

ENVIRONMENT AGENCY



128929

EA: WATER QUALITY
WALES 62

BATHING WATERS REPORT

1993

NRA WELSH REGION

1993 BATHING WATER SURVEY

1. BACKGROUND

1.1 EC Directives are agreements between the EC and Member States. Thus the interpretation of them at national level, their adoption into national law, and accountability for compliance with the terms of the directives, lies entirely with national governments.

1.2 The EC Bathing Waters Directive (76/160/EEC) was intended primarily to safeguard public health and the environment by reducing the pollution of bathing waters and protecting such waters against further deterioration. Under the Water Act 1989, the NRA has been given the responsibility to carry out the necessary monitoring programmes in relation to certain water-related directives, which include the Bathing Waters directive, in England and Wales. The results from these monitoring programmes in Wales are submitted to the Welsh Office (WO) and the Department of the Environment (DoE). It is for such Government Departments, however, to interpret this and other such EC Directives within England and Wales, and it follows from the preceding paragraph that only they can assess 'compliance' or otherwise with the Directives.

1.3 When Directive (76/160/EEC) was first adopted, only a limited number of bathing waters were identified by the UK Government. A large list of bathing waters has since been added to the initial list, and all these are included in the Government's report to the EC. If bathing waters have not been included in this report then they do not come within the terms of the Directive and thus, by definition, cannot be said to comply, or fail to comply, with its conditions. A number of non-identified bathing waters have been, however, routinely monitored by the NRA and the results are included in this report for comparison.

The NRA has now decided to cease all non-EC bathing water monitoring from 1994 because it considers that it now has sufficient information to characterise these waters. The only exceptions to this are any bathing waters nominated by local councils for consideration for EC Directive "identification".

1.4 The Directive specifies a range of water quality standards which should be achieved in identified bathing waters and indicates the required monitoring frequency. These standards fall into two categories, mandatory (I) and guideline (G) standards, details of the requirements for compliance with which are given in Appendix 1.

1.5 The Bathing Waters (Classification) Regulations 1991 was published as a Statutory Instrument on 9th August 1991, bringing the regulations into UK law. The "Notice" and "Directions" were received in 1992.

- 1.6 The Government currently uses the faecal and total coliforms "I" standards as the basis for determining UK compliance with the Directive. Additional microbiological "I" standards concern the occurrence of Salmonella and enteroviruses. Physico-chemical "I" standard parameters are tested as indicated in Appendix 1. The occurrence of faecal streptococci is also examined, although this parameter only has a non-mandatory "G" standard in the Directive. Welsh Region has been granted a derogation for transparency at all its bathing waters from 1991.

2. SAMPLING PROGRAMME

- 2.1 The 51 bathing waters in the Welsh region currently identified by the UK Government as falling within the scope of the Directive are displayed on Figure 1 and listed in Appendix 2. 50 of these bathing waters are in Wales and one, West Kirby, is in England.
- 2.2 The Government requires that these bathing waters are monitored in accordance with the requirements of the Bathing Waters Directive and the data reported to the WO and DOE by November of each year. This report summarises the results of the monitoring carried out during the 1993 bathing season.
- 2.3 Non-identified bathing waters (Appendix 3) are monitored in order to establish the impact of local discharges and to ensure that the water quality in these areas does not deteriorate.
- 2.4 A full report on the current status of Directive 76/160/EEC compliance in England and Wales will be published by the NRA during 1994.

3. 1993 MONITORING PROGRAMME FOR BATHING WATERS IDENTIFIED AS FALLING WITHIN THE TERMS OF THE BATHING WATERS DIRECTIVE

- 3.1 Monitoring is confined to the period 1st May - 30th September, which includes two weeks sampling prior to the DOE identified bathing season (15 May - 30th September).
- 3.2 Guidance has been issued by DOE indicating the frequency of monitoring required for each parameter. This guidance has been used to develop the monitoring programme within Welsh Region. DOE specified that faecal and total coliforms should be analysed for on at least 20 occasions during the bathing season and that the NRA are to report "confirmed" faecal and total coliform results instead of the "presumptive" results which had been reported in previous years *. The test for Salmonella is to be carried out twice during the bathing season and the test for enteroviruses is to be carried out twice, but only at the bathing waters which failed to achieve the faecal / total coliform standards during the previous bathing season. pH is only required to be measured once during the season and the physicochemical parameters are to be assessed on at least 20 occasions during the bathing season.

* "Confirmation" of the Coliform test requires further analysis of all samples to substantiate the result.

- 3.3 Summary data on quality collected from the 51 identified bathing waters are reported in Appendix 4. These results, together with those from elsewhere in the UK have been published by the Government.
- 3.4 Table 1(a) summarises "confirmed" faecal and total coliform sample statistics and compliance, as reported by the DOE, with the "I" values for the 51 identified Welsh Region bathing waters in 1993. These results indicate that overall 42 (82%) complied with the combined standard.
- 3.5 Table 1(b) summarises Salmonella sample statistics for the 51 identified Welsh Region bathing waters in 1993. The results indicate that at 41 (80%) no Salmonella were identified.
- 3.6 Table 1(c) summarises entero-virus sample statistics for the 12 identified Welsh Region bathing waters sampled for enterovirus in 1993. The results indicate that at 3 (25 %) no entero-virus were identified.
- 3.7 Table 1(d) summarises faecal streptococci sample statistics for the 51 identified Welsh Region bathing waters tested in 1993. The results indicate that 16 (31%) had <three samples with a value >100 faecal streptococci per 100 ml with no consecutive failures.

4. 1993 MONITORING PROGRAMME FOR BATHING WATERS NOT IDENTIFIED UNDER THE TERMS OF THE BATHING WATERS DIRECTIVE

- 4.1 A total of 83 non-identified bathing waters were monitored during 1993. These results have been reported to the WO. Wherever resources allowed, monitoring was undertaken at, at least, fortnightly intervals and, as in past years assistance with sampling was provided by some Local Authorities. Appendix 5 gives summary statistical details for this monitoring programme. Due to limited resources it was not possible to report "confirmed" faecal and total coliform results for all samples. Only those samples which exceeded the 2000/100ml faecal coliform standard or the 10000/100ml total coliform standard were "confirmed".
- 4.2 A summary of the analysis at each of these waters for Faecal Coliforms and total coliforms is shown in Table 2(a). This shows that 71 (86%) had <two samples with a value >2000/100 ml for Faecal Coliforms and that 75 (90%) had <two samples with a value >10000/100 ml for total coliforms. A total of 70 non-identified bathing waters (84%) had <two samples with >2000 Faecal Coliforms and >10000 total coliforms per 100 ml.
- 4.3 A summary of the analysis for faecal streptococci is shown in Table 2(b). The results show that 22 (27%) had <three samples with a value of >100 faecal streptococci per 100 ml with no consecutive failures.

5. REMEDIAL MEASURES REQUIRED TO MEET LONG TERM OBJECTIVE

- 5.1 The long term objective is for all identified bathing waters to comply with the standards laid down in the Directive. In order to facilitate this an "EC Bathing Waters Improvement Strategy" has been drawn up by NRA Welsh Region to identify and prioritise the remedial works required at identified bathing waters to ensure that Dwr Cymru discharges are consistent with compliance, at most bathing waters, with the faecal and total coliform standards by the end of 1995 and the bathing waters in the Cardiff area and Swansea Bay complying by 1997. The requirements for remedial works at non-identified bathing waters are being reviewed.

Table 3 compares the compliance of the identified bathing waters over the period 1986 - 1993 (the assessment was carried out differently prior to 1986 and therefore cannot be included). It is important to realise that slightly different criteria were used for 1986 and 1987 where a look up table approach, which also entailed reduced sampling effort, was adopted by the Government. Therefore care must be taken when making any comparison of compliance between 1986/87 and subsequent years. It should also be noted that 1986 - 1991 figures show compliance using "presumptive" results, whereas figures from 1992 show "confirmed" results.

It must be emphasised that compliance is considered an unreliable indication of trends due to the statistical limitations of such a small data set. Variation in compliance from year to year therefore does not necessarily indicate genuine improvements or deteriorations.

In addition Table 3 indicates those bathing waters which are included in the Dwr Cymru cyf. investment programme designed to meet compliance by the UK with its obligations under the EC Bathing Waters Directive.

Two of the schemes listed in Table 3 were completed during 1993; these were at Broadhaven and Newgale Beach.

6. SUMMARY

- 6.1 As reported by the DOE, a total of 42 out of the 51 identified bathing waters complied with the faecal and total coliform "I" standards specified in the Directive (82%).
- 6.2 Of the 83 non-identified bathing waters sampled in 1993, 70 had <two samples with >2000 faecal and >10000 total coliforms per 100 ml (84%).
- 6.3 Summary table showing compliance with the combined faecal and total coliform standards:- (All samples were "confirmed" for identified waters, but at non identified waters only those samples which exceeded the 2000/100ml faecal coliform standard or the 10000/100ml total coliform standard were "confirmed".)

Bathing Water	Number	Number with <two samples with >2000 faecal and >10000 total coliforms per 100 ml	Percent
EC	51	42	82
non EC	83	70	84

Figure 1

LOCATION OF IDENTIFIED BATHING WATER SAMPLING SITES IN WELSH REGION

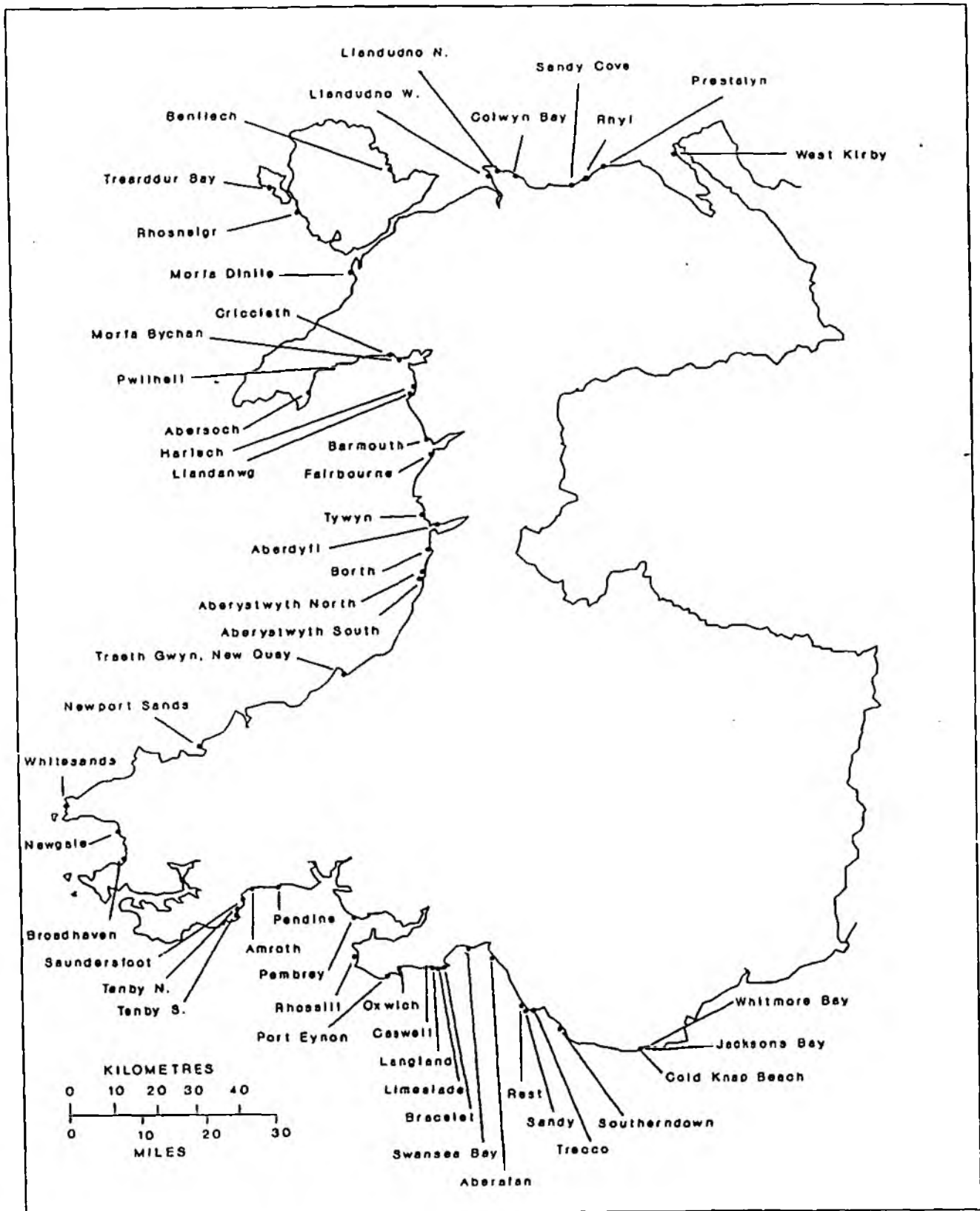


Table 1a

COMPLIANCE. AS COMPUTED BY THE DOE. OF IDENTIFIED BATHING WATERS. WITH "I" VALUES FOR "CONFIRMED" FAECAL AND TOTAL COLIFORMS

<u>Bathing Water</u>	<u>Faecal Coliform</u>			<u>Total Coliforms</u>			<u>Overall</u>
	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>Pass/Fail</u>
<u>South East</u>							
Jacksons Bay	20	1	P	20	0	P	P
Whitmore Bay	20	1	P	20	0	P	P
Cold Knap Beach	20	0	P	20	0	P	P
<u>South West</u>							
Southerndown Beach	20	0	P	20	0	P	P
Trecco Bay	20	0	P	20	0	P	P
Sandy Bay	20	0	P	20	0	P	P
Rest Bay	20	0	P	20	0	P	P
Aberafan Slip	20	0	P	20	0	P	P
Swansea Bay	20	1	P	20	3	F	F
Bracelet Bay	20	1	P	20	0	P	P
Limeslade Bay	20	1	P	20	0	P	P
Langland Bay	20	2	F	20	0	P	F
Caswell Bay	20	0	P	20	0	P	P
Oxwich Bay	20	0	P	20	0	P	P
Port Eynon Bay	20	0	P	20	0	P	P
Rhossili Beach	20	0	P	20	0	P	P
Pembrey Beach	20	0	P	20	0	P	P
Pendine Beach	20	0	P	20	0	P	P
Amroth Beach	20	0	P	20	0	P	P
Saundersfoot Beach	20	0	P	20	1	P	P
Tenby N. Beach	20	0	P	20	0	P	P
Tenby S. Beach	20	0	P	20	0	P	P
Broadhaven	20	0	P	20	0	P	P
Newgale Beach	20	0	P	20	0	P	P
Whitesands	20	0	P	20	0	P	P
Newport Sands N.	20	2	F	20	0	P	F
Traeth Gwyn, New Quay	20	1	P	20	1	P	P
Aberystwyth S. Beach	20	2	F	20	1	P	F
Aberystwyth N. Beach	20	1	P	20	0	P	P
<u>North</u>							
Aberdyfi	20	2	F	20	0	P	F
Borth	20	0	P	20	0	P	P
Tywyn	20	1	P	20	0	P	P
Fairbourne Beach	20	0	P	20	0	P	P
Barmouth	20	0	P	20	0	P	P
Llandamwg Beach	20	1	P	20	0	P	P
Harlech	20	0	P	20	0	P	P
Morfa Bychan	20	0	P	20	0	P	P
Criccieth Beach E.	20	1	P	20	0	P	P
Pwllheli Beach	20	0	P	20	0	P	P
Abersoch	20	1	P	20	0	P	P
Morfa Dinlle	20	0	P	20	0	P	P
Benllech	20	1	P	20	0	P	P
Trearddur Bay	21	1	P	21	0	P	P
Rhosneigr	21	0	P	20	0	P	P
Llandudno W.	22	7	F	22	6	F	F
Llandudno N.	20	0	P	20	0	P	P
Colwyn Bay	20	2	F	20	0	P	F
Sandy Cove/Kinmel Bay	20	1	P	20	0	P	P
Rhyl	20	7	F	20	5	F	F
Prestatyn	20	0	P	20	0	P	P
W. Kirby	20	5	F	20	3	F	F

Table 1b

ANALYSIS OF IDENTIFIED BATHING WATERS RESULTS FOR SALMONELLA

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of Positive Results</u>
<u>South East</u>		
Jacksons Bay	2	1
Whitmore Bay	2	0
Cold Knap Beach	2	0
<u>South West</u>		
Southerndown Beach	2	0
Trecco Bay	2	0
Sandy Bay	2	1
Rest Bay	2	1
Aberafan Slip	2	0
Swansea Bay	2	0
Bracelet Bay	2	0
Limeslade Bay	2	0
Langland Bay	2	0
Caswell Bay	2	0
Oxwich Bay	2	0
Port Eynon Bay	2	0
Rhossili Beach	2	0
Pembrey Beach	2	0
Pendine Beach	2	0
Amroth Beach	2	1
Saundersfoot Beach	2	1
Tenby N. Beach	2	0
Tenby S. Beach	2	0
Broadhaven	2	0
Newgale Beach	2	0
Whitesands	2	1
Newport Sands N.	2	0
Traeth Gwyn, New Quay	2	1
Aberystwyth S. Beach	2	0
Aberystwyth N. Beach	2	0
<u>North</u>		
Aberdyfi	2	0
Borth	2	0
Tywyn	2	0
Fairbourne Beach	2	0
Barmouth	2	0
Llandanwg Beach	2	0
Harlech	2	0
Morfa Bychan	2	0
Criccieth Beach E.	2	0
Pwllheli Beach	2	0
Abersoch	2	0
Morfa Dinlle	2	0
Benllech	2	0
Trearddur Bay	2	0
Rhosneigr	2	0
Llandudno W.	2	0
Llandudno N.	2	0
Colwyn Bay	2	0
Sandy Cove/Kinmel Bay	2	0
Rhyl	2	1
Prestatyn	2	1
W. Kirby	2	1

Table 1c

ANALYSIS OF IDENTIFIED BATHING WATERS RESULTS FOR ENTERO-VIRUS

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of Positive Results</u>
<u>South East</u>		
Jacksons Bay	2	1
Whitmore Bay	2	2
Cold Knap Beach		
<u>South West</u>		
Southerndown Beach		
Trecco Bay		
Sandy Bay		
Rest Bay		
Aberafan Slip		
Swansea Bay	2	1
Bracelet Bay		
Limeslade Bay		
Langland Bay		
Caswell Bay	2	1
Oxwich Bay		
Port Eynon Bay		
Rhossili Beach		
Pembrey Beach		
Pendine Beach		
Amroth Beach		
Saundersfoot Beach		
Tenby N. Beach		
Tenby S. Beach		
Broadhaven		
Newgale Beach		
Whitesands		
Newport Sands N.		
Traeth Gwyn, New Quay		
Aberystwyth S. Beach	2	1
Aberystwyth N. Beach		
<u>North</u>		
Aberdyfi	2	2
Borth		
Tywyn		
Fairbourne Beach		
Barmouth		
Llandanwg Beach		
Harlech		
Morfa Bychan	2	0
Criccieth Beach E.	2	0
Pwllheli Beach		
Abersoch		
Morfa Dinlle		
Benllech		
Trearddur Bay		
Rhosneigr		
Llandudno W.	2	1
Llandudno N.		
Colwyn Bay		
Sandy Cove/Kinmel Bay	2	1
Rhyl	2	2
Prestatyn		
West Kirby	2	0

Table 1d

ANALYSIS OF IDENTIFIED BATHING WATERS RESULTS FOR FAECAL STREPTOCOCCI

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
<u>South East</u>		
Jacksons Bay	20	18
Whitmore Bay	20	13
Cold Knap Beach	20	4
<u>South West</u>		
Southerndown Beach	20	3
Trecco Bay	20	3
Sandy Bay	20	4
Rest Bay	20	2
Aberafan Slip	20	9
Swansea Bay	20	9
Bracelet Bay	20	3
Limeslade Bay	20	7
Langland Bay	20	3
Caswell Bay	20	1
Oxwich Bay	20	0
Port Eynon Bay	20	0
Rhossili Beach	20	0
Pembrey Beach	20	1
Pendine Beach	20	1
Amroth Beach	20	2
Saundersfoot Beach	20	8
Tenby N.Beach	20	4
Tenby S.Beach	20	3
Broadhaven	20	3
Newgale Beach	20	0
Whitesands.	20	0
Newport Sands N.	20	3
Traeth Gwyn, New Quay	20	5
Aberystwyth S.Beach	20	7
Aberystwyth N.Beach	20	10
<u>North</u>		
Aberdyfi	20	8
Borth	20	5
Tywyn	20	1
Fairbourne Beach	20	2
Barmouth	20	4
Llandanwg Beach	20	1
Harlech	20	2
Morfa Bychan	20	1
Criccieth Beach E.	20	3
Pwllheli Beach	20	3
Abersoch	20	6
Morfa Dinlle	20	2
Benllech	20	6
Trearddur Bay	21	10
Rhosneigr	21	0
Llandudno W.	22	10
Llandudno N.	20	2
Colwyn Bay	20	5
Sandy Cove/Kinmel Bay	20	9
Rhyl	20	11
Prestatyn	20	5
West Kirby	20	10

Table 2a

ANALYSIS OF NON-IDENTIFIED BATHING WATERS RESULTS FOR FAECAL AND TOTAL COLIFORMS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No. Samples</u>	<u>No. with >2000 per 100 ml</u>	<u>No. Samples</u>	<u>No. with >10000 per 100 ml</u>
<u>South East</u>				
Penarth Yacht	20	5	20	0
St Marys Well Bay	20	1	20	0
Little Island	20	0	20	0
Watchouse Bay	19	0	19	0
Fontygary Bay	19	0	19	0
<u>South West</u>				
Llantwit Major Beach	21	0	21	0
Aberafan West	20	0	20	0
Jersey Marine East	20	1	20	0
Jersey Marine Central	20	0	20	0
Jersey Marine West	20	0	20	0
Swansea Bay County Hall	20	0	20	0
Swansea Bay Black Pill	20	1	20	1
Mumbles - Knap Rock	20	0	20	0
Mumbles - Head Pier	20	4	20	4
Three Cliffs Bay	20	1	20	0
Broughton Beach	20	0	20	0
Llanelli Beach	20	5	20	4
Burry Port Beach	20	0	20	1
Wisemans Bridge	20	1	20	0
Lystep	20	0	20	0
Skrinkle	20	0	20	0
Manorbier Beach	20	0	20	0
Freshwater East	20	0	20	1
Barafundle	20	0	20	0
Broad Haven South	20	1	20	0
Freshwater West	20	0	20	0
West Angle	20	0	20	0
Gelliswick	20	1	20	1
Dale	20	1	20	0
Marloes	20	0	20	0
Nolton	20	0	20	0
Caerfai	20	0	20	0
Abereiddy	20	0	20	0
Traeth Llyfn	20	0	20	0
Goodwick Harbour	20	1	20	0
Goodwick Beach	20	0	20	0
Pwll Gwaelod	20	1	20	0
Cwm yr Eglwys	20	1	20	0
Newport Sands	20	0	20	0
Poppit Sands West	20	0	20	0
Poppit Sands East	20	0	20	0
Patch	20	6	20	4
Gwbert	20	1	20	0
Mwnt at Aberporth	20	0	20	0
Aberporth Slip	20	0	20	1
Aberporth E.	20	1	20	0
Tresaith	20	0	20	0
Penbryn	20	0	20	0
Llangranog	20	0	20	0

Table 2a (contd)

ANALYSIS OF NON-IDENTIFIED BATHING WATERS RESULTS FOR FAECAL AND TOTAL COLIFORMS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No. Samples</u>	<u>No. with >2000 per 100 ml</u>	<u>No. Samples</u>	<u>No. with >10000 per 100 ml</u>
Cil Borth	20	0	20	0
Cwmtudu	20	0	20	0
Newquay N.	20	0	20	0
Newquay S.	20	0	20	0
Llanina	20	0	20	0
Little Quay(Cei Bach)	20	1	20	0
Gilfach yr Halen	20	0	20	0
Aberaeron S.	20	0	20	0
Aberaeron N.	20	1	20	0
Aberaeron	20	0	20	0
Aberarth	20	0	20	0
Llanon	20	1	20	0
Llansantffraid	20	0	20	0
Llanrhystud S.	20	0	20	0
Morfa Bychan at Slipway	20	0	20	0
Tanybwllch	20	0	20	1
Aberystwyth Harbour-Slip	20	0	20	4
Clarach Bay S.	20	3	20	3
Clarach Bay N.	20	2	20	0
<u>North</u>				
Tal-y-Bont	20	0	20	0
Llanenddwyn	20	1	20	0
Garreg Wen	20	6	20	5
Black Rock Sands (Morfa)	20	0	20	0
Porth Dinllaen	20	0	20	0
Niwbwrrch (Llanddwyn)	21	1	21	0
Porth Gwr Mawr	21	7	21	2
Porth Dafarch	21	1	21	0
Llanfairfechan Shore Rd	21	2	21	0
Penmeanmawr (22995)	22	1	22	1
Morfa Conwy Site AC	22	1	22	1
Deganwy Nrth Shltr	22	3	22	0
Penrhyn Bay	21	9	21	8
Colwyn Bay (25042)	20	0	20	0
Colwyn Bay (25041)	20	2	20	1

* All samples with numbers in excess of 2000 per 100ml for Faecal Coliforms, and 10000 per 100ml for Total Coliforms were "confirmed".

Table 2b

ANALYSIS OF NON-IDENTIFIED BATHING WATERS RESULTS FOR FAECAL STREPTOCOCCI

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
<u>South East</u>		
Penarth Yacht	20	20
St Marys Well Bay	20	17
Little Island	20	6
Watchouse Bay	19	7
Fontygary Bay	19	2
<u>South West</u>		
Llantwit Major Beach	21	5
Aberafan West	20	6
Jersey Marine East	20	5
Jersey Marine Central	20	6
Jersey Marine West	20	4
Swansea Bay County Hall	20	9
Swansea Bay Black Pill	20	12
Mumbles - Knap Rock	20	9
Mumbles - Head Pier	20	14
Three Cliffs Bay	20	2
Broughton Beach	20	0
Llanelli Beach	20	12
Burry Port Beach	19	1
Wisemans Bridge	20	4
Lystep	20	2
Skrinkle	20	2
Manorbier Beach	20	1
Freshwater East	20	2
Barafundle	20	2
Broad Haven South	20	3
Freshwater West	20	3
West Angle	20	4
Gelliswick	20	5
Dale	20	3
Marloes	20	0
Nolton	19	9
Caerfai	20	3
Abereiddy	20	2
Traeth Llyfn	20	1
Goodwick Harbour	19	3
Goodwick Beach	20	2
Pwll Gwaelod	20	4
Cwm yr Eglwys	20	7
Newport Sands	20	2
Poppit Sands West	20	1
Poppit Sands East	20	3
Patch	20	15
Gwbert	20	13
Mwnt at Aberporth	20	0
Aberporth Slip	20	11
Aberporth E.	20	9
Tresaith	20	3
Penbryn	20	5
Llangranog	20	9

Table 2b (contd)

ANALYSIS OF NON-IDENTIFIED BATHING WATERS RESULTS FOR FAECAL STREPTOCOCCI

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
Cil Borth	20	3
Cwmtudu	20	4
Newquay N.	20	2
Newquay S.	20	4
Llanina	20	9
Little Quay(Cei Bach)	20	3
Gilfach yr Halen	20	2
Aberaeron S.	20	6
Aberaeron N.	19	11
Aberaeron	19	15
Aberarth	20	1
Llanon	20	6
Llansantffraid	20	1
Llanrhystud S.	20	3
Morfa Bychan at Slipway	20	4
Tanybwllch	20	2
Aberystwyth Harbour-Slip	20	12
Clarach Bay S.	20	8
Clarach Bay N.	20	7
<u>North</u>		
Tal-y-Bont	20	4
Llanenddwyn	20	2
Garreg Wen	20	9
Black Rock Sands (Morfa)	20	1
Porth Dinllaen	20	3
Niwbrch (Llanddwyn)	21	3
Porth Gwr Mawr	21	17
Porth Dafarch	21	5
Llanfairfechan Shore Rd	21	3
Penmeanmawr (22995)	22	9
Morfa Conwy Site AC	22	8
Deganwy Nrth Shltr	22	9
Penrhyn Bay	21	13
Colwyn Bay (25042)	20	4
Colwyn Bay (25041)	20	8

Table 3

COMPARISON OF 1986 TO 1993 COMPLIANCE FOR IDENTIFIED BATHING WATERS WITH "I" VALUES FOR FAECAL AND TOTAL COLIFORMS AS REPORTED BY THE DOE

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992#</u>	<u>1993</u>	<u>Included in</u> <u>Dwr Cymru cyf</u> <u>Programme</u> <u>& Completion Date</u>
<u>South East</u>									
Jacksons Bay	F	F	F	F	F	F	F	P	x end '97
Whitmore Bay	F	F	F	F	F	P	F	P	x end '97
Cold Knap Beach	F	F	F	P	F	P	P	P	x end '97
<u>South West</u>									
Southerndown Beach	F	P	F	P	P	P	P	P	x early '90
Trecco Bay	F	F	P	F	P	P	P	P	x early '91
Sandy Bay	F	F	F	P	F	P	P	P	x early '91
Rest Bay	F	P	P	P	P	P	P	P	x early '91
Aberafan Slip	F	P	P	P	P	P	P	P	x '95
Swansea Bay	F	F	F	P	F	P	F	F	x end '97
Bracelet Bay	P	P	P	P	P	P	P	P	x end '97
Limeslade Bay	F	F	P	F	P	P	P	P	x end '97
Langland Bay	F	P	P	F	P	P	P	F	x end '97
Caswell Bay	P	F	P	P	P	P	F	P	x end '97
Oxwich Bay	P	P	P	P	P	P	P	P	x end '97
Port Eynon Bay	P	P	P	P	P	P	P	P	
Rhossili Beach	F	P	P	P	P	P	P	P	x '90
Pembrey Beach	P	P	P	P	P	P	P	P	
Pendine Beach	P	P	P	P	P	P	P	P	
Amroth Beach	F	F	P	P	P	P	P	P	x '95
Saundersfoot Beach	P	F	P	P	F	P	P	P	x end '95
Tenby N. Beach	P	F	F	P	P	P	P	P	x end '95
Tenby S. Beach	F	P	P	P	P	P	P	P	
Broadhaven	F	P	P	P	P	P	P	P	x '93
Newgale Beach	F	P	P	P	P	P	P	P	x '93
Whitesands	P	P	P	P	P	P	P	P	
Newport Sands N.	P	P	P	P	P	P	P	F	
Traeth Gwyn-New Quay	P	P	P	P	P	P	P	P	
Aberystwyth S. Beach	F	F	P	P	F	P	F	F	x '95
Aberystwyth N. Beach	P	P	P	P	P	P	P	P	x '95
<u>North</u>									
Aberdyfi	**				F	P	F	F	x '95
Borth	P	P	P	P	P	P	P	P	
Tywyn	F	P	P	P	P	P	P	P	x '95
Fairbourne Beach	P	P	P	P	P	P	P	P	x '94
Barmouth	P	P	P	P	P	P	P	P	x '89
Llandanwg Beach	P	P	P	P	P	P	P	P	x '95
Harlech	P	P	P	P	P	P	P	P	x '94
Morfa Bychan	F	F	P	P	P	P	F	P	
Criccieth Beach E.	P	F	P	P	F	P	F	P	x '95
Pwllheli Beach	P	P	P	P	P	P	P	P	x '95
Abersoch	P	P	F	P	P	P	P	P	
Morfa Dinlle	*		P	P	P	P	P	P	
Benllech	P	F	P	P	F	F	P	P	x '92
Trearddur Bay	F	F	P	P	P	P	P	P	x end '91
Rhosneigr	**				P	P	P	P	
Llandudno W.	F	F	F	F	F	F	F	F	x end '95
Llandudno N.	P	P	P	P	F	P	P	P	

Table 3 (contd)

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992#</u>	<u>1993</u>	<u>Included in Dwr Cymru cyf Programme</u>	
Colwyn Bay	P	P	P	P	P	P	P	F	x	'95
Sandy Cove/Kinmel	F	F	F	F	F	F	F	P	x	'94
Rhyl	F	F	F	F	F	F	F	F	x	'94
Prestatyn	F	P	P	P	F	P	P	P		
W. Kirby	***					F	F	F		
Total No. Waters	47	47	48	48	50	51	51	51		
Total No. Pass	23	28	37	40	35	45	39	42		
% Pass	49	60	77	83	70	88	76	82		

* This site was identified as falling within the scope of the Bathing Waters directive from 1988, however 1986 and 1987 samples confirm that it would have passed during those two years.

** These two sites were identified from 1990, analysis of samples taken in previous years shows that both sites would have failed in 1988 and both would have passed in 1989.

*** This site was identified from 1991. It is situated in England but falls within the Welsh Region of the NRA.

From 1992 all samples were subject to "confirmation" of analysis compared with previous years "presumptive" results.

1986 data from WWA 1986 Bathing Water Survey Report
 1987 data from WWA 1987 Bathing Water Survey Report
 1988 data from WWA 1988 Bathing Water Survey Report
 1989 data from Welsh Region NRA 1989 Bathing Waters Report
 1990 data from Welsh Region NRA 1990 Bathing Waters Report
 1991 data from Welsh Region NRA 1991 Bathing Waters Report
 1992 data from Welsh Region NRA 1992 Bathing Waters Report

NB Amendments have been made to this table to correct errors reported in the 1989 Bathing Waters Report.

CRITERIA FOR ASSESSING COMPLIANCE WITH EC BATHING WATERS DIRECTIVE STANDARDS

1. Article 3 of the EC Directive on the quality of bathing waters (76/160/EEC) requires member states to set bathing water quality standards no less stringent than those specified as "I" values in the Annex to the Directive. Article 3 also requires member states to endeavour to observe "G" values as guidelines, whether or not there is a corresponding "I" value.
2. Article 5 sets out the detailed requirements for compliance.
For "I" value determinands:-
 - a) 95% of the samples must comply with the "I" value
 - b) The 5% not complying with the "I" value must not allow consecutive samples taken at statistically valid intervals to exceed the "I" value, ie. "I" value failures must be of short duration.

For "G" value determinands:-

- a) 90% of the samples must conform with the "G" value (80% in the case of total coliform and faecal coliform parameters).
- b) The 10 (or 20%) not complying with the "G" value must not allow consecutive samples taken at statistically valid intervals to not exceed the "G" value, ie. "G" value failures should be of short duration.

Quality Standards for Bathing Waters used in this Report

<u>Parameter</u>	<u>Imperative Standard</u>	<u>Guide Standard</u>
<u>Microbiological</u>		
Faecal coliforms	2000/100 ml	100/100 ml
Total coliforms	10000/100 ml	500/100 ml
Faecal streptococci		100/100 ml
Salmonella	0 / litre	
Enteroviruses	0 PFU/10 litres	

Appendix 1 (contd)

<u>Parameter</u>	<u>Imperative Standard</u>	<u>Guide Standard</u>
<u>Physico-chemical</u>		
pH	6 - 9	-
Colour	No abnormal change in colour	-
Mineral Oils	No film visible on water surface and no odour	0.3 mg / litre
Surface Active Substances	No lasting foam	0.3 mg / litre
Phenols	No specific odour (0.05 mg / litre)	0.005 mg / litre
Transparency *	Extinction depth of 1m for Secchi disc - equivalent to 6.665 ftu (turbidity)	Extinction depth of 2m - equivalent turbidity value not yet calculated
Tarry Residues and Persistent Floating Solids	-	Must be absent

* Welsh Region has been granted a derogation for transparency at all its bathing waters so is not required to comply with these standards.

Appendix 2

IDENTIFIED BATHING WATER SAMPLE POINT AND DOE REFERENCE NUMBERS

<u>Bathing Water</u>	<u>Sampling Point Number</u>	<u>DOE Reference Number</u>
<u>South East</u>		
Jacksons Bay Beach, Barry	19055	36100
Whitmore Bay Central, Barry	19034	36200
Cold Knap Beach, Barry	19037	36300
<u>South West</u>		
Southerndown Beach (Centre)	19100	36400
Trecco Bay Central, Porthcawl	19114	36500
Sandy Bay Central, Porthcawl	19117	36600
Rest Bay, Porthcawl	19122	36700
Aberafan Slip	19051	36800
Swansea Bay at Slip	74006	36900
Bracelet Bay, Mumbles Head	39105	37000
Limeslade Bay	39106	37100
Langland Bay West	39109	37200
Caswell Bay Central	39111	37300
Oxwich Bay West End	39123	37400
Port Eynon Bay West	39127	37500
Rhossili Beach at Hillend	74010	37600
Pembrey Beach, Cefn Sidan	39005	37700
Pendine Beach East	39010	37800
Amroth Beach Central	39013	37900
Saundersfoot Beach Slip	39017	38000
Tenby North Beach, Gosker Rock	39020	38100
Tenby South Beach, Old Outfall	39024	38200
Broadhaven Centre	84231	38300
Newgale Beach Centre	39048	38400
Whitesands Centre	84232	38500
Newport Sands North	39065	38600
Traeth Gwyn, New Quay	39080	38700
Aberystwyth South Beach	39091	38800
Aberystwyth North Beach	39093	38900
<u>North</u>		
Aberdyfi	20171	39050
Borth, Opposite Hotel	20023	39000
Tywyn Main Beach Access	20019	39100
Fairbourne Beach	20402	39200
Barmouth Coastguard Station	20014	39300
Llandanwg, Centre of Beach	20028	39400
Harlech, North of Beach Access	22596	39500
Morfa Bychan, Black Rock Sands	22539	39600
Criccieth Beach East	23142	39700
Pwllheli Beach	22589	39800
Abersoch, South End	22552	39900
Morfa Dinlle	22564	39970
Benllech	27551	40100
Trearddur Bay	27532	40000
Rhosneigr	27536	39990
Llandudno West Shore	25032	40200
Llandudno North Shore	25046	40300
Colwyn Bay, Op. Railway Underpass	25049	40400
Sandy Cove, Kinmel Bay	3604	40500
Rhyl, High Street	3608	40600
Prestatyn Central, West Car Park	3612	40700
W. Kirby, Dee Lane	3646	40750

Appendix 3

NON-IDENTIFIED BATHING WATERS SITES SAMPLED IN 1993

<u>Bathing Water</u>	<u>Sample Point Number</u>
<u>South East</u>	
Penarth Yacht	19029
St Marys Well Bay	19032
Little Island	19056
Watchouse Bay	68603
Fontygary Bay	19038
<u>South West</u>	
Llantwit Major Beach	74050
Aberafan West	19052
Jersey Marine East	74026
Jersey Marine Central	39153
Jersey Marine West	39097
Swansea Bay County Hall	74060
Swansea Bay Black Pill	39101
Mumbles Knap Rock	39103
Mumbles Head Pier	39104
Three Cliffs Bay	39116
Broughton Beach	74025
Llanelli Beach	39001
Burry Port Beach	39003
Wisemans Bridge	32797
Lystep	39026
Skrinkle	39423
Manorbier Beach	39027
Freshwater East	39030
Barafundle	39136
Broad Haven South	32422
Freshwater West	39031
West Angle	39032
Gelliswick	39037
Dale	39040
Marloes	32788
Nolton	39046
Caerfai	39142
Abereiddy	39053
Traeth Llyfn	32789
Goodwick Harbour	39058
Goodwick Beach	39059
Pwll Gwaelod	32790
Cwm yr Eglwys	32791
Newport Sands	39064
Poppit Sands West	39067
Poppit Sands East	39068
Patch	32424
Gwbert	83515
Mwnt at Aberporth	32425
Aberporth Slip	39072
Aberporth E.	83502
Tresaith	39073
Penbryn	39147
Llangranog	39075

New
EC spt.

Appendix 3 (contd)

NON-IDENTIFIED BATHING WATERS SITES SAMPLED IN 1993

<u>Bathing Water</u>	<u>Sample Point Number</u>
Cil Borth	32851
Cwmtudu	32426
Newquay N.	39077
Newquay S.	39079
Llanina	39146
Little Quay(Cei Bach)	39081
Gilfach yr Halen	32427
Aberaeron S.	39082
Aberaeron N.	39083
Aberaeron	39427
Aberarth	32428
Llanon	32429
Llansantffraid	32430
Llanrhystud S.	39087
Morfa Bychan at Slipway	32431
Tanybwllch	32432
Aberystwyth Harbour-Slip	82103
Clarach Bay S.	39095
Clarach Bay N.	39096
<u>North</u>	
Tal-y-Bont	20026
Llanenddwyn	20027
Garreg Wen	23253
Black Rock Sands (Morfa)	22540
Porth Dinllaen	22559
Nirbwrch (Llanddwyn)	27537
Porth Gwr Mawr	27544
Porth Dafarch	27546
Llanfairfechan Shore R	23245
Penmeanmawr (22995)	22995
Morfa Conwy Site AC	23246
Deganwy Nrth Shltr	25034
Penrhyn Bay	25045
Colwyn Bay (25042)	25042
Colwyn Bay (25041)	25041

Appendix 4

SUMMARY DATA FOR IDENTIFIED BATHING WATERS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
Jacksons Bay	20	90-2700	20	580-8000
Whitmore Bay	20	100-2340	20	180-7000
Cold Knap Beach	20	20-1000	20	144-3500
<u>South West</u>				
Southerndown Beach	20	<10-2000	20	30-5600
Trecco Bay	20	<10-320	20	<10-600
Sandy Bay	20	<10-300	20	20-2500
Rest Bay	20	<10-190	20	30-1000
Aberafan Slip	20	10-1700	20	20-2000
Swansea Bay	20	10-11000	20	80-20000
Bracelet Bay	20	10-3400	20	100-10000
Limeslade Bay	20	30-2160	20	70-4800
Langland Bay	20	<10-2400	20	30-4800
Caswell Bay	20	<10-300	20	20-1600
Oxwich Bay	20	<10-50	20	<10-108
Port Eynon Bay	20	<10-190	20	<10-400
Rhossili Beach	20	<10-180	20	<10-200
Pembrey Beach	20	<10-340	20	<10-1300
Pendine Beach	20	<10-840	20	<10-1300
Amroth Beach	20	<10-320	20	<10-2000
Saundersfoot Beach	20	10-1440	20	20-15000
Tenby N. Beach	20	<10-350	20	<10-2700
Tenby S. Beach	20	<10-1080	20	<10-6400
Broadhaven	20	<10-1400	20	<10-1600

<u>Salmonella</u>		<u>Viruses</u>		<u>Faecal Strep.</u>	
<u>No.</u> <u>Samples</u>	<u>+ve</u> <u>Result</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(b)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
2	1	2	<1-2	20	48->600
2	0	2	1	20	44-400
2	0	0		20	2-200
2	0	0		20	<1-192
2	0	0		20	<2-288
2	1	0		20	2-560
2	1	0		20	<1-400
2	0	0		20	4-448
2	0	2	<1-1	20	2-488
2	0	0		20	<1-252
2	0	0		20	11-418
2	0	0		20	2-226
2	0	2	<1-3	20	1-199
2	0	0		20	<1-52
2	0	0		20	<1-74
2	0	0		20	<1-68
2	0	0		20	<1-240
2	0	0		20	<1-800
2	1	0		20	<1-152
2	1	0		20	10-752
2	0	0		20	<1-336
2	0	0		20	1-448
2	0	0		20	<1-600

Appendix 4 (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
Newgale Beach	20	<10-160	20	<10-200
Whitesands	20	<10-60	20	<10-160
Newport Sands N.	20	<10-5000	20	<10-8800
Traeth Gwyn, New Quay	20	<10-19400	20	<10-22000
Aberystwyth S. Beach	20	<10-5400	20	63-10600
Aberystwyth N. Beach	20	<10-3300	20	<10-8800
<u>North</u>				
Aberdyfi	20	10-5300	20	60-6570
Borth	20	<10-600	20	<10-800
Tywyn	20	<10-3000	20	<10-3700
Fairbourne Beach	20	<10-460	20	<10-810
Barmouth	20	<10-1130	20	<10-1540
Llandanwg Beach	20	10-3700	20	40-4100
Harlech	20	<10-570	20	<10-1206
Morfa Bychan	20	<10-1310	20	<10-3000
Criccieth Beach E.	20	<10-2421	20	<10-6500
Pwllheli Beach	20	<10-350	20	<10-2560
Abersoch	20	<10-2170	20	<10-4140
Morfa Dinlle	20	<10-850	20	<10-960
Benllech	20	<10-3200	20	10-8100
Trearddur Bay	21	<10-2200	21	10-2200
Rhosneigr	21	<10-70	20	<10-110
Llandudno W.	22	<10->20000	22	<10->20000
Llandudno N.	20	<10-560	20	20-850
Colwyn Bay	20	<10-6300	20	20-8500
Sandy Cove/Kinmel Bay	20	40-2800	20	210-6000
Rhyl	20	40-8800	20	40->20000
Prestatyn	20	<10-1480	20	10-3600
W. Kirby	20	20->20000	20	140-27400

(a) = No./100 ml

(b) = PFU/10 litres

* Coliform results "confirmed"

<u>Salmonella</u>		<u>Viruses</u>		<u>Faecal Strep.</u>	
<u>No.</u> <u>Samples</u>	<u>+ve</u> <u>Result</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(b)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
2	0	0		20	<1-66
2	1	0		20	<1-57
2	0	0		20	1->600
2	1	0		20	<1->300
2	0	2	<1-1	20	1-2100
2	0	0		20	1-800
2	0	2	1-2	20	10-810
2	0	0		20	1-192
2	0	0		20	1->2000
2	0	0		20	<1-690
2	0	0		20	<1-570
2	0	0		20	1-460
2	0	0		20	<1-800
2	0	2	<1	20	<1-530
2	0	2	<1	20	1-760
2	0	0		20	<1-200
2	0	0		20	<1-500
2	0	0		20	<1->2000
2	0	0		20	3->2000
2	0	0		21	3-1950
2	0	0		21	<1-58
2	0	2	<1-1	22	<1->5000
2	0	0		20	1-2680
2	0	0		20	<1->2000
2	0	2	<1-23	20	2-1270
2	1	2	1-23	20	3-940
2	1	0		20	1-4730
2	1	2	<1	20	2-4240

Appendix 5

SUMMARY DATA FOR NON-IDENTIFIED BATHING WATERS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
<u>South East</u>						
Penarth Yacht	20	200-3000	20	1600-9200	20	156-920
St Marys Well Bay	20	100-2100	20	900-4700	20	46-504
Little Island	20	10-1600	20	160-6200	20	4-336
Watchouse Bay	19	<10-1800	19	40-6000	19	12-328
Fontygary Bay	19	10-1500	19	10-1700	19	<2-900
<u>South West</u>						
Llantwit Major Beach	21	<10-450	21	30-1100	21	4->600
Aberafan West 20 6	20	<10-900	20	10-7000	20	2-246
Jersey Marine East	20	<10-2400	20	10-9000	20	2-252
Jersey Marine Central	20	10-2000	20	20-6000	20	3-272
Jersey Marine West	20	<10-1120	20	40-3000	20	<5-282
Swansea Bay County Hall	20	10-1000	20	80-6500	20	2-332
Swansea Bay Black Pill	20	<10-5000	20	10-19600	20	2-752
Mumbles - Knap Rock	20	<10-1000	20	10-9700	20	2-818
Mumbles - Head Pier	20	10-6200	20	200->40000	20	16-1100
Three Cliffs Bay	20	<10-3300	20	10-3300	20	1-228
Broughton Beach	20	<10-270	20	10-300	20	<1-32
Llanelli Beach	20	40-16800	20	380->30000	20	26-1000
Burry Port Beach	20	<10-2000	20	50-11000	19	<2-140
Wisemans Bridge	20	<10-2100	20	10-9100	20	2-1040
Lystep	20	<10-760	20	<10-900	20	1-262
Skrinkle	20	<10-680	20	10-1240	20	<1-190
Manorbier Beach	20	<10-120	20	<10-570	20	<1-188
Freshwater East	20	<10-480	20	<10-11000	20	<1-1200
Barafundle	20	<10-630	20	<10-830	20	<1-260
Broad Haven South	20	<10-2660	20	<10-2710	20	<1-650
Freshwater West	20	<10-1270	20	<10-1320	20	<1-244
West Angle	20	<10-740	20	<10-740	20	<1-485
Gelliswick	20	<10-2500	20	10-14000	20	1-360
Dale	20	<10-4000	20	<10-7800	20	<1-480
Marloes	20	<10-140	20	<10-350	20	<1-61
Nolton	20	<10-1240	20	10-4000	19	3->600
Caerfai	20	<10-1500	20	<10-6500	20	<1-206
Abereiddy	20	<10-600	20	<10-1100	20	<1->300
Traeth Llyfn	20	<10-200	20	<10-350	20	<1-107
Goodwick Harbour	20	<10-4000	20	<10-6000	19	2-780
Goodwick Beach	20	<10-1040	20	10-3200	20	2-292
Pwll Gwaelod	20	<10-6000	20	50-8000	20	4-400
Cwm yr Eglwys	20	<10-4000	20	20-7000	20	2-490
Newport Sands	20	<10-740	20	10-1200	20	3->600
Poppit Sands West	20	<10-510	20	<10-1010	20	<1-162
Poppit Sands East	20	<10-1500	20	<10-2000	20	<1-148
Patch	20	10-7500	20	80->30000	20	2-972
Gwbert	20	<10-6000	20	400-7800	20	4-1280
Mwnt at Aberporth	20	<10-300	20	<10-580	20	<1-79
Aberporth Slip	20	<10-1200	20	40-12000	20	8-304
Aberporth E.	20	10-9200	20	20-9500	20	<2-1200
Tresaith	20	<10-1290	20	30-4000	20	4->300
Penbryn	20	<10-1260	20	10-1280	20	<1-490
Llangranog	20	10-1650	20	40-4500	20	10-360

Appendix 5 (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
Cil Borth	20	<10-1300	20	<10-2000	20	1-284
Cwmtudu	20	<10-1150	20	20-6000	20	1-216
Newquay N.	20	<10-1800	20	<10-10000	20	<1-230
Newquay S.	20	<10-770	20	<10-870	20	1-420
Llanina	20	<10-1800	20	<10-8000	20	2-800
Little Quay(Cei Bach)	20	<10-2080	20	<10-4800	20	2->300
Gilfach yr Halen	20	<10-1200	20	<10-3000	20	<1-142
Aberaeron S.	20	<10-910	20	<10-1120	20	<1-416
Aberaeron N.	20	<10-2460	20	50-3800	19	<5-2445
Aberaeron	20	<10-1900	20	<10-5700	19	24-4500
Aberarth	20	<10-580	20	<10-4400	20	2-188
Llanon	20	<10-2100	20	<10-9800	20	4->600
Llansantffraid	20	<10-600	20	<10-1300	20	1-108
Llanrhystud S.	20	<10-630	20	<10-1200	20	<1-280
Morfa Bychan at Slipway	20	<10-900	20	<10-9600	20	<1->300
Tanybwllch	20	<10-2000	20	30-12000	20	<1->300
Aberystwyth Harb./Slip	20	10-1200	20	50-12800	20	14-468
Clarach Bay S.	20	<10-22000	20	10-28800	20	1->400
Clarach Bay N.	20	<10-5000	20	30-9800	20	4->400
<u>North</u>						
Tal-y-Bont	20	<10-1310	20	<10-2400	20	<1-390
Llanenddwyn	20	<10-2700	20	<10-3300	20	<1-520
Garreg Wen	20	<10-9700	20	20-20200	20	4->2000
Black Rock Sands Morfa	20	<10-650	20	<10-1800	20	1-111
Porth Dinllaen	20	<10-670	20	<10-2260	20	<1-1140
Niwbwrch (Llanddwyn)	21	<10-2500	21	<10-2500	21	<1-3940
Porth Gwr Mawr	21	20-11100	21	90-16900	21	9-2010
Porth Dafarch	21	<10-2210	21	<10-4100	21	<1-970
Llanfairfechan Shore Rd	21	<10-5000	21	10-8500	21	2-1270
Penmeanmawr (22995)	22	10->20000	22	10->20000	22	1->2000
Morfa Conwy Site AC	22	20-8100	22	60-12700	22	1->2000
Deganwy Nrth Shltr	22	20-5700	22	20-9200	22	2->2000
Penrhyn Bay	21	110->20000	21	200-20300	21	4->2000
Colwyn Bay (25042)	20	<10-1750	20	20-3600	20	3-1110
Colwyn Bay (25041)	20	20-10200	20	30-10200	20	3->2000

(a) - No./100 ml

* "Confirmed" results reported for those Coliform samples exceeding 2000 per 100ml for Faecal coliforms and 10,000 per 100ml for Total Coliforms.

1993 BATHING WATERS REPORT

PART II

1. INTRODUCTION

- 1.1 Part II of the Bathing Waters Report contains information regarding compliance with the "G" standards for those parameters for which "I" standards also exist, ie faecal and total coliforms. Compliance with the "G" standards is not mandatory but the Directive states that Member States should "endeavour" to observe them as guidelines. The "G" standard compliance is specified in Appendix 1 of the main report.

2. BATHING WATERS IDENTIFIED AS FALLING WITHIN THE TERMS OF THE DIRECTIVE

- 2.1 Table 5 summarises faecal and total coliform sample statistics and compliance with the "G" values for the 51 identified Welsh Region bathing waters in 1993. "Confirmed" * results for Faecal and Total coliforms are used instead of the "Presumptive" results which had been reported prior to 1992. This indicates that overall 9 (18%) complied with the combined standard.

3. BATHING WATERS NOT IDENTIFIED AS FALLING WITHIN THE TERMS OF THE DIRECTIVE

- 3.1 The compliance of the non-identified bathing waters with the faecal/total coliform "G" standard of the Bathing Waters Directive is shown in Table 6. All samples with numbers in excess of 2000 per 100ml for Faecal coliforms and 10,000 per 100ml for Total coliforms were "confirmed" *. This shows that 12 (14%) complied with this Directive standard in 1993.

4. SUMMARY

- 4.1 Summary table showing compliance with the combined faecal and total coliform "G" and "I" standards:- (All samples were "confirmed" for identified waters, but at non identified waters only those samples which exceeded the 2000/100ml faecal coliform standard or the 10000/100ml total coliform standard were "confirmed".)

Bathing Water	Number	"I" Standard Pass		"G" Standard Pass	
		Number	Percent	Number	Percent
EC	51	42	82	9	18
non EC	83	70	84	12	14

* "Confirmation" of the coliforms tests requires further analysis of all samples to substantiate the result.

Table 5 (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>			<u>Total Coliforms</u>			<u>Overall</u>
	<u>No.</u> <u>Samples</u>	<u>No.</u> <u>Fail</u>	<u>Pass/</u> <u>Fail</u>	<u>No.</u> <u>Samples</u>	<u>No.</u> <u>Fail</u>	<u>Pass/</u> <u>Fail</u>	<u>Pass/</u> <u>Fail</u>
Colwyn Bay	20	8	F	20	4	P	F
Sandy Cove/Kinmel Bay	20	19	F	20	17	F	F
Rhyl	20	17	F	20	15	F	F
Prestatyn	20	15	F	20	11	F	F
W. Kirby	20	17	F	20	11	F	F

Table 6

COMPLIANCE OF NON-IDENTIFIED BATHING WATERS WITH "G" VALUES FOR
FAECAL AND TOTAL COLIFORMS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>			<u>Total Coliforms</u>			<u>Overall</u>	
	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>Pass/Fail</u>	<u>Pass/Fail</u>
<u>South East</u>								
Penarth Yacht	20	20	F	20	20	F		F
St Marys Well Bay	20	18	F	20	20	F		F
Little Island	20	13	F	20	12	F		F
Watchouse Bay	19	12	F	19	10	F		F
Fontygary Bay	19	9	F	19	4	F	P	F
<u>South West</u>								
Llantwit Major Beach	21	11	F	21	8	F		F
Aberafan West	20	9	F	20	5	F		F
Jersey Marine East	20	12	F	20	9	F		F
Jersey Marine Central	20	12	F	20	10	F		F
Jersey Marine West	20	10	F	20	7	F		F
Swansea Bay County Hall	20	13	F	20	11	F		F
Swansea Bay Black Pill	20	15	F	20	16	F		F
Mumbles - Knap Rock	20	14	F	20	12	F		F
Mumbles - Head Pier	20	17	F	20	15	F		F
Three Cliffs Bay	20	3	F P	20	2	F P		F P
Broughton Beach	20	5	F	20	0	P		F
Llanelli Beach	20	19	F	20	19	F		F
Burry Port Beach	20	11	F	20	7	F		F
Wisemans Bridge	20	10	F	20	8	F		F
Lystep	20	1	P	20	1	P		P
Skrinkle	20	4	P	20	1	P		P
Manorbier Beach	20	1	P	20	1	P		P
Freshwater East	20	2	P	20	2	P		P
Barafundle	20	1	P	20	1	P		P
Broad Haven South	20	2	P	20	1	P		P
Freshwater West	20	4	F P	20	3	F P		F
West Angle	20	5	F	20	4	P		F
Gelliswick	20	9	F	20	6	F		F
Dale	20	6	F	20	4	P		F
Marloes	20	1	P	20	0	P		P
Nolton	20	10	F	20	7	F		F
Caerfai	20	2	P	20	1	P		P
Abereiddy	20	4	P	20	2	P		P
Traeth Llyfn	20	1	P	20	0	P		P
Goodwick Harbour	20	7	F	20	7	F		F
Goodwick Beach	20	11	F	20	6	F		F
Pwll Gwaelod	20	8	F	20	5	F		F
Cwm yr Eglwys	20	8	F	20	5	F		F
Newport Sands	20	7	F	20	5	F		F
Poppit Sands West	20	5	F	20	2	P		F
Poppit Sands East	20	7	F	20	4	P		F
Patch	20	16	F	20	17	F		F
Gwbart	20	11	F	20	18	F		F
Mwnt at Aberporth	20	3	P	20	1	P		P
Aberporth Slip	20	12	F	20	11	F		F
Aberporth E.	20	14	F	20	12	F		F
Tresaith	20	5	F	20	6	F		F
Penbryn	20	6	F	20	2	P		F
Llangranog	20	11	F	20	10	F		F

FS

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Table 6 (Contd)

COMPLIANCE OF NON-IDENTIFIED BATHING WATERS WITH "G" VALUES FOR
FAECAL AND TOTAL COLIFORMS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>			<u>Total Coliforms</u>			<u>Overall</u>
	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>Pass/Fail</u>
Cil Borth	20	9	F	20	6	F	F
Cwmtudu	20	12	F	20	9	F	F
Newquay N.	20	6	F	20	5	F	F
Newquay S.	20	3	P	20	1	P	PF
Llanina	20	7	F	20	6	F	F
Little Quay(Cei Bach)	20	7	F	20	3	P	F
Gilfach yr Halen	20	8	F	20	5	F	F
Aberaeron S.	20	7	F	20	4	P	F
Aberaeron N.	20	10	F	20	11	F	F
Aberaeron	20	16	F	20	12	F	F
Aberarth	20	3	P	20	3	FP	F P
Llanon	20	11	F	20	4	FP	F P
Llansantffraid	20	2	P	20	3	FP	F P
Llanrhystud S.	20	4	FP	20	3	P	F P
Morfa Bychan at Slipway	20	10	F	20	9	F	F
Tanybwllch	20	7	F	20	7	F	F
Aberystwyth Harb./Slip	20	16	F	20	19	F	F
Clarach Bay S.	20	14	F	20	12	F	F
Clarach Bay N.	20	10	F	20	9	F	F
<u>North</u>							
Tal-y-Bont	20	8	F	20	2	P	F
Llanenddwyn	20	7	F	20	2	P	F
Garreg Wen	20	14	F	20	13	F	F
Black Rock Sands Morfa	20	12	F	20	6	F	F
Porth Dinllaen	20	6	F	20	5	F	F
Niwbrch (Llanddwyn)	21	4	FP	21	2	P	F P
Porth Gwr Mawr	21	18	F	21	14	F	F
Porth Dafarch	21	8	F	21	6	F	F
Llanfairfechan Shore Rd	21	7	F	21	6	F	F
Penmeanmawr (22995)	22	13	F	22	9	F	F
Morfa Conwy Site AC	22	17	F	22	11	F	F
Deganwy Nrth Shltr	22	17	F	22	15	F	F
Penrhyn Bay	21	21	F	21	19	F	F
Colwyn Bay (25042)	20	8	F	20	6	F	F
Colwyn Bay (25041)	20	11	F	20	6	F	F

* All samples with numbers in excess of 2000 per 100ml for Faecal coliforms, and 10,000 per 100ml for Total coliforms were "confirmed".