

Waterwatch Victoria



QA/QC on Mystery Physico-Chemical and Macroinvertebrate Samples

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Front Cover Photograph: *Antiporus bakewelli* (Family: Dytiscidae)

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1 Background

Waterwatch Victoria is a state-wide community water quality monitoring organisation that aims to increase understanding of waterway issues and form networks throughout catchments. The monitoring program involves regional coordinators and a range of community monitors collecting water quality data from their local creeks and rivers. In order for coordinators to be confident in the data they and their monitors report, a state-wide Quality Assurance and Quality Control (QA/QC) program is undertaken annually. Analysis of quality controlled samples (“Mystery Samples”) ensures confidence in proficiency of coordinators and monitors collection of accurate and precise data.

This report summarises the data from physico-chemical and macroinvertebrate “Mystery Samples” tested by Waterwatch Victoria coordinators and monitors from across the state between 5th June and 9th June 2006. Similar QA/QC programs have been undertaken in 1998, 1999, 2000, 2001, 2002, 2003, 2004 and 2005. In this report results have been analysed as per 2005 for all participants and separately for monitors and coordinators.

2 Methods

Reference water samples for parameters pH, electrical conductivity (EC), turbidity and orthophosphate, along with reference macroinvertebrate samples of known taxonomic composition were prepared by Ecowise Environmental (Victoria) according to Waterwatch Victoria specifications. Two hundred and sixty sets of physico-chemical “Mystery Samples” and one hundred macroinvertebrate “Mystery Samples” were provided to Waterwatch Victoria to be sent to coordinators and monitors for testing. The results from the coordinators and monitors data analysis sheets were collated and evaluated by Ecowise. Due to instability of the pH solution throughout the Waterwatch QA/QC testing period, this parameter has been excluded from analysis.

2.1 Physico - chemical parameters

For each parameter tested, two concentrations were provided. The physico-chemical “Mystery Samples” set comprised of six bottles. The pH and EC parameters were combined in one bottle, while turbidity and orthophosphate samples were provided in separate bottles. The reference values for the parameters tested are presented in Table 1.

Table 1: Reference values for “Mystery Sample” parameters.

Parameter	Mystery Sample 1 value	Mystery Sample 2 value
EC (μ S/cm)	730	4300
Turbidity (NTU)	40	100
Orthophosphate mg/L as P	0.11	0.30

Acceptable upper and lower quality control limits for each parameter tested were chosen to encompass the wide array of equipment used by Waterwatch coordinators and monitors, and to determine compliance with quality standards. These limits, as determined by Waterwatch Victoria, are presented in Table 2. According to equipment sensitivity, different limits are applicable to different equipment, with broader quality control limits for less sensitive equipment. Electrical conductivity was measured using a variety of EC meters, turbidity was determined using a turbidity tube or turbidity meter, and orthophosphate was determined with a variety of visual comparators or a colorimeter.

Waterwatch coordinators and monitors provided multiple responses; using different equipment and these responses have been designated with a, b, c & d following the monitor code. In cases where a range was given for a particular answer, the average of the numbers was used in the results analysis (eg. 6-7 given a value of 6.5). Additionally where a qualifier was included, the value without the qualifier was analysed (eg. <80 was given a value of 80). Waterwatch coordinators and monitors tested for parameters that were relevant for their monitoring aims; therefore not all parameters were tested by all individuals.

Table 2: Quality limits and upper and lower limits for physico - chemical parameters.

Parameter	Quality Limits	Mystery Sample 1			Mystery Sample 2		
		Reference Value	Lower Limit	Upper Limit	Reference Value	Lower Limit	Upper Limit
EC ($\mu\text{S}/\text{cm}$)	$\pm 10\%$	730	660	800	4300	3900	4700
Turbidity (NTU) tube	$\pm 20\%$	40	30	50	100	80	120
Turbidity (NTU) meter	$\pm 20\%$	40	30.66	46.0	100	79.1	118.6
Orthophosphate mg/L as P comparator	$\pm 20\%$	0.11	0.09	0.15	0.30	0.22	0.34
Orthophosphate mg/L as P colorimeter	$\pm 20\%$	0.11	0.094	0.142	0.30	0.226	0.338

- The range for electrical conductivity for Mystery Sample 1 was rounded to the nearest ten (ie. 422 rounded to 420, 518 rounded to 520). The range electrical conductivity for Mystery Sample 2 was rounded to the nearest hundred (ie. 2520 rounded to 2500, 3080 rounded to 3100).
- The quality limit for the turbidity tube for Mystery Sample 2 is broader than Mystery Sample 1 to allow the range to include the nearest marked increments on the tube.

2.2 Macroinvertebrates

Macroinvertebrate “Mystery Samples” were used to test coordinators and monitors identification skills to family level taxonomic resolution. Macroinvertebrate “Mystery Samples” consisted of six macroinvertebrates (Table 3) identified by a qualified aquatic ecologist. Coordinators and monitors identified the macroinvertebrates at the class, order, family and common name level. Analysis of results was carried out on the order, family and common name level. When tallying results, a non-attempt at identification was interpreted as a row on the results sheet with all blank spaces and recorded as “No response”. An error included a misidentification or a blank space in a row where a partial identification attempt had been made (eg. common name recorded but blank space in family column). The term “% no response” is defined as the percentage of the total respondents. The family Ceinidae is also known as Hyalidae in some keys, and responses with this family were considered correct (Bradbury & Williams, 1999). Elmidae has formerly been known as Helminthidae and responses with this family were considered correct (Williams, 1980).

Table 3: Macroinvertebrate “Mystery Sample” taxa list.

Class	Order	Family	Common Name
Insecta	Odonata	Telephlebiidae	Dragonfly
Insecta	Trichoptera	Hydrobiosidae	Caddisfly
Insecta	Coleoptera	Elmidae (larvae)	Riffle beetle (larvae)
Insecta	Diptera	Culicidae	Mosquito larvae
Crustacea	Decapoda	Atyidae	Shrimp
Crustacea	Amphipoda	Ceinidae	Scud/Sideswimmer

3 Results

3.1 Physico – chemical parameters

Two hundred and twelve results sheets were received by Ecowise. The combined coordinator and monitor “Mystery Sample” results for each parameter are presented in Appendices A to F.

3.1.1 All participants

A summary of physico-chemical “Mystery Sample” results for all participants is presented in Table 4. The lowest percentage compliance was 46.3% (orthophosphate Sample 1 – colorimeter) and the highest, 88.3% (EC Sample 1). All median values fell within the acceptable range.

High compliancy was evident for electrical conductivity. EC Sample 1 (88.3%) had a higher percentage compliance than EC Sample 2 (83.0%).

Turbidity tubes were more commonly used than turbidity meters, with similar pass rates achieved between equipment types. The pass rate for turbidity Sample 2 using a meter (85.7%) was slightly higher than turbidity Sample 2 using a tube (74.7%).

There was a large difference between the percentage compliance using a comparator (78.1%) as opposed to a colorimeter (46.3%) for orthophosphate Sample 1. This trend is not evident for orthophosphate Sample 2.

3.1.2 Coordinators

A summary of physico-chemical “Mystery Sample” results for Waterwatch coordinators is presented in Table 5. The lowest percentage compliance was 55.6% (orthophosphate Sample 1 – colorimeter) and the highest 93.2% (EC Sample 1). Median values for all parameters except EC Sample 2 fell within the acceptable range of values.

Greater than 80% compliance was achieved for all parameters except orthophosphate Sample 2 – comparator and orthophosphate Sample 1 and 2 - colorimeter.

Coordinator percentage compliance for turbidity was higher using a tube than a meter for both Sample 1 and 2. Overall the percentage compliance for orthophosphate samples was lowest of all parameters, regardless of equipment used.

3.1.3 Monitors

A summary of the results of Waterwatch monitor physico-chemical “Mystery Samples” are presented in Table 6. All median values fell within the acceptable ranges. The highest percentage compliance was for the parameter turbidity Mystery Sample 2 - meter (89.5%). The lowest percentage compliance was for orthophosphate Sample 1 – colorimeter (43.8%). This was the lowest percentage compliance for any parameter in this program.

There was a large difference in the percentage compliance between turbidity Sample 1 and 2 using a meter (70% vs. 89.5% respectively). There was a higher percentage

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compliance for orthophosphate Sample 1 using a comparator (77.4%) than a colorimeter (43.8%).

Overall, Waterwatch coordinators generally achieved a higher percentage compliance than monitors, the exceptions being turbidity Sample 2 - meter, and orthophosphate Sample 2 - comparator & colorimeter. In these cases the monitors achieved a slightly higher percentage compliance.

Table 4: Physico - chemical “Mystery Samples,” all participants.

Parameter	No. tested	No. passed	% passed	Reference value	Minimum value recorded	Median value recorded	Maximum value recorded
EC 1	163	144	88.3	730	513	719	1374
EC 2	165	137	83.0	4300	470	4200	5200
Turbidity 1 tube	167	128	76.6	40	10	40	175
Turbidity 1 meter	36	27	75.0	40	12.9	39.85	55
Turbidity 2 tube	150	112	74.7	100	18	94	350
Turbidity 2 meter	35	30	85.7	100	63	101	138
Orthophosphate 1 comparator	137	107	78.1	0.11	0	0.11	3.6
Orthophosphate 1 colorimeter	41	19	46.3	0.11	0.01	0.11	0.9
Orthophosphate 2 comparator	103	63	61.2	0.30	0.04	0.3	9
Orthophosphate 2 colorimeter	33	23	69.7	0.30	0.08	0.3	1

Table 5: Physico - chemical “Mystery Samples,” coordinators.

Parameter	No. tested	No. passed	% passed	Reference value	Minimum value recorded	Median value recorded	Maximum value recorded
EC 1	44	41	93.2	730	600	730	800
EC 2	46	40	87.0	4300	3400	4170	4900
Turbidity 1 tube	29	27	93.1	40	32	40	52
Turbidity 1 meter	16	13	81.3	40	26.1	40.75	55
Turbidity 2 tube	30	26	86.7	100	60	91.5	150
Turbidity 2 meter	16	13	81.3	100	75	102.45	121
Orthophosphate 1 comparator	31	25	80.6	0.11	0.08	0.12	0.2
Orthophosphate 1 colorimeter	9	5	55.6	0.11	0.091	0.11	0.18
Orthophosphate 2 comparator	27	16	59.3	0.30	0.18	0.3	0.5
Orthophosphate 2 colorimeter	6	4	66.7	0.30	0.28	0.315	0.39

Table 6: Physico - chemical “Mystery Sample,” monitors.

Parameter	No. tested	No. passed	% passed	Reference value	Minimum value recorded	Median value recorded	Maximum value recorded
EC 1	119	103	86.6	730	513	712	1374
EC 2	119	97	81.5	4300	470	4200	5200
Turbidity 1 tube	138	101	73.2	40	10	40	175
Turbidity 1 meter	20	14	70.0	40	12.9	34.5	42.54
Turbidity 2 tube	120	86	71.1	100	18	95	350
Turbidity 2 meter	19	17	89.5	100	63	100	138
Orthophosphate 1 comparator	106	82	77.4	0.11	0	0.11	3.6
Orthophosphate 1 colorimeter	32	14	43.8	0.11	0.01	0.107	0.9
Orthophosphate 2 comparator	76	47	61.8	0.30	0.04	0.3	9
Orthophosphate 2 colorimeter	27	19	70.4	0.30	0.08	0.293	1

3.2 Macroinvertebrates

Ecowise Environmental received a total of 65 Macroinvertebrate “Mystery Sample” results sheets (Appendix G and Appendix H). The number of “No response” or non attempts was low (<7 for all families). All participants attempted to identify the Telephlebiidae dragon fly, with seven participants not attempting to identify the Ceinidae amphipod.

A summary of the macroinvertebrate results for all participants is presented in Table 7. At the order level, the percentage of correct responses was generally high, around or above 90%. At the family level, the percentage of correct responses was high for Atyidae (92.2%) and Culicidae (85.9%). The lowest percentage correct was for Telephlebiidae at 32.3%. At the common name level, participants correctly identified five of the six macroinvertebrates with a greater than 90% pass rate. The lowest percentage pass was for the riffle beetle larvae (76.6%), whilst a 100% success rate was achieved for shrimp.

Table 8 summarises the coordinator macroinvertebrate results and Table 9 presents the monitor results. The percentage correct response for coordinators was as high or higher for all levels of identification than monitors. Both coordinators and monitors achieved 100% pass rate at the common name level for shrimp.

Table 10 presents misidentifications at the family level. The highest percentage misidentification was for Ceinidae, misidentified as Paramelitidae (31.0%). Telephlebiidae was misidentified as Aeshnidae (18.5%), and Hydrobiosidae as Philopotamidae (17.5%).

Table 7: Macroinvertebrate “Mystery Samples,” all participants.

Order	% Correct	% Incorrect	Number No response	Family	% Correct	% Incorrect	Number No response	Common name	% Correct	% Incorrect	Number No response
Odonata	95.4	4.6	0	Telephlebiidae	32.3	67.7	0	Dragonfly	95.4	4.6	0
Trichoptera	90.5	9.5	2	Hydrobiosidae	38.1	61.9	2	Caddisfly	92.1	7.9	2
Coleoptera	76.7	23.3	5	Elmidae (larvae)	58.3	41.7	5	Riffle beetle (larvae)	76.7	23.3	5
Diptera	90.6	9.4	1	Culicidae	85.9	14.1	1	Mosquito larvae	95.3	4.7	1
Decapoda	98.4	1.6	1	Atyidae	92.2	7.8	1	Shrimp	100.0	0.0	1
Amphipoda	93.1	6.9	7	Ceinidae	36.2	63.8	7	Scud/Sideswimmer	93.1	6.9	7

Number respondents = 65.

Table 8: Macroinvertebrate “Mystery Sample,” coordinators.

Order	% Correct	% Incorrect	Number No response	Family	% Correct	% Incorrect	Number No response	Common name	% Correct	% Incorrect	Number No response
Odonata	100.0	0.0	0	Telephlebiidae	68.0	32.0	0	Dragonfly	96.0	4.0	0
Trichoptera	100.0	0.0	0	Hydrobiosidae	60.0	40.0	0	Caddisfly	100.0	0.0	0
Coleoptera	95.7	4.3	2	Elmidae (larvae)	82.6	17.4	2	Riffle beetle (larvae)	95.7	4.3	2
Diptera	100.0	0.0	0	Culicidae	100.0	0.0	0	Mosquito larvae	100.0	0.0	0
Decapoda	100.0	0.0	0	Atyidae	100.0	0.0	0	Shrimp	100.0	0.0	0
Amphipoda	96.0	4.0	0	Ceinidae	68.0	32.0	0	Scud/Sideswimmer	96.0	4.0	0

Number of coordinator respondents = 25.

Table 9: Macroinvertebrate “Mystery Samples,” monitors.

Order	% Correct	% Incorrect	Number No response	Family	% Correct	% Incorrect	Number No response	Common name	% Correct	% Incorrect	Number No response
Odonata	92.5	7.5	0	Telephlebiidae	10.0	90.0	0	Dragonfly	95.0	5.0	0
Trichoptera	84.2	15.8	2	Hydrobiosidae	23.7	76.3	2	Trichoptera	86.8	13.2	2
Coleoptera	64.9	35.1	3	Elmidae (larvae)	43.2	56.8	3	Riffle beetle (larvae)	64.9	35.1	3
Diptera	84.6	15.4	1	Culicidae	76.9	23.1	1	Mosquito larvae	92.3	7.7	1
Decapoda	97.4	2.6	1	Atyidae	87.2	12.8	1	Shrimp	100.0	0.0	1
Amphipoda	90.9	9.1	7	Ceinidae	12.1	87.9	7	Scud/Sideswimmer	90.9	9.1	7

Number monitors respondents = 40.

Table 10: Family Level Misidentification, all participants.

Family	Misidentification (% misidentified)	Misidentification (% misidentified)	Misidentification (% misidentified)
Telephlebiidae	Aeshnidae (18.5)	Gomphidae (12.3)	Corduliidae (7.7)
Hydrobiosidae	Philopotamidae (17.5)	Ecnomidae (7.9)	Leptoceridae (4.8)
Elmidae (larvae)	Ptilodactylidae (8.3)	Chironomidae (5.0)	
Culicidae	Chironomidae, Coenagrionidae, Orthocladiinae (1.6)		
Atyidae	No misidentification		
Ceinidae	Paramelitidae (31.0)		

4 References

Bradbury, and Williams, (1999), *Key to freshwater amphipods*, Technical Reports of the Australian Museum No. 14.

Williams, W.D., (1980), *Australian Freshwater Life-The Invertebrates of Australian Inland Waters*, Macmillan Education Australia PTY LTD, Melbourne.

5 Appendices

A Physico – chemical “Mystery Sample” results, all participants – EC.

Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
10	C	Mallee	10/06/2006	TD Scan 3 (Sample 1)/ WTW Multiline P3 (Sample 2)	710	Y	4120	Y
11	C	Mallee	15/06/2006	TD Scan 3 (Sample 1)/ WTW Multiline P3 (Sample 2)	740	Y	4080	Y
21b	C	Lower Wimmera	5/06/2006	EC Testr high			4500	Y
22	C	Lower Wimmera	6/06/2006	EC Scan high			3800	N
27c	C	Lower Wimmera	7/06/2006	EC Scan low	770	Y		
28a	C	Lower Wimmera	11/06/2006	EC Scan high	700	Y	4300	Y
28c	C	Lower Wimmera	11/06/2006	EC Scan high	800	Y	4300	Y
28d	C	Lower Wimmera	11/06/2006	EC Scan high	800	Y	4300	Y
28e	C	Lower Wimmera	11/06/2006	TD scan 4 Waterproof			4100	Y
030a	C	Wimmera Upper	16/06/2006	Eutech EC Scan low (Sample 1), Eutech TD Scan 4 (Sample 2)	730	Y	4900	N
030b	C	Wimmera Upper	16/06/2006	Eutech EC Scan high #?	700	Y	4300	Y
32	C	Wimmera Upper	16/06/2006	Eutech EC Scan Low #22	730	Y	4230	Y
33	C	Wimmera Upper	16/06/2006	Eutech EC Testr high #53	800	Y	4800	N
38	C	Wimmera	14/06/2006	Eutech EC Scan low (Sample 1), Eutech EC Scan high (Sample 2)	720	Y	4200	Y
48	C	Middle Wimmera	8/06/2006	EC Scan low (Sample 1), EC Scan high (sample 2)	730	Y	4100	Y
49	C	Wimmera	7/06/2006	Low Scan 2 (Sample 1) High Scan 2 (Sample 2)	710	Y	4100	Y
51	C	Wimmera	6/06/2006	EC high			4000	Y
60	C	North Central	8/06/2006	Hach Sension 5 HA02	712	Y	4110	Y
72	C	North Central	10/06/2006	Ecoscan EC Eutech	730	Y	4310	Y
81	C	North Central	9/06/2006	Ecoscan EC Eutech	730	Y	4300	Y
90a	C	Goulburn Broken	8/06/2006	TD Scan 20 ECTD 100	690	Y	4100	Y
90b	C	Goulburn Broken	8/06/2006	Aqua TPS meter cond/pH	700	Y	4110	Y
97	C	Goulburn Broken	9/06/2006	LaMotte pocket tester Tracer handheld EC meter	720	Y	4350	Y
100	C	Goulburn Broken	16/06/2006	TD Scan 20	719	Y	4100	Y
104a	C	Goulburn Broken	16/06/2006		711	Y	4190	Y
108a	C	Goulburn Broken	16/06/2006		709	Y	4190	Y
120	C	North East	13/06/2006	Eutech low EC meter	750	Y	4300	Y
121	C	North East	14/06/2006	Eutech low EC meter	750	Y	4300	Y
130a	C	East Gippsland	9/06/2006	TDS Tracer Pocket tester	730	Y	4120	Y
131a	C	East Gippsland	8/06/2006	TDS Tracer Pocket tester	730	Y	4120	Y
Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
160a	C	West Gippsland		TD Scan 20 (H)	700	Y	4150	Y
160b	C	West Gippsland		TD Scan 20 (L)	745	Y	3850	N
160c	C	West Gippsland		Hanna Combo HR	800	Y	4050	Y
160d	C	West Gippsland		TPS MC 81	650	N	4130	Y
181	C	West Gippsland	8/06/2006	Hanna Combo meter low range	694	Y		
193	C	West Gippsland	8/06/2006	Hanna Combo meter low range	613	N	3495	N
196	C	West Gippsland	9/06/2006	TDS conductivity meter	782	Y	4300	Y
197	C	West Gippsland	9/06/2006	WW144 Hanna HR	740	Y	4210	Y
204	C	Port Phillip	7/06/2006	TD Scan 3 Primary kit	740	Y		
207	C	Port Phillip	8/06/2006	EC Scan low	730	Y		
213	C	Port Phillip	8/06/2006	TD Scan 3	740	Y		
255	C	Port Phillip	11/06/2006	EC Scan high	800	Y	4200	Y
270b	C	Corangamite	14/06/2006	Eutech EC testr high			4200	Y
271	C	Corangamite	14/06/2006				4100	Y
272	C	Corangamite	15/06/2006	Eutech EC testr high			4100	Y
273	C	Corangamite	16/06/2006	EC Scan high 0-19.90	600	N	3400	N
274b	C	Corangamite	14/06/2006	Eutech EC testr high			4200	Y
310a	C	Glenelg-Hopkins	5/06/2006	EC Testr high	700	Y	4100	Y
310b	C	Glenelg-Hopkins	5/06/2006	TD Scan 20	683	Y	4110	Y

320	C	Glenelg Hopkins-Portland Coast	17/06/2006	TD Scan 3 (Sample 1), EC Scan high (sample 2)	740	Y	4500	Y
321	C	Glenelg Hopkins	15/06/2006	Eutech Instruments EC Scan high 0-19.90mS	700	Y	4400	Y
331	C	Central Highlands	9/06/2006	TD Scan 20	690	Y		
014	M	Mallee	15/06/2006	Tracer Pocket tester (pH TDS)	758	Y	4350	Y
015	M	Mallee	16/06/2006	TD Scan 20	710	Y		
20a	M	Lower Wimmera	5/06/2006	EC Scan high			4000	Y
20b	M	Lower Wimmera	5/06/2006	TD Scan 20	697	Y	4200	Y
21a	M	Lower Wimmera	5/06/2006	EC Scan high			4000	Y
21c	M	Lower Wimmera	5/06/2006	Hanna EC/TDS			4300	Y
23	M	Lower Wimmera	7/06/2006	EC Scan low	780	Y		
24a	M	Lower Wimmera	7/06/2006	TD Scan 4			4200	Y
24b	M	Lower Wimmera	7/06/2006	EC Scan high			4900	N
24c	M	Lower Wimmera	7/06/2006	EC Scan high			4200	Y
25a	M	Lower Wimmera	11/06/2006	TDSscan 4 small yellow dot			4300	Y
25b	M	Lower Wimmera	11/06/2006	EC Scan high			4100	Y
Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
26a	M	Lower Wimmera	7/06/2006	EC Scan low	700	Y		
26b	M	Lower Wimmera	7/06/2006	TD Scan 4 Waterproof			4100	Y
26c	M	Lower Wimmera	7/06/2006	TD Scan 4			3900	Y
27a	M	Lower Wimmera	7/06/2006	LC 81	687	Y	3770	N
27b	M	Lower Wimmera	7/06/2006	EC Scan high			4100	Y
031	M	Wimmera Upper	15/06/2006	Eutech EC Scan high #8	700	Y	3900	Y
039	M	Wimmera	6/06/2006	Eutech EC Scan high	700	Y	4200	Y
039b	M	Wimmera	6/06/2006	Ejtech EC Scan low	750	Y		
040	M	Wimmera	6/06/2006	Eutech TD sCan 4	700	Y	4000	Y
041	M	Wimmera	7/06/2006	Eutech EC Scan high			3700	N
042a	M	Wimmera	7/06/2006	Eutech EC Scan high	700	Y	3900	Y
042b	M	Wimmera	7/06/2006	Eutech EC Scan high	700	Y	4100	Y
043a	M	Wimmera	7/06/2006	Eutech EC Scan high	700	Y	4300	Y
043b	M	Wimmera	8/06/2006	Eutech EC Scan high	700	Y	4500	Y
044	M	Wimmera	14/06/2006	Eutech EC Scan high	700	Y	3900	Y
047	M	Wimmera	23/06/2006	Eutech EC Scan high	700	Y	4200	Y
049	M	Middle Wimmera	6/06/2006	EC Scan low	720	Y		
050	M	Middle Wimmera	6/06/2006	EC Scan high			4100	Y
052	M	Wimmera	6/06/2006	EC Scan low	730	Y	3900	Y
053	M	Middle Wimmera	6/06/2006	EC Scan high 0to19.90mS			4100	Y
054	M	Middle Wimmera	13/06/2006	EC Scan low	850	N		
055	M	Middle Wimmera	13/06/2006	EC Scan low	710	Y		
056c	M	Middle Wimmera	8/06/2006	Eutech EC Scan low (1) high (2)	730	Y	4000	Y
058	M	Middle Wimmera	8/06/2006	EC Scan low	730	Y	4000	Y
061	M	North Central	8/06/2006	Ecoscan Con 6	704	Y	4210	Y
062	M	North Central	8/06/2006	Tracer	708	Y	4140	Y
063	M	North Central	8/06/2006	Tracer	719	Y	4170	Y
064	M	North Central	8/06/2006	Tracer	722	Y	4170	Y
065	M	North Central	8/06/2006	Tracer TR039	744	Y	3690	N
066	M	North Central	8/06/2006	Tracer	705	Y	4150	Y
067	M	North Central	9/06/2006	Hanna instrument	700	Y	4100	Y
068	M	North Central	14/06/2006	Tracer	687	Y	3921	Y
069	M	North Central	14/06/2006	EC/TDS Dist Hanna	1000	N	4240	Y
70	M	North Central	16/06/2006	Tracer EC	716	Y		
71	M	North Central	6/06/2006	Tracer TR037	600	N		
Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
73	M	North Central	8/06/2006	Tracer TRO29	736	Y	3540	N
74	M	North Central	10/06/2006	Tracer	725	Y		
75	M	North Central	10/06/2006	Tracer TR030	724	Y		
76	M	North Central	19/06/2006	Tracer EC	725	Y		

77	M	North Central	10/06/2006	Tracer TR11	1374	N	4380	Y
78	M	North Central	10/06/2006	La Motte Tracer TR15			4220	Y
79	M	North Central	10/06/2006	Tracer Tr045	757	Y		
80	M	North Central	June	Tracer pocket meter	717	Y		
91	M	Goulburn Broken	16/06/2006	Tracer Pocket tester	720	Y	4060	Y
102	M	Goulburn Broken	16/06/2006	Tracer	757	Y	4640	Y
124	M	North East	12/6/6	Eutech low EC meter	740	Y	4200	Y
125	M	North East	15/06/2006	Eutech low EC meter	780	Y	4620	Y
126	M	North East	20/06/2006	Eutech TD Scan 3 low EC meter (1) high (2)	670	Y	4220	Y
132	M	East Gippsland	16/06/2006	Tracer TDs Scan			4260	Y
133	M	East Gippsland					4300	Y
134	M	East Gippsland			745	Y		
136	M	East Gippsland	10/06/2006	Standard TDSscan 20 tester Eytech instruments	713	Y		
138	M	East Gippsland	13/06/2006	Tracer Pocket tester			4620	Y
139	M	East Gippsland		TD Scan 20			4200	Y
140	M	East Gippsland	10/06/2006	TD Scan 20			3910	Y
142	M	East Gippsland					4000	Y
146	M	East Gippsland		TD Scan 20			3530	N
147	M	East Gippsland		Tracer Pocket Tester CF 103321			4300	Y
166	M	West Gippsland	15/06/2006	TD Scan 20	680	Y		
171b	M	West Gippsland	8/06/2006	Eutech TDS Scan 2	770	Y		
178	M	West Gippsland	11/06/2006	Hanna HI 98129 WW150	656	N		
179	M	West Gippsland	8/06/2006	Hanna Combo Meter low range HI 198129 WW 161	660	Y		
182	M	West Gippsland	10/06/2006	Hanna HI 98129 WW113	522	N		
183	M	West Gippsland	10/06/2006	Hanna HI 98129 WW113	513	N		
184	M	West Gippsland	13/06/2006	Hanna Combo Meter low range	712	Y		
185	M	West Gippsland	6/06/2006	Hanna Combo Meter low range	644	N		
186	M	West Gippsland	6/06/2006	Hanna Combo Meter low range	644	N		
187	M	West Gippsland	6/06/2006	Hanna Combo Meter low range	581	N		
188	M	West Gippsland	8/06/2006	Hanna Combo Meter low range	603	N		
189	M	West Gippsland	12/06/2006	Hanna Combo Meter low range	565	N		
Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
198	M	West Gippsland		Hanna meter Combo HI 998129	597	N		
199	M	West Gippsland	18/06/2006		747	Y	3999	Y
201	M	Port Phillip	6/06/2006	TD Scan 3	740	Y		
202	M	Port Phillip	6/06/2006	TD Scan 3	670	Y		
203	M	Port Phillip	6/06/2006	EC Scan low 0 to 19.90	700	Y		
206	M	Port Phillip	6/06/2006	Conductivity meter EC Scan	685	Y		
208	M	Port Phillip	8/06/2006	EC meter 205	730	Y		
209	M	Port Phillip	8/06/2006		700	Y		
210	M	Port Phillip	8/06/2006	EC Scan low pocket meter	780	Y		
211	M	Port Phillip	8/06/2006	EC Scan pocket meter low	750	Y		
212	M	Port Phillip	12/06/2006	Eutech instruments Waterproof scan low	740	Y		
221	M	Port Phillip & Western port	7/06/2006	TD Scan 3	710	Y	4160	Y
222	M	Port Phillip & Western port	3/06/2006	EC Scan low	740	Y	4380	Y
223	M	Port Phillip & Western port	3/06/2006	EC Scan low	740	Y	4360	Y
224	M	Port Phillip & Western port	5/06/2006	EC Scan low	700	Y	4250	Y
225	M	Port Phillip & Western port	8/06/2006	EC Scan low	720	Y	3840	N
226	M	Port Phillip & Western port	7/06/2006	TD Scan 3	740	Y	4400	Y
227	M	Port Phillip & Western port	4/06/2006	EC Scan low	690	Y	4840	N
228	M	Port Phillip & Western port	8/06/2006	Eutech TD Scan 20	703	Y	3870	N
230	M	Port Phillip & Western port	7/06/2006	TD Scan 3	750	Y	4400	Y
231a	M	Port Phillip & Western port	7/06/2006	TD Scan 20	690	Y	4200	Y
236	M	Port Phillip	8/06/2006	Eutech EC Scan high			4400	Y
238	M	Port Phillip	7/06/2006	EC Scan high Eutech			4400	Y
239	M	Port Phillip	7/06/2006	EC Scan high0-19.9	900	N	4100	Y
240	M	Port Phillip	7/06/2006	EC Scan hi Eutech	1000	N	5200	N

241	M	Port Phillip	7/06/2006	Eutech EC Scan high			4400	Y
245a	M	Port Phillip	11/06/2006				4400	Y
245b	M	Port Phillip	5/06/2006				4400	Y
246	M	Port Phillip	5/06/2006				4400	Y
247	M	Port Phillip	5/06/2006				4400	Y
248	M	Port Phillip	5/06/2006				4400	Y
249	M	Port Phillip	7/06/2006				4400	Y
250b	M	Port Phillip	5/06/2006				4400	Y
251	M	Port Phillip	15/06/2006	Eutech/Oakton Instruments EC Testr high	900	N	5000	N
252a	M	Port Phillip	8/06/2006	Dist Hanna	780	Y	3950	Y
Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
253	M	Port Phillip	8/06/2006	meter	700	Y	4200	Y
254	M	Port Phillip	9/06/2006		800	Y	4300	Y
269	M	Port Phillip	7/06/2006	EC Scan high Eutech			4300	Y
275	M	Corangamite	14/06/2006	TD Scan 4			3600	N
277	M	Corangamite	15/06/2006	TD Scan 4	700	Y	3600	N
278	M	Corangamite	12/06/2006	TD Scan 4			4300	Y
279	M	Corangamite		TD Scan 4			4200	Y
280	M	Corangamite	11/06/2006	EC Scan high Eutech			4200	Y
281	M	Corangamite	13/06/2006	TD Scan 4 0-19.9	700	Y		
282	M	Corangamite	15/06/2006	TD Scan	700	Y	4000	Y
285	M	Corangamite	13/06/2006	TD Scan 4 #2	700	Y	3600	N
286	M	Corangamite	8/06/2006	TD Scan 4	800	Y	3800	N
287	M	Corangamite	8/06/2006	TD Scan 4	800	Y	3800	N
288	M	Corangamite	14/06/2006	EC Scan no 52	800	Y	4700	Y
289	M	Corangamite	9/06/2006	Waterproof Ec Scan high No.39 GWPS			470	N
292	M	Corangamite	14/06/2006	Tracer pocket tester	724	Y	4400	Y
293	M	Corangamite	13/06/2006	EC Testa High No. 93			3600	N
294	M	Corangamite	9/06/2006	TD Scan 4 0-19.90mS/cm	700	Y	4200	Y
295a	M	Corangamite	15/06/2006	Jenco model 103	780	Y	4340	Y
295b	M	Corangamite	15/06/2006	Ec Scan low	720	Y	4300	Y
300	M	Corangamite	14/06/2006	EC Scan high 0-19.9	700	Y	4100	Y
302	M	Corangamite	8/06/2006		700	Y	3700	N
305	M	Corangamite	15/06/2006	TD Scan 4	700	Y	3700	Y
306	M	Corangamite	13/06/2006	Eutech instrument TD Scan 4	700	Y	4000	Y
309	M	Corangamite	13/06/2006	TD Scan 4 #2	700	Y	3600	N
311	M	Glenelg Hopkins	9/06/2006	Hanna dIST 6	720	Y	4200	Y
312a	M	Glenelg Hopkins	5/06/2006	Hanna dIST6 meter	780	Y	4260	Y
312b	M	Glenelg Hopkins	5/06/2006					
313a	M	Glenelg Hopkins	5/06/2006	TD Scan 20	719	Y	3740	N
314	M	Glenelg Hopkins	7/06/2006	EC Tester	800	Y	4200	Y
315	M	Glenelg-Hopkins Portland Coast	14/06/2006	TD Scan 20	710	Y	4300	Y
316	M	Glenelg-Hopkins Portland Coast	16/06/2006	TD Scan 20	800	Y	4700	Y
Code	Coordinator/ Monitor	Region	Date	EC instrument	MS 1 result	Met	MS 2 result	Met
317	M	Glenelg-Hopkins Portland Coast	21/06/2006	TD Scan 20	660	Y	3910	Y
318	M	Glenelg-Hopkins Portland Coast	19/06/2006	Eutech Ec Testr	800	Y	4900	N
322	M	Glenelg Hopkins	19/06/2006	Eutech Instruments EC Scan high 0-19.90 (#2)	800	Y	4400	Y
325	M	Glenelg Hopkins	16/06/2006	Eutech EC Testr (Waterproof)	800	Y	4700	Y
326	M	Glenelg Hopkins	20/06/2006	TD Scan 20	800	Y	4200	Y
328a	M	Glenelg Hopkins	20/06/2006	Hanna dist 6	680	Y	4310	Y
328b	M	Glenelg Hopkins	21/06/2006	Eutech EC Testr	700	Y	4400	Y
329	M	Glenelg Hopkins	20/06/2006	Hanna dist6	700	Y	4110	Y

330	M	Central Highlands	7/06/2006	TD Scan 20	704	Y	4060	Y
332	M	Central Highlands	9/06/2006	TD Scan 20	680	Y		
333	M	Central Highlands	9/06/2006	TD Scan 21	740	Y	4500	Y

B Physico - chemical "Mystery Sample" results, all participants - turbidity tube.

Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
10	C	Mallee	10/06/2006	Tube	35	Y	85	Y
11	C	Mallee	15/06/2006	Tube	48	Y	100	Y
21b	C	Lower Wimmera	5/06/2006	Tube	45	Y	100	Y
22	C	Lower Wimmera	6/06/2006	Tube	50	Y	150	N
27c	C	Lower Wimmera	7/06/2006	Tube			90	Y
28a	C	Lower Wimmera	11/06/2006	Tube	35	Y	90	Y
28b	C	Lower Wimmera	11/06/2006	Tube	35	Y	90	Y
28d	C	Lower Wimmera	11/06/2006	Tube	40	Y	95	Y
030a	C	Wimmera Upper	16/06/2006	Tube	32	Y	95	Y
030b	C	Wimmera Upper	16/06/2006	Tube	32	Y	100	Y
32	C	Wimmera Upper	16/06/2006	Tube	33	Y	95	Y
33	C	Wimmera Upper	16/06/2006	Tube	32	Y	100	Y
38	C	Wimmera	14/06/2006	Tube	46	Y	115	Y
48	C	Middle Wimmera	8/06/2006	Tube	35	Y	90	Y
108b	C	Goulburn Broken	16/06/2006	Tube	42	Y	93	Y
121	C	North East	14/06/2006	Tube	32	Y	77	N
130a	C	East Gippsland	9/06/2006	Tube	52	N	110	Y
131a	C	East Gippsland	8/06/2006	Tube	52	N	110	Y
160a	C	West Gippsland		Tube	50	Y	125	N
181	C	West Gippsland	8/06/2006	Tube	40	Y	90	Y
193	C	West Gippsland	8/06/2006	Tube	40	Y	90	Y
204	C	Port Phillip	7/06/2006	Primary kit	40	Y	80	Y
207	C	Port Phillip	8/06/2006	Tube	40	Y	80	Y
213	C	Port Phillip	8/06/2006	Tube	40	Y	80	Y
255	C	Port Phillip	11/06/2006	Tube	40	Y	60	N
270b	C	Corangamite	14/06/2006	Tube	40	Y	80	Y
274b	C	Corangamite	14/06/2006	Tube	40	Y	80	Y
320	C	Glenelg Hopkins-Portland Coast	17/06/2006	Tube	40	Y	100	Y
321	C	Glenelg Hopkins	15/06/2006	Tube	40	Y	80	Y
331	C	Central Highlands	9/06/2006	Tube	40	Y	100	Y
014	M	Mallee	15/06/2006	Tube	52	N	100	Y
015	M	Mallee	16/06/2006	Tube	38	Y	90	Y
Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
20a	M	Lower Wimmera	5/06/2006	Tube	80	N	300	N
21a	M	Lower Wimmera	5/06/2006	Tube	50	Y	100	Y
21c	M	Lower Wimmera	5/06/2006	Tube	40	Y	100	Y
23	M	Lower Wimmera	7/06/2006	Tube	20	N	120	Y
24b	M	Lower Wimmera	7/06/2006	Tube	50	Y	90	Y
24c	M	Lower Wimmera	7/06/2006	Tube	50	Y	100	Y
25a	M	Lower Wimmera	11/06/2006	Tube	47	Y	95	Y
25b	M	Lower Wimmera	11/06/2006	Tube	52	N	100	Y
26a	M	Lower Wimmera	7/06/2006	Tube	40	Y	100	Y
26b	M	Lower Wimmera	7/06/2006	Tube	45	Y	110	Y
26c	M	Lower Wimmera	7/06/2006	Tube	39	Y	110	Y
27a	M	Lower Wimmera	7/06/2006	Tube	55	N	110	Y
27b	M	Lower Wimmera	7/06/2006	Tube	29	N	70	N
031	M	Wimmera Upper	15/06/2006	Tube	34	Y	110	Y
039	M	Wimmera	6/06/2006	Tube	47	Y	115	Y
039b	M	Wimmera	6/06/2006	Tube	50	Y	160	N
040	M	Wimmera	6/06/2006	Tube	46	Y	120	Y
041	M	Wimmera	7/06/2006	Tube	48	Y	120	Y
042a	M	Wimmera	7/06/2006	Tube	50	Y	120	Y
042b	M	Wimmera	7/06/2006	Tube	45	Y	111	Y

043a	M	Wimmera	7/06/2006	Tube	50	Y	150	N
043b	M	Wimmera	8/06/2006	Tube	50	Y	110	Y
044	M	Wimmera	14/06/2006	Tube	44	Y	110	Y
047	M	Wimmera	23/06/2006	Tube	43	Y	110	Y
049	M	Middle Wimmera	6/06/2006	Tube	31	Y		
050	M	Middle Wimmera	6/06/2006	Tube	80	N		
052	M	Wimmera	6/06/2006	Tube	33	Y		
053	M	Middle Wimmera	6/06/2006	Tube	50	Y		
054	M	Middle Wimmera	13/06/2006	Tube	34	Y		
055	M	Middle Wimmera	13/06/2006	Tube	35	Y		
056c	M	Middle Wimmera	8/06/2006	Tube	40	Y	85	Y
061	M	North Central	8/06/2006	Tube	36	Y	65	N
062	M	North Central	8/06/2006	Tube	50	Y	65	N
063	M	North Central	8/06/2006	Tube	35	Y	62	N
064	M	North Central	8/06/2006	Tube	25	N	60	N
Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
065	M	North Central	8/06/2006	Tube	36	Y	65	N
066	M	North Central	8/06/2006	Tube	25	N	80	Y
067	M	North Central	9/06/2006	Tube	32	Y	78	N
068	M	North Central	14/06/2006	Tube	35	Y	90	Y
069	M	North Central	14/06/2006	Tube	25	N	100	Y
70	M	North Central	16/06/2006	Tube	25	N		
71	M	North Central	6/06/2006	Tube	37	Y	79	N
73	M	North Central	8/06/2006	Tube	37	Y	70	N
74	M	North Central	10/06/2006	Tube	55	N		
75	M	North Central	10/06/2006	Tube	33	Y	80	Y
76	M	North Central	19/06/2006	Tube	39.5	Y		
77	M	North Central	10/06/2006	Tube	31	Y	75	N
79	M	North Central	10/06/2006	Tube	38	Y		
80	M	North Central	June	Tube	35	Y		
91	M	Goulburn Broken	16/06/2006	Tube	30	Y	60	N
92	M	Goulburn Broken	8/06/2006	Tube	48	Y	110	Y
93	M	Goulburn Broken	10/06/2006	Tube	45	Y	100	Y
102	M	Goulburn Broken	16/06/2006	Tube	52	N	120	Y
106	M	Goulburn Broken	16/06/2006	Tube	50	Y		
124	M	North East	12//6/6	Tube	35	Y	70	N
125	M	North East	15/06/2006	Tube	33	Y	82	Y
126	M	North East	20/06/2006	Tube	35	Y	84	Y
134	M	East Gippsland		Tube	35	Y	60	N
136	M	East Gippsland	10/06/2006	Tube	40	Y	100	Y
138	M	East Gippsland	13/06/2006	Tube	35	Y	80	Y
139	M	East Gippsland		Tube	26	N	70	N
142	M	East Gippsland		Tube	52	N	110	Y
146	M	East Gippsland		Tube	40	Y	100	Y
147	M	East Gippsland		Tube	45	Y	85	Y
199	M	West Gippsland	18/06/2006	Tube	27	N	36	N
140	M	East Gippsland	10/06/2006	Tube	39	Y	90	Y
145	M	East Gippsland	13/06/2006	Tube	50	Y	130	N
161	M	West Gippsland	21/06/2006	Tube	50	Y	120	Y
166	M	West Gippsland	15/06/2006	Tube	35	Y	80	Y
171b	M	West Gippsland	8/06/2006	Tube	50	Y	100	Y
Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
178	M	West Gippsland	11/06/2006	Tube	55	N	100	Y
179	M	West Gippsland	8/06/2006	Tube	48	Y	95	Y
182	M	West Gippsland	10/06/2006	Tube	38	Y	82	Y
183	M	West Gippsland	10/06/2006	Tube	35	Y	80	Y

184	M	West Gippsland	13/06/2006	Tube	40	Y	90	Y
185	M	West Gippsland	6/06/2006	Tube	40	Y	73	N
186	M	West Gippsland	6/06/2006	Tube	38	Y	82	Y
187	M	West Gippsland	6/06/2006	Tube	40	Y	88	Y
188	M	West Gippsland	8/06/2006	Tube	36	Y	82	Y
189	M	West Gippsland	12/06/2006	Tube	28	N	110	Y
198	M	West Gippsland		Tube	39	Y	99	Y
201	M	Port Phillip	6/06/2006	Tube			80	Y
202	M	Port Phillip	6/06/2006	Tube	20	N		
203	M	Port Phillip	6/06/2006	Tube	10	N		
206	M	Port Phillip	6/06/2006	Tube	25	N		
208	M	Port Phillip	8/06/2006	Tube	60	N	150	N
209	M	Port Phillip	8/06/2006	Tube	40	Y		
210	M	Port Phillip	8/06/2006	Tube	36	Y	80	Y
211	M	Port Phillip	8/06/2006	Tube	70	N		
212	M	Port Phillip	12/06/2006	Tube	30	Y	60	N
221	M	Port Phillip & Western port	7/06/2006	Tube	50	Y	150	N
225	M	Port Phillip & Western port	8/06/2006	Tube	45	Y	100	Y
227	M	Port Phillip & Western port	4/06/2006	Tube	85	N	175	N
229	M	Port Phillip & Western port	13/06/2006	Tube	34	Y	95	Y
231b	M	Port Phillip & Western port	7/06/2006	Tube	55	N	110	Y
232	M	Port Phillip & Western port	9/06/2006	Tube	53	N	105	Y
236	M	Port Phillip	8/06/2006	Tube	40	Y	80	Y
238	M	Port Phillip	7/06/2006	Tube	40	Y	80	Y
239	M	Port Phillip	7/06/2006	Tube	50	Y	100	Y
240	M	Port Phillip	7/06/2006	Tube	45	Y	90	Y
241	M	Port Phillip	7/06/2006	Tube	40	Y	80	Y
245a	M	Port Phillip	11/06/2006	Tube	40	Y	80	Y
246	M	Port Phillip	5/06/2006	Tube	40	Y	100	Y
248	M	Port Phillip	5/06/2006	Tube	35	Y	97	Y
250a	M	Port Phillip	5/06/2006	Tube	40	Y	80	Y
Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
250c	M	Port Phillip	5/06/2006	Tube	38	Y	80	Y
251	M	Port Phillip	15/06/2006	Tube	30	Y	80	Y
252b	M	Port Phillip	8/06/2006	Tube	43	Y	87	Y
253	M	Port Phillip	8/06/2006	Tube	22	N	18	N
254	M	Port Phillip	9/06/2006	Tube	30	Y	60	N
280	M	Corangamite	11/06/2006	Tube	34	Y		
281	M	Corangamite	13/06/2006	Tube	30	Y	60	N
282	M	Corangamite	15/06/2006	Tube	35	Y	90	Y
286	M	Corangamite	8/06/2006		37	Y	97	Y
287	M	Corangamite	8/06/2006		37	Y	97	Y
288	M	Corangamite	14/06/2006		25	N	60	N
292	M	Corangamite	14/06/2006	Tube	18	N	26	N
293	M	Corangamite	13/06/2006		40	Y	90	Y
295a	M	Corangamite	15/06/2006	Tube	38	Y	90	Y
299	M	Corangamite			30	N	125	N
300	M	Corangamite	14/06/2006	Tube	175	N	350	N
302	M	Corangamite	8/06/2006		45	Y	90	Y
305	M	Corangamite	15/06/2006		40	Y	93	Y
306	M	Corangamite	13/06/2006		60	N	100	Y
309	M	Corangamite	13/06/2006		41	Y	99	Y
311	M	Glenelg Hopkins	9/06/2006	Tube	40	Y	90	Y
312a	M	Glenelg Hopkins	5/06/2006	Tube	60	N	150	N
313a	M	Glenelg Hopkins	5/06/2006	Tube	50	Y	100	Y
314	M	Glenelg Hopkins	7/06/2006	Tube	40	Y	100	Y
315	M	Glenelg-Hopkins Portland Coast	14/06/2006	Tube	60	N	120	Y

316	M	Glenelg-Hopkins Portland Coast	16/06/2006	Tube	90	N	100	Y
317	M	Glenelg-Hopkins Portland Coast	21/06/2006	Tube	40	Y	80	Y
318	M	Glenelg-Hopkins Portland Coast	19/06/2006	Tube	80	N	150	N
322	M	Glenelg Hopkins	19/06/2006	Tube	30	Y	60	N
330	M	Central Highlands	7/06/2006	Tube	60	N	100	Y
332	M	Central Highlands	9/06/2006	Tube	40	Y	100	Y
333	M	Central Highlands	9/06/2006	Tube	40	Y		

C Physico-chemical “Mystery Sample” results, all participant results - Turbidity meter.

Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
60	C	North Central	8/06/2006	La Motte Turbidity meter	26.1	N	99.1	Y
72	C	North Central	10/06/2006	Hach Turbidity meter 2100P	40	Y	105	Y
81	C	North Central	9/06/2006	Hach 2100P	40.3	Y	104	Y
90b	C	Goulburn Broken	8/06/2006	2100P Hach Turbidimeter	45	Y	108	Y
97	C	Goulburn Broken	9/06/2006	Merck Turbiquant 100 IR Turbidity meter	40	Y	96	Y
100	C	Goulburn Broken	16/06/2006	Turbiquant 1000 IR (merk)	45.9	Y	107.7	Y
104a	C	Goulburn Broken	16/06/2006		39.7	Y	94.3	Y
108a	C	Goulburn Broken	16/06/2006	Meter	34.5	Y	90.1	Y
120	C	North East	13/06/2006	Turbidity meter	33	Y	75	N
130b	C	East Gippsland	9/06/2006	Turbiquant meter	42.96	Y	101.9	Y
131b	C	East Gippsland	8/06/2006	Turbiquant	42.96	Y	101.9	Y
196	C	West Gippsland	9/06/2006	Hach 2100P turbidimeter	40.1	Y	97.8	Y
271	C	Corangamite	14/06/2006	Hach Dr 890 Colorimeter	43	Y	119	N
272	C	Corangamite	15/06/2006	Hach 890 Colorimeter	48	N	114	Y
273	C	Corangamite	16/06/2006	Hach Unit DR890 Colorimeter	55	N	121	N
310b	C	Glenelg-Hopkins	5/06/2006	Eutech Turbidimeter TN-100	41.2	Y	103	Y
058	M	Middle Wimmera	8/06/2006	Turbiquant (10001R)	42.54	Y	103.3	Y
78	M	North Central	10/06/2006	Smart colorimeter	30	N		
222	M	Port Phillip & Western port	3/06/2006	Smart 1 colorimeter	25	N	80	Y
223	M	Port Phillip & Western port	3/06/2006	Smart 1 colorimeter	25	N	83	Y
224	M	Port Phillip & Western port	5/06/2006	DC 1600 Colorimeter	37.4	Y	90.8	Y
226	M	Port Phillip & Western port	7/06/2006	Smart 2 colorimeter	34	Y	81	Y
228	M	Port Phillip & Western port	8/06/2006	La Motte Smart colorimeter	42	Y	97	Y
230	M	Port Phillip & Western port	7/06/2006	Smart 2 colorimeter	33	Y	84	Y
231a	M	Port Phillip & Western port	7/06/2006	Colorimeter DC 1600	12.9	N	97.2	Y
245b	M	Port Phillip	5/06/2006	Colorimeter Lamotte Smart 2	37	Y	101	Y
247	M	Port Phillip	5/06/2006	Smart 2 colorimeter	34	Y	98	Y
249	M	Port Phillip	7/06/2006	Smart 2	35	Y	63	N
250b	M	Port Phillip	5/06/2006	Smart 2 Colorimeter	42	Y	109	Y
252a	M	Port Phillip	8/06/2006	Colorimeter	40	Y	101	Y
275	M	Corangamite	14/06/2006	Hach DR 890 colorimeter	28	N	138	N
277	M	Corangamite	15/06/2006	Hach DR 890 colorimeter	33	Y	102	Y
Code	Coordinator/ Monitor	Region	DATE	Turb instrument	MS 1 result	Met	MS2 result	Met
278	M	Corangamite	12/06/2006	Hach DR 890 colorimeter	27	N	102	Y
279	M	Corangamite		Abscorbic method	42	Y	103	Y
285	M	Corangamite	13/06/2006	Hach colorimeter #9 s/n 980690002696	38	Y	102	Y
312b	M	Glenelg Hopkins	5/06/2006	Eutech Turbidimeter	40.2	Y	100	Y

D Physico-chemical “Mystery Samples” results, all participants - Orthophosphate comparator.

Code	Coordinator/ Monitor	Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
10	C	Mallee	10/06/2006	Visocolor HE Phosphat test 0.01-0.25 (Sample 1) 0.05-1.00 (Sample 2)	0.1	Y	0.4	N
11	C	Mallee	15/06/2006	Visocolor HE Phosphat test 0.01-0.25 (Sample 1) 0.05-1.00 (Sample 2)	0.1	Y	0.4	N
21b	C	Lower Wimmera	5/06/2006	Visocolor HE for kit 28	0.15	Y	0.4	N
22	C	Lower Wimmera	6/06/2006	Visocolor HE for kit 30	0.15	Y	0.3	Y
28a	C	Lower Wimmera	11/06/2006	Visocolor HE	0.15	Y	0.3	Y
030a	C	Wimmera Upper	16/06/2006	Visocolor HE Phosphat Tests (DEV) Exp 8/06	0.15	Y	0.3	Y
030b	C	Wimmera Upper	16/06/2006	Visocolor HE Phosphat Tests (DEV) Exp 8/06	0.15	Y	0.4	N
32	C	Wimmera Upper	16/06/2006	Visocolor HE Phosphat Tests (DEV) Exp 9/07	0.125	Y	0.3	Y
33	C	Wimmera Upper	16/06/2006	Visocolor HE Phosphat Tests (DEV) Exp 8/06	0.15	Y	0.3	Y
38	C	Wimmera	14/06/2006	Machery Nagel Visocolor	0.14	Y	0.4	N
48	C	Middle Wimmera	8/06/2006	Visocolor HE	0.17	N	0.3	Y
51	C	Wimmera	6/06/2006	Visocolor HE Phosphat 0.01-0.25 mg/L	0.15	Y		
72	C	North Central	10/06/2006	Visocolor HE	0.175	N		
81	C	North Central	9/06/2006	Visocolor HE low	0.17	N		
90b	C	Goulburn Broken	8/06/2006	aququant merk OPAQQ100	0.11	Y	0.24	Y
100	C	Goulburn Broken	16/06/2006	Merk phosphate test kit	0.08	N	0.32	Y
120	C	North East	13/06/2006	Visocolor Reactive phosphorus	0.12	Y	0.36	N
121	C	North East	14/06/2006	Visocolor Reactive phosphorus	0.12	Y	0.36	N
130a	C	East Gippsland	9/06/2006	Aquaquant Merck P. kit	0.11	Y	0.28	Y
131a	C	East Gippsland	8/06/2006	Aquaquant Merck Phosphate test	0.08	N	0.22	Y
160a	C	West Gippsland		Merk kit (low), Merk kit high	0.13	Y	0.32	Y
181	C	West Gippsland	8/06/2006	Merck Aquaquant low range expiry 31/3/8	0.11	Y	0.28	Y
193	C	West Gippsland	8/06/2006	Merck Aquaquant low range expiry 31/3/8	0.11	Y	0.28	Y
197	C	West Gippsland	9/06/2006		0.11	Y	0.22	N
255	C	Port Phillip	11/06/2006	Colour comparator Visocolor HE 0.01-0.25	0.15	Y	0.4	N
270b	C	Corangamite	14/06/2006	Aquaquant	0.11	Y	0.3	Y
274b	C	Corangamite	14/06/2006	Aquaquant	0.11	Y	0.3	Y
310b	C	Glenelg-Hopkins	5/06/2006	Merck Aquaquant low range	0.11	Y	0.33	Y
320	C	Glenelg Hopkins-Portland Coast	17/06/2006	Merck Aquaquant kit 0.015-0.14mg/L exp 31/5/07	0.11	Y	0.18	N
Code	Coordinator/ Monitor	Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
321	C	Glenelg Hopkins	15/06/2006	Visocolor HE Art-Nr 920 080, Phosphate test (DEV) 0.01-0.25	0.2	N	0.5	N
331	C	Central Highlands	9/06/2006	Visocolor Phosphate test (DEV) 0.01-0.25mg/L	0.1	Y		
015	M	Mallee	16/06/2006	Visocolor HE	0.1	Y	0.3	Y
20a	M	Lower Wimmera	5/06/2006	Visocolor HE	0.01	N	0.04	N
23	M	Lower Wimmera	7/06/2006	Visocolor HE	0.15	Y		
24b	M	Lower Wimmera	7/06/2006	Visocolor HE for kit 34 by J, Clark)	0.15	Y	0.3	Y
25b	M	Lower Wimmera	11/06/2006	Visocolor HE	0.07	N	0.35	N
27a	M	Lower Wimmera	7/06/2006	Visocolor HE (of kit 26)	0.15	Y	0.4	N
27b	M	Lower Wimmera	7/06/2006	Visocolor HE	0.07	N	0.3	Y
031	M	Wimmera Upper	15/06/2006	Visocolor HE Phosphat test (DEV) Exp 6/6	0.15	Y	0.25	Y
039	M	Wimmera	6/06/2006	Hachery-Nagel Visocolor	0.1	Y	0.25	Y
039b	M	Wimmera	6/06/2006	Hachery-Nagel Visocolor	0.14	Y	0.3	Y
040	M	Wimmera	6/06/2006	Hachery-Nagel Visocolor	0.14	Y	0.25	Y
041	M	Wimmera	7/06/2006	Hachery-Nagel Visocolor	0.07	N	0.25	Y
042a	M	Wimmera	7/06/2006	Hachery-Nagel Visocolor	0.1	Y	0.25	Y
042b	M	Wimmera	7/06/2006	Hachery-Nagel Visocolor	0.07	N	0.25	Y
043a	M	Wimmera	7/06/2006	Hachery-Nagel Visocolor	0.14	Y	0.25	Y
043b	M	Wimmera	8/06/2006	Hachery-Nagel Visocolor	0.14	Y	0.4	N

044	M	Wimmera	14/06/2006	Hachery-Nagel Visocolor	0.14	Y	0.3	Y
047	M	Wimmera	23/06/2006	Hachery-Nagel Visocolor	0.13	Y	0.5	N
049	M	Middle Wimmera	6/06/2006	Visocolor #2 exp 8/2006	0.18	N		
050	M	Middle Wimmera	6/06/2006	Visocolor HE Phosphate test DEV 0.01-0.25 mg/L	0.17	N		
052	M	Wimmera	6/06/2006	Visocolor HE Phosphate test DEV 0.01-0.25 mg/L			0.36	N
053	M	Middle Wimmera	6/06/2006	Visocolor HE Phosphate test (DEV) 0.01-0.25	0.17	N	0.3	Y
054	M	Middle Wimmera	13/06/2006	Visocolor HE	0.03	N		
055	M	Middle Wimmera	13/06/2006	Visocolor	0.1	Y		
058	M	Middle Wimmera	8/06/2006	Visocolor	0.17	N	0.4	N
062	M	North Central	8/06/2006	Visocolor	0.1	Y		
063	M	North Central	8/06/2006	Visocolor	0.1	Y		
064	M	North Central	8/06/2006	Phosphat test Visocolor 0.01-0.25 0.05-1.0mg/LP	0.15	Y	0.4	N
065	M	North Central	8/06/2006	MN Visocolor Phosphat test 0.01-0.25	0.1	Y		
066	M	North Central	8/06/2006	Phosphat 0.01-0.25	0.1	Y		
067	M	North Central	9/06/2006	Visocolor HE 0.01-0.25	0.1	Y		
Code	Coordinator/ Monitor	Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
068	M	North Central	14/06/2006	0-0.25mg/L Visocolor Test kit	0.08	N		
069	M	North Central	14/06/2006	0.01-0.25 Phosphat test (DEV) Visocolor	0.1	Y		
70	M	North Central	16/06/2006	Visocolor HE low	0.12	Y		
71	M	North Central	6/06/2006	Visocolor0.01-0.25	0.15	Y		
73	M	North Central	8/06/2006	Visocolor Phosphat test DEV	0.18	N		
74	M	North Central	10/06/2006	Visocolor	0.12	Y		
75	M	North Central	10/06/2006	Visocolor	0.17	N		
76	M	North Central	19/06/2006	Visocolor HE low	0.15	Y		
77	M	North Central	10/06/2006	Visocolor pHoo4	0.1	Y	0.4	N
	M							
79	M	North Central	10/06/2006	Visocolor 0.01 -0.25	0.175	N		
80	M	North Central	June	Visocolor Phos. Test kit	0.015	N		
91	M	Goulburn Broken	16/06/2006	Merk Phosphate-test Aquaquant	0.11	Y	0.44	N
92	M	Goulburn Broken	8/06/2006	Aquaquant merck	0.11	Y	0.24	Y
124	M	North East	12/6/6	Visocolor Reactive Phosphorus	0.11	Y	0.33	Y
125	M	North East	15/06/2006	Visocolor Reactive Phosphorus	0	N	0.18	N
126	M	North East	20/06/2006	Visocolor reactive phosphorus	0.15	Y	0.4	N
134	M	East Gippsland			0.11	Y		
136	M	East Gippsland	10/06/2006	Merck Phosphat test 1.14445 colorimeter PMB	0.11	Y	0.14	N
138	M	East Gippsland	13/06/2006	Merck Phosphat test 1.14445	0.11	Y	0.24	Y
139	M	East Gippsland		P(PMB) Aquaquant	0.11	Y	0.28	Y
140	M	East Gippsland	10/06/2006	Merck kit	0.11	Y	0.28	Y
142	M	East Gippsland			0.11	Y	0.16	N
145	M	East Gippsland	13/06/2006	P(PMB)	0.14	Y	0.3	Y
146	M	East Gippsland		1.4445.0001 Phosphate test	3.6	N	9	N
147	M	East Gippsland		Merck kit 1.14445.000P OC355623	0.11	Y	0.3	Y
161	M	West Gippsland	21/06/2006	Soluble Reactive Phosphorous kit merck	0.11	Y	0.44	N
166	M	West Gippsland	15/06/2006	Phosphorus Test kit	0.11	Y	0.28	Y
171b	M	West Gippsland	8/06/2006	Merck Aquaquant	0.11	Y	0.32	Y
178	M	West Gippsland	11/06/2006	Merck kit 1.14445.000P Phosphat test	0.11	Y	0.28	Y
179	M	West Gippsland	8/06/2006	Merck Aquaquant Low Range expiry 31/3/8	0.11	Y	0.3	Y
182	M	West Gippsland	10/06/2006	Merck 1.14445 Phosphat test	0.08	N	0.28	Y
183	M	West Gippsland	10/06/2006	Merck 1.14445 Phosphat test	0.08	N	0.28	Y
184	M	West Gippsland	13/06/2006	Merck aquaquant	0.11	Y	0.3	Y
185	M	West Gippsland	6/06/2006	Merck Aquaquant Low Range expiry 31/3/8	0.11	Y	0.3	Y
Code	Coordinator/ Monitor	Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
186	M	West Gippsland	6/06/2006	Merck Aquaquant	0.11	Y	0.3	Y
187	M	West Gippsland	6/06/2006	Merck Phosphorus test	0.14	Y	0.3	Y
188	M	West Gippsland	8/06/2006	Merck aquaquant	0.11	Y	0.4	N
189	M	West Gippsland	12/06/2006	Merck aquaquant	0.11	Y	0.4	N

198	M	West Gippsland		Merck kit	0.1	Y	0.44	N
199	M	West Gippsland	18/06/2006		0.11	Y	0.14	N
208	M	Port Phillip	8/06/2006	Visocolor HE	0.08	N		
212	M	Port Phillip	12/06/2006	Visocolor HE Phosphate test (Art No 920080)	0.12	Y		
225	M	Port Phillip & Western port	8/06/2006	Visocolor HE Phosphate test (Art No 920080)	0.15	Y	0.25	Y
229	M	Port Phillip & Western port	13/06/2006	Visocolor	0.13	Y	0.2	N
236	M	Port Phillip	8/06/2006	Visocolor HE	0.1	Y	0.3	Y
238	M	Port Phillip	7/06/2006	Visocolor color comparator	0.1	Y		
239	M	Port Phillip	7/06/2006	Visocolor HE Phosphate test (DEV) 0.01-0.25 lot no 0.137	0.07	N	0.21	N
240	M	Port Phillip	7/06/2006	Visocolor color comparator	0.1	Y	0.25	Y
241	M	Port Phillip	7/06/2006	Visocolor color comparator	0.1	Y		
245a	M	Port Phillip	11/06/2006	Visocolor color comparator	0.1	Y	0.3	Y
248	M	Port Phillip	5/06/2006	Visocolor HE Phosphate (DEV)	0.11	Y	0.25	Y
251	M	Port Phillip	15/06/2006	Visocolor HE Phosphate 0.01-0.25	0.1	Y	0.3	Y
253	M	Port Phillip	8/06/2006	Chemical test PO4	0.1	Y	0.4	N
254	M	Port Phillip	9/06/2006	Visocolor 0.01-0.25	0.05	N	0.2	N
269	M	Port Phillip	7/06/2006	Color comparator	0.1	Y	0.25	Y
281	M	Corangamite	13/06/2006	Aquaquant phosphorus test kit, reagent P-1a	0.14	Y		
282	M	Corangamite	15/06/2006	Aquaquant	0.11	Y		
288	M	Corangamite	14/06/2006	Aquaquant 14445	0.11	Y	0.4	N
289	M	Corangamite	9/06/2006	1.1445,0001 Phosphat-Test Pmerk	0.11	Y	0.4	N
292	M	Corangamite	14/06/2006	Merck Aquaquant	0.11	Y	0.3	Y
293	M	Corangamite	13/06/2006	Merck aquaquant kit Machery-Nagel Visocolor (HE) Phosphorus test	0.11	Y	0.33	Y
294	M	Corangamite	9/06/2006	Merck Phosphor-Test (PMB) 14445 Test Kit	0.11	Y	0.28	Y
295a	M	Corangamite	15/06/2006	Merck Phosphate test	0.11	Y	0.3	Y
300	M	Corangamite	14/06/2006	Aquaquant Phosphorus test kit 1.14445.001 Merck P	0.11	Y	0.225	Y
311	M	Glenelg Hopkins	9/06/2006	Merck aquaquant low range	0.11	Y	0.56	N
312a	M	Glenelg Hopkins	5/06/2006	Merck Aquaquant low range	0.11	Y	0.56	N
Code	Coordinator/ Monitor	Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
313a	M	Glenelg Hopkins	5/06/2006	Merck Phosphate test	0.08	N	0.26	Y
314	M	Glenelg Hopkins	7/06/2006	Merck aquaquant kit low range	0.11	Y	0.28	Y
315	M	Glenelg-Hopkins Portland Coast	14/06/2006	Merck 0.015-0.14 exp 30/11/6	0.11	Y	0.2	N
316	M	Glenelg-Hopkins Portland Coast	16/06/2006	Merck Aquaquant kit 0.015-0.14	0.45	N		
317	M	Glenelg-Hopkins Portland Coast	21/06/2006	Merck Aquaquant kit 0.015-0.14	0.11	Y		
318	M	Glenelg-Hopkins Portland Coast	19/06/2006	Merck Aquaquant kit 0.015-0.14	0.11	Y	0.28	Y
322	M	Glenelg Hopkins	19/06/2006	Merk P Phosphate test 1.14445.0001 0.015-0.14	0.11	Y	0.28	Y
330	M	Central Highlands	7/06/2006	Visocolor Phosphate test (DEV) 0.01-0.25	0.1	Y	0.3	Y
332	M	Central Highlands	9/06/2006	Visocolor Phosphate test (DEV) 0.01-0.25	0.1	Y		
333	M	Central Highlands	9/06/2006	Visocolor Phosphate test (DEV) 0.01-0.26	0.1	Y		

E Physico-chemical “Mystery Samples” results, all participants - Orthophosphate colorimeter.

Code		Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
60	C	North Central	8/06/2006	La Motte colorimeter	0.1	Y	0.28	Y
108a	C	Goulburn Broken	16/06/2006	Colorimeter	0.13	Y	0.31	Y
196	C	West Gippsland	9/06/2006	Hach DR 2010 spectrophotometer	0.11	Y	0.3	Y
204	C	Port Phillip	7/06/2006	Smart 2	0.095	Y		
207	C	Port Phillip	8/06/2006	Smart 2	0.094	Y		
213	C	Port Phillip	8/06/2006	Smart 2	0.091	N		
271	C	Corangamite	14/06/2006	Hach Dr 890 Colorimeter	0.16	N	0.32	Y
272	C	Corangamite	15/06/2006	Hach 890 Colorimeter	0.16	N	0.38	N
273	C	Corangamite	16/06/2006	Hach unit DR890 colorimeter	0.18	N	0.39	N
056c	M	Middle Wimmera	8/06/2006	Visocolor comparator	0.1	Y	0.3	Y
78	M	North Central	10/06/2006	La Motte Colorimeter	0.11	Y		
201	M	Port Phillip	6/06/2006	MC 1600			1	N
203	M	Port Phillip	6/06/2006	Smart 2 Colorimeter	0.01	N		
206	M	Port Phillip	6/06/2006	Colorimeter visocolor	0.75	N		
209	M	Port Phillip	8/06/2006		0.08	N		
210	M	Port Phillip	8/06/2006	Smart 2	0.28	N	0.81	N
221	M	Port Phillip & Western port	7/06/2006	La Motte Smart 2	0.104	Y	0.293	Y
222	M	Port Phillip & Western port	3/06/2006	Smart 1 colorimeter	0.12	Y	0.29	Y
223	M	Port Phillip & Western port	3/06/2006	Smart 1 colorimeter	0.11	Y	0.31	Y
224	M	Port Phillip & Western port	5/06/2006	DC 1600 Colorimeter	0.127	Y	0.189	N
226	M	Port Phillip & Western port	7/06/2006	Smart 2 colorimeter	0.104	Y	0.244	Y
227	M	Port Phillip & Western port	4/06/2006	DC 1600 Colorimeter	0.02	N	0.28	Y
228	M	Port Phillip & Western port	8/06/2006	La Motte Smart Colorimeter	0.11	Y	0.28	Y
230	M	Port Phillip & Western port	7/06/2006	Smart 2 colorimeter	0.09	N	0.19	N
231a	M	Port Phillip & Western port	7/06/2006	DC 1600	0.127	Y	0.332	Y
245b	M	Port Phillip	5/06/2006	Colorimeter Lamotte Smart 2	0.08	N	0.27	Y
246	M	Port Phillip	5/06/2006	Smart 2 Colorimeter	0.09	N	0.25	Y
247	M	Port Phillip	5/06/2006	Smart 2	0.08	N	0.31	Y
249	M	Port Phillip	7/06/2006	Smart 2	0.9	N		
250b	M	Port Phillip	5/06/2006	Smart 2	0.09	N	0.23	Y
275	M	Corangamite	14/06/2006	Hach DR 890 colorimeter	0.16	N	0.31	Y
Code		Region	Date	Reactive-P instrument	MS 1 result	Met	MS 2 result	Met
277	M	Corangamite	15/06/2006	Hach DR 890 colorimeter	0.18	N	0.38	N
278	M	Corangamite	12/06/2006	Hach DR 890 colorimeter	0.12	Y	0.3	Y
279	M	Corangamite		THO Hach DR890 colorimeter	0.06	N	0.08	N
280	M	Corangamite	11/06/2006		0.08	N		
285	M	Corangamite	13/06/2006	Hach colorimeter #9 s/n 980690002696	0.1	Y	0.25	Y
286	M	Corangamite	8/06/2006		0.11	Y	0.3	Y
287	M	Corangamite	8/06/2006		0.11	Y	0.3	Y
299	M	Corangamite			0.08	N	0.85	N
302	M	Corangamite	8/06/2006		0.03	N	0.08	N
306	M	Corangamite	13/06/2006	Hach DR/890	0.18	N	0.33	Y
309	M	Corangamite	13/06/2006	Hach DR/890	0.12	Y	0.25	Y

F Physico - chemical comments, all participants.

Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
10	C	Mallee		
11	C	Mallee		
21b	C	Lower Wimmera	2x0.20 diluted	EC calib 2800 EC,
22	C	Lower Wimmera	2x0.15	Calibration EC 2700
27c	C	Lower Wimmera		Calibrated 1410 EC
28a	C	Lower Wimmera	2x0.15	2900 EC for 2760 EC as buttons at 2.8 then read 2.9,
28b	C	Lower Wimmera		2901 EC for 2760 EC as buttons at 2.8 then read 2.9,
28c	C	Lower Wimmera		2902 EC for 2760 EC as buttons at 2.8 then read 2.9,
28d	C	Lower Wimmera		2903 EC for 2760 EC as buttons at 2.8 then read 2.9,
28e	C	Lower Wimmera		EC 2800, sample temp 21C
030a	C	Wimmera Upper	Kit #9: Mary-anne Jess Samples 30/5/05	
030b	C	Wimmera Upper	Kit # 22: Ros Byass Samples 30/5/06 Dilution 1:3 Sample 2	
32	C	Wimmera Upper	Dilution 1:2 Sample 2. Kit #53: Ian & Liz jackson. Samples 30/5/06	
33	C	Wimmera Upper	Kit #7: Denis McLann Samples 30/5/05	
38	C	Wimmera	Ortho-P sample 1 rounded back to 0.14, ortho-P sample 2 50% dilution	
48	C	Middle Wimmera		
49	C	Wimmera		700 0.70mS/cm
51	C	Wimmera		4.00 mS/cm
60	C	North Central		
72	C	North Central		
81	C	North Central		
90a	C	Goulburn Broken		TD Scan calibrated with standard 1413us/cm solution prior to testing-is a fairly old (4yrs) meter
90b	C	Goulburn Broken	Sample 2 diluted 1:4 0.06 so multiplied	EC meter calibrated prior to use. buffer 1413 us/cm solutions
97	C	Goulburn Broken	Calibrated turbidity meter 9/6/6 to standards	Calibrated EC meter 9/6/6 before cal 1443 Us/cm at 12C-after cal 1413 us/cm.
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
100	C	Goulburn Broken	0.25 PO4 mg/L, 1.00 mg/L PO4. Mystery solution for ortho phosphorus sample 2 diluted 1:4, 5mL:20mL.0.08 Px4 0.32mg/LP. 0.05 PO4x4 1.00mg/LPO4.	
104a	C	Goulburn Broken		
104b	C	Goulburn Broken		
104c	C	Goulburn Broken		
104d	C	Goulburn Broken		
104e	C	Goulburn Broken		
108a	C	Goulburn Broken		
108b	C	Goulburn Broken		
108c	C	Goulburn Broken		
120	C	North East		
121	C	North East		
130a	C	East Gippsland	0.14x2	
130b	C	East Gippsland		
131a	C	East Gippsland		
131b	C	East Gippsland		
160a	C	West Gippsland	merk kit high:new kit tested first time. 1xP/PO4 is 0.32	H is 12.90 mS/cm std, L is 1413 us/cm std.

160b	C	West Gippsland		
160c	C	West Gippsland		
160d	C	West Gippsland		
181	C	West Gippsland	Sample 2 Diluted 1:2	
193	C	West Gippsland	Sample 2 Diluted 1:2	Post calibration check is 1437
196	C	West Gippsland		
197	C	West Gippsland	Cold morning, 5C, diluted x1	
204	C	Port Phillip	0.29x0.326 Merrri Ck Primary monitoring kit	
207	C	Port Phillip	000.29ppm	
213	C	Port Phillip	MCMPWW, 0.28x0.326	
255	C	Port Phillip	0.2x2 0.4 Phos diluted 50%. Sample 2. EC Cal 13200 12900.	
270a	C	Corangamite		
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
270b	C	Corangamite	Dilution for sample 2 P was 0.06x5	
271	C	Corangamite		
272	C	Corangamite		
273	C	Corangamite		
274a	C	Corangamite		
274b	C	Corangamite		
310a	C	Glenelg-Hopkins		
310b	C	Glenelg-Hopkins	Solutions not refrigerated at all	
320	C	Glenelg Hopkins-Portland Coast	Sample 2 0.045x4, ortho P sample diluted 5mL of sample to 15 mL distilled water.	EC scan high calibrated using 12880us, TD Scan 3 calibrated using 1413us.
321	C	Glenelg Hopkins	Ortho-P. Sample 2 ratio 1:2 sample and distilled water. All equipment calibrated and within expiry date.	
331	C	Central Highlands	Ortho P Sample 2-too high	
014	M	Mallee	This class does not test for Phosphorus	
015	M	Mallee		Sample 2-beyond meter range
20a	M	Lower Wimmera	0.02x2	EC Scan calibrated to 2700 , sample temp 18C
20b	M	Lower Wimmera		EC calibrated to 2760 EC
21a	M	Lower Wimmera		EC calibrated to 2700
21c	M	Lower Wimmera		EC calibrated to 2700
23	M	Lower Wimmera		Calibration 1430 EC for 1410
24a	M	Lower Wimmera		Calibration 2800 EC
24b	M	Lower Wimmera	Sample 2 diluted 0.15x2	Calibrated to 12,900 EC
24c	M	Lower Wimmera		Calib 2.8 sample temp 16C
25a	M	Lower Wimmera		Calibration to 2800 EC
25b	M	Lower Wimmera	0.175x2, halfway in between 0.15 and 0.2 sample temp 19C.	calibrated to 2700
26a	M	Lower Wimmera		calibrated to 1410 EC,Kit 31
26b	M	Lower Wimmera		calibrated 14000 EC
26c	M	Lower Wimmera		calibrated to 2700 EC
27a	M	Lower Wimmera	.02x2	calibrated 1413 EC sample temp 12C
27b	M	Lower Wimmera	0.15x2	calibrated to 2700 EC temp 14C
031	M	Wimmera Upper	Sorry Sara! Kit #8	
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
039	M	Wimmera		
039b	M	Wimmera	orthophosphate sample 2 59% dilution, orthophosphate sample 1 rounded back to 0.14 Turbidity sample 1 rounded back to 50	
040	M	Wimmera	Ortho P sample 1 rounded back to 0.14	
041	M	Wimmera		

042a	M	Wimmera		
042b	M	Wimmera		
043a	M	Wimmera		
043b	M	Wimmera	PO4-P sample 1 rounded back to 0.14, sample 2 50% diluted, pH suspect sample	
044	M	Wimmera	PO4-P sample 1 rounded back to 0.14, sample 2 50% diluted	
047	M	Wimmera	50% dilution on sample 2 PO4	
049	M	Middle Wimmera		
050	M	Middle Wimmera	Cataracts on eyes-may affect turbidity reading	
052	M	Wimmera		
053	M	Middle Wimmera	ortho-P not quite at room temperature	
054	M	Middle Wimmera	suspect PO4 powder	
055	M	Middle Wimmera		
056c	M	Middle Wimmera		
058	M	Middle Wimmera		
061	M	North Central		
062	M	North Central		
063	M	North Central		
064	M	North Central		
065	M	North Central		
066	M	North Central		
067	M	North Central		
068	M	North Central		
069	M	North Central		
70	M	North Central	First time using equipment	
71	M	North Central	New monitor	
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
73	M	North Central		sample temp 17.8-18.8C
74	M	North Central		
75	M	North Central		
76	M	North Central		
77	M	North Central		Definitely something wrong here. Ec low range may not have been calibrated for...
78	M	North Central		
79	M	North Central		
80	M	North Central	for phosphate test-used both 0.01-0.25 & 0.05-1.0 mg/L kits	
91	M	Goulburn Broken		
92	M	Goulburn Broken	Robyn does ortho-P, Stan does turbidity. Monitor doesn't ever have to dilute samples and dilution may be reading a little low maybe reading may be 0.26mg/LP 0.06 diluted by 4	
93	M	Goulburn Broken		
102	M	Goulburn Broken		
106	M	Goulburn Broken		Battery dead, no result sent
124	M	North East	Dilution for sample 2 1 in 3 (10)	
125	M	North East		
126	M	North East	Sample was diluted, we couldn't calibrate the high EC meter	
132	M	East Gippsland	Anne monitors out in the lake and uses a secchi disk for turbidity, she does not monitor ortho-P	
133	M	East Gippsland	Tom only monitors EC, temp and flow	
134	M	East Gippsland	Unable to get reading after dilution, too dark	
136	M	East Gippsland	P, my equip does not test >0.14	EC meter before calibration:1416, did not recalibrate.
138	M	East Gippsland		

139	M	East Gippsland	Diluted 1-1 0.14 then double for reading	EC meter calibrated but standard out of date july 14 05
140	M	East Gippsland	Calibrated conductivity meter Std 1413 before 1420 after 1411. 12890 before 12890 after. Sample 2 for Phos diluted 50:50 reading double to get result. Solns need to be updated.	
142	M	East Gippsland		
145	M	East Gippsland	Done by artificial light, diluted 1:5 to read, used upper scale P	Tracer wouldn't switch on.
146	M	East Gippsland		EC calibrated using 1413
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
147	M	East Gippsland	Changed batteries.....	Calibrated at 1413, 12890.
161	M	West Gippsland	Had to dilute sample 2 1/4 to get reading	TD Scan 20 meter playing up
166	M	West Gippsland		
171b	M	West Gippsland	0.08x4	
178	M	West Gippsland	Diluted 1 part sample to 1 part filtered water. I repeated this one several time as cover letter said sample 1<50 NTU however I still get same result.	
179	M	West Gippsland	Diluted mystery sample 2 ortho-P-1:5	
182	M	West Gippsland	Diluted 1:2	
183	M	West Gippsland	Diluted 1:2	
184	M	West Gippsland	Diluted x 5 Some readings done is less than optimum light. House very cold at time-room temperature quite cold.	
185	M	West Gippsland	Diluted 1:5	
186	M	West Gippsland	Diluted sample 2 ortho P 1:5	
187	M	West Gippsland	Diluted 1:5	
188	M	West Gippsland	Diluted 1:5	
189	M	West Gippsland	Diluted as per ring/flip folder 0.08x5, still battling with meter and calibration. Waiting for more of our members to be trained so we can cover our measuring points	
198	M	West Gippsland	EC sample 2 3999 flashing unable to read, meters calibrated	
199	M	West Gippsland	off the scale too blue. I was late with my testing as I did not get the parcel until 15/6/6	Temp 6.6C, sample 2 flashing result
201	M	Port Phillip		
202	M	Port Phillip		
203	M	Port Phillip	Nilumbik Smart 2 kit, 0.03ppm ortho P sample 2	
206	M	Port Phillip		
208	M	Port Phillip		
209	M	Port Phillip	0.26ppm x 0.326 Ortho-P sample 1	
210	M	Port Phillip		ERR sample 2
211	M	Port Phillip	Using Julias kit (kit 1 Tert), Turbidity -away from light, rinse 3 times, calibrate	
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
212	M	Port Phillip	The solution temp was 12C while the instructions say it should be 18-30C. The sample was allowed 10 minutes to compensate for the slower speed at low temp.	
221	M	Port Phillip & Western port		
222	M	Port Phillip & Western port		
223	M	Port Phillip & Western port		
224	M	Port Phillip & Western port	Ortho P ppm	EC sample 2 diluted 1:4 ie 10mL sample to 30 mL dH2O
225	M	Port Phillip & Western port		
226	M	Port Phillip & Western port		690 old probe end, 3840 old probe

227	M	Port Phillip & Western port	Slight problem with the colorimeter battery (even with a new one) causing the readings to drift. Readings were recorded immediately, they appeared to stabilize then started to drift. Readings 96% & 67%	
228	M	Port Phillip & Western port		
229	M	Port Phillip & Western port		
230	M	Port Phillip & Western port		650 old probe end, 3880 old probe end
231a	M	Port Phillip & Western port	Ortho-P sample 1 0.39x0.326, Sample 2 0.02x0.326	
231b	M	Port Phillip & Western port		
232	M	Port Phillip & Western port		
236	M	Port Phillip	Sample 2 diluted 1:3	
238	M	Port Phillip		
239	M	Port Phillip	Phosphate test out of date, 0.07x3 (diluted 1:3)	
240	M	Port Phillip	Sample 2 required dilution for phosphate, 3x0.15 is 0.45	
241	M	Port Phillip		
245a	M	Port Phillip	diluted 1:1	
245b	M	Port Phillip	0.26ppm & 0.82ppm converted to mg/L by Amy (co-ord)	
246	M	Port Phillip	0.28ppm & 0.78ppm converted to mg/L by Amy (co-ord)	
247	M	Port Phillip	0.26ppm & 0.94ppm converted to mg/L by Amy (co-ord)	
248	M	Port Phillip		
249	M	Port Phillip	0.27ppm Smart 2 colorimeter ortho-P results Sample 0.02,0.10,0.05, ppm 0.08,0.22,0.19, mg/L0.03,0.07,0.06	
Code	Coordinator/Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
250a	M	Port Phillip		
250b	M	Port Phillip	0.29ppm & 0.70ppm converted to mg/L by Amy (co-ord)	
250c	M	Port Phillip		
251	M	Port Phillip	1:2 dilution 2 x 0.15	EC meter calibrated against EC standard 128880 us/cm prior to testing
252a	M	Port Phillip	La motte Smart 2 colorimeter 1. 0.027,2. 0.04, 3. 0.083, 4.0.273, 5.0.45, 6. 0.91	EC couldn't calibrate, read 12000 on 12880 sample
252b	M	Port Phillip		
253	M	Port Phillip	Phos 2 diluted 1:1	
254	M	Port Phillip		
269	M	Port Phillip		
275	M	Corangamite		
277	M	Corangamite		
278	M	Corangamite	Used distilled water as a blank for turbidity, overtime for sample 2 Phosphorus-sorry	
279	M	Corangamite		
280	M	Corangamite		EC Scan calibrated to 2000 us prior to test
281	M	Corangamite		EC meter calibrated to 2000
282	M	Corangamite	P sample 2, was much bigger than my chart, could not get a result	
285	M	Corangamite	Phosphate standards, 0.00 is 0.00, 0.02 is 0.02, 0.05 is 0.06, 0.10 is 0.10, 0.30 is 0.28, 0.50 is 0.51, 1.00 is >0.9 (limit)	Hach colorimeter external service, Nov 2004, Call no.22037, Waterwatch kit serviced Feb 06 TDS meter calibrated at 2000Ec
286	M	Corangamite	Diluted P sample 1: 5 0.06x5 is 0.30	
287	M	Corangamite	Diluted P sample x1.5	
288	M	Corangamite		
289	M	Corangamite	Turb, Do not carry out this test-erskine river has clear water. P sample 2, after 2 minutes noticed crystals had not dissolved fully so re-shook solution, watched another 60 seconds and then found reading had changed.	

292	M	Corangamite	Ortho-P sample #2 diluted 5:1	EC meter calibrated with 1413us/cm solution
293	M	Corangamite	Ortho-P 2 diluted 1:3, Having recently developed a cataract in my right eye turb are one -eye readings with my right eye shut.	EC monitor calibrated against 2000us/cm standard solution before and after testing
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
294	M	Corangamite	Ortho-P Sample 2 diluted 50/50 w DI water	Calibrated: 2000EC Jano 06 solution
295a	M	Corangamite		
295b	M	Corangamite		
299	M	Corangamite		
300	M	Corangamite	Reading 0.045 for 1:4 dilution ie 1 in 5	
302	M	Corangamite		
305	M	Corangamite	Apologies for not completing tests as I only received samples late Thursday afternoon. I have completed tests I had time for. Water column Turbidity Assessor	
306	M	Corangamite	Standard Turbidity Tube	
309	M	Corangamite	Hach colorimeter ext service Nov 2004, kit serviced waterwatch feb 06, P solution cal @ pH 7, pH 10 TDS meter 2000EC Hach DR/890 Colorimeter #9 S/N980690002696	
311	M	Glenelg Hopkins		
312a	M	Glenelg Hopkins	0.14x4 is 0.56, T Tube readings undertaken indoors.	
312b	M	Glenelg Hopkins		
313a	M	Glenelg Hopkins		
313b	M	Glenelg Hopkins		
314	M	Glenelg Hopkins		
315	M	Glenelg-Hopkins Portland Coast	0.02x10	
316	M	Glenelg-Hopkins Portland Coast		
317	M	Glenelg-Hopkins Portland Coast		
318	M	Glenelg-Hopkins Portland Coast	Ortho-P 2, 0.14 50% diluted sample	
322	M	Glenelg Hopkins		
325	M	Glenelg Hopkins		
326	M	Glenelg Hopkins		
328a	M	Glenelg Hopkins		
328b	M	Glenelg Hopkins		
329	M	Glenelg Hopkins		
Code	Coordinator/ Monitor	Region	Ortho-P & Turbidity Waterwatcher comments	EC Waterwatcher comments
330	M	Central Highlands		
332	M	Central Highlands	P 2. too high	EC 2 Too high, no calibration for TD20 (4000EC),
333	M	Central Highlands	T 2, incorrect, Orth-P 2, too high	

G Macroinvertebrate “Mystery Samples” results, all participants.

QA/QC Code	Region	Macro 1				Macro 2				Macro 3			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
Coordinators													
		Insecta	Odonata	Telephlebiidae	Dragonfly	Insecta	Trichoptera	Hydrobiosidae	Caddisfly	Insecta	Coleoptera	Elmidae	Riffle beetle larvae
10	Mallee	Y	Y	Y	Y	Y	Y	Philopatamidae	Y	Y	Y	Y	Y
11	Mallee	Y	Y	Y	Y	Y	Y	Philopatamidae	Y	Y	Y	Y	Y
28	Lower Wimmera	Y	Y	Corduliid	Y	Y	Y	Philopatamidae	Y	Y	Y	Y	Y
45	Wimmera	Y	Y	Aeshnidae	Y	Y	Y	Y	Y	Y	Diptera	Chironomidae	Non-biting midge
51	Wimmera	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
72	North Central	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Ptilodactylidae	Y
81	North Central	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Ptilodactylidae	Y
90	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
97	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
100	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
108	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Ptilodactylidae	Y
120	North East	Dragonflies	Y		Y	Caddis	Y	Philopatamidae	Y				
121	North East	Dragonfly	Y	Gomphidae	Y	Caddisfly	Y	Philopatamidae	Y				
130	East Gippsland	Y	Y	Y	Y	Y	Y	Glossosomatidae	Y	Y	Y	Y	Y

QA/QC Code	Region	Macro 1				Macro 2				Macro 3			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
131	East Gippsland	Y	Y	Y	Y	Y	Y	Glossosomatidae	Y	Y	Y	Y	Y
160	West Gippsland	Y	Y	Gomphidae/ Lindeniidae	Y	Y	Y	Y	Y	Y	Y	Y	Y
204	Port Phillip	Y	Y	Austropetalidae	Y	Y	Y	Dipseudopsidae	Y	Y	Y	Y	Y
213	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
255	Port Phillip	Y	Y	Aeshnidae	Y	Y	Y	Y	Y	Y	Y	Y	Y
270	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
271	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
272	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
274	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
327	Glenelg (Hopkins basin)	Y	Y	Y	Y	Y	Y	Ecnomidae	Y	Y	Y	Y	Y
331	Central Highlands	Y	Y	Gomphidae		Y	Y	Philopotamidae	Y	Y	Y	Y	Y
Monitors													
13	Mallee	Y	Y		Y	Y	Y		Y	Y	Y		Y
46	Wimmera	Y	Y	Aeshnidae	Y	Y	Zygoptera		Damselfly	Y	Diptera	Empididae	Dance fly
48	Middle Wimmera	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
57	Wimmera	Y	Y	Aeshnidae	Y	Y	Y	Philopotamidae	Y	Y	Trichoptera	Philopotamidae	caddis fly
60	North Central	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Ptilodactylidae	Y
91	Goulburn Broken	Y	Y	Aeshnidae	Y	Y	Y	Philopotamidae	Y	Y	Y	Y	Y
126	North East	Dragonflies	Y		Y	Caddisflies	Y	Philopotamidae	Y				

QA/QC Code	Region	Macro 1				Macro 2				Macro 3			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
136	East Gippsland	Y	Y	Corduliidae	Y	Y	Y	Leptoceridae	Y	Y	Trichoptera	Leptoceridae	Caddisfly
140	East Gippsland	Y	Y	Gomphidae	Y	Y	Y		Y	Y	Y	Y	Y
201	Port Phillip				Y				Y				Fly larvae
202	Port Phillip	Y	Y			Y	Y			Y	Y		
207	Port Phillip	Y	Y	Aeshnidae/ Telephlebiidae	Y	Y	Y	Leptoceridae	Y	Y	Trichoptera	Glossosmatidae	caddisfly
208	Port Phillip	Y	Y		Y	Y	Y		Y				scorpion fly larvae
209	Port Phillip		Y	Austropetalia	Y		Y	Ecnomidae	Y		Y	Y	Y
210	Port Phillip		Y		Y		Y		Y			Ptilodactylidae	Byrocryptus larvae
212	Port Phillip	Y	Y	Corduliid/ lebellulid-like	Y	Y	Y	Y	Y	Y	Y	Y	Y
222	Port Phillip	Y	Y	Aeshnidae	Y	Y	Y	Ecnomidae	Y	Y	Y	Y	Y
223	Port Phillip & Western Port	Y	Y	Aeshnidae	Y	Y	Y	Ecnomidae	Y	Y	Y	Y	Y
224	Port Phillip & Western Port	Y	Y	Aeshnidae	Y	Y	Diptera	Chironomidae	midge	Y	Y		
228	Port Phillip	Y	Y	Aeshnidae	Y	Y	Y	Y	Y	Y	Y	Y	Y
229	Port Phillip & Western Port	Y	Y	Gomphiidae	Y					Y	Diptera	Dixidae	Dixid midges

QA/QC Code	Region	Macro 1				Macro 2				Macro 3			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
230	Port Phillip & Western Port	Y	Y	Aeshnidae	Y	Y	Y	Y	Y	Y	Y	Y	Y
236	Port Phillip				Y				Y				Y
238	Port Phillip		Y	Austroaestchna	Y		Y		Y				
239	Port Phillip	Y	Y	Corduliidae	Y	Y	Y		Y	Y	Y	Hydrophilidae	Y
245b	Port Phillip	Y	Y	Epiproctophera	Y	Flies	Y	Y	Y	Flies	Diptera	Chironomidae	Y
246	Port Phillip	Y	Y	Corduliidae	Y	Y	Diptera	Chironomidae	Chironomids	Y	Y	Y	Y
247	Port Phillip	Y	Y	Aeshnidae	Y	Y	Diptera	Chironomidae	fly larva	Y	Y	Y	Y
248	Port Phillip	Y	Y	Austroaschna	Y	Y	Y	Ecnomidae	Y	Y	Y	Y	Y
249	Port Phillip	Y	Y		Y	Y	Y	Leptoceridae	Y	Y	Y	Dytiscidae	Y
250	Port Phillip	Y	Y	Gomphidae	Y	Y	Y	Hydropsychidae	Y	Y	Diptera	Simuliidae	true flies
250a	Port Phillip		Y		Y		Y	Y	Y	Diptera		chironomidae	bloodworms
251	Port Phillip	Y	Y		Y	Y	Y		Y	Y	Diptera		chironomid
252	Port Phillip	Y	Y		Y	Y	Y		Y	Y			Y
253	Port Phillip	Y	Y		Y	Y	Y		Y				
269	Port Phillip	Y	Ephemeroptera	Siphonuridae	Mayfly					Y	Y		Y
273	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
309	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
332	Central Highlands	Y	Y	Gomphidae	Y	Y	Y	Philopotamidae	Y	Y	Y	Y	Y
333	Central Highlands	Y	Y	Gomphidae	Y	Y	Y	Philopotamidae	Y	Y	Y	Y	Y

QA/QC Code	Region	Macro 4				Macro 5				Macro 6			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
Coordinators													
		Insecta	Diptera	Culicidae	Mosquito larvae	Crustacea	Decapoda	Atyidae	Shrimp	Crustacea	Amphipoda	Ceinidae	Scuds/ Side swimmers
10	Mallee	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
11	Mallee	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
28	Lower Wimmera	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
45	Wimmera	Y	Y	Y	Y	Y	Y	Y	Y	Insecta	Megaloptera	Sialidae	Dobson Fly
51	Wimmera	Y	Y	Y	Y	Malacostraca	Y	Y	Y	Y	Y	Y	Y
72	North Central	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
81	North Central	Y	Y	Y	Y	Malacostraca	Y	Y	Y	Malacostraca	Y	Y	Y
90	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

97	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
100	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
108	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
120	North East	True flies	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
121	North East	True fly	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
130	East Gippsland	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

QA/QC Code	Region	Macro 4				Macro 5				Macro 6			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
131	East Gippsland	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
160	West Gippsland	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
204	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
213	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
255	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Hardae	Y
270	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
271	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
272	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
274	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
327	Glenelg (Hopkins basin)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
331	Central Highlands	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
Monitors													
13	Mallee	Y	Y		Y	Y	Y		Y	Y	Y		Y
46	Wimmera	Y	Y	Chironomidae	midge	Y	Y	Y	Y				
48	Middle Wimmera	Y	Y	Y	Y	Malacostraca	Y	Y	Y	Y	Y		Y
57	Wimmera	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
60	North Central	Y	Y	Y	Y	Insecta	Y	Y	Y	Insecta	Y	Y	Y
91	Goulburn Broken	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
126	North East	True flies	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
QA/QC Code	Region	Macro 4				Macro 5				Macro 6			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
136	East Gippsland	Y	Odonata	Coenagrionidae	damselfly	Y	Y	Y	Y				
140	East Gippsland	Y	Y	Y	Y	Y	Y	Y	Y				
201	Port Phillip				Y		Y	Y	Y				Y
202	Port Phillip					Y	Y	Y	Y	Y	Y		

207	Port Phillip	Y	Y	Orthoclaadiinae	chironomid maggot	Y	Y	Y	Y	Y	Y	Y	Y
208	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
209	Port Phillip		Y	Y	Y		Y	Y	Y		Y	Paramelitidae	Y
210	Port Phillip			Y	Y		Y		Y		Isopoda		Water slater
212	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
222	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
223	Port Phillip & Western Port	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
224	Port Phillip & Western Port	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
228	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
229	Port Phillip & Western Port	Y	Y	Y	Y	Y	Y	Y	Y				
230	Port Phillip & Western Port	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
236	Port Phillip				Y				Y				Y
238	Port Phillip		Chironomidae	Y	Y		Y	Y	Y		Y	Gamazaridae	Y
QA/QC Code	Region	Macro 4				Macro 5				Macro 6			
		Class	Order	Family	Common Name	Class	Order	Family	Common Name	Class	Order	Family	Common Name
239	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
245b	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Eusiridae	Y
246	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
247	Port Phillip	Y	Y	Y	Y						Y	Paracalliopidae	Y
248	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
249	Port Phillip	Y	Y		Y	Y	Y	Y	Y	Y	Y		Y
250	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y				
250a	Port Phillip		Y		Y	Insecta	Y	Y	Y		Y		Y
251	Port Phillip	Y	Y		Y	Malacostraca	Y		Y	Malacostraca	Y		Sandhopper
252	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
253	Port Phillip	Y		Y	Y	Y	Y		Y				
269	Port Phillip	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
273	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y				
309	Corangamite	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
332	Central Highlands	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y
333	Central Highlands	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y

H Macroinvertebrate comments, all participants.

QA/QC Code	Region	References Used	ID Method	Comments
Coordinators				
10	Mallee	2,3	microscope, eye, website	Trichoptera: No case present so assumed free swimming
11	Mallee	1,2, Identification and ecology of Australian Freshwater Invertebrates	microscope, eye	Amphipoda: Not sure on this one
28	Lower Wimmera	1,2	eye, handlens	Thankyou for including some larger sized bugs this year. Odonata: not black and yellow, 2 segments to tarsi. Trichoptera: no antennae, no gills, 2 sclerotised-2 head+1. Clean legs not hairy legs (like Atriplectididae). Too tiny to see- almost missed, white, antennae-one longer than the other. Coleoptera: dark-looks like caddisfly ashape, sclerotised body segments, 6 thin legs, hooks or tufts at tail end.
45	Wimmera	1,2,4	microscope, eye, hand lens	
51	Wimmera	1,Key to dragonflies of NSW	eye	Odonata: Epiroct strongly tapered apex pointed. Amphipoda: No microscope to determine species correctly
72	North Central	1,my brain	microscope	
81	North Central	1	microscope,eye	
90	Goulburn Broken	1,Dragonfly larvae-guide to larvae from NSW-Hawking & Theischinger	microscope	Trichoptera: front legs modified. Diptera: siphon at end of abdomen. Amphipoda: almost transparent, hard to tell family not knowing live colour.
97	Goulburn Broken	1,2	microscope AIS Optical Stereo microscope WF 10x20 eyepiece	Amphipoda: Not confident the family level id is correct. Odonata: Not 100% confident I have this correct.
100	Goulburn Broken	1,2, Michaela & Glenda	microscope, eye, handlens	
108	Goulburn Broken		microscope	The key I was using relied on knowledge of the LIVE animal so unsure if I was on exactly the right track, especially for #6.
120	North East			
121	North East		microscope	
130	East Gippsland		microscope	

QA/QC Code	Region	References Used	ID Method	Comments
131	East Gippsland	1,2,MDRFC Web Guide	microscope	
160	West Gippsland		microscope, eye	
204	Port Phillip		microscope, eye	
213	Port Phillip		microscope	Odonata: looked very similar to aeshnidae. Amphipoda: possibly Eusiridae?, needed live specimens for key and actual specimen was not the best to use for several characteristics.
255	Port Phillip	1, notes from the waterbug workshop	microscope,eye	Amphipoda: In the too hard basket. There were 2.
270	Corangamite	1, 3	microscope	Odonata: niad if you're being technical
271	Corangamite	1, Identification and Ecology of Australian Freshwater Invertebrates-Website	microscope, eye	
272	Corangamite	1,2	microscope, eye	Amphipoda: waterbug book refers to Hyalidae as Ceinidae
274	Corangamite	1, Identification and Ecology of Australian Freshwater Invertebrates	microscope, eye	Amphipoda: Sara-older members need bigger bugs...brail like??

327	Glenelg (Hopkins basin)	1, 5, Identification keys to Australian Families and Genera of Caddis-Fly Larvae: Dean, St Clair, Cartwright, 1999, Dragon Larvae (Odonata); Hawking & Theischinger, 2004	microscope	
331	Central Highlands	web guide	microscope, eye	Amphipoda: very small sample
Monitors				
13	Mallee	1,3,	microscope	
46	Wimmera	1, 5	microscope, eye, hand lens	Curled up-unable to uncurl and unable to id, broken tails, broken head
48	Middle Wimmera		microscope, eye	
57	Wimmera	1,2	microscope	
60	North Central	1	microscope	
91	Goulburn Broken		microscope	
126	North East		hand lens, 2 way microscope	Only 5 specimens supplied

QA/QC Code	Region	References Used	ID Method	Comments
136	East Gippsland		hand lens	Specimen broken, no other specimens
140	East Gippsland	2,5	microscope	Gastropoda: operculum present or absent.with outerpulmonata, with Prosobranchia. Trichoptera: out of case. Coleopteran: possible riffle beetle.
201	Port Phillip		microscope	He didn't do the orders as he ran out of time, so he just put the common names of the orders which is what he ids to.
202	Port Phillip		microscope	Don't know the last one
207	Port Phillip	1,2	microscope	
208	Port Phillip		microscope	Scorpion fly: tried to id from waterbug book
209	Port Phillip		microscope	
210	Port Phillip		microscope	Ptilodactylidae110-Page
212	Port Phillip		hand lens	Trichoptera:hard to identify family without microscope. Amphipoda: not really able to identify family confidently
222	Port Phillip	1,2	eye, hand lens	
223	Port Phillip & Western Port	1,2	eye, hand lens	Trichoptera: Philopotamidae
224	Port Phillip & Western Port	1, Torrance (1989) Standard grade biology. Hodder & Stoughton.	eye, hand lens	Hand lens was only visual tool available. If a microscope was available then perhaps we could have identified the last two samples to family level.
228	Port Phillip	1, CD-Interactive guide to Australian Aquatic invertebrates-CSIRO Entomology	hand lens	
229	Port Phillip & Western Port	1		
230	Port Phillip & Western Port			
236	Port Phillip	1	eye, hand lens	
238	Port Phillip	1	eye, hand lens	

QA/QC Code	Region	References Used	ID Method	Comments
239	Port Phillip	1	eye, hand lens	
245b	Port Phillip		eye	

246	Port Phillip	1,2	eye, hand lens	
247	Port Phillip		eye, hand lens	
248	Port Phillip		eye, hand lens	
249	Port Phillip		eye, hand lens-magnifying glass	
250	Port Phillip		eye	Mangled insect
250a	Port Phillip		eye	
251	Port Phillip	4	eye, hand lens	The only reference I had was Waterwatch "Know your beasties". Because of this I was not able to identify the specimens to family level. Also some of the specimens were hard to see with only a hand lens, would have been easier with a dissecting microscope. Odonata: Pterygota, raptorial labial mask. Chironomidae: Segmented body, Three pairs of legs, very small. Diptera: Thorax wider than the head or abdomen, siphon at posterior of abdomen. Trichoptera: Three pairs of legs, segmented body, Ectognathous mouthparts. Amphipoda: No carapace, antennules, antennae, small. Decapoda: Fan tail, bent abdomen, small spike above eye, long thin legs.
252	Port Phillip		microscope, eye	Trichoptera: hooks on end. Amphipoda: had eggs under legs.
253	Port Phillip		microscope	Coleoptera & Amphipoda: could see but not id
269	Port Phillip		eye, hand lens, magnifying glass	
273	Corangamite		microscope	
309	Corangamite		microscope, eye	
332	Central Highlands		microscope, eye, web guide	
333	Central Highlands		microscope, eye, book	

Reference Key
1 The Waterbug Book, Tsyrlin & Gooderham.
2 Colour guide to Invertebrates of Australian Inland Waters, Hawking & Smith.
3 Colour Web guide, Hawkins.
4 Know Your Beasties, Waterwatch.
5 Freshwater Invertebrates, Ralph Miller.
6 Wimmera Community Waterwatch field guide.