



ENVIRONMENT
AGENCY

An audit of performance in the
Primary analysis of standard biological
Macro-invertebrate samples in 2001:
The Environment Agency

Centre for Ecology and Hydrology

CEH Report Ref: C00158/23

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Statement of Use

Information in this document is to help biologists in the Agency to identify where analytical errors occur so that they can be reduced or eliminated. Data in the tables provide measures of the accuracy of primary data produced in accordance with the standard methods for the River Invertebrate Prediction and Classification System (RIVPACS) and analysed to the level required for the Biological Monitoring Working Party (BMWP)-score system, including General Quality Assessment. Information in this report may be used to determine statistical confidence limits and the statistical significances of differences between biological samples. This includes comparisons of Observed/Expected (O/E) values and quality bands made by the compare module of RIVPACS III+ and the statistical routine CONCLASS used for GQA surveys.

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1. INTRODUCTION

The collection of standard macro-invertebrate samples and their analysis to the level required for the Biological Monitoring Working Party (BMWP) system is the most widely used biological technique for evaluating river quality in the water industry in the United Kingdom. Used with the computer model RIVPACS (River Invertebrate Prediction and Classification System) developed by the Centre for Ecology and Hydrology (CEH), they are the basis for the Agency's biological classification of water quality. This is used for national General Quality Assessment (GQA) river quality surveys and one of the government's Headline Indicators of environmental quality, as well as for purely operational purposes including Catchment Abstraction Management Strategies, drought orders and drought permits, and determining appropriate discharge consents. These samples are also used for assessing pollution and setting priorities for capital investment. Data from these samples are made available to the public. An independent audit of these biological samples is required to ensure that a high and consistent standard of sorting and identification is maintained; to assess the proficiency of the internal laboratory analytical quality control (AQC) inspection and to demonstrate the quality of the data to its users.

In 2001, biological monitoring of rivers was undertaken by the Environment Agency (The Agency) in England and Wales, the Scottish Environment Protection Agency (SEPA) in Scotland, the Industrial Research and Technology Unit (IRTU) in Northern Ireland and the Government Laboratory in the Isle of Man. Each organisation employed standard collection procedures (Murray-Bligh, 1999a) to ensure that the data collected were compatible with RIVPACS. Each Environment Agency laboratory appointed at least one experienced analyst to act as an internal analytical quality control (AQC) inspector. These inspectors re-sorted a random selection of 1 in every 10 of their laboratory's standard samples. In addition, CEH was contracted to undertake an independent external audit of the quality of the laboratories' analyses of standard biological samples. This commission was consistent with the audit performed by CEH staff for the national River Quality Surveys in 1990, 1995 and 2000 and for the biological monitoring and assessment surveys each year between 1991 and 1994 and between 1996 and 1999. The audit for the Agency comprised two elements. The AQC Audit provided a measure of the quality of the AQC inspection and was used to adjust the control parameters of the AQC scheme for each laboratory. The Primary Audit provided an independent measure of the quality of the data from each laboratory (data was not adjusted for errors identified by the audit) and hence the errors in biotic indices calculated from that data. The net error in number of BMWP-scoring taxa (bias) was used to determine confidence limits of EQIs and the probabilities of sites belonging to each grade of the Agency's GQA environmental quality classification, and the probabilities of changes or differences in grade (see Section 5).

For 2001, CEH were contracted to audit 520 samples for the Agency. However, an outbreak of Foot and Mouth Disease led to a restriction on the movement of Agency staff, severely curtailing their sampling programme in spring 2001, so some laboratories did not send their full quota of samples for audit. This report presents the results of the audit of 423 samples that were sorted and identified by the Agency's primary analysts. The results of the AQC Audit, detailing the quality of the Agency's internal AQC inspections of these samples, are reported separately (Gunn *et al.*, 2002).

2. SAMPLE SELECTION

Samples for audit were selected internally by each of the organisations being audited. The precise 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 organisation, within the limits of the total number of samples that CEH was contracted to audit. The standard method of selection used by the Agency is

described in Murray-Bligh (1999b). Each Agency laboratory should have randomly selected for audit 20 samples that had been analysed twice (once for primary analysis and once for internal AQC inspection). However, if there were insufficient AQC-inspected samples to make up the laboratory's quota by the deadline for dispatch to CEH, primary samples that had been analysed just once were sent instead. The biologists analysing these samples had no prior knowledge of which samples were to be audited.

3. SAMPLE PROCESSING

The normal protocol for Agency biologists was to sort their samples, either live or preserved, in the laboratory. Samples were sorted for all families of aquatic macro-invertebrates and examples of each taxon were removed. The specimens were placed in a vial of preservative (70% industrial alcohol) and the taxa present were recorded on a standard data sheet. The vial of animals and the bulk of the sample were then returned to the sample container and preservative added. Samples were re-sorted for internal AQC inspection in the same manner as the primary analysis. The AQC inspector's task included confirming the identification of the contents of the vial and ensuring that the results recorded on the data sheet were correct. Any additional taxa found in the AQC inspection were to be put in a separate vial so that the contents of the primary analyst's vial was not altered, although this instruction was not always followed.

Each sample available to CEH for audit should have included:

- i) A vial or vials containing representatives from each family.
- ii) A data sheet containing a list of the families to be found in the vial(s).
- iii) The preserved sample.

When these three elements were present, the sequence of operations at CEH 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 families of aquatic macro-invertebrates were identified.
- b) The families contained within the vial(s) were identified.
- c) The list of families recorded on the data sheet was compared with those found in the sample by the CEH auditor.
- d) The list of families recorded on the data sheet was compared with those identified from the vial(s) by the CEH auditor.
- e) "Losses", "gains" and "omissions" from the list of families recorded on the data sheet were noted. In the case of "gains", each additional family was identified to species, where possible, so that species causing repeated errors could be noticed. Any "gains" represented in the sample by a single specimen were noted as such.
- f) For each "loss" or "gain", the CEH auditor selected a code from a list at the foot of the result sheet to indicate the most likely cause of the error.

Definitions

Losses are taxa recorded as present by the analyst whose quality was being audited, but that were not found in the vial or sample by the auditor. Gains are taxa found in the vial or sample by the auditor, that were not recorded as present by the analyst whose quality was being audited. Omissions are taxa that were recorded as present by the analyst whose quality is being audited, and that the auditors found in the sample, but not in the vial.

Occasionally a sample did not include a vial containing representative examples of the families recorded 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 CEH relating to the treatment of macro-invertebrate taxa. Every taxon recorded on the data sheet must have been 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*, all of which are protected species. 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 list of families recorded on the data sheet as 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 families were also to be excluded from the audit. Clambidae, Chrysomelidae and Curculionidae, which appear in the original BMWP list, were excluded because most representatives of these families are terrestrial and they are excluded from the BMWP-score system as currently used in the UK, including the Agency's GQA classification. Trichopteran pupae were to be included in the listing of families as they were to be identified by Agency biologists.

4. REPORTING

The results of each sample audit were recorded on a standard report form (see Figs 1 & 2) and sent to the Agency's Project Manager and to the Area and Regional Biologists. For audit samples where a vial of animals was included, the comparison between the families recorded on the data sheet and the taxa found in the vial by CEH was shown in the section of the report form headed "VIAL". Discrepancies could be caused by misidentifications or by mistakes in recording the results on the data sheet. Families not recorded on the data sheet but found by CEH in the remainder of the sample were entered in the section of the report form headed "SAMPLE" under "Additional taxa found in sample". For Primary Audit results, this section also included taxa added by the internal AQC inspector. 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 CEH, 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. These families were marked with an asterisk in both sections to highlight this fact. These errors were recorded as "omissions". They were usually caused by an analyst forgetting to place an example of the taxon in the vial, although occasionally they occurred when an animal in the vial had been misidentified, but the CEH auditor subsequently found the recorded taxon in the sample.

Species identifications, state of development (e.g. adult or larval coleopterans) and the presence of a single representative of a family were recorded in the centre section of the audit report form.

CEH was asked to interpret each error to suggest its probable 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". Where an error was modified by the findings of the internal AQC inspector, a code to indicate this was selected instead (either code 11 or 12).

Figure 1. An example of a Primary Audit result sheet

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: Example	LABORATORY: Example	DATE: 12 April 2001
WATER-COURSE: Beautiful River	PRIMARY ANALYST: XX	AQC ANALYST: YY
SITE: Utopia	CODE: 0001/AQC01	SORT/AQC METHOD: Live/Preserved

RESULTS OF PRIMARY AUDIT

Family name	Presumed cause of error (see footnotes)
<u>VIAL</u>	
<u>Taxa not found in vial</u>	
Planorbidae	12
Terrestrial snail in vial	
Baetidae *	1
Limnephilidae	7
<u>Additional taxa found in vial</u>	
Lepidostomatidae	7
Lepidostoma hirtum (Fabricius)	
<u>SAMPLE</u>	
<u>Taxa not found in sample</u> (for samples where vial is broken or absent)	
N/a	
<u>Additional taxa found in sample</u>	
Baetidae *	1
Baetis rhodani (Pictet)	
Hydrophilidae (incl. Hydraenidae)	9
Hydraena gracilis Germar (a) 1 only	
Hydroptilidae	11
Hydroptila sp. (p)	
Psychomyiidae (incl. Ecnomidae)	11
Psychomyia pusilla (Fabricius) 1 only	

SUMMARY OF AUDIT (For BMWP taxa only)

LOSSES: 2 GAINS: 4 OMISSIONS: 1

NET EFFECTS:
ON BMWP SCORE 19
ON NO. OF SCORING 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 CEH in sample (no net loss or gain)

Figure 2. An example of an AQC Audit result sheet

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES

REGION: Example

LABORATORY: Example

DATE: 12 April 2001

WATER-
COURSE: Beautiful River

PRIMARY
ANALYST: XX

AQC
ANALYST: YY

SITE: Utopia

CODE: 0001/AQC01

SORT/AQC
METHOD: Live/Preserved

RESULTS OF AQC AUDIT

Family name	Presumed cause of error (see footnotes)
<u>VIAL</u>	
<u>Taxa not found in vial</u>	
Baetidae *	1
Limnephilidae	7
<u>Additional taxa found in vial</u>	
Lepidostomatidae	7
Lepidostoma hirtum (Fabricius)	
<u>SAMPLE</u>	
<u>Taxa not found in sample</u> (for samples where vial is broken or absent)	
N/a	
<u>Additional taxa found in sample</u>	
Baetidae *	1
Baetis rhodani (Pictet)	
Hydrophilidae (incl. Hydraenidae)	9
Hydraena gracilis Germar (a) 1 only	

SUMMARY OF AUDIT (For BMWP taxa only)

LOSSES: 1 GAINS: 2 OMISSIONS: 1

NET EFFECTS:

ON BMWP SCORE 8
ON NO. OF SCORING 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 CEH in sample (no net loss or gain)

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" and "Additional taxa found in sample", as before. Families recorded on the list but not found by CEH were indicated in the section headed "Taxa not found in sample." If the vial of animals had been 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 or the wrong family box being ticked on the data sheet.

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

5. RESULTS

The results of the Primary Audit for 2001 for the Agency are presented in Tables 1 to 58. For each Region, a summary of the basic audit results in terms of losses, gains and omissions (of BMWP taxa only) is followed by the statistics of these regional audit results centred on the target of acceptability of no more than two missed taxa per sample. These data are presented for each analyst, for their Area laboratory and for the Region and Agency as a whole. Then follows information on the net effects of the Primary Audit on the BMWP score and number of scoring taxa. Following this are listings for the Region of the taxa missed at family and species levels in the 2001 Primary Audit. Tables 59 and 60 summarise the statistics and net effects of the 2001 Primary Audit for the whole of the Agency. Tables 61 and 62 list all taxa, at family and species levels respectively, missed in sorting by the Agency's primary analysts. Data for the AQC Audit are presented in a separate report (Gunn *et al*, 2001).

Estimating sample biases for the compare module of RIVPACS III+

The underestimation of the number of BMWP-scoring taxa is termed bias for the purpose of the compare module of RIVPACS III+. An estimate of bias is provided by the net gains (number of gains minus number of losses). The average net gains for each laboratory, Region and the Agency as a whole, are listed in Table 60 in the column "mean net effect on no. of taxa". These values may be used directly for RIVPACS. To estimate the bias over a different period to that covered by this audit, it is necessary to refer to the Primary Audit result sheets for individual samples. Note that estimates of bias should be based on the results of at least 20 audited samples. Further instructions are given in Clarke *et al*. (1997).

6. ACKNOWLEDGEMENTS

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AUDIT OF ANGLIAN REGION'S PRIMARY ANALYSTS

Table 1 The 20 samples audited for Northern Area of Anglian Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Gwash	Gunthorpe	AH	28/11/2001	0	4	0
Waring	Belchford	HW	04/09/2001	0	5	1
Lower Witham	Langrick Bridge	HW	11/09/2001	0	8	0
North Kelsey Beck	B1434	HW	23/10/2001	0	4	0
Welland	Tallington	HW	31/10/2001	0	7	0
South Drove Drain	Horseshoe Bridge	HW	13/12/2001	0	1	0
Welland	Uffington Rd Bridge	HW	13/12/2001	0	2	1
Nene	Wollaston Mill	HW	16/01/2002	0	2	1
Waithe Beck	Brigsley	JF	18/09/2001	1	0	0
Louth Canal	Tetney Lock	JF	24/09/2001	0	2	1
Laceby Beck	Laceby	JF	01/11/2001	0	0	0
Laceby Beck	Littlecoats	JF	05/11/2001	0	0	0
Willow Brook	Weldon Lodge	JF	10/01/2002	0	0	0
West Glen	Little Bytham	RPC	02/10/2001	0	2	1
Nettleham Beck	Sudbrooke	RPC	08/10/2001	0	2	0
Barlings Eau	Langworth	RPC	10/10/2001	0	4	1
East Glen	Edenham	RPC	08/11/2001	0	1	0
Willow Brook	Fotheringhay	RPC	22/11/2001	0	4	0
Langton Brook	Thorpe Langton	RPC	28/11/2001	0	2	0
Jordan	Little Bowden	RPC	04/12/2001	0	3	0

Table 2 The 5 samples audited for Central Area of Anglian Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Alconbury Brook	Grindley's Bridge	EIS	05/09/2001	0	1	1
Ouse	Bourton Mill Manor Farm	KJP	30/10/2001	0	4	0
Ouse	W.Q.M.S. Foxcote intake	KJP	02/11/2001	0	2	1
IDB Drain	Welney	KJP	02/01/2002	0	1	0
Millbridge Brook	B1042, Potton	MAC	19/09/2001	1	4	4

Table 3 The 20 samples audited for Eastern Area of Anglian Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Deben	Glevering Bridge	CSA	17/09/2001	0	2	0
Deben	Eyke Ford	CSA	02/10/2001	0	1	1
Brett	Higham Bridge	HJB	01/10/2001	0	2	0
Colne	Fordstreet	HJB	22/10/2001	0	1	2
Crouch	Wickford Memorial Park	HJB	15/11/2001	0	3	0
Blackwater-	Heybridge Canal	HJB	23/11/2001	0	5	0
Blackwater Drain	Gades Mill, Whitwell	HJB	29/11/2001	0	3	0
Tiffey	Chapel Lane Bridge	HJB	29/11/2001	0	2	0
Burn	Leicester Sq. Farm	HJB	06/12/2001	0	4	0
Brain	d/s Braintree STW	HJB	11/12/2001	0	0	0
Gipping	STW Tributary	HJB	12/02/2002	0	2	0
Gipping	Claydon Bridge	JHS	15/11/2001	0	3	0
Colne	Gt Yeldham Bridge	RDB	19/10/2001	0	4	0
Colne	u/s Earls Colne STW	RDB	22/10/2001	0	4	0
Pant	Wethersfield Mill RB	RDB	06/11/2001	0	4	0
Pant	Petches Bridge	RDB	06/11/2001	1	3	0
Gipping	Sproughton Mill	RDB	15/11/2001	0	3	0
Gipping	Bramford Mill	RDB	15/11/2001	1	1	2
Gipping/Rattlesdon	u/s Confluence - ICI	RDB	22/11/2001	0	0	0
Brain	Bulford Mill	RDB	11/12/2001	0	3	0

Table 4 Statistics of the 2001 Primary Audit for Anglian 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
Northern	20	2.65	0.50	8	40.00	8	3.00	0.51
AH	1	4.00	-	1	100.00	4	4.00	-
HW	7	4.14	1.01	4	57.14	8	4.57	0.95
JF	5	0.40	0.40	0	0	2	0.80	0.58
RPC	7	2.57	0.43	3	42.86	4	2.86	0.51
Central	5	2.40	0.68	2	40.00	4	3.80	1.39
EIS	1	1.00	-	0	0	1	2.00	-
KJP	3	2.33	0.88	1	33.33	4	2.67	0.88
MAC	1	4.00	-	1	100.00	4	9.00	-
Eastern	20	2.50	0.31	11	55.00	5	2.85	0.29
CSA	2	1.50	0.50	0	0	2	2.00	0.00
HJB	9	2.44	0.50	4	44.44	5	2.67	0.47
JHS	1	3.00	-	1	100.00	3	3.00	-
RDB	8	2.75	0.53	6	75.00	4	3.25	0.49
Anglian Region	45	2.56	0.27	21	46.67	8	3.02	0.30
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 5 Net effects of the Primary Audit on BMWP score and number of scoring taxa for Anglian Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Northern	20	13.55	2.84	38	2.55	0.53	8
AH	1	29.00	-	29	4.00	-	4
HW	7	21.57	5.42	38	4.00	1.09	8
JF	5	1.20	2.63	11	0.20	0.49	2
RPC	7	12.14	2.27	17	2.57	0.43	4
Central	5	11.80	3.87	26	2.20	0.58	4
EIS	1	5.00	-	5	1.00	-	1
KJP	3	13.67	6.33	26	2.33	0.88	4
MAC	1	13.00	-	13	3.00	-	3
Eastern	20	12.15	1.74	26	2.40	0.33	5
CSA	2	9.00	6.00	15	1.50	0.50	2
HJB	9	12.11	2.75	26	2.44	0.50	5
JHS	1	14.00	-	14	3.00	-	3
RDB	8	12.75	3.03	24	2.50	0.60	4
Anglian Region	45	12.73	1.51	38	2.44	0.28	8
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 6 The families missed in sorting by Anglian Region's primary analysts

Family	n	% of Anglian Region's missed families in Primary Audit
Psychodidae	13	8.13
Empididae	9	5.63
Hydrobiidae (incl. Bithyniidae)	8	5.00
Hydroptilidae	8	5.00
Elmidae	7	4.38
Caenidae	6	3.75
Ceratopogonidae	6	3.75
Hydracarina	6	3.75
Simuliidae	6	3.75
Glossiphoniidae	6	3.75
Ephydriidae	5	3.13
Erpobdellidae	5	3.13
Hydrophilidae (incl. Hydraenidae)	4	2.50
Pyrilidae	4	2.50
Physidae	4	2.50
Halipidae	4	2.50
Muscidae	4	2.50
Lymnaeidae	4	2.50

Table 6 continued

Family	n	% of Anglian Region's missed families in Primary Audit
Limnephilidae	4	2.50
Psychomyiidae (incl. Ecnomidae)	3	1.88
Sphaeriidae	3	1.88
Molannidae	3	1.88
Valvatidae	3	1.88
Polycentropodidae	3	1.88
Corixidae	2	1.25
Ancylidae (incl. Acroloxidae)	2	1.25
Leptoceridae	2	1.25
Nemouridae	2	1.25
Neritidae	2	1.25
Planariidae (incl. Dugesiidae)	2	1.25
Planorbidae	2	1.25
Tipulidae	2	1.25
Lepidostomatidae	2	1.25
Stratiomyidae	2	1.25
Ephemerellidae	1	0.63
Baetidae	1	0.63
Calopterygidae	1	0.63
Tabanidae	1	0.63
Chironomidae	1	0.63
Coenagrionidae	1	0.63
Dytiscidae (incl. Noteridae)	1	0.63
Scirtidae	1	0.63
Hydropsychidae	1	0.63
Ephemeridae	1	0.63
Piscicolidae	1	0.63
Sialidae	1	0.63
Total	160	100

Table 7 The species missed in sorting by Anglian Region's primary analysts

Species	n	% of Anglian Region's missed species in Primary Audit
Potamopyrgus antipodarum (Gray)	8	4.52
Hydroptila sp.	7	3.95
Hydracarina indet	6	3.39
Pericoma trivialis group	6	3.39
Ceratopogonidae indet	6	3.39
Ephydriidae indet	5	2.82
Caenis luctuosa group	5	2.82
Pericoma fallax Eaton	5	2.82

Table 7 continued

Species	n	% of Anglian Region's missed species in Primary Audit
<i>Elmis aenea</i> (Muller)	4	2.26
<i>Hemerodromia</i> group	4	2.26
<i>Limnophora</i> sp.	4	2.26
<i>Limnephilidae</i> indet	3	1.69
<i>Glossiphonia complanata</i> (L.)	3	1.69
<i>Cataclysta lemnata</i> (L.)	3	1.69
<i>Pisidium</i> sp.	3	1.69
<i>Bithynia leachii</i> (Sheppard)	3	1.69
<i>Molanna angustata</i> Curtis	3	1.69
<i>Tinodes waeneri</i> (L.)	3	1.69
<i>Valvata cristata</i> Muller	3	1.69
<i>Helobdella stagnalis</i> (L.)	3	1.69
<i>Clinocerinae</i>	3	1.69
<i>Nemoura avicularis</i> Morton	2	1.13
<i>Empididae</i> indet	2	1.13
<i>Erpobdella octoculata</i> (L.)	2	1.13
<i>Haliphus</i> sp.	2	1.13
<i>Limnius volckmari</i> (Panzer)	2	1.13
<i>Dicranota</i> sp.	2	1.13
<i>Bithynia tentaculata</i> (L.)	2	1.13
<i>Theodoxus fluviatilis</i> (L.)	2	1.13
<i>Simulium</i> sp.	2	1.13
<i>Chelifera</i> group	2	1.13
<i>Hydraena riparia</i> Kugelann	2	1.13
<i>Pericoma exquisita</i> Eaton	2	1.13
<i>Caenis horaria</i> (L.)	2	1.13
<i>Polycentropus flavomaculatus</i> (Pictet)	2	1.13
<i>Oulimnius tuberculatus</i> (Muller)	2	1.13
<i>Physa</i> sp.	2	1.13
<i>Pericoma neglecta</i> Eaton	2	1.13
<i>Glossiphoniidae</i> indet	1	0.56
<i>Glyphotaelius pellucidus</i> (Retzius)	1	0.56
<i>Erpobdella</i> sp.	1	0.56
<i>Gyraulus albus</i> (Muller)	1	0.56
<i>Haliphus lineatocollis</i> (Marsham)	1	0.56
<i>Erpobdellidae</i> indet	1	0.56
<i>Ephemerella ignita</i> (Poda)	1	0.56
<i>Ephemera</i> sp.	1	0.56
<i>Elodes</i> sp.	1	0.56
<i>Chironomini</i>	1	0.56
<i>Lepidostoma hirtum</i> (Fabricius)	1	0.56
<i>Calopteryx splendens</i> (Harris)	1	0.56
<i>Beris</i> sp.	1	0.56
<i>Baetis rhodani</i> (Pictet)	1	0.56
<i>Armiger crista</i> (L.)	1	0.56

Table 7 continued

Species	n	% of Anglian Region's missed species in Primary Audit
Ancylus fluviatilis Muller	1	0.56
Agraylea sp.	1	0.56
Agabus sp.	1	0.56
Acroloxus lacustris (L.)	1	0.56
Chrysops sp.	1	0.56
Simulium (Boophthora) erythrocephalum (de Geer)	1	0.56
Physa acuta group	1	0.56
Physa fontinalis (L.)	1	0.56
Piscicola geometra (L.)	1	0.56
Polycelis felina (Dalyell)	1	0.56
Polycelis nigra group	1	0.56
Psychoda severini Tonnoir	1	0.56
Ischnura elegans (Van der Linden)	1	0.56
Sigara (Pseudovermicorixa) nigrolineata (Fieber)	1	0.56
Ochthebius bicolon Germar	1	0.56
Simulium (Eusimulium) aureum group	1	0.56
Simulium (Nevermannia) angustitarse group	1	0.56
Simulium (Wilhelmia) sp.	1	0.56
Theromyzon tessulatum (Muller)	1	0.56
Trocheta subviridis Dutrochet	1	0.56
Valvata piscinalis (Muller)	1	0.56
Sialis lutaria (L.)	1	0.56
Lymnaea auricularia (L.)	1	0.56
Holocentropus picicornis (Stephens)	1	0.56
Hydraena nigrita Germar	1	0.56
Hydropsyche pellucidula (Curtis)	1	0.56
Acentria ephemerella (Denis & Schiffermuller)	1	0.56
Ithytrichia sp.	1	0.56
Oxycera rara (Scopoli)	1	0.56
Lepidostomatidae indet	1	0.56
Oulimnius sp.	1	0.56
Lymnaea peregra (Muller)	1	0.56
Lymnaea stagnalis (L.)	1	0.56
Lymnaea truncatula (Muller)	1	0.56
Micronecta sp.	1	0.56
Mystacides azurea (L.)	1	0.56
Mystacides nigra (L.)	1	0.56
Haliphus ruficollis group	1	0.56
Total	177	100

AUDIT OF MIDLANDS REGION'S PRIMARY ANALYSTS

Table 8 The 20 samples audited for Upper Severn Area of Midlands Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Oswestry Brook	d/s Oswestry CSO	1	Not given	0	1	0
Wesley Brook	d/s Manor CSO	1	22/08/2001	0	3	0
Blakedown Brook	u/s Blakedown WRW	1	21/09/2001	1	1	2
Camlad	Shiregrove Bridge	1	20/12/2001	1	1	0
Martin's Brook	Brookhill	1	15/02/2002	0	0	0
Wordsley Brook	d/s Brierley Hill CSO	41	Not stated	1	4	1
Wordsley Brook	Bevan Rd CSO	41	04/02/2001	1	3	0
Rea Brook	Hanwood	41	23/10/2001	0	4	0
Stour	Maypole Hill	41	29/10/2001	0	1	0
Batchcott Trib	u/s Oakley Farm	41	07/11/2001	0	0	0
Cound	Condoover	41	07/11/2001	0	1	0
Lyde Brook	d/s Dale End CSO	41	22/11/2001	0	1	0
Lyde Brook	Coalbrookdale	41	10/01/2002	0	2	0
Dulas	d/s Rhydyclaudan	41	22/01/2002	0	1	0
Dulas	Twlch	41	25/01/2002	0	3	0
Smestow Brook	Compton	41	12/02/2002	1	0	0
Rea Brook	u/s Silt pollution	401	09/10/2001	0	3	0
Quinny Brook	u/s C. Stretton CSO	KV	23/08/2001	0	2	0
Quinny Brook	d/s C. Stretton CSO	KV	23/08/2001	0	0	0
Rea Brook	Meole Brace	KV	03/10/2001	1	2	0

Table 9 The 20 samples audited for Lower Severn Area of Midlands Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Canop Brook	Lydney Church	11	Not stated	1	0	0
Ell Brook Tributary	u/s B4222	11	17/05/2001	1	4	0
Ell Brook Tributary	u/s Springfield Cott. Pool	11	17/05/2001	0	2	0
Ruscombe Brook	u/s Humphreys End	11	23/10/2001	0	1	0
Frome	d/s Stanley Downton	11	25/01/2002	0	0	0
Leam Trib	Midland Oak CSO	39	08/11/2001	1	1	0
Sherbourne	Charterhouse	39	11/12/2001	0	2	0
Swift	u/s Kimcote WRW	39	14/12/2001	0	0	0
Severn	u/s Netheridge STW	39	20/12/2001	0	0	0
Isbourne Trib	u/s Postlip Mills	406	Not stated	1	3	0
Peacocks Brook	Newent School	406	Not stated	0	4	0
Ell Brook	Brass Mill	406	Not stated	1	1	0
Westbury Brook	u/s Flaxley	406	Not stated	0	1	0
Epney Rhyne	d/s Tributary	406	Not stated	0	2	0
Cinderford Brook	u/s Lorry Park	406	14/11/2001	0	1	0
Isbourne	A46 Road Bridge	406	20/11/2001	0	0	0
Leadon	Wedderburn Bridge	406	04/12/2001	0	2	0
Elmley Castle Brook	u/s Cropthorne P.S.	406	09/01/2002	0	1	0
Sow Brook	d/s Paynes Lane P.S.	406	18/01/2002	0	1	0
Bushley/Longdon Brook	Queenhill	406	07/02/2002	0	2	0

Table 10 The 20 samples audited for Upper Trent Area of Midlands Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Dove	Beresford Dale	3	19/07/2001	0	2	0
Picknall Brook	Uttoxeter	3	17/09/2001	0	3	0
Henmore Brook	Atlow	3	03/10/2001	0	6	0
Dove	Milldale	3	11/10/2001	1	4	0
Small Brook	A520 Road Bridge	3	16/11/2001	0	2	0
Mease	Measham	3	08/01/2002	0	4	2
Bourne	Furnace End	3	14/01/2002	0	0	0
Bradley Brook	d/s Roughwood Trib	8	25/10/2001	0	6	0
Blythe	Ryton End	8	25/01/2002	0	7	0
Cran Brook	Widney Manor	8	30/01/2002	1	1	0
Alders Brook	Combridge	47	06/03/2001	0	4	1
Tame (Oldbury)	Holloway Bank	47	23/05/2001	0	0	0
Bond Brook RH Trib	u/s Rowtons Well	47	02/07/2001	0	2	0
Bond Brook LH Trib	Sutton Park	47	02/07/2001	0	3	1
Bourn Brook	Grange Road	47	03/09/2001	0	0	0
Cole	Colebank Road	47	06/12/2001	0	2	0
Kingshurst Brook	Chelmsley Wood	47	12/12/2001	0	4	0
Walsall Canal	u/s Cerro	47	11/02/2002	0	1	0
Walsall Canal	Moors Mill Lane	47	20/02/2002	1	0	0
Ford Green Brook	Milton	405	27/03/2001	2	2	0

Table 11 The 20 samples audited for Lower Trent Area of Midlands Region

River	Site	Primary Analyst		Losses	Gains	Omissions
Leas Brook	d/s Culvert	5	26/04/2001	0	1	0
Smite	Colston Bassett	5	05/11/2001	0	4	0
Poulter	d/s Langwith Lodge	6	04/05/2001	0	3	1
Poulter	Nether Langwith	6	19/07/2001	0	5	2
Dover Beck	Shelt Hill	50	12/09/2001	0	2	0
Grace Dieu Brook	d/s Snarrows STW	50	05/11/2001	0	1	0
Warping Drain Trib	Burringham Road	50	19/12/2001	0	2	0
Cuttle Brook	Reckitt & Colmans	50	19/12/2001	0	1	0
Grace Dieu Brook	Woodlands	50	05/02/2002	1	2	1
Wood Brook	u/s Nanpantan Res	402	20/04/2001	0	3	0
Idle	Bawtry	402	15/05/2001	0	3	0
Erewash	Pye Bridge	402	25/05/2001	0	1	0
Dutch Dyke	d/s Pumping station	402	25/06/2001	0	0	0
Trent	Winthorpe	402	03/08/2001	0	1	0
Erewash	u/s Bentinck Colliery	402	20/09/2001	1	3	0
Erewash	Ilkeston	402	03/10/2001	0	2	0
Whissendine Brook	u/s Langham Brook	402	21/11/2001	1	2	0
Pickwell Brook	u/s Pickwell CSO	402	14/12/2001	0	1	0
Maun	d/s Mansfield CSO	402	21/01/2002	0	4	0
Thorpe Brook	Chadwell	402	19/02/2002	0	2	0

Table 12 Statistics of the 2001 Primary Audit for Midlands 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
U. Severn	20	1.65	0.29	6	30.00	4	2.10	0.36
1	5	1.20	0.49	1	20.00	3	2.00	0.71
41	11	1.82	0.44	4	36.36	4	2.18	0.55
401	1	3.00	-	1	100.00	3	3.00	-
KV	3	1.33	0.67	0	0	2	1.67	0.88
L. Severn	20	1.40	0.28	3	15.00	4	1.65	0.31
11	5	1.40	0.75	1	20.00	4	1.80	0.86
39	4	0.75	0.48	0	0	2	1.00	0.58
406	11	1.64	0.34	2	18.18	4	1.82	0.38
U. Trent	20	2.65	0.47	9	45.00	7	3.10	0.50
3	7	3.00	0.72	4	57.14	6	3.43	0.87
8	3	4.67	1.86	2	66.67	7	5.00	1.53
47	9	1.78	0.55	3	33.33	4	2.11	0.61
405	1	2.00	-	0	0	2	4.00	-
L. Trent	20	2.15	0.28	7	35.00	5	2.50	0.37
5	2	2.50	1.50	1	50.00	4	2.50	1.50
6	2	4.00	1.00	2	100.00	5	5.50	1.50
50	5	1.60	0.24	0	0	2	2.00	0.55
402	11	2.00	0.36	4	36.36	4	2.18	0.40
Midlands Region	80	1.96	0.18	25	31.25	7	2.34	0.20
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 13 Net effects of the Primary Audit on BMWP score and number of scoring taxa for Midlands Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
U. Severn	20	8.70	2.21	30	1.35	0.30	4
1	5	3.80	2.99	15	0.80	0.58	3
41	11	9.45	3.04	30	1.55	0.43	4
401	1	30.00		30	3.00		3
KV	3	7.00	3.51	11	1.00	0.58	2
L. Severn	20	8.00	2.11	35	1.15	0.27	4
11	5	8.00	5.28	23	1.00	0.71	3
39	4	2.75	2.14	9	0.50	0.50	2
406	11	9.91	2.89	35	1.45	0.34	4
U. Trent	20	15.70	3.26	40	2.40	0.51	7
3	7	18.14	5.66	40	2.86	0.70	6
8	3	26.67	12.35	40	4.33	2.19	7
47	9	11.44	3.87	25	1.67	0.60	4
405	1	4.00		4	0.00		0
L. Trent	20	11.75	2.11	35	2.00	0.29	5
5	2	12.00	5.00	17	2.50	1.50	4
6	2	27.50	3.50	31	4.00	1.00	5
50	5	5.60	1.47	11	1.40	0.24	2
402	11	11.64	2.85	35	1.82	0.35	4
Midlands Region	80	11.04	1.26	40	1.73	0.18	7
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 14 The families missed in sorting by Midland Region's primary analysts

Family	n	% of Midlands Region's missed families in Primary Audit
Hydracarina	19	9.36
Empididae	18	8.87
Ceratopogonidae	13	6.40
Simuliidae	10	4.93
Psychodidae	10	4.93
Hydrophilidae (incl. Hydraenidae)	8	3.94
Hydroptilidae	8	3.94
Planariidae (incl. Dugesiidae)	7	3.45
Caenidae	7	3.45
Leptoceridae	6	2.96
Elmidae	5	2.46
Hydrobiidae (incl. Bithyniidae)	4	1.97
Leuctridae	4	1.97
Ancylidae (incl. Acroloxidae)	4	1.97
Leptophlebiidae	4	1.97
Nemouridae	4	1.97
Physidae	4	1.97
Polycentropodidae	4	1.97
Psychomyiidae (incl. Ecnomidae)	4	1.97
Planorbidae	4	1.97
Stratiomyidae	3	1.48
Goeridae	3	1.48
Lymnaeidae	3	1.48
Gyrinidae	3	1.48
Sphaeriidae	3	1.48
Lepidostomatidae	3	1.48
Sericostomatidae	3	1.48
Asellidae	2	0.99
Dendrocoelidae	2	0.99
Ephemerellidae	2	0.99
Halplidae	2	0.99
Piscicolidae	2	0.99
Rhyacophilidae (incl. Glossosomatidae)	2	0.99
Veliidae	2	0.99
Muscidae	2	0.99
Philopotamidae	2	0.99
Nematomorpha	1	0.49
Baetidae	1	0.49
Valvatidae	1	0.49
Tipulidae	1	0.49
Chaoboridae	1	0.49
Corixidae	1	0.49
Dytiscidae (incl. Noteridae)	1	0.49
Heptageniidae	1	0.49
Tabanidae	1	0.49
Sialidae	1	0.49
Ephemeridae	1	0.49
Ephydriidae	1	0.49
Limnephilidae	1	0.49
Ptychopteridae	1	0.49
Scirtidae	1	0.49
Hydrometridae	1	0.49
Taeniopterygidae	1	0.49
Total	203	100

Table 15 The species missed in sorting by Midlands Region's primary analysts

Species	n	% of Midlands Region's missed species in Primary Audit
Hydracarina indet	19	8.96
Ceratopogonidae indet	13	6.13
Chelifera group	11	5.19
Hydroptila sp.	6	2.83
Pericoma trivialis group	5	2.36
Caenis luctuosa group	5	2.36
Simulium (Simulium) ornatum group	5	2.36
Clinocerinae	5	2.36
Potamopyrgus antipodarum (Gray)	4	1.89
Helophorus (Atracthelophorus) brevipalpis Bedel	3	1.42
Hydrophilidae indet	3	1.42
Athripsodes sp.	3	1.42
Sericostoma personatum (Spence)	3	1.42
Lepidostoma hirtum (Fabricius)	3	1.42
Simulium sp.	3	1.42
Orectochilus villosus (Muller)	3	1.42
Hemerodromia group	3	1.42
Pisidium sp.	3	1.42
Ancylus fluviatilis Muller	3	1.42
Polycelis nigra group	3	1.42
Elmis aenea (Muller)	3	1.42
Physa fontinalis (L.)	3	1.42
Hemerodromiinae	2	0.94
Asellus aquaticus (L.)	2	0.94
Limnophora sp.	2	0.94
Ephemerella ignita (Poda)	2	0.94
Oulimnius sp.	2	0.94
Habrophlebia fusca (Curtis)	2	0.94
Nemoura avicularis Morton	2	0.94
Mystacides azurea (L.)	2	0.94
Halipus sp.	2	0.94
Tinodes sp.	2	0.94
Silo pallipes (Fabricius)	2	0.94
Ithytrichia sp.	2	0.94
Psychodidae indet	2	0.94
Leuctra hippopus (Kempny)	2	0.94
Hydraena gracilis Germar	2	0.94
Armiger crista (L.)	2	0.94
Velia sp.	2	0.94
Polycelis sp.	2	0.94
Plectrocnemia conspersa (Curtis)	2	0.94
Dendrocoelum lacteum (Muller)	2	0.94
Piscicola geometra (L.)	2	0.94
Gyraulus albus (Muller)	2	0.94
Caenis rivulorum Eaton	2	0.94

Table 15 continued

Species	n	% of Midlands Region's missed species in Primary Audit
Hydraena riparia Kugelann	1	0.47
Agapetus sp.	1	0.47
Goera pilosa (Fabricius)	1	0.47
Ephydriidae indet	1	0.47
Ephemera sp.	1	0.47
Elodes sp.	1	0.47
Dugesia polychroa group	1	0.47
Crenobia alpina (Dana)	1	0.47
Ancylidae indet	1	0.47
Lype sp.	1	0.47
Chrysops sp.	1	0.47
Chaoborus (Chaoborus) flavicans (Meigen)	1	0.47
Caenis pusilla Navas	1	0.47
Beris sp.	1	0.47
Baetis rhodani (Pictet)	1	0.47
Athripsodes bilineatus (L.)	1	0.47
Ecdyonurus sp.	1	0.47
Rhyacophila sp.	1	0.47
Lymnaea sp.	1	0.47
Physa sp.	1	0.47
Plectrocnemia geniculata McLachlan	1	0.47
Polycentropus flavomaculatus (Pictet)	1	0.47
Protonemura meyeri (Pictet)	1	0.47
Psychoda cinerea Banks	1	0.47
Psychoda gemina Eaton	1	0.47
Pericoma sp.	1	0.47
Ptychoptera sp.	1	0.47
Pericoma exquisita Eaton	1	0.47
Sialis lutaria (L.)	1	0.47
Simulium (Boophthora) erythrocephalum (de Geer)	1	0.47
Simulium (Wilhelmia) sp.	1	0.47
Taeniopteryx nebulosa (L.)	1	0.47
Tipula sp.	1	0.47
Valvata cristata Muller	1	0.47
Psychomyia pusilla (Fabricius)	1	0.47
Nematomorpha indet	1	0.47
Leuctra nigra (Olivier)	1	0.47
Leuctra sp.	1	0.47
Limnephilidae indet	1	0.47
Lymnaea peregra (Muller)	1	0.47
Acroloxus lacustris (L.)	1	0.47

Table 15 continued

Species	n	% of Midlands Region's missed species in Primary Audit
<i>Lymnaea truncatula</i> (Muller)	1	0.47
<i>Wormaldia</i> sp.	1	0.47
<i>Philopotamus montanus</i> (Donovan)	1	0.47
<i>Nebrioporus elegans</i> (Panzer)	1	0.47
<i>Hydrometra stagnorum</i> (L.)	1	0.47
<i>Nemurella picteti</i> Klapalek	1	0.47
<i>Oxycera dives</i> Loew	1	0.47
<i>Oxycera nigricornis</i> Olivier	1	0.47
<i>Oxycera</i> sp.	1	0.47
<i>Paraleptophlebia</i> sp.	1	0.47
<i>Paraleptophlebia submarginata</i> (Stephens)	1	0.47
<i>Pericoma blandula</i> Eaton	1	0.47
<i>Micronecta</i> sp.	1	0.47
Total	212	100

AUDIT OF NORTH EAST REGION'S PRIMARY ANALYSTS

Table 16 The 20 samples audited for Northumbria Area of North East Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Steads Burn	Bullocks Hall	EWS	29/05/2001	1	2	0
Steads Burn	Bullocks Hall	EWS	03/08/2001	0	1	0
Steads Burn	Site 2 - North Steads	EWS	03/10/2001	0	0	0
Coquet	d/s Hazon Burn	EWS	16/10/2001	0	0	0
Hazon Burn	u/s Minewater discharge	EWS	06/11/2001	0	2	0
Hazon Burn	u/s Minewater	EWS	22/01/2002	1	1	0
Pont	Kirkley Mill	EWS	20/02/2002	1	3	0
Harthope Burn	West Shipley Farm	FM	12/06/2001	0	1	0
Holywell Beck	d/s Brandon	FM	13/06/2001	0	1	0
Hedleyhope Burn	Cowsley	FM	12/09/2001	0	3	0
Hedleyhope Burn	Cowsley	FM	04/10/2001	0	2	0
Wear	u/s Gaunless	FM	23/11/2001	0	0	0
Wear	Shincliffe	FM	17/12/2001	1	0	0
Nent	Alston	FM	22/01/2002	0	2	0
Derwent	Ebchester	FM	05/02/2002	0	0	0
Linton Burn	Northumberland F7M 2A	JH	20/07/2001	0	1	0
Ouseburn	u/s Airport Trib	VW	06/02/2001	0	2	0
Don	Jarrow Cemetery	VW	02/12/2001	0	2	0
Airport Tributary	u/s Ouseburn	VW	14/01/2002	0	0	0
Tyne	Ovingham	VW	25/01/2002	0	2	0

Table 17 The 20 samples audited for Dales Area of North East Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Ure	West Tanfield	CJ	03/09/2001	0	0	0
Pickering Beck	Pickering	CJ	25/10/2001	0	0	0
Ure	Aldwark Toll Bridge (Sweep)	CJ	28/11/2001	1	2	0
Wharfe	Boston Spa	CJ	12/12/2001	0	1	0
Greatham Creek	u/s Railway	EA	09/10/2001	0	1	0
Calais Beck	Site D	EA	20/12/2001	0	0	0
Ouse	Naburn Marina (Sweep)	GM	21/05/2001	0	1	0
Ouse	u/s York Water Works (Sweep)	GM	15/06/2001	0	1	0
Ure	Aldwark Toll Bridge (Airlift)	GM	15/08/2001	0	2	0
Ure	Masham	GM	17/09/2001	0	1	0
Oak Beck	Harrogate	GM	15/10/2001	0	0	0
Ouse	Beningbrough Hall (Airlift)	JB	30/05/2001	0	0	0
Wharfe	d/s Tadcaster Weir	JB	01/08/2001	0	0	0
Nidd	Walshford Bridge	JB	27/09/2001	0	2	0
Swale	Thornton Bridge	JB	15/11/2001	0	2	0
Swale	Morton-on-Swale	JB	27/11/2001	0	1	0
Burn	Masham	JB	05/12/2001	0	1	0
Ouse	u/s Clifton Bridge (Sweep)	SW	06/09/2001	0	0	0
Ouse	Beningbrough Hall (Airlift)	SW	22/10/2001	0	3	0
Ouse	d/s Nidd Mouth (Airlift)	SW	31/10/2001	0	1	0

Table 18 The 20 samples audited for Ridings Area of North East Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Rivelin	u/s Rivelin Dams	AM	05/06/2001	0	0	0
Black Brook	Penny Hill	AM	20/06/2001	0	0	0
Worth	Keighley Garforth Rd.	AM	25/06/2001	0	3	0
Dearne	d/s Billings Dyke	AM	23/07/2001	0	1	0
Rivelin	u/s Rivelin Dams	AM	12/12/2001	0	0	0
Booth Dean Clough	d/s Reservoir	AM	14/01/2002	1	2	0
West Beck	Rainbow Springs	FLS	21/11/2001	0	0	0
Ryburn	Ripponden	KJ	04/06/2001	1	1	0
Ewden Beck	Ewden Bridge	KJ	04/07/2001	0	3	0
Wessenden Brook	u/s Mill	KJ	19/12/2001	0	1	0
Bradshaw Beck	Bradshaw	KJ	08/01/2002	3	1	0
Little Don	Crookland Wood	KJ	28/01/2002	0	1	0
Turvin Clough	u/s Elphin Brook	LBS	27/06/2001	0	2	0
Hebden Water	Hebden Bridge	LBS	02/07/2001	0	3	0
Dove	d/s Worsbrough Res.	LBS	17/07/2001	0	1	0
Dearne	Marles Bridge	LBS	23/07/2001	1	2	3
Little Don	Crookland Wood	LBS	01/08/2001	0	1	0
Scout Dike	u/s Scout Bridge	LBS	21/08/2001	0	2	0
Crimsworth Dean Beck	u/s Hebden Water	LBS	28/10/2001	0	0	0
Dearne	B6098 Bridge	LG	26/11/2001	0	0	0

Table 19 Statistics of the 2001 Primary Audit for North East 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
Northumbria	20	1.25	0.23	2	10.00	3	1.45	0.26
EWS	7	1.29	0.42	1	14.29	3	1.71	0.57
FM	8	1.13	0.40	1	12.50	3	1.25	0.37
JH	1	1.00	-	0	0	1	1.00	-
VW	4	1.50	0.50	0	0	2	1.50	0.50
Dales	20	0.95	0.20	1	5.00	3	1.00	0.22
CJ	4	0.75	0.48	0	0	2	1.00	0.71
EA	2	0.50	0.50	0	0	1	0.50	0.50
GM	5	1.00	0.32	0	0	2	1.00	0.32
JB	6	1.00	0.37	0	0	2	1.00	0.37
SW	3	1.33	0.88	1	33.33	3	1.33	0.88
Ridings	20	1.20	0.24	3	15.00	3	1.65	0.36
AM	6	1.00	0.52	1	16.67	3	1.17	0.60
FLS	1	0	-	0	0	0	0	-
KJ	5	1.40	0.40	1	20.00	3	2.20	0.58
LBS	7	1.57	0.37	1	14.29	3	2.14	0.74
LG	1	0	-	0	0	0	0	-
N. East Region	60	1.13	0.13	6	10.00	3	1.37	0.17
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 20 Net effects of the Primary Audit on BMWP score and number of scoring taxa for North East Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Northumbria	20	6.40	1.50	21	1.05	0.23	3
EWS	7	6.00	2.40	15	0.86	0.34	2
FM	8	5.75	2.84	21	1.00	0.46	3
JH	1	5.00		5	1.00		1
VW	4	8.75	3.30	16	1.50	0.50	2
Dales	20	6.15	1.63	25	0.90	0.19	3
CJ	4	2.00	1.22	5	0.50	0.29	1
EA	2	1.50	1.50	3	0.50	0.50	1
GM	5	4.80	2.20	13	1.00	0.32	2
JB	6	9.17	3.27	20	1.00	0.37	2
SW	3	11.00	7.37	25	1.33	0.88	3
Ridings	20	5.35	1.52	19	0.90	0.28	3
AM	6	4.50	2.22	13	0.83	0.48	3
FLS	1	0		0	0		0
KJ	5	4.60	4.13	19	0.60	0.81	3
LBS	7	8.14	2.55	18	1.43	0.37	3
LG	1	0		0	0		0
N. East Region	60	5.97	0.88	25	0.95	0.14	3
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 21 The families missed by North East Region's primary analysts

Family	n	% of North East Region's missed families in Primary Audit
Empididae	14	12.50
Psychodidae	10	8.93
Ceratopogonidae	7	6.25
Hydrophilidae (incl. Hydraenidae)	7	6.25
Hydracarina	7	6.25
Planariidae (incl. Dugesiidae)	5	4.46
Hydroptilidae	4	3.57
Hydrobiidae (incl. Bithyniidae)	4	3.57
Limnephilidae	3	2.68
Elmidae	3	2.68
Muscidae	3	2.68
Psychomyiidae (incl. Ecnomidae)	3	2.68
Leptoceridae	2	1.79
Goeridae	2	1.79
Gammaridae (incl. Crangonyctidae & Niphargidae)	2	1.79
Dytiscidae (incl. Noteridae)	2	1.79
Lepidostomatidae	2	1.79
Veliidae	2	1.79
Nemouridae	2	1.79
Sphaeriidae	2	1.79
Lymnaeidae	2	1.79
Gyrinidae	1	0.89
Calopterygidae	1	0.89
Capniidae	1	0.89
Valvatidae	1	0.89
Chaoboridae	1	0.89
Chironomidae	1	0.89
Dendrocoelidae	1	0.89
Dolichopodidae	1	0.89
Syrphidae	1	0.89
Sisyridae	1	0.89
Ephydriidae	1	0.89
Leptophlebiidae	1	0.89
Scirtidae	1	0.89
Haliplidae	1	0.89
Rhyacophilidae (incl. Glossosomatidae)	1	0.89
Polycentropodidae	1	0.89
Planorbidae	1	0.89
Hydropsychidae	1	0.89
Physidae	1	0.89
Ancylidae (incl. Acroloxidae)	1	0.89
Nematomorpha	1	0.89
Leuctridae	1	0.89
Molannidae	1	0.89
Sericostomatidae	1	0.89
Total	112	100

Table 22 The species missed by North East Region's primary analysts

Species	n	% of North East Region's missed species in Primary Audit
Hydracarina indet	7	5.93
Clinocerinae	7	5.93
Ceratopogonidae indet	7	5.93
Hemerodromia group	6	5.08
Hydraena gracilis Germar	5	4.24
Pericoma fallax Eaton	4	3.39
Chelifera group	3	2.54
Polycelis felina (Dalyell)	3	2.54
Potamopyrgus antipodarum (Gray)	3	2.54
Pericoma trivialis group	3	2.54
Elmis aenea (Muller)	3	2.54
Limnophora sp.	3	2.54
Lymnaea peregra (Muller)	2	1.69
Ithytrichia sp.	2	1.69
Hydroptila sp.	2	1.69
Pericoma exquisita Eaton	2	1.69
Limnephilidae indet	2	1.69
Gammarus pulex (L.)	2	1.69
Tinodes waeneri (L.)	2	1.69
Gyrinus sp.	1	0.85
Ancylus fluviatilis Muller	1	0.85
Athripsodes cinereus (Curtis)	1	0.85
Hippeutis complanatus (L.)	1	0.85
Calopteryx splendens (Harris)	1	0.85
Helophorus (Atracthelophorus) brevipalpis Bedel	1	0.85
Capnia bifrons (Newman)	1	0.85
Ceraclea sp.	1	0.85
Diplectrona felix McLachlan	1	0.85
Habrophlebia fusca (Curtis)	1	0.85
Dendrocoelum lacteum (Muller)	1	0.85
Goera pilosa (Fabricius)	1	0.85
Chaoborus sp.	1	0.85
Ephydriidae indet	1	0.85
Elodes sp.	1	0.85
Dolichopodidae indet	1	0.85
Crenobia alpina (Dana)	1	0.85
Crunoecia irrorata (Curtis)	1	0.85
Cynus trimaculatus (Curtis)	1	0.85
Haliplus sp.	1	0.85
Pericoma blandula Eaton	1	0.85
Velia (Plesiovelia) caprai Tamanini	1	0.85
Valvata cristata Muller	1	0.85
Syrphidae indet	1	0.85
Sphaeriidae indet	1	0.85
Sisyr sp.	1	0.85

Table 22 continued

Species	n	% of North East Region's missed species in Primary Audit
<i>Silo pallipes</i> (Fabricius)	1	0.85
Sericostomatidae indet	1	0.85
<i>Rhyacophila</i> sp.	1	0.85
<i>Rhyacophila dorsalis</i> (Curtis)	1	0.85
<i>Psychoda gemina</i> Eaton	1	0.85
<i>Potamopyrgus jenkinsi</i> (Smith)	1	0.85
<i>Pisidium</i> sp.	1	0.85
<i>Lepidostoma hirtum</i> (Fabricius)	1	0.85
<i>Phagocata vitta</i> (Duges)	1	0.85
<i>Hydraena riparia</i> Kugelann	1	0.85
<i>Oulimnius tuberculatus</i> (Muller)	1	0.85
<i>Oulimnius</i> sp.	1	0.85
Orthoclaadiinae	1	0.85
<i>Oreodytes sanmarkii</i> (Sahlberg)	1	0.85
Nemouridae indet	1	0.85
<i>Nemoura cambrica</i> group	1	0.85
Nematomorpha indet	1	0.85
<i>Molanna angustata</i> Curtis	1	0.85
<i>Lype</i> sp.	1	0.85
<i>Limnephilus rhombicus</i> group	1	0.85
<i>Velia</i> sp.	1	0.85
<i>Leuctra fusca</i> (L.)	1	0.85
<i>Agabus</i> sp.	1	0.85
<i>Physa acuta</i> group	1	0.85
Total	118	100

AUDIT OF NORTH WEST REGION'S PRIMARY ANALYSTS

Table 23 The samples audited for Northern Area of North West Region

Because of the Foot & Mouth outbreak, no samples were audited in 2001/02 for Northern Area

Table 24 The 20 samples audited for Central Area of North West Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Douglas	Wanes Blade Bridge	AD	08/01/2002	0	0	0
Douglas	Wigan FC	AD	14/01/2002	0	3	0
Douglas	Parbold d/s bridge	AD	15/01/2002	0	1	0
Yarrow	Limbrick	AD	13/02/2002	0	2	0
Colne Water	ptc North Valley Rd Brook	AS	05/12/2001	1	0	0
Douglas	d/s M61	AS	16/01/2002	0	5	0
Goit	Site 2, Brinscall	AS	02/02/2002	0	5	0
Wade Brook	ptc Mill Brook	BL	17/01/2002	0	1	0
Yarrow	Limbrick	DL	21/05/2001	0	1	0
Hillylaid Pool	d/s Royles Brook	DL	29/11/2001	0	0	0
Savick Brook	Grimsargh Road Bridge	DL	08/01/2002	0	0	0
Smithy Brook	Lady Lane	DL	09/01/2002	0	1	0
Douglas	Longton Brook ptc	DL	09/01/2002	0	0	0
Buckrow Brook	By Tilcon Ltd	DL	10/01/2002	0	1	0
Brock	d/s Brock Mill Car Park	DL	21/01/2002	0	0	1
Barley Water	ptc Pendle Water	DL	23/01/2002	0	1	0
Dean Brook	ptc R. Douglas	GK	04/01/2002	1	1	0
Calder	Green Brook ptc	GK	10/01/2002	0	2	0
Yellow Brook	ptc R.Douglas	GK	23/01/2002	0	0	0
Black Brook	Nr Hospital	GK	11/02/2002	0	0	0

Table 25 The 20 samples audited for Southern Area of North West Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Astley Brook	ptc Shaw Brook	AG	13/12/2001	0	1	0
Bedford Brook	ptc Moss Brook	AG	18/12/2001	0	1	0
Whittle Brook	Halton's Bridge	AG	04/01/2002	0	0	0
Newton Brook	ptc Sankey Brook	CW	04/02/2002	0	1	0
Diggle Brook	The Wharf	CW	06/02/2002	0	1	1
Irwell	u/s Bury ETW	GM	03/08/2001	0	0	0
Cowpe Brook	u/s Boarsgreave	GM	19/10/2001	2	4	0
Marsh Brook	ptc Hall Lee Brook	GM	18/01/2002	1	2	0
Mersey	d/s Northenden Weir	KA	24/10/2001	0	2	1
Medlock	Dawson St	MW	01/08/2001	0	1	1
Roch	ptc Irwell	MW	06/08/2001	0	2	0
Irk	u/s Collyhurst Weir	MW	17/10/2001	0	1	0
Beal	ptc Piethorne Brook	MW	13/11/2001	0	2	0
Tong End Brook	ptc R. Spodden	MW	21/12/2001	0	1	0
Clough Brook	Peak Park	MW	15/02/2002	0	6	0
Irk	u/s Cedar Grove	NR	19/10/2001	0	0	0
Glaze	Little Woolden Hall	NR	27/11/2001	0	0	0
Westleigh Brook	ptc Pennington Brook	NR	23/01/2002	1	3	0
Irwell	University FB	RM	25/09/2001	0	0	0
Moss Brook	ptc Bedford Brook	RM	05/12/2001	1	0	0

Table 26 Statistics of the 2001 Primary Audit for North West 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
Northern	0	-	-	-	-	-	-	-
Central	20	1.20	0.34	3	15.00	5	1.35	0.33
AD	4	1.50	0.65	1	25.00	3	1.50	0.65
AS	3	3.33	1.67	2	66.67	5	3.67	1.33
BL	1	1.00	-	0	0	1	1.00	-
DL	8	0.50	0.19	0	0	1	0.63	0.18
GK	4	0.75	0.48	0	0	2	1.00	0.58
Southern	20	1.40	0.34	3	15.00	6	1.80	0.41
AG	3	0.67	0.33	0	0	1	0.67	0.33
CW	2	1.00	0.00	0	0	1	1.50	0.50
GM	3	2.00	1.15	1	33.33	4	3.00	1.73
KA	1	2.00	-	0	0	2	3.00	-
MW	6	2.17	0.79	1	16.67	6	2.33	0.76
NR	3	1.00	1.00	1	33.33	3	1.33	1.33
RM	2	0	0	0	0	0	0.50	0.50
N. West Region	40	1.30	0.24	6	15.00	6	1.58	0.26
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 27 Net effects of the Primary Audit on BMWP score and number of scoring taxa for North West Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Northern	0	-	-	-	-	-	-
Central	20	5.90	1.95	29	1.10	0.36	5
AD	4	8.75	3.50	17	1.50	0.65	3
AS	3	14.00	10.02	29	3.00	2.00	5
BL	1	5.00	-	5	1.00	-	1
DL	8	3.75	1.61	10	0.50	0.19	1
GK	4	1.50	4.17	13	0.50	0.50	2
Southern	20	6.85	2.47	47	1.15	0.32	6
AG	3	2.00	1.00	3	0.67	0.33	1
CW	2	5.00	0.00	5	1.00	0	1
GM	3	10.00	6.43	22	1.00	0.58	2
KA	1	8.00	-	8	2.00	-	2
MW	6	13.67	6.80	47	2.17	0.79	6
NR	3	2.00	2.00	6	0.67	0.67	2
RM	2	-2.50	2.50	0	-0.50	0.50	0
N. West Region	40	6.38	1.55	47	1.13	0.24	6
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 28 The families missed in sorting by North West Region's primary analysts

Family	n	% of North West Region's missed families in Primary Audit
Psychodidae	9	14.52
Hydrobiidae (incl. Bithyniidae)	6	9.68
Empididae	5	8.06
Hydracarina	4	6.45
Physidae	3	4.84
Hydrophilidae (incl. Hydraenidae)	3	4.84
Leptoceridae	3	4.84
Lymnaeidae	2	3.23
Ceratopogonidae	2	3.23
Ancylidae (incl. Acroloxidae)	2	3.23
Planariidae (incl. Dugesiidae)	2	3.23
Heptageniidae	2	3.23
Sphaeriidae	2	3.23
Haliplidae	1	1.61
Goeridae	1	1.61
Ephemeridae	1	1.61
Dolichopodidae	1	1.61
Dendrocoelidae	1	1.61
Asellidae	1	1.61
Erpobdellidae	1	1.61
Lepidostomatidae	1	1.61
Leptophlebiidae	1	1.61
Leuctridae	1	1.61
Limnephilidae	1	1.61
Nemouridae	1	1.61
Planorbidae	1	1.61
Psychomyiidae (incl. Ecnomidae)	1	1.61
Rhyacophilidae (incl. Glossosomatidae)	1	1.61
Sciomyzidae	1	1.61
Hydroptilidae	1	1.61
Total	62	100

Table 29 The species missed in sorting by North West Region's primary analysts

Species	n	% of North West Region's missed species in Primary Audit
Potamopyrgus antipodarum (Gray)	5	7.46
Hydracarina indet	4	5.97
Clinocerinae	4	5.97
Pericoma fallax Eaton	3	4.48
Hydraena gracilis Germar	3	4.48
Physa sp.	3	4.48
Mystacides azurea (L.)	3	4.48
Polycelis nigra group	2	2.99
Pericoma pseudoexquisita Tonnoir	2	2.99
Ceratopogonidae indet	2	2.99
Ancylus fluviatilis Muller	2	2.99
Hemerodromia group	2	2.99
Heptagenia lateralis (Curtis)	1	1.49
Haliphus sp.	1	1.49
Gyraulus albus (Muller)	1	1.49
Heptageniidae indet	1	1.49
Erpobdella octoculata (L.)	1	1.49
Ephemera sp.	1	1.49
Dolichopodidae indet	1	1.49
Limnephilidae indet	1	1.49
Dendrocoelum lacteum (Muller)	1	1.49
Chelifera group	1	1.49
Bithynia sp.	1	1.49
Asellus aquaticus (L.)	1	1.49
Drusus annulatus (Stephens)	1	1.49
Paraleptophlebia sp.	1	1.49
Sphaeriidae indet	1	1.49
Silo pallipes (Fabricius)	1	1.49
Sciomyzidae indet	1	1.49
Rhyacophila sp.	1	1.49
Psychoda sp.	1	1.49
Psychoda gemina Eaton	1	1.49
Pisidium sp.	1	1.49
Lepidostoma hirtum (Fabricius)	1	1.49
Pericoma sp.	1	1.49
Hydroptila sp.	1	1.49
Nemurella picteti Klapalek	1	1.49
Lype sp.	1	1.49
Lymnaea truncatula (Muller)	1	1.49
Lymnaea sp.	1	1.49
Trocheta bykowskii Gedroyc	1	1.49
Leuctra sp.	1	1.49
Amphinemura sulcicollis (Stephens)	1	1.49
Pericoma trivialis group	1	1.49
Total	67	100

AUDIT OF SOUTHERN REGION'S PRIMARY ANALYSTS

Table 30 The 20 samples audited for the Hants & Isle of Wight Area of Southern Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Alver	Kingfisher Caravan Park	AF	19/01/2001	0	0	0
Wallington	Newman's Bridge	AF	05/02/2001	0	0	0
Test	Lynch	AF	14/11/2001	0	1	0
Test	u/s Portal's	AF	15/11/2001	0	0	0
Test	Laverstoke	AF	22/11/2001	0	1	0
Test	Broadlands	EH	15/01/2002	0	0	0
Sutton Stream	Road Bridge	EH	12/02/2002	1	2	0
Blackwater	Wellow Mill	EM	11/01/2002	0	4	0
Becton Bunny	Road Bridge	MT	25/01/2001	0	1	0
Matley Bog	Matley Passage	MT	05/02/2001	1	1	0
Lymington	Millyford Bridge	MT	08/10/2001	0	1	0
Lymington	Balmer Lawn	MT	20/11/2001	0	2	0
Lymington	Whitley Bridge	MT	07/01/2002	0	0	0
Blackwater	Hamptworth Bridge	SW	07/11/2001	1	0	1
Sombourne Stream	Horsebridge	SW	14/11/2001	0	0	0
Applemore Stream	Rush Bush	SW	21/02/2002	1	0	0
Dane's Stream	Lavender Farm	SW	25/02/2002	0	1	0
Eastern Yar	Burnt House	WP	22/01/2001	2	2	0
Meon	Drayton	WP	26/11/2001	0	2	0
Eastern Yar	Burnt House	WP	04/12/2001	0	2	0

Table 31 The 20 samples audited for the Kent Area of Southern Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Darent	Farningham	E4	Not stated	1	4	0
Darent	Lullingstone	E4	Not stated	0	1	0
Littlestone Sewer	d/s New Romney STW	LT	30/08/2001	0	0	0
Darent	u/s Eynesford	LT	29/10/2001	0	2	0
Little Stour	Littlebourne Mill	MK	Not stated	0	2	0
Little Stour	Littlebourne Oast Houses	MK	Not stated	0	1	0
Little Stour	Seaton House	MK	Not stated	0	2	0
Little Stour	Wickhambreaux	MK	Not stated	2	1	0
Little Stour	d/s Old STW	MK	Not stated	0	1	0
Little Stour	Wichambreaux	MK	01/11/2001	2	3	0
Little Stour	d/s Seaton Mill	MK	01/11/2001	0	6	0
Little Stour	White Bridge	MK	01/12/2001	0	3	1
Little Stour	d/s Seaton House	MK	21/12/2001	1	3	0
Great Stour	Whitemill Bridge	SJM	Not stated	2	4	1
Great Stour	Horton	SJM	Not stated	0	2	0
Darent	Westerham	SJM	17/09/2001	0	2	0
Dour	Kearsney	SJM	22/10/2001	0	2	1
Rother	Blackwall Bridge	SJM	20/11/2001	0	2	0
Motney Hill SSSI	Site 6, d/s Reed Bed	SJM	20/12/2001	0	0	0
Len	Mote Park	SS	22/01/2002	0	3	0

Table 32 The 20 samples audited for the Sussex Area of Southern Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Ouse	Sheffield Park Station	ES	25/02/2001	0	1	0
Framfield Stream	B2141 Bridge	ES	17/10/2001	0	2	0
Uck	u/s Tributary	ES	13/11/2001	0	2	0
Sheffield Park Stream	North Hall Farm	ES	17/12/2001	0	4	0
Longford Stream	Longford Farm	ES	14/02/2002	0	2	0
Goldings Stream Trib	d/s Mannings Heath STW	ES	14/02/2002	0	2	0
Goldings Stream Trib	u/s Mannings Heath STW	ES	14/02/2002	0	1	0
Willingdon Upper Sewer	Willingdon Drive Junction	ES	14/02/2002	0	2	0
Uck	Buxted Bridge	ES	19/02/2002	1	3	0
Goldings Stream Trib	d/s Mannings Heath	ES	19/02/2002	0	1	0
Glynde Reach	Beddingham	ES	21/02/2002	1	1	0
Ouse	Anchor Weir	ES	22/02/2002	0	1	0
Pellingford Brook	Sheffield Park Station	ES	22/02/2002	0	1	0
Ouse	Gold Bridge	ES	26/02/2002	0	0	0
Barnham Rife Trib	d/s Barnham Lane	ES	27/02/2002	0	0	0
Ouse	Barcombe Mills	ES	27/02/2002	0	1	0
Barnham Rife	d/s Elm Grove CSO	ES	28/02/2002	0	1	0
Barnham Rife	u/s Elm Grove CSO	ES	01/03/2002	0	2	0
Ouse	Sharpsbridge	JH	26/02/2002	0	0	0
Barnham Tributary	Site 3	VC	16/03/2001	0	1	0

Table 33 Statistics of the 2001 Primary Audit for Southern 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
Hants & IOW	20	1.00	0.24	1	5.00	4	1.35	0.28
AF	5	0.40	0.24	0	0	1	0.40	0.24
EH	2	1.00	1.00	0	0	2	1.50	1.50
EM	1	4.00	-	1	100.00	4	4.00	-
MT	5	1.00	0.32	0	0	2	1.20	0.37
SW	4	0.25	0.25	0	0	1	1.00	0.41
WP	3	2.00	0.00	0	0	2	2.67	0.67
Kent	20	2.20	0.32	7	35.00	6	2.75	0.43
E4	2	2.50	1.50	1	50.00	4	3.00	2.00
LT	2	1.00	1.00	0	0	2	1.00	1.00
MK	9	2.44	0.53	4	44.44	6	3.11	0.59
SJM	6	2.00	0.52	1	16.67	4	2.67	0.95
SS	1	3.00	-	1	100.00	3	3.00	-
Sussex	20	1.40	0.22	2	10.00	4	1.50	0.25
ES	18	1.50	0.23	2	11.11	4	1.61	0.26
JH	1	0	-	0	0	0	0	-
VC	1	1.00	-	0	0	1	1.00	-
Southern Region	60	1.53	0.16	10	16.67	6	1.87	0.20
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 34 Net effects of the Primary Audit on BMWP score and number of scoring taxa for Southern Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Hants & IOW	20	4.10	1.48	24	0.70	0.26	4
AF	5	1.80	1.20	6	0.40	0.24	1
EH	2	3.50	3.50	7	0.50	0.50	1
EM	1	24.00	-	24	4.00	-	4
MT	5	4.20	2.03	11	0.80	0.37	2
SW	4	-1.00	2.35	5	-0.25	0.48	1
WP	3	8.33	2.91	13	1.33	0.67	2
Kent	20	11.10	1.83	34	1.80	0.32	6
E4	2	9.50	4.50	14	2.00	1.00	3
LT	2	8.50	8.50	17	1.00	1.00	2
MK	9	12.56	3.33	34	1.89	0.63	6
SJM	6	8.67	2.03	14	1.67	0.33	2
SS	1	21.00	-	21	3.00	-	3
Sussex	20	7.20	1.46	22	1.30	0.22	4
ES	18	7.83	1.54	22	1.39	0.23	4
JH	1	0	-	0	0	-	0
VC	1	3.00	-	3	1.00	-	1
Southern Region	60	7.47	0.98	34	1.27	0.16	6
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 35 The families missed in sorting by Southern Region's primary analysts

Family	n	% of Southern Region's missed families in Primary Audit
Caenidae	7	7.37
Hydridae	6	6.32
Hydrophilidae (incl. Hydraenidae)	5	5.26
Hydrobiidae (incl. Bithyniidae)	5	5.26
Leptoceridae	5	5.26
Haliplidae	4	4.21
Hydroptilidae	4	4.21
Lymnaeidae	4	4.21
Baetidae	3	3.16
Piscicolidae	3	3.16
Calopterygidae	3	3.16
Ceratopogonidae	3	3.16
Empididae	3	3.16
Hydracarina	2	2.11
Asellidae	2	2.11
Beraeidae	2	2.11
Valvatidae	2	2.11
Elmidae	2	2.11
Ephemerellidae	2	2.11
Tipulidae	2	2.11
Simuliidae	2	2.11
Limnephilidae	2	2.11
Planorbidae	2	2.11
Planariidae (incl. Dugesiidae)	2	2.11
Psychodidae	2	2.11
Physidae	1	1.05
Nematomorpha	1	1.05
Muscidae	1	1.05
Dytiscidae (incl. Noteridae)	1	1.05
Sphaeriidae	1	1.05
Psychomyiidae (incl. Ecnomidae)	1	1.05
Ancylidae (incl. Acroloxidae)	1	1.05
Ephemeridae	1	1.05
Ephydriidae	1	1.05
Goeridae	1	1.05
Gyrinidae	1	1.05
Hydropsychidae	1	1.05
Veliidae	1	1.05
Polycentropodidae	1	1.05
Rhyacophilidae (incl. Glossosomatidae)	1	1.05
Leptophlebiidae	1	1.05
Total	95	100

Table 36 The species missed in sorting by Southern Region's primary analysts

Species	n	% of Southern Region's missed species in Primary Audit
Hydridae indet	6	6.18
Caenis luctuosa group	5	5.15
Potamopyrgus antipodarum (Gray)	5	5.15
Hydroptila sp.	3	3.09
Piscicola geometra (L.)	3	3.09
Calopteryx splendens (Harris)	2	2.06
Lymnaea peregra (Muller)	2	2.06
Lymnaea sp.	2	2.06
Limnephilidae indet	2	2.06
Hydracarina indet	2	2.06
Centroptilum luteolum (Muller)	2	2.06
Ceratopogonidae indet	2	2.06
Valvata cristata Muller	2	2.06
Haliphus sp.	2	2.06
Ephemerella ignita (Poda)	2	2.06
Athripsodes cinereus (Curtis)	2	2.06
Hydraena riparia Kugelann	2	2.06
Elmis aenea (Muller)	2	2.06
Hemerodromia group	2	2.06
Pericoma trivialis group	2	2.06
Ephemera danica Muller	1	1.03
Chelifera group	1	1.03
Dugesia polychroa group	1	1.03
Calopteryx virgo (L.)	1	1.03
Ephydridae indet	1	1.03
Caenis horaria (L.)	1	1.03
Brychius elevatus (Panzer)	1	1.03
Beraeodes minutus (L.)	1	1.03
Beraea maurus (Curtis)	1	1.03
Baetis rhodani (Pictet)	1	1.03
Atrichopogon sp.	1	1.03
Athripsodes bilineatus (L.)	1	1.03
Asellus meridianus Racovitza	1	1.03
Asellus aquaticus (L.)	1	1.03
Antocha vitripennis (Meigen)	1	1.03
Anisus vortex (L.)	1	1.03
Ancylus fluviatilis Muller	1	1.03
Anacaena limbata (Fabricius)	1	1.03
Caenis robusta Eaton	1	1.03
Oecetis lacustris (Pictet)	1	1.03
Tinodes waeneri (L.)	1	1.03
Simulium (Simulium) ornatum group	1	1.03
Simulium (Nevermannia) vernum group	1	1.03
Silo nigricornis (Pictet)	1	1.03
Polycentropodidae indet	1	1.03

Table 36 continued

Species	n	% of Southern Region's missed species in Primary Audit
<i>Polycelis nigra</i> group	1	1.03
<i>Platambus maculatus</i> (L.)	1	1.03
<i>Planorbidae</i> indet	1	1.03
<i>Pisidium</i> sp.	1	1.03
<i>Physa fontinalis</i> (L.)	1	1.03
<i>Physa acuta</i> group	1	1.03
<i>Orectochilus villosus</i> (Muller)	1	1.03
<i>Haliplus lineatocollis</i> (Marsham)	1	1.03
<i>Nematomorpha</i> indet	1	1.03
<i>Mystacides azurea</i> (L.)	1	1.03
<i>Limnophora</i> sp.	1	1.03
<i>Limnophila</i> (<i>Eloeophila</i>) sp.	1	1.03
<i>Laccobius</i> (<i>Laccobius</i>) <i>minutus</i> (L.)	1	1.03
<i>Ithytrichia</i> sp.	1	1.03
<i>Hydropsyche angustipennis</i> (Curtis)	1	1.03
<i>Velia</i> (<i>Plesiovelia</i>) sp.	1	1.03
<i>Hydraena gracilis</i> Germar	1	1.03
<i>Agapetus</i> sp.	1	1.03
<i>Helophorus</i> (<i>Atracthelophorus</i>) <i>brevipalpis</i> Bedel	1	1.03
<i>Paraleptophlebia</i> sp.	1	1.03
Total	97	100

AUDIT OF SOUTH WEST REGION'S PRIMARY ANALYSTS

Table 34 Net effects of the AQC Audit on BMWP score and number of scoring taxa for Southern Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of net effect on score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of net effect on no. of taxa	Maximum underestimate of no. of taxa
Hants & IOW	0	-	-	-	-	-	-
Kent	4	10.50	4.41	21	2.25	0.85	4
EI	1	0	-	0	0	-	0
SW	3	14.00	3.79	21	3.00	0.58	4
Sussex	5	6.60	3.16	17	1.20	0.58	3
AG	3	8.33	4.91	17	1.67	0.88	3
SE							

Table 30 The samples audited for the Hants & Isle of Wight Area of Southern Region

Hants & Isle of Wight Area sent primary samples only for audit.

Table 31 The 4 samples audited for the Kent Area of Southern Region

River	Site	AQC inspector	AQC date	Losses	Gains	Omissions
Littlestone Sewer	d/s New Romney STW	E1	20/09/2001	0	0	0
Little Stour	d/s Seaton Mill	SW	28/11/2001	0	4	0
Rother	Blackwall Bridge	SW	04/12/2001	0	2	0
Little Stour	White Bridge	SW	03/01/2002	0	3	0

Table 32 The 5 samples audited for the Sussex Area of Southern Region

River	Site	AQC inspector	AQC date	Losses	Gains	Omissions
Barnham Tributary	Site 3	AG	30/10/2001	0	0	0
Sheffield Park Stream	North Hall Farm	AG	02/01/2002	0	3	0
Longford Stream	Longford Farm	AG	14/02/2002	0	2	0
Framfield Stream	B2141 Bridge	SE	13/11/2001	0	1	0
Uck	u/s Tributary	SE	03/01/2002	0	0	0

Table 33 Statistics of the 2001 AQC Audit for Southern Region

Analyst/ Group	n	Mean gains	Standard error	Highest no. gains	Mean errors (l+g+o)	Standard error
Hants & IOW	0	-	-	-	-	-
Kent	4	2.25	0.85	4	2.25	0.85
E1	1	0	-	0	0	-
SW	3	3.00	0.58	4	3.00	0.58
Sussex	5	1.20	0.58	3	1.20	0.58
AG	3	1.67	0.88	3	1.67	0.88
SE	2	0.50	0.50	1	0.50	0.50
Southern Region	9	1.67	0.50	4	1.67	0.50
Whole of Agency	318	0.70	0.05	5	0.87	0.06

Table 37 The 20 samples audited for Cornwall Area of South West Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Wolf	Roadford New Bridge	AB	21/03/2001	0	0	0
Fowey	Draynes Bridge	AB	30/10/2001	0	1	0
Plym	u/s Ditsworthy	JMB	08/03/2001	0	0	0
Wolf	u/s Thrushel (Milford)	JMB	19/04/2001	0	2	0
Lyd	Lifton Bridge	JMB	30/05/2001	2	3	0
Tavy	d/s Willsworthy Leat	JMB	20/07/2001	0	1	0
Warleggan (Bodelda)	Temple	JMB	23/08/2001	0	0	0
Fal	Kernick Bridge	JMB	12/11/2001	0	0	0
Gover Stream	d/s Carrancarrow	JMB	17/12/2001	0	0	0
Tamar	Buses Bridge	LC	04/10/2001	0	0	0
Cober	Trehear Bridge	LD	02/04/2001	1	0	0
Newlyn	Newlyn Bridge	LD	10/04/2001	0	0	0
Tehidy Stream	Coombe	TG	05/03/2001	0	0	0
Red	Kieve Bridge	TG	14/03/2001	0	2	0
Red	Godrevy	TG	20/03/2001	0	3	0
Red	u/s South Crofty Mine	TG	15/05/2001	0	1	0
Trevenen	u/s Tewennack STW	TG	08/06/2001	0	1	0
Reskadinnick Stream	Reskadinnick	TG	03/09/2001	0	1	0
Red	d/s Brea Addit Bridge	TG	27/09/2001	0	0	0
Walkham	Grenofen Bridge	TG	05/11/2001	0	0	0

Table 38 The 4 samples audited for Devon Area of South West Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Umber	Combe Martin	AD	08/05/2001	0	1	0
Dunkeswell Stream	u/s Madford River	AD	07/11/2001	0	1	0
Lemon	u/s South Knighton STW	AH	01/08/2001	0	2	0
Barnstable Yeo	d/s Brockham Bridge	APH	Not stated	0	1	0

Table 39 The 10 samples audited for North Wessex Area of South West Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Durleigh Brook	Albert Street	IH	09/01/2002	0	0	0
Tone	Waterrow	IH	14/01/2002	0	1	0
Hillfarrance Brook	Milverton STW	IH	15/01/2002	0	0	0
Bristol Avon	Lackham College	IN	14/01/2002	0	3	1
Buckington Drove	Pinkney Farm	IN	20/01/2002	0	3	0
Chalfield Brook	Broughton Gifford	JS	17/01/2002	0	2	0
Lopen Brook	Summer Lane	JS	28/01/2002	0	3	0
Tone	Waterrow	WO	13/12/2001	0	1	0
Hillfarrance Trib	Wiverliscombe STW	WO	17/01/2002	0	3	0
South Drain	d/s Peat Discharge	WO	30/01/2002	0	3	0

Table 40 The 10 samples audited for South Wessex Area of South West Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Fonthill Brook	Hillground Copse	CMH	01/05/2001	0	1	0
Hooke	d/s Hooke	LC	17/05/2001	0	1	0
Nine Mile	Nine Mile Ford	MP	23/04/2001	0	1	0
Devil's Brook	Lower Ansty	MP	08/08/2001	0	1	0
Tarrant	u/s Preston Farm	MP	04/12/2001	0	0	0
Bourne Stream	Talbot Heath	MP	07/01/2002	0	2	0
Devil's Brook	Mill House	MP	23/01/2002	0	1	0
Piddle	White Lackington	PRH	30/07/2001	0	1	0
Ashfield Water	Burton	PRH	11/10/2001	0	0	0
Bourne Stream	Town Centre Gardens	RSJ	04/02/2002	0	1	0

Table 41 Statistics of the 2001 Primary Audit for South West 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
Cornwall	20	0.75	0.23	2	10.00	3	0.90	0.29
AB	2	0.50	0.50	0	0	1	0.50	0.50
JMB	7	0.86	0.46	1	14.29	3	1.14	0.70
LC	1	0	-	0	0	0	0	-
LD	2	0	0	0	0	0	0.50	0.50
TG	8	1.00	0.38	1	12.50	3	1.00	0.38
Devon	4	1.25	0.25	0	0	2	1.25	0.25
AD	2	1.00	0.00	0	0	1	1.00	0.00
AH	1	2.00	-	0	0	2	2.00	-
APH	1	1.00	-	0	0	1	1.00	-
N. Wessex	10	1.90	0.41	5	50.00	3	2.00	0.45
IH	3	0.33	0.33	0	0	1	0.33	0.33
IN	2	3.00	0	2	100.00	3	3.50	0.50
JS	2	2.50	0.50	1	50.00	3	2.50	0.50
WO	3	2.33	0.67	2	66.67	3	2.33	0.67
S. Wessex	10	0.90	0.18	0	0	2	0.90	0.18
CMH	1	1.00	-	0	0	1	1.00	-
LC	1	1.00	-	0	0	1	1.00	-
MP	5	1.00	0.32	0	0	2	1.00	0.32
PRH	2	0.50	0.50	0	0	1	0.50	0.50
RSJ	1	1.00	-	0	0	1	1.00	-
S. West Region	44	1.09	0.16	7	15.91	3	1.18	0.18
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 42 Net effects of the Primary Audit on BMWP score and number of scoring taxa for South West Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Cornwall	20	4.25	1.43	15	0.60	0.21	3
AB	2	5.00	5.00	10	0.50	0.50	1
JMB	7	4.71	2.25	13	0.57	0.30	2
LC	1	0	-	0	0	-	0
LD	2	-4.00	4.00	0	-0.50	0.50	0
TG	8	6.25	2.27	15	1.00	0.38	3
Devon	4	8.25	2.14	13	1.25	0.25	2
AD	2	5.00	2.00	7	1.00	0.00	1
AH	1	13.00	-	13	2.00	-	2
APH	1	10.00	-	10	1.00	-	1
N. Wessex	10	11.10	2.85	24	1.90	0.41	3
IH	3	3.33	3.33	10	0.33	0.33	1
IN	2	13.00	7.00	20	3.00	0.00	3
JS	2	12.50	9.50	22	2.50	0.50	3
WO	3	16.67	4.06	24	2.33	0.67	3
S. Wessex	10	6.00	1.58	16	0.90	0.18	2
CMH	1	3.00	-	3	1.00	-	1
LC	1	10.00	-	10	1.00	-	1
MP	5	6.40	2.69	16	1.00	0.32	2
PRH	2	5.00	5.00	10	0.50	0.50	1
RSJ	1	5.00	-	5	1.00	-	1
S. West Region	44	6.57	1.06	24	1.02	0.16	3
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 43 The families missed in sorting by South West Region's primary analysts

Family	n	% of South West Region's missed families in Primary Audit
Sphaeriidae	4	6.90
Hydracarina	3	5.17
Psychodidae	3	5.17
Goeridae	3	5.17
Ceratopogonidae	3	5.17
Leptoceridae	3	5.17
Perlodidae	2	3.45
Dytiscidae (incl. Noteridae)	2	3.45
Limnephilidae	2	3.45
Chloroperlidae	2	3.45
Oligochaeta	2	3.45
Planorbidae	2	3.45
Caenidae	2	3.45
Simuliidae	2	3.45
Capniidae	1	1.72
Coenagrionidae	1	1.72
Brachycentridae	1	1.72
Dryopidae	1	1.72
Argulidae	1	1.72
Elmidae	1	1.72
Ephemerellidae	1	1.72
Ephemeridae	1	1.72
Chironomidae	1	1.72
Gyrinidae	1	1.72
Ancylidae (incl. Acroloxidae)	1	1.72
Hydroptilidae	1	1.72
Stratiomyidae	1	1.72
Leptophlebiidae	1	1.72
Lymnaeidae	1	1.72
Nemouridae	1	1.72
Odontoceridae	1	1.72
Planariidae (incl. Dugesiidae)	1	1.72
Polycentropodidae	1	1.72
Rhagionidae (incl. Athericidae)	1	1.72
Sciomyzidae	1	1.72
Scirtidae	1	1.72
Hydropsychidae	1	1.72
Total	58	100

Table 44 The species missed in sorting by South West Region's primary analysts

Species	n	% of South West Region's missed species in Primary Audit
Pisidium sp.	4	6.78
Ceratopogonidae indet	3	5.08
Hydracarina indet	3	5.08
Adicella reducta (Mclachlan)	2	3.39
Caenis luctuosa group	2	3.39
Pericoma trivialis group	2	3.39
Limnephilidae indet	2	3.39
Lumbriculidae	2	3.39
Chloroperla torrentium (Pictet)	1	1.69
Goera pilosa (Fabricius)	1	1.69
Ferrissia wautieri (Mirolli)	1	1.69
Ephemerella ignita (Poda)	1	1.69
Ephemera sp.	1	1.69
Elodes sp.	1	1.69
Elmis aenea (Muller)	1	1.69
Dugesia tigrina (Girard)	1	1.69
Gyraulus albus (Muller)	1	1.69
Coenagrionidae indet	1	1.69
Chloroperla sp.	1	1.69
Capnia bifrons (Newman)	1	1.69
Brachycentrus subnubilus Curtis	1	1.69
Beris sp.	1	1.69
Armiger crista (L.)	1	1.69
Argulus sp.	1	1.69
Agabus sp.	1	1.69
Dryops sp.	1	1.69
Nemoura sp.	1	1.69
Simulium (Eusimulium) aureum group	1	1.69
Silo pallipes (Fabricius)	1	1.69
Silo nigricornis (Pictet)	1	1.69
Sciomyzidae indet	1	1.69
Rhagionidae indet	1	1.69
Psychoda sp.	1	1.69
Plectrocnemia sp.	1	1.69
Perlodes microcephala (Pictet)	1	1.69
Hydroporinae	1	1.69
Odontocerum albicorne (Scopoli)	1	1.69
Gyrinus sp.	1	1.69
Mystacides azurea (L.)	1	1.69
Lymnaea peregra (Muller)	1	1.69
Lumbricidae	1	1.69
Leptophlebiidae indet	1	1.69
Ithytrichia sp.	1	1.69
Isoperla sp.	1	1.69
Simulium (Simulium) ornatum group	1	1.69
Hydropsyche siltalai Dohler	1	1.69
Orthocladiinae	1	1.69
Total	59	100

AUDIT OF THAMES REGION'S PRIMARY ANALYSTS

Table 45 The 14 samples audited for the Hatfield Laboratory of Thames Region

River	Site	Primary Analyst		Losses	Gains	Omissions
Lee	Hackney Marshes	KG	25/05/2001	0	2	0
Colne Brook	Wraysbury BR Station	KG	03/08/2001	0	1	0
Colne	d/s Stanwell Moor	KG	06/08/2001	0	1	0
Lee	Waterhall	KG	30/08/2001	0	1	0
Gade	Cassiobury Park	KG	27/09/2001	1	1	1
Brookhouse Brook	d/s Hobbs Cross Farm	KG	07/11/2001	0	0	0
Cripsey Brook	Weald Bridge	KG	08/11/2001	0	1	0
Cripsey Brook	Moreton Bridge	KG	09/11/2001	1	0	0
Stort	Briggens	RC	25/05/2001	0	0	0
Mimshall Brook	Waterend	RC	31/05/2001	0	1	0
Roding	High Ongar Bridge	RC	12/07/2001	3	1	0
Colne	London Colney	RC	01/08/2001	0	2	0
Pinn	Stratford Bridge	RC	18/10/2001	0	0	0
Ascot Road Ditch	d/s Ascot Road	RC	20/11/2001	1	0	0

Table 46 The 20 samples audited for the Frimley Laboratory of Thames Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Quaggy	Chinbrook Meadows	307	31/01/2001	0	1	0
Wandle	3 Arch Bridge	307	03/04/2001	0	0	0
The Cut	Pitts Bridge	307	18/04/2001	0	3	0
Beverley Brook	Richmond Park	307	22/05/2001	1	3	0
The Cut	u/s Lam Brook	307	25/05/2001	0	3	0
Bracknell Mill Pond	Inlet Stream	307	13/06/2001	0	2	0
Ravensbourne	Norman Park	307	10/07/2001	0	1	0
Gatwick Stream	Tinsley Bridge	307	30/08/2001	0	1	0
Jubilee River	d/s Dorney Footbridge	307	28/09/2001	0	0	0
Cranleigh Waters	Water Bridge	307	19/10/2001	1	3	0
Cranleigh Waters	u/s Collins Brook	307	19/11/2001	0	3	0
Ravensbourne	Ladywell Park	317	03/04/2001	0	1	0
Ockham Mill Stream	Ockham Mill	317	26/04/2001	0	3	0
Lawbrook	Drydown Farm	317	19/07/2001	0	0	0
Hogsmill	u/s Mill Street	317	26/09/2001	0	1	0
Cranleigh Waters	Water Bridge	MJW	08/01/2001	0	2	0
Ludgershall Brook	u/s Ray	MJW	05/02/2001	0	1	0
Marston Meysey Brook	d/s Marston Meysey	MJW	16/02/2001	0	3	0
Wey (S)	Passfield Business Park	MJW	31/07/2001	0	3	0
Cranleigh Waters	u/s Collins Brook	MJW	12/12/2001	0	1	0

Table 47 The 20 samples audited for the Wallingford Laboratory of Thames Region

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Kennet	Chilton Foliat	BPM	20/09/2001	1	2	0
Churn	u/s A435, Colesbourne	BPM	11/10/2001	3	1	1
Lambourn	A4, Newbury	BPM	01/11/2001	0	2	0
Dikler	Stow Bridge	BPM	08/01/2002	0	0	0
Wye	Bassetsbury Lane	BPM	09/01/2002	0	1	0
Dikler	Lower Swell	BPM	22/01/2002	0	2	0
Windrush	Harford Ford	BPM	27/01/2002	0	0	0
Windrush	Lower Upton Farm	BPM	27/01/2002	0	1	0
Windrush	Worsham Works	BPM	31/01/2002	0	1	0
Windrush	G.S. Newbridge	BPM	04/02/2002	0	0	0
Windrush	Newbridge	BPM	04/02/2002	0	2	0
Windrush	East Arm @ Cokethorpe	BPM	06/02/2002	0	1	0
Mill Brook	Watery Lane	BPM	06/02/2002	0	0	0
Windrush	Minster Lovell Rec Ground	BPM	18/02/2002	0	3	0
Medley Brook	d/s Stanton Harcourt	BPM	18/02/2002	0	0	1
Mill Brook	Mill Brook Cottage	BPM	20/02/2002	0	1	0
Mill Brook	Thatcher Cottage	BPM	05/03/2002	1	0	0
Marcham Brook	Mill Road, Marcham	JAB	10/10/2001	1	6	1
Kennet	d/s Sheep Drove Bend	JAB	22/01/2002	0	5	0
Cole	Acorn Bridge, Bourton	SC	21/02/2002	1	2	0

Table 48 Statistics of the 2001 Primary Audit for Thames 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
Hatfield	14	0.79	0.19	0	0	2	1.29	0.30
KG	8	0.88	0.23	0	0	2	1.25	0.31
RC	6	0.67	0.33	0	0	2	1.33	0.61
Frimley	20	1.75	0.26	8	40.00	3	1.85	0.29
307	11	1.82	0.38	5	45.45	3	2.00	0.45
317	4	1.25	0.63	1	25.00	3	1.25	0.63
MJW	5	2.00	0.45	2	40.00	3	2.00	0.45
Wallingford	20	1.50	0.37	3	15.00	6	2.00	0.46
BPM	17	1.00	0.23	1	5.88	3	1.41	0.32
JAB	2	5.50	0.50	2	100.00	6	6.50	1.50
SC	1	2.00	-	0	0	2	3.00	-
Thames Region	54	1.41	0.18	11	20.37	6	1.76	0.22
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 49 Net effects of the Primary Audit on BMWP score and number of scoring taxa for Thames Region

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Hatfield	14	1.93	1.58	14	0.36	0.31	2
KG	8	3.63	1.91	14	0.63	0.32	2
RC	6	-0.33	2.55	9	0	0.58	2
Frimley	20	9.10	1.61	19	1.65	0.24	3
307	11	8.82	2.19	19	1.64	0.34	3
317	4	6.50	3.97	18	1.25	0.63	3
MJW	5	11.80	3.22	18	2.00	0.45	3
Wallingford	20	7.00	2.27	31	1.15	0.39	5
BPM	17	4.59	1.84	15	0.71	0.29	3
JAB	2	28.50	2.50	31	5.00	0	5
SC	1	5.00	-	5	1.00	-	1
Thames Region	54	6.46	1.16	31	1.13	0.20	5
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 50 The families missed in sorting by Thames Region's primary analysts

Family	n	% of Thames Region's missed families in Primary Audit
Psychodidae	16	12.50
Empididae	12	9.38
Hydracarina	12	9.38
Hydrophilidae (incl. Hydraenidae)	6	4.69
Caenidae	6	4.69
Ceratopogonidae	6	4.69
Elmidae	4	3.13
Planorbidae	4	3.13
Limnephilidae	4	3.13
Beraeidae	3	2.34
Dixidae	3	2.34
Ephydriidae	3	2.34
Ancylidae (incl. Acroloxidae)	3	2.34
Hydrobiidae (incl. Bithyniidae)	3	2.34
Planariidae (incl. Dugesiidae)	3	2.34
Hydriidae	2	1.56
Simuliidae	2	1.56
Coenagrionidae	2	1.56
Physidae	2	1.56
Psychomyiidae (incl. Ecnomidae)	2	1.56
Tipulidae	2	1.56
Baetidae	2	1.56
Asellidae	2	1.56
Nemouridae	2	1.56
Lymnaeidae	2	1.56
Polycentropodidae	2	1.56
Valvatidae	1	0.78
Astacidae	1	0.78
Sciomyzidae	1	0.78
Stratiomyidae	1	0.78
Culicidae	1	0.78
Sericostomatidae	1	0.78
Ephemeridae	1	0.78
Gammaridae (incl. Crangonyctidae &	1	0.78
Muscidae	1	0.78
Goeridae	1	0.78
Gyrinidae	1	0.78
Haliplidae	1	0.78
Veliidae	1	0.78
Hydropsychidae	1	0.78
Hydroptilidae	1	0.78
Leptoceridae	1	0.78
Leptophlebiidae	1	0.78
Erpobdellidae	1	0.78
Total	128	100

Table 51 The species missed in sorting by Thames Region's primary analysts

Species	n	% of Thames Region's missed species in Primary Audit
Hydracarina indet	12	7.97
Hemerodromia group	8	5.80
Pericoma trivialis group	6	4.35
Ceratopogonidae indet	6	4.35
Pericoma fallax Eaton	5	3.62
Caenis luctuosa group	5	3.62
Elmis aenea (Muller)	4	2.90
Hydraena riparia Kugelann	3	2.17
Chelifera group	3	2.17
Limnephilidae indet	3	2.17
Peripsychoda fusca (Macquart)	3	2.17
Polycelis nigra group	3	2.17
Hydridae indet	2	1.45
Clinocerinae	4	2.90
Dixa maculata complex	2	1.45
Lype sp.	2	1.45
Lymnaea sp.	2	1.45
Ephydridae indet	2	1.45
Acroloxus lacustris (L.)	2	1.45
Dicranota sp.	2	1.45
Polycentropus flavomaculatus (Pictet)	2	1.45
Potamopyrgus antipodarum (Gray)	2	1.45
Beraeodes minutus (L.)	2	1.45
Armiger crista (L.)	2	1.45
Pericoma sp.	2	1.45
Athripsodes cinereus (Curtis)	1	0.72
Halipus sp.	1	0.72
Habrophlebia fusca (Curtis)	1	0.72
Ancylus fluviatilis Muller	1	0.72
Anopheles sp.	1	0.72
Gyraulus sp.	1	0.72
Goera pilosa (Fabricius)	1	0.72
Glyphotaelius pellucidus (Retzius)	1	0.72
Gammarus sp.	1	0.72
Asellus aquaticus (L.)	1	0.72
Ephemera sp.	1	0.72
Baetis rhodani (Pictet)	1	0.72
Beraea pullata (Curtis)	1	0.72
Dixa sp.	1	0.72
Coenagrionidae indet	1	0.72
Cloeon dipterum (L.)	1	0.72

Table 51 continued

Species	n	% of Thames Region's missed species in Primary Audit
<i>Bithynia tentaculata</i> (L.)	1	0.72
<i>Caenis rivulorum</i> Eaton	1	0.72
<i>Asellus meridianus</i> Racovitza	1	0.72
Sciomyzidae indet	1	0.72
<i>Hydraena</i> sp.	1	0.72
<i>Pericoma pulchra</i> Eaton	1	0.72
<i>Physa fontinalis</i> (L.)	1	0.72
Physidae indet	1	0.72
<i>Plectrocnemia</i> sp.	1	0.72
<i>Pericoma exquisita</i> Eaton	1	0.72
<i>Pyrrhosoma nymphula</i> (Sulzer)	1	0.72
<i>Pacifastacus leniusculus</i> (Dana)	1	0.72
<i>Sericostoma personatum</i> (Spence)	1	0.72
<i>Simulium</i> (<i>Eusimulium</i>) <i>aureum</i> group	1	0.72
<i>Simulium</i> (<i>Simulium</i>) <i>ornatum</i> group	1	0.72
<i>Trocheta subviridis</i> Dutrochet	1	0.72
<i>Valvata cristata</i> Muller	1	0.72
<i>Velia</i> sp.	1	0.72
<i>Psychoda cinerea</i> Banks	1	0.72
<i>Limnophora</i> sp.	1	0.72
<i>Hippeutis complanatus</i> (L.)	1	0.72
<i>Hydrellia</i> sp.	1	0.72
Hydrophilidae indet	1	0.72
<i>Pericoma pseudoexquisita</i> Tonnoir	1	0.72
<i>Hydroptila</i> sp.	1	0.72
<i>Helophorus</i> (<i>Helophorus</i>) <i>obscurus</i> Mulsant	1	0.72
<i>Nemoura cinerea</i> (Retzius)	1	0.72
<i>Nemoura</i> sp.	1	0.72
<i>Ochthebius dilatatus</i> Stephens	1	0.72
<i>Orectochilus villosus</i> (Muller)	1	0.72
<i>Oulimnius tuberculatus</i> (Muller)	1	0.72
<i>Oxycera rara</i> (Scopoli)	1	0.72
<i>Hydropsyche siltalai</i> Dohler	1	0.72
Total	138	100

AUDIT OF PRIMARY ANALYSTS FOR WALES

Table 52 The 10 samples audited for Northern Area of Wales

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Afon Braint	d/s Penhesgyn Tip	358	14/06/2001	1	3	0
Afon Erch	Glen Afon	358	09/11/2001	0	2	0
Coed Llwybor y Bi	Drain @ Road Bridge	358	31/01/2002	0	0	0
Afon Gele	Gors Bridge	359	21/06/2001	1	4	0
Desach	Wooden Bridge	359	09/10/2001	0	1	0
Stanney Brook	d/s Church Lane	377	29/11/2001	1	1	0
Glanfyddion Brook	A547, Dyserth	377	19/12/2001	0	2	0
Glanfyddion Brook	u/s Trelawnyd STW	377	01/02/2002	0	1	0
Afon Clywedog	u/s Llwyn Onn	385	31/10/2001	0	0	0
Afon Clywedog	Pickhill	385	28/11/2001	0	1	0

Table 53 The 14 samples audited for South Eastern Area of Wales

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Monnow	u/s Habitat improvement	381	11/07/2001	2	1	0
Tarell	Brecon	381	03/09/2001	1	1	0
Stream	Nr Dan y Coed Terrace	381	15/01/2002	0	2	0
Ditch	1st d/s BSW Newbridge	383	14/03/2001	0	1	0
Lamby Way Tip	u/s Bridge 1	383	20/03/2001	2	4	0
Rhiangoll	Bottom site d/s Rep	383	21/03/2001	1	3	0
Rhyd-y-Meirch	Bottom stretch - mid site	383	31/07/2001	2	1	0
Yazor Brook	d/s Burghill STW	386	21/03/2001	4	0	0
Sirhowy	d/s Sunningdale minewater	401	08/11/2001	0	1	0
Sirhowy	Gelligroes Bridge	401	14/11/2001	0	0	0
Trosnant Brook	u/s Minewater	401	20/11/2001	1	3	1
Taff Bargoed	d/s Minewater	401	23/11/2001	0	0	0
Nant y Gwyddon	Picnic Site	NW	15/01/2002	1	1	0
Cage Brook	u/s Wye	PC	07/02/2001	0	1	0

Table 54 The 16 samples audited for South Western Area of Wales

River	Site	Primary Analyst	Date of Analysis	Losses	Gains	Omissions
Afan	u/s Lower Cwmafan Bridge	CUR	27/06/2001	0	0	0
Gwenffrwd	u/s Whitworth Lagoon	CUR	09/07/2001	2	1	1
Blaenpelenna	u/s Garth Tonmawr	CUR	11/07/2001	0	1	0
Afan	u/s Ynysgwas Road Bridge	CUR	30/07/2001	1	1	0
Gwenffrwd	u/s Whitworth No 1	CUR	10/08/2001	0	0	0
Pelenna	u/s Confluence	CUR	16/08/2001	0	0	0
Sutton Brook	d/s Lower SW	GR		0	0	0
Kenfig	d/s Discharge	GR	20/12/2001	0	0	0
Sutton Brook	Llandow	GR	16/01/2002	1	0	0
Sutton Brook	Sutton Farm	GR	18/01/2002	1	1	0
Syfyfny	u/s Rosebush WTW	HF	03/10/2001	0	2	0
Bow St. Brook	d/s STW	HF	21/01/2002	0	0	0
Bow St. Brook	u/s STW	HF	05/02/2002	0	2	0
Camnant	u/s Hirwaun P/S	JG	05/02/2002	0	0	0
Camnant	u/s STW final effluent	JG	07/02/2002	0	1	0
Camnant	d/s Hirwaun STW	JG	11/02/2002	0	2	0

Table 55 Statistics of the 2001 Primary Audit for Wales

Analyst/ Group	n	Mean gains	Standard error	No.samples> 2 gains	% samples >2 gains	Highest no. gains	Mean errors (l+g+o)	Standard error
Northern	10	1.50	0.40	2	20.00	4	1.80	0.51
358	3	1.67	0.88	1	33.33	3	2.00	1.15
359	2	2.50	1.50	1	50.00	4	3.00	2.00
377	3	1.33	0.33	0	0	2	1.67	0.33
385	2	0.50	0.50	0	0	1	0.50	0.50
S. Eastern	14	1.36	0.32	3	21.43	4	2.43	0.49
381	3	1.33	0.33	0	0	2	2.33	0.33
383	4	2.25	0.75	2	50.00	4	3.50	1.04
386	1	0.00	-	0	0	0	4.00	-
401	4	1.00	0.71	1	25.00	3	1.50	1.19
NW	1	1.00	-	0	0	1	2.00	-
PC	1	1.00	-	0	0	1	1.00	-
S. Western	16	0.69	0.20	0	0	2	1.06	0.30
CUR	6	0.50	0.22	0	0	1	1.17	0.65
GR	4	0.25	0.25	0	0	1	0.75	0.48
HF	3	1.33	0.67	0	0	2	1.33	0.67
JG	3	1.00	0.58	0	0	2	1.00	0.58
Wales	40	1.13	0.18	5	12.50	4	1.73	0.26
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 56 Net effects of the Primary Audit on BMWP score and number of scoring taxa for Wales

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Northern	10	9.50	2.89	23	1.20	0.33	3
358	3	11.67	6.01	20	1.33	0.67	2
359	2	14.00	9.00	23	2.00	1.00	
377	3	8.33	6.01	20	1.00	0.58	2
385	2	3.50	3.50	7	0.50	0.50	1
S. Eastern	14	3.57	2.37	21	0.36	0.44	2
381	3	3.00	7.09	17	0.33	0.88	2
383	4	5.00	2.04	11	1.00	0.71	2
386	1	-14.00		-14	-4.00		-4
401	4	6.75	4.96	21	0.75	0.48	2
NW	1	1.00		1	0.00		0
PC	1	7.00		7	1.00		1
S. Western	16	2.94	1.87	20	0.38	0.24	2
CUR	6	-0.83	2.01	5	0.00	0.26	1
GR	4	-0.25	2.25	5	-0.25	0.25	0
HF	3	9.33	5.81	20	1.33	0.67	2
JG	3	8.33	4.41	15	1.00	0.58	2
Wales	40	4.80	1.37	23	0.58	0.20	3
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 57 The families missed in sorting by Wales' primary analysts

Family	n	% of Wales' missed families in Primary Audit
Hydracarina	8	12.12
Ceratopogonidae	7	10.61
Empididae	7	10.61
Sericostomatidae	4	6.06
Hydropsychidae	3	4.55
Hydrophilidae (incl. Hydraenidae)	3	4.55
Psychodidae	3	4.55
Ephemerellidae	2	3.03
Goeridae	2	3.03
Ancylidae (incl. Acroloxidae)	2	3.03
Lepidostomatidae	2	3.03
Limnephilidae	2	3.03
Stratiomyidae	2	3.03
Rhyacophilidae (incl. Glossosomatidae)	2	3.03
Heptageniidae	1	1.52
Caenidae	1	1.52
Chironomidae	1	1.52
Dytiscidae (incl. Noteridae)	1	1.52
Scirtidae	1	1.52
Rhagionidae (incl. Athericidae)	1	1.52
Leptoceridae	1	1.52
Haliplidae	1	1.52
Lymnaeidae	1	1.52
Ptychopteridae	1	1.52
Hydrometridae	1	1.52
Psychomyiidae (incl. Ecnomidae)	1	1.52
Oligochaeta	1	1.52
Nematomorpha	1	1.52
Veliidae	1	1.52
Muscidae	1	1.52
Gyrinidae	1	1.52
Total	66	100

Table 58 The species missed in sorting by Wales' primary analysts

Species	n	% of Wales' missed species in Primary Audit
Hydracarina indet	8	11.76
Ceratopogonidae indet	6	8.82
Clinocerinae	4	5.88
Sericostoma personatum (Spence)	4	5.88
Chelifera group	3	4.41
Pericoma trivialis group	3	4.41
Limnephilidae indet	2	2.94
Hemerodromia group	2	2.94
Silo sp.	2	2.94
Ancylus fluviatilis Muller	2	2.94
Ephemerella ignita (Poda)	2	2.94
Helophorus (Atrachelophorus) brevipalpis Bedel	1	1.47
Halipus sp.	1	1.47
Gyrinus sp.	1	1.47
Elodes sp.	1	1.47
Crunoecia irrorata (Curtis)	1	1.47
Diplectrona felix McLachlan	1	1.47
Atrichopogon sp.	1	1.47
Atherix ibis (Fabricius)	1	1.47
Hydrophilidae indet	1	1.47
Athripsodes aterrimus (Stephens)	1	1.47
Caenis rivulorum Eaton	1	1.47
Ecdyonurus sp.	1	1.47
Naididae	1	1.47
Vanoyia tenuicornis (Macquart)	1	1.47
Tinodes waeneri (L.)	1	1.47
Tanypodinae	1	1.47
Rhyacophila sp.	1	1.47
Ptychoptera sp.	1	1.47
Oxycera morrisii Curtis	1	1.47
Hydraena gracilis Germar	1	1.47
Nematomorpha indet	1	1.47
Agapetus sp.	1	1.47
Lymnaea peregra (Muller)	1	1.47
Limnophora sp.	1	1.47
Lepidostoma hirtum (Fabricius)	1	1.47
Hydropsyche siltalai Dohler	1	1.47
Hydropsyche angustipennis (Curtis)	1	1.47
Velia sp.	1	1.47
Hydrometra stagnorum (L.)	1	1.47
Oreodytes sanmarkii (Sahlberg)	1	1.47
Total	68	100

SUMMARY OF PRIMARY AUDIT FOR ENVIRONMENT AGENCY

Table 59 Statistics of the 2001 Primary Audit for each Agency laboratory

Region/Area	n	Mean gains	Standard error	No.samples >2 gains	% samples >2 gains	Highest no. gains	Mean errors (l+g+o)	Standard error
Anglian Region	45	2.56	0.27	21	46.67	8	3.02	0.30
Northern	20	2.65	0.50	8	40.00	8	3.00	0.51
Central	5	2.40	0.68	2	40.00	4	3.80	1.39
Eastern	20	2.50	0.31	11	55.00	5	2.85	0.29
Midlands Region	80	1.96	0.18	25	31.25	7	2.34	0.20
Upper Severn	20	1.65	0.29	6	30.00	4	2.10	0.36
Lower Severn	20	1.40	0.28	3	15.00	4	1.65	0.31
Upper Trent	20	2.65	0.47	9	45.00	7	3.10	0.50
Lower Trent	20	2.15	0.28	7	35.00	5	2.50	0.37
N. East Region	60	1.13	0.13	6	10.00	3	1.37	0.17
Northumbria	20	1.25	0.23	2	10.00	3	1.45	0.26
Dales	20	0.95	0.20	1	5.00	3	1.00	0.22
Ridings	20	1.20	0.24	3	15.00	3	1.65	0.36
N. West Region	40	1.30	0.24	6	15.00	6	1.58	0.26
Northern	0	-	-	-	-	-	-	-
Central	20	1.20	0.34	3	15.00	5	1.35	0.33
Southern	20	1.40	0.34	3	15.00	6	1.80	0.41
Southern Region	60	1.53	0.16	10	16.67	6	1.87	0.20
Hants & I.O.W.	20	1.00	0.24	1	5.00	4	1.35	0.28
Kent	20	2.20	0.32	7	35.00	6	2.75	0.43
Sussex	20	1.40	0.22	2	10.00	4	1.50	0.25
S. West Region	44	1.09	0.16	7	15.91	3	1.18	0.18
Cornwall	20	0.75	0.23	2	10.00	3	0.90	0.29
Devon	4	1.25	0.25	0	0	2	1.25	0.25
North Wessex	10	1.90	0.41	5	50.00	3	2.00	0.45
South Wessex	10	0.90	0.18	0	0	2	0.90	0.18
Thames Region	54	1.41	0.18	11	20.37	6	1.76	0.22
Hatfield	14	0.79	0.19	0	0	2	1.29	0.30
Frimley	20	1.75	0.26	8	40.00	3	1.85	0.29
Wallingford	20	1.50	0.37	3	15.00	6	2.00	0.46
Wales	40	1.13	0.18	5	12.50	4	1.73	0.26
Northern	10	1.50	0.40	2	20.00	4	1.80	0.51
South Eastern	14	1.36	0.32	3	21.43	4	2.43	0.49
South Western	16	0.69	0.20	0	0	2	1.06	0.30
Whole of Agency	423	1.54	0.07	91	21.51	8	1.88	0.08

Table 60 Net effects of the 2001 Primary Audit on BMWP score and no. of scoring taxa for each Agency lab.

Analyst/ Group	n	Mean net effect on BMWP score	Standard error of effect on BMWP score	Maximum underestimate of BMWP score	Mean net effect on no. of taxa	Standard error of effect on no. of taxa	Maximum underestimate of no. of taxa
Anglian	45	12.73	1.51	38	2.44	0.28	8
Northern	20	13.55	2.84	38	2.55	0.53	8
Central	5	11.80	3.87	26	2.20	0.58	4
Eastern	20	12.15	1.74	26	2.40	0.33	5
Midlands	80	11.04	1.26	40	1.73	0.18	7
U. Severn	20	8.70	2.21	30	1.35	0.30	4
L. Severn	20	8.00	2.11	35	1.15	0.27	4
U. Trent	20	15.70	3.26	40	2.40	0.51	7
L. Trent	20	11.75	2.11	35	2.00	0.29	5
North East	60	5.97	0.88	25	0.95	0.14	3
Northumbria	20	6.40	1.50	21	1.05	0.23	3
Dales	20	6.15	1.63	25	0.90	0.19	3
Ridings	20	5.35	1.52	19	0.90	0.28	3
North West	40	6.38	1.55	47	1.13	0.24	6
Northern	0	-	-	-	-	-	-
Central	20	5.90	1.95	29	1.10	0.36	5
Southern	20	6.85	2.47	47	1.15	0.32	6
Southern	60	7.47	0.98	34	1.27	0.16	6
Hants & I.O.W.	20	4.10	1.48	24	0.70	0.26	4
Kent	20	11.10	1.83	34	1.80	0.32	6
Sussex	20	7.20	1.46	22	1.30	0.22	4
South West	44	6.57	1.06	24	1.02	0.16	3
Cornwall	20	4.25	1.43	15	0.60	0.21	3
Devon	4	8.25	2.14	13	1.25	0.25	2
N. Wessex	10	11.10	2.85	24	1.90	0.41	3
S. Wessex	10	6.00	1.58	16	0.90	0.18	2
Thames	54	6.46	1.16	31	1.13	0.20	5
Hatfield	14	1.93	1.58	14	0.36	0.31	2
Frimley	20	9.10	1.61	19	1.65	0.24	3
Wallingford	20	7.00	2.27	31	1.15	0.39	5
Wales	40	4.80	1.37	23	0.58	0.20	3
Northern	10	9.50	2.89	23	1.20	0.33	3
S. Eastern	14	3.57	2.37	21	0.36	0.44	2
S. Western	16	2.94	1.87	20	0.38	0.24	2
Whole of Agency	423	7.91	0.45	47	1.31	0.07	8

Table 61 The families missed in sorting by the Agency's Primary Analysts

Family	n	% of Agency's missed families in Primary Audit
Empididae	68	7.69
Psychodidae	66	7.47
Hydracarina	61	6.90
Ceratopogonidae	47	5.32
Hydrophilidae (incl. Hydraenidae)	36	4.07
Hydrobiidae (incl. Bithyniidae)	30	3.39
Caenidae	29	3.28
Hydroptilidae	27	3.05
Leptoceridae	23	2.60
Elmidae	22	2.49
Planariidae (incl. Dugesiidae)	22	2.49
Simuliidae	22	2.49
Lymnaeidae	19	2.15
Limnephilidae	19	2.15
Planorbidae	16	1.81
Ancylidae (incl. Acroloxidae)	16	1.81
Psychomyiidae (incl. Ecnomidae)	15	1.70
Sphaeriidae	15	1.70
Physidae	15	1.70
Haliplidae	14	1.58
Goeridae	13	1.47
Nemouridae	12	1.36
Polycentropodidae	12	1.36
Muscidae	12	1.36
Ephydriidae	11	1.24
Lepidostomatidae	10	1.13
Stratiomyidae	9	1.02
Sericostomatidae	9	1.02
Leptophlebiidae	9	1.02
Hydriidae	8	0.90
Valvatidae	8	0.90
Hydropsychidae	8	0.90
Ephemerellidae	8	0.90
Dytiscidae (incl. Noteridae)	8	0.90
Gyrinidae	8	0.90
Asellidae	7	0.79
Baetidae	7	0.79
Rhyacophilidae (incl. Glossosomatidae)	7	0.79
Tipulidae	7	0.79
Veliidae	7	0.79
Erpobdellidae	7	0.79
Glossiphoniidae	6	0.68
Piscicolidae	6	0.68
Ephemeridae	6	0.68
Leuctridae	6	0.68

Table 61 continued

Family	n	% of Agency's missed families in Primary Audit
Scirtidae	5	0.57
Calopterygidae	5	0.57
Beraeidae	5	0.57
Coenagrionidae	4	0.45
Heptageniidae	4	0.45
Dendrocoelidae	4	0.45
Pyalidae	4	0.45
Molannidae	4	0.45
Nematomorpha	4	0.45
Chironomidae	4	0.45
Corixidae	3	0.34
Dixidae	3	0.34
Sciomyzidae	3	0.34
Oligochaeta	3	0.34
Gammaridae (incl. Crangonyctidae & Niphargidae)	3	0.34
Neritidae	2	0.23
Philopotamidae	2	0.23
Ptychopteridae	2	0.23
Capniidae	2	0.23
Chaoboridae	2	0.23
Tabanidae	2	0.23
Chloroperlidae	2	0.23
Hydrometridae	2	0.23
Sialidae	2	0.23
Perlodidae	2	0.23
Dolichopodidae	2	0.23
Rhagionidae (incl. Athericidae)	2	0.23
Culicidae	1	0.11
Syrphidae	1	0.11
Sisyridae	1	0.11
Brachycentridae	1	0.11
Dryopidae	1	0.11
Odontoceridae	1	0.11
Astacidae	1	0.11
Taeniopterygidae	1	0.11
Argulidae	1	0.11
Total	884	100

Table 62 The species missed in sorting by the Agency's Primary Analysts

Species	n	% of Agency's missed species in Primary Audit
Hydracarina indet	61	6.52
Ceratopogonidae indet	45	4.81
Pericoma trivialis group	28	2.99
Potamopyrgus antipodarum (Gray)	27	2.88
Clinocerinae	27	2.88
Hemerodromia group	27	2.88
Chelifera group	24	2.56
Caenis luctuosa group	22	2.35
Hydroptila sp.	20	2.14
Pericoma fallax Eaton	17	1.82
Elmis aenea (Muller)	17	1.82
Limnephilidae indet	16	1.71
Pisidium sp.	13	1.39
Limnophora sp.	12	1.28
Hydraena gracilis Germar	12	1.28
Ancylus fluviatilis Muller	11	1.18
Polycelis nigra group	10	1.07
Haliphus sp.	10	1.07
Ephydriidae indet	10	1.07
Hydraena riparia Kugelann	9	0.96
Ephemerella ignita (Poda)	8	0.85
Sericostoma personatum (Spence)	8	0.85
Hydriidae indet	8	0.85
Simulium (Simulium) ornatum group	8	0.85
Valvata cristata Muller	8	0.85
Mystacides azurea (L.)	8	0.85
Lymnaea peregra (Muller)	8	0.85
Tinodes waeneri (L.)	7	0.75
Ithytrichia sp.	7	0.75
Lepidostoma hirtum (Fabricius)	7	0.75
Lymnaea sp.	6	0.64
Physa fontinalis (L.)	6	0.64
Pericoma exquisita Eaton	6	0.64
Physa sp.	6	0.64
Armiger crista (L.)	6	0.64
Helophorus (Atrachelophorus) brevipalpis Bedel	6	0.64
Piscicola geometra (L.)	6	0.64
Hydrophilidae indet	5	0.53
Velia sp.	5	0.53
Ephemera sp.	5	0.53
Gyraulus albus (Muller)	5	0.53
Elodes sp.	5	0.53
Simulium sp.	5	0.53
Asellus aquaticus (L.)	5	0.53
Polycentropus flavomaculatus (Pictet)	5	0.53

Table 62 continued

Species	n	% of Agency's missed species in Primary Audit
Orectochilus villosus (Muller)	5	0.53
Silo pallipes (Fabricius)	5	0.53
Lype sp.	5	0.53
Calopteryx splendens (Harris)	4	0.43
Dicranota sp.	4	0.43
Nemoura avicularis Morton	4	0.43
Caenis rivulorum Eaton	4	0.43
Nematomorpha indet	4	0.43
Dendrocoelum lacteum (Muller)	4	0.43
Habrophlebia fusca (Curtis)	4	0.43
Pericoma sp.	4	0.43
Molanna angustata Curtis	4	0.43
Goera pilosa (Fabricius)	4	0.43
Oulimnius tuberculatus (Muller)	4	0.43
Oulimnius sp.	4	0.43
Athripsodes cinereus (Curtis)	4	0.43
Acroloxus lacustris (L.)	4	0.43
Polycelis felina (Dalyell)	4	0.43
Rhyacophila sp.	4	0.43
Baetis rhodani (Pictet)	4	0.43
Erpobdella octoculata (L.)	3	0.32
Athripsodes sp.	3	0.32
Gyrinus sp.	3	0.32
Psychoda gemina Eaton	3	0.32
Paraleptophlebia sp.	3	0.32
Lymnaea truncatula (Muller)	3	0.32
Caenis horaria (L.)	3	0.32
Simulium (Eusimulium) aureum group	3	0.32
Cataclysta lemnata (L.)	3	0.32
Hydropsyche siltalai Dohler	3	0.32
Helobdella stagnalis (L.)	3	0.32
Peripsychoda fusca (Macquart)	3	0.32
Beraeodes minutus (L.)	3	0.32
Physa acuta group	3	0.32
Bithynia leachii (Sheppard)	3	0.32
Beris sp.	3	0.32
Bithynia tentaculata (L.)	3	0.32
Agabus sp.	3	0.32
Sciomyzidae indet	3	0.32
Glossiphonia complanata (L.)	3	0.32
Pericoma pseudoexquisita Tonnoir	3	0.32
Agapetus sp.	3	0.32
Crunoecia irrorata (Curtis)	2	0.21
Leuctra hippopus (Kempny)	2	0.21
Crenobia alpina (Dana)	2	0.21
Coenagrionidae indet	2	0.21

Table 62 continued

Species	n	% of Agency's missed species in Primary Audit
Silo sp.	2	0.21
Simulium (Boophthora) erythrocephalum (de Geer)	2	0.21
Sialis lutaria (L.)	2	0.21
Leuctra sp.	2	0.21
Diplectrona felix McLachlan	2	0.21
Hydropsyche angustipennis (Curtis)	2	0.21
Silo nigricornis (Pictet)	2	0.21
Ecdyonurus sp.	2	0.21
Adicella reducta (McLachlan)	2	0.21
Gammarus pulex (L.)	2	0.21
Empididae indet	2	0.21
Glyptotaelius pellucidus (Retzius)	2	0.21
Trocheta subviridis Dutrochet	2	0.21
Haliphus lineatocollis (Marshall)	2	0.21
Dugesia polychroa group	2	0.21
Theodoxus fluviatilis (L.)	2	0.21
Dixa maculata complex	2	0.21
Hemerodromiinae	2	0.21
Orthocladinae	2	0.21
Hippeutis complanatus (L.)	2	0.21
Sphaeriidae indet	2	0.21
Dolichopodidae indet	2	0.21
Simulium (Wilhelmia) sp.	2	0.21
Hydrometra stagnorum (L.)	2	0.21
Tinodes sp.	2	0.21
Ptychoptera sp.	2	0.21
Nemurella picteti Klapalek	2	0.21
Chrysops sp.	2	0.21
Centroptilum luteolum (Muller)	2	0.21
Nemoura sp.	2	0.21
Polycelis sp.	2	0.21
Atrichopogon sp.	2	0.21
Capnia bifrons (Newman)	2	0.21
Pericoma blandula Eaton	2	0.21
Plectrocnemia sp.	2	0.21
Oxycera rara (Scopoli)	2	0.21
Athripsodes bilineatus (L.)	2	0.21
Psychoda sp.	2	0.21
Pericoma neglecta Eaton	2	0.21
Micronecta sp.	2	0.21
Limnius volckmari (Panzer)	2	0.21
Psychoda cinerea Banks	2	0.21
Asellus meridianus Racovitza	2	0.21
Plectrocnemia conspersa (Curtis)	2	0.21
Lumbriculidae	2	0.21
Oreodytes sanmarkii (Sahlberg)	2	0.21

Table 62 continued

Species	n	% of Agency's missed species in Primary Audit
Psychodidae indet	2	0.21
Caenis robusta Eaton	1	0.11
Anacaena limbata (Fabricius)	1	0.11
Leuctra fusca (L.)	1	0.11
Caenis pusilla Navas	1	0.11
Amphinemura sulcicollis (Stephens)	1	0.11
Brychius elevatus (Panzer)	1	0.11
Brachycentrus subnubilus Curtis	1	0.11
Ephemera danica Muller	1	0.11
Beraea maurus (Curtis)	1	0.11
Bithynia sp.	1	0.11
Beraea pullata (Curtis)	1	0.11
Agraylea sp.	1	0.11
Chaoborus (Chaoborus) flavicans (Meigen)	1	0.11
Chloroperla torrentium (Pictet)	1	0.11
Chloroperla sp.	1	0.11
Cloeon dipterum (L.)	1	0.11
Atherix ibis (Fabricius)	1	0.11
Chironomini	1	0.11
Athripsodes aterrimus (Stephens)	1	0.11
Cyrnus trimaculatus (Curtis)	1	0.11
Dryops sp.	1	0.11
Chaoborus sp.	1	0.11
Ancylidae indet	1	0.11
Ceraclea sp.	1	0.11
Antocha vitripennis (Meigen)	1	0.11
Dixa sp.	1	0.11
Anopheles sp.	1	0.11
Drusus annulatus (Stephens)	1	0.11
Anisus vortex (L.)	1	0.11
Calopteryx virgo (L.)	1	0.11
Dugesia tigrina (Girard)	1	0.11
Argulus sp.	1	0.11
Phagocata vitta (Duges)	1	0.11
Oxycera dives Loew	1	0.11
Protonemura meyeri (Pictet)	1	0.11
Potamopyrgus jenkinsi (Smith)	1	0.11
Polycentropodidae indet	1	0.11
Plectrocnemia geniculata McLachlan	1	0.11
Platambus maculatus (L.)	1	0.11
Planorbidae indet	1	0.11
Psychomyia pusilla (Fabricius)	1	0.11
Philopotamus montanus (Donovan)	1	0.11
Pyrrhosoma nymphula (Sulzer)	1	0.11
Perlodes microcephala (Pictet)	1	0.11
Pericoma pulchra Eaton	1	0.11

Table 62 continued

Species	n	% of Agency's missed species in Primary Audit
<i>Paraleptophlebia submarginata</i> (Stephens)	1	0.11
<i>Pacifastacus leniusculus</i> (Dana)	1	0.11
<i>Oxycera</i> sp.	1	0.11
<i>Oxycera nigricornis</i> Olivier	1	0.11
Lepidostomatidae indet	1	0.11
Physidae indet	1	0.11
Syrphidae indet	1	0.11
<i>Velia</i> (Plesiovelia) sp.	1	0.11
<i>Velia</i> (Plesiovelia) caprai Tamanini	1	0.11
<i>Vanoyia tenuicornis</i> (Macquart)	1	0.11
<i>Valvata piscinalis</i> (Muller)	1	0.11
<i>Trocheta bykowskii</i> Gedroyc	1	0.11
<i>Tipula</i> sp.	1	0.11
<i>Theromyzon tessulatum</i> (Muller)	1	0.11
<i>Psychoda severini</i> Tonnoir	1	0.11
<i>Taeniopteryx nebulosa</i> (L.)	1	0.11
<i>Oecetis lacustris</i> (Pictet)	1	0.11
<i>Sisyra</i> sp.	1	0.11
<i>Simulium</i> (Nevermannia) verum group	1	0.11
<i>Simulium</i> (Nevermannia) angustitarse group	1	0.11
<i>Sigara</i> (Pseudovermicorixa) nigrolineata (Fieber)	1	0.11
Sericostomatidae indet	1	0.11
<i>Rhyacophila dorsalis</i> (Curtis)	1	0.11
Rhagionidae indet	1	0.11
Tanypodinae	1	0.11
<i>Heptagenia lateralis</i> (Curtis)	1	0.11
<i>Oxycera morrisii</i> Curtis	1	0.11
<i>Ischnura elegans</i> (Van der Linden)	1	0.11
<i>Hydropsyche pellucidula</i> (Curtis)	1	0.11
Hydroporinae	1	0.11
<i>Hydrellia</i> sp.	1	0.11
<i>Hydraena</i> sp.	1	0.11
<i>Hydraena nigrita</i> Germar	1	0.11
<i>Laccobius</i> (Laccobius) minutus (L.)	1	0.11
Heptageniidae indet	1	0.11
<i>Acentria ephemerella</i> (Denis & Schiffermuller)	1	0.11
<i>Helophorus</i> (Helophorus) obscurus Mulsant	1	0.11
<i>Haliphus ruficollis</i> group	1	0.11
<i>Gyraulus</i> sp.	1	0.11
Glossiphoniidae indet	1	0.11
<i>Gammarus</i> sp.	1	0.11
<i>Ferrissia wautieri</i> (Mirolli)	1	0.11
Erpobdellidae indet	1	0.11
<i>Holocentropus picicornis</i> (Stephens)	1	0.11
<i>Lymnaea stagnalis</i> (L.)	1	0.11
<i>Odontocerum albicorne</i> (Scopoli)	1	0.11

Table 62 continued

Species	n	% of Agency's missed species in Primary Audit
Ochthebius dilatatus Stephens	1	0.11
Ochthebius bicolon Germar	1	0.11
Nemouridae indet	1	0.11
Nemoura cinerea (Retzius)	1	0.11
Nemoura cambrica group	1	0.11
Nebrioporus elegans (Panzer)	1	0.11
Isoperla sp.	1	0.11
Mystacides nigra (L.)	1	0.11
Erpobdella sp.	1	0.11
Lymnaea auricularia (L.)	1	0.11
Lumbricidae	1	0.11
Limnophila (Eloeophila) sp.	1	0.11
Limnephilus rhombicus group	1	0.11
Leuctra nigra (Olivier)	1	0.11
Wormaldia sp.	1	0.11
Leptophlebiidae indet	1	0.11
Naididae	1	0.11
Total	936	100

APPENDIX

Analysis dates for the Agency's audited samples

Anglian Region, Northern Area

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Waring	Belchford	Live/Live	03/09/2001	04/09/2001	10/09/2001	17/10/2001	6	
Lower Witham	Langrick Bridge	Live/Live	03/09/2001	11/09/2001	12/09/2001	17/10/2001	1	
Waithe Beck	Brigsley	Live/Preserved	17/09/2001	18/09/2001	24/09/2001	17/10/2001	6	
Louth Canal	Tetney Lock	Preserved/Preserved	17/09/2001	24/09/2001	26/09/2001	17/10/2001	2	
West Glen	Little Bytham	Live/Live	26/09/2001	02/10/2001	03/10/2001	17/10/2001	1	14
Nettleham Beck	Sudbrooke	Live/Live	04/10/2001	08/10/2001	09/10/2001	17/10/2001	1	
Barlings Eau	Langworth	Live/Live	04/10/2001	10/10/2001	15/10/2001	04/12/2001	5	
North Kelsey Beck	B1434	Live/Live	22/10/2001	23/10/2001	29/10/2001	04/12/2001	6	
East Glen	Edenham	Live/Live	05/11/2001	08/11/2001	09/11/2001	04/12/2001	1	
Laceby Beck	Littlecoats	Live/Preserved	31/10/2001	05/11/2001	15/11/2001	04/12/2001	10	-
Willow Brook	Fotheringhay	Live/Live	20/11/2001	22/11/2001	30/11/2001	23/01/2002	8	
Langton Brook	Thorpe Langton	Live/Preserved	27/11/2001	28/11/2001	03/12/2001	23/01/2002	5	
Welland	Uffington Rd Bridge	Live/Live	12/12/2001	13/12/2001	20/12/2001	23/01/2002	7	
Jordan	Little Bowden	Live/Preserved	27/11/2001	04/12/2001	27/12/2001	23/01/2002	23	
South Drove Drain	Horseshoe Bridge	Live/Preserved	12/12/2001	13/12/2001	27/12/2001	23/01/2002	14	27
Welland	Tallington	Live/Preserved	30/10/2001	31/10/2001	28/12/2001	23/01/2002	58	
Gwash	Gunthorpe	Live/Preserved	26/11/2001	28/11/2001	28/12/2001	23/01/2002	30	
Laceby Beck	Laceby	Live/Preserved	31/10/2001	01/11/2001	02/01/2002	23/01/2002	62	
Nene	Wollaston Mill	Live/Preserved	14/01/2002	16/01/2002	04/02/2002	04/03/2002	19	
Willow Brook	Weldon Lodge	Live/Preserved	07/01/2002	10/01/2002	04/02/2002	04/03/2002	25	-

Average period between primary analysis and AQC inspection = 14.5 days

Maximum period between primary analysis and AQC inspection = 62 days

Anglian Region, Central Area

River	Site	Sort Method	Sample date
Alconbury Brook	Grindley's Bridge	Live/Live	03/09/2001
Millbridge Brook	B1042, Potton	Live/Preserved	19/09/2001
Ouse	Bourton Mill Manor Farm	Live/Preserved	29/10/2001
Ouse	W.Q.M.S. Foxcote intake	Live/Live	29/10/2001
IDB Drain	Welney	Preserved/Preserved	20/12/2001

Average period between primary analysis and AQC inspection = 4.8 days

Maximum period between primary analysis and AQC inspection = 13 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
05/09/2001	05/09/2001	12/11/2001	0	
19/09/2001	02/10/2001	12/11/2001	13	-
30/10/2001	01/11/2001	08/01/2002	2	
02/11/2001	02/11/2001	08/01/2002	0	-
02/01/2002	11/01/2002	23/01/2002	9	-

Anglian Region, Eastern Area

River	Site	Sort Method
Deben	Glevering Bridge	Live/Live
Deben	Eyke Ford	Live/Live
Colne	u/s Earls Colne STW	Live/Live
Pant	Petches Bridge	Live/Live
Colne	Gt Yeldham Bridge	Live
Colne	Fordstreet	Not stated
Pant	Wethersfield Mill	Live
Brett	Higham Bridge	Live/Preserved
Gipping	Claydon Bridge	Live/Live
Gipping	Sproughton Mill	Live/Live
Blackwater- Chelmer Canal	Heybridge Canal	Live/Live
Blackwater Drain	Gades Mill	Live/Live
Brain	d/s Braintree STW	Live/Live
Gipping	Bramford Mill	Live
Gipping/Rattlesdon	u/s Confluence - ICI	Not stated
Crouch	Wickford Mem Park	Not stated
Tiffey	Chapel Lane Bridge	Live
Burn	Leicester Sq. Farm	Live
Brain	Bulford Mill	Live
Gipping	STW Tributary	Live/Not stated

Average period between primary analysis and AQC inspection =
Maximum period between primary analysis and AQC inspection

Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
17/09/2001	17/09/2001	18/09/2001	17/10/2001	1	-
01/10/2001	02/10/2001	03/10/2001	12/11/2001	1	-
18/10/2001	22/10/2001	23/10/2001	04/12/2001	1	
05/11/2001	06/11/2001	07/11/2001	04/12/2001	1	
18/10/2001	19/10/2001		04/12/2001		
18/10/2001	22/10/2001		04/12/2001		
05/11/2001	06/11/2001		04/12/2001		-
28/09/2001	01/10/2001	05/10/2001	08/01/2002	4	
14/11/2001	15/11/2001	16/11/2001	08/01/2002	1	
14/11/2001	15/11/2001	16/11/2001	08/01/2002	1	
22/11/2001	23/11/2001	23/11/2001	08/01/2002	0	
28/11/2001	29/11/2001	29/11/2001	08/01/2002	0	40
10/12/2001	11/12/2001	11/12/2001	08/01/2002	0	
14/11/2001	15/11/2001		08/01/2002		
20/11/2001	22/11/2001		08/01/2002		
14/11/2001	15/11/2001		08/01/2002		
28/11/2001	29/11/2001		08/01/2002		
05/12/2001	06/12/2001		08/01/2002		
10/12/2001	11/12/2001		23/01/2002		-
11/02/2002	12/02/2002	14/02/2002	04/03/2002	2	-

1.0 day
= 4 days

Midlands Region, Upper Severn Area

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Wesley Brook	d/s Manor CSO	Preserved/Preserved	25/07/2001	22/08/2001	31/08/2001	11/10/2001	9	-
Blakedown Brook	Blakedown WRW	Preserved/Preserved	02/08/2001	21/09/2001	22/10/2001	20/12/2001	31	
Rea Brook	u/s Silt pollution	Preserved/Preserved	13/09/2001	09/10/2001	01/11/2001	20/12/2001	23	
Rea Brook	Hanwood	Preserved/Preserved	12/10/2001	23/10/2001	12/11/2001	20/12/2001	20	
Cound	Conover	Live/Preserved	07/11/2001	07/11/2001	28/11/2001	20/12/2001	21	-
Camlad	Shiregrove Bridge	Live/Preserved	18/12/2001	20/12/2001	18/01/2002	12/03/2002	29	
Lyde Brook	d/s Dale End CSO	Preserved/Preserved	01/08/2001	22/11/2001	08/02/2002	12/03/2002	78	
Dulas	d/s Rhydyclaudan	Live/Preserved	21/01/2002	22/01/2002	22/02/2002	12/03/2002	31	
Wordsley Brook	Bevan Rd CSO	Preserved/Preserved	27/09/2001	04/02/2002	22/02/2002	12/03/2002	18	
Smestow Brook	Compton	Preserved/Preserved	15/11/2001	12/02/2002	05/03/2002	12/03/2002	21	7
Martin's Brook	Brookhill	Preserved	25/09/2001	15/02/2002		12/03/2002		
Oswestry Brook	d/s Oswestry CSO	Preserved	19/09/2001			12/03/2002		
Stour	Maypole Hill	Preserved	10/08/2001	29/10/2001		12/03/2002		
Batchcott Trib	u/s Oakley Farm	Preserved	05/11/2001	07/11/2001		12/03/2002		
Lyde Brook	Coalbrookdale	Preserved	19/09/2002	10/01/2002		12/03/2002		
Dulas	Twlch	Preserved	22/01/2002	25/01/2002		12/03/2002		
Wordsley Brook	d/s Brierley Hill CSO	Preserved	27/09/2001	Unknown		12/03/2002		
Quinny Brook	d/s Ch Stretton CSO	Preserved	13/07/2001	23/08/2001		12/03/2002		
Rea Brook	Meole Brace	Preserved	14/09/2001	03/10/2001		12/03/2002		
Quinny Brook	u/s Ch Stretton CSO	Preserved	13/07/2001	23/08/2001		12/03/2002		

Average period between primary analysis and AQC inspection = 28.1 days

Maximum period between primary analysis and AQC inspection = 78 days

Midlands Region, Lower Severn Area

River	Site	Sort Method	Sample date
Ell Brook Tributary	u/s Springfield Cott	Not stated/Preserved	16/05/2001
Ell Brook Tributary	u/s B4222	Not stated/Preserved	16/05/2001
Ruscombe Brook	u/s Humphreys End	Preserved/Preserved	03/10/2001
Leam Trib	Midland Oak CSO	Preserved/Preserved	16/10/2001
Cinderford Brook	u/s Lorry Park	Preserved/Preserved	24/10/2001
Isbourne	A46 Road Bridge	Preserved/Preserved	04/10/2001
Leadon	Wedderburn Bridge	Preserved/Preserved	11/09/2001
Sherbourne	Charterhouse	Preserved/Preserved	11/09/2001
Swift	u/s Kimcote WRW	Preserved/Preserved	11/09/2001
Severn	u/s Netheridge STW	Preserved/Preserved	21/09/2001
Elmley Castle Brook	u/s Croptorne PS	Preserved/Preserved	07/11/2001
Sow Brook	d/s Paynes Lane PS	Preserved/Preserved	01/11/2001
Frome	d/s Stanley Downton	Preserved/Preserved	02/10/2001
Bushley/Longdon	Queenhill	Preserved/Preserved	11/10/2001
Canop Brook	Lydney Church	Not stated	29/11/2001
Westbury Brook	u/s Flaxley	Not stated	02/08/2001
Ell Brook	Brass Mill	Not stated	25/09/2001
Peacocks Brook	Newent School	Not stated	25/09/2001
Isbourne Trib	u/s Postlip Mills	Not stated	04/10/2001
Epney Rhyne	d/s Tributary	Not stated	01/11/2001

Average period between primary analysis and AQC inspection = 49.9 days

Maximum period between primary analysis and AQC inspection = 137 days

[illegible]

Midlands Region, Upper Trent Area

River	Site	Sort Method	Sample date
Alders Brook	Combridge	Preserved/Preserved	14/02/2001
Ford Green Brook	Milton	Preserved/Preserved	19/03/2001
Tame (Oldbury)	Holloway Bank	Preserved/Preserved	18/05/2001
Bond Brook Trib	u/s Rowtons Well	Preserved/Preserved	25/06/2001
Bond Brook Trib	Sutton Park	Preserved/Preserved	25/06/2001
Dove	Beresford Dale	Preserved/Preserved	12/07/2001
Bourn Brook	Grange Road	Preserved/Preserved	20/08/2001
Picknall Brook	Uttoxeter	Preserved/Preserved	05/09/2001
Henmore Brook	Atlow	Preserved/Preserved	20/09/2001
Dove	Milldale	Preserved/Preserved	04/10/2001
Bradley Brook	d/s Roughwood Tributary	Live/Preserved	24/10/2001
Small Brook	A520 Road Bridge	Preserved/Preserved	02/11/2001
Cole	Colebank Road	Preserved/Preserved	20/11/2001
Kingshurst Brook	Chelmsley Wood	Preserved/Preserved	09/11/2001
Mease	Measham	Preserved/Preserved	26/09/2001
Bourne	Furnace End	Preserved/Preserved	18/12/2001
Blythe	Ryton End	Preserved/Preserved	07/12/2001
Cran Brook	Widney Manor	Preserved/Preserved	18/12/2001
Walsall Canal	u/s Cerro	Preserved/Preserved	28/01/2002
Walsall Canal	Moors Mill Lane	Preserved/Preserved	28/01/2002

Average period between primary analysis and AQC inspection = 16.7 days

Maximum period between primary analysis and AQC inspection = 66 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
06/03/2001	15/03/2001	11/10/2001	9	
27/03/2001	01/06/2001	11/10/2001	66	
23/05/2001	04/06/2001	11/10/2001	12	
02/07/2001	30/07/2001	11/10/2001	28	
02/07/2001	30/07/2001	11/10/2001	28	73
19/07/2001	02/08/2001	11/10/2001	14	
03/09/2001	24/09/2001	20/12/2001	21	
17/09/2001	26/09/2001	20/12/2001	9	
03/10/2001	25/10/2001	20/12/2001	22	
11/10/2001	29/10/2001	20/12/2001	18	
25/10/2001	09/11/2001	20/12/2001	15	41
16/11/2001	20/11/2001	12/03/2002	4	
06/12/2001	11/12/2001	12/03/2002	5	
12/12/2001	17/12/2001	12/03/2002	5	
08/01/2002	22/01/2002	12/03/2002	14	
14/01/2002	23/01/2002	12/03/2002	9	48
25/01/2002	06/02/2002	12/03/2002	12	
30/01/2002	07/02/2002	12/03/2002	8	
11/02/2002	04/03/2002	12/03/2002	21	
20/02/2002	05/03/2002	12/03/2002	13	

Midlands Region, Lower Trent Area

River	Site	Sort Method	Sample date
Wood Brook	u/s Nanpantan Res	Preserved/Preserved	12/04/2001
Leas Brook	d/s Culvert	Preserved/Preserved	19/04/2001
Poulter	d/s Langwith Lodge	Preserved/Preserved	03/05/2001
Idle	Bawtry	Preserved/Preserved	03/05/2001
Erewash	Pye Bridge	Preserved/Preserved	24/05/2001
Dutch Dyke	d/s Pumping station	Preserved/Preserved	21/06/2001
Poulter	Nether Langwith	Preserved/Preserved	03/05/2001
Trent	Winthorpe	Preserved/Preserved	11/05/2001
Dover Beck	Shelt Hill	Preserved/Preserved	16/05/2001
Erewash	u/s Bentinck Colliery	Preserved/Preserved	28/08/2001
Erewash	Ilkeston	Preserved/Preserved	28/08/2001
Grace Dieu Brook	d/s Snarrows STW	Preserved/Preserved	12/10/2001
Warping Drain Trib	Burringham Road	Preserved/Preserved	31/10/2001
Whissendine Brook	u/s Langham Brook	Preserved/Preserved	30/10/2001
Pickwell Brook	u/s Pickwell CSO	Preserved/Preserved	13/12/2001
Smite	Colston Bassett	Preserved/Preserved	04/10/2001
Cuttle Brook	Reckitt & Colmans	Preserved/Preserved	29/11/2001
Maun	d/s Mansfield CSO	Preserved/Preserved	26/11/2001
Grace Dieu Brook	Woodlands	Preserved/Preserved	20/11/2001
Thorpe Brook	Chadwell	Preserved/Preserved	30/10/2001

Average period between primary analysis and AQC inspection = 32.3 days
 Maximum period between primary analysis and AQC inspection = 71 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
20/04/2001	25/05/2001	11/10/2001	35	
26/04/2001	31/05/2001	11/10/2001	35	
04/05/2001	31/05/2001	11/10/2001	27	
15/05/2001	31/05/2001	11/10/2001	16	
25/05/2001	08/06/2001	11/10/2001	14	125
25/06/2001	18/07/2001	11/10/2001	23	
19/07/2001	13/08/2001	11/10/2001	25	
03/08/2001	24/08/2001	11/10/2001	21	
12/09/2001	12/11/2001	20/12/2001	61	
20/09/2001	30/11/2001	20/12/2001	71	
03/10/2001	30/11/2001	20/12/2001	58	
05/11/2001	03/12/2001	20/12/2001	28	-
19/12/2001	28/12/2001	12/03/2002	9	
21/11/2001	28/12/2001	12/03/2002	37	
14/12/2001	07/01/2002	12/03/2002	24	
05/11/2001	08/01/2002	12/03/2002	64	
19/12/2001	22/01/2002	12/03/2002	34	49
21/01/2002	12/02/2002	12/03/2002	22	
05/02/2002	05/03/2002	12/03/2002	28	
19/02/2002	05/03/2002	12/03/2002	14	

North East Region, Northumbria Area

Harthope Burn	West Shipley Farm	Preserved/Preserved	08/06/2001
Steads Burn	Bullocks Hall	Preserved/Preserved	22/05/2001
Holywell Beck	d/s Brandon	Preserved/Preserved	08/06/2001
Linton Burn	Northumberland F7M 2A	Preserved/Preserved	21/06/2001
Steads Burn	Bullocks Hall	Preserved/Preserved	27/07/2001
Steads Burn	North Steads	Preserved/Preserved	02/10/2001
Hedleyhope Burn	Cowsley	Preserved/Preserved	07/09/2001
Ouseburn	u/s Airport Trib	Preserved/Preserved	26/01/2001
Hedleyhope Burn	Cowsley	Preserved/Preserved	28/09/2001
Coquet	d/s Hazon Burn	Preserved/Preserved	04/10/2001
Wear	u/s Gaunless	Preserved/Preserved	14/11/2001
Don	Jarrow Cemetery	Preserved/Preserved	26/11/2001
Hazon Burn	u/s Minewater	Preserved/Preserved	04/10/2001
Airport Tributary	u/s Ouseburn	Preserved/Preserved	26/11/2001
Wear	Shincliffe	Preserved/Preserved	07/11/2001
Tyne	Ovingham	Preserved/Preserved	19/11/2001
Hazon Burn	u/s Minewater	Preserved/Preserved	21/01/2002
Pont	Kirkley Mill	Preserved/Preserved	08/11/2001
Nent	Alston	Preserved/Preserved	14/11/2001
Derwent	Ebchester	Preserved/Preserved	14/11/2001

Average period between primary analysis and AQC inspection = 49.0 days

Maximum period between primary analysis and AQC inspection = 303 days

12/06/2001	20/06/2001	30/11/2001	8	
29/05/2001	10/07/2001	30/11/2001	42	
13/06/2001	18/07/2001	30/11/2001	35	
20/07/2001	30/07/2001	30/11/2001	10	
03/08/2001	27/11/2001	30/11/2001	116	3
03/10/2001	30/11/2001	14/01/2002	58	
12/09/2001	06/12/2001	14/01/2002	85	
06/02/2001	06/12/2001	14/01/2002	303	
04/10/2001	06/12/2001	14/01/2002	63	
16/10/2001	07/12/2001	14/01/2002	52	38
23/11/2001	07/12/2001	14/01/2002	14	
02/12/2001	07/12/2001	14/01/2002	5	
06/11/2001	17/12/2001	14/01/2002	41	
14/01/2002	22/01/2002	27/02/2002	8	
17/12/2001	02/02/2002	27/02/2002	47	
25/01/2002	08/02/2002	27/02/2002	14	
22/01/2002	19/02/2002	27/02/2002	28	
20/02/2002	22/02/2002	27/02/2002	2	5
22/01/2002	22/02/2002	27/02/2002	31	
05/02/2002	22/02/2002	27/02/2002	17	

North East Region, Dales Area

River	Site	Sort Method	Sample date
Ouse	Naburn Marina	Preserved/Preserved	14/05/2001
Ouse	u/s York W/Works	Preserved/Preserved	15/05/2001
Ouse	u/s Clifton Bridge	Preserved/Preserved	21/08/2001
Ure	Aldwark Toll Bridge	Preserved/Preserved	10/08/2001
Wharfe	d/s Tadcaster Weir	Preserved/Preserved	26/07/2001
Ure	Masham	Preserved/Preserved	02/08/2001
Oak Beck	Harrogate	Preserved/Preserved	05/09/2001
Burn	Masham	Preserved/Preserved	05/11/2001
Swale	Thornton Bridge	Preserved/Preserved	06/11/2001
Ure	Aldwark Toll Bridge	Preserved/Preserved	16/11/2001
Swale	Morton-on-Swale	Preserved/Preserved	06/11/2001
Wharfe	Boston Spa	Preserved/Preserved	12/11/2001
Ouse	Beningbrough Hall	Preserved/Preserved	22/08/2001
Greatham Creek	u/s Railway	Preserved/Preserved	02/10/2001
Calais Beck	Site D	Preserved/Preserved	12/12/2001
Pickering Beck	Pickering	Preserved/Preserved	11/09/2001
Ure	West Tanfield	Preserved/Preserved	02/08/2001
Ouse	d/s Nidd Mouth	Preserved/Preserved	22/08/2001
Ouse	Beningbrough Hall	Preserved/Preserved	15/05/2001
Nidd	Walshford Bridge	Preserved/Preserved	29/08/2001

Average period between primary analysis and AQC inspection = 72.9 days

Maximum period between primary analysis and AQC inspection = 245 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
21/05/2001	09/08/2001	18/02/2002	80	
15/06/2001	16/08/2001	18/02/2002	62	
06/09/2001	20/09/2001	18/02/2002	14	
15/08/2001	01/10/2001	18/02/2002	47	
01/08/2001	03/10/2001	18/02/2002	63	140
17/09/2001	04/10/2001	18/02/2002	17	
15/10/2001	02/01/2002	18/02/2002	79	
05/12/2001	02/01/2002	18/02/2002	28	
15/11/2001	03/01/2002	18/02/2002	49	
28/11/2001	04/01/2002	18/02/2002	37	
27/11/2001	04/01/2002	18/02/2002	38	
12/12/2001	07/01/2002	18/02/2002	26	
22/10/2001	07/01/2002	18/02/2002	77	
09/10/2001	23/01/2002	18/02/2002	106	
20/12/2001	24/01/2002	18/02/2002	35	
25/10/2001	25/01/2002	18/02/2002	92	
03/09/2001	28/01/2002	18/02/2002	147	
31/10/2001	29/01/2002	18/02/2002	90	
30/05/2001	30/01/2002	18/02/2002	245	
27/09/2001	30/01/2002	18/02/2002	125	

North East Region, Ridings Area

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Rivelin	u/s Rivelin Dams	Preserved/Preserved	16/05/2001	05/06/2001	20/07/2001	18/12/2001	45	
Worth	Keighley Garforth Road	Preserved/Preserved	22/05/2001	25/06/2001	01/08/2001	18/12/2001	37	
Hebden Water	Hebden Bridge	Preserved/Preserved	24/05/2001	02/07/2001	06/08/2001	18/12/2001	35	
Dearne	d/s Billings Dyke	Preserved/Preserved	16/05/2001	23/07/2001	01/10/2001	18/12/2001	70	
Dearne	Marles Bridge	Preserved/Preserved	16/05/2001	23/07/2001	16/11/2001	18/12/2001	116	32
Black Brook	Penny Hill	Preserved	30/05/2001	20/06/2001		18/12/2001		
Ryburn	Ripponden	Preserved	30/05/2001	04/06/2001		18/12/2001		
Ewden Beck	Ewden Bridge	Preserved	22/05/2001	04/07/2001		18/12/2001		
Turvin Clough	u/s Elphin Brook	Preserved	24/05/2001	27/06/2001		18/12/2001		
Dove	d/s Worsbrough Res	Preserved	16/05/2001	17/07/2001		18/12/2001		
West Beck	Rainbow Springs	Preserved/Preserved	13/11/2001	21/11/2001	12/12/2001	22/02/2002	21	
Little Don	Crookland Wood	Preserved/Preserved	22/05/2001	01/08/2001	04/01/2002	22/02/2002	156	
Crimsworth Dean	u/s Hebden Water	Preserved/Preserved	13/09/2001	28/10/2001	04/01/2002	22/02/2002	68	
Rivelin	u/s Rivelin Dams	Preserved/Preserved	19/09/2001	12/12/2001	07/01/2002	22/02/2002	26	
Wessenden Brook	u/s Mill	Preserved/Preserved	20/09/2001	19/12/2001	07/01/2002	22/02/2002	19	46
Scout Dike	u/s Scout Bridge	Preserved/Preserved	31/05/2001	21/08/2001	07/01/2002	22/02/2002	139	
Dearne	B6098 Bridge	Preserved/Preserved	14/11/2001	26/11/2001	07/01/2002	22/02/2002	42	
Bradshaw Beck	Bradshaw	Preserved/Preserved	20/09/2001	08/01/2002	31/01/2002	22/02/2002	23	
Booth Dean Clough	d/s Reservoir	Preserved/Preserved	26/09/2001	14/01/2002	05/02/2002	22/02/2002	22	
Little Don	Crookland Wood	Preserved/Preserved	03/10/2001	28/01/2002	14/02/2002	22/02/2002	17	

Average period between primary analysis and AQC inspection = 55.7 days

Maximum period between primary analysis and AQC inspection = 156 days

North West Regon, Central Area

River	Site	Sort Method	Sample date
Colne Water	ptc North Valley Rd Brook	Preserved/Preserved	06/11/2001
Douglas	Wanes Blade Bridge	Preserved/Preserved	21/11/2001
Douglas	Parbold d/s bridge	Preserved/Preserved	16/11/2001
Yellow Brook	ptc R.Douglas	Preserved/Preserved	30/10/2001
Black Brook	Nr Hospital	Preserved/Preserved	13/11/2001
Yarrow	Limbrick	Preserved/Preserved	21/05/2001
Buckrow Brook	By Tilcon Ltd	Preserved/Preserved	30/10/2001
Douglas	Wigan FC	Preserved/Preserved	30/10/2001
Wade Brook	ptc Mill Brook	Preserved/Preserved	15/11/2001
Brock	d/s Brock Mill C/P	Preserved/Preserved	14/10/2001
Douglas	d/s M61	Preserved/Preserved	08/11/2001
Smithy Brook	Lady Lane	Preserved/Preserved	15/11/2001
Yarrow	Limbrick	Preserved/Preserved	13/11/2001
Goit	Site 2, Brinscall	Preserved/Preserved	14/11/2001
Hillylaid Pool	d/s Royles Brook	Preserved/Preserved	28/11/2001
Savick Brook	Grimsargh R/B	Preserved/Preserved	20/11/2001
Barley Water	ptc Pendle Water	Preserved/Preserved	13/11/2001
Dean Brook	ptc R. Douglas	Preserved/Preserved	16/11/2001
Douglas	Longton Brook ptc	Preserved/Preserved	23/10/2001
Calder	Green Brook ptc	Preserved/Preserved	13/11/2001

Average period between primary analysis and AQC inspection = 43.0 days

Maximum period between primary analysis and AQC inspection = 268 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
05/12/2001	09/01/2002	12/02/2002	35	
08/01/2002	15/01/2002	12/02/2002	7	
15/01/2002	18/01/2002	12/02/2002	3	
23/01/2002	07/02/2002	12/02/2002	15	-
11/02/2002	13/02/2002	15/02/2002	2	
21/05/2001	13/02/2002	15/02/2002	268	
10/01/2002	14/02/2002	15/02/2002	35	
14/01/2002	14/02/2002	15/02/2002	31	-
17/01/2002	15/02/2002	25/02/2002	29	
21/01/2002	19/02/2002	25/02/2002	29	
16/01/2002	19/02/2002	25/02/2002	34	
09/01/2002	21/02/2002	25/02/2002	43	
13/02/2002	21/02/2002	25/02/2002	8	4
02/02/2002	21/02/2002	25/02/2002	19	
29/11/2001	22/02/2002	28/02/2002	85	
08/01/2002	22/02/2002	28/02/2002	45	
23/01/2002	22/02/2002	28/02/2002	30	
04/01/2002	22/02/2002	28/02/2002	49	
09/01/2002	25/02/2002	28/02/2002	47	3
10/01/2002	25/02/2002	28/02/2002	46	

North West Regon, Southern Area

River	Site	Sort Method	Sample date
Medlock	Dawson St	Preserved/Preserved	08/05/2001
Roch	ptc Irwell	Preserved/Preserved	25/05/2001
Irk	u/s Cedar Grove	Preserved/Preserved	12/10/2001
Mersey	d/s Northenden Weir	Preserved/Preserved	04/09/2001
Beal	ptc Piethorne Brook	Preserved/Preserved	30/10/2001
Moss Brook	ptc Bedford Brook	Preserved/Preserved	06/11/2001
Astley Brook	ptc Shaw Brook	Preserved/Preserved	14/11/2001
Whittle Brook	Halton's Bridge	Preserved/Preserved	14/11/2001
Bedford Brook	ptc Moss Brook	Preserved/Preserved	06/11/2001
Tong End Brook	ptc R. Spodden	Preserved/Preserved	14/12/2001
Marsh Brook	ptc Hall Lee Brook	Preserved/Preserved	14/11/2001
Westleigh Brook	ptc Pennington Brk	Preserved/Preserved	14/11/2001
Irk	u/s Collyhurst Weir	Preserved/Preserved	12/10/2001
Irwell	University FB	Preserved/Preserved	02/05/2001
Irwell	u/s Bury ETW	Preserved/Preserved	02/05/2001
Newton Brook	ptc Sankey Brook	Preserved/Preserved	04/10/2001
Diggie Brook	The Wharf	Preserved/Preserved	03/10/2001
Glaze	Little Woolden Hall	Preserved/Preserved	06/11/2001
Cowpe Brook	u/s Boarsgreave	Preserved/Preserved	11/10/2001
Clough Brook	Peak Park	Preserved/Preserved	07/12/2001

Average period between primary analysis and AQC inspection = 55.5 days

Maximum period between primary analysis and AQC inspection = 202 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
01/08/2001	11/10/2001	13/11/2001	71	
06/08/2001	17/10/2001	13/11/2001	72	
19/10/2001	23/10/2001	13/11/2001	4	-
24/10/2001	11/12/2001	09/01/2002	48	
13/11/2001	11/12/2001	09/01/2002	28	
05/12/2001	20/12/2001	09/01/2002	15	-
13/12/2001	08/01/2002	26/02/2002	26	
04/01/2002	09/01/2002	26/02/2002	5	
18/12/2001	10/01/2002	26/02/2002	23	
21/12/2001	11/01/2002	26/02/2002	21	
18/01/2002	06/02/2002	26/02/2002	19	20
23/01/2002	07/02/2002	26/02/2002	15	
17/10/2001	20/02/2002	04/03/2002	126	
25/09/2001	20/02/2002	04/03/2002	148	
03/08/2001	21/02/2002	04/03/2002	202	
04/02/2002	25/02/2002	04/03/2002	21	
06/02/2002	27/02/2002	04/03/2002	21	5
27/11/2001	01/03/2002	04/03/2002	94	
19/10/2001	28/02/2002	08/03/2002	132	
15/02/2002	06/03/2002	08/03/2002	19	

Southern Region, Hants & Isle of Wight Area

River	Site	Sort Method
Test	Lynch	Preserved
Test	u/s Portal's	Preserved
Test	Laverstoke	Preserved
Alver	Kingfisher Caravan Park	Preserved
Wallington	Newman's Bridge	Preserved
Test	Broadlands	Preserved
Sutton Stream	Road Bridge	Preserved
Blackwater	Wellow Mill	Preserved
Becton Bunny	Road Bridge	Preserved
Matley Bog	Matley Passage	Preserved
Lymington	Millyford Bridge	Preserved
Lymington	Balmer Lawn	Preserved
Lymington	Whitley Bridge	Preserved
Blackwater	Hamptworth Bridge	Preserved
Sombourne Stream	Horsebridge	Preserved
Applemore Stream	Rush Bush	Preserved
Dane's Stream	Lavender Farm	Preserved
Eastern Yar	Burnt House	Preserved
Meon	Drayton	Preserved
Eastern Yar	Burnt House	Preserved

Average period between primary analysis and AQC inspection =
Maximum period between primary analysis and AQC inspection =

Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
21/05/2001	14/11/2001		07/03/2002		
04/09/2001	15/11/2001		07/03/2002		
21/05/2001	22/11/2001		07/03/2002		
18/10/2000	19/01/2001		07/03/2002		
20/10/2000	05/02/2001		07/03/2002		
24/05/2001	15/01/2002		07/03/2002		
08/11/2001	12/02/2002		07/03/2002		
20/09/2001	11/01/2002		07/03/2002		
10/10/2000	25/01/2001		07/03/2002		
09/11/2000	05/02/2001		07/03/2002		
26/09/2001	08/10/2001		07/03/2002		
19/11/2001	20/11/2001		07/03/2002		
19/11/2001	07/01/2002		07/03/2002		
27/09/2001	07/11/2001		07/03/2002		
12/09/2001	14/11/2001		07/03/2002		
26/09/2001	21/02/2002		07/03/2002		
30/05/2001	25/02/2002		07/03/2002		
28/11/2000	22/01/2001		07/03/2002		
23/05/2001	26/11/2001		07/03/2002		
30/05/2001	04/12/2001		07/03/2002		

= Not applicable

n = Not applicable

Southern Region, Kent Area

River	Site	Sort Method	Sample date
Littlestone Sewer	d/s N Romney STW	Preserved/Preserved	19/06/2001
Little Stour	d/s Seaton Mill	Preserved/Preserved	01/06/2001
Rother	Blackwall Bridge	Preserved/Preserved	12/11/2001
Little Stour	White Bridge	Preserved/Preserved	01/06/2001
Darent	u/s Eynesford	Preserved	16/10/2001
Little Stour	Wichambreaux	Preserved	01/06/2001
Little Stour	d/s Seaton House	Preserved	01/11/2001
Darent	Westerham	Preserved	13/09/2001
Dour	Kearsney	Preserved	18/05/2001
Motney Hill SSSI	Site 6, d/s Reed Bed	Preserved	12/12/2001
Len	Mote Park	Preserved	21/11/2001
Darent	Farningham	Preserved	25/05/2001
Darent	Lullingstone	Preserved	25/05/2001
Little Stour	d/s Old STW	Preserved	01/06/2001
Little Stour	Wickhambreaux	Preserved	01/11/2001
Little Stour	Seaton House	Preserved	01/06/2001
Little Stour	Littlebourne Oast Houses	Preserved	01/11/2001
Little Stour	Littlebourne Mill	Preserved	01/11/2001
Great Stour	Whitemill Bridge	Preserved	01/11/2001
Great Stour	Horton	Preserved	02/11/2001

Average period between primary analysis and AQC inspection = 23.8 days

Maximum period between primary analysis and AQC inspection = 33 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
30/08/2001	20/09/2001	22/10/2001	21	-
01/11/2001	28/11/2001	25/01/2002	27	
20/11/2001	04/12/2001	25/01/2002	14	
01/12/2001	03/01/2002	25/01/2002	33	
29/10/2001		25/01/2002		
01/11/2001		25/01/2002		-
21/12/2001		25/01/2002		
17/09/2001		25/01/2002		
22/10/2001		25/01/2002		
20/12/2001		25/01/2002		
22/01/2002		25/01/2002		
Unknown		07/03/2002		
Unknown		07/03/2002		
Unknown		07/03/2002		
Unknown		07/03/2002		
Unknown		07/03/2002		-
Unknown		07/03/2002		
Unknown		07/03/2002		
Unknown		07/03/2002		
Unknown		07/03/2002		

Southern Region, Sussex Area

River	Site	Sort Method	Sample date
Barnham Tributary	Site 3	Preserved/Preserved	13/03/2001
Framfield Stream	B2141 Bridge	Preserved/Preserved	15/10/2001
Sheffield Pk Str	North Hall Farm	Preserved/Preserved	31/10/2001
Uck	u/s Tributary	Preserved/Preserved	15/10/2001
Longford Stream	Longford Farm	Preserved/Preserved	31/10/2001
Goldings Str Trib	d/s Mannings Heath	Preserved	03/08/2001
Ouse	Anchor Weir	Preserved	12/12/2001
Barnham Rife	u/s Elm Grove CSO	Preserved	12/12/2001
Willingdon Upper Sewer	Willingdon Drive Junction	Preserved	13/12/2001
Goldings Str Trib	u/s Mannings Heath	Preserved	03/08/2001
Ouse	Sheffield Park Stn	Preserved	12/12/2001
Barnham Rife Trib	d/s Barnham Lane	Preserved	12/12/2001
Uck	Buxted Bridge	Preserved	31/10/2001
Ouse	Barcombe Mills	Preserved	12/12/2001
Barnham Rife	d/s Elm Grove CSO	Preserved	12/12/2001
Glynde Reach	Beddingham	Preserved	31/10/2001
Ouse	Gold Bridge	Preserved	12/12/2001
Pellingford Brook	Sheffield Park Stn	Preserved	12/12/2001
Goldings Str Trib	d/s Mannings Heath	Preserved	03/08/2001
Ouse	Sharpsbridge	Preserved	12/12/2001

Average period between primary analysis and AQC inspection = 64.4 days

Maximum period between primary analysis and AQC inspection = 228 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
16/03/2001	30/10/2001	21/02/2002	228	
17/10/2001	13/11/2001	21/02/2002	27	
17/12/2001	02/01/2002	21/02/2002	16	
13/11/2001	03/01/2002	21/02/2002	51	
14/02/2002	14/02/2002	21/02/2002	0	7
14/02/2002		05/03/2002		
22/02/2002		05/03/2002		
01/03/2002		05/03/2002		
14/02/2002		05/03/2002		
14/02/2002		05/03/2002		-
25/02/2001		05/03/2002		
27/02/2002		05/03/2002		
19/02/2002		05/03/2002		
27/02/2002		05/03/2002		
28/02/2002		05/03/2002		
21/02/2002		05/03/2002		
26/02/2002		05/03/2002		
22/02/2002		05/03/2002		
19/02/2002		05/03/2002		
26/02/2002		05/03/2002		

South West Region, Cornwall Area

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Tehidy Stream	Coombe	Preserved/Preserved	09/03/2000	05/03/2001	09/03/2001	31/01/2002	4	
Plym	u/s Ditsworthy	Preserved/Preserved	23/07/1999	08/03/2001	13/03/2001	31/01/2002	5	
Red	Kieve Bridge	Preserved/Preserved	11/07/2000	14/03/2001	16/03/2001	31/01/2002	2	
Red	Godrevy	Preserved/Preserved	11/07/2000	20/03/2001	22/03/2001	31/01/2002	2	
Wolf	Roadford New Br	Preserved/Preserved	19/07/1999	21/03/2001	30/03/2001	31/01/2002	9	307
Cober	Trenear Bridge	Preserved/Preserved	27/09/1999	02/04/2001	09/04/2001	31/01/2002	7	
Newlyn	Newlyn Bridge	Preserved/Preserved	27/09/1999	10/04/2001	18/04/2001	31/01/2002	8	
Wolf	u/s Thrushel	Preserved/Preserved	04/11/1999	19/04/2001	26/04/2001	31/01/2002	7	
Red	u/s S. Crofty Mine	Preserved/Preserved	09/05/2001	15/05/2001	24/05/2001	31/01/2002	9	
Lyd	Lifton Bridge	Preserved/Preserved	11/11/1999	30/05/2001	01/06/2001	31/01/2002	2	
Trevenen	u/s Tewennack STW	Preserved/Preserved	06/06/2001	08/06/2001	13/07/2001	31/01/2002	35	
Tavy	d/s Willsworthy Leat	Preserved/Preserved	12/05/2000	20/07/2001	15/08/2001	31/01/2002	26	
Warleggan	Temple	Preserved/Preserved	28/03/2000	23/08/2001	30/08/2001	31/01/2002	7	
Reskadinnick Str	Reskadinnick	Preserved/Preserved	24/07/2001	03/09/2001	10/09/2001	31/01/2002	7	
Red	d/s Brea Addit Br	Preserved/Preserved	29/09/2001	27/09/2001	12/10/2001	31/01/2002	15	
Tamar	Buses Bridge	Preserved/Preserved	26/07/2000	04/10/2001	17/10/2001	31/01/2002	13	
Fowey	Draynes Bridge	Preserved/Preserved	18/07/2000	30/10/2001	06/11/2001	31/01/2002	7	
Walkham	Grenofen Bridge	Preserved/Preserved	19/07/2001	05/11/2001	09/11/2001	31/01/2002	4	
Fal	Kernick Bridge	Preserved/Preserved	27/09/2001	12/11/2001	19/11/2001	31/01/2002	7	
Gover Stream	d/s Carrancarrow	Preserved/Preserved	04/10/2001	17/12/2001	20/12/2001	31/01/2002	3	

Average period between primary analysis and AQC inspection = 9.0 days

Maximum period between primary analysis and AQC inspection = 35 days

South West Region, Devon Area

River	Site	Sort Method	Sample date
Dunkeswell Stream	u/s Madford River	Preserved/Preserved	20/08/2001
Umbur	Combe Martin	Preserved/Preserved	03/05/2001
Barnstable Yeo	d/s Brockham Bridge	Preserved/Preserved	20/07/2001
Lemon	u/s South Knighton STW	Preserved/Preserved	19/07/2001

Average period between primary analysis and AQC inspection = 132.0 days

Maximum period between primary analysis and AQC inspection = 212 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
07/11/2001	05/12/2001	08/02/2002	28	
08/05/2001	06/12/2001	08/02/2002	212	
Unknown	07/12/2001	08/02/2002		
01/08/2001	04/01/2002	08/02/2002	156	-

South West Region, North Wessex Area

River	Site	Sort Method	Sample date
Hillfarrance Brook	Milverton STW	Preserved/Preserved	16/10/2001
Chalfield Brook	Broughton Gifford	Preserved/Preserved	22/10/2001
Hillfarrance Trib	Wiverliscombe STW	Preserved/Preserved	18/10/2001
Tone	Waterrow	Preserved/Preserved	10/10/2001
Durleigh Brook	Albert Street	Preserved/Preserved	21/08/2001
Bristol Avon	Lackham College	Preserved/Preserved	08/11/2001
Tone	Waterrow	Preserved/Preserved	28/08/2001
Buckington Drove	Pinkney Farm	Preserved/Preserved	22/10/2001
Lopen Brook	Summer Lane	Preserved/Preserved	05/11/2001
South Drain	d/s Peat Discharge	Preserved/Preserved	29/10/2001

Average period between primary analysis and AQC inspection = 34.1 days

Maximum period between primary analysis and AQC inspection = 74 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
15/01/2002	08/02/2002	19/02/2002	24	
17/01/2002	08/02/2002	19/02/2002	22	
17/01/2002	08/02/2002	19/02/2002	22	
14/01/2002	11/02/2002	19/02/2002	28	
09/01/2002	13/02/2002	19/02/2002	35	6
14/01/2002	06/02/2002	07/03/2002	23	
13/12/2001	25/02/2002	07/03/2002	74	
20/01/2002	04/03/2002	07/03/2002	43	
28/01/2002	05/03/2002	07/03/2002	36	
30/01/2002	05/03/2002	07/03/2002	34	2

South West Region, South Wessex Area

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Nine Mile	Nine Mile Ford	Preserved/Preserved	01/03/2000	23/04/2001	24/04/2001	10/01/2002	1	
Fonthill Brook	Hillground Copse	Preserved/Preserved	17/10/2000	01/05/2001	29/06/2001	10/01/2002	59	
Hooke	d/s Hooke	Preserved/Preserved	26/10/2000	17/05/2001	24/07/2001	10/01/2002	68	
Piddle	White Lackington	Preserved/Preserved	30/03/2000	30/07/2001	05/09/2001	10/01/2002	37	
Devil's Brook	Lower Ansty	Preserved/Preserved	23/03/2000	08/08/2001	24/10/2001	10/01/2002	77	78
Ashfield Water	Burton	Preserved/Preserved	11/10/2000	11/10/2001	21/11/2001	06/03/2002	41	
Tarrant	u/s Preston Farm	Preserved/Preserved	17/07/2001	04/12/2001	24/01/2002	06/03/2002	51	
Bourne Stream	Talbot Heath	Preserved/Preserved	24/03/2000	07/01/2002	01/02/2002	06/03/2002	25	
Devil's Brook	Mill House	Preserved/Preserved	01/11/2000	23/01/2002	12/02/2002	06/03/2002	20	
Bourne Stream	Town Centre Gardens	Preserved/Preserved	18/10/2000	04/02/2002	20/02/2002	06/03/2002	16	14

Average period between primary analysis and AQC inspection = 39.5 days

Maximum period between primary analysis and AQC inspection = 77 days

Thames Region, Hatfield Laboratory

River	Site	Sort Method	Sample date
Lee	Hackney Marshes	Live/Preserved	23/05/2001
Stort	Briggens	Live/Preserved	24/05/2001
Roding	High Ongar Bridge	Preserved/Preserved	23/05/2001
Colne Brook	Wraysbury BR Stn	Preserved/Preserved	29/05/2001
Colne	d/s Stanwell Moor	Preserved/Preserved	29/05/2001
Colne	London Colney	Preserved/Preserved	29/05/2001
Mimshall Brook	Waterend	Live/Preserved	30/05/2001
Cripsey Brook	Moreton Bridge	Live/Preserved	06/11/2001
Ascot Road Ditch	d/s Ascot Road	Live/Preserved	20/11/2001
Cripsey Brook	Weald Bridge	Live/Preserved	06/11/2001
Pinn	Stratford Bridge	Live/Preserved	18/10/2001
Brookhouse Brook	d/s Hobbs Cross Fm	Live/Preserved	06/11/2001
Lee	Waterhall	Preserved/Preserved	30/05/2001
Gade	Cassiobury Park	Live/Preserved	26/09/2001

Average period between primary analysis and AQC inspection = 21.1 days

Maximum period between primary analysis and AQC inspection = 92 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
25/05/2001	29/05/2001	07/11/2001	4	
25/05/2001	30/05/2001	07/11/2001	5	
12/07/2001	18/07/2001	07/11/2001	6	
03/08/2001	07/08/2001	07/11/2001	4	
06/08/2001	09/08/2001	07/11/2001	3	90
01/08/2001	09/08/2001	07/11/2001	8	
31/05/2001	01/06/2001	07/12/2001	1	
09/11/2001	26/11/2001	07/12/2001	17	
20/11/2001	27/11/2001	07/12/2001	7	
08/11/2001	27/11/2001	07/12/2001	19	
18/10/2001	28/11/2001	07/12/2001	41	
07/11/2001	28/11/2001	07/12/2001	21	
30/08/2001	30/11/2001	07/12/2001	92	
27/09/2001	03/12/2001	07/12/2001	67	

Thames Region, Frimley Laboratory

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Cranleigh Waters	Water Bridge	Live/Preserved	08/01/2001	08/01/2001	17/01/2001	14/06/2001	9	
Quaggy	Chinbrook Meadows	Live/Preserved	30/01/2001	31/01/2001	05/02/2001	14/06/2001	5	
Ludgershall Brook	u/s Ray	Preserved/Preserved	28/09/2000	05/02/2001	12/02/2001	14/06/2001	7	
Marston Meysey Br	d/s Marston Meysey	Preserved/Preserved	18/10/2000	16/02/2001	22/02/2001	14/06/2001	6	
Ravensbourne	Ladywell Park	Live/Preserved	02/04/2001	03/04/2001	05/04/2001	14/06/2001	2	70
Wandle	3 Arch Bridge	Live/Preserved	02/04/2001	03/04/2001	18/04/2001	14/06/2001	15	
The Cut	Pitts Bridge	Live/Preserved	17/04/2001	18/04/2001	25/04/2001	14/06/2001	7	
Ockham Mill Str	Ockham Mill	Live/Preserved	24/04/2001	26/04/2001	08/05/2001	14/06/2001	12	
Beverley Brook	Richmond Park	Live/Preserved	22/05/2001	22/05/2001	29/05/2001	14/06/2001	7	
The Cut	u/s Lam Brook	Live/Preserved	23/05/2001	25/05/2001	05/06/2001	14/06/2001	11	
Bracknell Mill Pond	Inlet Stream	Live/Preserved	12/06/2001	13/06/2001	26/06/2001	29/11/2001	13	
Ravensbourne	Norman Park	Live/Preserved	10/07/2001	10/07/2001	13/07/2001	29/11/2001	3	
Lawbrook	Drydown Farm	Preserved/Preserved	04/07/2001	19/07/2001	31/07/2001	29/11/2001	12	
Wey (S)	Passfield Bus. Park	Live/Preserved	31/07/2001	31/07/2001	16/08/2001	29/11/2001	16	
Gatwick Stream	Tinsley Bridge	Live/Preserved	28/08/2001	30/08/2001	11/09/2001	29/11/2001	12	79
Hogsmill	u/s Mill Street	Live/Preserved	25/09/2001	26/09/2001	01/10/2001	29/11/2001	5	
Jubilee River	d/s Dorney F/B	Live/Preserved	27/09/2001	28/09/2001	11/10/2001	29/11/2001	13	
Cranleigh Waters	Water Bridge	Live/Preserved	17/10/2001	19/10/2001	24/10/2001	31/01/2002	5	
Cranleigh Waters	u/s Collins Brook	Preserved/Preserved	13/11/2001	19/11/2001	21/11/2001	31/01/2002	2	
Cranleigh Waters	u/s Collins Brook	Live/Preserved	11/12/2001	12/12/2001	24/01/2002	31/01/2002	43	-

Average period between primary analysis and AQC inspection = 10.3 days

Maximum period between primary analysis and AQC inspection = 43 days

Thames Region, Wallingford Laboratory

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Marcham Brook	Mill Rd, Marcham	Live/Preserved	10/10/2001	10/10/2001	04/01/2002	31/01/2002	86	
Churn	Colesbourne	Live/Preserved	10/10/2001	11/10/2001	07/01/2002	31/01/2002	88	
Lambourn	A4, Newbury	Live/Preserved	30/10/2001	01/11/2001	21/01/2002	31/01/2002	81	
Wye	Bassetsbury Lane	Preserved/Preserved	19/09/2001	09/01/2002	22/01/2002	31/01/2002	13	
Dikler	Stow Bridge	Not stated/Preserved	20/11/2001	08/01/2002	28/01/2002	31/01/2002	20	3
Kennet	Chilton Foliat	Not stated/Preserved	18/09/2001	20/09/2001	29/01/2002	31/01/2002	131	
Windrush	Worsham Works	Preserved/Preserved	20/11/2001	31/01/2002	13/02/2002	06/03/2002	13	
Windrush	East Arm at Cokethorpe	Not stated/Preserved	07/12/2001	06/02/2002	14/02/2002	06/03/2002	8	
Dikler	Lower Swell	Not stated/Preserved	05/12/2001	22/01/2002	15/02/2002	06/03/2002	24	
Windrush	Lower Upton Farm	Not stated/Preserved	05/12/2001	27/01/2002	15/02/2002	06/03/2002	19	
Windrush	Harford Ford	Not stated	05/12/2001	27/01/2002	26/02/2002	06/03/2002	30	8
Windrush	Newbridge	Not stated/Preserved	20/11/2001	04/02/2002	26/02/2002	06/03/2002	22	
Windrush	G.S. Newbridge	Not stated/Preserved	20/11/2001	04/02/2002	26/02/2002	06/03/2002	22	
Kennet	Sheep Drove Bend	Not stated/Preserved	12/09/2001	22/01/2002	26/02/2002	06/03/2002	35	
Windrush	Minster Lovell Rec.	Preserved/Preserved	07/12/2001	18/02/2002	21/02/2002	18/03/2002	3	
Mill Brook	Watery Lane	Preserved/Preserved	19/12/2001	06/02/2002	22/02/2002	18/03/2002	16	
Cole	Acorn Br, Bourton	Preserved/Preserved	08/10/2001	21/02/2002	22/02/2002	18/03/2002	1	
Mill Brook	Mill Brook Cottage	Preserved/Preserved	19/12/2001	20/02/2002	25/02/2002	18/03/2002	5	
Medley Brook	d/s Stanton Harcourt	Preserved/Preserved	07/12/2001	18/02/2002	26/02/2002	18/03/2002	8	20
Mill Brook	Thatcher Cottage	Preserved/Preserved	19/12/2001	05/03/2002	11/03/2002	18/03/2002	6	

Average period between primary analysis and AQC inspection = 31.6 days

Maximum period between primary analysis and AQC inspection = 131 days

Wales, Northern Area

River	Site	Sort Method	Sample date
Afon Braint	d/s Penhesgyn Tip	Preserved/Preserved	08/05/2001
Afon Erch	Glen Afon	Preserved/Preserved	24/09/2001
Afon Gele	Gors Bridge	Preserved/Preserved	13/06/2001
Afon Clywedog	u/s Llwyn Onn	Preserved/Preserved	11/09/2001
Glanfyddion Brook	A547, Dyserth	Preserved/Preserved	26/10/2001
Afon Clywedog	Pickhill	Preserved/Preserved	11/09/2001
Coed Llwybor y Bi	Drain at Road Br	Preserved	30/10/2001
Stanney Brook	d/s Church Lane	Preserved	25/10/2001
Glanfyddion Brook	u/s Trelawnyd STW	Preserved	26/10/2001
Desach	Wooden Bridge	Preserved	26/09/2001

Average period between primary analysis and AQC inspection = 89.5 days

Maximum period between primary analysis and AQC inspection = 166 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
14/06/2001	27/11/2001	13/02/2002	166	
09/11/2001	08/01/2002	13/02/2002	60	
21/06/2001	Unknown	13/02/2002		
31/10/2001	Unknown	13/02/2002		-
19/12/2001	28/02/2002	08/03/2002	71	
28/11/2001	28/01/2002	08/03/2002	61	
31/01/2002		08/03/2002		
29/11/2001		08/03/2002		
01/02/2002		08/03/2002		-
09/10/2001		25/03/2002		-

Wales, South Eastern Area

River	Site	Sort Method	Sample date	Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
Cage Brook	u/s Wye	Preserved/Preserved	29/09/2000	07/02/2001	09/08/2001	04/01/2002	183	
Yazor Brook	d/s Burghill STW	Preserved/Preserved	10/08/2000	21/03/2001	09/08/2001	04/01/2002	141	
Rhiangoll	Bottom site d/s Rep	Preserved/Preserved	23/02/2000	21/03/2001	10/08/2001	04/01/2002	142	
Rhyd-y-Meirch	Bottom stretch - mid site	Preserved/Preserved	23/02/2000	31/07/2001	29/11/2001	04/01/2002	121	
Sirhowy	d/s Sunningdale minewater	Preserved/Preserved	22/10/2001	08/11/2001	13/12/2001	04/01/2002	35	22
Trosnant Brook	u/s Minewater	Preserved/Preserved	22/10/2001	20/11/2001	18/12/2001	04/01/2002	28	
Ditch	1st d/s BSW Newbridge	Preserved	28/07/2000	14/03/2001		04/01/2002		
Lamby Way Tip	u/s Bridge 1	Preserved	20/06/2000	20/03/2001		04/01/2002		
Monnow	u/s Habitat improvement	Preserved	20/09/2000	11/07/2001		04/01/2002		
Tarell	Brecon	Preserved	03/09/2001	03/09/2001		04/01/2002		
Sirhowy	Gelligroes Bridge	Preserved	22/10/2001	14/11/2001		04/01/2002		
Taff Bargoed	d/s Minewater	Preserved	22/10/2001	23/11/2001		04/01/2002		
Stream	Nr Dan y Coed Terrace	Preserved/Preserved	30/08/2001	15/01/2002	06/02/2002	26/02/2002	22	
Nant y Gwyddon	Picnic Site	Preserved	30/08/2001	15/01/2002		26/02/2002		-

Average period between primary analysis and AQC inspection = 96.0 days

Maximum period between primary analysis and AQC inspection = 183 days

Wales, South Western Area

River	Site	Sort Method	Sample date
Afan	u/s Lower Cwmafan Bridge	Preserved/Preserved	18/04/2001
Blaenpelenna	u/s Garth Tonmawr	Preserved/Preserved	18/04/2001
Gwenffrwd	u/s Whitworth Lagoon	Preserved	18/04/2001
Afan	Ynysgwas Road Bridge	Preserved	18/07/2001
Pelenna	u/s Confluence	Preserved/Preserved	18/07/2001
Gwenffrwd	u/s Whitworth No 1	Preserved	18/07/2001
Camnant	u/s Hirwaun P/S	Preserved/Preserved	19/10/2001
Sutton Brook	d/s Lower SW	Preserved/Preserved	15/08/2001
Syfywy	u/s Rosebush WTW	Preserved	10/08/2001
Sutton Brook	Llandow	Preserved	13/11/2001
Kenfig	d/s Discharge	Preserved	07/09/2001
Sutton Brook	Sutton Farm	Preserved	13/11/2001
Bow St. Brook	d/s STW	Preserved	14/08/2001
Bow St. Brook	u/s STW	Preserved	14/08/2001
Camnant	u/s STW effluent	Preserved	19/10/2001
Camnant	d/s Hirwaun STW	Preserved	19/10/2001

Average period between primary analysis and AQC inspection = 44.0 days

Maximum period between primary analysis and AQC inspection = 70 days

Primary analysis	AQC analysis	Arrived at CEH	Primary to AQC analysis (days)	5th AQC in batch to arrival at CEH (days)
27/06/2001	26/07/2001	28/09/2001	29	
11/07/2001	19/09/2001	28/09/2001	70	
09/07/2001		28/09/2001		
30/07/2001		28/09/2001		-
16/08/2001	16/10/2001	04/01/2002	61	
10/08/2001		04/01/2002		-
05/02/2002	21/02/2002	26/02/2002	16	
Unknown	Unknown	26/02/2002		
03/10/2001		26/02/2002		
16/01/2002		26/02/2002		
20/12/2001		25/03/2002		-
18/01/2002		25/03/2002		
21/01/2002		25/03/2002		
05/02/2002		25/03/2002		
07/02/2002		25/03/2002		
11/02/2002		25/03/2002		