



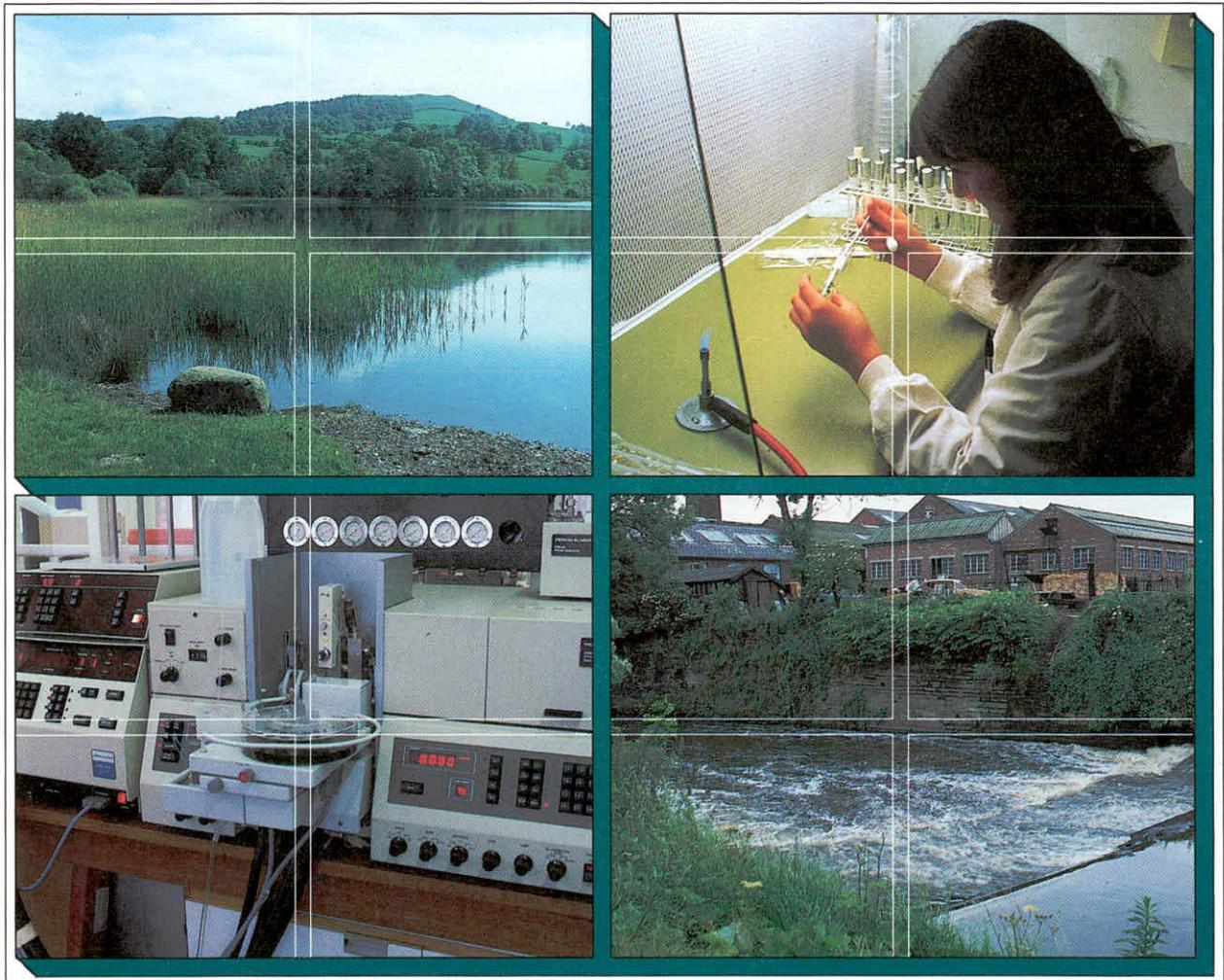
# An audit of performance in the processing of macro-invertebrate samples in 1992. NRA Severn-Trent Region

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**NRA Severn-Trent Region**

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|                 |  |
|-----------------|--|
| Project leader: | R.J.M. Gunn                                      |
| Report date:    | March 1993                                       |
| Report to:      | National Rivers Authority<br>Severn-Trent Region |
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| TFS Project No: | T04071a1   |

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## **1. INTRODUCTION**

In 1992 the sampling of aquatic macro-invertebrates for the biological assessment of river quality continued throughout the United Kingdom. This task was undertaken by the National Rivers Authority (NRA) in England and Wales, the River Purification Boards (RPBs) in Scotland and the Industrial Research & Technology Unit (IRTU) in Northern Ireland.

In view of the number of staff involved and the variability of sample processing techniques, it was recognised that an independent quality control exercise was necessary to promote a consistently high level of reliability. The IFE was contracted to undertake an audit of the sample sorting and identification performance of each NRA region, several RPBs and the IRTU. This report presents the results of 62 samples audited for Severn-Trent Region of the NRA. The IFE was not required to perform any statistical analyses nor interpretation of the results of the audit.

Each organisation employed standard collection procedures, as used in the 1990 River Quality Survey, and the sampling strategy was therefore compatible with RIVPACS (River InVertebrate Prediction And Classification System), which has been developed by the Institute of Freshwater Ecology (IFE).

Samples were sorted by NRA, RPB and IRTU personnel for the families of macro-invertebrates included in the Biological Monitoring Working Party (BMWP) system. Taxa present were recorded on site data sheets. Sample processing and recording techniques varied from region to region.

## **2. SAMPLE SELECTION**

Samples for audit were selected internally by each of the agencies being monitored. The biologists processing these samples had no prior knowledge of the samples to be audited.

The manner of sample selection, which biologists would be monitored and the number of audit samples from each season, were left to the discretion of the agency, within the limits of the total number of samples that IFE was contracted to audit.

## **3. SAMPLE PROCESSING**

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

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

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

- a) The remainder of the sample was sorted and the BMWP families listed
- b) The families contained within the vial were identified and listed
- c) A comparison was made between the NRA listing of families and those identified from the vial by IFE
- d) A comparison was made between the NRA listing of families and those found in the sample by IFE
- e) "Losses" or "gains" from the NRA listing of families were noted. In the case of "gains", each additional family was identified, where possible, to species level, in order to clarify any specific repetitive errors.

For a number of different reasons, some samples did not include a vial containing representative examples of the families listed on the data sheet. Others arrived with the vial damaged in transit such that the representative examples were no longer separated. For these samples, only operations a), d) and e) above were appropriate.

Several directives were issued to IFE relating to the treatment of BMWP taxa. Terrestrial representatives of BMWP scoring families, animals deemed to have been dead at the time of sampling, cast insect skins, pupal exuviae, empty mollusc shells and posterior ends of "living" specimens were to be excluded from the listing of families present. Chrysomelidae and Curculionidae, which appear in the BMWP list, were also to be excluded for the purposes of the audit. Trichopteran pupae, although not routinely identified by many biologists, were to be included in the listing of families.

#### 4. REPORTING

The results of each sample audit were recorded on a standard report form (Table 1). For audit samples where a vial of animals was included, the comparison between the NRA listing and the taxa found in the vial by IFE was shown in box A of the report form. Discrepancies could be due to carelessness, misidentifications or errors in completing the NRA data sheet. Families not on the NRA listing but found by IFE in the remainder of the sample were entered in box B of the report form under "additional families". When the families listed as "losses" in section A of the report form were compared with the full list of families recorded in the sample by IFE, some apparent losses from the vial were offset by the presence of those families in the remainder of the sample. These taxa were therefore listed in the "losses" box of section A and the "gains" box of section B and were neither a net loss nor a net gain. In these cases, the families were marked with an asterisk in both boxes. Such errors are noted as "omissions" in the tables which summarise the results for each season (Tables 2, 3 and 4).

Species identifications, state of development (eg adult or larval coleopterans) and the presence of a single representative of a family within the remainder of the sample were recorded in the notes section of the report form. Where the NRA data sheet indicated that a family was noted and released at the site, this was recorded in the notes section but not included as a "loss", even though the family was not found in the vial.

For those samples in which the vial of animals was damaged or missing, box A of the report form was not applicable (N/a). Families not on the NRA list but present in the sample were listed in box B under "additional families" as before. Families recorded on the NRA list but not found by IFE were indicated on the left hand side of box B. If the vial of animals was retained by the NRA, entries in this box could include the sole representative of a family which was removed by the NRA, a family seen at the site which escaped or was released (without mention being made on the NRA data sheet), inaccurate identification, the wrong family box being ticked on the NRA data sheet or the family being present in the sample but missed by IFE.

Results of the audits of individual samples are presented in the Appendix.

#### **ACKNOWLEDGEMENTS**

Thanks to Kay Symes for help with production of results and to Valerie Palmer for typing the manuscript.

TABLE 1. The IFE Report form

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION  RIVER

DATE  SITE

SORTER  SAMPLE CODE

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE |                                |                                  |

|   |  |  |                     |
|---|--|--|---------------------|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) |                     |

NOTES: NET LOSSES  NET GAINS

TABLE 2. The 20 spring samples audited for Severn-Trent Region.

| River                | Site                       | Sorter | Losses | Gains | Omissions |
|----------------------|----------------------------|--------|--------|-------|-----------|
| Nailsworth Stream    | Avening                    | 2.4    | 0      | 1     | 0         |
| Glynch Brook         | Bury Court                 | 2.4    | 0      | 0     | 1         |
| Piddle Brook         | d/s Flyford Flavell<br>WRW | 2.3    | 0      | 1     | 0         |
| Smite Brook          | u/s Coombe Abbey<br>WRW    | 2.3    | 0      | 0     | 0         |
| Lathkill             | Alport                     | 4.1    | 0      | 1     | 1         |
| Cole                 | Lowbrook Bridge            | 3.5    | 0      | 2     | 0         |
| Kyre Brook           | Tenbury                    | 1.3    | 0      | 3     | 0         |
| Polser Brook         | Radcliffe-on-Trent         | 4.3    | 0      | 3     | 0         |
| Wye                  | Ashford                    | 4.1    | 0      | 1     | 0         |
| Rothley Brook        | Newton Unthank             | 4.2    | 0      | 3     | 1         |
| Sibson Brook         | Sibson                     | 3.1    | 0      | 5     | 0         |
| Corve                | Beambridge                 | 1.3    | 1      | 3     | 0         |
| Henmore Brook        | u/s Ashbourne              | 3.1    | 0      | 1     | 1         |
| Saltersford Brook    | Oakthorpe                  | 3.5    | 0      | 1     | 0         |
| Oldcoates Dyke       | Blythe                     | 4.3    | 0      | 1     | 0         |
| Severn               | Montford Bridge            | 1.1    | 2      | 2     | 0         |
| Ragdale (Hoby) Brook | u/s R. Wreake              | 4.2    | 1      | 1     | 0         |
| Collingham Brook     | Collingham                 | 4.2    | 0      | 2     | 0         |
| Torne                | Hirst Priory               | 4.1    | 1      | 1     | 0         |
| Teme                 | Burrington                 | 1.1    | 0      | 4     | 0         |

TABLE 3. The 20 summer samples audited for Severn-Trent Region

| River           | Site                    | Sorter | Losses | Gains | Omissions |
|-----------------|-------------------------|--------|--------|-------|-----------|
| Torne           | Tunnel Pits Farm        | 4.3    | 0      | 2     | 0         |
| Ryton           | Harrycrofts             | 4.1    | 0      | 3     | 0         |
| Onny            | Newington Footbridge    | 1.1    | 0      | 3     | 0         |
| Rea Brook       | Malehurst               | 1.1    | 0      | 1     | 1         |
| Press Brook     | u/s Clay Cross WRW      | 4.3    | 0      | 0     | 0         |
| Foston Brook    | Scropton                | 3.5    | 0      | 3     | 0         |
| Anker           | Tamworth                | 3.7    | 0      | 2     | 1         |
| Dove            | Sprink                  | 3.7    | 0      | 1     | 0         |
| Frome           | Edgeworth Mill          | 2.4    | 0      | 3     | 0         |
| Itchen          | u/s Long Itchington WRW | 2.4    | 1      | 2     | 0         |
| Tern            | Betton                  | 1.1    | 0      | 3     | 0         |
| Dove            | Dovedale                | 3.7    | 0      | 2     | 0         |
| Oldberrow Brook | B4480 Bridge            | 2.4    | 1      | 1     | 0         |
| Scalford Brook  | u/s R. Wreake           | 4.2    | 0      | 2     | 0         |
| Quinny Brook    | u/s Church Stretton WRW | 1.1    | 0      | 1     | 0         |
| Plants Brook    | Pype Hayes              | 3.1    | 0      | 1     | 0         |
| Meer Brook      | Frith Bottom Farm       | 3.1    | 0      | 0     | 0         |
| Leek Brook      | Leekbrook               | 3.1    | 0      | 0     | 1         |
| Derwent         | Cromford Station        | 4.1    | 0      | 5     | 0         |
| Sher Brook      | Shugborough             | 3.7    | 0      | 4     | 0         |

TABLE 4. The 22 autumn samples audited for Severn-Trent Region

| River                   | Site                           | Sorter | Losses | Gains | Omissions |
|-------------------------|--------------------------------|--------|--------|-------|-----------|
| Derwent                 | Cromford Station               | 4.3    | 0      | 7     | 0         |
| Redlake                 | Jay                            | 1.3    | 0      | 7     | 1         |
| Daddle Brook            | d/s Alveley WRW                | 1.3    | 0      | 2     | 0         |
| Gaddesby (Ouston) Brook | u/s Gaddesby (Marefield) Brook | 4.2    | 0      | 3     | 0         |
| Hilton Brook            | Longford Mill                  | 3.1    | 1      | 2     | 0         |
| Ashop                   | u/s Ladybower Reservoir        | 4.1    | 0      | 0     | 0         |
| Trent                   | d/s Knypersley Reservoir       | 3.1    | 0      | 6     | 0         |
| Downs Bank Brook        | Oulton                         | 3.1    | 0      | 2     | 1         |
| Whitsun Brook           | Bishampton                     | 2.4    | 0      | 1     | 0         |
| Birches Dingle          | d/s Parkend                    | 2.4    | 0      | 0     | 0         |
| Swift                   | Walcote                        | 2.4    | 0      | 1     | 0         |
| Elmley Castle Brook     | Croptorne                      | 2.4    | 0      | 0     | 1         |
| Dene                    | Fosse Way Road                 | 2.4    | 0      | 5     | 0         |
| Smite Brook             | B4029 Bridge                   | 2.4    | 0      | 2     | 0         |
| Poulter                 | Crookford                      | 4.3    | 0      | 0     | 0         |
| Afon Gam                | Fridd Fawr Fisheries           | 1.6    | 1      | 4     | 0         |
| Banwy                   | Llangadfan                     | 1.6    | 1      | 1     | 1         |
| North Beck              | Laneham                        | 4.1    | 0      | 2     | 0         |
| Thurlaston Brook        | Huncote                        | 4.2    | 0      | 1     | 0         |
| Strine                  | Crudgington                    | 1.1    | 1      | 7     | 1         |
| Tern Waters             | Upton Ternhill                 | 1.1    | 0      | 2     | 0         |
| Rhaiadr                 | B4396 Bridge, Llanrhaiadr      | 1.3    | 0      | 0     | 0         |



## **APPENDIX**

### **Results of individual sample audits**

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                   |
|--------|--------------|-------------|-------------------|
| REGION | Severn-Trent | RIVER       | Nailsworth Stream |
| DATE   | 9.3.92       | SITE        | Avening           |
| SORTER | 2.4          | SAMPLE CODE |                   |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Scirtidae                      |

NET LOSSES  NET GAINS

NOTES:

1 Elodes sp. (larva) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |              |
|--------|--------------|-------------|--------------|
| REGION | Severn-Trent | RIVER       | Glynch Brook |
| DATE   | 28.5.92      | SITE        | Bury Court   |
| SORTER | 2.4          | SAMPLE CODE |              |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Sphaeriidae*                 | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Sphaeriidae*                   |

NET LOSSES 0 NET GAINS 0

NOTES:

2 Pisidium sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                         |
|--------|--------------|-------------|-------------------------|
| REGION | Severn-Trent | RIVER       | Piddle Brook            |
| DATE   | 26.5.92      | SITE        | d/s Flyford Flavell WRW |
| SORTER | 2.3          | SAMPLE CODE |                         |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Leptoceridae                   |

NET LOSSES  NET GAINS

NOTES:

1 Athripsodes aterrimus

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                      |
|--------|--------------|-------------|----------------------|
| REGION | Severn-Trent | RIVER       | Smite Brook          |
| DATE   | 28.5.92      | SITE        | u/s Coombe Abbey WRW |
| SORTER | 2.3          | SAMPLE CODE |                      |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES 0 NET GAINS 0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Lathkill   |
| DATE   | 14.4.92      | SITE        | Alport     |
| SORTER | 4.1          | SAMPLE CODE | NRA04 5108 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Rhyacophilidae*              | 2 Tipulidae                      |

|   |  |  |                                  |
|---|--|--|----------------------------------|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 3 Rhyacophilidae*                |

NET LOSSES  NET GAINS

NOTES:

2 Antocha vitripennis  
3 Rhyacophila munda

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                 |
|--------|--------------|-------------|-----------------|
| REGION | Severn-Trent | RIVER       | Cole            |
| DATE   | 8.4.92       | SITE        | Lowbrook Bridge |
| SORTER | 3.5          | SAMPLE CODE | NRA04 8502      |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE       |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Polycentropodidae<br>2 Psychomyiidae |

NET LOSSES  NET GAINS

NOTES:

1 Plectrocnemia conspersa 1 only  
2 Tinodes waeneri 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Kyre Brook |
| DATE   | 6.5.92       | SITE        | Tenbury    |
| SORTER | 1.3          | SAMPLE CODE |            |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | 1 Chironomidae                   |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE  |
|---|--|--|-----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Ephemeridae<br>3 Rhyacophilidae |

NET LOSSES  0 NET GAINS  3

NOTES:

1 Orthocladiinae + Tanytarsini in vial and sample, Tanypodinae + Chironomini in sample  
2 Ephemera danica 1 only  
3 Rhyacophila dorsalis

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                    |
|--------|--------------|-------------|--------------------|
| REGION | Severn-Trent | RIVER       | Polser Brook       |
| DATE   | 15.4.92      | SITE        | Radcliffe on Trent |
| SORTER | 4.3          | SAMPLE CODE | NRA04 4042         |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | 1 Elmidae                        |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Valvatidae<br>3 Leptoceridae   |

NET LOSSES  0 NET GAINS  3

NOTES:

1 Elmis aenea (larva)  
2 Valvata piscinalis 1 only  
3 Athripsodes aterrimus 1 only  
  
Posterior end of Hydroptila sp. found in sample

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Wye        |
| DATE   | 14.4.92      | SITE        | Ashford    |
| SORTER | 4.1          | SAMPLE CODE | NRA04 5104 |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Sphaeriidae                    |

NET LOSSES 0 NET GAINS 1

NOTES:

1 Pisidium sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                |
|--------|--------------|-------------|----------------|
| REGION | Severn-Trent | RIVER       | Rothley Brook  |
| DATE   | 13.4.92      | SITE        | Newton Unthank |
| SORTER | 4.2          | SAMPLE CODE |                |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Erpobdellidae*               | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                                       |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Planariidae<br>3 Erpobdellidae*<br>4 Limnephilidae<br>5 Leptoceridae |

NET LOSSES  NET GAINS

NOTES:

- 2 Polycelis nigra/tenuis 1 only
- 3 Trocheta subviridis
- 4 Limnephilus sp. 1 only
- 5 Mystacides azurea 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |              |
|--------|--------------|-------------|--------------|
| REGION | Severn-Trent | RIVER       | Sibson Brook |
| DATE   | 5.3.92       | SITE        | Sibson       |
| SORTER | 3.1          | SAMPLE CODE | NRA04 8172   |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE   |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Leptophlebiidae<br>2 Dytiscidae<br>3 Psychomyiidae<br>4 Hydroptilidae<br>5 Limnephilidae |

NET LOSSES  NET GAINS

NOTES:

1 Habrophlebia fusca 1 only  
 2 Potamonectes depressus (adult) 1 only  
 3 Tinodes waeneri  
 4 Hydroptila sp.  
 5 Anabolia nervosa 1 only

Note on data sheet that Unionidae returned to river. Not found by IFE in sample.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Corve      |
| DATE   | 6.5.92       | SITE        | Beambridge |
| SORTER | 1.3          | SAMPLE CODE |            |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Piscicolidae                 | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                    |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Planorbidae<br>3 Ephemerellidae<br>4 Leptoceridae |

NET LOSSES  1 NET GAINS  3

NOTES:

2 Armiger crista  
3 Ephemerella ignita  
4 Athripsodes bilineatus, Ceraclea sp. (pupa)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |               |
|--------|--------------|-------------|---------------|
| REGION | Severn-Trent | RIVER       | Henmore Brook |
| DATE   | 1.4.92       | SITE        | u/s Ashbourne |
| SORTER | 3.1          | SAMPLE CODE |               |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Lymnaeidae*                  | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Lymnaeidae*<br>3 Gammaridae    |

NET LOSSES  NET GAINS

NOTES:

1,2 Succinea sp. in vial, Lymnaea peregra in sample  
3 Gammarus pulex

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                   |
|--------|--------------|-------------|-------------------|
| REGION | Severn-Trent | RIVER       | Saltersford Brook |
| DATE   | 16.3.92      | SITE        | Oakthorpe         |
| SORTER | 3.5          | SAMPLE CODE | NRA04 8031        |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Asellidae                      |

NET LOSSES  NET GAINS

NOTES:

1 Asellus aquaticus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |               |
|--------|--------------|-------------|---------------|
| REGION | Severn-Trent | RIVER       | Oldcoats Dyke |
| DATE   | 3.4.92       | SITE        | Blyth         |
| SORTER | 4.3          | SAMPLE CODE | NRA04 5079    |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Valvatidae                     |

NET LOSSES  NET GAINS

NOTES:

1 Valvata cristata 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                 |
|--------|--------------|-------------|-----------------|
| REGION | Severn-Trent | RIVER       | Severn          |
| DATE   | 6.5.92       | SITE        | Montford Bridge |
| SORTER | 1.1          | SAMPLE CODE | NRA04 1010      |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE       | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Leptoceridae<br>2 Lepidostomatidae | 3 Hydrobiidae<br>4 Lymnaeidae    |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES  2 NET GAINS  2

NOTES:

3 Potamopyrgus jenkinsi  
4 Lymnaea peregra  
  
Macronychus quadrituberculatus (larvae) found in sample.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                      |
|--------|--------------|-------------|----------------------|
| REGION | Severn-Trent | RIVER       | Ragdale (Hoby) Brook |
| DATE   | 1.4.92       | SITE        | u/s R.Wreake, Hoby   |
| SORTER | 4.2          | SAMPLE CODE | NRA04 6117           |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Dytiscidae                   | 2 Hydrophilidae                  |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES |
|---|--|--|---------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                |

NET LOSSES 1 NET GAINS 1

NOTES:

2 Hydrobius fuscipes (adult) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| REGION | Severn-Trent | RIVER       | Collingham Brook |
| DATE   | 29.4.92      | SITE        | Collingham       |
| SORTER | 4.2          | SAMPLE CODE | NRA04 6129       |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Corixidae<br>2 Tipulidae       |

NET LOSSES  0 NET GAINS  2

NOTES:

1 Sigara lateralis 1 only  
2 Limnophila (Eloeophila) sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |              |
|--------|--------------|-------------|--------------|
| REGION | Severn-Trent | RIVER       | Torne        |
| DATE   | 7.4.92       | SITE        | Hirst Priory |
| SORTER | 4.1          | SAMPLE CODE | NRA04 5805   |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Dendrocoelidae               | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Planorbidae                    |

NET LOSSES  1

NET GAINS  1

NOTES:

2 Anisus vortex, Armiger crista

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Teme       |
| DATE   | 23.4.92      | SITE        | Burrington |
| SORTER | 1.1          | SAMPLE CODE |            |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                                       |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Hydrobiidae<br>2 Glossiphoniidae<br>3 Ephemerellidae<br>4 Leuctridae |

NET LOSSES 0 NET GAINS 4

NOTES:

- 1 Potamopyrgus jenkinsi 1 only
- 2 Glossiphonia complanata 1 only
- 3 Ephemerella ignita 1 only
- 4 Leuctra sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| REGION | Severn-Trent | RIVER       | Torne            |
| DATE   | 5.8.92       | SITE        | Tunnel Pits Farm |
| SORTER | 4.3          | SAMPLE CODE | NRA04 5804       |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | 1 Lymnaeidae                     |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Haliplidae                     |

NET LOSSES  NET GAINS

NOTES:

1 Lymnaea palustris  
2 Halipus sp. (larva)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |             |
|--------|--------------|-------------|-------------|
| REGION | Severn-Trent | RIVER       | Ryton       |
| DATE   | 16.7.92      | SITE        | Harrycrofts |
| SORTER | 4.1          | SAMPLE CODE | NRA04 5722  |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

|   |  |  |   |
|---|--|--|---|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                  |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Glossiphoniidae<br>2 Elmidae<br>3 Limnephilidae |

NET LOSSES 0 NET GAINS 3

NOTES:

1 Helobdella stagnalis 1 only  
2 Elmis aenea (adult) 1 only  
3 Limnephilus lunatus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                      |
|--------|--------------|-------------|----------------------|
| REGION | Severn-Trent | RIVER       | Onny                 |
| DATE   | 12.8.92      | SITE        | Newington Footbridge |
| SORTER | 1.1          | SAMPLE CODE |                      |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                      |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Hydrophilidae<br>2 Psychomyiidae<br>3 Hydroptilidae |

NET LOSSES 0 NET GAINS 3

NOTES:

- 1 Indet Hydrophilid larvae
- 2 Tinodes waeneri 1 only
- 3 Ithytrichia sp. (pupa) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Rea Brook  |
| DATE   | 7.8.92       | SITE        | Malehurst  |
| SORTER | 1.1          | SAMPLE CODE | NRA04 1054 |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Gammaridae*                  | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Planorbidae<br>3 Gammaridae*   |

NET LOSSES 0 NET GAINS 1

NOTES:

2 Gyraulus albus  
3 Gammarus pulex

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                    |
|--------|--------------|-------------|--------------------|
| REGION | Severn-Trent | RIVER       | Press Brook        |
| DATE   | 20.7.92      | SITE        | u/s Clay Cross WRW |
| SORTER | 4.3          | SAMPLE CODE |                    |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES  NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |              |
|--------|--------------|-------------|--------------|
| REGION | Severn-Trent | RIVER       | Foston Brook |
| DATE   | 22.6.92      | SITE        | Scropton     |
| SORTER | 3.5          | SAMPLE CODE | NRA04 7951   |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE               |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Planariidae<br>2 Hydrometridae<br>3 Sialidae |

NET LOSSES 0 NET GAINS 3

NOTES:

1 Polycelis nigra/tenuis 1 only  
2 Hydrometra gracilentata/stagnorum (nymph) 1 only  
3 Sialis sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Anker      |
| DATE   | 29.7.92      | SITE        | Tamworth   |
| SORTER | 3.7          | SAMPLE CODE | NRA04 8210 |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Glossiphoniidae*             | 2 Psychomyiidae                  |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE       |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 3 Dendrocoelidae<br>4 Glossiphoniidae* |

NET LOSSES 0 NET GAINS 2

NOTES:

2 Taenodes waeneri  
3 Dendrocoelum lacteum 1 only  
4 Glossiphonia complanata, Theromyzon tessulatum

Note on label that "Viviparus sp. not in vial". Large V.viviparus found by IFE in sample.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Dove       |
| DATE   | 24.6.92      | SITE        | Sprink     |
| SORTER | 3.7          | SAMPLE CODE | NRA04 7802 |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Caenidae                       |

NET LOSSES 0 NET GAINS 1

NOTES:

1 Caenis rivulorum

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                |
|--------|--------------|-------------|----------------|
| REGION | Severn-Trent | RIVER       | Frome          |
| DATE   | 30.6.92      | SITE        | Edgeworth Mill |
| SORTER | 2.4          | SAMPLE CODE |                |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES                           |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Valvatidae<br>2 Sphaeriidae<br>3 Dytiscidae |

NET LOSSES 0 NET GAINS 3

NOTES:

1 Valvata piscinalis  
2 Pisidium sp. 1 only  
3 Oreodytes sanmarkii (larva) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                         |
|--------|--------------|-------------|-------------------------|
| REGION | Severn-Trent | RIVER       | Itchen                  |
| DATE   | 1.6.92       | SITE        | u/s Long Itchington WRW |
| SORTER | 2.4          | SAMPLE CODE |                         |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Tipulidae                    | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Dytiscidae<br>3 Simuliidae     |

NET LOSSES  1

NET GAINS  2

NOTES:

2 Potamonectes sp. (larva) 1 only  
3 Simulium angustitarse group, S.aureum group (pupae)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |        |
|--------|--------------|-------------|--------|
| REGION | Severn-Trent | RIVER       | Tern   |
| DATE   | 21.8.92      | SITE        | Betton |
| SORTER | 1.1          | SAMPLE CODE |        |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | 1 Baetidae                       |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE  |
|---|--|--|-----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Hydroptilidae<br>3 Leptoceridae |

NET LOSSES  NET GAINS

NOTES:

1 Baetis rhodani  
2 Hydroptila sp. 1 only  
3 Athripsodes bilineatus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Dove       |
| DATE   | 15.6.92      | SITE        | Dovedale   |
| SORTER | 3.7          | SAMPLE CODE | NRA04 7804 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE  |
|---|--|--|-----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Planariidae<br>2 Philopotamidae |

NET LOSSES  0 NET GAINS  2

NOTES:

1 Polycelis felina 1 only  
2 Wormaldia sp

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                 |
|--------|--------------|-------------|-----------------|
| REGION | Severn-Trent | RIVER       | Oldberrow Brook |
| DATE   | 16.6.92      | SITE        | B4480 Bridge    |
| SORTER | 2.4          | SAMPLE CODE |                 |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Rhyacophilidae               | 2 Psychomyiidae                  |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES 1 NET GAINS 1

NOTES:

2 Tinodes waeneri

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |               |
|--------|--------------|-------------|---------------|
| REGION | Severn-Trent | RIVER       | Scaford Brook |
| DATE   | 4.8.92       | SITE        | u/s R.Wreake  |
| SORTER | 4.2          | SAMPLE CODE | NRA04 4319    |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Caenidae<br>2 Hydroptilidae    |

NET LOSSES 0 NET GAINS 2

NOTES:

1 Caenis luctuosa/macrura 1 only  
2 Hydroptila sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                         |
|--------|--------------|-------------|-------------------------|
| REGION | Severn-Trent | RIVER       | Quinny Brook            |
| DATE   | 12.8.92      | SITE        | u/s Church Stretton WRW |
| SORTER | 1.1          | SAMPLE CODE |                         |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Hydrophilidae                  |

NET LOSSES 0 NET GAINS 1

NOTES:

1 Hydraena gracilis (adult) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                        |
|--------|--------------|-------------|------------------------|
| REGION | Severn-Trent | RIVER       | Plants Brook Section 1 |
| DATE   | 13.8.92      | SITE        | Pype Hayes             |
| SORTER | 3.1          | SAMPLE CODE | NRA04 8818             |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Simuliidae                     |

NET LOSSES 0 NET GAINS 1

NOTES:

1 Simulium aureum group 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                   |
|--------|--------------|-------------|-------------------|
| REGION | Severn-Trent | RIVER       | Meer Brook        |
| DATE   | 29.7.92      | SITE        | Frith Bottom Farm |
| SORTER | 3.1          | SAMPLE CODE | NRA04 7631        |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

|   |  |  |                     |
|---|--|--|---------------------|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                |

NET LOSSES 0 NET GAINS 0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Leek Brook |
| DATE   | 15.7.92      | SITE        | Leekbrook  |
| SORTER | 3.1          | SAMPLE CODE | NRA04 7681 |

AQC OF BMWP FAMILIES A. IN VIAL

B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Erpobdellidae*               | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Erpobdellidae*                 |

NET LOSSES

NET GAINS

NOTES:

|                         |
|-------------------------|
| 2 Erpobdella octoculata |
|-------------------------|

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| REGION | Severn-Trent | RIVER       | Derwent (Middle) |
| DATE   | 13.8.92      | SITE        | Cromford Station |
| SORTER | 4.1          | SAMPLE CODE |                  |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | 1 Tipulidae                      |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                                    |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Leptophlebiidae<br>3 Caenidae<br>4 Goeridae<br>5 Lepidostomatidae |

NET LOSSES  NET GAINS

NOTES:

- 1 Antocha vitripennis
- 2 Paraleptophlebia submarginata 1 only
- 3 Caenis rivulorum 1 only
- 4 Goera pilosa 1 only
- 5 Lepidostoma hirtum

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |             |
|--------|--------------|-------------|-------------|
| REGION | Severn-Trent | RIVER       | Sher Brook  |
| DATE   | 26.8.92      | SITE        | Shugborough |
| SORTER | 3.7          | SAMPLE CODE | NRA04 7311  |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                                     |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Lymnaeidae<br>2 Rhyacophilidae<br>3 Goeridae<br>4 Sericostomatidae |

NET LOSSES  NET GAINS

NOTES:

1 Lymnaea peregra 1 only  
 2 Agapetus sp., Rhyacophila dorsalis (pupa)  
 3 Silo pallipes 1 only  
 4 Sericostoma personatum 1 only

Label in vial says "Heptageniidae not in vial". Incomplete specimens of Ecdyonurus sp. found by IFE in sample.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| REGION | Severn-Trent | RIVER       | Derwent (Middle) |
| DATE   | 8.1.93       | SITE        | Cromford Station |
| SORTER | 4.3          | SAMPLE CODE |                  |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

|   |  |  |   |
|---|--|--|---|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE  |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Ancylidae<br>2 Glossiphoniidae<br>3 Leptophlebiidae<br>4 Ephemerellidae<br>5 Haliplidae<br>6 Gyrinidae<br>7 Polycentropodidae |

NET LOSSES  0

NET GAINS  7

NOTES:

- 1 Ancylus fluviatilis 1 only
- 2 Glossiphonia complanata, Helobdella stagnalis
- 3 Paraleptophlebia submarginata
- 4 Ephemerella ignita 1 only
- 5 Brychius elevatus (adult) 1 only
- 6 Orectochilus villosus (larvae)
- 7 Polycentropus flavomaculatus

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Redlake    |
| DATE   | 14.12.92     | SITE        | Jay        |
| SORTER | 1.3          | SAMPLE CODE | NRA04 1826 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Elmidae*                     | 2 Taeniopterygidae               |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE   |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 3 Planariidae<br>4 Ancylidae<br>5 Sphaeriidae<br>6 Asellidae<br>7 Ephemerellidae<br>8 Perlodidae<br>9 Elmidae* |

NET LOSSES  0 NET GAINS  7

NOTES:

- 2 Brachyptera risi
- 3 Polycelis nigra/tenuis
- 4 Ancylus fluviatilis
- 5 Pisidium sp. 1 only
- 6 Asellus aquaticus 1 only
- 7 Ephemerella ignita 1 only
- 8 Isoperla grammatica
- 9 Elmis aenea, Limnius volckmari, Oulimnius sp. (larvae)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                 |
|--------|--------------|-------------|-----------------|
| REGION | Severn-Trent | RIVER       | Daddle Brook    |
| DATE   | 8.12.92      | SITE        | d/s Alveley WRW |
| SORTER | 1.3          | SAMPLE CODE |                 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Nemouridae<br>2 Tipulidae      |

NET LOSSES  NET GAINS

NOTES:

1 Nemoura cambrica/erratica 1 only  
2 Limnophila (Eloeophila) sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                             |
|--------|--------------|-------------|-----------------------------|
| REGION | Severn-Trent | RIVER       | Gaddesby (Ouston) Brook     |
| DATE   | 2.11.92      | SITE        | u/s Gaddesby (Marefield) Bk |
| SORTER | 4.2          | SAMPLE CODE | NRA04 4324                  |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES                           |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Caenidae<br>2 Dytiscidae<br>3 Limnephilidae |

NET LOSSES  NET GAINS

NOTES:

1 Caenis luctuosa/macrura 1 only  
2 Platambus maculatus (larva) 1 only  
3 Indet Limnephilid (juvenile) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |               |
|--------|--------------|-------------|---------------|
| REGION | Severn-trent | RIVER       | Hilton Brook  |
| DATE   | 30.9.92      | SITE        | Longford Mill |
| SORTER | 3.1          | SAMPLE CODE | NRA04 7991    |

AQC OF BMWP FAMILIES A. IN VIAL  + B. IN SAMPLE  +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Limnephilidae                | 2 Lepidostomatidae               |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 3 Valvatidae                     |

NET LOSSES  1 NET GAINS  2

NOTES:

2 *Lepidostoma hirtum*  
3 *Valvata piscinalis*  
  
Assumed that *Astacidae* was returned to river.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                         |
|--------|--------------|-------------|-------------------------|
| REGION | Severn-Trent | RIVER       | Ashop                   |
| DATE   | 4.11.92      | SITE        | u/s Ladybower Reservoir |
| SORTER | 4.1          | SAMPLE CODE | NRA04 5009              |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES  NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                          |
|--------|--------------|-------------|--------------------------|
| REGION | Severn-Trent | RIVER       | Trent                    |
| DATE   | 7.12.92      | SITE        | d/s Knypersley Reservoir |
| SORTER | 3.1          | SAMPLE CODE | NRA04 7201               |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE   |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Ancylidae<br>2 Erpobdellidae<br>3 Rhyacophilidae<br>4 Philopotamidae<br>5 Psychomyiidae<br>6 Tipulidae |

NET LOSSES  NET GAINS

NOTES:

- 1 Ancylus fluviatilis
- 2 Erpobdella octoculata 1 only
- 3 Rhyacophila dorsalis 1 only
- 4 Wormaldia sp. 1 only
- 5 Tinodes waeneri
- 6 Dicranota sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| REGION | Severn-Trent | RIVER       | Downs Bank Brook |
| DATE   | 23.11.92     | SITE        | Oulton           |
| SORTER | 3.1          | SAMPLE CODE | NRA04 7271       |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Gammaridae*                  | 2 Chloroperlidae                 |

|   |  |  |                                      |
|---|--|--|--------------------------------------|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE     |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 3 Gammaridae*<br>4 Polycentropodidae |

NET LOSSES  NET GAINS

NOTES:

2 Chloroperla torrentium  
3 Gammarus pulex  
4 Plectrocnemia conspersa 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |               |
|--------|--------------|-------------|---------------|
| REGION | Severn-Trent | RIVER       | Whitsun Brook |
| DATE   | 11.12.92     | SITE        | Bishampton    |
| SORTER | 2.4          | SAMPLE CODE | NRA04 3505    |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Elmidae                        |

NET LOSSES  NET GAINS

NOTES:

1 Elmis aenea (larva) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                |
|--------|--------------|-------------|----------------|
| REGION | Severn-Trent | RIVER       | Birches Dingle |
| DATE   | 21.12.92     | SITE        | d/s Parkend    |
| SORTER | 2.4          | SAMPLE CODE |                |

AQC OF BMWP FAMILIES A. IN VIAL + B. IN SAMPLE +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES 0 NET GAINS 0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Swift      |
| DATE   | 16.12.92     | SITE        | Walcote    |
| SORTER | 2.4          | SAMPLE CODE | NRA04 3914 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

|   |  |  |                                  |
|---|--|--|----------------------------------|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Hydropsychidae                 |

NET LOSSES  NET GAINS

NOTES:

1 Hydropsyche angustipennis 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                     |
|--------|--------------|-------------|---------------------|
| REGION | Severn-Trent | RIVER       | Elmley Castle Brook |
| DATE   | 10.12.92     | SITE        | Crothorne           |
| SORTER | 2.4          | SAMPLE CODE | NRA04 3517          |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Sphaeriidae*                 | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Sphaeriidae*                   |

NET LOSSES  NET GAINS

NOTES:

2 Pisidium sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                |
|--------|--------------|-------------|----------------|
| REGION | Severn-Trent | RIVER       | Dene           |
| DATE   | 13.10.92     | SITE        | Fosse Way Road |
| SORTER | 2.4          | SAMPLE CODE | NRA04 3619     |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE  |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Erpobdellidae<br>2 Taeniopterygidae<br>3 Psychomyiidae<br>4 Hydroptilidae<br>5 Chironomidae |

NET LOSSES  0

NET GAINS  5

NOTES:

- 1 Erpobdella octoculata 1 only
- 2 Taeniopteryx nebulosa 1 only
- 3 Lype sp. 1 only
- 4 Hydroptila sp.
- 5 Orthocladiinae

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |              |
|--------|--------------|-------------|--------------|
| REGION | Severn-Trent | RIVER       | Smite Brook  |
| DATE   | 14.12.92     | SITE        | B4029 Bridge |
| SORTER | 2.4          | SAMPLE CODE | NRA04 3818   |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Caenidae<br>2 Leptoceridae     |

NET LOSSES  NET GAINS

NOTES:

1 Caenis luctuosa/macrura 1 only  
2 Athripsodes aterrimus, Mystacides azurea

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Poulter    |
| DATE   | 16.11.92     | SITE        | Crookford  |
| SORTER | 4.3          | SAMPLE CODE | NRA04 5602 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

|   |  |                                |                                  |
|---|--|--------------------------------|----------------------------------|
| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

|   |  |  |                                  |
|---|--|--|----------------------------------|
| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES  NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                      |
|--------|--------------|-------------|----------------------|
| REGION | Severn-Trent | RIVER       | Afon Gam             |
| DATE   | 11.12.92     | SITE        | Fridd Fawr Fisheries |
| SORTER | 1.6          | SAMPLE CODE |                      |

AQC OF BMWP FAMILIES A. IN VIAL  + B. IN SAMPLE  +

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Hydroptilidae                | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE                                |
|---|--|--|---|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 2 Ancylidae<br>3 Sphaeriidae<br>4 Baetidae<br>5 Leptophlebiidae |

NET LOSSES  1 NET GAINS  4

NOTES:

- 1 Empty case in vial
- 2 Ancylus fluviatilis 1 only
- 3 Pisidium sp. 1 only
- 4 Baetis rhodani
- 5 Paraleptophlebia submarginata 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | Banwy      |
| DATE   | 11.12.92     | SITE        | Llangadfan |
| SORTER | 1.6          | SAMPLE CODE |            |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE      | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|-------------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Hydrophilidae<br>2 Limnephilidae* | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 3 Limnephilidae*<br>4 Simuliidae |

NET LOSSES  NET GAINS

NOTES:

3 Potamophylax sp.  
4 Simulium cryophilum group

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |            |
|--------|--------------|-------------|------------|
| REGION | Severn-Trent | RIVER       | North Beck |
| DATE   | 29.9.92      | SITE        | Laneham    |
| SORTER | 4.1          | SAMPLE CODE | NRA04 5923 |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Valvatidae<br>2 Hydrophilidae  |

NET LOSSES  NET GAINS

NOTES:

1 Valvata cristata  
2 Indet Hydrophilid (larva) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| REGION | Severn-Trent | RIVER       | Thurlaston Brook |
| DATE   | 7.10.92      | SITE        | Huncote          |
| SORTER | 4.2          | SAMPLE CODE | NRA04 4118       |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Leptoceridae                   |

NET LOSSES  NET GAINS

NOTES:

1 *Mystacides azurea* 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |             |
|--------|--------------|-------------|-------------|
| REGION | Severn-Trent | RIVER       | Strine      |
| DATE   | 14.12.92     | SITE        | Crudgington |
| SORTER | 1.1          | SAMPLE CODE |             |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE    | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|-----------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | 1 Dendrocoelidae<br>2 Dytiscidae* | 3 Hydrometridae                  |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE   |
|---|--|--|--|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 4 Valvatidae<br>5 Physidae<br>6 Dytiscidae*<br>7 Elmidae<br>8 Brachycentridae<br>9 Chironomidae<br>10 Simuliidae |

NET LOSSES  NET GAINS

NOTES:

- 3 Hydrometra stagnorum
- 4 Valvata piscinalis 1 only
- 5 Physa fontinalis 1 only
- 6 Potamonectes depressus (adult) 1 only
- 7 Elmis aenea, Oulimnius sp. (larvae)
- 8 Brachycentrus subnubilus
- 9 Orthocladiinae, Chironomini
- 10 Simulium ornatum group 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                |
|--------|--------------|-------------|----------------|
| REGION | Severn-Trent | RIVER       | Tern Waters    |
| DATE   | 9.12.92      | SITE        | Upton Ternhill |
| SORTER | 1.1          | SAMPLE CODE |                |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE     |
|---|--|--|--------------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | 1 Glossiphoniidae<br>2 Hydroptilidae |

NET LOSSES  NET GAINS

NOTES:

1 Glossiphonia complanata 1 only  
2 Hydroptila sp. (pupa) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

|        |              |             |                           |
|--------|--------------|-------------|---------------------------|
| REGION | Severn-Trent | RIVER       | Rhaiadr                   |
| DATE   | 10.12.92     | SITE        | B4396 Bridge, Llanrhaiadr |
| SORTER | 1.3          | SAMPLE CODE |                           |

AQC OF BMWP FAMILIES A. IN VIAL  B. IN SAMPLE

| A | VIAL   | BMWP FAMILIES NOT FOUND BY IFE | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--------------------------------|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in VIAL by IFE | None                           | None                             |

| B | SAMPLE   | BMWP FAMILIES NOT FOUND BY IFE                                 | ADDITIONAL FAMILIES FOUND BY IFE |
|---|--|--|----------------------------------|
|   | Differences between:<br>i) BMWP families listed on sample data sheet and<br>ii) BMWP families found in SAMPLE by IFE | (This box only completed when no vial is supplied with sample) | None                             |

NET LOSSES  NET GAINS

NOTES:

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