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Appendix B

**Chemical Analysis Data for  
Bore & Surface Water**

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*Held - correct*





17-Oct-94	Whitford 8		0.23	113.7	<0.01	<0.01	<0.03	0.7	9.7	38.3	0.22	100	-0.2	0.01		43	-0.04						1.5		4.2	6.38	800	500	15	nil	clear	clear		
17-Oct-94	Whitford 9		<0.1	8.9	<0.01	<0.01	<0.03	2.4	1.7	9.8	0.05	68	<0.2	0.01		84	-0.04						0.97		10.8	6.8	400	0	15	nil	clear	clear		
17-Feb-95	Whitford 9		4	375	<0.1	0.27	<0.3	1.8	352	1187	0.44	9891	2	-0.1		202	0.41						0.8		9.8	7.32	600	1000	25	nil	clear	clear		
29-Mar-96	Whitford 10	B			<0.001	0.019	0.047	78																										
10-Oct-96	Whitford 10	B	0.1			0.018	0.041	150																										
13-Feb-98	Whitford 10	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18-May-98	Whitford 10	B	0.27	-	0.001	0.01	0.046	86	-	-	3.3	-	0.12	0.18	870	-	-	0.004	0.11	-	-	4.1	55	-	5.89	290	2	-	nil	sl cloudy	silty			
28-Jul-98	Whitford 10	B	0.16	-	0.0006	0.005	0.02	30	-	-	1.6	-	0.012	0.046	220	-	-	-0.01	<0.01	-	-	0.24	13	N/A	5.97	90	5	18	Weak	sl cldy	orange			
21-Oct-98	Whitford 10	B	0.18	-	0.00022	0.0029	0.0179	51.8	-	-	2.01	-	0.0242	0.046	420	-	-	0.02	0.5	-	-	40.3	unable to	6.37	118	6	21	slight	Opaque	Lt orange				
<b>Comparison Data</b>																																		
	blank		0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	-0.2	0.02																				
	sea water		3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																				
	river water		<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																				
	Greenmount		22		<0.01	0.19	0.07	128				13		0.18	25																			
	ARC Trade Waste		25		1	30	10					20		10	25																			
	USEPA Fresh Acute				0.0039	0.016	0.18							0.083	0.12																			
	USEPA Marine Acute				0.043	1.1	0.0029							0.22	0.095																			
	ANZECC Freshwater				*0.0002	0.01	*0.002	1						*0.001	*0.005																			
	ANZECC Marine				0.002	0.05	0.005							0.005	0.05																			





RIVERINA AVE

date collected	location	B (mg/l)	Ca (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH <sub>4</sub> -N (mg/l)	Nitrite	Nitrate	NNN	Total N (mg/l)	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour	
26-Mar-96	Riverina 4			0.002	2.2	0.74	920			11		0.92	2.1			0.14	<0.005	0.011			27	1.25	5.63	120	<1	22			yellow / br	
06-Nov-96	Riverina 4	0.2			0.094	0.072	54					0.052	0.11	280		0.02	<0.005	0.028			4.8	5.3	5.6	100	<1	17	slight	cloudy	or. / brown	
04-Jun-98	Riverina 4	<0.05	-	<0.0005	0.027	0.49	34	-	-	0.72	-	0.047	0.58	84	-	-	0.005	0.01	-	0.13	17	5.8	5.49	-	0	17	sl odour	sl cloudy	blackish	
22-Oct-98	Riverina 4	B 0.05	-	0.00046	0.0148	0.195	11.7	-	-	0.409	-	0.0214	0.194	55	-	-	0.02	0.3	-	-	28.1	3.5	5.58	22	1	19	mod	sl cloudy	grey	
<b>Comparison Data</b>																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																	
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																	
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																	
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18	25		10500															
	ARC Trade Waste	25		1	30	10				20		10	25																	
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	0.12																	
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.095																	
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	*0.005																	
	ANZECC Marine			0.002	0.05	0.005						0.005	0.05																	

RIVERHILLS PARK

date collected	location	B mg/l	Ca mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	K mg/l	Mg mg/l	Mn mg/l	Na mg/l	Pb mg/l	Zn mg/l	Cl mg/l	COD mg/l	NH <sub>4</sub> -N mg/l	Nitrite mg/l	Nitrate mg/l	NNN mg/l	Total N mg/l	TOC* NPOC mg/l	DO	pH	EC	salinity	temp	odour	clarity	colour	
07-Apr-96	Riverhills 2	B		<0.001	0.002	0.01	140			5		0.005	0.11			1.3		0.1			5.2	3.55	5.25	240	1.5	19	slight	cloudy	lt. br.	
20-Oct-96	Riverhills 2	B	0.1		0.02	0.024	410					0.022	0.1	1900		3.6	0.077	0.048			21	2.5	5.62	485		19	strong	cloudy	gr. br.	
27-May-98	Riverhills 2	B	<0.05	-	<0.0005	0.021	0.036	130	-	-	4.8	-	0.043	0.11	880	-	-	0.022	0.09	-	2.05	19	4.9	5.9	-	2	16	nil	sl silty	blackish
23-Oct-98	Riverhills 2	B	0.023	-	0.0003	0.0149	0.0213	88.2	-	-	0.0006	-	0.0287	0.071	500	-	-	<0.01	0.4	-	-	15.9	3.4	5.77	102	4	19	slight	sl cloudy	lt grey
<b>Comparison Data</b>																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																	
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																	
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																	
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18	25	10500																
	ARC Trade Waste	25		1	30	10				20		10	25																	
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	0.12																	
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.095																	
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	*0.005																	
	ANZECC Marine			0.002	0.05	0.005						0.005	0.05																	



LEABANK PARK

date collecte	location	B (mg/l)	Ca (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH4-N (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	NNN (mg/l)	Total N (mg/l)	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour		
2-Apr-96	Leabank 5	B																													
29-Oct-96	Leabank 5	B	<0.1		0.069	0.033	60					0.052	0.21	27		<0.01	0.02	2.4			1.6	4.2	8.75	13	<1	19	nil	or. / br.	low		
<b>Comparison Data</b>																															
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.12		3.4	0.16					1.4		4.2	6.96	nt	0	22	none	opaque	light grey brown	
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.02																		
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5		24.4	<0.2	0.4																		
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18	0.01																		
	ARC Trade Waste	25		1	30	10				20		10	25		10500																
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	25																		
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.12																		
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	0.095																		
	ANZECC Marine			0.002	0.05	0.005						0.005	*0.005																		



date collected	location	B (mg/l)	Ca (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH4-N (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	NNN (mg/l)	Total N (mg/l)	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour	
<b>Comparison Data</b>																														
	<i>blank</i>																													
	<i>sea water</i>																													
	<i>river water</i>	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02	-	-															
	<i>Greenmount</i>	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4	-	-															
	<i>ARC Trade Waste</i>	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01	-	-															
		22	-	<0.01	0.19	0.07	128	-	-	13	-	0.18	25	10500	-	-														
		25	-	1	30	10	-	-	-	20	-	10	25	-	-															
	<i>USEPA Fresh Acute</i>	-	-	0.0039	0.016	0.18	-	-	-	-	-	0.083	0.12	-	-															
	<i>USEPA Marine Acute</i>	-	-	0.043	1.1	0.0029	-	-	-	-	-	0.22	0.095	-	-															
	<i>ANZECC Freshwater</i>	-	-	*0.0002	0.01	*0.002	1	-	-	-	-	*0.001	*0.005	-	-															
	<i>ANZECC Marine</i>	-	-	0.002	0.05	0.005	-	-	-	-	-	0.005	0.05	-	-															

# denotes results from reanalysis of sample following filtration

DALE CRES

date collected	location	B (mg/l)	Ca (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH <sub>4</sub> -N (mg/l)	Nitrite	Nitrate	NNN	Total N (mg/l)	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour				
26-Mar-96	Dale Cres 1	B		0.001	0.1	0.054	150			8.1		0.086	0.3			37	<0.005	0.003			130	1	6.41	2700	18	19	strong	cloudy	grey				
06-Nov-96	Dale Cres 1	B	2.2	0.038		0.051	130					0.05	0.13	6500		28	0.008	0.017			54	3.1	6.64	1700	11	19	v.strong	black	black				
04-Jun-98	Dale Cres 3	B	0.66	-	<0.0005	0.032	0.089	75	-	-	1.8	-	0.055	0.37	2000	-	-	0.006	<0.01	-	11	56	2.6	6.46	-	<0.1	16	organic	cloudy	black			
23-Oct-98	Dale Cres 3	B	0.88	-	<0.0005	<0.005	0.023	77.7	-	-	3.62	-	0.015	0.07	3455	-	-	0.03	0.2	-	-	139	2.2	6.81	790	70	19	strong	sl. cldy	blackish			
<b>Comparison Data</b>																																	
	blank		0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																			
	sea water		3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																			
	river water		<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																			
	Greenmount		22		<0.01	0.19	0.07	128							10500																		
	ARC Trade Waste		25		1	30	10																										
	USEPA Fresh Acute				0.0039	0.016	0.18						0.083	0.12																			
	USEPA Marine Acute				0.043	1.1	0.0029							0.22	0.095																		
	ANZECC Freshwater				*0.0002	0.01	*0.002	1					*0.001	*0.005																			
	ANZECC Marine				0.002	0.05	0.005						0.005	0.05																			

KINGFISHER PL.

date collected	location	B (mg/l)	Ca (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH <sub>4</sub> -N (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	NNN (mg/l)	Total N (mg/l)	TOC	DO	pH	EC	salinity	temp	odour	clarity	colour	
26-Sep-94	Kingfisher 1	0.19	79	<0.01	<0.01	<0.03	10	5.5	9.6	2.3	41	<0.2	0.15		73	0.79				1.6		4.7	6.26	500	0.1	17	clear	none	none	
19-Oct-94	Kingfisher 1	0.17	72	<0.01	<0.01	<0.03	11	7.8	20.8	2.3	82	<0.2	<0.01	854	<0.04					1.7		6	6.46	670	100	16	nil	clear	clear	
23-Oct-98	Kingfisher 1	1.41	-	0.0017	0.017	0.036	146	-	-	2.15	-	0.038	0.83	6770	-	-	0.06	0.5	-	-	12.3	3.8	7.46	1150	103	17	mod	sl cldy	lt orange	
12-Sep-95	Kingfisher 1	S	0.5	100	0.0051	0.076	0.092	740	16	34	3.7	92	0.12	3.2	-	480	0.23	-	-	8.7		0.5								
13-May-96	Kingfisher 1	S			0.002	0.12	0.16	1200			4.7		0.17	6.4			2.5		0.004		7	0.35	6.97	90	<1	17	slight	cloudy	or. br.	
25-May-98	Kingfisher 1	S	4	-	0.0005	0.008	0.0018	9.3	-	-	0.8	-	<0.003	0.095	14000	-	-	0.15	0.35	-	0.65	11	4.7	7.2	-	25	17	nil	sl cloudy	sl silty
19-Oct-94	Kingfisher 2	<0.01	7.6	<0.01	<0.01	<0.03	0.25	<1.3	27.3	0.02	17	<0.2	<0.01		237	<0.04				2.9		9.5	6.19	160	0	15	nil	clear	clear	
24-Feb-95	Kingfisher 2	0.23	11.1	<0.01	<0.01	<0.03	0.68	4.6	11.1	0.07	92	<0.2	0.27		245	0.15				0.9		7.2	6.72	700	0	21	nil	clear	clear	
<b>Comparison Data</b>																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																	
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																	
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																	
	Greenmount	22		<0.01	0.19	0.07	128				13		0.18	25	10500															
	ARC Trade Waste	25		1	30	10					20		10	25																
	USEPA Fresh Acute			0.0039	0.016	0.18							0.083	0.12																
	USEPA Marine Acute			0.043	1.1	0.0029							0.22	0.095																
	ANZECC Freshwater			*0.0002	0.01	*0.002	1						*0.001	*0.005																
	ANZECC Marine			0.002	0.05	0.005							0.005	0.05																

COXHEAD RD

date collected	location	B mg/l	Ca mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	K mg/l	Mg mg/l	Mn mg/l	Na mg/l	Pb mg/l	Zn mg/l	Cl mg/l	COD mg/l	NH <sub>4</sub> -N mg/l	Nitrite mg/l	Nitrate mg/l	NNN	Total N	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour	
23-Sep-94	Coxhead Rd 1	0.1	12.3	<0.01	<0.01	<0.03	0.2	<1.3	4.4	0.03	19	<0.2	0.1		424	<0.04				3.2		10.8	6.81	150	0	14	none	clear	none	
18-Oct-94	Coxhead Rd 1	<0.02	9.2	<0.01	<0.01	<0.03	0.2	<1.3	4.7	0.04	16	<0.2	<0.01		930	<0.04				3.4		10.2	6.86	170	0	16	none	clear	none	
23-Sep-94	Coxhead Rd 2	0.1	10.4	<0.01	<0.01	<0.03	0.5	<1.3	3.3	0.07	18	<0.2	0.02		114	0.09				4		10.6	6.58	150	0	15	none	clear	none	
18-Oct-94	Coxhead Rd 2	<0.02	6.5	<0.01	<0.01	<0.03	0.3	<1.3	3.5	0.1	18	<0.2	<0.01		685	0.07				4.2		9.3	6.58	160	0	17	none	clear	none	
17-Feb-95	Coxhead Rd 2	0.19	12.9	<0.01	<0.01	<0.03	0.35	3.7	5.9	0.02	47.5	<0.2	0.04		92	0.05				2.9		9.6	7.24	300	0	19	none	clear	none	
13-Sep-95	Coxhead Rd 2	S 0.19	8.6	0.0002	0.002	0.02	0.86	1.7	3.7	0.09	18	0.006	0.027	-	15	0.08	-	-		4.3		0								
27-Mar-96	Coxhead Rd 2	B		0.003	0.07	0.31	110			1.4		0.55	3.3		6.3	0.009	0.14				14*	0.75	6.43	90	<1	18	slight	cloudy	grey	
29-Oct-96	Coxhead Rd 2	B 0.4			0.025	0.15	87					0.29	2.4	36		5.6		0.025	0.005		15	2.65	7.79	80	<1	20	nil	cloudy	grey	
7-Aug-98	Coxhead Rd 2	B 0.28	-	<0.0005	0.003	0.035	73	-	-	0.42	-	0.068	0.31	10	-	-	0.043	0.01	-	6.2	17.5	3.6	6.57	-	0.4	18	sl silty	cloudy	sl silty	
23-Oct-98	Coxhead Rd 2	B 0.224	-	0.00062	0.0026	0.0357	58.4	-	-	0.802	-	0.0818	0.331	30	-	-	0.2	0.3	-	-	27.9	1.8	6.81	60	2	19	strong	opaque	blackish	
23-Sep-94	Coxhead Rd 3	0.1	12	<0.01	<0.01	<0.03	0.3	<1.3	4.2	0.04	18	<0.2	0.06		316	<0.04				3		10.8	6.57	150	0	14	none	clear	none	
18-Oct-94	Coxhead Rd 3	<0.02	9.2	<0.01	<0.01	<0.03	0.1	<1.3	4.7	0.04	16	<0.2	<0.01		780	<0.04				3.5		9.6	6.56	175	0	17	none	clear	none	
17-Feb-95	Coxhead Rd 3	0.13	13.1	<0.01	0.02	<0.03	0.4	3.1	4.8	0.02	47.5	<0.2	0.05		202	0.07				2.8		11	7.02	296	0	19	none	clear	none	
<b>Comparison Data</b>																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2																		
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2																		
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2																		
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18																		
	ARC Trade Waste	25		1	30	10				20		10																		
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083																		
	USEPA Marine Acute			0.043	1.1	0.0029						0.22																		
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001																		
	ANZECC Marine			0.002	0.05	0.005						0.005																		

ORUARANGI RD

date collected location		B	Ca	Cd	Cr	Cu	Fe	K	Mg	Mn	Na	Pb	Zn	Cl	COD	NH4-N	Nitrite	Nitrate	NNN	Total N	TOC*	DO	pH	EC	salinity	temp	odour	clarity	colour	
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
5-Nov-96	Oruarangi 1	B	<0.1		0.035	0.018	25					0.047	0.059	140		0.43	0.026	0.85			3.9	2.9	6.36	80	<1	23	smelly	cloudy	grey	
<b>Comparison Data</b>																														
	blank		0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.12	54	0.16				1.4		4.2	6.96	nt	0	22	none	opaque	light grey brown	
	sea water		3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.02																
	river water		<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.4																
	Greenmount		22		<0.01	0.19	0.07	128			13		0.18	0.01																
	ARC Trade Waste		25		1	30	10				20		10	25	10500															
	USEPA Fresh Acute				0.0039	0.016	0.18						0.083	25																
	USEPA Marine Acute				0.043	1.1	0.0029						0.22	0.12																
	ANZECC Freshwater				*0.0002	0.01	*0.002	1					*0.001	0.095																
	ANZECC Marine				0.002	0.05	0.005						0.005	*0.005																

GREAT SOUTH RD

date collected	location	B (mg/l)	Ca (mg/l)	Cl (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH4-N (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	NNN (mg/l)	Total N (mg/l)	TOC* NPOC	DO	pH	EC salinity	temp	odour	clarity	colour			
26-Sep-94	Gr. Silt Rd 1	0.25	55	<0.01	<0.01	<0.03	2.4	5.8	0.3	56	<0.2	0.26		163	0.12				0.59		4.1	6.56	510	0	16	swamp	clear	none		
24-Feb-95	Gr. Silt Rd 1	0.5	75	0.06	<0.01	0.52	373	9.4	0.98	66	0.45	15.3		122	2.5				5.7		0.5	6.88	700	100	22	org.	opaque	dark grey		
12-Sep-95	Gr. Silt Rd 1	0.4	59	0.0009	0.002	0.015	11	8.3	0.8	47	0.013	0.49		35	0.35				0.75		0									
13-Nov-96	Gr. Silt Rd 1	0.3			0.016	0.074	33				0.11	0.26			0.32	<0.005	0.044				16	2.4	83	-	19.1	strong	sl. cldy	gr. black		
26-Sep-94	Gr. Silt Rd 2	0.38	75	<0.01	<0.01	<0.03	5.7	13	0.6	112	<0.2	0.13		265	0.34				0.97		5.4	6.62	680	0.3	15	swamp	clear	none		
24-Feb-95	Gr. Silt Rd 2	0.31	13.8	<0.01	<0.01	<0.03	2.8	2.5	0.06	13.9	<0.2	0.26		246	0.18				0.7		4	6.86	150	0	22	nil	clear	v lt yellow		
13-Nov-96	Gr. Silt Rd 2	<0.1			0.018	0.068	9.4				0.073	0.96			0.031	<0.005	0.052				14	5.1	3	-	18.5	mod.	sl. cldy	grey		
12-Sep-95	Gr. Silt Rd 3	0.35	32	0.0003	0.002	0.009	3.1	4.7	0.13	29	0.008	0.19		25	0.29				1.6		0									
30-Oct-96	Gr. Silt Rd 3	0.2			0.026	0.019	100				0.089	0.13			0.67	<0.005	0.017				7.3	2.95	31	<1	19	slight	cloudy	or. br.		
30-Oct-96	Gr. Silt Rd 4	1.5			0.07	0.11	37				0.11	0.73			0.005	0.016					22	2.7	800	5	20	strong	opaque	black		
14-May-96					0.002	0.01	0.08	46	1.2		0.05	1.7			2.9		0.007				10	0.95	6.98	100	<1	18	strong	opaque	black	
14-May-96					<0.001	<0.002	0.02	3.3	0.3		0.007	0.07			1.1		0.006				6	2	6.59	27	0	20	nil	clear	or. br.	
Comparison Data																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																	
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	10.7	0.07	0.283	<0.2	0.1																	
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	0.13	24.4	<0.2	0.01																		
	Cremona	2.2		<0.01	0.19	0.07	128		1.3		0.18	25		10500																
	ARC Trade Waste	25		1	30	10			20		10	25																		
	UNEP A Freshwater			0.0039	0.016	0.18					0.083	0.12																		
	UNEP A Marine Acidic			0.043	1.1	0.0029					0.22	0.095																		
	ANZECC Freshwater			*0.0002	0.01	*0.002	1				*0.001	*0.005																		
	ANZECC Marine			0.002	0.05	0.005					0.005	0.05																		



ROBERT ALLAN WAY

date collect	location	B	Ca	CD	Cr	Cu	Pg	K	Mg	Mn	Na	Pb	Zn	Cl	COD	NH4-N	Nitric	Nitrate	NNN	Total N	TOC*	DO	pH	EC	salinity	temp	odour	clarity	colour			
4-Apr-06	Robert Allan 2	B		<0.001	0.004	0.014	36			3.5		0.004	0.053			194		0.007			140	1.3	6.59	1950	6	18	slight	cloudy	light grey			
20-Dec-06	Robert Allan 2	B	1.4		0.031	0.028	89					0.064	0.069	5400		6.3	<0.005	0.016		19	4	6.72	1300	8	16	strong	cloudy	grey, blk				
27-Mar-08	Robert Allan 2	B	0.55		0.031	0.042	52			3.4		0.085	0.12	1100						1.9	28	3.8	7.1	2	15	nil	sl cloudy	blackish				
22-Dec-08	Robert Allan 2	B	0.59		0.007	0.01	37			4.89		0.014	0.02	2315			<0.01	0.7			26.8	3.2	7.01	550	50	20	mud	opaque	sk grey			
4-Apr-06	Robert Allan 3	B			0.002	0.008	3.2			4		0.003	0.04			6.6		0.007			27	1.6	6.3	1550	10	17	moderate	cloudy	light grey			
30-Dec-06	Robert Allan 3	B	0.5		0.011	0.025	120			2.2		0.005	0.032	2680		89	0.029	0.011		175	1	6.76	750	5	17	moderate	opaque	grey, blk				
27-Mar-08	Robert Allan 3	B	0.014		0.025	0.031	94					0.03	0.12	2300			0.002	<0.01		80	125	2.8	6.9	5	15	nil	sl cloudy	blackish				
22-Dec-08	Robert Allan 3	B	0.24		0.008	0.044	133			3.45		0.059	0.16	2280			0.01	1.1			183	3.5	7.34	700	60	20	mud	sl cloudy	grey			
Comparison Data																																
	blank		0.21		<0.01	<0.03	0.14			0.006	3.1	<0.2	0.02																			
	river water		3.3		<0.1	<0.3	0.3			0.07	9.93	<2	0.4																			
	Groundwater		22		<0.01	<0.03	5.9			1.3	24.4	0.18	35								10500											
	AIRC Trade Waste		25		<0.01	0.19	128			20		10	33																			
	USEPA Freshwater				0.0039	0.016						0.063	0.12																			
	USEPA Marine Acute				0.043	1.1						0.22	0.095																			
	ANZECC Freshwater				0.007	0.01						0.001	0.005																			
	ANZECC Marine				0.002	0.05						0.005	0.05																			

ENNIS AVE

date collected	location	B (ng/l)	Cu (ug/l)	Cd (ng/l)	Cr (ng/l)	Cu (ng/l)	Fe (ng/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (ug/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH4-N (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	NNN (mg/l)	Total N (mg/l)	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour	
2-Apr-96	Ennis Ave			<0.001	0.003	0.02	0.84			0.048		0.007	0.09			0.067		0.37			4.8	7.4	6.44	22	0	15	nil	clear	clear	
5-Nov-96	Ennis Ave	<0.1		0.001	0.005	4.7						<0.001	0.093	67		0.17	0.005	0.11			4.9	6.4	6.5	40.2	-	13.3	odour	clear	lt. br.	
<b>Comparison Data</b>																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.12		54	0.16					1.4		4.2	6.96	nt	0	22	none	opaque	light grey brown
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.02																	
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.4																	
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18	0.01																	
	ARC Trade Waste	25		1	30	10				20		10	25		10500															
	UNEPA Fresh Acute			0.0039	0.016	0.18						0.083	25																	
	UNEPA Marine Acute			0.043	1.1	0.0029						0.22	0.12																	
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	0.095																	
	ANZECC Marine			0.002	0.05	0.005						0.005	*0.005																	

RECEIVED: 26 Sep 2012 SCANNED: 26 Sep 2012 BOX: 52 BATCH: 96494 DOC: ACLAAOZA

KIWI ESPLANADE

date collected	location	B (mg/ml)	Ca (mg/ml)	Cd (mg/ml)	Cr (mg/ml)	Cu (mg/ml)	Fe (mg/ml)	K (mg/ml)	Mg (mg/ml)	Mn (mg/ml)	Na (mg/ml)	Pb (mg/ml)	Zn (mg/ml)	Cl (mg/ml)	COD (mg/ml)	NH <sub>4</sub> -N (mg/ml)	Nitrite (mg/ml)	Nitrate (mg/ml)	NNN (mg/ml)	Total N (mg/ml)	DO	TOC	pH	EC	salinity	temp	odour	clarity	colour	
28-Sep-94	Esplanade 1	0.28	32	<0.01	0.1	<0.03	1	21	56	0.06	446	<0.02	0.04		590	0.05				0.67	9.3		7.07	2550	1.8	14	none	clear	light greyish brown	
28-Oct-94	Esplanade 1	1.3	132	<0.01	0.14	<0.03	1.5	116	319	0.5	2836	<0.02	0.03		185	0.55				1.5	4.3		7.39	10000	7000	14	nil	clear	clear	
15-Feb-95	Esplanade 1	3.8	368	<0.1	0.44	2.1	0.31	343	1147	0.22	9610	>2	0.28		188	0.4				1.6	5.5		6.28	490	0	22	nil	clear	clear	
28-Sep-94	Esplanade 2	2.9	282	<0.1	0.33	<0.3	38	272	866	0.6	7020	<0.2	<0.1		95	0.69				5	9.7			29000	22	15	none	opaque	light greyish brown	
28-Oct-94	Esplanade 2	4.1	379	<0.1	0.7	<0.3	24	388	1195	0.5	10250	<0.2	0.08		70	0.09				4.2										
15-Feb-95	Esplanade 2	4	370	<0.1	0.47	0.3	2.4	368	1213	0.21	10302	<2	<0.1		52	0.62				1.3	12		N/T	15000	32000	22	nil	clear	clear	
<b>Comparison Data</b>																														
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																	
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																	
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																	
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18	25		10500															
	ARC Trade Waste	25		1	30	10				20		10	25																	
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	0.12																	
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.095																	
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	*0.005																	
	ANZECC Marine			0.002	0.05	0.005						0.005	0.05																	

RIVERHILLS SCHOOL

date collected	location	B	Ca	CD	Cr	Cu	Fe	K	Mg	Mn	Na	Pb	Zn	Cl	COD	NH-N	Nitrite	Nitrate	NNN	Total N	TOC	DO	pH	EC	salinity	temp	odour	clarity	colour		
07-Apr-06	Riverhills School	S		<0.001	<0.001	0.015	4.6			0.57		0.1	0.09			0.018		<0.003				3.2	5.6	6.37	32	0	17	nil	clear	clear	
	blank		0.21	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																		
	sea water		3.3	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9383	<2	0.4																		
	river water		<0.1	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	34.4	<0.2	0.01																		
	Greenmount		22	<0.01	0.19	0.07	128			13		0.18	25		10500																
	AIRC Trade Waste		23	1	30	10				20		10	25																		
	USRP 1 Fresh Aerie			0.0039	0.016	0.18						0.083	0.12																		
	USRP 1 Marine Aerie			0.043	1.1	0.0029						0.001	0.095																		
	ANZREC Freshwater			0.0002	0.01	0.002	1					0.001	0.005																		
	ANZREC Marine			0.002	0.05	0.005						0.005	0.05																		

TI RAKAU DR

date collected	location	B mg/l	Ca mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	K mg/l	Mg mg/l	Mn mg/l	Na mg/l	Pb mg/l	Zn mg/l	Cl mg/l	COD mg/l	NH <sub>4</sub> -N mg/l	Nitrite mg/l	Nitrate mg/l	NNN mg/l	Total N mg/l	TOC* NPOC mg/l	DO	pH	EC	salinity	temp	odour	clarity	colour	
07-Apr-96	Ti Rakau 1	B		<0.001	0.008	0.018	3.9			0.25		0.074	0.064			0.022		0.42			17	2.1	6.4	35	0	18	slight	opaque	gr brown	
06-Nov-96	Ti Rakau 1	B	0.1		0.008	0.008	8					0.014	0.016	54		0.29	0.007	0.059			13	3.7	6.62	70	<1	18	mod.	cloudy	gr. black	
	blank		0.21	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																	
	sea water		3.3	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																	
	river water		<0.1	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																	
	Greenmount		22	<0.01	0.19	0.07	128			13		0.18	25		10500															
	ARC Trade Waste		25	1	30	10				20		10	25																	
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	0.12																	
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.095																	
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	*0.005																	
	ANZECC Marine			0.002	0.05	0.005						0.005	0.05																	

HARANIA RD

date collected	location	B mg/l	Ca mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	K mg/l	Mg mg/l	Mn mg/l	Na mg/l	Pb mg/l	Zn mg/l	Cl mg/l	COD mg/l	NH <sub>4</sub> -N mg/l	Nitrite mg/l	Nitrate mg/l	NNN mg/l	Total N mg/l	TOC* NPOC	DO	pH	EC	salinity	temp	odour	clarity	colour
26-Sep-94	Harania Rd 1	0.08	12	<0.01	<0.02	<0.03	0.4	3	7	0.04	18	<0.2	0.07		137	<0.04				8.2		9	6.28	190	0	15	nil	clear	clear
17-Oct-94	Harania Rd 1	<0.02	10	<0.01	<0.02	<0.03	0.2	4.3	7	<0.02	16	<0.2	0.1		20	0.07				6.8		5.8	6.55	165	0	17	nil	clear	clear
17-Feb-95	Harania Rd 1	0.12	32	<0.01	<0.02	<0.03	0.65	11.1	24.5	0.71	45	<0.2	0.17		112	0.13				31		8	6.67	92	0	19	nil	clear	nil
26-Sep-94	Harania Rd 2	0.07	9	<0.01	<0.02	<0.03	0.3	0.7	5	<0.02	16	<0.2	0.04		84	<0.04				4.2		6.1	6.35	140	0	15	nil	clear	clear
17-Feb-95	Harania Rd 2	0.13	36.5	<0.01	<0.02	<0.03	6.8	17.3	33.5	2.5	118	<0.2	0.29		70	0.24				28		1.6	6.46	93	0	18	nil	fair	nil
07-Apr-96	Harania Rd 2 B			<0.001	0.002	0.008	0.38			0.031			0.079	0.068		0.13		0.004			3.2*	2.3	4.97	20	0	20	slight	sl. cloudy	or. / br.
25-Oct-96	Harania Rd 2 B	0.1			0.014	0.13						0.019	0.033	19		0.5	<0.005	0.028			7.4	2.95	8.37	23	<1	20	slight	sl. cloudy	gr. / br.
13-Sep-95	Harania Rd 2 S	0.28	76	0.0072	0.4	0.99	340	25	38	25	37	3	7.2	-	20	0.92	-	-		27		0							
14-May-96	Harania Rd 2 S			<0.001	<0.002	0.03	0.82			0.4		0.01	0.12			1.6		8.7			3.6*	2.45	6.65	32	0	18	nil	clear	clear
26-Nov-96	Harania Rd 2 S	0.1			<0.001	0.01	0.16					<0.001	0.089	97		<0.01	0.04	13			3.3	3.6	6.04	49	0	17	none	clear	clear
26-Sep-94	Harania Rd 3	0.19	9	<0.01	<0.02	<0.03	0.5	1.6	7	0.03	34	<0.2	0.05		35	<0.04				4		8	6.35	242	0	15	nil	clear	clear
17-Oct-94	Harania Rd 3	<0.02	12	<0.01	<0.02	<0.03	0.2	4.3	10	<0.02	30	<0.2	0.04		195	<0.04				7		6.7	6.82	261	0	17	nil	clear	clear
17-Feb-95	Harania Rd 3	0.84	90	<0.01	0.03	<0.03	1.5	75	233	1	2019	<0.2	0.09		46	0.27				9		6.2	6.38	540	0	19	nil	clear	nil
07-Apr-96	Harania Rd 3 B			<0.001	0.002	0.008	4.8			0.003		2.6	0.04			7.1		<0.003			23*	0.35	6.29	130	<1	22	slight	cloudy	gr. / br.
25-Oct-96	Harania Rd 3 B	0.5			0.039	0.039	120					0.049	0.1	520		5.5	0.032	0.039			33	1.75	8.08	195	1	18	strong	opaque	gr. / blk
26-Sep-94	Harania Rd 4	0.43	17	<0.01	<0.02	<0.03	0.5	2.7	10	0.15	26	<0.2	0.06		181	0.5				11		8.2	5.97	240	0	15	nil	clear	clear
17-Oct-94	Harania Rd 4	<0.02	12	<0.01	<0.02	<0.03	0.9	2.9	7	0.16	19	<0.2	0.26		335	0.24				6.7		6	6.62	102	0	16	nil	clear	clear
17-Feb-95	Harania Rd 4	0.4	123	<0.01	<0.02	<0.03	3	131	62	0.39	139	<0.2	0.58		110	0.22				83		8.2	6.38	540	0	18	nil	clear	nil
13-Sep-95	Harania Rd 4 S	0.41	18	0.0003	0.003	0.014	1.8	8.5	13	0.15	59	0.013	0.14	-	40	0.11	-	-		12		0							
17-Feb-95	Harania Rd 5	0.3	85	<0.01	<0.02	<0.03	2.7	89	39	0.29	57	<0.2	0.36		98	0.19				44		9	6.41	19	0	19	nil	clear	nil
07-Apr-96	Harania Rd 5 B			<0.001	0.03	0.045	6.6			0.023		0.18	0.052			<0.006		<0.003			0.2*	3	5.52	90	<1	21	slight	sl. cloudy	or. / br.
25-Oct-96	Harania Rd 5 B	0.4			0.09	0.091	23					0.076	0.15	170		0.22	0.005	0.061			32	3.2	5.15	80	0	19	strong	opaque	brown
17-Feb-95	Harania Rd 6	0.14	9.5	<0.01	<0.02	<0.03	1.9	3.7	2.6	0.2	25.5	<0.2	0.05		185	0.91				2.1		2	6.81	21	0	21	nil	clear	nil
<b>Comparison Data</b>																													
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02																
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4																
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01																
	Greenmount	22		<0.01	0.19	0.07	128					0.18	25	10500															
	ARC Trade Waste	25		1	30	10						10	25																
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	0.12																
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.095																
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	*0.005																
	ANZECC Marine			0.002	0.05	0.005						0.005	0.05																

BAIRDS RD

date collected	location	B mg/l	Ca mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	K mg/l	Mg mg/l	Mn mg/l	Na mg/l	Pb mg/l	Zn mg/l	Cl mg/l	COD mg/l	NH <sub>4</sub> -N mg/l	Nitrite mg/l	Nitrate mg/l	NNN mg/l	Total N mg/l	TOC	DO
23-Sep-94	Bairds Rd 1	0.13	9.5	<0.01	<0.02	<0.03	0.6	<1.3	4.5	0.12	19	<0.2	0.1		1730	0.05				1.9		8.4
15-Feb-95	Bairds Rd 1	0.19	11.3	<0.01	0.03	0.16	1.7	3.4	5	0.06	32.5	<0.2	<0.1		1300	0.27				0.7		3
23-Sep-94	Bairds Rd 2	0.23	16.2	<0.01	<0.02	<0.03	4	<1.3	6	0.35	25	<0.2	0.08		247	0.09				1.5		6
12-Sep-95	Bairds Rd 2	S 0.62	50	0.0002	0.003	0.009	30	2.1	9.7	2.9	33	0.023	0.05	-	30	0.11	-	-		0.57		0
23-Sep-94	Bairds Rd 3	0.3	9.7	<0.01	<0.02	<0.03	0.7	<1.3	4.5	0.12	20	<0.2	0.12		549	<0.04				1.8		8.6
15-Feb-95	Bairds Rd 3	0.12	11	<0.01	0.03	0.08	1.4	2.6	4	0.11	25.5	<0.2	0.06		256	0.17				0.5		3.5
<b>Comparison Data</b>																						
	blank	0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.02									
	sea water	3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.4									
	river water	<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.01									
	Greenmount	22		<0.01	0.19	0.07	128			13		0.18	25		10500							
	ARC Trade Waste	25		1	30	10				20		10	25									
	USEPA Fresh Acute			0.0039	0.016	0.18						0.083	0.12									
	USEPA Marine Acute			0.043	1.1	0.0029						0.22	0.095									
	ANZECC Freshwater			*0.0002	0.01	*0.002	1					*0.001	*0.005									
	ANZECC Marine			0.002	0.05	0.005						0.005	0.05									

OLD QUARRY RD

Date collected	Location	B (mg/l)	Ca (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	K (mg/l)	Mg (mg/l)	Mn (mg/l)	Na (mg/l)	Pb (mg/l)	Zn (mg/l)	Cl (mg/l)	COD (mg/l)	NH4-N (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	NNN (mg/l)	Total N (mg/l)	TOC	DO	pH	EC	salinity	temp	odour	clarity	colour	
26-Sep-94	Coronation Rd 1	S	0.03	10	<0.01	<0.01	<0.03	2.5	<1.3	5.1	0.08	17	<0.2	0.05	145	0.07				2.5		9.8	6.49	135	0	17	none	opaque	light greyish brown	
17-Oct-94	Coronation Rd 1	S	<0.02	16	<0.01	<0.01	<0.03	0.5	2.3	9	0.02	30	<0.2	0.1	63	0.07				3.5		8.3	6.85	230	0	16	none	clear	clear	
26-Sep-94	Coronation Rd 2	S	0.04	9	<0.01	<0.01	<0.03	2.4	<1.3	5.9	0.06	16	<0.2	0.04	<2	<0.04				2.5		10.2	6.53	140	0	15	none	clear	light greyish brown	
17-Oct-94	Coronation Rd 2	S	<0.02	16	<0.01	<0.01	<0.03	0.7	2.1	9	0.04	33	<0.2	0.02	210	0.07				3.3		7.8	6.73	248	0	15	none	clear	clear	
26-Sep-94	Coronation Rd 3	S	0.2	75	<0.01	<0.01	<0.03	42	5.9	47	2.4	70	<0.2	0.2	38	0.88				1.8		2.2	6.03	800	0.5	14	none	clear	light greyish brown	
17-Oct-94	Coronation Rd 3	S	<0.02	80	<0.01	<0.01	<0.03	35	7.7	47	2.2	63	<0.2	0.1	355	0.74				1.5		4.3	6.37	1800	500	15	dull org	susp rust	clear	
26-Sep-94	Coronation Rd 4	S	0.24	83	<0.01	0.02	<0.03	27	5.1	50	1.8	55	<0.2	<0.01	102	1.3				1.7		2.5	6.22	800	0.5	17	none	clear	light greyish brown	
17-Oct-94	Coronation Rd 4	S	0.2	85	<0.01	<0.01	<0.03	30	8	49	1.6	58	<0.2	<0.01	170	1.2				1.7		2.8	6.47	8000	500	17	dull org	susp rust	clear	
14-May-96	Old Quarry Rd	S			<0.001	<0.002	0.02	2.1			0.7		0.008	0.04							5.8	2.65	6.95	750	<1	20	slight	clear	lt. orange	
24-Feb-96	Old Quarry Rd 1	S	0.27	9.2	<0.01	<0.01	<0.03	3	2.7	4.9	0.08	27.5	<0.2	0.08	80	0.2				1.3		4	7.01	nt	0	22	none	opaque	light grey brown	
24-Feb-96	Old Quarry Rd 2	S	0.26	9.6	<0.01	<0.01	<0.03	3	4	6	0.07	41	<0.2	0.12	54	0.16				1.4		4.2	6.96	nt	0	22	none	opaque	light grey brown	
12-Sep-95	Old Quarry Rd 3	S	0.39	75	0.0005	0.005	0.011	46	8.1	41	1.6	64	0.024	0.088	50	0.54				1.3		0.5								
12-Sep-95	Old Quarry Rd 4	S	0.46	170	0.0028	0.16	0.24	1800	17	82	5.5	79	1.1	2	440	0.49				2.9		0.5								
<b>Comparison Data</b>																														
	blank		0.21	1.4	<0.01	<0.01	<0.03	0.14	1.3	0.2	0.006	3.1	<0.2	0.12	54	0.16				1.4		4.2	6.96	nt	0	22	none	opaque	light grey brown	
	sea water		3.3	337	<0.1	<0.1	<0.3	0.3	331	1077	0.07	9283	<2	0.02																
	river water		<0.1	4.2	<0.01	<0.01	<0.03	5.9	6.1	7.5	0.13	24.4	<0.2	0.4																
	Greenmount		22		<0.01	0.19	0.07	128			13		0.18	0.01																
	ARC Trade Waste		25		1	30	10			20		10	25	10500																
	USEPA Fresh Acute				0.0039	0.016	0.18						0.083	25																
	USEPA Marine Acute				0.043	1.1	0.0029						0.22	0.12																
	ANZECC Freshwater				*0.0002	0.01	*0.002	1					*0.001	0.095																
	ANZECC Marine				0.002	0.05	0.005						0.005	*0.005																





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**Appendix C**

**Data for Stream Water Samples**

Report Number : 21 2212 00

Page

# Manukau City - OLD LANDFILL TESTING

Location: RIVERINA AVE

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		30.10.99	30.10.99
Time - sampling		8.07am	8.30am
Low tide		6.03am	6.03am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	7.35	7.66
Dissolved Oxygen	mg/l	11.99	11.33
Conductivity	mS/m	Exceeds limits of the portable machine	
Clarity		Opaque	Opaque
Visual Inspection		Tidal	Tidal
<b>SAMPLE Number</b>			
Lab sample No		121AN	122AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ  
 Checked by: TR

Date: 30.10.99  
 Date: 8.11.99

12/11/99

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Report Number  
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21 2212 00

**Manukau City - OLD LANDFILL TESTING**Location: **RIVERINA AVE****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
SAMPLE			
Lab sample No		121AM	122AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
ANALYSIS			
Boron	mg/L		
Chromium	mg/L		
Copper	mg/L		
Lead	mg/L		
Manganese	mg/L		
Zinc	mg/L		
Iron	mg/L		
Cadmium	mg/L		
TOC	ppm	10.6	11.8
Nitrate - N	mgNO <sub>3</sub> -N/L	0.6	0.4
Nitrite - N	mgNO <sub>2</sub> -N/L	0.01	0.02
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.8	0.3
Chloride	mg/L	13 450	14 975

Tested by:

SPJ

Date:

30.10.99

Checked by:

Date:

Report Number: 21 2212 00

Page

# Manukau City - OLD LANDFILL TESTING

Location:

**KINGFISHER PLACE**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		29.10.99	29.10.99
Time - sampling		8.50am	9.15am
Low tide		8.17am	8.17am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	6.54	6.75
Dissolved Oxygen	mg/l	9.82	9.28
Conductivity	mS/m	260.00	378.00
Clarity		Clear	Clear
Visual Inspection		Flow steady	Flow steady
<b>SAMPLE Number</b>			
Lab sample No		113AN	114AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ & DH

Date:

29.10.99

Checked by: TB

Date:

8.11.99

12/11/99

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004

Report Number 21221200  
Page**Manukau City - OLD LANDFILL TESTING**

Location: KINGFISHER PLACE

## LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site			
SAMPLE			
Lab sample No		113AN	114AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
ANALYSIS			
Boron	mg/L		
Chromium	mg/L		
Copper	mg/L		
Lead	mg/L		
Manganese	mg/L		
Zinc	mg/L		
Iron	mg/L		
Cadmium	mg/L		
TOC	ppm	7.2	9
Nitrate - N	mgNO <sub>3</sub> -N/L	1.5	1.5
Nitrite - N	mgNO <sub>2</sub> -N/L	0.04	0.04
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.3	0.8
Chloride	mg/L	730	1170

Tested by: SPJ & DH Date: 29.10.99  
 Checked by: Date:

Report Number : 21 2212 00  
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## Manukau City - OLD LANDFILL TESTING

Location:

PAH ROAD

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		28.10.99	28.10.99
Time - sampling		10.30am	11.00am
Low tide		7.55am	7.55am
Weather		Overcast	Overcast
MEASUREMENTS			
pH	-	7.21	7.25
Dissolved Oxygen	mg/l	14.06	13.99
Conductivity	mS/m	24.5	95.6
Clarity		Clear	Clear
Visual Inspection		Flow steady	Flow steady
SAMPLE Number			
Lab sample No		965AM	966AM
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date: 28.10.99

Checked by: TB

Date: 0.11.99

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**PAH ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		965AN	966AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.024	0.099
Chromium	mg/L	0.0011	0.0015
Copper	mg/L	0.0034	0.0033
Lead	mg/L	0.0011	0.0012
Manganese	mg/L	0.118	0.32
Zinc	mg/L	0.011	0.017
Iron	mg/L	0.88	1.55
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	10.8	12.2
Nitrate - N	mgNO <sub>3</sub> -N/L	0.9	1
Nitrite - N	mgNO <sub>2</sub> -N/L	0.03	0.24
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	35	295

Tested by:

SPJ

Date:

28.10.99

Checked by:

Date:

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**ROBERT ALLAN PARK**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		26.10.999	26.10.99
Time - sampling		3.50pm	4.05pm
Low tide		3.28pm	3.28pm
Weather		Overcast	Overcast
MEASUREMENTS			
pH	-	7.03	7.21
Dissolved Oxygen	mg/l	7.94	8.24
Conductivity	mS/m	1883	Out of range
Clarity		Clear	Clear
Visual Inspection		Odourless	Odourless
SAMPLE Number			
Lab sample No		086AN	087AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date: 26.10.99

Checked by: TB

Date: 8-11-99



Report Number  
Page

## Manukau City - OLD LANDFILL TESTING

Location:

**ROBERT ALLAN PARK**

### LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
SAMPLE			
Lab sample No		088AN	087AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
ANALYSIS			
Boron	mg/L	1.67	1.94
Chromium	mg/L	<0.005	<0.005
Copper	mg/L	0.006	0.007
p	mg/L	0.002	0.002
Manganese	mg/L	0.443	0.340
Zinc	mg/L	0.080	0.07
Iron	mg/L	0.9	0.7
Cadmium	mg/L	<0.0005	<0.0005
TOC	ppm	14.0	12.5
Nitrate - N	mgNO <sub>3</sub> -N/L	0.7	0.8
Nitrite - N	mgNO <sub>2</sub> -N/L	0.04	0.02
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	665	720

Tested by:

SPJ

Date:

26.10.99

Checked by:

Date:

Report Number

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# Manukau City - OLD LANDFILL TESTING

Location: **HILLS ROAD - MAYFIELD PARK**

## LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		987AM	988AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.058	0.093
Chromium	mg/L	0.0023	0.0019
Copper	mg/L	0.0039	0.0039
Lead	mg/L	0.0014	0.0017
Manganese	mg/L	0.0613	0.0712
Zinc	mg/L	0.024	0.028
Iron	mg/L	1.15	1.19
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	3.6	3.9
Nitrate - N	mgNO <sub>3</sub> -N/L	1.5	2.2
Nitrite - N	mgNO <sub>2</sub> -N/L	0.03	0.04
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.8	0.3
Chloride	mg/L	95	185
Salinity	mg/L	172	334

Tested by: SPJ Date: 26.10.99  
 Checked by: TB Date: 3.11.99

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location: ORUARANGI ROAD

STREAM SAMPLING

Parameter	Units	Results	
		Up stream	Down Stream
Site			
Type of Site			
Date - of sampling		20.10.99	20.10.99
Time - sampling		2.00pm	2.15pm
Low tide		1.09pm	1.09pm
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	7.34	7.40
Dissolved Oxygen	mg/l	10.24	8.62
Conductivity	mS/m	34.5	35.0
Clarity		Clear	Clear
Visual Inspection		No flow	flow
<b>SAMPLE Number</b>			
Lab sample No		064AN	065AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: TB &amp; RT

Checked by: TB

Date: 20.10.99

Date: 8.11.99

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**ORUARANGI ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		064AN	065AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.055	0.057
Chromium	mg/L	<0.0005	<0.0005
Copper	mg/L	0.0031	0.0032
Lead	mg/L	0.0004	0.0003
Manganese	mg/L	0.0735	0.0759
Zinc	mg/L	0.016	0.016
Iron	mg/L	0.37	0.36
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	13.6	13.6
Nitrate - N	mgNO <sub>3</sub> -N/L	0.2	0.2
Nitrite - N	mgNO <sub>2</sub> -N/L	<0.01	<0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	0.6
Chloride	mg/L	53	46

Tested by: TB

Date:

20.10.99

Checked by:

Date:

10/11/99

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Report Number: 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**HARANIA AVE**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		19.10.99	19.10.99
Time - sampling		11.15am	11.45am
Low tide		11.58am	11.58am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	6.32	6.91
Dissolved Oxygen	mg/l	7.52	8.03
Conductivity	mS/m	25.90	44.30
Clarity		Clear	Clear
Visual Inspection		No flow	Slight flow
<b>SAMPLE Number</b>			
Lab sample No		044AN	045AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: TB

Date: 19.10.99

Checked by: TB

Date: 8.11.99

Report Number  
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## Manukau City - OLD LANDFILL TESTING

Location: **HARANIA PARK**

### LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		044AN	045AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.041	0.076
Chromium	mg/L	0.0006	<0.0005
Copper	mg/L	0.0094	0.0058
Lead	mg/L	0.0007	0.0007
Manganese	mg/L	0.0742	0.0313
Zinc	mg/L	0.041	0.060
Iron	mg/L	0.26	0.15
Cadmium	mg/L	0.00008	<0.00005
TOC	ppm	4.6	7.6
Nitrate - N	mgNO <sub>3</sub> -N/L	10.1	4.4
Nitrite - N	mgNO <sub>2</sub> -N/L	0.02	0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	28	64

Tested by: TB Date: 19.10.99  
Checked by: Date:

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Page**Manukau City - OLD LANDFILL TESTING**

Location:

**OLD QUARRY ROAD**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		19.10.99	19.10.99
Time - sampling		12.00pm	12.30pm
Low tide		11.58am	11.58am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH		7.07	7.00
Dissolved Oxygen	mg/l	9.70	9.24
Conductivity	mS/m	26.30	27.90
Clarity		Clear	Clear
Visual Inspection		Flow	Slight flow
<b>SAMPLE Number</b>			
Lab sample No		046AN	047AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: TB  
Checked by: TBDate: 19.10.99  
Date: 8.11.99

11/11/99

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Page**Manukau City - OLD LANDFILL TESTING**

Location:

**OLD QUARRY ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		046AN	047AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.037	0.038
Chromium	mg/L	<0.005	<0.0005
Copper	mg/L	0.0019	0.0020
Lead	mg/L	0.0007	0.0005
Manganese	mg/L	0.0169	0.0176
Zinc	mg/L	0.025	0.026
Iron	mg/L	0.2	0.22
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	6.7	72
Nitrate - N	mgNO <sub>3</sub> -N/L	0.3	0.2
Nitrite - N	mgNO <sub>2</sub> -N/L	<0.01	<0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	28	25

Tested by:

TB

Date:

19.10.99

Checked by:

Date:



Report Number : 21 2212 00

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# Manukau City - OLD LANDFILL TESTING

Location:

ELM PARK

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		12.10.99	12.10.99
Time - sampling		2.35pm	2.55pm
Low tide		4.16pm	4.16pm
Weather		Overcast	Overcast
<b>MEASUREMENTS</b>			
pH		7.08	7.12
Dissolved Oxygen	mg/l	8.50	8.40
Conductivity	mS/m	39.50	72.10
Clarity		Clear	Clear
Visual Inspection		Flow steady	Flow steady
<b>SAMPLE Number</b>			
Lab sample No		992AM	993AM
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ  
 Checked by: TB

Date: 12.10.99  
 Date: 8.11.99