

TYPICAL COMPOSITION OF HWC TREATED WATER 1 July 2005 to 30 June 2006

Parameter	Units	NHMRC Guideline*		Water Treatment Plant														
				Dungog			Grahamstown ***			Lemon Tree Passage			Anna Bay			Nelson Bay		
		Health	Aesthetic	10th Percentile	90th Percentile	Median	10th Percentile	90th Percentile	Median	10th Percentile	90th Percentile	Median	10th Percentile	90th Percentile	Median	10th Percentile	90th Percentile	Median
Alkalinity at pH 4.5 as Calcium Carbonate***	mg/L			39	42	40	23***	44***	25***	56	61	59	46	51	48	14	15	14
Aluminium	mg/L		<0.2	0.05	0.11	0.08	0.04	0.11	0.07	0.04	0.08	0.06	0.05	0.10	0.08	0.03	0.06	0.04
Arsenic	mg/L	<0.007		0.0002	0.0007	0.0005	0.0003	0.0009	0.0006	0.0001	0.0003	0.0002	<0.0001	0.0003	0.0001	<0.0001	0.0003	0.00
Cadmium	mg/L	<0.002		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	mg/L		(2)	15	17	16	12	24	12	19	25	23	15	19	17	1	1	1
Chloride	mg/L		<250	9	11	10	40	45	42	24	32	26	42	50	43	46	47	47
Chromium	mg/L	<0.05		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Colour Apparent	Hazen Units		<15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	1
Conductivity	uS/cm		(1)	129	141	137	243	288	269	194	207	201	236	261	248	197	211	209
Copper	mg/L	<2	<1	0.002	0.005	0.002	<0.001	0.002	0.001	0.016	0.030	0.020	0.004	0.008	0.007	0.004	0.008	0.005
Cyanide	mg/L	<0.08		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoride	mg/L	<1.5		0.9	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	0.9	1.1	1.0	0.9	1.0	1.0
Hardness as Calcium Carbonate***	mg/L		<200	44	48	45	53***	80***	55***	57	72	65	52	61	56	15	17	15
Iron	mg/L		<0.3	0.01	0.05	0.03	0.01	0.05	0.01	0.01	0.05	0.03	0.02	0.09	0.06	0.02	0.06	0.04
Lead	mg/L	<0.01		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.0034	0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001
Magnesium	mg/L		(2)	1.2	1.6	1.5	4.5	6.1	5.5	1.8	2.3	2.0	3.2	3.5	3.4	3.1	3.5	3.2
Manganese	mg/L	<0.5	<0.1	0.001	0.011	0.004	0.001	0.024	0.006	0.002	0.014	0.009	0.001	0.013	0.005	0.001	0.009	0.003
Mercury	mg/L	<0.001		<0.0001	0.0002	0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	<0.02		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.001	<0.001	<0.001	<0.001
Nitrates	mg/L	<50		0.02	0.06	0.04	0.01	0.04	0.01	0.15	0.18	0.16	0.31	0.64	0.41	0.05	0.08	0.06
Nitrites	mg/L	<3		<0.003	0.007	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
pH **	units		6.5-8.5	7.5	7.7	7.6	7.3	7.5	7.4	7.4	7.7	7.6	7.4	7.6	7.5	7.1	7.3	7.2
Potassium	mg/L		(1)	0.9	1.1	1.0	1.7	2.6	2.1	0.7	0.8	0.7	1.2	1.4	1.3	1.2	1.3	1.2
Selenium	mg/L	<0.01		<0.0001	0.0001	<0.0001	0.0001	0.00044	0.00018	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	0.0002	0.0001	0.00036	0.0002
Silica as SiO2	mg/L			11.5	13.8	12.8	1.6	6.2	2.0	7.0	8.0	7.4	9.9	10.6	10.2	9.1	9.5	9.4
Sodium	mg/L		<180	5.8	6.2	6.1	22.4	25.4	23.2	11.7	13.3	13.2	22.9	24.5	23.7	30.1	32.3	31.4
Sulphate	mg/L	<500	<250	7.3	8.7	8.0	30.3	33.1	31.0	5.4	6.0	6.0	8.3	9.7	9.0	8.0	8.7	8.0
Total Organic Carbon	mg/L			1.2	1.5	1.5	3.8	4.6	4.4	2.7	3.5	2.9	0.4	0.6	0.4	0.3	0.6	0.4
Total Phosphorus	mg/L		(1)	0.005	0.025	0.008	0.004	0.028	0.008	0.004	0.029	0.007	0.004	0.009	0.007	0.003	0.014	0.005
Total Solids	mg/L		<500	89	108	97	165	185	174	92	130	120	127	153	138	101	122	120
Total Suspended Solids	mg/L			1	3	2	<1	3	2	<1	8	1	<1	<1	<1	<1	2	<1
Turbidity	NTU		<5	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.4	0.3	0.4	0.7	0.6	0.2	0.3	0.2
Zinc	mg/L		<3	0.002	0.009	0.006	<0.001	0.006	0.004	0.003	0.009	0.003	0.002	0.017	0.003	0.004	0.011	0.008

*National Health and Medical Research Council (NHMRC) 2004 Australian Drinking Water Guidelines

(1) Guideline not given as no known associated health effect.

(2) Contributes to hardness. Combined content should maintain hardness at < 200mg/L as CaCO3

**Note that pH within the distribution system (ie at customers' taps) is typically somewhat higher than pH at the water treatment plants

***Grahamstown Water Treatment Plant plant treats water from Grahamstown or Tomago sources or a blend of both. Composition varies depending on the source(s) being treated.

Typical Alkalinity of water supplied by Grahamstown Water Treatment Plant ranges from 15 to 65 mg/L. Typical Hardness at Grahamstown Water Treatment Plant is 30 to 105 mg/L.

This summary is based on results from analysis performed on samples collected from the water leaving each of the water treatment plant over the period 1st July 2005 to 30th June 2006