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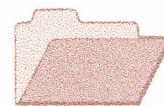
Cooperative Research Centre for
Landscape Evolution & Mineral Exploration



CSIRO
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SERIES**

PETROLOGY AND GEOCHEMISTRY OF SURFACE MATERIALS OVERLYING THE BOTTLE CREEK GOLD MINE, WA

Volume 2 - Appendices

I.D.M. Robertson and R. Wills

CRC LEME OPEN FILE REPORT 56

November 1998

(CSIRO Division of Exploration Geoscience Report 394R, 1993.
Second impression 1998)

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RESEARCH ARISING FROM CSIRO/AMIRA REGOLITH GEOCHEMISTRY PROJECTS 1987-1993

In 1987, CSIRO commenced a series of multi-client research projects in regolith geology and geochemistry which were sponsored by companies in the Australian mining industry, through the Australian Mineral Industries Research Association Limited (AMIRA). The initial research program, "Exploration for concealed gold deposits, Yilgarn Block, Western Australia" (1987-1993) had the aim of developing improved geological, geochemical and geophysical methods for mineral exploration that would facilitate the location of blind, buried or deeply weathered gold deposits. The program included the following projects:

P240: Laterite geochemistry for detecting concealed mineral deposits (1987-1991). Leader: Dr R.E. Smith.
Its scope was development of methods for sampling and interpretation of multi-element laterite geochemistry data and application of multi-element techniques to gold and polymetallic mineral exploration in weathered terrain. The project emphasised viewing laterite geochemical dispersion patterns in their regolith-landform context at local and district scales. It was supported by 30 companies.

P241: Gold and associated elements in the regolith - dispersion processes and implications for exploration (1987-1991). Leader: Dr C.R.M. Butt.

The project investigated the distribution of ore and indicator elements in the regolith. It included studies of the mineralogical and geochemical characteristics of weathered ore deposits and wall rocks, and the chemical controls on element dispersion and concentration during regolith evolution. This was to increase the effectiveness of geochemical exploration in weathered terrain through improved understanding of weathering processes. It was supported by 26 companies.

These projects represented "an opportunity for the mineral industry to participate in a multi-disciplinary program of geoscience research aimed at developing new geological, geochemical and geophysical methods for exploration in deeply weathered Archaean terrains". This initiative recognised the unique opportunities, created by exploration and open-cut mining, to conduct detailed studies of the weathered zone, with particular emphasis on the near-surface expression of gold mineralisation. The skills of existing and specially recruited research staff from the Floreat Park and North Ryde laboratories (of the then Divisions of Minerals and Geochemistry, and Mineral Physics and Mineralogy, subsequently Exploration Geoscience and later Exploration and Mining) were integrated to form a task force with expertise in geology, mineralogy, geochemistry and geophysics. Several staff participated in more than one project. Following completion of the original projects, two continuation projects were developed.

P240A: Geochemical exploration in complex lateritic environments of the Yilgarn Craton, Western Australia (1991-1993). Leaders: Drs R.E. Smith and R.R. Anand.

The approach of viewing geochemical dispersion within a well-controlled and well-understood regolith-landform and bedrock framework at detailed and district scales continued. In this extension, focus was particularly on areas of transported cover and on more complex lateritic environments typified by the Kalgoorlie regional study. This was supported by 17 companies.

P241A: Gold and associated elements in the regolith - dispersion processes and implications for exploration. Leader: Dr C.R.M. Butt.

The significance of gold mobilisation under present-day conditions, particularly the important relationship with pedogenic carbonate, was investigated further. In addition, attention was focussed on the recognition of primary lithologies from their weathered equivalents. This project was supported by 14 companies.

Although the confidentiality periods of the research reports have expired, the last in December 1994, they have not been made public until now. Publishing the reports through the CRC LEME Report Series is seen as an appropriate means of doing this. By making available the results of the research and the authors' interpretations, it is hoped that the reports will provide source data for future research and be useful for teaching. CRC LEME acknowledges the Australian Mineral Industries Research Association and CSIRO Division of Exploration and Mining for authorisation to publish these reports. It is intended that publication of the reports will be a substantial additional factor in transferring technology to aid the Australian Mineral Industry.

This report (CRC LEME Open File Report 56) is a Second impression (second printing) of CSIRO, Division of Exploration Geoscience Restricted Report 394R, first issued in 1993, which formed part of the CSIRO/AMIRA Projects P240A and P241A.

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APPENDICES

- APPENDIX 1 Tabulated lag geochemistry - Emu Area
- APPENDIX 2 Tabulated lag geochemistry - VB Boags Area
- APPENDIX 3 Comparative frequency distributions of Emu and VB Boags areas
- APPENDIX 4 Power transforms - Emu and VB Boags
- APPENDIX 5 Correlation Matrices
- APPENDIX 6 Geology, geomorphology and contoured geochemistry of VB Boags and Emu areas
- APPENDIX 7 Systematic Petrography of Lag
- APPENDIX 8 Tabulated Gossan Geochemistry
- APPENDIX 9 Tabulated Soil Geochemistry
- APPENDIX 10 Frequency Distributions of Phase 1 Geochemistry
- APPENDIX 11 Geomorphology and Contoured Phase 1 Geochemistry
- APPENDIX 12 Frequency Distributions of Phase 2 Geochemistry
- APPENDIX 13 Geomorphology and Contoured Phase 2 Geochemistry
- APPENDIX 14 Tabulated Phase 1 Geochemistry of Magnetic Lag (E.Z. Co. Ltd)
- APPENDIX 15 Tabulated Phase 2 Geochemistry of Magnetic Lag (E.Z. Co. Ltd)

APPENDIX 1

TABULATED GEOCHEMISTRY OF THE VB BOAGS AREA

Co-ordinates in m
Major Elements in %
Trace Elements in ppm
except Au in ppb

See text for methods

Sample	East	North	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	Ag	As	Au	Ba	BI	Co
06-0225	8950	11300	26.00	13.32	51.62	0.09	0.07	0.01	0.02	1.40	0.1	94	1	0	2.0	16
06-0215	8950	12500	43.30	19.22	22.81	0.38	0.21	0.18	0.33	1.20	0.1	68	6	0	4.0	14
06-0216	8950	12500	43.70	18.63	22.59	0.39	0.23	0.19	0.37	1.23	0.1	62	1	0	6.0	14
06-0217	9000	12500	49.00	19.24	14.94	0.56	0.37	0.27	0.53	0.87	0.1	34	2	0	11.0	14
06-0155	9040	12500	47.70	18.20	20.15	0.40	0.17	0.22	0.41	1.12	0.1	68	1	148	7.0	10
06-0150	9080	12500	25.10	13.31	51.60	0.13	0.15	0.03	0.20	1.33	0.1	50	3	622	2.0	18
06-0151	9080	12500	49.80	19.03	14.20	0.54	1.12	0.31	0.54	0.85	0.1	32	7	169	6.0	10
06-0220	9100	12300	28.40	12.51	51.03	0.07	0.05	0.01	0.24	1.18	0.1	48	1	0	7.0	14
06-0149	9120	12500	28.80	13.44	47.99	0.13	0.13	0.02	0.17	1.22	0.1	46	180	212	11.0	12
06-0742	9125	11275	35.40	15.00	42.90	0.24	0.32	0.09	0.33	1.06	0.0	35	8	427	2.0	7
06-0249	9155	11290	39.90	14.30	25.50	0.24	0.24	0.01	0.20	1.08	0.1	20	1	0	10.0	20
06-0734	9155	11375	45.20	12.00	13.50	0.82	11.90	0.13	0.58	0.67	0.0	160	67	617	2.0	6
06-0745	9157	11275	45.70	14.40	28.60	0.04	0.36	0.14	0.41	0.92	0.0	9	11	1760	2.0	22
06-0736	9160	11375	56.20	13.30	19.00	0.56	1.27	0.12	0.45	0.46	0.0	460	130	393	2.0	15
06-0244	9160	11875	51.00	16.60	13.20	0.66	1.09	0.41	0.56	0.83	0.1	56	25	180	0.5	14
06-0738	9162	11375	35.00	13.50	46.10	0.30	0.30	0.08	0.42	0.84	0.0	300	340	125	2.0	10
06-0727	9185	11570	25.30	16.40	15.70	0.68	19.70	0.17	0.21	1.20	0.0	550	81	102	2.0	3
06-0723	9186	11570	26.00	9.73	28.70	0.42	14.00	0.09	0.59	0.70	0.0	1500	220	1150	2.0	6
06-0729	9186	11580	28.10	20.20	15.70	0.46	6.66	0.38	1.48	1.48	0.0	340	45	151	5.0	3
06-0730	9186	11580	44.40	17.40	19.90	0.42	3.29	0.15	0.24	1.30	0.0	340	110	344	5.0	5
06-0732	9188	11580	28.90	18.00	28.60	0.43	6.07	0.13	0.18	1.49	0.0	1100	220	86	2.0	2
06-0728	9190	11570	21.10	14.90	37.50	0.39	8.13	0.10	0.14	1.19	0.0	1400	100	77	2.0	3
06-1352	9190	12180	21.00	18.50	46.30	0.15	0.10	0.25	0.05	1.15	0.2	5500	250	115	6.0	78
06-1344	9200	11695	24.50	19.90	46.10	0.19	0.20	0.12	0.05	1.25	0.1	195	16	73	1.0	68
06-1345	9200	11700	21.90	12.40	56.70	0.13	0.15	0.13	0.06	0.81	0.1	15	3	517	6.0	86
06-0164	9225	12285	28.30	12.93	48.52	0.11	0.10	0.01	0.19	1.03	0.4	360	1	414	1.0	24
06-0123	9240	12690	23.10	13.83	53.68	0.11	0.08	0.03	0.21	1.52	0.1	46	1	92	1.0	16
06-0158	9250	12285	17.40	14.22	57.31	0.11	0.09	0.01	0.20	1.42	1.0	1720	7	20	2.0	12
06-0293I	9278	12755	30.60	15.40	40.80	0.33	0.40	0.12	0.32	1.16	0.0	38	12	692	2.0	11
06-0293II	9278	12755	46.40	13.70	22.20	0.48	3.08	0.13	0.45	0.73	0.0	19	20	810	2.0	10
06-0294	9278	12755	50.00	19.30	12.30	0.70	0.49	0.19	0.67	0.75	0.0	21	14	139	2.0	11
06-0295	9278	12755	57.10	16.70	6.45	0.68	0.60	0.25	0.68	0.39	0.0	6	12	180	5.0	10
06-0305	9279	12755	48.60	19.70	15.90	0.67	0.46	0.26	0.63	0.68	0.0	22	9	244	2.0	10
06-0297	9280	12755	25.30	14.90	50.90	0.25	0.28	0.16	0.46	0.68	0.0	37	8	509	2.0	10
06-0298	9280	12755	46.40	16.40	20.00	0.54	1.30	0.10	0.19	1.30	0.0	21	9	141	2.0	9
06-0310I	9280	12755	32.00	15.10	43.00	0.27	0.28	0.15	0.28	1.19	0.0	36	10	353	2.0	8
06-0310II	9280	12755	41.60	14.80	30.90	0.32	0.28	0.18	0.46	1.02	0.0	38	8	219	2.0	25
06-0310III	9280	12755	32.30	14.60	40.50	0.23	0.19	0.13	0.22	1.09	0.0	55	7	83	2.0	7
06-0313	9280	12755	49.10	18.20	14.60	0.63	0.40	0.24	0.51	0.59	0.0	24	15	185	2.0	8
06-0314	9280	12755	37.50	15.80	31.50	0.25	0.22	0.15	0.24	0.98	0.0	55	11	129	2.0	5
06-0315	9280	12755	44.60	19.70	18.20	0.73	0.70	0.29	0.51	0.79	0.0	65	18	151	2.0	7
06-0316	9280	12755	33.20	18.60	31.30	0.42	0.27	0.20	0.31	0.94	0.0	140	6	107	2.0	9
06-0322	9281	12755	52.20	17.60	12.50	0.77	0.29	0.33	0.53	0.82	0.0	910	14	246	2.0	11
06-0323I	9281	12755	32.70	16.50	32.90	0.51	0.19	0.23	0.35	1.12	0.0	390	6	129	2.0	11
06-0323II	9281	12755	23.70	13.30	45.20	0.39	0.23	0.19	0.31	0.95	0.0	2650	7	162	5.0	9
06-0326	9281	12755	52.00	20.00	9.25	0.74	1.38	0.35	0.54	1.09	0.0	320	7	193	2.0	6
06-0327	9281	12755	52.30	19.30	9.97	0.80	0.46	0.38	0.57	1.02	0.0	450	10	150	2.0	7
06-0349	9291	12755	55.30	13.30	18.60	0.28	0.35	0.14	0.62	0.85	0.0	36	11	705	2.0	7
06-0350	9291	12755	48.90	15.20	23.20	0.31	0.33	0.12	0.57	1.29	0.0	25	9	361	2.0	11
06-0352	9291	12755	21.90	12.50	56.80	0.16	0.21	0.09	0.16	1.39	0.0	95	4	314	2.0	8
06-0354	9292	12755	28.30	8.22	7.78	1.09	2.66	0.20	0.46	0.39	0.0	260	8	166	2.0	7
06-0355	9292	12755	43.10	18.60	20.00	0.54	1.20	0.22	1.06	0.96	0.0	750	11	220	2.0	23
06-0356	9292	12755	49.90	19.80	10.50	0.85	0.81	0.29	1.35	0.65	0.0	540	6	220	2.0	11
06-0363	9302	12755	41.60	16.90	24.30	0.51	0.62	0.16	0.48	0.90	0.0	38	30	379	5.0	10
06-0359	9303	12755	13.90	4.04	2.56	1.47	40.30	0.19	0.22	0.14	0.0	8	10	123	10.0	3
06-0360	9303	12755	56.30	17.70	6.95	0.74	2.07	0.23	0.61	0.46	0.0	6	20	168	2.0	10
06-0361	9303	12755	59.20	15.80	10.20	0.46	1.40	0.22	0.65	0.72	0.0	10	21	392	2.0	20
06-0362	9303	12755	50.00	13.20	4.62	0.97	11.50	0.18	0.57	0.36	0.0	1	17	149	2.0	8
06-0364	9303	12755	21.70	14.50	53.30	0.22	0.23	0.09	0.18	1.41	0.0	57	6	95	2.0	9
06-0365	9303	12755	29.70	16.70	42.00	0.27	0.30	0.13	0.24	1.06	0.0	130	4	150	2.0	8
06-0379	9303	12755	47.60	17.60	18.50	0.81	1.38	0.38	0.86	0.72	0.0	630	15	303	2.0	6
06-0142	9325	12500	28.40	14.70	39.50	0.19	0.19	0.09	0.35	1.07	0.1	54	4	0	1.0	14
06-0131	9330	12600	24.20	13.30	52.24	0.15	0.19	0.02	0.09	1.20	0.1	78	1	226	5.0	16
06-0160	9360	12300	48.00	17.69	18.94	0.35	0.67	0.24	0.37	0.62	0.1	1340	130	411	11.0	80
06-0143	9380	12500	35.70	15.69	37.82	0.18	0.14	0.03	0.24	1.07	0.1	440	430	215	6.0	16
06-0144	9440	12500	49.40	16.47	18.45	0.51	1.58	0.17	0.60	0.78	0.1	34	24	195	9.0	10
06-0062	8835	11385	17.20	13.82	61.06	0.06	0.09	0.01	0.03	1.27	0.3	23	1	1	0.5	17
06-0078	8835	11485	13.50	8.31	70.59	0.07	0.08	0.09	0.11	1.52	0.1	36	2	20	3.0	34
06-0109	8865	11100	19.90	18.25	52.04	0.05	0.05	0.01	0.08	1.32	0.4	165	44	20	5.0	10
06-0061	8885	11385	15.70	10.83	66.49	0.05	0.08	0.01	0.02	1.33	0.3	22	1	14	1.0	40
06-0077	8885	11485	15.80	9.46	68.16	0.06	0.10	0.06	0.05	1.02	0.1	22	1	20	5.0	14
06-0060	8935	11385	16.80	13.46	60.71	0.07	0.11	0.01	0.03	1.24	0.3	47	40	16	1.0	37
06-0076	8935	11485	15.30	9.87	67.49	0.06	0.10	0.08	0.08	1.00	0.1	26	1	20	2.0	22

Sample	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	V	W	Zn	Zr
06-0225	920	42	38	0	280	16	11	44	40	28	6	940	4	64	280
06-0215	430	78	32	0	170	3	9	72	18	12	1	520	4	56	200
06-0216	450	70	32	0	165	3	9	70	16	10	2	520	4	50	220
06-0217	310	54	24	0	210	1	8	76	17	10	1	310	4	48	200
06-0155	520	48	28	0	135	3	9	60	18	10	1	410	8	48	200
06-0150	1000	80	30	0	260	20	11	80	19	16	1	920	12	60	260
06-0151	300	62	24	0	195	2	9	66	15	6	1	250	2	54	180
06-0220	1050	68	26	0	180	26	7	56	22	10	7	860	16	56	260
06-0149	820	62	32	0	185	19	8	50	20	8	3	840	2	48	220
06-0742	659	64	31	0	271	5	4	52	10	5	1	675	4	38	167
06-0249	580	64	26	0	420	19	10	92	18	13	1	580	14	54	240
06-0734	149	61	14	0	356	0	7	40	5	5	1	214	1	37	72
06-0745	415	66	22	0	402	8	4	75	2	4	1	449	5	41	94
06-0736	109	92	17	0	285	0	9	41	30	10	1	113	2	50	67
06-0244	363	29	50	0	162	2	7	84	21	3	1	291	2	24	196
06-0738	463	74	21	0	450	5	6	60	20	15	1	494	6	50	100
06-0727	122	44	15	0	245	0	7	11	2	20	1	347	0	15	101
06-0723	155	100	9	0	343	0	3	15	25	100	1	266	2	50	122
06-0729	212	83	23	0	244	0	7	14	15	20	1	489	0	21	122
06-0730	223	71	22	0	310	1	11	23	10	25	5	693	0	22	117
06-0732	216	86	32	0	281	0	7	13	40	65	1	646	1	28	124
06-0728	157	100	12	0	349	0	1	9	40	160	5	348	1	60	111
06-1352	365	270	34	1	205	2	6	80	620	150	3	1280	2	34	100
06-1344	716	48	54	1	243	5	10	64	86	11	4	935	2	13	190
06-1345	701	140	32	1	280	44	8	150	26	1	1	660	15	135	111
06-0164	840	100	22	0	390	26	7	92	40	20	5	640	18	92	220
06-0123	860	68	38	0	230	5	7	50	24	15	2	920	10	50	300
06-0158	920	80	44	0	165	11	8	46	180	105	4	820	14	72	260
06-0293I	679	63	38	0	460	1	3	86	15	8	1	826	3	31	118
06-0293II	344	47	26	0	391	1	1	83	15	1	1	409	0	29	96
06-0294	227	52	31	0	234	0	12	74	10	8	1	225	0	40	97
06-0295	116	47	23	0	296	0	1	65	5	8	1	116	0	39	56
06-0305	280	54	25	0	223	0	9	55	30	1	1	290	0	39	83
06-0297	800	62	41	0	240	0	5	57	10	7	4	951	8	28	84
06-0298	328	50	29	0	358	0	3	61	30	4	1	359	1	34	126
06-0310I	798	58	39	0	267	0	9	48	15	1	1	777	6	29	117
06-0310II	589	53	26	0	292	1	4	50	30	1	1	550	4	31	111
06-0310III	736	60	31	0	278	1	6	48	15	4	1	755	4	32	103
06-0313	277	54	28	0	145	0	8	55	10	6	1	270	0	37	68
06-0314	659	71	35	0	252	0	3	53	15	6	1	676	5	32	91
06-0315	355	52	33	0	222	0	5	55	10	4	3	372	0	38	88
06-0316	558	63	42	0	447	1	4	58	20	10	1	642	4	33	99
06-0322	209	110	31	0	142	0	7	46	400	55	1	427	0	40	88
06-0323I	596	73	39	0	284	0	8	41	60	15	1	657	0	32	138
06-0323II	731	81	40	0	265	0	6	38	700	440	6	748	3	38	110
06-0326	190	68	27	0	160	0	7	40	145	20	1	263	0	34	99
06-0327	202	72	28	0	148	0	4	46	225	30	1	298	0	38	105
06-0349	328	40	18	0	325	0	7	46	10	6	1	338	0	32	105
06-0350	410	45	28	0	4220	0	8	60	10	6	1	434	8	35	137
06-0352	944	54	45	0	227	2	7	51	20	8	1	1040	4	26	123
06-0354	142	36	14	0	998	1	3	38	25	1	1	121	0	37	59
06-0355	359	64	35	0	311	1	6	61	40	9	1	415	0	36	121
06-0356	161	60	27	0	217	1	7	62	25	6	1	197	0	40	133
06-0363	458	57	35	0	404	1	11	60	10	1	1	513	2	34	108
06-0359	53	18	2	0	709	0	1	20	20	1	1	55	0	25	22
06-0360	133	54	20	0	283	0	6	75	5	1	1	124	0	40	66
06-0361	238	53	16	0	453	1	7	68	2	1	1	231	0	31	94
06-0362	85	34	16	0	178	0	4	47	2	1	1	78	0	31	57
06-0364	907	63	50	0	283	2	8	50	20	9	1	1040	4	26	133
06-0365	776	68	49	0	274	1	11	50	30	10	1	790	0	33	128
06-0379	280	54	25	0	186	1	7	40	380	25	1	329	0	35	95
06-0142	800	82	24	0	330	7	5	52	19	16	3	880	6	58	280
06-0131	980	68	32	0	220	4	6	52	28	16	6	940	10	52	190
06-0160	260	82	13	0	500	1	3	90	72	15	3	260	2	490	120
06-0143	780	66	36	0	195	2	6	62	340	16	1	740	12	84	130
06-0144	390	86	24	0	190	2	8	58	15	13	1	330	8	60	180
06-0062	813	93	29	0	226	19	5	39	28	1	2	1287	8	39	125
06-0078	440	60	19	0	580	14	8	64	24	17	1	640	24	92	260
06-0109	410	62	24	0	210	6	3	40	60	20	2	800	2	38	300
06-0061	772	90	26	0	269	24	6	47	25	1	2	1121	8	48	118
06-0077	580	78	24	0	260	36	7	36	19	11	3	700	14	60	220
06-0060	932	123	32	0	269	22	5	39	23	1	5	1263	12	29	114
06-0076	600	80	24	0	240	22	4	46	20	9	7	840	4	82	220

Sample	East	North	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	Ag	As	Au	Ba	Bi	Co
06-0086	8940	11700	18.30	11.05	62.79	0.05	0.09	0.05	0.01	1.02	0.1	28	1	20	4.0	12
06-0214	8950	12600	14.50	12.52	65.97	0.05	0.08	0.01	0.02	1.71	1.0	39	1	12	0.5	53
06-0108	8965	11100	18.50	19.23	49.24	0.06	0.08	0.03	0.11	1.23	0.6	180	660	20	4.0	8
06-0098	8985	11295	14.30	12.85	64.97	0.05	0.07	0.01	0.01	1.05	0.1	150	6	20	14.0	8
06-0059	8985	11385	15.80	10.71	67.29	0.05	0.10	0.01	0.02	1.55	0.2	16	2	15	2.0	32
06-0075	8985	11485	16.20	10.66	65.53	0.06	0.07	0.07	0.06	0.87	0.1	36	5	20	13.0	14
06-0139	9010	12600	16.30	14.47	59.98	0.05	0.07	0.01	0.02	1.90	0.5	44	3	20	1.0	25
06-0128	9015	12700	15.90	14.31	60.46	0.04	0.05	0.01	0.01	1.49	0.1	52	1	20	3.0	14
06-0116	9015	12900	16.50	14.46	59.79	0.04	0.06	0.01	0.01	1.25	0.1	50	1	20	1.0	10
06-0097	9035	11295	15.50	12.39	63.81	0.05	0.06	0.01	0.01	1.00	0.1	170	12	20	2.0	10
06-0058	9035	11385	18.10	10.47	64.59	0.05	0.09	0.01	0.03	1.93	0.3	14	1	15	1.0	22
06-0074	9035	11485	12.30	8.91	71.64	0.05	0.08	0.08	0.05	0.75	0.1	72	3	20	1.0	20
06-0085	9050	11700	20.10	13.89	56.51	0.05	0.05	0.09	0.03	1.02	0.1	42	2	20	3.0	10
06-0137	9055	12600	15.90	14.87	58.89	0.05	0.07	0.01	0.02	2.66	0.2	28	2	22	4.0	25
06-0107	9065	11100	16.30	14.02	56.48	0.09	0.10	0.04	0.14	1.12	0.1	120	140	158	11.0	22
06-0127	9065	12700	15.30	12.15	64.10	0.04	0.05	0.01	0.01	1.57	0.1	52	1	20	1.0	14
06-0096	9085	11295	19.20	13.41	59.80	0.04	0.05	0.02	0.01	1.02	0.1	96	9	20	5.0	8
06-0057	9085	11385	18.20	10.88	64.15	0.05	0.09	0.01	0.04	1.23	0.4	24	1	13	1.0	22
06-0073	9085	11485	10.20	7.20	76.06	0.06	0.08	0.11	0.05	1.03	0.1	38	5	20	2.0	24
06-0138	9105	12600	18.60	16.88	53.75	0.06	0.06	0.01	0.02	1.65	0.3	45	3	10	3.0	15
06-0099	9115	11100	15.10	12.75	62.29	0.04	0.09	0.01	0.01	1.12	0.1	250	17	20	1.0	12
06-0126	9115	12700	18.10	15.91	55.80	0.04	0.07	0.01	0.01	1.10	0.1	52	1	20	3.0	12
06-0115	9115	12900	14.80	12.57	64.31	0.04	0.06	0.01	0.01	1.80	0.1	36	1	20	2.0	4
06-0095	9135	11300	31.80	11.93	45.64	0.15	0.73	0.08	0.12	1.07	0.1	510	120	431	8.0	10
06-0050	9135	11385	22.20	7.42	65.59	0.06	0.09	0.01	0.03	1.06	0.1	75	3	18	2.0	39
06-0072	9135	11485	15.00	7.81	70.88	0.06	0.10	0.06	0.03	1.15	0.1	125	11	20	2.0	16
06-0083	9150	11700	20.80	18.79	46.24	0.08	0.76	0.05	0.01	1.33	0.1	34	12	20	8.0	12
06-0084	9150	11700	21.10	7.23	64.41	0.06	0.06	0.05	0.01	0.73	0.1	18	2	20	3.0	10
06-0136	9155	12600	15.80	13.50	61.58	0.05	0.08	0.01	0.02	1.56	0.1	20	3	13	0.5	30
06-0087	9160	11290	22.90	15.53	51.14	0.06	0.07	0.03	0.01	1.37	0.1	19	12	20	10.0	14
06-0047	9160	11385	19.00	7.41	67.65	0.07	0.10	0.01	0.05	0.78	0.4	778	53	12	0.5	26
06-0071	9160	11485	8.20	6.55	77.03	0.09	0.14	0.16	0.03	0.70	0.1	1340	230	20	1.0	12
06-0125	9165	12700	14.80	13.51	62.05	0.03	0.06	0.01	0.01	2.00	0.1	34	1	20	1.0	12
06-0165	9175	12300	18.60	12.55	61.44	0.07	0.05	0.01	0.11	1.38	0.1	54	1	89	1.0	12
06-0100	9180	11100	10.00	8.55	74.55	0.06	0.12	0.01	0.06	0.78	0.1	750	8	20	4.0	6
06-0088	9185	11290	18.70	10.66	63.01	0.04	0.08	0.03	0.01	0.85	0.1	32	18	20	1.0	6
06-0049	9185	11385	10.20	5.63	77.31	0.08	0.11	0.01	0.11	0.57	0.8	2035	1210	34	2.0	40
06-0069	9185	11485	6.00	5.45	77.78	0.08	0.11	0.01	0.04	0.71	0.9	2379	840	12	0.5	46
06-0148	9195	12500	18.10	16.02	54.21	0.04	0.05	0.01	0.01	1.10	0.1	44	65	20	4.0	12
06-0080	9200	11700	22.90	18.90	44.01	0.10	0.09	0.11	0.12	1.38	0.1	64	26	197	1.0	14
06-0135	9205	12605	14.70	13.05	63.75	0.06	0.08	0.01	0.02	1.88	0.2	59	7	20	4.0	27
06-0124	9215	12700	15.40	13.88	61.34	0.02	0.06	0.01	0.01	1.32	0.1	74	1	20	1.0	8
06-0114	9215	12900	16.40	14.53	59.46	0.05	0.08	0.01	0.01	1.47	0.1	76	1	20	11.0	8
06-0079	9225	11700	21.80	18.45	45.46	0.09	0.07	0.09	0.06	1.33	0.1	62	10	79	4.0	14
06-0089	9235	11295	21.20	11.35	59.56	0.04	0.07	0.04	0.01	2.15	0.1	42	22	20	2.0	6
06-0051	9235	11385	8.20	7.05	77.50	0.09	0.12	0.02	0.12	0.85	0.8	2058	130	39	0.5	48
06-0068	9235	11485	5.70	3.53	82.36	0.12	0.26	0.02	0.07	0.25	0.9	3282	2480	139	0.5	37
06-0104	9240	11100	14.20	10.03	68.62	0.06	0.07	0.01	0.07	0.92	0.1	380	9	20	11.0	10
06-0147	9240	12500	15.90	13.75	60.62	0.06	0.07	0.02	0.13	1.75	0.1	42	55	20	14.0	12
06-0134	9255	12610	18.00	15.75	57.03	0.05	0.07	0.01	0.02	1.29	0.2	43	3	1	1.0	23
06-0113	9265	12900	16.30	13.93	60.63	0.04	0.18	0.01	0.01	1.23	0.1	52	1	20	1.0	16
06-0133	9268	12590	17.80	13.61	59.29	0.07	0.07	0.01	0.04	1.47	0.2	28	4	106	1.0	32
06-0081	9280	11700	25.10	22.39	36.69	0.10	0.07	0.09	0.05	1.43	0.1	80	38	119	3.0	16
06-0245	9280	11875	20.00	13.30	47.10	0.07	0.06	0.01	0.14	1.12	0.1	26	1	0	6.0	20
06-0132	9280	12615	15.20	13.64	62.84	0.06	0.08	0.01	0.02	1.41	0.5	38	4	16	0.5	14
06-0090	9285	11295	13.20	9.17	69.95	0.05	0.10	0.04	0.01	1.89	0.1	560	50	20	3.0	6
06-0052	9285	11385	8.40	6.60	79.35	0.08	0.13	0.01	0.05	0.91	0.9	1672	150	18	0.5	33
06-0067	9285	11485	5.90	4.42	83.91	0.08	0.13	0.01	0.13	0.38	0.2	2514	1550	27	0.5	49
06-0122	9290	12700	25.20	14.21	49.16	0.23	0.24	0.08	0.24	1.35	0.1	110	1	263	1.0	14
06-0110	9290	12900	13.90	12.16	63.58	0.06	0.15	0.01	0.05	1.92	0.1	46	1	20	8.0	18
06-0105	9320	11100	19.40	14.00	57.62	0.06	0.12	0.01	0.08	1.02	0.1	145	1	20	1.0	8
06-0091	9335	11305	11.30	9.20	73.64	0.03	0.06	0.02	0.01	0.82	0.1	970	290	20	1.0	12
06-0053	9335	11385	10.00	7.91	76.58	0.08	0.12	0.01	0.03	0.91	0.6	967	36	28	0.5	19
06-0066	9335	11485	14.70	7.97	71.23	0.05	0.09	0.01	0.04	0.89	0.1	509	200	55	2.0	12
06-0121	9340	12700	20.00	17.27	51.68	0.06	0.05	0.02	0.10	1.40	0.1	68	2	20	2.0	16
06-0111	9340	12900	19.20	17.67	49.95	0.04	0.05	0.01	0.01	1.23	0.1	160	26	20	7.0	20
06-0082	9375	11700	23.80	20.05	41.38	0.09	0.07	0.05	0.01	1.37	0.1	52	20	148	6.0	16
06-0130	9380	12600	19.10	17.48	52.61	0.05	0.07	0.01	0.02	1.46	0.3	64	9	1	2.0	16
06-0092	9385	11295	13.80	12.10	66.97	0.04	0.08	0.02	0.01	1.20	0.1	450	11	20	6.0	8
06-0054	9385	11385	16.40	6.04	73.54	0.06	0.10	0.01	0.03	0.81	0.5	581	100	26	0.5	33
06-0065	9385	11485	17.70	9.54	65.01	0.05	0.07	0.01	0.04	1.07	0.1	364	26	19	2.0	26
06-0120	9390	12700	18.00	16.64	53.34	0.06	0.07	0.00	0.05	1.10	0.1	78	4	20	2.0	16
06-0106	9420	11100	16.40	13.45	61.47	0.05	0.05	0.01	0.08	1.13	0.1	42	1	20	1.0	16

Sample	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	V	W	Zn	Zr
06-0086	600	88	30	0	185	60	5	22	26	8	5	940	14	48	190
06-0214	684	86	38	0	371	1	4	27	24	1	5	1395	40	37	144
06-0108	380	84	28	0	120	2	4	32	68	22	7	940	4	32	300
06-0098	390	64	22	0	270	12	4	22	60	17	1	980	16	64	170
06-0059	683	98	26	0	296	24	6	39	21	2	4	1305	5	31	126
06-0075	720	70	22	0	200	34	5	30	22	11	3	800	4	60	200
06-0139	940	96	43	0	268	14	4	25	24	4	5	1663	2	28	178
06-0128	700	84	34	0	155	4	5	30	20	8	1	1050	10	42	200
06-0116	780	70	36	0	195	5	5	32	22	15	2	1100	2	30	220
06-0097	420	60	19	0	320	14	4	32	50	18	9	860	4	66	220
06-0058	725	114	23	0	410	26	5	35	20	3	1	1298	5	42	126
06-0074	430	86	22	0	280	32	3	42	24	6	1	700	10	84	190
06-0085	700	86	30	0	170	28	5	28	19	8	5	1100	8	30	180
06-0137	953	114	43	0	276	29	7	42	22	1	4	1500	2	21	211
06-0107	540	135	22	0	240	3	1	38	92	26	8	640	16	280	190
06-0127	1200	42	38	0	6	7	5	38	24	5	5	1150	2	40	260
06-0096	760	62	32	0	220	26	3	32	30	13	8	1100	8	50	160
06-0057	855	95	25	0	311	20	4	37	20	5	3	1104	8	41	112
06-0073	400	105	14	0	300	20	4	44	17	8	6	660	20	82	220
06-0138	1150	128	33	0	231	3	3	41	20	5	4	1531	47	28	157
06-0099	240	430	17	0	260	2	4	26	86	14	10	460	10	100	60
06-0126	880	88	34	0	165	2	5	36	19	13	4	1250	16	40	220
06-0115	740	19	44	0	125	6	7	12	26	17	9	1200	14	14	240
06-0095	490	86	20	0	280	28	5	38	92	14	1	660	12	92	140
06-0050	537	97	17	0	347	28	3	43	22	2	3	973	8	55	95
06-0072	400	62	18	0	320	26	7	32	32	18	6	680	2	50	200
06-0083	600	185	34	0	98	19	5	46	16	10	1	880	4	32	170
06-0084	450	80	13	0	130	18	3	18	18	11	1	600	24	60	120
06-0136	981	105	33	0	269	6	1	54	20	1	3	1548	5	45	145
06-0087	640	145	30	0	170	36	9	64	28	10	1	900	14	38	180
06-0047	375	98	18	0	246	9	1	19	54	42	3	683	5	61	68
06-0071	280	140	10	0	210	6	2	16	78	94	5	540	2	96	150
06-0125	820	76	36	0	200	6	8	28	28	10	10	1100	22	32	200
06-0165	1450	56	36	0	175	32	8	48	32	15	5	1100	28	48	280
06-0100	250	66	18	0	240	6	2	16	160	74	11	390	6	100	140
06-0088	430	84	16	0	195	17	5	16	22	13	5	780	14	62	150
06-0049	282	145	9	0	248	3	3	14	358	209	12	422	2	121	58
06-0069	259	153	4	0	246	1	3	19	85	112	8	470	2	146	41
06-0148	800	140	32	0	135	10	4	42	16	9	3	920	10	64	150
06-0080	640	180	36	0	155	17	5	48	12	15	5	880	4	38	200
06-0135	1194	108	46	0	215	13	8	34	25	1	4	1507	22	25	153
06-0124	780	80	30	0	185	3	4	34	20	11	8	1050	2	40	180
06-0114	820	82	38	0	170	5	7	32	22	14	4	1050	14	30	220
06-0079	680	200	30	0	135	18	6	60	20	5	1	1150	20	54	180
06-0089	520	76	24	0	210	19	7	22	19	8	7	800	2	34	220
06-0051	261	103	19	0	297	4	5	21	137	154	12	437	2	106	64
06-0068	134	283	6	0	729	1	1	20	373	514	12	200	2	159	37
06-0104	350	72	12	0	240	24	6	18	62	17	1	660	10	52	190
06-0147	760	86	36	0	180	11	6	26	34	14	12	1300	10	38	260
06-0134	984	137	36	0	237	4	1	39	21	2	4	1387	2	23	146
06-0113	900	84	40	0	180	2	7	48	22	20	2	1050	8	54	200
06-0133	1008	129	31	0	223	4	1	61	24	3	5	1397	2	45	132
06-0081	470	210	36	0	140	17	6	64	1	15	1	840	6	40	190
	900	94	26	0	430	28	6	58	24	5	1	880	10	68	240
06-0132	1135	87	34	0	262	3	1	43	27	2	4	1322	2	38	145
06-0090	330	60	18	0	320	66	7	18	96	140	19	820	24	58	200
06-0052	250	106	9	0	322	4	3	1	270	164	12	423	2	101	71
06-0067	292	110	8	0	296	19	1	10	209	264	6	433	2	99	55
06-0122	900	62	38	0	200	5	7	58	26	18	6	920	8	44	240
06-0110	1300	82	38	0	300	5	7	40	24	13	1	1300	10	54	240
06-0105	560	88	24	0	175	20	5	28	42	16	1	880	14	46	240
06-0091	350	68	14	0	350	12	4	20	105	92	1	580	16	66	80
06-0053	359	99	15	0	302	8	1	24	108	104	5	623	14	76	73
06-0066	472	80	18	0	240	24	1	18	79	29	3	896	2	36	88
06-0121	960	115	44	0	155	4	5	60	30	10	3	1150	10	66	260
06-0111	840	120	40	0	180	3	4	58	19	11	3	1050	24	82	120
06-0082	740	220	36	0	120	22	7	56	4	17	1	840	12	46	140
06-0130	993	141	41	0	219	3	4	41	24	1	4	1406	5	31	151
06-0092	480	58	22	0	290	28	4	32	60	54	1	800	6	56	150
06-0054	374	91	10	0	335	12	4	22	49	76	7	646	2	60	97
06-0065	618	151	22	0	330	24	4	42	26	22	5	996	10	55	93
06-0120	760	130	36	0	130	3	4	48	12	16	2	110	22	44	220
06-0106	620	92	28	0	220	74	5	34	20	12	5	940	36	54	220

Sample	East	North	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	Ag	As	Au	Ba	Bi	Co
06-0129	9430	12600	18.20	16.44	54.39	0.06	0.09	0.01	0.02	1.24	0.3	135	54	21	0.5	23
06-0093	9435	11295	15.60	12.89	64.19	0.04	0.07	0.04	0.01	0.92	0.1	300	13	20	2.0	10
06-0055	9435	11385	16.30	10.15	65.96	0.06	0.08	0.01	0.02	1.70	0.3	134	5	85	1.0	30
06-0064	9435	11485	21.30	8.62	63.19	0.05	0.07	0.01	0.02	0.83	0.1	67	21	15	0.5	61
06-0163	9440	12300	21.80	17.48	48.30	0.05	0.06	0.01	0.02	1.22	0.1	200	1	20	3.0	12
06-0119	9440	12700	20.00	18.62	48.94	0.07	0.08	0.02	0.09	1.07	0.1	150	22	20	2.0	12
06-0112	9440	12900	21.50	19.44	44.72	0.06	0.04	0.01	0.01	1.12	0.1	340	19	20	7.0	12
06-0212	9480	12600	21.60	20.26	44.24	0.07	0.08	0.01	0.02	1.23	0.7	134	17	18	2.0	36
06-0094	9485	11295	18.00	16.43	55.26	0.04	0.04	0.03	0.01	1.17	0.1	94	9	20	8.0	12
06-0056	9485	11385	21.20	11.83	58.90	0.05	0.07	0.01	0.03	1.32	0.2	31	3	17	1.0	34
06-0063	9485	11485	25.70	9.07	57.84	0.05	0.06	0.01	0.03	0.87	0.2	21	4	10	1.0	51
06-0145	9490	12500	21.10	18.77	48.01	0.06	0.07	0.01	0.07	0.97	0.1	185	3	20	7.0	16
06-0118	9490	12700	21.20	16.81	49.80	0.06	0.07	0.01	0.03	0.98	0.1	200	3	20	6.0	18
06-0213	9530	12600	22.20	20.85	42.86	0.07	0.06	0.02	0.02	1.43	0.8	197	75	29	1.0	15
06-0219	9540	12300	20.80	18.98	46.93	0.06	0.05	0.01	0.04	0.93	0.1	70	1	0	7.0	44
06-0146	9540	12500	19.70	18.63	48.01	0.06	0.09	0.01	0.07	1.02	0.1	190	7	20	13.0	16
06-0117	9540	12700	22.00	19.01	45.13	0.07	0.06	0.01	0.04	1.13	0.1	135	13	83	1.0	16
06-0222	9550	12900	21.80	17.85	46.64	0.06	0.06	0.01	0.05	0.92	0.1	115	1	0	6.0	20
06-0218	9800	12300	18.20	21.15	45.02	0.06	0.07	0.01	0.04	1.02	0.1	120	1	0	1.0	14
06-1397	10000	12700	26.10	12.10	55.50	0.04	0.05	0.02	0.05	0.84	0.3	62	2	38	2.0	78
06-01656	10000	12900	17.06	10.62	68.12	0.07	0.03	0.00	0.02	0.92	1.0	45	5	11	0.0	41
06-01657	9800	12800	17.43	9.89	67.91	0.05	0.03	0.01	0.02	0.92	0.0	96	6	11	1.0	53
06-01658	9600	12800	18.28	10.24	66.67	0.09	0.02	0.04	0.04	0.93	1.0	70	6	26	0.0	36
06-01659	9500	12800	17.22	11.45	64.27	0.07	0.04	0.01	0.03	1.22	0.0	113	7	68	1.0	41
06-01660	9400	12800	16.22	11.93	66.51	0.09	0.04	0.04	0.03	1.39	0.0	79	5	39	0.0	31
06-01661	9800	12600	16.72	11.00	68.06	0.08	0.02	0.01	0.02	1.29	0.0	56	6	24	1.0	34
06-01662	10000	12500	16.64	10.85	68.08	0.08	0.02	0.00	0.02	1.19	0.0	59	6	20	2.0	32
06-01663	9800	12400	17.14	10.99	66.52	0.09	0.01	0.01	0.03	1.12	0.0	49	6	25	5.0	36
06-01664	8900	11200	11.66	11.85	72.37	0.07	0.04	0.03	0.02	2.32	1.0	100	15	41	6.0	7
06-01665	9000	11200	15.17	13.84	62.04	0.06	0.05	0.01	0.01	1.55	2.0	203	144	25	2.0	14
06-01666	9100	11200	14.01	12.56	66.71	0.12	0.16	0.00	0.02	1.43	5.0	160	24	37	1.0	16
06-01667	9200	11200	18.08	11.66	65.28	0.07	0.07	0.06	0.03	1.38	0.0	76	5	36	6.0	11
06-01668	9300	11200	17.10	10.52	67.90	0.05	0.03	0.01	0.02	1.66	0.0	37	6	29	2.0	12
06-01669	9400	11200	16.83	10.73	68.44	0.09	0.03	0.01	0.02	1.51	0.0	44	5	32	6.0	15
06-01670	9500	11100	18.00	8.99	69.17	0.06	0.02	0.01	0.02	1.40	4.0	32	5	21	6.0	19
06-01671	9500	11200	16.67	10.60	68.28	0.07	0.04	0.02	0.04	1.38	0.0	169	6	26	4.0	19
06-01672	9600	11100	18.11	11.92	72.80	0.08	0.04	0.03	0.03	1.46	0.0	85	6	20	10.0	14
06-01673	9600	11200	17.49	9.42	69.81	0.09	0.04	0.01	0.03	1.15	3.0	158	9	6	0.0	15
06-01674	9800	11100	17.23	10.56	68.07	0.06	0.03	0.02	0.03	1.46	3.0	90	6	32	3.0	13
06-01675	9400	12500	14.54	12.37	68.96	0.07	0.03	0.01	0.02	1.67	1.0	64	6	28	6.0	14
06-01676	9400	12400	14.62	11.95	68.85	0.07	0.04	0.01	0.03	1.73	0.0	63	6	19	4.0	13
06-01677	9400	12300	15.05	11.83	67.90	0.07	0.05	0.03	0.04	1.52	3.0	178	28	42	0.0	16
06-01678	9400	12200	16.43	14.03	63.36	0.07	0.02	0.01	0.03	1.31	6.0	260	218	42	0.0	19
06-01679	9500	12200	16.00	12.11	66.70	0.05	0.03	0.02	0.03	1.57	3.0	90	5	29	4.0	14
06-01680	9400	12100	16.96	12.35	66.03	0.06	0.02	0.01	0.03	1.56	0.0	35	5	38	2.0	14
06-01681	9600	12100	17.18	12.89	63.79	0.08	0.03	0.02	0.08	1.46	1.0	110	7	39	4.0	23
06-01682	9400	12000	15.32	11.67	68.66	0.08	0.02	0.02	0.03	1.52	0.0	40	6	30	1.0	16
06-01683	9500	12000	14.95	11.37	68.71	0.08	0.03	0.02	0.02	1.63	1.0	23	6	45	5.0	12
06-01684	9400	11900	17.74	11.63	65.38	0.07	0.03	0.00	0.03	1.47	0.0	28	6	22	4.0	11
06-01685	9600	11900	14.62	11.32	69.86	0.05	0.03	0.01	0.02	1.55	0.0	22	6	111	6.0	16
06-01686	9300	11800	15.56	11.76	67.94	0.06	0.03	0.01	0.03	1.36	7.0	23	5	29	0.0	14
06-01687	9400	11800	14.49	11.04	70.63	0.07	0.02	0.01	0.03	1.60	0.0	26	5	27	7.0	12
06-01688	9500	11800	15.05	11.61	68.35	0.06	0.02	0.02	0.02	1.50	0.0	29	5	32	0.0	13
06-01689	9300	11600	18.49	9.62	66.65	0.08	0.05	0.00	0.02	1.29	2.0	154	7	16	0.0	37
06-01690	9400	11600	20.78	10.12	63.33	0.07	0.04	0.01	0.03	1.29	3.0	18	5	29	4.0	20
06-01693	10000	12300	16.64	10.57	68.74	0.06	0.02	0.01	0.02	1.15	2.0	53	5	19	2.0	34
06-01694	9800	12200	16.54	12.75	64.21	0.06	0.04	0.01	0.03	1.44	0.0	105	6	36	0.0	31
06-01695	10000	12100	14.72	10.61	71.48	0.08	0.02	0.01	0.02	1.18	0.0	65	5	25	2.0	35
06-01696	9800	12000	16.17	12.32	65.80	0.09	0.02	0.00	0.03	1.43	2.0	101	6	29	1.0	22
06-01697	10000	11900	19.10	12.90	61.33	0.08	0.05	0.03	0.05	1.14	1.0	213	11	58	0.0	31
06-01698	9800	11800	19.71	12.07	61.67	0.07	0.04	0.01	0.03	1.49	2.0	22	5	38	1.0	19
06-01699	10000	11200	18.15	11.45	65.03	0.07	0.01	0.02	0.02	1.51	0.0	44	6	19	6.0	15
06-01700	9800	11300	19.39	11.87	62.70	0.06	0.02	0.00	0.02	1.36	0.0	63	5	6	6.0	18
06-01701	10000	11400	18.52	10.26	65.80	0.05	0.02	0.01	0.02	1.36	0.0	17	5	21	4.0	17
06-01702	9800	11500	18.65	11.50	64.36	0.05	0.03	0.01	0.03	1.39	0.0	82	30	22	1.0	15
06-01703	9600	11400	19.87	10.52	64.55	0.05	0.03	0.01	0.03	1.38	0.0	31	5	25	1.0	17

Sample	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	V	W	Zn	Zr
06-0129	1491	121	41	0	272	3	9	46	27	4	5	1546	2	34	175
06-0093	600	58	28	0	250	30	3	22	52	40	6	820	8	40	130
06-0055	677	104	25	0	238	35	1	45	27	8	5	1149	2	53	131
06-0064	639	122	18	0	423	22	1	63	17	1	3	880	8	90	84
06-0163	1350	135	34	0	100	4	4	60	22	13	5	1100	2	62	200
06-0119	1100	135	46	0	150	3	4	64	15	11	4	1150	4	54	220
06-0112	800	210	34	0	98	2	4	50	34	19	9	980	2	34	140
06-0212	1630	225	39	0	311	1	1	98	21	4	6	1541	2	46	127
06-0094	900	105	40	0	130	36	5	56	20	15	1	1100	12	36	160
06-0056	709	116	28	0	284	43	5	32	23	2	4	1186	2	50	122
06-0063	597	141	17	0	275	18	4	43	11	1	3	761	2	66	88
06-0145	800	150	36	0	140	4	4	48	22	11	3	980	10	48	200
06-0118	700	190	30	0	165	4	2	72	13	12	4	880	2	58	180
06-0213	955	146	37	0	110	2	4	57	16	7	5	1387	2	26	141
06-0219	1050	165	36	0	66	3	5	66	8	13	12	800	4	40	180
06-0146	1150	160	40	0	105	3	5	56	16	14	9	1050	2	58	200
06-0117	800	190	36	0	135	2	2	66	18	17	13	980	4	52	170
06-0222	840	330	40	0	110	2	3	100	16	16	1	1200	2	74	180
06-0218	720	135	28	0	80	2	4	54	7	14	3	880	2	52	170
06-1397	1380	110	42	1	741	3	6	115	36	6	1	1270	2	86	95
06-01656	860	169	29	1	1020	5	1	99	22	3	3	1409	2	93	85
06-01657	880	167	25	1	894	6	3	100	21	6	4	1357	4	120	83
06-01658	731	205	28	0	733	5	3	110	21	5	4	1296	2	143	86
06-01659	701	177	29	0	559	5	5	82	22	6	3	1366	3	121	101
06-01660	868	174	33	2	496	5	3	71	19	5	3	1356	5	104	117
06-01661	1197	132	30	0	607	6	5	93	24	5	7	1640	4	77	107
06-01662	1247	123	32	0	659	6	3	83	23	5	6	1599	3	71	98
06-01663	1111	163	33	2	724	6	4	103	18	3	7	1574	3	86	100
06-01664	958	68	43	1	361	11	6	42	44	10	5	1759	4	27	186
06-01665	408	127	26	3	442	3	3	28	79	7	4	1282	4	59	114
06-01666	326	137	21	1	494	7	3	33	99	7	2	833	3	105	90
06-01667	749	100	31	1	371	17	5	48	44	5	3	1184	5	54	131
06-01668	735	107	33	0	280	37	6	42	27	3	4	1292	12	40	134
06-01669	788	93	33	0	419	25	6	47	23	3	5	1257	11	56	127
06-01670	597	105	28	1	365	41	6	54	23	2	4	1052	9	64	111
06-01671	713	104	31	2	392	20	5	43	49	24	3	1173	14	68	119
06-01672	813	105	32	0	334	56	9	45	28	8	3	1381	8	60	124
06-01673	603	123	23	1	374	40	6	56	34	16	5	1121	8	85	102
06-01674	912	112	30	1	382	24	10	56	31	10	6	1357	8	63	126
06-01675	1033	102	42	2	271	6	7	56	31	4	6	1545	9	34	140
06-01676	1089	102	40	1	347	6	4	69	34	5	5	1644	7	47	151
06-01677	846	100	40	0	486	5	5	39	32	4	4	1480	5	55	133
06-01678	936	130	34	0	299	11	6	71	53	9	6	1332	3	70	131
06-01679	982	121	36	0	385	7	6	53	29	5	4	1485	3	46	135
06-01680	984	98	35	3	289	24	6	54	27	1	7	1382	10	40	148
06-01681	998	143	35	0	373	9	5	82	30	6	4	1513	5	78	127
06-01682	1007	117	36	2	325	19	4	58	26	2	3	1394	4	56	138
06-01683	863	123	33	0	283	24	6	59	26	1	6	1390	14	41	137
06-01684	1045	100	34	2	308	16	5	38	21	1	5	1361	4	44	138
06-01685	928	105	34	1	365	36	8	60	20	1	4	1442	12	54	133
06-01686	964	127	33	2	274	15	6	65	28	1	5	1370	7	53	123
06-01687	1074	115	34	0	285	31	8	45	24	1	4	1494	10	48	142
06-01688	988	122	32	4	363	28	4	53	25	2	2	1378	8	53	134
06-01689	545	148	25	2	348	48	3	67	23	8	4	1140	10	101	100
06-01690	546	162	30	2	362	17	6	64	21	1	5	1070	8	87	100
06-01693	1144	135	32	0	727	5	7	90	21	5	3	1549	2	88	112
06-01694	877	143	35	1	580	5	7	91	28	7	4	1437	3	74	121
06-01695	1138	125	35	0	836	5	3	83	24	6	4	1583	3	75	99
06-01696	1016	142	37	0	397	6	5	75	30	7	6	1561	3	74	124
06-01697	815	164	32	1	749	5	4	93	74	7	4	1328	2	104	102
06-01698	700	151	33	1	335	31	8	73	15	1	5	1280	6	73	121
06-01699	833	138	36	0	259	27	5	62	25	3	4	1414	8	49	133
06-01700	706	144	30	0	326	32	5	55	19	6	3	1271	9	69	136
06-01701	632	148	28	2	315	31	4	59	15	1	4	1162	8	68	109
06-01702	758	127	31	2	290	34	5	41	29	3	4	1323	11	58	123
06-01703	691	120	31	0	333	37	4	47	24	2	3	1296	12	68	119

APPENDIX 2

TABULATED GEOCHEMISTRY OF THE EMU AREA

Co-ordinates in m
Major Elements in %
Trace Elements in ppm
except Au in ppb

See text for methods

Sample	East	North	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	Ag	As	Au	Ba	Bi	Co
06-0239	8870	14900	30.20	28.90	26.90	0.16	0.12	0.13	0.05	0.90	1.2	69	65	156	0.5	26
06-0240	8940	14900	34.80	25.50	24.50	0.31	0.22	0.32	0.08	0.91	0.1	61	22	21	0.5	26
06-0241	8998	14900	39.80	28.10	15.00	0.41	0.30	0.36	0.07	1.27	0.1	82	3	37	0.5	24
06-1215A	9080	15300	6.50	8.64	76.50	0.04	0.06	0.02	0.05	5.51	0.1	195	6	21	6.0	16
06-1448	9080	16200	37.40	25.70	19.20	0.30	1.46	0.22	0.11	1.26	0.1	165	12	58	4.0	50
06-1215	9100	15300	30.70	10.50	50.20	0.07	0.09	0.04	0.37	3.77	0.1	115	10	104	3.0	22
06-1217	9100	15300	7.20	4.33	63.50	0.08	0.06	0.03	0.05	21.60	0.3	360	23	2842	5.0	22
06-0211	9240	14800	25.40	17.55	43.82	0.20	0.12	0.08	0.16	1.10	0.1	1320	9	0	7.0	14
06-1446	9240	16100	32.80	23.70	32.30	0.18	0.20	0.11	0.10	1.01	0.3	290	250	58	4.0	36
06-0202	9280	15000	21.80	16.49	52.30	0.21	0.34	0.14	0.12	1.45	0.8	394	150	68	0.5	23
06-0201	9335	15000	9.30	22.68	49.12	0.19	0.13	0.26	0.04	3.63	1.1	2972	10	23	0.5	37
06-1211	9345	15055	31.90	25.60	28.00	0.17	0.29	0.15	0.12	1.82	1.7	360	280	36	1.0	48
06-1213	9345	15055	26.70	21.40	41.50	0.17	0.26	0.12	0.08	1.29	0.2	590	350	149	1.0	22
06-1377	9350	15050	27.70	21.50	40.10	0.20	0.28	0.12	0.11	1.14	0.2	610	180	253	9.0	80
06-1378	9350	15050	22.90	28.70	37.00	0.19	0.36	0.15	0.08	1.80	1.7	460	320	65	2.0	90
06-1399	9354	16100	21.30	30.30	31.50	0.16	0.23	0.18	0.16	1.63	0.5	390	280	322	1.0	34
06-1401	9354	16100	19.80	24.60	39.20	0.13	0.31	0.18	0.05	2.15	5.0	590	5880	47	4.0	32
06-0836	9355	15680	38.20	26.10	13.50	1.10	2.69	0.45	0.13	2.00	0.0	210	11	53	2.0	3
06-1275	9356	15075	6.80	31.50	42.90	0.23	1.00	0.10	0.06	3.30	0.2	350	190	46	4.0	98
06-1279	9356	15075	10.20	33.00	37.00	0.16	0.22	0.11	0.06	3.99	0.1	490	560	167	5.0	88
06-0209	9360	14800	16.50	16.32	56.91	0.08	0.05	0.04	0.22	1.17	0.2	1940	360	0	1.0	12
06-1408	9368	16100	12.80	33.60	40.30	0.13	0.21	0.16	0.08	2.22	2.1	480	244	78	1.0	30
06-0185	9381	15200	19.70	14.53	54.63	0.08	0.07	0.02	0.15	0.98	0.1	1280	26	20	1.0	10
06-1283	9386	15065	23.80	20.70	41.50	0.30	0.22	0.24	0.60	1.15	0.1	4300	420	71	7.0	72
06-1284	9386	15065	20.30	16.30	38.10	1.55	5.54	0.28	0.36	0.89	0.5	3650	810	112	4.0	65
06-1286	9386	15065	29.90	19.40	37.30	0.28	0.29	0.40	0.25	1.55	0.1	640	110	93	7.0	68
06-1287	9386	15065	36.80	13.20	13.00	0.43	14.60	0.12	0.16	0.57	0.1	340	190	563	4.0	38
06-1419	9394	16100	21.50	21.80	37.40	0.22	0.66	0.14	0.19	1.24	3.0	1180	490	284	1.0	32
06-1250	9410	16000	38.70	21.30	25.40	0.23	0.12	0.22	0.21	1.02	0.8	360	83	248	4.0	12
06-0208	9415	14800	22.30	18.50	47.48	0.09	0.07	0.05	0.20	0.93	0.1	1740	110	0	6.0	8
06-0195	9415	15242	14.00	13.67	62.16	0.06	0.13	0.01	0.14	0.93	0.3	1940	360	20	10.0	6
06-1201	9420	15045	6.10	25.00	56.90	0.13	0.08	0.08	0.09	2.45	1.5	2300	5	35	1.0	44
06-1281	9420	15075	30.60	24.30	30.60	0.31	0.20	0.32	0.57	0.85	0.1	2500	21	58	5.0	68
06-1282	9420	15075	28.80	19.90	31.60	0.33	4.38	0.30	0.49	1.42	0.1	1080	24	56	6.0	68
06-1204	9430	15040	29.60	21.00	37.30	0.24	0.14	0.27	0.16	1.29	0.1	650	33	537	5.0	30
06-1206	9430	15040	31.80	22.80	27.90	0.28	0.27	0.24	0.16	0.99	0.1	310	890	211	1.0	20
06-1207	9430	15040	54.70	20.70	19.80	0.40	0.68	0.18	0.30	0.72	0.1	165	820	652	1.0	14
06-1436	9437	16100	26.10	22.50	32.60	0.23	0.24	0.17	0.21	0.77	2.0	710	400	531	3.0	36
06-1437	9437	16100	25.30	23.50	38.10	0.19	0.16	0.18	0.16	0.84	3.4	900	1280	68	4.0	30
06-1438	9437	16100	20.40	16.30	49.40	0.30	0.17	0.19	0.12	1.05	1.8	1220	1830	37	2.0	32
06-0204	9440	14800	14.00	10.81	65.32	0.08	0.05	0.01	0.22	0.55	0.2	4050	180	0	2.0	8
06-0191	9520	15400	12.80	11.63	68.19	0.09	0.05	0.03	0.34	0.72	0.1	2600	170	20	1.0	6
06-1237	9520	16000	33.80	18.90	35.40	0.25	0.42	0.15	0.24	0.78	1.7	950	940	215	3.0	82
06-0183	9560	15200	8.10	10.75	69.00	0.18	0.15	0.04	0.40	3.19	0.1	1980	1	20	4.0	14
06-1443	9560	16100	36.00	25.00	23.40	0.21	0.13	0.21	0.14	1.08	0.1	230	28	68	3.0	34
06-0228	9720	15200	23.50	13.56	54.73	0.07	0.04	0.01	0.15	0.78	0.1	180	1	0	2.0	24
06-1391	8500	15600	21.90	12.10	59.90	0.04	0.08	0.02	0.05	1.09	0.1	32	2	15	7.0	68
06-1387	8500	16100	14.80	12.40	67.00	0.04	0.06	0.02	0.05	1.38	0.1	50	2	9	2.0	66
06-0233	9020	15200	24.30	23.95	37.23	0.05	0.02	0.01	0.33	1.08	1.9	200	2	0	8.0	12
06-0232	9080	15200	18.50	16.48	52.36	0.06	0.09	0.01	0.40	1.12	0.1	470	1	0	9.0	10
06-1216	9100	15300	3.40	4.84	78.10	0.05	0.06	0.02	0.05	13.70	0.3	135	1	28	5.0	22
06-0238	9115	15100	27.00	25.31	32.66	0.06	0.22	0.01	0.28	1.38	0.6	195	7	0	2.0	8
06-0231	9160	15200	19.60	15.07	51.99	0.13	0.17	0.01	0.24	1.32	0.1	690	1	0	5.0	12
06-0227	9160	15400	33.60	11.95	43.44	0.21	0.18	0.01	0.23	1.13	0.1	300	1	0	7.0	10
06-0237	9165	15100	23.60	22.54	39.76	0.05	0.00	0.01	0.28	1.38	0.8	340	10	0	1.0	8
06-1390	9200	15775	16.90	15.30	60.30	0.04	0.06	0.02	0.07	0.71	0.2	560	26	19	1.0	60
06-1389	9200	15925	11.80	12.70	69.70	0.05	0.07	0.02	0.05	1.27	0.3	410	25	14	4.0	68
06-1379A	9200	16120	8.50	8.69	78.50	0.05	0.07	0.02	0.05	1.31	0.3	480	5	15	3.0	72
06-1379B	9200	16120	17.10	14.80	61.40	0.04	0.06	0.02	0.05	1.16	0.4	380	4	19	2.0	66
06-1386	9200	16550	14.50	12.90	66.40	0.05	0.07	0.02	0.05	1.50	0.3	530	22	21	5.0	72
06-0178	9225	15100	23.80	22.94	39.00	0.06	0.03	0.01	0.02	1.33	1.0	510	8	20	5.0	6
06-0203	9230	15000	15.50	14.48	62.86	0.07	0.07	0.01	0.05	1.39	0.9	312	5	16	0.5	2
06-0229	9240	15200	22.50	18.05	44.66	0.15	0.46	0.01	0.10	1.45	0.1	860	2	0	8.0	14
06-0230	9240	15200	8.60	7.06	72.71	0.09	0.22	0.01	0.26	0.77	0.1	2150	1	0	1.0	48
06-0177	9275	15100	20.50	21.28	44.68	0.05	0.03	0.01	0.01	1.23	0.8	860	17	20	3.0	6
06-0194	9280	15400	17.70	14.30	54.06	0.21	0.41	0.02	0.11	1.42	0.1	540	13	234	8.0	16
06-0206	9300	14800	21.50	19.35	49.57	0.06	0.07	0.02	0.07	0.72	0.6	1080	600	0	1.0	10
06-0186	9320	15200	10.50	8.84	67.72	0.08	0.07	0.03	0.12	0.87	0.1	1480	14	88	12.0	32
06-0176	9325	15100	20.90	19.78	47.49	0.06	0.10	0.01	0.01	1.32	0.1	760	44	57	5.0	12
06-0193	9336	15400	7.10	5.01	80.53	0.14	0.21	0.01	0.40	0.42	0.1	3150	500	139	1.0	14
06-0166	9375	15090	9.80	35.52	41.76	0.07	0.11	0.01	0.10	1.67	0.4	780	1	60	5.0	8
06-0167	9375	15090	14.00	26.31	41.36	0.07	0.06	0.01	0.07	1.65	2.0	2200	1	42	2.0	12
06-0179	9415	15200	16.90	13.91	59.68	0.06	0.05	0.01	0.12	1.02	0.1	1140	150	20	1.0	8

Sample	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	V	W	Zn	Zr
06-0239	570	118	63	0	70	1	5	122	16	4	4	601	2	2	116
06-0240	618	64	62	0	79	1	4	96	18	2	1	645	2	2	112
06-0241	434	65	64	0	60	2	8	113	14	2	2	449	2	2	179
06-1215A	1282	28	160	1	208	9	18	40	52	19	1	2598	2	22	116
06-1448	484	50	44	1	59	2	10	120	36	16	1	546	4	7	82
06-1215	867	28	90	1	215	5	16	42	32	10	2	1595	4	24	85
06-1217	425	24	150	1	672	13	65	40	32	50	1	6414	15	44	64
06-0211	400	78	38	0	100	2	4	36	54	42	8	920	2	44	170
06-1446	485	40	46	1	103	3	8	88	48	14	2	692	2	6	103
06-0202	1349	54	42	0	169	4	6	55	54	17	2	1560	8	9	159
06-0201	676	32	91	0	305	6	10	74	61	29	2	2765	2	35	227
06-1211	453	38	52	3	168	1	7	70	40	9	4	746	6	16	121
06-1213	767	48	50	2	249	1	6	80	62	17	1	840	5	22	143
06-1377	719	48	52	1	278	2	7	74	80	19	4	757	4	22	180
06-1378	548	28	64	1	231	2	9	60	90	18	3	759	12	12	170
06-1399	673	35	62	2	337	3	11	78	140	25	1	801	4	62	142
06-1401	465	55	65	2	174	3	9	78	185	28	4	1220	6	28	135
06-0836	238	43	29	0	240	0	7	53	15	10	1	467	1	17	126
06-1275	455	25	75	3	277	4	13	50	44	14	1	980	6	16	125
06-1279	410	28	76	1	244	6	17	46	58	22	3	953	6	19	83
06-0209	860	46	38	0	150	5	6	38	48	96	6	940	14	46	300
06-1408	749	20	90	2	283	4	12	54	185	28	1	1180	2	52	132
06-0185	580	105	26	0	220	3	4	36	38	28	11	720	2	70	220
06-1283	415	85	38	1	187	3	6	42	165	56	1	570	10	28	178
06-1284	377	135	32	1	207	3	10	48	230	50	1	537	6	16	155
06-1286	445	28	70	1	219	3	10	42	90	48	1	724	4	13	151
06-1287	186	36	24	1	219	1	6	48	26	8	1	274	2	11	83
06-1419	501	185	40	1	245	5	10	56	80	56	4	550	5	105	131
06-1250	740	36	46	1	82	3	11	64	70	42	6	663	2	7	122
06-0208	700	115	36	0	76	3	4	54	92	125	1	800	2	84	240
06-0195	780	40	44	0	94	7	5	18	370	120	10	920	12	34	260
06-1201	636	30	85	1	171	6	11	75	92	34	1	1009	2	85	110
06-1281	271	32	42	1	151	5	9	52	130	78	6	561	4	14	181
06-1282	377	30	50	1	152	3	11	50	72	60	4	625	2	19	146
06-1204	824	32	50	2	171	3	7	65	56	60	1	771	2	18	135
06-1206	1430	46	44	1	104	2	7	85	55	22	1	642	5	18	117
06-1207	454	52	32	1	189	1	7	110	28	9	1	372	4	38	100
06-1436	793	46	46	2	143	3	7	86	110	34	5	615	8	22	113
06-1437	983	38	46	3	129	3	6	74	150	44	2	893	6	14	97
06-1438	1180	42	48	2	194	5	9	60	160	50	1	1120	10	17	104
06-0204	680	80	26	0	110	5	6	20	480	175	22	520	2	60	180
06-0191	1000	48	44	0	140	8	6	18	230	165	10	800	20	36	320
06-1237	753	34	55	1	96	6	8	78	130	58	2	921	4	12	117
06-0183	660	5	110	0	320	13	28	14	82	440	7	1150	18	26	320
06-1443	601	16	68	1	97	3	8	62	24	22	3	686	2	11	79
06-0228	1450	88	36	0	340	6	5	74	36	15	9	1000	2	72	220
06-1391	945	74	55	1	491	2	4	80	46	1	1	1170	4	55	114
06-1387	1600	60	52	1	382	4	6	62	32	4	3	1290	4	38	160
06-0233	900	62	60	0	46	3	2	115	34	19	3	1050	4	40	260
06-0232	720	120	32	0	98	4	5	60	48	16	12	1750	2	62	150
06-1216	671	15	175	1	288	10	48	32	16	34	5	3824	10	24	92
06-0238	400	120	42	0	115	2	4	76	46	18	3	1050	2	64	220
06-0231	410	240	28	0	105	2	5	40	26	20	15	1200	2	130	170
06-0227	210	105	17	0	64	1	2	38	2	8	5	540	4	110	160
06-0237	390	115	56	0	230	1	3	62	62	22	7	1300	6	60	190
06-1390	864	88	42	1	241	1	5	66	60	5	8	878	6	25	90
06-1389	1610	56	50	1	277	3	8	70	58	16	3	1380	2	8	171
06-1379A	1560	46	56	1	512	5	6	60	95	36	1	1250	12	38	188
06-1379B	1470	70	44	1	363	3	8	60	88	24	5	1200	2	36	162
06-1386	1400	60	52	1	404	4	8	62	78	25	9	1290	2	44	177
06-0178	560	88	46	0	145	2	4	42	46	24	1	1300	2	32	260
06-0203	1235	70	44	0	285	3	3	43	60	8	3	1673	6	18	0
06-0229	490	195	40	0	340	1	4	40	34	22	4	1100	4	94	190
06-0230	220	135	14	0	500	2	3	68	48	16	1	350	2	250	140
06-0177	660	110	44	0	130	2	5	42	28	30	8	1300	4	32	280
06-0194	520	125	24	0	115	3	2	40	26	18	5	1250	2	340	130
06-0206	1200	64	34	0	115	3	4	62	48	38	5	940	2	60	190
06-0186	120	160	13	0	380	3	3	46	46	15	1	340	2	210	150
06-0176	740	1	44	0	200	4	6	58	50	28	10	960	2	52	240
06-0193	310	125	17	0	430	7	4	28	130	190	18	230	2	160	60
06-0166	410	12	60	0	88	3	5	34	74	24	3	680	2	18	280
06-0167	340	64	28	0	34	3	6	34	36	28	1	540	8	46	240
06-0179	900	52	40	0	110	6	7	26	70	48	14	1000	2	34	300

Sample	East	North	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	Ag	As	Au	Ba	Bi	Co
06-0180	9438	15200	13.30	11.72	67.30	0.08	0.13	0.01	0.15	0.83	0.1	1620	44	20	1.0	8
06-0171	9460	15100	14.50	12.83	65.23	0.09	0.19	0.02	0.21	0.87	0.1	1280	1	20	1.0	8
06-0190	9460	15400	20.30	19.06	48.37	0.14	0.06	0.06	1.95	0.47	0.2	4300	470	63	5.0	4
06-0181	9490	15200	6.10	6.35	82.63	0.04	0.07	0.01	0.01	0.72	0.1	1580	6	20	1.0	8
06-0182	9490	15200	9.80	9.46	75.31	0.06	0.07	0.01	0.07	0.57	0.3	2150	17	20	1.0	8
06-0205	9500	14800	17.30	16.76	53.90	0.05	0.04	0.01	0.02	0.63	0.4	2100	100	0	1.0	8
06-0174	9560	15100	22.40	20.36	44.06	0.05	0.04	0.01	0.01	0.68	0.1	260	5	4	5.0	6
06-0200	9600	15000	22.80	21.23	42.12	0.06	0.05	0.02	0.02	0.96	0.6	151	6	169	0.5	13
06-0184	9620	15200	21.10	19.84	45.20	0.07	0.06	0.01	0.05	0.70	0.1	240	4	382	2.0	8
06-0235	9670	15000	20.80	19.52	45.92	0.08	0.10	0.01	0.02	0.93	1.0	321	2	115	0.5	12
06-0226	9680	15400	23.10	21.04	43.12	0.07	0.07	0.01	0.25	0.72	0.1	250	1	0	6.0	16
06-0234	9720	15000	22.40	18.16	48.53	0.07	0.08	0.01	0.02	0.91	0.5	102	1	1	1.0	33
06-0236	9720	15100	18.80	16.80	51.89	0.08	0.07	0.01	0.34	0.58	0.1	105	1	0	1.0	26
06-1380A	9800	14800	13.20	9.15	73.10	0.04	0.07	0.02	0.05	0.95	0.1	140	13	13	1.0	78
06-1380B	9800	14800	26.10	10.60	57.50	0.04	0.07	0.01	0.05	0.58	0.1	110	1	15	5.0	110
06-1393	9900	14800	19.30	11.80	62.10	0.04	0.06	0.02	0.05	0.88	0.1	100	1	17	8.0	82
06-01600	9000	16400	14.01	12.25	69.32	0.06	0.03	0.02	0.02	2.05	0.0	92	5	22	2.0	8
06-01601	8500	14800	14.87	12.90	67.65	0.06	0.02	0.01	0.03	1.76	0.0	40	6	20	2.0	8
06-01602	8600	15000	14.97	12.98	67.16	0.04	0.02	0.01	0.02	1.86	1.0	36	5	25	5.0	9
06-01603	8500	15200	0.06	0.13	0.04	0.04	0.00	0.01	0.00	1.81	5.0	35	6	35	3.0	12
06-01604	8800	15100	15.91	13.60	64.90	0.08	0.02	0.01	0.02	1.84	0.0	30	5	32	3.0	11
06-01605	8800	15300	12.15	18.48	59.29	0.08	0.05	0.01	0.02	2.60	0.0	90	10	36	0.0	8
06-01606	9000	15000	20.46	20.28	49.79	0.08	0.01	0.01	0.04	1.37	2.0	157	19	31	0.0	8
06-01607	9000	15400	18.11	15.12	58.72	0.08	0.14	0.01	0.02	1.11	4.0	162	6	123	0.0	6
06-01608	8800	15500	15.37	13.49	65.12	0.06	0.03	0.03	0.02	1.19	0.0	146	5	15	1.0	5
06-01609	9000	15600	23.38	16.50	50.12	0.30	0.37	0.10	0.10	1.12	2.0	132	5	258	1.0	5
06-01610	9200	15600	12.72	10.73	67.57	0.27	0.18	0.06	0.37	1.04	0.0	533	493	424	0.0	19
06-01611	8800	15700	14.57	13.45	68.12	0.07	0.01	0.01	0.01	1.04	0.0	226	12	9	0.0	5
06-01612	9000	15800	11.34	12.22	71.52	0.07	0.03	0.00	0.04	2.66	1.0	257	15	43	2.0	5
06-01613	9000	16000	14.47	12.11	69.29	0.09	0.03	0.01	0.04	1.82	1.0	207	6	30	0.0	8
06-01614	8800	15900	14.34	11.85	69.89	0.07	0.03	0.01	0.03	1.79	3.0	206	7	21	5.0	7
06-01615	8800	16100	13.68	11.54	70.19	0.07	0.02	0.01	0.02	2.07	3.0	105	6	30	0.0	7
06-01616	9000	16200	13.60	11.80	71.29	0.07	0.03	0.01	0.04	1.76	5.0	268	8	22	4.0	7
06-01617	9200	16300	13.20	11.86	71.49	0.09	0.03	0.01	0.06	1.53	0.0	405	6	24	2.0	6
06-01618	9000	16400	13.57	11.84	69.85	0.07	0.03	0.05	0.02	2.04	4.0	79	6	35	0.0	7
06-01619	8800	16300	13.72	12.21	70.07	0.08	0.03	0.03	0.02	2.05	1.0	64	5	26	0.0	7
06-01620	8800	16500	14.57	12.70	67.94	0.04	0.03	0.01	0.02	2.02	0.0	75	5	47	4.0	6
06-01621	8600	16300	16.26	12.91	63.61	0.08	0.02	0.01	0.01	2.09	0.0	44	5	31	0.0	8
06-01622	8500	16500	18.35	14.42	59.24	0.08	0.01	0.06	0.02	2.15	0.0	31	7	19	3.0	10
06-01623	8600	15900	13.36	11.97	70.75	0.09	0.02	0.00	0.02	1.73	5.0	49	6	19	0.0	8
06-01624	8600	15400	14.83	13.06	66.25	0.08	0.03	0.01	0.02	1.74	0.0	27	6	26	2.0	16
06-01625	9700	14800	13.90	11.61	72.07	0.08	0.03	0.03	0.05	1.07	3.0	439	7	21	0.0	19
06-01626	9400	14900	14.56	13.20	65.81	0.15	0.12	0.08	0.17	1.46	0.0	1656	91	167	2.0	6
06-01627	9900	15300	19.93	12.79	62.30	0.07	0.02	0.01	0.02	0.92	2.0	116	5	17	2.0	21
06-01628	9700	15600	18.22	12.12	65.13	0.07	0.02	0.01	0.04	1.28	0.0	204	5	39	3.0	12
06-01629	9400	15600	72.56	16.62	2.20	0.49	0.15	0.13	3.92	0.18	1.0	226	16	625	0.0	3
06-01630	9500	15700	11.30	11.07	74.60	0.08	0.02	0.02	0.10	1.47	0.0	966	6	52	0.0	6
06-01631	9900	15700	16.15	14.97	61.97	0.05	0.01	0.01	0.01	0.78	0.0	208	7	5	1.0	7
06-01632	9700	15800	17.69	11.41	67.35	0.07	0.01	0.00	0.04	1.19	0.0	145	5	24	5.0	10
06-01633	9400	15800	13.83	13.26	67.60	0.09	0.02	0.00	0.13	1.45	0.0	764	8	49	2.0	5
06-01634	9400	15900	15.38	13.42	66.34	0.07	0.02	0.01	0.05	1.52	4.0	342	6	40	0.0	7
06-01635	9500	15900	16.81	12.69	67.24	0.07	0.02	0.04	0.04	1.32	0.0	244	6	38	0.0	8
06-01636	9300	16000	13.87	11.51	71.19	0.08	0.03	0.00	0.06	1.45	2.0	329	6	29	1.0	7
06-01637	9600	16000	15.76	11.54	69.38	0.08	0.02	0.00	0.04	1.33	0.0	211	5	30	2.0	8
06-01638	9700	16000	18.10	11.72	65.82	0.09	0.02	0.02	0.04	1.23	0.0	126	5	34	0.0	11
06-01639	9900	16100	18.42	13.03	62.96	0.05	0.04	0.03	0.03	0.94	0.0	87	5	34	3.0	17
06-01640	9600	16100	16.16	12.63	67.04	0.07	0.01	0.03	0.04	1.29	0.0	242	6	27	1.0	7
06-01641	9500	16100	13.16	11.55	72.35	0.09	0.02	0.01	0.05	1.45	0.0	366	7	20	1.0	7
06-01642	9300	16100	13.51	11.72	71.15	0.07	0.02	0.03	0.04	1.53	2.0	325	6	24	4.0	6
06-01643	9400	16200	13.51	11.89	70.99	0.09	0.02	0.00	0.06	1.44	0.0	384	6	39	4.0	6
06-01644	9500	16200	13.97	12.34	70.30	0.09	0.02	0.01	0.05	1.34	3.0	354	7	27	3.0	7
06-01645	9600	16200	14.62	11.98	69.22	0.07	0.02	0.00	0.05	1.33	0.0	351	6	14	0.0	7
06-01646	9700	16200	17.26	12.14	65.59	0.06	0.02	0.00	0.04	1.38	0.0	171	6	31	0.0	7
06-01647	9500	16300	13.72	12.07	70.30	0.06	0.02	0.01	0.06	1.42	0.0	400	6	28	4.0	6
06-01648	9400	16300	14.36	12.44	69.63	0.06	0.02	0.01	0.05	1.34	2.0	422	6	46	0.0	7
06-01649	9400	16400	14.15	12.31	70.01	0.08	0.02	0.01	0.07	1.33	0.0	534	6	32	4.0	7
06-01650	9700	16400	15.22	12.56	68.30	0.07	0.01	0.01	0.05	1.39	0.0	325	6	32	3.0	6
06-01651	9900	16500	18.63	13.25	62.99	0.08	0.02	0.01	0.03	1.43	3.0	84	5	31	0.0	8
06-01652	9500	16500	12.94	11.94	71.40	0.08	0.02	0.01	0.07	1.25	1.0	635	52	27	1.0	7
06-01653	9400	16500	12.77	11.87	72.33	0.08	0.02	0.01	0.09	1.17	0.0	884	13	33	1.0	5

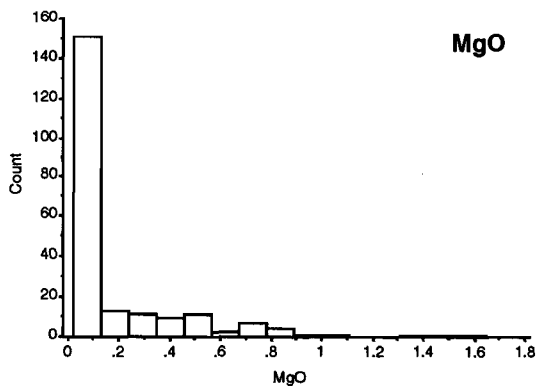
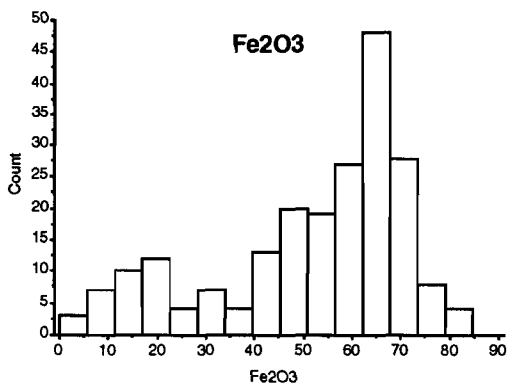
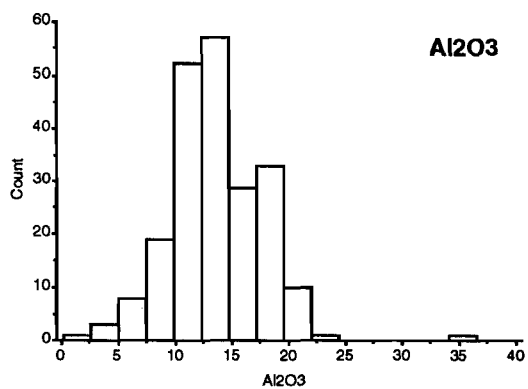
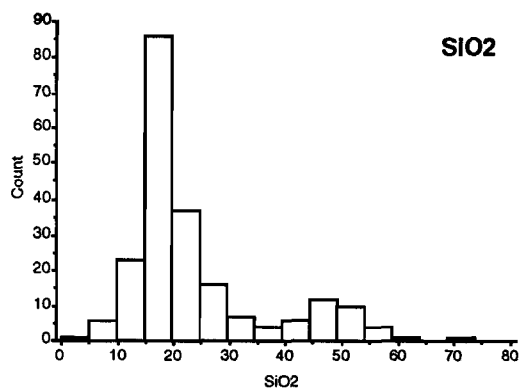
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06-0171	720	56	32	0	200	5	4	24	110	44	3	920	4	48	280
06-0190	720	34	62	0	44	7	8	8	210	170	7	660	6	30	300
06-0181	1050	42	32	0	155	10	6	12	155	150	10	960	2	46	220
06-0182	740	70	28	0	230	8	6	10	400	140	10	680	8	42	240
06-0205	1000	92	30	0	140	3	2	52	52	34	5	820	2	64	130
06-0174	1900	155	42	0	60	3	3	72	22	14	4	1050	4	34	120
06-0200	2402	125	44	0	100	1	1	73	18	5	6	1493	2	22	198
06-0184	1950	145	36	0	52	2	3	78	30	20	10	940	2	66	200
06-0235	2351	174	33	0	112	1	1	74	18	6	7	1487	2	24	139
06-0226	1400	130	44	0	76	3	2	62	34	15	1	1100	2	44	200
06-0234	1679	132	43	0	324	2	4	99	35	7	4	1959	2	29	130
06-0236	2000	220	38	0	490	2	3	135	22	14	3	860	2	195	150
06-1380A	1660	58	56	1	671	5	6	82	55	20	1	1230	10	50	140
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06-1393	1140	105	42	1	336	1	4	88	42	3	13	976	2	50	106
06-01600	1019	69	37	0	522	5	9	45	34	5	5	1735	2	49	172
06-01601	1536	73	43	3	254	8	3	43	33	3	3	1677	18	27	162
06-01602	1402	64	46	1	204	8	8	50	34	3	5	1761	26	27	172
06-01603	1447	77	43	0	283	9	8	51	38	3	4	1851	19	34	165
06-01604	1017	108	44	0	254	7	7	47	29	2	4	1776	12	44	157
06-01605	1023	101	53	0	594	5	7	40	23	3	6	1491	2	35	171
06-01606	817	177	45	0	225	7	3	104	33	8	5	1432	3	33	123
06-01607	649	137	29	1	299	5	4	34	20	3	10	1105	2	32	59
06-01608	689	108	35	1	304	5	5	27	32	4	7	1332	2	20	92
06-01609	558	169	35	0	686	4	4	84	15	5	5	1106	2	46	58
06-01610	365	201	17	3	385	6	2	24	19	13	5	799	3	98	66
06-01611	582	129	34	3	230	6	2	29	30	3	6	1254	3	19	96
06-01612	1258	59	58	1	245	7	5	51	45	12	5	1926	2	10	171
06-01613	1245	54	43	0	429	6	6	35	52	14	6	1728	3	37	164
06-01614	1113	71	42	0	402	6	4	51	49	14	4	1752	2	42	154
06-01615	715	62	37	0	379	6	0	27	34	6	6	1903	4	37	183
06-01616	1141	48	37	4	393	6	2	29	50	17	7	1722	3	40	161
06-01617	1234	62	42	2	343	6	6	54	61	31	6	1646	3	43	148
06-01618	1089	52	38	0	491	7	4	53	31	4	6	1738	4	49	172
06-01619	647	61	42	2	371	5	5	30	36	3	5	1828	2	50	180
06-01620	603	44	37	2	373	5	3	18	38	2	5	1808	2	49	184
06-01621	405	83	32	2	341	5	7	27	26	1	6	1647	2	63	169
06-01622	291	113	31	0	314	6	5	26	19	1	5	1549	3	56	158
06-01623	1496	77	41	0	304	6	6	39	32	4	5	1803	3	30	158
06-01624	1142	110	40	0	314	6	4	83	22	2	2	1700	8	64	151
06-01625	1181	96	36	0	510	7	3	64	56	29	6	1460	4	71	120
06-01626	924	87	38	0	257	18	5	31	82	90	8	1588	4	49	157
06-01627	1303	102	37	1	504	5	4	81	32	7	8	1537	3	49	102
06-01628	1547	85	32	0	345	5	6	62	47	21	6	1586	2	39	135
06-01629	24	6	22	0	142	3	9	5	43	22	2	39	1	2	76
06-01630	1185	62	44	0	271	6	7	37	108	46	7	1870	3	34	181
06-01631	1543	137	37	1	186	7	0	46	33	4	5	1241	4	34	76
06-01632	1681	62	31	0	356	5	4	52	43	18	8	1520	2	36	121
06-01633	1026	78	45	0	242	6	2	31	124	34	9	1839	3	46	171
06-01634	1389	84	44	0	300	8	7	65	71	32	6	1887	3	39	180
06-01635	1387	82	37	0	354	6	6	58	48	23	5	1625	3	28	136
06-01636	1400	74	44	2	339	6	2	63	57	29	6	1677	3	37	141
06-01637	1632	73	37	0	331	6	2	50	41	26	4	1606	2	24	133
06-01638	1638	85	34	2	335	5	6	50	37	17	6	1481	2	31	122
06-01639	1093	98	31	3	409	5	1	67	29	9	4	1398	2	49	92
06-01640	1535	59	40	3	284	5	2	46	51	24	7	1630	3	25	133
06-01641	1547	56	40	1	300	7	4	35	61	36	6	1737	3	24	145
06-01642	1432	59	40	0	322	6	3	57	56	31	6	1709	3	34	150
06-01643	1440	65	44	0	318	6	3	51	60	38	5	1722	3	34	150
06-01644	1463	68	42	0	304	7	4	46	54	31	5	1687	4	26	147
06-01645	1594	65	41	0	289	6	5	42	58	31	7	1690	2	23	144
06-01646	1718	73	41	0	354	6	4	43	46	20	7	1569	3	14	135
06-01647	1391	65	41	0	307	6	5	57	57	41	7	1723	2	35	148
06-01648	1341	80	40	2	308	7	4	48	60	35	5	1614	3	26	137
06-01649	1292	62	36	0	317	6	3	44	76	40	7	1655	3	36	143
06-01650	1597	73	42	0	316	6	5	51	57	33	7	1668	2	31	142
06-01651	1556	64	40	0	291	5	7	55	39	9	7	1608	2	21	134
06-01652	1279	74	39	0	261	7	3	30	87	75	8	1618	3	40	132
06-01653	976	79	34	0	239	8	1	44	114	42	6	1412	4	44	124

APPENDIX 3

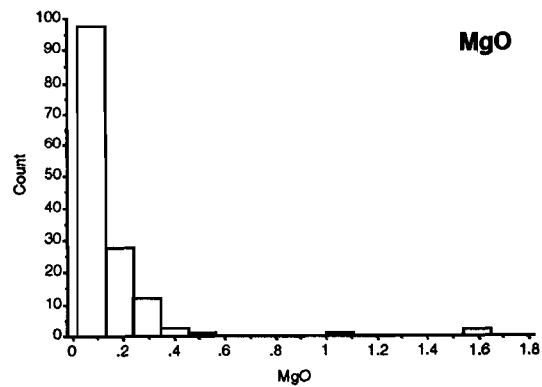
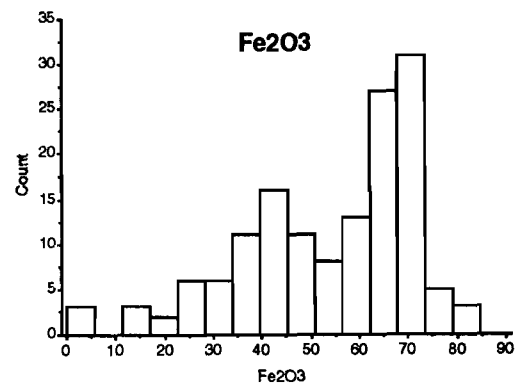
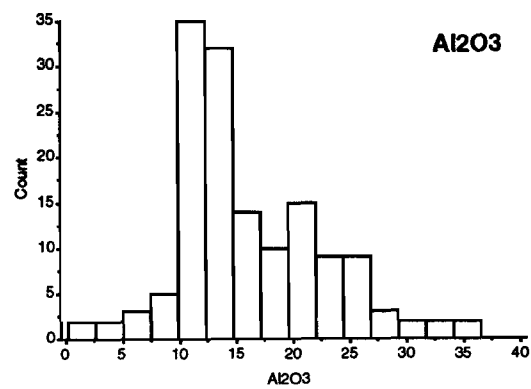
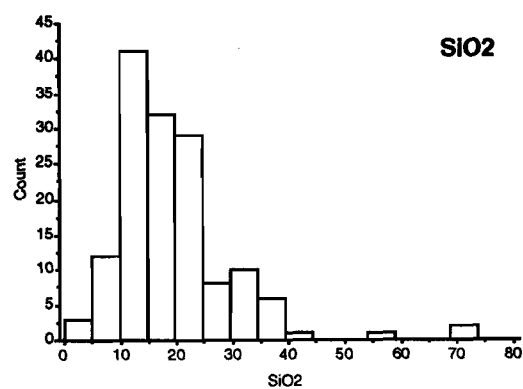
COMPARATIVE FREQUENCY DISTRIBUTIONS OF THE GEOCHEMISTRY OF EMU AND VB BOAGS AREAS

VB Boags: n = 212
Emu: n = 145

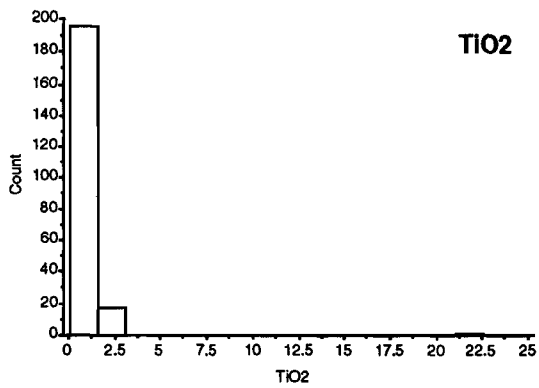
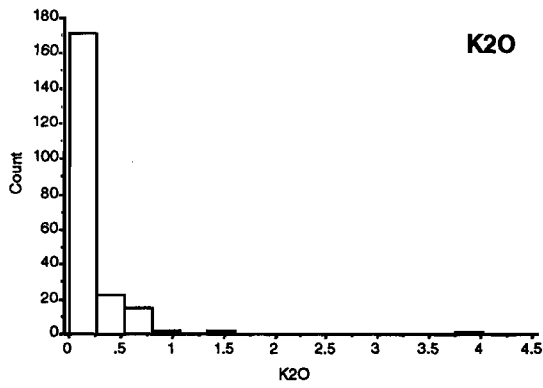
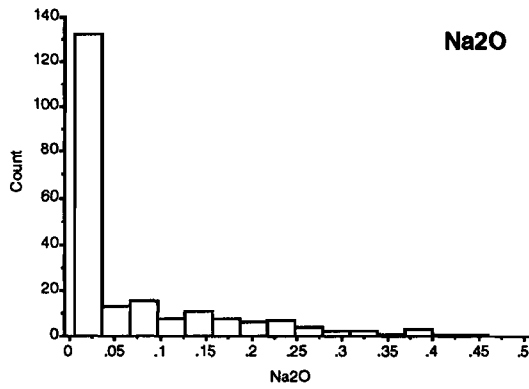
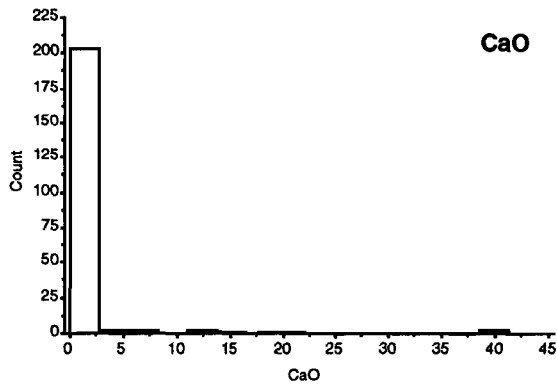
VB BOAGS



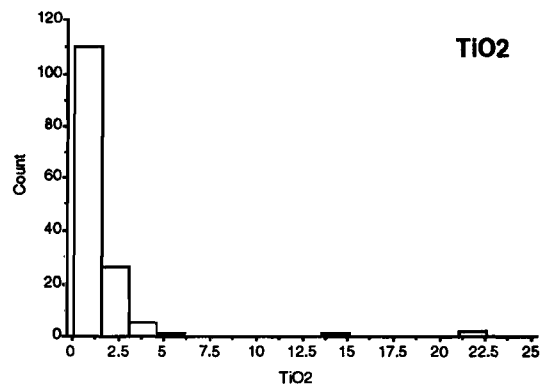
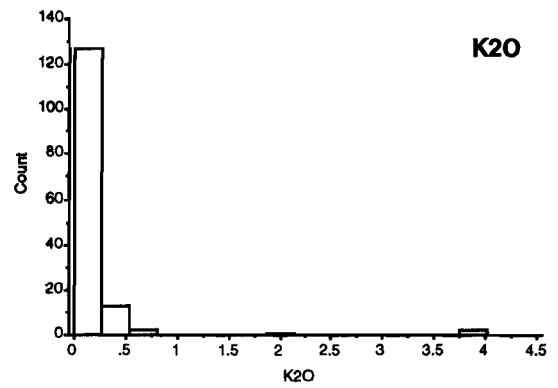
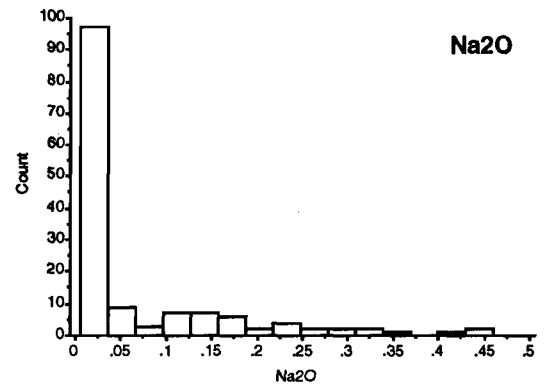
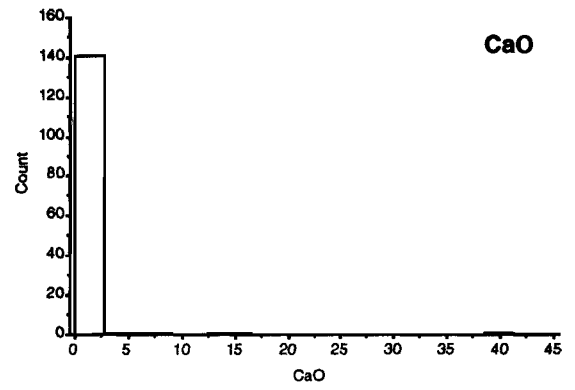
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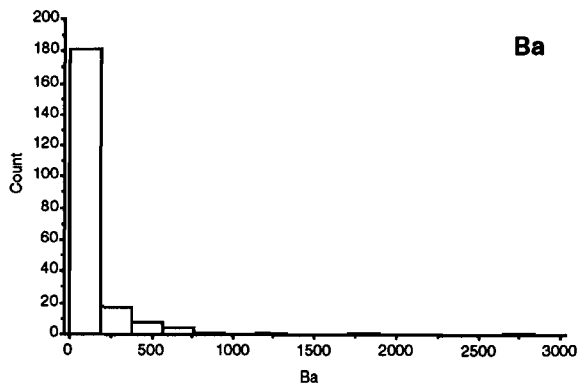
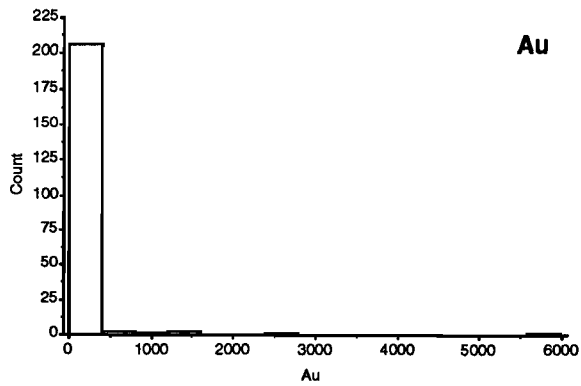
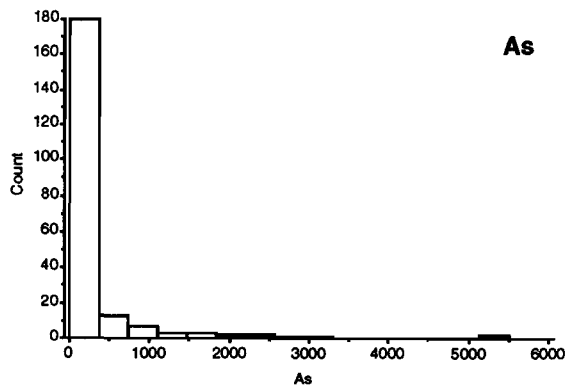
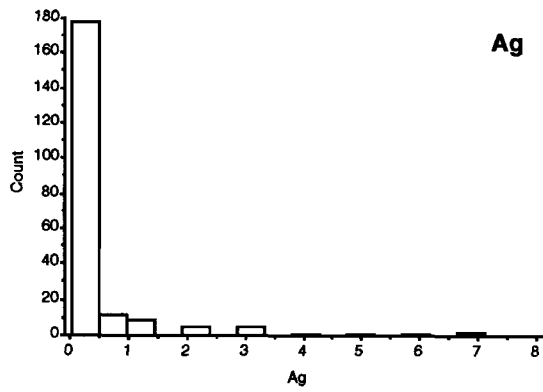
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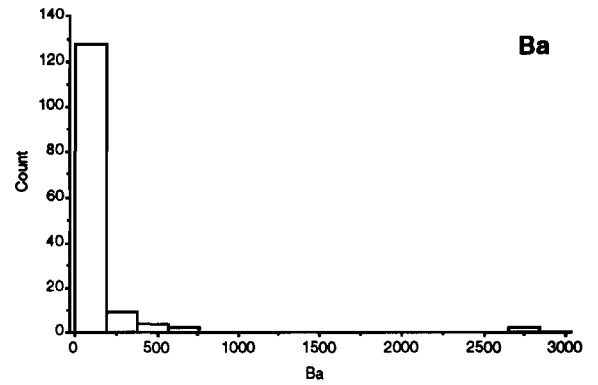
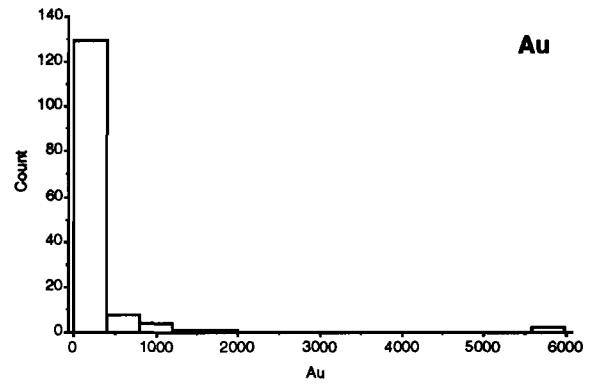
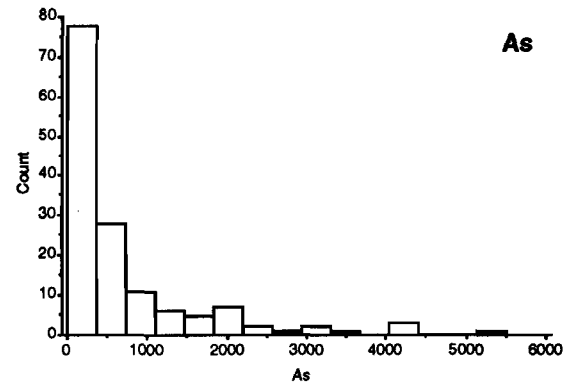
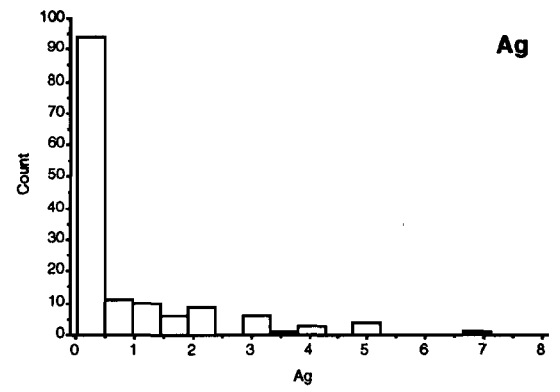
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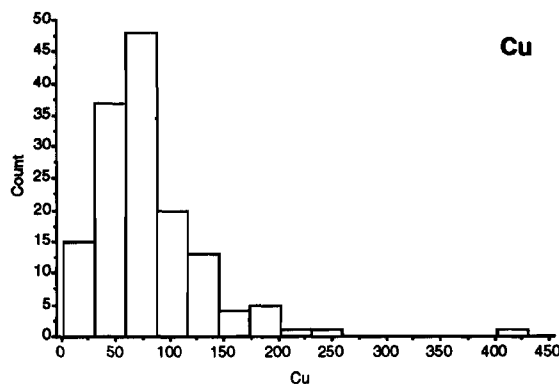
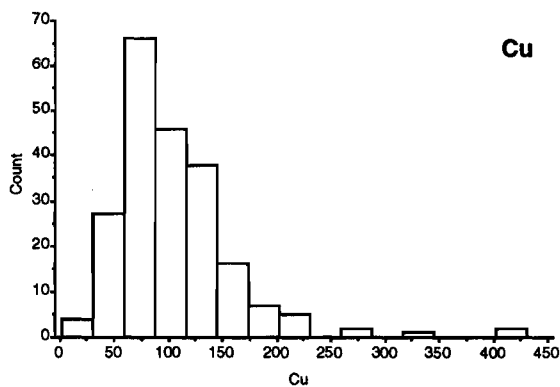
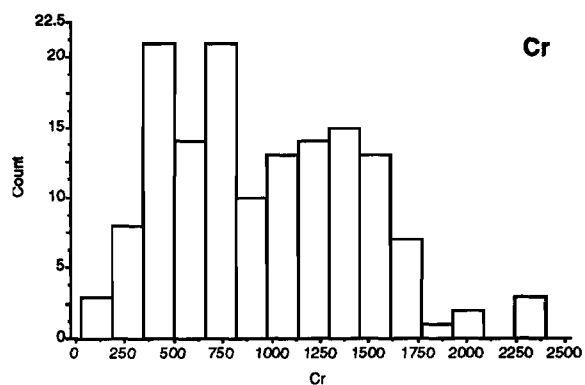
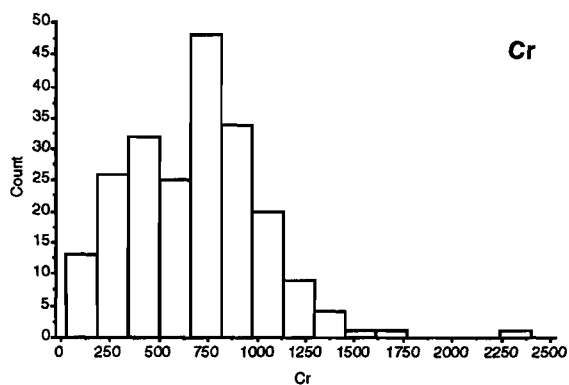
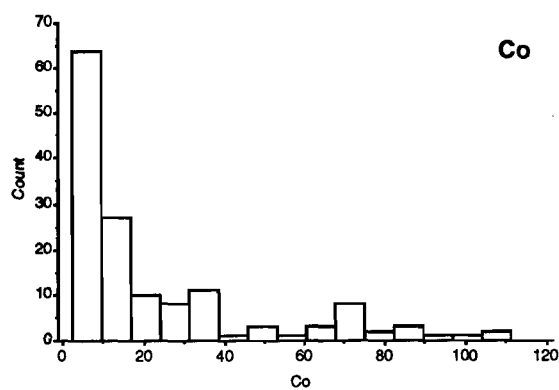
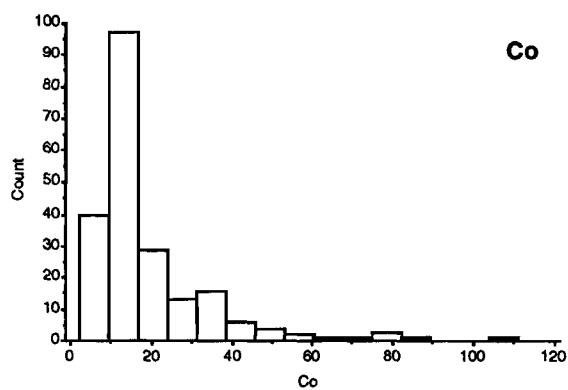
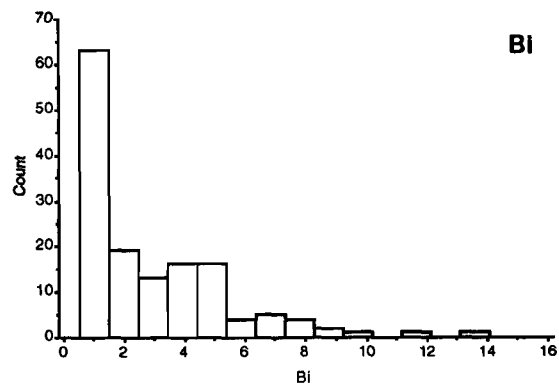
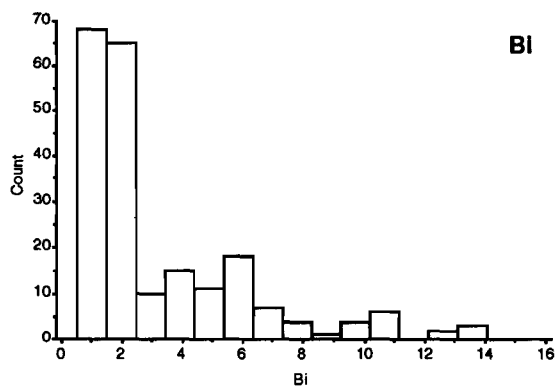
VB BOAGS



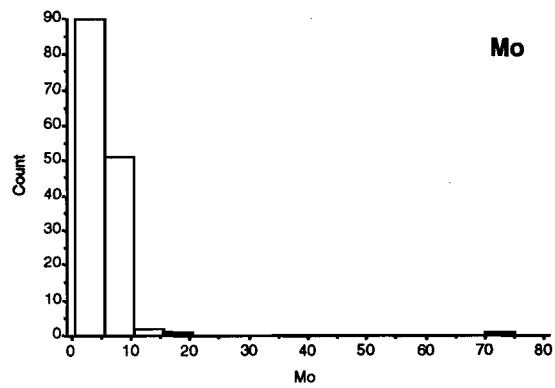
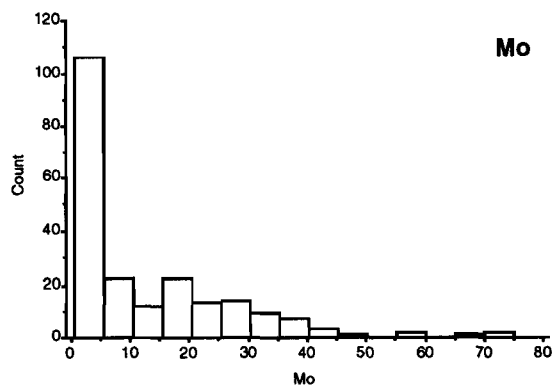
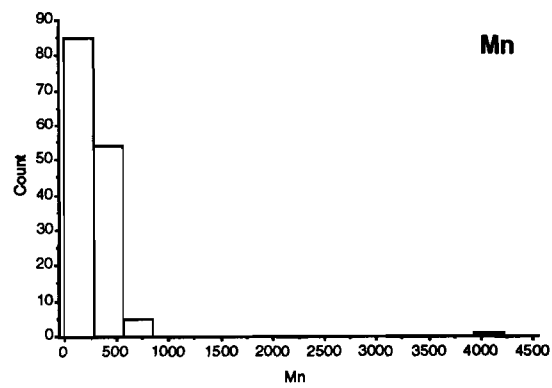
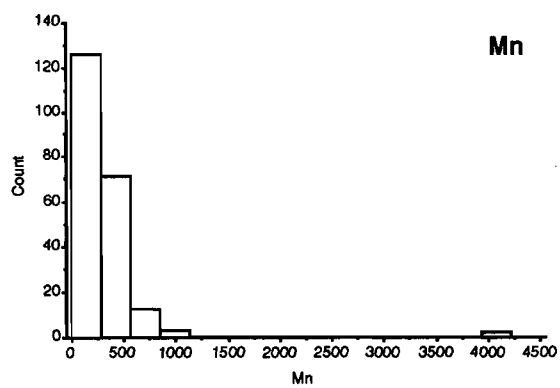
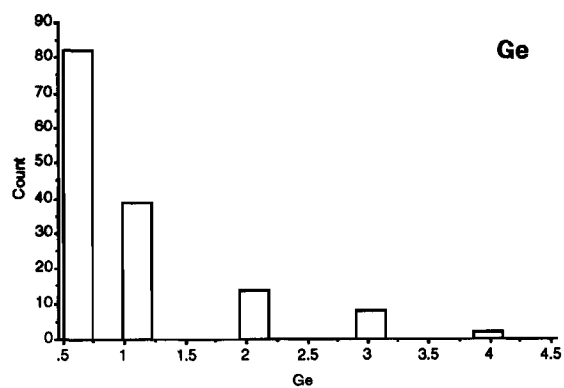
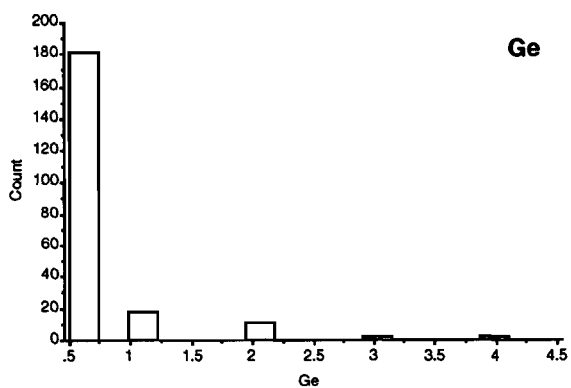
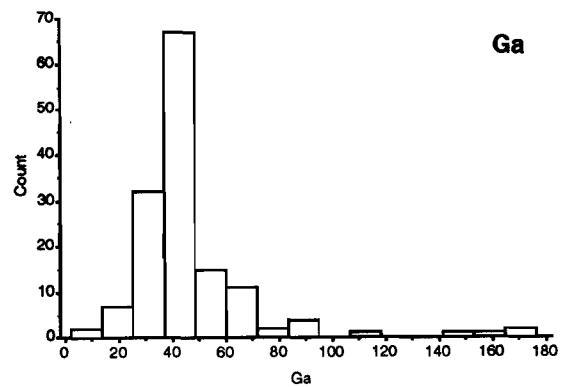
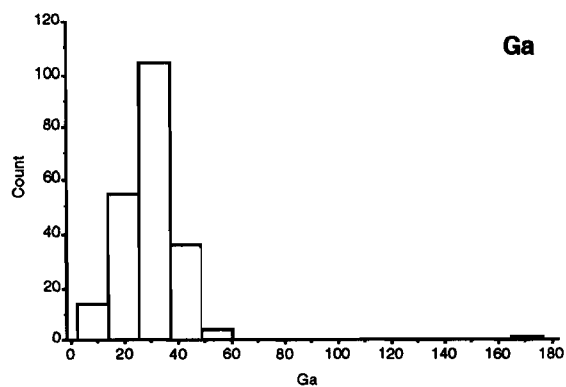
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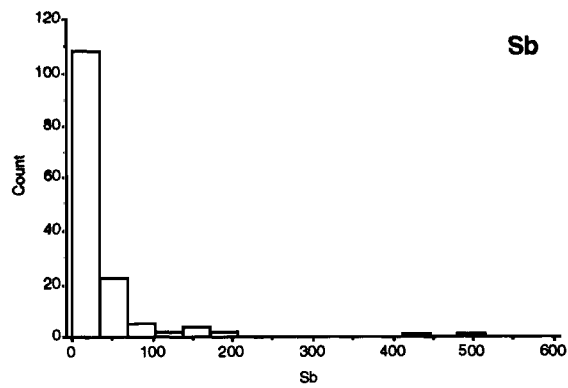
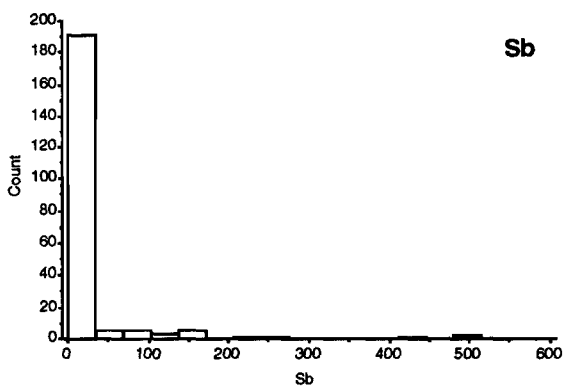
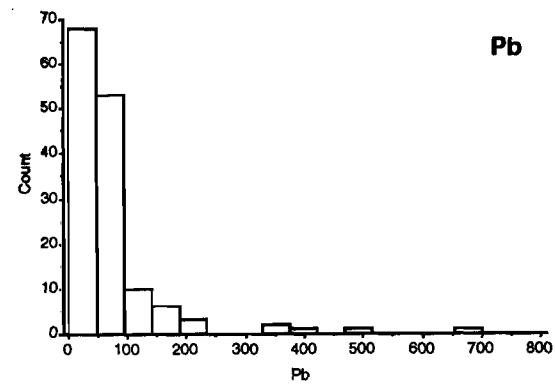
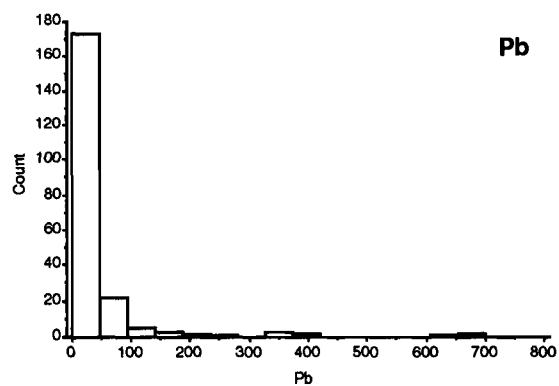
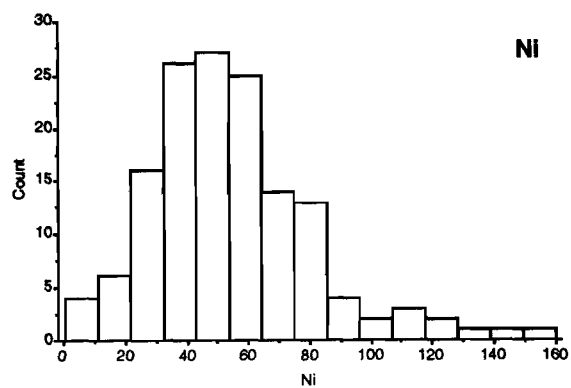
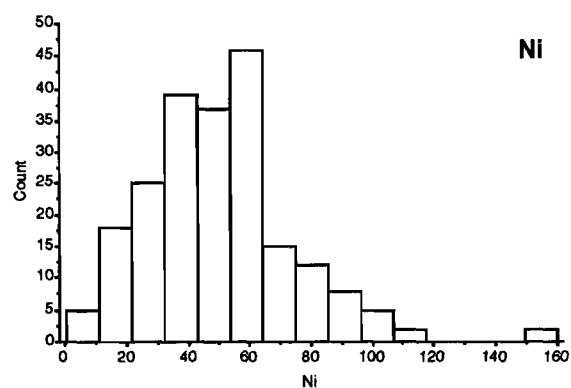
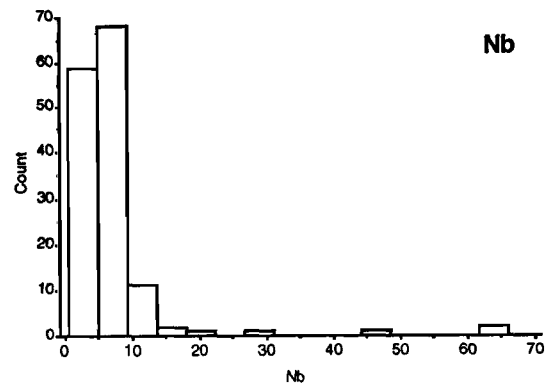
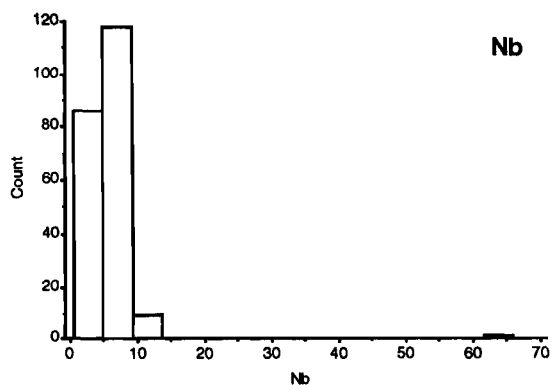
VB BOAGS



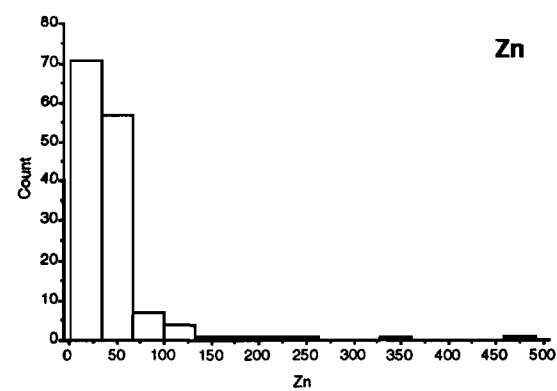
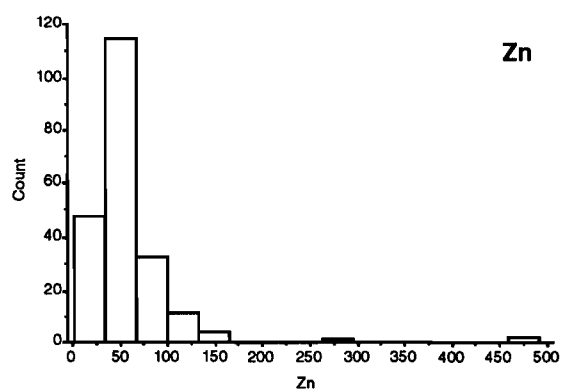
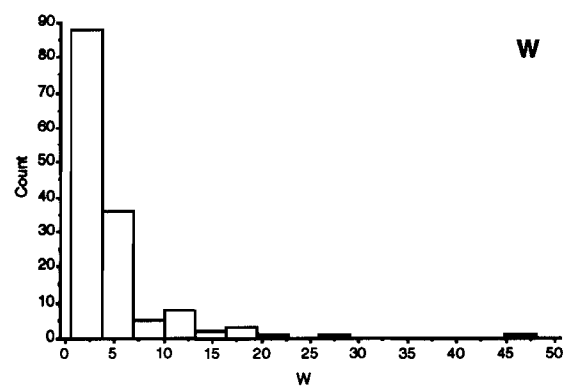
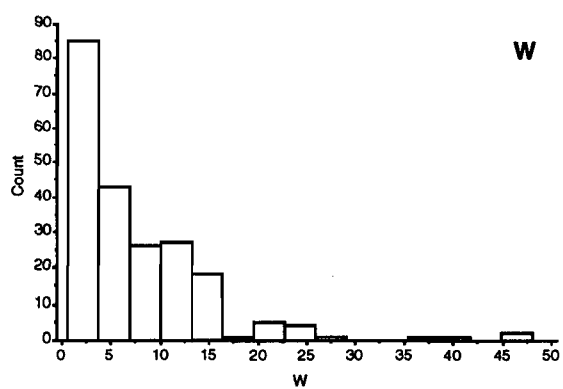
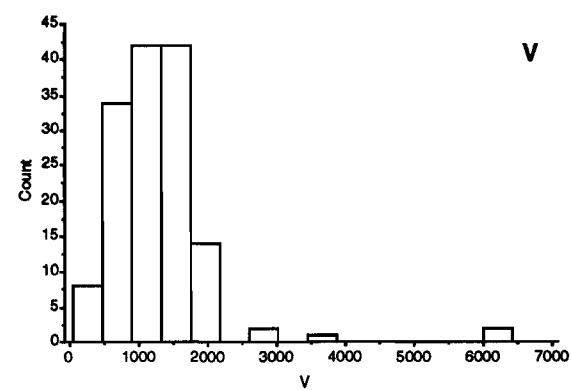
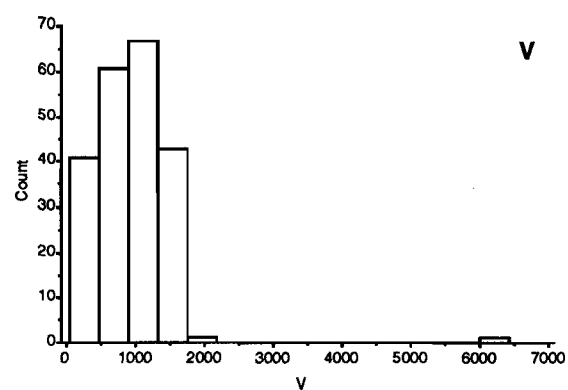
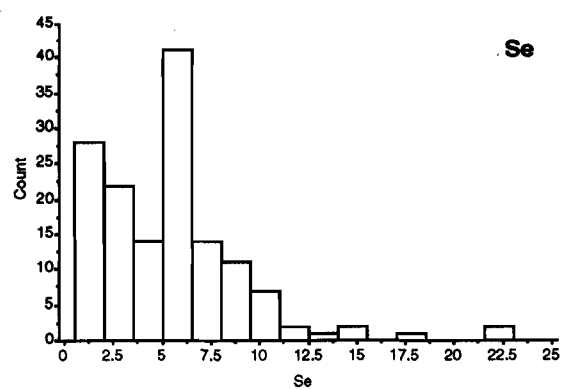
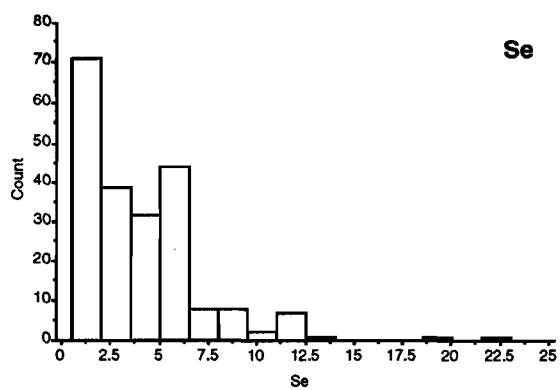
VB BOAGS



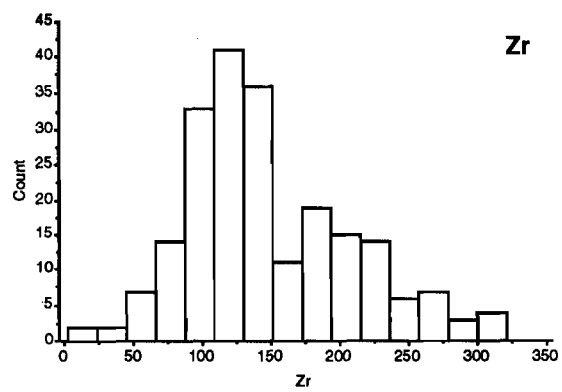
VB BOAGS



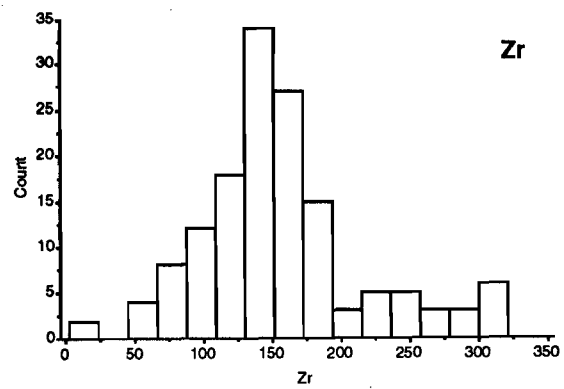
VB BOAGS



VB BOAGS



EMU



APPENDIX 4

POWER TRANSFORMS APPLIED TO DATA VALUES FOR LAMDA (λ)

Element	λ	Element	λ
Si	0.50	Cu	0.35
Al	0.80	Ga	0.20
Fe	1.40	Ge	0.00
Mg	-0.15	Mn	0.50
Ca	0.00	Mo	0.00
Na	0.00	Nb	0.00
K	0.00	Ni	0.60
Ti	-0.18	Pb	0.10
Ag	-0.20	Sb	-0.14
As	0.10	Se	0.00
Au	-0.10	V	1.00
Ba	-0.17	W	0.00
Bi	0.00	Zn	0.10
Co	0.00	Zr	1.00
Cr	0.50		

The generalized power transformed value y is calculated from an untransformed x as:

$$y = (x^{\lambda} - 1) / \lambda$$

but where $\lambda = 0$ then:-

$$y = \ln(x)$$

For more detail, refer to Box and Cox (1964) and Grunsky (1991).

APPENDIX 5

CORRELATION AND SCATTERPLOT MATRICES OF GEOCHEMICAL DATA FROM VB-BOAGS AND EMU AREAS (TRANSFORMED DATA)

Location	Number	Confidence Limits		
		95%	99%	99.9
VB Boags	212	0.113	0.160	0.225
Emu	145	0.139	0.195	0.275

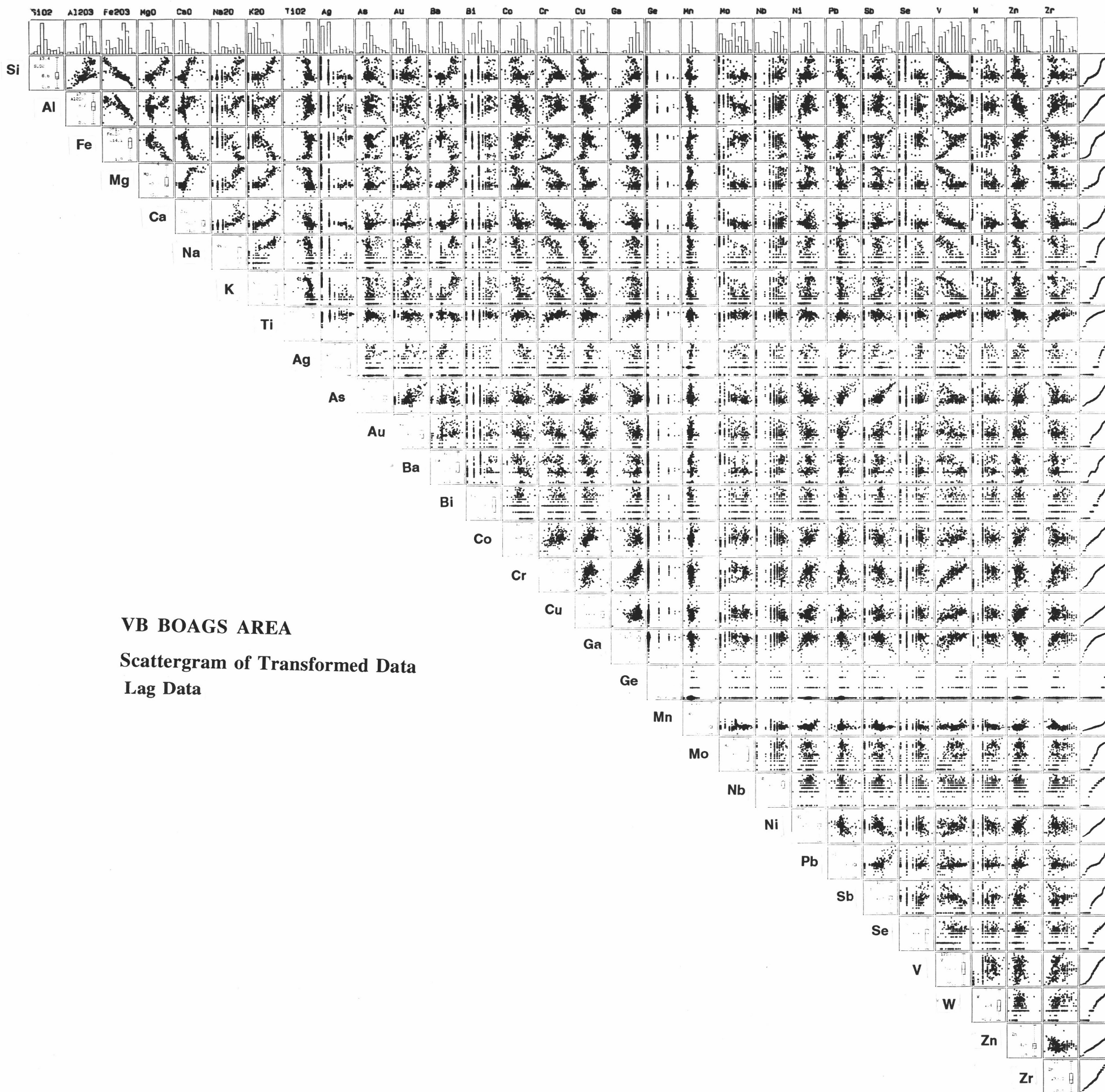
See Appendix 4 for details of transformations

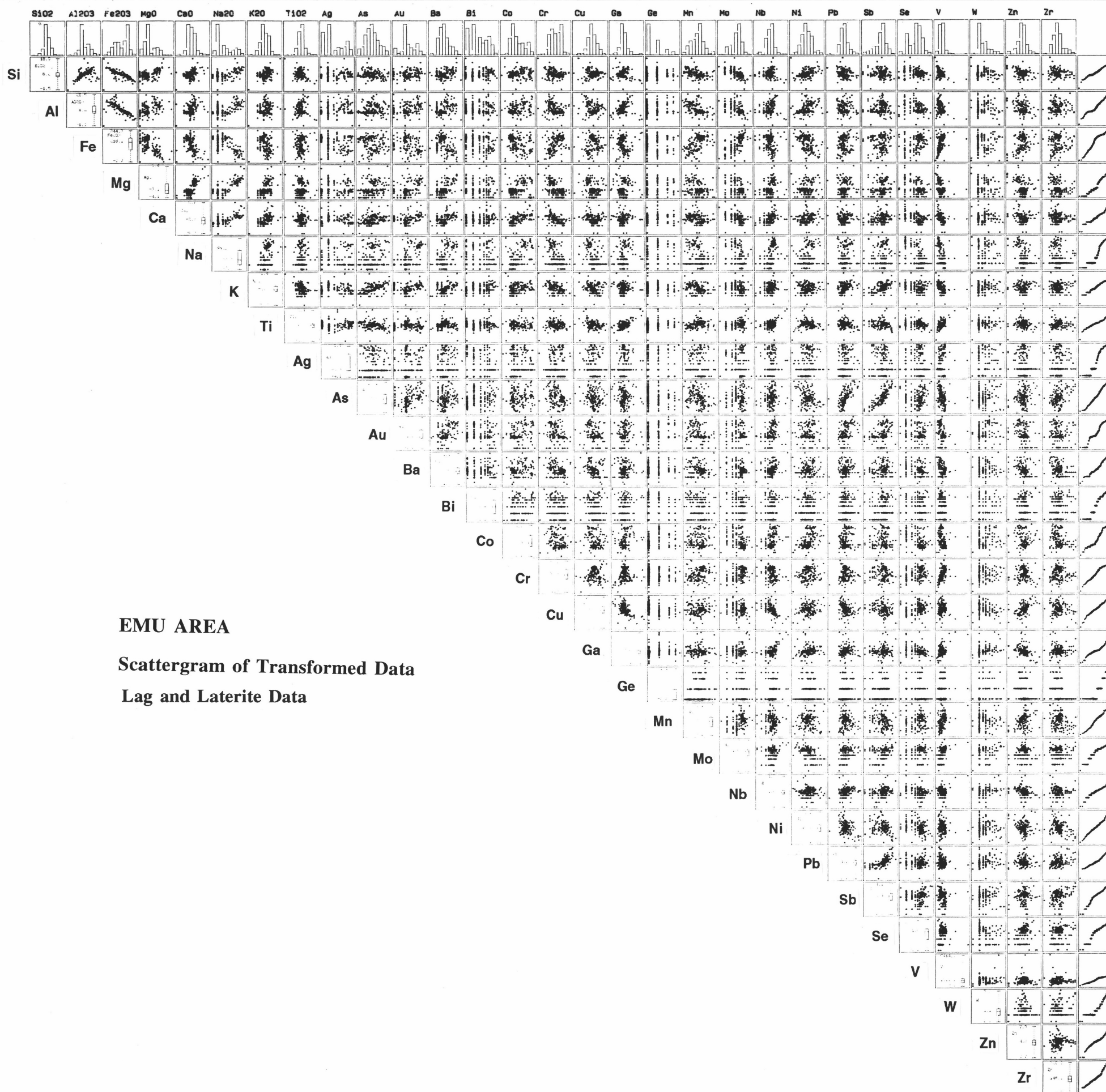
CORRELATION MATRIX **TRANSFORMED LAG DATA - VB BOAGS**

	Si	Al	Fe	Mg	Ca	Na	K	Ti	Ag	As	Au	Ba	Bi	Co	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	V	W	Zn	Zr
Si		0.69	-0.91	0.78	0.61	0.71	0.76	-0.28	-0.46	-0.19	0.05	0.53	0.20	-0.30	-0.39	-0.43	0.09	-0.19	-0.01	-0.56	0.30	0.34	-0.29	-0.15	-0.57	-0.57	-0.47	-0.30	-0.11
Al	0.59		-0.69	0.35	0.24	0.37	0.33	0.19	-0.27	-0.11	-0.08	0.19	0.27	-0.27	0.07	-0.03	0.56	-0.16	-0.36	-0.44	0.30	0.33	-0.27	-0.03	-0.33	-0.10	-0.24	-0.43	0.27
Fe	-0.91	-0.69		-0.81	-0.75	-0.73	-0.75	0.36	0.47	0.10	-0.08	-0.51	-0.25	0.42	0.44	0.40	-0.04	0.26	0.09	0.68	-0.23	-0.22	0.29	0.08	0.57	0.61	0.53	0.46	0.06
Mg	0.78	0.35	-0.81		0.79	0.61	0.67	-0.48	-0.42	0.10	0.26	0.53	0.12	-0.36	-0.57	-0.44	-0.15	-0.14	0.11	-0.70	0.17	0.15	-0.05	0.00	-0.50	-0.66	-0.60	-0.23	-0.29
Ca	0.61	0.24	-0.75	0.79		0.71	0.71	-0.53	-0.38	0.15	0.29	0.56	0.09	-0.47	-0.70	-0.49	-0.38	-0.30	0.00	-0.65	0.02	-0.21	-0.11	0.10	-0.48	-0.75	-0.55	-0.31	-0.23
Na	0.71	0.37	-0.73	0.61	0.71		0.75	-0.40	-0.49	0.05	0.24	0.63	0.19	-0.40	-0.58	-0.46	-0.11	-0.20	-0.01	-0.55	0.24	0.07	-0.08	0.07	-0.53	-0.65	-0.47	-0.27	-0.15
K	0.76	0.53	-0.75	0.67	0.71	0.75		-0.45	-0.39	0.10	0.20	0.61	0.11	-0.28	-0.50	-0.46	-0.15	-0.23	0.08	-0.61	0.19	0.15	-0.05	0.06	-0.47	-0.68	-0.48	-0.15	-0.11
Ti	-0.28	0.19	0.36	-0.48	-0.53	-0.40	-0.45		0.19	-0.18	-0.32	-0.30	0.02	0.05	0.62	0.19	0.65	0.21	-0.12	0.41	0.31	0.07	-0.07	-0.12	0.22	0.66	0.42	-0.17	0.46
Ag	-0.46	-0.27	0.47	-0.42	-0.38	-0.49	-0.39	0.19		0.15	0.06	-0.36	-0.30	0.41	0.22	0.35	-0.04	0.10	0.03	0.30	-0.18	-0.05	0.25	0.03	0.36	0.35	0.19	0.25	0.01
As	-0.19	-0.11	0.10	0.10	0.15	0.05	0.10	-0.18	0.15		0.53	0.10	-0.12	0.02	-0.32	0.18	-0.33	-0.09	-0.04	-0.21	-0.17	-0.36	0.71	0.75	0.19	-0.25	-0.19	0.27	-0.19
Au	0.05	-0.08	-0.08	0.26	0.29	0.24	0.20	-0.32	0.06	0.53		0.35	-0.06	-0.06	-0.47	0.13	-0.41	0.03	0.12	-0.24	-0.23	-0.22	0.31	0.27	0.04	-0.30	-0.33	0.15	-0.48
Ba	0.53	0.19	-0.51	0.63	0.56	0.63	0.61	-0.30	-0.36	0.10	0.35		0.05	-0.27	-0.37	-0.31	-0.07	-0.06	0.13	-0.47	0.12	0.12	-0.02	0.01	-0.34	-0.45	-0.37	-0.15	-0.30
Bi	0.20	0.27	-0.25	0.12	0.09	0.19	0.11	0.02	-0.30	-0.12	-0.06	0.05		-0.28	-0.02	-0.11	0.10	-0.10	-0.18	0.03	0.27	0.07	-0.09	0.04	-0.23	-0.10	0.13	-0.09	0.26
Co	-0.30	-0.27	0.42	-0.36	-0.47	-0.40	-0.28	0.05	0.41	0.02	-0.06	-0.27	-0.28		0.33	0.49	0.03	0.15	0.22	0.30	-0.18	0.42	0.12	-0.15	0.26	0.34	0.18	0.50	-0.13
Cr	-0.39	0.07	0.44	-0.57	-0.70	-0.58	-0.50	0.62	0.22	-0.32	-0.47	-0.37	-0.02	0.33		0.31	0.69	0.17	-0.06	0.40	0.10	0.39	-0.14	-0.27	0.30	0.83	0.44	-0.02	0.38
Cu	-0.43	-0.03	0.40	-0.44	-0.49	-0.46	-0.46	0.19	0.35	0.18	0.13	-0.31	-0.11	0.49	0.21		0.08	0.23	-0.01	0.24	-0.24	0.23	0.11	0.05	0.32	0.43	0.19	0.43	-0.15
Ga	0.09	0.56	-0.04	-0.15	-0.38	-0.11	-0.15	0.65	-0.04	-0.33	-0.41	-0.07	0.10	0.03	0.69	0.08		0.13	-0.19	0.06	0.37	0.45	-0.19	-0.26	0.00	0.56	0.19	-0.35	0.38
Ge	-0.19	-0.16	0.26	-0.14	-0.30	-0.20	-0.23	0.21	0.10	-0.09	0.03	-0.06	-0.10	0.15	0.17	0.23	0.13		0.21	0.22	0.00	0.20	0.05	-0.24	0.16	0.34	0.10	0.16	-0.17
Mn	-0.01	-0.36	0.09	0.11	0.00	-0.01	0.08	-0.12	0.03	-0.04	0.12	0.13	-0.18	0.22	-0.06	-0.01	-0.19	0.21		-0.06	-0.11	0.23	0.00	-0.17	-0.02	0.07	-0.06	0.25	-0.36
Mo	-0.56	-0.44	0.59	-0.70	-0.65	-0.55	-0.61	0.41	0.30	-0.21	-0.24	-0.47	0.03	0.30	0.40	0.24	0.06	0.22	-0.06		0.05	-0.05	0.00	-0.11	0.28	0.49	0.63	0.25	0.31
Nb	0.30	0.30	-0.23	0.17	0.02	0.24	0.19	0.31	-0.18	-0.17	-0.23	0.12	0.27	-0.18	0.10	-0.24	0.37	0.00	-0.11	0.05		0.15	-0.14	-0.06	-0.23	0.00	0.11	-0.26	0.32
Ni	0.34	0.33	-0.22	0.15	-0.21	0.07	0.15	0.07	-0.05	-0.36	-0.22	0.12	0.07	0.42	0.38	0.23	0.45	0.20	0.23	-0.05	0.15		-0.30	-0.38	-0.21	0.23	-0.03	0.19	0.00
Pb	-0.29	-0.27	0.29	-0.05	-0.11	-0.08	-0.05	-0.07	0.25	0.71	0.31	-0.02	-0.09	0.12	-0.14	0.11	-0.19	0.05	0.00	0.00	-0.14	-0.30		0.51	0.24	-0.05	0.01	0.31	-0.11
Sb	-0.15	-0.03	0.08	0.00	0.10	0.07	0.06	-0.12	0.03	0.75	0.27	0.01	0.04	-0.15	-0.27	0.05	-0.26	-0.24	-0.17	-0.11	-0.06	-0.38	0.51		0.11	-0.31	-0.01	0.22	0.17
Se	-0.57	-0.33	0.57	-0.50	-0.48	-0.53	-0.47	0.22	0.30	0.19	0.04	-0.34	-0.23	0.26	0.30	0.32	0.00	0.16	-0.02	0.28	-0.23	-0.21	0.24	0.11		0.42	0.17	0.22	0.05
V	-0.57	-0.10	0.61	-0.66	-0.75	-0.65	-0.68	0.66	0.35	-0.25	-0.30	-0.45	-0.10	0.34	0.53	0.43	0.56	0.34	0.07	0.48	0.00	0.23	-0.05	-0.31	0.42		0.30	0.00	0.18
W	-0.47	-0.24	0.53	-0.60	-0.55	-0.47	-0.48	0.42	0.19	-0.19	-0.33	-0.37	0.13	0.18	0.44	0.19	0.19	0.10	-0.06	0.69	0.11	-0.03	0.01	-0.01	0.17	0.39		0.22	0.4
Zn	-0.30	-0.43	0.46	-0.23	-0.31	-0.27	-0.15	-0.17	0.25	0.21	0.15	-0.15	-0.09	0.50	-0.02	0.43	-0.35	0.16	0.25	0.25	-0.26	0.19	0.31	0.22	0.22	0.00	0.22		-0.13
Zr	-0.11	0.27	0.06	-0.29	-0.23	-0.15	-0.11	0.46	0.01	-0.19	-0.48	-0.30	0.26	-0.13	0.38	-0.15	0.38	-0.17	-0.36	0.31	0.32	0.00	-0.11	0.17	0.05	0.18	0.41	-0.13	

CORRELATION MATRIX **TRANSFORMED LAG AND LATERITE DATA - EMU**

	Si	Al	Fe	Mg	Ca	Na	K	Ti	Ag	As	Au	Ba	Bi	Co	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	V	W	Zn	Zr	
Si		0.52	-0.68	0.54	0.45	0.50	0.45	-0.44	-0.01	-0.10	0.21	0.27	0.05	0.14	-0.30	-0.04	-0.16	0.04	-0.41	-0.62	-0.03	0.35	-0.21	-0.10	-0.22	-0.49	-0.25	-0.39	-0.17	
Al	0.52		-0.72	0.45	0.44	0.54	0.25	-0.03	0.20	0.11	0.30	0.23	0.05	0.27	-0.31	-0.18	0.24	0.12	-0.52	-0.51	0.12	0.36	0.00	0.00	-0.32	-0.44	-0.10	-0.35	0.06	
Fe	-0.68	-0.72		-0.61	-0.53	-0.65	-0.32	0.20	-0.19	-0.02	-0.31	-0.37	-0.16	-0.32	0.44	0.15	-0.10	-0.05	0.55	0.65	-0.20	-0.39	0.14	0.06	0.40	0.45	0.04	0.40	0.07	
Mg	0.54	0.45	-0.61		0.73	0.75	0.55	-0.11	0.04	0.25	0.47	0.54	0.02	0.25	-0.55	-0.18	-0.03	0.13	-0.28	-0.31	0.25	0.09	0.05	0.18	-0.36	-0.41	-0.02	-0.34	-0.20	
Ca	0.45	0.44	-0.53	0.73		0.67	0.52	-0.13	0.02	0.33	0.37	0.43	0.21	0.49	-0.52	-0.19	0.02	0.16	-0.25	-0.45	0.34	0.16	0.10	0.18	-0.42	-0.45	-0.04	-0.18	-0.13	
Na	0.50	0.54	-0.65	0.75	0.67		0.43	-0.01	0.10	0.20	0.55	0.52	0.08	0.51	-0.48	-0.36	0.25	0.31	-0.25	-0.31	0.44	0.24	0.12	0.10	-0.49	-0.35	0.09	-0.44	-0.20	
K	0.45	0.25	-0.32	0.55	0.52	0.43		-0.34	-0.07	0.52	0.25	0.25	0.20	0.20	-0.46	-0.16	-0.05	-0.04	-0.31	-0.20	0.21	-0.06	0.32	0.52	-0.18	-0.43	0.01	-0.02	0.10	
Ti	-0.44	-0.03	0.20	-0.11	-0.13	-0.01	-0.34		0.06	-0.25	-0.11	0.07	0.10	0.04	0.03	-0.27	0.54	0.17	0.25	0.31	0.40	-0.06	-0.20	-0.15	-0.12	0.69	0.25	-0.02	-0.03	
Ag	-0.01	0.20	-0.19	0.04	0.02	0.10	-0.07	0.06		0.04	0.18	0.13	-0.16	0.06	-0.01	-0.09	0.18	0.05	-0.07	-0.03	0.08	0.16	0.11	0.05	-0.05	0.05	0.16	-0.14	0.00	
As	-0.10	0.11	-0.02	0.25	0.33	0.20	0.52	-0.25	0.04		0.39	0.07	0.15	0.08	-0.31	-0.15	-0.11	-0.13	-0.32	0.07	0.13	-0.34	0.57	0.52	0.02	-0.31	0.09	0.17	0.37	
Au	0.21	0.30	-0.31	0.47	0.37	0.55	0.25	-0.11	0.18	0.39		0.47	-0.03	0.21	-0.24	-0.27	0.09	0.30	-0.23	-0.02	0.25	-0.05	0.45	0.32	-0.14	-0.27	0.23	-0.28	-0.10	
Ba	0.27	0.23	-0.37	0.54	0.43	0.52	0.25	0.07	0.13	0.07	0.47		-0.02	0.17	-0.29	-0.28	0.10	0.24	-0.04	-0.05	0.31	0.04	0.05	0.10	-0.23	-0.05	0.03	-0.26	-0.30	
Bi	0.05	0.05	-0.16	0.02	0.21	0.08	0.20	0.10	-0.16	0.15	-0.03	-0.02		0.30	-0.20	-0.16	0.14	0.04	-0.18	-0.09	0.19	0.02	0.10	0.19	-0.17	-0.04	0.13	0.12	0.12	
Co	0.14	0.27	-0.32	0.25	0.49	0.51	0.20	0.04	0.06	0.08	0.21	0.17	0.30		-0.17	-0.16	0.25	0.34	0.08	-0.31	0.37	0.45	0.10	0.00	-0.45	-0.22	0.17	-0.09	-0.20	
Cr	-0.30	-0.31	0.44	-0.55	-0.52	-0.48	-0.46	0.03	-0.01	-0.31	-0.24	-0.29	-0.20	-0.17		0.16	0.10	-0.06	0.22	0.27	-0.28	0.21	-0.02	-0.04	0.27	0.35	0.03	0.00	0.01	
Cu	-0.04	-0.18	0.15	-0.18	-0.19	-0.36	-0.16	-0.27	-0.09	-0.15	-0.27	-0.28	-0.16	-0.16	0.16		-0.54	-0.21	0.11	-0.18	-0.55	0.20	-0.30	-0.29	0.20	-0.07	-0.18	0.44	-0.13	
Ga	-0.16	0.24	-0.10	-0.03	0.02	0.25	-0.05	0.54	0.18	-0.11	0.09	0.10	0.14	0.25	0.10	-0.54		0.19	-0.01	0.17	0.55	0.15	0.07	0.07	-0.24	0.47	0.30	-0.38	0.02	
Ge	0.04	0.12	-0.05	0.13	0.16	0.31	-0.04	0.17	0.05	-0.13	0.30	0.24	0.04	0.34	-0.06	-0.21	0.19		0.15	0.00	0.12	0.08	0.06	-0.13	-0.22	0.01	0.15	-0.16	-0.36	
Mn	-0.41	-0.52	0.55	-0.28	-0.25	-0.25	-0.31	0.25	-0.07	-0.32	-0.23	-0.04	-0.18	0.08	0.22	0.11	-0.01	0.15		0.32	0.02	0.01	-0.10	-0.22	0.03	0.41	0.01	0.35	-0.30	
Mo	-0.62	-0.51	0.53	-0.31	-0.45	-0.31	-0.20	0.31	-0.03	0.07	-0.02	-0.05	-0.09	-0.31	0.27	-0.18	0.17	0.00	0.32		0.14	-0.47	0.30	0.23	0.30	0.45	0.25	0.13	0.10	
Nb	-0.03	0.12	-0.20	0.25	0.34	0.44	0.21	0.40	0.08	0.13	0.25	0.31	0.19	0.37	-0.28	-0.55	0.55	0.12	0.02	0.14		-0.04	0.22	0.22	-0.25	0.17	0.26	-0.27	0.01	
Ni	0.35	0.36	-0.39	0.09	0.16	0.24	-0.06	-0.06	0.16	-0.34	-0.05	0.04	0.02	0.45	0.21	0.20	0.15	0.08	0.01	-0.47	-0.04		-0.30	-0.26	-0.35	-0.11	-0.11	-0.11	-0.31	
Pb	-0.21	0.00	0.14	0.05	0.10	0.12	0.32	-0.20	0.11	0.57	0.45	0.05	0.10	0.10	-0.02	-0.30	0.07	0.06	-0.10	0.30	0.22	-0.30		0.55	0.07	-0.17	0.23	0.00	0.25	
Sb	-0.10	0.00	0.06	0.18	0.18	0.10	0.52	-0.15	0.05	0.52	0.32	0.10	0.19	0.00	-0.04	-0.29	0.07	-0.13	-0.22	0.23	0.22	-0.26	0.55		0.08	-0.11	0.10	0.09	0.32	
Se	-0.22	-0.32	0.40	-0.36	-0.42	-0.49	-0.18	-0.12	-0.05	0.02	-0.14	-0.23	-0.17	-0.45	0.27	0.20	-0.24	-0.22	0.03	0.30	-0.25	-0.35	0.07	0.08		0.12	-0.12	0.16	0.19	
V	-0.49	-0.44	0.45	-0.41	-0.45	-0.35	-0.43	0.55	0.05	-0.31	-0.27	-0.05	-0.04	-0.22	0.35	-0.07	0.47	0.01	0.41	0.45	0.17	-0.11	-0.17	-0.11	0.12		0.17	0.07	-0.11	
W	-0.25	-0.10	0.04	-0.02	-0.04	0.09	0.01	0.25	0.16	0.09	0.23	0.03	0.13	0.17	0.03	-0.18	0.30	0.15	0.01	0.25	0.26	-0.11	0.23	0.10	-0.12	0.17		-0.05	0.16	
Zn	-0.39	-0.35	0.40	-0.34	-0.18	-0.44	-0.02	-0.02	-0.14	0.17	-0.28	-0.26	0.12	-0.09	0.00	0.45	-0.38	-0.16	0.33	0.13	-0.27	-0.11	0.00	0.09	0.16	0.07	-0.05		0.15	
Zr	-0.17	0.06	0.07	-0.20	-0.13	-0.20	0.10	-0.03	0.00	0.37	-0.10	-0.30	0.12	-0.20	0.01	-0.13	0.02	-0.36	-0.30	0.10	0.01	-0.31	0.25	0.32	0.19	-0.11	0.16	0.15		



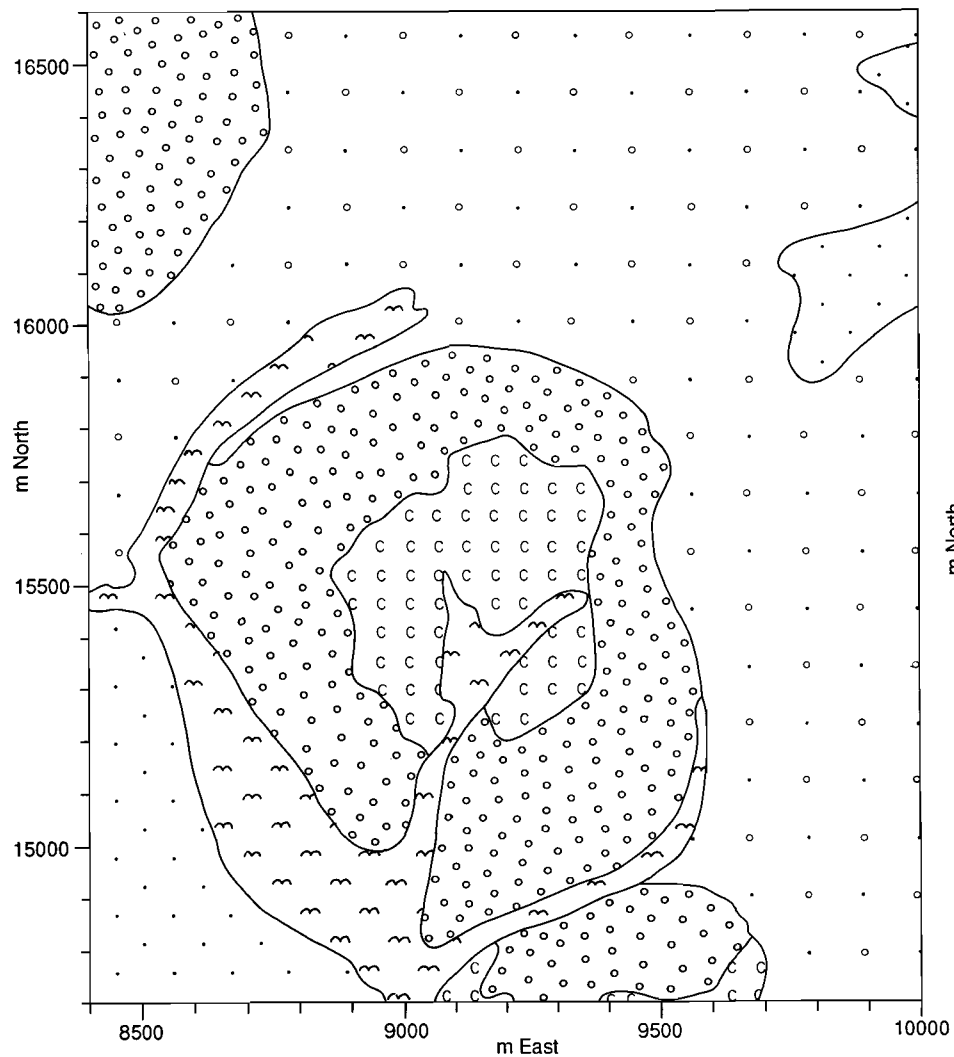


APPENDIX 6

GEOLOGY, GEOMORPHOLOGY AND CONTOURED GEOCHEMISTRY OF VB BOAGS AND EMU AREAS

Sample locations	+
Positive features	⊕
Negative features	-

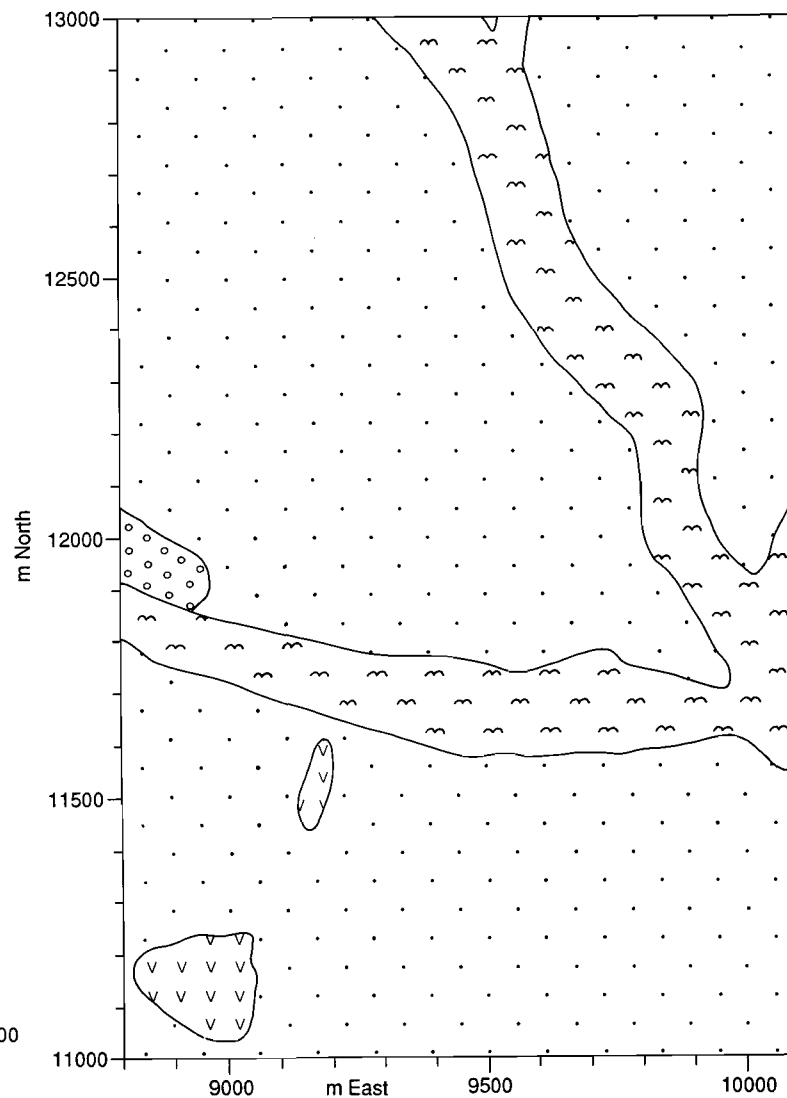
EMU



REGOLITH - LANDFORMS

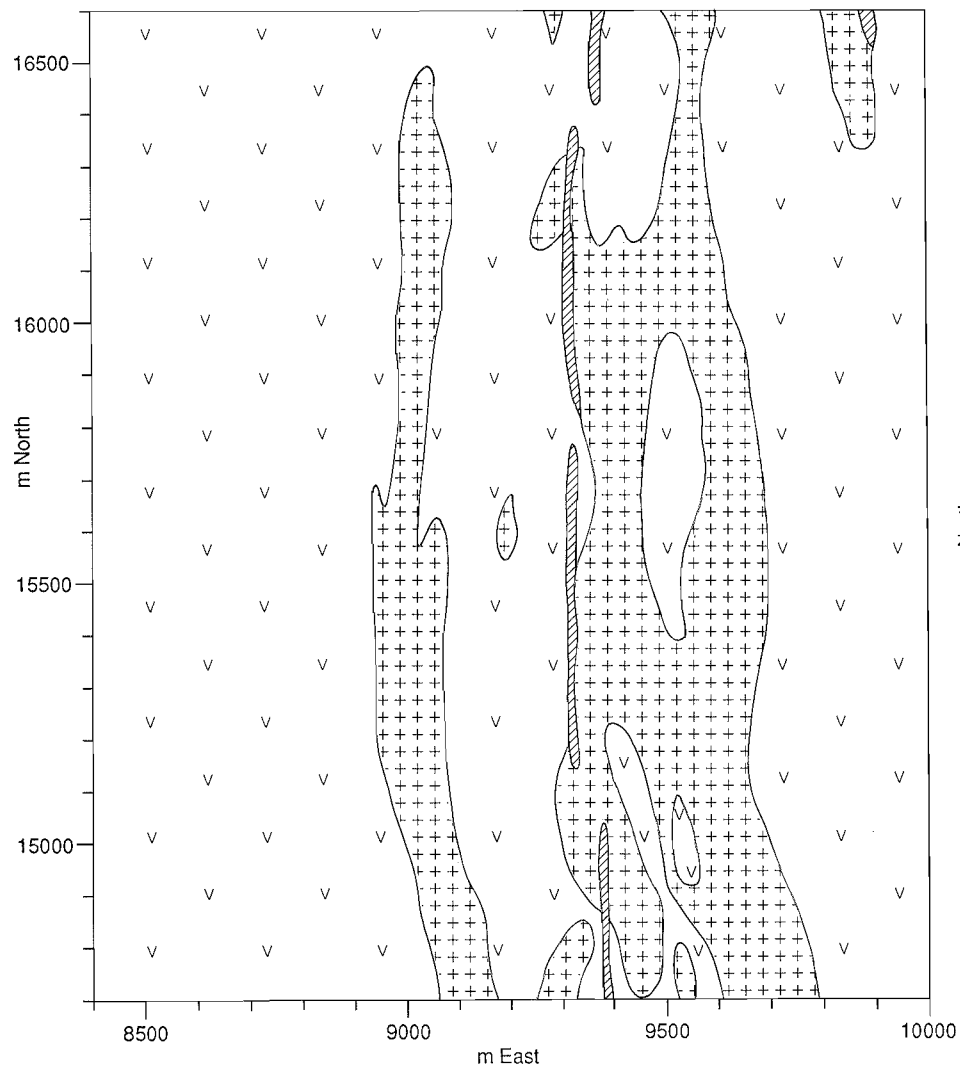
- | | |
|--------------------------------------|-----------------------------------------|
| Drainages - alluvium | Alluvial plain - red earths and hardpan |
| Erosional tracts - calcareous earths | Low gradient slopes - colluvium |

VB Boags



- | |
|------------------------------------------------------------------------|
| Crests and upper slopes - lateritic residuum and ferruginous saprolite |
| Low rises - greenstone saprolite |

EMU



Gossan



Metabasalt

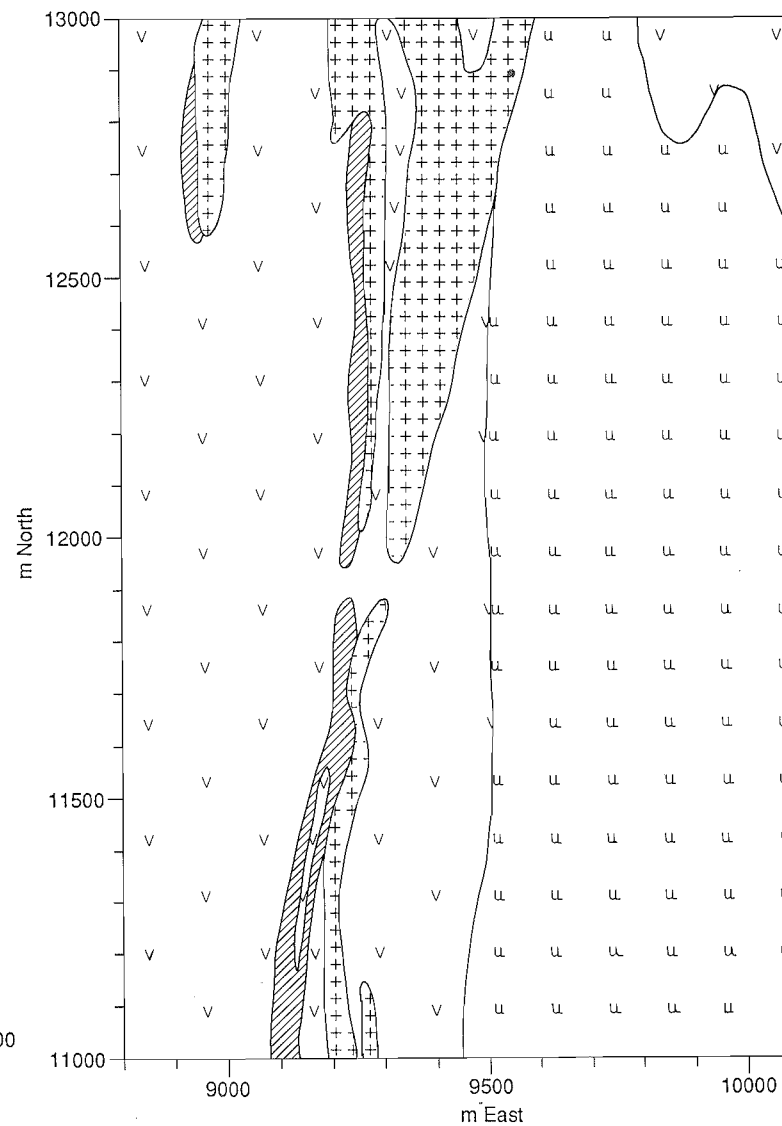


Adamellite porphyry

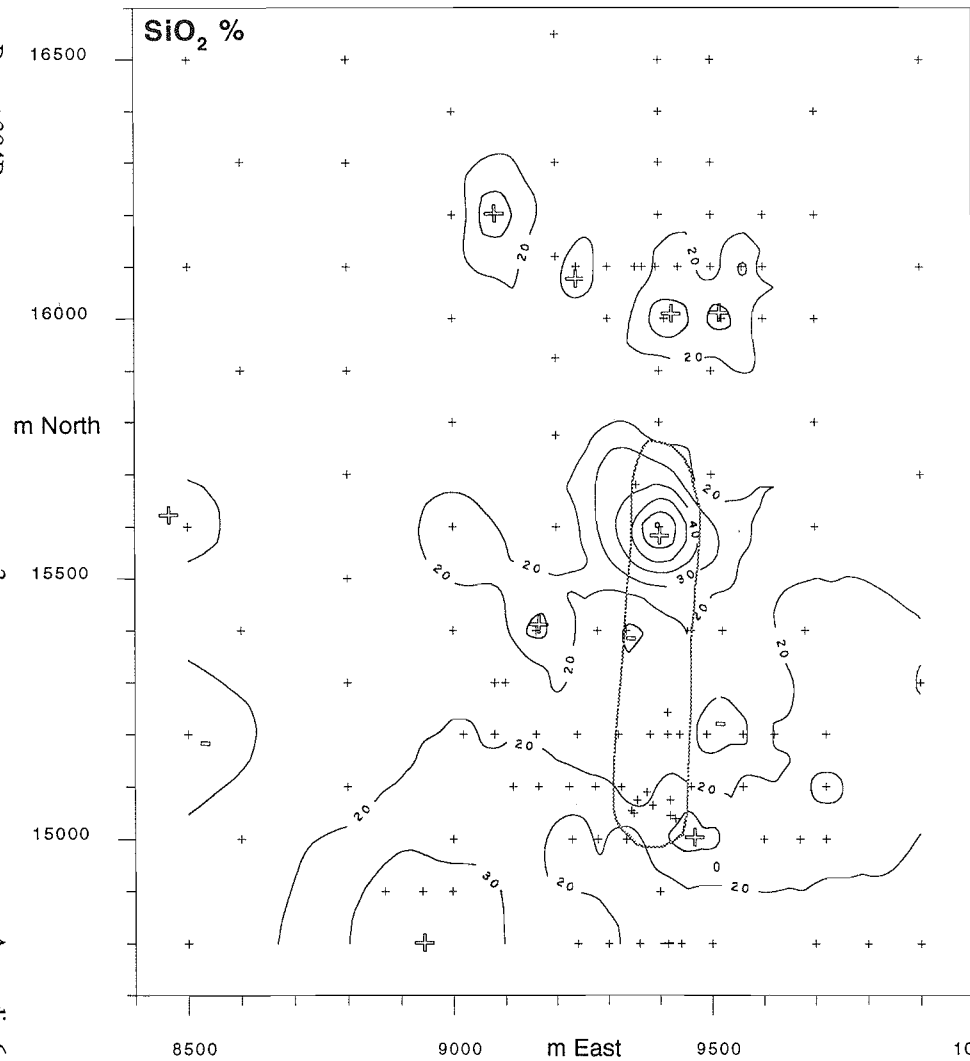


Ultramafic schist

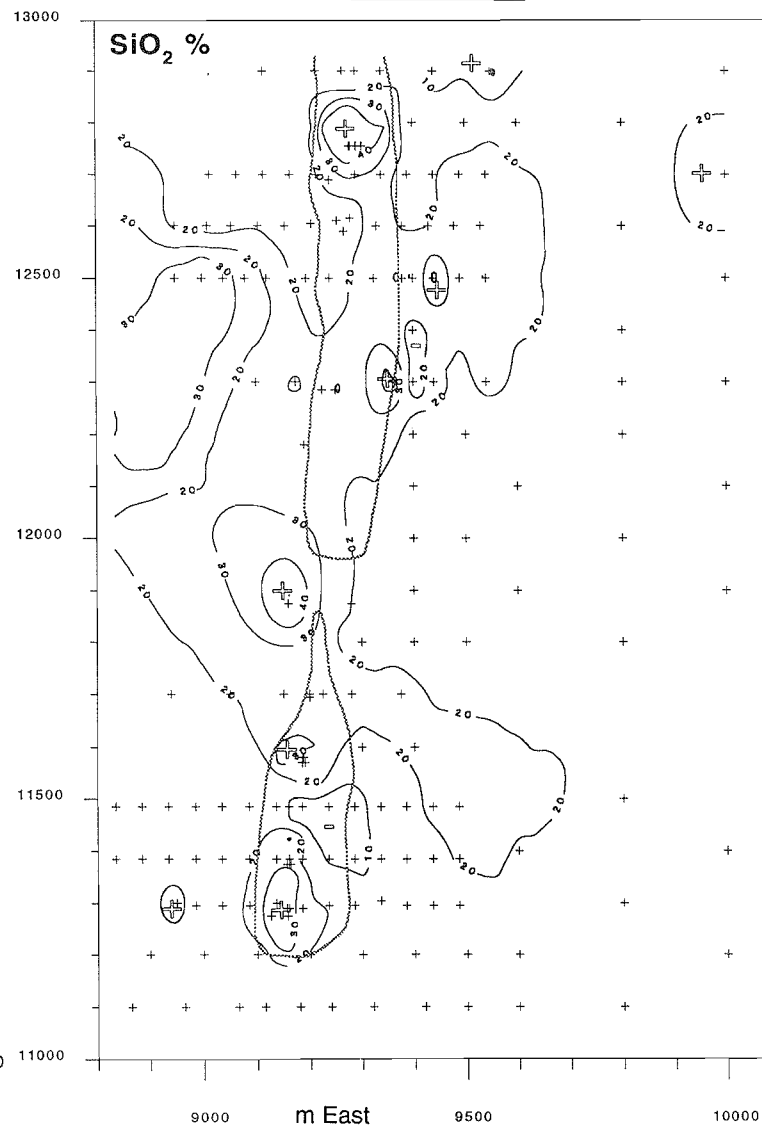
VB Boags



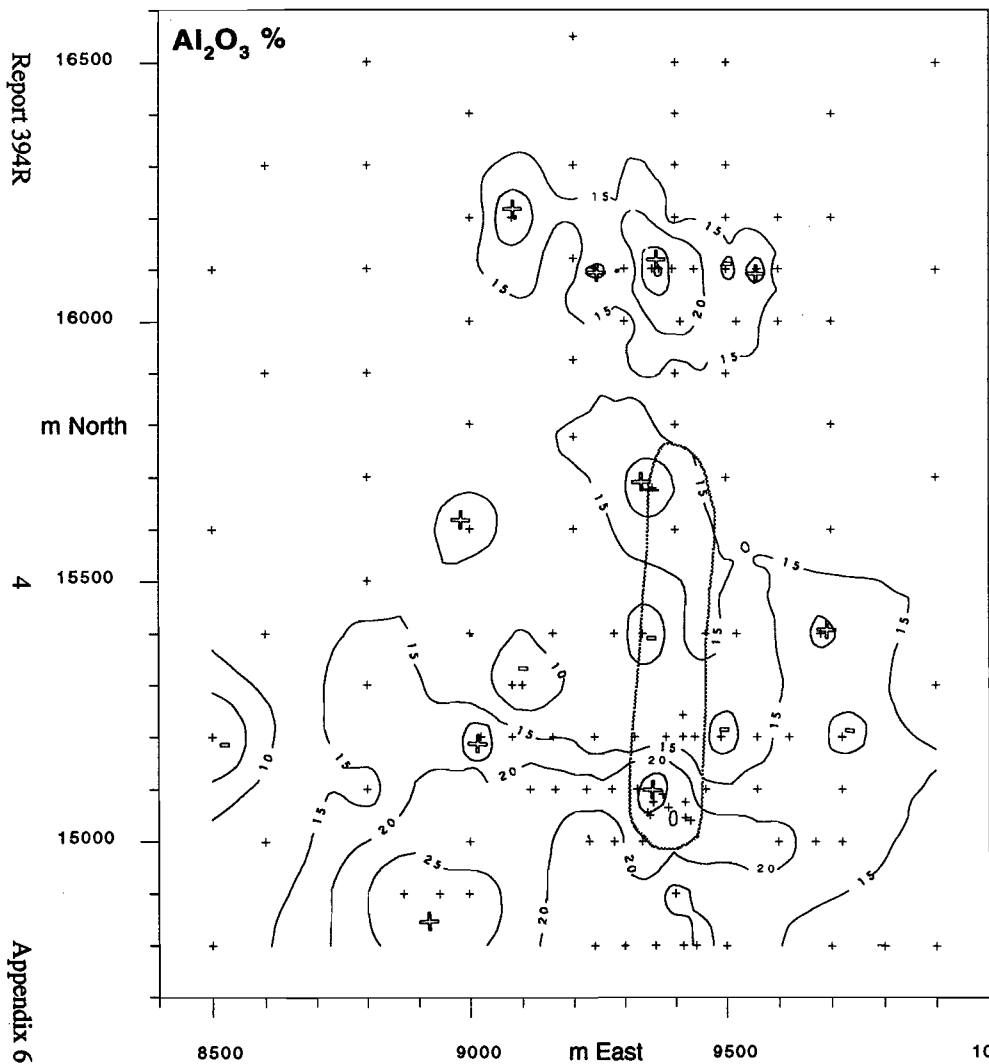
Emu



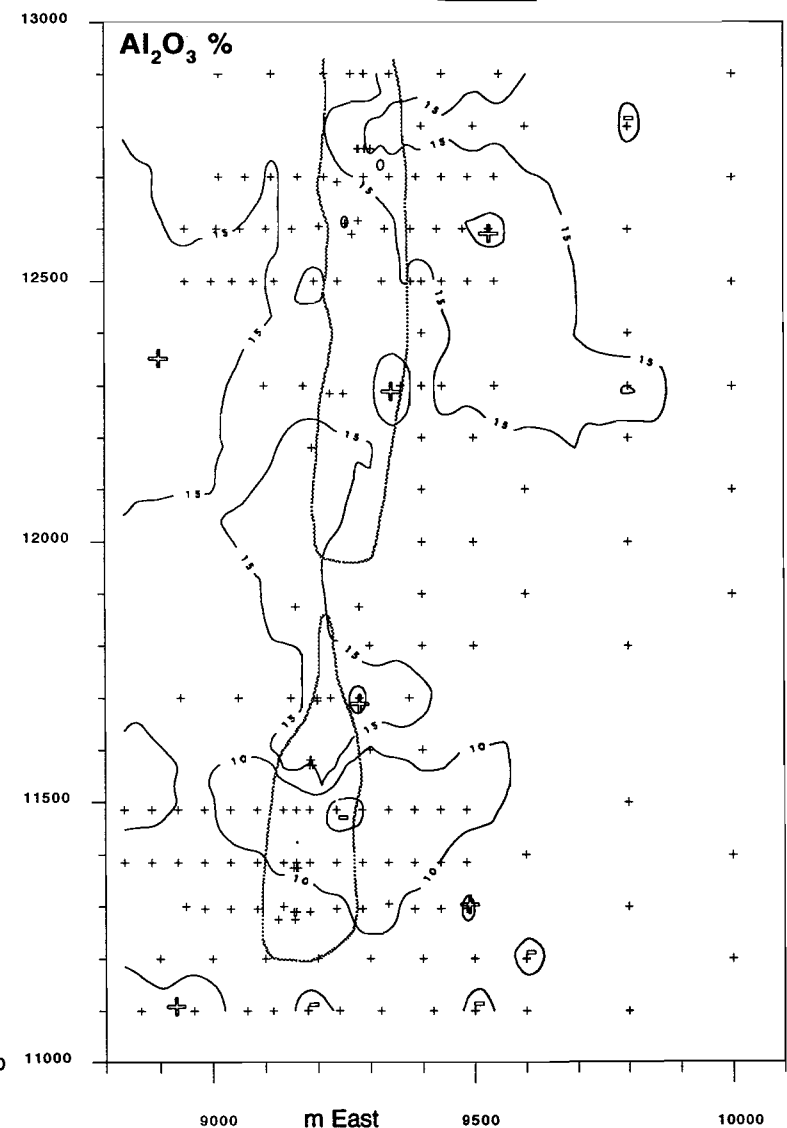
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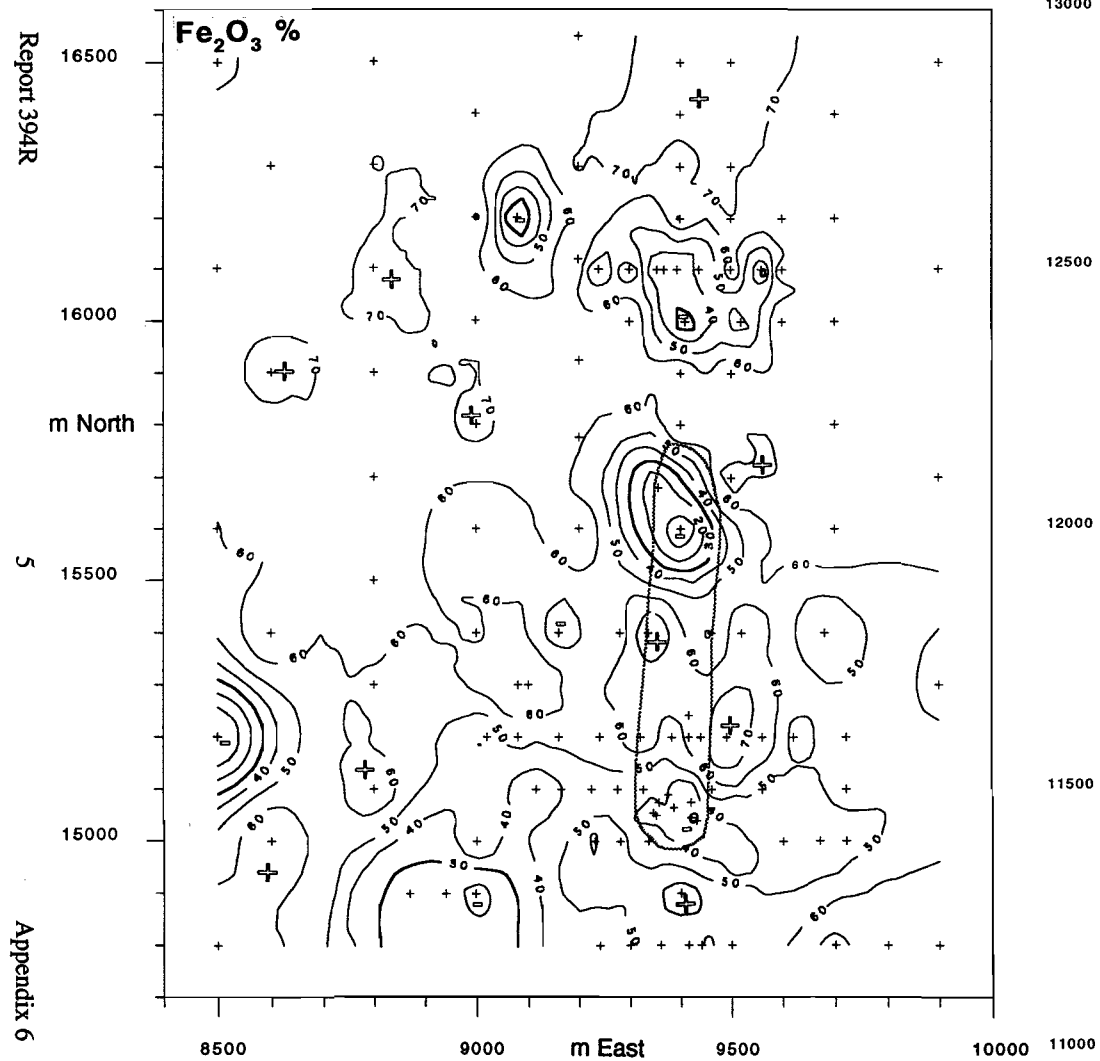
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VB Boags

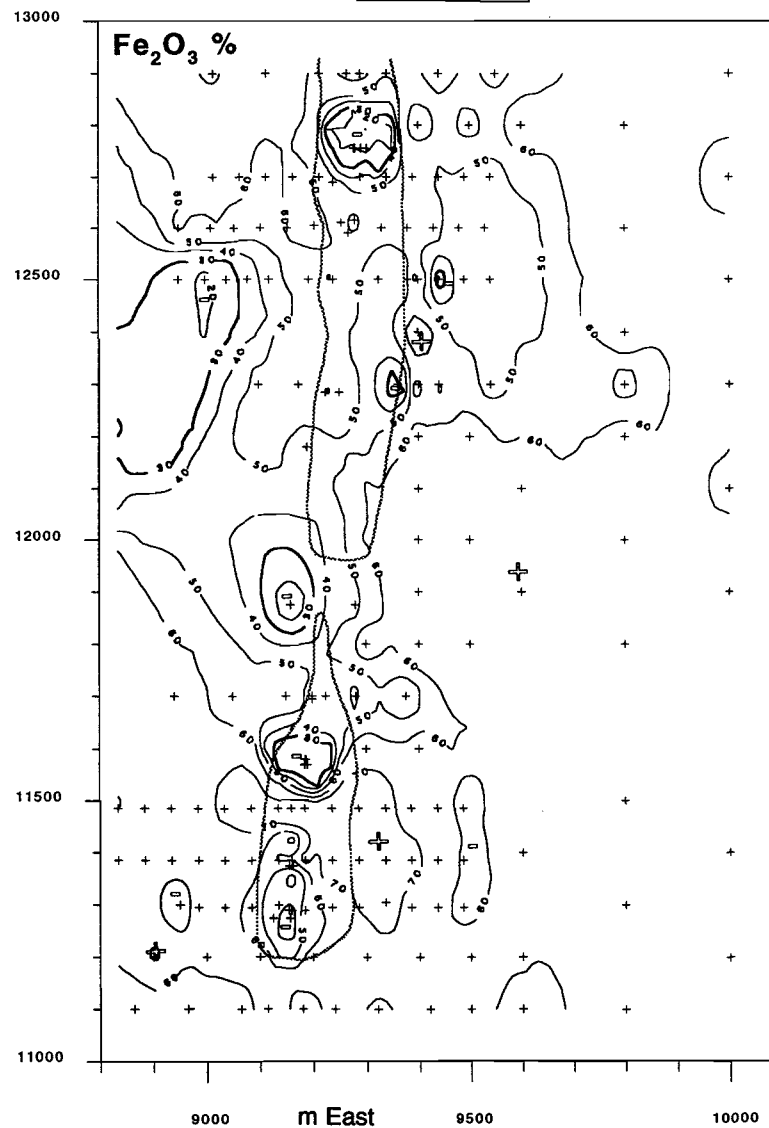


Emu



Appendix 6

VB Boags



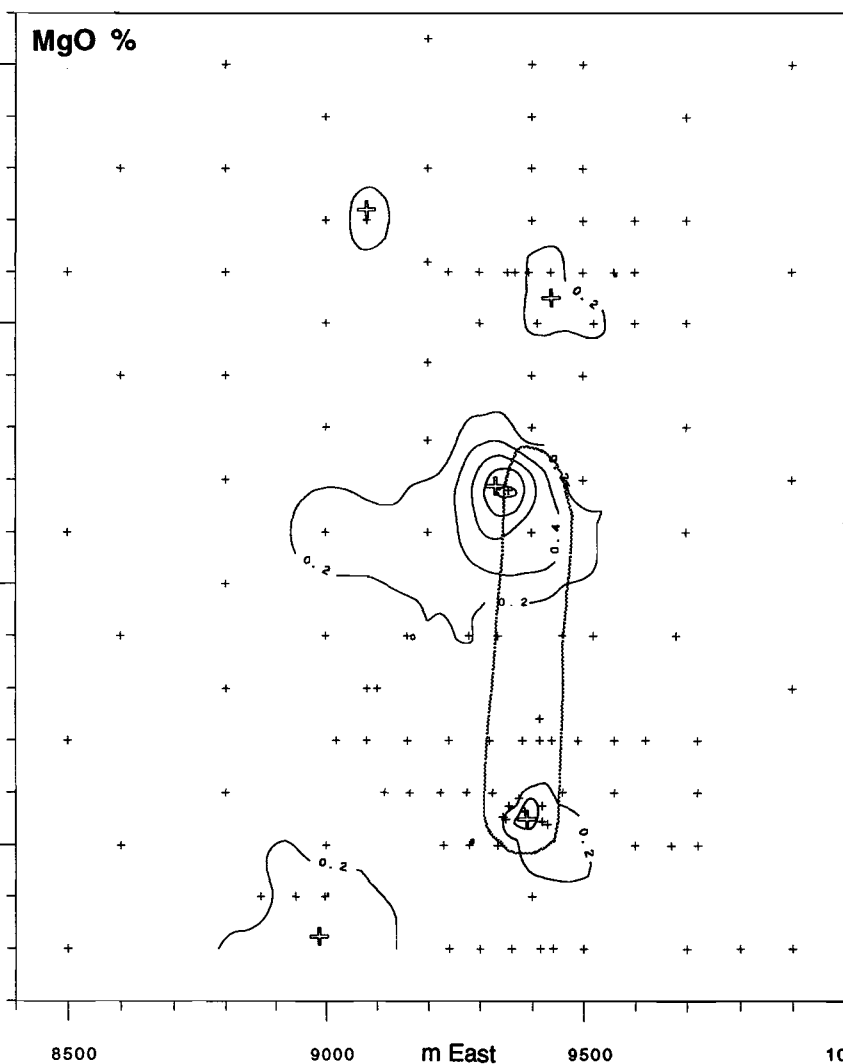
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Report 394R

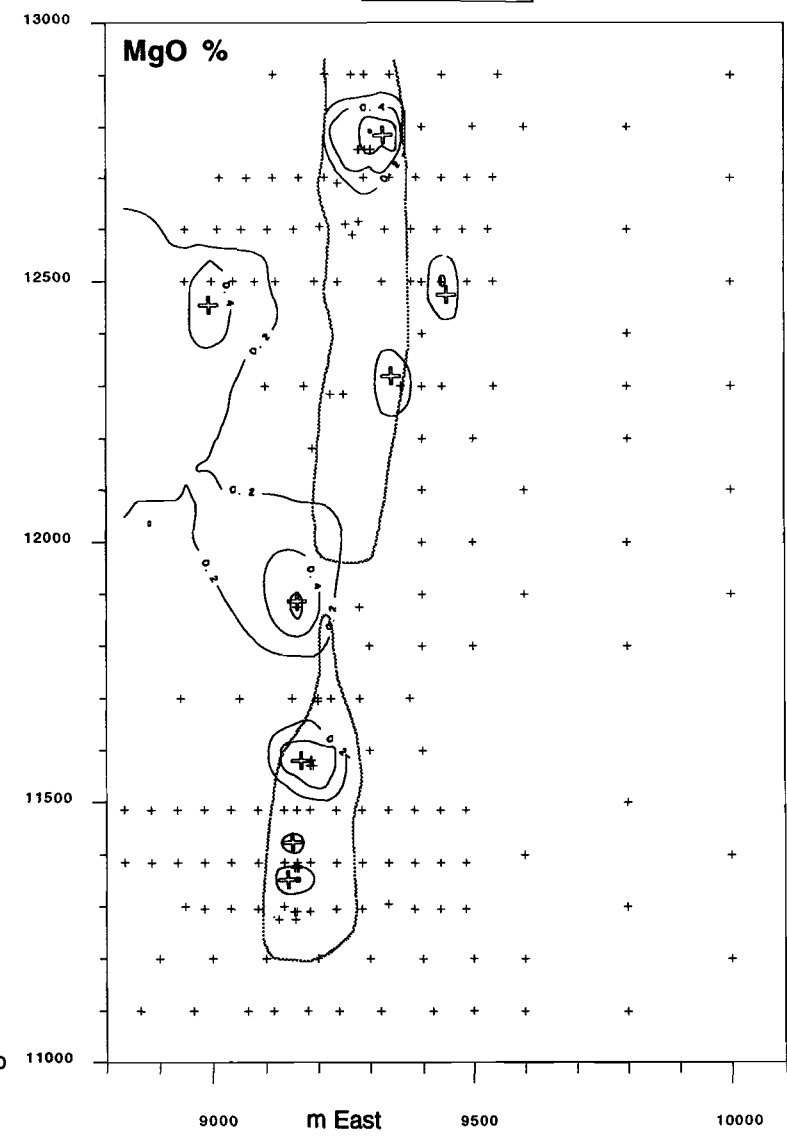
6

Appendix 6

Emu

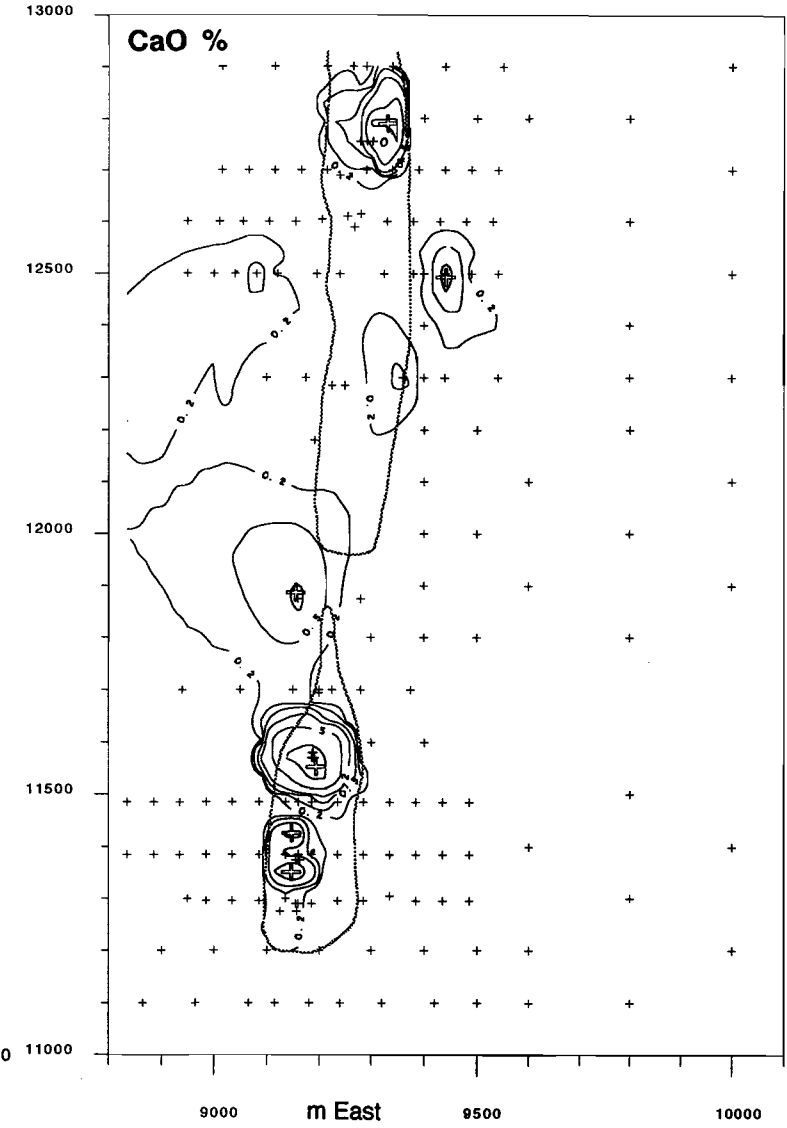


VB Boags



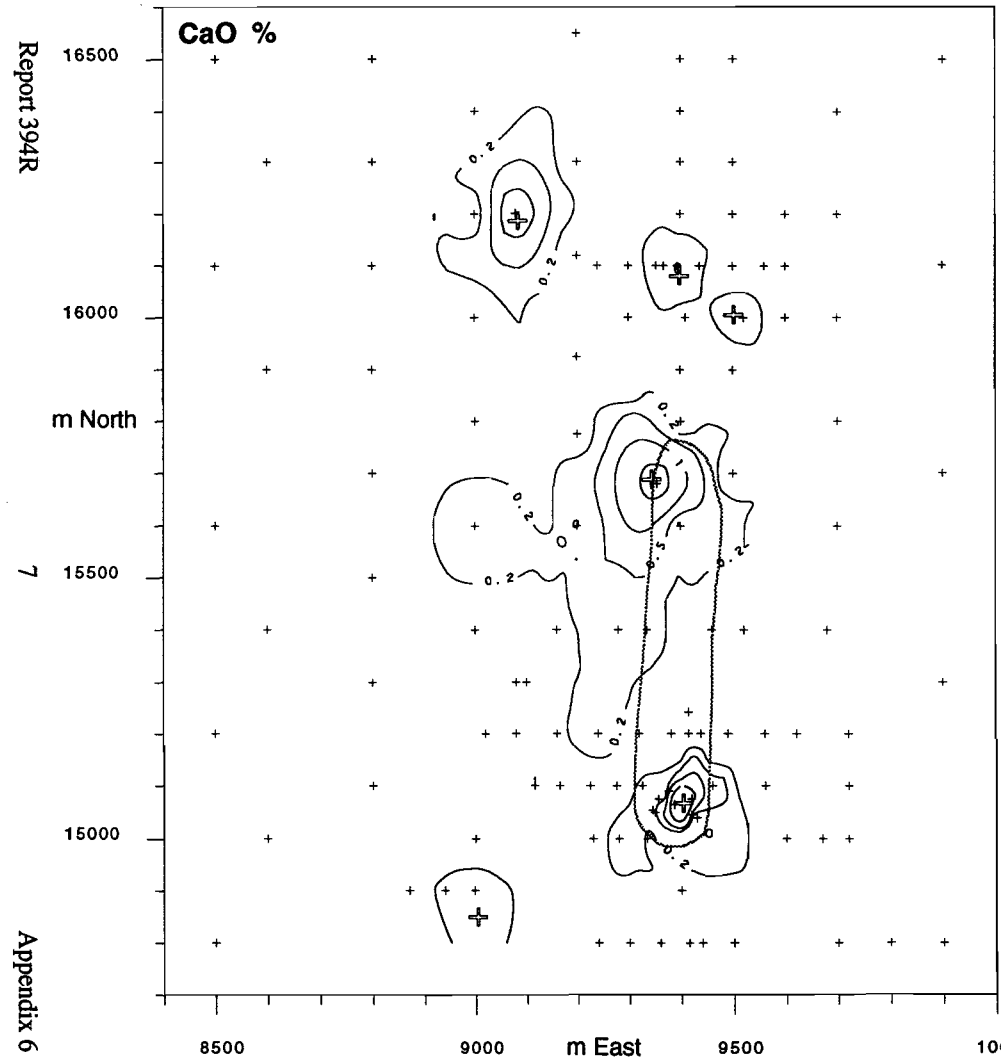
Mg

VB Boags



Ca

Emu



Report 394R

7

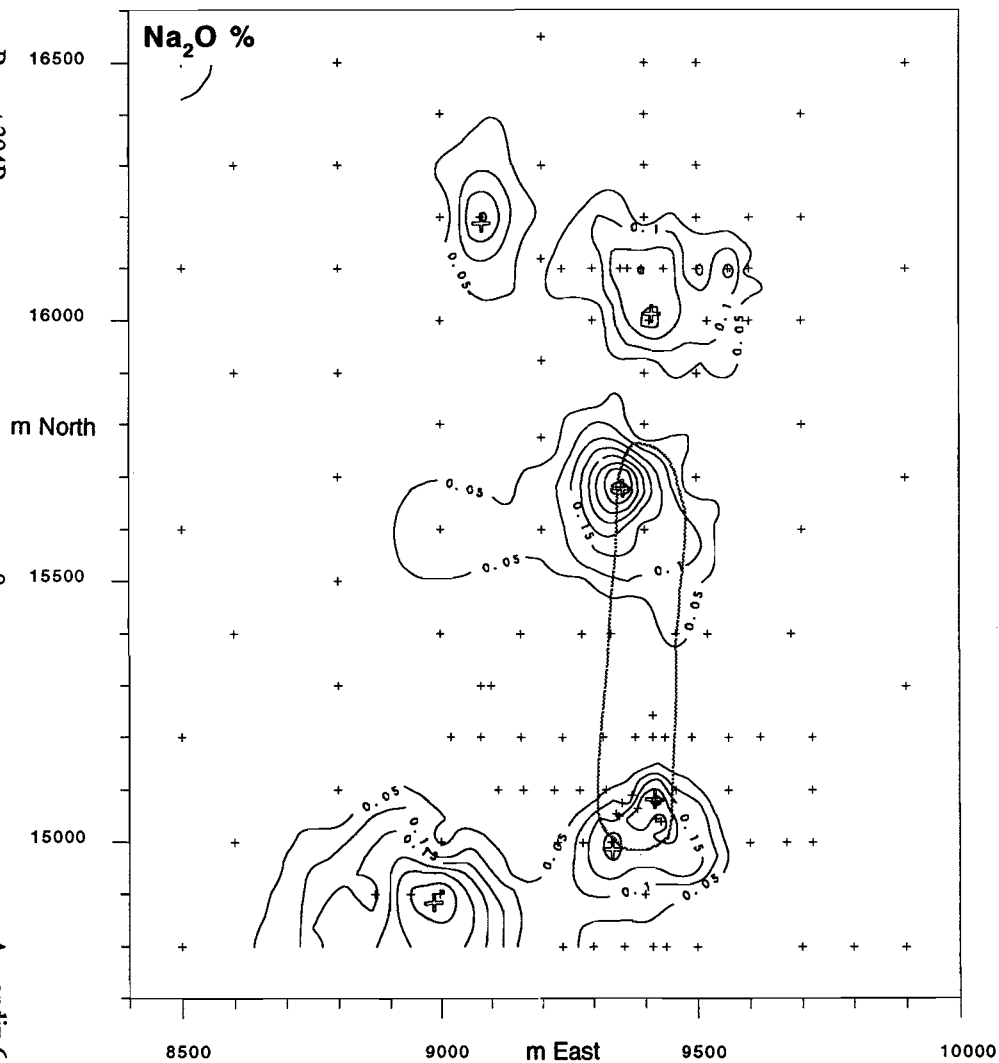
Appendix 6

Report 394R

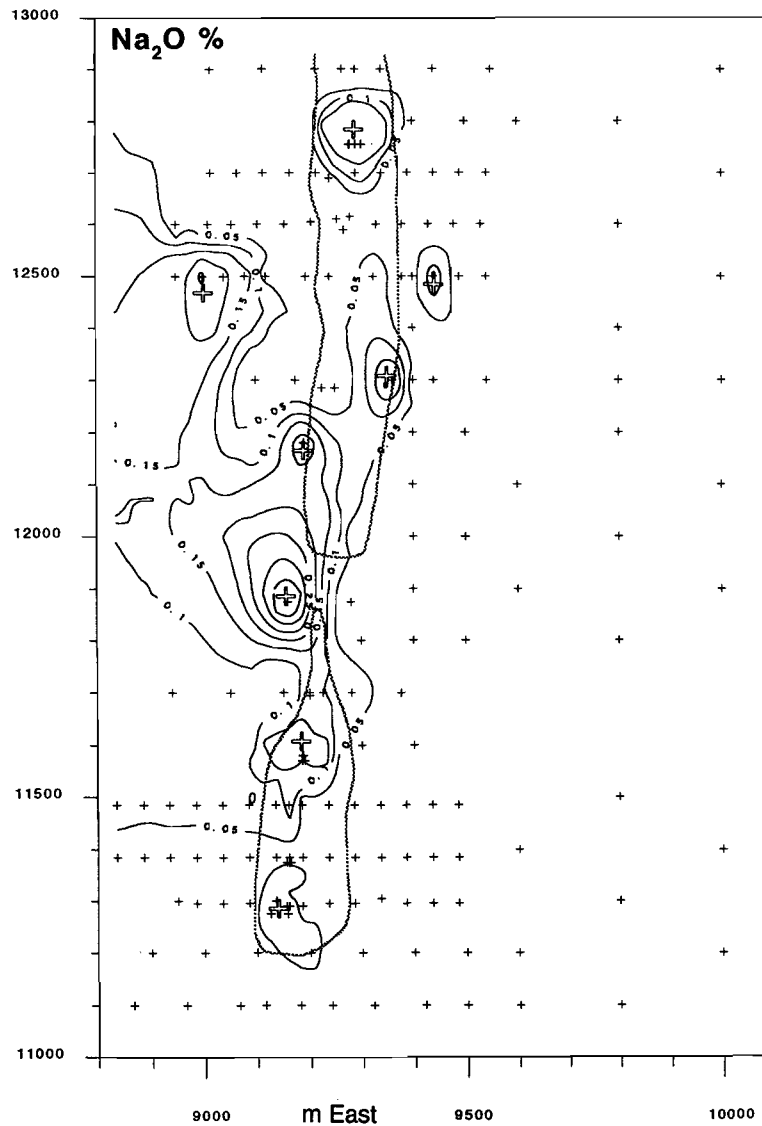
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Appendix 6

Emu

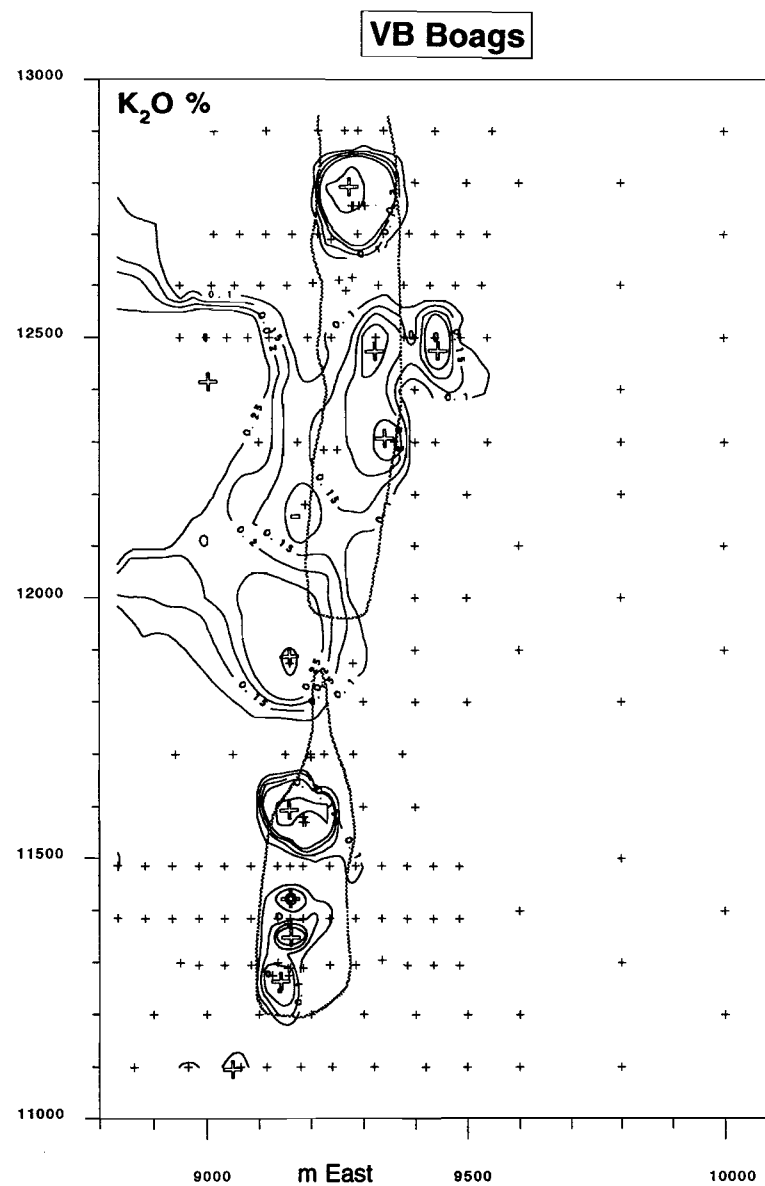
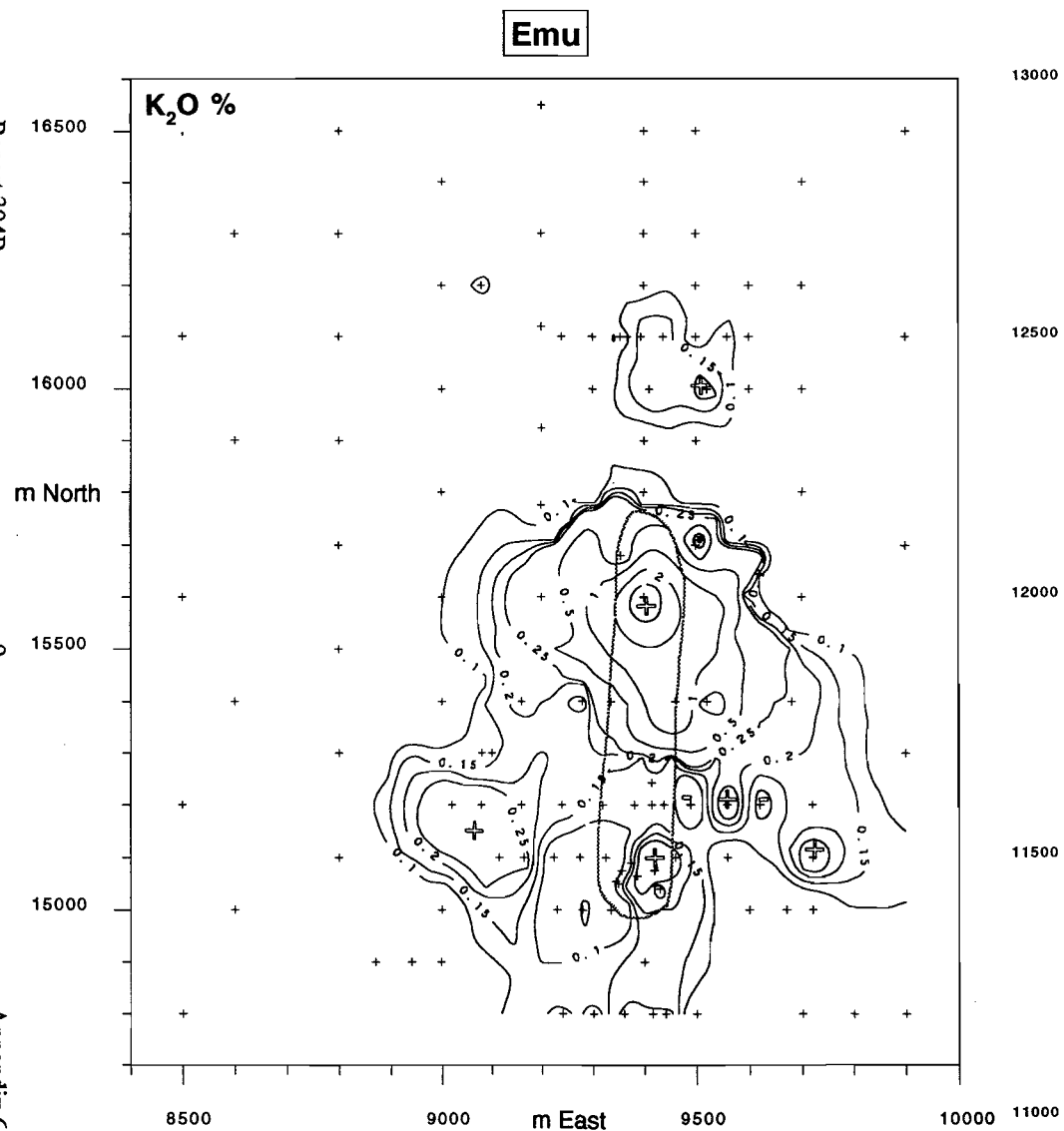


VB Boags



Na

Appendix 6



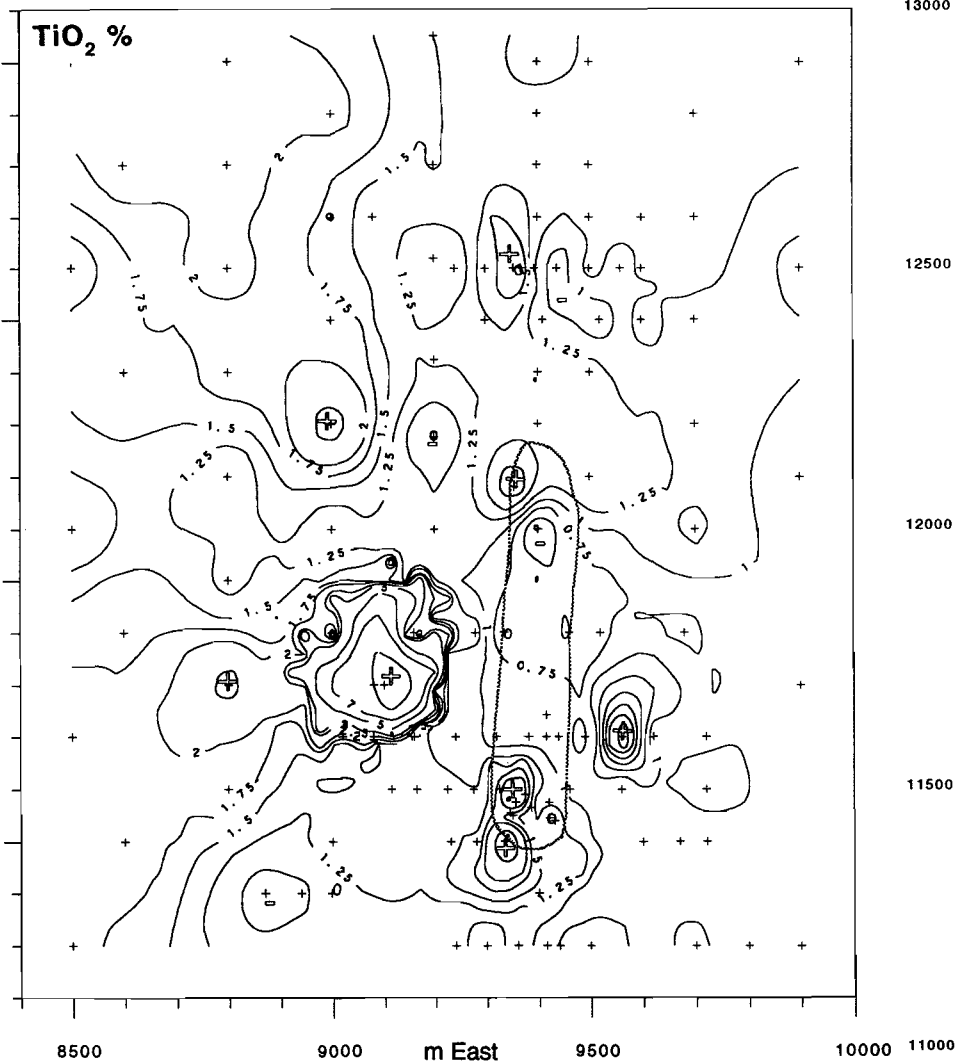
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m North

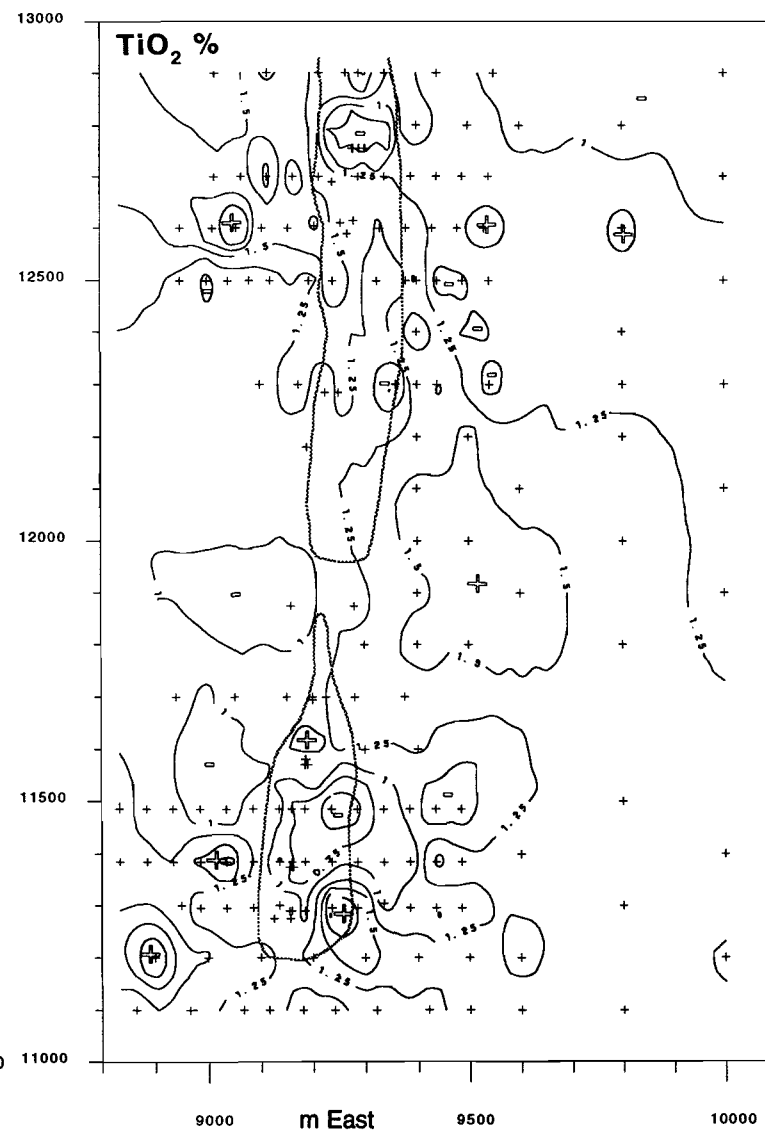
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Appendix 6

Emu



VB Boags



Ti

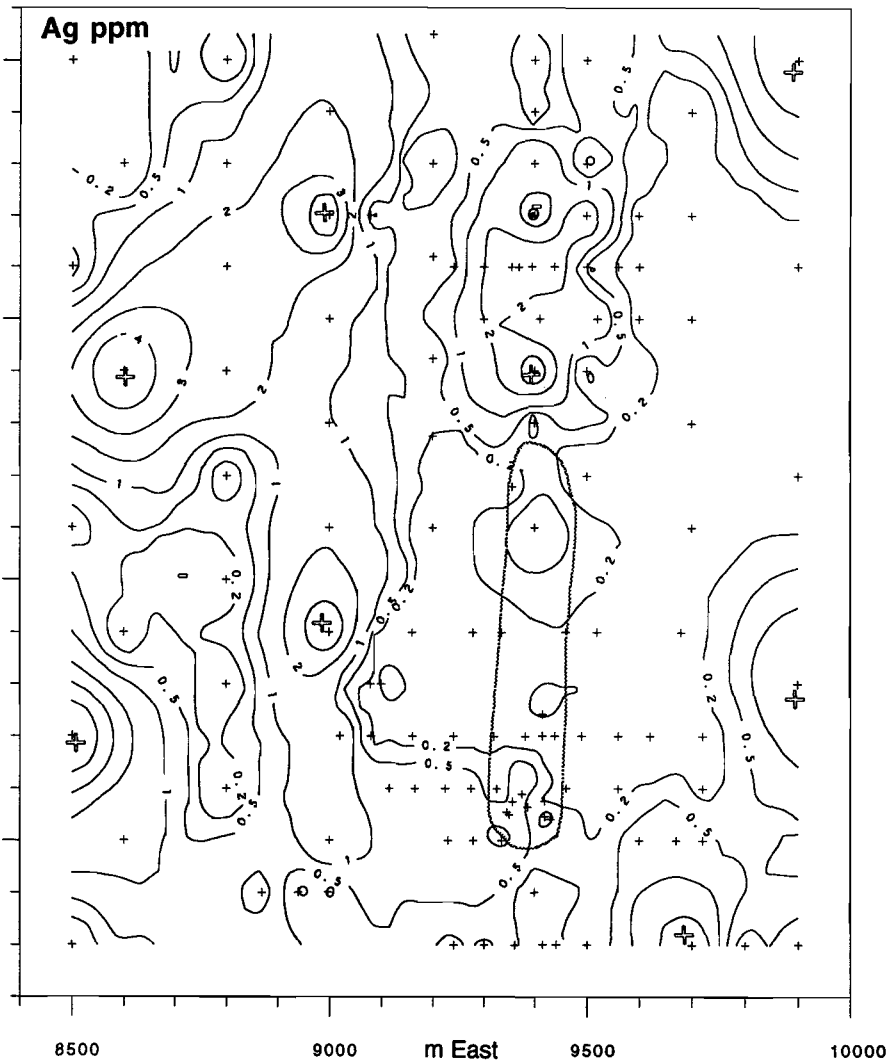
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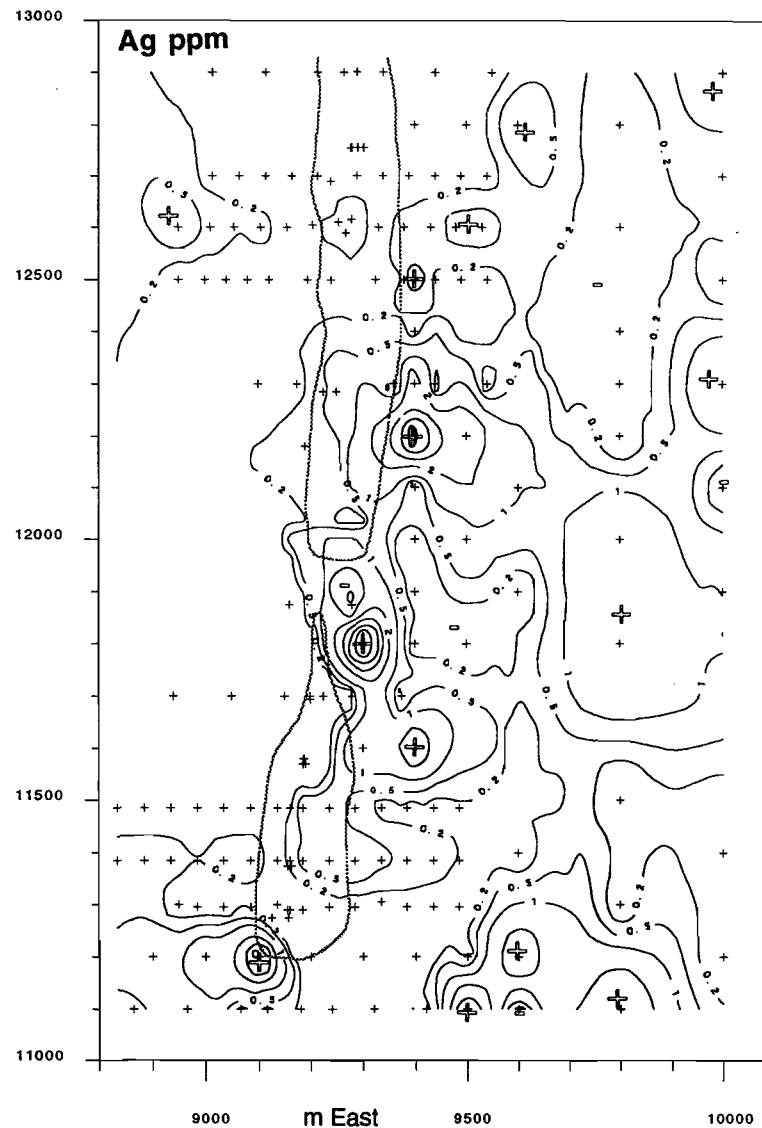
11

Appendix 6

Emu



VB Boags



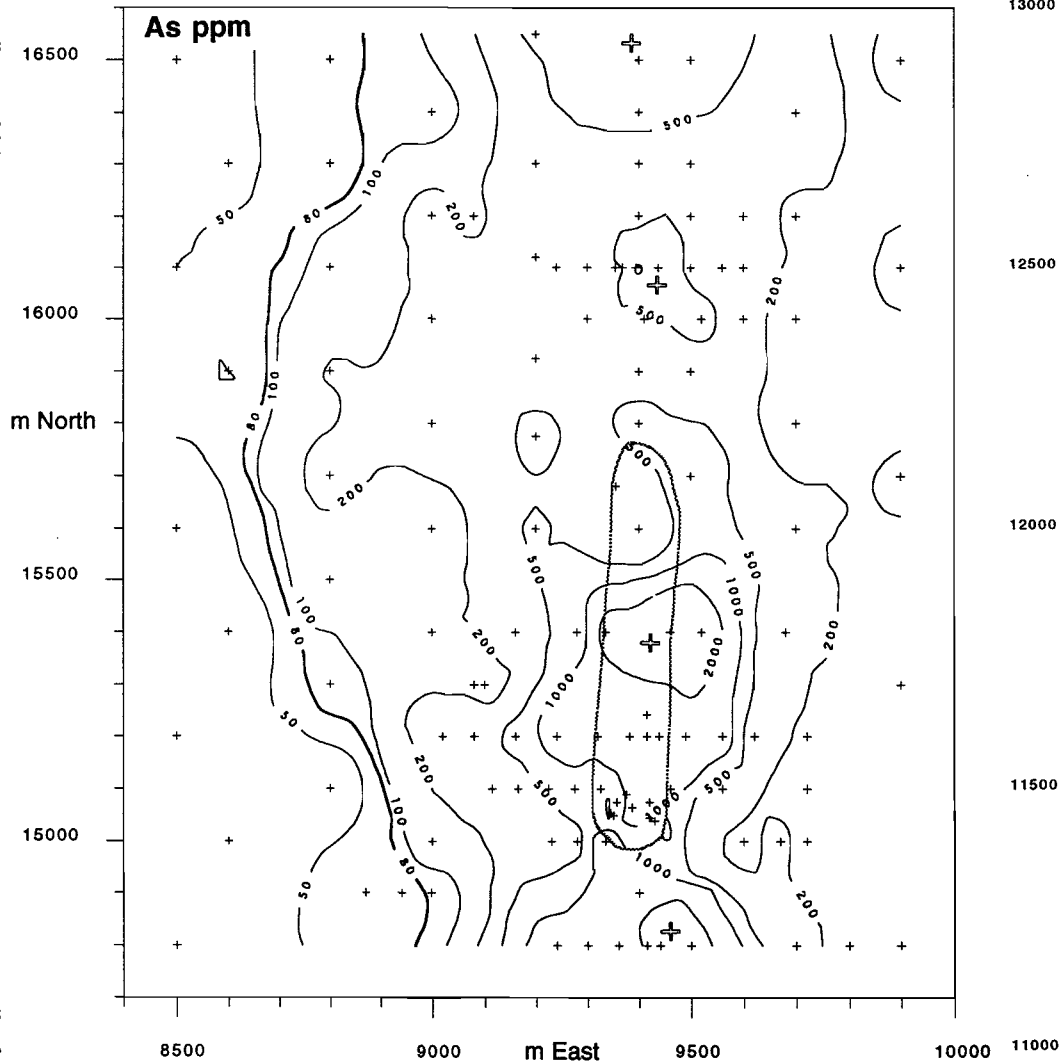
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Report 394R

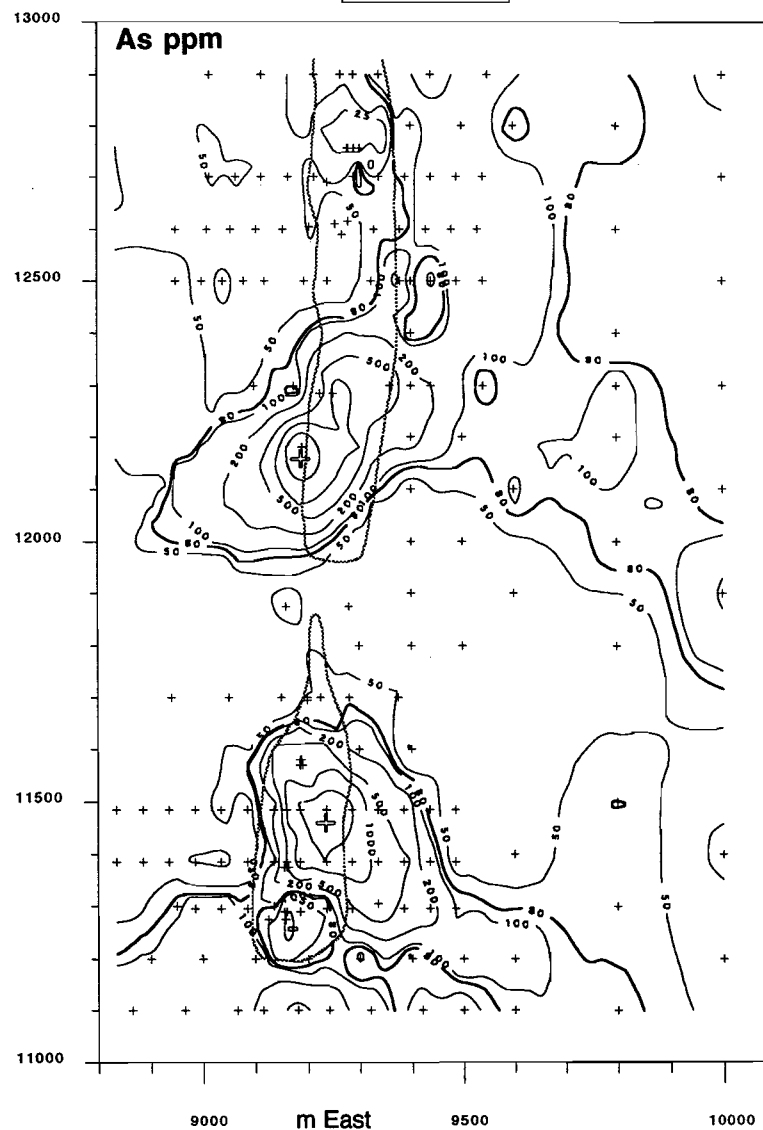
12

Appendix 6

Emu

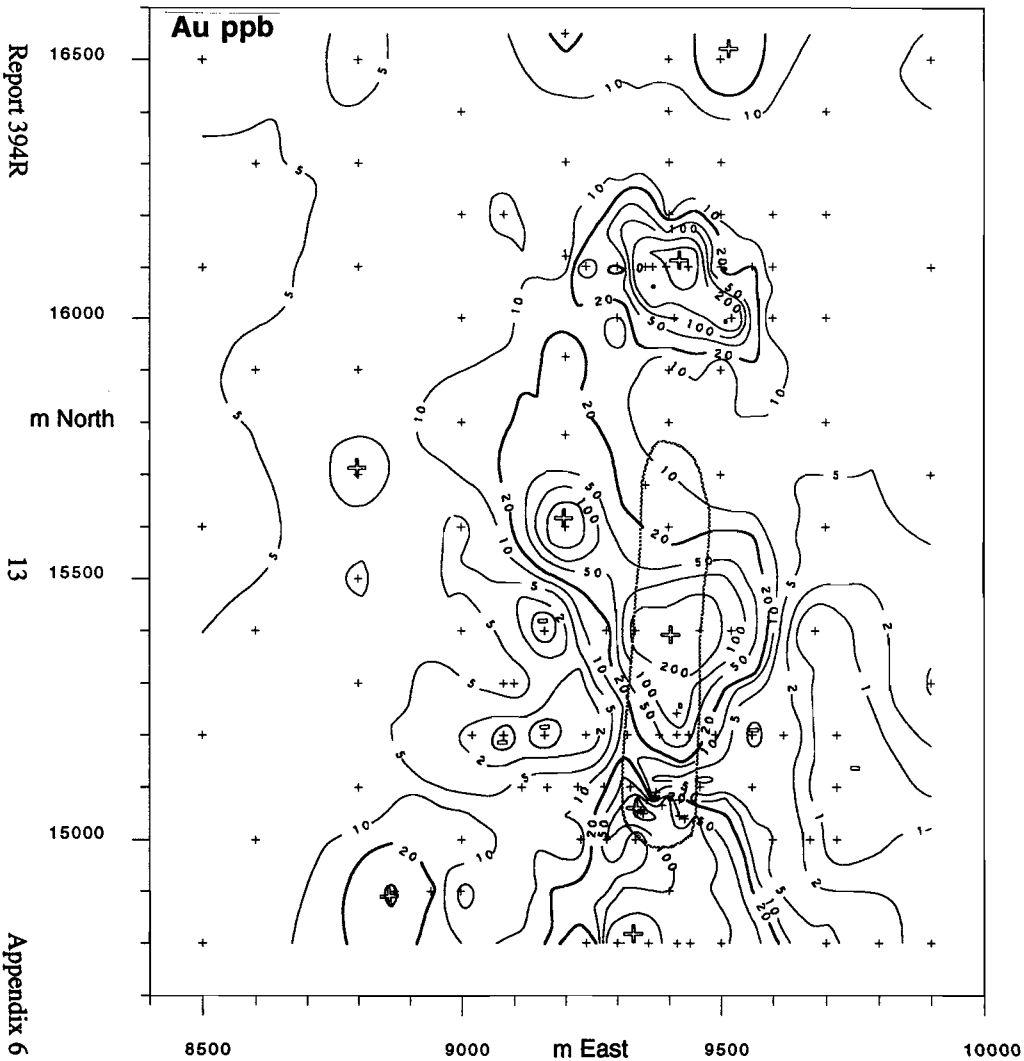


VB Boags



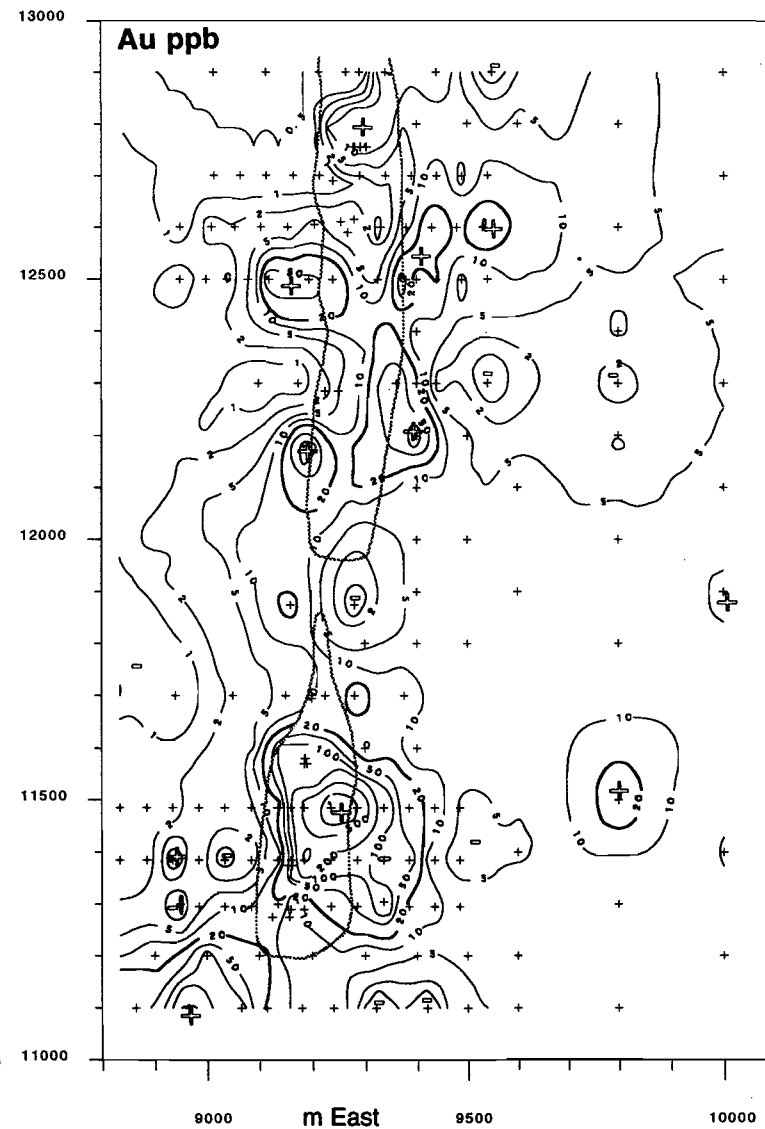
AS

Emu



Appendix 6

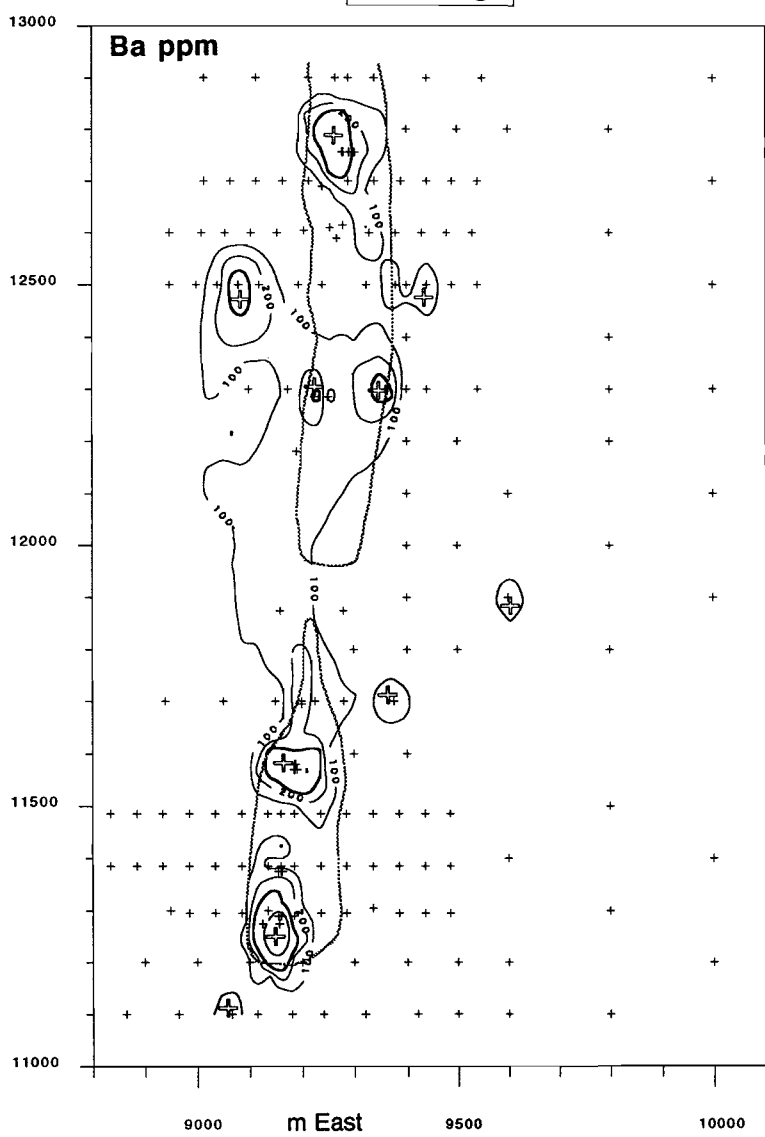
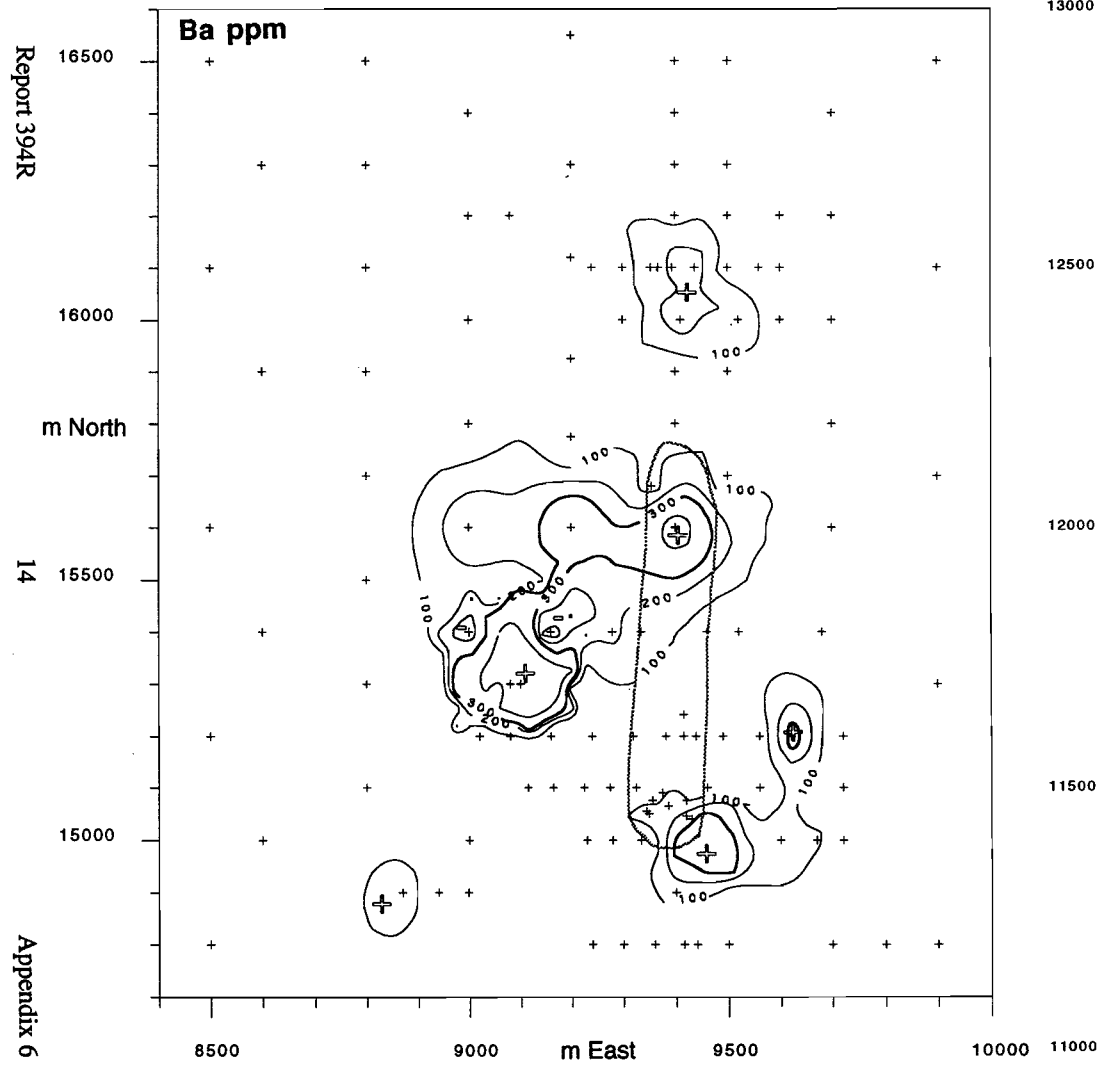
VB Boags



Au

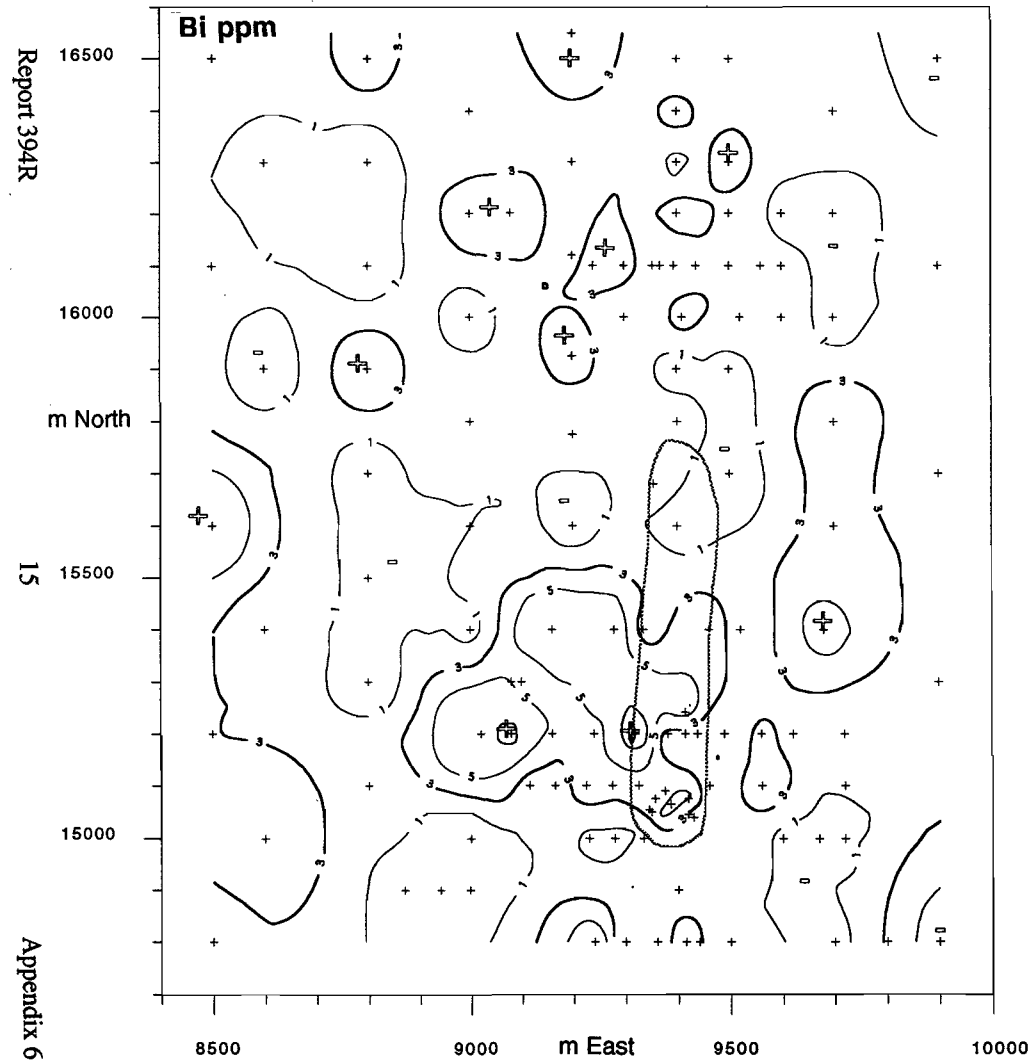
Emu

VB Boags

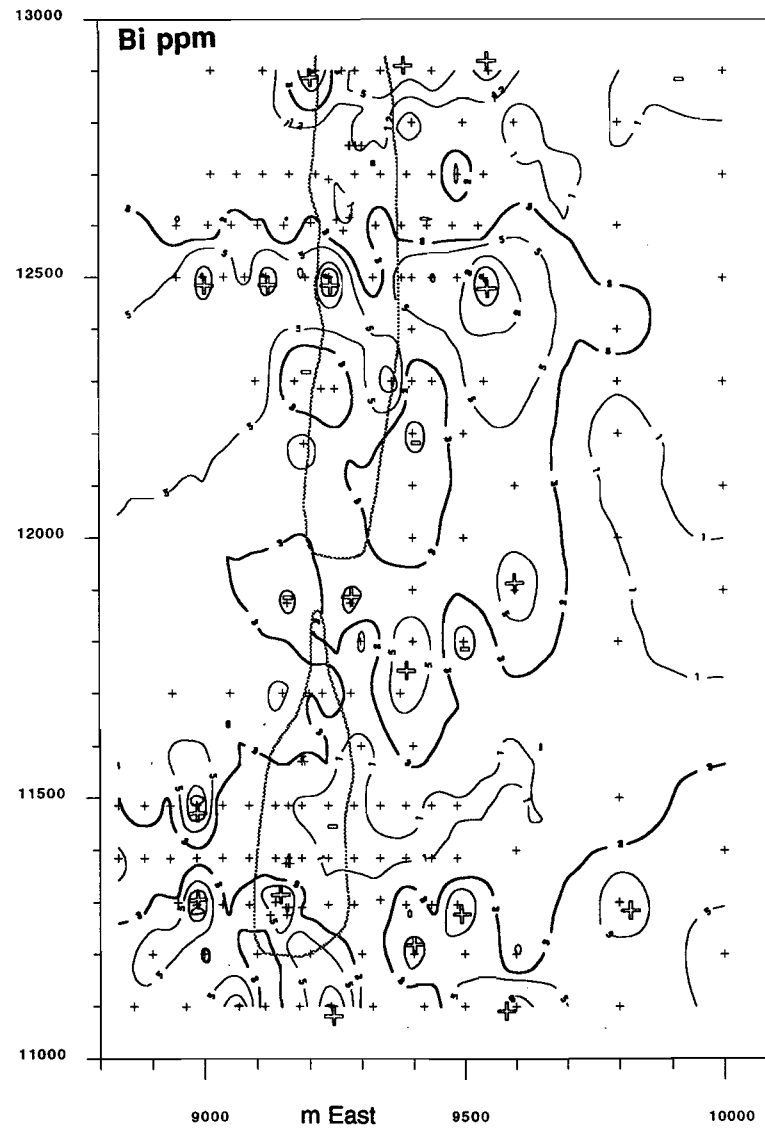


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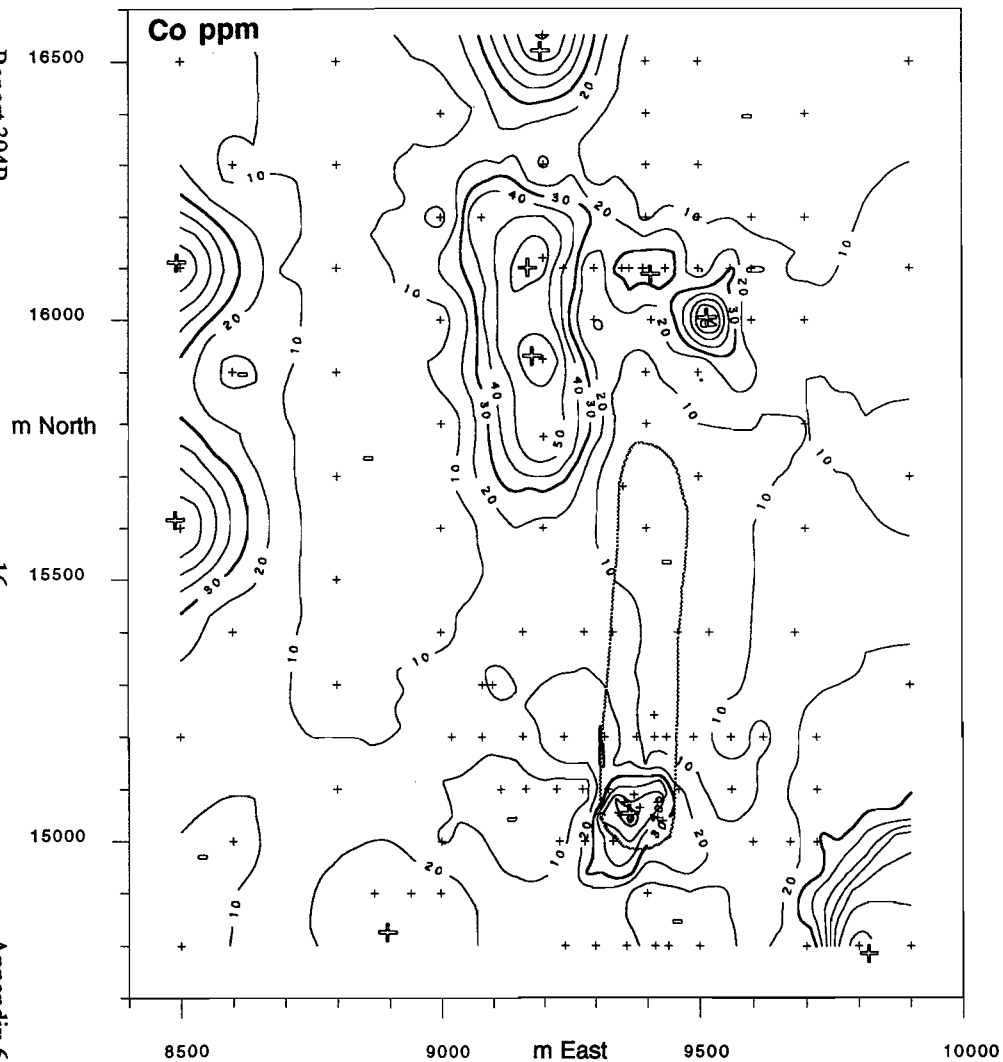
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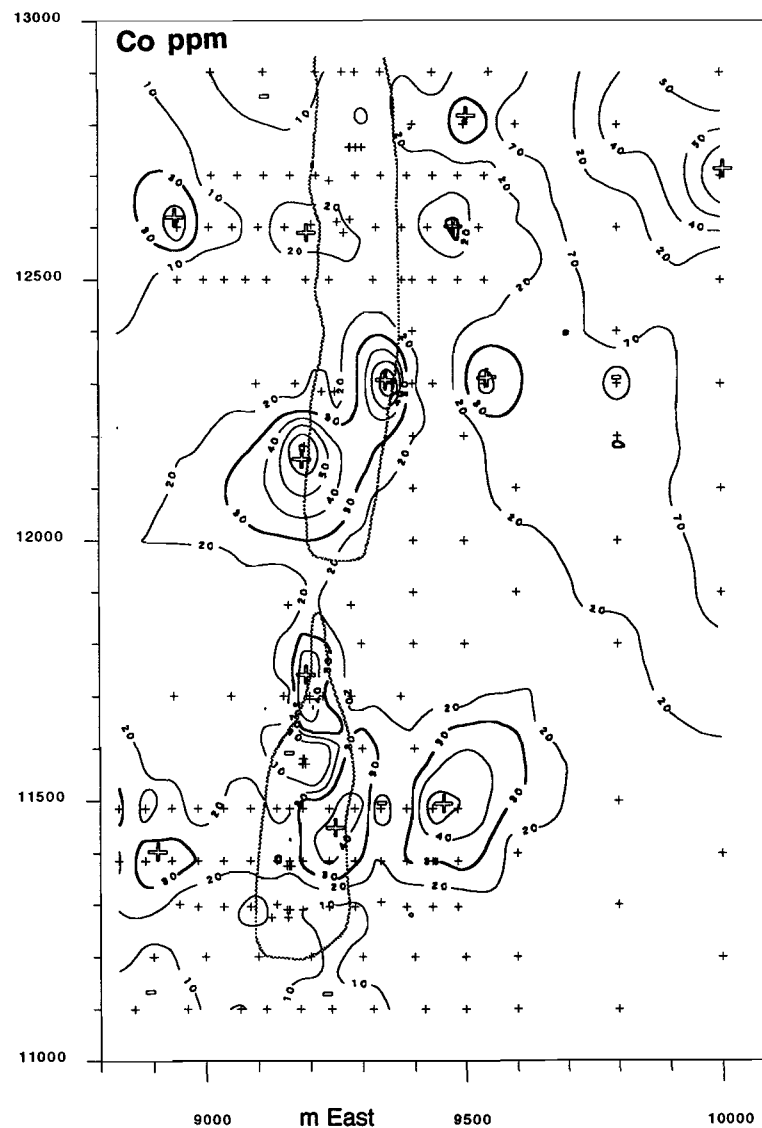
VB Boags



Emu



VB Boags

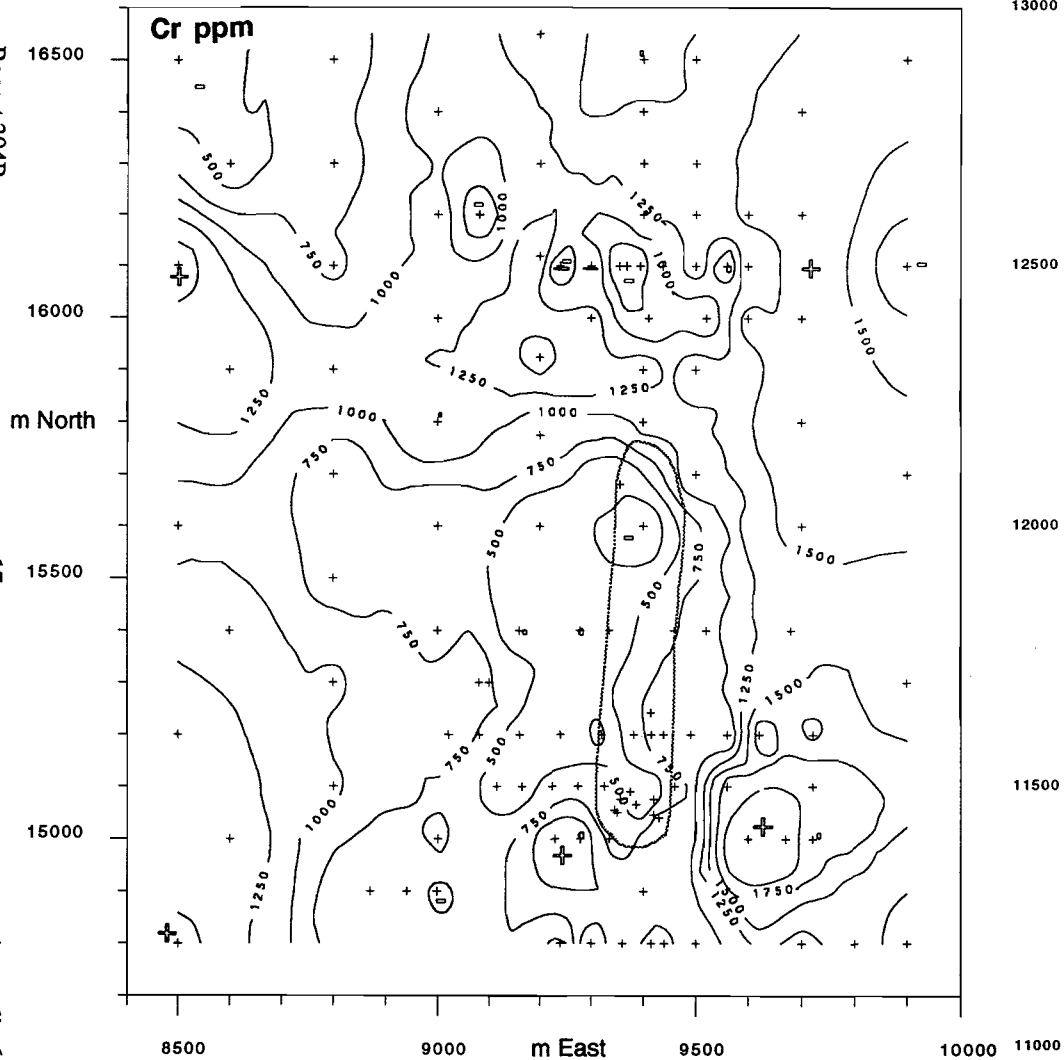


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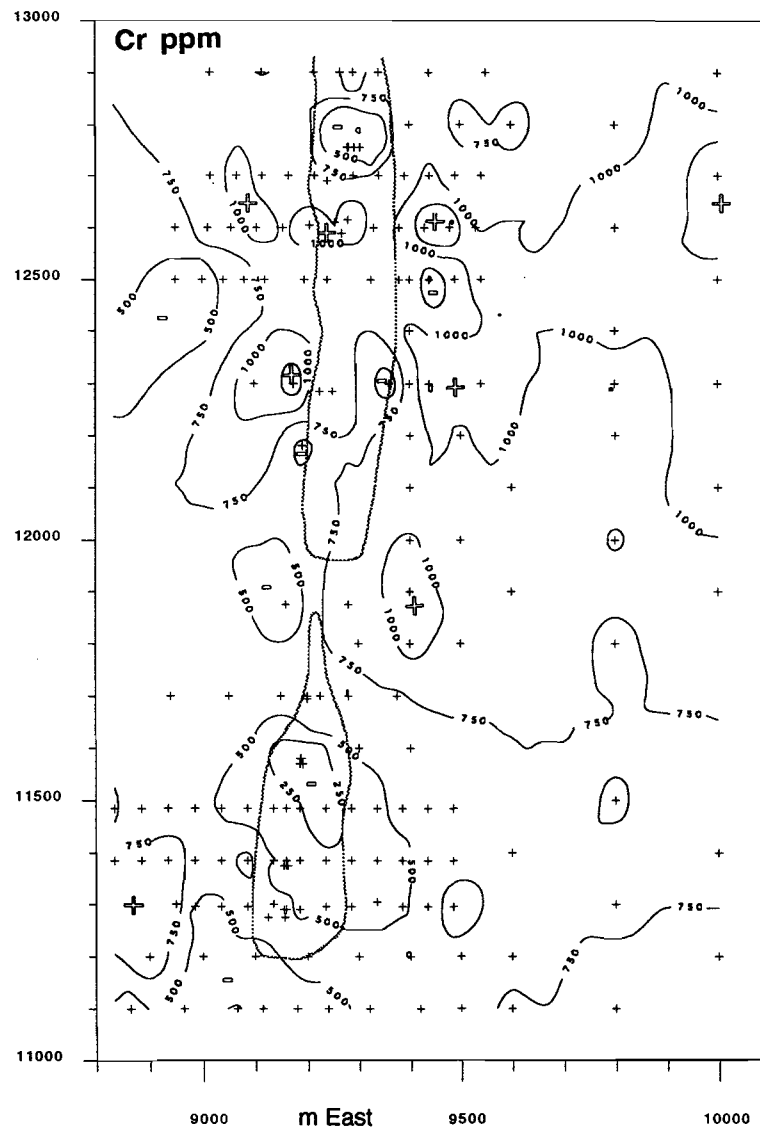
17

Appendix 6

Emu



VB Boags



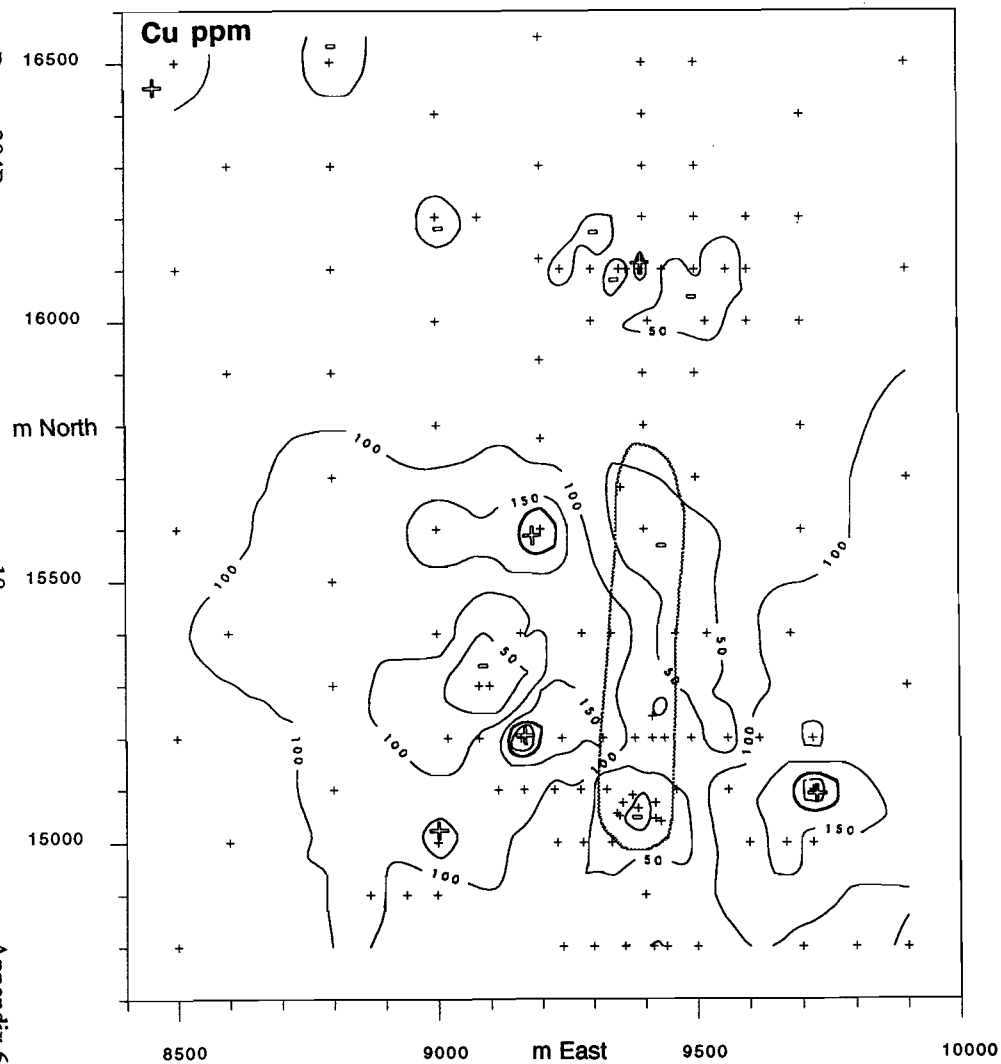
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Report 394R

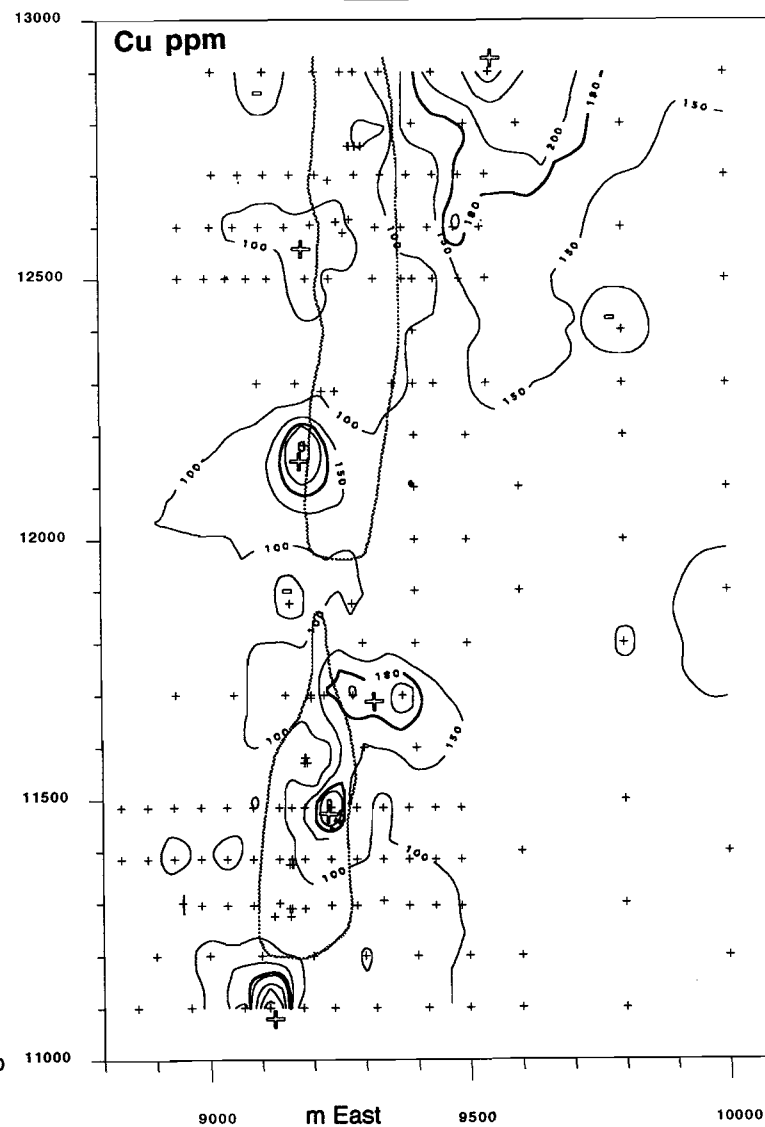
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Appendix 6

Emu

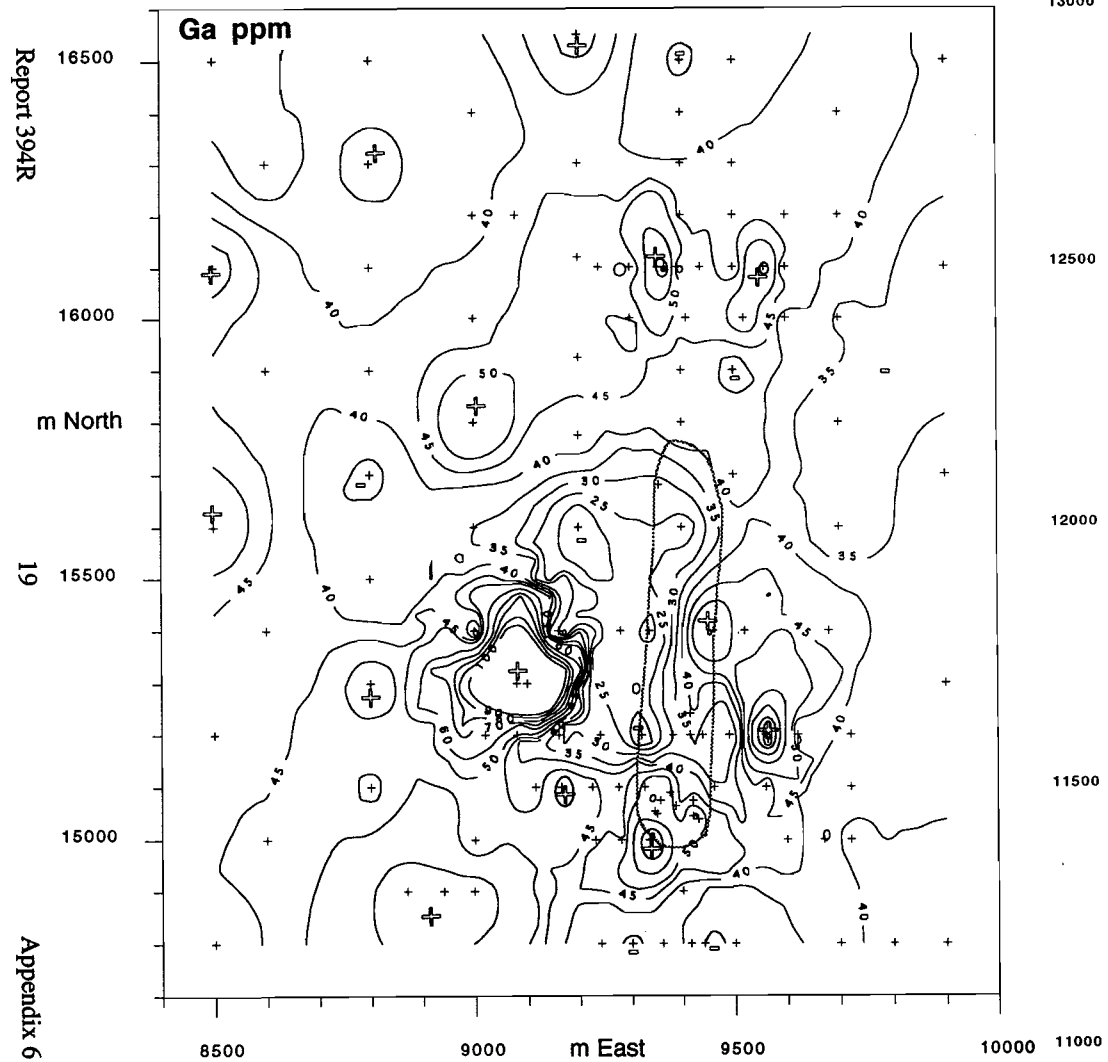


VB Boags

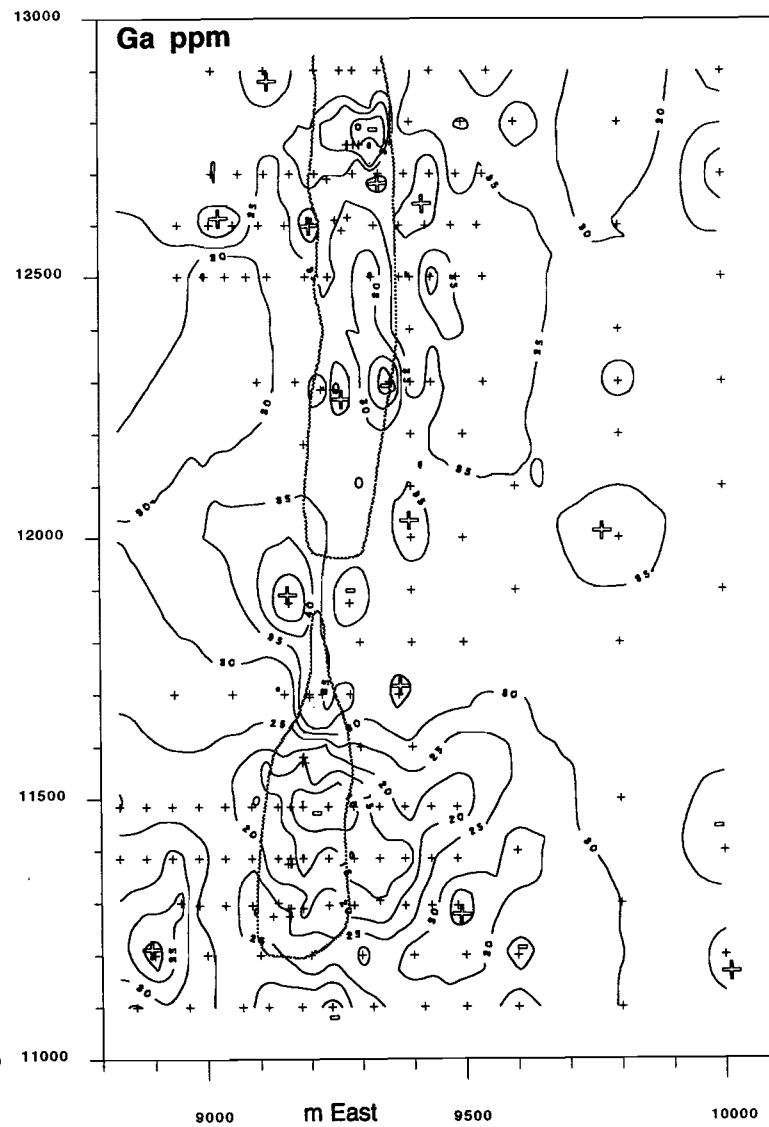


Cu

Emu

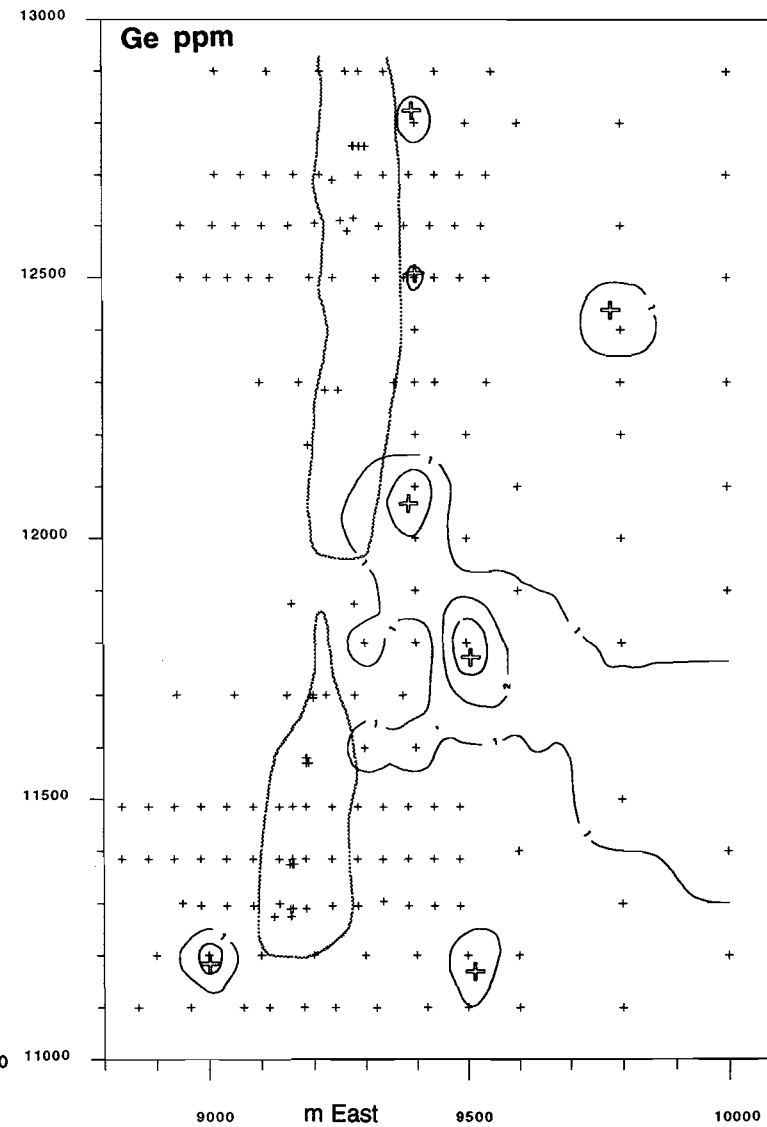


VB Boags

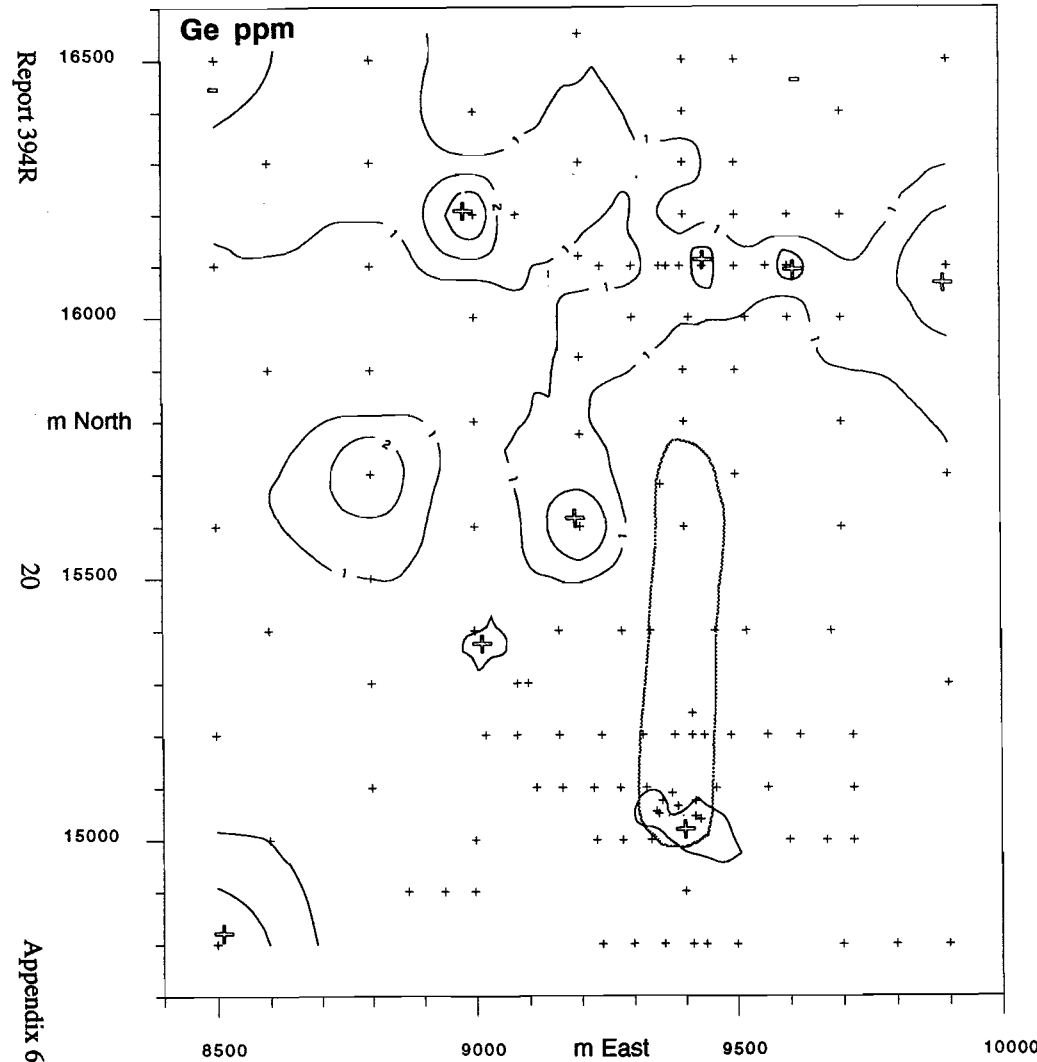


ଗା

VB Boags



Emu



Ge

Report 394R

m North

20

Appendix 6

Ge ppm

Ge ppm

m East

m East

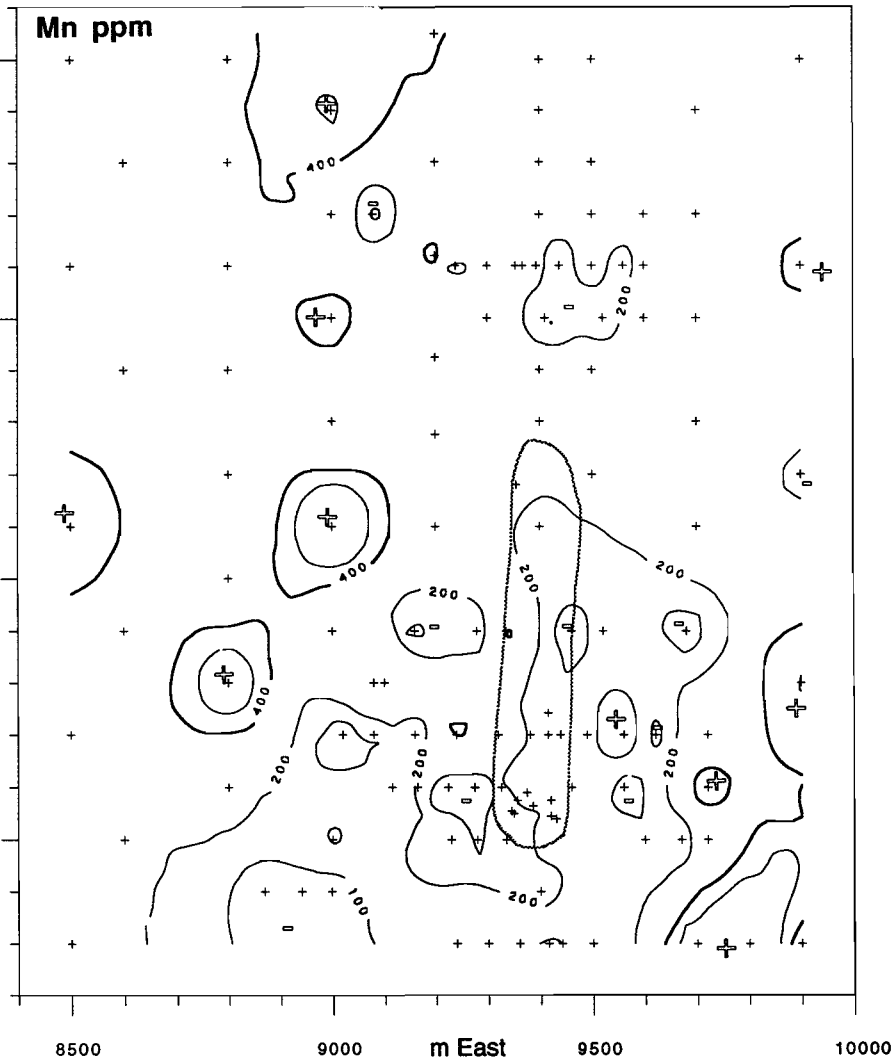
Report 394R

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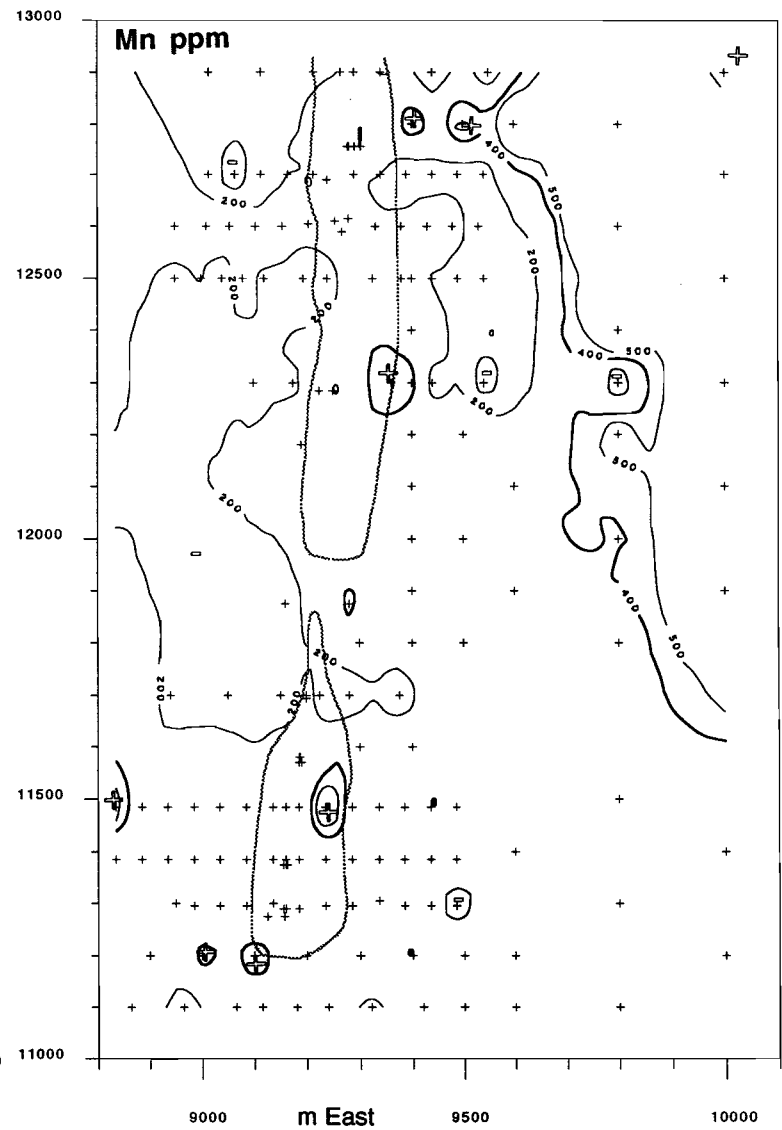
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Appendix 6

Emu

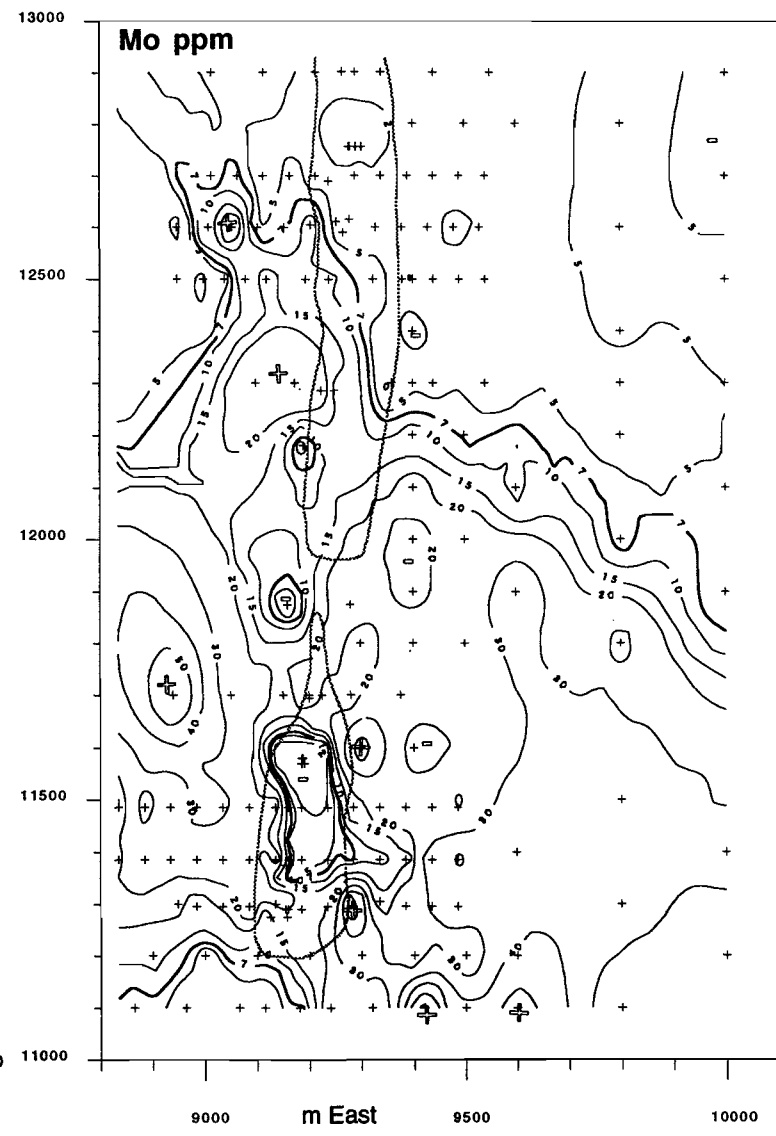


VB Boags



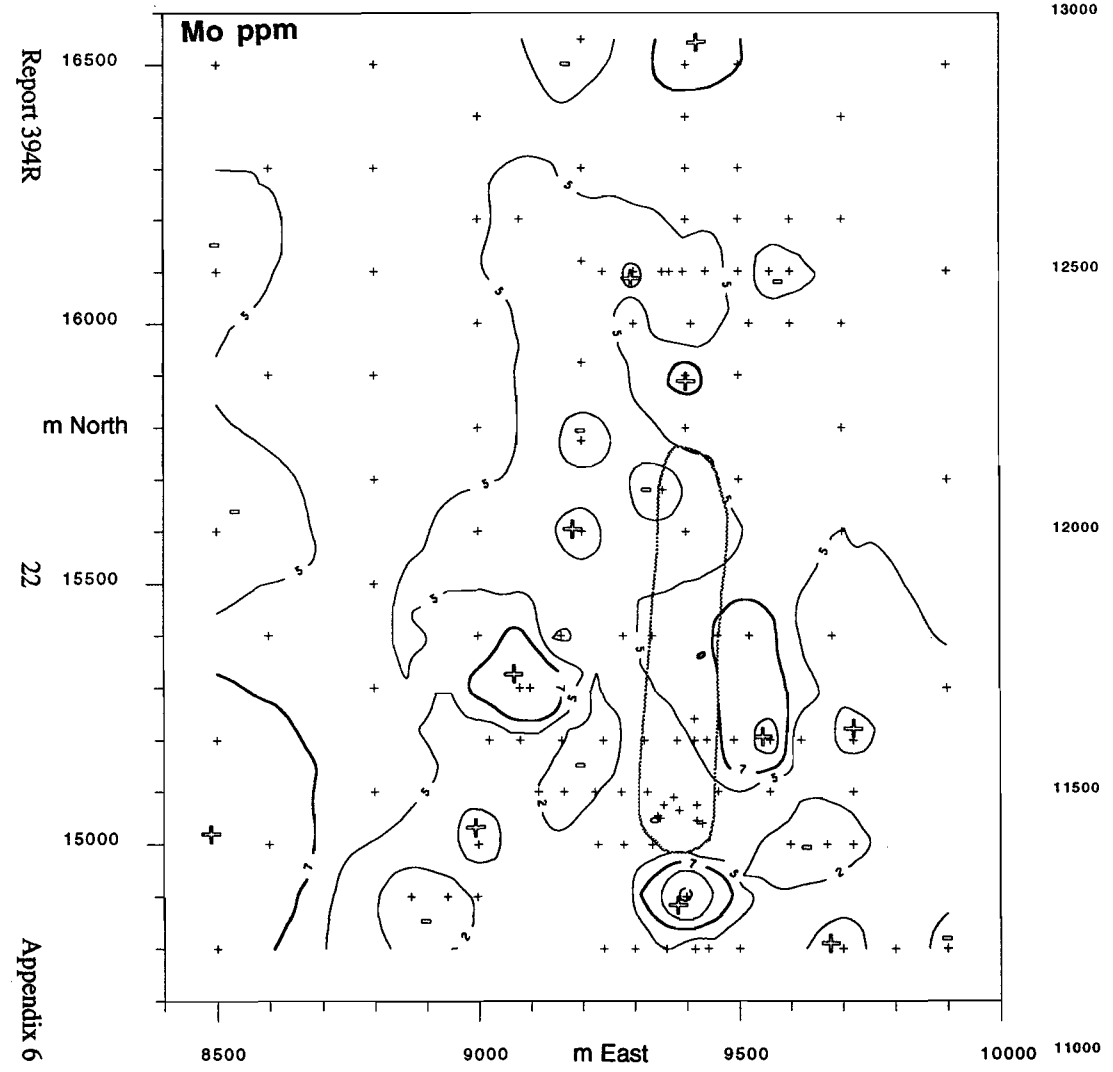
Mn

VB Boags

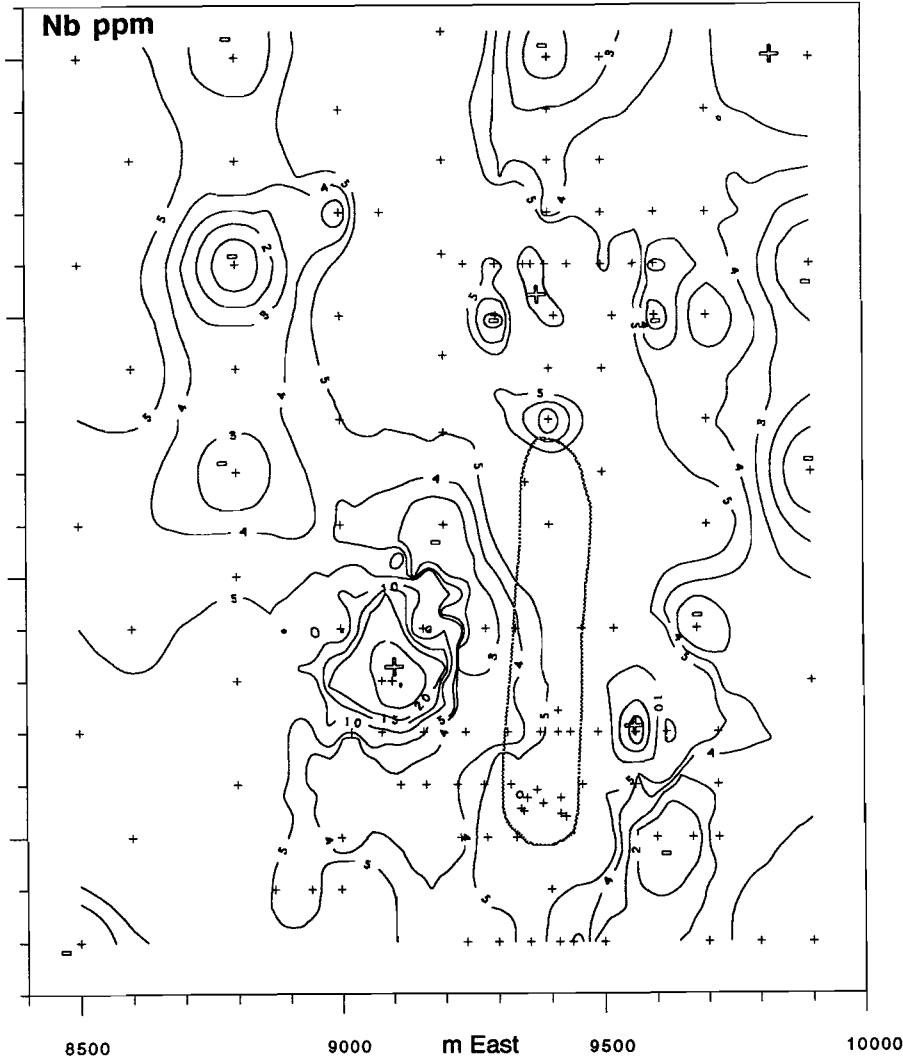


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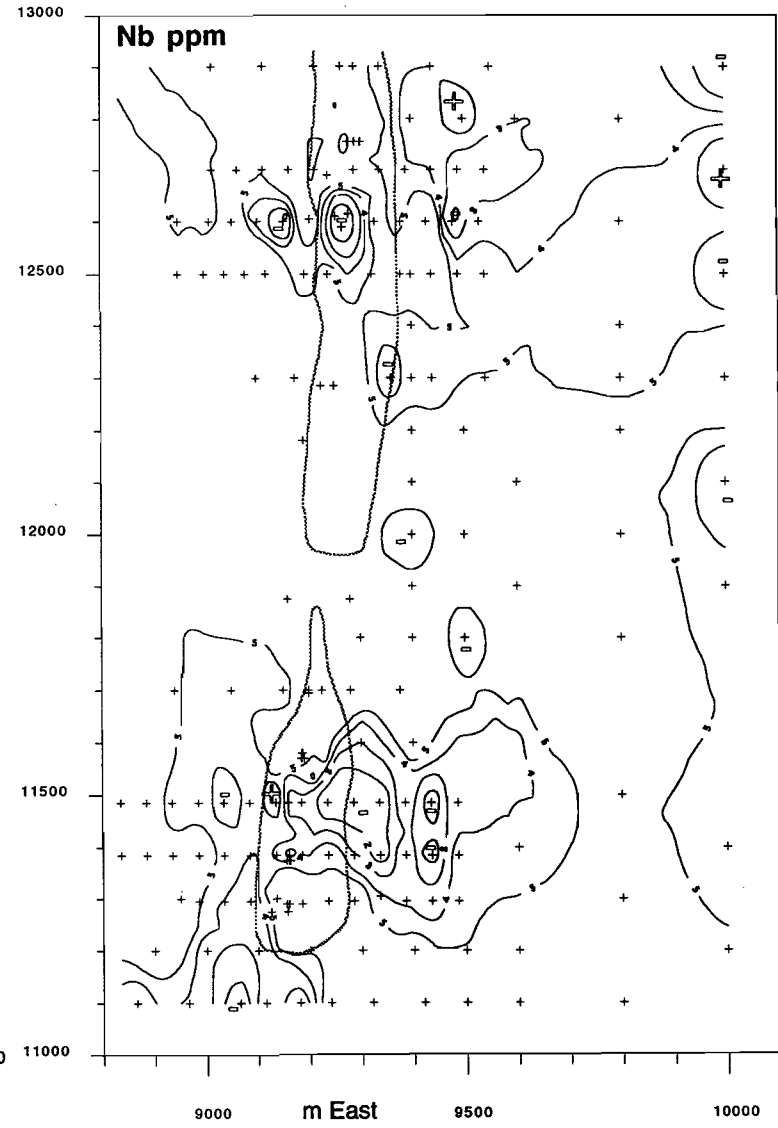
Emu



Emu

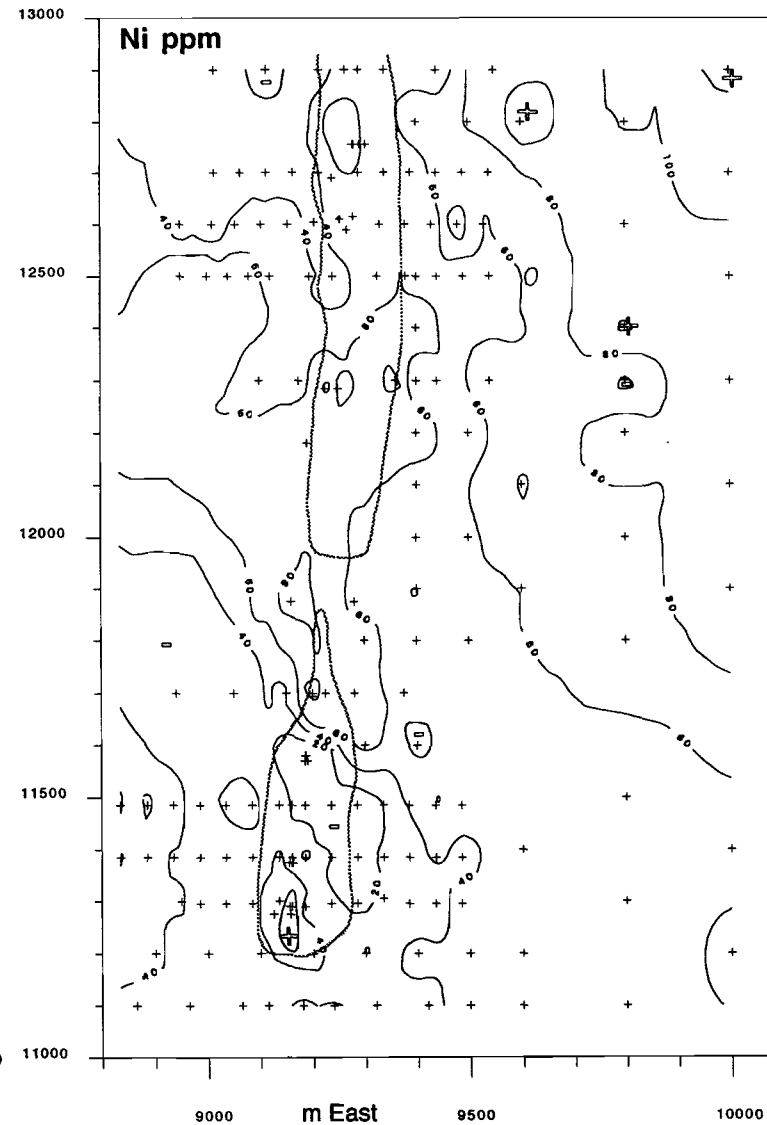


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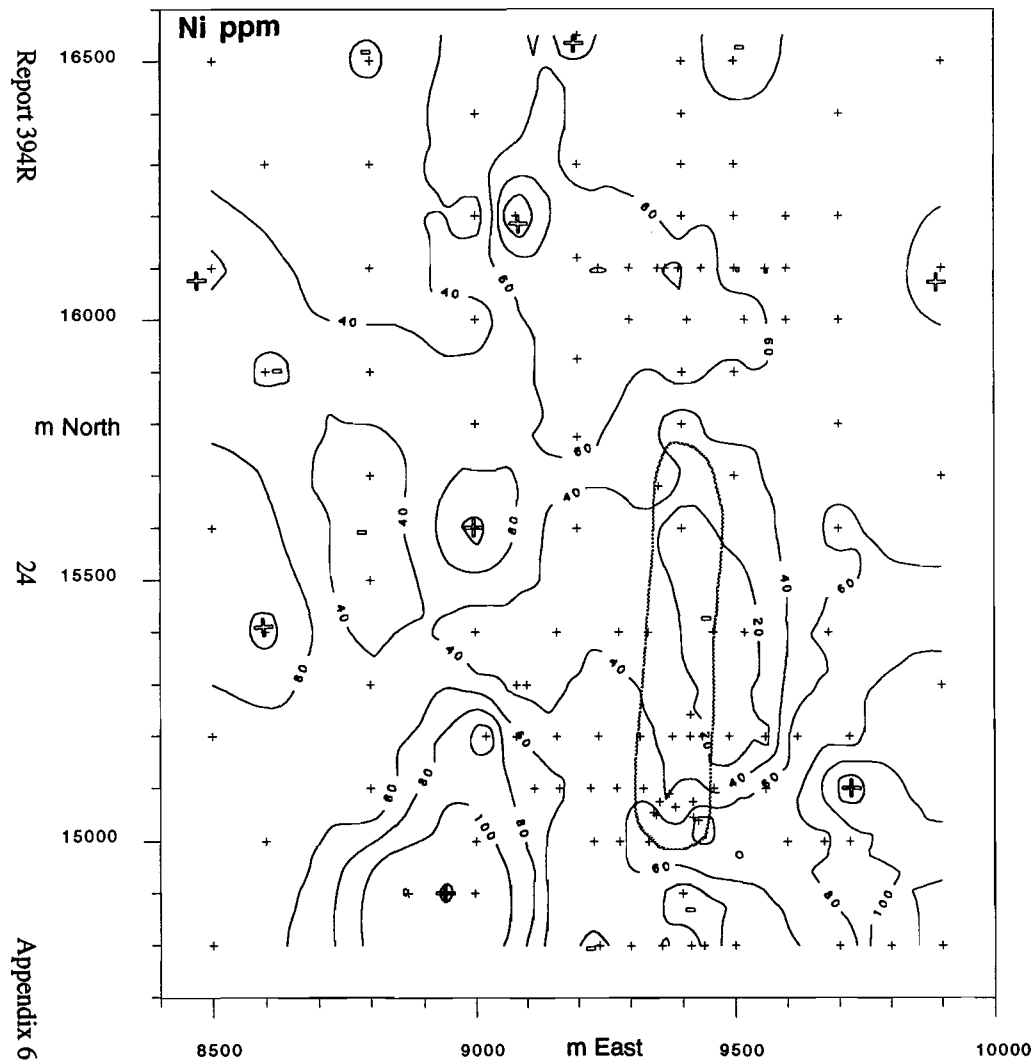


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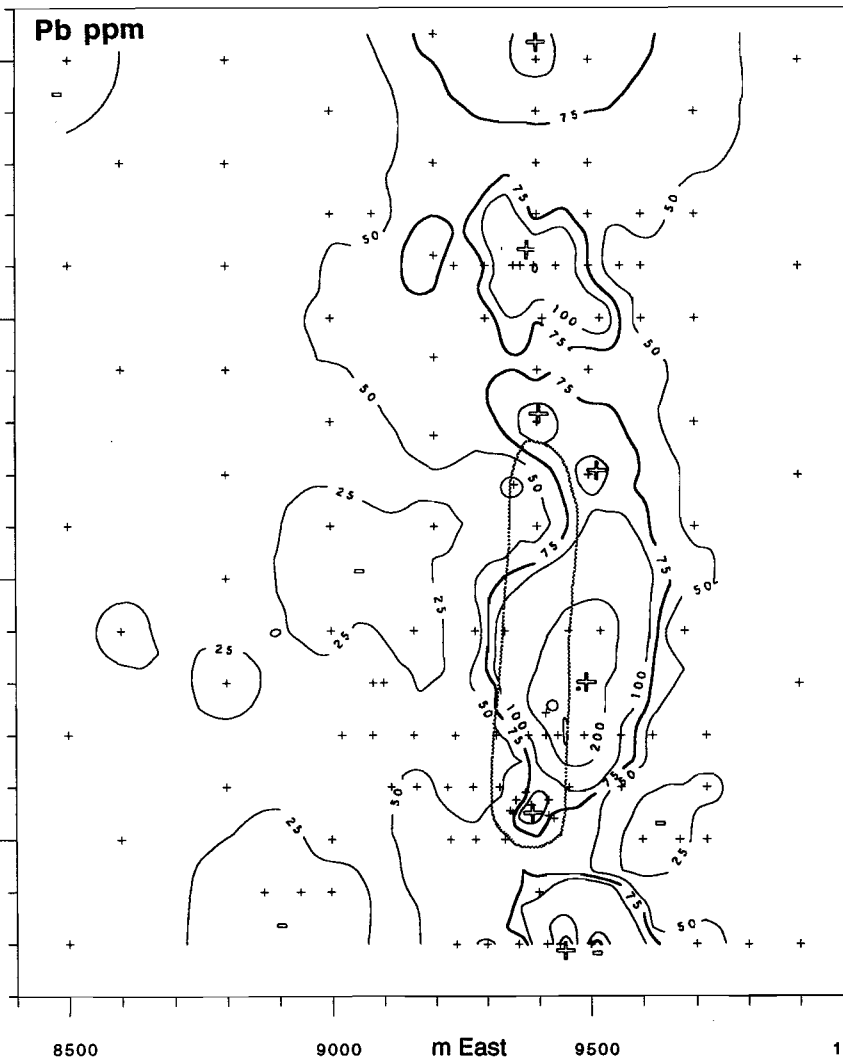
VB Boags



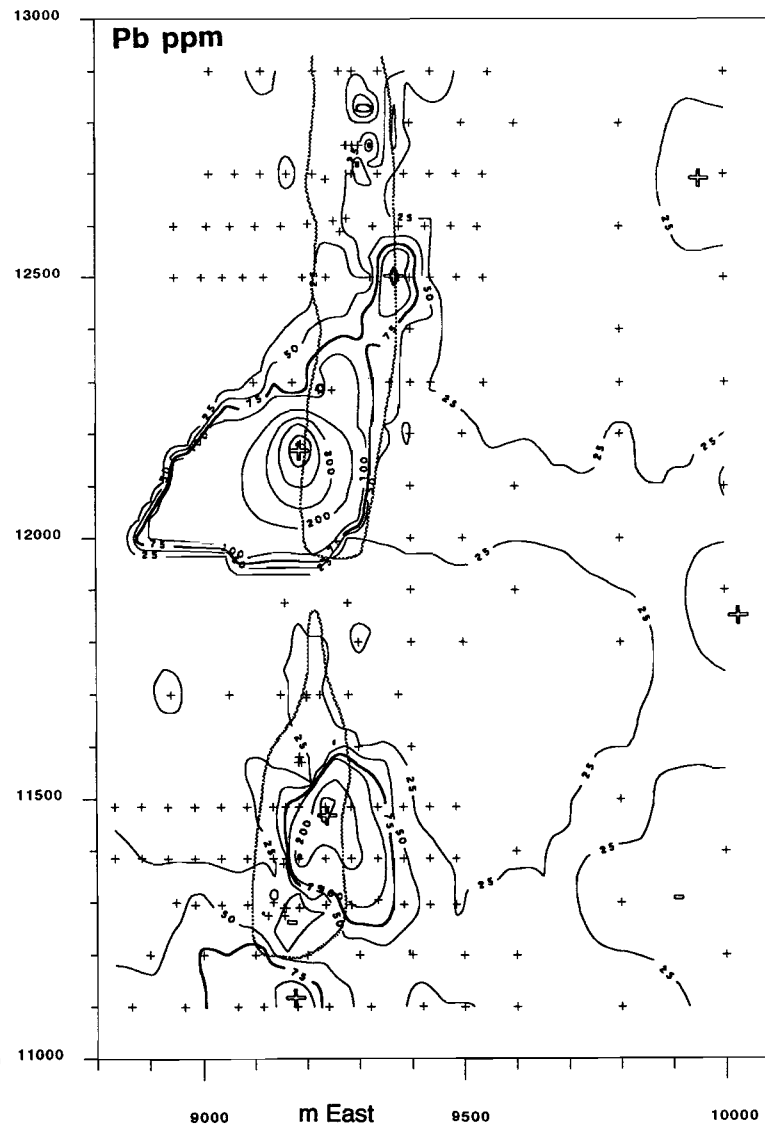
Emu



Emu

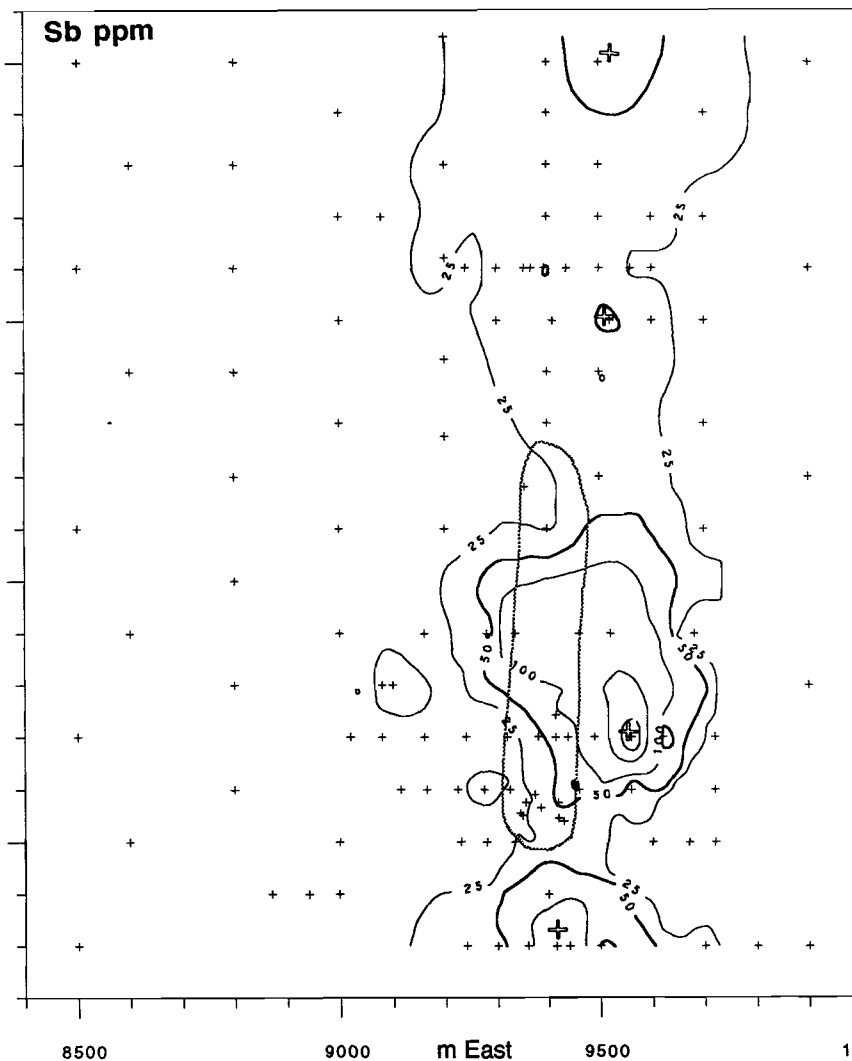


VB Boags

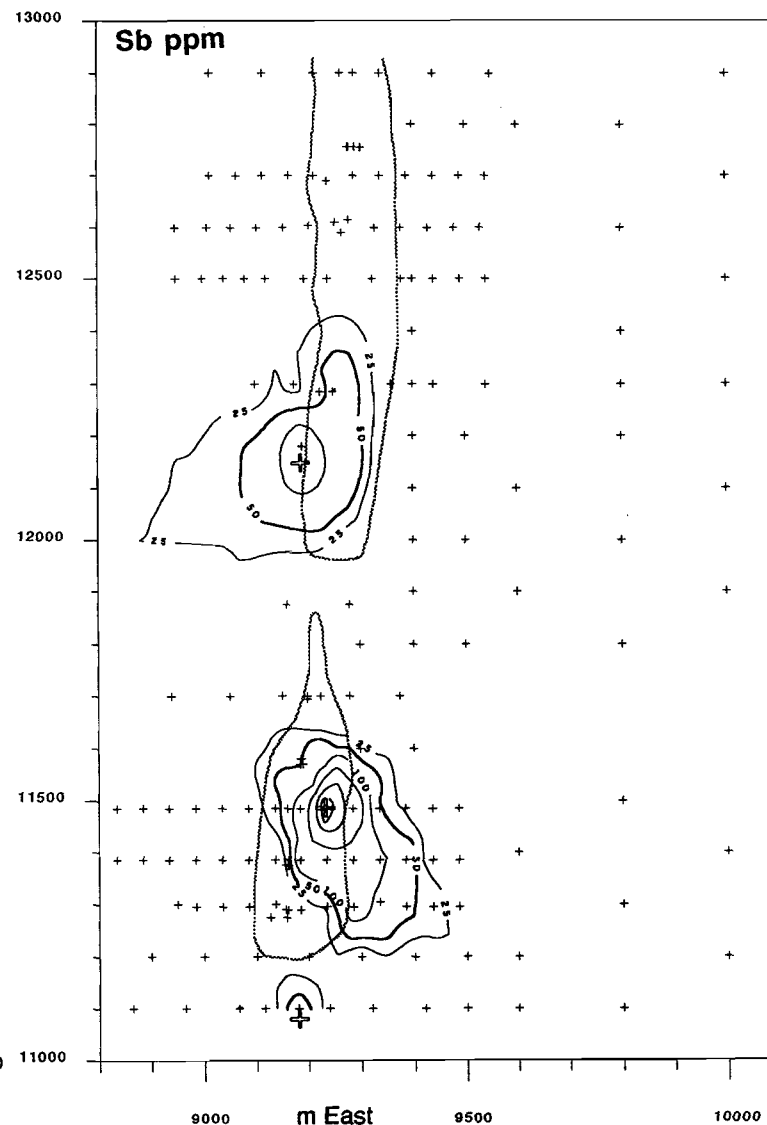


Pb

Emu

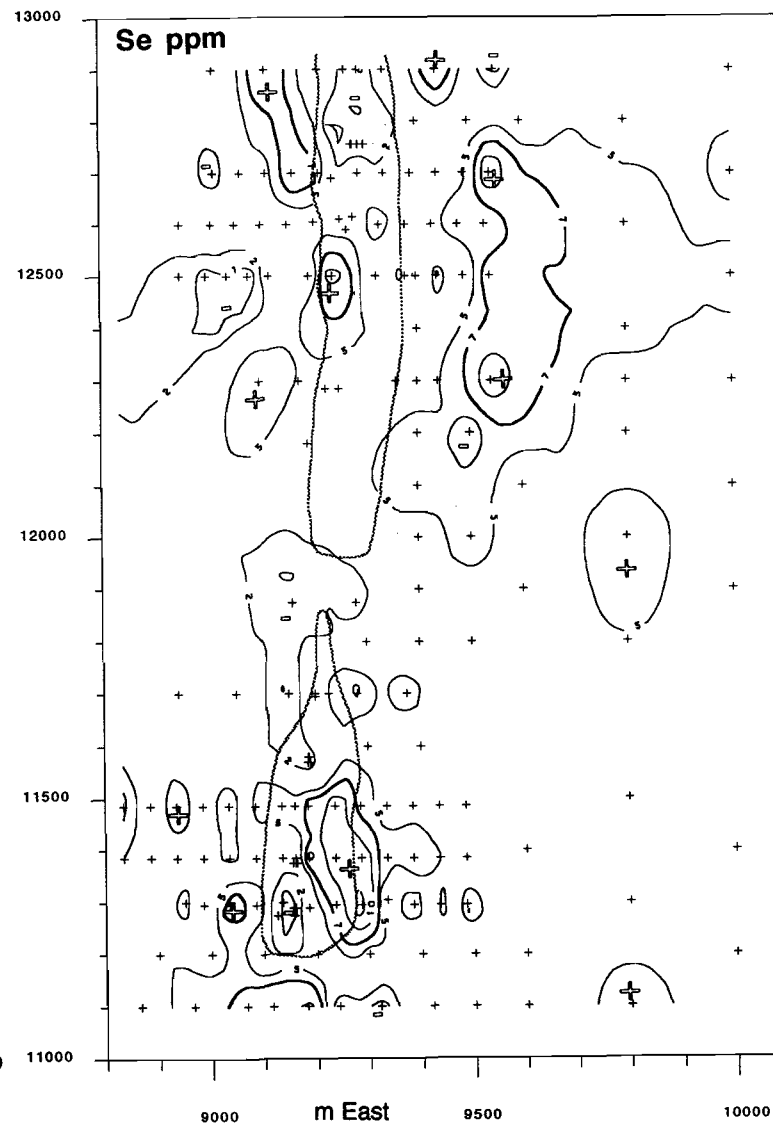


VB Boags



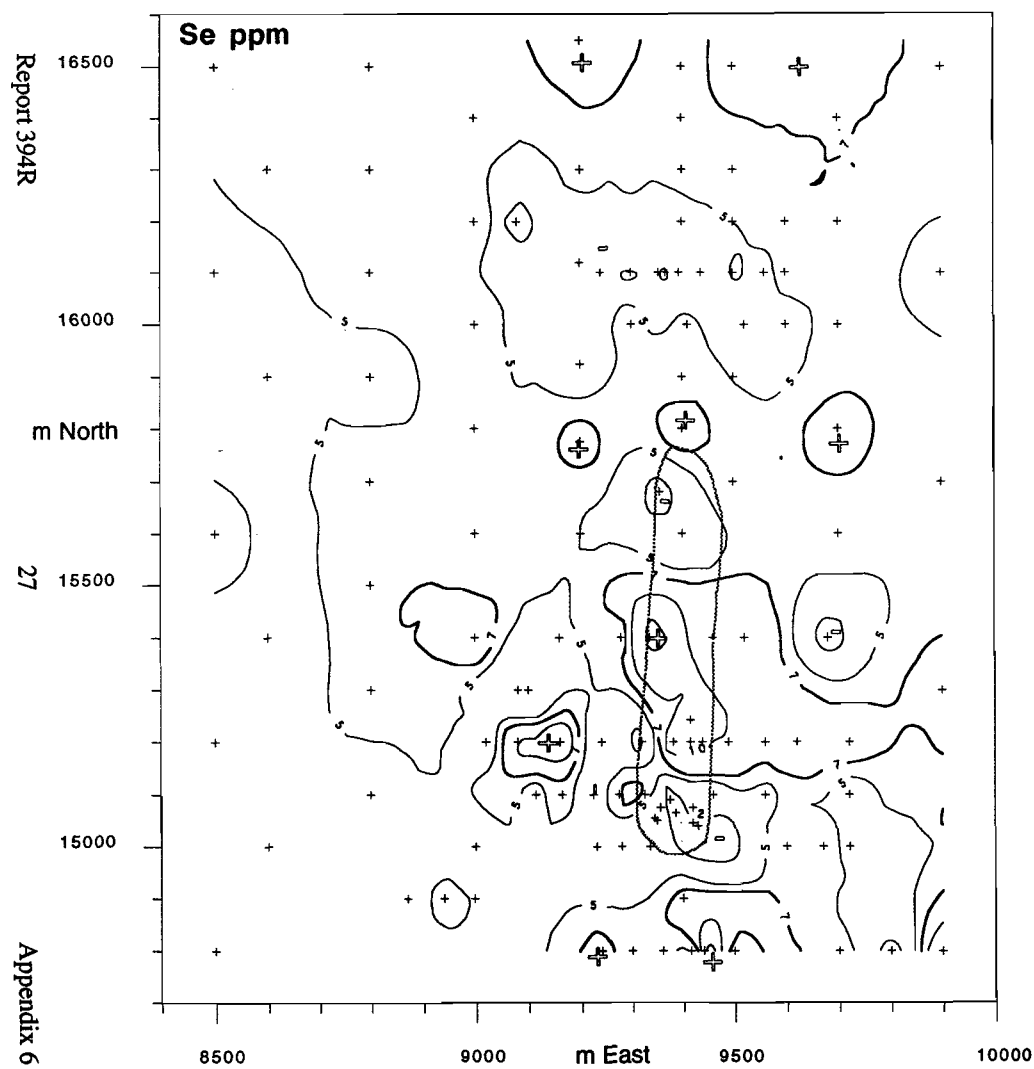
Sb

VB Boags



Se

Emu



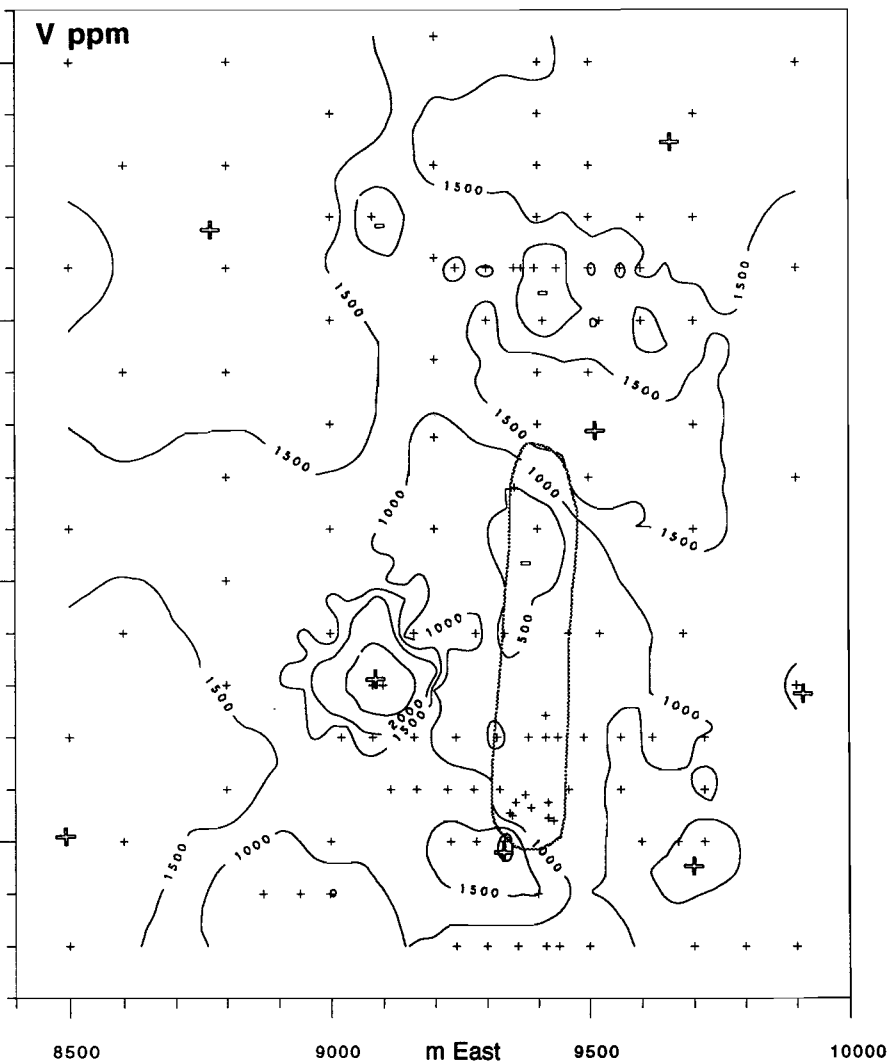
Report 394R

m North

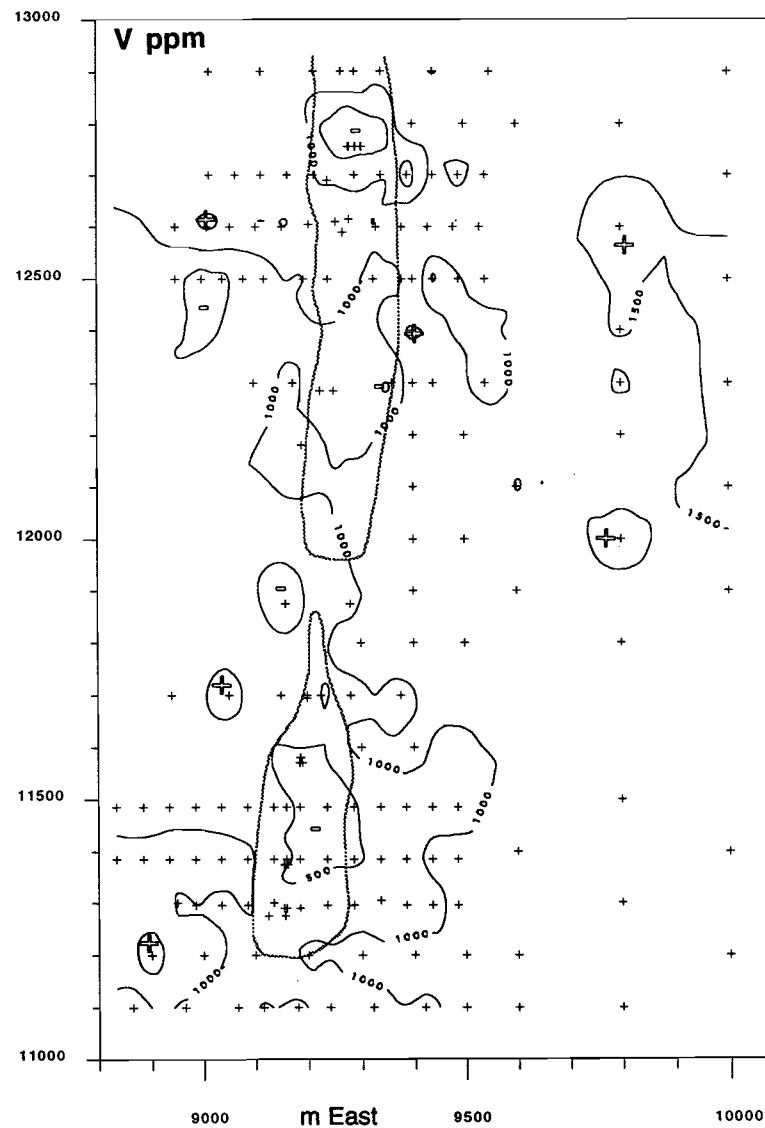
28

Appendix 6

Emu



VB Boags



Report 394R

m North

29

Appendix 6

Emu

W ppm

16500

16000

15500

15000

8500

9000

m East

9500

10000

13000

W ppm

12500

12000

11500

9000

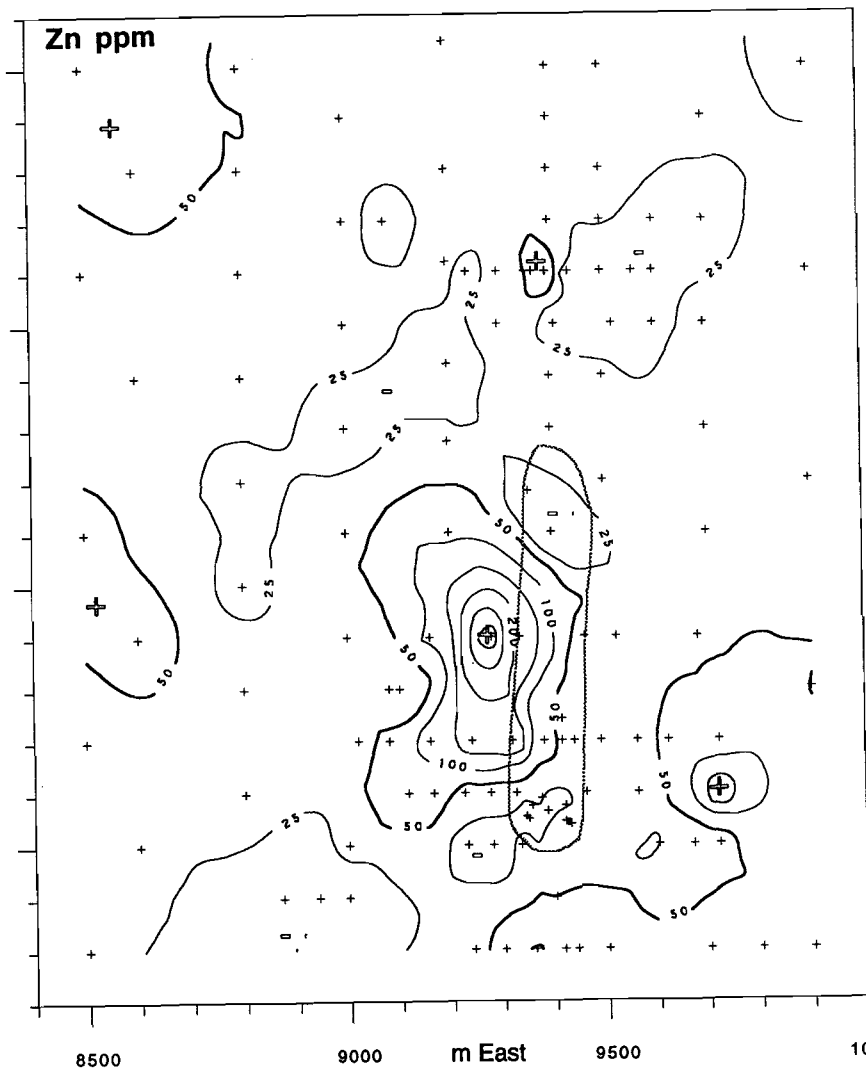
m East

9500

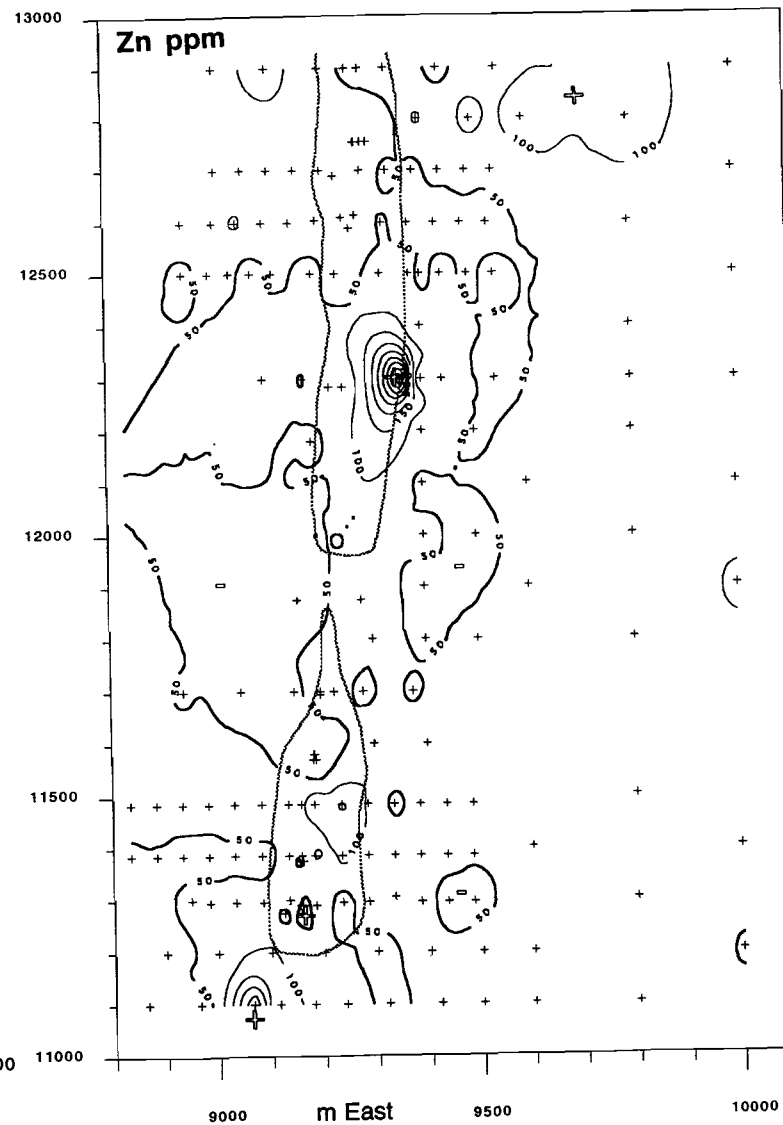
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W

Emu



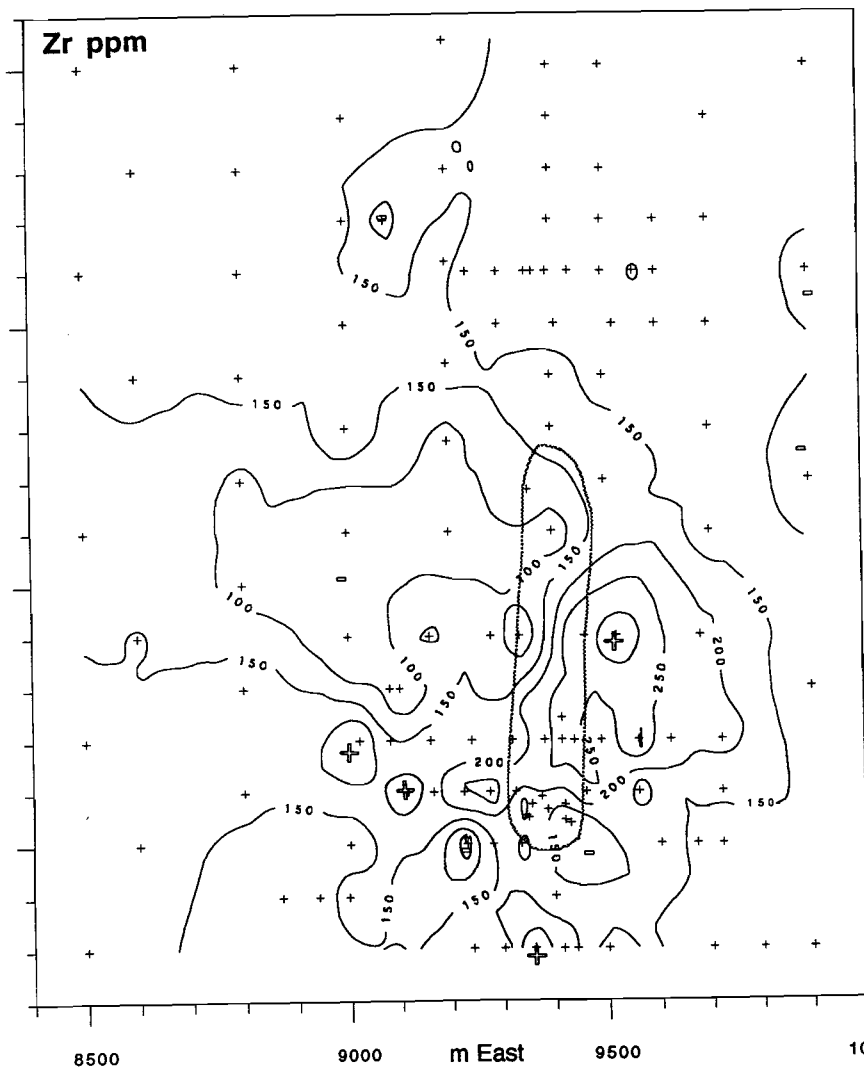
VB Boags



Zn

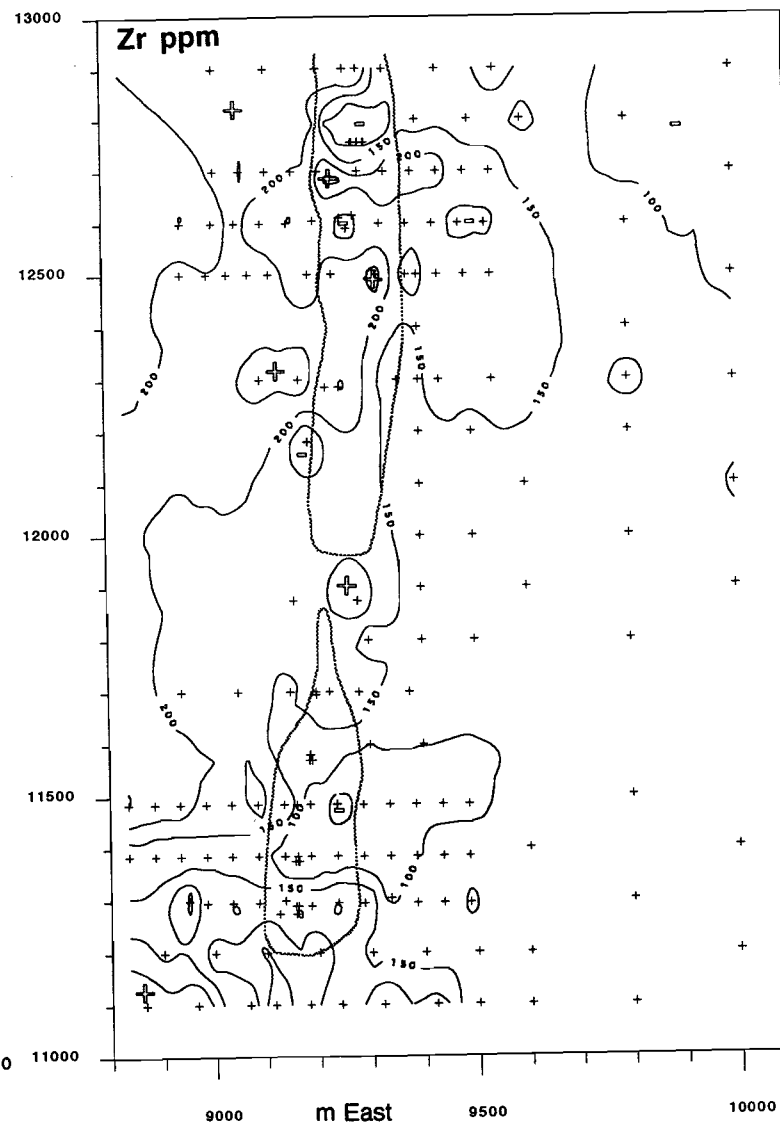
Emu

Zr ppm



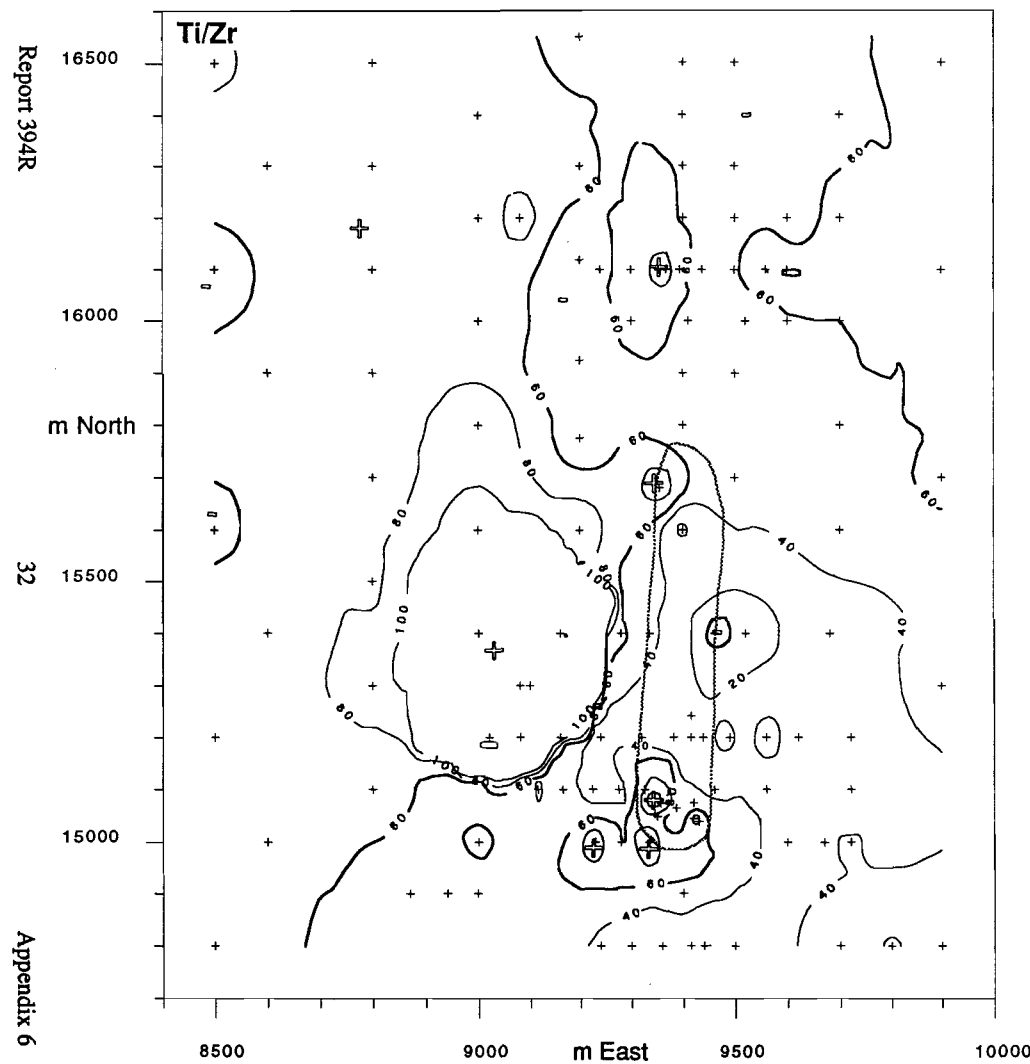
VB Boags

Zr ppm

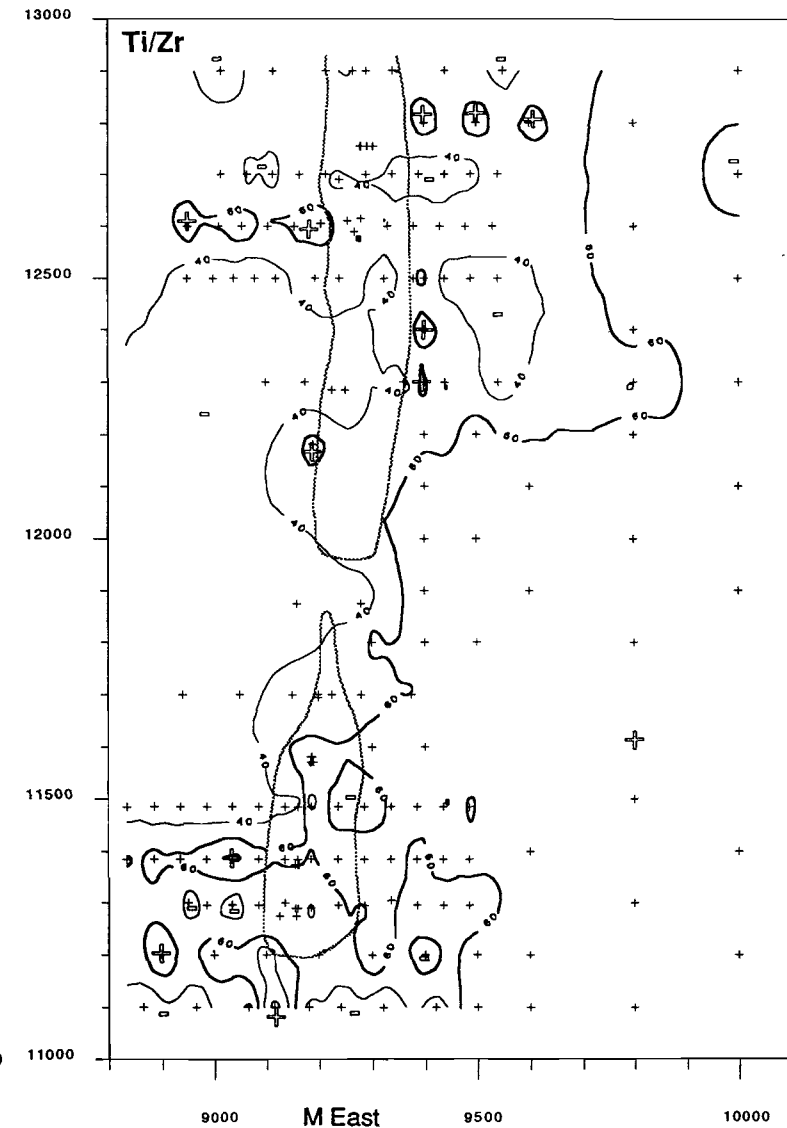


Zr

EMU



VB Boags



Ti/Zr

Report 394R

32

Appendix 6

APPENDIX 7

SYSTEMATIC PETROGRAPHY OF LAG

SYSTEMATIC PETROGRAPHY OF LAG

06-0190

This is rich in coarse, particularly linear mica flakes and equant subhedral hematite after magnetite. The magnetite pseudomorphs do not show trellis structures but internal brush polarization, suggesting an intermediate goethite phase which has been dehydrated to hematite. SEM examination of these pseudomorphs reveals a trace of As. The appearance and coarseness of the muscovite (K by SEM) suggests this may be part of a phyllic alteration halo.

06-0191

Two of the fragments are black and the third dark brown. The brown fragment consists of a partly eroded fingerprint goethite fabric after kaolinite, typical of the saprolite of a mafic rock. The dark two are highly reflective and are composed of spongy, largely dehydrated goethite, showing secondary structures. One has a thin, partial cutan of ferruginous clay. There are some voids, now partly filled with cusped goethite.

06-0193

The three fragments show a wide variety of fabrics and compositions. Some show mixtures of relict mica and goethite pseudomorphs after kaolinite, set in lead grey goethite. These have been modified by a variety of secondary structures. One fragment contains a well-developed fingerprint fabric which has been largely recrystallised to accordion-structured kaolinite before partial replacement and preservation by goethite. Set in this fabric are patches and lozenges of hematite. Other parts consist of only secondary goethite structures, including botryoidal structures, dehydration structures and patches of intense iron oxide dissolution and redeposition.

06-0194

All three fragments show kaolinitic saprolitic fingerprint fabrics, overprinted to varying degrees by accordion structures, the whole now preserved in goethite. Laths and lozenges of hematite are common, as are numerous irregular voids. SEM examination of the kaolinite pseudomorphs indicates a very small amount of admixed K, typical of interlayered kaolinite and minor sericite, typical of weathering.

06-0226

Goethite pseudomorphs of fingerprint fabrics after saprolitic kaolinite predominate. There has been varying degrees of iron oxide dissolution to form channels and voids, with some iron oxide deposition as void linings.

06-0227

The rock has retained a strong schistose structure in which goethite has replaced a very fine-grained phyllic structure of partly kaolinised muscovite, leaving the granular quartz unaltered. Set in it are 'eyes' of slightly coarser granular quartz, goethite replacing matted kaolinite with some vermicular accordion structures, and hematite pseudomorphs (martite) after magnetite, showing a trellis structure under crossed polarizers.

Some parts show alternating layers of phyllic and quartzose material, either a graded argillaceous metasediment or the zebra-rock of Binns (1988), the phyllic material, in part mica and in part kaolinite, has been largely replaced by and set in goethite.

06-1607

These are dominated by saprolitic fingerprint and accordion fabrics after kaolinite. Crystals of martite after primary magnetite or ilmenite are set in the saprolitic fabric which also shows slight dissolution along channels with partial filling by secondary goethite.

06-1624

Two of the three fragments in this section consist of very fine-grained kaolinite replaced and surrounded by lead-grey goethite, showing a classic fingerprint fabric, typical of the saprolite of a mafic rock. One has been intensively cracked and penetrated by solution channels, some of which are partly or completely filled with second generation goethite, with a slightly higher reflectivity. The third fragment is darker and rich in partly dehydrated goethite which appears to pseudomorph a complex magnetite fabric set in lead grey goethite which has been partly dissolved.

APPENDIX 8

TABULATED GOSSAN GEOCHEMISTRY

Oxides in %
Trace elements in ppm
Co-ordinates in m

GOSSAN SAMPLES

Sample	East	North	Depth (m)	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	LOI	Ag	As	Au	Ba	BI
06-0001	9262	12300	0.6	3.80	3.64	82.50	0.04	0.06	0.03	0.05	0.15	7.7	8.50	8800	5.500	1446	0.5
06-0002	9261	12300	0.5	5.60	4.20	78.10	0.05	0.07	0.03	0.08	0.20	10.3	7.50	10900	1.550	2021	0.5
06-0003	9260	12300	0.5	5.50	4.08	82.10	0.03	0.05	0.03	0.05	0.23	7.9	10.00	3880	1.100	224	0.5
06-0004	9259	12300	0.5	3.50	3.26	83.50	0.04	0.06	0.03	0.05	0.27	8.2	7.50	6700	3.150	35	1.0
06-0005	9258	12300	0.5	5.10	6.30	77.50	0.04	0.07	0.02	0.05	0.60	9.5	10.00	10600	4.750	12	1.0
06-0006	9257	12300	0.4	6.30	6.45	76.80	0.04	0.07	0.02	0.05	0.28	9.2	10.00	9000	2.950	595	0.5
06-0007	9256	12300	0.5	5.10	3.26	80.40	0.06	0.11	0.03	0.05	0.22	9.6	5.50	5300	3.600	1607	0.5
06-0008	9254	12300	1	9.90	5.20	72.20	0.11	0.14	0.04	0.05	0.18	10.9	8.50	7600	10.000	485	2.0
06-0009	9253	12300	0.9	6.40	8.65	71.60	0.19	0.19	0.09	0.06	0.28	15.3	12.00	9250	15.200	1591	0.5
06-0010	9252	12300	1.5	10.30	12.50	61.90	0.18	0.31	0.07	0.11	0.32	13.7	10.00	5950	25.300	298	0.5
06-0011	9251	12300	1.2	7.30	6.00	73.50	0.12	0.11	0.04	0.05	0.20	11.7	4.90	6950	4.600	1711	0.5
06-0012	9240	12300	1.2	2.90	3.36	80.40	0.08	0.09	0.07	0.05	1.38	10.7	3.80	7400	1.300	33	0.5
06-0048	9160	11385	1	25.70	3.94	54.01	0.77	4.38	0.10	0.80	0.38	9.8	2.10	1409	0.220	73	0.5
06-0070	9185	11485	0	5.90	5.04	76.24	0.10	0.11	0.02	0.07	0.47	11.7	0.50	2416	0.120	194	0.5
06-0102	9231	12300	-	6.90	5.40	69.20	0.16	0.14	0.06	0.05	4.94	11.8	3.80	5150	3.350	36	7.0
06-0189	9400	15400	0	5.50	3.37	82.34	0.15	0.16	0.04	0.19	0.37	8	0.05	4200	1.200	140	1.0
06-0345	9290	12755	3.4	6.20	4.33	75.90	0.19	0.24	0.16	0.14	0.48	9.3	0.00	15600	0.280	140	5.0
06-0670	9420	15475	-	39.60	4.06	54.90	0.10	0.03	0.21	0.14	0.21	6.4	0.00	240	0.051	23	2.0
06-0671	9420	15475	-	9.00	5.33	73.10	0.16	0.05	0.27	0.19	0.46	10.5	0.00	330	3.960	14	2.0
06-0673	9420	15475	-	4.60	3.57	79.80	0.10	0.02	0.24	0.16	0.19	-	0.00	3100	2.990	12	2.0
06-0674	9420	15475	-	13.50	7.01	63.50	0.16	0.02	0.33	0.19	0.83	14.6	0.00	2050	0.120	89	2.0
06-1346	9300	13138	11.5	36.10	3.70	48.40	0.17	0.22	0.13	0.64	0.66	9.1	3.20	14100	0.780	376	15.0
06-1365	9390	15070	9	6.80	5.50	76.60	0.16	0.10	0.16	0.37	0.33	9.8	7.80	10300	1.650	48	8.0

GOSSAN SAMPLES

Sample	Co	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	Sn	V	W	Zn	Zr
06-0001	9	260	265	23.0	2	24	13.0	1	80	255	580	40	2.0	200	6.0	50	37
06-0002	9	240	270	0.5	1	278	14.0	1	80	475	880	16	4.0	260	24.0	115	44
06-0003	8	120	155	1.0	4	25	6.0	1	50	155	58	15	0.5	120	26.0	52	39
06-0004	10	100	300	1.0	3	58	5.0	1	40	370	49	34	0.5	120	20.0	70	48
06-0005	8	320	320	7.0	3	45	4.0	1	70	300	86	9	0.5	280	12.0	71	110
06-0006	7	200	165	0.5	3	54	6.0	1	30	740	450	30	0.5	180	2.0	51	72
06-0007	8	80	150	0.5	4	97	1.0	1	30	260	110	6	1.0	80	6.0	305	31
06-0008	9	140	240	0.5	1	121	6.0	1	50	260	135	8	0.5	180	2.0	480	34
06-0009	7	240	195	0.5	1	123	4.0	6	30	620	190	6	0.5	400	2.0	130	127
06-0010	8	280	225	8.0	2	32	7.0	4	40	490	220	15	0.5	550	20.0	125	73
06-0011	10	80	180	7.0	1	66	0.5	1	30	340	90	7	1.0	160	2.0	235	44
06-0012	15	160	180	26.0	4	411	3.0	6	40	205	130	12	0.5	550	2.0	500	52
06-0048	2	771	202	11.0	0	119	2.0	1	1	44	165	28	1.0	160	10.0	46	32
06-0070	41	136	343	8.0	0	318	1.0	1	10	93	176	4	1.0	1428	2.0	166	47
06-0102	16	340	125	44.0	3	1077	4.0	14	50	72	165	17	3.0	800	6.0	470	31
06-0189	10	95	160	1.0	0	52	14.0	3	6	320	195	18	3.0	110	12.0	76	170
06-0345	1	133	130	27.0	0	48	1.0	3	3	2150	830	25	20.0	317	4.0	36	124
06-0670	1	39	110	9.0	0	34	1.5	5	2	2	25	1	7.0	38	0.5	11	51
06-0671	1	65	205	2.0	0	60	1.5	4	1	15	30	15	1.0	44	5.5	15	80
06-0673	1	43	140	6.0	0	1600	1.0	3	1	75	30	11	10.0	55	4.0	13	53
06-0674	1	135	350	19.0	0	49	4.0	1	1	50	420	23	30.0	84	4.0	26	252
06-1346	52	144	460	50.0	1	1300	4.0	2	44	5900	300	1	5.0	191	6.0	270	77
06-1365	58	220	320	20.0	1	60	7.0	3	26	260	220	20	1.0	203	18.0	44	60

APPENDIX 9

TABULATED SOIL GEOCHEMISTRY

Oxides in %
Trace elements in ppm
except Au in ppb
Co-ordinates in m

SOILS

Sample	East	North	Depth (m)	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	LOI	Ag	As	Au	Ba
06-0739	9162	11375	0.00	44.90	13.50	35.90	0.10	0.07	0.06	0.55	1.06	6.70	0.00	100	4	125
06-0749	9170	11275	0.50	39.10	15.90	35.80	0.12	0.10	0.05	0.42	0.90	8.10	0.00	20	6	114
06-1334	9095	11185	0.00	20.90	12.70	57.70	0.08	0.14	0.08	0.05	1.39	6.70	0.05	160	13	38
06-1335	9115	11182	0.00	40.30	13.40	36.20	0.18	0.23	0.08	0.34	1.02	7.90	0.05	82	18	484
06-1336	9135	11180	0.00	21.40	12.90	57.30	0.10	0.43	0.04	0.12	1.25	7.20	0.05	230	17	179
06-1337	9145	11180	0.00	25.20	12.90	54.10	0.07	0.10	0.04	0.20	1.28	6.50	0.05	210	20	56
06-1338	9152	11179	0.00	19.00	12.60	59.80	0.08	0.13	0.04	0.09	1.30	6.70	0.05	220	12	48
06-1339	9160	11180	0.00	17.30	13.30	61.60	0.05	0.07	0.02	0.05	1.31	6.90	0.05	210	12	16
06-1340	9170	11183	0.00	18.70	13.90	59.40	0.06	0.10	0.03	0.07	1.30	7.10	0.05	170	13	23
06-1341	9185	11185	0.00	18.20	13.20	61.00	0.04	0.07	0.02	0.05	1.39	6.30	0.05	185	13	15
06-1342	9210	11190	0.50	25.30	13.60	52.70	0.13	0.20	0.03	0.13	1.25	7.30	0.05	58	5	215

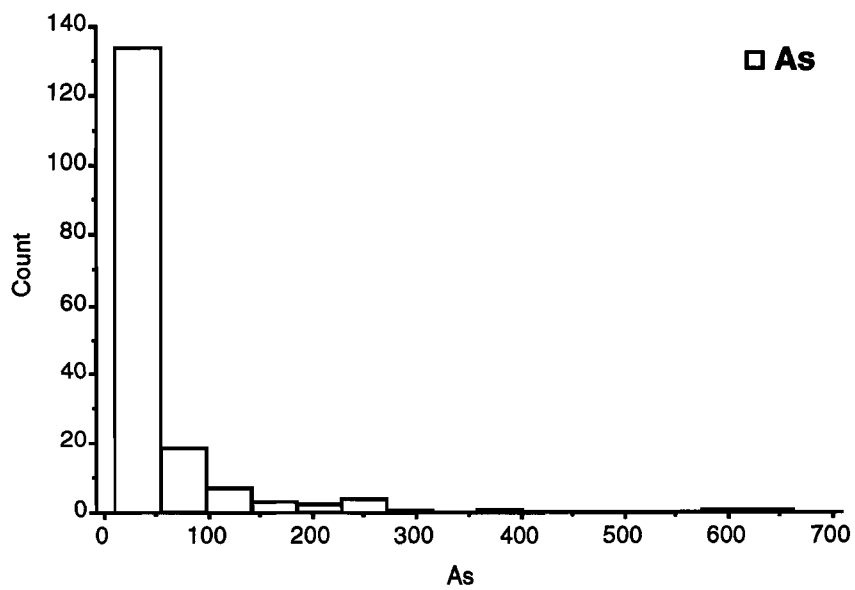
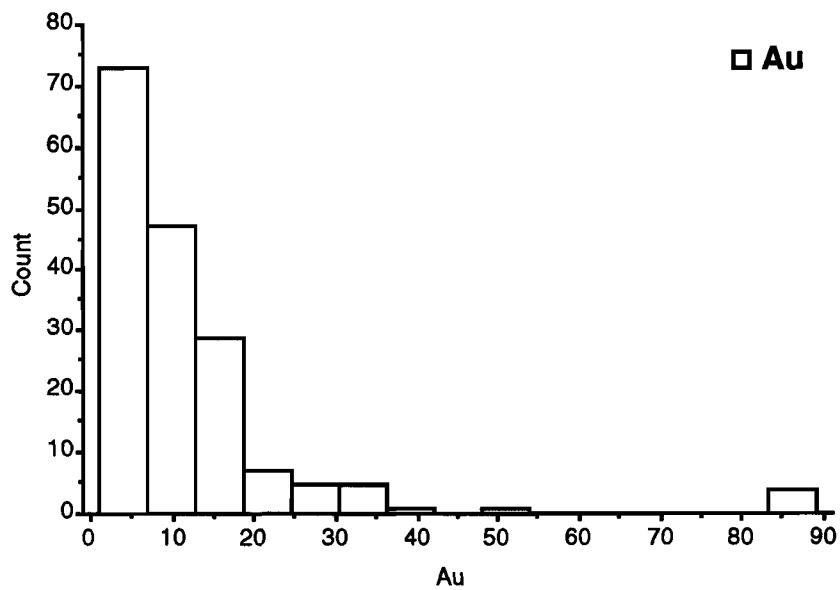
SOILS

Sample	Bi	Co	Cr	Cu	Ga	Ge	Mn	Mo	Nb	Ni	Pb	Sb	Se	Sn	V	W	Zn	Zr
06-0739	2	10	570	62	20	0	405	6.0	1	40	20	10	5	7	526	4	44	124
06-0749	2	12	580	73	32	0	392	6.5	10	54	2	3	1	8	505	5	40	90
06-1334	4	64	718	86	40	1	605	6.0	9	60	130	15	6	4	897	2	78	143
06-1335	1	46	502	70	28	1	487	4.0	6	60	74	9	1	1	535	4	70	120
06-1336	4	66	832	86	36	1	465	18.0	6	60	110	14	1	8	859	2	70	138
06-1337	2	55	723	80	46	1	420	7.0	8	62	105	13	1	5	765	2	70	137
06-1338	6	68	822	92	40	1	438	11.0	9	64	115	16	1	1	865	2	84	143
06-1339	5	68	799	96	42	1	477	8.0	5	58	125	20	7	1	921	2	80	144
06-1340	3	68	746	96	36	1	508	10.0	7	68	130	16	4	1	869	10	95	134
06-1341	3	62	875	100	38	1	400	26.0	8	62	86	16	7	1	914	16	76	113
06-1342	9	68	912	94	40	1	694	26.0	8	74	52	7	3	7	857	12	52	113

APPENDIX 10

FREQUENCY DISTRIBUTIONS OF PHASE 1 GEOCHEMISTRY

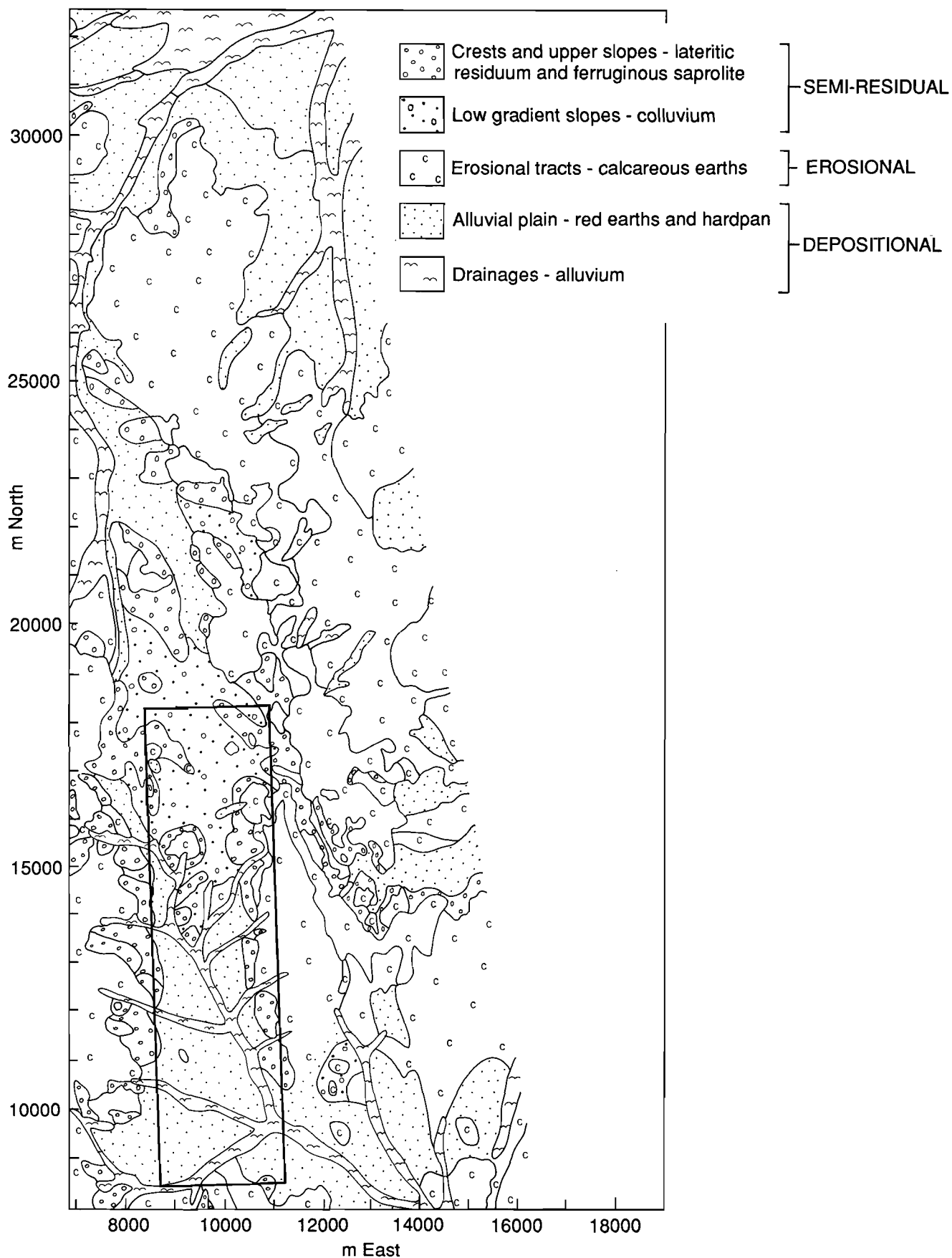
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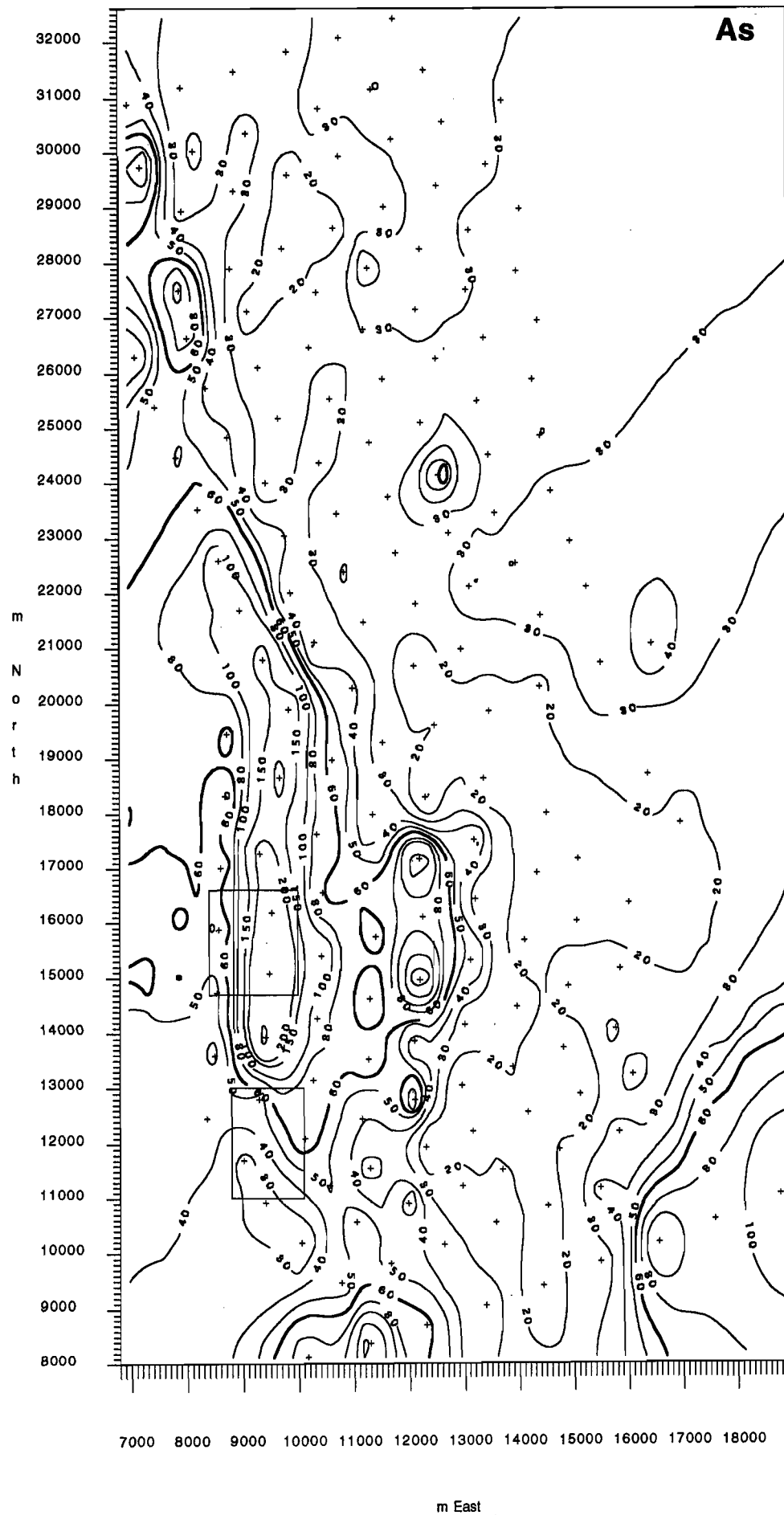


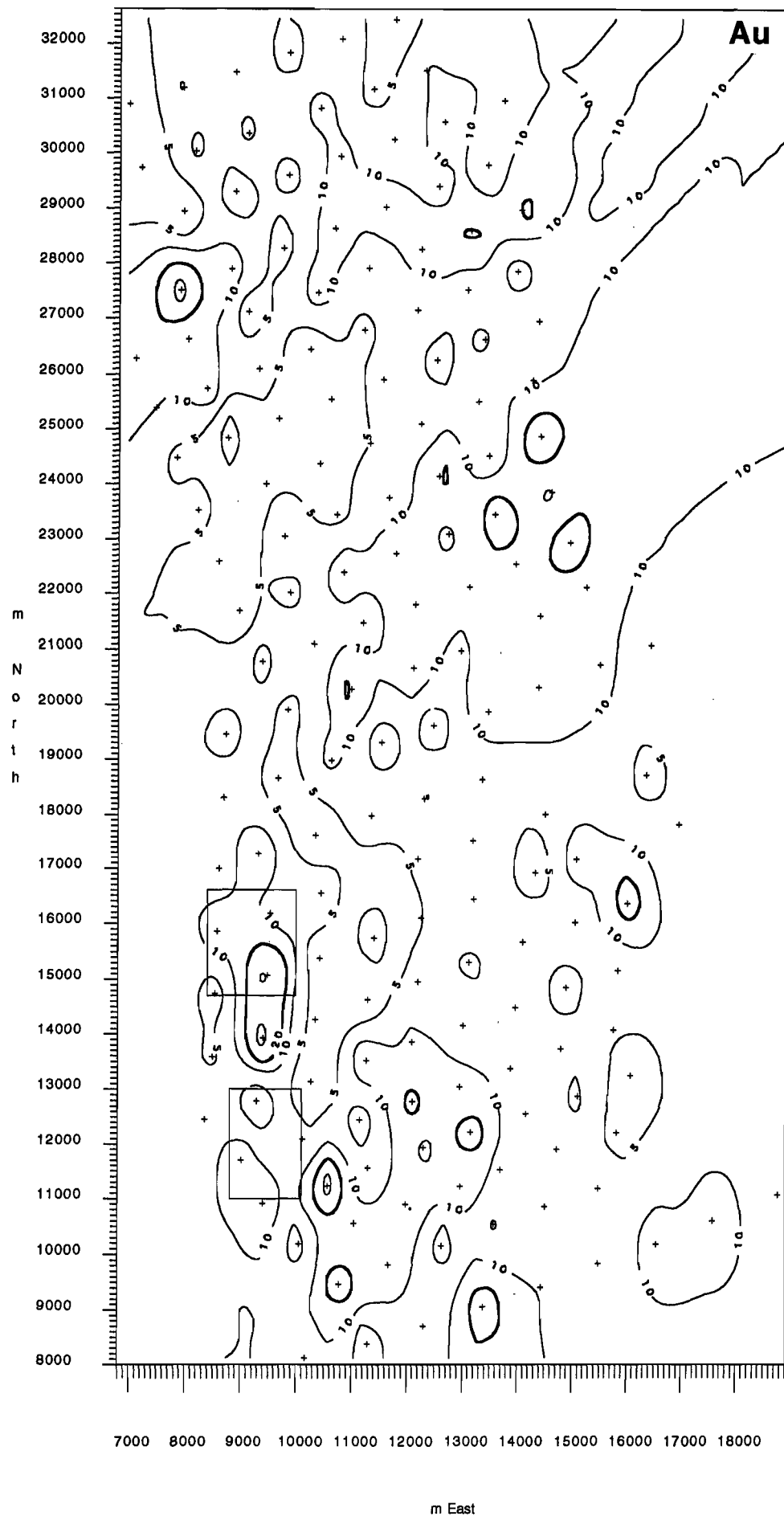
APPENDIX 11

GEOMORPHOLOGY AND CONTOURED PHASE 1 GEOCHEMISTRY

Au in ppb
all others in ppm



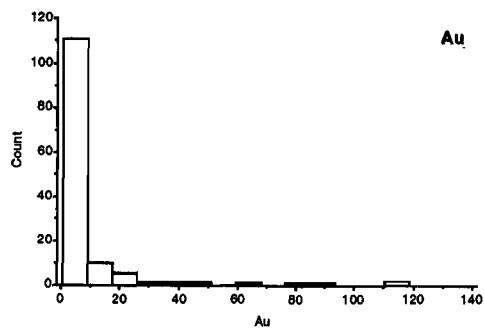
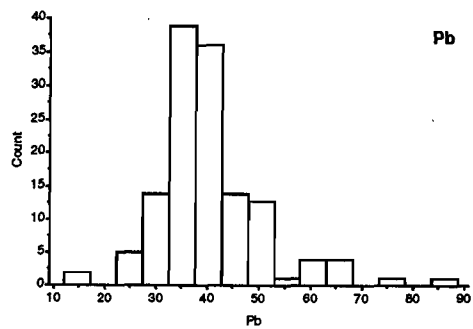
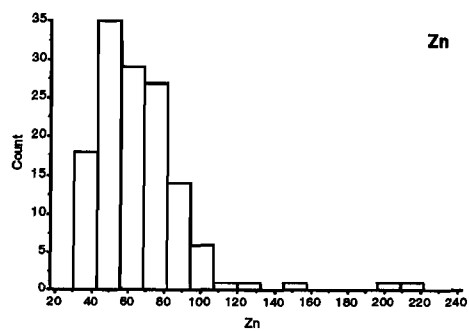
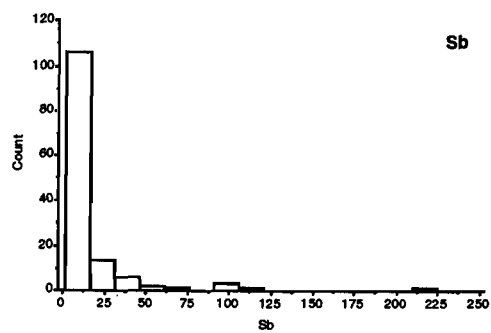
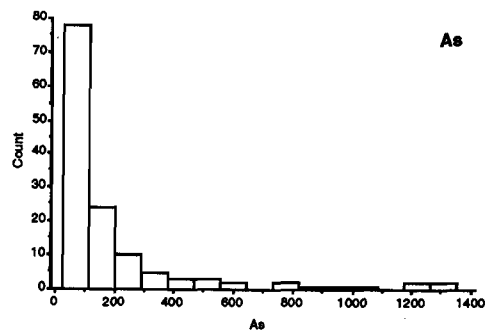


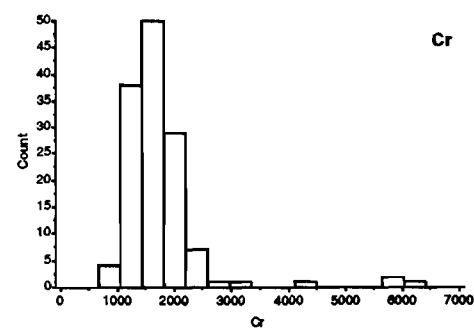
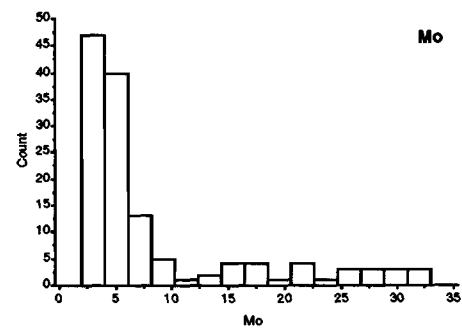
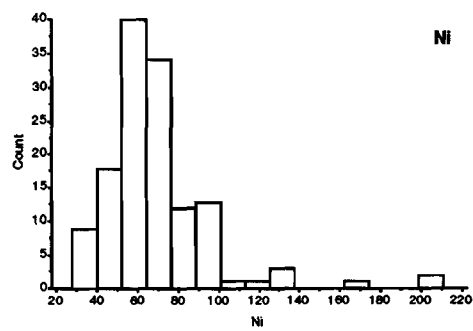
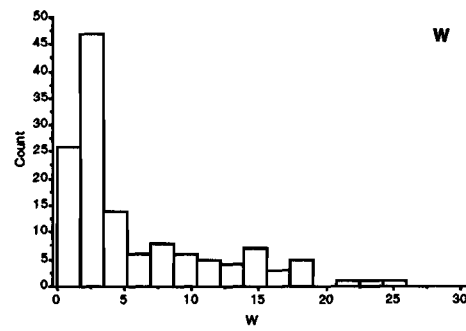
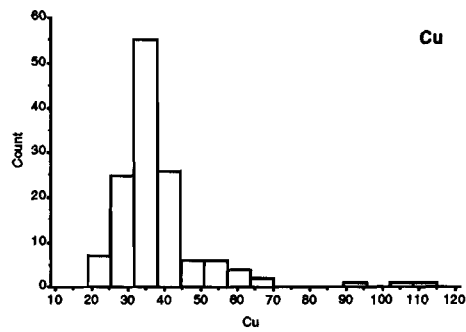


APPENDIX 12

FREQUENCY DISTRIBUTIONS OF PHASE 2 GEOCHEMISTRY

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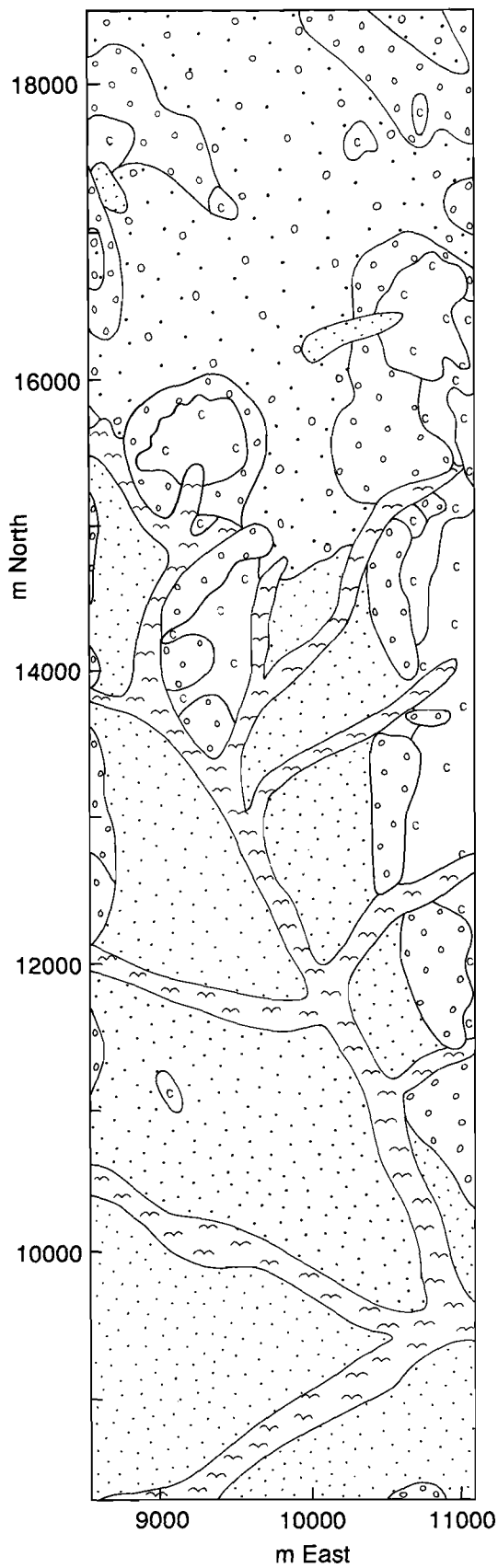




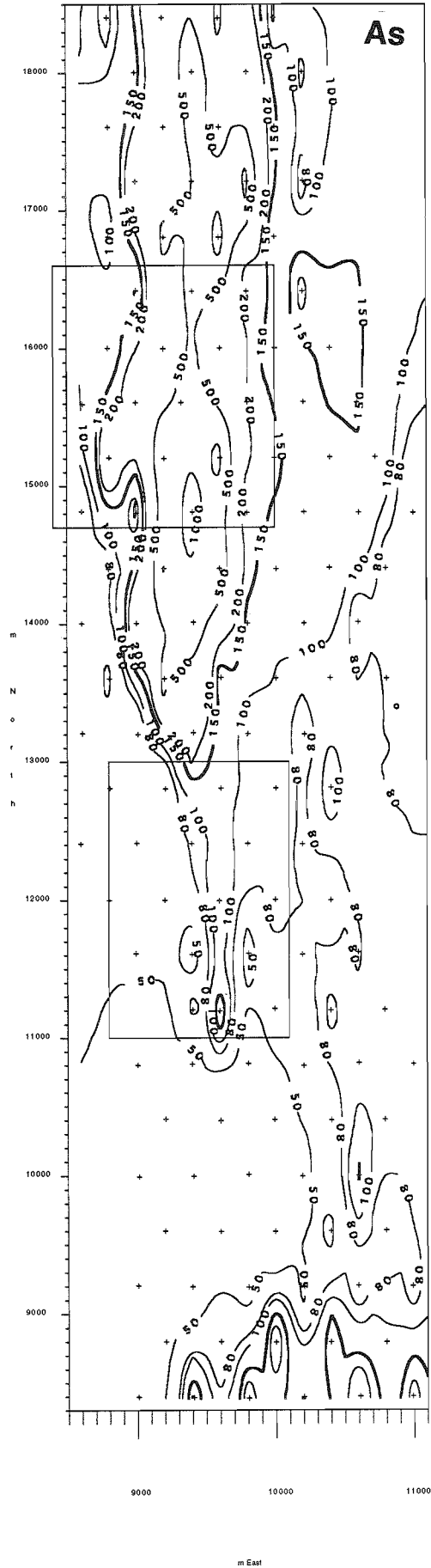
APPENDIX 13

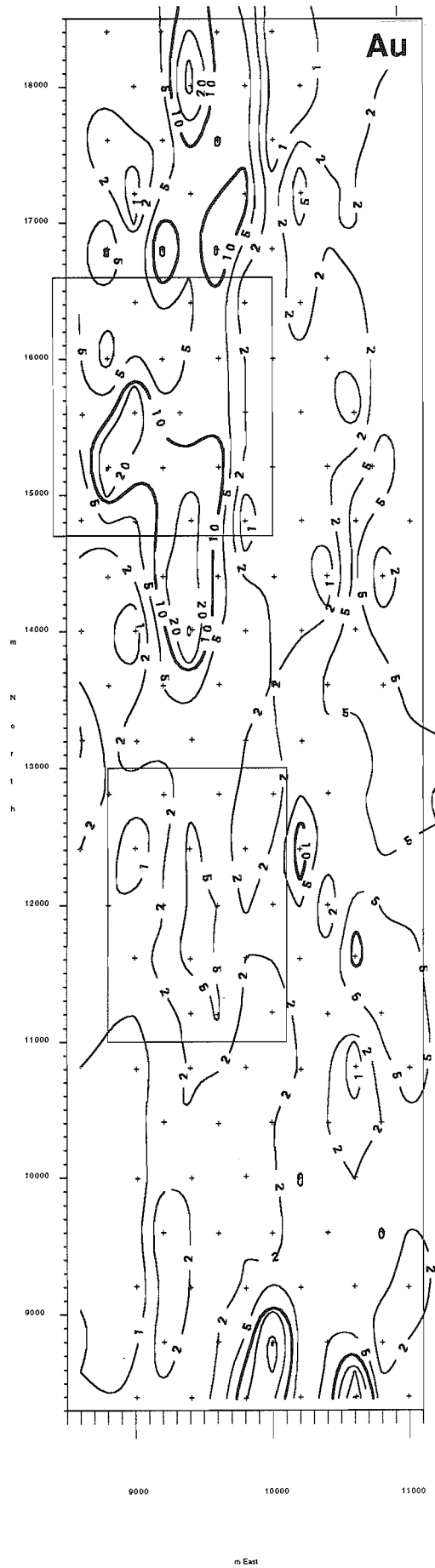
GEOMORPHOLOGY AND CONTOURED PHASE 2 GEOCHEMISTRY

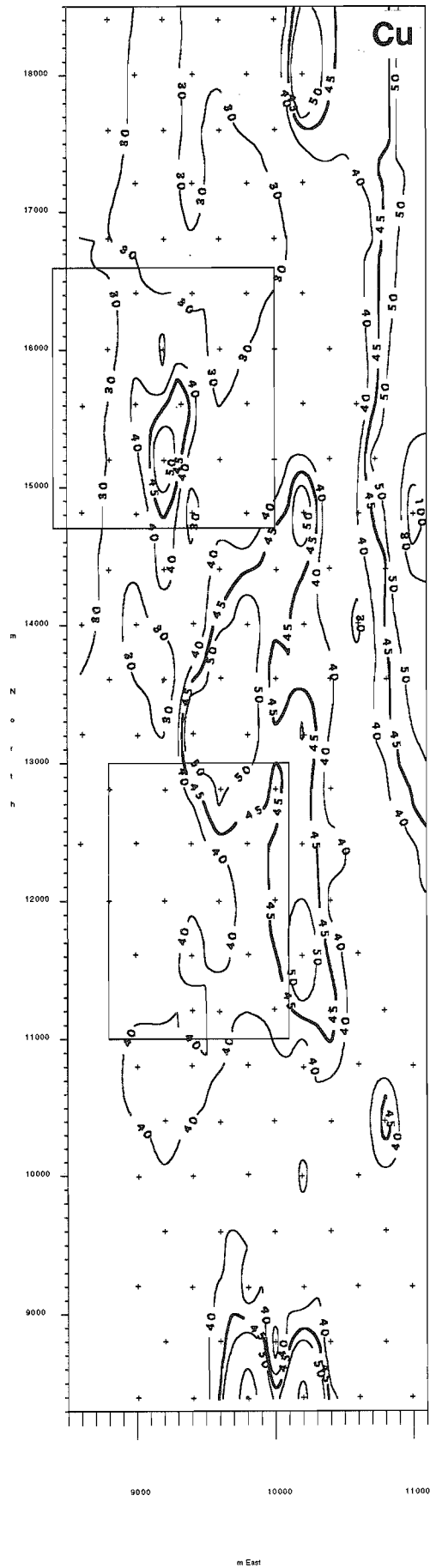
Au in ppb
all others in ppm

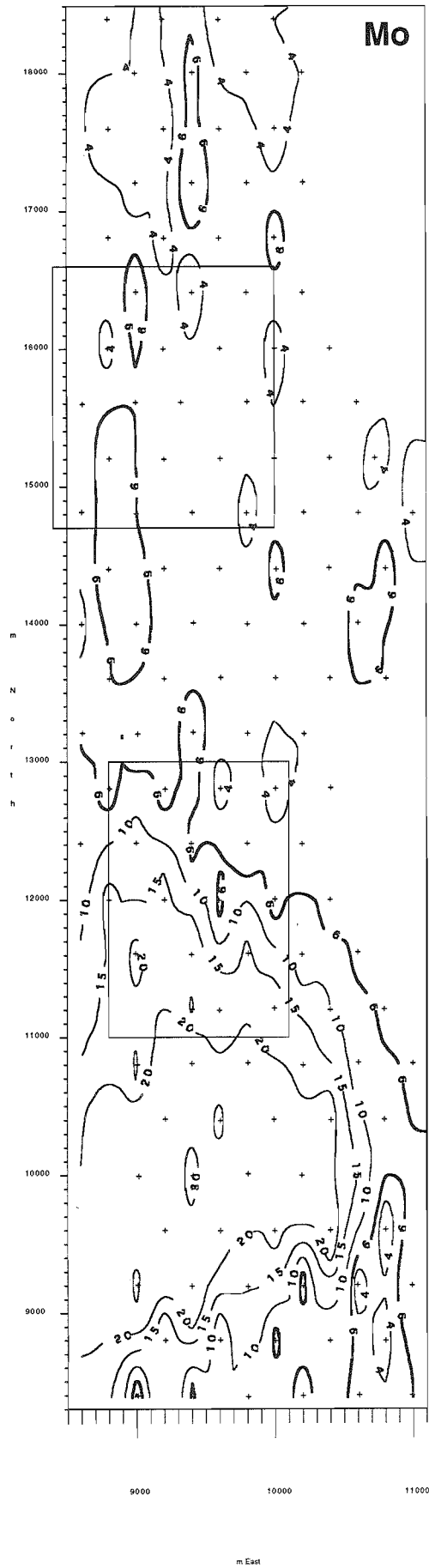


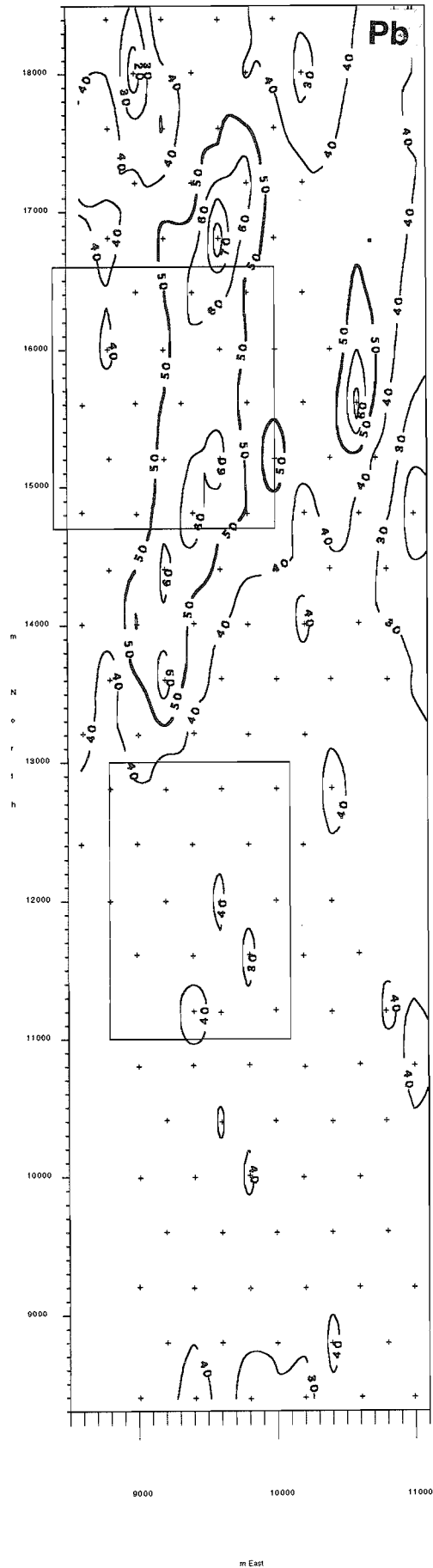
- | | | |
|--|------------------------------------------------------------------------|-----------------|
| | Crests and upper slopes - lateritic residuum and ferruginous saprolite | } SEMI-RESIDUAL |
| | Low gradient slopes - colluvium | |
| | Erosional tracts - calcareous earths | } EROSIONAL |
| | Alluvial plain - red earths and hardpan | } DEPOSITIONAL |
| | Drainages - alluvium | |

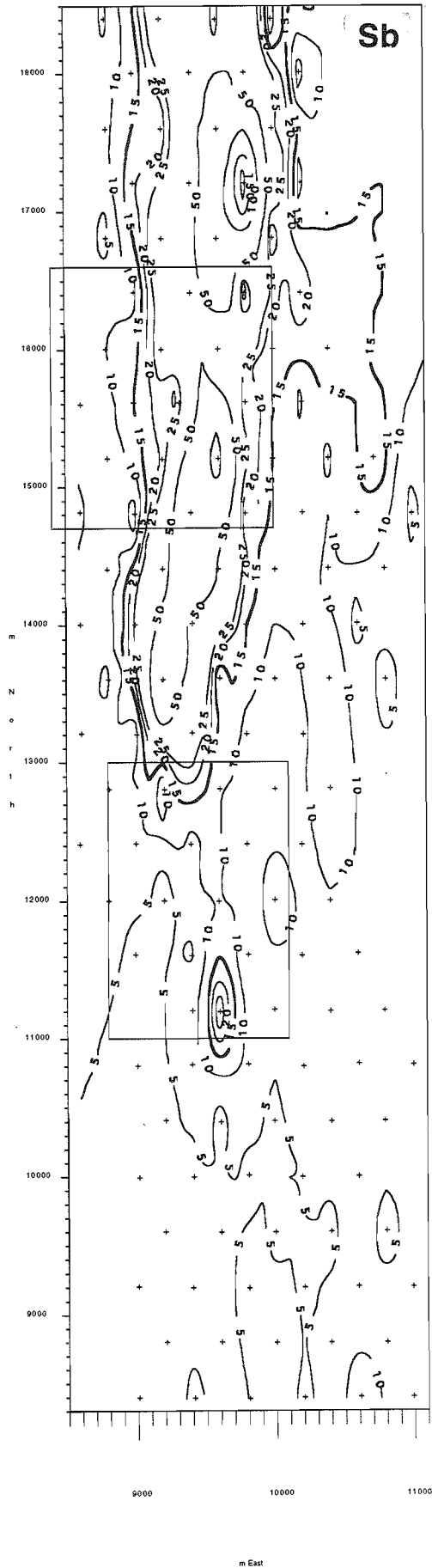




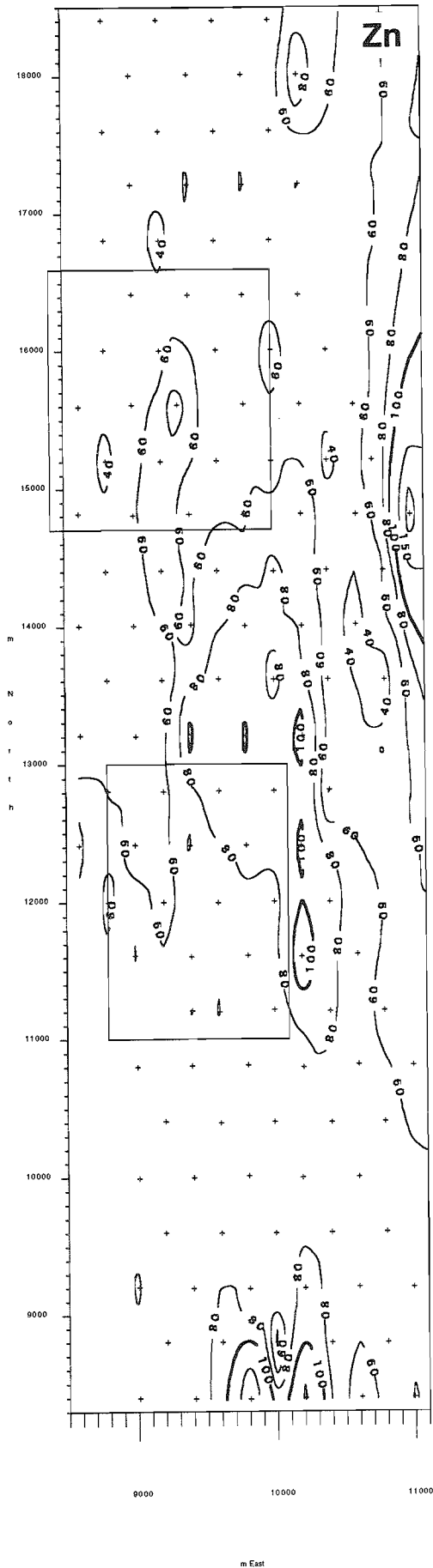












APPENDIX 14

TABULATED PHASE 1 GEOCHEMISTRY OF MAGNETIC LAG (provided by Electrolytic Zinc Co of Australasia Ltd, Barnes 1985)

Au in ppb
all others in ppm
Co-ordinates in m; Mine Grid

East	North	Au	As	East	North	Au	As	East	North	Au	As
6969	30890	3	42	9778	23043	8	44	8497	13585	4	35
7930	31199	11	22	10711	23442	4	18	9407	13932	84	660
8869	31479	5	21	11648	23748	6	30	10339	14265	4	87
9834	31833	4	25	12559	24125	26	82	11293	14632	3	48
10761	32080	7	33	13457	24492	5	30	12205	14955	6	365
11741	32416	2	40	14405	24847	53	19	13117	15305	13	53
7190	29725	2	140	8959	21684	3	120	14106	15667	10	14
8151	30028	13	16	9875	22012	4	29	15060	16007	6	18
9089	30358	13	37	10834	22387	18	31	16006	16343	33	10
10388	30809	13	42	11784	22729	19	26	8355	12455	9	43
11343	31162	4	43	12734	23084	8	21	9302	12786	2	46
12291	31503	11	36	13574	23434	36	25	10265	13132	2	68
7944	28943	2	26	14601	23837	7	35	11266	13514	21	73
8864	29299	3	37	9380	20792	15	189	12102	13855	11	30
9833	29599	4	16	10307	21098	7	29	13014	14155	5	25
10757	29935	11	21	11192	21466	6	24	13961	14479	7	25
11711	30242	5	30	12138	21794	12	24	14896	14838	14	28
12630	30561	16	30	13112	22112	14	45	15845	15153	6	24
13717	30955	9	30	13957	22530	19	42	9015	11701	15	25
7892	27497	88	119	14941	22927	32	34	10116	12092	5	71
8799	27888	19	29	8733	19440	14	53	11149	12441	3	39
9740	28276	4	16	9838	19899	4	210	12103	12777	29	112
10662	28635	16	16	10989	20284	26	45	12961	13043	11	11
11572	29017	16	24	12109	20669	18	13	13876	13364	8	21
12526	29397	8	35	12956	20975	9	23	14803	13722	8	14
13421	29775	5	32	14407	21577	18	33	15767	14070	5	37
7098	26286	18	21	15250	22093	14	39	9410	10909	15	26
8029	26635	9	99	8691	18309	7	44	10564	11231	88	51
9110	27120	3	15	9667	18655	3	235	11295	11557	4	23
10353	27461	16	20	10622	18964	13	54	12304	11928	8	10
11272	27909	6	54	11535	19292	3	27	13149	12221	38	17
12217	28256	14	31	12475	19603	3	21	14159	12557	6	11
13114	28597	28	29	13465	19851	18	16	15110	12870	12	13
14035	28969	28	24	14383	20306	16	18	16071	13234	3	16
7455	25387	10	62	15506	20714	11	35	10054	10189	3	21
8365	25740	17	34	16428	21054	6	49	11044	10556	10	61
9303	26097	8	26	8611	16996	7	50	11985	10894	22	62
10223	26450	3	30	9314	17267	19	264	12968	11217	16	22
11198	26788	4	30	10347	17627	2	78	13694	11523	9	21
12156	27140	6	35	11350	17974	6	31	14733	11893	7	21
13062	27512	7	32	12305	18282	11	9	15825	12203	4	35
13977	27845	3	20	13356	18622	5	12	10774	9470	35	44
7834	24467	4	49	8576	15859	14	44	11664	9815	19	44
8746	24827	1	41	9528	16177	7	290	12632	10150	3	34
9664	25187	4	26	10447	16540	10	50	13572	10542	4	24
10594	25536	3	34	12192	17171	5	265	14515	10852	10	19
11550	25906	7	20	13188	17517	7	56	15485	11173	7	47
12504	26246	13	30	14502	17998	5	19	10168	8123	7	97
13376	26620	12	27	16357	18698	4	22	11293	8372	3	255
14366	26942	6	22	8541	14736	3	42	12307	8698	7	62
8212	23518	7	68	9484	15079	84	580	13390	9057	36	37
9442	23996	5	24	10419	15386	3	120	14438	9412	10	14
10402	24364	3	35	11405	15739	1	52	15486	9829	7	27
11308	24736	5	28	12259	16091	5	88	16550	10179	13	150
12226	25095	6	19	13209	16432	5	23	17572	10594	12	94
13266	25496	5	24	14324	16909	3	16	18771	11059	9	148
14264	25884	9	21	15073	17155	15	20				
8585	22593	3	125	16947	17808	5	19				

APPENDIX 15

TABULATED PHASE 2 GEOCHEMISTRY OF MAGNETIC LAG (provided by Electrolytic Zinc Co of Australasia Ltd, Barnes 1985)

Au in ppb
all others in ppm
Co-ordinates in m; Mine Grid

East	North	Cu	W	Ni	Mo	Cr	As	Sb	Zn	Pb	Au	Fe
8798	18402	34	1	54	5	1430	69	4	40	37	5	54.2
9195	18402	28	2	44	4	2000	370	35	48	48	5	55.0
9601	18400	37	2	60	2	2000	170	20	54	42	8	50.0
10000	18402	34	2	58	4	1800	75	7	45	33	0.5	53.5
8994	18005	29	2	50	4	1750	130	10	43	12	4	52.0
9412	18007	31	1	43	7	1150	880	45	50	43	92	51.5
9803	18006	40	3	55	4	3150	430	25	42	39	9	50.0
10203	18007	66	1	89	4	950	75	3	98	25	0.5	49.0
8803	17600	34	2	45	3	1700	100	9	40	50	1	50.0
9202	17598	29	2	37	2	1650	250	15	50	29	2	54.0
9605	17600	25	2	40	4	2150	410	67	51	49	4	59.5
10004	17603	31	1	37	2	2000	160	25	56	42	0.5	60.0
9001	17208	27	2	40	3	1900	370	20	41	41	0.5	59.0
9407	17208	34	2	48	10	1150	490	25	62	43	7	53.5
9802	17208	26	2	45	5	1670	1210	224	39	66	16	54.1
10206	17211	36	1	55	6	1700	70	9	39	41	10	51.0
8803	16806	30	0	43	5	1200	80	3	51	38	12	55.0
9202	16805	23	5	34	3	1550	560	40	32	53	34	54.0
9599	16805	27	2	35	4	1650	1350	100	53	88	25	57.0
10000	16809	25	2	46	7	2150	100	15	42	45	1	54.0
9004	16415	31	2	46	8	1350	95	7	55	44	2	57.5
9406	16410	29	2	44	2	1800	550	45	50	62	4	55.5
9799	16410	27	2	55	5	2250	150	15	46	48	1	50.5
10202	16411	34	2	58	6	1550	230	25	46	46	3	56.5
8801	16003	27	1	43	3	1250	120	10	48	39	1	56.0
9201	16001	28	2	45	5	1850	280	30	51	46	2	58.0
9608	16003	27	3	51	6	2150	242	32	47	52	9	55.1
10003	16004	35	2	65	3	1900	120	15	71	41	1	57.0
10399	16002	38	4	54	4	1600	190	20	42	40	1	52.0
8614	15594	28	3	53	5	1770	98	9	53	41	6	54.0
9000	15609	43	3	58	6	1400	340	15	46	42	50	49.0
9327	15606	52	2	67	6	1000	510	15	95	59	5	48.5
9803	15613	32	1	55	5	2200	200	20	54	45	2	56.5
10209	15611	32	2	76	4	1850	100	9	50	50	2	52.0
10596	15609	32	2	65	6	2100	160	15	43	75	0.5	50.0
8809	15203	30	3	54	8	1350	420	9	34	45	67	51.5
9204	15201	61	2	55	4	850	940	20	76	52	14	47.0
9607	15202	30	2	35	6	1500	1200	120	43	64	22	51.5
10000	15203	35	1	70	4	2150	170	15	50	56	2	51.5
10400	15207	30	2	56	5	2050	140	9	35	48	2	53.0
10726	15206	52	2	59	3	1850	140	20	74	39	16	57.0
8608	14815	28	18	62	5	1850	55	4	48	46	2	51.5
9003	14803	34	13	62	6	1500	70	2	59	40	4	49.0
9408	14812	25	2	38	5	1650	1350	100	45	66	35	52.0
9800	14808	34	1	64	3	2000	150	15	58	50	0.5	53.0
10213	14811	60	0	93	6	1650	130	15	81	34	1	51.5
10606	14808	40	1	72	4	2730	144	14	40	38	8	55.1
11003	14802	114	1	210	3	660	55	4	220	12	3	48.0
8804	14401	31	25	67	8	1750	70	8	48	46	1	52.5
9204	14403	44	6	59	5	1100	1050	45	75	62	21	52.5
9604	14402	43	4	60	6	1600	780	50	68	48	8	50.0
10011	14401	50	2	82	7	1550	110	10	84	40	2	57.5
10396	14406	33	2	70	4	2200	130	9	46	40	0.5	51.5
10805	14404	44	1	63	7	2150	70	9	59	25	1	57.0
8608	14004	27	4	68	3	2450	60	6	48	45	1	52.0
9002	14004	25	5	50	8	1650	350	25	46	61	0.5	51.0
9417	14010	32	4	48	5	1160	742	48	54	47	82	51.2
9803	14005	56	1	89	4	1750	140	15	92	30	3	57.0

East	North	Cu	W	Ni	Mo	Cr	As	Sb	Zn	Pb	Au	Fe
10211	14004	40	2	86	4	2050	110	10	80	42	2	49.5
10602	14012	27	0	44	7	2450	65	3	30	31	10	54.5
8807	13603	35	4	69	6	1200	45	4	58	35	1	50.0
9205	13604	19	4	28	4	1140	612	102	46	66	5	52.4
9610	13610	59	0	93	5	1750	130	10	90	35	2	56.5
10006	13608	42	1	78	4	2000	100	8	74	33	2	52.5
10401	13608	41	1	74	6	1600	95	15	52	34	7	50.0
10806	13605	44	1	59	6	2150	80	3	31	34	7	50.0
8613	13206	32	3	62	6	2050	65	5	52	42	6	54.0
9010	13200	34	12	58	4	1650	50	6	57	42	3	53.5
9410	13210	62	1	100	8	1550	250	30	106	38	4	50.0
9805	13205	54	2	99	5	1700	80	9	102	32	2	50.5
10211	13201	51	2	93	4	1650	65	9	109	30	3	57.0
8807	12806	34	3	51	4	1250	75	7	60	36	2	51.0
9208	12804	31	7	56	4	1650	50	6	56	32	1	52.5
9609	12809	51	2	90	3	1600	120	10	93	34	3	56.0
10005	12806	44	1	98	3	1950	90	7	99	36	1	57.5
10402	12811	37	2	69	4	2150	120	15	39	45	3	50.5
8595	12409	39	3	62	6	1150	65	5	85	34	2	52.0
9001	12411	33	7	61	11	1550	60	9	57	38	0.5	50.0
9397	12407	34	10	66	5	1610	82	9	59	40	7	55.1
9801	12408	42	1	93	4	1850	90	6	85	36	1	56.0
10196	12405	46	2	86	5	1900	75	8	103	33	19	49.5
8802	11998	35	8	65	17	1550	50	6	57	37	1	50.5
9205	11999	34	13	58	17	1750	60	3	52	30	2	53.0
9597	11996	32	7	55	5	1650	140	10	65	42	5	53.5
9998	12004	46	3	92	4	2000	100	15	72	36	3	52.5
10398	12001	39	2	102	4	2000	65	10	91	38	1	53.0
8997	11610	36	17	76	22	1200	55	4	81	40	2	54.0
9400	11605	45	12	71	19	1250	35	4	73	31	9	50.0
9808	11613	43	13	67	16	1200	40	5	61	27	2	53.5
10197	11603	65	1	133	8	1700	80	10	120	31	4	48.5
10601	11618	33	1	74	5	2000	78	8	62	39	15	55.3
9403	11204	37	10	66	14	1400	90	8	81	50	2	49.5
9601	11196	42	12	63	15	1300	210	30	81	34	6	50.5
9995	11210	40	14	71	17	1250	60	5	68	39	1	50.5
10401	11199	48	7	88	10	1450	110	7	84	37	3	50.0
10791	11205	33	2	70	5	2300	90	8	51	41	6	53.9
9006	10799	43	14	62	14	1250	30	3	70	31	0.5	54.0
9400	10806	41	23	64	28	1200	35	9	71	38	2	51.0
9805	10810	38	10	53	22	1200	35	9	60	30	1	57.0
10205	10797	36	9	67	18	1500	65	9	75	39	2	52.5
10605	10814	38	6	70	6	1550	100	10	75	33	0.5	54.0
10998	10807	32	1	77	5	2350	92	8	42	42	8	53.8
9206	10408	43	17	58	26	1250	40	3	64	33	2	50.0
9603	10397	39	15	70	32	1250	25	3	64	41	1	53.5
9991	10403	34	18	57	27	1400	35	4	62	35	2	53.5
10404	10398	37	14	71	23	1450	65	6	68	36	2	52.5
10793	10405	48	5	77	8	1650	100	10	74	36	2	56.0
9015	9991	38	15	51	30	1450	40	5	66	33	0.5	54.5
9407	9997	39	22	58	32	1350	45	4	73	33	2	53.5
9804	10006	40	15	70	26	1350	35	4	69	42	1	52.0
10191	9997	41	17	66	30	1300	44	5	73	33	7	53.7
10599	9998	36	9	74	15	1500	160	10	62	35	2	51.0
9203	9601	37	11	65	30	1100	25	4	74	34	4	48.0
9604	9597	39	14	60	22	1250	30	4	76	32	1	56.0
9997	9594	37	18	62	22	1300	25	4	74	33	1	51.5
10401	9598	37	18	63	26	1250	45	4	69	35	2	52.0

East	North	Cu	W	Ni	Mo	Cr	As	Sb	Zn	Pb	Au	Fe
10798	9602	36	4	80	2	1450	50	2	76	34	6	52.0
9007	9204	33	18	57	32	1550	35	4	58	38	0.5	52.5
9401	9197	33	11	67	28	1450	35	4	68	36	2	50.5
9805	9193	37	8	67	15	1450	40	8	61	36	2	52.5
10203	9195	36	5	83	4	1350	45	4	86	34	3	57.5
10596	9203	35	6	74	2	1650	65	5	68	36	2	58.0
10991	9199	35	6	86	10	1550	70	6	75	33	1	55.0
9206	8798	33	13	75	10	1400	45	2	70	35	3	53.5
9602	8800	42	7	84	6	1250	65	2	83	32	2	49.0
10001	8796	25	9	71	5	5900	290	10	35	30	117	47.5
10395	8797	35	6	120	9	4350	190	7	72	43	5	50.5
10800	8797	35	6	93	3	2100	100	9	80	39	1	52.0
9007	8396	37	7	91	3	1400	35	4	80	34	1	53.0
9408	8391	33	4	81	5	1750	220	6	70	50	1	48.0
9804	8388	103	2	127	8	1200	260	5	200	23	19	52.0
10199	8394	90	4	210	4	1150	150	4	156	26	3	43.0
10606	8398	34	3	135	4	6400	320	15	40	33	117	51.5
10990	8401	30	4	164	6	5690	236	10	59	39	4	52.6