

Appendix 4B. Lag chemistry

GSWA	Site	Bedrock geology	Regolith	Easting	Northing	Comment	Au	Ag	Al2O3	As	Ba	BaO
222178	E9249	Redcliff Pound Group	Rr-hm	470098	7630048		0.5	0.04	8.36	56.3	6369.4	0.68
223411	E9499	Undivided Mesozoic	W-f	475452	7649874		0.5	0.06	8.72	69.6	5443.4	0.58
223421	M138	Liveringa Group	Rr-hm	404785	7715107		0.5	0.24	14.93	154.7	248	0.03
223431	M164	Liveringa Group	Rr-hm	394976	7711329		0.5	0.14	14.06	217.7	381.4	0.04
223426	M52	Millyit Sandstone	W	394966	7729960	Rock fragments - ferruginized. Some ?pisolites	0.5	0.24	15.93	229.7	288.6	0.03
223430	M55	Granites_Tanami	Rr-z-z	410023	7729980	Pisolites and ferruginized rock fragments	2	0.1	14.46	80.9	80.2	0.005
222194	M568	Liveringa Group	W-f	374872	7636317	Ferruginized lithic fragments and some ferruginous lag	0.5	0.38	14.05	167.9	318.2	0.04
223434	M569	Liveringa Group	W-f	380047	7635007	Fine grained ferruginous lag and some fine-grained ferruginous lithics	0.5	0.18	14.62	106.4	55.6	0.005
222183	M570	Liveringa Group	X-q-s	385594	7636514		0.5	0.07	24.28	48.4	126.1	0.01
223413	M593	Liveringa Group	W-f	374616	7630109	Ferruginized lithics	0.5	0.22	12.61	175.7	1007.6	0.11
223427	M594	Liveringa Group	W-f	380047	7630102	Ferruginized lithics	0.5	0.24	13.77	169.9	2327.6	0.25
223432	M595	Liveringa Group	Rr-hm	385164	7628927		0.5	0.27	18.88	208.2	194.4	0.02
222176	M596	Liveringa Group	Rr-hm	390070	7629971		0.5	0.21	18.4	154.2	454.7	0.05
222185	M617	Liveringa Group	W-f	369968	7624917		0.5	0.27	16.83	99.3	1271.6	0.14
222188	M618	Liveringa Group	W-f	375001	7624969		0.5	0.27	16.5	108	351.2	0.04
222179	M623	Liveringa Group	X-l-s	400088	7625014	Weakly ferruginized lithic fragments, pisolites	0.5	0.14	15.12	89.3	70.2	0.005
223429	M640	Liveringa Group	Rr-f-s	359896	7619850	Pisolitic nodules	0.5	0.21	13.55	63.2	32.9	0.005
222184	M642	Liveringa Group	Av	370070	7619920	Fine-grained ferruginous lag	0.5	0.18	16.22	96	1211.7	0.13
222187	M643	Liveringa Group	W-f	374903	7620035	Some carbonate fragments	0.5	0.25	14.5	160.3	2119.1	0.24
222180	M644	Liveringa Group	W-f	380054	7620176		0.5	0.47	13.36	225	3592.4	0.4
223404	M646	Liveringa Group	W-f	390093	7619910	Fine-grained ferruginous lag	0.5	0.18	15.35	125.6	260.1	0.03
222196	M647	Liveringa Group	Rr-hm	395013	7619881	Ferruginized lithic fragmments and lag	0.5	0.15	16.97	273.7	184.9	0.02
223409	M648	Liveringa Group	Rr-hm	400136	7619965		0.5	0.35	16.69	194.4	112.5	0.01
223406	M649	Liveringa Group	X-q-s	404976	7619969	Fine-grained, balck-brown ferruginous lag	0.5	0.28	15.54	193.3	253.6	0.03
222171	M668	Liveringa Group	X-q-s	369918	7615022	Fine-grained ferruginous lag	0.5	0.07	13.66	92.6	136.9	0.01
222181	M669	Liveringa Group	Rr-k-kg	374806	7615006	Ferruginous lag, minor lithics	0.5	0.53	13.77	186.8	3457.8	0.38
223423	M670	Liveringa Group	Lp	380041	7615090		0.5	0.32	16.78	182.4	2924.2	0.32
222170	M695	Liveringa Group	Rr-hm	369994	7609986	Angular, medium-grained lithics and fine lag	0.5	0.24	18.14	165.8	179.1	0.02
223408	M701	Liveringa Group	Lp	400097	7609845	Lag and pisoliths	0.5	0.06	11.76	59.1	147.3	0.02
222169	M716	Callawa Formation	X-l-s	334928	7604978	Coarse-grained ferruginized lithic fragments	0.5	0.21	10.72	80.4	79.5	0.005
222175	M723	Liveringa Group	Rr-hm	369898	7605007	Fine-grained ferruginous lag	0.5	0.15	18.64	124.4	686.2	0.08
223420	M727	Hidden Basin beds	Rr-hm	390084	7605047		0.5	0.03	19.67	158.2	460.4	0.05
222182	M731	Liveringa Group	El	409944	7605002	Coarse-grained lag	0.5	0.25	12.3	105.6	387.5	0.04
222172	M757	Hidden Basin beds	Rr-hm	390034	7600111		0.5	0.15	17.26	62.9	545.7	0.06
223403	M787	Liveringa Group	Rr-hm	387968	7598098	Lithic fragments and ferruginous lag	0.5	0.1	17.89	68.4	223.4	0.02
223412	M811	Callawa Formation	Rr-f-s	344993	7590533		0.5	0.07	11.96	84.4	56.3	0.005
223419	M814	Liveringa Group	W-f	360009	7589911	Moderately fine-grained ferruginous lag and ferruginized lithic fragments	0.5	0.12	15.93	193.4	155.7	0.02
223405	M815	Liveringa Group	X-q-s	365019	7590035		0.5	0.02	13.42	96.4	216.9	0.03
223416	M818	Liveringa Group	W-f	379908	7589968	Fine-grained lag. Some rock fragments	0.5	0.18	23.67	67.5	100.1	0.01
223407	M819	Liveringa Group	W-f	383893	7590657	Fine-grained ferruginous lag	0.5	0.23	15.76	70.7	73.1	0.005
223401	M837	Redcliff Pound Group	X-q-s	475079	7589873		0.5	0.18	12.91	51.9	91.5	0.005
223415	M847	Liveringa Group	W-f	360035	7584990	Ferruginized lithic fragments and ?pisoliths	0.5	0.18	12.79	132.1	235.2	0.03
223424	M848	Liveringa Group	W-f	367415	7586790	Fine-grained ferruginous lag and some rounded quartz grains	0.5	0.1	17.45	51.8	151.7	0.02
223414	M849	Liveringa Group	W-f	370178	7584921		0.5	0.11	15.78	93.7	269.3	0.03
222186	M851	Liveringa Group	Rr-f-s	380115	7584971		0.5	0.12	23.75	70.1	33	0.005
222199	M855	Hidden Basin beds	Rr-f-s	400105	7585143	Ferruginized lithic fragments. Occasional rock fragments. Some lag	0.5	0.06	19.23	49.2	1041.7	0.12
222189	M880	Callawa Formation	Rr-f-s	350045	7580247		0.5	0.27	13.54	148.9	51	0.005

Be	Bi	C	CaO	Cd	Ce	Co	Cr	Cr2O3	Cs	Cu	Dy	Er	Eu	Fe2O3	Ga	Gd	Ge	Hf	Ho	In	K2O	LOI	La	Li	Lu
3.02	1.02	0.08	0.09	0.14	32.2	12.3	205	0.03	0.7	7.6	4.6	2.8	0.9	36.53	24.8	4.3	0.42	9.1	0.9	0.28	0.07	6.95	16.7	15.4	0.4
1.11	3.18	0.09	0.08	0.14	43.3	4.3	608	0.1	2.2	12.4	3.2	2.2	0.5	66.35	47	2.9	0.31	16.5	0.8	0.37	0.32	2.95	15.9	6.3	0.4
1.16	2.25	0.12	0.03	0.01	44.9	3.8	650	0.1	1.1	17	1.9	1.9	0.3	50.97	46.3	1.9	0.75	10.1	0.5	0.32	0.22	5.2	27.6	5.5	0.3
1.76	1.67	0.14	0.03	0.02	57.2	12.7	628	0.09	1.5	21.1	2.8	2	0.5	50.42	37.9	2.1	0.97	9.5	0.6	0.3	0.36	6.15	38.5	6.2	0.4
1.66	2.45	0.11	0.04	0.05	27.1	6.9	572	0.08	1	13.8	3	2.1	0.2	54.1	55.5	1.6	0.48	14.9	0.6	0.41	0.21	7.42	14.3	7.9	0.3
1.17	1.2	0.13	0.03	0.01	10.2	4.6	403	0.06	0.2	11.6	1.4	1.2	0.1	33.33	63.4	0.9	0.81	14.1	0.4	0.28	0.07	6.65	5.9	9.7	0.2
1.53	1.46	0.1	0.07	0.03	25.1	5.5	683	0.1	0.8	12.5	3.2	2.7	0.4	50.11	51	2.2	0.63	23.9	0.9	0.44	0.17	7.27	15.7	7.4	0.5
1	1.94	0.13	0.02	0.01	20.9	3.9	756	0.12	0.4	17.4	3.6	2.8	0.3	47.55	44	1.9	0.76	25.4	0.7	0.33	0.11	5.29	12.4	6.3	0.5
0.91	0.64	0.27	0.04	0.02	14.8	6.2	468	0.07	0.5	16.4	1.9	1.7	0.3	24.51	39.9	1.1	1.37	17.6	0.4	0.21	0.07	9.22	7.8	18.2	0.4
1.66	2.53	0.08	0.09	0.06	50.4	4.8	726	0.11	0.3	14.6	4.7	3.5	0.7	62.8	46.9	3.4	0.68	25	1.1	0.41	0.18	5.69	28.2	9	0.7
2.65	1.74	0.11	0.07	0.05	50.6	6.6	619	0.1	0.5	12.6	5	3.8	0.7	57.48	50.5	3.9	0.79	32	1.2	0.46	0.19	8.23	30.7	8.7	0.8
1.15	2.12	0.09	0.03	0.03	39	3.9	718	0.11	1.4	19.3	2.9	1.7	0.4	46.54	48.1	2.2	0.46	11.6	0.6	0.38	0.17	7.04	25.1	12	0.4
1.4	1.98	0.14	0.03	0.03	29.2	5	663	0.1	0.8	17.1	3	2.2	0.4	46.45	45.6	2.1	0.65	13.8	0.6	0.33	0.16	7.17	19.8	12.1	0.4
1.45	1.69	0.06	0.03	0.04	26.3	5.1	585	0.09	0.6	18.8	3.1	2.3	0.4	41.9	47.4	2.4	1.39	14.8	0.8	0.35	0.15	6.34	17.8	15.1	0.4
1.28	1.57	0.18	0.03	0.04	24	4.2	617	0.09	0.7	15.6	3	2.4	0.4	41.64	48.6	1.9	1.2	15.6	0.7	0.33	0.15	6.39	15	12.5	0.4
0.84	1.6	0.14	0.02	0.01	16.2	3.3	715	0.11	0.3	10.5	3.3	2.5	0.2	32.98	53.6	1.8	0.9	27	0.9	0.39	0.06	6.39	7.3	8.9	0.5
1.14	1.18	0.11	0.01	0.01	22.7	3	508	0.07	0.2	10.8	1.6	1.3	0.2	37.22	50.6	1	1.32	14.9	0.4	0.28	0.03	6.52	9.8	7.2	0.3
1.45	1.95	0.04	0.04	0.07	47.4	4.8	693	0.1	0.7	24.4	3.5	2.4	0.6	43.1	37.9	3	1.23	11.7	0.9	0.28	0.16	5.86	30.3	15.3	0.5
1.52	1.94	0.26	1.35	0.1	84.4	6.6	555	0.08	1.1	22.9	4.1	2.8	0.9	48.5	36.3	4.7	1.32	10.7	1.1	0.31	0.24	6.74	51.6	11.4	0.5
1.88	2.15	0.11	0.15	0.04	63.8	4.2	605	0.09	0.9	17.6	3.5	2.6	0.7	56.77	43.6	3.3	1.71	10.1	0.7	0.36	0.23	6.54	42.1	9.2	0.4
1.3	1.74	0.1	0.03	0.05	28.2	4.5	739	0.11	0.8	17.6	3.1	2.3	0.4	43.81	42.6	2.6	0.81	15.2	0.8	0.3	0.19	6	18.8	11	0.5
1.39	2.21	0.16	0.03	0.04	43	3.3	499	0.07	1.2	19.2	2.1	2	0.4	42.71	41.6	2	0.85	9.5	0.6	0.28	0.25	7.37	28.6	7.6	0.4
1.33	2.08	0.27	0.03	0.01	43.2	3.4	670	0.1	0.6	13	2.6	2.2	0.4	51.83	55.6	2.2	0.93	15.1	0.7	0.37	0.19	7.51	24.2	8.1	0.4
1.71	2.24	0.12	0.05	0.07	54.4	4.6	789	0.12	0.9	21.4	3.4	2.1	0.6	49.26	41.4	2.6	1.01	10.5	0.8	0.31	0.26	5.97	34.1	9.7	0.4
1.4	1.27	0.12	0.02	0.05	39.1	5.8	482	0.07	1	16.7	2.2	1.7	0.4	37.63	33.2	1.8	0.87	9.5	0.6	0.21	0.17	5.5	24.6	8	0.3
1.49	2.44	0.05	0.05	0.07	49.9	3.5	558	0.08	0.5	18.8	3.2	2.2	0.6	57.61	54.3	3	1.65	12	0.8	0.4	0.18	6.3	31.4	8	0.4
2.11	2.01	0.1	0.03	0.03	58.1	4.8	507	0.08	0.9	15.6	3.4	2.4	0.6	41.6	44.1	2.8	1.41	12.3	0.9	0.35	0.22	7.85	38.7	13.4	0.4
1.22	2.07	0.17	0.03	0.02	41.1	3.7	602	0.09	1.1	20.2	2.6	2	0.5	46.87	46.8	2.5	1.44	11.1	0.7	0.34	0.24	7.13	27	8.3	0.4
3.44	0.57	0.13	0.03	0.01	27.2	18.7	417	0.06	1.4	32.5	2.7	1.7	0.4	35.13	28.3	1.7	1.11	8	0.7	0.16	0.16	6.55	17.5	8	0.3
0.97	1.67	0.12	0.04	0.03	29.9	2.2	587	0.09	0.3	12.6	1.4	0.9	0.3	65.2	61.8	1.5	1.48	12.9	0.3	0.36	0.06	6.07	20.7	4	0.2
1.57	2.39	0.16	0.06	0.04	38.2	5.9	698	0.1	1.3	23.5	2.9	2.3	0.6	45.36	44.5	2	0.49	12.2	0.6	0.3	0.24	6.6	21.9	14.5	0.4
2.22	1.88	0.13	0.05	0.02	33.2	10.5	445	0.06	1	19.4	3.4	2.5	0.6	43.11	58.9	2.2	0.4	11.2	0.7	0.38	0.13	10.67	20.3	19.5	0.4
1.23	1.78	0.16	0.07	0.02	25.7	3.4	569	0.08	0.5	15	2.9	2.2	0.4	48.55	47.4	2.4	0.89	15.5	0.8	0.34	0.11	5.34	14.6	8.8	0.4
1.25	1.25	0.09	0.03	0.01	24	5.5	571	0.08	0.8	20.5	2.3	1.9	0.4	33.18	38.5	1.7	1.1	12	0.6	0.24	0.17	6.85	16.4	14	0.4
1.28	1.45	0.12	0.03	0.05	26.6	5.1	597	0.09	0.8	23	2.1	1.9	0.3	30.64	47.3	1.4	1.06	15.2	0.6	0.23	0.13	7.15	14.9	10.6	0.4
1.81	0.89	0.16	0.02	0.03	18.5	10.9	263	0.04	0.9	30.2	3.3	2	0.5	37.81	30.1	2	0.56	11.8	0.6	0.25	0.11	7.65	11.3	7.9	0.4
1.87	2.05	0.1	0.04	0.02	29.1	6.6	621	0.09	1.8	21	2.8	1.8	0.2	46.41	43.4	1.7	1.04	9.6	0.5	0.35	0.36	7.17	17.6	8.3	0.3
1.72	0.71	0.09	0.04	0.02	27.6	6.4	500	0.07	0.8	20.5	3.1	2.7	0.4	26.18	33.9	2.1	1.09	22.6	0.8	0.23	0.16	5.97	17.3	11.4	0.4
0.97	1.26	0.08	0.02	0.01	13.9	4.2	707	0.1	0.3	18.6	2.3	1.6	0.3	25.26	37.2	1.1	1.14	12.8	0.4	0.26	0.07	8.71	7.5	18.2	0.3
1.17	1.4	0.08	0.03	0.01	20.4	4.3	734	0.11	0.8	19.7	2	2.1	0.2	37.2	37.6	1.4	0.97	13.8	0.5	0.29	0.14	5.72	10.8	9.2	0.4
1.87	1.23	0.14	0.03	0.01	29.2	7.5	493	0.07	1.3	17.3	3.6	2.7	0.5	39.09	34.5	2.5	0.35	15.2	0.9	0.25	0.14	6.02	15.2	11.1	0.4
1.75	1.14	0.04	0.06	0.04	27.8	4.2	572	0.08	0.4	12.5	2.7	2.1	0.3	36.84	43.5	1.9	0.92	18.5	0.7	0.33	0.1	6.29	16.4	10.4	0.3
0.97	1.09	0.08	0.02	0.03	15.3	5.2	678	0.1	0.6	19.6	1.8	1.5	0.2	22.63	29	1.2	0.83	10.6	0.4	0.21	0.09	6.46	9.5	15.3	0.3
1.77	1.13	0.09	0.03	0.04	19.4	9.1	572	0.08	0.9	18	2.8	2.2	0.3	34.32	32.4	1.7	0.54	11	0.7	0.29	0.13	6.88	11.2	10.9	0.3
0.67	1.65	0.09	0.02	0.01	15.4	3.1	680	0.1	0.4	12.3	2.2	1.3	0.2	22.41	39.6	0.8	1	13.9	0.5	0.29	0.05	8.8	5.8	8.9	0.4
1.35	0.88	0.07	0.06	0.06	17.3	8.5	303	0.04	0.6	17.8	1.6	1.2	0.3	25.4	37.4	1.2	1.06	8.9	0.4	0.19	0.12	8.69	9.2	25.9	0.3
1.32	1.22	0.18	0.02	0.05	21.9	5.1	380	0.06	0.7	17.4	2.3	2	0.4	36.59	33.7	1.4	0.32	14	0.6	0.3	0.09	6.54	8.7	9.3	0.4

MgO	MnO	Mo	Na2O	Nb	Nd	Ni	P2O5	Pb	Pd	Pr	Pt	Rb	Re	S	SO3	Sb	Sc	Se	SiO2	Sm	Sn	Sr	Ta	Tb
0.15	0.01	2	0.02	12.8	17.6	27.9	0.073	47	1	5.2	1	4.3	0.001	0.16	0.41	2.88	22	2.4	46.66	3.7	2	142.2	1.1	0.7
0.15	0.04	2.6	0.02	13.3	15.3	13.1	0.098	86.6	2	4.2	9	23.5	0.001	0.14	0.34	6.55	18	3.6	19.46	3.5	6	101.8	1.1	0.5
0.08	0.02	3.9	0.02	20.4	13.9	10.6	0.11	59	2	4.8	2	13.8	0.001	0.02	0.05	2.79	16	3.8	27.35	2.6	7	28.7	1.4	0.3
0.12	0.17	6.1	0.04	20.4	16.8	23.2	0.13	65	1	5.6	2	21.5	0.001	0.02	0.05	3.01	17	3.7	26.94	2.6	6	62.6	1.4	0.4
0.08	0.03	2.6	0.03	25.4	7.9	14.1	0.074	56.8	2	2.6	1	10.9	0.001	0.03	0.09	2.56	21	3	20.43	1.8	8	17.6	1.6	0.4
0.08	0.02	1.8	0.005	11.1	4.1	9.2	0.063	28.7	2	0.9	1	5.1	0.001	0.01	0.04	3.97	13	3.2	44.75	0.6	4	7	0.9	0.2
0.09	0.03	4.3	0.02	32	7.9	12	0.089	48	2	2.5	1	8.9	0.001	0.03	0.09	2.19	21	3.3	26.56	2	8	23.8	1.9	0.4
0.18	0.02	4	0.02	33.3	6.2	12	0.092	46.3	1	2.1	0.5	7	0.001	0.01	0.03	3.04	15	2.9	30.27	1.7	8	12.8	2.1	0.5
0.05	0.02	2.7	0.03	21.6	3.9	16.9	0.067	25.6	1	1.6	0.5	5.9	0.001	0.005	0.02	1.57	5	1.9	40.68	1.3	7	13.7	1.4	0.3
0.09	0.07	4.3	0.005	36.3	15.5	15	0.13	98.8	0.5	5	0.5	9.1	0.001	0.05	0.15	2.85	22	3.8	16.46	3.4	9	46.7	2.1	0.7
0.13	0.06	2.7	0.02	44.1	15.8	16.2	0.113	121.8	0.5	5.1	0.5	9.1	0.001	0.08	0.25	2.49	25	3.4	17.73	3.9	9	84.7	2.7	0.7
0.07	0.02	4.6	0.005	25.5	12	14.4	0.099	62	0.5	3.7	1	10.9	0.001	0.01	0.04	2.98	18	2.8	25.79	2	9	31.4	1.8	0.4
0.09	0.02	4.5	0.005	28.4	10.2	16	0.092	55.1	2	3.3	1	11.2	0.001	0.02	0.06	2.58	18	3	26.29	2.1	8	29.4	1.8	0.4
0.1	0.02	3.4	0.03	25.5	12.1	15	0.084	53.5	1	3.5	1	9.4	0.001	0.03	0.1	2.08	16	3.1	33.46	2.3	9	47.3	1.7	0.4
0.08	0.02	3.4	0.02	25.3	9.6	14.8	0.09	44.3	1	2.6	1	8.4	0.001	0.02	0.05	2	17	2.8	33.72	1.9	9	20.2	1.7	0.3
0.06	0.01	4.6	0.02	33	4.6	8.6	0.082	63.8	0.5	1.3	0.5	4.4	0.001	0.01	0.03	2.19	12	3.3	43.88	1.3	9	10.7	2.1	0.4
0.03	0.02	2	0.005	11.9	6.7	7.4	0.075	26.4	1	1.9	0.5	2.2	0.001	0.02	0.05	1.2	15	3	41.16	1.2	7	8.7	1	0.3
0.11	0.03	3.1	0.01	24.6	17.3	17.8	0.098	66.2	0.5	5.8	0.5	9.3	0.001	0.03	0.08	2.53	14	1.9	33.25	3.5	7	56.8	1.6	0.5
0.15	0.08	3.2	0.02	23	32	17.7	0.117	92.8	0.5	9.5	1	11.6	0.001	0.05	0.17	2.73	14	2.3	26.41	4.6	5	106.3	1.6	0.7
0.14	0.03	3.9	0.02	23.4	23.2	14.8	0.116	107.6	1	7.5	3	11.2	0.001	0.09	0.26	2.76	18	3.3	20.9	4.3	5	111.2	1.5	0.7
0.09	0.02	4.3	0.01	26.9	10.4	13	0.101	53.9	0.5	3.3	1	11.8	0.001	0.01	0.04	2.57	16	3.6	33.47	2.1	7	22.3	1.7	0.5
0.08	0.01	5.5	0.02	23.1	13.4	10.4	0.087	58.2	2	4.3	1	15	0.001	0.02	0.06	2.17	14	3.8	31.11	2.2	6	30.4	1.8	0.4
0.08	0.02	4	0.005	25.6	14.3	10.4	0.086	62.3	2	4	2	11	0.001	0.02	0.05	2.89	21	4	22.3	2.5	7	21	1.8	0.4
0.11	0.03	4.7	0.005	26.3	18.4	15.1	0.142	68.2	0.5	6	1	14.3	0.001	0.02	0.05	2.78	16	2.8	27.08	3.2	6	48.5	1.7	0.5
0.08	0.03	3.4	0.01	15	13.1	14.1	0.1	43.5	0.5	4.3	1	13.2	0.001	0.01	0.03	1.93	11	2.8	42.23	2.6	5	27.8	1.1	0.3
0.13	0.04	3.2	0.01	23	18.3	11.7	0.101	93.4	0.5	6	1	10.5	0.001	0.08	0.23	2.88	18	3.6	19.89	3	6	81.9	1.5	0.6
0.1	0.01	4.5	0.03	27.3	18.1	16.3	0.109	98.7	0.5	6.4	0.5	12.3	0.001	0.07	0.22	2.26	18	3.9	31.44	3.3	7	82.4	2	0.5
0.1	0.02	3.9	0.005	23.8	14.6	12.1	0.106	65	1	4.6	1	14.4	0.001	0.01	0.04	2.52	16	3.8	26.1	2.4	6	24.5	1.5	0.4
0.1	0.03	2.8	0.01	9.6	11.2	34.8	0.096	50.7	0.5	3.3	2	15	0.001	0.005	0.03	1.52	14	2	45.24	2.5	4	18.1	0.8	0.4
0.05	0.01	2.8	0.01	11.8	11.5	4.8	0.09	55.9	3	3.5	2	3.3	0.001	0.02	0.07	1.59	20	6.4	16.35	1.7	5	25.9	0.8	0.2
0.12	0.05	4.3	0.03	28.3	14.1	19.7	0.115	62.7	1	4.1	0.5	14.9	0.001	0.02	0.07	2.8	16	3.2	27.09	3.1	7	43.8	1.9	0.5
0.09	0.02	2.7	0.01	27.6	13.1	23.8	0.089	38.8	1	4.2	1	9.4	0.001	0.02	0.09	1.81	26	1.8	24.98	2.8	6	36	1.9	0.5
0.08	0.02	5	0.005	21.7	9.6	9.9	0.073	65.8	2	3	1	6.1	0.001	0.02	0.05	2.28	16	4.3	32.11	1.9	6	19.9	1.3	0.4
0.1	0.02	3.4	0.02	19	10	15.3	0.105	46.5	1	3.1	1	12.9	0.001	0.01	0.06	1.98	11	3.1	40.72	2.5	5	22.8	1.3	0.5
0.08	0.02	4	0.005	22.5	8	17.4	0.093	48.7	1	2.3	1	10.3	0.001	0.005	0.03	2.36	5	3.1	42.93	1.8	6	21.6	1.4	0.4
0.07	0.02	3.2	0.02	12.7	9.4	23.4	0.211	33.3	2	2.6	2	9.7	0.001	0.01	0.06	1.72	19	1.6	41.67	2.3	4	10.7	1.1	0.4
0.12	0.04	5.3	0.005	23.6	9.3	16.9	0.118	58.8	1	2.9	2	21.8	0.001	0.02	0.06	2.11	16	3.4	28.73	1.4	5	22.3	1.6	0.4
0.08	0.02	3.7	0.02	24.1	9.5	17.3	0.054	52.1	0.5	3	2	12.2	0.001	0.01	0.04	1.54	10	3.4	52.99	1.7	6	21.1	1.6	0.5
0.05	0.01	2.4	0.02	23.4	3.8	16.4	0.064	33	1	1.4	0.5	6	0.001	0.005	0.02	1.73	13	2.8	41.19	1.2	9	9.3	1.5	0.3
0.07	0.03	3.4	0.005	24.4	6.8	13.8	0.094	40.4	0.5	2	1	10.5	0.001	0.005	0.02	2.02	15	3.1	39.23	1.7	7	11.4	1.5	0.4
0.08	0.02	3.3	0.02	18.3	11.2	18.7	0.073	53.6	0.5	3.1	2	11.5	0.001	0.01	0.04	3.57	16	3.5	40.17	3.1	6	15.1	1.4	0.5
0.07	0.03	4.5	0.03	25.7	9.2	11.2	0.099	45.5	0.5	3.1	0.5	5.4	0.001	0.02	0.1	1.78	13	3.1	42.3	1.8	6	24.1	1.8	0.4
0.06	0.02	2.3	0.02	18.3	5.7	15.5	0.059	30.4	0.5	1.7	0.5	6.3	0.001	0.005	0.02	1.44	5	1.6	51.89	1.2	7	11	1.3	0.3
0.09	0.03	3.1	0.02	21	7.9	20	0.083	40.6	1	2.1	0.5	8.9	0.001	0.01	0.05	1.85	13	2.5	41.51	1.5	4	17.5	1.3	0.4
0.05	0.005	2	0.005	20.7	3.9	14.5	0.045	49.6	0.5	1	0.5	4.3	0.001	0.005	0.02	2.06	12	1.8	43.79	0.7	6	6.9	1.3	0.3
0.07	0.03	2.7	0.03	10.4	7.6	20.2	0.046	31.1	0.5	1.9	1	8.5	0.001	0.02	0.13	1.74	5	4.2	45.21	1.7	5	46.9	0.7	0.3
0.05	0.02	4.1	0.02	16.9	5.4	13.7	0.091	34.5	1	1.9	2	7.2	0.001	0.01	0.04	1.88	21	3.1	41.82	1.5	4	8	1.5	0.3

Te	Th	TiO2	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
0.3	47.8	0.59	0.07	0.4	7.5	614	3	21.1	2.8	10	295
0.7	109.4	0.62	0.51	0.4	4.4	1000	3	17.7	2.5	11	466
0.6	70.7	0.66	0.1	0.3	2.7	1229	3	13	1.8	15	310
0.6	57.6	0.63	0.45	0.3	2.5	1391	3	14.3	2.2	46	285
0.7	99.7	0.75	0.09	0.3	3.2	1540	3	16.2	2.4	20	435
0.9	75.9	0.47	0.07	0.2	2.3	728	2	10	1.8	7	451
0.9	101.5	0.82	0.1	0.5	4	1214	3	22.2	3.4	25	774
0.9	77.9	0.92	0.1	0.5	3.3	980	4	21.2	3.1	12	815
0.6	43.4	0.9	0.08	0.3	2.2	534	3	15.1	2.1	10	581
0.9	127.2	0.85	0.15	0.5	4.2	1462	4	26.4	3.8	18	798
0.7	120.3	1.02	0.17	0.6	4.5	1311	4	30.9	4.9	30	1043
0.9	72.3	0.79	0.11	0.3	2.9	1581	4	14.6	2	13	352
0.7	72.4	0.83	0.1	0.4	3.1	1104	4	19.8	2.9	18	476
0.9	69.4	0.87	0.09	0.4	3.4	969	4	20	3.2	14	515
0.8	68	0.87	0.07	0.3	2.7	978	4	17.7	2.7	15	500
1.3	126.2	0.95	0.07	0.5	3.3	1693	3	23.5	3.3	17	944
0.7	85.4	0.63	0.04	0.2	2.1	742	3	9.7	1.5	13	474
0.7	56.4	0.83	0.11	0.4	2.3	1104	4	20.6	3.4	16	395
0.7	58.4	0.72	0.18	0.4	2.5	1422	4	24.7	3.3	16	323
0.7	69.7	0.67	0.1	0.4	2.6	1722	3	19.3	3.1	20	329
0.8	64.8	0.79	0.11	0.4	2.9	1077	3	19.9	2.9	16	537
0.6	48.2	0.7	0.11	0.3	2.2	1455	4	14.3	2.2	13	281
0.7	85.3	0.8	0.11	0.4	3.4	1479	4	17	2.7	9	470
0.7	56.3	0.77	0.12	0.3	2.7	1622	4	17.6	2.6	19	323
0.5	45	0.59	0.11	0.3	2.1	700	3	14.7	2.1	26	328
0.7	85.6	0.7	0.12	0.4	2.7	1467	4	19.6	2.9	18	384
0.6	64	0.81	0.09	0.4	4.1	1298	4	18.8	3.2	16	401
0.6	69.6	0.76	0.11	0.4	2.6	1182	4	15	2.6	16	351
0.3	22.4	0.5	0.25	0.3	3.3	614	2	13.1	2.3	16	265
0.7	64.9	0.7	0.03	0.1	2.2	1246	2	7.7	1.1	8	440
0.6	69.6	0.83	0.19	0.4	2.6	1161	4	18	3.4	30	399
0.5	76.5	0.84	0.09	0.4	3.4	1097	4	19.2	2.8	17	356
1.2	89.1	0.79	0.08	0.4	2.7	1269	3	17.2	2.9	17	506
0.7	46.9	0.77	0.13	0.3	2.8	824	3	14.9	2.4	17	390
1.1	51.4	0.9	0.13	0.3	3	973	3	14.7	2.6	18	521
0.3	56.9	0.59	0.14	0.4	4.2	559	2	15.8	2.8	30	363
0.6	62	0.69	0.16	0.3	2.8	1336	3	14.3	2.6	39	302
0.7	68.4	0.83	0.13	0.4	3.1	796	3	21.4	3.4	15	764
0.7	42.6	0.93	0.06	0.3	1.8	795	3	13.3	2	13	403
0.8	47.7	0.92	0.11	0.3	2.1	909	3	13.6	1.9	16	443
0.5	63.6	0.84	0.17	0.5	4.8	733	4	20.6	3.1	11	496
0.7	91.6	0.78	0.06	0.4	2.8	981	3	18.3	2.9	27	633
0.5	34	0.76	0.08	0.3	1.6	685	2	11.9	1.7	17	329
0.9	43.4	0.83	0.08	0.3	1.9	926	3	15.8	2.6	39	368
1	56.7	0.84	0.04	0.2	1.5	1254	3	11.7	1.9	9	437
0.6	34.6	0.46	0.17	0.2	2.4	553	2	9.9	1.5	11	298
0.6	61.7	0.67	0.1	0.3	3.2	856	3	15.5	2.6	13	425

Appendix 4B. Lag chemistry

GSWA	Site	Bedrock geology	Regolith	Easting	Northing	Comment	Au	Ag	Al2O3	As	Ba	BaO
222193	M886	Liveringa Group	Rr-f-s	380277	7580004		0.5	0.29	21.53	96.3	48.3	0.005
222198	M892	Hidden Basin beds	Rr-hm	410147	7580085	Lag and occasional ferruginized lithic fragments	0.5	0.18	15.49	63.3	160.1	0.02
222177	M894	Hidden Basin beds	Rr-hm	420069	7579969	Lithic fragments	0.5	0.19	12.91	49.4	382.3	0.04
223425	M90	Redcliff Pound Group	Rr-hm	445152	7725060	Quite coarse-grained ferruginous lag with some lithic fragments	0.5	0.29	10.5	89.6	79.9	0.01
222200	M919	Liveringa Group	W-f	367990	7574211	Moderately fine-grained lag with some lithic fragments	0.5	0.15	21.15	110.3	55.3	0.005
222195	M924	Hidden Basin beds	Rr-f-s	390317	7575038	Fine-grained ferruginous lag with some lithic fragments	0.5	0.22	21.57	90.3	203.8	0.02
222197	M927	Hidden Basin beds	X-l-s	405013	7575451	Pisoliths and coarse-grained lithic fragments	0.5	0.09	11.74	76.3	1505.6	0.17
223402	M948	Callawa Formation	Rr-f-s	330042	7570098	Ferruginized lithic fragments and ?pisoliths	0.5	0.04	16.12	64.8	552.6	0.06
223422	M952	Callawa Formation	W-f	350010	7570045		0.5	0.1	12.01	132.6	98.1	0.01
222168	M955	Liveringa Group	X-q-s	365082	7570002	Angular, weakly ferruginized lithic fragments	0.5	0.08	14.43	147.6	69.6	0.005
222167	M984	Callawa Formation	Rr-f-s	330050	7565020	Ferruginized lithic fragments up to 2 cm	0.5	0.04	12.54	155.5	100.8	0.01
223428	M986	Callawa Formation	S	340278	7565236	Fine-grained lag and some rock fragments	1	0.13	15.78	93.8	53.3	0.005
223417	SOUTH FUEL	Liveringa Group	W-f	388900	7620384	Lag and ferruginized lithic fragementts	0.5	0.24	13.46	142.7	364.6	0.04
223418	SS1	Hidden Basin beds	El	419081	7599173	Ferruginzed lithic fragments up to 1.5 cm	0.5	0.09	9.02	101	5233.2	0.58
223410	SS5	Liveringa Group	Lm	471645	7599861	Carbonate fragments and ferruginous lag	0.5	0.31	7.98	201.9	6545.9	0.71
222190	SS6	Liveringa Group	El	417358	7599907	Significantly rounded quartz grains up to 3mm, and lag	0.5	0.1	8.23	79.5	739.8	0.08

Be	Bi	C	CaO	Cd	Ce	Co	Cr	Cr2O3	Cs	Cu	Dy	Er	Eu	Fe2O3	Ga	Gd	Ge	Hf	Ho	In	K2O	LOI	La	Li	Lu
0.82	1.72	0.08	0.01	0.01	14.6	2.9	741	0.11	0.4	12.2	1.9	1.7	0.3	26.18	47.3	1.5	0.68	15.7	0.5	0.35	0.05	8.36	7.9	13.5	0.3
1.22	1.54	0.12	0.03	0.05	25	4.9	660	0.1	1.5	26.3	3.3	2.3	0.4	44.39	45.3	2.3	0.46	15.8	0.7	0.27	0.22	5.9	13.8	9.8	0.4
1.15	0.84	0.09	0.07	0.04	12.4	6.7	280	0.04	0.5	17.5	2.4	1.7	0.3	32.03	30.5	1.7	1.16	13.6	0.5	0.2	0.06	6.14	6.5	12.3	0.3
1.11	2.91	0.16	0.03	0.07	21.2	3.8	729	0.1	1.3	17.6	2.4	1.6	0.4	69.84	49.3	1.9	0.14	16.9	0.5	0.41	0.18	3.4	12.3	6.4	0.3
0.99	1.37	0.12	0.02	0.01	31.2	4.2	547	0.08	0.6	17.8	2.4	1.7	0.2	22.1	37.6	1.5	0.92	13.8	0.5	0.25	0.1	8.31	10.3	18.3	0.4
1.33	1.5	0.28	0.03	0.01	23.5	4	636	0.09	0.8	15.7	2.5	2	0.3	29.44	41.7	1.6	0.74	12.5	0.6	0.24	0.11	8.75	12.3	17.8	0.3
1.27	1.25	0.08	0.07	0.06	12.3	6	274	0.04	0.2	13.7	2.1	1.5	0.2	36.34	59.6	1.4	0.63	13.7	0.4	0.27	0.04	7.34	7.5	11.7	0.3
1.62	0.91	0.13	0.04	0.02	18.7	6.3	314	0.04	0.9	31.1	2.6	1.7	0.3	21.47	35.8	1.7	0.85	10.4	0.6	0.17	0.11	7.12	10.6	18.5	0.3
1.38	2.07	0.13	0.02	0.02	33.3	5.4	685	0.1	1.4	21.6	1.9	1.5	0.4	50.42	39.9	1.7	0.97	11.6	0.6	0.3	0.21	4.46	19.5	6	0.3
2.02	1.63	0.12	0.02	0.01	37.9	5.1	667	0.1	0.9	14.1	3.1	1.8	0.5	40.07	41.4	1.9	0.74	12	0.7	0.34	0.16	6.8	18.5	10.5	0.3
2.02	0.83	0.16	0.02	0.03	27	13.5	333	0.05	1	27.5	2	1.7	0.3	45.03	30.5	2	1.06	7.1	0.5	0.23	0.28	7.02	15.8	6.6	0.3
1.24	1.23	0.11	0.03	0.01	24	6	578	0.08	1.6	18.4	2.2	1.9	0.3	36.28	33.3	1.3	0.98	11.7	0.5	0.26	0.2	6.35	15.4	9.1	0.3
1.17	2.04	0.1	0.03	0.03	27.9	3.9	772	0.12	0.6	14.2	2.9	2.8	0.4	47.87	44.9	1.8	0.98	19.2	0.7	0.35	0.15	5.46	17.4	9.7	0.4
2.73	1.38	0.11	0.06	0.07	29.4	17.1	172	0.02	0.5	57.4	4.7	2.9	0.9	55.69	25.5	4.6	0.76	7.9	1.1	0.16	0.04	9.51	12.6	8.5	0.4
0.98	2.94	0.3	1.14	0.08	57.7	4.3	643	0.09	0.5	19.1	3.6	2.4	0.9	60.02	41.1	3.8	1.3	10.7	0.8	0.31	0.15	3.91	43.7	6.7	0.4
1.01	1.32	0.06	0.13	0.08	47.1	3.6	351	0.05	0.5	12	2.3	1.6	0.4	26.16	22.8	2.3	1.14	6.6	0.7	0.15	0.12	3.06	24.4	7.3	0.3

MgO	MnO	Mo	Na2O	Nb	Nd	Ni	P2O5	Pb	Pd	Pr	Pt	Rb	Re	S	SO3	Sb	Sc	Se	SiO2	Sm	Sn	Sr	Ta	Tb
0.04	0.005	3	0.01	24.5	4	11.7	0.05	50	0.5	1.4	0.5	3.5	0.001	0.005	0.03	2.03	10	2.6	41.83	0.9	6	8.4	1.4	0.3
0.1	0.02	3.5	0.02	16.5	11	16.3	0.107	37.2	1	2.6	2	18.5	0.001	0.01	0.04	5.16	18	3.5	32.22	1.9	6	12.4	1.3	0.4
0.07	0.01	4.5	0.03	22.1	6.2	22.7	0.071	54.8	0.5	1.8	1	5.6	0.001	0.02	0.07	4.04	13	2.8	47.16	1.8	7	16.6	1.9	0.3
0.1	0.02	4.7	0.005	11	6.6	15.5	0.089	88.4	2	2.1	2	14.8	0.001	0.02	0.03	8.1	24	4	14.52	1.5	4	9.3	0.8	0.3
0.06	0.02	4.2	0.02	21.9	5.9	14.4	0.062	44.5	0.5	1.7	0.5	7.5	0.001	0.005	0.02	2.1	5	2.1	46.88	1.4	7	10.2	1.5	0.3
0.06	0.01	3	0.02	23.5	6.9	15.7	0.067	37.6	0.5	2.2	0.5	7.4	0.001	0.01	0.04	2.1	13	2.3	38.83	1.5	8	16.6	1.6	0.4
0.09	0.03	2.7	0.005	8.3	7.1	11.3	0.042	39.8	0.5	2.2	0.5	3.1	0.001	0.04	0.16	2.21	11	4.2	43.64	1.9	5	23.8	0.6	0.3
0.07	0.02	2.7	0.03	12.7	7.4	22.2	0.043	50.5	0.5	2.4	2	9	0.001	0.02	0.07	1.52	5	2.4	54.4	2.4	5	25.5	1	0.3
0.07	0.03	3.9	0.005	19.5	11.9	15.5	0.102	59.9	1	3.5	2	15	0.001	0.01	0.03	2.73	15	2.9	31.35	2.1	7	21.3	1.2	0.3
0.08	0.03	3.9	0.005	25.2	10.2	15.1	0.122	47	0.5	2.9	0.5	10.6	0.001	0.01	0.04	2.39	16	2.7	37.04	1.7	8	23.3	1.6	0.4
0.1	0.08	3.5	0.02	12.5	8.7	23.4	0.106	40	0.5	2.7	2	16.4	0.001	0.02	0.07	1.67	13	2.8	33.6	1.8	4	22.9	0.9	0.3
0.08	0.02	3.6	0.02	15.1	7.6	15.3	0.083	45.4	0.5	2.5	2	18.1	0.001	0.005	0.03	2.22	14	2.6	40.33	1.8	6	17.5	1.1	0.3
0.09	0.02	5	0.005	29.5	9.3	12.8	0.108	75.1	0.5	3.2	1	8.3	0.001	0.03	0.06	2.63	16	4.3	31.37	1.7	6	22.8	1.9	0.5
0.16	0.02	4.9	0.005	9.8	19.1	28.2	0.105	70.3	0.5	5.4	1	3.5	0.001	0.11	0.38	2.03	12	4.6	23.81	5.5	4	92.9	0.8	0.8
0.09	0.07	5.2	0.005	18.2	26.2	13.6	0.094	115.1	0.5	7.6	2	7.9	0.001	0.17	0.44	3.61	12	4.9	24.38	4.8	6	190.9	1.1	0.6
0.08	0.04	2.6	0.02	13	14	12.1	0.064	52.7	0.5	5	0.5	6.8	0.001	0.03	0.06	1.71	5	1.7	60.97	2.4	5	25.6	0.9	0.4

Te	Th	TiO2	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
1.2	59.3	0.96	0.04	0.3	2	1370	3	12.8	2.4	9	504
0.5	58.4	0.89	0.17	0.3	4.7	764	4	18.6	3	14	500
0.3	37.1	1.1	0.06	0.3	5.4	539	4	13.7	2.6	12	450
1	89.9	0.56	0.13	0.2	4.8	1069	3	13.8	1.8	13	479
0.8	62.9	0.71	0.1	0.3	2.2	929	3	14	2.6	14	442
0.5	55.2	0.83	0.07	0.3	2.2	826	4	15	2.1	12	405
1.2	84.6	0.39	0.07	0.2	3.1	809	2	10.7	1.8	7	440
0.5	42.1	0.55	0.15	0.3	2.5	758	3	12.5	2.3	9	353
0.7	77.1	0.64	0.16	0.3	2.2	1159	4	12	2	24	363
0.7	71.6	0.68	0.1	0.3	2.4	1071	2	16.5	2.9	30	416
0.4	48.7	0.46	0.18	0.3	2.7	770	2	12.1	1.8	50	239
0.6	48.5	0.59	0.16	0.2	2.5	937	3	11.9	2.1	15	365
1	87.5	0.77	0.08	0.4	3.2	1324	4	19.4	2.9	14	647
0.8	58.5	0.47	0.05	0.5	15.9	1011	3	20.6	3.2	20	262
1	84.7	0.52	0.2	0.3	2.4	1687	4	17.8	2.5	14	358
0.4	34.1	0.39	0.1	0.2	1.3	682	2	13.9	2.1	20	224