DEPARTMENT OF
MINERALS AND ENERGY

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Record 1973/175

MISCELLANEOUS CHEMICAL, PETROGRAPHIC AND MINERAGRAPHIC INVESTIGATIONS CARRIED OUT IN THE GEOLOGICAL LABORATORY

Compiled

by

B.I. Cruikshank

Record 1973/175

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Record 1973/175

January to December, 1972

The miscellaneous chemical, petrographic and mineragraphic investigations carried out in the Geological Laboratory, Bureau of Mineral Resources during 1972 are compiled in this Record. The results of these investigations are presented in a series of Laboratory Reports which are arranged in numerical order in the Record.

MISCELLANEOUS CHEMICAL, PETROGRAPHIC AND MINERAGRAPHIC INVESTIGATIONS CARRIED OUT IN THE GEOLOGICAL LABORATORY.

January to December, 1972

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Laboratory Report No. 1 26 January 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 1-12-71

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	435	7.7	.17	.10	0.23
Honeysuckle Creek	257	7.4	.01	.20	
Lake Burley Griffin at:					
King's Avenue Bridge	232	7.8	.03	.70	
Commonwealth Avenue Bridge	226	7.8	.03	.88	
Scrivener Dam	197	8.8	.01	.88	24.91
Molonglo River below Scrivener Dam	211	7.4	.03	.98	2.28

Laboratory Report No. 2 27 January 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 8-12-71

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	432	7.9	.18	.10	0.21
Honeysuckle Creek	294	7.2	.02	.95	
Lake Burley Griffin at:					
King's Avenue Bridge	226	7.4	.04	1.19	
Commonwealth Avenue Bridge	217	7.7	.02	1.30	
Scrivener Dam	203	7.8	.02	1.19	24.95
Molonglo River below Scrivener Dam	210	7.4	.02	1.30	3.92

Laboratory Report No. 3 27 January 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 15-12-71

SAMPLING POINTS	Sp. Cond.	pH.	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	440	7.5	.23	.10	0.10
Honeysuckle Creek	251	7.7	.01	.20	
Lake Burley Griffin at:					
King's Avenue Bridge	210	7.5	.05	1.32	
Commonwealth Avenue Bridge	207	7.7	.04	1.22	
Scrivener Dam	197	7.9	.03	1.10	24.88'
Molonglo River below Scrivener Dam	255	7.3	.01	1.53	2.25'

Laboratory Report No. 4 27 January 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 22-12-71

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	519	7.8	.14	.10	0.04'
Honeysuckle Creek	300	8.4	.01	.10	
Lake Burley Griffin at:					
King's Avenue Bridge	233	7.8	.03	1.0	
Commonwealth Avenue Bridge	228	7.7	.03	1.0	
Scrivener Dam	260	7.7	.01	.80	24.88'
Molonglo River below Scrivener Dam	257	7.5	.03	1.80	2.34'

Laboratory Report No. 5 27 January, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 30 December, 1971

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	520	7.8	.09	.10	0.03'
Honeysuckle Creek	215	8.1	.01	1.0	
Lake Burley Griffin at:					
King's Avenue Bridge	237	7.6	.03	1.15	
Commonwealth Avenue Bridge	219	7.6	.03	1.15	
Scrivener Dam	215	8.2	.03	.70	24.80'
Molonglo River below Scrivener Dam	249	7.4	.01	1.15	2.52'

Laboratory Report No. 6 27 January, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 5 January, 1972.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	520	8.0	.09	.10	0.05'
Honeysuckle Creek	254	7.6	.01	.40	
Lake Burley Griffin at:					
King's Avenue Bridge	226	7.5	.03	1.40	
Commonwealth Avenue Bridge	222	7.6	.03	1.25	
Scrivener Dam	232	8.0	.03	1.0	24.88'
Molonglo River below Scrivener Dam	233	7.8	.03	.70	3.12'

Laboratory Report No. 7 27 January, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 12 January, 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	472	7.6	.25	0.01	0.21'
Honeysuckle Creek	333	7.9	.05	.18	
Lake Burley Griffin at:					
King's Avenue Bridge	341	7.8	.01	.10	
Commonwealth Avenue Bridge	231	8.0	.05	1.05	
Scrivener Dam	224	8.1	.03	.87	24.88'
Molonglo River below Scrivener Dam	226	7.8	.03	.87	2.58'

Laboratory Report No. 8 27 January 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 19-1-72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	355	7.0	1.12	4.97	0.04 '
Honeysuckle Creek	174	7.2	.10	5.61	
Lake Burley Griffin at:					
King's Avenue Bridge	223	7.6	.04	1.35	
Commonwealth Avenue Bridge	215	7.6	.02	1.08	
Scrivener Dam	204	7.7	.04	.90	24.90 '
Molonglo River below Scrivener Dam	209	7.7	.02	1.18	3.07 '

27th January, 1972

Laboratory Report No. 9

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of zinc in five water samples collected daily from the Molonglo River. The samples were submitted by Mr. M. Elliott of the Department of the Interior.

Results are given as ppm Zn.

Sample locations are as follows:

D_2 - Burbong
F - Sutton Road Bridge
F_2 - Honeysuckle Creek
G - Duntroon Bridge
H - Lake Burley Griffin
Month - December, 1971.

Date	D_2	F	F_2	G	H
1	0.21	0.17	0.08	0.11	0.02
2	0.33	0.23	0.26	0.05	0.02
3	0.33	0.21	0.06	0.02	0.09
4	0.34	0.15	0.05	0.04	0.14
5	0.30	0.13	0.04	0.05	0.02
6	0.25	0.10	0.04	0.05	0.02
7	-	-	-	-	-
8	0.28	0.14	0.04	0.02	0.03
9	0.33	0.12	0.05	0.03	0.02
10	0.27	0.12	0.03	0.05	0.02
11	0.25	0.11	0.03	0.08	0.04
12	0.27	0.11	0.02	0.05	0.04
13	0.21	0.09	0.04	0.04	0.03
14	0.68	0.11	0.02	0.03	0.04
15	0.49	0.09	0.02	0.06	0.07
16	0.26	0.10	0.01	0.04	0.06
17	0.26	0.11	0.03	0.06	0.04
18	0.27	0.11	0.03	0.08	0.05
19	0.26	0.13	0.03	0.06	0.02
20	0.30	0.10	0.03	0.03	0.03
21	0.29	0.11	0.02	0.02	0.02
22	0.14	0.09	0.07	0.05	0.04
23	0.18	0.19	0.13	0.23	0.04
24	0.21	0.11	0.02	0.06	0.06
25	0.41	0.06	0.02	0.05	0.27
26	0.14	0.11	0.04	0.08	0.05
27	0.14	0.11	0.05	0.09	0.05
28	0.13	0.05	0.05	0.08	0.02
29	0.24	0.05	0.09	0.02	0.02
30	0.62	0.12	0.02	0.08	0.09
31	0.19	0.05	0.08	0.09	0.14

Lab. Report No. 9 (Cont.)

Month December, 1971

Specific Conductance
μmho/cm.

Date	D_2	F	F_2	G	H
1	419	482	231	119	186
2	468	464	469	250	203
3	420	461	211	249	208
4	429	425	269	253	258
5	421	442	272	202	206
6	426	450	287	260	205
7	-	-	-	-	-
8	428	449	272	261	204
9	431	455	272	264	206
10	432	472	261	261	205
11	439	483	261	266	211
12	442	482	265	271	210
13	445	492	251	266	206
14	446	499	234	260	207
15	442	505	238	262	223
16	458	505	250	262	211
17	462	500	254	255	203
18	468	502	278	262	213
19	468	497	275	263	211
20	462	507	281	261	212
21	468	482	302	262	211
22	464	505	269	268	212
23	473	513	272	272	214
24	480	521	258	269	217
25	500	472	249	259	236
26	468	478	221	221	201
27	467	478	211	261	210
28	471	469	192	262	208
29	482	405	222	262	212
30	495	374	218	270	222
31	472	474	231	265	214

27th January, 1972

Laboratory Report No. 10

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo and Queanbeyan River.

The samples were submitted by Mr. M. Elliot of the Department of the Interior.

Sampling Date: December, 1971

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	7.0	57	0	.20
d/s of mine	B	3.0	1350	46.7	14.8
Bungendore Rd Bridge	C	4.6	449	12.57	.20
Hoskinstown Rd Bridge	D	7.2	408	.58	.10
Burbong	D_2	7.6	423	.19	.10
Sutton Rd Bridge	F	7.8	447	.06	.10
Duntroon Bridge	G	7.5	263	.01	.50
Lake Burley Griffin	H	7.9	203	.02	1.19
Queanbeyan River at Queanbeyan	E	7.6	172	.01	.50

27th January, 1972

Laboratory Report No. 11.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr. M. Elliot of the Department of the Interior.

Sampling Date: January, 1972

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	7.1	64	0.01	0.18
d/s of mine	B	2.7	1650	50.00	10.90
Bungendore Rd Bridge	C	4.2	495	15.50	0.10
Hoskinstown Rd Bridge	D	7.1	430	0.48	0.56
Burbong	D_2	7.4	495	0.14	0.28
Sutton Rd Bridge	F	6.5	515	0.02	0.78
Duntroon Bridge	G	7.7	250	0.02	0.78
Lake Burley Griffin	H	7.4	205	0.02	0.10
Queanbeyan River					
at Queanbeyan	E	7.7	162	0.01	0.18

Laboratory Report No. 12 8th February, 1972

LAKE GEORGE WATER ANALYSIS

by

C.W. Claxton

The following results were obtained on a sample of water from the Geary's Gap Station on Lake George, N.S.W. The sample was submitted by A. Schuett on 28th January, 1972.

SAMPLE NO.	72270002
pH	8.92
Specific Cond. at 25°C (micromho / cm)	18,600
T.D.S. 180°C (ppm)	13,557

	ppm	me/l
Ca	65	3.2
Mg	253	20.8
Na	5030	218.7
K	11	0.3
TOTAL CATIONS		243.0
CO_3	145	4.8
HCO_2	660	10.8
Cl	7300	205.9
SO_4	847	17.6
P_2O_5	2.6	
NO_3	80	1.3
TOTAL ANIONS		240.4

Laboratory Report No. 13 14 February, 1972

Lake George Water Analysis

by

C.W. Claxton

A sample of water collected from Geary's Gap No. 1 Station on Lake George N.S.W. was submitted for partial analysis by A. Schuett on 3 February 1972.

The following determinations were made:-

pH		8.61
Specific Conductivity @ 25°C	(micromho/cm)	15,000
T.D.S. @ 180°C	(p.p.m.)	10,550

A qualitative test for Nitrate was made and found to be of normal low magnitude.

Laboratory Report No. 14 17 February, 1972

Water Sample from Cherryburn bore, A.C.T.

by

C.W. Claxton

A sample of water from a Cherryburn bore was submitted for analysis by A.T. Laws on 9 February.

The following results were obtained:-

pH	6.39
Sp. Cond. @ 25°C (micromho/cm)	2500
T.D.S. @ 180°C (p.p.m.)	1360

	ppm	me/l
Ca	216	10.8
Mg	203	16.7
Na	275	12.0
K	2.05	0.05
Li	0.03-	
Rb	0.02-	
cations		39.5
CO_3	Nil	
HCO_3	842	13.8
Cl	433	12.2
SO_4	624	13.0
NO_3	5	0.1
anions		39.1

Minus sign indicates less than

Laboratory Report No. 15 17 February, 1972

Analysis of Gas Condensate Samples from Vulcanological Observatory, Rabaul, T.P.N.G.

by

C.W. Claxton

Seven gas condensate samples, submitted by I.V. Crick of the Central Vulcanological Observatory, Rabaul, T.P.N.G., were analysed and the following results obtained.

SAMPLE NO.	002	003	004	005	006
pH	4.3	4.36	4.27	3.99	3.97
Specific Cond. at 25°C (micromho/cm)	25	22	21	65	39
T.D.S. 180°C					

	ppm	ppm	ppm	ppm	ppm
Ca	0.6	0.4	0.2	1.5	0.3
Mg	0.17	0.075	0.05	0.55	0.035
Na	0.46	0.42	0.20	4.45	0.87
K	0.05	0.05	0.02-	0.43	0.02-
CO_3	Nil	Nil	Nil	Nil	Nil
HCO_3	Nil	Nil	Nil	Nil	Nil
Cl	2.5	3	3.5	9	1.5
SO_4	30.5	31.3	31.3	34.2	32.5
S	a	a	a	a	a
SO_3	a	a	a	a	a
Li	0.03-	0.03-	0.03-	0.03-	0.03-
Rb	0.02-	0.02-	0.02-	0.02-	0.02-

Laboratory Report 16 23 February 1972

CHEMICAL ANALYSIS OF VOLCANIC ROCKS FROM TALASEA, NEW BRITAIN

by

J.W. Sheraton

Eleven samples of volcanic rocks from Talasea, New Britain, were submitted by I.B. Lambert for major element analysis. The analyses were carried out by X-ray fluorescence, using material ignited at 900°C.

Sample No.	70420001	70420002	70420003	70420004	70420005	70420006
SiO_2	76.9	56.0	56.5	80.5	57.8	73.0
TiO_2	0.35	0.54	0.46	0.30	0.52	0.19
Al_2O_3	9.28	14.37	13.27	11.99	15.93	13.36
*Fe_2O_3	3.74	9.28	8.15	0.27	8.43	1.10
MnO	0.02	0.21	0.14	0.01	0.15	0.04
MgO	0.25	5.4	6.8	0.02	4.4	0.21
CaO	0.14	8.97	9.24	0.04	7.94	0.81
Na_2O	0.0	2.7	2.7	0.5	2.7	2.3
K_2O	7.86	1.36	1.24	0.10	1.55	4.19
P_2O_5	0.09	0.12	0.13	0.01	0.12	0.01
Loss on ignition	1.71	0.76	1.05	5.54	1.80	5.10
TOTAL	100.3	99.6	99.7	99.3	101.3	100.4

Sample No.	70420007	70420008	70420010	70420011	70420012
SiO_2	57.7	75.6	75.1	68.3	63.1
TiO_2	0.53	0.24	0.24	0.49	0.82
Al_2O_3	15.88	12.57	12.46	14.54	15.05
*Fe_2O_3	8.37	1.54	1.48	4.47	7.84
MnO	0.14	0.06	0.06	0.10	0.15
MgO	4.1	0.24	0.23	1.1	2.1
CaO	7.66	1.20	1.18	3.68	5.38
Na_2O	3.0	3.9	3.9	3.9	4.3
K_2O	1.62	3.83	3.79	2.97	1.87
P_2O_5	0.09	0.03	0.03	0.16	0.29
Loss on ignition	1.90	0.69	0.61	0.59	0.02
TOTAL	101.0	99.9	99.1	100.3	100.9

* Total iron as Fe_2O_3

Laboratory Report No. 17 24th March, 1972

Analysis of Gas Condensates from Rabaul, P.N.G.

by

C.J. Claxton

Two samples, collected on 9th March, were received for Analysis on 16th March from the Vulcanological Observatory, Rabaul, New Britain, T.P.N.G.

The following results were obtained:-

Sample No.	009	010
pH	3.62	3.60
Sp. Cond. @ 25°C (micromho/cm)	50	50
	ppm	ppm
Total SasH_2 SO_4	31.7	25.9
H_2 SO_4	11.3	22.3
H_2 SO_3	17	3
H_2 S	a	a
Ce	5	6
Na	3.8	0.6
K	0.04	0.04
Ca	0.2	0.3
Mg	0.01	0.03
Li	0.03-	0.03-
Rb	0.02-	0.02-

minus sign indicates less than.
a signifies sought but not detected.

Laboratory Report No. 18 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr M. Elliot of the Department of the Interior.

Sampling Date: February 1972

Location	Point	pH	Sp. Cond. mhc/cm	Zn ppm	Fe ppm
Molonglo River					
8 km u/s of mine	A	6.6	46	.01	.12
d/s of mine	B	6.2	190	3.62	1.95
Bungendore Rd Bridge	C	6.0	258	5.38	.03
Hoskinstown Rd Bridge	D	6.7	300	2.30	.25
Burbong	D_2	6.8	379	3.27	.07
Sutton Rd Bridge	F	7.2	415	.26	.07
Duntroon Bridge	G	7.1	175	.07	.64
Lake Burley Griffin	H	7.7	208	.03	.33
Queanbeyan River at Queanbeyan	E	7.4	124	.01	.28

Laboratory Report No. 19 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr M. Elliot of the Department of the Interior.

Sampling date: 6 March 1972

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	6.97	46	0.01	0.50
d/s of mine	B	5.83	206	5.47	3.95
Bungendore Rd Bridge	C	5.77	243	6.28	1.60
Hoskinstown Rd Bridge	D	7.01	238	1.26	0.45
Burbong	D_2	7.02	247	1.76	0.75
Sutton Rd Bridge	F	7.17	237	1.04	0.50
Duntroon Bridge	G	6.99	146	0.05	1.40
Lake Burley Griffin	H	7.51	193	0.02	1.45
Queanbeyan River at Queanbeyan	E	7.45	112	0.02	0.65

Laboratory Report No. 20 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 26 January 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	414	6.7	2.71	.58	0.31'
Honeysuckle Creek	155	7.6	.04	.80	
Lake Burley Griffin at					
King's Avenue Bridge	243	7.7	.02	1.03	
Commonwealth Avenue Bridge	225	7.8	.03	1.03	
Scrivener Dam	213	7.7	.02	.80	24.90'
Molonglo River below Scrivener Dam	214	7.7	.02	.62	3.47'

Laboratory Report No. 21 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conducitivity in umho/cm.

Sampling Date: 2 February 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	387	6.9	3.38	.30	0.32'
Honeysuckle Creek	187	7.3	.05	.71	
Lake Burley Griffin at					
King's Avenue Bridge	240	7.8	.04	.99	
Commonwealth Avenue Bridge	237	7.8	.03	.99	
Scrivener Dam	226	8.2	.03	.71	24.88'
Molonglo River below Scrivener Dam	230	7.8	.05	1.07	2.88'

Laboratory Report No. 22 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 16 February 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	348	6.95	1.61	.08	0.85'
Honeysuckle Creek	80.	6.56	.04	1.95	
Lake Burley Griffin at:					
King's Avenue Bridge	160	6.77	.04	3.20	
Commonwealth Avenue Bridge	197	7.12	.03	1.57	
Scrivener Dam	212	7.88	.01	.18	24.93'
Molonglo River below Scrivener Dam	216	7.47	.05	.45	4.95'

Laboratory Report No. 23 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 23 February 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	207	7.19	2.47	.82	0.53'
Honeysuckle Creek	134	7.51	.32	1.10	
Lake Burley Griffin at					
King's Avenue Bridge	153	7.53	.12	2.50	
Commonwealth Avenue Bridge	178	7.79	.04	1.50	
Scrivener Dam	204	7.91	.03	.76	-
Molonglo River below Scrivener Dam	198	7.94	.04	1.02	3.80'

Laboratory Report No. 24 30 March, 1972

Zinc Content of Molonglo River Water

by

A. D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 1 March, 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	227	6.96	1.80	0.55	
Honeysuckle Creek	137	7.03	0.11	1.41	
Lake Burley Griffin at					
King's Avenue Bridge	153	7.15	0.12	3.60	
Commonwealth Avenue Bridge	159	7.19	0.10	3.67	
Scrivener Dam	205	8.82	0.04	1.31	
Molonglo River below Scrivener Dam	180	7.57	0.04	3.04	

Laboratory Report No. 25 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 8 March 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	258	7.21	1.28	0.25	
Honeysuckle Creek	154	7.54	0.27	0.35	
Lake Burley Griffin at					
King's Avenue Bridge	158	7.59	0.14	3.10	
Commonwealth Avenue Bridge	169	7.63	0.13	3.20	
Scrivener Dam	195	7.71	0.06	1.55	
Molonglo River below Scrivener Dam	190	7.63	0.12	2.20	

Laboratory Report No. 26 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 15 March, 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	289	6.52	3.69	1.10	0.47
Honeysuckle Creek	145	7.14	0.20	0.85	
Lake Burley Griffin at					
King's Avenue Bridge	157	7.42	0.09	0.80	
Commonwealth Avenue Bridge	190	7.60	0.08	0.80	
Scrivener Dam	190	8.37	0.05	0.65	24.92
Molonglo River below Scrivener Dam	189	7.74	0.06	0.55	3.15

Laboratory Report No. 27 30 March, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 22 March 1972

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	219	7.15	1.99	0.3	0.32
Honeysuckle Creek	146	7.4	0.27	1.1	
Lake Burley Griffin at					
King's Avenue Bridge	160	7.55	0.07	2.7	
Commonwealth Avenue Bridge	171	7.75	0.05	3.1	
Scrivener Dam	184	7.8	0.04	2.6	24.92
Molonglo River below Scrivener Dam	185	7.9	0.05	3.1	2.46

Laboratory Report No.28. 24th March, 1972

LAKE GEORGE, N.S.W., WATER SAMPLES

by

C.W. Claxton

Two samples of water, collected from the Geary's Gap No.1 Station on Lake George, N.S.W., were submitted for analysis by A. Schuett on 20th March.

The results obtained are as follows: -

Sample Date	7 March.	17 March
pH	8.54	8.48
Sp. Cond. @ 25°C (micromho/cm)	11,400	17,700
T.D.S. @ 180°C (ppm)	8,250	13,650

The 17/3/72 sample was slightly discoloured and a lot of sediment was contained in the bottle.

Laboratory Report No. 29. 18th April, 1972.

LAKE GEORGE (N.S.W.) WATER ANALYSIS

by

C.W. Claxton

Two samples of water from Lake George, N.S.W., were submitted for partial analysis on 11th April by A. Schuett.

The samples were collected at the same time. One was filtered prior to analysis, the other as control.

	Filtered	Unfiltered
pH	8.9	8.92
Sp. Cond. @ 25°C (micromho/cm)	14,500	14,500
T.D.S. @ 180°C	10,980	10,970

Laboratory Report No. 30. 19th April, 1972.

EAST COAST ZIRCON CONCENTRATE ANALYSIS

by

C.W. Claxton

A sample of "Foundry Grade" zircon concentrate was received from Mineral Deposits Limited. This material was specified as containing more than 0.1% Fe_2O_3.

An agate mortar and pestle was used to hand crush the sample, which was then fused with sodium carbonate. The melt was dissolved in dilute sulphuric acid and evaporated to fumes. The walls of the beaker were washed with dilute acid and the evaporation repeated. The residue was diluted with water and filtered. An aliquot of the filtrate was taken and the red iron-thiocyanate complex developed. The absorbancy of the coloured solution was determined at 480 nm in a Unicam SP 500 U.V. Spectrophotometer. The precipitate was also checked for iron.

As a final check, the iron content was determined by Atomic Absorption Spectrophotometry both in this laboratory and the Baas-Becking Laboratory. Several methods of extraction were used and results between 0.08 and 0.09% Fe_2O_3 were obtained.

The iron oxide content of the material submitted was found to be 0.09% Fe_2O_3, which is below the specified minimum.

Laboratory Report No.31. 1st May, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 29/3/72.

SAMPLING POINTS	Sp.Cond.	pH	Zn	Fe	Gauge Reading.
Molonglo River at:					
Burbong	196	7.60	0.80	0.20	0.32
Honeysuckle Creek	148	7.30	0.28	0.30	
Lake Burley Griffin at					
King's Avenue Bridge	166	7.41	0.04	1.20	
Commonwealth Avenue Bridge	175	7.90	0.04	1.15	
Scrivener Dam	186	7.80	0.04	1.55	24.90
Molonglo River below					
Scrivener Dam	183	7.75	0.04	1.10	2.86

Laboratory Report No. 32. 1st May, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 5/4/72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at -					
Burbong	215	7.6	0.79	0.25	0.40
Honeysuckle Creek	136	7.3	0.11	0.30	
Lake Burley Griffin at -					
King's Avenue Bridge	168	7.3	0.05	1.20	
Commonwealth Avenue Bridge	177	7.1	0.04	1.40	
Scrivener Dam	182	7.8	0.04	1.85	24.91
Molonglo River below					
Scrivener Dam	190	7.4	0.04	1.65	3.08

Laboratory Report No.33. 1st May, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr. M. Elliott of the Department of the Interior.

Sampling date: 6/4/72.

Location.	Point	pH	Sp.Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	6.85	37	0.01	0.25
d/s of mine	B	4.79	255	6.30	4.75
Bungendore Rd Bridge	C	3.67	425	17.00	3.85
Hoskinstown Rd Bridge	D	7.18	165	0.48	0.10
Burbong	D_2	7.36	268	0.85	0.20
Sutton Road Bridge	F	7.56	222	0.80	0.20
Duntroon Bridge	G	7.33	154	0.12	0.35
Lake Burley Griffin	H	8.37	178	0.04	1.65
Queanbeyan River at Queanbeyan	E	7.60	85	0.01	0.20

Laboratory Report No. 34. 1st May, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 12/4/72

SAMPLING POINTS	Sp.Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at -					
Burbong	214	7.3	0.79	0.20	0.30
Honeysuckle Creek	145	7.4	0.14	0.50	
Lake Burley Griffin at -					
King's Avenue Bridge	173	7.6	0.05	1.15	
Commonwealth Avenue Bridge	180	7.6	0.04	1.75	
Scrivener Dam	188	7.8	0.05	1.65	24.87
Molonglo River below					
Scrivener Dam	187	7.6	0.04	1.65	2.54

Laboratory Report No. 35 1st May, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 17/4/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at -					
Burbong	201	7.3	0.72	0.25	0.27
Honeysuckle Creek	146	7.4	0.08	1.25	
Lake Burley Griffin at -					
King's Avenue Bridge	174	7.8	0.04	1.15	
Commonwealth Avenue Bridge	180	7.9	0.04	1.75	
Scrivener Dam	187	7.6	0.04	1.85	24.92
Molonglo River below -					
Scrivener Dam	210	7.6	0.08	1.95	2.77

Laboratory Report No. 36. 8th May, 1972.

Analysis of Water Sample from Lake George, New South Wales.

by

C.W. Claxton

The following results were obtained on a water sample from Lake George, N.S.W., collected by A. Schuett on 2nd May, 1972.

pH	8.86
Sp. Cond. @ 25°C (micro mho/cm)	14,300
T.D.S. @ 180°C (ppm)	10,700

Laboratory Report No. 37 11th May, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 24/4/72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading.
Molonglo River at:					
Burbong	203	7.1	0.65	0.15	0.30
Honeysuckle Creek	158	7.1	0.10	0.85	
Lake Burley Griffin at:					
King's Avenue Bridge	172	7.6	0.04	1.25	
Commonwealth Avenue Bridge	177	7.5	0.09	1.15	
Scrivener Dam	183	7.7	0.05	1.25	24.87
Molonglo River below Scrivener Dam	194	7.7	0.05	1.10	2.56

Laboratory Report No. 38

11th May, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 1/5/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading.
Molonglo River at:					
Burbong	227	7.1	0.67	0.20	0.28
Honeysuckle Creek	163	7.1	0.09	1.30	
Lake Burley Griffin at:					
King's Avenue Bridge	173	7.6	0.07	1.10	
Commonwealth Avenue Bridge	177	7.7	0.05	1.50	
Scrivener Dam	180	7.5	0.03	1.60	24.88
Molonglo River below Scrivener Dam	186	7.5	0.05	1.40	2.78

Laboratory Report No. 39. 11th May, 1972.

Zinc Content of the Molonglo River Water

by

A.D. Haldane.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 8/5/72

SAMPLING POINTS	Sp. Cond	pH	Zn	Fe	Gauge Reading.
Molonglo River at:					
Burbong	232	7.2	0.63	0.10	0.26
Honeysuckle Creek	195	6.9	0.06	0.95	
Lake Burley Griffin at:					
King's Avenue Bridge	175	7.4	0.02	1.05	
Commonwealth Avenue Bridge	178	7.5	0.03	1.25	
Scrivener Dam	180	8.0	0.03	1.50	24.89
Molonglo River below					
Scrivener Dam	185	7.6	0.03	1.25	2.81

Laboratory Report No. 40 23rd May, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr. M. Elliot of the Department of the Interior.

Sampling Date: 3/5/72

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	6.1	33	0.00	0.10
d/s of mine	B	5.8	195	3.95	3.15
Bungendore Rd Bridge	C	6.2	186	3.75	0.10
Hoskinstown Rd Bridge	D	6.8	221	0.79	0.20
Burbong	D_2	6.7	243	0.71	0.00
Sutton Rd Bridge	F	7.3	235	0.40	0.00
Duntroon Bridge	G	7.4	157	0.04	1.35
Lake Burley Griffin	H	7.3	175	0.04	1.55
Queanbeyan River					
at Queanbeyan	E	6.9	108	0.02	0.25

Laboratory Report No. 41 23rd May, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values given in ppm and specific conductivity in umho/cm.

Sampling date: 15/5/72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	255	7.1	0.73	0.45	0.41
Honeysuckle Creek	157	7.1	0.12	0.25	
Lake Burley Griffin at:					
King's Avenue Bridge	173	7.4	0.03	0.85	
Commonwealth Avenue Bridge	176	7.6	0.03	1.35	
Scrivener Dam	181	7.4	0.02	1.45	24.88
Molonglo River below Scrivener Dam	183	7.8	0.03	1.40	3.06

Laboratory Report No. 42.

Zinc Content of Molonglo River Water

by

A.D. Haldane.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 22/5/72

Sampling Points	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	265	6.9	1.03	0.10	0.28
Honeysuckle Creek	175	6.9	0.15	1.65	
Lake Burley Griffin at:					
King's Avenue Bridge	180	7.7	0.03	1.30	
Commonwealth Avenue Bridge	180	7.7	0.01	1.50	
Scrivener Dam	185	8.0	0.01	1.70	24.30
Molonglo River below					
Scrivener Dam	183	7.7	0.01	1.70	3.10

Laboratory Report No. 43.

Zinc Content of Molonglo River Water

by

A.D. Haldane.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 4/6/72

Sampling Points	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	279	7.1	1.33	0.10	0.28
Honeysuckle Creek	192	7.3	0.17	2.40	
Lake Burley Griggin at:					
King's Avenue Bridge	176	7.8	0.03	0.90	
Commonwealth Avenue Bridge	177	7.9	0.08	1.00	
Scrivener Dam	188	7.9	0.03	1.40	24.90
Molonglo River below					
Scrivener Dam	181	7.1	0.07	2.20	3.10

Laboratory Report No.44. 21st June, 1972.

Lake George Water Analysis

by

C.W. Claxton

Nine samples, collected during a comprehensive sampling of the lake water, were submitted for analysis by A. Schuett on May 26th, 1972.

The following results were obtained:

Sample No.	pH	Sp.Cond. @ 25°C (micromho/cm)	T.D.S. at 180°C (ppm)
72270003	8.59	13,100	9540
0004	8.63	13,300	9540
0005	8.67	13,500	9820
0006	8.65	13,500	9680
0007	8.61	13,400	9620
0008	8.64	13,100	9420
0009	8.54	13,500	9620
0010	8.57	13,400	9600
72270011	8.57	13,200	9500

Laboratory Report No.45. 21st June, 1972.

Analysis of Gas Condensates from Rabaul. P.N.G.

by

C.W. Claxton

Nine samples of condensates, collected between 22nd April and 19th May, were received for analysis from the Vulcanological Observatory, Rabaul, New Britain, P.N.G.

The following results were obtained.

Sample No.	011	012	013	014	015	016	017	018	019
pH	5.1	3.68	3.78	3.79	3.77	3.82	3.47	3.86	3.74
Sp.Conduct. @ 25°C (micromho/cm)	16	43	23	18.5	17.5	14.5	102	25.5	25.5
Totals as H_2SO_4	37	13.2	9.9	8.65	9.9	8.65	22.2	13.2	22.2
H_2S	a	a	a	a	a	a	a	1.-	1.
H_2SO_3	a	1.5	2.9	a	1.8	a	1.5	4.4	5.3
H_2SO_4	37	11.3	6.3	8.65	7.65	8.65	21.3	7.7	8.8
Cl	3	3	4	4	3	4	11	4	4
Na	5.04	0.65	0.15	0.35	0.15	0.30	4.50	0.35	0.43
K	0.68	0.03	0.02	0.07	0.02	0.08	0.36	0.14	0.10
Ca	1.0	0.5	0.1	0.3	0.05-	0.3	1.4	0.6	0.3
Mg	0.28	0.11	0.025	0.035	0.02	0.03	0.70	0.14	0.075
L	0.03-	0.03-	0.03-	0.03-	0.03-	0.03-	0.03-	0.03-	0.03-
Rb	0.02-	0.02-	0.02-	0.02-	0.02-	0.02-	0.02-	0.02-	0.02-

a sought but not detected

\- less than

Laboratory Report No.46 21st June, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr. M. Elliott of the Department of the Interior,

Sampling Date: 8/6/72.

Location	Point.	pH	Sp.Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	6.9	34	0.00	0.05
d/s of mine	B	6.0	204	4.65	7.00
Bungendore Rd Bridge	C	6.7	181	3.98	0.30
Hoskinstown Rd Bridge	D	6.8	242	2.38	0.30
Burbong	D_2	7.1	320	3.25	0.11
Sutton Rd Bridge	F	7.5	288	0.69	0.11
Duntroon Bridge	G	7.4	177	0.04	1.80
Lake Burley Griffin	H	8.5	173	0.00	1.40
Queanbeyan River at Queanbeyan	E	7.6	114	0.00	0.65

Laboratory Report No.47. 21st June, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 13/6/72.

SAMPLING POINTS	Sp.Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at :					
Burbong	320	7.1	3.98	0.05	0.26
Honeysuckle Creek	225	7.2	0.10	0.65	
Lake Burley Griffin at:					
Kings Avenue Bridge	172	7.8	0.01	1.00	
Commonwealth Avenue Bridge	173	7.9	0.01	1.10	
Scrivener Dam	175	7.6	0.01	1.35	24.92
Molonglo River below-					
Scrivener Dam	181	7.2	0.02	1.25	3.80

Laboratory Report No. 48 30th June, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 19.6.72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	320	6.7	2.75	0.45	0.27
Honeysuckle Creek	168	7.4	0.09	0.90	
Lake Burley Griffin at:					
King's Avenue Bridge	183	7.4	0.02	0.81	
Commonwealth Avenue Bridge	182	7.7	0.02	1.00	
Scrivener Dam	182	7.7	0.01	1.15	
Molonglo River below					
Scrivener Dam	184	7.6	0.01	1.15	2.68

Laboratory Report No. 49 30th June, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samppes were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 26.6.72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	312	7.3	4.00	0.11	0.35
Honeysuckle Creek					
Lake Burley Griffin at:					
King's Avenue Bridge	172	8.00	0.01	0.59	
Commonwealth Avenue Bridge	175	8.0	0.01	0.81	
Scrivener Dam	180	7.7	0.05	1.05	24.85
Molonglo River below Scrivener Dam	177	7.7	0.03	1.00	3.00

Laboratory Report No.50. 4th July, 1972.

ANALYSIS OF PYROXENES FROM THE LUNCH CREEK GABBRO, MARY KATHLEEN AREA, QUEENSLAND.

by

D.J. Pritchard

The orthopyroxenes and clinopyroxenes in eleven samples from the Lunch Creek Gabbro, submitted by G.M. Derrick, were analysed on a Jeol J X A - 3A electron microprobe using an operating voltage of 20 KV and a specimen current close to 0.1 μA. Corrections for absorption and fluorescence were made using a program developed by Frazer, Fitzgerald and Reid (1966).

To test for inhomogeneity three analyses were carried out on each mineral. A total of 18 orthopyroxenes analyses and 32 clinopyroxene analyses were carried out Table 1).

Formulae were claculated on a basis of 6 oxygens. The number of atoms occupying the X + Y sites and the Z sites (Deer, Howie & Zussmann, 1966) and values for Mg/(Mg + Fe) are shown in Table 1.

The results were plotted on a Ca-Fe-Mg diagram (Fig. 1.).

Table 1. Pages 1 - 6. as follows.

References: Frazer, J.S., Fitzgerald, R.W., & Reid, A.M., 1966 - Computer programs EMX & EMX2 for electron probe data processing. Scripps Inst. Oceonog. Unpubl. Rept. 66-14.

Deer, W.A., Howie, R.A., & Zussman, J,, An Introduction to the Rock-Forming Minerals. Longmans, 1966.

TABLE 1.

Orthopyroxenes

Slide No.	217			222			235		
SiO_2	52.87	53.31	53.84	53.25	53.80	53.63	52.84	52.61	52.58
TiO_2	.62	.63	.41	.05	.05	.06	.08	.17	.18
Al_2O_3	1.63	1.64	1.02	.57	.55	.44	.97	.71	.85
FeO	16.81	16.56	16.56	20.58	20.74	20.68	23.31	23.13	22.82
MnO	.25	.24	.24	.32	.32	.32	.39	.35	.34
MgO	26. 42	26.50	26.96	24.32	24.97	24.53	22.94	22.29	22.08
CaO	1.96	1.93	1.63	.40	.36	.49	.34	.48	.66
Na_2O	.03	.01	.00	.00	.00	.00	.02	.05	.08
K_2O	.00	.00	.00	.01	.01	.01	.00	.00	.00
Total	100.59	100.82	100.66	99.50	100.80	100.16	100.89	99.79	99.59
Si	1.919	1.926	1.945	1.975	1.970	1.977	1.958	1.971	1.972
Al^{iv}	.070	.070	.043	.025	.024	.019	.042	.029	.029
Al^{vi}	.000	.000	.000	.000	.000	.000	.001	.002	.009
Ti	.017	.017	.011	.001	.001	.002	.002	.005	.005
Fe	.510	.500	.500	.639	.635	.638	.722	.725	.716
Mn	.008	.007	.007	.010	.010	.010	.012	.011	.011
Mg	1.429	1.427	1.452	1.345	1.363	1.348	1.267	1.245	1.234
Ca	.076	.075	.063	.016	.014	.019	.014	.019	.026
Na	.002	.001	.000	.000	.000	.000	.001	.003	.006
K	.000	.000	.000	.001	.001	.001	.000	.000	.000
X + Y	2.042	2.027	2.033	2.011	2.024	2.018	2.019	2.010	2.007
Z	1.989	1.996	1.988	2.000	1.994	1.996	2.000	2.000	2.000
Mg/(Mg+Fe)	.737	.741	.744	.678	.682	.679	.637	.632	.633

Slide No.	239			240			243		
SiO_2	51.41	51.92	51.36	51.07	51.31	50.53	52.96	53.30	52.84
TiO_2	.05	.21	.26	.05	.10	.10	.47	.44	.46
Al_2O_3	.78	.95	.80	1.88	1.37	1.83	2.21	2.23	2.42
FeO	28.73	28.80	28.73	25.61	27.26	26.47	17.76	17.69	17.08
MnO	.42	.35	.39	.41	.49	.42	.30	.30	.28
MgO	18.33	18.45	18.39	18.44	18.98	18.22	23.71	24.06	24.38
CaO	.41	.66	.92	.48	.43	.61	2.58	2.47	2.56
Na_2O	.05	.03	.07	.02	.00	.02	.00	.00	.00
K_2O	.02	.01	.01	.01	.00	.01	.01	.00	.00
Total	100.20	101.38	100.93	97.97	99.94	98.21	100.00	100.49	100.02
Si	1.971	1.966	1.958	1.973	1.959	1.959	1.940	1.941	1.930
Al^{iv}	.029	.034	.036	.027	.041	.041	.060	.059	.070
Al^{vi}	.006	.009	.000	.059	.020	.043	.036	.037	.034
Ti	.001	.006	.007	.001	.003	.003	.013	.012	.013
Fe	.921	.912	.916	.827	.870	.858	.544	.539	.522
Mn	.014	.011	.013	.013	.016	.014	.009	.009	.009
Mg	1.047	1.041	1.045	1.062	1.080	1.053	1.295	1.306	1.327
Ca	.017	.027	.038	.020	.017	.025	.101	.096	.100
Na	.004	.002	.005	.001	.000	.002	.000	.000	.000
K	.001	.001	.001	.001	.000	.001	.001	.000	.000
X + Y	2.011	2.009	2.025	1.984	2.006	1.939	1.999	1.999	2.005
Z	2.000	2.000	1.994	2.000	2.000	2.000	2.000	2.000	2.000
Mg/(Mg+Fe)	.532	.533	.533	.562	.554	.551	.704	.708	.718

Clinopyroxenes

Slide No.	217			222		223		
SiO_2	50.35	50.87	50.06	51.63	50.70	51.22	51.88	52.61
TiO_2	.86	.65	.65	.16	.18	.14	.22	.13
Al_2O_3	2.82	2.93	3.35	1.43	1.66	.97	1.08	1.01
FeO	8.97	8.12	8.28	7.57	7.64	9.62	9.43	10.08
MnO	.13	.14	.12	.14	.12	.16	.19	.15
MgO	16.09	16.20	17.00	13.64	13.42	12.48	12.50	12.62
CaO	20.11	20.53	20.08	24.19	23.71	22.68	22.86	23.38
Na_2O	.36	.43	.38	.39	.38	.28	.32	.31
K_2O	.01	.00	.00	.02	.05	.01	.01	.01
Total	99.70	99.87	99.92	99.17	97.86	97.56	98.49	100.30
Si	1.883	1.891	1.863	1.947	1.939	1.974	1.977	1.974
Al^{iv}	.117	.109	.137	.053	.061	.026	.023	.026
Al^{vi}	.007	.019	.010	.071	.014	.018	.025	.018
Ti	.024	.018	.018	.005	.005	.004	.006	.004
Fe	.280	.253	.258	.239	.244	.310	.301	.316
Mn	.004	.005	.004	.004	.004	.005	.006	.005
Mg	.897	.898	.943	.767	.765	.717	.710	.706
Ca	.806	.818	.801	.977	.971	.936	.933	.940
Na	.026	.031	.027	.029	.028	.021	.024	.023
K	.001	.000	.000	.001	.002	.001	.001	.001
X+Y	2.045	2.042	2.061	2.033	2.033	2.012	2.006	2.013
Z	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
Mg/(Mg+Fe)	.762	.780	.785	.762	.758	.698	.702	.690

Slide No.	224			232			235		
SiO_2	51.98	52.16	52.09	53.02	52.13	52.04	52.14	51.63	52.21
TiO_2	.07	.07	.05	.09	.05	.07	1.11	1.18	1.42
Al_2O_3	.60	.57	.55	.87	.91	.99	2.18	2.08	2.24
FeO	12.91	12.96	12.57	10.20	10.02	10.69	7.67	8.14	7.67
MnO	.39	.37	.37	.28	.28	.32	.17	.14	.15
MgO	10.83	10.93	11.04	12.85	12.67	12.41	13.70	13.85	13.92
CaO	22.47	22.71	22.75	23.14	23.35	23.23	23.44	22.89	22.69
Na_2O	.64	.63	.55	.44	.40	.44	.35	.40	.43
K_2O	.01	.01	.00	.00	.00	.00	.00	.01	.03
Total	99.90	100.41	99.97	100.89	99.81	100.19	100.76	100.32	100.76
Si	1.985	1.983	1.986	1.978	1.969	1.965	1.929	1.922	1.927
Al^{iv}	.015	.017	.014	.022	.031	.035	.071	.078	.073
Al^{vi}	.012	.008	.010	.016	.009	.009	.024	.013	.025
Ti	.002	.002	.002	.002	.002	.002	.031	.033	.039
Fe	.412	.412	.401	.318	.317	.337	.237	.253	.237
Mn	.013	.012	.012	.009	.009	.010	.005	.004	.005
Mg	.617	.619	.627	.714	.714	.698	.755	.768	.766
Ca	.919	.925	.929	.925	.945	.940	.929	.913	.897
Na	.048	.046	.041	.032	.030	.032	.023	.029	.030
K	.001	.001	.000	.000	.000	.000	.000	.001	.001
X + Y	2.024	2.025	2.022	2.016	2.026	2.028	2.004	2.014	2,000
Z	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
Mg/(Mg+Fe)	.600	.600	.610	.692	.693	.674	.761	.752	.764

Slide No.	236			239			240		
SiO_2	53.30	52.92	52.50	51.17	51.51	51.28	49.57	49.10	50.06
TiO_2	.02	.02	.00	.14	.16	.14	.32	.23	.19
Al_2O_3	1.11	1.07	.84	.99	.99	1.02	2.20	2.13	2.19
FeO	6.48	6.75	6.64	11.55	11.56	10.99	10.19	10.16	9.99
MnO	.22	.20	.11	.17	.18	.18	.17	.16	.14
MgO	14.94	14.71	14.91	12.65	12.62	12.45	14.21	13.48	13.51
CaO	24.22	24.13	24.11	22.57	22.84	22.66	21.05	21.33	22.97
Na_2O	.24	.20	.22	.32	.38	.33	.41	.52	.42
K_2O	.01	.01	.02	.01	.01	.00	.07	.02	.10
Total	100.54	100.01	99.35	99.57	100.25	99.05	98.19	97.13	99.57
Si	1.966	1.965	1.963	1.950	1.950	1.959	1.902	1.906	1.902
Al^{iv}	.034	.035	.037	.044	.044	.041	.098	.094	.098
Al^{vi}	.014	.012	.000	.000	.000	.005	.001	.004	.000
Ti	.001	.001	.000	.004	.004	.004	.009	.007	.006
Fe	.200	.210	.208	.368	.366	.351	.327	.331	.317
Mn	.007	.006	.003	.005	.006	.006	.006	.005	.005
Mg	.821	.815	.831	.718	.712	.709	.813	.782	.765
Ca	.957	.960	.966	.922	.927	.928	.865	.889	.935
Na	.017	.014	.016	.023	.028	.024	.031	.039	.031
K	.001	.001	.001	.001	.001	.000	.004	.001	.005
X + Y	2.018	2.019	2.025	2.041	2.044	2.027	2.056	2.056	2.064
Z	2.000	2.000	2.000	1.994	1.994	2.000	2.000	2.000	2.000
Mg/(Mg+Fe)	.804	.795	.800	.661	.660	.669	.713	.703	.707

Slide No.	242			243		
SiO_2	50.02	49.02	49.18	50.20	50.54	50.24
TiO_2	.82	.88	.78	1.02	.99	1.16
Al_2O_3	2.55	3.68	3.08	3.61	3.64	3.94
FeO	14.52	12.69	11.68	11.62	11.78	11.24
MnO	.31	.25	.21	.21	.22	.21
MgO	15.68	15.08	14.98	14.93	15.38	14.73
CaO	16.18	18.14	18.69	18.66	17.62	19.03
Na_2O	.32	.33	.28	.26	.20	.23
K_2O	.01	.01	,01	.00	.01	.00
Total	100.41	100.08	98.89	100.51	100.38	100.78
Si	1.885	1.851	1.873	1.875	1.883	1.869
Al^{iv}	.113	.149	.127	.125	.117	.131
Al^{vi}	.000	.015	.011	.034	.043	.042
Ti	.023	.025	.022	.029	.028	.032
Fe	.458	.401	.372	.363	.367	.354
Mn	.010	.008	.007	.007	.007	.006
Mg	.881	.849	.850	.831	.854	.816
Ca	.653	.734	.762	.746	.703	.758
Na	.024	.024	.021	.018	.015	.016
K	.001	.001	.001	.000	.001	.000
X + Y	2.050	2.057	2.046	2.028	2.018	2.025
Z	1.998	2.000	2.000	2.000	2.000	2.000
Mg/(Mg+Fe)	.658	.679	.696	.696	.699	.697

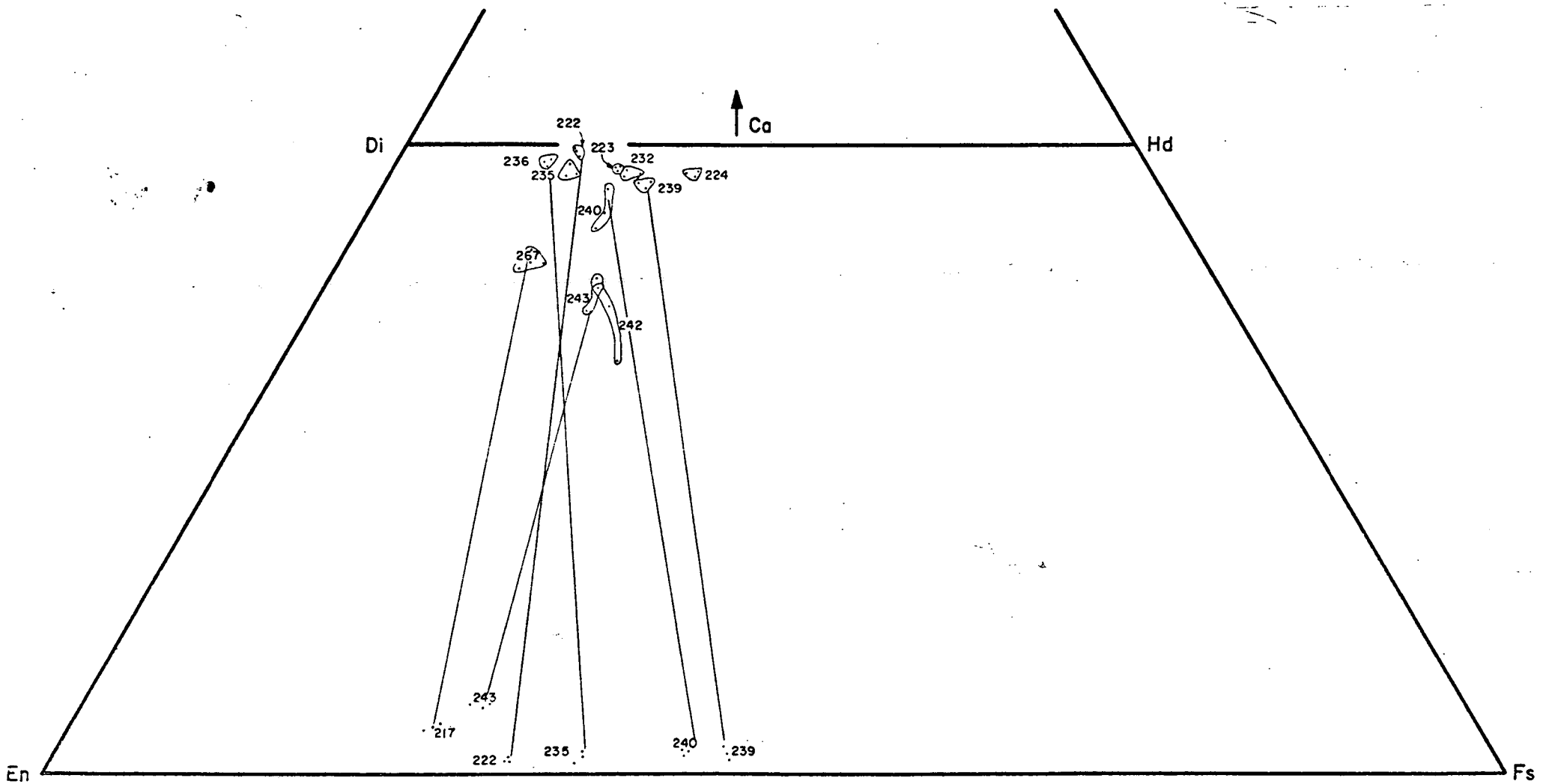

Fig I Pyroxene Compositions

To accompany lab. Report 50

M(PT)135

Laboratory Report No. 51 19 July, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 3-7-72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	280	7.0	1.92	0	0.35
Honeysuckle Creek	193	6.8	0.35	1.0	
Lake Burley Griffin at					
King's Avenue Bridge	190	7.3	0.04	0.3	
Commonwealth Avenue Bridge	181	7.6	0.03	1.2	
Scrivener Dam	182	7.7	0.02	0.6	24.84
Molonglo River below					
Scrivener Dam	185	7.7	0.01	0.9	2.80

Laboratory Report No. 52 19 July, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr M. Elliot of the Department of the Interior.

Sampling Date: 6/7/72

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	6.6	42	0.00	0.00
d/s of mine	B	5.4	228	4.95	9.40
Bungendore Rd Bridge	C	6.5	200	4.00	0.20
Hoskinstown Rd Bridge	D	6.8	243	2.08	0.00
Burbong	D_2	7.1	268	1.87	0.00
Sutton Rd Bridge	F	7.4	321	2.30	0.00
Duntroon Bridge	G	7.4	182	0.08	0.90
Lake Burley Griffin	H	8.0	173	0.02	0.15
Queanbeyan River at Queanbeyan	E	7.4	120	0.00	0.60

Laboratory Report No. 53

19 July, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date: 10/7/72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	287	7.3	1.81	0	0.28
Honeysuckle Creek	208	7.2	0.40	0.4	
Lake Burley Griffin at					
King's Avenue Bridge	192	7.8	0.02	0.4	
Commonwealth Avenue Bridge	188	7.6	0.02	0.6	
Scrivener Dam	185	7.7	0.01	1.0	
Molonglo River below Scrivener Dam	190	7.8	0.04	1.0	2.69

Laboratory Report No. 54 19 July, 1972

Analyses of Garnets from the Esmeralda Granite and the Croydon Volcanics, S.E. from township of Croydon, North Queensland

by

D.J. Pritchard

The garnets in five samples from the Esmeralda Granite and the Croydon Volcanics, submitted by B. Labonne, were analysed for Fe, Mn, Ca and Mg on a Jeol JXA-3A electron microprobe using an operating voltage of 20 KV and a specimen current close to 0.1μA. No corrections were made for absorption or fluorescence as corrections are minimal except in the case of Mg.

To test for zoning several analyses were carried out across each garnet but zoning was found to be only slight.

The analyses are presented as percentage almandine, spessartine, grossularite and pyrope components in (Table 1).

Table 1

Slide No.	1050	1061	1063	1068	1087
Element					
Fe	.1467	.3470	.3646	.2909	.3557
Mn	.0143	.0304	.0182	.0236	.0185
Ca	.0047	.0064	.0060	.0048	.0100
Mg	.0010	.0024	.0009	.0022	.0059
Component					
Almandine	86.3	88.5	92.7	89.2	88.4
Spessartine	8.5	8.5	4.7	7.3	4.7
Grossularite	3.8	3.8	2.1	2.0	3.5
Pyrope	1.4	1.4	.5	1.5	3.4

Laboratory Report No. 55 24th July, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 17/7/72

SAMPLING POINT	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	279	7.1	1.62	0.03	0.28
Honeysuckle Creek	187	7.4	0.26	0.93	
Lake Burley Griffin at:					
King's Avenue Bridge	193	7.8	0.03	0.45	
Commonwealth Avenue Bridge	184	7.8	0.06	0.85	
Scrivener Dam	180	7.8	0.04	0.99	24.89
Molonglo River below					
Scrivener Dam	182	7.6	0.06	1.11	2.27

Laboratory Report No. 56 1st August, 1972

ANALYSES OF GARNETS FROM THE OWEN STANLEY METAMORPHICS, PAPUA NEW GUINEA

by

D.J. Pritchard

The garnets in four samples from a blue schist terrain in the Owen Stanley Metamorphics, submitted by P.Pieters, were analysed for Fe, Mn, Mg & Ca on a Jeol JXA-3A electron microprobe using an operating voltage of 20 KV and a specimen current close to 0.1 uA. No corrections were made for absorption or flourescence as corrections are minimal except in the case of Mg.

To test for zoning several analyses were carried out across each garnet. The garnets in slides No. 300030, 300106, & 351012 were found to be zoned. The garnets in slide No. 0520 were only slightly zoned, however the compositions of individual garnets were found to vary.

The analyses are presented as percentage almandine, spessartine, grossularite and pyrope components and the mineral assemblages in each slide are also shown in Table 1.

A total of 22 analyses were performed:- five analyses across one garnet in slides 300030 & 300106, three analyses across garnet (a) in slide 351012, three analyses edge to centre across garnet (b) in slide 351012, and six analyses of individual garnets in slide 0520.

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TABLE 1.

300030:	Garnet + chloritoid + white mica + quartz + rutile + opaque schist				
Fe	.2792	.2677	.2649	.2739	.2706
Mn	.0006	.0030	.0099	.0067	.0005
Ca	.0375	.0721	.0724	.0727	.0365
Mg	.0228	.0047	.0028	.0042	.0284
Almandine	58.6	58.5	56.5	57.7	58.2
Spessartine	3.1	2.0	2.1	2.0	3.6
Grossularite	20.7	25.0	26.1	27.0	19.9
Pyrope	17.6	14.5	15.3	13.3	18.3

300106:	Garnet + actinolite + white mica + plagioclase + rutile schist				
Fe	.2330	.2333	.2242	.2294	.2295
Mn	.0122	.0080	.0082	.0079	.0141
Ca	.0590	.0717	.0744	.0770	.0565
Mg	.0305	.0252	.0264	.0231	.0315
Almandine	58.6	58.5	56.5	57.7	58.2
Spessartine	3.1	2.0	2.1	2.0	3.6
Grossularite	20.7	25.0	26.1	27.0	19.9
Pyrope	17.6	14.5	15.3	13.3	18.3

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351012:	Garnet + sphene + chlorite + carbonate + plagioclase schist					
Fe	a).2674	.2660	.2636	b).2683	.2681	.2558
Mn	.0122	.0315	.0114	.0135	.0294	.0850
Ca	.0625	.0523	.0632	.0637	.0580	.0566
Mg	.0067	.0059	.0073	.0078	.0053	.0050
Almandine	70.0	69.2	69.4	69.1	68.6	59.1
Spessartine	3.2	8.3	3.0	3.5	7.6	20.0
Grossularite	22.8	17.0	23.2	22.8	20.7	18.2
Pyrope	4.0	3.5	4.4	4.6	3.1	2.7

0520:	Stilpnomelane + garnet + chlorite + quartz + opaque schist					
Fe	.2479	.2667	.2105	.2197	.2256	.2401
Mn	.0788	.0476	.1639	.1408	.2002	.2026
Ca	.0219	.0239	.0420	.0421	.0532	.0519
Mg	.0022	.0030	.0017	.0016	.0019	.0019
Almandine	68.2	75.1	47.9	51.7	44.4	46.0
Spessartine	22.0	13.6	37.9	33.6	40.1	39.4
Grossularite	8.4	9.4	13.3	13.8	14.6	13.8
Pyrope	1.4	1.9	0.9	0.9	0.9	0.8

Laboratory Report No. 57 4th August, 1972

HEAVY MINERAL ANALYSIS OF SEABED SAMPLE FROM MIRA No 1 WELL, GULF OF PAPUA

by

D. J. Pritchard

A heavy mineral separation using bromoform was carried out on a seabed sample from Mira No 1 Well. The sample was submitted by J. Ward. Only 4.5% heavy minerals is present, the remainder being plagioclase and fine-grained almost opaque rock fragments.

A polished thin section grain mount of the heavy minerals was examined using an electron microprobe.

The heavy fraction was found to consist largely of rock-forming silicates, green and brown hornblende, pale greenish augite and a few grains of altered Ti-bearing opaque - possibly titaniferous magnetite. No chromite or zircon were detected but a few grains of rutile are present.

Laboratory Report No. 58 8th August, 2972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 24/7/72

Sampling Points	Sp.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	306	7.3	1.55	0.08	0.25
Honeysuckle Creek	213	7.3	0.23	0.38	
Lake Burley Griffin at:					
King's Avenue Bridge	206	7.6	0.07	0.45	
Commonwealth Avenue Bridge	199	7.8	0.03	0.53	
Scrivener Dam	191	7.3	0.04	0.85	24.83
Molonglo River below					
Scrivener Dam	202	7.2	0.05	0.75	2.25

Laboratory Report No. 59 8th August, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampping date: 31/7/72

Sampling Points	Sp.Cond	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	312	7.1	1.75	0.05	0.26
Honeysuckle Creek	246	7.8	0.17	0.56	
Lake Burley Griffin at:					
King's Avenue Bridge	205	7.7	0.03	0.31	
Commonwealth Avenue Bridge	200	7.8	0.02	0.59	
Scrivener Dam	198	7.9	0.06	0.89	
Molonglo River below Scrivener Dam	201	7.6	0.07	0.89	2.60

Laboratory Report No. 60. 14th August, 1972.

ZINC CONTENT OF MOLONGLO RIVER WATER

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling Date 7/8/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	371	7.0	1.88	0.17	0.35
Honeysuckle Creek	242	7.2	0.22	2.00	
Lake Burley Griffin at					
Kings Avenue Bridge	209	7.7	0.05	0.50	
Commonwealth Avenue Bridge	206	7.7	0.02	0.72	
Scrivener Dam	198	7.6	0.02	0.85	24.90
Molonglo River below					
Scrivener Dam	206	7.4	0.03	0.90	2.63

Laboratory Report No. 61 15 August, 1972

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr M. Elliot of the Department of the Interior.

Sampling Date: 3-8-72

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River -					
8 km u/s of mine	A	6.3	51	0.00	0.10
d/s of mine	B	6.2	180	4.15	7.30
Bungendore Rd Bridge	C	6.6	190	3.28	0.15
Hoskinstown Rd Bridge	D	6.8	245	2.36	0.00
Burbong	D_2	7.2	300	1.75	0.00
Sutton Rd Bridge	F	6.9	320	1.06	0.00
Duntroon Bridge	G	7.4	205	0.12	1.80
Lake Burley Griffin	H	8.4	185	0.02	0.70
Queanbeyan River at Queanbeyan	E	7.5	135	0.00	0.52

Laboratory Report No. 62 24th August, 1972.

ZINC CONTENT OF MOLONGLO RIVER WATER

by

A. D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 14-8-72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	340	7.1	1.60	0.05	
Honeysuckle Creek	268	6.9	0.41	0.90	
Lake Burley Griffin at					
King's Avenue Bridge	219	6.9	0.04	0.50	
Commonwealth Avenue Bridge	208	7.5	0.02	0.50	
Scrivener Dam	219	7.5	0.04	0.50	24.88
Molonglo River below					
Scrivener Dam	205	7.1	0.02	0.83	2.61

Laboratory Report No. 63. 24th August, 1972.

ZINC CONTENT OF MOLONGLO RIVER WATER

by

A. D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 21-8-72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	320	7.0	1.95	0.13	0.33
Honeysuckle Creek	215	7.2	0.24	0.66	
Lake Burley Griffin at					
King's Avenue Bridge	213	7.6	0.02	0.38	
Commonwealth Avenue Bridge	205	7.5	0.02	0.50	
Scrivener Dam	200	7.6	0.01	0.73	
Molonglo River below					
Scrivener Dam	210	7.4	0.06	0.70	2.82

Laboratory Report No. 64 20 August, 1972.

PETROGRAPHIC EXAMINATION OF MARBLE SAMPLES FROM YARRALOOLA, W.A.

by

B. Labonne

Six samples of marble have been supplied by the National Capital Development Commission for an assessment of their suitability for buildings in the A.C.T. The samples were supplied to N.C.D.C. by the Great Boulder Mines Pty. Ltd., W.A.

The samples are from an unworked deposit contained in the dolomitic Ashburton Formation, W.A. The deposit has not been inspected.

Description

The block-shaped polished samples have an average size of 14x11x4 cm.

The 6 samples, in hand specimens, appear to consist of crenulated bedded marble; 4 of the 6 have a rather highly coloured appearance. The colour of R13, B14, A11 and E3 is dark red with thin green and yellow bands; sample C12 is dark grey and E2 is ivory white, with brown and orange veinlets. The red specimens show coarse crenulated bedding, red bands alternating with lighter bands; the banding is highlighted by thin dark limonitic planes. The grey sample (C12) is finely bedded and cross-cut by friable calcitic veins, whereas the ivory one (E2) does not seem bedded, but randomly jointed: the joints are filled by yellow and dark material.

The 6 samples show an uneven polish due to the irregular grain-size and composition of the beds. Red cherts interbedded with the calcite in sample E3 take a much better polish.

All the samples are compact and the mineral grains are not liable to loosen or lift; the samples, however, are soft and easily scratched.

Thin sections (refer to table)

Thin sections were cut from 5 samples, 3 reddish (R13, E3, A11), the ivory white (E3) and the dark grey (C12).

All the samples are petrologically very similar; the rock is a marble and averages 98% calcitic material. The texture is heterogranular with a grain-size ranging from 0.01 to 5 mm. The larger crystals are also distributed in bands alternating with bands of small crystals. The crystals of calcite are xenomorphic and generally interlocked.

The remainder of each rock sample consists of one or more of the following: beds and cross-cutting veins of minute quartz crystals, chlorite, limonitic material, trace of sulphides and empty cavities: the cavities were certainly filled by crumbly crystals of calcite removed during the preparation of the thin sections. (See details on table). Sample E3 contains lenticular bands of chert.

Durability

The samples have not been tested for their durability, but the following observations have been made.

Resistance to weathering - The rocks consist of calcite which is generally stable for building and ornamental purposes. Partings, or incipient partings, e.g. along joints, bedding planes and crystal boundaries, were not observed in any of the specimens.

Staining and colour - If the calcite is stable during the lifetime of a building, the colour is not expected to change. Staining will be minor as the samples (except R13) are devoid of sulphides; limonite is in a stable oxidized condition. Severe urban and industrial pollution would affect the stone.

Resistance to abrasion and surface friction - The rock is soft and easily scratched; it is softer and more susceptible to wear than most marbles in commercial use. The beds have a differential hardness and under heavy foot traffic grooves and ridges will appear.

Resistance to flaking and spalling - Examination of hand specimens and thin sections indicates that no planes of either easy splitting or obvious jointing occur within the marble, the limonite-filled joints appear to be too discontinuous to cause parting. The veins of friable calcite are also too scarce to create planes of weakness.

Conclusions

The opinions expressed below are based on the 6 specimens examined. The samples cannot represent the broad features of the whole deposit such as:

- the jointing pattern, if any
- the continuity of the foliation (or bedding)
- the occurrence and distribution of chert.

To supply the stone as slabs probably will not present difficulty provided the jointing in the quarry is suitable. The marble has a warm appearance but its colour and softness will restrict its use. The uneven quality of the polish due to the heterogeneity of the various beds might also restrict its use. The porosity of the marble due to the friability of large crystals of calcite filling veins and cavities should be considered of minor importance.

THIN SECTION DESCRIPTION

Sample	Colour	Macro texture	Micro texture	Composition			Remarks - deleterious factors
R13	Red, pink, dark red	Crenulated bedding	Heterogranular Interlocked grains Veins of recrystallized material	Calcite xenomorphic	Quartz in veins and minute crystals	Chlorite & limonite, discontinuous veins, trace of sulphides	Contains cavities. Sulphides will give staining and locally corrosion on exposure to air and moisture
A11				Calcite xenomorphic		Chlorite & limonite, veins (discontinuous)	Limonite) Chlorite) 5% gives an uneven polish
E3				Calcite xenomorphic		Chlorite & limonite, veins (discontinuous)	Jointed - cross-cutting veins - but compact. Lenticles of chert.
C12	Dark grey			Calcite xenomorphic		Chlorite & limonite, veins (discontinuous)	Calcitic veins 0.5 cm wide make the material partly friable.
E2	Ivory white	Randomly jointed		Calcite xenomorphic		Chlorite & limonite, veins (discontinuous)	Friable calcite filling cavities.
B14	Red, pink	Similar to R13	No thin section				

Laboratory Report No. 65 31 August, 1972.

ANALYSIS OF BASALTIC AND ANDESITIC POWDERS FROM P.N.G.

by

T.I. Slezak

Seventy eight samples of basaltic and andesitic powders of Quaternary volcanoes from P.N.G. submitted by R.W. Johnson, were analysed by optical emission spectroscopy on the Hilger and Watts 3 metre Polychromator for Ba, Cr, Cu, Ni, Sc, and V.

The analytical method used was adapted from Ahrens and Taylor ("Spectrochemical Analysis", 1961, p. 189, Addison-Wesley Publishing Company). One part of sample was mixed with two parts of graphite (National Carbon Company Type L4160, Grade SP-2). The mix was loaded into a preformed graphite electrode (National Carbon Company Type L4206) and arced as the anode at a constant 8 amps D.C. for 130 seconds. Both internal standard and rock standard control were used.

BATCH 7

Sample Number	Ba ppm	Cr ppm	Cu ppm	Ni ppm	Sc ppm	V ppm
510199	110	23	54	13	31	190
510205	80	300	72	64	37	190
510217B	-50	340	78	90	35	140
512649	60	22	110	15	35	240
513038B	280	-10	15	10	17	43
513038G	120	35	100	32	46	215
513028	60	-10	185	-10	35	270
513039B	90	230	110	48	40	240
510236	130	38	58	28	34	270
510242	120	32	100	20	36	340
510258A	420	-10	28	-10	18	60
510259	120	54	125	41	38	300
512683D	210	12	78	19	22	200
512683C	250	11	49	-10	16	160
480042	80	290	100	125	44	440
260011B	430	27	205	25	36	390
190953	170	200	115	58	42	240

BATCH 8

Sample Number	Ba ppm	Cr ppm	Cu ppm	Ni ppm	Sc ppm	V ppm
180989	210	85	105	21	40	250
181001	220	84	54	21	45	340
180980B	240	44	105	13	28	180
260780	180	80	175	31	33	270
260787	120	42	78	28	36	300
260792	150	41	88	24	32	230
260793	140	160	210	42	46	320
260796	180	26	66	17	33	240
250005	880	-10	-10	-10	8	12
320079	90	+500	84	210	52	280
320082	170	350	100	70	54	280
320070B	300	19	34	14	27	170
320131	130	48	120	33	38	350
320140A	350	-10	95	-10	27	180
320142B	200	-10	150	12	37	470
320143A	240	-10	145	-10	30	360
320110B	360	-10	18	-10	21	40

BATCH 9

Sample Number	Ba ppm	Cu ppm	Cr ppm	Ni ppm	Sc ppm	V ppm
181013	310	190	10	-10	25	220
181019	200	100	46	20	38	380
181023	270	150	20	13	31	340
180992	180	47	72	23	43	250
180997	170	130	54	21	40	300
180968	390	70	15	-10	20	135
180973	200	80	140	33	47	320
180982	270	94	64	13	34	280
260003	180	120	380	78	47	280
260788	140	130	110	58	40	300
260801	130	105	82	28	45	300
320085	130	110	145	70	43	250
320629	140	96	55	270	39	225
320067A	280	70	20	14	25	230
320067B	300	70	121	17	27	230
320120	140	175	62	44	40	350
320127	520	140	-10	10	26	130
250016	880	17	70	19	12	25
250038	240	94	180	80	38	250
250056	970	14	77	13	8	13

BATCH 10

Sample Number	Ba ppm	Cr ppm	Cu ppm	Ni ppm	Sc ppm	V ppm
320072	160	150	165	56	42	400
320100A	150	20	230	16	42	350
320106	190	-10	88	-10	28	170
320662	180	105	150	40	40	280
320667D	210	80	130	31	41	310
320674	230	68	150	33	39	310
320675C	170	35	140	24	35	320
320682	120	70	130	41	54	450
320702A	320	48	72	28	20	150
320719	190	160	82	55	36	330
320721	170	270	120	92	35	280
320739A	240	-10	180	16	29	320
320739B	520	-10	300	15	38	370
270764E	380	25	41	21	16	90
270767	320	66	71	31	30	230
190954E	150	280	120	73	42	390
190955C	60	520	125	150	60	290
190959	470	35	110	22	25	220
190961	215	280	130	69	45	300
190965	350	33	74	15	21	230
180018	170	125	70	33	36	210
181028A	200	70	135	23	34	270
181034	240	120	140	25	40	290
181038E	200	140	23	100	22	150

Laboratory Report No. 66 September 1, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 28/8/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	315	6.9	1.71	0.15	0.24
Honeysuckle Creek	233	7.0	0.28	0.95	
Lake Burley Griffin at:					
King's Avenue Bridge	225	7.8	0.03	0.30	
Commonwealth Avenue Bridge	220	7.6	0.02	0.22	
Scrivener Dam	203	7.6	0.02	0.60	24.88
Molonglo River below Scrivener Dam	205	7.2	0.01	0.75	2.92

Laboratory Report No. 67. 8th September, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 5/9/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	353	7.3	1.80	0.44	0.34
Honeysuckle Creek	218	7.4	0.32	0.40	
Lake Burley Griffin at					
King's Avenue Bridge	224	8.0	0.03	0.24	
Commonwealth Avenue Bridge	213	7.5	0.03	0.28	
Scrivener Dam	204	7.5	0.03	0.66	
Molonglo River below Scrivener Dam	208	7.6	0.03	0.70	2.82

Laboratory Report No. 68. 8th September, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr. M. Elliot of the Department of the Interior.

Sampling date: 5/9/72.

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River-					
8 km u/s of mine	A	6.8	47	0.00	0.12
d/s of mine	B	4.1	970	30.80	34.40
Bungendore Rd Bridge	C	6.9	231	2.90	0.70
Hoskinstown Rd Bridge	D	6.8	306	2.60	0.40
Burbong	D2	7.2	330	1.86	0.37
Sutton Rd Bridge	F	7.5	360	1.22	0.24
Duntroon Bridge	G	7.5	211	0.14	1.90
Lake Burley Griffin	H	7.7	205	0.02	0.61
Queanbeyan River at Queanbeyan	E	7.5	125	0.00	0.79

Laboratory Report No. 69. 14th September, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 11/9/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	355	7.1	1.59	0.22	0.34
Honeysuckle Creek	213	7.3	0.25	0.95	
Lake Burley Griffin at					
King's Avenue Bridge	221	7.7	0.05	0.22	
Commonwealth Avenue Bridge	205	7.7	0.02	0.31	
Scrivener Dam	206	7.5	0.06	0.50	24.88
Molonglo River below Scrivener Dam	205	7.6	0.01	0.55	2.36

Laboratory Report No. 70 28th September, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 18/9/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	340	7.0	1.84	0.08	0.34
Honeysuckle Creek	265	6.8	0.21	0.66	
Lake Burley Griffin at					
King's Avenue Bridge	232	7.5	0.02	0.13	
Commonwealth Avenue Bridge	220	7.9	0.02	0.05	
Scrivener Dam	206	7.5	0.02	0.36	
Molonglo River below					
Scrivener Dam	216	7,1	0.03	0.27	2.82

Laboratory Report No. 71. 6th October, 1972.

Zinc Content of Molonglo River Water

by

A. D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 25.9.72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	366	7.0	1.46	0.15	0.21
Honeysuckle Creek	257	6.8	0.11	0.35	
Lake Burley Griffin at					
King's Avenue Bridge	238	6.9	0.04	0.30	
Commonwealth Avenue Bridge	229	7.4	0.23	0.40	
Scrivener Dam	216	7.7	0.03	0.45	24.83
Molonglo River below					
Scrivener Dam	208	8.5	0.02	0.45	2.15

Laboratory Report No. 72 6th October, 1972.

Zinc Content of Molonglo River water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 3.10.72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	391	7.5	1.58	0.15	0.21
Honeysuckle Creek	262	7.3	0.14	0.35	
Lake Burley Griffin at					
King's Avenue Bridge	232	7.7	0.03	0.57	
Commonwealth Avenue Bridge	226	7.7	0.03	0.52	
Scrivener Dam	212	7.7	0.02	0.45	24.83
Molonglo River below					
Scrivener Dam	212	8.0	0.03	0.45	2.10

Laboratory Report No. 73 6th October, 1972.

Zinc Content of Molonglo River Water

by

A.D. Haldane

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr. M. Elliot of the Department of the Interior.

Sampling Date: 3.10.72.

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River-					
8 km u/s of mine	A	6.7	54	0.01	0.02
d/s of mine	B	4.9	431	9.60	16.00
Bungendore Rd Bridge	C	6.5	282	5.28	0.15
Hoskinstown Rd Bridge	D	6.9	316	1.15	0.76
Burbong	D2	7.2	373	1.46	0.10
Sutton Rd Bridge	F	7.4	431	0.69	0.15
Duntroon Bridge	G	7.8	248	0.03	0.24
Lake Burley Griffin	H	7.8	216	0.02	0.35
Queanbeyan River at Queanbeyan	E	7.6	176	0.01	0.70

Laboratory Report No. 74 31st October, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE.

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 9/10/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	419	7.4	1.10	0.00	0.16
Honeysuckle Creek	272	8.1	0.07	0024	
Lake Burley Griffin at:					
King's Avenue Bridge	246	7.5	0.06	0.14	
Commonwealth Avenue Bridge	232	7.4	0.04	0.14	
Scrivener Dam	228	8.3	0.08	0.19	24.90
Molonglo River below Scrivener Dam	242	7.1	0.12	0.08	2.17

Laboratory Report No. 75 31st October, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 16/10/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	436	7.4	1.13	0.04	0.14
Honeysuckle Creek	291	6.7	0.07	0.46	
Lake Burley Griffin at:					
King's Avenue Bridge	235	7.5	0.01	0.22	
Commonwealth Avenue Bridge	230	7.6	0.01	0.31	
Scrivener Dam	220	7.7	0.01	0.27	24.84
Molonglo River below Scrivener Dam	227	7.3	0.02	0.18	2.78

Laboratory Report No. 76. 8th November, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 23/10/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	388	7.5	0.74	0.00	0.14
Honeysuckle Creek	222	7.3	0.03	0.10	
Lake Burley Griffin at:					
King's Avenue Bridge	212	7.6	0.02	0.10	
Commonwealth Avenue Bridge	204	8.2	0.02	0.15	
Scrivener Dam	206	7.7	0.03	0.30	24.83
Molonglo River below					
Scrivener Dam	207	7.9	0.07	0.32	2.36

Laboratory Report No. 77. 8th November, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr. B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho.cm.

Sampling date: 30/10/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	393	7.5	0.75	0.10	0.14
Honeysuckle Creek	213	6.8	0.10	1.87	
Lake Burley Griffin at:					
King's Avenue Bridge	211	7.5	0.04	0.22	
Commonwealth Avenue Bridge	200	7.5	0.01	0.30	
Scrivener Dam	198	7.8	0.00	0.38	
Molonglo River below					
Scrivener Dam	198	7.8	0.01	0.38	3.09

Laboratory Report No. 78 14 December, 1972

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 6/11/72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	335	7.3	0.98	0.28	0.40
Honeysuckle Creek	189	8.5	0.07	0.17	
Lake Burley Griffin at:					
Kings Avenue Bridge	217	8.1	0.02	0.08	
Commonwealth Avenue Bridge	219	7.6	0.02	0.10	
Scrivener Dam	206	7.5	0.02	0.17	
Molonglo River below Scrivener Dam	225	7.3	0.06	0.23	

Laboratory Report No. 79 14 December, 1972

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of nine water samples from the Molonglo River and Queanbeyan River.

The samples were submitted by Mr M. Elliot of the Department of the Interior.

Sampling Date: 10/11/72

Location	Point	pH	Sp. Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River					
8 km u/s of mine	A	6.5	215	0.00	0.10
d/s of mine	B	3.2	620	15.00	7.1
Bungendore Rd Bridge	C	5.0	336	8.20	0.2
Hoskinstown Rd Bridge	D	6.8	280	1.2	0.9
Burbong	D2	6.9	360	1.1	0.1
Sutton Rd Bridge	F	6.8	342	0.4	0.7
Duntroon Bridge	G	6.8	211	0.03	0.2
Lake Burley Griffin	H	7.2	210	0.01	0.2
Queanbeyan River at Queanbeyan	E	6.7	119	0.01	0.3

Laboratory Report No. 80 14 December, 1972

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 13/11/72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	369	7.3	1.0	0.2	
Honeysuckle Creek					
Lake Burley Griffin at:					
Kings Avenue Bridge	217	7.8	0.02	0.2	
Commonwealth Avenue Bridge	216	7.7	0.01	0.2	
Scrivener Dam	207	7.6	0.01	0.2	
Molonglo River below Scrivener Dam	465	7.7	0.04	0.2	

Laboratory Report No. 81 14 December, 1972

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of ten samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 17-11-72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Copper Creek	2,065	6.8	23.	20.6	
Molonglo River at:					
Copper Creek	457	3.7	9.2	10.3	
Carwoola					
Hoskintown Bdge -Bungendore Rd.	370	4.5	9.2	0.33	
Burbong Bridge. (C)					
Honeysuckle Crk					
Lake Burley Griffin at:					
King's Avenue Bridge					
Commonwealth Avenue					
Bridge					
Scrivener Dam					
Molonglo River below					
Scrivener Dam					

Laboratory Report No. 82 14 December, 1972

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of six samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 20-11-72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Molonglo River at:					
Burbong	356	7.3	0.76	0.10	0.18
Honeysuckle Creek	227	6.9	0.13	0.48	
Lake Burley Griffin at:					
King's Avenue Bridge	228	7.4	0.29	0.33	
Commonwealth Avenue Bridge	221	7.5	0.06	0.28	
Scrivener Dam	210	8.5	0.02	0.23	24.87
Molonglo River below Scrivener Dam	214	7.4	0.10	0.38	3.48

Laboratory Report No. 83 14 December, 1972

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of ten samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 24-11-72

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Copper Creek	5,560	2.3	300.	1,553	
Molonglo River at;					
Copper Creek	612	3.2	12.5	14.8	0.67
Hoskinstown Bridge	300	8.3	0.38	0.46	
Bungendore Bdge	385	4.7	11.5	0.15	1.02
Burbong					
Honeysuckle Creek					
Lake Burley Griffin at:					
King's Avenue Bridge					
Commonwealth Avenue Bridge					
Scrivener Dam					
Molonglo River below Scrivener Dam					

Laboratory Report No. 84 14th December, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of ten samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 27/11/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Copper Creek					
Molonglo River at:					
Copper Creek					
Carwoola					
Hoskintown Bdge					
Burbong	400	7.2	0.68	0.05	0.17
Honeysuckle Creek	203	7.5	0.01	0.05	
Lake Burley Griffin At;					
King's Avenue Bridge	217	7.8	0.00	0.3	
Commonwealth Avenue Bridge	207	8.3	0.00	0.2	
Scrivener Dam	206	8.1	0.00	0.2	
Molonglo River below Scrivener Dam	209	7.6	0.01	0.46	2.36

Laboratory Report No. 85 14th December, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of ten samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 1/12/72 .

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Copper Creek	2,205	6.3	13.7	18.5	
Molonglo River at:					
Copper Creek	418	4.1	11.0	7.9	0.64
Hoskinstown Bridge (D)	304	7.1	0.48	0.31	
Bungendore Bridge (C)	483	4.3	16.5	0.3	1.01
Burbong					
Honeysuckle Creek					
Lake Burley Griffin At:					
King's Avenue Bridge					
Commonwealth Avenue Bridge					
Scrivener Dam					
Molonglo River below Scrivener Dam					

Laboratory Report No. 86 14th December, 1972.

Zinc Content of Molonglo River Water

by

A.D. HALDANE

The following results were obtained for the determination of the zinc content of ten samples from the Molonglo River and Lake Burley Griffin. The samples were submitted by Mr B. Fitzgerald of the Department of Works.

Zinc and iron values are given in ppm and specific conductivity in umho/cm.

Sampling date: 8/12/72.

SAMPLING POINTS	Sp. Cond.	pH	Zn	Fe	Gauge Reading
Copper Creek	2,150	6.1	18.3	24.6	
Molonglo River at:					
Copper Creek	443	4.2	11.7	13.9	0.62
Hoskinstown Bdge (D)	305	7.5	0.24	0.75	
Bungendore Bridge (C)	692	3.5	24.1	0.08	0.98
Burbong	400	6.9	0.56	0.15	0.05
Honeysuckle Creek	245	7.1	0.02	0.20	
Lake Burley Griffin at:					
King's Avenue Bridge	223	7.5	0.06	0.40	
Commonwealth Avenue Bridge	216	7.3	0.04	0.40	
Scrivener Dam	221	7.9	0.28	0.40	24.79
Molonglo River below Scrivener Dam	224	8.4	0.07	0.31	2.38

Laboratory Report No.87. 28th December, 1972.

Zinc Content of Molonglo River Water.

by

A.D. Haldane

The following results were obtained for the determination of specific conductance, pH, zinc and iron content of nine water samples from the Molonglo River and Queanbeyan River. The samples were submitted by Mr. M. Elliot of the Department of the Interior.

Sampling Date: 11.12.72.

Location	Sampling Point	pH	Sp.Cond. mho/cm	Zn ppm	Fe ppm
Molonglo River					
8 km u/s of mine	A	6.5	71	0.02	0.15
d/s of mine	B	3.7	385	9.20	3.80
Bungendore Rd Bridge	C	3.6	563	20.0	0.40
Hoskinstown Rd Bridge	D	7.0	310	0.17	0.60
Burbong	D2	7.0	368	0.60	0.10
Sutton Rd Bridge	F	7.5	440	0.09	0.15
Duntroon Bridge	G	7.0	231	0.02	0.20
Lake Burley Griffin	H				
Queanbeyan	E	6.9	148	0	0.20