

EA-NORTH WEST BOX 4



ENVIRONMENT
AGENCY

ENVIRONMENT AGENCY
NORTH WEST REGION

REPORT ON EC DIRECTIVE COMPLIANCE 1996

Monitoring & Directives
SEPTEMBER 1997

SUMMARY

The following report summarises compliance with EC Directives in the north-west region for 1996.

Ten directives are discussed;

Dangerous Substances Directive	95% compliance with EQS in 1996
Bathing Water Quality Directive	60% compliance in 1996
Surface Water Abstraction Directives	75% compliance in 1996
Freshwater Fish Directive	96% compliance in 1996
Urban Wastewater Treatment Directive	
Nitrate Directive	
Shellfish Waters Directive	
Shellfish Hygiene Directive	
Habitats Directive	

General reasons for non-compliance with a Directive are reported in the main body of the text, however, more detailed information on non-compliance on a site by site basis together with ensuing action plans or pertinent comments are shown in the Appendices.

The Nitrate, Shellfish Waters, Shellfish Hygiene and Habitats Directive were not reported on in 1996 in the north-west region, so only a brief description of the directives and any developments are enclosed.

This document is intended to provide a snapshot on compliance within the region and if there is sufficient demand will be updated annually.

Any comments or suggestions should be addressed to Jon Greaves, Principal Monitoring and Directives at Richard Fairclough House.



DANGEROUS SUBSTANCES DIRECTIVE

Council Directive 76/464/EEC sets out a framework for the control of pollution by certain dangerous substances.

These substances are classed as List 1 if they are toxic, persistent and liable to bioaccumulate; and as List 2 if they have a deleterious effect on the aquatic environment.

Member states must take steps to eliminate pollution caused by List 1 substances and reduce pollution by List 2 substances. A substance does not become subject to List 1 methods of control, however, until a "daughter" Directive has been agreed.

The Surface Waters (Dangerous Substances) (Classification) Regulations 1989 (as amended in 1992) SI 337 introduced statutory Environmental Quality Standards (EQSs) for the 17 List 1 substances for which standards had been set in a "daughter" directive. The UK has chosen to adopt the EQS approach, which is permitted where it can be demonstrated that the EQS will be met in the receiving water downstream of the discharge.

Member States are required to set EQSs for List 2 substances and the UK has so far established national quality standards for 17 List 2 substances although these have yet to be given statutory effect in regulations.

Discharges liable to contain List 1 or List 2 substances have to be authorised in such a way that the EQS will be met in the receiving water. A large proportion of dischargers within the North West region who previously held National Rivers Authority Discharge Consents have now been authorised under the Integrated Pollution Control regime to discharge List 1 and List 2 substances.

Where an Environmental Quality Standard specified in a Directive has not been achieved then the reasons for non-compliance and any associated action plans to secure future compliance must be supplied to the Department of the Environment, Transport and the Regions (DETR) who then make formal submissions to the EC.

A summary of non-compliance is attached in appendix A together with limited comments; More detailed comments are shown overleaf.

LIST 1 COMPLIANCE 1996

Two EQS monitoring points did not comply with the specified List 1 Environmental Quality Standards during 1996 and both are attributed to pollution incidents from IPC Authorised processes, namely ICI at Runcorn and Belmont Bleaching and Dyeing Company discharging into Belmont Wastewater Treatment Works.

Eagley Brook d/s Belmont WwTW - PENTACHLOROPHENOL Annual Average 4.32ug/l (EQS =2ug/l)

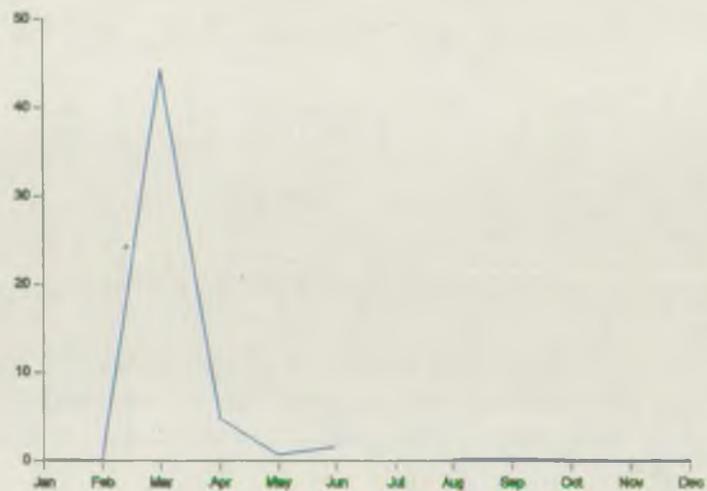
Failure to comply with the EQS was caused by the supply of PCP contaminated dye to the Belmont Bleaching & Dyeing company which was then released to the Waste water Treatment Works and from there to Eagley Brook.

The dye in question was Zeneca Solanthrene Navy RA, produced at plants in India. The problem originated when nitrobenzene, a raw material used in the manufacture of the dye became contaminated with phenol. This then became chlorinated in the production process, leading to the presence of PCP in the product at levels of 650ug/l. The phenol contamination arose through failure to clean the road tankers used to transport the raw materials.

Contaminated dye which had been supplied to many customers was recalled by the supplier following identification of the problem and the manufacturer has now ceased sourcing the dye in India to give greater control over the quality of the product. Additional quality control steps are in place within the company to prevent future supply of contaminated material.

The incident is unlikely to happen again and water quality within the river has returned to pre-incident levels.

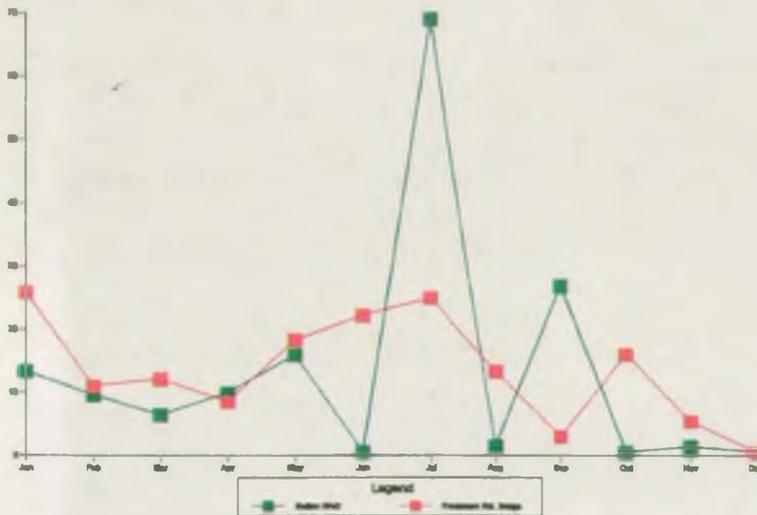
PCP concentration in Eagley Brook ug/l



**Weaver above Sutton Weir - 1,2-Dichloroethane
Annual Average 12.94 ug/l (EQS=10ug/l)**

**Weaver at Frodsham Road Bridge National Network Site - 1,2-Dichloroethane
Annual Average 13.4ug/l (EQS=10ug/l)**

1,2DCE concentrations in the Weaver ug/l



Failure to comply with the EQS for 1,2DCE at both sites is associated with losses of this substance from the ICI Runcorn site. The company notified the Agency of 7 unauthorised releases between February and July in 1996. In each case the company submitted an action

plan to prevent the recurrence of a similar problem.

The last of these releases caused the loss of 320kg of 1,2,DCE,(of which approximately 30kg reached the Weston canal) and occurred when a hose blew off during recommissioning of the vinyl chloride plant. The incident was the subject of an Agency prosecution action resulting in a £15,000 fine.

The incident is unlikely to happen again and 1,2 DCE levels within the canal have returned to pre-incident levels. ICI are currently in the early stages of a containment exercise, to review the potential for unauthorised aqueous releases from each plant on the Runcorn site and how such releases might be prevented.

A multi-million pound effluent treatment plant to remove chlorinated hydrocarbons from ICI discharges was commissioned during the middle of 1997.

General Compliance

Compliance with List 1 EQS continues to improve in 1996 compared to previous years. This is reflected in the improved water quality at background monitoring sites and the sediment or biota analysis which is undertaken to establish that levels of List 1 substances are not increasing over time. The graph below shows the overall mean mercury levels in sediment analysed in the Mersey estuary between 1975 and 1996. The increase between 1987 and 1992 is thought to be due to a redistribution of previously consolidated sediments within the estuary. All the available evidence shows that mercury concentrations in discharges to the estuary have been steadily declining since the mid 1970s and the sediments might be expected to reflect this change.

Mean Mercury Values for the Mersey Estuary (1975-1996)



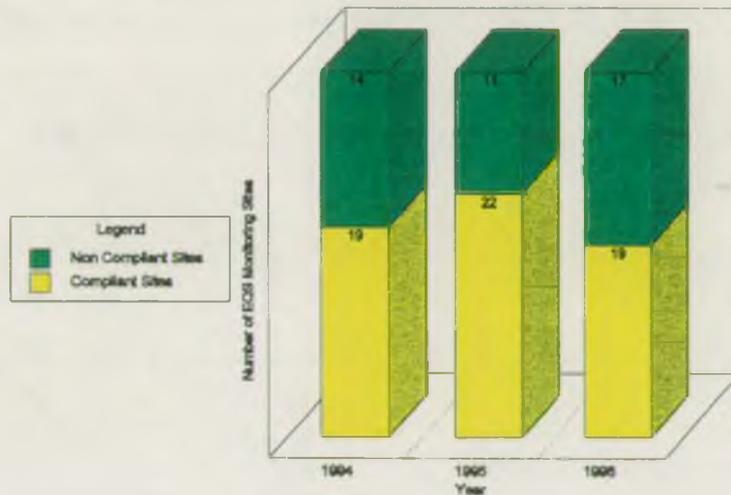
The mean mercury level quoted in 1996 (0.78mg/kg dry weight) is very similar to the results from the previous two years, although marginally higher and would seem to indicate that the values are now relatively static within the estuary, although the confidence limits in 1996 were broader than previous years. Extra sampling in 1997 to narrow the confidence bands should provide a more definitive answer next year for mean concentrations.

List 2 Compliance

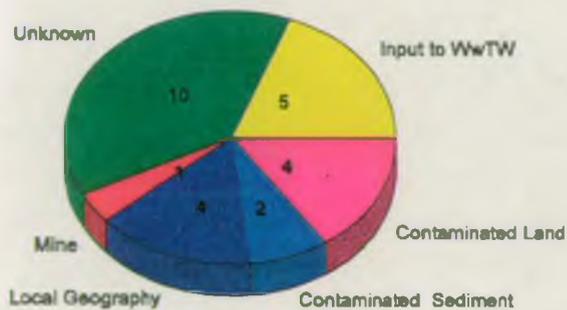
During 1996 the number of reported List 2 monitoring sites within the region was increased from 33 to 36. They comprise 20 freshwater sites and 16 saline sites. 17 of the 36 sites failed to comply with the List 2 standards.

The graph below shows the regional compliance with the Directive since 1994.

List 2 Site Compliance 1994-1996



Causes of Non-Compliance at List 2 Sites

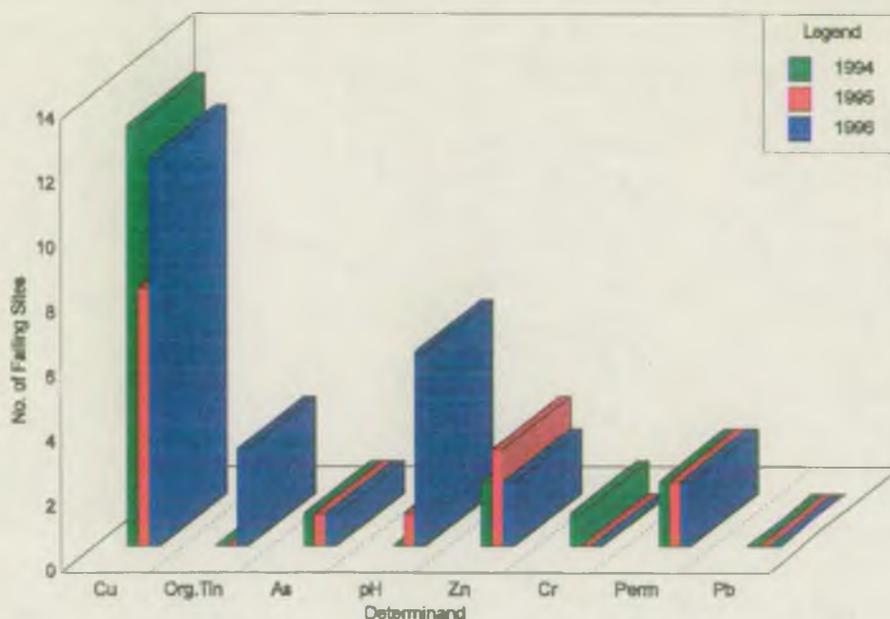


The causes of non-compliance are summarised in the chart opposite.

A large proportion of the failing sites have unknown reasons for non-compliance and are under investigation. During 1994 and 1995 the majority of exceedences were recorded for Copper and Zinc and thought to relate to diffuse inputs from contaminated land.

Several of the contaminated land sites are having remediation works undertaken and compliance is continuing to improve.

List 2 Determinand Compliance 1994-1996



The graph above shows individual determinand compliance between 1994 and 1996. During 1996 an increasing number of failures were reported for pH and Tri-butyl Tin (TBT). Five of the six pH exceedences were recorded above the EQS value and had unknown reasons for non-compliance but could perhaps be linked to the increasing number of eutrophication problems being highlighted within the region with an alkaline pH value.

TBT monitoring has increased in recent years with the authorisation under IPC of many shipyards within the region. Investigations are currently underway to look at TBT sediment levels within the Mersey estuary to quantify if the sediment is having an impact on water quality within the estuary. If a link can be made between sediment concentrations and non-compliant water monitoring sites then it could be some time before compliance is achieved at some sites.

Summary details on non-compliant sites are available in Appendix A.

Latest

In March 1997 draft regulations were issued for an initial 13 List 2 substances from a total of 34 that the government have taken from the EC priority list in order to meet their obligations under the Dangerous Substances Directive. The second tranche of 21 substances are currently out to consultation and new regulations will be published shortly.

The additional substances to be covered are shown in the list below;

Arsenic
Dichlorvos
Atrazine and Simazine
Azinphos-methyl
Endosulphan
Trifluralin
Malathion
Fenitrothion
Triphenyltin and its derivatives
Tributyltin
4-chloro-3-methyl-phenol
2-chlorophenol
2,4-dichlorophenol
2,4D
1,1,1-trichloroethane
1,1,2-trichloroethane
Bentazone
Benzene
Biphenyl
Chloronitrotoluenes
Demetons
Dimethoate
Linuron
MCPA
Mecoprop
Mevinphos
Naphthalene
Omethoate
Toluene
Triaziphos
Xylene

The substances have a number of uses. The majority are pesticides but the list also includes solvents such as trichloroethane and xylene. When the regulations are implemented, the Agency will be required to authorise all point source discharges of these substances including concentration limits in discharge consents and IPC authorisations. The impact of the implementation of the standards, both on the Agency and UK industry is under review.

SURFACE WATER ABSTRACTION DIRECTIVE

Council Directives **75/440/EEC** concerning the quality required of surface water intended for the abstraction of drinking water and
 79/869/EEC concerning the methods of measurement and frequencies of sampling and analysis of surface water intended for the abstraction of drinking water

These Directives are intended to protect public health by ensuring suitable surface water quality for water intended for potable supply and comparable surveillance by member states to achieve the required standards.

Directive 75/440/EEC sets standards for 46 substances whilst Directive 79/869/EEC sets out the limit of detection, precision, accuracy and the reference method of analysis for the 46 substances. Drinking water includes all surface waters intended for human consumption and supplied by distribution networks for public use.

Regulations were issued in 1996 to transpose the directives into UK legislation by Statutory Instrument 3001 **The Surface Waters (Abstraction for Drinking Water)(Classification) Regulations 1996** and a subsequent Direction and Notice from Government to the Environment Agency to implement the regulations. The regulations classify inland freshwaters by reference to their suitability for abstraction for supply as drinking water into **DW1**, **DW2** and **DW3**. All the sites in the North West are classified as either **DW1** or **DW2**.

The sampling frequency is determined by the population served at the Water Treatment Works and the water quality of the source. 95% of samples must comply with the standards set.

The 1996 Direction from government focuses on the need to respect the guideline values specified in the directive. With this in mind the Environment Agency is now collecting data on all parameters, with the exception of microbiology, at all SWAD sites, twelve times a year. This will continue for 3 years and should enable us to derive operational standards against which to assess that there has been no deterioration in water quality over time.

Waivers

Waivers are permitted under the terms of the directive where exceptional geographical conditions exist or where the water undergoes natural enrichment by certain substances.

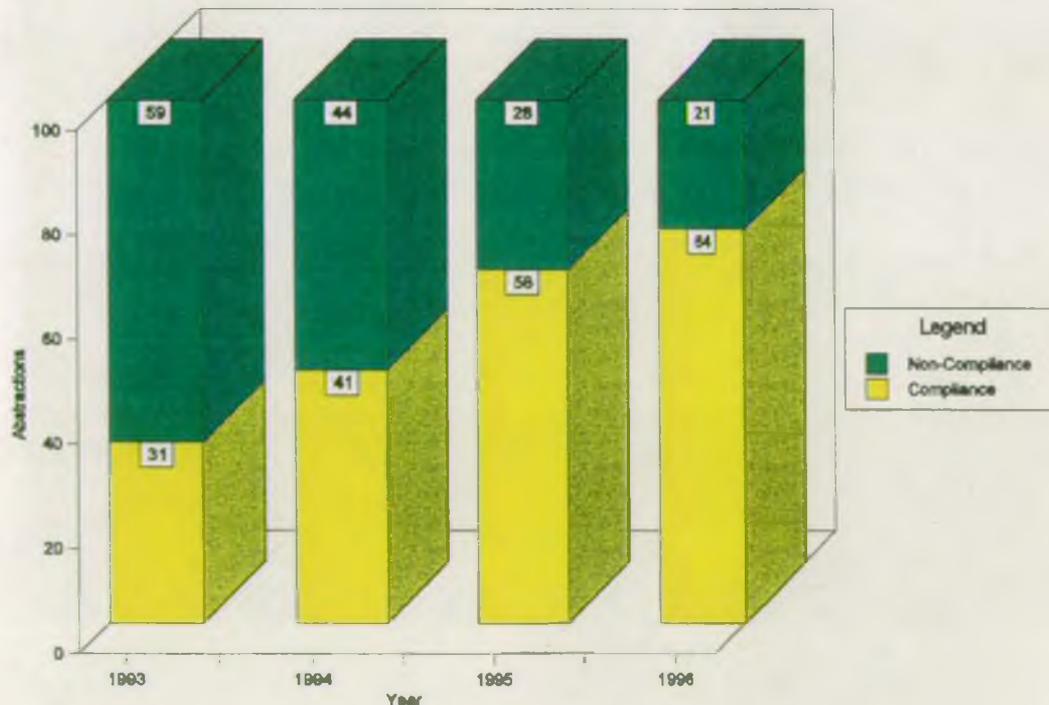
Compliance

Individual site compliance over the last three years together with any pertinent comments and follow up actions are supplied in Appendix B.

A minimum number of samples during abstraction are required to comply with the Directive, unless superior water quality can be demonstrated. Sampling at the time of abstraction has proven difficult in the past, with the EA relying on informal communication from NWW to find out if sites are abstracting. The process has become more formalised during 1996 with resulting improvements.

During 1996 compliance was assessed against the mandatory standards set out in the directive and the compliance is shown in the graph below.

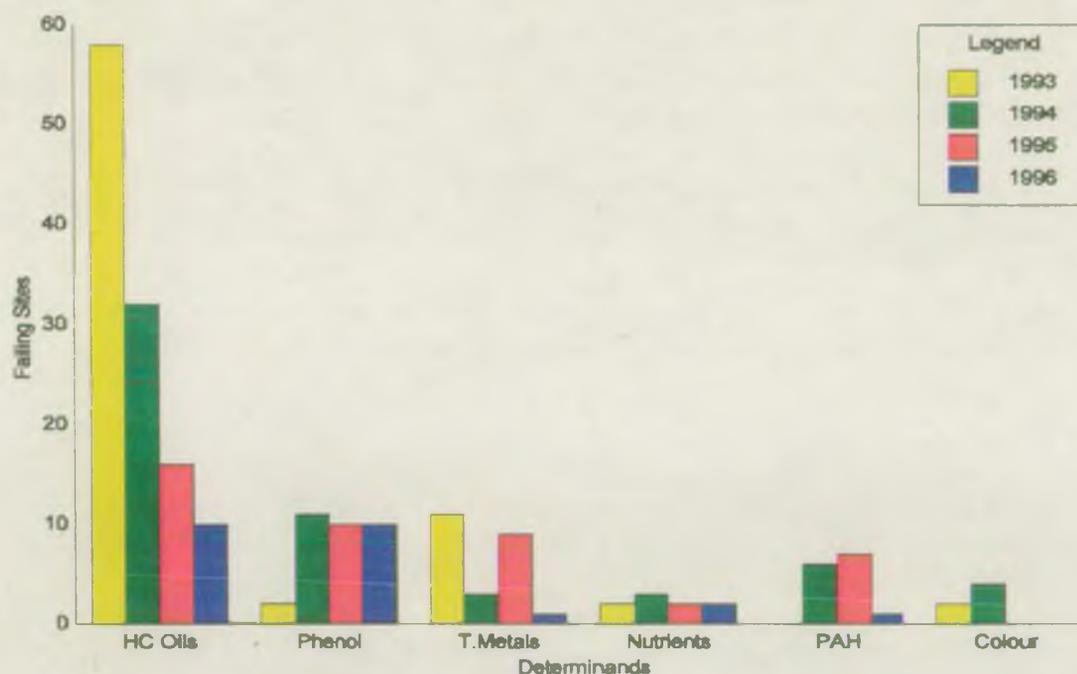
SWAD Site Compliance 1993-1996



Determinand Compliance

Individual determinand compliance is shown in the graph below. Two sites failed in 1996 due to elevated levels of Ammonia and investigations are being undertaken concerning a possible correlation between low water levels in the reservoirs and increased levels of Ammonia. Neither catchment has a defined input and there were no unusual circumstances recorded at the time of sampling.

SWAD Determinand Compliance 1993-1996



Phenols

All ten phenol failures in 1996 were recorded at DW1 sites, where the mandatory limit = 1ug/l. Seven phenol compounds are added to assess compliance, with less than being taken as half the face value. One positive result out of the seven will automatically trigger a failure with the current limits of detection (0.5ug/l), but this situation should be improved in 1997 as the minimum reporting value of phenols has now been reduced to 0.1ug/l.

Summary

Continuing improvements in analytical limits of detection have improved compliance in recent years and this improvement is expected to continue.

FRESHWATER FISH DIRECTIVE

Council Directive 78/659/EEC on the quality of fresh waters needing protection or improvement in order to support fish life.

The directive is aimed at protecting or improving the quality of waters to make them capable of supporting fish. Member states designate appropriate stretches and classify them into **Salmonid Waters (SW)** and **Cyprinid Waters (CW)**. Fourteen parameters are listed in the directive, but only 7 have mandatory (I) values against which compliance was assessed in 1996. The seven mandatory parameters are **Temperature, pH, Dissolved Oxygen, Zinc, Total Ammonium, Non-ionised ammonia and Total Residual Chlorine**.

A suitable methodology for determining total residual chlorine is not currently available and is currently not determined.

Approximately 60% of the regions inland waterways, 3400km, comprising 580 stretches have been designated under this directive, 2858km as Salmonid and 542km as Cyprinid.

Compliance

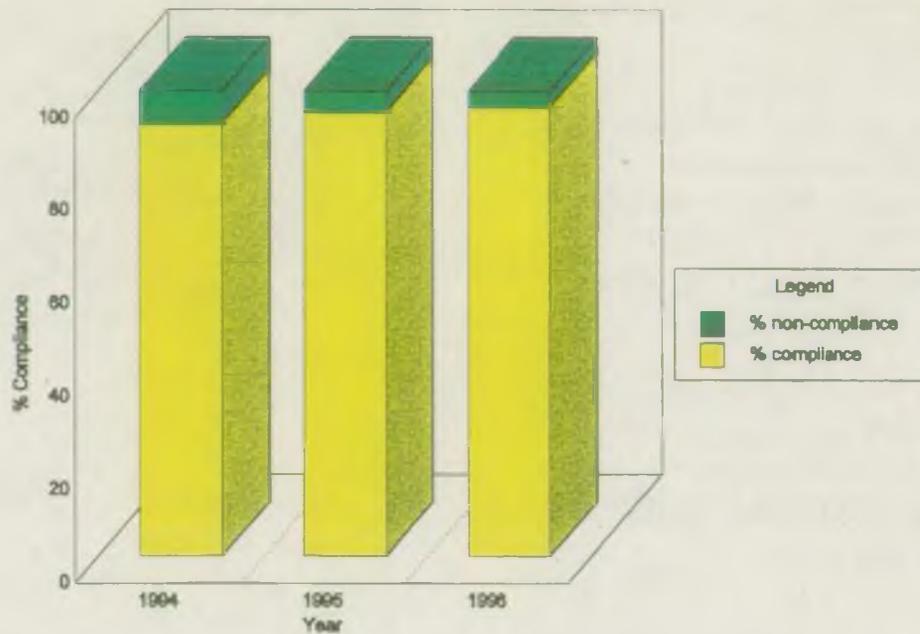
During 1996 monthly sampling of mandatory parameters were undertaken at most sites and if 11 out of 12 samples were at or better than the mandatory standards the site was judged to comply with the Directive requirements.

The graph overleaf shows compliance in the region with the mandatory standards between 1994 and 1996. Improvements have been noted each year with approximately 96% of the watercourses complying with the directive quality standards in 1996.

A reduction in sampling frequency is allowed if the water quality is good and in some cases the frequency may be reduced to zero where there is no risk from pollution and no threat to water quality. 18 sites did not comply with the required sampling frequency in the directive during 1996, but better auditing procedures should help with this during 1997.

Summary details on non-compliant sites are available in Appendix C together with future actions to ensure compliance.

Stretch Compliance 1994-1996

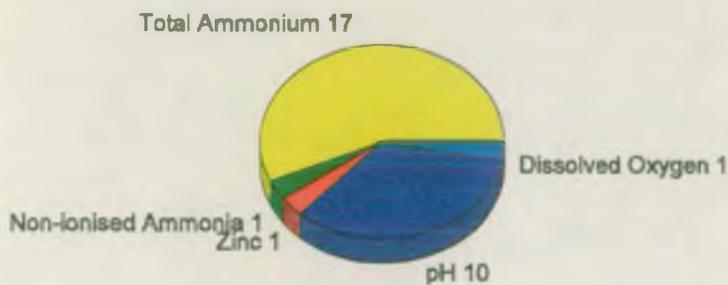


Derogations

Derogations are permitted on the grounds of exceptional weather or special geographic conditions and when designated waters are effected by natural enrichment i.e. through natural processes without human intervention. Several watercourses in the north west have derogations on the zinc standard due to abandoned mines.

Determinand Non-Compliance

The number of non-compliant determinands are shown in the chart opposite.

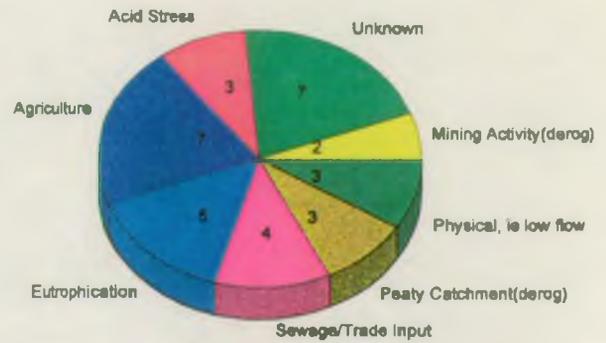


The most common cause of non-compliance within the North-West region is due to failure to comply with the mandatory standard for ammonia.

Several exceedences of the ammonia standard have been attributed to intensive farming.

Farm inspections and publicity campaigns have been undertaken in recent years and many small problems have been highlighted and rectified but there are still exceedences throughout the region from diffuse inputs.

It is possible to apply a relaxed ammonia standard if healthy fish populations are observed, but this information has not been readily available in the past.



An increasing number of pH exceedences in 1996, have been linked to eutrophication. 5 of the 10 pH exceedences were recorded as being from algal activity and 4 of the 5 were recorded at recognised UWWT Directive Sensitive Areas on the Leeds Liverpool Canal and the River Ribble. Improvements are expected as nutrient removal measures are taken at qualifying discharges.

Latest

Statutory Instrument SI 1331 The Surface Waters (Fishlife) (Classification) Regulations 1997 were issued in May, together with the Surface Waters (Fishlife) Directions 1997 to transpose the Directive into UK law. A Freshwater Fisheries Review Group was set up to look at the practical implementation of the regulations within the Agency. Their findings are currently being translated into policy which is likely to impact sampling from April 1998 onwards. The format is to be similar to the SWAD directive with information on all parameters in the Directive needing to be collected and site specific Operational Standards (OS) set to ensure no deterioration in water quality over time.

BATHING WATER DIRECTIVE

Council Directive 76/160/EEC concerning the quality of bathing water and the **Bathing Water(Classification) Regulations 1991 SI 1597** and subsequent Direction and Notice.

The objectives of the Bathing Water Directive is to improve or maintain the quality of bathing water for amenity reasons and to protect public health. It is not concerned with water used in swimming pools or water intended for therapeutic purposes.

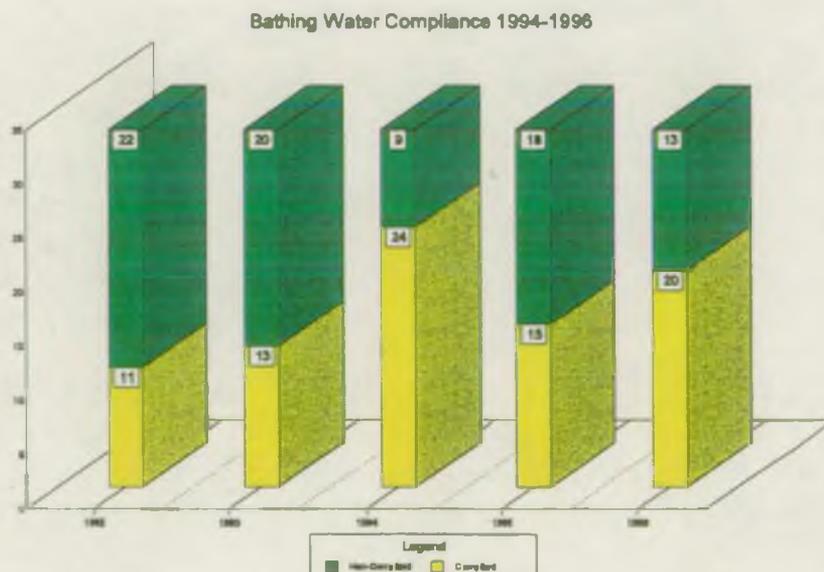
During 1996, 433 bathing waters were identified nationally, 33 of which can be found within north-west region.

Compliance

During 1996, 20 (60.6%) of the regions beaches complied with the mandatory total and faecal coliform standards specified within the Directive. The graph below outlines the regional compliance with the coliform standards set in the Directive since 1994.

The high compliance rate in 1994 must be regarded as atypical as consistent compliance was never expected before completion of the capital schemes. Of the regions 13 non-compliant sites identified in 1996, seven had schemes completed just prior to the bathing season. Point source discharges were thought to be responsible for several exceedences and investigations continue to resolve the outstanding issues. Possible sources of contamination being investigated include diffuse inputs from farm pollution, salt marshes and stormwater overflows.

Summary details on compliance are available on the map in Appendix D.



URBAN WASTE WATER TREATMENT DIRECTIVE

Council Directive 91/271/EEC concerning urban wastewater treatment and The Urban Waste Water Treatment (England and Wales) Regulations 1994 SI 2841 are seeking to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors.

Urban Waste Water means domestic waste water or the mixture of domestic with industrial waste water and/or run off from rain.

The directive requirements are complex and relate to the size of population served by the treatment works, the discharge location and the sensitivity of the receiving waters. Generally speaking secondary treatment will be the norm for discharges greater than 2000 population equivalent to inland and estuarine waters and for discharges greater than 10000 population equivalent to coastal waters. More stringent treatment is required for discharges to sensitive areas but primary treatment may be appropriate for discharges to less sensitive areas.

The initial designation of sensitive areas was done in May 1994 with reviews of designation required at least every four years. During 1994 six sensitive areas were identified in north west region and they are listed below;

- ◆ Bassenthwaite Lake
- ◆ Windermere Lake
- ◆ River Eden (Appleby to Temple Sowerby)
- ◆ River Douglas (Horwich WwTW to Scholes Weir)
- ◆ Leeds Liverpool Canal (Dover Bridge to Liverpool)
- ◆ Upper Ribble (Settle WwTW to Sawley Bridge)

The next round of designations will be made at the end of 1997, but the candidates that have been approved so far by the national panel are the six areas above plus

- ◆ Lower Ribble (Sawley Bridge to tidal limit)
- ◆ River Ehen (Cleator WwTW to tidal limit)
- ◆ River Yarrow (Chorley WwTW to tidal limit)
- ◆ River Lostock (Leyland wwTW to River Yarrow)

North West Water plc have been consulted about the proposals and the next step will be for the Department of the Environment, Transport and the Regions (DETR) to consider the proposals before the areas are designated as Sensitive Area (Eutrophic) under this directives provisions. Installation of nutrient removal at these works will be required within 7 years of designation.

Of the six qualifying WwTWs originally designated in 1994 as impacting on sensitive areas, Keswick has a consent with a phosphate condition which has been in place since February 1995 and Windermere has had phosphate removal since early 1992. The remaining works at Horwich, Settle, Barnoldswick and Appleby will have nutrient removal in place by the end of 1998.

Urban Wastewater treatment Works - Sensitive Areas (Eutrophic)

Name of Candidate (SAE)	Extent	NWW informed	Qual. STWs Direct	pc	Nutrient Removal by Date	Qual. STW indirect	pc	Nutrient Removal By Date	Comments
Bassenthwaite Lake	Whole	y	Keswick	25,100	1998				Phosphate stripping in place by February 1995.
River Douglas	Horwich STW to Scholes Weir	y	Horwich	34,215	1998				
River Eden	Appleby STW to Temple Sowerby	y	Appleby	13,029	1998				
Upper Ribble	Settle STW to Sawley Bridge	y	Barnoldswick	12,633	1998				
			Settle	18,644	1998				
Leeds/Liverpool Canal	Dover Bridge to Liverpool	y				Horwich	34,215	1998	
Lake Windermere	Waterhead to Newby Bridge	y	Windermere	15,591	1998				Nutrient removal commenced in 1992.
River Ehen	Cleator STW to tidal limit	y	Cleator	11,418	2004				
River Lostock	Leyland STW to River Yarrow	y	Leyland	46,000	2004				
River Yarrow	Chorley STW to tidal limit	y	Chorley	66,000	2004				Croston STW removed from proposal, stretch now terminates upstream (lack of evidence to support impact of this works) To be reviewed in next round
Lower Ribble	Sawley Bridge to Tidal Limit	y	Clitheroe	22,487	2004	Burnley	180,077	2004	Nutrient removal not requested this time. May be significant as direct input to the Calder, to be reconsidered in next round
						Hyndburn	143,258	2004	
						Colne	20,194		

There are waters put forward for designation by region and approved by national panel

UWWT Potential Candidates For Next Round Of Designations

Sensitive Area	Qualifying Discharge
River Eamont	Penrith WwTW
River Derwent	Cockermouth WwTW
River Kent	Kendal WwTW
River Eden	Carlisle WwTW
River Irwell	Rossendale, Bury, Bolton WwTWs
River Roch	Rochdale WwTW
River Bollin	Macclesfield, Wilmslow, Hale WwTWs
River Goyt	Whaley Bridge WwTW
Moss Brook	Westhoughton WwTW
Glaze Brook	Leigh WwTW
Mobberley Brook	Alderley Edge WwTW
River Yarrow	Croston WwTW
River Calder	Burnley, Hyndburn, Colne WwTWs
Crossens System	Burscough WwTW
River Alt	Fazakerley, HillHouse, Formby, Ainsdale WwTWs
River Douglas	Below Scholes Weir

The table above shows the areas being monitored as potential candidates for the next round of designations.

NITRATE DIRECTIVE

Council Directive **91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources and The Protection of Water Against Agricultural Nitrate Pollution (England & Wales) Regulations 1996 SI 888**

The Directive helps to protect Surface Water Abstraction Directive sites where the nitrate standard of 50mg/l NO₃ could be exceeded and also helps to target areas which are eutrophic or may become eutrophic in the near future because of elevated levels of nitrogen compounds. Member states identify affected waters and designate areas of land that impact upon the Polluted Waters as Vulnerable Zones.

Once Vulnerable Zones have been identified, member states are required to establish "action programmes" including codes of good agricultural practice, to reduce the nitrate concentrations in the affected waters.

In the north-west region there are currently no identified Polluted Waters, although work is ongoing looking at some of the Cheshire and Shropshire meres as potential candidates for the future.

Extra nitrate samples were taken at all the Surface Water Abstraction Points in 1996 and this exercise will be repeated in 4 or 8 years time depending on the nitrate levels identified previously.

SHELLFISH WATERS DIRECTIVE

Council Directive 79/923/EEC concerns the quality required of shellfish waters.

The directive aims to ensure suitable environments for the growth of shellfish and is not intended to protect the quality of the shellfish for consumption, which is dealt with in the Shellfish Hygiene Directive. Member states were asked to designate coastal and brackish waters which needed to be protected or improved in order to support shellfish in 1981. DoE guidance at the time was that this directive should not be a major cost driver and no waters were designated within the North-West.

The Directive sets chemical and microbiological standards for 12 parameters, including taste, some with guideline standards, some with imperative standards and some with both, together with the reference method for analysis and the minimum sampling frequency. A standard for Faecal coliforms per 100ml in the shellfish flesh was specified, but this has since been superseded by the Hygiene Directive standards.

The north- west region currently has no designated waters under this directive.

Latest

The Surface Waters (Shellfish)(Classification) Regulations 1997 SI No.1332 , and a subsequent Direction from government entitled **The Surface Waters (Shellfish) Directions 1997** came into force in June of this year.

A Shellfish Waters Directive Review Group are currently looking at the impact on the Environment Agency of the new regulations and it is thought that a similar stance to the Surface Water Abstraction Directive will be taken i.e. derive operational standards on a site by site basis.

In the north west region new designations are likely to be made and these will probably tie-in with the existing Shellfish Harvesting sites which are currently monitored by MAFF and Environmental Health.

SHELLFISH HYGIENE DIRECTIVE

Council Directive 91/492/EEC lays down the health conditions for the production and the placing on the market of live bivalve molluscs intended for consumption.

This directive looks at the bacteriological standards in the shellfish flesh and the processes undertaken to bring the shellfish safely to the consumer.

Regular monitoring of the relaying and production areas must be performed looking at microbiological quality and also checking for the presence of toxin-producing plankton in production and relaying waters and biotoxins in the live bivalve molluscs. For the purposes of this directive 'relaying' means an operation whereby live bivalve molluscs are transferred to approved sea or lagoon areas or approved estuarine areas under the supervision of the competent authority for the time necessary to remove contamination. Production areas are classified by the treatment required before molluscs can be marketed.

- ◆ Class A molluscs can be harvested for direct human consumption
- ◆ Class B molluscs can go for human consumption after purification in an approved plant or after relaying in an approved relaying area or after an EC approved heat treatment process
- ◆ Class C molluscs can go for human consumption only after relaying for at least two months in an approved relaying area, whether or not combined with purification, or after an EC approved heat treatment process

The directive was transposed into UK law by the **Food Safety(Live Bivalve Molluscs and Other Shellfish) Regulations 1992 SI 3164**. The competent authorities are the Ministry of Agriculture Fisheries and Food and the Department of Health, with the Local Authorities and Public Health Authorities also playing a role in enforcement and monitoring.

Within this region production areas are located in;
Liverpool Bay, Ribble, Lune, Morecambe Bay, Barrow, Duddon, Ravenglass, Silloth and the Solway.

HABITATS DIRECTIVE

Council Directive **92/43/EEC** on the **Conservation of Natural Habitats and of Wild Flora and Fauna** is more commonly known as the Habitats Directive.

The aim of the directive is to contribute towards biodiversity through the protection of habitats and wild flora and fauna in Europe, via maintaining or restoring favourable conservation status.

Implementation of the directive in the UK has been through **The Conservation (Natural Habitats &c) Regulations 1994 SI 2716**. The Environment Agency is the "competent authority" under the regulations and a "relevant authority" in marine areas and must take account of the legislation in exercising it's functions.

The regulations apply to all sites which have been selected and approved for designation within a european network known as *Natura 2000*. This comprises both Special Protection Areas (SPAs) classified under the Wild Birds Directive and Special Areas of Conservation (SAC) designated under the Habitats Directive.

English Nature (EN) and the Countryside Council for Wales (CCW) have identified national areas for priority review and the areas of concern within this region are shown on the table overleaf.

By 1998 member states must agree a final list of sites and all permissions which impact on these sites must be reviewed by 2004.

County	Area	Status	English Nature Issues	Comments
Cumbria	R EHEN	SAC	Priority 1 AMP3 Sewage Creator Moor SAW	Creator Moor STW identified in AMP for nutrient removal under ADD
Cumbria	R DERWENT/ COCKER	SAC	Priority 2 AMP Sewage Keswick & Cocker mouth STWs	Keswick STW nutrient removal planned for AMP and completed 1996 Cocker mouth STW identified by Area in AMP as overperforming works
Cumbria	R EDEN	SAC	Priority 1 AMP Sewage Penrith & Appleby STWs	Appleby STW nutrient removal planned in AMP for completion by 1998 Penrith STW not identified within AMP but NWW Ltd to install high rate filter system by end of summer 1997
Cumbria	ELTERWATER	SSSI	STW Diversion	Langdale STW - Elterwater outfall diversion currently within additional discretionary spend programme for completion by October 1997
Cumbria	S WALNEY & PIEL CHANNEL	SSSI/SAC/SPA	Priority 2 Marine Sewage Discharges	
Lancashire	MORECAMBE BAY	SAC/SPA	Priority 2 AMP Sewage Marine Sewage discharges	
Lancashire	R RIBBLE, LONG PRESTON DEEPS	SSSI	Priority 1 AMP Sewage Barnoldswick, Settle STWs	Barnoldswick STW and Settle STW planned for improvement within AMP for completion by 1998
Lancashire	LUNE ESTUARY	SSSI/SAC/SPA	Priority 2 AMP Sewage Marine Sewage discharges	
Mersey	MERSEY ESTUARY	SPA	Industrial Discharge consent to be reviewed	
Cheshire	OAKMERE	SAC	Mineral Extraction consent to be reviewed	
Greater Manchester	Huddersfield Narrow Canal	SSSI	Priority 2	

APPENDIX A

LIST 1 Non-Compliant Sites Reported in 1994-1996

SPT	EQS ug/l	Type	94			95			96			Action Plans	
			mean ug/l	min ug/l	max ug/l	mean ug/l	min ug/l	max ug/l	mean ug/l	min ug/l	max ug/l		
Weaver at Sutton Weir	HCBD	0.1	EQS	0.25	0.03	1.54	compliant			compliant		By-product. Treatment plant to be constructed on site.	
	TCB	0.4	EQS	0.96	0.15	6.51	compliant			compliant		By-product. Treatment plant to be constructed on site.	
	1,2DCE	10	EQS	compliant			compliant			12.94	0.05	69.00	Unauthorised releases of 1,2DCE from ICI plant at Runcom.
Weaver at Frodsham	ChCl3	12	Ref	13.40	5.48	25.50	compliant			compliant		Small dataset with 2/5 samples exceeding standard. Tment plant to be constructed	
	1,2DCE	10	Ref	compliant			compliant			13.40	25.80	0.05	Unauthorised releases of 1,2DCE from ICI plant at Runcom. Prosecution taken.
Wyre at St. Michaels	HCBD	0.1	Ref	0.17	0.03	1.69	compliant			compliant		One high result biased the dataset. No investigative action planned	
	TCB	0.4	Ref	0.66	0.15	6.25	compliant			compliant		One high result biased the dataset. No investigative action planned	
T&M Canal d/s Hayes	Hg	1	EQS	4.95	0.44	32.90	1.79	0.12	8.43	compliant		Resuspension of historically contaminated sediment within the canal. Discharge point re-located. Survey to look at extent of Hg contamination on-going.	
Mersey at Runcom	TCB	0.4	EQS	compliant			0.44	0.02	4.22	compliant		One set of atypical results from February 1995.	
Leven at Haverthwaite	Cd	2.5	EQS	compliant			4.63	0.01	13.50	compliant		One extremely high result recorded in December. No known reason.	
Eagley Brook	PCP	2	EQS	compliant			compliant			4.32	0.05	44.30	Contaminated dye supplied to textile finisher discharged to sewer. Dye withdrawn from use.

Key EQS=designated sample point down stream of known List 1 discharger. Ref= Background monitoring point used for reference. T&M = Trent & Mersey

List 2 Non-Compliant Sites Reported in 1994-1996

Receiving Water	Location	SPT	1994	1995	1996	Action Plans
All	Bull Bridge Aintree	69804050	Cu	Cu	Cu	Combination of contaminated s/w, industrial inputs to WwTW. Ongoing liaison with NWW plc.
					TBT	Sources unclear, maybe sediment stores. Discussions and investigations are ongoing.
Calder	Calder Hall	74808950	Cu			Contaminated cooling water. Flows diverted to coastal waters March 1994
				pH	pH	pH>8.5. Saline EQS= 95% of samples between 6-8.5 1/17 Samples above 8.5. Possible algal activity
Darwen	A6 Road Bridge	71805500	Cu	Cu	Cu	Elevated Cu from Blackburn WwTW. Investigations throughout the catchment, discussions with NWW
Derwent	Workington	75809110	Cu	Cu	Cu	Cu eqs at this site is 1ug/l. Open cast coal site and minewater discharge impacting on spt.
			Zn	Zn	Zn	As above
					TBT	Unknown. 1 exceedence of MAC standard. Monitoring to Continue
Ditton Brook	Cart Bridge Halewood	69803050	Cu	Cu	Cu	Historical contamination. Feasibility study to look at possible wrong connections allowing foul TE to contaminate s/w
Douglas	Wanes Bridge	70805970		Cu	Cu	Elevated Cu from Skelmersdale WwTW. Investigations throughout the catchment and discussions with NWW plc.
Eagley Brook	d/s Belmont WwTW u/s Charles Turner	69801337	Cu	Cu	Cu	Local geographic conditions.
Gow	u/s Manchester Ship Canal syphon	68803220	Cu	Cu		Local geographic conditions.
Great Gutter	Road Bridge d/s Main Road	75809315	Cu		Cu	Possible mobilisation of contaminated sediments d/s of closed circuit foil manufacturer. Investigation planned 97/8
Irish Sea	Workington near Northside sewer	75809118K	pH	pH	pH	Saline EQS= 95% of samples btw 6-8.5 Marginal exceedences of standard during summer months. Possible algal activity
Irwell	Stubbins Bridge	69800890	Perm	Perm	Perm	Textile discharge to Rossendale WwTW. Annual mean continues to improve. Works to be consented for Permethrin.
				Cu	Cu	Local geographic conditions
Kirkby Brook	PTC River Alt	69804040	Cu			Contaminated s/w discharge from Kirby Industrial estate
Leven	Haverthwaite	73808450	Cu		Cu	Cu eqs at this site =1ug/l. Local geographic conditions
Mersey Estuary	New Brighton	69803952			pH	pH>8.5. Saline EQS= 95% of samples between 6-8.5 Marginal exceedence in May. possible algal activity
	Seacombe Ferry	69803950			pH	pH>8.5. Saline EQS= 95% of samples between 6-8.5 Marginal exceedence in May. possible algal activity
	Monks Hall	69802580			TBT	No. of IPC authorised shipyards dis. to the estuary. Possible influence from sediments. Sediment survey undertaken.
Prescot Brook	Whiston Lane	69802970		Cu	Cu	As Ditton Brook at Cart Bridge
Roch	Rochdale College	69801105	Cu	Cu		Contaminated land on site. Annual average Cu improvement noted every year.
Tame	Manchester Road Bridge	69800370	Perm	Perm	Perm	Input to Saddleworth WwTW. 94 and 95 AA <0.01ug/l In 96 AA=0.014ug/l. EQS = 95% total. Monitoring to continue.
Tinker (Hyndburn) Brook	PTC White Ash Brook	71804930	As	As	As	Failures associated with seepages/discharges from Inorganic Chemical manufacturer. Study undertaken to look at possibilities for remedial action. Cu reduction has been noted with collection sump to contain contaminated drainage.
			Cu	Cu	Cu	Recent study indicated that remedial action would be expensive. Further work is necessary.
			Zn	Zn	Zn	Seepage from landfill area. Remedial action being considered.
Tinker (Hyndburn) Brook	PTC River Hyndburn	71804970	Cu			Sample point impacted as above. Modernisation on site has lead to improvements. Tip leachate interception systems and intercepting leachate from contaminated production areas has improved compliance.
			Zn	Zn		
Weaver	Sutton Weir	68803815	Cu		Cu	Investigations to look at Cu levels throughout the weaver catchment. Saline standard applied at this spt
					pH	pH>8.5. Saline EQS= 95% of samples between 6-8.5 Marginal exceedence during summer months. Poss. algal activity

Key Cu=Copper Perm=Permethrin, As=Arsenic, Zn=Zinc, TBT=Tributyl Tin, TE=trade effluent, s/w=surface water, MAC = maximum admissable concentration, AA= annual average

APPENDIX B

Surface Water Abstraction Directive Reported Non-Compliance 1994-1996

Abstraction_Point

SPT

1994 Compliance

1995 Compliance

1996 Compliance

SHORTFALLS		SHORTFALLS		SHORTFALLS	
EXCEEDENCES		EXCEEDENCES		EXCEEDENCES	
Waiver		Waiver		Waiver	
KINDER RES	914KIN-2R				
LAMALOAD RES	914LAM-2R	PAH			
LANESHAW RES	9162RWLAN	HQ, Col			
LANTHWAITHE RES	9172RWSCD	Col			
LEVERS WATER RES	917PADD2R	HC	Co		
LOWER SWINESHAW RES	9148UC-1RL	PAH, Col, HC			
MILLBECK RES	917MILL2R		HC		
MITCHELLS No. 1	9161R1MIT				
MITCHELLS No. 2	9161R2MIT				
NEW YEARS BRIDGE RES	914CASI1RN				
OGDEN RES	9162RWOGD	Ammon, HC	HC		
OGDEN RES (HASLINGDEN)	914HASW1RO				
PADFIELD RES	914PAD-2R				
PENNINGTON RES	917CAST2R	NO1			
PIETHORNE RES	914PIE2RZ	phen, HC			
POAKA BECK RES	917POAK1R				
RHODESWOOD RES	914ARN-1RR	PAH, HC	Fe (diss)		
RIDGEGATE RES	914RID-2R	phen, Col, HC			
RIVINGTON LOWER RESS	703W001RIVLOS	Fe (diss), Col, phen	Ba, PAH, HC, Fe (diss), Cu, Pb		
ROODEN RES	914WICE1RA				
ROUGHTEN GILL RES	917RGHT2R		phen, HC		
SAILBECK RES	917SAIL2R	phen			
SEDBURGH RES	917SEDB2R	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
SPRINGMILL RES	914CWME2RZ			HC	
SPRINGS RES	914SPRW2RZ	HC			
STOCKS RES	9162RWSTO	HC, Col			
SUNNYHURST RES	9162RWSUN		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
SWINDEN NO 1 RES	9161R1SWI	phen, Col, Fe (diss)			
SWINDEN NO 2 RES	9161R2SWI		Col		
SWINESHAW LOWER RES	914SWI-2R	HC, phen			
THE HIGH RES	917THEH2R				
THIRLMERE COMPENS RES	917THIR1R	phen, HC, Fe (diss), NO1	Ammon, HC, Col		
THIRLMERE RES	917THIR2R		HC		
WALKERWOOD RES	914BUC-1RW		HC		
WARLAND RES	914WICE1RA	phen			
WATERGROVE RES	914WATE2RZ	HC			
WAYDH RES	914WAYW2RZ	HC			
WHITEHOLME RES	914WICE1RW	HC	PAH, phen		
WINDERMERE	917WIND1R	phen, PAH			
WORM GILL RES	917WORM2R	HC	HC, phen		
WORTHINGTON RES	912WTNRAW	XXXXXXXXXX			
WYRE RIVER	9162RRFRA	Col	HC		
YEOMAN KEY RES	914BUC-1RY	HC	PAH		

Comments

1 positive phenol result. No point source
1 positive phenol result. No point source
No point source. No known inputs.
atypical result
waiver
No point source for phenol. Investigation revealed high levels of Ba thru' catchment.
No point source. No known inputs.
Waiver
No point source. No known inputs.
Waiver
No point source. No known inputs.
No point source. No known inputs.
Investigation underway to look at impact of reservoir levels on Ammonia
Investigation underway to look at impact of reservoir levels on Ammonia
1 positive phenol result. No point source
No point source. No known inputs.

APPENDIX C

FRESHWATER FISH DIRECTIVE REPORTED NON-COMPLIANCE 1994-1996

CATCHMENT	SAMPLE POINT	SPT	CLASS	1994	1995	1996	Comments
37	EDEN	400M W/S BARONS DYKE	S	NH3			atypical - no known reason
56A	EDEN	PTC R PETERIL	S			Ig NH3	atypical result. Continuation of monitoring.
57	EDEN	GREYSTOKE	S	NH3		NH3	Agricultural drainage. Investigation planned.
71	ELLEN	PTC RIVER ELLEN	S	NH3	NH3	NH3	Possible farm inputs. Survey 97/8 to determine the cause.
76	DERWENT	400M D/S ARC THREUKELD	S	Zn	Zn	Zn	Past mining activities - derogation
80	DERWENT	BRAITHWAITE	S	Zn	Zn		Past mining activities - derogation
82	DERWENT	MAGGIES BRIDGE	S				Acid rain. Critical load exceedance area.
90	DERWENT	D/S BRIDES BECK	S	DO	Ig NH3	NH3	Inspect from WwTW and stock watering causing concern. Remedial work undertaken by local farmers.
91	DERWENT	CARR BECK	S		Ig DO NH3		Low flows, stock watering. Monitoring to continue.
98	EHENCALDER	W/S RIVER CALDER	S		NH3	NH3	No point source. Continuation of monitoring.
97	CUMBRIA COAST STREAM	ANNASIDE	S	NH3			Intermittent farm drainage. Problem resolved.
99	IRTAMITE/ESK	WHAMHOUSE BRIDGE	S	pH	pH	pH	Acid rain. Critical load exceedance area.
100	IRTAMITE/ESK	PTC RIVER ESK	S	pH			Acid rain. Critical load exceedance area.
101	IRTAMITE/ESK	MUNCASTER MILL BRIDGE	S	NH3			atypical. Continuation of monitoring.
103	IRTAMITE/ESK	HOLMROOK	S	NH3			atypical. Continuation of monitoring.
108	DUDDON	DUDDON BRIDGE	S	pH			Acid rain. Critical load exceedance area.
109	DUDDON	D/S TARN BECK	S	pH		pH	Acid rain. Critical load exceedance area.
110	DUDDON	TONGUE HOUSE	S	pH	pH	pH	Acid rain. Critical load exceedance area.
123	LEVEN ESTUARY TRIBS	HIGH FRITH	S			DO	Unknown. Continuation of monitoring.
131	KENT ESTUARY TRIBS	PTC RIVER POOL	S		DO		Slow moving & canalised. Low flows. Monitoring to continue.
133	KENT ESTUARY TRIBS	SAMPOOL BRIDGE	S	DO	DO pH		Slow moving & canalised. Low flows. Monitoring to continue.
135	KENT ESTUARY TRIBS	TIDAL GATES	S		DO		Accumulation of rotting vegetation by tidal doors.
174	WYRE	PTC ABBEYSTEAD RES	S			NH3	Wyre catchment survey undertaken including farm visits.
181	WYRE	PTC RIVER CALDER	S	NH3		NH3	Farm pollution incident.
182	WYRE	PTC RIVER WYRE	S	DO			Farm drainage. Investigation on going.
187	WYRE	PTC WOODPLUMPTON BROOK	S	NH3			Farm drainage. Investigation on going.
189	WYRE	PTC RIVER BROOK	S	DO NH3		NH3	Farm drainage. Investigation on going.
201	RIBBLE	SAMLESBURY	C	pH		pH	Elevated algal activity. U/S designated SA under UWWT in 64. This stretch proposed in 97. Monitoring to continue.
211	DOUGLAS	RAW WATER	C	pH	pH NH3		Unknown input. Monitoring to continue.
214	MERSEY EST. TRIBS. (S BANK)	PTC R GOWY	C	NH3 Ig	NH3		STW input / Agricultural run-off. Monitoring to continue.
215	MERSEY EST. TRIBS. (S BANK)	CROSS LANES BRIDGE	C	NH3 DO			Farm drainage
216	MERSEY EST. TRIBS. (S BANK)	PTC R GOWY	C	NH3 Ig	NH3		STW & industrial input / trade input to STW inhibiting nitrification. Study undertaken and problem resolved.
225	IRWELL	WHITEHOUSE RES	S	914WICE1RW	pH NH3	pH NH3	pH natural no known input of NH3. Study to be undertaken.
240	IRWELL	BLACKSTONE EDGE RES	S	pH	Zn pH	pH NH3 Zn	Zn natural occurring in peaty catchment. NH3 poss. due to low water levels in reservoir. Study to be undertaken
248	IRWELL	GREEN LANE BRIDGE	S	NH3 Ig	NH3	NH3	shw&trade input / input to be controlled by consent review
250	IRWELL	D/S BOTTOMS RESERVOIR	S		pH		Unknown
254	M/CHESTER SHIP CANAL/R.MERSE	WOODFORD AERODROME	S	NH3	NH3	Ig NH3	STW / Farm drainage & Trade input / consent review
259	M/CHESTER SHIP CANAL/R.MERSE	PTC RIVER BOLLIN	C	NH3			Sample point located within mixing zone of WwTW, has now been changed.
274	WEAVER	AUDLEM GAUGING STATION	C	NH3			Farm drainage problems. Now resolved.
276	WEAVER	BELOW MANTWICH	C	NH3 Ig		NH3	WwTW input. New consent issued. Pumping regime improved to reduce CSO overflows.
277	WEAVER	PTC RIVER WEAVER	C	NH3		NH3	Farm drainage. Significant inputs to be reduced by additional storage and re-drainage.
280	CANALS	PRIMROSE MYERSCOUGH	C			NH3	1 atypical result. Monitoring to continue.
287	CANALS	CINDERBARROW BRIDGE	C	pH			Algal activity. UWWT designated sensitive area.
291	CANALS	CHISNALL STREET	C	DO			Algal activity. UWWT designated sensitive area.
292	CANALS	LUTHERLAND ROAD BRIDGE	C			NH3 pH	Algal activity. UWWT designated sensitive area. NH3 input unknown. Monitoring to continue.
293	CANALS	85194 ROAD BRIDGE	C			pH	Algal activity. UWWT designated sensitive area.
294	CANALS	LYDIATE	C			pH	Algal activity. UWWT designated sensitive area.
295	CANALS	SPENCER BRIDGE	C			NH3	CSO & or septic tank. Monitoring to continue.
310	CANALS	WHITCHURCH ROAD BRIDGE	C			pH	Algal activity. Investigation undertaken to look at diurnal fluctuations.
312	CANALS	CANAL BRIDGE	C	DO NH3			Farm drainage. Remedial work undertaken.

Key Classification

S= salmonid, C=cyprinid

DO=Dissolved Oxygen, NH3=Total Ammonium, Ig=non-toxic ammonia at fish pH, Zn=pne

APPENDIX D

**North West Region Designated Bathing Waters
Historical Compliance and Improvement Scheme Details**

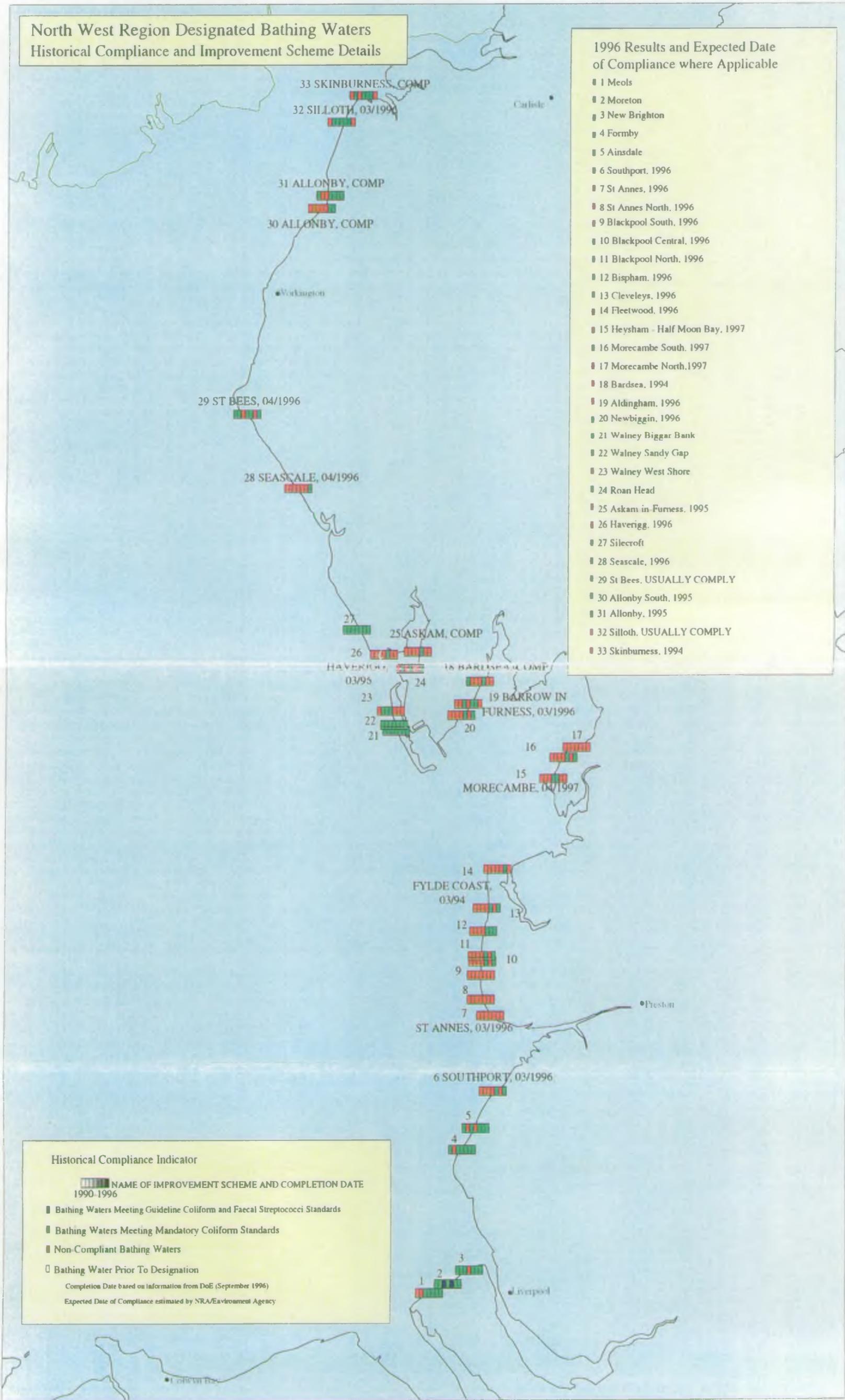
- 1996 Results and Expected Date of Compliance where Applicable**
- 1 Meols
 - 2 Moreton
 - 3 New Brighton
 - 4 Formby
 - 5 Ainsdale
 - 6 Southport, 1996
 - 7 St Annes, 1996
 - 8 St Annes North, 1996
 - 9 Blackpool South, 1996
 - 10 Blackpool Central, 1996
 - 11 Blackpool North, 1996
 - 12 Bispham, 1996
 - 13 Cleveleys, 1996
 - 14 Fleetwood, 1996
 - 15 Heysham - Half Moon Bay, 1997
 - 16 Morecambe South, 1997
 - 17 Morecambe North, 1997
 - 18 Bardsea, 1994
 - 19 Aldingham, 1996
 - 20 Newbiggin, 1996
 - 21 Walney Biggar Bank
 - 22 Walney Sandy Gap
 - 23 Walney West Shore
 - 24 Roan Head
 - 25 Askam in Furness, 1995
 - 26 Haverigg, 1996
 - 27 Silecroft
 - 28 Seascale, 1996
 - 29 St Bees, USUALLY COMPLY
 - 30 Allonby South, 1995
 - 31 Allonby, 1995
 - 32 Silloth, USUALLY COMPLY
 - 33 Skinburness, 1994

Historical Compliance Indicator

■■■■■ NAME OF IMPROVEMENT SCHEME AND COMPLETION DATE
1990-1996

- Bathing Waters Meeting Guideline Coliform and Faecal Streptococci Standards
- Bathing Waters Meeting Mandatory Coliform Standards
- Non-Compliant Bathing Waters
- Bathing Water Prior To Designation

Completion Date based on information from DoE (September 1996)
Expected Date of Compliance estimated by NRA/Environment Agency





ENVIRONMENT AGENCY

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