1542.74	48115.18	700.92	650560.8	1269.58	3153.4	46.51	170.91	20.75
318	301.59	50-100-50-100	7701.64	1565.4	48941.35	710.1	646699.6	1287.18	3192.97	46.13	171.15	20.49
324	300.63	50-100-50-100	6946.16	1505.91	43041.47	647.95	667782.5	1224.88	3050.75	46.22	163.42	20.72
334	301.19	50-100-50-100	5923.28	1550.78	46407.11	694.54	655906.8	1272.68	3130.71	45.89	161.86	20.37
345	300.97	50-100-50-100	7431.32	1513.24	43440.86	653.74	669746.8	1194.04	3003.95	45.22	160.63	20.2
361	300.53	50-100-50-100	7885.39	1592.45	47721.63	710.82	650607.4	1266.48	3167.01	45.9	172.32	20.39
366	301.6	50-100-50-100	5013.4	1477.06	40926.49	630.26	677201.4	1196.46	3085.68	45.58	179.48	20.45
377	300.55	50-100-50-100	5672.73	1496.21	45093.5	670.05	664538.1	1230	3034.5	45.31	156.22	20.16
382	301.2	50-100-50-100	3759.47	1431.84	41468.2	626.11	679354	1180.85	2990.75	44.57	167.03	19.95
411	301.65	50-100-50-100	5705.93	1525.26	44046.68	667.13	664040.3	1232.82	3075.95	46.96	160.32	21.05
436	300.35	50-100-50-100	6748.38	1547.97	46028.75	687.89	657253.1	1247.45	3120.5	46.38	164.88	20.67
5	301.83	50-100-50-100	5453.94	1511.53	42916.68	653.46	667291.9	1211.37	3150.88	47.37	153.87	21.11
18	301.11	50-100-50-100	5980.09	1537.61	45974.99	685.35	656967.6	1254.64	3155.83	46.93	154.15	20.85
34	301.7	50-100-50-100	7004.81	1504.22	45969.48	671.34	660643.8	1244.23	3009.8	45.74	167.71	20.48
41	300.69	50-100-50-100	8282.15	1572.95	42707.65	661.97	667234.1	1211.76	3137.41	46.74	184.21	20.97
67	300.92	50-100-50-100	7528.28	1579.84	47910.04	707.63	649642.3	1285.75	3192.95	46.21	169.36	20.51
mean			6616.332	1576.479	45277.86	696.4603	661850.5	1259.943	3056.373	52.99821	166.5366	25.58385
SD			1160.834	189.6272	2561.785	89.61841	9219.377	122.8721	104.9311	38.91608	27.76963	29.15404
RSD %			17.54498	12.02853	5.65792	12.8677	1.39297	9.7522	3.433191	73.42905	16.67479	113.9549

NIST 2709a

Reading No	Duration	INSPECTOR (filter settings)	Cr	Cr Error	Mn	Mn Error	Fe	Fe Error	Co	Co Error	Ni	Ni Error	Cu	Cu Error
348	300.99	50-100-50-100	151.6	13.96	502.95	57.04	34661.98	238.9	< LOD	88	< LOD	30.9	< LOD	20.18
349	300.39	50-100-50-100	160.27	13.58	446.78	55.85	34786.21	239.07	< LOD	87.62	< LOD	30.84	< LOD	19.33
359	300.44	50-100-50-100	170.8	13.81	481.87	55.1	35180.11	235.15	< LOD	86.7	< LOD	29.54	< LOD	18.04

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360	301.36	50-100-50-100	163.9	13.89	482.78	55.01	35467.05	235.89	< LOD	86.45	< LOD	30.02	< LOD	20.94
385	300.61	50-100-50-100	174.52	14.1	467.7	55.75	35483.09	239.94	< LOD	88.58	< LOD	30.3	< LOD	14.67
386	301.39	50-100-50-100	170.32	13.92	508.74	56.51	35500.73	239.66	< LOD	87.71	< LOD	30.29	< LOD	14.69
466	301.03	50-100-50-100	181.79	13.9	451.58	55.36	34719	236.7	< LOD	87.1	< LOD	30.08	< LOD	16.02
467	301.83	50-100-50-100	169.1	13.85	419.96	55.67	34442.66	238.1	< LOD	87.96	< LOD	30.24	< LOD	17.93
510	301.86	50-100-50-100	177.92	14	531.34	57.06	35306.09	239.29	< LOD	89.02	< LOD	30.41	< LOD	15.35
511	301.4	50-100-50-100	169.78	13.85	503.47	56.38	35351.97	240.1	< LOD	88.64	< LOD	30.23	15.45	9.86
147	361.11	50-100-50-100	174.56	12.8	484.12	51.06	34769.96	215.02	< LOD	79.76	< LOD	27.69	< LOD	13.26
148	361.33	50-100-50-100	162.82	12.68	518.79	51	34940.61	213.04	< LOD	78.61	< LOD	27.35	< LOD	13.11
150	181.7	30-60-30-60	149.51	18.08	481.18	73.89	34742.05	312.12	< LOD	116.62	< LOD	40.17	< LOD	20.02
151	181.06	30-60-30-60	174.85	17.96	463.22	74.12	34569.77	313.69	< LOD	115.87	< LOD	40.93	< LOD	19.28
203	180.38	30-60-30-60	< LOD	98.46	493.41	51.11	34977.96	212.89	< LOD	78.97	< LOD	27.89	< LOD	13.29
206	181.46	30-60-30-60	169.42	18.35	484.31	74.01	35188.9	313	< LOD	114.7	< LOD	39.48	< LOD	21.69
217	300.54	50-100-50-100	165.23	13.95	467.85	55.62	34989.91	237.24	< LOD	87.35	< LOD	29.99	< LOD	18.43
233	300.6	50-100-50-100	166.01	13.72	457.37	54.98	34136.67	231.96	< LOD	85.79	< LOD	29.7	< LOD	18.17
249	300.16	50-100-50-100	168.41	13.34	400.09	54.66	33860.16	234.08	< LOD	86.62	< LOD	30.32	18.55	9.89
255	301.79	50-100-50-100	160.7	13.88	487.95	56.29	34535.2	236.47	< LOD	87.23	< LOD	30.27	< LOD	14.64
280	301.62	50-100-50-100	177.38	13.53	483.33	56.56	33946.27	235.46	< LOD	87	< LOD	29.79	< LOD	22.79
295	300.29	50-100-50-100	179.05	13.95	493.92	56.78	35396.07	241.98	< LOD	88.92	< LOD	31.14	< LOD	14.79
300	300.92	50-100-50-100	157.98	14.12	488.65	56.02	35158.63	238.14	< LOD	87.74	< LOD	30.25	< LOD	14.6
310	301.25	50-100-50-100	175.33	14.15	545.79	57.16	35549	239.51	< LOD	87.79	< LOD	30.65	< LOD	14.66
318	301.59	50-100-50-100	181.27	13.86	490.15	56.22	35085.54	238	< LOD	87.48	< LOD	30.47	< LOD	14.58
324	300.63	50-100-50-100	168.15	14.03	508.65	56.73	35007.25	238.88	< LOD	88.14	< LOD	30.66	< LOD	20.39
334	301.19	50-100-50-100	174.13	13.6	502.57	57.25	35210.21	242.03	< LOD	89.19	< LOD	31.11	< LOD	14.86
345	300.97	50-100-50-100	174.35	13.6	535.6	56.15	34171.73	231.64	< LOD	85.67	< LOD	29.87	< LOD	20.11
361	300.53	50-100-50-100	170.16	13.58	480.66	55.58	35119.64	236.85	< LOD	87.28	< LOD	30.03	< LOD	19.99
366	301.6	50-100-50-100	179.99	13.37	496.81	55.97	35067.73	238.23	< LOD	87.41	< LOD	30.16	< LOD	16.67
377	300.55	50-100-50-100	156.32	13.66	438.94	55.31	34141.8	234.52	< LOD	86.96	< LOD	30.12	17.66	9.84
382	301.2	50-100-50-100	186.46	13.63	511.03	56.81	34688.84	236.77	< LOD	87.94	< LOD	30.68	17.92	9.91
411	301.65	50-100-50-100	186.59	14.26	500.45	56.58	35662.77	241.22	< LOD	89.33	< LOD	30.38	16.66	9.9

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436	300.35	50-100-50-100	176.27	13.96	460.27	55.44	35664.78	239.66	< LOD	87.3	< LOD	29.85	< LOD	21.79
5	301.83	50-100-50-100	168.13	14.41	519.68	56.38	35939.89	240.41	< LOD	88.45	< LOD	30.35	< LOD	18.99
18	301.11	50-100-50-100	165.61	14.29	521.41	56.83	35114.56	239.18	< LOD	88.1	< LOD	30.18	< LOD	15.47
34	301.7	50-100-50-100	163.23	14.04	487.65	56.22	34672.36	236.43	< LOD	86.99	< LOD	29.93	< LOD	14.67
41	300.69	50-100-50-100	164.11	14.11	512.22	55.95	35107.06	235.61	< LOD	86.69	< LOD	29.73	< LOD	19.8
67	300.92	50-100-50-100	163.97	14.03	501.79	56.81	35181.73	240.24	< LOD	88.38	< LOD	30.41	< LOD	23.27
mean			169.737	16.31436	487.5649	57.10821	34961.43	241.7197		89.12974		30.83077	17.248	16.56077
SD			28.5135	13.55459	30.27515	5.166103	491.0225	21.94724		8.155859		2.855813	5.854961	3.817249
RSD %			16.7987	83.0838	6.209462	9.046166	1.404469	9.079621		9.150546		9.262865	33.94574	23.04995

NIST 2709a

Reading No	Duration	INSPECTOR (filter settings)	Zn	Zn Error	As	As Error	Se	Se Error	Rb	Rb Error	Sr	Sr Error	Zr	Zr Error
348	300.99	50-100-50-100	78.71	6.96	12.29	3.19	< LOD	1.78	37.32	1.12	148.41	2.55	125.45	2.75
349	300.39	50-100-50-100	79.17	6.97	14	3.29	< LOD	1.81	37.04	1.12	149.95	2.56	128.05	2.77
359	300.44	50-100-50-100	80.6	6.81	13.76	3.12	< LOD	1.68	38.18	1.11	152.8	2.53	129.96	2.73
360	301.36	50-100-50-100	78.49	6.77	15.86	3.23	< LOD	1.73	39.41	1.12	154.6	2.55	127.5	2.71
385	300.61	50-100-50-100	76.46	6.87	11.68	3.24	< LOD	1.78	39.33	1.14	154.83	2.59	121.45	2.7
386	301.39	50-100-50-100	82.22	6.98	13.8	3.21	< LOD	1.79	40.33	1.15	153.79	2.58	122.1	2.7
466	301.03	50-100-50-100	83.82	6.97	12.32	3.2	< LOD	1.79	37.67	1.12	149.82	2.54	118.76	2.67
467	301.83	50-100-50-100	74.63	6.83	12.09	3.15	< LOD	1.76	36.9	1.12	149.82	2.57	118	2.69
510	301.86	50-100-50-100	81.22	6.96	15.22	3.24	< LOD	1.84	38.48	1.13	154.54	2.59	118.45	2.68
511	301.4	50-100-50-100	79.2	6.96	11.71	3.23	< LOD	1.84	40.56	1.16	153.4	2.58	120.65	2.7
147	361.11	50-100-50-100	75.48	6.18	13.96	2.88	< LOD	1.59	39.34	1.03	153.07	2.33	123.6	2.46
148	361.33	50-100-50-100	80	6.2	14.34	2.85	< LOD	1.7	38.51	1.01	154.65	2.32	121.89	2.42
150	181.7	30-60-30-60	79.03	9.02	11.78	4.21	< LOD	2.55	38.11	1.48	151.92	3.38	123.94	3.58
151	181.06	30-60-30-60	82.06	9.24	7.28	4.19	< LOD	2.54	38.81	1.5	151.84	3.4	123.73	3.61

Appendix 1

203	180.38	30-60-30-60	88.54	6.45	10.97	2.9	< LOD	1.55	39.5	1.03	153.78	2.32	111.59	2.36
206	181.46	30-60-30-60	75.64	8.93	10.13	4.22	< LOD	2.57	38.9	1.49	153.67	3.39	109.8	3.42
217	300.54	50-100-50-100	77.85	6.83	14.15	3.23	< LOD	2.52	38.83	1.13	150.86	2.55	127.2	2.73
233	300.6	50-100-50-100	82.1	6.89	9.92	3.17	< LOD	1.75	36.76	1.09	146.26	2.48	114.7	2.6
249	300.16	50-100-50-100	76.04	6.85	11.69	3.22	< LOD	1.79	37.36	1.11	147.03	2.52	119.79	2.68
255	301.79	50-100-50-100	73.43	6.82	11.39	3.11	< LOD	1.83	37.79	1.12	148.91	2.54	122.76	2.71
280	301.62	50-100-50-100	79.77	6.96	10.6	3.26	< LOD	1.81	37.8	1.12	147.92	2.54	105.6	2.57
295	300.29	50-100-50-100	82.96	7.04	12.71	3.22	< LOD	1.84	38.71	1.14	153.49	2.6	121.74	2.73
300	300.92	50-100-50-100	79.74	6.88	11.72	3.23	< LOD	1.79	39.7	1.14	155.98	2.59	113.59	2.63
310	301.25	50-100-50-100	81.38	6.94	10.58	3.3	< LOD	1.93	39.23	1.13	155.5	2.59	127.42	2.74
318	301.59	50-100-50-100	84.14	6.97	14.06	3.28	< LOD	1.85	39.3	1.14	152.55	2.57	111.54	2.61
324	300.63	50-100-50-100	78.03	6.9	10.06	3.18	< LOD	1.82	38.68	1.13	152.1	2.57	120.51	2.7
334	301.19	50-100-50-100	83.94	7.08	14.39	3.24	< LOD	1.85	39.22	1.15	154.29	2.62	122.95	2.75
345	300.97	50-100-50-100	77.27	6.77	11.93	3.11	< LOD	1.68	37.97	1.1	150.44	2.51	116.8	2.61
361	300.53	50-100-50-100	83.56	6.97	11.55	3.24	< LOD	1.8	39.01	1.12	151.5	2.54	111.93	2.6
366	301.6	50-100-50-100	84.34	6.94	14.02	3.23	< LOD	1.78	38.71	1.13	154.94	2.58	119.11	2.67
377	300.55	50-100-50-100	76.93	6.85	11.14	3.21	< LOD	1.73	37.78	1.12	147.91	2.52	116.28	2.64
382	301.2	50-100-50-100	78.09	6.87	10.81	3.16	< LOD	1.79	38.39	1.13	148.18	2.53	105.82	2.56
411	301.65	50-100-50-100	85.03	7.04	11.88	3.25	< LOD	1.86	39.91	1.15	156.47	2.61	125.04	2.74
436	300.35	50-100-50-100	84.74	7.01	13.67	3.25	< LOD	1.72	38.81	1.13	152.99	2.56	125.51	2.72
5	301.83	50-100-50-100	86.56	7.04	12.55	3.17	< LOD	2.15	39.43	1.13	158.97	2.61	119.4	2.68
18	301.11	50-100-50-100	84.91	7.06	12.21	3.28	< LOD	1.83	39.06	1.14	154.39	2.59	109.03	2.6
34	301.7	50-100-50-100	80	6.93	11.93	3.2	< LOD	1.82	36.73	1.1	149.25	2.54	127.59	2.74
41	300.69	50-100-50-100	73.84	6.67	11.14	3.17	< LOD	1.64	38.93	1.12	151.66	2.53	111.64	2.59
67	300.92	50-100-50-100	79.97	6.97	11.4	3.15	< LOD	1.75	38.81	1.14	155.03	2.61	109.61	2.62
			88.54											
mean			80.25359	7.035385	12.22282	3.261795		1.862308	38.59769	1.147179	152.2438	2.607179	119.2431	2.722308
SD			3.638827	0.625838	1.690884	0.29426		0.252414	0.948088	0.105105	2.907468	0.239736	6.571194	0.255667
RSD %			4.534161	8.895572	13.83383	9.021406		13.55384	2.456333	9.162052	1.909744	9.195229	5.510755	9.391552

Appendix 1

NIST 2709a

Reading No	Duration	INSPECTOR (filter settings)	Nb	Nb Error	Mo	Mo Error	Pd	Pd Error	Ag	Ag Error	Cd	Cd Error	Sn	Sn Error
348	300.99	50-100-50-100	8.01	1.17	< LOD	1.5	< LOD	2.57	< LOD	24.69	< LOD	5.7	< LOD	15.65
349	300.39	50-100-50-100	6.54	1.15	< LOD	1.5	< LOD	2.64	< LOD	31.15	< LOD	5.71	< LOD	25.47
359	300.44	50-100-50-100	8.74	1.15	< LOD	1.5	< LOD	3.28	< LOD	39.05	< LOD	5.66	< LOD	15.25
360	301.36	50-100-50-100	7.6	1.14	< LOD	1.5	< LOD	2.66	< LOD	33.67	< LOD	5.68	< LOD	20.82
385	300.61	50-100-50-100	8.31	1.16	< LOD	1.5	< LOD	2.72	< LOD	42.93	< LOD	5.79	< LOD	17.79
386	301.39	50-100-50-100	7.61	1.15	< LOD	2.06	< LOD	2.75	< LOD	39.82	< LOD	5.83	< LOD	15.61
466	301.03	50-100-50-100	7.38	1.15	< LOD	1.5	< LOD	3.94	< LOD	28.21	< LOD	5.61	17.6	10.88
467	301.83	50-100-50-100	6.17	1.15	< LOD	1.5	< LOD	2.61	< LOD	24.66	< LOD	5.49	< LOD	20.16
510	301.86	50-100-50-100	7.54	1.16	< LOD	1.5	< LOD	2.7	< LOD	33.07	< LOD	5.77	< LOD	15.32
511	301.4	50-100-50-100	7.16	1.15	< LOD	1.5	< LOD	2.7	< LOD	36.18	< LOD	5.7	< LOD	21.66
147	361.11	50-100-50-100	7.71	1.05	< LOD	1.5	< LOD	2.44	< LOD	25.3	< LOD	5.16	< LOD	23.21
148	361.33	50-100-50-100	8.51	1.04	< LOD	1.5	< LOD	2.46	< LOD	41.03	< LOD	5.25	< LOD	22.87
150	181.7	30-60-30-60	7.12	1.51	< LOD	1.72	< LOD	3.7	< LOD	41.21	< LOD	7.78	< LOD	26.47
151	181.06	30-60-30-60	8.02	1.54	< LOD	1.77	< LOD	3.77	< LOD	33.01	< LOD	7.7	< LOD	20.15
203	180.38	30-60-30-60	7.77	1.04	< LOD	1.5	< LOD	2.4	< LOD	36.48	< LOD	5.21	< LOD	20.35
206	181.46	30-60-30-60	6.83	1.5	< LOD	1.74	< LOD	3.79	< LOD	34.5	< LOD	7.81	< LOD	20.54
217	300.54	50-100-50-100	7.32	1.15	< LOD	1.5	< LOD	2.64	< LOD	28.21	< LOD	5.7	< LOD	15.38
233	300.6	50-100-50-100	7.55	1.14	< LOD	1.5	< LOD	2.54	< LOD	22.91	< LOD	5.75	< LOD	15.25
249	300.16	50-100-50-100	6.8	1.14	< LOD	1.5	< LOD	2.59	< LOD	29.96	< LOD	5.58	< LOD	14.93
255	301.79	50-100-50-100	7.46	1.15	< LOD	1.5	< LOD	2.78	< LOD	27.65	< LOD	5.84	< LOD	21.77
280	301.62	50-100-50-100	6.47	1.15	< LOD	1.5	< LOD	2.63	< LOD	24.69	< LOD	5.7	< LOD	15.15
295	300.29	50-100-50-100	7.68	1.17	< LOD	1.5	< LOD	2.7	< LOD	39.8	< LOD	5.85	17.44	11.12
300	300.92	50-100-50-100	8.41	1.16	< LOD	1.5	< LOD	2.66	< LOD	29.93	< LOD	5.72	< LOD	24.53
310	301.25	50-100-50-100	7.72	1.15	< LOD	1.5	< LOD	2.73	< LOD	29.72	< LOD	5.8	< LOD	15.4
318	301.59	50-100-50-100	9.09	1.17	< LOD	1.5	< LOD	2.65	< LOD	32.24	< LOD	5.74	< LOD	17.92
324	300.63	50-100-50-100	8.48	1.17	< LOD	1.5	< LOD	2.75	< LOD	33.85	< LOD	5.69	< LOD	15.38

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334	301.19	50-100-50-100	7.29	1.17	< LOD	1.5	< LOD	2.66	< LOD	40.22	< LOD	5.66	< LOD	17.2
345	300.97	50-100-50-100	6.67	1.12	< LOD	1.5	< LOD	2.67	< LOD	38.04	< LOD	5.74	< LOD	18.64
361	300.53	50-100-50-100	8.2	1.15	< LOD	1.5	< LOD	2.68	< LOD	40.35	< LOD	5.73	< LOD	23.62
366	301.6	50-100-50-100	8.5	1.16	< LOD	1.5	< LOD	2.64	< LOD	43.91	< LOD	5.77	< LOD	20.15
377	300.55	50-100-50-100	7.18	1.15	< LOD	1.5	< LOD	2.67	< LOD	23.9	< LOD	5.68	< LOD	19.57
382	301.2	50-100-50-100	6.47	1.14	< LOD	1.5	< LOD	2.72	< LOD	27.86	< LOD	5.86	< LOD	17.94
411	301.65	50-100-50-100	8.61	1.17	< LOD	1.5	< LOD	2.8	< LOD	25.48	< LOD	5.86	< LOD	15.89
436	300.35	50-100-50-100	7.36	1.15	< LOD	1.5	< LOD	2.77	< LOD	31.26	< LOD	5.82	< LOD	16.61
5	301.83	50-100-50-100	8.28	1.16	< LOD	1.5	< LOD	2.68	< LOD	40.96	< LOD	8.02	< LOD	25.4
18	301.11	50-100-50-100	7.68	1.16	< LOD	1.5	< LOD	2.66	< LOD	29.72	< LOD	5.71	< LOD	15.36
34	301.7	50-100-50-100	7.64	1.15	< LOD	1.5	< LOD	2.7	< LOD	31.31	< LOD	5.76	< LOD	18.72
41	300.69	50-100-50-100	7.66	1.14	< LOD	1.5	< LOD	2.76	< LOD	28.69	< LOD	6.15	< LOD	16.67
67	300.92	50-100-50-100	8.24	1.17	< LOD	1.5	< LOD	3.02	< LOD	36.39	< LOD	5.79	< LOD	16.53
mean			7.635385	1.173077		1.533077		2.800769		32.87205		5.917179	17.52	18.49564
SD			0.696615	0.105435		0.108801		0.371699		6.043678		0.678625	3.91499	3.805227
RSD %			9.123513	8.987926		7.096902		13.27131		18.38546		11.46872	22.34583	20.57364

NIST 2709a

Reading No	Duration	INSPECTOR (filter settings)	Sb	Sb Error	W	W Error	Au	Au Error	Pb	Pb Error	Bi	Bi Error	Si	Si Error
348	300.99	50-100-50-100	< LOD	11.19	< LOD	60.74	< LOD	7.18	8.66	3.31	6.56	3.02	216682.9	909.09
349	300.39	50-100-50-100	< LOD	11.16	< LOD	64.28	< LOD	7.26	10.38	3.38	9.13	3.09	217740.3	911.33
359	300.44	50-100-50-100	< LOD	15.95	< LOD	42.02	< LOD	7.19	7.24	3.19	10.63	3.07	205954.5	864.1
360	301.36	50-100-50-100	< LOD	12.24	< LOD	44.37	< LOD	7.01	9.51	3.27	7.46	3	207755	867.57
385	300.61	50-100-50-100	< LOD	13.19	< LOD	67.19	< LOD	7.46	11.67	3.39	8.64	3.08	218453.6	909.04
386	301.39	50-100-50-100	< LOD	11.45	< LOD	60.27	< LOD	7.21	8.75	3.3	9.84	3.12	218131.6	904.27
466	301.03	50-100-50-100	< LOD	12.21	< LOD	41.65	< LOD	7.09	9.64	3.33	7.83	3.04	203032	866.4

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467	301.83	50-100-50-100	< LOD	10.93	< LOD	42.18	< LOD	7.16	7.72	3.27	4.56	2.96	204101.6	872.71
510	301.86	50-100-50-100	< LOD	11.24	< LOD	57.47	< LOD	7.22	8.19	3.3	10.12	3.11	219061.9	909.52
511	301.4	50-100-50-100	< LOD	12.36	< LOD	43.86	< LOD	7.15	10.52	3.39	9.59	3.14	219900.1	900.13
147	361.11	50-100-50-100	< LOD	10.23	< LOD	48.14	< LOD	6.39	7.58	2.95	6.19	2.73	208030.8	801.24
148	361.33	50-100-50-100	< LOD	10.33	< LOD	49.92	< LOD	6.31	7.15	2.91	8.31	2.74	210035.7	798.61
150	181.7	30-60-30-60	< LOD	14.88	< LOD	56.16	< LOD	10.07	10.37	4.4	6.29	3.96	211514.5	1175.38
151	181.06	30-60-30-60	< LOD	24.32	< LOD	57.21	< LOD	10.03	12.96	4.55	7.81	4.07	215610.1	1208.59
203	180.38	30-60-30-60	< LOD	10.39	< LOD	41.18	< LOD	6.49	10.89	3.05	9.77	2.83	245867.2	1107.92
206	181.46	30-60-30-60	< LOD	15.06	< LOD	58.28	< LOD	9.8	12.38	4.48	6.94	3.98	219489.8	1191.71
217	300.54	50-100-50-100	< LOD	16.18	< LOD	42.31	< LOD	7.27	9.3	3.32	8.06	3.05	211650.4	889.37
233	300.6	50-100-50-100	< LOD	11.21	< LOD	54.19	< LOD	7.17	12.4	3.37	7.54	2.99	201370.1	853.72
249	300.16	50-100-50-100	< LOD	10.96	< LOD	58.82	< LOD	7.12	11.05	3.37	8.33	3.06	214717	903.01
255	301.79	50-100-50-100	< LOD	11.44	< LOD	43.66	< LOD	7.07	7.46	3.26	7.87	3.04	203898.5	865.81
280	301.62	50-100-50-100	< LOD	15.11	< LOD	62.63	< LOD	6.99	12.85	3.45	8.47	3.08	208477.3	883.14
295	300.29	50-100-50-100	< LOD	17.71	< LOD	42.95	< LOD	7.39	8.69	3.34	9.51	3.13	217147.5	906.36
300	300.92	50-100-50-100	< LOD	11.1	< LOD	42.05	< LOD	7.17	11.57	3.38	6.2	3.02	208599	878.09
310	301.25	50-100-50-100	< LOD	11.33	< LOD	55.39	< LOD	7.04	14.73	3.51	10.35	3.13	219220.5	904.94
318	301.59	50-100-50-100	< LOD	11.27	< LOD	42.23	< LOD	7.31	10.85	3.38	9.72	3.11	221277.7	909.96
324	300.63	50-100-50-100	< LOD	11.29	< LOD	57.96	< LOD	7.08	10.82	3.38	8.18	3.07	207859.7	877.07
334	301.19	50-100-50-100	< LOD	16.07	< LOD	42.45	< LOD	7.2	7.4	3.31	9.51	3.15	216811.3	911.67
345	300.97	50-100-50-100	< LOD	13.58	< LOD	63.24	< LOD	6.95	8.65	3.23	9.66	3.05	206898.1	864.35
361	300.53	50-100-50-100	< LOD	12.31	< LOD	65.12	< LOD	7.02	12.8	3.4	6.71	3.01	219153.9	909.8
366	301.6	50-100-50-100	< LOD	17.75	< LOD	42.26	< LOD	7.34	9.49	3.32	11.07	3.13	202756.3	866.67
377	300.55	50-100-50-100	< LOD	13.94	< LOD	57.13	< LOD	7.2	11.67	3.37	6.72	3.01	212499.5	893.76
382	301.2	50-100-50-100	< LOD	12.81	< LOD	42.39	< LOD	7.2	9.73	3.33	8.09	3.06	202123	859.95
411	301.65	50-100-50-100	< LOD	11.52	< LOD	42.67	< LOD	7.35	11.45	3.41	7.18	3.06	210649.4	887.24
436	300.35	50-100-50-100	< LOD	15.95	< LOD	56.57	< LOD	7.12	10.6	3.34	8.99	3.07	214677.6	896.2
5	301.83	50-100-50-100	< LOD	19.08	< LOD	49.57	< LOD	7.13	8.62	3.3	8.35	3.06	208496.1	876.16
18	301.11	50-100-50-100	< LOD	11.21	< LOD	59.78	< LOD	6.79	12.02	3.42	8.44	3.09	216284.5	903.9
34	301.7	50-100-50-100	< LOD	14.23	< LOD	59.27	< LOD	7.13	10.19	3.35	9.48	3.07	213335	890.61

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41	300.69	50-100-50-100	13.26	8.38	< LOD	41.94	< LOD	7.19	11.29	3.32	9.5	3.07	207456.7	874.96
67	300.92	50-100-50-100	< LOD	15.52	< LOD	56.73	< LOD	7.07	8.18	3.3	11.03	3.16	219925.4	915.05
mean			13.26	13.25846		51.69821		7.315897	10.13897	3.400769	8.42641	3.118205	212990.9	913.3179
SD			2.123299	3.054678		8.592589		0.812069	1.881237	0.336189	1.492907	0.275642	8016.24	92.90145
RSD %			16.01282	23.03946		16.62067		11.10006	18.55451	9.885677	17.717	8.839751	3.763653	10.17186
NIST 2709a														
Reading No	Duration	INSPECTOR (filter settings)	P	P Error	S	S Error	CI	CI Error	K	K Error	Ca	Ca Error	Ba	Ba Error
348	300.99	50-100-50-100	952.06	108.98	1091.11	41.01	37.03	16.56	14445.45	158.1	17167.46	276.7	699.47	32.35
349	300.39	50-100-50-100	806.42	108.7	1105.85	41.18	< LOD	24.81	14626.98	157.58	17050.58	274.28	688.46	32.2
359	300.44	50-100-50-100	707.86	104.56	1003.75	40	37.89	16.28	14939.51	159.93	17116.67	277	724.59	32.31
360	301.36	50-100-50-100	896.06	106.02	1052.94	40.49	28.18	16.28	14991.62	159.62	17012.29	274.92	728.45	32.5
385	300.61	50-100-50-100	708.99	109.36	1075.59	41.48	< LOD	37.95	15135.95	163.66	17357.84	284.25	746.32	32.99
386	301.39	50-100-50-100	810.67	109.07	1088.84	41.29	< LOD	32.57	15005.83	161.07	17465.05	280.94	761.39	33.39
466	301.03	50-100-50-100	832.47	104.53	989.5	39.83	< LOD	37.04	14680.05	160.26	16914.98	278.19	701.74	32.19
467	301.83	50-100-50-100	817.78	103.95	995.63	39.58	< LOD	23.93	14690.54	158.48	16957.53	274.51	684.07	31.82
510	301.86	50-100-50-100	825.52	109.55	1089.66	41.33	66.29	16.89	15176.93	162.43	16771.18	278.79	747.41	32.83
511	301.4	50-100-50-100	839.75	109.92	1064.11	41.19	59.71	16.86	15203.11	161.21	16866.09	277	734.63	32.87
147	361.11	50-100-50-100	920.97	97.8	997.5	36.99	< LOD	21.27	15083.06	148.12	17173.3	256.04	731.74	29.95
148	361.33	50-100-50-100	854.32	97.71	972.4	36.75	< LOD	21.27	15192.61	146.27	17145.42	251.88	733.65	30.39
150	181.7	30-60-30-60	936.79	144.06	1077.38	54.71	< LOD	42.27	14957.03	208.12	17087.04	358.46	733.11	42.74
151	181.06	30-60-30-60	986.02	150.8	1051.94	56.53	< LOD	34.49	14949.6	209.04	17150.47	360.86	757.9	42.62
203	180.38	30-60-30-60	973.98	168.54	1304.67	63.78	< LOD	50.33					780.81	30.82
206	181.46	30-60-30-60	900.18	144.13	1081.68	53.97	< LOD	31.14	14949.47	212.94	17062.57	367.96	769.24	43.48
217	300.54	50-100-50-100	816.81	107.79	1058.39	41	< LOD	23.32	14895.17	161.77	16993.84	279.88	709.45	32.82
233	300.6	50-100-50-100	767.57	102.25	987.4	39.1	< LOD	22.06	14568.8	157.79	16958.74	274.83	686.48	32.36
249	300.16	50-100-50-100	770.77	107.93	1066.76	40.77	< LOD	23.17	14385.7	155.25	16782.81	270.63	663.16	31.69
255	301.79	50-100-50-100	825.7	103.38	983.7	39.31	< LOD	22.38	14474.45	157.87	17106.82	275.59	695.77	33.04
280	301.62	50-100-50-100	966.35	105.3	1030.03	39.68	< LOD	22.5	14677.82	157.04	16878.63	270.81	688.28	32.17

Appendix 1

295	300.29	50-100-50-100	2820.2	118.46	1102.73	41.58	< LOD	23.56	15147.03	161.88	17460.3	278.9	765.47	33.15
300	300.92	50-100-50-100	828.71	106.02	1048.31	40.55	< LOD	23.13	14969.92	162.04	17207.45	280.24	728.48	32.5
310	301.25	50-100-50-100	970.09	109.9	1073.71	41.15	< LOD	23.21	15248.11	162.96	17438.81	280.8	755.54	33.17
318	301.59	50-100-50-100	940.24	110.31	1112.68	41.49	< LOD	23.43	15354.97	161.47	17624.72	277.98	754.16	32.99
324	300.63	50-100-50-100	874.76	105.08	966.17	39.58	< LOD	22.48	15067.45	161.88	17346.36	280.14	758.69	32.95
334	301.19	50-100-50-100	903.08	110.51	1063.8	41.65	< LOD	23.48	15166.47	160.15	17404.37	277.1	746.89	32.67
345	300.97	50-100-50-100	920.85	105.83	990.92	39.85	< LOD	22.5	14544.91	157.64	16804.26	274.88	720.75	32.64
361	300.53	50-100-50-100	824.61	111.25	1069.22	41.82	< LOD	23.95	15237.4	160.22	17155.46	276.37	762.22	32.82
366	301.6	50-100-50-100	898.78	104.94	946.93	39.61	< LOD	22.49	14941.77	158.41	17061.01	273.65	763.02	33.15
377	300.55	50-100-50-100	806.64	107.17	1047.97	40.51	< LOD	22.7	14488.63	157.69	16770.63	274.1	699.02	32.67
382	301.2	50-100-50-100	820.66	103.09	958.7	39.17	< LOD	22.13	14708.14	156.72	17086.43	272.9	727.84	33.19
411	301.65	50-100-50-100	856.71	107.77	998.32	40.69	< LOD	23.22	15286.98	164.37	17587.89	284.39	755.74	33.73
436	300.35	50-100-50-100	740.13	108.52	1060.26	41.15	< LOD	23.24	15106.96	162.07	17563.46	281.49	750.28	33.12
5	301.83	50-100-50-100	806.28	106.53	1027.49	40.7	< LOD	22.84	15391	165.56	17452.55	285.76	751.18	33.49
18	301.11	50-100-50-100	879.19	109.47	1085.85	41.52	< LOD	23.36	15135.4	163.31	17382.91	282.98	742.42	32.83
34	301.7	50-100-50-100	858.01	106.18	1058.86	40.2	< LOD	22.39	14694.96	161.22	16756.56	279.12	701.77	32.58
41	300.69	50-100-50-100	811.32	107.56	990.02	40.93	< LOD	23.18	15042.84	162.53	17142.86	281.4	759.94	33.36
67	300.92	50-100-50-100	843	110.65	1077.81	41.73	< LOD	23.66	15222.53	161.67	17420.82	278.65	751.57	32.95
mean			905.6487	111.63	1047.399	42.15	45.82	24.82872	14941.71	163.6405	17149.64	283.2729	732.3359	33.37154
SD			322.4102	14.6151	62.41502	5.440277	16.39546	7.110677	279.0448	14.28403	249.1234	24.38219	29.11025	2.908593
RSD %			35.59992	13.09245	5.959047	12.90694	35.78231	28.63892	1.867555	8.728909	1.452645	8.607317	3.974987	8.715789

Appendix 1

NIST 2711a

Reading No	Duration	INSPECTOR (filter settings)	Mg	Mg Error	Al	Al Error	Bal	Bal Error	Ti	Ti Error	V	V Error
153	181.56	30-60-30-60	4627.82	2097.48	41911.33	885.39	643846.1	1672.71	2621.73	51.88	108.92	22.86
154	181.19	30-60-30-60	< LOD	3031.15	40013.65	853.59	650938.5	1621.01	2635.53	52.88	122.06	23.4
204	180.22	30-60-30-60	4381.11	2195.2	45081.35	935.15	649882.1	1152.32	1253.71	279.29	< LOD	199
205	181.03	30-60-30-60	5920.65	2104.94	43382.52	898.11	636798.7	1688.76	2534.24	51.8	111.26	22.96
216	301.71	50-100-50-100	3284.94	1512.47	40203.41	637.35	652017.6	1252.33	2646.14	40.69	118.65	17.96
234	302	50-100-50-100	5218.24	1569.95	40412.72	648.75	648563.1	1269.98	2590.73	39.79	111.55	17.57
250	300.16	50-100-50-100	4503.38	1589.81	43337.55	683.15	635527.8	1291.75	2658.49	40.4	129.66	17.87
256	301.87	50-100-50-100	4012.85	1504.5	39439.84	625.35	652562.9	1239.42	2566.06	39.74	112.9	17.62
281	301.93	50-100-50-100	4933.77	1540.17	41737.7	653.35	643432.6	1282.14	2583.79	39.98	117.16	17.7
296	302.09	50-100-50-100	6504.89	1601.19	44498.26	685.52	631011.1	1326.04	2703.66	41.17	123.14	18.13
301	300.85	50-100-50-100	5007.54	1601.97	41134.55	663.9	642232.2	1276.69	2771.69	42.23	129.32	18.66
311	300.89	50-100-50-100	4591.14	1591.56	42548.16	672.92	634643.9	1290.96	2696.81	41.08	111.02	18.09
319	301.53	50-100-50-100	6846.95	1633.63	44597.3	698.48	627567.6	1348.93	2585.09	40.58	117.39	17.95
325	301.4	50-100-50-100	5678.24	1571.6	39809.45	643.38	648391.2	1267.31	2700.05	40.64	133.88	17.98
335	301.57	50-100-50-100	4014.94	1545.2	41980.75	657.59	639362.3	1282.81	2598.35	40.5	113.47	17.89
346	300.11	50-100-50-100	5683.21	1594.08	40798.84	657.99	644358.4	1276.45	2653.71	40.13	122.89	17.72
362	301.6	50-100-50-100	< LOD	2281.32	27696.55	550.97	683978.1	1154.66	2688.59	40.89	120.48	17.99
367	301.91	50-100-50-100	5681.49	1545.2	38162.3	621.71	655441.4	1247.37	2638.56	41.27	126.8	18.29
378	301.06	50-100-50-100	7009.49	1607.63	42756.11	673.98	637051.7	1323.74	2685.46	41.06	123.43	18.1
383	301.74	50-100-50-100	4484.98	1533.57	39438.4	631.93	651117.2	1259.72	2723.22	41.23	116.35	18.15
412	300.13	50-100-50-100	3970.3	1563.17	39657.59	646.54	648936.1	1268.27	2714.49	40.95	115.51	17.99
437	301.05	50-100-50-100	4907.06	1568.52	42038.08	664.33	639540.6	1300.18	2607.76	40.15	132.7	17.81
6	300.14	50-100-50-100	5121.34	1609.53	40174.82	657.94	644309.6	1272.08	2683.33	41.52	128.24	18.4
19	300.4	50-100-50-100	5353.95	1614.16	42536.47	681.2	637503.1	1298.15	2703.29	41.88	127.16	18.51

Appendix 1

35	300.01	50-100-50-100	5061.88	1597.01	42294.55	675.75	640265.9	1289.45	2516.68	40.56	117.64	18.1
42	300.9	50-100-50-100	5139.52	1573.33	39356.94	642.07	651930.6	1248.72	2568.72	39.74	122.15	17.67
68	300.93	50-100-50-100	6560.17	1596	42061.44	665.41	638649	1287.22	2530.31	41.52	114.92	18.65
Mean			5139.994	1717.568	41002.25	689.3259	644809.6	1314.414	2587.414	50.87222	120.3327	25.29704
1 stdev			1643.087	341.5558	3195.865	91.58253	10629.93	131.9841	274.5223	45.79982	24.18295	34.75343
%RSD			31.96672	19.88601	7.794366	13.28581	1.648537	10.04129	10.60991	90.02913	20.09674	137.3814

NIST 2711a

Reading No	Duration	INSPECTOR (filter settings)	Cr	Cr Error	Mn	Mn Error	Fe	Fe Error	Co	Co Error	Ni	Ni Error	Cu	Cu Error
153	181.56	30-60-30-60	73.4	16.42	560.19	75.96	27839.71	278.51	< LOD	106.45	< LOD	39.05	104.69	15.52
154	181.19	30-60-30-60	80.52	16.53	628.78	76.92	27910.57	275.53	< LOD	105.34	< LOD	38.29	103.36	15.28
204	180.22	30-60-30-60	< LOD	95.21	601.25	52.63	27879.23	187.11	< LOD	72.17	< LOD	26.41	109.53	10.69
205	181.03	30-60-30-60	76.91	16.46	564.78	75.8	27722.78	274.76	< LOD	104.8	< LOD	37.96	84.58	14.84
216	301.71	50-100-50-100	85.96	12.83	593.38	59.01	28237.39	214.07	< LOD	81.37	< LOD	29.36	102.17	11.8
234	302	50-100-50-100	73.16	12.85	682.55	60.41	28706.97	216.58	< LOD	81.96	< LOD	29.22	103.12	11.86
250	300.16	50-100-50-100	81.24	12.61	605	58.44	27662.84	210.54	< LOD	79.91	< LOD	28.92	100.71	11.67
256	301.87	50-100-50-100	68.08	12.72	592.34	57.9	27833.78	210.23	< LOD	80.04	< LOD	29.06	106.71	11.77
281	301.93	50-100-50-100	67.85	12.79	510.59	57.24	27430.46	210.74	< LOD	80.49	< LOD	28.99	102.22	11.77
296	302.09	50-100-50-100	69.35	13.1	588.21	59.04	28048.01	214.69	< LOD	81.58	< LOD	29.14	110.17	11.99
301	300.85	50-100-50-100	85.03	13.14	593.33	58.35	29138.14	216.98	< LOD	82.55	< LOD	29.51	122.17	12.18
311	300.89	50-100-50-100	76.21	12.96	577.15	57.98	28381.15	213.01	< LOD	81.58	< LOD	29.1	108.5	11.84
319	301.53	50-100-50-100	85.09	12.83	606.15	60.03	28135.59	217.2	< LOD	82.47	< LOD	30.15	118.66	12.32
325	301.4	50-100-50-100	73.72	12.55	606.29	59.06	28171.67	214.16	< LOD	81.53	< LOD	29.58	113.05	12.01
335	301.57	50-100-50-100	86.85	12.74	636.97	59.31	27990.16	212.39	< LOD	80.57	< LOD	29.33	102.12	11.75

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346	300.11	50-100-50-100	78.2	12.67	545.94	58.03	28095.03	213.07	< LOD	81.21	< LOD	29.41	105.03	11.83
362	301.6	50-100-50-100	74.59	12.95	604.75	58.58	27835.74	211.8	< LOD	80.7	< LOD	29.21	109.04	11.85
367	301.91	50-100-50-100	82.69	13.02	584.01	58.37	28066.31	213.61	< LOD	81.13	< LOD	29.35	100.11	11.78
378	301.06	50-100-50-100	81.33	12.78	608.19	59.88	28439.21	218.81	< LOD	82.86	< LOD	29.51	106.79	12.07
383	301.74	50-100-50-100	77.36	12.97	610.17	59.16	28367.73	215.23	< LOD	82.02	< LOD	29.31	105.69	11.9
412	300.13	50-100-50-100	81.47	12.88	617.02	59.58	28037.81	215.08	< LOD	81.59	< LOD	29.62	103.13	11.92
437	301.05	50-100-50-100	81.18	12.56	593.99	59.27	27841.99	214.46	< LOD	81.23	< LOD	29.49	103.19	11.9
6	300.14	50-100-50-100	88.84	12.97	594.51	58.7	28695.37	215.81	< LOD	81.81	< LOD	29.69	113.27	12.05
19	300.4	50-100-50-100	89.91	13.02	562.28	58.05	28149.58	213.86	< LOD	80.82	< LOD	29.47	110.12	11.98
35	300.01	50-100-50-100	80.83	12.89	532.31	57.56	27533.56	211.01	< LOD	80.72	< LOD	29.28	102.12	11.79
42	300.9	50-100-50-100	75.54	12.69	554.99	57.55	28220.63	212.98	< LOD	80.64	< LOD	29.39	101.88	11.75
68	300.93	50-100-50-100	67.1	13.29	598.1	58.34	28062.38	212.04	< LOD	80.09	< LOD	28.89	106.53	11.8
Mean			78.55423	16.31222	590.86	60.41296	28090.14	219.7874		83.61593		30.24778	105.8763	12.21889
1 stdev			16.40303	15.81093	34.10781	5.867913	371.5594	21.09836		8.123307		3.017636	6.848062	1.116569
%RSD			20.88115	96.92687	5.772571	9.713004	1.32274	9.59944		9.715024		9.976388	6.467984	9.138054

NIST 2711a

Reading No	Duration	INSPECTOR (filter settings)	Zn	Zn Error	As	As Error	Se	Se Error	Rb	Rb Error	Sr	Sr Error	Zr	Zr Error
153	181.56	30-60-30-60	368.4	16.01	71.67	22.16	< LOD	3.18	49.06	1.7	149.47	3.39	245.87	4.84
154	181.19	30-60-30-60	347.6	15.42	88.65	21.92	< LOD	2.93	49.33	1.68	148.85	3.35	244.85	4.78
204	180.22	30-60-30-60	356.55	10.79	75.58	15.1	< LOD	1.98	49.13	1.16	151.43	2.33	248.86	3.32
205	181.03	30-60-30-60	346.56	15.51	101.14	21.87	< LOD	3.01	49.91	1.7	149.44	3.36	251.23	4.85
216	301.71	50-100-50-100	349.02	11.95	75.94	16.91	< LOD	2.17	50.1	1.31	152.39	2.62	240.45	3.67
234	302	50-100-50-100	354.79	12.07	92.8	17.05	< LOD	2.35	49.91	1.31	150.03	2.61	254.8	3.78

Appendix 1

250	300.16	50-100-50-100	349.47	11.86	80.5	16.57	< LOD	2.16	49.1	1.29	151.53	2.59	260.39	3.77
256	301.87	50-100-50-100	351.61	11.88	63.76	16.66	< LOD	2.25	49.35	1.29	149.77	2.57	253.57	3.72
281	301.93	50-100-50-100	341.24	11.85	99.78	16.8	< LOD	2.18	48.33	1.29	149.4	2.59	248.18	3.72
296	302.09	50-100-50-100	349.76	12.01	88.69	17.09	< LOD	2.24	49.79	1.31	153.9	2.64	243.26	3.71
301	300.85	50-100-50-100	369.44	12.21	93.48	17.15	< LOD	2.25	51.43	1.32	153.78	2.62	253.36	3.75
311	300.89	50-100-50-100	356.62	11.97	83.44	16.94	< LOD	2.28	51.19	1.31	152.98	2.6	247.4	3.69
319	301.53	50-100-50-100	357.78	12.25	78.86	17.22	< LOD	2.3	50.7	1.34	149.5	2.63	252.98	3.81
325	301.4	50-100-50-100	351.57	11.97	84.92	16.95	< LOD	2.34	50.25	1.31	152.3	2.62	242.33	3.68
335	301.57	50-100-50-100	355.78	11.98	75.45	16.76	< LOD	2.14	48.63	1.29	150.31	2.59	252.16	3.73
346	300.11	50-100-50-100	339.34	11.79	90.11	16.85	< LOD	2.26	50.04	1.31	154.19	2.63	244	3.69
362	301.6	50-100-50-100	345.13	11.83	73.62	16.84	< LOD	2.34	50.24	1.3	151.33	2.6	244.08	3.67
367	301.91	50-100-50-100	352.98	11.99	77.88	16.85	< LOD	2.26	47.6	1.28	152.3	2.62	255.44	3.77
378	301.06	50-100-50-100	365.13	12.37	97.84	17.35	< LOD	2.28	49.01	1.32	151.99	2.66	247.75	3.78
383	301.74	50-100-50-100	359.43	12.14	73.46	17.08	< LOD	2.52	49.63	1.31	149.11	2.6	247.54	3.72
412	300.13	50-100-50-100	347.82	12	100.91	17.06	< LOD	2.3	50.92	1.33	151.94	2.63	257.13	3.81
437	301.05	50-100-50-100	353.54	12.09	71.48	16.94	< LOD	2.28	48.62	1.3	153.1	2.64	252.73	3.78
6	300.14	50-100-50-100	356.98	12.03	97.6	17.12	< LOD	2.26	51.37	1.32	155.28	2.64	252.88	3.75
19	300.4	50-100-50-100	362.87	12.13	77.85	16.83	< LOD	2.2	49.31	1.3	150.43	2.6	252.67	3.75
35	300.01	50-100-50-100	345.48	11.9	73.01	16.76	< LOD	2.3	48.48	1.29	149.56	2.59	257.48	3.78
42	300.9	50-100-50-100	346.3	11.82	87.37	16.77	< LOD	2.27	48.98	1.29	148.34	2.57	251.15	3.71
68	300.93	50-100-50-100	351.47	11.89	72.97	16.64	< LOD	2.3	48.86	1.29	148.07	2.56	270.17	3.84
Mean			353.061 5	12.35 963	83.2874 1	17.4163		2.3455 56	49.6025 9	1.34259 3	151.137 8	2.68333 3	250.841 1	3.84703 7
1 stdev			7.59479 5	1.217 682	10.6607 3	1.69233 1		0.2687 48	0.97068	0.13016 5	1.95102 8	0.25314 9	6.35780 3	0.36377 1
%RSD			2.15112 5	9.852 093	12.7999 3	9.71694 2		11.457 77	1.95691 4	9.69507 5	1.29089 4	9.43413 9	2.53459 4	9.45587 5

Appendix 1

NIST 2711a

Reading No	Duration	INSPECTOR (filter settings)	Nb	Nb Error	Mo	Mo Error	Pd	Pd Error	Ag	Ag Error	Cd	Cd Error	Sn	Sn Error	Sb	Sb Error
153	181.56	30-60-30-60	16.43	1.69	< LOD	1.99	< LOD	4.55	< LOD	32.79	46.03	6.84	< LOD	28.12	19.64	11.01
154	181.19	30-60-30-60	16.54	1.67	< LOD	1.97	< LOD	3.74	< LOD	41.5	43.62	6.74	< LOD	25.98	28.79	11.03
204	180.22	30-60-30-60	15.16	1.14	< LOD	1.5	< LOD	3.09	< LOD	27.86	41.91	4.79	< LOD	15.29	21.96	7.83
205	181.03	30-60-30-60	15.89	1.67	< LOD	1.98	< LOD	3.84	< LOD	36.18	48.59	6.91	< LOD	24.01	< LOD	16.45
216	301.71	50-100-50-100	15.94	1.29	< LOD	1.5	< LOD	2.82	< LOD	28.16	44.15	5.3	< LOD	20.3	19.5	8.62
234	302	50-100-50-100	16.51	1.3	< LOD	1.5	< LOD	2.79	< LOD	24.38	42.74	5.28	< LOD	15.59	20.15	8.61
250	300.16	50-100-50-100	15.69	1.27	< LOD	1.5	< LOD	2.69	< LOD	20.63	42.64	5.22	< LOD	26.33	17.92	8.49
256	301.87	50-100-50-100	15.61	1.27	< LOD	1.5	< LOD	2.74	< LOD	23.08	38.11	5.09	< LOD	22.53	20.98	8.4
281	301.93	50-100-50-100	14.89	1.27	< LOD	1.5	< LOD	2.7	< LOD	30.04	41.15	5.15	< LOD	25.26	22.9	8.44
296	302.09	50-100-50-100	15.86	1.29	< LOD	1.5	< LOD	2.73	< LOD	38.1	43.68	5.22	< LOD	15.46	27.92	8.55
301	300.85	50-100-50-100	17.04	1.3	< LOD	1.5	< LOD	2.78	< LOD	49.06	44.67	5.3	< LOD	16.84	17.84	8.57
311	300.89	50-100-50-100	16.18	1.28	< LOD	1.5	< LOD	2.85	< LOD	41.29	47.49	5.37	< LOD	27.1	18.4	8.63
319	301.53	50-100-50-100	16.45	1.31	< LOD	1.5	< LOD	3.13	< LOD	30.96	42.54	5.23	< LOD	24.62	16.05	8.5
325	301.4	50-100-50-100	15.01	1.27	< LOD	1.5	< LOD	2.84	< LOD	29.82	45.35	5.31	< LOD	19.95	13.07	8.55
335	301.57	50-100-50-100	15.94	1.28	< LOD	1.5	< LOD	2.83	< LOD	33.87	43.55	5.33	< LOD	19.42	14.24	8.62
346	300.11	50-100-50-100	15.51	1.28	< LOD	1.5	< LOD	2.78	< LOD	36.1	40.35	5.31	< LOD	17.75	18.01	8.71
362	301.6	50-100-50-100	14.83	1.26	< LOD	1.5	< LOD	2.76	< LOD	25.23	40.57	5.3	< LOD	20.43	21.37	8.71
367	301.91	50-100-50-100	16.86	1.3	< LOD	1.5	< LOD	2.78	< LOD	23.55	44.4	5.28	< LOD	23.41	13.73	8.5
378	301.06	50-100-50-100	16.81	1.32	< LOD	1.5	< LOD	2.87	< LOD	40.62	45.85	5.37	< LOD	15.86	18.81	8.68
383	301.74	50-100-50-100	15.98	1.29	< LOD	1.5	< LOD	2.75	< LOD	30.83	44.75	5.29	< LOD	22.45	17.98	8.57
412	300.13	50-100-50-100	16.66	1.3	< LOD	1.5	< LOD	2.86	< LOD	35.84	39.58	5.27	< LOD	16.96	17.68	8.65
437	301.05	50-100-50-100	15.6	1.29	< LOD	1.5	< LOD	3.4	< LOD	24.28	40.23	5.2	< LOD	21.13	16.8	8.52
6	300.14	50-100-50-100	17.67	1.31	< LOD	1.5	< LOD	2.8	< LOD	30.81	49.44	5.53	< LOD	17.37	< LOD	13.21

Appendix 1

19	300.4	50-100-50-100	16.69	1.3	< LOD	1.5	< LOD	2.78	< LOD	31.77	48.51	5.31	16.97	11.11	20.59	8.51
35	300.01	50-100-50-100	14.68	1.27	< LOD	1.5	< LOD	5.05	< LOD	34.04	46.02	5.27	< LOD	16.63	24.51	8.55
42	300.9	50-100-50-100	16.81	1.29	< LOD	1.5	< LOD	2.92	< LOD	27.65	44.62	5.4	< LOD	18.98	17.81	8.75
68	300.93	50-100-50-100	15.96	1.28	< LOD	1.5	< LOD	2.77	< LOD	28.64	43.86	5.29	< LOD	18.27	20.37	8.6
Mean			16.04444	1.325556		1.553333		3.060741		31.7437	43.86667	5.440741	16.97	20.26481	19.4808	9.194815
1 stdev			0.746027	0.130482		0.153748		0.584189		6.659295	2.840528	0.516407	3.265878	4.324825	6.354565	1.816661
%RSD			4.649753	9.843596		9.897943		19.08651		20.97832	6.475368	9.491486	19.24501	21.34155	32.61963	19.75745

NIST 2711a

Reading No	Duration	INSPECTOR (filter settings)	W	W Error	Au	Au Error	Pb	Pb Error	Bi	Bi Error	Si	Si Error	P	P Error
153	181.56	30-60-30-60	< LOD	108.64	< LOD	12.07	1403.99	25.19	< LOD	10.84	233034.8	1248.22	1148.26	155.65
154	181.19	30-60-30-60	< LOD	79.06	< LOD	12.03	1387.85	24.77	12.15	7.18	230181.4	1226.98	944.04	152.52
204	180.22	30-60-30-60	59.78	31.06	< LOD	7.9	1396.56	17.11	19.36	5.07	264949.8	1167.3	1232.19	176.67
205	181.03	30-60-30-60	78.53	45.71	< LOD	11.99	1364.47	24.61	13.15	7.18	237684.8	1248.17	1024.21	155.01
216	301.71	50-100-50-100	< LOD	51.45	< LOD	8.88	1398.71	19.22	11.98	5.56	227584.1	926.68	855.27	112.18
234	302	50-100-50-100	< LOD	51.85	< LOD	8.97	1397.43	19.28	12.21	5.58	228097.2	931.19	1064.41	114.28
250	300.16	50-100-50-100	< LOD	79.12	< LOD	9.04	1355.63	18.75	10.93	5.44	239876.5	962.62	1126.59	119.11
256	301.87	50-100-50-100	< LOD	51.6	< LOD	8.92	1393.39	18.99	15.52	5.55	228184.9	920.65	1082.65	111.98
281	301.93	50-100-50-100	52.52	34.47	< LOD	8.89	1356.38	18.91	11.61	5.49	234007.6	944.08	1210.12	115.03
296	302.09	50-100-50-100	< LOD	77.1	< LOD	9.04	1404.17	19.36	14.21	5.62	240031.8	962.16	1171.91	117.15
301	300.85	50-100-50-100	< LOD	52.26	< LOD	9.07	1436.15	19.44	14.67	5.64	232213.2	938.43	1049.54	116.84
311	300.89	50-100-50-100	< LOD	51.64	< LOD	9.01	1420.28	19.24	15.8	5.61	239903	952.84	1173.2	118.56
319	301.53	50-100-50-100	< LOD	75.57	< LOD	9.25	1404.61	19.57	13.75	5.68	243887.2	983.36	1000.6	119.21
325	301.4	50-100-50-100	< LOD	72.79	< LOD	9.06	1396.36	19.21	11.66	5.55	229004.1	934.98	1058.7	114.22

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335	301.57	50-100-50-100	< LOD	63.51	< LOD	9.08	1382.91	19.03	20.74	5.64	237799.4	950.52	990.14	115.51
346	300.11	50-100-50-100	< LOD	51.76	< LOD	9.08	1379.11	19.04	16.79	5.6	232244.8	941.34	1059.96	116.28
362	301.6	50-100-50-100	< LOD	50.44	< LOD	8.65	1403.72	19.17	10.34	5.51	175991.1	778.58	32368.58	238.34
367	301.91	50-100-50-100	< LOD	65.66	< LOD	9.06	1383.45	19.11	14.91	5.57	224502.9	922.32	970.4	111.55
378	301.06	50-100-50-100	< LOD	85.27	< LOD	9.29	1408.28	19.61	18.65	5.76	235410.8	960.56	845.09	115.14
383	301.74	50-100-50-100	< LOD	51.86	< LOD	8.98	1421.82	19.45	12.19	5.61	227547.6	926.56	964.54	112.36
412	300.13	50-100-50-100	< LOD	82.74	< LOD	9.14	1383.3	19.22	14.3	5.62	230452.2	946.61	842.49	114.96
437	301.05	50-100-50-100	< LOD	75.64	< LOD	9.05	1384.58	19.26	15.63	5.63	236266.2	957.63	1110.77	116.43
6	300.14	50-100-50-100	< LOD	75.31	< LOD	9.08	1424.62	19.37	11.39	5.58	231971.2	944.06	958.4	116.89
19	300.4	50-100-50-100	< LOD	57.29	< LOD	9.03	1380.47	19.09	17.03	5.61	237469.6	960.31	1059.95	118.94
35	300.01	50-100-50-100	< LOD	52.08	< LOD	9.07	1375.54	19.04	14.48	5.55	236364.9	956.71	1060.81	118.38
42	300.9	50-100-50-100	< LOD	71.17	< LOD	9.12	1380	18.97	20.97	5.63	226765.7	928.51	970.42	114.21
68	300.93	50-100-50-100	< LOD	80.78	< LOD	9.06	1375.53	18.9	15.56	5.53	236236.9	950.71	1185.53	116.67
Mean			63.61	63.91963		9.326296	1392.567	19.73741	14.61462	5.882593	232506.1	980.4474	1044.623	126.8174
1 stdev			20.7088	17.4785		1.005084	19.90513	1.899497	4.043281	1.086185	13702.02	109.5331	108.9247	27.76038
%RSD			32.55589	27.34449		10.77688	1.429384	9.623843	27.66601	18.46439	5.89319	11.17175	10.42718	21.89004

NIST 2711a

Reading No	Duration	INSPECTOR (filter settings)	S	S Error	CI	CI Error	K	K Error	Ca	Ca Error	Ba	Ba Error
153	181.56	30-60-30-60	1530.38	61.15	< LOD	31.33	18893.6	223.99	20763.21	369.79	525.28	41.51
154	181.19	30-60-30-60	1514.6	60.44	< LOD	30.46	18764.85	226.78	20619.21	375.62	522.88	41.19
204	180.22	30-60-30-60	1646.53	67.89	< LOD	36.31					505.77	29.33
205	181.03	30-60-30-60	1476.26	60.04	< LOD	30.76	18927.75	226.96	20706.77	374.96	519.71	41.62
216	301.71	50-100-50-100	1436.67	44.4	< LOD	22.36	18938.26	175.37	20946.2	291.74	523.64	32.42

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234	302	50-100-50-100	1446.18	45.04	< LOD	23.05	18909.99	173.53	21075.77	289.32	486.51	32.2
250	300.16	50-100-50-100	1474.9	46	< LOD	23.36	19072.45	174.41	21017.47	288.57	472.34	31.74
256	301.87	50-100-50-100	1363.01	43.45	< LOD	22.22	18731.79	172.16	20441.35	285.29	477.37	31.36
281	301.93	50-100-50-100	1412.57	44.22	< LOD	22.62	18920.29	174.66	20628.13	287.71	490.83	31.5
296	302.09	50-100-50-100	1491.72	45.28	< LOD	23.14	19214.16	178.03	21455.4	295.9	551.4	32.09
301	300.85	50-100-50-100	1483.7	46.03	< LOD	23.44	19474.85	179.76	21437.28	298.85	577.23	32.65
311	300.89	50-100-50-100	1521.46	46.11	< LOD	23.46	19184.21	176.22	21423.63	293.29	577.23	32.81
319	301.53	50-100-50-100	1569.01	46.59	< LOD	23.61	18930.84	176.63	20998.71	293.4	541.7	32.23
325	301.4	50-100-50-100	1475.23	45.12	< LOD	23.02	19062.44	173.78	20835.19	286.71	496.1	32.22
335	301.57	50-100-50-100	1498.43	45.11	< LOD	22.95	18897.76	175.46	21027.62	292.19	509.43	32.54
346	300.11	50-100-50-100	1497.66	45.76	< LOD	23.23	18959.59	172.82	20848.11	287.3	532.68	32.89
362	301.6	50-100-50-100	5503.53	71.87	< LOD	21.95	19079.33	176.64	21022.73	293.9	501.59	32.59
367	301.91	50-100-50-100	1338.51	43.68	< LOD	22.61	18823.8	177.47	20619.4	294.76	479.92	31.95
378	301.06	50-100-50-100	1466.42	45.24	< LOD	23.1	19243.66	177.07	21178.54	292.89	535.83	32.75
383	301.74	50-100-50-100	1404.79	44.1	< LOD	22.49	19202.21	176.21	20844.37	291.14	532.44	32.34
412	300.13	50-100-50-100	1399.82	45.18	< LOD	23.28	19064.94	175.57	21041.72	290.79	539.77	32.72
437	301.05	50-100-50-100	1470.07	45.25	< LOD	23.19	19190.94	175.25	21242.81	290.3	497.76	32.01
6	300.14	50-100-50-100	1501.58	46.46	< LOD	23.64	19485.42	178.76	21176.58	296.68	522.46	33.33
19	300.4	50-100-50-100	1474.65	46.36	< LOD	23.94	19030.94	178.37	20908.06	297.17	497.86	31.88
35	300.01	50-100-50-100	1443.36	45.85	< LOD	23.59	18838.58	175.98	20843.07	293.32	505.25	31.91
42	300.9	50-100-50-100	1445.28	45.34	< LOD	23.21	18808.66	172.45	21056.87	287.59	493.97	32.8
68	300.93	50-100-50-100	1417.37	44.93	< LOD	23.28	18944.75	178.09	20616.8	294.99	459.12	31.99
Mean			1618.655	48.7737		24.42963	19022.93	181.6315	20952.88	301.3142	513.9285	33.2063
1 stdev			778.8624	7.855104		3.468433	195.9854	16.42963	267.8972	26.80635	29.41935	3.05384
%RSD			48.11787	16.1052		14.19765	1.030259	9.04558	1.27857	8.896476	5.724405	9.19657

Appendix 1

TILL 4

Index	Duration	SAMPLE	Bal	Bal Error	Ti	Ti Error	V	V Error	Cr	Cr Error	Mn	Mn Error	Fe	Fe Error	Co	Co Error
51	181.59	till4	652070.2	1697.46	3942.74	62.81	124.41	25.84	81.76	18.19	352.74	71.66	40364.35	346.94	< LOD	125.08
52	181.79	till4	649780.4	1687.73	3934.46	63.44	133.08	26.2	98.04	18.1	388.74	72.46	40816.57	349.25	< LOD	125.73
53	180.26	till4	648233.1	1704.45	3941.8	63.65	135.57	26.34	95.46	18.32	442.63	73.44	40861.88	348.93	< LOD	127.23
87	180.61	Till 4-2	656868.1	1648.51	3901.01	63.01	144.19	26.15	110.09	17.97	494.14	73.88	40857.71	343.69	< LOD	124.95
88	181.11	Till 4-2	651145.1	1714.19	3879.11	61.54	128.94	25.33	95.28	17.78	460.76	75.09	40996.39	354.11	< LOD	129.04
89	107.43	Till 4-2	928071.4	404.32	3837.31	63.14	118.6	26.3	93.27	18.29	365.13	71.15	40490.67	342.79	< LOD	124.46
117	180.22	Till 4-3	644194.3	1708.63	4017.94	64.17	123.49	26.23	75.63	18.41	424.21	73.02	40432.22	344.9	< LOD	125.07
118	180.01	Till 4-3	645222.6	1720.75	4034.15	63.61	121.19	26.01	90.06	17.83	414.63	72.68	40016.49	343.14	< LOD	125.52
119	181.36	Till 4-3	646978	1678.78	4059.85	62.88	131.5	25.76	73.4	17.82	454.35	72.31	40252.48	338.27	< LOD	122.67
151	182.05	Till 4-4	643834.6	1717.21	4068.37	64.41	150.27	26.65	82.18	18.62	453.58	73.51	41399.8	351.17	< LOD	127.43
152	180.5	Till 4-4	646518.3	1682.44	4129.03	64.8	123.31	26.4	109.19	18.44	452.14	73.53	41707.82	350.79	< LOD	126.49
153	181.93	Till 4-4	643282.6	1727.06	4050.18	65.07	113.94	26.74	100.66	18.64	427.04	73.02	41876.95	353.65	< LOD	127.56
159	181.13	Till 4-5	634419.9	1761.91	4037.49	65.15	136.61	26.97	87.19	18.72	507.07	75.05	41574.24	352.6	< LOD	126.99
160	180.29	Till 4-5	638030.8	1709.9	4072.31	63.67	119.21	26.09	91.02	18.34	514.07	73.86	41641.48	344.36	< LOD	124.12
161	182.07	Till 4-5	634586.6	1747.17	4104.62	64.08	142.25	26.28	94.04	18.43	521.65	75.1	41818.47	352.02	< LOD	127.24
180	240.8	Till 4-6	638698.4	1396.66	4152.69	57.89	139.1	24.14	102.31	16.71	425.95	58.93	41949.45	284.41	< LOD	103.04
181	240.63	Till 4-6	636953.4	1410.17	4127.79	57.92	149.8	24.32	88.22	16.83	440.53	59.54	42350.17	288.4	< LOD	103.55
214	240.79	Till 4-7	648405.3	1342.97	3985.32	57.18	142.2	24.14	114.17	16.66	459.98	58.67	41346.64	278.05	< LOD	100.38
215	240.62	Till 4-7	645516.4	1369.99	3984.95	56.15	132.66	23.55	84.95	16.74	437.99	58.88	41223.32	279.73	< LOD	100.52
245	181.64	Till 4-8	625668.6	1774.87	4049.22	64.28	129.09	26.42	80.55	18.75	361.08	70.98	41809.58	349.33	< LOD	127.1
246	180.02	Till 4-8	633677.4	1753.93	3980.26	63.1	147.33	26.08	85.38	18.34	418.03	72.74	41740.29	351.04	< LOD	125.87
247	181.84	Till 4-8	630125.7	1781.94	4033.67	63.41	116.73	25.9	82.18	18.36	411.98	72.89	41633.91	353.01	< LOD	127.41
265	241.55	TILL 4-10	639173.4	1403.49	4015.35	57.63	124.92	24.12	95.03	16.63	355.74	57.68	41527.16	283.27	< LOD	101.75
266	241.72	TILL 4-10	640177.4	1399.08	4080.49	57.57	129.52	23.96	104.43	16.59	400.45	58.59	41392.95	283.47	< LOD	102.27
273	241.9	TILL 4-11	643594	1361.77	4124.62	57.71	141.69	24.1	91.09	16.82	508.71	60.21	41932.94	282.67	< LOD	101.91
274	241.77	TILL 4-11	637386.1	1402.38	4122.43	57.34	129.93	23.88	101.88	16.52	468.04	59.75	42165.05	285.86	< LOD	103.05
276	290.59	TILL 4-11	643536.7	1374.05	4058.59	49.68	137	20.34	88.38	14.21	492.79	59.82	41198.43	279.54	< LOD	100.83
310	301.35	TILL 4-12	624453.1	1370.19	4113.94	49.99	127.7	20.51	91.27	14.3	425.46	55.9	41600.23	268.66	< LOD	97.16

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311	301.5	TILL 4-12	625095.4	1365.46	4147.88	50.71	140.25	20.89	91.13	14.58	433.22	55.84	41724.76	268.15	< LOD	96.83
321	302.07	TILL 4-13	652132.6	1281.22	4026.57	49.7	137.38	20.6	84.3	14.12	389.99	54.94	41125.94	266.03	< LOD	95.7
322	300.18	TILL 4-13	653480	1255	4073.84	49.54	135.44	20.45	92.18	14.17	416.91	54.27	40841.12	259.19	< LOD	94.01
347	302.09	TILL 4-14	650168.1	1279.99	4036.43	49.37	121.83	20.31	101.01	13.81	370.92	54.24	40208.74	260.54	< LOD	94.57
348	300.05	TILL 4-14	648296	1289.17	4012.97	49.25	123.48	20.26	90.83	14.04	403.8	54.62	40159.26	260.11	< LOD	94.69
382	300.46	TILL 4-15	651749.2	1266.48	4001.69	49.1	136.27	20.3	105.04	14.03	405.64	54.51	40624.24	260.45	< LOD	94.09
383	300.08	TILL 4-15	647046.1	1295.53	4036.16	48.25	133.09	19.83	94.99	13.91	408.46	55.17	40581.73	262.5	< LOD	94.65
410	300.44	TILL 4-16	651000.8	1275.06	4087.55	49.94	129.82	20.6	95.67	14.06	468.93	55.79	40729.8	261.43	< LOD	94.06
411	300.52	TILL 4-16	651193.7	1278.68	4142.58	49.29	134.76	20.13	100.9	13.93	405.66	55.12	40629.36	262.78	< LOD	95.2
454	300.18	TILL 4-17	636338.6	1340.47	3899.8	48.47	132.93	20.14	102.67	13.94	475.62	56.88	40467.07	264.46	< LOD	95.44
455	301.98	TILL 4-17	631434.3	1331.45	3963.65	49.33	133.25	20.46	97.93	14.29	385.25	54.15	40543.38	259.95	< LOD	94.81

TILL 4

Index	Duration	SAMPLE	Ni	Ni Error	Cu	Cu Error	Zn	Zn Error	As	As Error	Se	Se Error	Rb	Rb Error	Sr	Sr Error
51	181.59	till4	< LOD	40.05	194.97	18.2	50.42	9.15	117.53	8.12	< LOD	3.95	67.75	2.01	74.72	2.47
52	181.79	till4	< LOD	40.39	214.24	18.67	44.08	8.96	119.06	8.14	< LOD	4.14	68.48	2.02	76.27	2.49
53	180.26	till4	< LOD	40.12	214.21	18.61	59.19	9.33	115.92	8.18	< LOD	3.99	69.2	2.02	74.19	2.46
87	180.61	Till 4-2	< LOD	39.69	237.15	18.88	49.66	9.03	116.26	8.13	< LOD	4.34	68.96	1.99	76.1	2.45
88	181.11	Till 4-2	< LOD	40.31	215.87	18.91	51.66	9.34	127.99	8.42	< LOD	3.15	67.88	2.03	77.33	2.54
89	107.43	Till 4-2	< LOD	40.3	204.74	18.39	44.83	8.98	117.52	8.18	< LOD	3.64	66.64	1.98	76.48	2.49
117	180.22	Till 4-3	< LOD	40.18	223.71	18.74	47.93	9.01	115.4	8.18	< LOD	3.09	67.67	1.99	77.47	2.49
118	180.01	Till 4-3	< LOD	39.37	221.71	18.67	52.46	9.21	119.59	8.05	< LOD	5.24	67.9	1.99	75.81	2.47
119	181.36	Till 4-3	< LOD	39.05	189.93	17.65	54.9	9.11	114.56	7.78	< LOD	2.89	66.27	1.94	75.08	2.42
151	182.05	Till 4-4	< LOD	39.91	229.83	18.96	55.99	9.27	110.34	8.09	< LOD	4.03	70.54	2.04	75.01	2.47
152	180.5	Till 4-4	< LOD	39.17	212.73	18.46	54.45	9.18	118.06	8.07	< LOD	3.77	69.4	2.01	77.31	2.49
153	181.93	Till 4-4	< LOD	40.29	219.66	18.78	53.14	9.23	126.1	8.27	< LOD	4.77	69.92	2.03	76.03	2.49
159	181.13	Till 4-5	< LOD	40.6	213.1	18.67	56.3	9.39	122.04	8.31	< LOD	3.82	71.86	2.06	77.23	2.51
160	180.29	Till 4-5	< LOD	39.61	229.84	18.58	50.78	9.02	121.66	8.06	< LOD	4.64	72.19	2.02	80.23	2.49

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161	182.07	Till 4-5	< LOD	40.48	232.29	18.99	52.89	9.25	121.7	8.22	< LOD	4.68	68.46	2	78.27	2.51
180	240.8	Till 4-6	< LOD	32.19	215.51	15	51.53	7.43	121.76	6.68	< LOD	3.4	70.88	1.64	79.66	2.04
181	240.63	Till 4-6	< LOD	33.2	203.61	14.96	51.54	7.47	126.58	6.78	< LOD	3.24	71.04	1.66	79.81	2.06
214	240.79	Till 4-7	< LOD	31.66	220.9	14.87	54.85	7.4	119.46	6.58	< LOD	2.69	68.56	1.59	78.22	1.99
215	240.62	Till 4-7	< LOD	32.23	220.02	14.98	57.31	7.49	119.1	6.58	< LOD	4.02	68.73	1.61	76.05	1.98
245	181.64	Till 4-8	< LOD	39.79	205.98	18.25	48.53	9.03	124.04	8.27	< LOD	3.05	69.68	2.01	78.48	2.5
246	180.02	Till 4-8	< LOD	39.48	221	18.65	60.24	9.41	121.15	8.23	< LOD	3.98	69.12	2.01	79.13	2.52
247	181.84	Till 4-8	< LOD	41.12	212.05	18.66	56.67	9.39	117.33	8.35	< LOD	3.04	68.9	2.02	76.15	2.49
265	241.55	TILL 4-10	< LOD	32.88	212.41	15.01	56.8	7.57	123.54	6.73	< LOD	2.36	71.73	1.65	79.82	2.04
266	241.72	TILL 4-10	< LOD	33.08	216.67	15.11	59.94	7.59	118.07	6.64	< LOD	2.81	71.18	1.65	78.26	2.03
273	241.9	TILL 4-11	< LOD	32.17	215.64	14.9	57.45	7.49	119.93	6.63	< LOD	2.34	70.25	1.63	79.07	2.02
274	241.77	TILL 4-11	< LOD	32.55	214.68	15.02	56.03	7.52	122.72	6.68	< LOD	3.2	68.51	1.62	78.21	2.03
276	290.59	TILL 4-11	< LOD	32.28	224.97	15.06	53.79	7.41	120.23	6.6	< LOD	3.29	69.17	1.61	79.17	2.02
310	301.35	TILL 4-12	< LOD	30.69	216.18	14.27	55.97	7.13	120.24	6.26	< LOD	2.73	69.85	1.55	79.48	1.93
311	301.5	TILL 4-12	< LOD	31.13	215.3	14.22	54.47	7.05	126.35	6.3	< LOD	2.17	70.74	1.55	78.79	1.92
321	302.07	TILL 4-13	< LOD	29.91	218.12	14.2	57.23	7.12	118.74	6.19	< LOD	3.03	66.95	1.51	75.38	1.88
322	300.18	TILL 4-13	< LOD	29.79	223.4	13.99	51.75	6.82	117.23	6.06	< LOD	3.81	66.11	1.47	75.68	1.84
347	302.09	TILL 4-14	< LOD	30.12	213.15	14.01	54.29	6.98	116.2	6.14	< LOD	3.06	68.23	1.51	75.85	1.87
348	300.05	TILL 4-14	< LOD	30.09	199.92	13.77	54.39	7.03	115.44	6.07	< LOD	3.06	67.48	1.5	76.09	1.87
382	300.46	TILL 4-15	< LOD	30.12	212.74	13.93	50.2	6.84	118.19	6.21	< LOD	2.34	66.84	1.49	75.91	1.86
383	300.08	TILL 4-15	< LOD	30.31	210.68	14.03	54.23	7.07	124.02	6.2	< LOD	2.19	67.87	1.51	76.01	1.88
410	300.44	TILL 4-16	< LOD	30.46	217.04	14.05	53.84	6.94	115.77	6.15	< LOD	2.46	68.87	1.51	77.09	1.88
411	300.52	TILL 4-16	< LOD	30.33	214.3	14.09	57.14	7.08	120.34	6.22	< LOD	2.32	68.46	1.52	76.56	1.88
454	300.18	TILL 4-17	< LOD	30.74	217.83	14.29	48.56	6.96	120.3	6.24	< LOD	2.66	67.18	1.52	76.58	1.9
455	301.98	TILL 4-17	< LOD	30.04	217.71	14.02	49.13	6.86	114.08	6.07	< LOD	3.94	68.35	1.5	77.39	1.88

Appendix 1

TILL 4

Index	Duration	SAMPLE	Zr	Zr Error	Nb	Nb Error	Mo	Mo Error	Pd	Pd Error	Ag	Ag Error	Cd	Cd Error	Sn	Sn Error
51	181.59	till4	302.14	5.35	13.58	1.68	9.03	2.18	< LOD	4.02	< LOD	49.39	< LOD	8.19	< LOD	34.66
52	181.79	till4	299.64	5.34	13.01	1.67	8.34	2.17	< LOD	3.74	< LOD	45.24	< LOD	7.9	< LOD	22.01
53	180.26	till4	307.19	5.39	12.92	1.67	8.16	2.17	< LOD	4.25	< LOD	56.01	< LOD	8.19	< LOD	36.96
87	180.61	Till 4-2	307.59	5.32	14.84	1.68	7.52	2.13	< LOD	3.79	< LOD	44.72	< LOD	8.16	< LOD	22.5
88	181.11	Till 4-2	312.48	5.52	13.86	1.71	9.76	2.23	< LOD	3.92	< LOD	41.94	< LOD	7.86	< LOD	35.2
89	107.43	Till 4-2	303.87	5.36	12.83	1.66	10.81	2.19	< LOD	6.18	< LOD	60.92	< LOD	12.31	< LOD	43.02
117	180.22	Till 4-3	298.56	5.29	14.41	1.68	9.22	2.16	< LOD	3.81	< LOD	47.14	< LOD	7.82	< LOD	22.11
118	180.01	Till 4-3	299.19	5.3	14.23	1.68	6.66	2.13	< LOD	3.72	< LOD	54.11	< LOD	7.85	21.73	14.44
119	181.36	Till 4-3	298.61	5.2	11.59	1.61	7.66	2.11	< LOD	3.68	< LOD	42.89	< LOD	7.88	< LOD	29.53
151	182.05	Till 4-4	322.1	5.53	15.59	1.71	10.67	2.21	< LOD	3.92	< LOD	55.03	< LOD	8.11	< LOD	36.02
152	180.5	Till 4-4	321.72	5.5	15.42	1.7	7.61	2.16	< LOD	3.88	< LOD	38.83	< LOD	7.97	< LOD	22.6
153	181.93	Till 4-4	321.49	5.53	14.31	1.69	8.35	2.19	< LOD	3.85	< LOD	42.98	< LOD	7.98	22.89	15.07
159	181.13	Till 4-5	309.09	5.42	15.56	1.71	8.46	2.18	< LOD	6.73	< LOD	46.39	< LOD	8.08	< LOD	22.4
160	180.29	Till 4-5	311.32	5.32	14.39	1.65	8.85	2.13	< LOD	3.92	< LOD	45.03	< LOD	8	34.06	15.12
161	182.07	Till 4-5	305.47	5.37	15.22	1.7	8.44	2.16	< LOD	3.89	< LOD	41.22	< LOD	7.95	< LOD	22.41
180	240.8	Till 4-6	306.34	4.33	14.48	1.36	10.47	1.76	< LOD	3.09	< LOD	57.71	< LOD	6.28	20.97	12.1
181	240.63	Till 4-6	310.49	4.4	15.84	1.39	10.29	1.78	< LOD	3.08	< LOD	42.44	< LOD	6.41	< LOD	18.32
214	240.79	Till 4-7	309.14	4.29	13.35	1.32	9.25	1.73	< LOD	3.02	< LOD	50.67	< LOD	6.39	19.65	12.1
215	240.62	Till 4-7	308.82	4.32	13.95	1.34	9.15	1.74	< LOD	3.06	< LOD	57.26	< LOD	6.36	< LOD	18.4
245	181.64	Till 4-8	310.47	5.37	13.5	1.66	7.14	2.14	< LOD	3.89	< LOD	38.13	< LOD	7.81	28.59	14.96
246	180.02	Till 4-8	302.5	5.33	13.96	1.67	6.55	2.13	< LOD	4	< LOD	32.8	< LOD	8.01	< LOD	22.28
247	181.84	Till 4-8	307.22	5.41	13.49	1.68	6.97	2.16	< LOD	3.92	< LOD	49.19	< LOD	8.02	< LOD	22.18
265	241.55	TILL 4-10	300.7	4.3	13.39	1.35	8.37	1.74	< LOD	2.99	< LOD	45.88	< LOD	6.34	27.95	12.27
266	241.72	TILL 4-10	299.06	4.29	14.28	1.36	9.02	1.75	< LOD	3.15	< LOD	61.72	< LOD	6.48	28.39	12.34
273	241.9	TILL 4-11	283.57	4.14	15.02	1.36	9.23	1.72	< LOD	2.94	< LOD	46.69	< LOD	6.31	26.06	12.13
274	241.77	TILL 4-11	286.11	4.19	14.11	1.36	9.98	1.75	< LOD	3.11	< LOD	45.8	< LOD	6.43	< LOD	18.35
276	290.59	TILL 4-11	298.46	4.24	14.34	1.35	9.59	1.73	< LOD	2.91	< LOD	51.61	< LOD	6.28	19.5	11.92

Appendix 1

310	301.35	TILL 4-12	331.47	4.29	13.49	1.28	8.24	1.67	< LOD	2.78	< LOD	57.45	< LOD	5.97	28.18	11.58
311	301.5	TILL 4-12	330.8	4.27	12.82	1.26	8.19	1.66	< LOD	2.88	< LOD	46.64	< LOD	5.96	24.53	11.63
321	302.07	TILL 4-13	309.24	4.11	14.51	1.29	9.05	1.66	< LOD	2.85	< LOD	57.02	< LOD	5.91	20.63	11.5
322	300.18	TILL 4-13	306.47	4	14.25	1.25	7.49	1.6	< LOD	2.84	< LOD	44.58	< LOD	5.96	< LOD	17.07
347	302.09	TILL 4-14	299.01	4.01	12.74	1.25	9.06	1.63	< LOD	2.73	< LOD	43.74	< LOD	5.86	< LOD	26.62
348	300.05	TILL 4-14	294.78	3.97	12.59	1.25	7.68	1.62	< LOD	2.78	< LOD	39.87	< LOD	5.93	21.73	11.23
382	300.46	TILL 4-15	304.82	4.02	13.64	1.26	8.05	1.62	< LOD	2.77	< LOD	44.95	< LOD	5.85	18.79	11.47
383	300.08	TILL 4-15	308.69	4.08	13.63	1.27	7.59	1.63	< LOD	2.79	< LOD	52.32	< LOD	6.04	19.39	11.6
410	300.44	TILL 4-16	297.51	3.98	14.1	1.27	8.53	1.62	< LOD	2.87	< LOD	58.07	< LOD	6.01	17.28	11.5
411	300.52	TILL 4-16	301.39	4.03	13.46	1.27	7.16	1.62	< LOD	2.7	< LOD	48.49	< LOD	5.91	21.74	11.34
454	300.18	TILL 4-17	310.83	4.14	12.19	1.26	10.32	1.68	< LOD	2.75	< LOD	57.64	< LOD	5.93	18.4	11.39
455	301.98	TILL 4-17	307.9	4.05	13.93	1.26	10.06	1.64	< LOD	2.87	< LOD	42.05	< LOD	6	< LOD	17.08

TIILL 4

Index	Duration	SAMPLE	Sb	Sb Error	W	W Error	Au	Au Error	Pb	Pb Error	Bi	Bi Error	Mg	Mg Error	Al	Al Error
51	181.59	till4	< LOD	15.71	262.27	46.47	< LOD	11.21	41.5	6.13	60.02	6.2	4409.07	1914.36	46187.53	885.14
52	181.79	till4	< LOD	15.3	259.1	46.86	< LOD	11.87	40.69	6.11	58.26	6.17	< LOD	4146.41	46112.94	947.14
53	180.26	till4	< LOD	19.49	204.72	46.1	< LOD	14.01	46.34	6.29	54.92	6.09	3470.39	1966.19	46391.91	911.76
87	180.61	Till 4-2	< LOD	15.53	268.19	45.87	< LOD	11.02	49.62	6.29	54.9	6.01	4669.19	1976.19	43847.55	879.7
88	181.11	Till 4-2	< LOD	19.31	261.68	47.78	< LOD	13.41	42.13	6.18	51.12	6.05	3995.68	2022.18	44869.24	911.15
89	107.43	Till 4-2	< LOD	23.32	280.73	46.72	< LOD	11.27	46.6	6.24	54.05	6.02				
117	180.22	Till 4-3	< LOD	15.25	249.54	46.32	< LOD	11.71	49.59	6.33	54.48	6.04	< LOD	3005.63	47371.13	938.35
118	180.01	Till 4-3	< LOD	22.33	269.99	47.1	< LOD	13.28	38.8	6	54.56	6.03	6601.99	2009.67	47022.54	916.38
119	181.36	Till 4-3	< LOD	16.27	270.7	46.43	< LOD	15.02	37.89	5.8	52.87	5.86	5571.78	1941.66	46372.34	888.3
151	182.05	Till 4-4	< LOD	22.43	219.07	46.93	< LOD	18.17	47.53	6.33	54.99	6.11	4375.74	2035.7	45730.96	918.53
152	180.5	Till 4-4	< LOD	15.7	233.33	46.61	< LOD	15.65	41.39	6.09	59.26	6.16	< LOD	4874.37	46199.16	993.15
153	181.93	Till 4-4	< LOD	15.53	248.02	46.7	< LOD	11.59	41.83	6.11	50.75	5.98	5161.6	1997.54	47131.09	914.17
159	181.13	Till 4-5	< LOD	19.68	270.98	47.45	< LOD	12.93	46.67	6.3	55.91	6.16	5237	2070.15	48645.58	954.84

Appendix 1

160	180.29	Till 4-5	< LOD	20.92	287.99	46.22	< LOD	11.1	44.44	6.08	55.9	6	5908.77	2059.11	48228.36	943.58
161	182.07	Till 4-5	< LOD	15.58	281.2	46.72	< LOD	11.18	44.36	6.19	56.01	6.08	3725.54	2036.84	48749.57	951.41
180	240.8	Till 4-6	< LOD	14.89	287.64	38.28	< LOD	9.91	48.2	5.09	56.78	4.94	3491.19	1774.69	48205.01	819.99
181	240.63	Till 4-6	< LOD	12.72	276.17	38.27	< LOD	9.1	45.87	5.08	54.18	4.93	2819.89	1789.4	48068.21	827.58
214	240.79	Till 4-7	< LOD	12.35	277.9	37.53	< LOD	9.56	50.2	5.06	55.55	4.83	< LOD	2564.54	45759.23	784.27
215	240.62	Till 4-7	< LOD	12.52	259.8	37.75	< LOD	11.76	47.05	5.02	53.83	4.83	4054.91	1749.25	46859.49	800.4
245	181.64	Till 4-8	< LOD	15.36	277.07	46.92	< LOD	13.31	47.82	6.24	55.34	6.05	4785	2054.67	51605.34	978.55
246	180.02	Till 4-8	< LOD	15.51	260.19	46.36	< LOD	11.22	46.4	6.25	54.01	6.03	4413.15	2049.65	50010.61	970.95
247	181.84	Till 4-8	< LOD	18.01	271.19	47.12	< LOD	11.37	53.32	6.48	53.61	6.08	4890.14	1987.17	50895.54	949.4
265	241.55	TILL 4-10	< LOD	15.45	284.66	37.76	< LOD	8.8	48.86	5.11	57.11	4.97	5866.8	1818.99	47033.3	813.64
266	241.72	TILL 4-10	< LOD	14.13	223.73	38.14	< LOD	10.26	47.25	5.08	56.55	4.96	3656.13	1758.26	47664.48	808.48
273	241.9	TILL 4-11	< LOD	12.33	259.39	37.66	< LOD	10.89	49.83	5.08	54.35	4.86	< LOD	4257.14	47315.21	875.32
274	241.77	TILL 4-11	< LOD	12.58	267.06	37.78	< LOD	8.97	46.36	5.05	54.68	4.89	2960.38	1761.44	48724.71	821.76
276	290.59	TILL 4-11	< LOD	12.23	272.24	37.55	< LOD	8.92	47.81	5.03	53.66	4.83	3192.15	1458.2	47838.88	692.65
310	301.35	TILL 4-12	< LOD	15.7	270.08	35.86	< LOD	8.44	45	4.72	47.89	4.5	3759.53	1535.81	51942.12	742.15
311	301.5	TILL 4-12	< LOD	11.8	253.84	35.89	< LOD	12.24	43.09	4.66	54.51	4.62	4664.96	1523.93	51638.87	731.01
321	302.07	TILL 4-13	< LOD	15.49	262.36	35.56	< LOD	8.42	43.03	4.68	51.85	4.54	2814.7	1449.6	45182.07	667.37
322	300.18	TILL 4-13	< LOD	11.66	263.52	34.19	< LOD	7.94	44.18	4.61	56.71	4.53	4587.83	1471.93	45013.3	667.59
347	302.09	TILL 4-14	< LOD	11.6	249.77	35.3	< LOD	9.83	45.14	4.69	56.18	4.6	3648.29	1425.31	45684.45	658.92
348	300.05	TILL 4-14	< LOD	12.08	295.11	35.27	< LOD	8.12	42.05	4.6	52.4	4.51	4653.62	1470.21	46845.13	681.41
382	300.46	TILL 4-15	< LOD	11.66	256.39	34.98	< LOD	8.3	50.71	4.78	52.52	4.5	3360.15	1448.52	45465.74	666.84
383	300.08	TILL 4-15	< LOD	11.85	303.92	35.69	< LOD	8.21	40.83	4.59	57.34	4.62	4968.38	1485.87	46304.9	679.58
410	300.44	TILL 4-16	< LOD	12.88	238.05	35.5	< LOD	14.77	47.07	4.73	60.67	4.68	5042.93	1491.12	45184.11	673.43
411	300.52	TILL 4-16	< LOD	12.95	261.29	35.47	< LOD	8.39	45.68	4.71	55.25	4.6	3244.46	1450.59	45427.7	667.99
454	300.18	TILL 4-17	< LOD	19.68	281.06	35.39	< LOD	8.19	42.63	4.69	59.12	4.7	4610.21	1502.14	49653.9	713.2
455	301.98	TILL 4-17	< LOD	11.76	280	35.42	< LOD	8.36	45.04	4.67	56.07	4.57	5734.2	1521.75	49858.73	713.77

Appendix 1

TILL 4

Index	Duration	SAMPLE	Si	Si Error	P	P Error	S	S Error	Cl	Cl Error	K	K Error	Ca	Ca Error	Ba	Ba Error
51	181.59	till4	222832.6	1214.78	1229.03	144.38	1300.07	55.02	< LOD	29.27	19995.22	249.68	5546.08	257.45	324.3	42.05
52	181.79	till4	229205	1245.11	1288.34	150.96	1425.48	58.08	< LOD	30.25	19889.53	250.67	5324.39	260.39	340.72	40.75
53	180.26	till4	226526.1	1236.3	1243.43	150.16	1365.58	57.5	< LOD	30.32	20178.64	253.23	5535.21	261.84	356.49	42.34
87	180.61	Till 4-2	219439.9	1200.16	1203.57	147.05	1306.89	56.66	< LOD	30.02	20109.82	251.81	5414.41	261.42	319.1	41.43
88	181.11	Till 4-2	224633	1245.91	1408.15	153.17	1367.93	58.68	< LOD	30.97	19987.19	246.35	5394.52	253.85	367.78	41.31
89	107.43	Till 4-2									20012.07	250.47	5330.02	259.59	405.66	61.75
117	180.22	Till 4-3	231114.8	1256.06	1375.2	155.63	1419.21	59.34	< LOD	31.18	19911.27	253.3	5300.76	263.02	280.1	40.42
118	180.01	Till 4-3	226712	1231.06	1302.08	149.01	1353.41	56.63	< LOD	29.74	20063.43	249.66	5380.56	256.74	371.69	40.16
119	181.36	Till 4-3	226639.9	1207.95	1260.67	145.57	1329.71	55.16	< LOD	29.11	19878.33	245.86	5426.13	254.86	351.43	40.75
151	182.05	Till 4-4	229780.3	1247.56	1351.25	153.71	1394.53	58.76	< LOD	30.73	20503.5	255.01	5231.2	260.11	377.91	41.94
152	180.5	Till 4-4	230622.9	1246.18	1418.15	155.09	1372.5	58.86	< LOD	31.1	20457.71	255.43	5263.49	262.08	359.74	42
153	181.93	Till 4-4	227651.6	1230.52	1381.86	149.42	1352.62	56.84	< LOD	30.05	20510.84	256.9	5306.33	262.58	360.3	41.89
159	181.13	Till 4-5	234964.2	1264.39	1338.61	155.44	1436.18	59.32	< LOD	31.39	20574.71	257.93	5351.42	264.21	383.69	41.87
160	180.29	Till 4-5	231110.3	1231.03	1310.49	153.19	1414.51	58.6	< LOD	31.15	20474.76	252.13	5375.51	257.99	354.69	41.59
161	182.07	Till 4-5	236143.7	1262.83	1371.71	155.79	1436.12	59.28	< LOD	31.45	20479.4	254.01	5164.79	259.8	339.31	41.51
180	240.8	Till 4-6	232025.1	1039.44	1317.6	135.07	1438.21	51.94	< LOD	27.25	20829.48	226.46	5499.45	237.41	388.09	33.73
181	240.63	Till 4-6	234200.6	1053.57	1386.17	137.56	1359.44	51.94	< LOD	27.69	20939.23	227.03	5443.66	237.31	368.46	34.14
214	240.79	Till 4-7	227266.2	1016.93	1341.87	132.38	1325.51	50.18	< LOD	26.38	20556.71	225.3	5352.86	235.58	385.27	33.77
215	240.62	Till 4-7	227689.8	1025.16	1322.43	132.79	1324.61	50.27	< LOD	26.57	20388.43	222.09	5332.6	231.57	344.29	34.07
245	181.64	Till 4-8	241231.3	1269.93	1343.45	156.06	1455.45	59.01	< LOD	31.24	20594.68	256.94	5223.5	261.73	360.88	41.43
246	180.02	Till 4-8	235046.7	1261.64	1368.91	156.3	1406.09	59	< LOD	30.96	20678.29	254.87	5416.33	258.1	325.91	41.31
247	181.84	Till 4-8	237444.1	1259.13	1273.27	150.54	1450.65	57.32	< LOD	30.01	20710.02	254.33	5288.14	258.1	341.3	41.01
265	241.55	TILL 4-10	231149.3	1039.81	1397.63	135.26	1437.98	51.91	< LOD	27.04	20739.2	227.89	5382.37	236.67	373.6	34.01
266	241.72	TILL 4-10	231891.1	1040.21	1300.61	133.73	1388.6	51.02	< LOD	26.78	20786.73	227.49	5343.47	236.17	395.59	34.19
273	241.9	TILL 4-11	231643.5	1035.89	1419.6	135.96	1380.86	51.57	< LOD	27.32	20774.54	227.36	5407.32	236.36	382.64	33.72

Appendix 1

274	241.77	TILL 4-11	233446.7	1042.61	1250.65	134.63	1411.33	51.49	< LOD	27.25	20668.75	224.05	5487.84	233.64	395.08	34.29
276	290.59	TILL 4-11	229248.4	968.03	1250.89	111.83	1329.02	42.42	< LOD	22.2	20663.35	198.33	5293.83	199.56	360.39	33.15
310	301.35	TILL 4-12	242621.2	975.96	1472.29	118.78	1496.61	45.02	< LOD	23.29	20863.32	198.37	5301.01	201.95	392.52	32.11
311	301.5	TILL 4-12	240857.2	964.87	1436.51	116.42	1452.88	43.98	< LOD	22.75	21186.54	201.9	5439.44	206.95	373.98	32.31
321	302.07	TILL 4-13	224391.4	926.91	1353.66	111.48	1336.63	42.56	< LOD	22.02	20227.06	195.1	5112.68	198.83	382.25	32.03
322	300.18	TILL 4-13	221843.8	909.27	1264.57	110.64	1275.23	42.03	< LOD	21.88	20271.44	194.54	5079.07	198.65	342.87	31.72
347	302.09	TILL 4-14	226149	922.01	1146.69	108.55	1338.65	41.62	< LOD	21.68	20266.25	193.54	5176.44	198.26	342.82	31.52
348	300.05	TILL 4-14	226106.9	927.79	1146.12	110.73	1347.92	42.46	< LOD	22.01	20091.82	193.95	5106.86	198.41	338.31	31.15
382	300.46	TILL 4-15	224305.7	917.78	1295.45	110.77	1338.1	42.4	< LOD	22.07	20348.99	194.83	5241.4	199.9	351.63	31.91
383	300.08	TILL 4-15	226752.9	929.75	1274.18	111.67	1316.82	42.46	< LOD	22.13	20222.42	190.76	5177.56	195.47	349.44	32.18
410	300.44	TILL 4-16	223577.9	920.46	1197.31	111.24	1303.26	42.53	< LOD	22.32	20341.38	194.93	5146.89	200.19	412.44	32.26
411	300.52	TILL 4-16	224986.7	924.84	1263.37	110.95	1341	42.52	< LOD	22.09	20310.15	193.11	5163	197.77	368.7	31.55
454	300.18	TILL 4-17	234430.6	956.58	1243.86	114.23	1384.83	43.36	< LOD	22.59	20356.79	193.26	5204.97	197.98	379.4	31.75
455	301.98	TILL 4-17	237983.6	952.49	1249.95	114.6	1431.34	43.57	< LOD	22.76	20383.34	196.33	5155.91	201.91	353.44	31.85

Appendix 1

A1.4 Filter time Experiment data

All figures in ppm unless otherwise stated, except duration, which is in seconds. **This data is uncalibrated.**

Reading No	Duration	SAMPLE (number)	AVERAGE	(filter settings)	Bal	Bal Error	Error as %	Ti	Ti Error	Error as %	V	V Error	Cr	Cr Error
156	31.2	53051		main filter 30sec only	894654	574.91	0.064261	14056.38	487.78	3.470168	< LOD	280.61	< LOD	122.04
157	30.07	53051		main filter 30sec only	894957.2	573.4	0.06407	14259.66	496.53	3.482061	< LOD	284.16	< LOD	123.25
158	30.39	53051		main filter 30sec only	895110.8	589.57	0.065866	13977.79	502.39	3.594202	< LOD	289.9	< LOD	129.7
159	60.46	53051	Avg of 157-158	main filter 30sec only	895034	581.48	0.064967	14118.72	499.46	3.537573	< LOD	287.03	< LOD	126.47
160	40.62	53051		main filter 40sec only	894786.7	502.79	0.056191	14295.28	428.61	2.998262	< LOD	247.21	< LOD	108.52
161	40.62	53051		main filter 40sec only	895618.7	500.52	0.055885	13634.49	424.43	3.112914	< LOD	248.67	< LOD	108.07
162	40.14	53051		main filter 40sec only	895411.4	502.27	0.056094	13811.5	426.5	3.088006	< LOD	248.02	< LOD	108.68
163	80.76	53051	Avg of 161-162	main filter 40sec only	895515	501.39	0.055989	13723	425.46	3.100342	< LOD	248.34	< LOD	108.37
164	40.08	53051		main filter 40sec only	894866.6	502.03	0.056101	13985.13	425.53	3.042732	< LOD	247.04	< LOD	109.62
165	40.71	53051		main filter 40sec only	895152.4	499.96	0.055852	13683.55	422.41	3.086991	< LOD	253.41	< LOD	108.08
166	40.43	53051		main filter 40sec only	894320.4	504.37	0.056397	14250.27	427.31	2.99861	< LOD	296.52	< LOD	108.5
167	121.22	53051	Avg of 164-166	main filter 40sec only	894779.8	502.12	0.056117	13972.98	425.08	3.042157	< LOD	265.66	< LOD	108.73
168	50.67	53051		main filter 50 sec only	895131	442.03	0.049382	13860.27	374.01	2.698432	< LOD	327.2	< LOD	95.01
169	50.07	53051		main filter 50 sec only	895782.6	436.58	0.048737	13514.62	369.11	2.73119	< LOD	280.89	< LOD	93.01
170	50.34	53051		main filter 50 sec only	895317.4	448.98	0.050148	13657.86	379.14	2.775984	< LOD	255.97	< LOD	96.86
171	151.08	53051	Avg of 168-170	main filter 50 sec only	895410.3	442.53	0.049422	13677.59	374.09	2.735058	< LOD	288.02	< LOD	94.96

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172	60.27	53051		main filter 60 sec only	894980.8	406.9	0.045465	14069.39	344.78	2.450568	< LOD	200.73	< LOD	86.52
173	60	53051		main filter 60 sec only	895207.4	402.85	0.045001	13921.24	340.97	2.449279	< LOD	272.47	< LOD	86.42
174	60.7	53051		main filter 60 sec only	895388	404.12	0.045134	13652.51	340.84	2.496537	< LOD	259.74	< LOD	86.2
175	180.97	53051	Avg of 172- 174	main filter 60 sec only	895192.1	404.62	0.045199	13881.05	342.2	2.465231	< LOD	244.32	< LOD	86.38
176	70.7	53051		main filter 70 sec only	894998.9	370.86	0.041437	13966.55	312.94	2.240639	< LOD	198.96	< LOD	78.91
177	70.63	53051		main filter 70 sec only	895020.4	374.24	0.041814	14002.3	315.96	2.256486	< LOD	184.27	< LOD	80.1
178	70.19	53051		main filter 70 sec only	895058.1	376.03	0.042012	14015.32	317.87	2.268018	< LOD	196.9	< LOD	80.52
179	211.52	53051	Avg of 176- 178	main filter 70 sec only	895025.8	373.71	0.041754	13994.72	315.59	2.255065	< LOD	193.38	< LOD	79.84
180	80.09	53051		main filter 80 sec only	895129.9	346.66	0.038727	14043.44	293.08	2.086953	< LOD	217.51	< LOD	73
181	80.3	53051		main filter 80 sec only	895018.4	349.84	0.039087	13826.73	294.03	2.126533	< LOD	170.97	< LOD	74.03
182	80.38	53051		main filter 80 sec only	894978.2	350.32	0.039143	14058.29	295.68	2.103243	< LOD	171.86	< LOD	74.14
183	240.77	53051	Avg of 180- 182	main filter 80 sec only	895042.2	348.94	0.038986	13976.16	294.26	2.105442	< LOD	186.78	< LOD	73.72
184	90.18	53051		main filter 90 sec only	895232.6	330.33	0.036899	13888.75	278.23	2.003276	< LOD	162.23	< LOD	69.99
185	90.06	53051		main filter 90 sec only	895247.4	326.16	0.036432	14062.2	275.77	1.961073	< LOD	159.19	< LOD	68.86
186	90.78	53051		main filter 90 sec only	895089.1	331.2	0.037002	13940.86	278.9	2.000594	< LOD	170.38	< LOD	70.79
187	271.02	53051	Avg of 184- 186	main filter 90 sec only	895189.7	329.23	0.036778	13963.93	277.63	1.988194	< LOD	163.93	< LOD	69.88
Mean					895114	435.341 9		13929.45	368.955 3	2.648742		234.445 9		93.4115 6
Stdev					280.908	82.9624 1		188.6334	72.0891 7	38.21655		47.9510 6		18.5618 3
%RSD					0.031382	19.0568 4		1.354205	19.5387 3	1442.819		20.4529 3		19.8710 2

Appendix 1

Filter time experiment data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	INSPECTOR (filter settings)	Mn	Mn Error	Error as %	Fe	Fe Error	Error as %	Cu	Cu Error	Error as %	Zn	Zn Error	Error as %
156	31.2	53051		main filter 30sec only	2059.71	103.68	5.033718	88668.21	584.75	0.659481	55.27	15.79	28.56884	118.43	11.29	9.533058
157	30.07	53051		main filter 30sec only	2014.95	104.09	5.165885	88202.32	585.42	0.663724	58.93	16.11	27.33752	121.15	11.45	9.451094
158	30.39	53051		main filter 30sec only	2004.26	106.16	5.296718	88340.66	600.24	0.679461	55.61	16.31	29.32926	119.38	11.66	9.76713
159	60.46	53051	Avg of 157-158	main filter 30sec only	2009.61	105.13	5.231363	88271.48	592.83	0.671599	57.27	16.21	28.30452	120.27	11.56	9.611707
160	40.62	53051		main filter 40sec only	2072.42	90.9	4.386177	88278.91	509.58	0.577239	57.48	13.89	24.16493	133.81	10.2	7.622749
161	40.62	53051		main filter 40sec only	2043.57	90.68	4.437333	88131.13	510.7	0.579477	64.89	14.15	21.80613	123.08	10.03	8.149171
162	40.14	53051		main filter 40sec only	1994.99	90.15	4.51882	88153.34	510.99	0.57966	73.8	14.37	19.47154	117.85	9.95	8.442936
163	80.76	53051	Avg of 161-162	main filter 40sec only	2019.28	90.41	4.477338	88142.23	510.85	0.579575	69.34	14.26	20.56533	120.47	9.99	8.292521
164	40.08	53051		main filter 40sec only	2117.66	91.55	4.323168	88456.09	510.81	0.577473	67.95	14.16	20.83885	117.87	9.87	8.373632
165	40.71	53051		main filter 40sec only	2027.34	89.98	4.438328	88381.94	509.45	0.576419	47.4	13.64	28.77637	115.79	9.78	8.446325
166	40.43	53051		main filter 40sec only	2031.94	90.17	4.437631	88835.18	512.63	0.577057	50.49	13.71	27.15389	116.61	9.83	8.429809
167	121.22	53051	Avg of 164-166	main filter 40sec only	2058.98	90.57	4.39878	88557.74	510.96	0.576979	55.28	13.83	25.01809	116.75	9.83	8.4197
168	50.67	53051		main filter 50 sec only	2002.75	79.03	3.946074	88446.26	449.53	0.508252	47.73	12.01	25.16237	121.63	8.74	7.185727
169	50.07	53051		main filter 50 sec only	2059.02	79.14	3.843576	88081.2	445.28	0.505534	59.32	12.2	20.56642	120.2	8.65	7.196339
170	50.34	53051		main filter 50 sec only	2121.5	82.01	3.865661	88346.58	457.02	0.517304	56.69	12.46	21.97919	115.76	8.76	7.567381
171	151.08	53051	Avg of 168-170	main filter 50 sec only	2061.09	80.06	3.884352	88291.34	450.61	0.510367	54.58	12.22	22.38915	119.2	8.72	7.315436
172	60.27	53051		main filter 60	2066.03	73.29	3.54738	88322.	413.27	0.4679	57.11	11.27	19.733	116.85	7.94	6.7950

Appendix 1

				sec only			3	21		12			85			36
173	60	53051		main filter 60 sec only	2058.79	72.61	3.52682 9	88246. 26	408.96	0.4634 3	53.14	11.05	20.794 13	126.39	8.04	6.3612 63
174	60.7	53051		main filter 60 sec only	2038.62	72.71	3.56662 8	88361. 35	412.07	0.4663 46	50.08	11.05	22.064 7	122.96	8.04	6.5387 12
175	180.97	53051	Avg of 172-174	main filter 60 sec only	2054.48	72.87	3.54688 3	88309. 94	411.43	0.4658 93	53.44	11.12	20.808 38	122.07	8.01	6.5618 09
176	70.7	53051		main filter 70 sec only	2058.77	66.61	3.23542 7	88415. 81	377.24	0.4266 66	51.95	10.13	19.499 52	121.39	7.33	6.0383 89
177	70.63	53051		main filter 70 sec only	2068.22	67.34	3.25594	88333. 72	379.39	0.4294 96	62.64	10.41	16.618 77	125.3	7.44	5.9377 49
178	70.19	53051		main filter 70 sec only	2119.47	68.26	3.22061 6	88238. 95	382.1	0.4330 29	64.73	10.51	16.236 68	119.81	7.4	6.1764 46
179	211.52	53051	Avg of 176-178	main filter 70 sec only	2082.16	67.4	3.23702 3	88329. 5	379.57	0.4297 21	59.77	10.35	17.316 38	122.17	7.39	6.0489 48
180	80.09	53051		main filter 80 sec only	2073.32	62.35	3.00725 4	88156. 24	351.12	0.3982 93	52.18	9.48	18.167 88	114.29	6.73	5.8885 29
181	80.3	53051		main filter 80 sec only	2108.58	63.27	3.00059 8	88478. 69	355.34	0.4016 11	58.35	9.66	16.555 27	120.48	6.87	5.7021 91
182	80.38	53051		main filter 80 sec only	2014.13	62.37	3.09662 2	88382. 34	355.2	0.4018 9	53.61	9.57	17.851 15	122.48	6.9	5.6335 73
183	240.77	53051	Avg of 180-182	main filter 80 sec only	2065.34	62.66	3.03388 3	88339. 09	353.89	0.4006 04	54.71	9.57	17.492 23	119.08	6.83	5.7356 4
184	90.18	53051		main filter 90 sec only	2026.7	59	2.91113 6	88288. 21	335.31	0.3797 9	52.56	9.05	17.218 42	120.28	6.48	5.3874 29
185	90.06	53051		main filter 90 sec only	2072.27	58.68	2.83167 7	88046. 71	330.4	0.3752 55	59.66	9.02	15.119 01	121.5	6.42	5.2839 51
186	90.78	53051		main filter 90 sec only	2063.43	59.47	2.88209 4	88334. 71	335.76	0.3801	57.01	9.12	15.997 19	126.42	6.59	5.2127 83
187	271.02	53051	Avg of 184-186	main filter 90 sec only	2054.14	59.05	2.87468 2	88223. 21	333.82	0.3783 81	56.41	9.06	16.060 98	122.73	6.5	5.2961 79
Mean					2053.86	78.4890 6		88324. 74	442.70 38		57.168 13	12.054 38		120.70 16	8.6006 25	
Stdev					33.89615	15.1131 5		162.39 11	85.031 98		6.0338 38	2.3592 36		3.8039 36	1.6599 61	
%RSD					1.650363	19.2551 1		0.1838 57	19.207 42		10.554 55	19.571 61		3.1515 22	19.300 47	

Appendix 1

Filter time experiment data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	INSPECTOR (filter settings)	As	As Error	Error as %	Rb	Rb Error	Error as %	Sr	Sr Error	Error as %
156	31.2	53051		main filter 30sec only	9.77	4.49	45.95701	25.94	1.38	5.319969	176.98	4.03	2.277093
157	30.07	53051		main filter 30sec only	7.48	4.47	59.75936	25.63	1.39	5.423332	173.59	4.01	2.310041
158	30.39	53051		main filter 30sec only	11.79	4.76	40.3732	25.32	1.41	5.56872	172.63	4.1	2.375022
159	60.46	53051	Avg of 157-158	main filter 30sec only	9.64	4.62	47.92531	25.48	1.4	5.494505	173.11	4.06	2.34533
160	40.62	53051		main filter 40sec only	8.32	3.78	45.43269	24.65	1.19	4.827586	171.7	3.47	2.020967
161	40.62	53051		main filter 40sec only	13.24	3.9	29.45619	24.77	1.19	4.804199	175.65	3.52	2.003985
162	40.14	53051		main filter 40sec only	13.36	3.91	29.26647	24.82	1.19	4.794521	176.49	3.53	2.000113
163	80.76	53051	Avg of 161-162	main filter 40sec only	13.3	3.9	29.32331	24.8	1.19	4.798387	176.07	3.52	1.999205
164	40.08	53051		main filter 40sec only	10.73	3.98	37.09226	25.69	1.2	4.671078	174.16	3.49	2.003904
165	40.71	53051		main filter 40sec only	7.74	3.94	50.90439	25.16	1.19	4.72973	175.68	3.5	1.992259
166	40.43	53051		main filter 40sec only	13.26	3.95	29.78884	25.37	1.2	4.729996	179.48	3.55	1.977936
167	121.22	53051	Avg of 164-166	main filter 40sec only	10.58	3.96	37.42911	25.41	1.2	4.72255	176.44	3.51	1.989345
168	50.67	53051		main filter 50 sec only	14.61	3.41	23.34018	24.31	1.04	4.278075	175.19	3.08	1.758091
169	50.07	53051		main filter 50 sec only	9.73	3.43	35.2518	24.36	1.03	4.228243	172.9	3.04	1.758242
170	50.34	53051		main filter 50 sec only	13.03	3.51	26.93784	24.94	1.07	4.290297	173.86	3.13	1.800299
171	151.08	53051	Avg of 168-170	main filter 50 sec only	12.46	3.45	27.6886	24.54	1.05	4.278729	173.98	3.08	1.770318
172	60.27	53051		main filter 60 sec only	11.78	3.22	27.33447	24.28	1	4.118616	174.52	2.83	1.621591
173	60	53051		main filter 60 sec only	9.65	3.11	32.22798	25.05	1	3.992016	174.03	2.8	1.608918
174	60.7	53051		main filter 60 sec only	11.4	3.21	28.15789	24.64	1	4.058442	173.66	2.81	1.618104
175	180.97	53051	Avg of 172-174	main filter 60 sec only	10.94	3.18	29.06764	24.66	1	4.05515	174.07	2.81	1.614293
176	70.7	53051		main filter 70 sec only	9.44	2.88	30.50847	25.34	1	3.94633	175.23	2.58	1.472351
177	70.63	53051		main filter 70 sec only	11.11	2.92	26.28263	24.59	1	4.066694	173.93	2.59	1.489105
178	70.19	53051		main filter 70 sec only	8.2	2.89	35.2439	24.67	1	4.053506	174.78	2.61	1.493306
179	211.52	53051	Avg of 176-178	main filter 70 sec only	9.58	2.9	30.2714	24.87	1	4.020909	174.65	2.59	1.482966
180	80.09	53051		main filter 80 sec only	13.53	2.78	20.54693	24.55	1	4.07332	174.38	2.41	1.382039
181	80.3	53051		main filter 80 sec only	11.69	2.77	23.69547	25.08	1	3.987241	175	2.43	1.388571

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182	80.38	53051		main filter 80 sec only	11.86	2.74	23.10287	24.98	1	4.003203	176.31	2.44	1.383926
183	240.77	53051	Avg of 180-182	main filter 80 sec only	12.36	2.76	22.3301	24.87	1	4.020909	175.23	2.43	1.386749
184	90.18	53051		main filter 90 sec only	9.62	2.57	26.71518	25.12	1	3.980892	175.32	2.3	1.311887
185	90.06	53051		main filter 90 sec only	10.65	2.55	23.94366	25.27	1	3.957262	175.29	2.27	1.294997
186	90.78	53051		main filter 90 sec only	9.2	2.55	27.71739	24.22	1	4.128819	174.91	2.3	1.314962
187	271.02	53051	Avg of 184-186	main filter 90 sec only	9.82	2.56	26.06925	24.87	1	4.020909	175.17	2.29	1.307301
Mean					10.93344	3.407813		24.94531	1.10375		174.8247	3.034688	
Stdev					1.859578	0.660184		0.432077	0.138022		1.464273	0.585772	
%RSD					17.00817	19.37267		1.732096	12.5048		0.837567	19.30255	

Filter time experiment data continued

Reading No	Duration (seconds)	SAMPLE (number)	AVERAGE	INSPECTOR (filter settings)	Zr	Zr Error	Error as %	Nb	Nb Error	Error as %	Sn	Sn Error	Pb	Pb Error	Error as %
156	31.2	53051		main filter 30sec only	154.73	4.36	2.817812	14.09	1.81	12.84599	< LOD	23.77	< LOD	7.42	
157	30.07	53051		main filter 30sec only	158.54	4.42	2.78794	13.31	1.81	13.5988	< LOD	23.9	< LOD	7.55	
158	30.39	53051		main filter 30sec only	158.95	4.53	2.849953	15.31	1.88	12.27956	< LOD	24.55	< LOD	7.74	
159	60.46	53051	Avg of 157-158	main filter 30sec only	158.75	4.48	2.822047	14.31	1.85	12.92802	< LOD	24.22	< LOD	7.64	
160	40.62	53051		main filter 40sec only	155.44	3.81	2.451107	15.33	1.6	10.43705	< LOD	20.54	< LOD	9.32	
161	40.62	53051		main filter 40sec only	156.16	3.83	2.452613	14.27	1.59	11.14226	< LOD	20.67	< LOD	8.02	
162	40.14	53051		main filter 40sec only	157.41	3.85	2.445842	15.37	1.61	10.47495	< LOD	20.67	< LOD	7.72	
163	80.76	53051	Avg of 161-162	main filter 40sec only	156.78	3.84	2.449292	14.82	1.6	10.79622	< LOD	20.67	< LOD	7.87	
164	40.08	53051		main filter	155.97	3.81	2.442777	14.43	1.58	10.94941	< LOD	20.51	7.67	4.34	56.5840

Appendix 1

				40sec only											9
165	40.71	53051		main filter 40sec only	154.99	3.8	2.451771	13.95	1.57	11.25448	< LOD	20.5	9.22	4.42	47.9392 6
166	40.43	53051		main filter 40sec only	156.87	3.83	2.441512	15.62	1.6	10.24328	< LOD	20.61	< LOD	6.34	
167	121.2 2	53051	Avg of 164-166	main filter 40sec only	155.94	3.81	2.443247	14.67	1.59	10.83845	< LOD	20.54	7.13	4.33	60.7293 1
168	50.67	53051		main filter 50 sec only	156.43	3.36	2.147926	15.62	1.41	9.026889	< LOD	18	< LOD	4.88	
169	50.07	53051		main filter 50 sec only	154.9	3.32	2.143318	14.48	1.38	9.530387	< LOD	17.77	6.66	3.78	56.7567 6
170	50.34	53051		main filter 50 sec only	158.3	3.44	2.173089	14.02	1.41	10.05706	< LOD	18.29	< LOD	8.25	
171	151.0 8	53051	Avg of 168-170	main filter 50 sec only	156.54	3.38	2.159193	14.71	1.4	9.517335	< LOD	18.02	< LOD	6.27	
172	60.27	53051		main filter 60 sec only	156.11	3.09	1.979374	14.41	1.28	8.88272	< LOD	16.43	6.52	3.48	53.3742 3
173	60	53051		main filter 60 sec only	154.35	3.05	1.976029	15.08	1.28	8.488064	< LOD	16.25	5.25	3.43	65.3333 3
174	60.7	53051		main filter 60 sec only	155.98	3.07	1.968201	13.9	1.27	9.136691	< LOD	16.35	6.97	3.49	50.0717 4
175	180.9 7	53051	Avg of 172-174	main filter 60 sec only	155.48	3.07	1.97453	14.46	1.28	8.852006	< LOD	16.34	6.25	3.47	55.52
176	70.7	53051		main filter 70 sec only	155.33	2.8	1.802614	14.17	1.16	8.186309	< LOD	14.92	7.19	3.18	44.2280 9
177	70.63	53051		main filter 70 sec only	157.53	2.84	1.802831	13.98	1.17	8.369099	< LOD	15.01	6.16	3.17	51.4610 4
178	70.19	53051		main filter 70 sec only	154.72	2.84	1.835574	14.07	1.18	8.386638	< LOD	15.08	7.15	3.22	45.0349 7
179	211.5 2	53051	Avg of 176-178	main filter 70 sec only	155.86	2.83	1.815732	14.07	1.17	8.315565	< LOD	15	6.83	3.19	46.7057 1
180	80.09	53051		main filter 80 sec only	157.05	2.63	1.674626	13.12	1.07	8.155488	< LOD	13.84	6.28	2.97	47.2929 9
181	80.3	53051		main filter 80 sec only	155.84	2.65	1.700462	14.42	1.1	7.628294	< LOD	13.96	6.75	3	44.4444 4
182	80.38	53051		main filter 80 sec only	158.3	2.67	1.686671	14.12	1.09	7.719547	< LOD	13.98	5.42	2.96	54.6125 5
183	240.7 7	53051	Avg of 180-182	main filter 80 sec only	157.07	2.65	1.687146	13.88	1.09	7.853026	< LOD	13.93	6.15	2.98	48.4552 8

Appendix 1

184	90.18	53051		main filter 90 sec only	155.92	2.5	1.603386	14.33	1.04	7.257502	< LOD	13.12	6.58	2.84	43.1610 9
185	90.06	53051		main filter 90 sec only	155.34	2.47	1.590061	14.18	1.02	7.19323	< LOD	12.93	6.44	2.79	43.3229 8
186	90.78	53051		main filter 90 sec only	157.83	2.52	1.596655	13.68	1.03	7.52924	< LOD	13.14	6.22	2.83	45.4983 9
187	271.0 2	53051	Avg of 184-186	main filter 90 sec only	156.36	2.5	1.598874	14.06	1.03	7.325747	< LOD	13.07	6.41	2.82	43.9937 6
Mean					156.4303	3.314 063		14.3825	1.37343 8	9.549366		17.7056 3	6.662 5	4.86593 8	
Stdev					1.25768	0.644 274		0.60768 7	0.26973 8	44.38769		3.64322 2	3.341 065	2.15713 2	
%RSD					0.803987	19.44 062		4.22518 6	19.6396 5	464.8234		20.5766 3	50.14 732	44.3312 7	

Appendix 1

Filter time experiment data continued.

Reading No	Durati on	SAMPLE (number)	INSPECTOR (filter settings)	Mg	Mg Error	Error as %	Al	Al Error	Error as %	Bal	Bal Error	Error as %	Ti	Ti Error	Error as %
188	181.29	32989 0.42-0.45	main 60 all others 30	7997.85	4049.28	50.629 61	39574. 93	1460.1 5	3.6895 83	678008 .2	952.36	0.1404 64	17729. 17	216	1.2183 31
189	180.56	32989 0.42-0.45	main 60 all others 30	6899.7	3931.07	56.974 51	40315. 16	1439.5 9	3.5708 4	678062 .4	966.11	0.1424 81	17584. 26	215.06	1.2230 26
190	210.1	32989 0.42-0.45	main 60 all others 40	13457.95	3425.5	25.453 36	40005. 43	1201.4	3.0030 92	674464 .3	976.36	0.1447 61	17393. 4	185.78	1.0681 06
191	210.31	32989 0.42-0.45	main 60 all others 40	13887.42	3463.95	24.943 08	40043. 01	1213.0 7	3.0294 18	674111 .3	988.17	0.1465 89	17341. 61	183.44	1.0578 03
192	240.86	32989 0.42-0.45	main 60 all others 50	8897.42	2956.42	33.227 83	38316. 92	1056.1 8	2.7564 32	684064 .4	946.92	0.1384 26	17177. 85	168.07	0.9784 11
193	240.08	32989 0.42-0.45	main 60 all others 50	10692.78	2880.11	26.935 09	39896. 73	1034.6 4	2.5932 95	678249 .6	967.5	0.1426 47	17273. 45	164.1	0.9500 13
194	240.28	32989 0.42-0.45	main 60 all others 60	14851.6	2693.71	18.137 51	38499. 42	938.36	2.4373 35	679464 .2	1172.0 3	0.1724 93	17052. 69	154.01	0.9031 42
195	241.5	32989 0.42-0.45	main 60 all others 60	8930.16	2582.7	28.921 09	38072. 12	933.43	2.4517 42	685013 .2	1162.1 3	0.1696 51	16959. 14	153.34	0.9041 73
196	191.69	32989 0.42-0.45	main, high 60 low 70	10668.29	2428.7	22.765 6	39331. 72	878.81	2.2343 54	701678 .9	1084.2 5	0.1545 22	20151. 63	367.9	1.8256 59
197	191.1	32989 0.42-0.45	main, high 60 low 70	10256.23	2411.73	23.514 78	39715. 04	878.48	2.2119 58	700526 .5	1082.1 8	0.1544 81	20176. 25	365.83	1.8131 71
198	200.33	32989 0.42-0.45	main, high 60 low 80	12423.64	2260.16	18.192 41	39604. 32	817.41	2.0639 42	701466 .3	1094.3 4	0.1560 07	20070. 67	368.87	1.8378 56
Mean				10814.82	3007.57 5	27.809 76	39397. 71	1077.4 11	2.7347 04	685009 .9	1035.6 68	0.1511 9	18082. 74	231.12 73	1.2781 65
Stdev				2571.986	621.898 9	24.179 71	760.77 85	223.69 66	29.403 64	10927. 34	85.222 26	0.7798 99	1334.5 47	90.060 49	6.7483 92
%RSD				23.78205	20.6777 5	86.946 87	1.9310 22	20.762 42	1075.2 04	1.5952 09	8.2287 22	515.83 98	7.3802 29	38.965 76	527.97 49

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	V	V Error	Error as %	Cr	Cr Error	Error as %	Mn	Mn Error	Error as %	Fe	Fe Error	Error as %	Co	Co Error
188	181.29	32989 0.42-0.45	main 60 all others 30	464.37	86.75	18.68122	222.95	40.94	18.36286	3452.59	70.37	2.03818	99440.52	373	0.375099	< LOD	102.82
189	180.56	32989 0.42-0.45	main 60 all others 30	429.24	86.03	20.0424	231.8	41.64	17.96376	3485.17	71.67	2.056428	99435.79	377.92	0.380064	< LOD	104.74
190	210.1	32989 0.42-0.45	main 60 all others 40	406.08	73.43	18.08264	235.56	35.03	14.87095	3439.08	70.59	2.052584	99244.39	373.24	0.376082	< LOD	103.62
191	210.31	32989 0.42-0.45	main 60 all others 40	475.15	72.33	15.22256	247.73	34.17	13.79324	3456.71	72.16	2.087534	99601.39	378.36	0.379874	< LOD	105.53
192	240.86	32989 0.42-0.45	main 60 all others 50	481.16	66.03	13.72309	242.15	30.62	12.64505	3486.64	71.22	2.042654	99271.41	374.73	0.37748	< LOD	103.57
193	240.08	32989 0.42-0.45	main 60 all others 50	528.91	64.35	12.16653	233.02	30.2	12.96026	3467.79	71.87	2.072502	99554.21	375.91	0.377593	< LOD	105.09
194	240.28	32989 0.42-0.45	main 60 all others 60	470.34	57.56	12.23796	249.04	26.54	10.65692	3446.62	86.6	2.512607	99381.64	452.4	0.455215	< LOD	128.13
195	241.5	32989 0.42-0.45	main 60 all others 60	458.23	57.22	12.48718	232.45	26.87	11.55948	3465.68	88.17	2.544089	99928.17	462.12	0.462452	< LOD	130.33
196	191.69	32989 0.42-0.45	main, high 60 low 70	< LOD	201.93		< LOD	82.59		3496.74	85.96	2.45829	98730.2	438.8	0.444444	< LOD	126.15
197	191.1	32989 0.42-0.45	main, high 60 low 70	< LOD	200.04		< LOD	81.09		3441.15	84.93	2.46807	99165.35	438.15	0.441838	< LOD	125.54
198	200.33	32989 0.42-0.45	main, high 60 low 80	< LOD	201.01		< LOD	82.94		3406.22	85.49	2.50982	98969.98	442	0.4466	< LOD	126.44
Mean				464.185	106.0618	22.84904	236.8375	46.60273	19.67709	3458.581	78.09364	2.257968	99338.46	407.8755	0.410592		114.7236
Stdev				218.9474	61.72117	28.18995	110.8747	23.38042	21.08724	25.87248	7.84617	30.32631	321.5994	37.77179	11.74498		12.14295
%RSD				47.16814	58.19358	123.3748	46.81468	50.16964	107.1665	0.748066	10.04713	1343.08	0.323741	9.260618	2860.502		10.58452

Appendix 1

Filter time experiment data continued.

Reading No	Durati on	SAMPLE (number)	INSPECTOR (filter settings)	Ni	Ni Error	Cu	Cu Error	Erro r as %	Zn	Zn Error	Error as %	As	As Error	Error as %	Se	Se Error
188	181.29	32989 0.42-0.45	main 60 all others 30	< LOD	23.23	< LOD	10.85		83.62	5.71	6.82851	12.99	2.25	17.32102	< LOD	1.5
189	180.56	32989 0.42-0.45	main 60 all others 30	< LOD	23.76	< LOD	10.9		80.73	5.75	7.122507	11.33	2.27	20.0353	< LOD	1.5
190	210.1	32989 0.42-0.45	main 60 all others 40	< LOD	23.18	< LOD	13.09		90.67	5.85	6.451969	9.57	2.28	23.82445	< LOD	1.5
191	210.31	32989 0.42-0.45	main 60 all others 40	< LOD	23.95	< LOD	11.04		86.72	5.91	6.815037	11.37	2.3	20.22867	< LOD	1.5
192	240.86	32989 0.42-0.45	main 60 all others 50	< LOD	23.46	< LOD	10.85		85.71	5.81	6.778672	12.3	2.22	18.04878	< LOD	1.5
193	240.08	32989 0.42-0.45	main 60 all others 50	< LOD	23.93	< LOD	11.07		88.14	5.9	6.693896	12.11	2.3	18.99257	< LOD	1.5
194	240.28	32989 0.42-0.45	main 60 all others 60	< LOD	29.85	< LOD	14.18		90.93	7.18	7.896184	8	2.76	34.5	< LOD	1.97
195	241.5	32989 0.42-0.45	main 60 all others 60	< LOD	30.54	< LOD	14.7		83.26	7.14	8.575546	12.36	2.74	22.16828	< LOD	1.97
196	191.69	32989 0.42-0.45	main, high 60 low 70	< LOD	29.85	< LOD	14.63		85.08	7.03	8.262811	10.58	2.68	25.33081	< LOD	1.94
197	191.1	32989 0.42-0.45	main, high 60 low 70	< LOD	29.91	< LOD	22.28		86.99	7.04	8.092884	12.52	2.67	21.32588	< LOD	1.99
198	200.33	32989 0.42-0.45	main, high 60 low 80	< LOD	30.39	< LOD	14.41		76.8	6.88	8.958333	9.31	2.79	29.96778	< LOD	1.89
Mean					26.55		13.45455		85.33182	6.381818		11.13091	2.478182			1.705455
Stdev					3.421567		3.376428		4.168887	0.650274		1.586723	0.242397			0.237334
%RSD					12.88726		25.09507		4.885501	10.18948		14.2551	9.781248			13.91615

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Rb	Rb Error	Error as %	Sr	Sr Error	Error as %	Zr	Zr Error	Error as %	Nb	Nb Error	Error as %
188	181.29	32989 0.42-0.45	main 60 all others 30	18	1	5.555556	167.49	2.21	1.319482	175.89	2.58	1.466826	15.51	1.04	6.705351
189	180.56	32989 0.42-0.45	main 60 all others 30	18.04	1	5.543237	169.77	2.26	1.331213	175.11	2.62	1.496202	15.64	1.05	6.713555
190	210.1	32989 0.42-0.45	main 60 all others 40	17.88	1	5.592841	166.7	2.22	1.331734	174.91	2.59	1.480762	15.78	1.05	6.653992
191	210.31	32989 0.42-0.45	main 60 all others 40	17.44	1	5.733945	166.64	2.26	1.356217	174.76	2.64	1.510643	16.41	1.07	6.520414
192	240.86	32989 0.42-0.45	main 60 all others 50	18.27	1	5.473454	166.86	2.23	1.33645	177.29	2.62	1.477805	15.42	1.05	6.809339
193	240.08	32989 0.42-0.45	main 60 all others 50	17.68	1	5.656109	169.43	2.27	1.339786	173.71	2.62	1.508261	15.56	1.06	6.812339
194	240.28	32989 0.42-0.45	main 60 all others 60	17.77	1	5.627462	167.56	2.73	1.629267	177.32	3.2	1.804647	16.68	1.29	7.733813
195	241.5	32989 0.42-0.45	main 60 all others 60	17.76	1	5.630631	169.47	2.79	1.646309	176.98	3.25	1.836366	16.15	1.31	8.111455
196	191.69	32989 0.42-0.45	main, high 60 low 70	17.95	1	5.571031	169.8	2.73	1.607774	176.48	3.17	1.796238	16.35	1.28	7.828746
197	191.1	32989 0.42-0.45	main, high 60 low 70	18.11	1	5.521811	170.95	2.72	1.591109	177.05	3.16	1.784807	16.88	1.28	7.582938
198	200.33	32989 0.42-0.45	main, high 60 low 80	17.59	1	5.685048	171.49	2.75	1.603592	177.13	3.19	1.800937	16.53	1.29	7.803993
Mean				17.86273	1		168.7418	2.47		176.0573	2.876364		16.08273	1.160909	
Stdev				0.243068	0		1.752169	0.263515		1.25358	0.305328		0.519963	0.124053	
%RSD				1.360753	0		1.038373	10.66861		0.712029	10.61508		3.233054	10.68583	

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Si	Si Error	Error as %	P	P Error	Error as %	S	S Error	Error as %
188	181.29	32989 0.42-0.45	main 60 all others 30	116404.5	1071.19	0.920231	5079.16	239.68	4.718891	486.2	80.94	16.64747
189	180.56	32989 0.42-0.45	main 60 all others 30	116915.8	1054.27	0.901734	5192.46	236.11	4.54717	441.2	78.6	17.81505
190	210.1	32989 0.42-0.45	main 60 all others 40	115122.7	882.62	0.766678	5031.04	193.31	3.842347	463.16	64.98	14.02971
191	210.31	32989 0.42-0.45	main 60 all others 40	114530	887.95	0.775299	5173.26	195.79	3.784654	477.99	65.61	13.72623
192	240.86	32989 0.42-0.45	main 60 all others 50	112801.9	802.12	0.711087	5067.41	174.5	3.443574	440.64	58.41	13.25572
193	240.08	32989 0.42-0.45	main 60 all others 50	114089.9	775.91	0.680087	4926.9	166.22	3.373724	436.64	55.76	12.77025
194	240.28	32989 0.42-0.45	main 60 all others 60	111579.2	735.51	0.659182	4912.15	150.67	3.067292	434.05	50.31	11.59083
195	241.5	32989 0.42-0.45	main 60 all others 60	111762.9	744.19	0.665865	4894.5	152.21	3.109817	410.28	50.64	12.34279
196	191.69	32989 0.42-0.45	main, high 60 low 70	119329.8	735.93	0.616719	5401.06	148.62	2.751682	483.02	49.54	10.2563
197	191.1	32989 0.42-0.45	main, high 60 low 70	120144.7	734.66	0.611479	5301.11	147.47	2.78187	534.81	49.9	9.330416
198	200.33	32989 0.42-0.45	main, high 60 low 80	117546.4	692.73	0.589325	5324.23	136.13	2.556802	462.51	45.16	9.764113
Mean				115475.2	828.8255		5118.48	176.4282		460.9545	59.07727	
Stdev				2879.842	130.9039		174.7152	35.7999		34.00326	12.10376	
%RSD				2.493904	15.7939		3.41342	20.29149		7.376707	20.48801	

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	K	K Error	Error as %	Ca	Ca Error	Error as %	Ba	Ba Error	Error as %
188	181.29	32989 0.42-0.45	main 60 all others 30	5958.74	251.12	4.214314	24457.67	747.96	3.058182	227.82	50.05	21.9691
189	180.56	32989 0.42-0.45	main 60 all others 30	5734.98	247.97	4.323816	24497.3	750.57	3.063889	235.08	48.18	20.49515
190	210.1	32989 0.42-0.45	main 60 all others 40	5805.83	213.04	3.669415	24137.57	642.1	2.660168	258.54	41.62	16.09809
191	210.31	32989 0.42-0.45	main 60 all others 40	5762.12	209.79	3.640847	24154.73	634.77	2.627933	235.58	40.7	17.27651
192	240.86	32989 0.42-0.45	main 60 all others 50	5689.82	190.47	3.347558	23334.02	574.18	2.460699	210.65	36.04	17.10895
193	240.08	32989 0.42-0.45	main 60 all others 50	5833.36	187.46	3.213585	24114.41	562.47	2.332506	202.48	36.34	17.94745
194	240.28	32989 0.42-0.45	main 60 all others 60	5540.23	166.55	3.006193	23436.96	509.76	2.175026	189.14	32.85	17.36809
195	241.5	32989 0.42-0.45	main 60 all others 60	5641.93	167.06	2.961043	23513.17	505.77	2.151007	211.84	32.93	15.54475
196	191.69	32989 0.42-0.45	main, high 60 low 70							227.09	32.94	14.50526
197	191.1	32989 0.42-0.45	main, high 60 low 70							226.86	33.18	14.62576
198	200.33	32989 0.42-0.45	main, high 60 low 80							232.16	32.7	14.08511
Mean				5745.876	204.1825		23955.73	615.9475		223.3855	37.95727	16.99183
Stdev				127.1551	32.71595		462.075	96.0714		18.83891	6.363645	33.77927
%RSD				2.21298	16.0229		1.92887	15.59734		8.433363	16.76529	198.7972

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Mg	Mg Error	Error as %	Al	Al Error	Error as %	Bal	Bal Error	Error as %	Ti	Ti Error	Error as %
218	91.36	53102	main60 light 30	8929.32	4003.53	44.83578	38470.25	1423.64	3.700626	700363.7	1082.58	0.154574	10648.92	327.14	3.072049
219	100.23	53102	main60 light 40	12169.75	3598.66	29.57053	39370.88	1265.89	3.215295	694922.7	1090.69	0.156951	10680.84	322.85	3.022702
220	110.52	53102	main60 light 50	11119.04	2939.94	26.44059	37726.36	1034.45	2.741982	703406.4	1063.55	0.1512	10735.89	323.06	3.009159
221	120.64	53102	main 60 light 60	10307.32	2620.04	25.41922	37431.96	928.16	2.479592	704300.8	1061.48	0.150714	10643.71	323.37	3.038132
222	131.21	53102	main 60 light 70	9855.04	2382.61	24.17656	38335.28	856.92	2.23533	702730.6	1071.89	0.152532	10542.58	324.07	3.073915
223	141.5	53102	main 60 light 80	10436.4	2143.03	20.53419	36827.64	761.98	2.069044	706650.2	1055.4	0.149353	10447.79	322.11	3.083044
224	150.05	53102	main 60 light 90	9456.71	2011	21.26532	37168.07	725.32	1.95146	706858.8	1060.13	0.149978	10871.64	327.25	3.010125
225	161.93	53102	main 60 light 100	9783.68	1902.33	19.44391	37561.56	688.98	1.834269	705274	1040.98	0.147599	10694.14	317.93	2.972937
226	170.77	53102	main 60 light 110	< LOD	2651.14		27659.55	569.28	2.058168	737299.9	947.04	0.128447	10686.26	325.07	3.041944
227	171.87	53102 repeat	main 60 light 110	9314.13	1782.89	19.14178	37334.49	652.24	1.747017	706837.4	1078.45	0.152574	10363.36	322.42	3.111153
228	182.07	53102	main 60 light 120	9912.01	1698.51	17.13588	37193.7	617.9	1.661303	706752.2	1045.7	0.147959	10589.85	320.33	3.024878
Mean				10128.34	2508.254	24.76471	37742.02	895.548	2.372814	703809.7	1065.085	0.151331	10627.73	323.2364	3.041444
Stdev				946.7918	786.6316	83.08391	767.1487	271.551	35.39743	3797.029	15.90652	0.41892	139.1068	2.722915	1.957427
%RSD				9.347946	31.36172	335.4932	2.032612	30.32232	1491.791	0.539497	1.49345	276.823	1.308905	0.842391	64.35847

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Mn	Mn Error	Error as %	Fe	Fe Error	Error as %	Cu	Cu Error	Error as %	Zn	Zn Error	Error as %
218	91.36	53102	main60 light 30	1448.31	65.32	4.510084	77738.05	370.69	0.476845	65.56	10.91	16.64124	151.38	8.38	5.535738
219	100.23	53102	main60 light 40	1520.4	65.28	4.293607	77641.73	364.35	0.469271	67.03	10.81	16.12711	156.52	8.33	5.322004
220	110.52	53102	main60 light 50	1529.17	65.47	4.281408	77874.78	365.22	0.468984	55.31	10.57	19.11047	153.61	8.27	5.383764
221	120.64	53102	main 60 light 60	1542.51	65.75	4.262533	77741.89	365.68	0.470377	56.4	10.62	18.82979	158.85	8.43	5.306893
222	131.21	53102	main 60 light 70	1574.78	66.41	4.217097	77979.41	369.19	0.473445	57.14	10.71	18.74344	152.77	8.36	5.472279
223	141.5	53102	main 60 light 80	1462.82	64.81	4.430484	77749.4	366.15	0.470936	53.49	10.56	19.74201	152.02	8.28	5.446652
224	150.05	53102	main 60 light 90	1485.23	65.5	4.410091	77932.16	369.27	0.473835	68.2	10.93	16.02639	154.17	8.38	5.435558
225	161.93	53102	main 60 light 100	1451.34	63.57	4.38009	78349.55	361.66	0.461598	57.61	10.5	18.226	154.15	8.21	5.325981
226	170.77	53102	main 60 light 110	1527.34	65.96	4.318619	77977.15	369.4	0.473729	60.5	10.77	17.80165	150.35	8.3	5.520452
227	171.87	53102 repeat	main 60 light 110	1465.32	65.26	4.453635	78045.79	372.08	0.476746	63.09	10.87	17.22935	150.81	8.37	5.55003
228	182.07	53102	main 60 light 120	1509.47	64.87	4.297535	77915.68	363.71	0.466799	61.17	10.66	17.42684	156.57	8.3	5.301143
Mean				1501.517	65.29091	4.348329	77904.14	367.0364	0.471138	60.5	10.71909		153.7455	8.328182	
Stdev				41.61837	0.732017	1.758887	194.4082	3.272804	1.68347	4.972116	0.149496		2.678897	0.063058	
%RSD				2.771755	1.121162	40.44956	0.249548	0.891684	357.3196	8.218374	1.394672		1.742423	0.757169	

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	As	As Error	Error as %	Rb	Rb Error	Error as %	Sr	Sr Error	Error as %	Zr	Zr Error	Error as %
218	91.36	53102	main60 light 30	9.73	3.44	35.35457	16.5	1	6.060606	180.78	2.78	1.537781	137.7	2.84	2.062455
219	100.23	53102	main60 light 40	12.73	3.41	26.78712	15.8	1	6.329114	180.1	2.73	1.515825	137.22	2.8	2.040519
220	110.52	53102	main60 light 50	11.15	3.38	30.3139	15.66	1	6.385696	181.86	2.75	1.512152	137.39	2.8	2.037994
221	120.64	53102	main 60 light 60	11.83	3.44	29.07861	16.29	1	6.138735	181.08	2.75	1.518666	136.63	2.8	2.04933
222	131.21	53102	main 60 light 70	11.39	3.39	29.76295	16.29	1	6.138735	184.74	2.79	1.510231	135.82	2.82	2.076277
223	141.5	53102	main 60 light 80	12.81	3.44	26.85402	15.67	1	6.381621	181.46	2.75	1.515486	139.19	2.83	2.033192
224	150.05	53102	main 60 light 90	11.05	3.35	30.31674	15.96	1	6.265664	182.75	2.78	1.521204	138.84	2.84	2.04552
225	161.93	53102	main 60 light 100	12.76	3.3	25.86207	16.13	1	6.199628	184.87	2.74	1.482123	138.54	2.78	2.006641
226	170.77	53102	main 60 light 110	9.78	3.4	34.76483	15.94	1	6.273526	183.82	2.79	1.517789	138.45	2.83	2.044059
227	171.87	53102 repeat	main 60 light 110	12.47	3.37	27.02486	15.89	1	6.293266	182.22	2.8	1.536604	136.01	2.84	2.088082
228	182.07	53102	main 60 light 120	11.88	3.33	28.0303	15.79	1	6.333122	182.74	2.74	1.499398	139.5	2.81	2.014337
Mean				11.59818	3.386364		15.99273	1		182.4018	2.763636		137.7536	2.817273	
Stdev				1.110548	0.046534		0.275757	0		1.571476	0.024606		1.259288	0.020538	
%RSD				9.575189	1.374172		1.724264	0		0.861546	0.890348		0.914159	0.72901	

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Nb	Nb Error	Error as %	Pb	Pb Error	Error as %	Si	Si Error	Error as %	P	P Error	Error as %	S	S Error	Error as %
218	91.36	53102	main60 light 30	11.12	1.19	10.70144	21.41	3.75	17.51518	156852.1	1243.8	0.792976	4041.38	254.8	6.304777	913.89	94.34	10.32291
219	100.23	53102	main60 light 40	11.37	1.18	10.37819	18.99	3.64	19.16798	158122	1114.47	0.704817	4068.7	223.01	5.481112	903.22	82.14	9.09413
220	110.52	53102	main60 light 50	10.36	1.17	11.29344	19.81	3.65	18.42504	152187.7	960.55	0.631161	4005.29	183.66	4.585436	830.1	67.24	8.100229
221	120.64	53102	main 60 light 60	10.24	1.17	11.42578	20.4	3.7	18.13725	152617.1	895.12	0.586514	3922.37	164.8	4.201541	866.02	60.86	7.027551
222	131.21	53102	main 60 light 70	9.51	1.17	12.30284	19.29	3.66	18.97356	153482.9	847.03	0.551873	4106.33	151.41	3.687234	806.04	54.85	6.804873
223	141.5	53102	main 60 light 80	9.97	1.17	11.73521	20.35	3.67	18.0344	151197.6	789.99	0.522489	3818.99	134.66	3.526063	824.24	49.5	6.005532
224	150.05	53102	main 60 light 90	9.97	1.17	11.73521	17.01	3.61	21.22281	151022.8	767.54	0.508228	3774.67	127.23	3.370626	831.94	46.91	5.638628
225	161.93	53102	main 60 light 100	10.68	1.16	10.86142	17.16	3.51	20.45455	151687.1	736.56	0.485579	3810.76	120.23	3.155014	765.35	43.66	5.70458
226	170.77	53102	main 60 light 110	10.63	1.18	11.10066	20.78	3.7	17.80558	121703.8	635.46	0.522136	18753.9	178.64	0.952549	1395.75	46.93	3.36235
227	171.87	53102 repeat	main 60 light 110	11.91	1.2	10.07557	16.5	3.61	21.87879	151443.7	737.51	0.486986	3777.67	113.21	2.996821	789.52	41.32	5.23356
228	182.07	53102	main 60 light 120	9.62	1.15	11.95426	17.4	3.57	20.51724	150877.5	698.63	0.463044	3836.76	107.72	2.807577	818.12	39.42	4.818364
Mean				10.48909	1.173636		19.00909	3.642727	19.16308	152949	879.12		3916.292	158.073		834.844	58.024	
Stdev				0.747054	0.013618		1.722036	0.066497	3.861519	2536.308	179.3957		128.7332	49.21262		47.17805	18.35187	
%RSD				7.122196	1.16034		9.059015	1.825466	20.15082	1.65827	20.40628		3.287119	31.13284		5.651122	31.62808	

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Bal	Bal Error	Error as %	Ti	Ti Error	Error as %	Mn	Mn Error	Error as %	Fe	Fe Error	Error as %
258	40.67	53039	main and high 20	903961.4	674.37	0.074602	12710.46	621.77	4.891798	1912.94	130.84	6.839734	80667.7	697.34	0.86446
259	60.14	53039	main and high 30	904613.1	530.32	0.058624	12417.32	487.86	3.928867	1900.29	102.67	5.40286	80259.78	549.09	0.684141
260	80.14	53039	main and high 40	904253.6	451.41	0.049921	12659.13	414.96	3.27795	1855.98	86.44	4.657378	80417.63	465.8	0.579226
261	100.71	53039	main and high 50	903994.3	400.15	0.044265	12704.59	366.47	2.884548	1939.43	77.27	3.98416	80599.2	413.18	0.512635
262	120.38	53039	main and high 60	904768.1	362.63	0.04008	12595.01	333.89	2.650971	1882.6	69.95	3.715606	80018.45	375.08	0.468742
263	140.11	53039	main and high 70	904291	336.61	0.037224	12718.76	308.68	2.426966	1892.08	64.54	3.411061	80335.41	346.68	0.431541
264	160.37	53039	main and high 80	904626.9	311.57	0.034442	12640.84	285.99	2.262429	1876.39	59.76	3.184839	80121.73	321.26	0.400965
265	180.03	53039	main and high 90	904679.6	294.57	0.032561	12650.3	270.32	2.136866	1805.33	55.74	3.087524	80107.84	303.74	0.379164
266	200.49	53039	main and high 100	904191.8	280.9	0.031066	12938.58	257.66	1.991409	1846.38	53.27	2.885105	80287.3	288.54	0.359384
Mean				904375.5	404.7256		12670.55	371.9556		1879.047	77.83111		80312.78	417.8567	0.520287
Stdev				303.8845	129.0539		136.0931	119.3507		39.47953	25.39177		220.2553	133.9897	60.8338
%RSD				0.033602	31.88676		1.07409	32.08735		2.10104	32.62419		0.274247	32.06594	11692.36

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Cu	Cu Error	Error as %	Zn	Zn Error	Error as %	As	As Error	Error as %	Rb	Rb Error	Error as %
258	40.67	53039	main and high 20	< LOD	34.23		116.14	14.35	12.35578	< LOD	7.7		27.7	1.8	6.498195
259	60.14	53039	main and high 30	37.97	15.2	40.0316	114.63	11.18	9.753119	7.51	4.16	55.39281	27.27	1.41	5.170517
260	80.14	53039	main and high 40	20.4	12.43	60.93137	110.41	9.4	8.513722	7.46	3.44	46.1126	27.62	1.2	4.344678
261	100.71	53039	main and high 50	34.62	11.33	32.72675	107.49	8.22	7.647223	8.71	3.07	35.24684	27.91	1.07	3.833751
262	120.38	53039	main and high 60	27	10.17	37.66667	113.78	7.61	6.688346	7.66	2.77	36.16188	27.47	1	3.640335
263	140.11	53039	main and high 70	26.15	9.39	35.90822	114.86	7.02	6.111788	11.19	2.58	23.0563	27.52	1	3.633721
264	160.37	53039	main and high 80	34.57	8.85	25.60023	112.56	6.48	5.75693	9.64	2.42	25.10373	27.69	1	3.611412
265	180.03	53039	main and high 90	33.13	8.34	25.17356	107.13	6.03	5.628675	11.84	2.25	19.00338	27.61	1	3.621876
266	200.49	53039	main and high 100	25.65	7.8	30.40936	104.73	5.67	5.413922	8.74	2.12	24.25629	27.97	1	3.575259
Mean				29.93625	13.08222		111.3033	8.44		9.09375	3.39		27.64	1.164444	
Stdev				11.44019	8.258518		4.043328	2.815884		3.414085	1.738095		0.214884	0.276049	
%RSD				38.21517	63.12779		3.63271	33.36355		37.5432	51.27125		0.777437	23.70646	

Appendix 1

Filter time experiment data continued.

Reading No	Duration	SAMPLE (number)	INSPECTOR (filter settings)	Sr	Sr Error	Error as %	Zr	Zr Error	Error as %	Nb	Nb Error	Error as %	Sn	Sn Error
258	40.67	53039	main and high 20	152.26	4.74	3.113096	154.96	5.49	3.54285	13.66	2.29	16.76428	< LOD	31.29
259	60.14	53039	main and high 30	146.48	3.66	2.498635	156.98	4.34	2.764683	13.27	1.8	13.56443	30.71	17.15
260	80.14	53039	main and high 40	149.21	3.13	2.097715	155.66	3.66	2.351278	11.73	1.5	12.78772	< LOD	21.74
261	100.71	53039	main and high 50	149.58	2.77	1.851852	154.22	3.22	2.087926	13.19	1.34	10.15921	< LOD	30.05
262	120.38	53039	main and high 60	147.27	2.5	1.697562	152.72	2.92	1.911996	12.58	1.22	9.697933	< LOD	17.92
263	140.11	53039	main and high 70	150.35	2.34	1.556368	152.65	2.7	1.768752	12.92	1.13	8.74613	17.51	10.99
264	160.37	53039	main and high 80	148.93	2.16	1.450346	151.17	2.5	1.653767	11.25	1.03	9.155556	< LOD	15.36
265	180.03	53039	main and high 90	148.3	2.03	1.368847	152.11	2.36	1.551509	12.74	1	7.849294	< LOD	14.42
266	200.49	53039	main and high 100	149.34	1.94	1.299049	154.09	2.26	1.466675	12.76	1	7.836991	15.7	9.1
Mean				149.08	2.807778		153.84	3.272222		12.67778	1.367778		21.30667	18.66889
Stdev				1.685482	0.912151		1.85154	1.067494		0.757756	0.435683		11.41392	7.75123
%RSD				1.130589	32.48658		1.203549	32.62292		5.977043	31.85333		53.5697	41.5195

Appendix 1

A1.5 Uncalibrated data

Reading No	Duration	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	Mg	Mg Error	Al	Al Error	Bal	Bal Error	Ti	Ti Error
71	180.12	53074		30-60-30-60		6302.28	1920.88	18528.17	574.01	781740.4	1097.8	7236.52	89.14
73	181.08	53074b		30-60-30-60		2891.84	1815.26	18376.05	562.06	783631.1	1104.16	7311.77	91.42
77	541.88	53094a	Avg of 74-76	30-60-30-60		3334.72	1771.35	19373.88	544	784550.3	1085.41	6187.11	78.44
81	542.46	53083	Avg of 78-80	30-60-30-60		4709.24	1876.23	19366.91	578.26	777886	1146.09	9152.47	104.27
85	543.97	53055	Avg of 82-84	30-60-30-60		6380.04	2131.82	22679.38	661.23	751260	1301.53	9277.19	107.08
89	542.53	53101	Avg of 86-88	30-60-30-60		4147.4	1881.87	20703.26	594.54	778885.7	1130.61	7359.97	90.87
91	181.9	53096		30-60-30-60		4783.23	1892.37	21997.19	605.41	760100.1	1240.45	8144.23	98.46
97	542.72	53096b	Avg of 94-96	30-60-30-60		5249.2	2063.87	23127.82	660.04	750382.9	1321.73	9023.99	107
157	542.47	46182	Avg of 154-156	30-60-30-60	paktertunet oven	< LOD	3237.54	9617.73	401.36	857092.8	743.63	6148.02	73.17
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertunet oven	< LOD	2528.09	12976.8	443.08	827936	878.03	6903.44	83.25
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertunet oven	< LOD	2347.77	12583.79	436.64	831946	865.17	6393.56	77.91
169	544.92	46184	Avg of 166-168	30-60-30-60	paktertunet oven	3702.42	1599.2	17072.6	493.81	805496	1018.64	7263.25	85.97
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertunet oven	3181.59	1698.3	14180.65	478.95	817248.9	941.63	7627.73	88.27
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertunet	< LOD	2899.26	12209.19	438.61	831065.2	867.08	6672.14	80.41
203	542.54	46181	Avg of 200-202	30-60-30-60	paktertunet	< LOD	2304.84	12281.05	428.4	832225.3	850.09	6636.26	79.18
207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertunet	< LOD	2145.21	12855.71	386.96	828416.5	704.77	6710.44	69.45

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218	480.71	46183	Avg of 216-217	30-60-30-60	paktertunet	< LOD	2512.87	12445.63	378.76	834131.3	673.45	6593.8	68.81
221	481.69	46185	Avg of 219-220	30-60-30-60	paktertunet	2366.04	1167.42	10161.11	316.81	868067.4	531.73	5384.46	59.33
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertunet	9226.19	2713.64	41676.12	1025.21	658441.5	1786.51	13399.07	146.73
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertunet					718909.7	1524.55	13329.8	148.35
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertunet	8317.32	2454.67	33472.98	856.57	688579.3	1561.67	9567.72	116.34
253	542.73	53096	Avg of 250-252	30-60-30-60		13061.09	2935.54	41942.88	1060.95	639399.8	1909.8	13690.11	151.8
257	545.06	53101	Avg of 254-256	30-60-30-60		8717.37	2495.48	38072.55	915.03	675603.4	1661.79	10025	119.8
261	541.79	53055	Avg of 258-260	30-60-30-60		11880.5	2677.81	36450.14	931.34	670361.6	1714.22	11221.77	129.84
265	544.17	53094	Avg of 262-264	30-60-30-60		10827.83	2418.39	42016.03	941.72	648970.9	1750.81	8326.86	103.61
269	461.68	53085	Avg of 266-268	30-60-30-60						718885.3	1486.74	11972.16	138.07
273	542.39	53085b	Avg of 270-272	30-60-30-60		11770.82	2718.08	39517.19	977.14	662609.5	1741.77	11842.9	135.55
285	541.88	53048	Avg of 282-284	30-60-30-60		8435.27	2527.38	31435.51	846.97	697947.3	1561.39	11342.88	129.6
289	540.77	53100	Avg of 286-288	30-60-30-60		8419.51	2329.51	40116.72	906.91	674753.4	1587.13	7134.8	94.48
293	544.03	53087	Avg of 290-292	30-60-30-60		9565.75	2672.8	37506.14	952.88	670589.9	1677.27	11595.51	131.74
312	601.84	46185	Avg of 310-311	50-100-50-100		10049.72	1845.9	35840.02	662.8	696573	1196.58	11426.51	99.45
315	602.77	46180	Avg of 313-314	50-100-50-100		11373.22	2042.56	38646.24	724.65	669397.3	1313.77	12114.4	105.13
318	601.04	46183	Avg of 316-317	50-100-50-100		12053.9	2025.2	38349.91	718.92	670703.8	1290.44	12183.28	105.84
321	600.5	46181	Avg of 319-320	50-100-50-100		8894.31	1962.63	37562.31	702.33	677069.9	1280.78	11610.58	102.28
324	600.35	46179	Avg of 322-323	50-100-50-100		10796.24	2048.6	38747.48	728.24	670317.1	1279.08	12110.95	104.89

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327	602.72	46184	Avg of 325-326	50-100-50-100		11592.28	2036.35	39609.88	735.77	663449.1	1315.83	12401.11	106.7
330	600.38	46178	Avg of 328-329	50-100-50-100		3576.75	1807.34	23444.66	549.85	751331.4	1008.95	10285.25	92.06
333	602.06	46177	Avg of 331-332	50-100-50-100		8740.27	1975.19	39709.7	724.43	670150.6	1301.81	12822.78	107.87
336	601.48	46182	Avg of 334-335	50-100-50-100		12874.92	2198.51	43491.31	803.98	646201	1400.51	13579.56	114.68
364	601.65	53088	Avg of 362-363	50-100-50-100		10138.44	1996.48	34975.3	686.95	673565.1	1267.43	11426.55	101.73
367	601.53	53083	Avg of 365-366	50-100-50-100		7996.82	1709.68	35118.98	628.99	686763.8	1198.05	8155.98	78.06
370	600.92	53091	Avg of 368-369	50-100-50-100		11386	2052.93	37899.46	723.62	664181.1	1309.3	11371.77	102.42
373	602.04	53078	Avg of 371-372	50-100-50-100		10793.36	2119.81	41157.65	771.35	647894.1	1405.68	13701.51	116.16
376	600.85	53086	Avg of 374-375	50-100-50-100		12875.87	2314.94	43982.98	840.29	627063.4	1499.32	13774.58	119.54
390	601.68	53079	Avg of 388-389	50-100-50-100		6692.01	1657.95	36093.57	630.79	684548.7	1178.9	7668.12	74.66
393	602.8	53061	Avg of 391-392	50-100-50-100		11895.6	2048.49	39467	735.72	661593.1	1373.65	12990.78	113.51
396	603.1	53093	Avg of 394-395	50-100-50-100		8711.87	1846.25	40657.19	705.25	667526.4	1296.94	9809.07	91.73
399	601.77	53104	Avg of 397-398	50-100-50-100		9976.22	1890.23	42077.32	731.12	658321.4	1325.69	9116.7	86.77
402	600.91	53075	Avg of 400-401	50-100-50-100		9438.72	1997.72	37055.3	700.95	674627.9	1260.3	11315.05	99.81
471	600.53	53022	Avg of 469-470	50-100-50-100		11933.74	2191.43	37568.45	749.97	661362.1	1361.35	13552.72	115.65
474	602.22	53077	Avg of 472-473	50-100-50-100		9969.18	2015.44	35734.33	697.74	680245.7	1261.27	11411.7	101.79
477	603.98	53046	Avg of 475-476	50-100-50-100		9885.44	1964.59	40306.48	726.2	668747.3	1294.37	11482.57	100.77
480	602	53107	Avg of 478-479	50-100-50-100		9239.33	1702.07	42132.07	683.44	677213.8	1223.01	7382.99	74.43
483	603.36	53084	Avg of 481-482	50-100-50-100		7925.19	1675.85	37492.42	641.05	680290.9	1193.23	7255.05	72.45

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486	601.16	53105	Avg of 484-485	50-100-50-100		10074.67	1885.1	44976.53	751.33	655106.9	1315.95	8845.79	85.34
489	601.97	53098	Avg of 487-488	50-100-50-100		7942.78	1632.04	44677.67	690.07	662036	1229.07	5870.32	63.52
492	601.81	53103	Avg of 490-491	50-100-50-100		12291.4	2032.11	37780.82	716.33	664175.3	1330.02	11179.64	101.04
495	600.94	53056	Avg of 493-494	50-100-50-100		12012.3	2195.57	42538.46	797.65	639710.1	1435.56	13498.76	115.23
498	602	53098	Avg of 496-497	50-100-50-100		10324.36	1702.51	43646.52	696.55	667828.9	1281.88	6645.1	71.11
501	603.37	53090	Avg of 499-500	50-100-50-100		12948.1	2068.28	41680.55	758.09	647543.9	1384.04	10050.79	94.96
515	601.49	53068	Avg of 513-514	50-100-50-100		11480.89	2276.93	44248.52	825.29	628961.3	1565.3	10407.89	105.97
518	603.22	53097	Avg of 516-517	50-100-50-100		11200.15	1728.57	41825.18	684.19	672639.6	1255.77	7578.75	75.32
521	603.35	53082	Avg of 519-520	50-100-50-100		10030.58	1952.28	39466.13	713.15	672460.1	1294.33	11659.04	102.47
524	601.3	53098b	Avg of 522-523	50-100-50-100		9105.17	1665.99	44429.09	695.79	665545.4	1264.65	6219.9	66.8
527	600.97	53067	Avg of 525-526	50-100-50-100		12853.33	2164.28	43053.18	797.72	654557.8	1422.58	15211.15	125.33
530	602.58	53023	Avg of 528-529	50-100-50-100		10971.61	1919.35	42587.28	736.14	666160.5	1326.6	11054.03	98.78
533	600.63	53025	Avg of 531-532	50-100-50-100		12094.14	2018.94	39078.29	721.68	674899.8	1308.74	11177.79	100.19
536	604.13	53073	Avg of 534-535	50-100-50-100		12086.23	2425.52	30494.06	718.83	667365.8	1455.86	12377.87	117.05
539	601.96	53063	Avg of 537-538	50-100-50-100		10910.05	1869.78	40664.19	703.53	673633	1273.99	10129.59	92.23
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		10391.85	2604.87	42227.17	996.9	668578.8	1836.46	17452.11	175.71
208	180.91	53051		30-60-30-60		9703.03	2590.84	36366.8	916.52	683108.4	1595.3	11068.73	126.4
209	180.06	53059		30-60-30-60	layer 11999	11227.9	2783.91	38299.89	984.61	660889.8	1753.45	13953.44	148.28
210	180.67	53031		30-60-30-60		8418.71	2436.89	34501.91	866.47	693584.2	1569.55	11303.15	129.42
211	181.59	53040		30-60-30-60		11218.03	2623.4	37649.75	934.68	686428.3	1667.58	10899.73	127.75

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212	301.14	53102		30-60-30-60		10615.3	1796.7	34180.18	631.63	693239.1	1166.62	9411.16	86.25
229	300.6	53102		50-100-50-100		11562.65	1879.47	35750.34	664.22	678630.7	1245.1	9584.9	89.49
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	6374.54	1882.35	34014.51	663.6	687207.9	1216.81	13160.27	108.18
237	301.32	53034		50-100-50-100		12540.44	1977.65	34158.76	665.96	680441.1	1247.29	12277.58	105.24
238	300.77	53050		50-100-50-100		10965.46	1913.12	35824.66	667.41	683937.4	1216.01	11211.08	99.22
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	5914.59	1602.17	29652.37	557.83	731672.6	997.42	12204.23	93.36
240	301.55	53035		50-100-50-100		8649.94	1868.84	34448.48	652.32	686364	1239.62	11846.79	101.72
241	301.6	53064		50-100-50-100		9904.75	1822.64	40730.85	700.1	675052.8	1281.5	10222.1	92.3
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	8305.76	1854.19	31739.47	620.44	702343.4	1152.99	11370.89	97.14
243	301.65	53054		50-100-50-100		3998.14	1932.74	27390.31	603.06	703910.9	1171.87	12115.63	106.5
244	300.71	53054		50-100-50-100	fresh sample repeat	12409.67	2086.66	37210.2	718.79	670802.4	1281.1	12295.53	106.7
245	300.71	53038		50-100-50-100		13253.24	2102.52	40816.91	751.02	666237	1394.51	12140.81	109.74
246	301.18	53038		50-100-50-100		14797.85	2111.9	40191.41	743.93	665952.8	1416.64	12012.48	108.11
247	300.06	53038		50-100-50-100		14144.45	2170.11	40763.52	767.53	664129	1393.04	12201.94	109.51
257	301.73	53039		50-100-50-100		8303.13	1793.32	34860.75	641.71	698687.1	1207.15	11275.16	97.24
276	301.93	53039		50-100-50-100		9758.66	1857.62	38172.43	680.6	688032.4	1234.89	11249.93	97.05
284	300.52	53043		50-100-50-100		3621.32	1763.47	29656.14	596.69	716138.4	1101.93	11242.41	97.37
285	300.88	53024		50-100-50-100		10230.65	1947.23	36296.66	680.29	684823.9	1228.97	12762.85	107.18
286	302.1	53036		50-100-50-100		12930.14	2046.34	39509.11	730.76	659845.9	1355.89	12410.38	107.84

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287	301.81	53053		50-100-50-100		11336	2177.98	42189.73	790.72	640033.8	1443.31	13215.34	114.96
288	301.89	53106		50-100-50-100		9055.97	1630.53	36335.89	618.59	694499.4	1168.09	7826.47	74.72
289	300.08	53045		50-100-50-100		8920.59	1894.96	35803.22	671.69	688273.3	1231.27	12215.16	104.8
290	300.26	53027		50-100-50-100		11635.24	1862.99	41775.38	717.89	681670.6	1256.82	11646.15	98.41
291	301.07	53057		50-100-50-100		9878.09	2033.35	38010.35	719.9	665402.4	1312.18	12400.9	108.74
292	301.22	53081		50-100-50-100		8712.82	1737.5	32800.15	611.06	705117.5	1135.59	9875.96	89.46
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	9441.16	1979.05	36008.94	692.8	679549.9	1303.04	13325.2	111.74
303	300.74	53080		50-100-50-100		6202.61	1653.48	33806.27	604.62	700904.8	1154.82	8362.49	80.11
304	300.7	53030		50-100-50-100		13789.1	2047.59	38083.58	719.82	670083.2	1275.1	12801.86	107.38
305	301.43	53072		50-100-50-100		10173.49	1974.53	34894.37	677.05	682313.9	1260.96	11534.88	102.28
306	300.24	53066		50-100-50-100		6972.37	1684.17	33431.31	608.92	707275	1108.96	9392.92	84.5
307	300.22	53047		50-100-50-100		10544.02	1814.64	35783.27	651.08	694184.6	1216.29	10386.5	91.73
312	301.45	53052		50-100-50-100		11064.44	2170.22	41629.07	784.55	638042.3	1442.19	12912.83	112.84
313	301.79	53026		50-100-50-100		9281.37	1949.69	37749.93	702.11	679423.8	1291.63	11523.9	102.29
314	300.15	53028		50-100-50-100		11421.5	2067.12	37928.15	728.46	665212.9	1317.58	14029.77	115.23
315	300.43	53044		50-100-50-100	layer 25600,52702	7348.01	1757.11	32483.31	615.55	707252.9	1142.42	10736.22	93.52
326	301.12	53033		50-100-50-100		8003.16	1954.04	34591.7	677.55	676385.2	1285.35	12495.1	107.25
327	301.93	53029		50-100-50-100		9603.89	1829.15	32726.73	628.48	691196	1215.02	11686.66	99.29
328	301.73	53062		50-100-50-100		7504	1908.1	38522.11	703.52	683699.6	1318.1	11340.86	106.22

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329	300.38	53058		50-100-50-100		11298.16	2107.71	35323.38	717.34	662259.7	1345.24	13183.8	110.38
330	300.08	53060		50-100-50-100	layer 11999	5669.17	1763.53	32836.48	626.33	699744.9	1163.8	10527.97	95.15
331	300.86	53065		50-100-50-100	layer 25600	7193.27	1634.58	36404.66	622.54	695873.4	1122.28	7991.04	76.56
332	301.26	25018		50-100-50-100	0.2-0.23 Bw	8280.71	1713.93	28694.75	573.04	722069.2	1065.14	10142.9	90.38
336	301.78	25011		50-100-50-100	0.19-0.23	7862.77	1874	33749.1	653.17	691861.5	1174.17	11106.57	97.52
337	300.9	53042		50-100-50-100		8348.74	1674.43	34896.86	616.22	705415.6	1151.64	9322.34	85.76
338	300.32	53071		50-100-50-100		13349.64	2446.63	43180.16	854.81	619626.7	1657.64	13022.94	121.43
347	300.83	25020		50-100-50-100	0.19-0.22 A horizon	10415.69	1710.01	27771.87	558.16	723910.4	1056.47	10283.07	90.33
348	300.98	53092		50-100-50-100		9264	1870.33	35508.17	665.48	684545.9	1238.86	11188.84	99.01
349	300.94	53037		50-100-50-100		6937.32	1807.63	34893.65	650.96	689169.3	1224.32	11287.84	98.79
350	300.53	53070		50-100-50-100	layer 11999	10187.24	1850.97	33861.88	642.9	688697.9	1206.64	10401.76	93.34
351	301.02	25016		50-100-50-100	0.15-0.2	8597.5	1754.55	26737.88	559.94	720564.8	1072.45	10860.09	92.8
352	300.19	25011A		50-100-50-100	0.24-0.28 A-B	8016.48	1707.81	29017.48	570.29	718491.3	1072.17	10713.21	93.26
353	300.43	25007A		50-100-50-100	0.1-0.15	6578.71	1676.49	27167.52	549.45	728023.9	1050.91	10589.23	90.83
354	300.32	25020		50-100-50-100	0.37-0.4 tree roo	7269.72	1564	26161.77	518.08	738371.7	988.52	9339.07	84.69
355	302.11	25088		50-100-50-100	0.2-0.24 lower A	9197.03	1716.62	30080.78	579.75	712863.8	1097.36	10439.65	91.15
356	301.49	32989		50-100-50-100	0.36-0.39	8138.06	1881.53	35629.03	678.07	692510.3	1194.16	16655.98	125.58
357	301.95	32770A		50-100-50-100	0.05-0.08	9108.55	1831.41	33508.08	639.02	695511.3	1178.74	11002.16	99.86
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	15091.92	2232.68	42671.13	798.58	659546.8	1442.71	16401.69	135.29

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368	300.84	25019		50-100-50-100	0.19-0.22 lower A	5087.75	1667.68	25861.49	541.91	733406.3	1053.65	10346.91	91.21
369	300.93	53049		50-100-50-100		7424.5	1770.7	33457.2	622.79	706467.1	1143.93	11003.53	96.15
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	11647.58	1918.79	35069.37	661.79	689553.1	1222.81	12485.57	106.03
371	301.4	32989		50-100-50-100	0.2-0.24	10423.36	1985.72	36486.86	702.13	676958.3	1292.59	14388.85	116.57
372	300.33	25007A		50-100-50-100	0.05-0.1m	7535.95	1808.04	28017.49	577.19	714998.9	1118.82	11106.5	96.02
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	11374.98	2040.18	35348.15	686.56	671846.4	1301.65	13076.42	110.74
374	301.19	53076		50-100-50-100		11754.92	1974.72	33482.9	662.51	678427.9	1273.39	12097.06	105.59
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	11149.57	2108.91	31383.08	664.98	680212.6	1251.06	10873.85	98.11
387	902.81	25055	Avg of 384-386	50-100-50-100		8225.68	2005.43	31536.73	665.95	695275.6	1205.23	16355.71	120.43
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	13841.26	2369.74	34764.23	747.28	644479.7	1481.41	14366.47	125.89
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	6842.91	1795.03	29023.32	591.7	713413	1054.25	7981.42	77.95
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	14894.17	2250.03	40512.46	787.87	648333.2	1427.93	13105.94	116.2
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	8286.6	1914.34	33039.75	655.79	692003.3	1218.23	13372.71	109.59
426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	8722.47	1838.93	32104.87	631.25	699851.4	1165.27	11842.48	99.86
430	903.6	25055	Avg of 427-429	50-100-50-100	0.25-0.3m Bw	10341.13	1992.47	36321.68	699.5	678588.5	1255.01	13124.28	108.8
434	900.89	25055	Avg of 431-433	50-100-50-100	0.6-0.65m bA	10977.09	2010.05	39250.19	732.97	672208.2	1276.29	16636.08	124.07
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	9517.96	2092.89	40063.34	766.97	673131.2	1372.85	21567.14	158.04
439	300.58	25007		50-100-50-100	02-0.25 A horizon	7139.58	1647.93	26499.32	537.02	731086.2	1001.72	10368.24	90.48

Appendix 1

440	300.38	32989		50-100-50-100	0.1-0.15	11705.24	2060.18	39621.93	740.07	661076.2	1347.86	13011.53	111.31
441	300.73	26970		50-100-50-100	0.4-0.45 A-B	10290.52	1994.75	34302.18	676.64	679310.6	1263.46	10891.24	99.13
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	10264.04	1985.54	35058.6	681.27	680901.8	1244.82	14952.61	118.98
443	300.37	26973		50-100-50-100	0.15-0.2	8351	1803.93	30638.42	605.34	708191.1	1116.32	9831.89	89.68
444	301.44	32990		50-100-50-100	0.15-0.21	8311.92	2056.86	31940.08	671.09	689446.7	1231.07	13166.69	118.85
445	300.64	32990		50-100-50-100	0.48-0.53	9720.51	1928.19	33411.22	662.73	694984.1	1222.05	19549.49	139.25
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	6303.22	1709.57	28357.23	569.9	718760.3	1065.33	8925.42	82.27
7	300.53	26957		50-100-50-100	0.45-0.5	7964.1	1780.88	26855.8	562.49	714402	1074.55	9452.16	85.69
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	6749.93	1834.34	28835.26	597.1	706864.9	1124.1	9168.12	85.2
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	9010.45	1873.64	33037.34	643.93	695167.2	1196.58	10998	97.56
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	8691.19	1860.8	30540.53	615.12	702178.8	1121.44	9828.53	91.12
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw- anthro	9548.1	2015.13	34179.37	685.64	689072.3	1267.43	20925.79	149.59
12	300.39	26957		50-100-50-100	0.1-0.15 Ap	8231.02	1687.1	30402.53	577.14	720967.9	1055.4	8835.24	81.2
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	9565.81	1985.68	30348.18	637.16	690962.3	1202.66	9183.15	88.19
14	300.54	26962		50-100-50-100	0.25-0.3 Ap	6598.12	1735.22	28292.6	575.13	722306.4	1045.94	8596.03	81.45
15	301.93	25016A		50-100-50-100	0.1-0.15 Ap	7076.58	1714.07	28726.92	571.94	717544.2	1065.25	10765.55	94.08
23	901.76	25088	Avg of 20-22	50-100-50-100	0.75-0.8 bA	9590.11	1896.65	37322.03	683.45	696151.2	1163.87	10364.21	93.04
24	301.99	25014		50-100-50-100	0.2-0.24 Ap	8146.06	1804.12	31296.43	609.03	705851.7	1142.9	11765.01	100.38
25	300.99	26957		50-100-50-	0.8-0.85 feature	8139.44	1961.78	30641.07	640.53	691230.7	1196.78	10463.68	94.18

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				100									
26	300.1	32657		50-100-50-100	0.12-0.15 anthro	9136.82	1973.74	37085.36	703.08	681783.4	1256.78	11960.41	105.59
27	301.02	25015		50-100-50-100	0.19-0.23 B	7447.21	1753.55	28339.27	577.17	714410.5	1100.26	10516.64	93.65
28	301.01	26958		50-100-50-100	0.6-0.65 B(p)	9570.79	2010.11	31637.26	648.17	684793.1	1237.19	10567.18	96.04
29	300.7	32991		50-100-50-100	0.08-0.1 anthro	6586.62	1863.15	30436.71	616.09	701694.3	1153.99	11731.54	101.46
30	301.35	26960		50-100-50-100	0.84-0.88 anthro mortar rich hetrogenous	10656.55	2344.88	26920.65	660.89	684553.7	1181.8	8063.14	84.13
31	300.48	32991		50-100-50-100	0.2-0.23 anthro	14292.25	1986.78	37762.19	697.17	678951.3	1293.3	13082.02	109.75
32	302.03	25015		50-100-50-100	0.24-0.27 B	8875.18	1701.34	29949.47	573.87	713738.6	1081.71	10493.83	91.88
50	300.69	26960		50-100-50-100	0.47-0.5 anthro	6882.74	1772.61	28426.39	583.12	712357.4	1127.2	7887.19	80.33
51	300.76	26957		50-100-50-100	0.6-0.65	7630.32	1654.45	28274.48	549.64	731353.7	995.36	8261.8	77.47
52	300.14	32990		50-100-50-100	0.1-0.15 anthro	9545.11	1981.99	35891.36	689.85	680269.4	1240.53	13105.1	109.06
53	300.72	32657		50-100-50-100	0.2-0.24 anthro	6433.53	1808.6	32331.51	629.53	702506.1	1131.77	11799.9	101.67
54	301.71	32990		50-100-50-100	0.45-0.48 Bw1 anthro	8805.29	1873.95	33673.06	653.66	700557.3	1204.65	19011.75	139.07
55	301.8	32991		50-100-50-100	0.25-0.27 Bw-P	12662.79	2141.11	39012.88	750.09	663897	1342.85	14898.52	123.02
56	301.9	26958		50-100-50-100	0.95-1.0 B(p)	8663.83	1806.76	28303.94	580.01	708832.7	1081.15	9790.95	88.58
57	301.83	32991		50-100-50-100	0.15-0.18 anthro	8962.18	1873.74	34498.04	651.92	697405.4	1162.17	12571.59	105.78
58	301.63	26960		50-100-50-100	0.54-0.58 anthro	8378.82	1883.91	29445.91	607.02	702866.5	1118.62	9183.87	87.23
59	301.14	26960		50-100-50-100	0.25-0.3 Ap	8803.53	1813.28	31030.87	609.44	704764.3	1119.45	9235.36	85.85

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60	300.13	26964		50-100-50-100	0.26-0.3 Ap	7612.97	1791.68	27887.36	575.43	718055.1	1068.63	7728.89	76.22
61	300.49	25018		50-100-50-100	0.27-0.3 Bw	8568.91	1801.68	31387.01	612.01	706444.9	1149.02	10884.45	95.91
62	301.36	26964		50-100-50-100	Ap	7535.68	1893.02	30096.77	618.5	706065.8	1070.58	7847.99	79.17
63	301.51	25088		50-100-50-100	0.85-0.89 C	13928.61	2037.61	37880.11	718.25	659147.6	1355.25	9589.68	91.67
64	301.96	25015		50-100-50-100	0.27-0.3 poss feature	7432.42	1648.31	27362.43	544.76	731115.8	1022.34	10350.31	90.09
65	300.59	26970		50-100-50-100	0.15-0.2 Ap	8092.48	1757.58	32072.23	611.85	703817.2	1144.05	9879.92	89.4

Uncalibrated data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	V	V Error	Cr	Cr Error	Mn	Mn Error	Fe	Fe Error	Co	Co Error
71	180.12	53074		30-60-30-60		274.17	33.7	152.85	18.78	1204.27	84.98	64229.04	445.49	< LOD	145.43
73	181.08	53074b		30-60-30-60		268.23	34.33	142.56	19.26	1153.77	85.47	64367.31	455.51	< LOD	148.7
77	541.88	53094a	Avg of 74-76	30-60-30-60		224.07	29.9	134.04	17.25	1061.3	82.93	58775.14	421.86	< LOD	140.23
81	542.46	53083	Avg of 78-80	30-60-30-60		278.56	38.12	170.32	20.05	1843.82	96.98	86960.13	561.73	< LOD	168.73
85	543.97	53055	Avg of 82-84	30-60-30-60		321.35	38.82	166.99	20.56	1723.02	99.61	71220.6	507.37	< LOD	160.12
89	542.53	53101	Avg of 86-88	30-60-30-60		256.89	34.14	166.59	19	1227.41	86.81	66264.57	463.21	< LOD	150.31
91	181.9	53096		30-60-30-60		320.26	37.12	149.44	20.13	1407.27	90.74	86987.75	570.13	< LOD	171.9
97	542.72	53096b	Avg of 94-96	30-60-30-60		315.38	39.34	164.04	20.77	1668.61	98.5	86218.88	585.02	< LOD	175.88
157	542.47	46182	Avg of	30-60-30-60	paktertun	186.92	26.94	103.14	15.12	813.16	77.41	52406.14	386.33	< LOD	132.46

Appendix 1

			154-156		et oven										
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertun et oven	218.36	31.04	126.91	17.19	1262.52	85.73	61284.98	427.38	< LOD	142.46
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertun et oven	214.75	29.17	114.78	16.32	1248.18	85.89	62667.38	435.94	< LOD	144.09
169	544.92	46184	Avg of 166-168	30-60-30-60	paktertun et oven	224.83	31.43	133.16	17.14	1336.8	89.86	63841.86	454.79	< LOD	149.4
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertun et oven	227.51	32.25	121.83	17.72	1592.86	92.35	67641.31	462.55	< LOD	149.69
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertun et	232.19	30.07	125.82	16.59	1223.12	85.3	64002.64	442.71	< LOD	144.71
203	542.54	46181	Avg of 200-202	30-60-30-60	paktertun et	222.82	29.51	123.88	16.51	1102.7	81.94	60639.01	420.49	< LOD	139.55
207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertun et	235.09	26.37	115.15	14.9	1107.42	66.23	60813.08	340.71	< LOD	112.81
218	480.71	46183	Avg of 216-217	30-60-30-60	paktertun et	226.62	26.22	121.66	14.69	1442.13	70.38	60759.93	336.01	< LOD	111.74
221	481.69	46185	Avg of 219-220	30-60-30-60	paktertun et	185	23.07	122.39	13.85	1148.68	64.42	49209.3	283.21	< LOD	99.06
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertun et	400.12	52.53	232.87	26.7	1998.38	104.58	104746.6	687.88	< LOD	193.22
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertun et	370.17	52.91	246.99	26.6	2007.85	106.92	104863.6	704.97	< LOD	197.36
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertun et	343.43	43.44	201.53	23.47	1525.23	93.79	80702.49	548.77	< LOD	167.43
253	542.73	53096	Avg of 250-252	30-60-30-60		441.68	53.82	248.38	26.85	1893.53	105.94	99728.38	683.82	< LOD	194.41
257	545.06	53101	Avg of 254-256	30-60-30-60		346.02	44.22	200.17	23.88	1545.31	96.68	78143.22	548.74	< LOD	168.35
261	541.79	53055	Avg of 258-260	30-60-30-60		398.14	47.01	223.4	24.03	1782.83	102.36	83061.85	582.67	< LOD	175.77
265	544.17	53094	Avg of 262-264	30-60-30-60		322.68	38.94	175.86	22.04	1396.08	94.08	69572.81	502.1	< LOD	159.92
269	461.68	53085	Avg of 266-268	30-60-30-60		421.24	50.36	223.31	26.05	1838.78	103.48	89670.91	618.96	< LOD	182.16
273	542.39	53085b	Avg of 270-272	30-60-30-60		405.03	49.34	225.43	25.09	1750.06	100.48	89457.63	608.76	< LOD	179.39

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285	541.88	53048	Avg of 282-284	30-60-30-60		376.13	47.25	237.63	25	2002.33	103.98	83096.93	570.68	< LOD	171.66
289	540.77	53100	Avg of 286-288	30-60-30-60		283.57	36.84	188.79	21.69	1151.01	86.43	62976.96	451.68	< LOD	147.49
293	544.03	53087	Avg of 290-292	30-60-30-60		396.73	47.7	201.42	24.86	1823.88	101.01	85121.75	581.94	< LOD	173.68
312	601.84	46185	Avg of 310-311	50-100-50-100		392.47	36.27	247.57	19.09	1994.69	78.55	81071.89	424.93	< LOD	128.96
315	602.77	46180	Avg of 313-314	50-100-50-100		390.53	38.01	216.99	19.81	1871.76	78.67	84649.41	448.94	< LOD	133.58
318	601.04	46183	Avg of 316-317	50-100-50-100		379.8	38.5	234.41	19.77	2244.25	82.16	87057.93	450.26	< LOD	133.19
321	600.5	46181	Avg of 319-320	50-100-50-100		377.28	37.3	220.76	19.5	1678.34	75.25	84893.07	444.67	< LOD	132.49
324	600.35	46179	Avg of 322-323	50-100-50-100		405.3	38.13	234.92	19.62	1777.32	75.92	83918.31	435.97	< LOD	130.61
327	602.72	46184	Avg of 325-326	50-100-50-100		421.47	38.57	221.05	20.13	1886.62	78.13	85110.82	445.33	< LOD	132.89
330	600.38	46178	Avg of 328-329	50-100-50-100		334.96	33.45	185.56	17.8	1455.34	73.27	70364.57	390.48	< LOD	124
333	602.06	46177	Avg of 331-332	50-100-50-100		374.03	38.5	198.02	19.67	2180.15	82.02	89953.33	465.66	< LOD	136.74
336	601.48	46182	Avg of 334-335	50-100-50-100		440.13	41.07	235.76	20.6	1660.12	75.65	91007.55	475.38	< LOD	138.02
364	601.65	53088	Avg of 362-363	50-100-50-100		400.33	37.29	223.88	19.48	1766.47	76.14	85421.26	445.34	< LOD	132.85
367	601.53	53083	Avg of 365-366	50-100-50-100		312.41	29.63	185.15	16.83	1487.33	71.69	69705.45	378.18	< LOD	119.91
370	600.92	53091	Avg of 368-369	50-100-50-100		395.7	37.64	227.81	19.99	1808.59	77.2	85743.58	448.32	< LOD	133.56
373	602.04	53078	Avg of 371-372	50-100-50-100		432.18	41.31	244.39	20.32	1801.82	78.24	94005.11	494.29	< LOD	142.12
376	600.85	53086	Avg of 374-375	50-100-50-100		475.84	43.15	251.6	21.73	2003.53	82.15	101610.7	531.1	< LOD	148.77
390	601.68	53079	Avg of 388-389	50-100-50-100		271.65	28.52	175.24	16.53	1250.76	67.18	60321.69	334.55	< LOD	110.55
393	602.8	53061	Avg of 391-392	50-100-50-100		398.28	41.06	244.03	20.62	1870.52	79.09	100055.6	516.86	< LOD	145.65

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396	603.1	53093	Avg of 394-395	50-100-50-100		333.53	34.45	200.11	18.38	1278.55	70.15	73970.2	403.51	< LOD	126.11
399	601.77	53104	Avg of 397-398	50-100-50-100		339.18	32.82	201.59	18.3	1519.53	73.11	74934.33	402.97	< LOD	125.81
402	600.91	53075	Avg of 400-401	50-100-50-100		370.03	36.52	219.18	18.76	1752.04	75.53	81856.16	429.78	< LOD	129.68
471	600.53	53022	Avg of 469-470	50-100-50-100		435.79	41.48	234.26	20.73	2044.82	81.88	91891.92	484.5	< LOD	140.99
474	602.22	53077	Avg of 472-473	50-100-50-100		389.32	37.41	220.66	19.43	2618.16	87.07	85939.39	449.96	< LOD	133.55
477	603.98	53046	Avg of 475-476	50-100-50-100		367.4	36.78	212.87	19.53	1560.75	73.34	80646.13	426.6	< LOD	129.81
480	602	53107	Avg of 478-479	50-100-50-100		287.22	29.02	225.26	17.23	1268.38	67.77	67364.7	362.7	< LOD	116.5
483	603.36	53084	Avg of 481-482	50-100-50-100		257.47	27.96	179.73	16.44	1288.1	67.77	59149.16	329.93	< LOD	109.17
486	601.16	53105	Avg of 484-485	50-100-50-100		319.92	32.49	204.57	18.33	1275.38	69.03	69979.76	381.04	< LOD	120.32
489	601.97	53098	Avg of 487-488	50-100-50-100		229.29	25.39	175.2	15.73	887.63	61.35	50300.88	293.11	< LOD	101.08
492	601.81	53103	Avg of 490-491	50-100-50-100		396.2	37.19	233.69	19.41	1460.63	73.05	88498.77	464.36	< LOD	136.92
495	600.94	53056	Avg of 493-494	50-100-50-100		442.67	41.14	244.06	20.77	1842.79	79.06	97674.15	507.75	< LOD	145.14
498	602	53098	Avg of 496-497	50-100-50-100		266.69	28.21	185.24	16.55	1106.87	67.54	59853.76	344.4	< LOD	113.73
501	603.37	53090	Avg of 499-500	50-100-50-100		388.86	35.78	217.32	19.43	1651.33	75.61	86943.68	457.19	< LOD	135.38
515	601.49	53068	Avg of 513-514	50-100-50-100		402.66	41.46	271.65	22.78	2722.88	91.07	133232.6	665.07	< LOD	169.54
518	603.22	53097	Avg of 516-517	50-100-50-100		255.43	28.87	171.76	17.2	1244.25	68.8	63534.22	354.17	< LOD	115.2
521	603.35	53082	Avg of 519-520	50-100-50-100		381.02	37.39	218.68	19.4	1939.47	79.19	85135.7	447	< LOD	134.09
524	601.3	53098b	Avg of 522-523	50-100-50-100		234.08	26.48	181.15	16.24	1083.86	66.41	55372.52	322.01	< LOD	109.27
527	600.97	53067	Avg of 525-526	50-100-50-100		416.31	44.24	209.72	21.62	2889.92	92.48	101264.9	526.46	< LOD	148.88

Appendix 1

530	602.58	53023	Avg of 528-529	50-100-50-100		371.05	36.53	201.03	19.28	2182.66	82.39	80053.8	425.67	< LOD	130.24
533	600.63	53025	Avg of 531-532	50-100-50-100		354.62	36.71	224.32	19.71	3346.4	96.89	83061.22	444.81	< LOD	134.08
536	604.13	53073	Avg of 534-535	50-100-50-100		483.63	43.51	244.43	22.59	1719.63	81.99	119794.2	638.53	< LOD	168.73
539	601.96	53063	Avg of 537-538	50-100-50-100		305.28	34.11	218.98	18.53	1820.05	76.26	76262.77	403.56	< LOD	125.61
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		516.8	59.34	264.4	27.8	3557.01	134.37	101816.7	705.95	< LOD	198.33
208	180.91	53051		30-60-30-60		385.44	46.31	219.23	24.16	1811.86	98.48	83225.58	559.02	< LOD	167.9
209	180.06	53059		30-60-30-60	layer 11999	444.44	52.05	214.38	25.63	1633.64	99.09	89963.32	615.93	< LOD	181.03
210	180.67	53031		30-60-30-60		380.03	47.11	197.75	23.76	1935.31	102.14	84042.14	571.47	< LOD	172.12
211	181.59	53040		30-60-30-60		401.17	47.15	246.5	24.81	2403.12	111.65	86645.16	594.8	< LOD	176.76
212	301.14	53102		30-60-30-60		334.47	32.22	192.15	17.57	1582.67	71.11	81430.92	413.15	< LOD	125.1
229	300.6	53102		50-100-50-100		341.92	33.42	216.33	18.46	1476.77	72.03	78370.8	414.37	< LOD	126.91
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	420.68	38.24	217.19	18.95	1594.06	73.67	86855.52	450.13	< LOD	133.7
237	301.32	53034		50-100-50-100		421.2	37.99	220.96	18.96	1473.41	71.54	88585.03	453.59	< LOD	133.74
238	300.77	53050		50-100-50-100		353.59	36.5	224.68	18.63	1556.12	71.29	87187.38	439.88	< LOD	130.21
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	342.54	32.23	160.82	15.28	1013.7	61.55	61641.8	331.27	< LOD	107.48
240	301.55	53035		50-100-50-100		381.67	36.59	219.92	18.55	1600.41	73.81	91975.3	471.21	< LOD	137.34
241	301.6	53064		50-100-50-100		345.9	34.21	211.64	18.59	1426.29	71.19	77458.8	409.31	< LOD	126.12
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	358.59	35.28	190.73	17.96	1474.35	70.09	84705.47	431.3	< LOD	128.58
243	301.65	53054		50-100-50-100		396.69	38.72	234.74	19.94	1874.19	78.55	87269.88	458.22	< LOD	135.84
244	300.71	53054		50-100-50-	fresh	407.96	38.75	217.62	19.69	2038.25	78.9	89192.44	455.66	< LOD	133.46

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				100	sample repeat										
245	300.71	53038		50-100-50-100		421.19	40.23	352.73	21.86	2950.73	93.72	107243.4	550.44	< LOD	152.16
246	301.18	53038		50-100-50-100		430.84	39.56	352.24	21.24	2981.7	94.76	107287.3	558.93	< LOD	153.15
247	300.06	53038		50-100-50-100		431.28	40.27	350.47	21.47	2939.7	92.86	107520.1	548.35	< LOD	150.72
257	301.73	53039		50-100-50-100		364.68	35.16	236.72	18.48	1881.74	77.87	81341.47	426.59	< LOD	129.23
276	301.93	53039		50-100-50-100		384.02	35.16	234.55	18.34	1863.1	77.3	81507.39	429.18	< LOD	129.5
284	300.52	53043		50-100-50-100		357.1	35.45	192.27	18.59	1859.37	76.13	80410.82	417.67	< LOD	126.7
285	300.88	53024		50-100-50-100		411.01	38.71	223.41	19.31	2255.21	80.88	89804.8	454.41	< LOD	133.18
286	302.1	53036		50-100-50-100		392.97	38.94	222.66	20.02	1813.52	77.91	92652.84	480.73	< LOD	139.46
287	301.81	53053		50-100-50-100		441.55	41.38	240.21	20.87	1479.44	74.8	97761.78	511.81	< LOD	145.75
288	301.89	53106		50-100-50-100		290.75	28.46	188.88	16.47	1296.46	67.45	66700.03	356.38	< LOD	114.71
289	300.08	53045		50-100-50-100		432.67	38.18	201.56	19.55	1881.33	77.2	87282.1	452.05	< LOD	132.7
290	300.26	53027		50-100-50-100		407.1	35.46	276.77	19.19	2509.68	85.04	81459.8	425.87	< LOD	129.45
291	301.07	53057		50-100-50-100		422.9	39.76	212.27	20.71	2000.71	79.72	90277.11	467.44	< LOD	136.54
292	301.22	53081		50-100-50-100		331.85	33.22	211.39	18.01	2048.6	77.65	78578.75	405.43	< LOD	123.62
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	428.66	39.72	219.53	19.91	2628.11	89.21	95332.46	497.09	< LOD	143.1
303	300.74	53080		50-100-50-100		288.63	30.32	191.56	16.79	1831.49	76.62	69623.55	377.81	< LOD	119.42
304	300.7	53030		50-100-50-100		442.04	38.85	220.6	19.68	1955.28	77.02	88328.73	447.57	< LOD	132.16
305	301.43	53072		50-100-50-100		392.92	37.31	236.53	19.29	1806.09	77.16	85259.88	449.11	< LOD	132.9

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306	300.24	53066		50-100-50-100		334.82	31.54	190.25	17.05	1482.2	69.52	72118.39	376.91	< LOD	118.26
307	300.22	53047		50-100-50-100		351.36	33.78	198.94	17.84	1658.63	73.89	82334.8	425.02	< LOD	128.62
312	301.45	53052		50-100-50-100		464.58	40.74	224.26	20.86	1822.99	79.13	97618.1	510.06	< LOD	145.83
313	301.79	53026		50-100-50-100		394.92	37.47	229.78	19.76	2035.02	80.25	88452.91	459	< LOD	135.17
314	300.15	53028		50-100-50-100		377.5	40.7	239.63	19.79	2069.8	79.82	97207.7	491.22	< LOD	140.16
315	300.43	53044		50-100-50-100	layer 25600,52702	366.51	34.26	194.1	17.96	1673.09	73.79	82659.26	425.96	< LOD	127.82
326	301.12	53033		50-100-50-100		428.48	38.29	232.81	19.24	1578.74	75.43	85923.3	458.92	< LOD	136.38
327	301.93	53029		50-100-50-100		359.79	35.57	205.39	18.06	1623.64	74	88126.74	454.5	< LOD	134.44
328	301.73	53062		50-100-50-100		399.49	39.86	316.4	21.83	4719.43	111.46	109523.4	556.5	< LOD	152.81
329	300.38	53058		50-100-50-100		436.22	39.11	234.3	19.09	1557.24	75.3	92052.13	484.17	< LOD	140.63
330	300.08	53060		50-100-50-100	layer 11999	381.08	35.19	211.6	18.44	1731.52	74.99	80145.55	420.36	< LOD	128.48
331	300.86	53065		50-100-50-100	layer 25600	290.83	29.47	176.25	16.63	1253.28	65.5	62994.81	337.37	< LOD	109.68
332	301.26	25018		50-100-50-100	0.2-0.23 Bw	358.19	33.62	203.95	17.33	1501.72	68.85	78153.28	393.59	< LOD	121.38
336	301.78	25011		50-100-50-100	0.19-0.23	382.16	35.79	186.44	19.02	1747.41	74.07	79959.5	412.48	< LOD	125.64
337	300.9	53042		50-100-50-100		339.19	32.14	193.29	17.37	1400.37	69.88	77266.77	404.95	< LOD	124.45
338	300.32	53071		50-100-50-100		494.8	44.69	282.72	22.85	1885.99	84.57	125758.6	672.37	< LOD	172.03
347	300.83	25020		50-100-50-100	0.19-0.22 A horizon	342.28	33.32	203.25	17.76	1281.23	65.88	85564.34	422.63	< LOD	126.83
348	300.98	53092		50-100-50-100		362.52	36.36	234	18.59	1641.65	73.3	85747.77	438.08	< LOD	130.89
349	300.94	53037		50-100-50-		365.6	35.81	222.14	18.44	1484.55	72.59	86595.3	450.34	< LOD	134.14

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350	300.53	53070		50-100-50-100	layer 11999	339.98	34.59	186.09	18.51	1705.64	74.07	81724.81	423.91	< LOD	128.3
351	301.02	25016		50-100-50-100	0.15-0.2	363.56	33.73	183.98	17.51	1384.12	68.05	85298.57	426.85	< LOD	127.56
352	300.19	25011A		50-100-50-100	0.24-0.28 A-B	347.57	34.12	185.13	17.69	1683.05	71.78	82254.45	413.11	< LOD	124.72
353	300.43	25007A		50-100-50-100	0.1-0.15	323.45	32.86	176.62	17.28	1148.42	64.96	80257.96	410.15	< LOD	124.04
354	300.32	25020		50-100-50-100	0.37-0.4 tree roo	339.9	31.82	205.22	17.09	1246.55	64.35	79162.63	393.71	< LOD	120.58
355	302.11	25088		50-100-50-100	0.2-0.24 lower A	344.45	33.25	186.23	17.18	1317.89	67.32	76768.7	397.11	< LOD	121.63
356	301.49	32989		50-100-50-100	0.36-0.39	430.22	43.42	220.07	20.55	3778.02	96.3	96896.57	476.15	< LOD	136.42
357	301.95	32770A		50-100-50-100	0.05-0.08	342.92	37.63	204.35	18.85	1798.8	75.39	83043.94	427.01	< LOD	129.17
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	484.66	47.95	242.65	22.95	4145.3	106.4 1	114595.2	584.83	< LOD	156.71
368	300.84	25019		50-100-50-100	0.19-0.22 lower A	318	33.22	187.66	17.39	1331.47	68.83	79775.8	412.68	< LOD	126.27
369	300.93	53049		50-100-50-100		351.56	35.23	260.89	18.8	2813.76	87.12	82700.2	424.62	< LOD	128.1
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	409.84	38.29	223.83	19.27	1759.42	75.62	85956.74	443.03	< LOD	132.13
371	301.4	32989		50-100-50-100	0.2-0.24	419.83	40.92	219.62	20.31	2078.42	80.94	89491.18	468.96	< LOD	136.73
372	300.33	25007A		50-100-50-100	0.05-0.1m	345.06	34.79	189.6	17.9	1294.26	68.45	83538.66	431.36	< LOD	129.15
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	409.77	39.75	214.87	19.79	1435.31	71.69	91789.66	475.13	< LOD	137.22
374	301.19	53076		50-100-50-100		440.91	38.49	217.94	19.61	1646.79	74.81	93231.69	479.03	< LOD	138.51
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	337.87	35.88	235.28	19.15	2589.84	87.05	83368.95	439.68	< LOD	132.4

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387	902.81	25055	Avg of 384-386	50-100-50-100		400.72	38.65	168.82	17.21	991.88	67.6	58640.89	352.7	< LOD	116.19
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	516.74	45.44	235.89	22.66	2116.94	83.9	115109.9	599.4	< LOD	159.24
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	314.94	29.84	191.73	16.66	1523.89	69.13	65707.42	348.07	< LOD	111.55
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	456.94	42.05	252.91	21.77	1459.62	74.26	97640.91	514.24	< LOD	144.41
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	398.77	38.46	221.68	18.88	1796.34	76.76	87773.16	457.72	< LOD	134.8
426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	380.89	35.72	205.95	18.22	1363.93	69.53	78548.6	411.77	< LOD	125.88
430	903.6	25055	Avg of 427-429	50-100-50-100	0.25-0.3m Bw	414.45	38.48	238.97	19.31	1530	72.9	82902.74	436.19	< LOD	130.49
434	900.89	25055	Avg of 431-433	50-100-50-100	0.6-0.65m bA	460.19	41.46	226.5	18.68	1278.53	69.69	75742.65	410.26	< LOD	125.83
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	552.63	53.11	242.14	23.51	4473.5	109.56	112428.2	573.47	< LOD	154.98
439	300.58	25007		50-100-50-100	0.2-0.25 A horizon	330.16	33.7	178.52	16.98	1126.84	62.71	76060.6	381.02	< LOD	117.69
440	300.38	32989		50-100-50-100	0.1-0.15	405.84	39.89	223.53	20.48	2228.63	83.52	89900.95	471.37	< LOD	137.99
441	300.73	26970		50-100-50-100	0.4-0.45 A-B	376.81	36.57	223.22	19.47	2278.55	83.75	83182.83	441.34	< LOD	132.42
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	445.96	41.97	214.74	20.24	2004.09	77.93	93896.1	472.49	< LOD	135.56
443	300.37	26973		50-100-50-100	0.15-0.2	335.54	33.63	209.98	18.38	2152.17	78.48	77994.69	402.95	< LOD	122.56
444	301.44	32990		50-100-50-100	0.15-0.21	408.89	45.72	222.87	20.39	1729.9	76.1	90055.47	466.93	< LOD	136.28
445	300.64	32990		50-100-50-100	0.48-0.53	546.36	47.05	212.04	20.7	4147.27	100.28	109106.2	531.29	< LOD	144.04
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	314.04	30.58	195.74	16.65	1950.57	76.37	70033.56	371.16	< LOD	117.16
7	300.53	26957		50-100-50-	0.45-0.5	282.45	31.71	191.93	17.14	2364.3	80.09	74641.87	385.13	< LOD	119.64

Appendix 1

				100											
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	298.92	31.78	207.67	17.27	2035.8	77.77	71995.02	380.59	< LOD	119.81
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	362.12	35.88	223.44	18.99	2563.81	85.77	85223.13	440.45	< LOD	132.07
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	348.17	34.24	211.61	18.62	2223.67	79.01	76508.53	394.4	< LOD	121.55
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw-anthro	527.97	50.11	224.12	21.62	3710.53	98.13	113069.7	557.12	< LOD	151.4
12	300.39	26957		50-100-50-100	0.1-0.15 Ap	328.23	30.76	196.25	16.8	1892.64	74.47	68513.94	360.2	< LOD	114.17
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	341.92	33.17	209.54	18.61	1987.57	79.32	80431.66	425.78	< LOD	128.9
14	300.54	26962		50-100-50-100	0.25-0.3 Ap	323.67	30.94	192.2	17.14	1886.81	74.09	71633.18	372.3	< LOD	117.28
15	301.93	25016A		50-100-50-100	0.1-0.15 Ap	346.11	34.51	198.83	17.95	1382.79	67.39	79966.74	403.13	< LOD	123.33
23	901.76	25088	Avg of 20-22	50-100-50-100	0.75-0.8 bA	358	34.37	216.66	18.49	1059.98	63.95	75447.68	394.85	< LOD	121.23
24	301.99	25014		50-100-50-100	0.2-0.24 Ap	415.61	36.41	211.34	18.2	1453.08	70.08	81941.84	423.4	< LOD	127.24
25	300.99	26957		50-100-50-100	0.8-0.85 feature	358.02	34.52	211.09	18.09	2207.17	81.98	77835.3	415.65	< LOD	127.57
26	300.1	32657		50-100-50-100	0.12-0.15 anthro	384.31	38.63	197.89	19.88	1730.61	75.85	87485.48	454.14	< LOD	134.32
27	301.02	25015		50-100-50-100	0.19-0.23 B	374.87	34.6	166.39	18.46	1337.13	68.42	79889.97	412.08	< LOD	125.9
28	301.01	26958		50-100-50-100	0.6-0.65 B(p)	341.71	35.27	224.2	18.76	2642.88	87.11	82726.38	437.48	< LOD	130.71
29	300.7	32991		50-100-50-100	0.08-0.1 anthro	368.15	36.99	185.85	18.97	2457.65	83.33	86154.45	439.09	< LOD	131.16
30	301.35	26960		50-100-50-100	0.84-0.88 anthro mortar rich heterogeneous	282.28	31.5	213.94	17.55	2390.57	83.59	68545.02	378.95	< LOD	118.32

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31	300.48	32991		50-100-50-100	0.2-0.23 anthro	391.58	39.06	192.34	19.52	2478.2	86.01	86258.83	454.47	< LOD	134.64
32	302.03	25015		50-100-50-100	0.24-0.27 B	355.78	33.92	193.5	17.45	1452.14	67.8	81110.82	405.48	< LOD	123.28
50	300.69	26960		50-100-50-100	0.47-0.5 anthro	271.73	31.31	198.69	16.97	1872.76	77.3	71192.29	383.58	< LOD	120.61
51	300.76	26957		50-100-50-100	0.6-0.65	323.51	29.63	194.45	16.3	1555.59	68.24	66690.1	346.03	< LOD	110.2
52	300.14	32990		50-100-50-100	0.1-0.15 anthro	416.24	39.12	210.43	19.61	1489.54	71.55	85541.92	440.94	< LOD	131.21
53	300.72	32657		50-100-50-100	0.2-0.24 anthro	371.13	37.08	192.63	19.07	1745.69	73.34	83927.98	424.51	< LOD	127.78
54	301.71	32990		50-100-50-100	0.45-0.48 Bw1 anthro	520.78	47.14	201.41	20.67	3176.36	91.79	99198.93	499.31	< LOD	140.52
55	301.8	32991		50-100-50-100	0.25-0.27 Bw-P	496.93	43.7	229.61	21.43	2455.68	85.83	93851.97	486.33	< LOD	139.87
56	301.9	26958		50-100-50-100	0.95-1.0 B(p)	327.45	32.97	204.52	17.55	1415.31	67.57	74467.07	381.12	< LOD	118.66
57	301.83	32991		50-100-50-100	0.15-0.18 anthro	391.38	38.42	208.64	19.42	2461.35	82.47	83770.6	424.84	< LOD	127.71
58	301.63	26960		50-100-50-100	0.54-0.58 anthro	334.13	32.99	225.05	18.04	2017.81	76.9	74702.41	390.07	< LOD	120.58
59	301.14	26960		50-100-50-100	0.25-0.3 Ap	342.7	32.23	198.37	17.54	1854.77	74.59	72433.55	381.31	< LOD	118.6
60	300.13	26964		50-100-50-100	0.26-0.3 Ap	286.44	29.08	178.02	16.42	1634.84	72.48	62122.39	343.17	< LOD	110.73
61	300.49	25018		50-100-50-100	0.27-0.3 Bw	361.87	35	215.54	18.22	1734.14	74.7	79950.48	418.68	< LOD	126.4
62	301.36	26964		50-100-50-100	Ap	269.01	31.11	164.35	16.82	1508.66	68.77	61071.43	330.06	< LOD	107.9
63	301.51	25088		50-100-50-100	0.85-0.89 C	364.71	34.16	221.43	19.11	1115.72	68.97	80421.97	439.06	< LOD	131.08
64	301.96	25015		50-100-50-100	0.27-0.3 poss feature	359.51	33.16	182.02	17.41	1262.08	65.21	78026.52	394.19	< LOD	119.91
65	300.59	26970		50-100-50-100	0.15-0.2 Ap	339.5	33.16	190.49	17.64	1938.24	76.92	76250.4	401.18	< LOD	123.13

Appendix 1

Uncalibrated data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	Ni	Ni Error	Cu	Cu Error	Zn	Zn Error	As	As Error	Se	Se Error
71	180.12	53074		30-60-30-60		< LOD	37.14	41.75	13.56	140.97	10.85	7.2	4.57	< LOD	2.49
73	181.08	53074b		30-60-30-60		< LOD	38.33	41.27	13.86	139.95	11.05	< LOD	10.45	< LOD	2.52
77	541.88	53094a	Avg of 74-76	30-60-30-60		< LOD	38.15	< LOD	18.43	60.19	8.49	6.65	3.73	< LOD	2.48
81	542.46	53083	Avg of 78-80	30-60-30-60		< LOD	40.81	32.35	14.19	85.75	9.74	8.12	3.48	< LOD	2.64
85	543.97	53055	Avg of 82-84	30-60-30-60		< LOD	42.53	27.03	14.36	94.65	10.2	6.73	3.71	< LOD	2.95
89	542.53	53101	Avg of 86-88	30-60-30-60		< LOD	39.26	< LOD	19.93	87.69	9.57	9.8	4.04	< LOD	2.55
91	181.9	53096		30-60-30-60		< LOD	41.62	< LOD	20.76	87.93	9.91	8.87	3.62	< LOD	2.94
97	542.72	53096b	Avg of 94-96	30-60-30-60		< LOD	43.22	< LOD	29.02	85.28	10.15	7.43	3.63	< LOD	3.02
157	542.47	46182	Avg of 154-156	30-60-30-60	paktertunet oven	< LOD	36.36	< LOD	17.93	46.94	7.97	6.97	3.04	< LOD	2.47
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertunet oven	< LOD	36.79	< LOD	18.3	75.83	8.86	6.61	3.47	< LOD	2.4
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertunet oven	< LOD	37.2	< LOD	24.69	78	9.01	6.69	3.49	< LOD	2.4
169	544.92	46184	Avg of 166-168	30-60-30-60	paktertunet oven	< LOD	40.15	< LOD	23.69	90.97	9.7	7.64	3.59	< LOD	2.57
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertunet oven	< LOD	38.32	< LOD	22.37	104.89	9.97	7.13	3.65	< LOD	2.54
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertunet	< LOD	37.02	< LOD	25.41	75.63	8.98	< LOD	6.01	< LOD	2.46
203	542.54	46181	Avg of 200-	30-60-30-60	paktertunet	< LOD	36.61	< LOD	18.07	68.53	8.54	7.81	3.62	< LOD	2.27

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			202												
207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertunet	< LOD	29.52	< LOD	14.25	65.26	6.84	5.62	2.85	< LOD	1.77
218	480.71	46183	Avg of 216-217	30-60-30-60	paktertunet	< LOD	28.78	< LOD	13.86	78.25	7.09	6.02	2.62	< LOD	1.71
221	481.69	46185	Avg of 219-220	30-60-30-60	paktertunet	< LOD	26.1	< LOD	12.85	100.2	7.25	6.71	2.51	< LOD	1.51
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertunet	< LOD	45.66	59.11	16.28	113.3	11.39	9.85	4.19	< LOD	3.19
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertunet	< LOD	46.54	63.7	16.83	116.65	11.81	11.66	4.25	< LOD	3.47
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertunet	< LOD	41.13	80.23	15.78	172.34	12.4	8.5	5.19	< LOD	2.89
253	542.73	53096	Avg of 250-252	30-60-30-60		< LOD	47.14	< LOD	23.19	108.05	11.41	8.04	4.1	< LOD	3.83
257	545.06	53101	Avg of 254-256	30-60-30-60		< LOD	42.89	28.54	14.62	108.31	10.77	10.3	4.55	< LOD	3.16
261	541.79	53055	Avg of 258-260	30-60-30-60		< LOD	44.49	51.6	15.69	112.75	11.12	8.61	3.91	< LOD	3.12
265	544.17	53094	Avg of 262-264	30-60-30-60		< LOD	42.5	< LOD	25.54	82.87	9.81	11.07	4.46	< LOD	2.84
269	461.68	53085	Avg of 266-268	30-60-30-60		< LOD	45.08	< LOD	22.38	108.04	11.14	8.86	4.38	< LOD	3.08
273	542.39	53085b	Avg of 270-272	30-60-30-60		< LOD	43.99	32.71	15.01	119.2	11.28	9.42	4.24	< LOD	3.05
285	541.88	53048	Avg of 282-284	30-60-30-60		< LOD	42.83	24.43	14.53	118.46	11.1	11.46	4.23	< LOD	2.99
289	540.77	53100	Avg of 286-288	30-60-30-60		< LOD	40.31	< LOD	21.63	80.5	9.4	9.73	4.18	< LOD	2.6
293	544.03	53087	Avg of 290-292	30-60-30-60		< LOD	43.4	37.5	14.99	124.68	11.3	9.43	4.83	< LOD	3.08
312	601.84	46185	Avg of 310-311	50-100-50-100		< LOD	31.95	23.95	10.92	126.41	8.55	8.56	3.03	< LOD	2.04
315	602.77	46180	Avg of 313-314	50-100-50-100		< LOD	33.21	24.29	11.23	115.74	8.5	7.47	3.3	< LOD	2.17
318	601.04	46183	Avg of 316-317	50-100-50-100		< LOD	32.79	27.02	11.23	115.62	8.44	6.47	3.14	< LOD	2.14

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321	600.5	46181	Avg of 319-320	50-100-50-100		< LOD	32.32	27.49	11.2	102.21	8.13	12.04	3.4	< LOD	2.22
324	600.35	46179	Avg of 322-323	50-100-50-100		< LOD	32.26	23.57	10.97	118.01	8.41	10.1	3.22	< LOD	2.13
327	602.72	46184	Avg of 325-326	50-100-50-100		< LOD	32.97	20.36	11.07	129.41	8.75	10.11	3.13	< LOD	2.27
330	600.38	46178	Avg of 328-329	50-100-50-100		< LOD	31.34	< LOD	21.73	106.12	8.2	9.09	3.02	< LOD	2.21
333	602.06	46177	Avg of 331-332	50-100-50-100		< LOD	33.48	32.4	11.47	165.95	9.61	10.59	3.35	< LOD	2.23
336	601.48	46182	Avg of 334-335	50-100-50-100		< LOD	34.1	< LOD	19.62	113.21	8.51	9.99	3.08	< LOD	2.27
364	601.65	53088	Avg of 362-363	50-100-50-100		< LOD	33.12	44.97	11.63	135.45	8.87	10.54	3.59	< LOD	2.17
367	601.53	53083	Avg of 365-366	50-100-50-100		< LOD	31.49	32.07	10.89	96.31	7.72	8.99	3.48	< LOD	2.04
370	600.92	53091	Avg of 368-369	50-100-50-100		< LOD	33.14	47.83	11.72	140.7	9.03	14.49	4.61	< LOD	2.45
373	602.04	53078	Avg of 371-372	50-100-50-100		< LOD	34.83	26.68	11.62	108.94	8.51	11.9	3.1	< LOD	2.23
376	600.85	53086	Avg of 374-375	50-100-50-100		< LOD	48.88	58.88	12.76	134	9.35	5.62	3.18	< LOD	2.45
390	601.68	53079	Avg of 388-389	50-100-50-100		< LOD	30.29	< LOD	17.03	69.83	6.84	8.21	3.16	< LOD	1.95
393	602.8	53061	Avg of 391-392	50-100-50-100		< LOD	34.44	31.01	11.78	101.44	8.43	9.75	3.05	< LOD	2.23
396	603.1	53093	Avg of 394-395	50-100-50-100		< LOD	32.62	21.02	11.01	95.24	7.89	9.26	3.38	< LOD	2.2
399	601.77	53104	Avg of 397-398	50-100-50-100		< LOD	32.67	49.19	11.55	114.15	8.31	9.96	3.55	< LOD	2.13
402	600.91	53075	Avg of 400-401	50-100-50-100		< LOD	32.29	39.02	11.28	115.71	8.33	9.96	3.05	< LOD	2.12
471	600.53	53022	Avg of 469-470	50-100-50-100		< LOD	37.97	43.18	12.1	116.39	8.75	12.45	3.84	< LOD	2.56
474	602.22	53077	Avg of 472-473	50-100-50-100		< LOD	32.82	57.09	11.91	148.48	9.15	9.17	3.12	< LOD	2.25
477	603.98	53046	Avg of 475-476	50-100-50-100		< LOD	32.68	20.34	10.95	91.26	7.8	10.83	3.35	< LOD	2.15

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480	602	53107	Avg of 478-479	50-100-50-100		< LOD	31.19	31.21	10.72	94.21	7.53	13.16	3.34	< LOD	1.93
483	603.36	53084	Avg of 481-482	50-100-50-100		< LOD	30.15	< LOD	18.41	76.45	7	8.02	3.15	< LOD	1.93
486	601.16	53105	Avg of 484-485	50-100-50-100		< LOD	32.22	< LOD	22.76	88.88	7.58	8.28	3.18	< LOD	2.05
489	601.97	53098	Avg of 487-488	50-100-50-100		< LOD	29.62	< LOD	19.24	67.79	6.66	6.84	3.07	< LOD	1.73
492	601.81	53103	Avg of 490-491	50-100-50-100		< LOD	34.01	93.39	12.9	169	9.75	9.2	3.6	< LOD	2.19
495	600.94	53056	Avg of 493-494	50-100-50-100		< LOD	35.19	30.21	11.81	137.68	9.23	9.76	3.37	< LOD	2.31
498	602	53098	Avg of 496-497	50-100-50-100		< LOD	32.38	< LOD	19.69	73.84	7.17	8.83	3.3	< LOD	1.98
501	603.37	53090	Avg of 499-500	50-100-50-100		< LOD	42.32	96.68	12.97	154.75	9.46	12.12	3.48	< LOD	2.19
515	601.49	53068	Avg of 513-514	50-100-50-100		< LOD	37.06	66.25	13.48	127.46	9.65	19.03	3.78	< LOD	2.68
518	603.22	53097	Avg of 516-517	50-100-50-100		< LOD	31.78	23.12	10.63	78	7.26	9.02	3.12	< LOD	1.94
521	603.35	53082	Avg of 519-520	50-100-50-100		< LOD	33.17	35.1	11.45	115.42	8.49	10.08	3.54	< LOD	2.17
524	601.3	53098b	Avg of 522-523	50-100-50-100		< LOD	31	< LOD	19.41	77.08	7.16	8.53	3.21	< LOD	1.89
527	600.97	53067	Avg of 525-526	50-100-50-100		< LOD	35.02	42.14	12.24	121.75	9.06	12.24	3.45	< LOD	2.34
530	602.58	53023	Avg of 528-529	50-100-50-100		< LOD	33.49	21.06	11.05	91.12	7.86	12.74	3.25	< LOD	2.15
533	600.63	53025	Avg of 531-532	50-100-50-100		< LOD	33.81	28	11.37	90.77	7.95	18.17	4.62	< LOD	2.32
536	604.13	53073	Avg of 534-535	50-100-50-100		< LOD	38.2	59.2	14.05	147.78	10.41	10.77	3.46	< LOD	2.85
539	601.96	53063	Avg of 537-538	50-100-50-100		< LOD	31.59	22.99	10.77	85.52	7.54	7.4	3.16	< LOD	2.08
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		< LOD	46.47	< LOD	27.13	88.92	11.11	8.43	4.38	< LOD	3.51
208	180.91	53051		30-60-30-60		< LOD	40.46	37.02	14.48	102.42	10.37	6.7	4.19	< LOD	2.75

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209	180.06	53059		30-60-30-60	layer 11999	< LOD	44.66	< LOD	22.15	99.59	10.71	11.51	3.93	< LOD	2.9
210	180.67	53031		30-60-30-60		< LOD	41.6	31.77	14.58	103.81	10.6	7.87	4.04	< LOD	2.99
211	181.59	53040		30-60-30-60		< LOD	43.14	< LOD	31.32	200.57	13.62	8.98	4.17	< LOD	2.88
212	301.14	53102		30-60-30-60		< LOD	30.86	68.15	11.56	169.33	9.22	9.55	3.69	< LOD	1.97
229	300.6	53102		50-100-50-100		< LOD	31.83	62.09	11.74	159.58	9.25	13.09	3.74	< LOD	2.07
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	< LOD	32.46	< LOD	16.22	96.74	7.92	6.63	2.85	< LOD	2.08
237	301.32	53034		50-100-50-100		< LOD	32.37	27.38	11.13	94.38	7.83	8.46	2.91	< LOD	2
238	300.77	53050		50-100-50-100		< LOD	30.54	< LOD	15.75	86.62	7.52	11.66	2.99	< LOD	2.06
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	< LOD	27.19	33.54	10.07	53.83	6.18	6.9	2.45	< LOD	1.75
240	301.55	53035		50-100-50-100		< LOD	32.03	25.56	11.22	100.85	8.12	10.18	3.02	< LOD	2.15
241	301.6	53064		50-100-50-100		< LOD	32.2	< LOD	23.05	100.1	7.98	9.29	3.17	< LOD	1.97
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	< LOD	31.25	< LOD	15.76	120.63	8.27	10.81	3.06	< LOD	2.06
243	301.65	53054		50-100-50-100		< LOD	33.19	21.26	11.2	111	8.39	9.79	3.1	< LOD	2.25
244	300.71	53054		50-100-50-100	fresh sample repeat	< LOD	32.72	37.15	11.39	105.97	8.14	10.82	3.03	< LOD	2.18
245	300.71	53038		50-100-50-100		< LOD	36.87	< LOD	18.86	107.11	8.78	6.8	3.26	< LOD	2.42
246	301.18	53038		50-100-50-100		< LOD	41.58	< LOD	17.84	111.71	8.96	10.56	3.29	< LOD	2.81
247	300.06	53038		50-100-50-100		< LOD	36.44	< LOD	16.82	106.64	8.69	10.3	3.17	< LOD	2.42
257	301.73	53039		50-100-50-100		< LOD	32.55	< LOD	16.21	108.38	8.22	14.02	3.07	< LOD	2.21
276	301.93	53039		50-100-50-100		< LOD	32.63	39.73	11.4	107.31	8.18	8.56	3.07	< LOD	2.04
284	300.52	53043		50-100-50-100		< LOD	31.63	< LOD	15.77	87.45	7.54	11.38	3.2	< LOD	2.06

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285	300.88	53024		50-100-50-100		< LOD	32.07	25.11	11.03	97.61	7.91	13.54	3.17	< LOD	1.98
286	302.1	53036		50-100-50-100		< LOD	33.91	34.51	11.7	106.44	8.39	8.94	3.47	< LOD	2.26
287	301.81	53053		50-100-50-100		< LOD	40.78	49.57	12.42	100.6	8.49	6.89	3.14	< LOD	2.35
288	301.89	53106		50-100-50-100		< LOD	30.29	< LOD	15.11	109.11	7.81	9.9	3.49	< LOD	1.97
289	300.08	53045		50-100-50-100		< LOD	32.5	38.2	11.4	101.38	8.09	10.84	3.47	< LOD	2.09
290	300.26	53027		50-100-50-100		< LOD	32.68	17.57	10.81	109.14	8.19	5.88	2.91	< LOD	2.12
291	301.07	53057		50-100-50-100		< LOD	33.82	31.05	11.48	122.64	8.67	9.25	3.14	< LOD	2.24
292	301.22	53081		50-100-50-100		< LOD	30.76	25.43	10.64	113.26	8.02	10.22	3.81	< LOD	2.01
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	< LOD	34.45	41.36	12.1	111.61	8.65	10.49	3.23	< LOD	2.15
303	300.74	53080		50-100-50-100		< LOD	31.19	22.11	10.68	90.05	7.57	6.93	3.12	< LOD	2.06
304	300.7	53030		50-100-50-100		< LOD	31.73	24.1	10.91	98.59	7.85	5.75	2.95	< LOD	1.97
305	301.43	53072		50-100-50-100		< LOD	33.19	31.09	11.37	113.51	8.39	12.75	3.39	< LOD	2.13
306	300.24	53066		50-100-50-100		< LOD	30.1	< LOD	15.16	87.94	7.3	11.46	3.39	< LOD	1.85
307	300.22	53047		50-100-50-100		< LOD	31.69	< LOD	15.9	80.16	7.42	8.08	3.16	< LOD	1.99
312	301.45	53052		50-100-50-100		< LOD	34.61	< LOD	17.3	96.01	8.29	8.23	3.1	< LOD	2.24
313	301.79	53026		50-100-50-100		< LOD	33.05	24.48	11.32	110.55	8.4	11.65	3.16	< LOD	2.15
314	300.15	53028		50-100-50-100		< LOD	33.35	< LOD	16.01	111.01	8.42	10.58	2.96	< LOD	2.07
315	300.43	53044		50-100-50-100	layer 25600,5270 2	< LOD	31.67	37.05	11.16	96.62	7.8	8.73	3.36	< LOD	1.96
326	301.12	53033		50-100-50-		< LOD	34.46	22.81	11.45	101.78	8.29	8.36	3.03	< LOD	2.37

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				100											
327	301.93	53029		50-100-50-100		< LOD	32.19	24.93	11.1	106.31	8.21	6.57	3.03	< LOD	2.1
328	301.73	53062		50-100-50-100		< LOD	40.09	27.48	12.11	102.58	8.62	12.64	3.36	< LOD	2.43
329	300.38	53058		50-100-50-100		38.55	23.83	17.3	11.5	119.67	8.85	10.41	3.07	< LOD	2.33
330	300.08	53060		50-100-50-100	layer 11999	< LOD	31.18	23.21	10.81	100.08	7.92	14.32	3.36	< LOD	2.08
331	300.86	53065		50-100-50-100	layer 25600	< LOD	28.21	< LOD	13.86	70.94	6.7	7.59	2.94	< LOD	1.73
332	301.26	25018		50-100-50-100	0.2-0.23 Bw	< LOD	29.11	< LOD	15	85.46	7.24	9.3	3.54	< LOD	1.89
336	301.78	25011		50-100-50-100	0.19-0.23	< LOD	30.39	26.75	10.7	83.27	7.38	11.81	3.56	< LOD	2
337	300.9	53042		50-100-50-100		< LOD	31.29	< LOD	19.5	78.37	7.32	15.33	3.26	< LOD	2.11
338	300.32	53071		50-100-50-100		< LOD	60.93	55.9	13.85	137.04	10.18	8.76	3.49	< LOD	2.65
347	300.83	25020		50-100-50-100	0.19-0.22 A horizon	< LOD	28.88	15.41	10.16	96.99	7.6	10.15	3.57	< LOD	1.82
348	300.98	53092		50-100-50-100		< LOD	31.69	27.01	11.02	114.38	8.29	11.04	3.04	< LOD	2.23
349	300.94	53037		50-100-50-100		< LOD	32.49	21.72	11.08	95.23	7.94	12.47	3.1	< LOD	2.24
350	300.53	53070		50-100-50-100	layer 11999	< LOD	31.34	24.25	10.84	84.74	7.5	10.27	3.25	< LOD	2.07
351	301.02	25016		50-100-50-100	0.15-0.2	< LOD	30.27	24.11	10.64	100.21	7.75	11.11	3.62	< LOD	1.92
352	300.19	25011A		50-100-50-100	0.24-0.28 A-B	< LOD	28.86	23.4	10.41	86.19	7.35	10.29	3.77	< LOD	1.96
353	300.43	25007A		50-100-50-100	0.1-0.15	< LOD	29.53	16.76	10.36	76.98	7.16	12.22	3.34	< LOD	2.01
354	300.32	25020		50-100-50-100	0.37-0.4 tree roo	< LOD	28.15	< LOD	21.48	89.29	7.21	11.94	3.56	< LOD	1.68
355	302.11	25088		50-100-50-100	0.2-0.24 lower A	< LOD	30.2	23.09	10.48	96.36	7.59	6.52	3.09	< LOD	1.86

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356	301.49	32989		50-100-50-100	0.36-0.39	< LOD	31.47	< LOD	15.19	67.74	7.12	10.06	2.94	< LOD	2.12
357	301.95	32770A		50-100-50-100	0.05-0.08	< LOD	32.08	36.68	11.13	108.28	8.07	22.88	3.76	< LOD	2.1
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	< LOD	45.07	90.7	13.77	129.77	9.49	12.2	3.4	< LOD	2.55
368	300.84	25019		50-100-50-100	0.19-0.22 lower A	< LOD	30.98	27.69	10.86	97.32	7.82	13.8	3.24	< LOD	1.93
369	300.93	53049		50-100-50-100		< LOD	31.59	26.6	10.89	115.18	8.16	9.24	3	< LOD	2.12
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	< LOD	32.27	33.46	11.23	99.6	8.04	10.24	3.43	< LOD	2.25
371	301.4	32989		50-100-50-100	0.2-0.24	< LOD	32.95	20	11.19	75.22	7.51	11.47	2.96	< LOD	2.24
372	300.33	25007A		50-100-50-100	0.05-0.1m	< LOD	31.1	< LOD	15.98	94.64	7.76	11.57	3	< LOD	2.03
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	< LOD	32.79	30.62	11.39	101.79	8.16	11.25	3.03	< LOD	2.12
374	301.19	53076		50-100-50-100		< LOD	32.72	22.52	11.24	107.08	8.36	7.74	3.07	< LOD	2.04
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	< LOD	32.68	90.36	12.62	163.23	9.48	12.62	4	< LOD	2.09
387	902.81	25055	Avg of 384-386	50-100-50-100		< LOD	32.45	< LOD	15.5	51.52	6.76	5.16	2.74	< LOD	2.1
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	< LOD	36.51	56.16	13.05	141.76	9.79	14.6	3.7	< LOD	2.55
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	< LOD	28.72	35.61	10.29	153.2	8.5	8.38	5.42	< LOD	1.83
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	< LOD	39.76	< LOD	16.45	81.72	7.93	10.75	3.01	< LOD	2.39
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	< LOD	32.72	< LOD	19.4	109.51	8.33	9.64	2.94	< LOD	2.18
426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	< LOD	31.28	24.1	10.77	113.2	8.16	9.88	3.44	< LOD	2.08
430	903.6	25055	Avg of 427-429	50-100-50-100	0.25-0.3m Bw	< LOD	32.45	< LOD	19.24	112.64	8.3	10.3	3.2	< LOD	2.14
434	900.89	25055	Avg of 431-	50-100-50-	0.6-0.65m	< LOD	32.04	< LOD	15.51	73.68	7.27	6.26	2.69	< LOD	2.1

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			433	100	bA										
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	< LOD	36.9	48.5	12.82	126.91	9.34	10.07	3.13	< LOD	2.38
439	300.58	25007		50-100-50-100	02-0.25 A horizon	< LOD	28.84	< LOD	14.71	80.65	6.98	14.77	3.56	< LOD	1.84
440	300.38	32989		50-100-50-100	0.1-0.15	< LOD	34.37	28.85	11.57	90.72	8.02	8.6	3	< LOD	2.26
441	300.73	26970		50-100-50-100	0.4-0.45 A-B	< LOD	33.1	67.03	12.18	133.03	8.89	13.39	3.99	< LOD	2.16
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	< LOD	32.07	< LOD	16.25	88.9	7.73	13.21	3.02	< LOD	2.07
443	300.37	26973		50-100-50-100	0.15-0.2	< LOD	30.79	46.13	11.06	182.12	9.43	11.18	5.46	< LOD	2
444	301.44	32990		50-100-50-100	0.15-0.21	< LOD	33.08	17.65	11.11	92.87	7.97	8.27	3.02	< LOD	2.14
445	300.64	32990		50-100-50-100	0.48-0.53	< LOD	31.76	< LOD	23.98	100.07	8.12	10.2	2.83	< LOD	2.12
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	< LOD	29.34	53.38	11.01	131.68	8.32	12.92	5.24	< LOD	1.92
7	300.53	26957		50-100-50-100	0.45-0.5	< LOD	28.98	52.11	10.95	113.57	7.88	7.63	4.29	< LOD	1.91
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	< LOD	29.95	45.98	11.04	133.1	8.45	18.74	4.77	< LOD	2.05
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	< LOD	32.1	47.27	11.6	114.89	8.36	12.47	3.86	< LOD	2.2
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	< LOD	29.74	48.5	10.98	139.77	8.52	14.42	3.94	< LOD	1.93
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw-anthro	< LOD	32.97	< LOD	19.44	106.87	8.46	13.18	3.05	< LOD	2.35
12	300.39	26957		50-100-50-100	0.1-0.15 Ap	< LOD	29.87	47.5	10.81	186.92	9.32	14.94	5.8	< LOD	1.97
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	< LOD	32.6	39.61	11.4	134.24	8.75	10.72	4.07	< LOD	2.06
14	300.54	26962		50-100-50-100	0.25-0.3 Ap	< LOD	29.25	31.02	10.4	129.31	8.16	12.39	5.02	< LOD	1.8

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15	301.93	25016A		50-100-50-100	0.1-0.15 Ap	< LOD	29.7	< LOD	15.17	92.12	7.43	10.72	3.63	< LOD	1.98
23	901.76	25088	Avg of 20-22	50-100-50-100	0.75-0.8 bA	< LOD	30.45	30.72	10.68	82.54	7.27	6.27	2.61	< LOD	1.96
24	301.99	25014		50-100-50-100	0.2-0.24 Ap	< LOD	30.84	19.94	10.61	74.59	7.22	10.55	2.95	< LOD	2.01
25	300.99	26957		50-100-50-100	0.8-0.85 feature	< LOD	32.14	60.12	11.81	130.6	8.68	7.31	3.62	< LOD	1.97
26	300.1	32657		50-100-50-100	0.12-0.15 anthro	< LOD	32.48	22.94	11.16	101.3	8.12	10.73	3.27	< LOD	2.1
27	301.02	25015		50-100-50-100	0.19-0.23 B	< LOD	30.3	< LOD	15.66	89.51	7.53	14.32	3.85	< LOD	2.09
28	301.01	26958		50-100-50-100	0.6-0.65 B(p)	< LOD	31.87	104.74	12.88	163.81	9.47	11.5	4.27	< LOD	2.21
29	300.7	32991		50-100-50-100	0.08-0.1 anthro	< LOD	32.01	30.2	11.09	95.01	7.79	5.83	3.03	< LOD	2.04
30	301.35	26960		50-100-50-100	0.84-0.88 anthro mortar rich hetrogenou s	< LOD	30.43	66.7	11.57	158.29	8.96	9.9	3.73	< LOD	1.93
31	300.48	32991		50-100-50-100	0.2-0.23 anthro	< LOD	33.44	20.33	11.22	98.89	8.14	11.51	3.12	< LOD	2.17
32	302.03	25015		50-100-50-100	0.24-0.27 B	< LOD	28.77	20.36	10.19	86.03	7.28	11.93	3.72	< LOD	1.93
50	300.69	26960		50-100-50-100	0.47-0.5 anthro	< LOD	30.9	53.31	11.44	128.16	8.56	13.19	4.58	< LOD	1.96
51	300.76	26957		50-100-50-100	0.6-0.65	< LOD	28.37	48.33	10.44	145.58	8.26	11.66	5.45	< LOD	1.74
52	300.14	32990		50-100-50-100	0.1-0.15 anthro	< LOD	32.19	23.72	10.97	95.21	7.82	10.66	3.03	< LOD	1.94
53	300.72	32657		50-100-50-100	0.2-0.24 anthro	< LOD	31.23	24.96	10.67	91.88	7.57	11.57	2.98	< LOD	2.09
54	301.71	32990		50-100-50-100	0.45-0.48 Bw1 anthro	< LOD	32.54	< LOD	17.22	89.95	7.87	11.8	2.92	< LOD	2.17
55	301.8	32991		50-100-50-100	0.25-0.27 Bw-P	< LOD	34.08	22.22	11.47	128.3	8.91	10.77	3.15	< LOD	2.18
56	301.9	26958		50-100-50-	0.95-1.0	< LOD	28.51	29.04	10.34	108.51	7.7	11.96	3.34	< LOD	1.75

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				100	B(p)										
57	301.83	32991		50-100-50-100	0.15-0.18 anthro	< LOD	30.4	31.69	10.8	110.1	8	9.9	2.92	< LOD	1.96
58	301.63	26960		50-100-50-100	0.54-0.58 anthro	< LOD	29.87	58.08	11.22	141.05	8.57	9.64	4.53	< LOD	1.84
59	301.14	26960		50-100-50-100	0.25-0.3 Ap	< LOD	29.99	36.8	10.71	125.25	8.19	13.84	5.39	< LOD	1.89
60	300.13	26964		50-100-50-100	0.26-0.3 Ap	< LOD	29.65	60.14	11.11	277.72	10.93	< LOD	11.95	< LOD	1.94
61	300.49	25018		50-100-50-100	0.27-0.3 Bw	< LOD	31.06	20.15	10.72	94.02	7.74	11.26	3.51	< LOD	2.03
62	301.36	26964		50-100-50-100	Ap	< LOD	28.31	42.54	10.37	147.46	8.36	< LOD	13.06	< LOD	1.82
63	301.51	25088		50-100-50-100	0.85-0.89 C	< LOD	52.11	42.63	11.86	55.49	7.05	7.57	2.98	< LOD	2.26
64	301.96	25015		50-100-50-100	0.27-0.3 poss feature	< LOD	28.55	< LOD	22.21	86.03	7.19	10.15	3.91	< LOD	1.87
65	300.59	26970		50-100-50-100	0.15-0.2 Ap	< LOD	30.88	37.19	11.01	173.02	9.36	11.76	5.22	< LOD	2.04

Appendix 1

Uncalibrated data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	Rb	Rb Error	Sr	Sr Error	Zr	Zr Error	Nb	Nb Error	Mo	Mo Error
71	180.12	53074		30-60-30-60		9.4	1	141.43	3.28	102.02	3.35	7.12	1.53	< LOD	1.71
73	181.08	53074b		30-60-30-60		9.86	1	141.86	3.35	102.49	3.42	7.91	1.58	< LOD	1.79
77	541.88	53094a	Avg of 74-76	30-60-30-60		16.55	1.06	138.37	3.24	125.67	3.6	8.42	1.55	< LOD	1.78
81	542.46	53083	Avg of 78-80	30-60-30-60		15.96	1.09	107.03	2.99	117.29	3.62	9.26	1.65	< LOD	1.9
85	543.97	53055	Avg of 82-84	30-60-30-60		15.44	1.09	117.54	3.17	131	3.85	11.32	1.7	< LOD	1.98
89	542.53	53101	Avg of 86-88	30-60-30-60		16.91	1.09	149.85	3.44	115.61	3.59	9.52	1.6	< LOD	1.82
91	181.9	53096		30-60-30-60		11.51	1	136.42	3.41	125.59	3.82	10.04	1.68	< LOD	1.95
97	542.72	53096b	Avg of 94-96	30-60-30-60		13.45	1.07	155.4	3.75	125	3.96	10.5	1.73	< LOD	2.06
157	542.47	46182	Avg of 154-156	30-60-30-60	paktertunet oven	8.45	1	92.37	2.62	78.65	2.92	5.53	1.49	< LOD	1.67
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertunet oven	12.4	1	120.82	3.01	110.87	3.39	8.72	1.55	< LOD	1.72
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertunet oven	11.43	1	124.98	3.08	95.05	3.23	7.32	1.54	< LOD	1.73
169	544.92	46184	Avg of 166-168	30-60-30-60	paktertunet oven	10.67	1	121.39	3.12	115.41	3.55	9.17	1.6	< LOD	1.8
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertunet oven	8.94	1	120.26	3.05	107.02	3.4	8.89	1.59	< LOD	1.79
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertunet	12.97	1	107.83	2.87	102.69	3.29	7.88	1.55	< LOD	1.74
203	542.54	46181	Avg of 200-202	30-60-30-60	paktertunet	18.8	1.09	113.97	2.89	91.26	3.11	8.15	1.53	< LOD	1.67

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207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertunet	18.65	1	115.17	2.36	92.95	2.55	7.73	1.23	< LOD	1.5
218	480.71	46183	Avg of 216-217	30-60-30-60	paktertunet	11.35	1	118.37	2.36	98.83	2.57	6.69	1.2	< LOD	1.5
221	481.69	46185	Avg of 219-220	30-60-30-60	paktertunet	9.06	1	85.97	1.93	86.53	2.29	7.51	1.16	< LOD	1.5
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertunet	24.2	1.38	134.52	3.58	163.08	4.48	14.71	1.86	< LOD	2.33
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertunet	24.19	1.41	134.53	3.67	164.98	4.61	13.99	1.9	< LOD	2.32
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertunet	13.56	1.05	171.37	3.83	141.43	4.06	10.88	1.69	< LOD	2.01
253	542.73	53096	Avg of 250-252	30-60-30-60		16.45	1.21	173.64	4.16	158.96	4.58	14.12	1.88	< LOD	2.53
257	545.06	53101	Avg of 254-256	30-60-30-60		21.38	1.26	184.02	4.05	148.16	4.23	13.55	1.77	< LOD	2.1
261	541.79	53055	Avg of 258-260	30-60-30-60		19.22	1.23	134.62	3.51	144.08	4.17	13.03	1.79	< LOD	2.13
265	544.17	53094	Avg of 262-264	30-60-30-60		19.51	1.2	195.9	4.13	391.68	6.54	13.35	1.74	< LOD	2.43
269	461.68	53085	Avg of 266-268	30-60-30-60		21	1.29	184.16	4.18	150.67	4.39	14.13	1.83	< LOD	2.18
273	542.39	53085b	Avg of 270-272	30-60-30-60		29.25	1.46	174.29	4	158.39	4.4	12.34	1.77	< LOD	2.13
285	541.88	53048	Avg of 282-284	30-60-30-60		24.91	1.34	169.67	3.89	167.47	4.42	13.55	1.77	< LOD	2.13
289	540.77	53100	Avg of 286-288	30-60-30-60		25.52	1.28	195.58	3.96	152.85	4.07	9.84	1.61	< LOD	1.9
293	544.03	53087	Avg of 290-292	30-60-30-60		13.55	1.07	180.77	4.03	149.23	4.25	16.71	1.83	< LOD	2.09
312	601.84	46185	Avg of 310-311	50-100-50-100		17.43	1	150.56	2.76	140.37	3.08	11.99	1.32	< LOD	1.5
315	602.77	46180	Avg of 313-314	50-100-50-100		18.76	1	178.21	3.08	148.05	3.27	13.72	1.37	< LOD	1.5
318	601.04	46183	Avg of 316-317	50-100-50-100		18.56	1	165.01	2.93	168.76	3.39	13.15	1.35	< LOD	1.5
321	600.5	46181	Avg of 319-320	50-100-50-100		22.3	1	176.47	3.06	158.68	3.34	14.97	1.38	< LOD	1.58

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324	600.35	46179	Avg of 322-323	50-100-50-100		19.18	1	178.25	3.02	156.53	3.27	13.05	1.33	< LOD	1.5
327	602.72	46184	Avg of 325-326	50-100-50-100		16.82	1	179.76	3.07	198.23	3.65	13.34	1.35	< LOD	1.5
330	600.38	46178	Avg of 328-329	50-100-50-100		15.49	1	140.06	2.69	119.48	2.93	10.48	1.32	< LOD	1.5
333	602.06	46177	Avg of 331-332	50-100-50-100		13.43	1	172.41	3.03	158.3	3.35	15.75	1.4	< LOD	1.59
336	601.48	46182	Avg of 334-335	50-100-50-100		19.36	1	185.45	3.17	169.4	3.48	15.68	1.41	< LOD	1.5
364	601.65	53088	Avg of 362-363	50-100-50-100		15.18	1	170.41	2.97	150	3.23	13.73	1.35	< LOD	1.5
367	601.53	53083	Avg of 365-366	50-100-50-100		23.95	1	186.82	3.02	175.81	3.36	11.98	1.29	< LOD	1.5
370	600.92	53091	Avg of 368-369	50-100-50-100		12.94	1	182.77	3.1	154.03	3.3	13.62	1.36	< LOD	1.5
373	602.04	53078	Avg of 371-372	50-100-50-100		19.48	1	190.07	3.25	156.92	3.42	14.34	1.41	< LOD	1.5
376	600.85	53086	Avg of 374-375	50-100-50-100		22.89	1.05	189.31	3.32	158	3.51	14.54	1.44	< LOD	1.91
390	601.68	53079	Avg of 388-389	50-100-50-100		25.53	1	192.99	3	202.4	3.47	11.93	1.25	< LOD	1.5
393	602.8	53061	Avg of 391-392	50-100-50-100		34.62	1.23	156.63	2.97	146.7	3.32	12.69	1.4	< LOD	1.5
396	603.1	53093	Avg of 394-395	50-100-50-100		24.12	1.01	274.75	3.84	299.61	4.48	14.64	1.36	< LOD	1.58
399	601.77	53104	Avg of 397-398	50-100-50-100		22.4	1	177.13	3.01	152.17	3.23	11.83	1.31	< LOD	1.5
402	600.91	53075	Avg of 400-401	50-100-50-100		27.64	1.06	186.01	3.08	151.74	3.23	12.71	1.33	< LOD	1.5
471	600.53	53022	Avg of 469-470	50-100-50-100		14.82	1	178.25	3.15	175.82	3.57	18.74	1.47	< LOD	1.67
474	602.22	53077	Avg of 472-473	50-100-50-100		17.58	1	164.74	2.94	146.13	3.2	12	1.34	< LOD	1.5
477	603.98	53046	Avg of 475-476	50-100-50-100		30.94	1.11	156.12	2.82	157.05	3.25	13.79	1.35	< LOD	1.52
480	602	53107	Avg of 478-479	50-100-50-100		30.16	1.06	150.43	2.66	167.52	3.19	12.22	1.27	< LOD	1.5

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483	603.36	53084	Avg of 481-482	50-100-50-100		25.48	1	185.37	2.92	171	3.22	12.15	1.25	< LOD	1.5
486	601.16	53105	Avg of 484-485	50-100-50-100		23.82	1	182.29	3	173.12	3.34	13.28	1.31	< LOD	1.5
489	601.97	53098	Avg of 487-488	50-100-50-100		30.3	1.02	169.08	2.72	171.45	3.12	10.85	1.2	< LOD	1.5
492	601.81	53103	Avg of 490-491	50-100-50-100		17.88	1	156.4	2.9	144.82	3.23	11.53	1.35	< LOD	1.5
495	600.94	53056	Avg of 493-494	50-100-50-100		21.49	1.01	173.82	3.12	160.58	3.46	15.29	1.43	< LOD	1.52
498	602	53098	Avg of 496-497	50-100-50-100		23.62	1	205.88	3.19	150.66	3.19	8.27	1.24	< LOD	1.5
501	603.37	53090	Avg of 499-500	50-100-50-100		20.94	1	168.5	3	152.22	3.29	12.34	1.35	< LOD	1.5
515	601.49	53068	Avg of 513-514	50-100-50-100		22.96	1.1	141.98	3.01	137.86	3.43	13.01	1.5	3.42	1.73
518	603.22	53097	Avg of 516-517	50-100-50-100		22.9	1	191.51	3.05	164.71	3.26	10.32	1.26	< LOD	1.5
521	603.35	53082	Avg of 519-520	50-100-50-100		22.11	1	172.56	3.02	168.7	3.42	14.49	1.38	< LOD	1.5
524	601.3	53098b	Avg of 522-523	50-100-50-100		29.86	1.05	191.26	3.01	179.08	3.33	10.65	1.25	< LOD	1.5
527	600.97	53067	Avg of 525-526	50-100-50-100		15.65	1	120.24	2.63	172.14	3.54	17.78	1.49	< LOD	1.57
530	602.58	53023	Avg of 528-529	50-100-50-100		30.83	1.12	147.89	2.78	152.34	3.24	14	1.36	< LOD	1.5
533	600.63	53025	Avg of 531-532	50-100-50-100		20.81	1	149.94	2.83	130.04	3.08	12.58	1.36	< LOD	1.5
536	604.13	53073	Avg of 534-535	50-100-50-100		34.22	1.33	144.15	3.1	147.57	3.61	11.63	1.52	< LOD	1.9
539	601.96	53063	Avg of 537-538	50-100-50-100		29.43	1.08	170.96	2.93	165.13	3.3	11.67	1.3	< LOD	1.5
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		17.22	1.27	165.81	4.17	187.27	5.03	17.12	1.99	< LOD	2.44
208	180.91	53051		30-60-30-60		21.69	1.24	167.37	3.78	143.26	4.07	13.14	1.73	< LOD	2.02
209	180.06	53059		30-60-30-60	layer 11999	31.44	1.51	120.98	3.34	156.85	4.31	15.3	1.84	< LOD	2.18

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210	180.67	53031		30-60-30-60		12.67	1.04	150.15	3.63	139.29	4.06	11.25	1.72	< LOD	2.01
211	181.59	53040		30-60-30-60		22.14	1.3	159.77	3.86	146.62	4.28	13.28	1.8	< LOD	2.16
212	301.14	53102		30-60-30-60		16.86	1	172.12	2.88	140.96	3.04	9.78	1.25	< LOD	1.5
229	300.6	53102		50-100-50-100		15.57	1	179.29	3.02	138.87	3.11	9.18	1.27	< LOD	1.5
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	6.33	1	181.22	3.07	162.92	3.35	14.97	1.37	< LOD	1.5
237	301.32	53034		50-100-50-100		17.5	1	142.36	2.7	158.52	3.25	11.87	1.32	< LOD	1.5
238	300.77	53050		50-100-50-100		28.2	1.05	171.1	2.92	136.71	3.05	11.7	1.3	< LOD	1.5
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	6.09	1	183.12	2.82	167.24	3.09	13.49	1.23	< LOD	1.96
240	301.55	53035		50-100-50-100		21.32	1	154.22	2.86	153.5	3.28	12.59	1.36	< LOD	1.5
241	301.6	53064		50-100-50-100		25.9	1.03	168.81	2.95	181.86	3.48	11.84	1.31	< LOD	1.5
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	21.75	1	163.05	2.83	144.39	3.09	13.37	1.32	< LOD	1.5
243	301.65	53054		50-100-50-100		27.26	1.08	162.64	2.94	153.58	3.3	12.95	1.36	< LOD	1.5
244	300.71	53054		50-100-50-100	fresh sample repeat	25.81	1.03	157.72	2.84	146.07	3.17	13.5	1.35	< LOD	1.5
245	300.71	53038		50-100-50-100		22.59	1.05	249.72	3.91	142.74	3.51	14.31	1.46	< LOD	1.58
246	301.18	53038		50-100-50-100		22.73	1.07	250.48	3.95	140.8	3.52	13.51	1.46	< LOD	1.59
247	300.06	53038		50-100-50-100		22.26	1.04	246.76	3.85	142.36	3.48	14.62	1.45	< LOD	1.54
257	301.73	53039		50-100-50-100		26.29	1.05	148.3	2.79	153.67	3.26	12.08	1.33	< LOD	1.5
276	301.93	53039		50-100-50-100		28.44	1.07	147.73	2.75	153.01	3.21	12.89	1.34	< LOD	1.5
284	300.52	53043		50-100-		22.43	1	142.07	2.66	151.12	3.14	11.07	1.29	< LOD	1.5

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				50-100											
285	300.88	53024		50-100-50-100		24.29	1.01	156.9	2.83	156.87	3.24	14.89	1.36	< LOD	1.5
286	302.1	53036		50-100-50-100		21.55	1	160.77	2.96	164.27	3.42	14.66	1.4	< LOD	1.5
287	301.81	53053		50-100-50-100		26.65	1.1	195.99	3.36	151.01	3.43	13.74	1.42	< LOD	1.52
288	301.89	53106		50-100-50-100		25.11	1	181.69	2.93	156.39	3.14	10.19	1.23	< LOD	1.5
289	300.08	53045		50-100-50-100		20.77	1	152.77	2.81	151.03	3.21	13.08	1.34	< LOD	1.5
290	300.26	53027		50-100-50-100		13.61	1	136.24	2.62	144.83	3.1	14.23	1.35	< LOD	1.5
291	301.07	53057		50-100-50-100		28.26	1.09	164.83	2.96	149.66	3.26	13.9	1.37	< LOD	2.34
292	301.22	53081		50-100-50-100		17.38	1	156.05	2.74	131.11	2.94	10.83	1.27	< LOD	1.5
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	18.91	1	156.74	2.97	165.99	3.49	16.01	1.44	< LOD	1.52
303	300.74	53080		50-100-50-100		26.45	1.02	171.67	2.9	140.69	3.06	10.8	1.28	< LOD	1.5
304	300.7	53030		50-100-50-100		16.26	1	156.35	2.8	158.45	3.24	12.64	1.32	< LOD	1.5
305	301.43	53072		50-100-50-100		25.29	1.04	175.54	3.04	147.63	3.24	13.41	1.36	< LOD	1.5
306	300.24	53066		50-100-50-100		20.83	1	163.27	2.75	133.8	2.92	11.86	1.26	< LOD	1.5
307	300.22	53047		50-100-50-100		29	1.08	164.67	2.92	154.86	3.26	12.97	1.33	< LOD	1.5
312	301.45	53052		50-100-50-100		24.3	1.06	160.28	3.01	158.76	3.44	15.46	1.44	< LOD	1.52
313	301.79	53026		50-100-50-100		24.54	1.04	172.73	3.08	153.57	3.35	14.57	1.39	< LOD	1.5
314	300.15	53028		50-100-50-100		29.35	1.11	128.84	2.61	149.68	3.22	12.69	1.36	< LOD	1.5
315	300.43	53044		50-100-50-100	layer 25600,5270 2	20.71	1	150.21	2.74	142.68	3.09	12.31	1.32	< LOD	1.5

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326	301.12	53033		50-100-50-100		15.56	1	155.33	2.9	154.38	3.32	13.48	1.38	< LOD	1.5
327	301.93	53029		50-100-50-100		21.35	1	157.47	2.87	148.65	3.21	11.56	1.33	< LOD	1.5
328	301.73	53062		50-100-50-100		29.6	1.18	162.99	3.11	151.95	3.46	11.26	1.42	< LOD	1.58
329	300.38	53058		50-100-50-100		15.52	1	177.14	3.14	149.79	3.35	13.54	1.4	< LOD	1.5
330	300.08	53060		50-100-50-100	layer 11999	17.95	1	160.13	2.84	157.74	3.24	10.8	1.3	< LOD	1.5
331	300.86	53065		50-100-50-100	layer 25600	29.56	1.01	179.25	2.82	162.54	3.09	10.71	1.21	< LOD	1.5
332	301.26	25018		50-100-50-100	0.2-0.23 Bw	12.64	1	156.76	2.73	162.94	3.18	11.32	1.25	< LOD	1.5
336	301.78	25011		50-100-50-100	0.19-0.23	15.5	1	154.44	2.74	145.06	3.07	13.21	1.31	< LOD	1.5
337	300.9	53042		50-100-50-100		26.16	1.02	170.11	2.9	184.71	3.43	10.97	1.29	< LOD	1.5
338	300.32	53071		50-100-50-100		38.85	1.41	203.73	3.74	152.56	3.77	14.99	1.57	< LOD	2.4
347	300.83	25020		50-100-50-100	0.19-0.22 A horizon	11.73	1	146.9	2.64	126.76	2.87	10.42	1.26	< LOD	1.5
348	300.98	53092		50-100-50-100		18.27	1	170.45	2.97	160.43	3.31	12.54	1.32	< LOD	1.5
349	300.94	53037		50-100-50-100		23.93	1.02	182.2	3.11	155.22	3.32	12.33	1.35	< LOD	1.5
350	300.53	53070		50-100-50-100	layer 11999	24.88	1	166.27	2.88	160.66	3.25	12.08	1.31	< LOD	1.5
351	301.02	25016		50-100-50-100	0.15-0.2	13.32	1	147.66	2.67	142.58	3.03	12.11	1.29	< LOD	1.5
352	300.19	25011A		50-100-50-100	0.24-0.28 A-B	13.34	1	139	2.56	142.48	2.99	11.03	1.26	< LOD	1.5
353	300.43	25007A		50-100-50-100	0.1-0.15	16.72	1	158.19	2.75	130.55	2.93	11.95	1.28	< LOD	1.5
354	300.32	25020		50-100-50-100	0.37-0.4 tree roo	10.77	1	166.01	2.74	110.16	2.69	9.83	1.22	< LOD	1.5
355	302.11	25088		50-100-50-100	0.2-0.24 lower A	5.44	1	181.22	2.93	139.24	3.01	11.26	1.26	< LOD	1.5

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356	301.49	32989		50-100-50-100	0.36-0.39	15.97	1	164.64	2.89	175.91	3.41	14.56	1.36	< LOD	1.5
357	301.95	32770A		50-100-50-100	0.05-0.08	16.23	1	164.03	2.86	160.83	3.25	13.3	1.33	< LOD	1.5
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	17.97	1	115.02	2.63	178.37	3.67	16.92	1.52	< LOD	1.65
368	300.84	25019		50-100-50-100	0.19-0.22 lower A	18.18	1	164.85	2.9	139.21	3.1	10.71	1.29	< LOD	1.5
369	300.93	53049		50-100-50-100		22.81	1	149.57	2.72	140.71	3.05	12.89	1.31	< LOD	1.5
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	21.57	1	149.3	2.77	151.97	3.21	12.97	1.34	< LOD	1.5
371	301.4	32989		50-100-50-100	0.2-0.24	13.59	1	174.03	3.06	179.63	3.54	14.1	1.38	< LOD	1.5
372	300.33	25007A		50-100-50-100	0.05-0.1m	20.62	1	161.28	2.85	143.1	3.11	11.66	1.31	< LOD	1.5
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	24.85	1.03	155.19	2.87	162.34	3.35	16.69	1.41	< LOD	1.5
374	301.19	53076		50-100-50-100		19.32	1	155.05	2.88	152.82	3.29	12.69	1.36	< LOD	1.5
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	33.54	1.16	223.36	3.45	145.3	3.28	13.7	1.36	< LOD	1.5
387	902.81	25055	Avg of 384-386	50-100-50-100		6.55	1	236.08	3.53	196.28	3.68	21.09	1.45	< LOD	1.5
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	37.13	1.31	170.38	3.22	160.55	3.6	16.84	1.52	< LOD	1.65
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	19.84	1	205.66	3.04	111.96	2.73	9.19	1.19	< LOD	1.5
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	4.67	1	216.53	3.53	155.65	3.5	16.28	1.45	< LOD	2.11
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	7.38	1	198.56	3.25	167.13	3.44	14.36	1.38	< LOD	1.5
426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	6.63	1	194.68	3.13	158.53	3.27	13.12	1.32	< LOD	1.5
430	903.6	25055	Avg of 427-429	50-100-50-100	0.25-0.3m Bw	7.66	1	198.24	3.21	156	3.3	14.68	1.36	< LOD	1.5
434	900.89	25055	Avg of 431-	50-100-	0.6-0.65m	6.15	1	200.84	3.21	187.3	3.53	16.92	1.38	< LOD	1.5

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			433	50-100	bA										
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	20.6	1.02	56.34	1.88	210.83	3.86	24.66	1.61	< LOD	1.67
439	300.58	25007		50-100-50-100	02-0.25 A horizon	13.82	1	156.24	2.64	121.9	2.75	11.03	1.22	< LOD	1.5
440	300.38	32989		50-100-50-100	0.1-0.15	17.47	1	172.87	3.07	171.37	3.49	15.28	1.41	< LOD	1.5
441	300.73	26970		50-100-50-100	0.4-0.45 A-B	20.79	1	218.94	3.43	141.64	3.26	11.85	1.34	< LOD	1.5
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	14.44	1	168.41	2.95	183.47	3.5	16.17	1.39	< LOD	1.5
443	300.37	26973		50-100-50-100	0.15-0.2	18.88	1	177.5	2.91	127.74	2.93	11.45	1.27	< LOD	1.5
444	301.44	32990		50-100-50-100	0.15-0.21	15.5	1	170.23	3.01	174.69	3.48	15.52	1.4	< LOD	1.5
445	300.64	32990		50-100-50-100	0.48-0.53	12.12	1	101.56	2.32	162.46	3.29	17.77	1.44	< LOD	1.5
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	18.33	1	180.09	2.92	121.21	2.85	9.3	1.23	< LOD	1.5
7	300.53	26957		50-100-50-100	0.45-0.5	22.27	1	222.51	3.24	124.35	2.92	11.43	1.25	< LOD	1.5
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	24.29	1	230.02	3.4	120.27	2.97	11.82	1.28	< LOD	1.5
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	13.41	1	170.54	2.97	180.66	3.48	13.26	1.35	< LOD	1.5
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	20.03	1	194.23	3.04	121.84	2.88	11.08	1.26	< LOD	1.5
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw-anthro	12.97	1	117.3	2.56	202.24	3.75	20.58	1.51	< LOD	1.62
12	300.39	26957		50-100-50-100	0.1-0.15 Ap	24.05	1	161.57	2.71	131.54	2.86	10.75	1.23	< LOD	1.5
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	16.61	1	195.84	3.19	125.64	3.04	10.65	1.31	< LOD	1.5
14	300.54	26962		50-100-50-100	0.25-0.3 Ap	18.38	1	163.9	2.73	112.89	2.72	10.04	1.23	< LOD	1.5

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15	301.93	25016A		50-100-50-100	0.1-0.15 Ap	13.97	1	143.76	2.59	133.88	2.9	11.45	1.26	< LOD	1.5
23	901.76	25088	Avg of 20-22	50-100-50-100	0.75-0.8 bA	6.41	1	192.2	3.03	136.36	3.01	14.81	1.31	< LOD	1.51
24	301.99	25014		50-100-50-100	0.2-0.24 Ap	15.07	1	162.48	2.83	139.13	3.05	11.63	1.3	< LOD	1.5
25	300.99	26957		50-100-50-100	0.8-0.85 feature	27.87	1.06	228.91	3.46	142.53	3.22	11.15	1.31	< LOD	1.5
26	300.1	32657		50-100-50-100	0.12-0.15 anthro	24.01	1.02	165.6	2.95	164.39	3.37	13.6	1.37	< LOD	1.5
27	301.02	25015		50-100-50-100	0.19-0.23 B	9.97	1	149.74	2.7	128.58	2.93	11.66	1.29	< LOD	1.5
28	301.01	26958		50-100-50-100	0.6-0.65 B(p)	34.69	1.18	259.05	3.73	140.96	3.28	12.02	1.33	< LOD	1.5
29	300.7	32991		50-100-50-100	0.08-0.1 anthro	19.37	1	184.34	3.05	154.31	3.24	13.7	1.34	< LOD	1.5
30	301.35	26960		50-100-50-100	0.84-0.88 anthro mortar rich hetrogenous	21.29	1	247.22	3.5	114.24	2.93	7.98	1.23	< LOD	1.5
31	300.48	32991		50-100-50-100	0.2-0.23 anthro	15.42	1	166.02	2.97	175.94	3.49	16.18	1.41	< LOD	1.5
32	302.03	25015		50-100-50-100	0.24-0.27 B	9.89	1	143.6	2.57	128.98	2.84	10.71	1.24	< LOD	1.5
50	300.69	26960		50-100-50-100	0.47-0.5 anthro	21.92	1	205.86	3.25	159.32	3.31	9.3	1.26	< LOD	1.5
51	300.76	26957		50-100-50-100	0.6-0.65	18.74	1	171.6	2.72	103.33	2.57	9.47	1.18	< LOD	1.5
52	300.14	32990		50-100-50-100	0.1-0.15 anthro	16.75	1	170.11	2.95	153.83	3.23	14.51	1.35	< LOD	1.5
53	300.72	32657		50-100-50-100	0.2-0.24 anthro	20.9	1	151.32	2.7	141.2	3.02	11.04	1.27	< LOD	1.5
54	301.71	32990		50-100-50-100	0.45-0.48 Bw1 anthro	10.52	1	131.5	2.64	168.37	3.38	15.55	1.4	< LOD	1.5
55	301.8	32991		50-100-50-100	0.25-0.27 Bw-P	10.19	1	190.66	3.24	173.65	3.54	15.52	1.41	< LOD	1.5
56	301.9	26958		50-100-	0.95-1.0	23.89	1	181.18	2.88	204.5	3.46	10.2	1.23	< LOD	1.5

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				50-100	B(p)										
57	301.83	32991		50-100- 50-100	0.15-0.18 anthro	17.12	1	157.98	2.78	147.65	3.1	12.71	1.3	< LOD	1.5
58	301.63	26960		50-100- 50-100	0.54-0.58 anthro	20.29	1	199.91	3.09	118.42	2.87	10.94	1.26	< LOD	1.5
59	301.14	26960		50-100- 50-100	0.25-0.3 Ap	21.1	1	194.49	3.03	125.28	2.9	10.45	1.24	< LOD	1.5
60	300.13	26964		50-100- 50-100	0.26-0.3 Ap	23.01	1	234.77	3.33	108.12	2.8	8.72	1.21	< LOD	1.5
61	300.49	25018		50-100- 50-100	0.27-0.3 Bw	13.11	1	175.77	2.97	137.68	3.08	12.18	1.31	< LOD	1.5
62	301.36	26964		50-100- 50-100	Ap	22.05	1	236.49	3.25	114.42	2.77	9.13	1.18	< LOD	1.5
63	301.51	25088		50-100- 50-100	0.85-0.89 C	11.99	1	215.66	3.43	154.36	3.39	14.26	1.38	< LOD	1.75
64	301.96	25015		50-100- 50-100	0.27-0.3 poss feature	15.88	1	156.28	2.68	150.87	3.04	11.31	1.25	< LOD	1.5
65	300.59	26970		50-100- 50-100	0.15-0.2 Ap	13.5	1	168.93	2.87	130.08	2.97	10.89	1.28	< LOD	1.5

Appendix 1

Uncalibrated data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	Pd	Pd Error	Ag	Ag Error	Cd	Cd Error	Sn	Sn Error	Sb	Sb Error
71	180.12	53074		30-60-30-60		< LOD	3.7	< LOD	21.27	< LOD	9.78	< LOD	35.28	< LOD	20.71
73	181.08	53074b		30-60-30-60		< LOD	3.82	< LOD	20.45	< LOD	7.98	< LOD	20.55	< LOD	15.33
77	541.88	53094a	Avg of 74-76	30-60-30-60		< LOD	4.28	< LOD	22.94	< LOD	8.4	< LOD	23.1	< LOD	18.9
81	542.46	53083	Avg of 78-80	30-60-30-60		< LOD	4.46	< LOD	35.51	< LOD	10.4	< LOD	27.01	< LOD	23.39
85	543.97	53055	Avg of 82-84	30-60-30-60		< LOD	4.47	< LOD	54.03	< LOD	9.02	< LOD	26.95	< LOD	17.73
89	542.53	53101	Avg of 86-88	30-60-30-60		< LOD	5.12	< LOD	32.08	< LOD	8.45	< LOD	29.75	< LOD	16.71
91	181.9	53096		30-60-30-60		< LOD	4.53	< LOD	61.13	< LOD	8.9	< LOD	40.14	< LOD	18.07
97	542.72	53096b	Avg of 94-96	30-60-30-60		< LOD	4.59	< LOD	56.9	< LOD	9.32	< LOD	31.32	< LOD	21.87
157	542.47	46182	Avg of 154-156	30-60-30-60	paktertunet oven	< LOD	3.96	< LOD	24.8	< LOD	8.88	< LOD	22.82	< LOD	19.29
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertunet oven	< LOD	4.29	< LOD	25.86	< LOD	7.95	< LOD	20.38	< LOD	15.8
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertunet oven	< LOD	3.84	< LOD	28.23	< LOD	8.62	< LOD	27.32	< LOD	19.77
169	544.92	46184	Avg of 166-168	30-60-30-60	paktertunet oven	< LOD	4.22	< LOD	36.21	< LOD	8.33	< LOD	28.41	< LOD	18.04
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertunet oven	< LOD	4.24	< LOD	31.41	< LOD	9.3	< LOD	25.44	< LOD	18.51
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertunet	< LOD	4.05	< LOD	21.11	< LOD	10.19	< LOD	26.17	< LOD	17.03
203	542.54	46181	Avg of 200-202	30-60-30-60	paktertunet	< LOD	4.26	< LOD	30.25	< LOD	9.98	< LOD	27.32	< LOD	17.11
207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertunet	< LOD	2.9	< LOD	17.51	< LOD	8.57	< LOD	17.32	< LOD	13.55
218	480.71	46183	Avg of 216-217	30-60-30-60	paktertunet	< LOD	3.18	< LOD	18.04	< LOD	7.79	< LOD	19.47	< LOD	11.84

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221	481.69	46185	Avg of 219-220	30-60-30-60	paktertunet	< LOD	2.94	< LOD	17.86	< LOD	7.68	< LOD	14.58	< LOD	14.04
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertunet	< LOD	4.86	< LOD	49.88	< LOD	9.99	< LOD	33.2	< LOD	22.76
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertunet	< LOD	4.87	< LOD	49.38	< LOD	9.91	< LOD	31.89	< LOD	19.11
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertunet	< LOD	4.42	< LOD	23.68	< LOD	9.53	< LOD	29.86	< LOD	17.58
253	542.73	53096	Avg of 250-252	30-60-30-60		< LOD	5.29	< LOD	79.72	< LOD	10.18	< LOD	35.78	< LOD	21.87
257	545.06	53101	Avg of 254-256	30-60-30-60		< LOD	4.65	< LOD	45.03	< LOD	9.45	< LOD	31.83	< LOD	19.39
261	541.79	53055	Avg of 258-260	30-60-30-60		< LOD	4.71	< LOD	45.64	< LOD	9.33	< LOD	30.6	< LOD	21.48
265	544.17	53094	Avg of 262-264	30-60-30-60		< LOD	4.39	< LOD	51.22	< LOD	8.78	< LOD	27.55	< LOD	17.95
269	461.68	53085	Avg of 266-268	30-60-30-60		< LOD	6.58	< LOD	63.48	< LOD	12.69	< LOD	40.09	< LOD	27.99
273	542.39	53085b	Avg of 270-272	30-60-30-60		< LOD	5.1	< LOD	52.49	< LOD	9.57	< LOD	25.8	< LOD	19.7
285	541.88	53048	Avg of 282-284	30-60-30-60		< LOD	4.46	< LOD	40.74	< LOD	10.13	< LOD	27.21	< LOD	24.02
289	540.77	53100	Avg of 286-288	30-60-30-60		< LOD	4.79	< LOD	33.23	< LOD	9.07	< LOD	27	< LOD	19.3
293	544.03	53087	Avg of 290-292	30-60-30-60		< LOD	5.12	< LOD	53.32	< LOD	9.49	< LOD	32.94	< LOD	19.16
312	601.84	46185	Avg of 310-311	50-100-50-100		< LOD	3.17	< LOD	27.59	< LOD	6.79	< LOD	24.56	< LOD	14.14
315	602.77	46180	Avg of 313-314	50-100-50-100		< LOD	3.39	< LOD	40.41	< LOD	7.01	< LOD	23.7	< LOD	13.74
318	601.04	46183	Avg of 316-317	50-100-50-100		< LOD	4.69	< LOD	46.42	< LOD	7.07	< LOD	22.89	< LOD	17.59
321	600.5	46181	Avg of 319-320	50-100-50-100		< LOD	3.36	< LOD	32.86	< LOD	7	< LOD	22.71	< LOD	16.39
324	600.35	46179	Avg of 322-323	50-100-50-100		< LOD	3.28	< LOD	40.13	< LOD	6.94	< LOD	19.27	< LOD	13.37
327	602.72	46184	Avg of 325-326	50-100-50-100		< LOD	3.55	< LOD	30.36	< LOD	7.02	< LOD	22.43	< LOD	13.56

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330	600.38	46178	Avg of 328-329	50-100-50-100		< LOD	3.42	< LOD	28.56	< LOD	7.32	< LOD	20.7	< LOD	13.93
333	602.06	46177	Avg of 331-332	50-100-50-100		< LOD	3.46	< LOD	51.29	< LOD	7.05	< LOD	24.07	< LOD	13.83
336	601.48	46182	Avg of 334-335	50-100-50-100		< LOD	3.49	< LOD	62.59	< LOD	7.25	< LOD	20.82	< LOD	18.68
364	601.65	53088	Avg of 362-363	50-100-50-100		< LOD	3.48	< LOD	61.09	< LOD	7.36	< LOD	23.19	< LOD	18.12
367	601.53	53083	Avg of 365-366	50-100-50-100		< LOD	3.23	< LOD	34.73	< LOD	6.8	< LOD	21.61	< LOD	13.06
370	600.92	53091	Avg of 368-369	50-100-50-100		< LOD	3.42	< LOD	42.57	< LOD	7.04	< LOD	19.11	< LOD	15.15
373	602.04	53078	Avg of 371-372	50-100-50-100		< LOD	3.64	< LOD	69.61	< LOD	7.35	< LOD	20.78	< LOD	14.37
376	600.85	53086	Avg of 374-375	50-100-50-100		< LOD	3.67	< LOD	63.36	< LOD	7.63	< LOD	24.37	< LOD	14.91
390	601.68	53079	Avg of 388-389	50-100-50-100		< LOD	4.11	< LOD	20.1	< LOD	6.49	< LOD	22.15	< LOD	15.34
393	602.8	53061	Avg of 391-392	50-100-50-100		< LOD	3.56	< LOD	43.67	< LOD	7.28	< LOD	19.71	< LOD	15.39
396	603.1	53093	Avg of 394-395	50-100-50-100		< LOD	3.26	< LOD	37.87	< LOD	7.96	< LOD	21.02	< LOD	13.81
399	601.77	53104	Avg of 397-398	50-100-50-100		< LOD	3.31	< LOD	52.6	< LOD	6.86	< LOD	18.74	< LOD	17.84
402	600.91	53075	Avg of 400-401	50-100-50-100		< LOD	3.3	< LOD	44.31	< LOD	6.78	< LOD	21.06	< LOD	15.65
471	600.53	53022	Avg of 469-470	50-100-50-100		< LOD	3.6	< LOD	75.77	< LOD	8.44	< LOD	20.92	< LOD	15.12
474	602.22	53077	Avg of 472-473	50-100-50-100		< LOD	3.47	< LOD	44.66	< LOD	8.06	< LOD	25.1	< LOD	13.77
477	603.98	53046	Avg of 475-476	50-100-50-100		< LOD	3.38	< LOD	42.71	< LOD	7.97	< LOD	24.11	< LOD	15.95
480	602	53107	Avg of 478-479	50-100-50-100		< LOD	3.19	< LOD	23.36	< LOD	7.18	< LOD	27.79	< LOD	14.92
483	603.36	53084	Avg of 481-482	50-100-50-100		< LOD	3.05	< LOD	24.99	< LOD	6.44	< LOD	21.27	< LOD	13.18
486	601.16	53105	Avg of 484-485	50-100-50-100		< LOD	3.29	< LOD	52.95	< LOD	6.76	< LOD	25.18	< LOD	15.28

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489	601.97	53098	Avg of 487-488	50-100-50-100		< LOD	3.65	< LOD	22.55	< LOD	6.6	< LOD	18.17	< LOD	16.21
492	601.81	53103	Avg of 490-491	50-100-50-100		< LOD	3.36	< LOD	59.94	< LOD	7	< LOD	22.67	< LOD	13.83
495	600.94	53056	Avg of 493-494	50-100-50-100		< LOD	3.61	< LOD	60.78	< LOD	7.43	< LOD	31.04	< LOD	14.35
498	602	53098	Avg of 496-497	50-100-50-100		< LOD	3.08	< LOD	37.86	< LOD	6.49	< LOD	23.34	< LOD	13.58
501	603.37	53090	Avg of 499-500	50-100-50-100		< LOD	3.43	< LOD	66.22	< LOD	7.15	< LOD	23.13	< LOD	15.56
515	601.49	53068	Avg of 513-514	50-100-50-100		< LOD	3.74	< LOD	82.95	< LOD	7.62	25.7	14.41	< LOD	19.79
518	603.22	53097	Avg of 516-517	50-100-50-100		< LOD	3.35	< LOD	47.76	< LOD	6.48	< LOD	23.03	< LOD	16.59
521	603.35	53082	Avg of 519-520	50-100-50-100		< LOD	3.39	< LOD	58.45	< LOD	7	< LOD	26.9	< LOD	13.57
524	601.3	53098b	Avg of 522-523	50-100-50-100		< LOD	3.05	< LOD	31.72	< LOD	6.48	< LOD	17.7	< LOD	12.6
527	600.97	53067	Avg of 525-526	50-100-50-100		< LOD	3.59	< LOD	57.32	< LOD	7.36	< LOD	22.02	< LOD	14.47
530	602.58	53023	Avg of 528-529	50-100-50-100		< LOD	3.35	< LOD	50.51	< LOD	6.83	< LOD	24.24	< LOD	15.19
533	600.63	53025	Avg of 531-532	50-100-50-100		< LOD	3.4	< LOD	60.54	< LOD	7.02	< LOD	22.3	< LOD	14.31
536	604.13	53073	Avg of 534-535	50-100-50-100		< LOD	4.37	< LOD	67.73	< LOD	8.63	< LOD	35.16	< LOD	21.77
539	601.96	53063	Avg of 537-538	50-100-50-100		< LOD	3.17	< LOD	30.88	< LOD	6.66	< LOD	21.62	< LOD	15.79
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		< LOD	6.2	< LOD	38.46	< LOD	9.93	< LOD	27.64	< LOD	20.33
208	180.91	53051		30-60-30-60		< LOD	4.71	< LOD	21.82	< LOD	12.76	47.55	16.13	< LOD	16.58
209	180.06	53059		30-60-30-60	layer 11999	< LOD	4.77	< LOD	38.29	< LOD	9.6	< LOD	31.29	< LOD	23.01
210	180.67	53031		30-60-30-60		< LOD	7.22	< LOD	35.36	< LOD	9.18	< LOD	39.13	< LOD	26.07
211	181.59	53040		30-60-30-60		< LOD	4.54	< LOD	24.64	< LOD	9.36	< LOD	33.21	< LOD	17.91
212	301.14	53102		30-60-30-60		< LOD	3.18	< LOD	20.13	< LOD	6.67	21.27	12.53	< LOD	12.94
229	300.6	53102		50-100-50-		< LOD	3.29	< LOD	47.4	< LOD	6.94	47.27	13.15	< LOD	14.87

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				100											
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	< LOD	3.44	< LOD	33.49	< LOD	7.06	< LOD	23.43	< LOD	17.53
237	301.32	53034		50-100-50-100		< LOD	3.35	< LOD	28.43	< LOD	7.12	55.35	13.49	< LOD	21.04
238	300.77	53050		50-100-50-100		< LOD	3.87	< LOD	19.88	< LOD	10.59	< LOD	22.38	< LOD	12.85
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	< LOD	2.85	< LOD	19.79	< LOD	7.09	< LOD	22.36	< LOD	11.62
240	301.55	53035		50-100-50-100		< LOD	3.33	< LOD	22.87	< LOD	8.73	21.71	12.99	< LOD	21.66
241	301.6	53064		50-100-50-100		< LOD	3.28	< LOD	22.46	< LOD	6.82	26.05	12.85	< LOD	13.22
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	< LOD	3.37	< LOD	18.73	< LOD	7.01	< LOD	22.28	< LOD	13.52
243	301.65	53054		50-100-50-100		< LOD	3.48	< LOD	34.73	< LOD	7.17	< LOD	26.8	< LOD	17
244	300.71	53054		50-100-50-100	fresh sample repeat	< LOD	3.45	< LOD	27.94	< LOD	7.12	< LOD	25.9	< LOD	13.9
245	300.71	53038		50-100-50-100		< LOD	3.82	< LOD	80.39	< LOD	7.58	< LOD	21.59	< LOD	18.55
246	301.18	53038		50-100-50-100		< LOD	3.62	< LOD	65.78	< LOD	7.65	< LOD	31.26	< LOD	14.72
247	300.06	53038		50-100-50-100		< LOD	3.85	< LOD	63.25	< LOD	7.71	< LOD	33.37	< LOD	15.07
257	301.73	53039		50-100-50-100		< LOD	3.4	< LOD	45.55	< LOD	7.07	< LOD	30.49	< LOD	13.57
276	301.93	53039		50-100-50-100		< LOD	4.12	< LOD	39.09	< LOD	6.91	20.7	12.79	< LOD	14.24
284	300.52	53043		50-100-50-100		< LOD	3.52	< LOD	32.26	< LOD	7.88	18.98	12.5	< LOD	12.99
285	300.88	53024		50-100-50-100		< LOD	3.24	< LOD	28.52	< LOD	6.96	< LOD	18.23	< LOD	13.6
286	302.1	53036		50-100-50-100		< LOD	3.56	< LOD	54.37	< LOD	7.4	< LOD	20.65	< LOD	14.28
287	301.81	53053		50-100-50-100		< LOD	3.63	< LOD	82	< LOD	7.51	29.18	14.31	< LOD	18.32

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288	301.89	53106		50-100-50-100		< LOD	3.03	< LOD	22.73	< LOD	6.49	25.38	12.19	< LOD	12.58
289	300.08	53045		50-100-50-100		< LOD	3.38	< LOD	43.09	< LOD	6.95	< LOD	19.45	< LOD	14.61
290	300.26	53027		50-100-50-100		< LOD	3.07	< LOD	50.33	< LOD	9.12	44.94	12.89	< LOD	14.21
291	301.07	53057		50-100-50-100		< LOD	3.58	< LOD	57.34	< LOD	7.34	< LOD	20.3	< LOD	14.13
292	301.22	53081		50-100-50-100		< LOD	3.19	< LOD	21.98	< LOD	6.77	< LOD	28.65	< LOD	12.99
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	< LOD	3.68	< LOD	53.21	< LOD	7.43	< LOD	22.36	< LOD	14.52
303	300.74	53080		50-100-50-100		< LOD	3.16	< LOD	31.49	< LOD	6.55	< LOD	23.34	< LOD	15.22
304	300.7	53030		50-100-50-100		< LOD	3.28	< LOD	18.75	< LOD	6.98	< LOD	19.89	< LOD	13.5
305	301.43	53072		50-100-50-100		< LOD	3.49	< LOD	51.42	< LOD	7.19	28.97	13.46	< LOD	13.81
306	300.24	53066		50-100-50-100		< LOD	5.04	< LOD	22.53	< LOD	7.65	< LOD	17.69	< LOD	12.32
307	300.22	53047		50-100-50-100		< LOD	3.2	< LOD	34.32	< LOD	6.74	< LOD	20.26	< LOD	18.15
312	301.45	53052		50-100-50-100		< LOD	3.66	< LOD	34.15	< LOD	7.42	< LOD	20.77	< LOD	21.42
313	301.79	53026		50-100-50-100		< LOD	3.49	< LOD	43.38	< LOD	8.08	< LOD	18.95	< LOD	14.01
314	300.15	53028		50-100-50-100		< LOD	3.94	< LOD	31.93	< LOD	7.16	< LOD	23.88	< LOD	19.23
315	300.43	53044		50-100-50-100	layer 25600,52702	< LOD	3.24	< LOD	22.1	< LOD	6.76	< LOD	17.9	< LOD	13.31
326	301.12	53033		50-100-50-100		< LOD	3.52	< LOD	59.07	< LOD	7.14	< LOD	23.88	< LOD	16.03
327	301.93	53029		50-100-50-100		< LOD	3.25	< LOD	42.22	< LOD	10.41	< LOD	22.36	< LOD	22.12
328	301.73	53062		50-100-50-100		< LOD	3.68	< LOD	40.8	< LOD	7.74	< LOD	20.26	< LOD	15
329	300.38	53058		50-100-50-100		< LOD	3.57	< LOD	72.15	< LOD	7.39	< LOD	31.95	< LOD	14.28

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330	300.08	53060		50-100-50-100	layer 11999	< LOD	3.22	< LOD	18.06	< LOD	6.65	< LOD	17.35	< LOD	13.9
331	300.86	53065		50-100-50-100	layer 25600	3.96	2.59	< LOD	25.01	< LOD	7.02	< LOD	25.83	< LOD	12.58
332	301.26	25018		50-100-50-100	0.2-0.23 Bw	< LOD	2.97	< LOD	16.88	< LOD	7.37	< LOD	26.14	< LOD	15.88
336	301.78	25011		50-100-50-100	0.19-0.23	< LOD	3.14	< LOD	22.09	< LOD	8.41	< LOD	21.14	< LOD	17.85
337	300.9	53042		50-100-50-100		< LOD	3.17	< LOD	23.82	< LOD	6.62	< LOD	23.4	< LOD	15.29
338	300.32	53071		50-100-50-100		< LOD	4.22	< LOD	111.41	< LOD	8.31	< LOD	33.4	< LOD	20.35
347	300.83	25020		50-100-50-100	0.19-0.22 A horizon	< LOD	3.49	< LOD	15.88	< LOD	8.05	< LOD	23.43	< LOD	12.91
348	300.98	53092		50-100-50-100		< LOD	3.39	< LOD	18.65	< LOD	6.98	< LOD	18	< LOD	13.39
349	300.94	53037		50-100-50-100		< LOD	3.35	< LOD	26.73	< LOD	6.96	< LOD	18.12	< LOD	13.61
350	300.53	53070		50-100-50-100	layer 11999	< LOD	3.79	< LOD	22.25	< LOD	6.79	< LOD	28.81	< LOD	18.15
351	301.02	25016		50-100-50-100	0.15-0.2	< LOD	3.14	< LOD	23.86	< LOD	9.39	< LOD	17.03	< LOD	15.52
352	300.19	25011A		50-100-50-100	0.24-0.28 A-B	< LOD	4.2	< LOD	16.01	9.4	5.02	< LOD	17.48	< LOD	12.23
353	300.43	25007A		50-100-50-100	0.1-0.15	< LOD	3.46	< LOD	17.68	< LOD	6.52	< LOD	17.01	< LOD	17.6
354	300.32	25020		50-100-50-100	0.37-0.4 tree roo	< LOD	3.58	< LOD	15.27	< LOD	10.73	< LOD	20.65	< LOD	12.92
355	302.11	25088		50-100-50-100	0.2-0.24 lower A	< LOD	5.91	< LOD	18.04	< LOD	6.91	< LOD	17.35	< LOD	19.28
356	301.49	32989		50-100-50-100	0.36-0.39	< LOD	3.74	< LOD	18.3	< LOD	6.87	< LOD	17.64	< LOD	13.98
357	301.95	32770A		50-100-50-100	0.05-0.08	< LOD	3.27	< LOD	42.45	< LOD	6.73	< LOD	18.01	< LOD	14.82
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	< LOD	3.81	< LOD	52.68	< LOD	7.82	< LOD	26.87	< LOD	15.28
368	300.84	25019		50-100-50-100	0.19-0.22 lower A	< LOD	3.05	< LOD	17.96	< LOD	6.92	< LOD	17.27	< LOD	12.89

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369	300.93	53049		50-100-50-100		< LOD	3.32	< LOD	30.34	< LOD	6.96	< LOD	29.49	< LOD	13.55
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	< LOD	4.13	< LOD	23.16	< LOD	7.06	< LOD	20.22	< LOD	13.5
371	301.4	32989		50-100-50-100	0.2-0.24	< LOD	3.74	< LOD	42.89	< LOD	6.98	< LOD	19.17	< LOD	13.64
372	300.33	25007A		50-100-50-100	0.05-0.1m	< LOD	3.26	< LOD	32.21	< LOD	8.47	< LOD	26.89	< LOD	22.66
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	< LOD	3.39	< LOD	40.78	< LOD	7.08	< LOD	29.2	< LOD	13.61
374	301.19	53076		50-100-50-100		< LOD	3.35	< LOD	26.22	< LOD	7.41	< LOD	29.31	< LOD	19.62
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	< LOD	3.25	< LOD	43.68	< LOD	7.01	< LOD	28.71	< LOD	14.57
387	902.81	25055	Avg of 384-386	50-100-50-100		< LOD	3.61	< LOD	45.3	< LOD	7.39	< LOD	22.24	< LOD	16.36
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	< LOD	3.82	< LOD	56.88	< LOD	7.93	< LOD	32.02	< LOD	18.22
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	4.2	2.63	< LOD	22.38	< LOD	9.79	< LOD	16.81	< LOD	11.69
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	< LOD	3.69	< LOD	72.71	< LOD	7.5	< LOD	23.75	< LOD	17.16
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	< LOD	3.45	< LOD	40.72	< LOD	7.17	< LOD	25.5	< LOD	13.93
426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	< LOD	3.44	< LOD	20.79	< LOD	6.85	< LOD	20.75	< LOD	15.69
430	903.6	25055	Avg of 427-429	50-100-50-100	0.25-0.3m Bw	< LOD	3.39	< LOD	35.55	< LOD	7.58	< LOD	23.24	< LOD	16.24
434	900.89	25055	Avg of 431-433	50-100-50-100	0.6-0.65m bA	< LOD	3.31	< LOD	32.27	< LOD	6.91	< LOD	25.87	< LOD	14.34
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	< LOD	3.91	< LOD	93.53	< LOD	7.89	22.36	14.83	< LOD	15.33
439	300.58	25007		50-100-50-100	0.2-0.25 A horizon	< LOD	3.12	< LOD	16.85	< LOD	8.78	< LOD	21.31	< LOD	12.05
440	300.38	32989		50-100-50-100	0.1-0.15	< LOD	3.58	< LOD	46.21	< LOD	7.17	< LOD	25.51	< LOD	14.13

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441	300.73	26970		50-100-50-100	0.4-0.45 A-B	< LOD	3.35	< LOD	36.51	< LOD	7.07	< LOD	30.2	< LOD	14.81
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	< LOD	3.38	< LOD	18.69	< LOD	7.01	< LOD	22.26	< LOD	13.45
443	300.37	26973		50-100-50-100	0.15-0.2	< LOD	3.06	< LOD	17.82	< LOD	6.54	26.3	12.35	< LOD	13.5
444	301.44	32990		50-100-50-100	0.15-0.21	< LOD	3.49	< LOD	55.75	< LOD	7.12	< LOD	21.01	< LOD	16.96
445	300.64	32990		50-100-50-100	0.48-0.53	< LOD	4.97	< LOD	18.26	< LOD	11.35	< LOD	21.82	< LOD	14.37
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	< LOD	2.98	< LOD	25.31	< LOD	10.44	23.11	11.81	< LOD	20.7
7	300.53	26957		50-100-50-100	0.45-0.5	< LOD	3.77	< LOD	25.73	< LOD	8.17	< LOD	26.55	< LOD	20.21
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	< LOD	4.3	< LOD	20.95	< LOD	9.01	< LOD	18.19	< LOD	12.7
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	< LOD	3.29	< LOD	30.73	< LOD	7.03	< LOD	23.3	< LOD	15.7
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	4.96	2.8	< LOD	23.3	< LOD	10.05	< LOD	18.47	< LOD	14.1
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw-anthro	< LOD	3.59	< LOD	30.29	< LOD	7.25	< LOD	26.18	< LOD	13.87
12	300.39	26957		50-100-50-100	0.1-0.15 Ap	< LOD	4.24	< LOD	23.35	< LOD	6.41	< LOD	18.69	< LOD	17.04
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	< LOD	3.35	< LOD	25.27	< LOD	7.08	< LOD	19.46	< LOD	13.53
14	300.54	26962		50-100-50-100	0.25-0.3 Ap	< LOD	4.26	< LOD	16.91	< LOD	10.86	< LOD	24.84	< LOD	13.23
15	301.93	25016A		50-100-50-100	0.1-0.15 Ap	< LOD	3.34	< LOD	20.39	< LOD	7.53	< LOD	18.59	< LOD	12.42
23	901.76	25088	Avg of 20-22	50-100-50-100	0.75-0.8 bA	< LOD	3.57	< LOD	23.12	< LOD	7.74	< LOD	22.39	< LOD	15.71
24	301.99	25014		50-100-50-100	0.2-0.24 Ap	< LOD	3.1	< LOD	17.88	< LOD	11.71	< LOD	26.9	< LOD	17.5
25	300.99	26957		50-100-50-100	0.8-0.85 feature	< LOD	3.34	< LOD	29.63	< LOD	7.04	< LOD	28.17	< LOD	13.53
26	300.1	32657		50-100-50-	0.12-0.15	< LOD	3.36	< LOD	33.03	< LOD	7.14	< LOD	23.2	< LOD	13.71

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				100	anthro										
27	301.02	25015		50-100-50-100	0.19-0.23 B	< LOD	3.85	< LOD	17.16	< LOD	9.63	< LOD	25.39	< LOD	18.3
28	301.01	26958		50-100-50-100	0.6-0.65 B(p)	< LOD	4.98	< LOD	26.54	< LOD	9.88	< LOD	30.65	< LOD	14.08
29	300.7	32991		50-100-50-100	0.08-0.1 anthro	< LOD	3.32	< LOD	33.77	< LOD	7.74	< LOD	30.69	< LOD	13.36
30	301.35	26960		50-100-50-100	0.84-0.88 anthro mortar rich hetrogenous	< LOD	4.7	< LOD	25.41	< LOD	6.86	< LOD	17.82	< LOD	13.37
31	300.48	32991		50-100-50-100	0.2-0.23 anthro	< LOD	3.47	< LOD	33.48	< LOD	7.06	< LOD	20.18	< LOD	14.07
32	302.03	25015		50-100-50-100	0.24-0.27 B	< LOD	2.98	< LOD	20.24	< LOD	10.03	< LOD	16.37	< LOD	13.37
50	300.69	26960		50-100-50-100	0.47-0.5 anthro	< LOD	3.22	< LOD	20.64	< LOD	6.68	< LOD	17.27	< LOD	12.93
51	300.76	26957		50-100-50-100	0.6-0.65	< LOD	5.08	< LOD	15.21	< LOD	7.21	< LOD	24.91	< LOD	14.89
52	300.14	32990		50-100-50-100	0.1-0.15 anthro	< LOD	3.5	< LOD	29.19	< LOD	7.14	< LOD	18.53	< LOD	13.84
53	300.72	32657		50-100-50-100	0.2-0.24 anthro	< LOD	3.26	< LOD	29.32	< LOD	7.75	< LOD	18.79	< LOD	14.48
54	301.71	32990		50-100-50-100	0.45-0.48 Bw1 anthro	< LOD	3.31	< LOD	28.41	< LOD	6.99	< LOD	18.09	< LOD	20.93
55	301.8	32991		50-100-50-100	0.25-0.27 Bw-P	< LOD	3.52	< LOD	34.75	< LOD	7.26	< LOD	25.93	< LOD	14.1
56	301.9	26958		50-100-50-100	0.95-1.0 B(p)	< LOD	5.1	< LOD	15.1	< LOD	7.06	< LOD	16.54	< LOD	16.79
57	301.83	32991		50-100-50-100	0.15-0.18 anthro	< LOD	3.62	< LOD	17.96	< LOD	6.67	< LOD	19.33	< LOD	12.87
58	301.63	26960		50-100-50-100	0.54-0.58 anthro	< LOD	3.88	< LOD	17.34	< LOD	7.53	< LOD	18.93	< LOD	20.86
59	301.14	26960		50-100-50-100	0.25-0.3 Ap	< LOD	3.99	< LOD	17.28	< LOD	9.68	< LOD	25.8	< LOD	17.06
60	300.13	26964		50-100-50-100	0.26-0.3 Ap	< LOD	2.93	< LOD	17.25	< LOD	6.35	22.96	11.91	< LOD	12.32

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61	300.49	25018		50-100-50-100	0.27-0.3 Bw	< LOD	3.25	< LOD	18.43	< LOD	7.86	< LOD	21.54	< LOD	15.04
62	301.36	26964		50-100-50-100	Ap	< LOD	3.89	< LOD	22.05	< LOD	10.63	< LOD	16.85	< LOD	18.28
63	301.51	25088		50-100-50-100	0.85-0.89 C	< LOD	3.5	< LOD	67.67	< LOD	7.34	< LOD	27.02	< LOD	17.27
64	301.96	25015		50-100-50-100	0.27-0.3 poss feature	< LOD	4.85	< LOD	15.38	8.34	4.82	< LOD	16.8	< LOD	15.89
65	300.59	26970		50-100-50-100	0.15-0.2 Ap	< LOD	3.18	< LOD	20.97	< LOD	8.82	21.66	12.35	< LOD	19.1

Uncalibrated data continued

Reading No	Duration	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	W	W Error	Au	Au Error	Pb	Pb Error	Bi	Bi Error	Si	Si Error
71	180.12	53074		30-60-30-60		< LOD	58.71	< LOD	9.1	24.29	5.03	< LOD	3.91	86843.58	669.68
73	181.08	53074b		30-60-30-60		< LOD	59.6	< LOD	9.19	25.29	5.16	< LOD	3.93	88060.67	675.01
77	541.88	53094a	Avg of 74-76	30-60-30-60		< LOD	72.3	< LOD	9.47	< LOD	7.05	< LOD	4.06	96706.15	693.68
81	542.46	53083	Avg of 78-80	30-60-30-60		< LOD	70.07	< LOD	9.97	< LOD	4.95	< LOD	4.5	75590.94	610.14
85	543.97	53055	Avg of 82-84	30-60-30-60		< LOD	75.94	< LOD	10.54	< LOD	5.36	< LOD	4.13	97440.8	734.79
89	542.53	53101	Avg of 86-88	30-60-30-60		< LOD	68.47	< LOD	9.78	< LOD	7.18	< LOD	4.52	88141.51	674.17
91	181.9	53096		30-60-30-60		< LOD	63.81	< LOD	10.32	< LOD	5.15	< LOD	3.93	86017.88	649.7
97	542.72	53096b	Avg of 94-96	30-60-30-60		< LOD	81.96	< LOD	10.65	< LOD	5.28	< LOD	4.14	90524.19	699.28
157	542.47	46182	Avg of 154-156	30-60-30-60	paktertunet oven	< LOD	63.07	< LOD	8.92	< LOD	4.09	< LOD	3.54	50940.34	476.76
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertunet oven	< LOD	54.24	< LOD	9.38	< LOD	4.87	< LOD	3.95	60823.5	517.25
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertunet oven	< LOD	54.57	< LOD	9.31	< LOD	5.37	< LOD	3.83	58306.29	505.89

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169	544.92	46184	Avg of 166-168	30-60-30-60	paktertunet oven	< LOD	69.72	< LOD	9.58	< LOD	5.34	< LOD	4.28	74803.09	587.34
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertunet oven	< LOD	64.15	< LOD	9.39	< LOD	5.81	< LOD	5.19	62637.06	537.32
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertunet	< LOD	60.71	< LOD	9.16	< LOD	5.24	< LOD	3.84	59082.13	512.79
203	542.54	46181	Avg of 200-202	30-60-30-60	paktertunet	< LOD	53.08	< LOD	9.05	< LOD	5.31	< LOD	3.86	59462.59	506.81
207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertunet	< LOD	43.27	< LOD	7.1	< LOD	4.19	< LOD	2.99	61600.91	446.53
218	480.71	46183	Avg of 216-217	30-60-30-60	paktertunet	< LOD	42.42	< LOD	6.96	< LOD	3.48	< LOD	2.59	59670.92	435.31
221	481.69	46185	Avg of 219-220	30-60-30-60	paktertunet	< LOD	39.05	< LOD	6.3	< LOD	3.18	< LOD	2.42	45115.32	357.54
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertunet	< LOD	75.83	< LOD	11.38	< LOD	6.17	< LOD	5.35	132922.4	920.98
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertunet	< LOD	89.18	< LOD	11.84	< LOD	6.15	< LOD	6.06		
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertunet	< LOD	81.6	< LOD	10.05	31.76	5.73	< LOD	4.95	130545.7	881.12
253	542.73	53096	Avg of 250-252	30-60-30-60		< LOD	92.29	< LOD	13.07	< LOD	6.14	< LOD	5.34	140794	961.47
257	545.06	53101	Avg of 254-256	30-60-30-60		< LOD	81.55	< LOD	10.73	10.34	4.94	< LOD	6.3	140588.7	926.97
261	541.79	53055	Avg of 258-260	30-60-30-60		< LOD	79.94	< LOD	11.17	< LOD	5.64	< LOD	5.33	134739.6	917.97
265	544.17	53094	Avg of 262-264	30-60-30-60		< LOD	70.69	< LOD	10.3	8.49	4.77	< LOD	5.36	171724.3	1028.49
269	461.68	53085	Avg of 266-268	30-60-30-60		< LOD	103.13	< LOD	11.67	< LOD	8.14	< LOD	4.73		
273	542.39	53085b	Avg of 270-272	30-60-30-60		< LOD	86.09	< LOD	11.13	< LOD	7.9	< LOD	5.49	132857.7	906.21
285	541.88	53048	Avg of 282-284	30-60-30-60		< LOD	85.2	< LOD	10.76	< LOD	6.5	< LOD	5.63	110146.9	800.53
289	540.77	53100	Avg of 286-288	30-60-30-60		< LOD	65.83	< LOD	9.74	8.51	4.51	< LOD	5.62	163293.8	997.05
293	544.03	53087	Avg of 290-292	30-60-30-60		< LOD	82.9	< LOD	10.94	17.75	5.31	< LOD	4.73	133032.3	909.89

Appendix 1

312	601.84	46185	Avg of 310-311	50-100-50-100		< LOD	67.42	< LOD	7.81	< LOD	4.78	< LOD	3.74	121552.1	644.7
315	602.77	46180	Avg of 313-314	50-100-50-100		< LOD	62.28	< LOD	8.12	6.09	3.7	< LOD	3.95	130292.8	680.23
318	601.04	46183	Avg of 316-317	50-100-50-100		< LOD	63.01	< LOD	7.8	< LOD	4.92	< LOD	4.32	130290.3	676.55
321	600.5	46181	Avg of 319-320	50-100-50-100		< LOD	67.19	< LOD	8.01	< LOD	6.72	< LOD	3.87	127918	679.82
324	600.35	46179	Avg of 322-323	50-100-50-100		< LOD	59.16	< LOD	7.96	< LOD	5.22	< LOD	4.28	130293.4	676.95
327	602.72	46184	Avg of 325-326	50-100-50-100		< LOD	55.81	< LOD	8.03	< LOD	4.34	< LOD	3.98	136330.4	697.04
330	600.38	46178	Avg of 328-329	50-100-50-100		< LOD	47.75	< LOD	7.87	< LOD	4.08	< LOD	4.55	99066.13	591.86
333	602.06	46177	Avg of 331-332	50-100-50-100		< LOD	65.4	< LOD	8.13	< LOD	6.55	< LOD	5.78	127916.6	666.71
336	601.48	46182	Avg of 334-335	50-100-50-100		< LOD	70	< LOD	8.39	< LOD	4.23	< LOD	3.4	138317.7	712.66
364	601.65	53088	Avg of 362-363	50-100-50-100		< LOD	65.62	< LOD	7.98	13.66	3.92	< LOD	3.9	131690.4	680.87
367	601.53	53083	Avg of 365-366	50-100-50-100		< LOD	65.94	< LOD	7.7	15.04	3.8	< LOD	4.38	148621.5	713.21
370	600.92	53091	Avg of 368-369	50-100-50-100		< LOD	58.9	< LOD	8.17	47.03	4.96	< LOD	4.6	135954.1	696.86
373	602.04	53078	Avg of 371-372	50-100-50-100		< LOD	50.99	< LOD	8.44	< LOD	4.15	< LOD	3.33	137557.1	708.03
376	600.85	53086	Avg of 374-375	50-100-50-100		< LOD	70.38	< LOD	8.53	< LOD	4.97	< LOD	3.55	142592.2	736.82
390	601.68	53079	Avg of 388-389	50-100-50-100		< LOD	54.75	< LOD	7.48	9.24	3.46	< LOD	4.14	162785.1	759.95
393	602.8	53061	Avg of 391-392	50-100-50-100		< LOD	66.59	< LOD	8.24	< LOD	4.25	< LOD	3.75	125480.5	666.43
396	603.1	53093	Avg of 394-395	50-100-50-100		< LOD	47.44	< LOD	7.76	8.12	3.7	< LOD	3.9	151952.3	733.79
399	601.77	53104	Avg of 397-398	50-100-50-100		< LOD	52.65	< LOD	7.99	14.5	3.87	< LOD	5.47	159329.6	771.89
402	600.91	53075	Avg of 400-401	50-100-50-100		< LOD	72.54	< LOD	8.01	< LOD	5.11	< LOD	3.62	128220.2	665.22

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471	600.53	53022	Avg of 469-470	50-100-50-100		< LOD	60.74	< LOD	9.85	14.9	4.16	< LOD	5.44	129122.7	691.2
474	602.22	53077	Avg of 472-473	50-100-50-100		< LOD	55.61	< LOD	8.23	< LOD	4.31	< LOD	4.17	122757.9	657.71
477	603.98	53046	Avg of 475-476	50-100-50-100		< LOD	54.26	< LOD	7.99	6.01	3.64	< LOD	5.01	140493.2	705.7
480	602	53107	Avg of 478-479	50-100-50-100		< LOD	53.29	< LOD	7.41	8.77	3.51	< LOD	3.9	158534.8	738.09
483	603.36	53084	Avg of 481-482	50-100-50-100		< LOD	57.99	< LOD	7.37	9.22	3.44	< LOD	3.98	166228	766.51
486	601.16	53105	Avg of 484-485	50-100-50-100		< LOD	52.09	< LOD	7.92	5.64	3.49	4.67	2.93	164804.3	770.31
489	601.97	53098	Avg of 487-488	50-100-50-100		< LOD	45.83	< LOD	7.11	10.43	3.36	< LOD	5.37	190082.1	817.01
492	601.81	53103	Avg of 490-491	50-100-50-100		< LOD	60.74	< LOD	8.24	13.18	3.98	< LOD	3.27	134735.3	692.89
495	600.94	53056	Avg of 493-494	50-100-50-100		< LOD	58.91	< LOD	8.59	< LOD	5.24	< LOD	3.51	138101.2	711.53
498	602	53098	Avg of 496-497	50-100-50-100		< LOD	54.54	< LOD	8.01	9.67	3.58	< LOD	4.76	171062.5	783.72
501	603.37	53090	Avg of 499-500	50-100-50-100		< LOD	51.25	< LOD	8.07	6.97	3.74	< LOD	3.38	149703.5	736.03
515	601.49	53068	Avg of 513-514	50-100-50-100		< LOD	65.47	< LOD	9.3	< LOD	5.17	< LOD	4.33	122678	667.01
518	603.22	53097	Avg of 516-517	50-100-50-100		< LOD	57.79	< LOD	7.5	< LOD	5.08	< LOD	5.7	164103.7	760.38
521	603.35	53082	Avg of 519-520	50-100-50-100		< LOD	67.53	< LOD	8.18	11.1	3.88	< LOD	3.93	131655.5	677.05
524	601.3	53098b	Avg of 522-523	50-100-50-100		< LOD	57.61	< LOD	7.42	8.87	3.48	< LOD	4.43	180074.2	804.23
527	600.97	53067	Avg of 525-526	50-100-50-100		< LOD	64.05	< LOD	8.71	< LOD	6	< LOD	3.75	126130	682.61
530	602.58	53023	Avg of 528-529	50-100-50-100		< LOD	52.81	< LOD	8.04	< LOD	5.58	< LOD	4.05	142861.6	724.74
533	600.63	53025	Avg of 531-532	50-100-50-100		< LOD	66.19	< LOD	8.24	41.98	4.88	< LOD	4.7	127245.6	671.99
536	604.13	53073	Avg of 534-535	50-100-50-100		< LOD	65.53	< LOD	9.6	< LOD	5.04	< LOD	4.18	103456.6	629.74

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539	601.96	53063	Avg of 537-538	50-100-50-100		< LOD	52.53	< LOD	7.72	< LOD	6.06	< LOD	4.88	141915.1	710.98
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		< LOD	71.63	< LOD	11.98	< LOD	6.58	< LOD	8.1	118308.8	858.02
208	180.91	53051		30-60-30-60		< LOD	73.27	< LOD	10.19	7.38	4.71	< LOD	4.49	127600.6	877.08
209	180.06	53059		30-60-30-60	layer 11999	< LOD	67.9	< LOD	11.32	< LOD	5.47	< LOD	4.81	133934.9	921.41
210	180.67	53031		30-60-30-60		< LOD	79.01	< LOD	10.74	< LOD	7.15	< LOD	4.18	122036.2	850.81
211	181.59	53040		30-60-30-60		< LOD	101.65	< LOD	10.54	< LOD	7.17	< LOD	4.51	118840.6	868.85
212	301.14	53102		30-60-30-60		< LOD	63.51	< LOD	7.51	23.02	4.04	< LOD	3.15	126799.6	642.84
229	300.6	53102		50-100-50-100		< LOD	57.06	< LOD	7.79	18	3.99	< LOD	5.46	138269.4	690.38
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	< LOD	47.24	< LOD	7.83	< LOD	3.98	< LOD	5.22	122780.2	650.19
237	301.32	53034		50-100-50-100		< LOD	47.67	< LOD	8.12	< LOD	3.99	< LOD	4.89	121832.8	641.55
238	300.77	53050		50-100-50-100		< LOD	60.55	< LOD	7.6	< LOD	3.99	< LOD	4.27	122372.3	635.52
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	< LOD	40.33	< LOD	6.68	< LOD	3.18	< LOD	4.41	111052.5	583.22
240	301.55	53035		50-100-50-100		< LOD	47.98	< LOD	8	< LOD	4.12	< LOD	3.6	119395.2	630.61
241	301.6	53064		50-100-50-100		< LOD	48.4	< LOD	7.75	< LOD	7.37	< LOD	5.3	142903.4	726.64
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	< LOD	46.59	< LOD	7.71	< LOD	4.12	< LOD	5.35	112862.4	604.53
243	301.65	53054		50-100-50-100		< LOD	49.19	< LOD	8.23	< LOD	4.27	< LOD	3.41	100594.5	577.89
244	300.71	53054		50-100-50-100	fresh sample repeat	< LOD	61.88	< LOD	7.85	< LOD	4.1	< LOD	4.16	125251.4	661.58
245	300.71	53038		50-100-50-100		< LOD	52.7	< LOD	8.36	< LOD	4.82	< LOD	3.41	111278.6	622.8
246	301.18	53038		50-100-50-100		< LOD	78.61	< LOD	8.66	< LOD	4.69	< LOD	3.61	110911.5	622.63
247	300.06	53038		50-100-50-100		< LOD	77.4	< LOD	8.7	< LOD	4.48	< LOD	3.35	112067.3	631.84

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257	301.73	53039		50-100-50-100		< LOD	48.95	< LOD	8.15	< LOD	3.95	< LOD	6.32	119005.6	647.17
276	301.93	53039		50-100-50-100		< LOD	66.98	< LOD	7.77	< LOD	4.23	< LOD	3.94	124066.2	647.46
284	300.52	53043		50-100-50-100		< LOD	52.99	< LOD	7.53	< LOD	6.61	< LOD	5.69	106402.8	589.4
285	300.88	53024		50-100-50-100		< LOD	55.75	< LOD	10.07	< LOD	4.15	< LOD	3.28	116344.7	621.58
286	302.1	53036		50-100-50-100		< LOD	51.06	< LOD	12.46	7.66	3.85	< LOD	4.77	133118.3	684.53
287	301.81	53053		50-100-50-100		< LOD	52.55	< LOD	8.52	< LOD	4.56	< LOD	3.47	139870.9	717.46
288	301.89	53106		50-100-50-100		< LOD	54.64	< LOD	7.55	17.96	3.79	< LOD	4.91	146171.2	714.5
289	300.08	53045		50-100-50-100		< LOD	76.11	< LOD	8.17	9.32	3.77	< LOD	5.13	120002.5	638.7
290	300.26	53027		50-100-50-100		< LOD	48.56	< LOD	7.75	< LOD	4.1	< LOD	3.02	129376	667.24
291	301.07	53057		50-100-50-100		< LOD	72.45	< LOD	8.15	< LOD	4.38	< LOD	4.31	130230.4	676.24
292	301.22	53081		50-100-50-100		< LOD	45.2	< LOD	7.47	26.71	4.15	< LOD	3.15	121700	629.25
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	< LOD	50.49	< LOD	8.4	< LOD	4.44	< LOD	5.76	118640.2	644.49
303	300.74	53080		50-100-50-100		< LOD	56.02	< LOD	7.6	5.56	3.48	< LOD	4.24	137552.2	677.3
304	300.7	53030		50-100-50-100		< LOD	47.58	< LOD	7.59	< LOD	4.51	< LOD	2.99	128543.6	668.08
305	301.43	53072		50-100-50-100		< LOD	47.9	< LOD	7.93	< LOD	5.42	< LOD	5.4	123004.7	653.14
306	300.24	53066		50-100-50-100		< LOD	46.58	< LOD	7.14	13.25	3.63	< LOD	4.96	128015.6	645.64
307	300.22	53047		50-100-50-100		< LOD	45.81	< LOD	7.66	< LOD	5.26	< LOD	3.42	123449	659.64
312	301.45	53052		50-100-50-100		< LOD	60.92	< LOD	8.52	< LOD	4.4	< LOD	3.51	143260.9	726.28
313	301.79	53026		50-100-50-100		< LOD	48.97	< LOD	8.18	< LOD	4.25	< LOD	4.02	123492.8	675.04

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314	300.15	53028		50-100-50-100		< LOD	49.61	< LOD	7.8	< LOD	4.01	< LOD	3.23	126318.9	666.69
315	300.43	53044		50-100-50-100	layer 25600,5270 2	< LOD	46.33	< LOD	7.79	9.9	3.7	< LOD	3.28	114962.6	613.13
326	301.12	53033		50-100-50-100		< LOD	66.71	< LOD	8.36	< LOD	4.22	< LOD	3.28	128710.9	674.52
327	301.93	53029		50-100-50-100		< LOD	62.86	< LOD	7.94	< LOD	4.3	< LOD	3.28	120469.2	631.7
328	301.73	53062		50-100-50-100		< LOD	51.74	< LOD	8.72	< LOD	4.66	< LOD	3.75	104166.4	593.95
329	300.38	53058		50-100-50-100		61.62	35.18	< LOD	8.43	< LOD	4.19	< LOD	3.2	132583.8	696.94
330	300.08	53060		50-100-50-100	layer 11999	< LOD	70.08	< LOD	7.39	< LOD	5.27	< LOD	3.37	123122.3	644.27
331	300.86	53065		50-100-50-100	layer 25600	< LOD	51.81	< LOD	6.52	4.85	3.23	< LOD	3.99	149571.8	702.27
332	301.26	25018		50-100-50-100	0.2-0.23 Bw	< LOD	54.72	< LOD	7.03	20.38	3.87	< LOD	3.57	109371.3	604.31
336	301.78	25011		50-100-50-100	0.19-0.23	< LOD	50.89	< LOD	7.76	15.79	3.83	< LOD	3.06	126519	656.27
337	300.9	53042		50-100-50-100		< LOD	64.41	< LOD	7.76	< LOD	4.72	< LOD	4.39	126296.1	643.65
338	300.32	53071		50-100-50-100		< LOD	88.73	< LOD	9.95	< LOD	5.23	< LOD	4.18	125113.9	696.61
347	300.83	25020		50-100-50-100	0.19-0.22 A horizon	< LOD	68.2	< LOD	7.11	19.69	3.89	< LOD	2.83	104442.3	569.64
348	300.98	53092		50-100-50-100		< LOD	66.6	< LOD	7.54	< LOD	4.09	< LOD	3.1	126606.5	676.29
349	300.94	53037		50-100-50-100		< LOD	47.8	< LOD	7.9	< LOD	4.12	< LOD	4.39	125674.5	653.19
350	300.53	53070		50-100-50-100	layer 11999	< LOD	50.47	< LOD	7.76	5.5	3.54	< LOD	3.25	129332.8	660.61
351	301.02	25016		50-100-50-100	0.15-0.2	< LOD	55.68	< LOD	7.22	18.54	3.92	< LOD	3.55	105873.6	578.85
352	300.19	25011A		50-100-50-100	0.24-0.28 A-B	< LOD	66.85	< LOD	6.84	26.73	4.11	< LOD	2.86	109166.7	584.1
353	300.43	25007A		50-100-50-	0.1-0.15	< LOD	51.56	< LOD	7.25	8.42	3.58	< LOD	5.33	104827.1	571.97

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				100											
354	300.32	25020		50-100-50-100	0.37-0.4 tree roo	< LOD	49.62	< LOD	6.72	20.88	3.81	< LOD	2.87	102791.7	553.26
355	302.11	25088		50-100-50-100	0.2-0.24 lower A	< LOD	63.58	< LOD	7.54	7.51	3.44	< LOD	2.66	115211.9	604.17
356	301.49	32989		50-100-50-100	0.36-0.39	< LOD	65.7	< LOD	7.6	< LOD	4.02	< LOD	4.36	109179.2	603.88
357	301.95	32770A		50-100-50-100	0.05-0.08	< LOD	53.63	< LOD	7.82	10.51	3.73	< LOD	3.17	121857.5	638.57
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	< LOD	55.15	< LOD	8.95	< LOD	4.77	< LOD	3.51	102103.4	602.56
368	300.84	25019		50-100-50-100	0.19-0.22 lower A	< LOD	58.13	< LOD	7.54	< LOD	6.17	< LOD	3.52	100505.5	576.56
369	300.93	53049		50-100-50-100		< LOD	46.22	< LOD	7.67	< LOD	4.11	< LOD	3.27	113369.8	605.31
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	49.8	32.58	< LOD	7.78	9.13	3.76	< LOD	3.2	117536	626.37
371	301.4	32989		50-100-50-100	0.2-0.24	< LOD	48.29	< LOD	8.09	< LOD	3.93	< LOD	3.3	125288.8	667.16
372	300.33	25007A		50-100-50-100	0.05-0.1m	< LOD	46.07	< LOD	7.6	< LOD	3.96	4.36	2.87	107559.9	587.59
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	< LOD	60.6	< LOD	7.89	< LOD	4.06	< LOD	3.43	122624.9	646.25
374	301.19	53076		50-100-50-100		< LOD	81.04	< LOD	8.02	< LOD	4.32	< LOD	3.17	122699.7	649.13
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	< LOD	52.06	< LOD	7.98	25.63	4.31	< LOD	3.64	119229.2	642.75
387	902.81	25055	Avg of 384-386	50-100-50-100		< LOD	53.96	< LOD	7.99	< LOD	3.76	< LOD	3.73	131807.5	707.32
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	< LOD	56.25	< LOD	9.04	< LOD	7.47	< LOD	3.78	114072.3	643.51
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	< LOD	43.65	< LOD	7.2	114.57	5.97	< LOD	5.81	118915.4	622.36
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	< LOD	71.14	< LOD	8.54	< LOD	4.1	< LOD	3.59	129375.2	695
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	< LOD	68.96	< LOD	8.03	< LOD	3.97	< LOD	3.61	116088.6	631.77

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426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	< LOD	64.31	< LOD	7.69	12.46	3.74	< LOD	3.18	119502.7	642.27
430	903.6	25055	Avg of 427-429	50-100-50-100	0.25-0.3m Bw	< LOD	63.51	< LOD	7.73	< LOD	5.07	< LOD	4.73	126815.6	668.23
434	900.89	25055	Avg of 431-433	50-100-50-100	0.6-0.65m bA	< LOD	50.48	< LOD	7.7	< LOD	3.69	< LOD	2.97	132769	689.69
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	< LOD	76.1	< LOD	9.03	< LOD	4.41	< LOD	3.48	104291.1	614.31
439	300.58	25007		50-100-50-100	0.2-0.25 A horizon	< LOD	52.57	< LOD	7.14	18.93	3.74	< LOD	2.91	106008.2	567.56
440	300.38	32989		50-100-50-100	0.1-0.15	< LOD	81.02	< LOD	8.17	< LOD	4.17	< LOD	5.61	133495.7	692.08
441	300.73	26970		50-100-50-100	0.4-0.45 A-B	< LOD	65.95	< LOD	8.07	23.91	4.28	< LOD	3.43	125984.6	664.08
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	< LOD	67.6	< LOD	7.73	< LOD	3.93	< LOD	3.12	115623.7	623.68
443	300.37	26973		50-100-50-100	0.15-0.2	< LOD	68.3	< LOD	7.66	102.5	5.98	< LOD	5.82	115125	612.88
444	301.44	32990		50-100-50-100	0.15-0.21	< LOD	77.83	< LOD	7.87	< LOD	4.2	< LOD	4.28	110886	624.03
445	300.64	32990		50-100-50-100	0.48-0.53	< LOD	64.32	< LOD	7.79	< LOD	3.87	< LOD	2.53	96323.71	562.53
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	< LOD	44.46	< LOD	7.3	91.54	5.68	< LOD	4.74	117911.6	618.06
7	300.53	26957		50-100-50-100	0.45-0.5	< LOD	53.22	< LOD	7.07	52.39	4.74	< LOD	3.3	115080.1	604.76
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	< LOD	45.23	< LOD	7.38	60.45	5.05	< LOD	5.85	118514	642.85
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	< LOD	48.12	< LOD	8.07	21.02	4.16	< LOD	4.3	120327.8	639.84
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	< LOD	58.89	< LOD	7.2	30.03	4.18	< LOD	3.12	118348.6	624.37
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw-anthro	< LOD	48.82	< LOD	8.06	< LOD	4.12	< LOD	3.13	93351.45	559.1
12	300.39	26957		50-100-50-	0.1-0.15 Ap	< LOD	46.53	< LOD	7.27	126.4	6.29	< LOD	5.45	117754.3	611.24

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				100						2					
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	< LOD	47.58	< LOD	7.83	31.72	4.43	< LOD	3.25	120213.6	643.5
14	300.54	26962		50-100-50-100	0.25-0.3 Ap	< LOD	51.15	< LOD	7.25	85.23	5.44	< LOD	3.21	114253.5	609.11
15	301.93	25016A		50-100-50-100	0.1-0.15 Ap	< LOD	60.85	< LOD	7.16	21.57	3.95	< LOD	4.05	111090.3	591.45
23	901.76	25088	Avg of 20-22	50-100-50-100	0.75-0.8 bA	< LOD	55.49	< LOD	7.22	< LOD	3.55	< LOD	3.1	117492.8	628.15
24	301.99	25014		50-100-50-100	0.2-0.24 Ap	< LOD	72.53	< LOD	7.49	< LOD	3.92	< LOD	4.09	112575.7	604.21
25	300.99	26957		50-100-50-100	0.8-0.85 feature	< LOD	63.94	< LOD	7.59	18.79	4.02	< LOD	4.97	123230.1	655.33
26	300.1	32657		50-100-50-100	0.12-0.15 anthro	< LOD	61.12	< LOD	7.83	< LOD	6.83	< LOD	4.11	122826.2	656.87
27	301.02	25015		50-100-50-100	0.19-0.23 B	< LOD	47.21	< LOD	7.65	23.42	4.08	< LOD	2.98	112903.2	605.34
28	301.01	26958		50-100-50-100	0.6-0.65 B(p)	< LOD	52.52	< LOD	7.91	36.83	4.66	< LOD	3.83	120181.3	639.44
29	300.7	32991		50-100-50-100	0.08-0.1 anthro	< LOD	56.95	< LOD	7.49	< LOD	6.54	< LOD	3.11	111183.7	603.65
30	301.35	26960		50-100-50-100	0.84-0.88 anthro mortar rich hetrogenous	< LOD	45.97	< LOD	7.49	25.36	4.06	< LOD	3.29	100758.7	592.07
31	300.48	32991		50-100-50-100	0.2-0.23 anthro	< LOD	70.3	< LOD	8.38	< LOD	4.16	< LOD	3.22	122113.1	648.25
32	302.03	25015		50-100-50-100	0.24-0.27 B	< LOD	44.18	< LOD	6.8	24.68	4.01	< LOD	4.25	113862.1	592.95
50	300.69	26960		50-100-50-100	0.47-0.5 anthro	< LOD	47.84	< LOD	7.49	53.83	4.94	< LOD	3.83	119837.8	650.54
51	300.76	26957		50-100-50-100	0.6-0.65	< LOD	53.71	< LOD	6.79	117.7 ₃	5.94	< LOD	3.5	109278.7	576.78
52	300.14	32990		50-100-50-100	0.1-0.15 anthro	< LOD	53.77	< LOD	7.62	< LOD	4.05	< LOD	5.58	123660.5	651.82
53	300.72	32657		50-100-50-100	0.2-0.24 anthro	< LOD	72.93	< LOD	7.36	< LOD	3.95	< LOD	3.11	115420.3	617.53

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54	301.71	32990		50-100-50-100	0.45-0.48 Bw1 anthro	< LOD	77.35	< LOD	7.68	< LOD	3.88	< LOD	2.89	97833.49	567.27
55	301.8	32991		50-100-50-100	0.25-0.27 Bw-P	< LOD	69.68	< LOD	8.24	< LOD	4.29	< LOD	3.14	123288.2	665.32
56	301.9	26958		50-100-50-100	0.95-1.0 B(p)	< LOD	48.84	< LOD	6.97	12.66	3.56	< LOD	3.08	115744.5	605.43
57	301.83	32991		50-100-50-100	0.15-0.18 anthro	< LOD	50.01	< LOD	7.48	< LOD	3.91	< LOD	3.08	112248.3	604.81
58	301.63	26960		50-100-50-100	0.54-0.58 anthro	< LOD	68.01	< LOD	7.13	59.64	4.96	< LOD	3.31	116379.1	617.81
59	301.14	26960		50-100-50-100	0.25-0.3 Ap	< LOD	66.78	< LOD	7.11	99.86	5.84	< LOD	3.51	121781.9	633.69
60	300.13	26964		50-100-50-100	0.26-0.3 Ap	< LOD	55.76	< LOD	7.63	281.0 ₃	8.81	< LOD	4.16	118281.3	623.52
61	300.49	25018		50-100-50-100	0.27-0.3 Bw	< LOD	66.12	< LOD	7.45	12.69	3.79	< LOD	4.14	116295.1	621.45
62	301.36	26964		50-100-50-100	Ap	< LOD	44.37	< LOD	6.98	221.0 ₆	7.7	< LOD	3.8	123041.3	639.53
63	301.51	25088		50-100-50-100	0.85-0.89 C	< LOD	70.97	< LOD	8.19	< LOD	4.15	< LOD	5.85	146217.2	733.41
64	301.96	25015		50-100-50-100	0.27-0.3 poss feature	< LOD	42.98	< LOD	6.68	34.43	4.26	< LOD	3.03	104147.9	564.95
65	300.59	26970		50-100-50-100	0.15-0.2 Ap	< LOD	63.59	< LOD	7.51	86.78	5.69	< LOD	3.31	124341.9	643.48

Appendix 1

Uncalibrated data continued

Reading No	Durati on	SAMPLE (number)	AVERAGE	filter settings	MISC (additional details)	P	P Error	S	S Error	CI	CI Error	K	K Error	Ca	Ca Error	Ba	Ba Error
71	180.12	53074		30-60-30-60		2511.88	114.06	621.75	46.55	< LOD	25.86	4082	123.1	25664.31	450.8	118.99	39.48
73	181.08	53074b		30-60-30-60		2542.61	113.22	625.67	46	< LOD	25.58	4108.38	126.51	25937.4	464.21	113.93	39.52
77	541.88	53094a	Avg of 74-76	30-60-30-60		2299.1	108.55	118.65	38.9	< LOD	24.49	5857.54	135.95	20782.15	395.03	213.13	40.29
81	542.46	53083	Avg of 78-80	30-60-30-60		1850.74	102.88	154.39	40.32	< LOD	25.46	6517.76	157.26	14982.39	382.03	138.36	44.18
85	543.97	53055	Avg of 82-84	30-60-30-60		4489.05	135.51	296.7	45.69	< LOD	27.8	4771.95	137.23	29339.54	500.3	173.69	44.74
89	542.53	53101	Avg of 86-88	30-60-30-60		4048.64	124.78	259.83	42.93	< LOD	26.45	5483.82	140.48	22403.92	432.72	211.73	41.99
91	181.9	53096		30-60-30-60		1789.88	103.3	119.75	39.3	< LOD	25.04	5760.82	148.43	21731.91	440.16	237.34	45.26
97	542.72	53096b	Avg of 94-96	30-60-30-60		1715.31	110.67	< LOD	62.44	< LOD	26.86	5976.62	154.1	24897.41	477.6	211.15	46.18
157	542.47	46182	Avg of 154-156	30-60-30-60	paktertun et oven	3024.67	102.65	< LOD	69.51	< LOD	25.77	2939.8	95.81	14944.58	327.95	151.98	40.68
161	544.36	46179	Avg of 158-160	30-60-30-60	paktertun et oven	4973.4	115.37	420.56	40.47	< LOD	23.68	2768.75	99.95	18443.94	376.98	129.37	39.3
165	542.58	46178	Avg of 162-164	30-60-30-60	paktertun et oven	3954.09	107.81	306.89	39.4	< LOD	23.7	2746.97	96.93	17105.56	357.31	146.1	39.33
169	544.92	46184	Avg of 166-168	30-60-30-60	paktertun et oven	3182.45	104.81	292.53	38.31	< LOD	22.88	2893.81	101.33	19228.39	385.93	139.77	41.07
177	542.56	46177	Avg of 174-176	30-60-30-60	paktertun et oven	4339.14	115.05	491	42.88	< LOD	24.86	2369.31	95.83	17818.13	376.09	136.51	40.28
199	542.44	46180	Avg of 196-198	30-60-30-60	paktertun et	4334.92	111.6	267.37	39.32	< LOD	24.01	2768.98	98.49	16761.88	356.1	124.98	39.15
203	542.54	46181	Avg of 200-202	30-60-30-60	paktertun et	4348.12	109.9	325.47	39.1	< LOD	23.36	3375.04	105.57	17241.74	356.66	128.03	38.48

Appendix 1

207	723.69	46181 repeat	Avg of 204-206	30-60-30-60	paktertunet	4454.69	98	356.89	35.01	< LOD	20.71	3403.07	93.92	17456.68	316.52	104.02	31.07
218	480.71	46183	Avg of 216-217	30-60-30-60	paktertunet	2873.15	87.19	187.03	33.18	< LOD	20.56	3205	91.73	16569.22	312.61	66.16	30.56
221	481.69	46185	Avg of 219-220	30-60-30-60	paktertunet	2023.81	73.19	373.86	31.91	< LOD	18.85	2294.73	77.34	13194.06	270.46	51.6	26.64
225	360.82	53083	Avg of 223-224	30-60-30-60	paktertunet	2883	147.8	272.61	50.58	< LOD	31.82	9220.73	210.12	23749.87	524.49	238.89	49.79
229	482.1	53083 repeat	Avg of 226-228	30-60-30-60	paktertunet							9273.63	212.07	23936.56	530.7	249.06	50.18
233	543.46	53074	Avg of 230-232	30-60-30-60	paktertunet	3431.28	144.05	816.62	54.47	< LOD	29.58	5084.52	151.66	36592.79	586.22	144.81	44.22
253	542.73	53096	Avg of 250-252	30-60-30-60		2823.78	152.14	180.22	50.83	< LOD	32.06	7916.61	197.45	37000.45	632.64	304.47	51.38
257	545.06	53101	Avg of 254-256	30-60-30-60		6306.65	166.48	458.9	51.01	< LOD	30.62	7044.05	175.46	32070.7	557.87	305.67	47.45
261	541.79	53055	Avg of 258-260	30-60-30-60		5655.58	164.47	403.12	51.52	< LOD	30.73	5418.55	159.03	37695.38	605.81	181.07	46.94
265	544.17	53094	Avg of 262-264	30-60-30-60		3633.93	153.07	218.51	45.75	< LOD	28.8	8042.16	176.34	33637.22	540.2	332.01	44.7
269	461.68	53085	Avg of 266-268	30-60-30-60								6745.38	179.85	37074.67	615.24	258.86	64.48
273	542.39	53085b	Avg of 270-272	30-60-30-60		6362.91	169.17	403.35	51.28	< LOD	30.62	6737.11	177.42	35174.79	595.97	283.2	48.11
285	541.88	53048	Avg of 282-284	30-60-30-60		17072.09	223.28	1700.5	63.37	< LOD	29.02	7711.35	186.22	27671.68	533.03	251.51	46.5
289	540.77	53100	Avg of 286-288	30-60-30-60		4316.11	157.42	194.88	47.04	< LOD	29.95	10746.35	200.54	25502.69	479.01	357.86	44.71
293	544.03	53087	Avg of 290-292	30-60-30-60		5470.13	164.8	566.69	54.02	< LOD	31.24	4950.25	153.82	38342.34	607.51	237.8	47.22
312	601.84	46185	Avg of 310-311	50-100-50-100		4979.7	114.27	498.65	38.1	< LOD	22.15	4772.38	116	29944.2	420.95	152.15	34.46
315	602.77	46180	Avg of 313-314	50-100-50-100		9896.14	144.38	667.3	41.29	< LOD	23.5	5130.9	121.64	34543.6	453.33	259.47	36.43
318	601.04	46183	Avg of 316-317	50-100-50-100		6414.64	126.79	524.87	39.91	< LOD	23.46	5701.16	127.65	33034.31	448.71	231.63	36.56
321	600.5	46181	Avg of 319-320	50-100-50-100		9729.25	141.22	713	41.26	< LOD	23.05	5514.68	124.85	33013.13	444.07	246.82	36.04

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324	600.35	46179	Avg of 322-323	50-100-50-100		9552.55	143.61	858.52	43.3	< LOD	23.86	5204.19	122.64	34962.87	457.93	225.48	35.39
327	602.72	46184	Avg of 325-326	50-100-50-100		6414.46	128.72	618.37	40.83	< LOD	23.46	5009.44	121.53	36154.41	465.01	165.45	35.53
330	600.38	46178	Avg of 328-329	50-100-50-100		6798.11	124.8	485.75	42.3	< LOD	25.18	4200.51	108.73	27927.79	402.49	130.31	36.18
333	602.06	46177	Avg of 331-332	50-100-50-100		9163.51	138.76	777.6	41.66	< LOD	23.06	4117.88	110.81	33063.27	442.48	213.29	36.44
336	601.48	46182	Avg of 334-335	50-100-50-100		8159.62	141.64	337.19	40.01	< LOD	24.48	6071.22	134.15	36777.04	478.28	261.62	37.53
364	601.65	53088	Avg of 362-363	50-100-50-100		4122.66	115.47	506.68	39.8	< LOD	23.04	6510.47	134.44	38382.29	476.05	242.29	37.25
367	601.53	53083	Avg of 365-366	50-100-50-100		3818.98	110.18	290.9	35.16	< LOD	21.36	8227.73	136.33	28433.53	386.25	294.31	35.04
370	600.92	53091	Avg of 368-369	50-100-50-100		4735.54	120.59	827.43	42.95	< LOD	23.6	5348.65	125.43	39217.9	483.49	217.34	36.03
373	602.04	53078	Avg of 371-372	50-100-50-100		3723.29	116.8	150.57	37.29	< LOD	23.43	7979.84	151.09	39658.86	497.59	273.16	38.18
376	600.85	53086	Avg of 374-375	50-100-50-100		3396.54	120.62	220.95	39.87	< LOD	24.61	8404.88	158.42	42403.61	523.53	272.02	39.56
390	601.68	53079	Avg of 388-389	50-100-50-100		4580.72	116.83	326.23	35.66	< LOD	21.59	8761.05	138.85	25677.44	367.32	309.36	33.66
393	602.8	53061	Avg of 391-392	50-100-50-100		3339.65	109.3	286.79	37.14	< LOD	22.75	12239.71	186.59	29342.31	449.35	237.44	37.36
396	603.1	53093	Avg of 394-395	50-100-50-100		4574.08	118.61	240	36.14	< LOD	22.28	9856.38	156.37	29569.46	415.83	505.56	36.85
399	601.77	53104	Avg of 397-398	50-100-50-100		2974.04	113.12	290.91	37.11	< LOD	22.67	10034.37	156.18	29927.13	415.15	328.22	35.94
402	600.91	53075	Avg of 400-401	50-100-50-100		9878.74	142.85	449.59	39.09	< LOD	22.85	6096.2	127.51	37873.27	463.03	263.49	35.44
471	600.53	53022	Avg of 469-470	50-100-50-100		8344.29	141.76	942.71	45.78	< LOD	24.85	5323.38	127.58	36312.12	479.21	248.95	38.13
474	602.22	53077	Avg of 472-473	50-100-50-100		5989.98	124.19	341.01	38.53	< LOD	23.1	5837.46	127.82	37471.76	469.22	467.63	37.82
477	603.98	53046	Avg of 475-476	50-100-50-100		8114.2	136.7	668.87	41.21	< LOD	23.66	7888.79	145.55	28798.17	419.46	282.04	36.1
480	602	53107	Avg of 478-479	50-100-50-100		2930.25	107.67	239.36	34.75	< LOD	21.65	12328.89	166.89	20032.55	341.45	280.88	34.23

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483	603.36	53084	Avg of 481-482	50-100-50-100		3685.2	112.89	207.38	34.78	< LOD	21.63	10927.25	153.48	24280.63	358.59	313.89	33.72
486	601.16	53105	Avg of 484-485	50-100-50-100		4386.31	121.61	194.2	36.45	< LOD	23.04	10565.07	160.36	28311.25	404.16	387.94	35.75
489	601.97	53098	Avg of 487-488	50-100-50-100		2534.41	111.78	69.63	33.25	< LOD	21.65	13788.96	167.12	20586.75	327.7	323.51	32.64
492	601.81	53103	Avg of 490-491	50-100-50-100		2484.04	107.03	381.52	38.26	< LOD	22.86	11131.67	171.52	34323.09	459.03	248.53	36.27
495	600.94	53056	Avg of 493-494	50-100-50-100		4733.5	123.47	304.09	39.23	< LOD	23.77	7118.89	144.15	40939.49	504.76	231.55	37.98
498	602	53098	Avg of 496-497	50-100-50-100		2702.45	109.03	151.18	33.38	< LOD	21.19	11011.04	155.63	23942.41	358.54	745.42	36.64
501	603.37	53090	Avg of 499-500	50-100-50-100		2619.79	111.89	646.27	41.31	< LOD	23.94	11037.39	170.16	33491.49	451.37	329.56	37.34
515	601.49	53068	Avg of 513-514	50-100-50-100		10702.85	148.8	848.67	43.22	< LOD	24.15	6860.73	149.15	26197.19	444.23	322.07	39.67
518	603.22	53097	Avg of 516-517	50-100-50-100		3465.15	111.41	255.46	34.62	< LOD	21.54	10604.62	154.42	22252.12	353.51	299.72	33.91
521	603.35	53082	Avg of 519-520	50-100-50-100		8537.89	135.42	819.4	41.55	< LOD	22.93	5832.21	127.11	30978.83	436.06	278.94	36.14
524	601.3	53098b	Avg of 522-523	50-100-50-100		2688.66	110.63	140.63	33.7	< LOD	21.84	13096.55	165.7	20873.73	335.67	388.5	34.34
527	600.97	53067	Avg of 525-526	50-100-50-100		6560.23	130.44	611.46	41.68	< LOD	24.02	5695.02	133.74	29729.41	452.08	235.25	38.05
530	602.58	53023	Avg of 528-529	50-100-50-100		7378.39	131.09	381.16	37.49	< LOD	22.69	9046.95	153.05	25901.51	401.92	310.28	36.13
533	600.63	53025	Avg of 531-532	50-100-50-100		9658.51	141.96	652.94	40.77	< LOD	23.07	5626.4	125.03	31795.1	438.55	236.22	36.2
536	604.13	53073	Avg of 534-535	50-100-50-100		3703.59	116.07	147.68	41.89	< LOD	26.57	12311.09	196.49	34920.09	512.86	276.62	44.87
539	601.96	53063	Avg of 537-538	50-100-50-100		7639.03	130.12	518.94	38.15	< LOD	22.47	7955.11	141.91	27250	403.1	231.46	34.47
207	181.71	32989 0.42-0.45 samples run		30-60-30-60		5118.93	153.64	457.09	50.05	< LOD	30.94	5954.45	176.27	24483.75	535.75	267.87	50.85
208	180.91	53051		30-60-30-60		7698.91	175.75	621.47	53.65	< LOD	31.2	5772.36	162.59	31786.06	557.17	85	42.52
209	180.06	53059		30-60-30-60	layer 11999	3823.4	156	232.48	50.63	< LOD	31.67	12835.02	238.38	31824.21	579.71	231.87	47.87

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210	180.67	53031		30-60-30-60		4844.84	150.75	490.04	50.15	< LOD	29.67	4524.55	147.3	33082.49	569.92	168.97	45.03
211	181.59	53040		30-60-30-60		7037.38	168.02	641.42	53.93	< LOD	31.29	5568.43	161.19	31314.8	561.43	135.37	46.05
212	301.14	53102		30-60-30-60		3624.82	105.25	722.05	38.66	< LOD	21.67	6517.32	127.4	30535.13	409.78	165.34	34.11
229	300.6	53102		50-100-50-100		3551.68	109.77	724.08	39.83	< LOD	22.51	7107.41	134.99	33492.43	435.33	233.46	35.23
235	300.09	25088		50-100-50-100	0.4-0.5 Bw	3377.56	108.08	665.71	40.54	< LOD	22.64	2428.08	89.44	40252.9	474.43	139.48	35.43
237	301.32	53034		50-100-50-100		4696.35	113.65	298.42	36.74	< LOD	22.11	6102.57	130.52	36309.85	466.28	99.09	35.3
238	300.77	53050		50-100-50-100		7035.47	124.19	481.35	37.84	< LOD	22.06	7857.84	144.51	30343.63	429.11	169.95	33.96
239	300.63	25088		50-100-50-100	bA anthro 0.6-0.65	3727.07	100.62	1901.3	46.42	< LOD	20.63	1814.94	72	38356.12	412.89	76.26	30.18
240	301.55	53035		50-100-50-100		5174.4	113.59	313.1	36.15	< LOD	21.78	6814.58	134.77	32137.6	435.93	157.31	35.3
241	301.6	53064		50-100-50-100		5131.15	117.24	327.31	36.2	< LOD	22.25	8681.84	147.45	26750.11	396.14	269.75	35.44
242	300.44	25012		50-100-50-100	A-anthro 0.24-0.28	9937.77	135.71	797.6	40.7	< LOD	22.43	4689.35	112	30583.27	414.89	142.39	35.09
243	301.65	53054		50-100-50-100		16898.51	170.46	2262.27	52.93	< LOD	21.73	6504.6	136.16	35788.31	466.93	230.48	36.83
244	300.71	53054		50-100-50-100	fresh sample repeat	7146.96	130.83	422.65	39.54	< LOD	23.52	6194.46	133.53	35696.85	468.56	190.5	36.44
245	300.71	53038		50-100-50-100		5452.65	117.61	428.12	38.77	< LOD	23.06	11486.99	183.74	26961.93	440.06	266.64	39.53
246	301.18	53038		50-100-50-100		5493.95	117.08	423.08	38.38	< LOD	22.81	11440.43	180.54	26825.91	431.7	273.15	38.86
247	300.06	53038		50-100-50-100		5526.45	120.69	446.03	39.83	< LOD	23.59	11474.52	181.84	27132.58	436.42	239.74	39.58
257	301.73	53039		50-100-50-100		8668.95	128.95	508.56	37.39	< LOD	21.7	5865.07	124.06	28255.55	402.79	227.12	35.75
276	301.93	53039		50-100-50-100		8861.98	133.02	564.95	38.52	< LOD	22.29	6039.05	125.43	28479.09	404.63	231.28	35.04
284	300.52	53043		50-100-		15002.4	159.34	1140.	43.2	<	21.21	6445.8	130.	26817.	398.0	226.	34.32

Appendix 1

				50-100		1		84	3	LOD		3	16	6	2	09	
285	300.88	53024		50-100-50-100		8719.99	132.63	850.99	41.59	< LOD	22.6	6255.08	131.78	30398.05	430.4	133.42	35.41
286	302.1	53036		50-100-50-100		4762.88	117.9	383.32	38.28	< LOD	23.08	8495.08	153.97	32634.01	451.96	239.51	37.71
287	301.81	53053		50-100-50-100		3654.82	117.94	205.22	38.5	< LOD	24.04	10552.67	173.77	38031.34	496.86	297.69	39.04
288	301.89	53106		50-100-50-100		4016.72	107.07	403.62	34.64	< LOD	20.85	9299.09	142.59	23098.79	349.52	248.49	33.48
289	300.08	53045		50-100-50-100		7750.68	128.57	951.91	42.19	< LOD	22.74	5148.16	121.66	30379.96	428.72	189.45	35.35
290	300.26	53027		50-100-50-100		4538.15	113.18	371.17	36.61	< LOD	22.03	4768.15	114.3	28784.21	405.62	196.86	34.37
291	301.07	53057		50-100-50-100		7662.71	133.21	494.84	39.81	< LOD	23.2	6474.99	137.95	35682.52	470.63	263.01	37.35
292	301.22	53081		50-100-50-100		4959.21	110.74	1116.94	41.75	< LOD	21.7	5210.58	117.25	28681.57	402.41	143.27	33.98
302	301.16	32770		50-100-50-100	0.08-0.13 lower Bw	5862.8	120.77	475.24	39.21	< LOD	23.05	6123.84	132.34	31174.9	440.27	218.33	38.17
303	300.74	53080		50-100-50-100		6002.28	117.31	411.19	35.92	< LOD	21.14	8391.47	139.14	25597.28	374.66	330.54	34.74
304	300.7	53030		50-100-50-100		4894.01	118.74	362.96	38.21	< LOD	23.1	5803.19	127.94	34089.13	451.37	116.23	34.99
305	301.43	53072		50-100-50-100		7441.58	129.41	539.24	39.65	< LOD	22.93	6701.12	136.22	34849.65	458.42	251.58	36.69
306	300.24	53066		50-100-50-100		5652.9	115.29	713.94	38.69	< LOD	21.54	6821.21	127.06	26974.29	379.95	158.09	32.35
307	300.22	53047		50-100-50-100		7955.58	126.27	578.02	37.78	< LOD	21.54	7768.86	138.13	24059.52	374.36	249.13	34.72
312	301.45	53052		50-100-50-100		4348.21	121.91	251.56	38.85	< LOD	24.08	7805.44	151.51	39852.96	502.24	175.82	37.89
313	301.79	53026		50-100-50-100		7806.69	130.07	560.08	39.68	< LOD	22.91	6372.35	133.82	31954.93	442.46	169.04	36.64
314	300.15	53028		50-100-50-100		3481.3	111.94	280.98	37.82	< LOD	23.03	12071.69	181.03	28648.19	432.78	199.28	36.59
315	300.43	53044		50-100-50-100	layer 25600,527 02	7333.64	122.43	721.27	38.98	< LOD	21.52	5719.77	121.19	27893.62	396.22	156.93	34.8

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326	301.12	53033		50-100- 50-100		5433.55	120.82	315.0 2	37.8 9	< LOD	22.57	6125.9 1	130. 75	39029. 02	479.4 5	220. 34	37.45
327	301.93	53029		50-100- 50-100		4351.35	108.46	242.6 7	34.8 2	< LOD	21.14	8158.6 5	143. 33	30527. 41	418.5 3	205. 64	34.97
328	301.73	53062		50-100- 50-100		4051.34	105.92	331.6 1	36.5 6	< LOD	21.95	11411. 04	183. 73	23252. 5	413.3 5	225. 28	39.42
329	300.38	53058		50-100- 50-100		3534.99	115.27	178.2 5	37.7 1	< LOD	23.32	6321.9 2	131. 09	40138. 32	482.0 1	226. 9	37.64
330	300.08	53060		50-100- 50-100	layer 11999	6224.62	119.87	571.7	38.2 9	< LOD	21.66	5041.8	117. 87	33166. 63	438.0 6	122. 95	33.72
331	300.86	53065		50-100- 50-100	layer 25600	5287.72	116.34	300.9 5	34.8 5	< LOD	21.17	9925.0 5	148. 22	22037. 04	347.2	214. 7	30.57
332	301.26	25018		50-100- 50-100	0.2-0.23 Bw	5683.83	111.5	1152. 91	41.7 4	28.4 2	15.2	3602.2 5	99.5	30188. 13	409.3 1	77.0 6	31.22
336	301.78	25011		50-100- 50-100	0.19-0.23	7120.79	127.73	801.0 8	41.4 3	< LOD	22.77	4563.3 1	114. 31	33533. 83	439.3 2	120. 06	33.42
337	300.9	53042		50-100- 50-100		5846.12	114.28	573.3 5	36.7	< LOD	20.91	8487.4 9	143. 6	20827. 99	352.5	274. 13	34.26
338	300.32	53071		50-100- 50-100		3613.01	118.3	137.5 6	39.2 4	< LOD	24.62	15363. 18	218. 69	37051. 36	525.2 5	403. 63	43.24
347	300.83	25020		50-100- 50-100	0.19-0.22 A horizon	3516.44	98.19	1280. 55	41.8 7	32.8 5	14.89	3586.2	99.9	26899. 15	390.3 7	< LOD	46.53
348	300.98	53092		50-100- 50-100		6181.76	120.19	205.0 4	35.5 4	< LOD	21.8	5683.3	124. 44	32142. 49	435.2 1	160. 86	35.1
349	300.94	53037		50-100- 50-100		5359.92	116.03	312.4 2	36.1 3	< LOD	21.7	7683.1	141. 33	29284. 05	419.5 5	202. 31	35.81
350	300.53	53070		50-100- 50-100	layer 11999	4692.99	113.6	366.5 8	36.8 5	< LOD	21.82	9038.9 6	150. 52	28723. 71	410.0 3	230. 21	35.2
351	301.02	25016		50-100- 50-100	0.15-0.2	4897.76	107.88	1414. 44	44.2	199. 61	16.33	3038.7 1	93.0 9	30045. 31	406.9 7	70.4 8	32.96
352	300.19	25011A		50-100- 50-100	0.24-0.28 A-B	5653.14	110.66	902.8 4	39.5 4	< LOD	21.26	4083.8 1	106. 08	28964. 71	406.8 5	58.3 4	31.49
353	300.43	25007A		50-100- 50-100	0.1-0.15	6903.24	116.1	1123. 67	41.3 1	< LOD	21.12	3743.8 5	100. 24	28588. 7	395.0 2	98.3 3	32.79
354	300.32	25020		50-100- 50-100	0.37-0.4 tree roo	3109.51	92.7	1191. 6	39.8 7	< LOD	21.4	3651.4 3	99.0 8	26694. 6	382.7 3	< LOD	44.9
355	302.11	25088		50-100- 50-100	0.2-0.24 lower A	2911.11	97.44	853.0 1	39.1 2	< LOD	20.62	2379.0 4	84.8 7	36872. 46	439.4 7	87.0 3	33.4

Appendix 1

356	301.49	32989		50-100-50-100	0.36-0.39	5610.79	116.52	318.69	36.48	< LOD	22.47	5131.59	123.91	24905.19	402.98	131.17	34.29
357	301.95	32770A		50-100-50-100	0.05-0.08	5864.99	118.02	748.96	39.73	< LOD	22.03	4615.17	114.23	31594.93	430.24	226.11	34.95
358	300.2	32770A		50-100-50-100	0.28-0.3 C horizon	6645.71	125.11	611.39	41.05	< LOD	23.36	7275.64	155.25	29292.41	467.47	241.92	40.08
368	300.84	25019		50-100-50-100	0.19-0.22 lower A	8933.11	125.43	897.23	39.74	< LOD	21.29	3779.87	101.4	28921.92	400.25	159.03	33.7
369	300.93	53049		50-100-50-100		6661.56	118.54	514.77	37.58	< LOD	21.61	6233.05	128.14	28036.2	406.93	200.66	35.6
370	301.6	32658		50-100-50-100	0.08-0.11m disturbed anth	8206.9	129.27	671.61	39.41	< LOD	22.07	5230.75	122.31	30506.31	431.01	183.32	35.35
371	301.4	32989		50-100-50-100	0.2-0.24	5355.2	120.45	355	38.06	< LOD	23.11	4327.36	114.39	33508.49	451.33	170.89	35.73
372	300.33	25007A		50-100-50-100	0.05-0.1m	9880.04	133.31	930.65	41.32	< LOD	21.94	4526.24	110.83	29364.72	410.12	220.32	34.71
373	301.65	25019		50-100-50-100	0.37-0.42 lower Bp	10635.99	143.83	489.48	39.15	< LOD	22.94	5176.36	123.37	34860.11	462.16	176.8	35.62
374	301.19	53076		50-100-50-100		4782.23	114.33	154.6	35.42	< LOD	22.14	6951.73	139.96	33474.31	456.81	135.51	34.71
375	300.42	26598		50-100-50-100	0.8-0.85 Bp	12026.45	153.55	588.71	41.52	< LOD	23.49	5169.87	119.9	41841.2	483.92	233.11	35.47
387	902.81	25055	Avg of 384-386	50-100-50-100		1330.48	105.36	201.87	40.46	< LOD	24.94	2220.13	83.46	52088.67	502.47	189.23	37.27
388	301.15	26970		50-100-50-100	0.55-0.6 upper C	4760.83	119.77	309.92	40.09	< LOD	24.07	9406.93	172.58	45101.7	556.53	215.7	40.53
389	300.08	26958		50-100-50-100	0.2-0.25 Ap	6166.78	120.33	1233.54	44.25	< LOD	22	5375.14	113.4	42507.51	456.13	128.24	30.6
416	903.07	25055b	Avg of 413-415	50-100-50-100	0.9-0.95m C-R horizon	1932.06	106.7	90.28	37.47	< LOD	24.06	2452.61	98.44	48703.28	551.23	225.92	38.32
422	902.63	25055	Avg of 419-421	50-100-50-100	0.4-0.45 Bw	4401.05	112.06	595.57	39.86	< LOD	22.63	2837.19	94.86	38471.36	466.79	159.34	36.34
426	904.32	25055	Avg of 423-425	50-100-50-100	0.15-0.18 A	3769.11	107.62	993.29	42.26	< LOD	22.18	2748.64	91.58	39300.83	458	112.78	34.17
430	903.6	25055	Avg of 427-	50-100-	0.25-0.3m	4067.73	114.42	833.5	42.6	<	23.2	2913.3	96.6	41184.	480.7	148.	35.43

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			429	50-100	Bw					LOD		4	9	31	9	13	
434	900.89	25055	Avg of 431-433	50-100-50-100	0.6-0.65m bA	2829.51	110.19	474.55	39.99	< LOD	23.51	2372.67	88.2	44096.95	486.05	135.53	35.26
438	300.5	32990		50-100-50-100	0.53-0.58m B-C interface-anthro	7156.33	129.3	379.31	39.41	< LOD	23.84	7728.4	159.99	17460.74	381.65	369.43	41.08
439	300.58	25007		50-100-50-100	02-0.25 A horizon	6964.78	115.72	1392.25	42.69	< LOD	20.83	3964.96	101.86	28342.77	388.65	95.78	31.3
440	300.38	32989		50-100-50-100	0.1-0.15	7020.03	131.2	422.05	39.23	< LOD	23.72	5859.2	131.62	34237.07	461.62	243.87	37.43
441	300.73	26970		50-100-50-100	0.4-0.45 A-B	7318.72	130.12	741.06	41.61	< LOD	23.19	5358.49	123.22	38854.43	473.35	222.27	35.74
442	300.81	32990		50-100-50-100	0.21-0.25 Bw-anthro	8738.89	133.84	562.75	39.3	< LOD	22.89	4161.23	113.44	32560.25	447.59	102.88	34.89
443	300.37	26973		50-100-50-100	0.15-0.2	5998.51	117.09	1231.01	43.62	< LOD	22	5030	115.26	34015.96	428	176.17	33.55
444	301.44	32990		50-100-50-100	0.15-0.21	14982.75	167.56	1173.64	46.33	< LOD	23.3	4623.36	119.14	32280.61	449.55	220.52	36.62
445	300.64	32990		50-100-50-100	0.48-0.53	7713.73	124.33	394.45	36.91	< LOD	22.21	3798.72	110.76	19594.84	367.94	69.16	34.01
446	301.38	26962		50-100-50-100	0.45-0.5 Ap	5924.68	115.95	1219.11	42.96	< LOD	21.81	4890.43	109.91	34399.56	419.65	149.41	31.91
7	300.53	26957		50-100-50-100	0.45-0.5	7593.25	123.53	771.99	39.86	< LOD	21.43	5027.44	111.92	34634.69	426.29	131.64	32.21
8	301.46	26958		50-100-50-100	0.37-0.4 Ap base	7668.33	126.84	916.55	42.13	< LOD	22.23	5704	117.23	40234.11	452.66	147.14	33.19
9	300.17	25096		50-100-50-100	0.25-0.3 modern A	6198.75	121.05	1071.3	43.27	< LOD	22.62	4946.92	117.18	30086.95	422.31	180.73	35.67
10	300.85	26973		50-100-50-100	0.4-0.44 2Ap	6732.7	123.02	978.19	42.36	< LOD	22.15	5023.44	117.05	37697.18	458.07	104.07	32.18
11	301.14	32990		50-100-50-100	0.4-0.45 lower Bw-anthro	8009.74	127.36	445.33	38.54	< LOD	22.96	3519.96	110.77	22870.36	406.47	72.19	35.59
12	300.39	26957		50-100-50-100	0.1-0.15 Ap	5252.69	111.11	1705.2	45.94	< LOD	21.54	6375.23	121.48	28615.68	385.37	172.61	32.61
13	300.87	26960		50-100-50-100	0.69-0.73 anthro	6682.53	126.15	999.68	43.91	< LOD	22.86	4610.04	112.43	43666.1	485.45	191.01	35.51

Appendix 1

14	300.54	26962		50-100- 50-100	0.25-0.3 Ap	6078.95	117.5	1409. 42	44.9 9	< LOD	21.94	5180.0 7	113. 51	32519. 72	415.9 4	136. 86	31.55
15	301.93	25016A		50-100- 50-100	0.1-0.15 Ap	5851.46	113.12	1381. 01	43.5 8	< LOD	21.43	3662.5 1	102. 09	31487. 55	421.2 6	69.9 8	31.99
23	901.76	25088	Avg of 20- 22	50-100- 50-100	0.75-0.8 bA	3955.83	110.03	1720. 05	48.5 7	< LOD	22.52	2304	86.4 6	43402	478.8 3	121. 2	33.75
24	301.99	25014		50-100- 50-100	0.2-0.24 Ap	9331.04	131.83	1126. 41	42.3 8	< LOD	21.64	3795.3 9	104. 68	31515. 57	427.1 6	121. 57	33.32
25	300.99	26957		50-100- 50-100	0.8-0.85 feature	8755.18	137.65	628.9	41.1 5	< LOD	22.88	5010.3 7	115. 47	40514. 24	469.3 3	147. 37	35.22
26	300.1	32657		50-100- 50-100	0.12-0.15 anthro	8286.96	135.13	644.6 1	41.0 5	< LOD	23.28	5925.9 5	131. 15	31818. 23	447.0 7	200. 46	36.01
27	301.02	25015		50-100- 50-100	0.19-0.23 B	7669.07	123.88	1265. 15	43.3 3	< LOD	21.49	3033.7 6	96.0 2	32101. 29	426.1 2	89.1 7	31.84
28	301.01	26958		50-100- 50-100	0.6-0.65 B(p)	9858.51	140.55	645.2 3	41.2 1	< LOD	22.97	5565.9 3	122. 57	40339. 85	476.1 4	142. 11	35.38
29	300.7	32991		50-100- 50-100	0.08-0.1 anthro	11848.0 6	145.97	1015. 51	42.7 9	< LOD	22.27	5019.6 2	118. 77	30588. 46	428.4 7	195. 11	35.01
30	301.35	26960		50-100- 50-100	0.84-0.88 anthro mortar rich heterogeneous	7767.06	136.94	1036. 01	48.2 5	< LOD	24.96	4948.6 4	113. 5	83106. 47	632.4 5	106. 32	34.47
31	300.48	32991		50-100- 50-100	0.2-0.23 anthro	7403.55	127.14	413.3 1	37.7 2	< LOD	22.79	4544.1 7	115. 81	31312. 13	437.6 6	253. 69	37.2
32	302.03	25015		50-100- 50-100	0.24-0.27 B	4864.26	106.44	1187. 14	41.2 1	< LOD	20.82	3048.6 6	93.4 3	30338. 2	411.0 9	50.8 4	31.49
50	300.69	26960		50-100- 50-100	0.47-0.5 anthro	6791.33	121.41	966.8 3	41.7 3	< LOD	21.71	5202.9 8	112. 09	37266. 41	434.6 4	156. 13	33.81
51	300.76	26957		50-100- 50-100	0.6-0.65	5437.02	109.24	1971. 3	47.0 7	< LOD	21.11	5266.6 7	110. 97	33039. 72	401.4 2	96.1 7	30.24
52	300.14	32990		50-100- 50-100	0.1-0.15 anthro	10201.8 4	143.63	604.6 1	40.4	< LOD	22.68	4867.9	118. 8	33504. 68	445.7 9	179. 34	36.22
53	300.72	32657		50-100- 50-100	0.2-0.24 anthro	6258.73	119.66	425.3 3	37.3	< LOD	21.71	5380.3 3	123. 26	32570. 77	438.9 5	155. 81	34.39
54	301.71	32990		50-100- 50-100	0.45-0.48 Bw1	7288.56	121.46	336.3 5	35.9 4	< LOD	21.63	3189.9 5	104. 21	25640. 57	412.8 8	111. 96	34.85

Appendix 1

					anthro												
55	301.8	32991		50-100- 50-100	0.25-0.27 Bw-P	6493.38	128.55	440.5 5	40.2 2	< LOD	24.21	3651.4 2	112. 54	37874. 43	494.4 2	162. 9	36.77
56	301.9	26958		50-100- 50-100	0.95-1.0 B(p)	8438.74	128.02	490.3 3	37.3 7	< LOD	21.13	4897.4 1	112. 56	37794. 76	446.1 4	< LOD	44.64
57	301.83	32991		50-100- 50-100	0.15-0.18 anthro	9239.88	133.35	701.4 9	39.6 1	< LOD	22.06	4687.2 3	116. 41	32183. 34	434.6 8	169. 14	33.79
58	301.63	26960		50-100- 50-100	0.54-0.58 anthro	6912.54	123.83	1072. 9	43.4 1	< LOD	22.28	5171.7 9	116. 49	42539. 18	473.5 3	130. 2	32.36
59	301.14	26960		50-100- 50-100	0.25-0.3 Ap	5926.96	118.39	1048. 84	42.4 9	< LOD	21.95	5392.5	117. 23	36353. 34	439.9	189. 73	32.56
60	300.13	26964		50-100- 50-100	0.26-0.3 Ap	8144.94	129.07	1482. 32	46.1 1	< LOD	22.2	5481.8 8	113. 6	39863. 41	440.7 8	198. 27	32.53
61	300.49	25018		50-100- 50-100	0.27-0.3 Bw	6480.63	119.5	1025. 15	42.0 1	32.9 6	15.79	4237.3 9	109. 05	31747. 19	426.7 2	141. 78	34.5
62	301.36	26964		50-100- 50-100	Ap	9188.27	138.98	1404. 45	47.1 7	< LOD	23.04	5663.3 6	114. 55	45163. 59	461.3 6	136. 71	30.64
63	301.51	25088		50-100- 50-100	0.85-0.89 C	1756.6	105.54	< LOD	84.5 2	< LOD	22.68	5978.9	127. 33	42552. 07	489.2 5	260. 31	37.71
64	301.96	25015		50-100- 50-100	0.27-0.3 poss feature	5094.52	105.97	1289. 37	42.0 5	< LOD	21	3082.6 1	93.5 1	29752. 39	402.1 5	57.1 9	30.31
65	300.59	26970		50-100- 50-100	0.15-0.2 Ap	4582.95	110.75	1148. 86	42.7	< LOD	21.66	4325.6 6	107. 29	32184. 08	418.6 6	162. 67	33.55