

# POLLUTION PREVENTION AND CONTROL UPDATE

Anglian Region



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# POLLUTION PREVENTION AND CONTROL UPDATE Anglian Region

## **PREFACE**

The formation of the Environment Agency in April 1996 brought together the regulators for major process industries, waste disposal operations and control of discharges to controlled waters into a single unified body. The bringing together of all these duties allows for an integrated approach to be taken across the whole range of pollution prevention and control issues.

This first year has been an extremely busy one for all the Regional Pollution Prevention and Control staff within Anglian Region. This report covers the major issues that have been addressed within the Region in this the first year of the formation of the Agency. It represents the efforts of extremely dedicated and highly professional staff. I believe the results demonstrate the advantages in bringing together all the above bodies, and that we are starting to see the benefits of an holistic approach to the environment.

This bodes well for the future and our prime purpose on sustainable development. I believe it shows we are meeting our vision of building a better environment for present and future generations.

**Dr Mick Pearson**  
**Regional Pollution Prevention and Control**  
**(PPC) Manager**

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## What is the Environment Agency and what does it do?

The Agency is a public body whose job is to protect the Environment. It operates through eight Regions (covering 26 Areas) in England and Wales and aims to protect and improve the quality of air, land and water by controlling the risk of pollution. It has powers to control radioactive substances. (The Agency also has duties for water resources, flood defence, freshwater fisheries, conservation and navigation).

The Agency controls major industrial and waste processes through issuing licences with strict conditions and Agency staff carry out regular inspections to ensure these conditions are met. Pollution Prevention and Control (PPC) staff also monitor the environment, undertake research, and advise how this country should allow development that is safe and sustainable. Advice is provided on all types of development that may affect the environment - the location of new factories, for example, and the action proposed must impose no excessive costs on society.

Many of the Agency's successes are the result of campaigns or visits and co-operative ventures with others. The Agency seeks to reduce waste through waste minimisation and recycling. Some improvements follow only from the prosecution of polluters.

One of the key aims is to prevent or then control pollution and hence improve the quality of the environment. The intention is that polluters pay the costs of the consequences of their activities.

## How does Anglian Region achieve its aims?

Anglian Agency staff work with local people and all kinds of organisations which represent industry, commerce, farming, Local Authorities, environmental interests and recreation. Awareness of the environment is promoted.

Proper environmental standards are set and enforced for industrial processes and releases and emergencies are promptly dealt with.

Licences are issued for industrial processes, waste management sites, discharges to rivers, the sea and other waters. Licences contain strict conditions and are only granted when the appropriate technical staff are satisfied that the environment is protected. Regular inspections and monitoring are performed to ensure this.

Local Environment Agency Plans (LEAPS) are used to agree with local groups and local people the measures which can be taken to protect and improve the environment over the next 10 years.



## What's special about Anglian Region?

The Anglian Region is one of the largest of the Agency's eight regions. It covers about 27,500 square kilometres of eastern England, an area which is nearly 18 % of England and Wales. The Region's boundaries extend from the Humber in the north to the Thames in the south and from the North Sea in the east to as far west as (but not including) Oxfordshire.

Anglian is the fastest-growing Region economically, with significant population growth. It is mainly low-lying and flat. It has low rainfall and intensive agriculture and there are many competing needs for water. Its rivers and wetlands depend on us all leaving sufficient water for ecological needs.

Anglian Region deals with numbers of developments, abstractions and discharges which are large compared with the rest of England and Wales. The Region faces ever-increasing competition for scarce water resources, and the vital need to protect waters of high quality. However, Anglian Region has seen the strongest improvement in river quality since records began, greater than anywhere else in the UK.

Each year the Region, which has some of the largest landfill sites in Britain, has to dispose of more than 25 million tonnes of waste through over 900 licensed waste facilities; a massive operation which requires registering over 8,000 waste carriers and carrying out more than 16,000 site inspections a year.

Anglian Region has some 250 processes requiring control under Integrated Pollution Control (IPC) with a good spread of industry representing all the relevant industry sectors. This includes some 50 power stations, 10 metal production processing industries, 15 mineral industries, 120 authorisations in the chemical industry sector (mainly covering speciality chemical manufacturing), 15 waste disposal and recycling processes. In addition it has 3 nuclear power stations, including the UK's only pressurised water reactor, 120 authorisations to dispose of radioactive waste and 820 registrations for the holding of radioactive sources.





# MAJOR ISSUES IN 1996/97

## Bovine Spongiform Encephalopathy (BSE)

The setting up of the Environment Agency coincided with the announcement in Parliament that a new variant of Creutzfeldt Jakob Disease may be linked to BSE in cattle. The Agency has regulatory control over some, but not all, aspects of the wastes arising from disposal of BSE cattle and associated materials. For example, the Region had the only IPC authorised incinerator for BSE cattle carcasses. The Region played a major part in helping to develop improved control systems for the safe handling and disposal of these materials over which it had direct control. It also re-examined previous disposal practices to confirm that precautions taken at the time were still adequate. Even in areas where we did not have direct control we still sought to provide advice and assistance, and sought to establish a high level of environmental protection. (eg, We carried out pollution prevention visits to all the abattoirs and renderers within the Region.)

The Region has also assisted with an Agency-wide programme for assessing and controlling the risks arising from the BSE eradication programme. For example the Region has provided data in respect of the operations at both the Attlebridge Waste Site and the Vetspeed incineration which has formed part of the Agency's risk assessment programme.

## New Waste Legislation and New Duties

The new Special Waste Regulations brought many more wastes into the system of controls run by the Agency. The newly introduced charge for Consignment Notes and the new procedures resulted in a steep learning curve for all concerned, especially as they were implemented in a very short space of time. The regulations have had a knock on effect on the licensing system with many licences having to be modified to address Special Waste because of items such as cement and asbestos. They have also led to an increase in flytipping in these wastes as producers try to avoid the higher costs of disposal of these items. The Agency has publicised a flytipping hotline number, and PPC inspectors have been kept very busy with this aspect of the work.

Regulations promoting the recycling and recovery of packaging were introduced in March 1997. Customers had been introduced to the concept 6 months earlier at a series of seminars, but the regulations have still resulted in much



Storage of cans for recycling



interest and concern. In the long term it is hoped the Regulations will lead to packaging being designed with ease of recycling in mind and new facilities being developed for energy recovery. Both of these will minimise waste and save money in the long run.

### **Secondary Liquid Fuel (SLF) Applications**

During the year two applications for substantial variations to IPC authorisations were determined to allow the use of SLF at Blue Circle Cement, Claydon near Ipswich and Castle Cement Ltd, at Ketton in Rutland. Both variations attracted a strong public reaction. In addition to increasing the amount of SLF to be burnt, the Castle Cement variation included a requirement to burn whole and shredded tyres. Trials of this commenced in March under strict Agency controls.

Running parallel to the consideration of these applications was the House of Commons Select Committee re-examining the use of SLF by the cement industry. The Report made a number of recommendations and in particular encourages the Agency to be more open and involve a greater degree of public consultation. The Agency welcomed The Report and this recommendation indeed reflects the actual practice within this Region where PPC inspectors have been encouraging companies to be more pro-active and have taken part in public meetings to discuss the issues.

### **The Norfolk Broads**

A number of projects to improve the Broads are underway in conjunction with organisations such as Anglian Water Services, English Nature, the Broads Authority and local councils.

Phosphorus is believed to contribute to the loss of pristine water quality in the Broads. PPC has worked with Anglian Water Services to ensure that phosphorus removal is installed at seven sewage treatment works and will be installed at one further works.

In conjunction with the Broads Authority and Essex and Suffolk Water Company, work is continuing to try to create clear-water conditions by promoting the development of populations of the tiny creatures which graze on algae in Ormesby Broad.

### **Future Investment On Water Quality**

In 1996 further necessary action was identified to meet water quality targets for 7,000 kilometres of river, and negotiated plans and priorities for investment by dischargers.

£42m has been secured for investment by Anglian Water Services. This will improve river and estuary water quality, beyond that driven by statutory requirements, by the year 2000.

Advice will continue to be provided to Anglian Water on further actions needed for consideration in their plans for the period post-2000.

### **Nitrate Vulnerable Zones**

The Nitrate Directive aims to protect rivers and underground waters from pollution from agriculture. Waters with high concentrations of nitrate have been identified.



*Berney Arms Windmill, Norfolk*

Under the Directive, land draining to these waters can be designated as a Vulnerable Zone. In 1996, 19 such Zones were designated within the Region, and further Zones are proposed. Environmental Regulations, enforced by the Agency, will restrict nitrate applications within these Zones. The Regulations will be compulsory within the Zones, and a Code of Good Agricultural Practice will be encouraged in areas outside the Zones.

### Waste Licensing Appeals

Several significant appeals have been dismissed by the Planning Inspector and the Agency's actions upheld. These included the Agency's action in preventing incinerator ash being deposited at a landfill in order to safeguard a water supply and the extensive containment works required at a landfill in Cambridgeshire to protect groundwater.

### Air Quality Management Strategy (AQMS) and IPC

In June 1996 Anglian Power Generators Ltd submitted an application for an extension to their power station near King's Lynn. Local Authority planning permission for this extension has been refused because of concerns over local air quality. This is the first case of its kind involving an interaction between the Strategy and an IPC authorisation. The Agency plans to use this as a test case to help develop procedures and protocols.

### Sizewell B

An application was received from Nuclear Electric Ltd in November for a variation to its existing Sizewell B authorisation to dispose of low level liquid radioactive waste to the North Sea. The application requests a two fold increase in the tritium discharge limit. The 8 week public consultation on the application began on 14 March.

*Regional PPC staff were key players in organising and taking part in Exercise "Jupiter", a major emergency exercise centred on Sizewell B that took place on 16 October. This was the first national civil nuclear emergency exercise for the Agency, for the newly privatised Nuclear Electric Ltd and for the station.*





## Waste Minimisation

The Agency has been a partner to several waste minimisation projects including a food project at Bernard Matthews plants in Norfolk and Suffolk, and a waste minimisation club in North Kesteven, Lincolnshire.

## Waste Surveys

The Agency and the Department of the Environment, Transport and The Regions (the DETR formerly the DOE) wish to improve the data collected from previous waste surveys by ensuring that data is collected nationally using the same methods and definitions of waste. Such data is a cornerstone in assessing the effects of policy on the quantities of waste produced and is essential in waste planning. A pilot survey was undertaken and a full survey is planned in the Spring of 1998.

## Waste Importation

The publication of a legally binding plan on the import and export of waste led to the Agency regarding waste arising from the recycling of motor vehicles as Red List. This classification required that the Agency make assessments on every load of such waste imported and secure financial guarantees. This led to a very high workload in Anglian because large quantities were being imported. However, a recent court ruling has resulted in a reclassification of this waste which should decrease this workload.

## Pollution Prevention

In 1996, over 1,500 farms and industrial sites were inspected. Such inspections help to identify illegal discharges, and assess the risk of accidental pollution.

Guidelines for developers, farms and businesses have been produced.

## Water Pollution Prevention Database

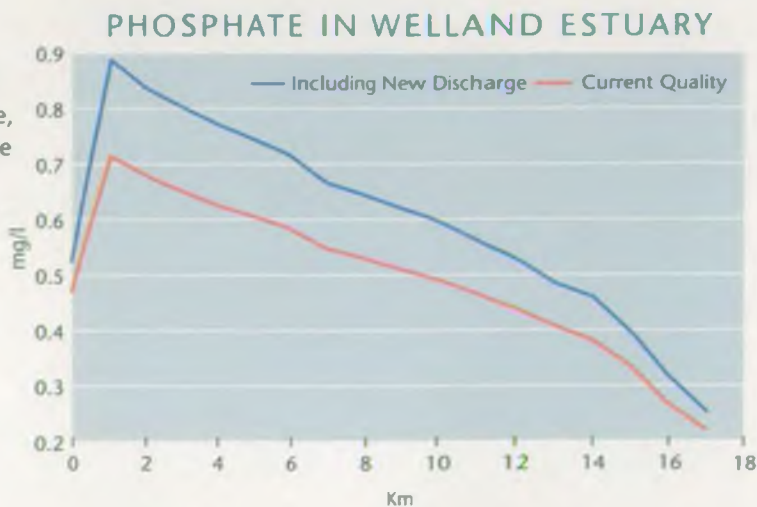
A new system for recording information gained during pollution prevention site inspections has been installed in the Region. The system will enable an inspection history to be built up for each site which will provide continuity of records, a consistent regional approach and a valuable tool for instigating proactive pollution prevention campaigns.

## Water Quality Models

Mathematical models are used to predict water quality. They describe the water quality throughout a catchment, for rivers, bathing waters and larger estuaries. For example, in 1996 the Welland Estuary Model was used to investigate the impact of a proposed new discharge on phosphate concentrations in the estuary. The graph illustrates the predicted change in estuary quality.



*An example of bad practices often found during pollution prevention site visits*





# MAJOR ENVIRONMENTAL INCIDENTS

## Water

Thirty-one Category 1 (major), 200 Category 2 (significant) and over 3,000 Category 3 (minor) or 4 (unsubstantiated or no pollution) incidents occurred during the year. Examples of incidents which were dealt with are:

A major fire at a recycling centre at Milton Keynes burned 50 tonnes of paper and 400 tonnes of plastics. Firewater was contained near to the site, and serious pollution of the River Great Ouse was averted.

Settled sewage flowed into the River Gipping from Stowmarket sewage works in June, killing around 250 fish. Anglian Water Services Ltd was fined £6,000.

In June, a spill of timber treatment chemicals, including permethrin and tributyl tin at John Mansfield Timber seeped into the Prittle Brook at Southend. The company was fined £6,000.

A mobile bowser containing up to 5 tonnes of ammonium nitrate liquid fertiliser overturned and spilled its contents into Pebmarsh Brook, Essex. A major operation had to be mounted to contain and neutralise the chemical. The farmer was fined £1,500.

Approximately 6,000 trout died during an algal bloom at a fish farm near Empingham which caused low dissolved oxygen and other related problems. Several fish rescues were mounted.

Diesel oil entered the River Hiz at Arlesey, Bedfordshire in July because drums of fuel oil left on a redundant site were vandalised. Hanson Brick was fined £2,000.



*Fish killed as a result of a pollution incident*



## Waste

A landfill licence in Essex was revoked due to the operator's failure to install monitoring boreholes and the operator was sentenced to 4 months in prison due to problems on the site.

A landfill operator in Cambridgeshire was fined a total of £10,000 for various offences relating to the disposal of waste from the excavations for cable television trenches.

A landfill operator in Essex has recently been fined for depositing quantities of waste outside of those allowed for in his licence. This has led to a review of the Agency's systems in tracking these inputs.

A fire involving 8 tonnes of clinical waste, at a clinical waste incinerator site in Cambridgeshire was brought under control and this has led to improvements being made to the site drainage.

The drought has exacerbated the migration of pesticides in the groundwater from the closed Helpston landfill site. However, treatment of the water by Anglian Water ensures that the drinking water delivered is of the required standard. A bid has been made by the Agency to the then Department of the Environment (now DETR) for additional funds to assist the remediation work.

## Integrated Pollution Control/Radioactive Substances

There were 13 significant IPC/RAS incidents during the year. Six warning letters (required under the Regulatory Code of Practice) were issued where breaches of the authorisations had occurred. No further enforcement action was required as, in all cases, the operators complied with the Agency's instructions.

The remaining seven incidents covered a range of occurrences including abandoned radioactive sources, odour complaints, allegations of skin irritation and non-compliance with the Sewage Sludge Regulations. The Agency has taken action in the form of warning letters, investigations, meetings with concerned parties, monitoring and legal advice.



*The fees for waste management licences are related to the quantities of waste received*

# STATE OF THE ENVIRONMENT

## Air Quality

While not directly responsible for all aspects of air quality, The Agency is responsible for discharges to atmosphere from major industrial installations. Strict limits are imposed in authorisations to protect air quality from these possible pollution sources.

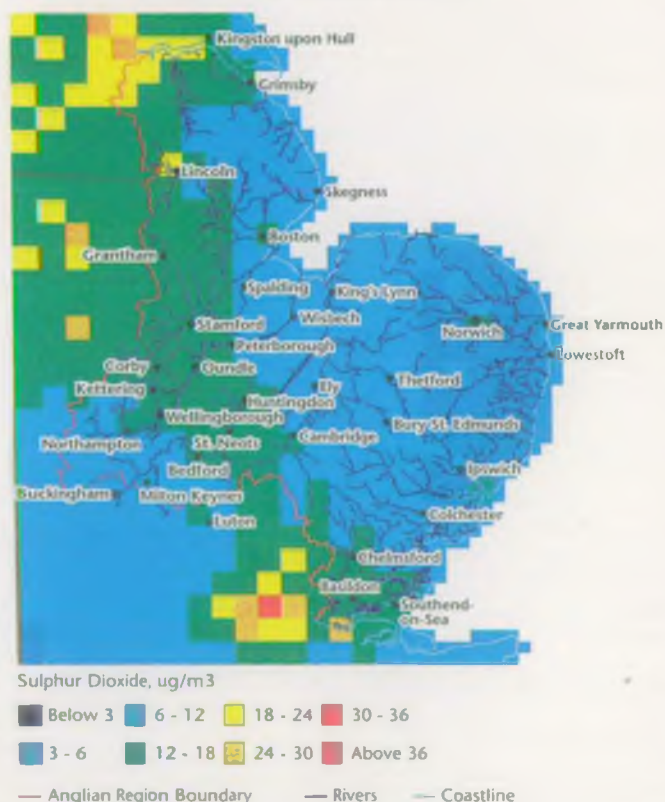
The Region also runs a system for automatic notification of poor air quality based on the Department of the Environment, Transport and the Region's (DETR formerly DoE) National monitoring system. In 1996/97 there were very few notifications received and none related to IPC processes.

The main responsibility for air quality lies with Local Authorities under the National Air Quality Management Strategy. In order to assist them with these responsibilities PPC has arranged modelling of air quality. The results for mean annual background concentrations for Sulphur Dioxide, Ozone (summer mean), Oxides of Nitrogen and PM10 (Particulate Matter) are shown in maps a to d.

Air quality modelling generally shows that there are few problems with air quality within the Region compared with the targets set in the national strategy. The areas where there are possible problems are urban locations and are likely to be associated with a variety of sources, including traffic.

## Estimated annual mean background sulphur dioxide concentration, 1994 ( $\mu\text{g}/\text{m}^3$ )

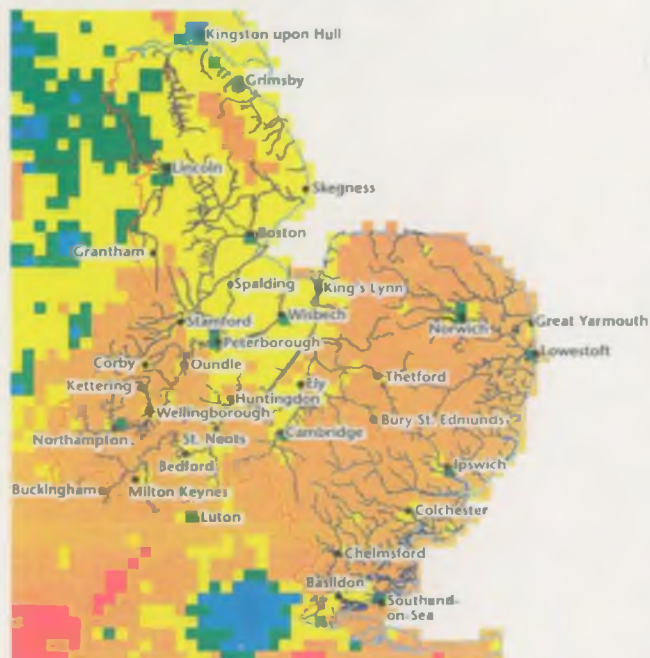
a. Ref NETCEN 21/04/96 20008001/GWC





## Estimated summer mean background ozone concentration, 1990-1994 ( $\mu\text{g}/\text{m}^3$ )

b. Ref NETCEN 14/02/96 16419002/JRS



Ozone summer mean,  $\mu\text{g}/\text{m}^3$



— Anglian Region Boundary — Rivers — Coastline

## Estimated annual mean background oxides of nitrogen concentration, 1994 ( $\mu\text{g}/\text{m}^3$ )

c. Ref NETCEN 24/07/96 20008001/JRS UK1KM\_NOX3



Oxides of nitrogen,  $\mu\text{g}/\text{m}^3$



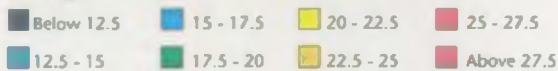
— Anglian Region Boundary — Rivers — Coastline

## Estimated annual mean background PM10 concentration, 1994 ( $\mu\text{g}/\text{m}^3$ )

d. Ref NETCEN 18/11/96 20008001/JRS UK1KM\_PM101



PM10  $\mu\text{g}/\text{m}^3$



— Anglian Region Boundary — Rivers — Coastline

Data Acknowledgements: DoE/ITE/NETCEN

Data Sources:

- DoE Rural SO<sub>2</sub>, Rural Automatic and Smoke and SO<sub>2</sub> Networks, and Joint Environmental Programme of National Power and PowerGen.
- DoE Rural Monitoring Network and Automatic Monitoring Urban Network.
- Automatic Urban Network.
- DoE Rural Monitoring Network, Automatic Urban Network, Acid Deposition Network and Joint Environmental Programme of National Power and PowerGen.



More than half of the drinking water supplied to the homes and businesses in the Region is taken from underground sources (groundwater). It is an important issue of Public Health that these waters receive all possible protection from the risk of pollution. Also, once pollution has occurred, it is very difficult and expensive to remove it and to develop new supplies.

To help monitor the groundwater in the Region, in 1996, more than 1,700 samples were collected from 450 sites.

River quality is reported by grading rivers according to measurements of pollution. By 1996, these grades were

According to the General Quality Assessment (GQA) and Classification of Estuaries Working Party (CEWP) Schemes





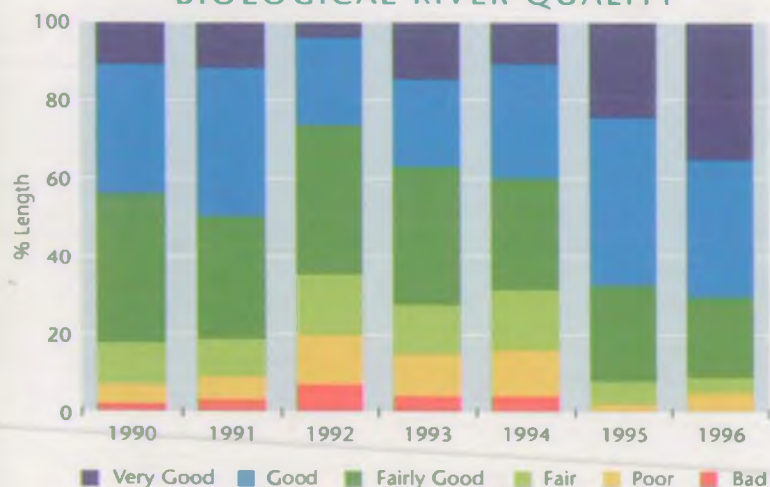
35% better than in 1990. The results for 1996 are shown in the Chemical Survey Map. The amount of ammonia present in rivers, a principal indicator of pollution by sewage effluents, has improved by 30% over that time. This is shown in the graph, below.

### MEDIAN AMMONIA VALUES

BIOLOGICAL  
RIVER QUALITY  
SURVEY 1996

According to the General Quality Assessment (GQA) Scheme

## BIOLOGICAL RIVER QUALITY



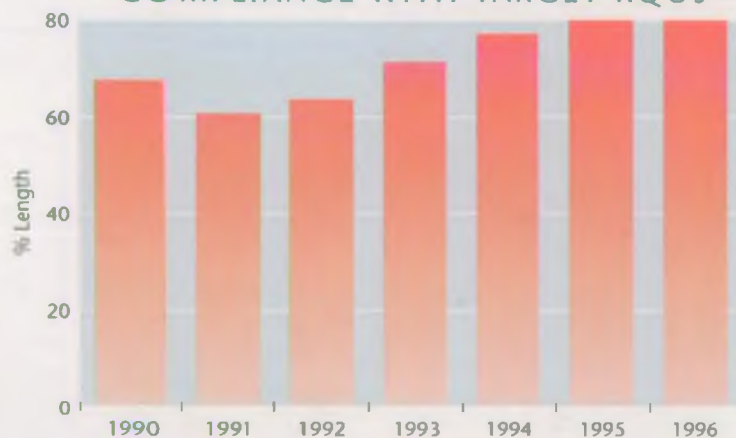
One cause of the improvement is the pressure brought to bear on dischargers. This has led to investment in better treatment and improved standards for discharges, especially those from sewage treatment works. Another cause is the wetter weather since the drought of 1990 and 1991. A third contribution is the special work undertaken to prevent pollution before it happens.

River quality is also graded according to the types of small creatures found living in the beds of rivers. The cleanest rivers tend to have an abundance of creatures which are sensitive to pollution. The results for 1996 are shown on the Biological Survey Map and for previous years in the graph left.

## River Quality Objectives

There are special targets for 7,000 kilometres of the Region's rivers. These are called River Quality Objectives (RQOs). Compliance with these is illustrated in the graph below. They are sets of water quality standards which will ensure that rivers are suitable for water supplies, fish, agriculture and recreation. Whenever a development is proposed which threatens water quality, the Region pushes for action which protects the RQO. Local Environment Agency Plans are used to agree particular targets for particular rivers.

## COMPLIANCE WITH TARGET RQOs



*In 1996, 79% of river length complied with target River Quality Objectives.*







### Bathing Waters

In 1996, 97% of the Region's 35 Bathing Waters complied with the standards, compared with 88% in 1995. On average, pollution has decreased by 27% since 1995. Plans are in hand to secure compliance at one water which failed in 1996.

*Extensive sampling of bathing waters is carried out.*

### Urban Waste Water Treatment Directive (UWWTD)

This directive imposes requirements on sewerage systems and sewage treatment. The stringency depends on the size of the discharge and on the type of receiving waters.

In a Region like Anglian, many waters contain more nutrients than may be expected naturally. These waters can suffer the green colour associated with blooms of algae and face the impacts of excessive growths of weeds. Waters with such problems can be designated as Eutrophic Sensitive Areas under the UWWTD. Sewage treatment works that discharge to these Areas may require special treatment if they serve more than the equivalent of a population of 10,000.

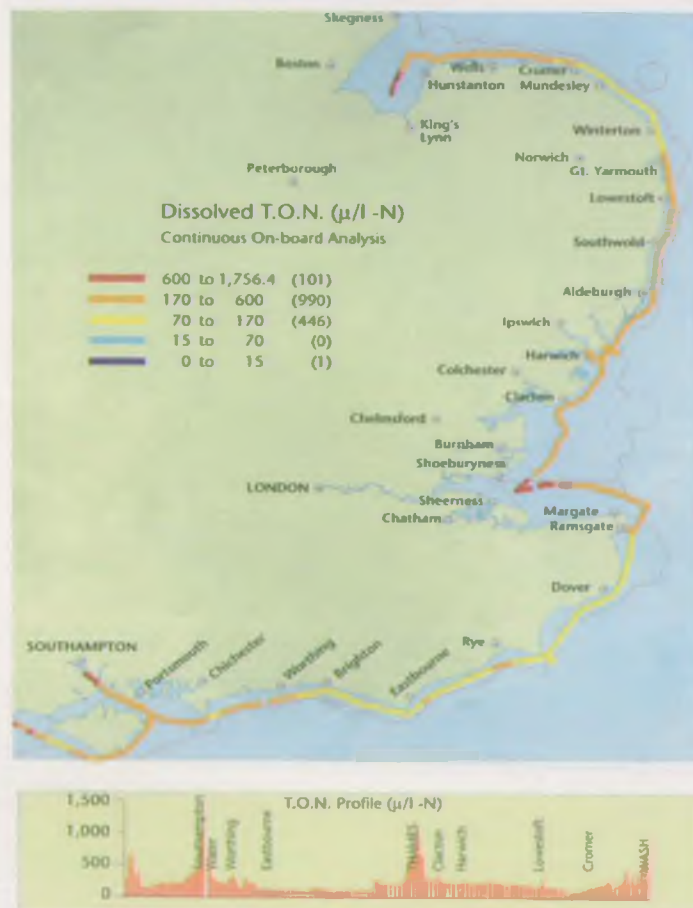
The Government designated 13 Eutrophic Sensitive Areas in the Region in 1994. Implicated sewage treatment works must have phosphorus removal by the end of 1998. The designations are reviewed every four years. During 1996 monitoring continued on the 13 designated Areas, and a further 23 freshwaters, and 7 estuaries, which were considered to be candidates for future designation.

### Nitrate Sensitive Areas

The Agency has powers to nominate areas of land where it considers it important to reduce the movement of nitrate into waters. These are designated as Nitrate Sensitive Areas (NSAs). In these the aim is to encourage changes in farming, such as the conversion of arable land to grassland. The scheme is voluntary, and compensation is paid to farmers who take part. So far, seven NSAs have been established, at Sleaford, Branston Booths, North Lincolnshire Wolds, Sedgeford, Slip End, Aswarby and Birchmoor.



## 'SEA VIGIL' COASTAL SURVEY



*'Sea Vigil' coastal survey vessel*

## Coastal Monitoring

Some 1,500 km of estuaries and coastal waters are monitored, to the three mile limit, to gauge how contaminants are dispersed.

The coastal survey vessel, Sea Vigil, collects information on coastal waters from the Humber to the Thames. All of this information helps form a picture of the state of the environment. An example of information collected by Sea Vigil is shown in the Map left.

## Operators' Monitoring

Within the conditions of an IPC authorisation is the requirement for the operator to carry out a monitoring programme and submit the data to the Agency; the type, frequency and extent as set out in the Authorisation. About 1,500 returns were received and placed on the public registers in the year.

## Environment Agency's Independent Monitoring

For some IPC permissions, in addition to operator's monitoring, independent monitoring is commissioned by the Agency. This provides independent data against which the operator's data can be checked. Alternatively the Agency commissions this in response to incidents, complaints or concerns.



Routine monitoring is carried out at a predetermined frequency. Non-routine monitoring is monitoring that is usually carried out at short notice, because of some concern of the Inspector.

In this year 59 IPC and 12 RAS sites were monitored under the Routine Contracts and 32 sites were monitored under the Non-routine Contracts; 7 related to air, 24 to water and 1 to RAS.

### Waste Regulation Monitoring

The majority of the environmental monitoring is performed by the site operators as a requirement of their licence. The Agency also carries out check monitoring to ensure that the operator data are satisfactory. Over 2,500 landfill gas readings were taken in addition to over 300 leachate samples and more than 1,000 groundwater samples.

A large proportion of the waste regulation work is ensuring preventative systems are in place so that pollution does not occur and waste is managed in accordance with the legislation. Over 63,000 special waste consignment notes were processed and 604 detailed Transfrontier Shipment Assessments made. The Agency also worked with the police and European Agencies to carry out 385 checks of carriers of waste and brokers.



*A waste carrier check*

### Discharges

The discharge of wastewaters is controlled by granting a consent. This is the legal permission to discharge an effluent to rivers or other waters.

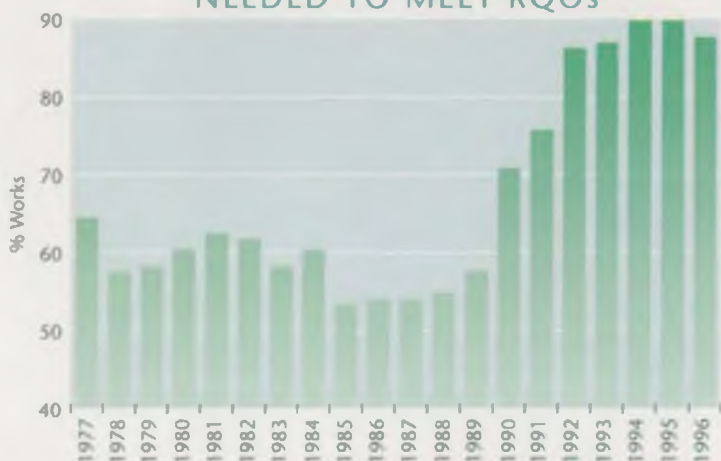
There have been big improvements in the performance of sewage treatment works operated by Anglian Water Services. More than 98% of the discharges comply with their consents, compared to 89% in 1989. Sewage treatment works in this Region have, on average, the tightest standards in the United Kingdom.

Since 1989 the number of discharges which comply with the quality needed to achieve the targets for the Environment (River Quality Objectives) has risen from 57% to 88%.

### COMPLIANCE WITH LEGAL NUMERIC CONSENTS



### COMPLIANCE WITH QUALITY NEEDED TO MEET RQOs



# MAJOR POLICY ISSUES DEALT WITH THIS YEAR

## IPPC

The EC Integrated Pollution Prevention and Control (IPPC) Directive will extend integrated control - covering releases to air, water and land - up to 7,000 installations, compared to the 2,000 or so processes regulated under Integrated Pollution Control (IPC) at present. It will take a far wider range of environmental factors into account. The Department of the Environment, Transport and the Regions (DETR formerly DoE) will publish a Consultation document on the Integrated Pollution Prevention and Control Directive in June 1997.

## Other European Directives.

Work is heavily influenced by a significant number of other Directives. As a result of 10 of these the Agency has to monitor, report, and pursue improvements. A great deal of monitoring is carried out for those on Dangerous Substances, Bathing Waters, Surface Water Abstraction, Freshwater Fish and Shellfish Waters.

These results are sent to the Department of the Environment, Transport and the Regions to be forwarded to the European Commission. They also appear on the public register at the Regional Office at Kingfisher House.

## Marine Waters

The Government has agreed at various international fora (eg Oslo and Paris Commission and the international North Sea Conference) to reduce contaminants entering the North Sea. To monitor this reduction 51 discharge sites were routinely monitored for over 50 substances. The UK's targets are being achieved and the further reductions required by the year 2000 are well on the way to being met.

## National Air Quality Management Strategy (NAQMS) and Local Air Quality Management Strategy

The National Air Quality Strategy (NAQS) was published in March 1997. It commits the government to achieving ambitious new quality objectives throughout the UK by 2005. The Agency was a key consultant in the preparation of the document.



Information on local air quality is important in developing and implementing policy on the National Air Quality Strategy, Local Environment Agency Action Plans (LEAPs) and for Regional State of the Environment Reporting



PPC staff have also been involved in preparing information and guidance in support of the Air Quality Management Strategy (AQMS).

### **Waste Licensing Consistency**

The issue of consistency in licensing and enforcement has been a major issue and Regional PPC staff have been helping to develop policy and guidance in this area. Anglian took a lead role in the area of Financial Provision whereby landfill operators have to secure funds to prove that funding is available for the long-term monitoring of landfill sites and for pollution problems arising from these sites. This has been well received by industry. Work is progressing on the development of standard licence conditions.

### **Special Waste Tracking**

Peterborough is the location for the national Special Waste Tracking System and as such has a major role in the administration of the new Special Waste Regulations. Nearly 8 million consignment notes have been sold. The system is now able to deliver the service required and adds to the procedures that ensure that special waste is not delivered to unsuitable sites.

*Transfer station for special waste*





*The Operator and Pollution Risk Appraisal (OPRA) system represents an important move towards risk-based assessment and regulation by The Environment Agency and is a significant step forward in regulatory development.*

### **Operator and Pollution Risk Appraisal (OPRA)**

OPRA is a formal system of risk assessment for processes under Integrated Pollution Control (IPC).

The Region took the lead in the development and implementation of the OPRA system. In addition to developing a formal guidance note and procedures, national training sessions were arranged, which included representatives from the Scottish Environmental Protection Agency. Potential longer-term developments will look at expanding OPRA to cover a wider range of uses and other parts of the Agency's work.

### **Review of Charging for IPC**

The Region contributed to the examination of a number of possible options for charging for Integrated Pollution Control. The results from this review have been fed into a draft consultation document which it is anticipated will be published in Autumn 1997.

### **Association of British Insurers Working Group**

Regional PPC is liaising with the Insurance Industry to help develop better technical understanding within the Insurance Industry of pollution risks.



## **REGIONAL ENVIRONMENT PROTECTION ADVISORY COMMITTEE (REPAC)**

The REPAC is a statutory committee set up under The Environment Act 1995. The Committee has responsibility for advising the Agency on the manner in which the Agency carries out its function in the Region on Pollution Prevention and Control, Water Resources, Conservation, the National Air Quality Strategy and the National Waste Strategy. Membership comprises of suitable representatives including a reasonable cross-section from local authorities, local industries and local interest groups within the Region.

Principal areas addressed via the REPAC in 1996/97 were:-

**Application of toxicity-based criteria for the regulatory control of wastewater discharges, Special Waste Regulations,**

**Burning of Substitute Liquid Fuels (SLF) in cement kilns,**

**National Air Quality Management Strategy (NAQMS) and Local Air Quality Management,**

**Bovine Spongiform Encephalopathy (BSE)**

**Environment Agency Strategy**

**Liquid Waste To Landfill**

**Local Environment Agency Plans (LEAPS)**

**Environmental Assessment in the Agency**

**Waste Producer Responsibility (Packaging)**

**Measuring the State of The Environment**



# STATISTICS

## ENFORCEMENT STATISTICS: 1996/97

	Minded to serve notice letters		Enforcement notices		Formal cautions	Prohibition notices	Prosecutions - taken (successful)	Total fines £*
IPC	2	0		0	0	0	n/a	
RAS	4	0		0	0	0	n/a	
Waste	106	29	6	3	39 (38)	27,670		
WQ	618	0	10		43 (43)	131,680		
Waste warning letters	513							* not including costs.
WQ warning letters	859							

This table gives the numbers and types of enforcement actions undertaken by Anglian Region. The table is shaded where a type of action is not applicable.

The great difference in number of authorisations in the separate functions, against which enforcement action could be taken precludes any useful comparison of figures being made.



*Site visits are an important part of regulation*



## Water Pollution Incidents

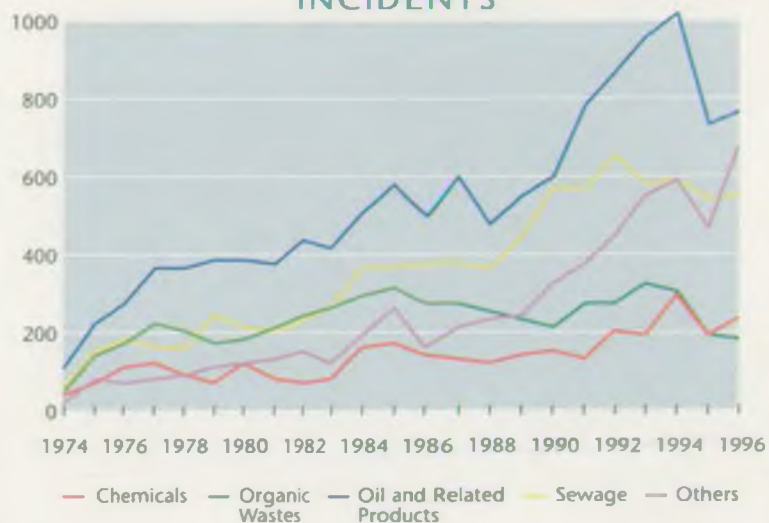
In 1996, 3% fewer incidents were reported than in 1995. The number and impact of incidents is beginning to reduce as the Region becomes more effective in getting others to prevent pollution. However, any decrease in the numbers is being partially countered by the fact that people have become more aware of pollution and the need to inform the Agency of incidents. This is reflected in the greater numbers of minor incidents in recent years.

## Prosecution

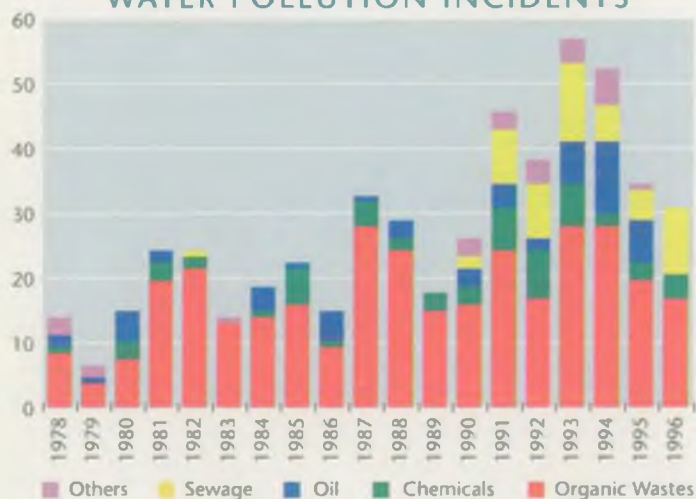
The Agency seeks to prosecute wherever serious pollution has occurred, or some negligence or deliberate act is involved, and where evidence can be accumulated to mount a successful case. A total of £159,350 in fines was imposed and £51,248 in costs was awarded to the Region for all pollution prosecutions.

The graph below shows the numbers of prosecutions for water pollution incidents over the years, back to 1978. Similar historical data is not available for other functions due to different pre-Agency boundaries.

## NUMBER OF WATER POLLUTION INCIDENTS



## NUMBER OF PROSECUTIONS FOR WATER POLLUTION INCIDENTS



## VISITS 1996/97

TYPE	Number
Pre-planned or Programmed	38,675
Reactive/Responsive	14,760
Application Related	293
Advisory	7,862
Total	61,590



## APPLICATIONS/LICENCE PROCESSING: APRIL 1996 - MARCH 1997

		Nos Received or Instigated	Nos Determined	% within target limits*
IPC	new applications	14	16	53
	major variations	19	17	71
	minor variations	46	39	
RAS	new or varied authorisations	61	65	86
	new or varied registrations	172	186	93
	cancellations		88	
WASTE	new licences	84	61	84
	modifications	32	28	86
	transfers	16	11	82
	surrenders	26	23	87
WATER QUALITY	utility	67	104	87
	non-utility	583	602	100

Almost all applications were determined within the extension timescale as agreed with the applicant.

The statutory time limit for new IPC applications and major variations is 4 months, or longer if agreed. The figures show those determined within 4 months. Because of the complexity of these processes an extension is often required.





### The Public Register

The Register, which is open to visitors every working day, holds copies of the standards applied to discharges and the results of analyses of environmental and effluent samples. The number of water quality related enquiries has increased seven-fold since 1989, and increased by about 16% since 1995.

During the year the IPC/RAS Public Register was moved from Bedford to amalgamate with the Water Quality Public Register in the Regional Office in Peterborough to help give an integrated public register for the Region. The Waste Registers are based in seven locations throughout the Region and hold details of licences, monitoring and enforcement notices.

*The public registers are used by a broad cross section of people from researchers and students to operators themselves.*

### TOTAL PUBLIC REGISTER ENQUIRIES: APRIL 1996 - MARCH 1997

TYPE	SOURCE OF ENQUIRY						TOTAL
	General Public	Industry	Consultant	Environment Group	Student	Official Bodies	
Phone or letter	682	1,759	1,002	64	386	377	4,270
Visit	22	44	55	3	15	10	149
Total	704	1,803	1,057	67	401	387	4,419



## GLOSSARY OF TERMS

**ABSTRACTIONS** - The removal of water from any source either permanently or temporarily, usually by pumping.

**ALGAE** - Microscopic (sometimes larger) plants, which may be floating or attached. Algae occur in still and flowing water.

**ALGAL BLOOM** - Rapid growth of algae in marine and freshwaters which may colour the water and accumulate on the surface as a scum. Decomposing dead cells can consume oxygen in the water which may affect fish.

**AMMONIA** - A chemical compound found in water often as a result of pollution by sewage effluents. Widely used as a measure of water quality. Ammonia detrimentally affects fish.

**ANNUAL MEAN BACKGROUND CONCENTRATION (AIR QUALITY)** - Averaged data, for a year period, acquired from a site away from the immediate influence of roads, industrial and other point sources.

**APPLICATION** - An application for an authorisation under IPC or an authorisation or registration under RAS.

**AIR QUALITY MANAGEMENT STRATEGY (AQMS)** - A national system for local air quality management whereby local authorities have the lead in assessing and then achieving air quality standards by 2005.

**AUTHORISATION** - A permit or licence to operate a process under IPC (Environmental Protection Act 1990) or accumulate and or dispose of radioactive waste under the Radioactive Substances Act 1997.

**BATHING WATERS** - Bathing waters identified under the Bathing Water Directive

**BROKERS** - People who arrange the transport and management of waste for other companies.

**CATCHMENT** - The total area from which a single river system collects rain.

**CONSIGNMENT NOTE** - The movement of special waste from premises requires a form to be filled in which describes the chemical nature of the waste and the destination. The Agency provides a unique code for these forms which allows the tracking of these wastes.

**CONTAINMENT WORKS** - Engineering works carried out on a site to form an impermeable barrier to water. These are usually clay or synthetic liners.

**DISCHARGE CONSENT** - A statutory document issued by the Environment Agency. It can authorise entry and indicate limits and conditions on the discharge of an effluent to a Controlled Water.

**EUTROPHIC** - A description of water which is rich in nutrients.

**FINANCIAL PROVISION** - The legislation on the licensing of waste management facilities requires that finances are secured from the licence holder to deal with long term monitoring of the site and for specified environmental problems which could occur.

**FLYTIPPING** - The illegal dumping of rubbish/material in places such as hedgerows, lay-bys, fields etc.

**INSTALLATIONS** - The IPPC Directive regulates whole installations rather than, as with IPC, individual processes. However, the definition of "installation" used in the Directive is, effectively, the same as the definition of "process" used in IPC.

**INTEGRATED POLLUTION CONTROL (IPC)** - An approach to pollution control which recognises the need to look at the Environment as a whole, so that solutions to particular pollution problems take account of potential effects on all environmental media.

**IPPC DIRECTIVE** - The EC Directive to be implemented in 1999 which adapts and expands IPC for member states. IPPC covers a wider range of installations than are currently controlled through IPC

**LANDFILL** - The engineered deposit of waste into or onto land in such a way that pollution or harm to the environment is minimized or prevented and, through restoration, to provide land which may be eventually used for another purpose.

**LEACHATE** - Liquor formed by the act of leaching (percolation of liquid through a material).

**LOCAL ENVIRONMENT AGENCY PLANS (LEAPS)** - The Environment Agency's integrated local management plan, based on geographic catchments, for identifying and assessing, prioritising and solving local environmental issues directly related to the work of the Agency's functions to contribute to sustainable development, taking into account the views of the Agency's local customers.

**MAJOR VARIATION** - A major change required to an IPC or RAS authorisation or registration.

**NITRATE VULNERABLE ZONE** - An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50mg/l laid down in the 1991 EC Nitrate Directive, and where compulsory, uncompensated agricultural measures were introduced from 1996 as a means of reducing those levels.

**NITRATE SENSITIVE AREAS** - An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50mg/l laid down in the 1980 EC Drinking Water Directive, and where voluntary, compensated agricultural measures were introduced in 1990 as a means of reducing the concentration of nitrate.



**NUTRIENT** - Substance providing nourishment for plants and animals eg nitrogen, phosphorus.

**OPERATOR PERFORMANCE AND RISK ASSESSMENT (OPRA)** - A rating system for regular use by Agency inspectors to evaluate the pollution risks and operator performance of IPC processes.

**PERMETHRIN** - A chemical used in timber treatment.

**PM10** - Particulate Matter 10 microns (millionths of a metre) or less in diameter.

**PROCESS INDUSTRIES** - Industries which use processes regulated under IPC.

**PROCESS** - An industrial activity for which an IPC Authorisation is required.

**RAS** - Radioactive substances, specifically anything regulated under the Radioactive Substances Act 1993

**RED LIST SUBSTANCE** - Substance which has been selected for monitoring on the basis of its persistency, toxicity and ability to bioaccumulate.

**REGISTRATION** - A certificate entitling the holder to use a radioactive substance (but not to accumulate or dispose of it as radioactive waste).

**RIVER QUALITY OBJECTIVES** - The level of water quality that a river should achieve in order to be suitable for its agreed use.

**SECONDARY LIQUID FUEL (SLF)** - Also known as Substitute Liquid Fuel, Recycled Liquid Fuel and Cemfuel (registered trademark). A waste derived fuel principally used in cement kilns instead of traditional fossil fuels.

**SPECIAL WASTE** - Category of Waste which includes material with any of the following properties :- dangerous to life as defined in the regulations, or with a flash point of 21°C or less, or a prescription only medicine.

**SUMMER MEAN BACKGROUND CONCENTRATION (AIR QUALITY)** - Averaged data for the period April to September inclusive. Relevant to ozone pollution due to ozone peak concentrations occurring during the summer and the crop growth inhibition effect of ozone.

**SUSTAINABLE DEVELOPMENT** - Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

**TRIBUTYL TIN** - A chemical used in timber treatment.

**TOXICITY BASED CRITERIA** - A toxicity measure used to assess environmental or discharge quality.

**TRANSFRONTIER SHIPMENT ASSESSMENT** - When specified wastes are imported into this country checks have to be made to ensure that the waste is destined for recycling. In some cases financial agreements have to be secured, so waste can be returned if it is not suitable.

**TRITIUM** - A radioactive isotope of hydrogen.

**WASTE SURVEYS** - Surveys of industrial and commercial premises which produce waste. The data from these are used for strategic planning.

**WASTE CARRIERS** - Businesses which transport waste for example skip, haulage and specialist waste management companies.

## ANGLIAN ADDRESSES

### REGIONAL OFFICE

Environment Agency  
Kingfisher House  
Goldhay Way  
Orton Goldhay  
Peterborough PE2 5ZR  
Tel: (01733) 371 811  
Fax: (01733) 231 840

### NORTHERN AREA

Environment Agency  
Waterside House  
Waterside North  
Lincoln LN2 5HA  
Tel: (01522) 513 100  
Fax: (01522) 512 927

### CENTRAL AREA

Environment Agency  
Bromholme Lane  
Brampton  
Huntingdon PE18 8NE  
Tel: (01480) 414 581  
Fax: (01480) 413 381

### EASTERN AREA

Environment Agency  
Cobham Road  
Ipswich IP3 9JE  
Tel: (01473) 727 712  
Fax: (01473) 724 205



For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

### ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

**0645 333 111**

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

### ENVIRONMENT AGENCY EMERGENCY HOTLINE

**0800 80 70 60**



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