

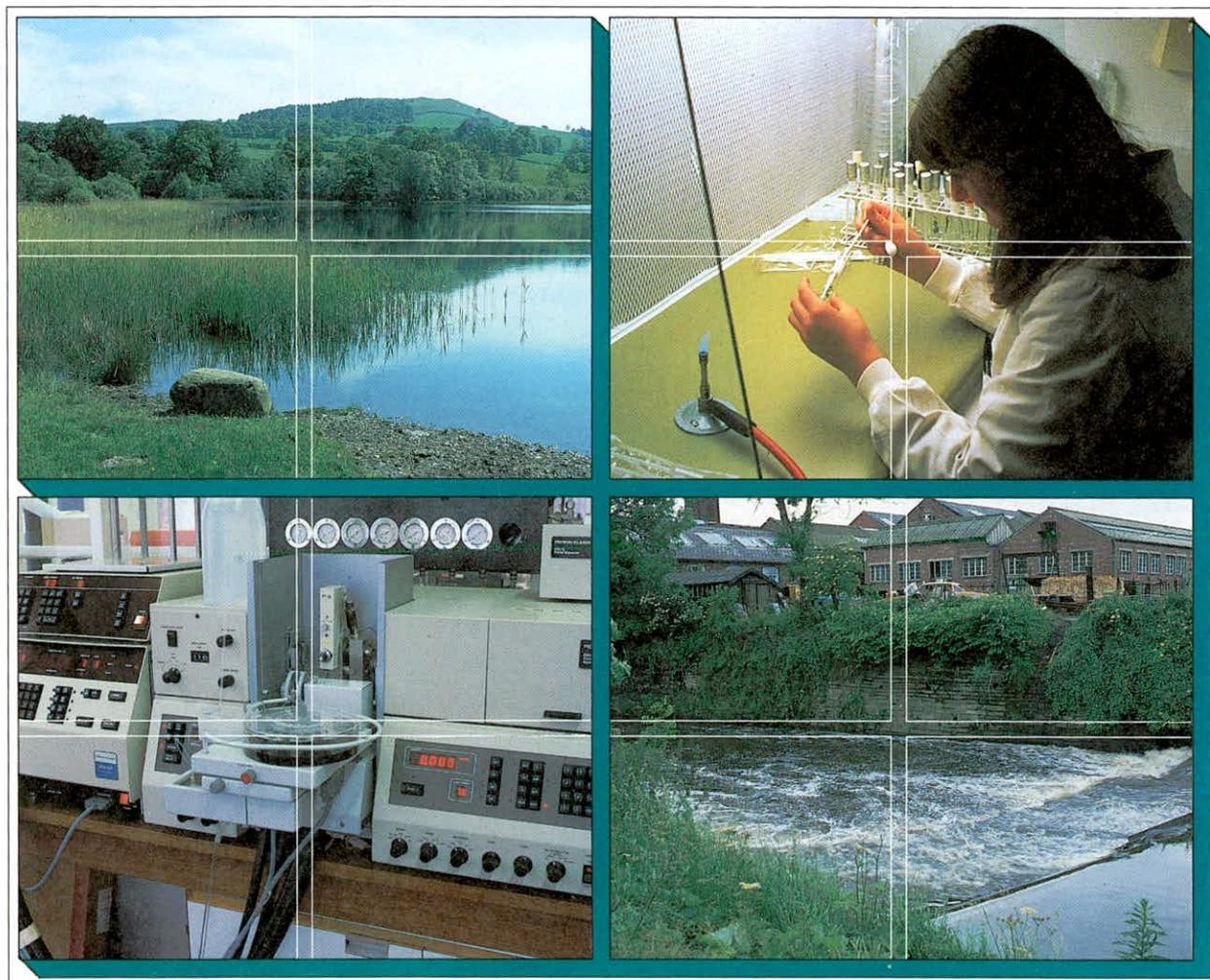
An audit of performance in the analysis of biological samples in 1995 NRA South Western Region: Primary Audit

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NRA South Western Region: Primary Audit**

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1. INTRODUCTION

The 1995 General Quality Assessment (GQA) Survey included the sampling of aquatic macro-invertebrates for biological assessment of river quality throughout the United Kingdom. In England and Wales the survey was undertaken by the National Rivers Authority (NRA), the River Purification Boards (RPBs) sampled in Scotland, the Industrial Research and Technology Unit (IRTU) undertook the work in Northern Ireland and the Government Laboratory covered the Isle of Man (IOM).

The majority of sites surveyed were sampled in two seasons, spring and autumn. Standard collection procedures were used and the sampling strategy was compatible with RIVPACS (River InVertebrate Prediction And Classification System), a computer model developed by the Institute of Freshwater Ecology (IFE).

Samples were sorted for the families of macro-invertebrates included in the Biological Monitoring Working Party (BMWP) system. Taxa present were recorded on site data sheets. Although attempts had been made to standardise sample processing and recording techniques, these did vary somewhat from region to region.

In order to undertake this massive programme of fieldwork and sample processing, a large number of staff, many of whom were relatively inexperienced, were employed by the surveying agencies. In view of the number of staff involved and the variability of sample processing techniques, it was recognised that a quality assurance exercise was necessary to minimise and quantify errors. Each laboratory appointed at least one experienced analyst to act as an internal analytical quality control (AQC) checker. For most agencies, these checkers re-sorted about 10% of the laboratory's samples, those samples chosen for re-sorting being selected at random. In addition, IFE was contracted to undertake an independent, external audit of the quality of the laboratory analysis of biological samples for each NRA region, each RPB, IRTU and IOM. This commission was consistent with the audit performed by IFE for the National River Quality Survey in 1990 and for the routine biological monitoring of river sites each year between 1991 and 1994. This audit was originally intended as a measure of the quality of the AQC analyses and is termed the main audit or AQC audit. The data collected for the 1995 GQA Survey was not adjusted for errors identified by either of the quality assurance procedures. Therefore the NRA contracted IFE to subject their samples to a further audit of the primary analysis (the primary audit) to provide an independent assessment of the quality of the Survey data.

This report presents the results of the 60 samples audited for NRA South Western Region and represents a measure of the performance of the primary analyst rather than that of the AQC analyst. The results of the AQC Audit, detailing the performance of the biologists who analysed the 53 AQC'd samples for the Region, are reported separately.

2. SAMPLE SELECTION

Samples for audit were selected internally by each of the agencies being monitored. The number of samples selected for audit varied between the different agencies and the biologists processing these samples had no prior knowledge of which samples were to be audited. Some agencies only sent to IFE samples that had been processed twice. Others adopted a random selection process, whereby some samples had been analysed just once and some had been re-sorted. The manner of sample selection, which biologists would be monitored and the number of audit samples from each season, were left to the discretion of the agency, within the limits of the total number of samples that IFE was contracted to audit.

3. SAMPLE PROCESSING

The normal protocol for NRA, RPB, IRTU and IOM biologists was to sort their samples within the laboratory and to select examples of each scoring taxon within the BMWP system. In most cases, the invertebrates were placed in a vial of preservative (4% formaldehyde solution or 70% industrial alcohol) and the BMWP taxa were listed on a data sheet. The vial of animals and the sorted material were then returned to the sample container and preservative added. Thus, each sample available to IFE for audit should have included:

- i) a data sheet containing a list of the BMWP families found in the sample.
- ii) a vial containing representatives from each family.
- iii) the preserved sample.

When these three elements were present, the sequence of operations at IFE was as follows:

- a) The remainder of the sample was sorted, without reference to the data sheet or to the vial of animals, and the BMWP families identified.
- b) The families contained within the vial were identified.
- c) A comparison was made between the listing of families and those found in the sample by IFE.
- d) A comparison was made between the listing of families and those identified from the vial by IFE.
- e) "Losses" or "gains" from the original listing of families were noted. In the case of "gains", each additional family was identified, where possible, to species level, in order to clarify any specific repetitive errors. Single representatives of a "gained" taxon were noted as such.
- f) An error code, selected from a list on the result sheet, was assigned by the IFE auditor for each "loss" or "gain".

Occasionally a sample did not include a vial containing representative examples of the families listed on the data sheet, while some arrived with the vial damaged in transit such that the representative specimens were no longer separated. For these samples, only operations a), c), e) and f) above were appropriate.

Several directives were issued to IFE relating to the treatment of BMWP taxa. Every taxon recorded on the data sheet must be supported by a voucher specimen of that family in the vial (or, for very large specimens, left in the sample). The only exceptions to this rule were the native crayfish, *Austropotamobius pallipes*, the medicinal leech, *Hirudo medicinalis* and the pearl mussel, *Margaritifera margaritifera* (which does not belong to a BMWP family), all of which are protected species. Where possible, IFE gave the benefit of doubt to the analyst in cases of the "loss" of Planariidae, specimens of which have been known to disintegrate in preservative. Animals deemed to have been dead at the time of sampling, cast insect skins, pupal exuviae and empty mollusc shells were to be excluded from the listing of families present. Isolated posterior ends of "living" specimens were not acceptable as records of a taxon. In these cases, thorax plus abdomen was deemed acceptable but abdomen only was deemed unacceptable. Terrestrial representatives of BMWP scoring families were also to be excluded from the audit. For this reason, Clambidae, Chrysomelidae and Curculionidae, which appear in the BMWP list, were excluded for the purposes of the audit since most representatives of these families are, at best, only semi-aquatic. Trichopteran pupae, although not routinely identified by many biologists, were to be included in the listing of families.

4. REPORTING

The results of each sample audit were recorded on a standard report form and sent to the Regional Biologist. Copies of these report forms are presented in the Appendix. For audit samples where a vial of animals was included, the comparison between the listing of families and the taxa found in the vial by IFE was shown in the section of the report form headed "VIAL". Discrepancies could be due to carelessness, misidentifications or errors in completing the data sheet listing the families present. Families not on the listing but found by IFE in the remainder of the sample were entered in the section of the report form headed "SAMPLE" under "Additional BMWP taxa found by IFE". Taxa recorded here represent families missed by the analyst(s) on sorting the sample. When the families listed as "losses" in the first section of the report form were compared with the full list of families recorded in the sample by IFE, some apparent losses from the vial were offset by the presence of those families in the remainder of the sample. These taxa were therefore listed both as "losses" from the vial and as "gains" from the sample and were neither a net loss nor a net gain. In these cases, the families were marked with an asterisk in both boxes. Such errors are noted as "omissions".

Species identifications, state of development (eg adult or larval coleopterans) and the presence of a single representative of a family within the remainder of the sample were recorded in the centre section of the report form under "species name".

IFE was asked to interpret each error to provide a possible cause. An error code, selected from a list of options at the foot of each result sheet, was entered against each taxon in the column headed "Presumed cause of error".

For those samples in which the vial of animals was damaged or missing, the "VIAL" sections of the report form were not applicable (N/a). Families not on the list but present in the sample were entered in the section under "SAMPLE" : "Additional taxa" as before. Families recorded on the list but not found by IFE were indicated in the section above this. If the vial of animals was retained by the sorter, entries in this box could include the sole representative of a family which was removed, a family seen at the site which escaped or was released (without mention being made on the data sheet), inaccurate identification, the wrong family box being ticked on the data sheet or the family being present in the sample but missed by IFE.

The final section of the result sheet summarises the audit, giving details of the numbers of "losses", "gains" and "omissions", together with the net effects on BMWP score and the number of scoring taxa.

5. RESULTS

The results of the Primary audit for South Western Region are summarised by area in Tables 1 to 4. Table 5 displays the statistics of these regional audit results centered around the target of acceptability of no more than two missed taxa per sample. These data are presented for each analyst, for their Area laboratories and for the Region as a whole. Table 6 compares these results for each NRA Region and Area laboratory. Table 7 presents data for South Western Region for the net effects of the Primary audit on the BMWP score and number of taxa. This table is again based on the target of no more than two missed taxa per sample. The figure of 13 for an acceptable underestimate of BMWP score is based on twice the average score of all taxa in the BMWP listing (excluding Clambidae, Chrysomelidae and Curculionidae, which are excluded from the audit). This average score is 6.57. Table 8 compares this BMWP data for each NRA Region and Area laboratory. Table 9 lists the taxa missed in sorting by South Western Region's primary analysts in the 1995 audit. A listing of all such taxa for the entire 1995 audit (Primary and AQC Audits for NRA regions and Main Audit for other organisations) for the whole of the UK is presented in the AQC audit report.

6. ACKNOWLEDGEMENTS

Grateful thanks to John Murray-Bligh of NRA Thames Region, who provided an invaluable service in the development and implementation of improved methodology and in providing helpful advice throughout.

Table 1. The 16 samples audited for Devon Area

River	Site	Primary Analyst	Losses	Gains	Omissions
SPRING					
Caen	St. Brannocks	AA	0	0	0
Langham Lake	u/s Bridge	AA	0	1	0
Culm	Silverton Mill	AA	0	2	0
Teign	Clifford Bridge	AA	0	1	0
Holy Brook	Northwood, Buckfast	AH	0	3	0
Holewater	u/s Linkleyham Bridge	LK	0	3	0
Mole	d/s FE discharge	LK	0	3	0
Drimpton Stream	u/s Ford, Netherhay	LK	0	0	0
AUTUMN					
Polly Brook	A376 Bridge, Exton	AA	1	3	0
Exe	Winsford	AA	0	1	0
Aller Brook	Aller Orchard	AA	0	1	0
Otter	Hoemoor Farm	AH	0	2	0
Hookmoor Brook	Narracott	LK	0	0	0
Dart (Exe Trib)	Dart Bridge, Bickleigh	LK	0	0	0
Danes Brook	Hawkrige	PG	0	1	0
Holy Brook	Buckfast	PG	0	4	0

Table 2. The 15 samples audited for Cornwall Area

River	Site	Primary Analyst	Losses	Gains	Omissions
SPRING					
Ottery	Canworthy Water Bridge	KAD/KAI	0	0	0
East Looe	d/s Moorswater	KAD/KAI	0	0	0
Fowey	Harrowbridge	KAD/KAI	0	5	0
Gwindra Stream	Treway Bridge	SDT	0	0	0
Carbis Stream	U/s Luxulyan	TAB	0	3	0
AUTUMN					
Plym	Plym Bridge	KAD/KAI	0	1	0
Kensey	St.Leonards Bridge	KAD/KAI	0	0	0
Fowey	Restormel	KAD/KAI	0	1	0
Mevagissey Stream	Mevagissey Car Park	KAD/KAI	0	0	0
Penberth Stream	Penberth Bridge	KAD/KAI	0	0	0
Quither Brook	u/s R.Lyd	TAB	0	1	0
Lyd	Lifton Bridge	TAB	0	2	0
Claw	Tetcott Bridge	TAB	1	4	0
Ottery	Hellescott Bridge	TAB	0	0	0
Par	Trefry Viaduct	TAB	0	2	0

Table 3. The 13 samples audited for North Wessex Area

River	Site	Primary Analyst	Losses	Gains	Omissions
SPRING					
Monksilver Stream	Monksilver	AB	0	0	0
Somer	d/s Chilcompton STW	AH	0	0	0
Alham	Alford House Bridge	APH	0	3	0
Nunney Brook	Vallis	APH	0	0	0
Sherston Avon	Cowdown Springs	JF	0	1	0
Washford	Whitehall Bridge	JF	0	0	0
AUTUMN					
North Drain	Tealham Moor	APH	0	2	0
Chew	Chew Magna	APH	0	0	0
Halse Water	Roughmoor	APH	0	1	0
Huntspill	Solway Lane	APH	0	2	0
Gaze Brook	u/s Hullavington STW	JF	0	0	0
Avill Tributary	Timberscombe	JF	0	1	0
Yeo	Goathill	JL	0	2	0

Table 4. The 16 samples audited for South Wessex Area

River	Site	Primary Analyst	Losses	Gains	Omissions
SPRING					
Stour	Hayward Bridge	BJJ	2	5	0
Piddle	Hyde	BJJ	1	3	0
Chew Stoke Stream	u/s Public footbridge	BJJ	0	6	0
Bristol Avon	Limpley Stoke	HY	0	4	0
Sherston Avon	d/s Sherston STW	JP	0	4	0
Wey	Westbrook House	MP	0	0	0
Cam	Queen Camel	MP	0	0	0
Huckles Brook	Hucklesbrook Farm	MP	0	0	0
Bristol Avon	Barton Farm	MP	0	1	0
Halse Water	Roughmoor	PRH	0	4	0
AUTUMN					
Wylde	Crockerton Green	BJJ	0	1	2
Frome	Burton	HY	0	1	0
Crane	Romford Bridge	JP	0	0	0
Stour	Wyndham Farm	MP	0	0	0
Stour	Lower Farm	PRH	0	4	0
Wylde	Hensford Marsh	PRH	0	2	0

Table 5. Statistics of 1995 Primary Audit results for South Western Region

Analyst/Group	n	Mean gains	Standard error	No.samples >2 gains	% samples >2 gains	Highest no. gains	Mean errors (l+g+o)	Standard error
Devon	16	1.56	0.33	5	31.25	4	1.63	0.35
AA	7	1.29	0.36	1	14.29	3	1.43	0.48
AH	2	2.50	0.50	1	50.00	3	2.50	0.50
LK	5	1.20	0.73	2	40.00	3	1.20	0.73
PG	2	2.50	1.50	1	50.00	4	2.50	1.50
Cornwall	15	1.27	0.42	3	20.00	5	1.33	0.45
KAD/KAI	8	0.88	0.61	1	12.50	5	0.88	0.61
SDT	1	0.00	n/a	0	0.00	0	0.00	n/a
TAB	6	2.00	0.58	2	33.33	4	6.00	0.89
North Wessex	13	0.92	0.29	1	7.69	3	0.92	0.29
AB	1	0.00	n/a	0	0.00	0	0.00	n/a
AH	1	0.00	n/a	0	0.00	0	0.00	n/a
APH	6	1.33	0.49	1	16.67	3	1.33	0.49
JF	4	0.50	0.29	0	0.00	1	0.50	0.29
JL	1	2.00	n/a	0	0.00	2	2.00	n/a
South Wessex	16	2.19	0.52	7	43.75	6	2.50	0.58
BJJ	4	3.75	1.11	3	75.00	6	5.00	0.92
HY	2	2.50	1.50	1	50.00	4	2.50	1.50
JP	2	2.00	2.00	1	50.00	4	2.00	2.00
MP	5	0.20	0.20	0	0.00	1	0.20	0.20
PRH	3	3.33	0.66	2	66.67	4	3.33	0.66
S.Western Region	60	1.52	0.21	16	26.67	6	1.63	0.23
Whole of NRA	481	1.88	0.08	150	31.19	8	2.21	0.09

Table 6. Summary of errors found in 1995 Primary Audit for each NRA Laboratory

Region/Lab.	n	Mean gains	Standard error	No.samples >2 gains	% samples >2 gains	Highest no. gains	Mean errors (l+g+o)	Standard error
Anglian	60	2.25	0.20	24	40.00	6	2.63	0.22
Central	20	2.25	0.35	6	30.00	5	3.00	0.42
Eastern	20	2.85	0.39	11	50.00	6	3.05	0.38
Northern	20	1.65	0.27	7	35.00	3	1.85	0.27
N'umb & Yorks	60	1.52	0.20	12	20.00	6	1.68	0.21
South Yorkshire	27	1.44	0.28	5	18.52	6	1.63	0.29
Northumbria	17	1.12	0.26	2	11.76	3	1.29	0.31
Dales	16	2.06	0.50	5	31.25	6	2.19	0.51
North West	60	2.52	0.27	26	43.33	8	2.98	0.30
Northern	18	2.22	0.45	6	33.33	7	2.89	0.57
Central	20	2.35	0.44	8	40.00	7	2.70	0.51
Southern	22	2.91	0.51	12	54.55	8	3.32	0.51
Severn-Trent	61	1.84	0.22	18	29.51	8	1.23	0.27
Upper Severn	16	1.50	0.41	5	31.25	5	1.88	0.60
Lower Severn	13	1.85	0.52	4	30.77	5	2.46	0.63
Upper Trent	13	1.69	0.41	3	23.08	5	1.92	0.42
Lower Trent	19	2.21	0.43	6	31.58	8	2.58	0.50
Southern	60	1.33	0.19	10	16.67	7	1.77	0.21
Western	30	1.20	0.26	5	16.67	6	1.60	0.27
Eastern	30	1.47	0.28	5	16.67	7	1.93	0.33
South Western	60	1.52	0.21	16	26.67	6	1.63	0.23
Devon	16	1.56	0.33	5	31.25	4	1.63	0.35
Cornwall	15	1.27	0.42	3	20.00	5	1.33	0.45
North Wessex	13	0.92	0.29	1	7.69	3	0.92	0.29
South Wessex	16	2.19	0.52	7	43.75	6	2.50	0.58
Thames	60	2.05	0.22	22	36.67	7	2.43	0.24
Fobney Mead	30	2.43	0.32	16	53.33	6	2.97	0.35
Waltham Cross	30	1.67	0.29	6	20.00	7	1.90	0.29
Welsh	60	1.98	0.22	22	36.67	6	2.30	0.23
Northern	20	2.20	0.40	9	45.00	6	2.65	0.39
South Western	20	1.75	0.40	5	25.00	6	2.10	0.41
South Eastern	20	2.00	0.37	8	40.00	5	2.15	0.39
Whole of NRA	481	1.88	0.08	150	31.19	8	2.21	0.09

Table 7. Net effects of the Primary Audit on BMWP score and number of scoring taxa

Analyst/Group	n	Mean net effect on BMWP score	% of samples underestimated by score >13	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	% of samples underestimated by >2 taxa	Maximum underestimate of no. of taxa
Devon	16	9.25	37.50	28	1.50	25.00	4
AA	7	6.00	14.29	15	1.14	0.00	2
AH	2	17.50	100.00	20	2.50	50.00	3
LK	5	7.60	40.00	24	1.20	40.00	3
PG	2	16.50	50.00	28	2.50	50.00	4
Cornwall	15	7.87	26.67	35	1.20	30.00	5
KAD/KAI	8	6.00	12.50	35	0.88	12.50	5
SDT	1	0.00	0.00	0	0.00	0.00	0
TAB	6	11.67	50.00	19	1.83	33.33	3
N.Wessex	13	4.54	15.38	16	0.85	6.25	3
AB	1	0.00	0.00	0	0.00	0.00	0
AH	1	0.00	0.00	0	0.00	0.00	0
APH	6	8.00	33.33	16	1.17	16.67	3
JF	4	2.00	0.00	5	0.50	0.00	1
JL	1	5.00	0.00	5	2.00	0.00	2
S.Wessex	16	11.31	37.50	33	2.00	37.50	6
BJJ	4	19.50	50.00	33	3.00	50.00	6
HY	2	13.00	50.00	16	2.50	50.00	4
JP	2	8.50	50.00	17	2.00	50.00	4
MP	5	1.00	0.00	5	0.20	0.00	1
PRH	3	18.33	66.67	22	3.33	66.67	4
S.W.Region	60	8.43	30.00	35	1.42	23.33	6
Whole of NRA	481	9.56	28.90	52	1.65	27.86	8

Table 8. Net effects of the Primary Audit on BMWP score and number of scoring taxa for each NRA Area

Analyst/Group	n	Mean net effect on BMWP score	% of samples underestimated by score >13	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	% of samples underestimated by >2 taxa	Maximum underestimate of no. of taxa
Anglian Region	60	10.32	35.00	37	1.98	35.00	6
Central	20	9.45	30.00	24	1.85	25.00	5
Eastern	20	14.35	55.00	37	2.65	55.00	6
Northern	20	7.15	20.00	18	1.45	30.00	3
N & Y Region	60	8.35	16.67	40	1.45	18.33	6
S. Yorkshire	27	7.33	14.81	35	1.37	18.52	6
Northumbria	17	5.41	5.88	20	1.00	5.88	3
Dales	16	13.19	31.25	40	2.06	31.25	6
N. West Region	60	13.03	41.67	49	2.18	40.00	8
Northern	18	12.50	44.44	33	1.83	33.33	5
Central	20	13.00	35.00	39	2.10	40.00	6
Southern	22	13.50	45.45	49	2.55	45.45	8
S-T Region	61	8.69	27.87	41	1.64	27.87	7
Upper Severn	16	8.44	25.00	33	1.31	25.00	4
Lower Severn	13	6.77	23.08	30	1.54	30.77	5
Upper Trent	13	9.23	23.08	41	1.62	23.08	5
Lower Trent	19	9.84	36.84	36	2.00	31.58	7
Southern Region	60	6.62	20.00	52	1.02	15.00	6
Western	30	5.33	13.33	32	0.90	13.33	6
Eastern	30	7.90	40.00	52	1.13	16.67	6
S.W. Region	60	8.43	30.00	35	1.42	23.33	6
Devon	16	9.25	37.50	28	1.50	25.00	4
Cornwall	15	7.87	26.67	35	1.20	30.00	5
N. Wessex	13	4.54	15.38	16	0.85	6.25	3
S. Wessex	16	11.31	37.50	33	2.00	37.50	6
Thames Region	60	9.18	26.67	47	1.78	31.67	7
Fobney Mead	30	11.00	40.00	47	2.10	46.67	6
Waltham Cross	30	7.37	13.33	42	1.47	16.67	7
Welsh Region	60	11.87	33.33	43	1.73	31.67	6
Northern	20	12.45	45.00	43	1.85	35.00	6
S. Western	20	9.45	20.00	37	1.40	20.00	6
S. Eastern	20	13.70	35.00	38	1.95	40.00	5
Whole of NRA	481	9.56	28.90	52	1.65	27.86	8

Table 9. Taxa missed by South Western Region's primary analysts

Family	n	% of S.Western Region's missed taxa in Primary Audit	% of missed taxa in Primary Audit for all NRA Regions
Hydroptilidae	5	6.10	5.93
Leptoceridae	5	6.10	3.68
Sphaeriidae	5	6.10	4.63
Planariidae (incl. Dugesiidae)	4	4.88	4.27
Scirtidae	4	4.88	1.42
Tipulidae	4	4.88	2.25
Caenidae	3	3.66	3.56
Hydrometridae	3	3.66	0.95
Hydrophilidae (incl. Hydraenidae)	3	3.66	5.46
Leuctridae	3	3.66	0.95
Planorbidae	3	3.66	2.85
Ancylidae (incl. Acroloxidae)	2	2.44	1.66
Baetidae	2	2.44	2.25
Goeridae	2	2.44	1.78
Haliplidae	2	2.44	2.02
Hydrobiidae (incl. Bithyniidae)	2	2.44	4.98
Hydropsychidae	2	2.44	1.66
Limnephilidae	2	2.44	2.61
Odontoceridae	2	2.44	0.83
Piscicolidae	2	2.44	1.90
Rhyacophilidae (incl. Glossosomatidae)	2	2.44	0.83
Aphelocheiridae	1	1.22	0.12
Asellidae	1	1.22	1.66
Brachycentridae	1	1.22	0.24
Chironomidae	1	1.22	0.59
Dendrocoelidae	1	1.22	1.07
Dytiscidae (incl. Noteridae)	1	1.22	1.90
Elmidae	1	1.22	4.03
Ephemeridae	1	1.22	0.47
Erpobdellidae	1	1.22	1.42
Glossiphoniidae	1	1.22	1.66
Lepidostomatidae	1	1.22	1.07
Lymnaeidae	1	1.22	2.49

Table 9. (cont.)

Family	n	% of S. Western Region's missed taxa in Primary Audit	% of missed taxa in Primary Audit for all NRA Regions
Nemouridae	1	1.22	2.25
Oligochaeta	1	1.22	0.71
Platycnemididae	1	1.22	0.24
Polycentropodidae	1	1.22	1.19
Psychomyiidae (incl. Ecnomidae)	1	1.22	2.85
Simuliidae	1	1.22	2.73
Taeniopterygidae	1	1.22	0.47
Valvatidae	1	1.22	2.14

APPENDIX

Results of individual sample audits

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 9.3.95

WATER-
COURSE: Caen

PRIMARY
ANALYST: AA

AQC
ANALYST: AH

SITE: St. Brannocks

CODE: NRA06 3001

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
--------------------	---	--

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 15.3.95

WATER-

PRIMARY

AQC

COURSE: Langham Lake

ANALYST: AA

ANALYST: LB

SITE: u/s Bridge

CODE: NRA06 3008

SORT/AQC

METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydropsychidae

Dipterona felix 1 only

9

SUMMARY OF AUDIT

LOSSES 0 GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 2.5.95

WATER-
COURSE: Culm

PRIMARY
ANALYST: AA

AQC
ANALYST: LMB

SITE: Silverton Mill

CODE: 06 0577 - D3

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
--------------------	---	--

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Leptoceridae	Athripsodes sp. (juveniles)	9
Tipulidae	Antocha vitripennis (pupa) 1 only	9

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 15

ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 5.5.95

WATER-COURSE: Teign

PRIMARY ANALYST: AA

AQC ANALYST: LK

SITE: Clifford Bridge

CODE: 06 0631 - D4

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
--------------------	---	--

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Dytiscidae (incl. Noteridae)	Oreodytes sanmarkii (adult) 1 only	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5

ON NO. OF TAXA 1

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 16.5.95

WATER-COURSE: Holy Brook

PRIMARY ANALYST: AH

AQC ANALYST: LK

SITE: Northwood, Buckfast

CODE: 06 0714 - E3

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Tipulidae	Dicranota sp. 1 only	11
Scirtidae	Hydrocyphon deflexicollis (larvae)	9
Leptoceridae	Oecetis testacea 1 only	9

SUMMARY OF AUDIT

LOSSES 0

GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 20

ON NO. OF TAXA 3

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 16.3.95

WATER-
COURSE: Holewater

PRIMARY
ANALYST: LK

AQC
ANALYST: LB

SITE: u/s Linkleyham Bridge

CODE: NRA06 3032

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Ancylidae (incl. Acroloxidae)	Ancylus fluviatilis 1 only	9
Tipulidae	Dicranota sp. 1 only	9
Sphaeriidae	Pisidium sp. 1 only	11

SUMMARY OF AUDIT

LOSSES 0 GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 14

ON NO. OF TAXA 3

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 30.3.95

WATER-COURSE: Mole

PRIMARY ANALYST: LK

AQC ANALYST: AH

SITE: d/s FE discharge

CODE: NRA06 3080

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Leuctridae	Leuctra inermis	11
Leptoceridae	Athripsodes sp. (juvenile) 1 only	9
Piscicolidae	Piscicola geometra 1 only	9

SUMMARY OF AUDIT

LOSSES 0

GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 24

ON NO. OF TAXA 3

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 18.4.95

WATER-

PRIMARY

AQC

COURSE: Drimpton Stream

ANALYST: LK

ANALYST: LB

SITE: u/s Ford, Netherhay

CODE: NRA06 0217

SORT/AQC

METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 9.10.95

WATER-
COURSE: Polly Brook

PRIMARY
ANALYST: AA

AQC
ANALYST: LK

SITE: A376 Bridge, Exton

CODE: 0566-11

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

Polycentropodidae	12
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Additional BMWP taxa found by IFE

Asellidae	Asellus aquaticus	11
Rhyacophilidae (incl. Glossosomatidae)	Rhyacophila dorsalis	11

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydroptilidae	Hydroptila sp. (pupae)	9
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SUMMARY OF AUDIT

LOSSES 1

GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 9

ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 12.10.95

WATER-COURSE: Exe

PRIMARY ANALYST: AA

AQC ANALYST: LK

SITE: Winsford

CODE: 0547-14

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydrobiidae (incl. Bithyniidae)	Potamopyrgus jenkinsi	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 3

ON NO. OF TAXA 1

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 24.10.95

WATER-COURSE: Aller Brook

PRIMARY ANALYST: AA

AQC ANALYST: AH

SITE: Aller Orchard

CODE: 0602-J4

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Planariidae (incl. Dugesiidae)	Polycelis felina 1 only	9
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SUMMARY OF AUDIT

LOSSES 0 GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5
ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 4.10.95

WATER-COURSE: Otter

PRIMARY ANALYST: AH

AQC ANALYST: LMB

SITE: Hoemoor Farm

CODE: 0401-H3

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Scirtidae	Elodes sp. (larva) 1 only	11
Odontoceridae	Odontocerum albicorne	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 15

ON NO. OF TAXA 2

1 No representative of family in vial
2 Alternative terrestrial specimen in vial
3 Posterior end only in vial
4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling
6 Taxon in vial but not recorded
7 Mis-identification
8 Typographical error - wrong box ticked

9 Taxon missed in sorting
10 Unexplained error
11 Taxon added in internal AQC
12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 26.9.95

WATER-COURSE: Hookmoor Brook

PRIMARY ANALYST: LK

AQC ANALYST: AH

SITE: Narracott

CODE: 2955-H1

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 13.10.95

WATER-COURSE: Dart (Exe Trib)

PRIMARY ANALYST: LK

AQC ANALYST: LMB

SITE: Dart Bridge, Bickleigh

CODE: 0534-15

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 10.10.95

WATER-
COURSE: Danes Brook

PRIMARY
ANALYST: PG

AQC
ANALYST: AH

SITE: Hawkridge

CODE: 0555-I2

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Scirtidae	Elodes sp. (larva) 1 only	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Devon

DATE: 30.10.95

WATER-COURSE: Holy Brook

PRIMARY ANALYST: PG

AQC ANALYST:

SITE: Northwood Buckfast

CODE: 0714

SORT/AQC METHOD: Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
-------------	-------------------------------------	---

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

Sphaeriidae	Pisidium sp.	6
Odontoceridae	Odontocerum albicorne	6
Scirtidae	Hydrocyphon deflexicollis (larvae)	6

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Ephemeraidae	Ephemera sp. (anterior end) 1 only	9
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SUMMARY OF AUDIT

LOSSES 0

GAINS 4

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 28

ON NO. OF TAXA 4

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 4.4.95

WATER-COURSE: Ottery

PRIMARY ANALYST: KAD

AQC ANALYST: TAB

SITE: Canworthy Water Bridge

CODE: NRA06 1255

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
--------------------	---	--

VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 29.3.95

WATER-
COURSE: East Looe

PRIMARY
ANALYST: KAI

AQC
ANALYST: SDT

SITE: d/s Moorswater

CODE: NRA06 1419

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0 GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 3.4.95

WATER-COURSE: Fowey

PRIMARY ANALYST: KAI

AQC ANALYST: TAB

SITE: Harrowbridge

CODE: NRA06 1512

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Odontoceridae	Odontocerum albicorne 1 only	9
Polycentropodidae	Polycentropus sp. 1 only	9
Scirtidae	Elodes sp. (larva) 1 only	9
Sphaeriidae	Pisidium sp.	11
Taeniopterygidae	Brachyptera risi	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 5

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 35

ON NO. OF TAXA 5

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 20.3.95

WATER-COURSE: Gwindra Stream

PRIMARY ANALYST: SDT

AQC ANALYST: KAI

SITE: Treway Bridge

CODE: NRA06 1926

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0 GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 23.3.95

WATER-COURSE: Carbis Stream

PRIMARY ANALYST: TAB

AQC ANALYST: SDT

SITE: U/s Luxulyan

CODE: NRA06 1614

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Psychomyiidae (incl. Ecnomidae)	Lype sp. 1 only	11
Rhyacophilidae (incl. Glossosomatidae)	Rhyacophila sp. 1 only	11
Sphaeriidae	Pisidium sp. 1 only	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 18

ON NO. OF TAXA 3

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 25.9.95

WATER-COURSE: Plym

PRIMARY ANALYST: KAI

AQC ANALYST: SDT

SITE: Plym Bridge

CODE: 06 1104

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydroptilidae	Oxyethira sp. 1 only	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 6

ON NO. OF TAXA 1

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 2.10.95

WATER-
COURSE: Kensey

PRIMARY
ANALYST: KAI

AQC
ANALYST: SDT

SITE: St.Leonards Bridge

CODE: 06 1262

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 6.9.95

WATER-COURSE: Fowey

PRIMARY ANALYST: KAI

AQC ANALYST: SDT

SITE: Restormel

CODE: 1516

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Caenidae	Caenis sp. (juvenile) 1 only	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 7

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 16.10.95

WATER-COURSE: Mevagissey Stream

PRIMARY ANALYST: KAI

AQC ANALYST: SDT

SITE: Mevagissey Car Park

CODE: 1805

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 27.9.95

WATER-COURSE: Penberth Stream

PRIMARY ANALYST: KAI

AQC ANALYST: SDT

SITE: Penberth Bridge

CODE: 2201

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 2.10.95

WATER-COURSE: Quither Brook

PRIMARY ANALYST: TAB

AQC ANALYST: SDT

SITE: u/s R.Lyd

CODE: 06 1224

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Piscicolidae

Piscicola geometra

11

SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 4
ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 29.9.95

WATER-COURSE: Lyd

PRIMARY ANALYST: TAB

AQC ANALYST: SDT

SITE: Lifton Bridge

CODE: 06 1223

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Planariidae (incl. Dugesiidae)	Polycelis sp. 1 only	11
Caenidae	Caenis rivulorum 1 only	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 12

ON NO. OF TAXA 2

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 22.9.95

WATER-COURSE: Claw

PRIMARY ANALYST: TAB

AQC ANALYST: SDT

SITE: Tetcott Bridge

CODE: 06 1242

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

Hydroptilidae	Agapetus sp.	12
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Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydrometridae	Hydrometra stagnorum 1 only	11
Limnephilidae	Chaetopteryx villosa 1 only	11
Aphelocheiridae	Aphelocheirus aestivalis (nymph) 1 only	11
Sphaeriidae	Pisidium sp. 1 only	9

SUMMARY OF AUDIT

LOSSES 1 GAINS 4

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 19
ON NO. OF TAXA 3

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 2.10.95

WATER-COURSE: Ottery

PRIMARY ANALYST: TAB

AQC ANALYST: SDT

SITE: Hellescott Bridge

CODE: 06 1256

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0 GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: Cornwall

DATE: 12.10.95

WATER-COURSE: Par

PRIMARY ANALYST: TAB

AQC ANALYST: SDT

SITE: Trefry Viaduct

CODE: 1602

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Goeridae	Silo pallipes 1 only	11
Rhyacophilidae (incl. Glossosomatidae)	Agapetus sp. 1 only	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 17

ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 19.4.95

WATER-

PRIMARY

AQC

COURSE: Monksilver Stream

ANALYST: AB

ANALYST:

SITE: Monksilver

CODE: 3604

SORT/AQC

METHOD: Preserved

RESULTS OF PRIMARY AUDIT

<u>Family name</u>	<u>Species name (where appropriate)</u>	<u>Presumed cause of error (see footnotes)</u>
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 18.5.95

WATER-
COURSE: Somer

PRIMARY
ANALYST: AH

AQC
ANALYST: JF

SITE: d/s Chilcompton STW

CODE: 09 5617

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 4.5.95

WATER-
COURSE: Alham

PRIMARY
ANALYST: APH

AQC
ANALYST:

SITE: Alford House Bridge

CODE: 4306

SORT/AQC
METHOD: Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Ancylidae (incl. Acroloxidae)	Ancylus fluviatilis	9
Hydrometridae	Hydrometra stagnorum 1 only	9
Elmidae	Elmis aenea (larva) 1 only	9

SUMMARY OF AUDIT

LOSSES 0

GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 16

ON NO. OF TAXA 3

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 12.4.95

WATER-COURSE: Nunney Brook

PRIMARY ANALYST: APH

AQC ANALYST:

SITE: Vallis

CODE: 5514

SORT/AQC METHOD: Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 21.3.95

WATER-COURSE: Sherston Avon

PRIMARY ANALYST: JF

AQC ANALYST: AB

SITE: Cowdown Springs

CODE: 09 4903

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Asellidae	Asellus aquaticus 1 only	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 3

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 19.4.95

WATER-COURSE: Washford

PRIMARY ANALYST: JF

AQC ANALYST: APH

SITE: Whitehall Bridge

CODE: 09 3506

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 2.10.95

WATER-

PRIMARY

AQC

COURSE: North Drain

ANALYST: APH

ANALYST: JF

SITE: Tealham Moor

CODE: 09 4323

SORT/AQC

METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydroptilidae	Oxyethira sp. (pupa) 1 only	9
Leptoceridae	Athripsodes aterrimus 1 only	9

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 16

ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 5.9.95

WATER-COURSE: Halse Water

PRIMARY ANALYST: APH

AQC ANALYST: AB

SITE: Roughmoor

CODE: 09 3719

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Caenidae	Caenis luctuosa/macrura	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 7

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 3.10.95

WATER-COURSE: Huntspill

PRIMARY ANALYST: APH

AQC ANALYST: AB

SITE: Solway Lane

CODE: 4328

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydroptilidae	Indet Hydroptilid (pupa) 1 only	11
Hydropsychidae	Hydropsyche sp. 1 only	9

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 11
ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 15.9.95

WATER-COURSE: Gaze Brook

PRIMARY ANALYST: JF

AQC ANALYST: AB

SITE: u/s Hullavington STW

CODE: 09 4959

SORT/AQC

METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 1.11.95

WATER-COURSE: Avill Tributary

PRIMARY ANALYST: JF

AQC ANALYST: AB

SITE: Timberscombe

CODE: 3403

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydrometridae

Hydrometra stagnorum 1 only

11

SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5

ON NO. OF TAXA 1

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 6.9.95

WATER-COURSE: Yeoo

PRIMARY ANALYST: JL

AQC ANALYST: APH

SITE: Goathill

CODE: 09 4203

SORT/AQC

METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Baetidae	Cloeon dipterum 1 only	11
Oligochaeta	Indet Tubificidae 1 only	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 2

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5

ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 27.3.95

WATER-COURSE: Stour

PRIMARY ANALYST: BJJ

AQC ANALYST:

SITE: Hayward Bridge

CODE: 71ST6000

SORT/AQC METHOD: Live

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

Coenagriidae 7

Hirudinidae 1

Additional BMWP taxa found by IFE

Molannidae Molanna angustata 6

Platycnemididae Platycnemis pennipes 7

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Haliplidae Haliplus sp. (larva) 1 only 9

Leuctridae Leuctra geniculata 1 only 9

Nemouridae Nemoura cinerea 1 only 9

SUMMARY OF AUDIT

LOSSES 2

GAINS 5

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 29

ON NO. OF TAXA 3

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western	LABORATORY: South Wessex	DATE: 10.5.95
WATER-COURSE: Piddle	PRIMARY ANALYST: BJJ	AQC ANALYST: GPG
SITE: Hyde	CODE: 7904	SORT/AQC METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

Planorbidae	Valvata cristata	7
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Additional BMWP taxa found by IFE

Valvatidae	Valvata cristata	7
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SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Brachycentridae	Brachycentrus subnubilus	9
Erpobdellidae	Erpobdella octoculata 1 only	11

SUMMARY OF AUDIT

LOSSES 1 GAINS 3

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 13

ON NO. OF TAXA 2

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western	LABORATORY: South Wessex	DATE: 26.4.95
WATER-COURSE: Chew Stoke Stream	PRIMARY ANALYST: JJ	AQC ANALYST: APH
SITE: u/s Public footbridge	CODE: 09 5707	SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Haliplidae	Brychius elevatus (larva) 1 only	11
Sphaeriidae	Pisidium sp.	11
Planariidae (incl. Dugesiidae)	Polycelis nigra/tenuis 1 only	11
Dendrocoelidae	Dendrocoelum lacteum 1 only	11
Hydrophilidae (incl. Hydraenidae)	Helophorus brevivalpis, Hydraena sp. (adults)	9
Leuctridae	Leuctra geniculata 1 only	9

SUMMARY OF AUDIT

LOSSES 0 GAINS 6 OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 33

ON NO. OF TAXA 6

- | | | |
|--|--|--|
| 1 No representative of family in vial | 5 Specimen dead at time of sampling | 9 Taxon missed in sorting |
| 2 Alternative terrestrial specimen in vial | 6 Taxon in vial but not recorded | 10 Unexplained error |
| 3 Posterior end only in vial | 7 Mis-identification | 11 Taxon added in internal AQC |
| 4 Empty shell or case or cast skin in vial | 8 Typographical error - wrong box ticked | 12 Recorded taxon that was rejected by AQC analyst |

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 4.5.95

WATER-
COURSE: Bristol Avon

PRIMARY
ANALYST: HY

AQC
ANALYST: JF

SITE: Limpley Stoke

CODE: 09 4932

SORT/AQC
METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

Dendrocoelidae	Dendrocoelum lacteum	6
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SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydrophilidae (incl. Hydraenidae)	Helophorus flavipes/obscurus 1 only	9
Valvatidae	Valvata cristata 1 only	11
Planorbidae	Gyraulus albus 1 only	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 4

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 16

ON NO. OF TAXA 4

1 No representative of family in vial
2 Alternative terrestrial specimen in vial
3 Posterior end only in vial
4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling
6 Taxon in vial but not recorded
7 Mis-identification
8 Typographical error - wrong box ticked

9 Taxon missed in sorting
10 Unexplained error
11 Taxon added in internal AQC
12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 21.3.95

WATER-COURSE: Sherston Avon

PRIMARY ANALYST: JP

AQC ANALYST: AB

SITE: d/s Sherston STW

CODE: 09 4905

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Baetidae	Baetis scambus/fuscatus, B.rhodani	11
Planorbidae	Armiger crista 1 only	11
Limnephilidae	Indet Limnephilids (juveniles)	11
Glossiphoniidae	Helobdella stagnalis	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 4

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 17

ON NO. OF TAXA 4

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 8.3.95

WATER-
COURSE: Wey

PRIMARY
ANALYST: MP

AQC
ANALYST: GPG

SITE: Westbrook House

CODE: 82WY0450

SORT/AQC
METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0 GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 13.3.95

WATER-
COURSE: Cam

PRIMARY
ANALYST: MP

AQC
ANALYST:

SITE: Queen Camel

CODE: 4223

SORT/AQC
METHOD: Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 18.4.95

WATER-COURSE: Huckles Brook

PRIMARY ANALYST: MP

AQC ANALYST: GPG

SITE: Hucklesbrook Farm

CODE: AQC1595

SORT/AQC METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0 GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: North Wessex

DATE: 1.5.95

WATER-COURSE: Bristol Avon

PRIMARY ANALYST: MP

AQC ANALYST: GPG

SITE: Barton Farm

CODE: 09 4929

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydrophilidae (incl. Hydraenidae)	Helophorus brevipalpis (adult) 1 only	11
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SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 5

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 29.3.95

WATER-COURSE: Halse Water

PRIMARY ANALYST: PRH

AQC ANALYST: APH

SITE: Roughmoor

CODE: 09 3719

SORT/AQC METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Leptoceridae	Adicella reducta, Athripsodes sp., Mystacides azurea, M.nigra/longicornis	11
Planariidae (incl. Dugesiidae)	Polycelis sp. 1 only	11
Planorbidae	Gyraulus albus, Armiger crista	11
Chironomidae	Orthoclaadiinae	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 4

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 20

ON NO. OF TAXA 4

1 No representative of family in vial

5 Specimen dead at time of sampling

9 Taxon missed in sorting

2 Alternative terrestrial specimen in vial

6 Taxon in vial but not recorded

10 Unexplained error

3 Posterior end only in vial

7 Mis-identification

11 Taxon added in internal AQC

4 Empty shell or case or cast skin in vial

8 Typographical error - wrong box ticked

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 30.10.95

WATER-COURSE: Wylfe

PRIMARY ANALYST: BJJ

AQC ANALYST: GPG

SITE: Crockerton Green

CODE: AQC 3395

SORT/AQC METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

Gyrinidae *	Specimen in separate AQC vial	1
Leptoceridae *	Specimen in separate AQC vial	1

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Gyrinidae *	Orectochilus villosus (larva) 1 only	11
Lymnaeidae	Lymnaea sp. (juvenile) 1 only	11
Leptoceridae *	Athripsodes sp. (juveniles)	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 2

NET EFFECTS:

ON BMWP SCORE 3

ON NO. OF TAXA 1

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 22.11.95

WATER-COURSE: Frome

PRIMARY ANALYST: HY

AQC ANALYST:

SITE: Burton

CODE: 09 8022

SORT/AQC METHOD: Live

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Lepidostomatidae

Lepidostoma hirtum 1 only

9

SUMMARY OF AUDIT

LOSSES 0

GAINS 1

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 10

ON NO. OF TAXA 1

1 No representative of family in vial

2 Alternative terrestrial specimen in vial

3 Posterior end only in vial

4 Empty shell or case or cast skin in vial

5 Specimen dead at time of sampling

6 Taxon in vial but not recorded

7 Mis-identification

8 Typographical error - wrong box ticked

9 Taxon missed in sorting

10 Unexplained error

11 Taxon added in internal AQC

12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 9.10.95

WATER-

PRIMARY

AQC

COURSE: Crane

ANALYST: JP

ANALYST: GPG

SITE: Romford Bridge

CODE: 09 7604

SORT/AQC

METHOD: Preserved/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 20.9.95

WATER-COURSE: Stour

PRIMARY ANALYST: MP

AQC ANALYST: GPG

SITE: Wyndham Farm

CODE: 71ST 9250

SORT/AQC METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

None

SUMMARY OF AUDIT

LOSSES 0

GAINS 0

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 0

ON NO. OF TAXA 0

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 13.9.95

WATER-COURSE: Stour

PRIMARY ANALYST: PRH

AQC ANALYST: GPG

SITE: Lower Farm

CODE: 71ST 7500

SORT/AQC METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydroptilidae	Hydroptila sp. (pupa) 1 only	9
Platycnemididae	Platycnemis pennipes 1 only	11
Tipulidae	Dicranota sp. 1 only	11
Simuliidae	Simulium erythrocephalum 1 only	11

SUMMARY OF AUDIT

LOSSES 0

GAINS 4

OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 22

ON NO. OF TAXA 4

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: South Western

LABORATORY: South Wessex

DATE: 30.10.95

WATER-
COURSE: Wylfe

PRIMARY
ANALYST: PRH

AQC
ANALYST: GPG

SITE: Hensford Marsh

CODE: AQC7295

SORT/AQC
METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Species name (where appropriate)	Presumed cause of error (see footnotes)
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VIAL

BMWP taxa not found by IFE

None

Additional BMWP taxa found by IFE

None

SAMPLE

BMWP taxa not found by IFE (For samples where vial is broken or absent)

N/a

Additional BMWP taxa found by IFE

Hydrobiidae (incl. Bithyniidae)	Potamopyrgus jenkinsi 1 only	11
Goeridae	Goera pilosa 1 only	11

SUMMARY OF AUDIT

LOSSES 0 GAINS 2 OMISSIONS: 0

NET EFFECTS:

ON BMWP SCORE 13
ON NO. OF TAXA 2

- 1 No representative of family in vial
- 2 Alternative terrestrial specimen in vial
- 3 Posterior end only in vial
- 4 Empty shell or case or cast skin in vial

- 5 Specimen dead at time of sampling
- 6 Taxon in vial but not recorded
- 7 Mis-identification
- 8 Typographical error - wrong box ticked

- 9 Taxon missed in sorting
- 10 Unexplained error
- 11 Taxon added in internal AQC
- 12 Recorded taxon that was rejected by AQC analyst

Omission (*) = Recorded, not in vial but found by IFE in sample (no net loss or gain)