Glenelg Hopkins Region
QA/QC Week Summary 2006
Feedback to Coordinator/s by Sara Johnson
July 2006

Number of Data sheets received

Physical-chemical-

Four phys-chem datasheets were returned by the Glenelg Hopkins Waterwatch Coordinators and 16 datasheets were returned by volunteer monitors. Participants and their QA/QC Codes are listed below. There was a very good return rate on the samples requested for EC, but lower for other parameters (turbidity and phosphates). Please make the most of these samples as they're expensive to produce.

Code	Region	Name
310a	Glenelg-Hopkins	Jennie Sparke (4) (except pH)
310b	Glenelg-Hopkins	Jennie Sparke (4) (except pH)
320	Glenelg Hopkins-Portland Coast	Richard Hodgens
321	Glenelg Hopkins	John Miles

Code	Region	Name
311	Glenelg Hopkins	Anne Mantferd
312a	Glenelg Hopkins	Noel Rowse (3)
312b	Glenelg Hopkins	Noel Rowse (3)
313a	Glenelg Hopkins	Roger Thompson (3)
313b	Glenelg Hopkins	Roger Thompson (3)
314	Glenelg Hopkins	Green Corps (3)
315	Glenelg-Hopkins Portland Coast	Tom McRae (3)
316	Glenelg-Hopkins Portland Coast	Wally Parsons
317	Glenelg-Hopkins Portland Coast	Windamarra
318	Glenelg-Hopkins Portland Coast	Alex and John Inman (3)
322	Glenelg Hopkins	Matt Gleeson (2)
325	Glenelg Hopkins	Hollis Brown
326	Glenelg Hopkins	Peter Waldron
328a	Glenelg Hopkins	Conrad Gration (3)
328b	Glenelg Hopkins	Conrad Gration (3)
329	Glenelg Hopkins	Beryl&Colin Grant (3)

One macro-invertebrate datasheets was returned, which was a disappointing 25% return rate on the number of samples requested. It is very expensive to run this event each year; I sincerely hope these samples weren't wasted.

Code	Region	Name
327	Glenelg (Hopkins basin)	John Miles

pH results

Comments for Coordinators
QA/QC Week 2006

Due to the unstable nature of the pH samples this year, the results submitted were not analysed. Please apologise to your monitors for this hiccup, and be conscious of other opportunities for them to check their pH monitoring efforts later this year.

EC results

Sample 1 Actual value = 730 µS/cm

Acceptable tolerance range (10%) = 660-800 uS/cm (10uS/cm resolution (minimum) expected of equipment for values less than 2000 uS/cm)

Statewide pass rate: 88.3% (163 participants)

Sample 2 Actual value = 4300 µS/cm

Acceptable tolerance range (10%) = 3900 – 4700 (100uS/cm resolution (minimum) expected of equipment for values greater than 2000 uS/cm)

Statewide pass rate: 83.0% (165 participants)

Coordinators:

310a	EC Testr high	700	Y	4100	Y
310b	TD Scan 20	683	Y	4110	Y
320	TD Scan 3 (Sample 1), EC Scan high (sample 2)	740	Y	4500	Y
321	Eutech Instruments EC Scan high 0-19.90mS	700	Y	4400	Y

Excellent results for Glenelg Hopkins Coordinators, all EC data was within the 10% tolerance range. Nice work.

Monitors:

311	Hanna dIST 6	720	Y	4200	Y
312a	Hanna dIST6 meter	780	Y	4260	Y
313a	TD Scan 20	719	Y	3740	N
314	EC Tester	800	N	4200	Y
315	TD Scan 20	710	Y	4300	Y
316	TD Scan 20	800	Y	4700	Y
317	TD Scan 20	660	Y	3910	Y
318	Eutech Ec Testr	800	Y	4900	N
322	Eutech Instruments EC Scan high 0-19.90 (#2)	800	Y	4400	Y
325	Eutech EC Testr (Waterproof)	800	Y	4700	Y
326	TD Scan 20	800	Y	4200	Y
328a	Hanna dist 6	680	Y	4310	Y
328b	Eutech EC Testr	700	Y	4400	Y
329	Hanna dist6	700	Y	4110	Y

A 93% pass rate for Sample 1 and an 86% pass rate for Sample 2 for Glenelg Hopkins monitors. This is a very good result compared with the state average. I strongly encourage you to review the equipment, calibration ranges and practices and maintenance records for the pieces that failed to pass, and see if you can identify opportunities to improve results.

Turbidity Results

Comments for Coordinators
QA/QC Week 2006

Sample 1 Actual value = 38.33 NTU
Acceptable tolerance range (20% for turbidity meters, ~20% to nearest increment for turbidity tubes) = 30.66 – 46.00NTU for turbidity meters, 30-50 NTU for turbidity tubes.
Statewide pass rate (Turbidity Tube): 76.6% (167 participants)
Statewide passrate (Turbidity Meter): 75.0% (36 participants)

Sample 2 Actual value = 98.8 NTU
Acceptable tolerance range (20% for turbidity meters, ~20% to nearest increment for turbidity tubes) = 79.1 – 118.6 NTU for turbidity meters, 80-120 NTU for turbidity tubes.
Statewide pass rate (Turbidity Tube): 74.7% (150 participants)
Statewide pass rate (Turbidity Meter): 85.7% (36 participants)

Coordinators:

310b	Eutech Turbidimeter TN-100	41.2	Y	103	Y
320	Tube	40	Y	100	Y
321	Turbidity tube	40	Y	80	Y

Excellent results Coordinators. Easy stuff, hey?

Monitors:

311	Tube	40	Y	90	Y
312a	Tube	60	N	150	N
312b	Eutech Turbidimeter	40.2	Y	100	Y
313a	Tube	50	Y	100	Y
314	Turbidity tube	40	Y	100	Y
315	Tube	60	N	120	Y
316	Tube	90	N	100	Y
317	Tube	40	Y	80	Y
318	Tube	80	N	150	N
322	Turbidity tube	30	Y	60	N

A pass rate of 60% for Sample 1, and 70% for Sample 2 was achieved by monitors, which were low compared with the state averages. Monitors 312a and 318 in particular need their equipment checked, followup support and possibly retraining. Is your turbidity meter being used at training events across the whole region?

Unusually, very few of your incorrect responses were low, implying that most samples were all very well shaken. You have fantastic meters to support your monitor's turbidity tube measurements in your region, so I hope we see improvements with this result.

Reactive Phosphorus Results:

Sample 1 Actual value = 0.118 mg/L P

Acceptable tolerance range (20% for colorimeters, ~20% to 2 decimal places for colour comparators) = 0.094 – 0.142 mg/L P for colorimeters, 0.09 – 0.15mg/L P for colour comparators.
Statewide pass rate (Colour Comparator): 78.1% (137 participants)
Statewide pass rate (Colorimeter): 46.3% (41 participants)

Sample 2 Actual value = 0.282 mg/L P
Acceptable tolerance range (20% for colorimeters, ~20% to 2 decimal places for colour comparators) = 0.226 – 0.338 mg/L P for colorimeters, 0.22 – 0.34 mg/L P for colour comparators.
Statewide pass rate (Colour Comparator): 61.2% (103 participants)
Statewide pass rate (Colorimeter): 69.7% (33 participants)

Coordinators:

310b	Merck Aquaquant low range	0.11	Y	0.33	Y	Solutions not refridgerated at all
320	Merck Aquaquant kit 0.015-0.14mg/L exp 31/5/07	0.11	Y	0.18	N	Sample 2.0.045x4, ortho P sample diluted 5mL of sample to 15 mL distilled water.
321	Visocolor HE Art-Nr 920 080, Phosphate test (DEV) 0.01-0.25	0.2	N	0.5	N	Ortho-P. Sample 2 ratio 1:2 sample and distilled water.

Some very strange results here. John - the fact that both results are consistently high implies that perhaps your glassware/reagents are contaminated? All glassware should be cleaned regularly with weak acid. Richard – not sure what happened with your Sample 2? The dilution looks correct, thanks for including those notes on the datasheet. I wonder whether the sample wasn't shaken well before testing? Please give this some thought and let me know what you identify as being the problem.

Monitors:

311	Merck aquaquant low range	0.11	Y	0.56	N	
312a	Merck Aquaquant low range	0.11	Y	0.56	N	0.14x4 is 0.56,
313a	Merck Phosphate test	0.08	N	0.26	Y	
314	Merck aquaquant kit low range	0.11	Y	0.28	Y	
315	Merck 0.015-0.14 exp 30/11/6	0.11	Y	0.2	N	0.02x10
316	Merck Aquaquant kit 0.015-0.14	0.45	N			
317	Merck Aquaquant kit 0.015-0.14	0.11	Y			
318	Merck Aquaquant kit 0.015-0.14	0.11	Y	0.28	Y	Ortho-P 2, 0.14 50% diluted sample
322	Merk P Phosphate test 1.14445.0001 0.015-0.14	0.11	Y	0.28	Y	

Mixed results for phosphate testing with a 78% pass rate for Sample 1, and a 58% pass rate for Sample 2. Some of these results are particularly high (Monitors 311,

312a, 316) - I would suggest you evaluate their technique asap. Unfortunately, little information was provided on datasheets re dilutions. What notes were provided are included below.

Macroinvertebrates

Macro 1 -3			Insecta	Odonata	Telephlebiidae	Dragonfly	Insecta	Trichoptera	Hydrobiosidae	Caddisfly	Insecta	Coleoptera	Elmidae	Riffle beetle larvae
327	Glenelg Hopkins	John Miles	Y	Y	Y	Y	Y	Y	Ecnomidae	Y	Y	Y	Y	Y

A few small family level errors, but overall a pretty good effort, John. Please check your specimens again cross-referencing with a guide, and let me know if you think there is doubt. Would love to know what happened with those other samples though!

Macro 4 - 6			Insecta	Diptera	Culicidae	Mosquito larvae	Crustacea	Decapoda	Atyidae	Shrimp	Crustacea	Amphipoda	Ceinidae	Scuds/Side swimmers
327	Glenelg Hopkins	John Miles	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Paramelitidae	Y

Reflection

A good participation across the region, however we need to see a 100% return rate on all samples (including macroinvertebrate samples). I will be harping on about this again next year. Please provide follow-up comments to all monitors, particularly those that recorded atypical results. I will expect to see improvements in turbidity and phosphate results next year.

Your data confidence plan should include regional events and opportunities for your monitors to have confidence in their actions. Please review what other QA/QC activities are planned within your region over the next 6-8 months.

Thanks Jen, Richard, John, Dave and Naomi, Sara