



ANALYSIS REPORT

Page 1 of 9

Client:	Tauranga City Council	Lab No:	1513135	DWPv1
Contact:	R Wiersma	Date Registered:	09-Dec-2015	
	C/- Tauranga City Council	Date Reported:	22-Dec-2015	
	Private Bag 12022	Quote No:	46877	
	TAURANGA 3143	Order No:	252675	
		Client Reference:	Retic Water Comprehensive	
		Submitted By:	Daniel Leslie	

Sample Type: Aqueous		Fergusson Park		Gordon Spratt	
Sample Name:		151200190 08-Dec-2015	151200193 08-Dec-2015		
Lab Number:		1513135.1	1513135.2	Guideline Value	Maximum Acceptable Values (MAV)
Individual Tests					
Phenolphthalein Alkalinity	g/m ³ as CaCO ₃	< 1.0	< 1.0	-	-
Total Alkalinity	g/m ³ as CaCO ₃	19.0	18.7	-	-
Total Hardness	g/m ³ as CaCO ₃	10.3	7.4	< 200	-
Antimony	g/m ³	< 0.0002	< 0.0002	-	0.02
Barium	g/m ³	0.044	0.044	-	0.7
Boron	g/m ³	0.010	0.008	-	1.4
Calcium	g/m ³	3.1	1.77	-	-
Iron	g/m ³	0.02	< 0.02	< 0.2	-
Lithium	g/m ³	0.0038	0.0033	-	-
Magnesium	g/m ³	0.64	0.71	-	-
Manganese	g/m ³	0.0100	< 0.0005	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Mercury	g/m ³	< 0.00008	< 0.00008	-	0.007
Molybdenum	g/m ³	< 0.0002	< 0.0002	-	0.07
Potassium	g/m ³	3.0	2.1	-	-
Selenium	g/m ³	< 0.0010	< 0.0010	-	0.01
Sodium	g/m ³	10.5	7.8	< 200	-
Uranium	g/m ³	< 0.00002	< 0.00002	-	0.02
Bromide	g/m ³	0.08	0.05	-	-
Bromate	g/m ³	< 0.005	< 0.005	-	0.01
Total Cyanide	g/m ³	< 0.0010	< 0.0010	-	0.6
Chloride	g/m ³	8.2	6.2	< 250	-
Chlorite	g/m ³	< 0.005	< 0.005	-	0.8
Chlorate	g/m ³	0.035	< 0.005	-	0.8
Fluoride	g/m ³	< 0.05	< 0.05	-	1.5
Total Ammoniacal-N	g/m ³	< 0.010	< 0.010	< 1.2	-
Nitrite-N	g/m ³	< 0.002	< 0.002	-	0.06 0.91 (short term)
Nitrate-N	g/m ³	0.97	0.48	-	11.3
Nitrate-N + Nitrite-N	g/m ³	0.97	0.48	-	-
Dissolved Reactive Phosphorus	g/m ³	0.008	0.012	-	-
Reactive Silica	g/m ³ as SiO ₂	49	40	-	-
Sulphate	g/m ³	3.2	2.0	< 250	-
Amine Acid Chelating Agents in Potable Water by GCMS					
Ethylenediaminetetraacetic acid (EDTA)	g/m ³	0.05	< 0.05	-	0.7
Nitrilotriacetic acid (NTA)	g/m ³	< 0.05	< 0.05	-	0.2
Organonitro&phosphorus Pesticides Screen in MR Water Liq/liq					
Acetochlor	g/m ³	< 0.0004	< 0.0004	-	-



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Sample Type: Aqueous					
Sample Name:		151200190 08-Dec-2015	151200193 08-Dec-2015	Guideline Value	Maximum Acceptable Values (MAV)
Lab Number:		1513135.1	1513135.2		
Organonitro&phosphorus Pesticides Screen in MR Water Liq/liq					
Alachlor	g/m³	< 0.0003	< 0.0003	-	0.02
Atrazine	g/m³	< 0.0004	< 0.0004	-	0.002
Atrazine-desethyl	g/m³	< 0.0004	< 0.0004	-	-
Atrazine-desisopropyl	g/m³	< 0.0007	< 0.0007	-	-
Azaconazole	g/m³	< 0.0002	< 0.0002	-	-
Azinphos-methyl	g/m³	< 0.0007	< 0.0007	-	0.004
Benalaxyl	g/m³	< 0.0002	< 0.0002	-	-
Bitertanol	g/m³	< 0.0007	< 0.0007	-	-
Bromacil	g/m³	< 0.0004	< 0.0004	-	0.4
Bromopropylate	g/m³	< 0.0004	< 0.0004	-	-
Butachlor	g/m³	< 0.0004	< 0.0004	-	-
Captan	g/m³	< 0.0007	< 0.0007	-	-
Carbaryl	g/m³	< 0.0004	< 0.0004	-	-
Carbofuran	g/m³	< 0.0004	< 0.0004	-	0.008
Chlorfluazuron	g/m³	< 0.0004	< 0.0004	-	-
Chlorothalonil	g/m³	< 0.0004	< 0.0004	-	-
Chlorpyrifos	g/m³	< 0.0004	< 0.0004	-	0.04
Chlorpyrifos-methyl	g/m³	< 0.0004	< 0.0004	-	-
Chlortoluron	g/m³	< 0.0007	< 0.0007	-	0.04
Cyanazine	g/m³	< 0.0004	< 0.0004	-	0.0007
Cyfluthrin	g/m³	< 0.0005	< 0.0005	-	-
Cyhalothrin	g/m³	< 0.0004	< 0.0004	-	-
Cypermethrin	g/m³	< 0.0009	< 0.0009	-	-
Deltamethrin (including Tralomethrin)	g/m³	< 0.0004	< 0.0004	-	-
Diazinon	g/m³	< 0.0002	< 0.0002	-	-
Dichlofluanid	g/m³	< 0.0004	< 0.0004	-	-
Dichloran	g/m³	< 0.002	< 0.002	-	-
Dichlorvos	g/m³	< 0.0007	< 0.0007	-	-
Difenoconazole	g/m³	< 0.0007	< 0.0007	-	-
Dimethoate	g/m³	< 0.0007	< 0.0007	-	0.008
Diphenylamine	g/m³	< 0.0007	< 0.0007	-	-
Diuron	g/m³	< 0.0004	< 0.0004	-	0.02
Fenpropimorph	g/m³	< 0.0004	< 0.0004	-	-
Fluazifop-butyl	g/m³	< 0.0004	< 0.0004	-	-
Fluometuron	g/m³	< 0.0004	< 0.0004	-	-
Flusilazole	g/m³	< 0.0004	< 0.0004	-	-
Fluvalinate	g/m³	< 0.0003	< 0.0003	-	-
Furalaxyl	g/m³	< 0.0002	< 0.0002	-	-
Haloxypop-methyl	g/m³	< 0.0004	< 0.0004	-	-
Hexaconazole	g/m³	< 0.0004	< 0.0004	-	-
Hexazinone	g/m³	< 0.0002	< 0.0002	-	0.4
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	g/m³	< 0.002	< 0.002	-	-
Kresoxim-methyl	g/m³	< 0.0002	< 0.0002	-	-
Linuron	g/m³	< 0.0004	< 0.0004	-	-
Malathion	g/m³	< 0.0004	< 0.0004	-	-
Metalaxyl	g/m³	< 0.0004	< 0.0004	-	0.1
Metolachlor	g/m³	< 0.0003	< 0.0003	-	0.01
Metribuzin	g/m³	< 0.0004	< 0.0004	-	0.07
Molinate	g/m³	< 0.0007	< 0.0007	-	0.007
Myclobutanil	g/m³	< 0.0004	< 0.0004	-	-
Naled	g/m³	< 0.002	< 0.002	-	-
Norflurazon	g/m³	< 0.0007	< 0.0007	-	-
Oxadiazon	g/m³	< 0.0004	< 0.0004	-	0.2
Oxyfluorfen	g/m³	< 0.0002	< 0.0002	-	-
Paclobutrazol	g/m³	< 0.0004	< 0.0004	-	-

Sample Type: Aqueous					
Sample Name:		151200190 08-Dec-2015	151200193 08-Dec-2015	Guideline Value	Maximum Acceptable Values (MAV)
Lab Number:		1513135.1	1513135.2		
Organonitro&phosphorus Pesticides Screen in MR Water Liq/liq					
Parathion-ethyl	g/m ³	< 0.0004	< 0.0004	-	-
Parathion-methyl	g/m ³	< 0.0004	< 0.0004	-	-
Pendimethalin	g/m ³	< 0.0004	< 0.0004	-	0.02
Permethrin	g/m ³	< 0.0002	< 0.0002	-	-
Pirimicarb	g/m ³	< 0.0004	< 0.0004	-	-
Pirimiphos-methyl	g/m ³	< 0.0004	< 0.0004	-	0.1
Prochloraz	g/m ³	< 0.002	< 0.002	-	-
Procymidone	g/m ³	< 0.0004	< 0.0004	-	0.7
Prometryn	g/m ³	< 0.0002	< 0.0002	-	-
Propachlor	g/m ³	< 0.0004	< 0.0004	-	-
Propanil	g/m ³	< 0.002	< 0.002	-	-
Propazine	g/m ³	< 0.0002	< 0.0002	-	0.07
Propiconazole	g/m ³	< 0.0003	< 0.0003	-	-
Pyriproxyfen	g/m ³	< 0.0004	< 0.0004	-	0.4
Quizalofop-ethyl	g/m ³	< 0.0004	< 0.0004	-	-
Simazine	g/m ³	< 0.0004	< 0.0004	-	0.002
Simetryn	g/m ³	< 0.0004	< 0.0004	-	-
Sulfentrazone	g/m ³	< 0.002	< 0.002	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	g/m ³	< 0.0007	< 0.0007	-	-
Tebuconazole	g/m ³	< 0.0004	< 0.0004	-	-
Terbacil	g/m ³	< 0.0004	< 0.0004	-	0.04
Terbufos	g/m ³	< 0.0004	< 0.0004	-	-
Terbumeton	g/m ³	< 0.0004	< 0.0004	-	-
Terbutylazine	g/m ³	< 0.0002	< 0.0002	-	0.008
Terbutylazine-desethyl	g/m ³	< 0.0004	< 0.0004	-	-
Terbutryn	g/m ³	< 0.0004	< 0.0004	-	-
Thiabendazole	g/m ³	< 0.002	< 0.002	-	0.4
Thiobencarb	g/m ³	< 0.0004	< 0.0004	-	-
Tolyfluanid	g/m ³	< 0.0002	< 0.0002	-	-
Triazophos	g/m ³	< 0.0004	< 0.0004	-	-
Trifluralin	g/m ³	< 0.0004	< 0.0004	-	0.03
Vinclozolin	g/m ³	< 0.0004	< 0.0004	-	-
Heavy metals Potable (As,Cd,Cr,Cu,Ni,Pb,Zn)					
Arsenic	g/m ³	< 0.0010	< 0.0010	-	0.01
Cadmium	g/m ³	< 0.00005	< 0.00005	-	0.004
Chromium	g/m ³	< 0.0005	< 0.0005	-	0.05
Copper	g/m ³	0.0009	0.0112	< 1	2
Lead	g/m ³	< 0.00010	0.00015	-	0.01
Nickel	g/m ³	< 0.0005	< 0.0005	-	0.08
Zinc	g/m ³	0.0031	0.0038	< 1.5	-
Acrylamide in drinking water by LCMSMS in Organics, trace level					
Acrylamide	g/m ³	< 0.00005	< 0.00005	-	0.0005
Acid Herbicides Trace in Water by LCMSMS					
Acifluorfen	g/m ³	< 0.00004	< 0.00004	-	-
Bentazone	g/m ³	< 0.00004	< 0.00004	-	-
Bromoxynil	g/m ³	< 0.00004	< 0.00004	-	-
Clopyralid	g/m ³	< 0.00006	< 0.00006	-	-
2,4-Dichlorophenoxyacetic acid (24D)	g/m ³	< 0.00004	< 0.00004	-	0.04
2,4-Dichlorophenoxybutyric acid (24DB)	g/m ³	< 0.00004	< 0.00004	-	0.1
Dicamba	g/m ³	< 0.00004	< 0.00004	-	-
Dichlorprop	g/m ³	< 0.00004	< 0.00004	-	0.1
Fluazifop	g/m ³	< 0.00004	< 0.00004	-	-
Fluroxypyr	g/m ³	< 0.00004	< 0.00004	-	-
Haloxypop	g/m ³	< 0.00004	< 0.00004	-	-

Sample Type: Aqueous					
Sample Name:		151200190 08-Dec-2015	151200193 08-Dec-2015	Guideline Value	Maximum Acceptable Values (MAV)
Lab Number:		1513135.1	1513135.2		
Acid Herbicides Trace in Water by LCMSMS					
2-methyl-4-chlorophenoxyacetic acid (MCPA)	g/m ³	< 0.00004	< 0.00004	-	0.002
2-methyl-4-chlorophenoxybutanoic acid (MCPB)	g/m ³	< 0.00004	< 0.00004	-	-
Mecoprop	g/m ³	< 0.00004	< 0.00004	-	0.01
Oryzalin	g/m ³	< 0.00006	< 0.00006	-	0.4
2,3,4,6-Tetrachlorophenol (TCP)	g/m ³	< 0.00004	< 0.00004	-	-
2,4,5-trichlorophenoxypropionic acid (245TP, Fenoprop, Silvex)	g/m ³	< 0.00004	< 0.00004	-	0.01
2,4,5-Trichlorophenoxyacetic acid (245T)	g/m ³	< 0.00004	< 0.00004	-	0.01
Pentachlorophenol (PCP)	g/m ³	< 0.00004	< 0.00004	-	0.009
Picloram	g/m ³	< 0.00006	< 0.00006	-	0.2
Quizalofop	g/m ³	< 0.00004	< 0.00004	-	-
Triclopyr	g/m ³	< 0.00004	< 0.00004	-	0.1
Haloethers Trace in SVOC Water Samples by GC-MS					
Bis(2-chloroethoxy) methane	g/m ³	< 0.0005	< 0.0005	-	-
Bis(2-chloroethyl)ether	g/m ³	< 0.0005	< 0.0005	-	-
Bis(2-chloroisopropyl)ether	g/m ³	< 0.0005	< 0.0005	-	-
4-Bromophenyl phenyl ether	g/m ³	< 0.0005	< 0.0005	-	-
4-Chlorophenyl phenyl ether	g/m ³	< 0.0005	< 0.0005	-	-
Nitrogen containing compounds Trace in SVOC Water Samples, GC-MS					
2,4-Dinitrotoluene	g/m ³	< 0.0010	< 0.0010	-	-
2,6-Dinitrotoluene	g/m ³	< 0.0010	< 0.0010	-	-
Nitrobenzene	g/m ³	< 0.0005	< 0.0005	-	-
N-Nitrosodi-n-propylamine	g/m ³	< 0.0010	< 0.0010	-	-
N-Nitrosodiphenylamine + Diphenylamine	g/m ³	< 0.0010	< 0.0010	-	-
Organochlorine Pesticides Trace in SVOC Water Samples by GC-MS					
Aldrin	g/m ³	< 0.0005	< 0.0005	-	-
alpha-BHC	g/m ³	< 0.0005	< 0.0005	-	-
beta-BHC	g/m ³	< 0.0005	< 0.0005	-	-
delta-BHC	g/m ³	< 0.0005	< 0.0005	-	-
gamma-BHC (Lindane)	g/m ³	< 0.0005	< 0.0005	-	0.002
4,4'-DDD	g/m ³	< 0.0005	< 0.0005	-	-
4,4'-DDE	g/m ³	< 0.0005	< 0.0005	-	-
4,4'-DDT	g/m ³	< 0.0010	< 0.0010	-	-
Dieldrin	g/m ³	< 0.0005	< 0.0005	-	-
Endosulfan I	g/m ³	< 0.0010	< 0.0010	-	-
Endosulfan II	g/m ³	< 0.0010	< 0.0010	-	-
Endosulfan sulfate	g/m ³	< 0.0010	< 0.0010	-	-
Endrin	g/m ³	< 0.0010	< 0.0010	-	0.001
Endrin ketone	g/m ³	< 0.0010	< 0.0010	-	-
Heptachlor	g/m ³	< 0.0005	< 0.0005	-	-
Heptachlor epoxide	g/m ³	< 0.0005	< 0.0005	-	-
Hexachlorobenzene	g/m ³	< 0.0005	< 0.0005	-	-
Polycyclic Aromatic Hydrocarbons Trace in SVOC Water Samples					
Acenaphthene	g/m ³	< 0.0003	< 0.0003	-	-
Acenaphthylene	g/m ³	< 0.0003	< 0.0003	-	-
Anthracene	g/m ³	< 0.0003	< 0.0003	-	-
Benzo[a]anthracene	g/m ³	< 0.0003	< 0.0003	-	-
Benzo[a]pyrene (BAP)	g/m ³	< 0.0005	< 0.0005	-	0.0007
Benzo[b]fluoranthene + Benzo[j]fluoranthene	g/m ³	< 0.0005	< 0.0005	-	-
Benzo[g,h,i]perylene	g/m ³	< 0.0005	< 0.0005	-	-
Benzo[k]fluoranthene	g/m ³	< 0.0005	< 0.0005	-	-
1&2-Chloronaphthalene	g/m ³	< 0.0003	< 0.0003	-	-
Chrysene	g/m ³	< 0.0003	< 0.0003	-	-

Sample Type: Aqueous					
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Lab Number:		1513135.1	1513135.2		
Polycyclic Aromatic Hydrocarbons Trace in SVOC Water Samples					
Dibenzo[a,h]anthracene	g/m ³	< 0.0005	< 0.0005	-	-
Fluoranthene	g/m ³	< 0.0003	< 0.0003	-	-
Fluorene	g/m ³	< 0.0003	< 0.0003	-	-
Indeno(1,2,3-c,d)pyrene	g/m ³	< 0.0005	< 0.0005	-	-
2-Methylnaphthalene	g/m ³	< 0.0003	< 0.0003	-	-
Naphthalene	g/m ³	< 0.0003	< 0.0003	-	-
Phenanthrene	g/m ³	< 0.0003	< 0.0003	-	-
Pyrene	g/m ³	< 0.0003	< 0.0003	-	-
Phenols Trace (drinkingwater) in SVOC Water Samples by GC-MS					
2-Chlorophenol	g/m ³	< 0.0005	< 0.0010	< 0.0001 (Taste) < 0.01 (Odour)	-
2,4-Dichlorophenol	g/m ³	< 0.0005	< 0.0010	< 0.0003 (Taste) < 0.04 (Odour)	-
2,4,6-Trichlorophenol	g/m ³	< 0.0010	< 0.002	< 0.002 (Taste) < 0.3 (Odour)	0.2
Phenols Trace (non-drinkingwater) in SVOC Water Samples by GC-MS					
4-Chloro-3-methylphenol	g/m ³	< 0.0010	< 0.002	-	-
2,4-Dimethylphenol	g/m ³	< 0.0005	< 0.0010	-	-
3 & 4-Methylphenol (m- + p-cresol)	g/m ³	< 0.0010	< 0.002	-	-
2-Methylphenol (o-Cresol)	g/m ³	< 0.0005	< 0.0010	-	-
2-Nitrophenol	g/m ³	< 0.0010	< 0.002	-	-
Pentachlorophenol (PCP)	g/m ³	< 0.010	< 0.010	-	0.009
Phenol	g/m ³	< 0.0010	< 0.002	-	-
2,4,5-Trichlorophenol	g/m ³	< 0.0010	< 0.002	-	-
Plasticisers Trace (non-drinkingwater) in SVOC Water by GCMS					
Butylbenzylphthalate	g/m ³	< 0.0010	< 0.0010	-	-
Diethylphthalate	g/m ³	< 0.0010	< 0.0010	-	-
Dimethylphthalate	g/m ³	< 0.0010	< 0.0010	-	-
Di-n-butylphthalate	g/m ³	< 0.0010	< 0.0010	-	-
Di-n-octylphthalate	g/m ³	< 0.0010	< 0.0010	-	-
Plasticisers Trace (drinkingwater) in SVOC Water Samples by GCMS					
Bis(2-ethylhexyl)phthalate	g/m ³	< 0.003	< 0.003	-	0.009
Di(2-ethylhexyl)adipate	g/m ³	< 0.0010	< 0.0010	-	-
Other Halogenated compounds Trace (drinkingwater) in SVOC Water					
1,2-Dichlorobenzene	g/m ³	< 0.0010	< 0.0010	< 0.001 (Taste) < 0.002 (Odour)	1.5
1,3-Dichlorobenzene	g/m ³	< 0.0010	< 0.0010	-	-
1,4-Dichlorobenzene	g/m ³	< 0.0010	< 0.0010	< 0.0003 (Odour) < 0.006 (Taste)	0.4
Other Halogenated compounds Trace (non-drinkingwater) in SVOC					
Hexachlorobutadiene	g/m ³	< 0.0010	< 0.0010	-	0.0007
Hexachloroethane	g/m ³	< 0.0010	< 0.0010	-	-
1,2,4-Trichlorobenzene	g/m ³	< 0.0005	< 0.0005	< 0.005	-
Other SVOC Trace in SVOC Water Samples by GC-MS					
Benzyl alcohol	g/m ³	< 0.005	< 0.005	-	-
Carbazole	g/m ³	< 0.0005	< 0.0005	-	-
Dibenzofuran	g/m ³	< 0.0005	< 0.0005	-	-
Isophorone	g/m ³	< 0.0005	< 0.0005	-	-
BTEX in VOC Water by Purge&Trap GC-MS					
Benzene	g/m ³	< 0.0005	< 0.0005	-	0.01
Toluene	g/m ³	< 0.0010	< 0.0010	< 0.03 (Odour) < 0.04 (Taste)	0.8
Ethylbenzene	g/m ³	< 0.0005	< 0.0005	< 0.002 (Odour) < 0.08 (Taste)	0.3
m&p-Xylene	g/m ³	< 0.0005	< 0.0005	-	-
o-Xylene	g/m ³	< 0.0005	< 0.0005	-	-

Sample Type: Aqueous					
Sample Name:		151200190 08-Dec-2015	151200193 08-Dec-2015	Guideline Value	Maximum Acceptable Values (MAV)
Lab Number:		1513135.1	1513135.2		
Halogenated Aliphatics in VOC Water by Purge&Trap GC-MS					
Bromomethane (Methyl Bromide)	g/m ³	< 0.002	< 0.002	-	-
Carbon tetrachloride	g/m ³	< 0.0005	< 0.0005	-	0.005
Chloroethane	g/m ³	< 0.0005	< 0.0005	-	-
Chloromethane	g/m ³	< 0.0005	< 0.0005	-	-
1,2-Dibromo-3-chloropropane	g/m ³	< 0.0005	< 0.0005	-	0.001
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m ³	< 0.0004	< 0.0004	-	0.0004
Dibromomethane	g/m ³	< 0.0005	< 0.0005	-	-
Dichlorodifluoromethane	g/m ³	< 0.0005	< 0.0005	-	-
1,1-Dichloroethane	g/m ³	< 0.0005	< 0.0005	-	-
1,2-Dichloroethane	g/m ³	< 0.0005	< 0.0005	-	0.03
1,1-Dichloroethene	g/m ³	< 0.0005	< 0.0005	-	-
cis-1,2-Dichloroethene	g/m ³	< 0.0005	< 0.0005	-	-
trans-1,2-Dichloroethene	g/m ³	< 0.0005	< 0.0005	-	-
Dichloromethane (methylene chloride)	g/m ³	< 0.010	< 0.010	-	0.02
1,2-Dichloropropane	g/m ³	< 0.0005	< 0.0005	-	0.05
1,3-Dichloropropane	g/m ³	< 0.0005	< 0.0005	-	-
1,1-Dichloropropene	g/m ³	< 0.0005	< 0.0005	-	-
cis-1,3-Dichloropropene	g/m ³	< 0.0005	< 0.0005	-	-
trans-1,3-Dichloropropene	g/m ³	< 0.0005	< 0.0005	-	-
Hexachlorobutadiene	g/m ³	< 0.0005	< 0.0005	-	0.0007
1,1,1,2-Tetrachloroethane	g/m ³	< 0.0005	< 0.0005	-	-
1,1,2,2-Tetrachloroethane	g/m ³	< 0.0005	< 0.0005	-	-
Tetrachloroethene (tetrachloroethylene)	g/m ³	< 0.0005	< 0.0005	-	0.05
1,1,1-Trichloroethane	g/m ³	< 0.0005	< 0.0005	-	-
1,1,2-Trichloroethane	g/m ³	< 0.0005	< 0.0005	-	-
Trichloroethene (trichloroethylene)	g/m ³	< 0.0005	< 0.0005	-	0.02
Trichlorofluoromethane	g/m ³	< 0.0005	< 0.0005	-	-
1,2,3-Trichloropropane	g/m ³	< 0.0005	< 0.0005	-	-
1,1,2-Trichlorotrifluoroethane (Freon 113)	g/m ³	< 0.004	< 0.004	-	-
Vinyl chloride	g/m ³	< 0.0005	< 0.0005	-	0.0003
Halogenated Aromatics in VOC Water by Purge&Trap GC-MS					
Bromobenzene	g/m ³	< 0.0005	< 0.0005	-	-
Chlorobenzene (monochlorobenzene)	g/m ³	< 0.0005	< 0.0005	< 0.01	-
2-Chlorotoluene	g/m ³	< 0.0005	< 0.0005	-	-
4-Chlorotoluene	g/m ³	< 0.0005	< 0.0005	-	-
1,2-Dichlorobenzene	g/m ³	< 0.0005	< 0.0005	< 0.001 (Taste) < 0.002 (Odour)	1.5
1,3-Dichlorobenzene	g/m ³	< 0.0005	< 0.0005	-	-
1,4-Dichlorobenzene	g/m ³	< 0.0005	< 0.0005	< 0.0003 (Odour) < 0.006 (Taste)	0.4
1,2,3-Trichlorobenzene	g/m ³	< 0.0005	< 0.0005	< 0.01	-
1,2,4-Trichlorobenzene	g/m ³	< 0.0005	< 0.0005	< 0.005	-
1,3,5-Trichlorobenzene	g/m ³	< 0.0005	< 0.0005	< 0.05	-
Monocyclic Aromatic Hydrocarbons in VOC Water by Purge&Trap GC-MS					
n-Butylbenzene	g/m ³	< 0.0005	< 0.0005	-	-
tert-Butylbenzene	g/m ³	< 0.0005	< 0.0005	-	-
Isopropylbenzene (Cumene)	g/m ³	< 0.0005	< 0.0005	-	-
4-Isopropyltoluene (p-Cymene)	g/m ³	< 0.0005	< 0.0005	-	-
n-Propylbenzene	g/m ³	< 0.0005	< 0.0005	-	-
sec-Butylbenzene	g/m ³	< 0.0005	< 0.0005	-	-
Styrene	g/m ³	< 0.0005	< 0.0005	< 0.004	0.03
1,2,4-Trimethylbenzene	g/m ³	< 0.0005	< 0.0005	-	-
1,3,5-Trimethylbenzene	g/m ³	< 0.0005	< 0.0005	-	-
Ketones in VOC Water by Purge&Trap GC-MS					
Acetone	g/m ³	< 0.05	< 0.05	-	-

Sample Type: Aqueous					
Sample Name:		151200190 08-Dec-2015	151200193 08-Dec-2015	Guideline Value	Maximum Acceptable Values (MAV)
Lab Number:		1513135.1	1513135.2		
Ketones in VOC Water by Purge&Trap GC-MS					
2-Butanone (MEK)	g/m³	< 0.005	< 0.005	-	-
Methyl tert-butylether (MTBE)	g/m³	< 0.005	< 0.005	-	-
4-Methylpentan-2-one (MIBK)	g/m³	< 0.005	< 0.005	-	-
Trihalomethanes in VOC Water by Purge&Trap GC-MS					
Bromodichloromethane	g/m³	0.0076	0.0032	-	0.06
Bromoform (tribromomethane)	g/m³	< 0.0005	< 0.0005	-	0.1
Chloroform (Trichloromethane)	g/m³	0.0099	0.0016	-	0.4
Dibromochloromethane	g/m³	0.0036	0.0029	-	0.15
Other VOC in Water by Purge&Trap GC-MS					
Carbon disulphide	g/m³	< 0.005	< 0.005	-	-
Naphthalene	g/m³	< 0.0005	< 0.0005	-	-
System monitoring Compounds for VOC - % Recovery					
4-Bromofluorobenzene	%	92	94	-	-
Toluene-d8	%	100	100	-	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from <http://www.health.govt.nz/publication/drinking-water-standards-new-zealand-2005-revised-2008>

The Maximum Acceptable Values (MAVs) have been defined by the Ministry of Health for parameters of health significance and should not be exceeded. The Guideline Values are the limits for aesthetic determinands that, if exceeded, may render the water unattractive to consumers.

Note that the units g/m³ are the same as mg/L and ppm.

Analyst's Comments

It has been noted that the method performance for Iprodione for ONOP analysis is not acceptable therefore we are unable to report this compound at this present time.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Acrylamide in drinking water	Acrylamide in drinking water by LCMS.	-	1-2
Amine Acid Chelating Agents in Potable Water by GCMS	methylation, Liq / Liq extraction, GC-MS SIM analysis	0.05 g/m ³	1-2
EDTA & NTA in water by liq/liq extraction	methylation, Liq / Liq extraction, GC-MS SIM analysis.	-	1-2
Organonitro&phosphorus Pesticides Screen in MR Water Liq/liq	Liquid / liquid extraction, GPC (if required), GC-MS analysis	-	1-2
Heavy metals Potable (As,Cd,Cr,Cu,Ni,Pb,Zn)	Analysed as received (after acid preservation, if required), ICP-MS, trace level.	0.00005 - 0.0010 g/m ³	1-2
Acrylamide in drinking water by LCMSMS in Organics, trace level	Acrylamide in water by LCMSMS	0.00005 g/m ³	1-2
Acid Herbicides Trace in Water by LCMSMS	Acid Herbicides in water, trace level	0.00003 - 0.00004 g/m ³	1-2
Semivolatile Organic Compounds Trace in Water by GC-MS	Liquid/Liquid extraction, GPC cleanup (if required), GC-MS FS analysis	-	1-2
Volatile Organic Compounds Trace in Water by Purge&Trap	Purge & Trap, GC-MS FS analysis [KBIs:28233,2694]	0.0004 - 1.0 g/m ³	1-2
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1-2
Total Cyanide Distillation	Distillation following the addition of sulphuric acid, alkaline trapping solution. APHA 4500-CN- C (modified) 22 nd ed. 2012.	-	1-2
Phenolphthalein Alkalinity	Titration to pH 8.3, Autotitrator. (P-Alkalinity). APHA 2320 B (modified) 22 nd ed. 2012.	1.0 g/m ³ as CaCO ₃	1-2
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. APHA 2320 B (Modified for alk <20) 22 nd ed. 2012.	1.0 g/m ³ as CaCO ₃	1-2
Total Hardness	Calculation: from Ca and Mg. APHA 2340 B 22 nd ed. 2012.	1.0 g/m ³ as CaCO ₃	1-2
Antimony	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0002 g/m ³	1-2

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Barium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00010 g/m ³	1-2
Boron	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.005 g/m ³	1-2
Calcium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.05 g/m ³	1-2
Iron	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 g/m ³	1-2
Lithium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0002 g/m ³	1-2
Magnesium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 g/m ³	1-2
Manganese	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0005 g/m ³	1-2
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m ³	1-2
Molybdenum	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0002 g/m ³	1-2
Potassium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.05 g/m ³	1-2
Selenium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0010 g/m ³	1-2
Sodium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 g/m ³	1-2
Uranium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00002 g/m ³	1-2
Bromide	Filtered sample. Ion Chromatography. APHA 4110 B 22 nd ed. 2012.	0.05 g/m ³	1-2
Bromate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B.	0.005 g/m ³	1-2
Total Cyanide	Distillation, colorimetry. APHA 4500-CN- C (modified) & E (modified) 22 nd ed. 2012.	0.0010 g/m ³	1-2
Chloride	Filtered sample. Ferric thiocyanate colorimetry. Discrete Analyser. APHA 4500 Cl- E (modified from continuous flow analysis) 22 nd ed. 2012.	0.5 g/m ³	1-2
Chlorite	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B.	0.005 g/m ³	1-2
Chlorate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B.	0.005 g/m ³	1-2
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F- C 22 nd ed. 2012.	0.05 g/m ³	1-2
Total Ammoniacal-N	Filtered sample. Phenol/hypochlorite colorimetry. Discrete Analyser. (NH ₄ -N = NH ₄ ⁺ -N + NH ₃ -N). APHA 4500-NH ₃ F (modified from manual analysis) 22 nd ed. 2012.	0.010 g/m ³	1-2
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO ₂ ⁻ I 22 nd ed. 2012 (modified).	0.002 g/m ³	1-2
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO ₂ N. In-House.	0.0010 g/m ³	1-2
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO ₃ ⁻ I 22 nd ed. 2012 (modified).	0.002 g/m ³	1-2
Dissolved Reactive Phosphorus	Filtered sample. Molybdenum blue colorimetry. Discrete Analyser. APHA 4500-P E (modified from manual analysis) 22 nd ed. 2012.	0.004 g/m ³	1-2
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Discrete analyser. APHA 4500-SiO ₂ F (modified from flow injection analysis) 22 nd ed. 2012.	0.10 g/m ³ as SiO ₂	1-2
Sulphate	Filtered sample. Ion Chromatography. APHA 4110 B 22 nd ed. 2012.	0.5 g/m ³	1-2

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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A handwritten signature in blue ink, appearing to read 'M. Cowell', is positioned above the printed name.

Martin Cowell - BSc
Client Services Manager - Environmental Division

