



Public Health Services
Ground Floor
Lindsay Wing Staff Residence
Timaru Hospital
Queen Street, Timaru
P.O. Box 510, Timaru
Telephone 03 688-6019, Fax 03 688-6015

W2/3/1

6 September 1994

32/03/03

The General Manager
Timaru District Council
PO Box 522
TIMARU

ATTENTION: MR D BINNEY

Dear Sir/Madam

WATER SUPPLY - GERALDINE

Water samples obtained have been reported upon by the government analyst and details are as follows:

Sample	Date	Sample Site	Time
MEB 107	29.04.94	Geraldine Service Centre	11.15 am
MEB 108	29.04.94	Pumpshed - Orari Back Road	-

RESULTS: See attached pages

REASON FOR SAMPLE: 3 Yearly Chemical Survey

COMMENTS: See page 4 of the attached.

Yours faithfully

R S Parr
Principal Health Protection Officer

D 8/9/94



Health South Canterbury Ltd
PHS Health Protection
P.O.Box 510
Timaru
Attention: Dick Parr

Job Number: H940555
Client order: -
9 July 1994

REPORT ON THE QUALITY OF WATER

Job registered: 3 May 1994
Number of samples: 2
Reason for Sampling: Health - Survey

SAMPLE DETAILS

Lab No.	Client No.	Taken from	Map Ref	Sampling Location
14912	MEB108	Source	S102 805902	Pumpshed - Orari Back Road
14913	MEB107	Reticulation	J38 695779	Geraldine Service Centre

Lab No.	Received	Sampled on	Sampled by	Treatment
14912	3 May 94	29 Apr 94	E. Watts	none
14913	3 May 94	29 Apr 94	E. Watts	none

WATER SUPPLY

Lab No.	Supply Code	Supply Name
14912	160320	Geraldine
14913	160320	Geraldine

ANALYTICAL RESULTS

Laboratory No.	14912	14913	units	method
Client Sample No.	MEB108	MEB107	-	
pH	6.8	7.0	-	phm
Acidity to pH 8.3 (as CO ₂)	9	8	g/m ³	auti
Total Alkalinity to pH4.5 as HCO ₃	32	34	g/m ³	auti
Alkalinity to pH 8.3 (as CO ₃)	0	0	g/m ³	auti
Turbidity	0.20	0.20	NTU	tmet
Conductivity at 20°C	6	6	mS/m	cmct
Absorbance units (270nm, 1cm cell)	0.01	0.01	-	spec
Fluoride	<0.2	<0.2	g/m ³	ic
Chloride	1.3	1.3	g/m ³	ic

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ANALYTICAL RESULTS continued

Laboratory No. Client Sample No.	14912 MEB108	14913 MEB107	units -	method
Bromide	<0.1	<0.1	g/m ³	ic
Nitrate Nitrogen	0.1	0.1	g/m ³	ic
Soluble Phosphate (as P)	<0.1	<0.1	g/m ³	ic
Sulphate	1.3	1.3	g/m ³	ic
Colour (from Absorbance 270nm)	1.0	1.0	TCU	calc
Chemical Oxygen Demand (as O)	<4	<4	g/m ³	sdoc
Lithium	<0.01	<0.01	g/m ³	ic
Sodium	3.0	3.4	g/m ³	ic
Ammoniacal Nitrogen	<0.04	<0.04	g/m ³	ic
Potassium	0.5	0.5	g/m ³	ic
Cadmium	<0.002	<0.002	g/m ³	aaf
Lead	<0.005	<0.005	g/m ³	aaf
Arsenic	<0.01	<0.01	g/m ³	aaf
Selenium	<0.005	<0.005	g/m ³	aaf
Reactive Silica (as SiO ₂)	11	12	g/m ³	hpb
Boron	<0.2	<0.2	g/m ³	azoa
Reactive Aluminium	<0.03	<0.03	g/m ³	ecr
Total Hardness (as CaCO ₃)	23	24	g/m ³	calc
Calcium	6.8	7.4	g/m ³	aa
Magnesium	1.5	1.4	g/m ³	aa
Strontium	0.03	0.03	g/m ³	aa
Chromium	<0.03	<0.03	g/m ³	aa
Copper	<0.02	0.29	g/m ³	aa
Zinc	<0.02	<0.02	g/m ³	aa
Nickel	<0.05	<0.05	g/m ³	aa
Manganese	<0.02	<0.02	g/m ³	aa
Iron	<0.1	<0.1	g/m ³	aa
Mercury	<0.5	<0.5	mg/m ³	aavg
Nitrite Nitrogen	<0.005	<0.005	g/m ³	sulpa
Fluoranthene	<6	-	µg/m ³	prehp
Pyrene	<7	-	µg/m ³	prehp
Benz[a]anthracene	<4	-	µg/m ³	prehp
Chrysene	<8	-	µg/m ³	prehp
Benzo[b]fluoranthene	<1	-	µg/m ³	prehp
Benzo[k]fluoranthene	<0.3	-	µg/m ³	prehp
Benzo[a]pyrene	<1	-	µg/m ³	prehp
Dibenz[a,h]anthracene	<3	-	µg/m ³	prehp
Organochlorine Pesticides	nd	-	mg/m ³	lle.gc ^w
Organonitrogen pesticides	nd	-	mg/m ³	lle.gc ^w
Organophosphorus Pesticides	nd	-	mg/m ³	lle.gc ^w
2,4-Dichlorophenoxyacetic acid	<0.3	-	mg/m ³	spgcm ^s w
2,4,5-Trichlorophenoxyacetic acid	<0.1	-	mg/m ³	spgcm ^s w

ANALYTICAL RESULTS continued

Laboratory No.	14912	14913	units	method
Client Sample No.	MEB108	MEB107	-	
Polychlorinated Biphenyls	nd	-	mg/m ³	lle,gc ^w
Volatile Organic Compounds	nd	-	mg/m ³	p&t ^w
Trichlopyr	<0.1	-	mg/m ³	spgcms ^w


Analytical results relate only to the sample as received.
 nd = not detected

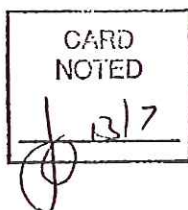
METHODS OF ANALYSIS

PAH analysis supervised by B Thomson.
 A superscript w above indicates analysis at the Wellington Science Centre, supervisor ETJ Bathurst.

aa	Flame AAS
aaf	Furnace AAS
aavg	Vapour Generation AAS
auti	Auto titrator
azoa	Azomethine, auto
calc	Calculated
cmet	Conductivity Meter
ecr	Eriochrome Cyanine R auto
hpb	Heteropoly Blue, auto
ic	Ion Chromatography
lle,gc	Liquid/Liquid extraction, GC
p&t	Purge and Trap GCMS
phm	pH meter
prehp	Pre conc HPLC
sdoc	Sulphuric/Dichromate Colorim.
spec	Spectrometer
spgcms	Solid phase extraction, GCMS
sulpa	Sulphanilamide, auto
tmet	Turbidity Meter

Method precision is available on request.


 C J Nokes
 Scientist, Water Group



TELAIRC

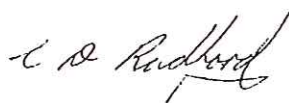
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NON-COMPLIANCE WITH NZ DRINKING WATER GUIDELINES

Lab No.	Test	Result	NZ Guideline
14912	pH	6.8	Aesthetic Excessive is outside 7.0 - 8.5
14913	pH	7.0	Aesthetic Highest Desirable is within 7.4 - 8.5
14913	Copper	0.29 g/m ³	Aesthetic Highest Desirable is 0.05 g/m ³

COMMENT

Due to analytical difficulties Benzo[ghi]perylene concentrations are not being determined.



C D Radford
Analytical Chemist, Water Group