

Abandoned mines

Abandoned mines can be a serious source of water pollution. The Environment Act 1996 lays down specific requirements in respect of water pollution from abandoned mines by way of a system of consents and the requirement for mine owners to give the Environment Agency at least six months notice prior to abandoning a mine.

Environment Act 1995

Abatement

The process of reducing the degree or intensity of, or eliminating, pollution.

The process of eliminating or controlling, in particular, statutory nuisances.

Under the common law, abatement is known as the “self-help” remedy whereby an occupier of land affected may take action to abate the damage.

Abatement Notice

Noise and Statutory Nuisances Act 1993

Noise nuisance

Nuisance

Powers of inspectors

Private actions

Private nuisances

Public nuisance

Statutory nuisances

Abatement Notice

Section 80 of the EPA outlines the summary proceedings for statutory nuisances.

Where a local authority is satisfied that a statutory nuisance exists or is likely to occur or recur in the area of the authority, the authority shall serve an Abatement Notice imposing all or any of the following requirements:

- (a) requiring the abatement of the nuisance or prohibiting or restricting its occurrence or recurrence;
- (b) requiring the execution of such works, and the taking of such other steps, as may be necessary for any of those purposes,

and the Notice shall specify the time or times within which the requirements of the Notice are to be complied with.

The Abatement Notice shall be served:

- (a) except in the case of (b) and (c) below, on the person responsible for the nuisance;
- (b) where the nuisance arises from any defect of a structural character, on the owner of the premises;
- (c) where the person responsible for the nuisance cannot be found or the nuisance has not yet occurred, on the owner or occupier of the premises.

A person served with an Abatement Notice may appeal to a Magistrates' Court within 21 days beginning with the date on which he was served with the Notice.

If a person on whom an Abatement Notice is served, without reasonable cause, contravenes or fails to comply with any requirement or prohibition imposed by the Notice, he shall be guilty of an offence.

Failure to comply with an Abatement Notice can result in the defendant being subjected to a fine not exceeding level 5 on the standard scale together with a further fine of an amount equal to one-tenth of that level for each day the offence continues after conviction. A person who commits an offence on industrial, trade or business premises, however, shall be liable to a fine not exceeding £20,000. It is a defence to prove that best practicable means were used to prevent, or to counteract the effects of, the nuisance.

Action in default

"Best practicable means"

Environmental Protection Act 1990

Offences

Powers of inspectors

Statutory nuisances

Abatement Order

Section 82 of the EPA makes separate provision for 'aggrieved persons' to formally complain to a Magistrates' Court in respect of statutory nuisances. Thus, a Magistrates' Court may act under this Section on complaint made by any person on the ground that he is aggrieved by the existence of a statutory nuisance. Where the court is satisfied that the alleged nuisance exists, or that,

although abated, it is likely to recur on the same premises, the court may make an Order (Abatement Order) for either or both of the following purposes:

- (a) requiring the defendant to abate the nuisance, within a time specified in the Order, and execute any works necessary for that purpose;
- (b) prohibiting a recurrence of the nuisance and requiring the defendant, within a time specified in that Order, to execute any works necessary to prevent the recurrence,

and may also impose on the defendant a fine not exceeding level 5 on the standard scale.

Where a court is satisfied that the nuisance exists and is such as, in the opinion of the court, to render premises unfit for human habitation, an Order may be made prohibiting the use of the premises for human habitation until the premises are, to the satisfaction of the court, rendered fit for that purpose.

Complaint to a Magistrates' Court

Environmental Protection Act 1990

Statutory nuisances

Absolute duties

Where a risk to the environment is inevitable if legal requirements are not followed, a statutory duty may well be strict or absolute. Absolute duties are qualified by the terms “shall” or “must” and there is little or no defence available when charged with such an offence.

Most of the duties under the Environmental Protection Act 1990 and Regulations made under the Act are of a strict or absolute nature. Similar provisions are incorporated in health and safety legislation, such as the Management of Health and Safety at Work Regulations 1999 and the Workplace (Health, Safety and Welfare) Regulations 1992.

Acidification

The process of a medium, such as soil, increasing its acidity, below a pH of 6.

Acid rain

Acid rain

Acid rain is a term which describes the acidity of wet and dry deposition. This includes acidity falling as rain, snow, sleet, hail, mist, fog (wet deposition) and the dry deposition of gases and particles.

Rain water is naturally acidic as a result of carbon dioxide dissolved in water and from volcanic emissions of sulphur. However, the chemical conversion of sulphur and nitrogen emissions from power stations, factories, vehicles and domestic premises, where fossil fuels are burnt, is generally associated with acid rain.

Acid rain is created by the release into the atmosphere of certain gases, such as sulphur dioxide, nitric oxide and nitrogen dioxide. Other chemicals, such as ammonia, ozone and various hydrocarbons are also implicated in the formation of acid rain. These pollutants can be converted through a series of complex chemical reactions into sulphuric acid, nitric acid or hydrochloric acid, increasing the acidity of the rain or other type of precipitation.

Carbon dioxide + water = Carbonic acid (weak)

Sulphur dioxide + water = Sulphuric acid

Nitrogen oxides + water = Nitric acid

Rainfall acidity is based on pH, a scale which ranges from 0 to 14, 0 being the most acid, 7 being neutral and 14 the most alkaline.

Air pollution

Ammonia

Carbon dioxide

Fossil fuels

Nitrogen oxides

Sulphur oxides

Action in default

Section 81 of the EPA gives the local authority power, where an Abatement Notice has not been complied with, and whether or not they have already taken proceedings, to abate the nuisance and do whatever may be necessary in execution of that Notice. Any expenses reasonably incurred may be recovered by

them from the person by whose act or default the nuisance was caused or apportioned among several persons accordingly.

This Section also gives power to a local authority, where proceedings for an offence would afford an inadequate remedy in the case of any statutory nuisance, to take proceedings in the High Court for the purpose of securing the abatement, prohibition or restriction of the nuisance, and the proceedings shall be maintainable notwithstanding the local authority have suffered no damage from the nuisance.

Abatement Notice

Environmental Protection Act 1990

Statutory nuisances

Aerobic digestion

The decomposition of organic matter by micro-organisms in the presence of oxygen.

Anaerobic digestion

Agricultural nitrate pollution

Nitrates are salts of nitric acid and have an important function in enhancing plant growth. However, the quantity of nitrates sufficient to permit plants to reach full growth is limited so it is necessary for those in agriculture to add further nitrate-based products to land to achieve the maximum yield from a crop. These may include organic manures and inorganic fertilisers.

However, not all sources of nitrates are accounted for. In many cases the quantity of nitrates applied is greater than the crop requires. As a result, excess nitrates may leach into the ground and surface waters bringing about an increase in nitrate levels. This release of nitrates into the water environment is a matter for great concern as nitrate pollution can contribute to eutrophication.

Agriculture is a major source of water pollution and a significant source of air pollution. According to the Report by the Policy Commission on Food and Farming (2002):

- over 70% of nitrates and 40% of phosphates in English waters originate from agricultural land;
- up to a half of England's bathing waters are affected by short-term contamination by agricultural pollution, mainly by microbes from livestock manure being washed off farm land after rain;

- the majority of silt loads to English rivers and lakes is derived from heavy soil erosion from agricultural land; this alters the composition of gravel sediments, reducing water clarity and causing serious risks to the life of fish, plants and insects;
- pesticides are contaminating drinking water sources, requiring extensive additional treatment at water works to remove pesticides before this water can be supplied to consumers.

Recent legislation, such as the Action Programme for Nitrate Vulnerable Zones (England and Wales) Regulations 1998, together with the Nitrate Vulnerable Zones (Additional Designations) (England) (No.2) Regulations 2002, was brought in as an attempt to remedy this situation.

Bathing Waters (Classification) Regulations 1991

Diffuse pollution

Eutrophication

Nitrate Vulnerable Zone

Pesticide

Soil erosion

Agricultural waste

This term is not defined in law but comes within the general definition of “waste”. Similarly, agricultural wastes are not specified, but can include all forms of waste encountered in agricultural activities such as packaging waste, building waste, animal health products and their packaging, empty chemical containers and various forms of hazardous waste, such as agrochemical concentrates, oils and brake fluids.

Where an agricultural business produces more than 500 kg (1100 lbs) or 500 litres (110 gallons) of hazardous waste a year, they must register with the Environment Agency.

Agricultural waste must be stored and disposed of in accordance with the Waste Management (England and Wales) Regulations 2006.

Environmental Protection (Duty of Care) Regulations 1991

Waste

Waste Management (England and Wales) Regulations 2006

Air

Air extends to the limits of the atmosphere and should be taken to include the air within buildings and other natural and man-made structures above or below the ground.

[Environmental Information Regulations 1992]

Airborne particulates

Air pollution

Release into the air: substances

Airborne particulates

Particulates are a collection of particles, each of which is an aggregation of many molecules. As aerosols, they take a number of forms and can be classified as:

Dusts

Dust is an aerosol composed of solid inanimate particles. (ILO). Dusts are solid airborne particles, often created by operations such as grinding, crushing, milling, sanding and demolition. Two of the principal dusts encountered in industry are asbestos and silica.

Dusts may be:

- (a) *fibrogenic* – they cause fibrotic changes to lung tissue, e.g. silica, cement dust, coal dust and certain metals;
- (b) *toxic* – they eventually poison the body systems e.g. arsenic, mercury, beryllium, phosphorus and lead.

Mists

A mist comprises airborne liquid droplets, a finely dispersed liquid suspended in air. Mists are mainly created by spraying, foaming, pickling and electro-plating. Danger arises most frequently from acid mist produced in industrial treatment processes e.g. oil mist, chromic acid mist.

Fumes

These are fine solid particulates formed from the gaseous state usually by vapourisation or oxidation of metals e.g. lead fume. Fumes usually form an oxide in contact with air. They are created by industrial processes which involve the

heating and melting of metals, such as welding, smelting and arc air gouging. A common fume danger is lead poisoning associated with the inhalation of lead fume.

Gases

These are formless fluids usually produced by chemical processes involving combustion or by the interaction of chemical substances. A gas will normally seek to completely fill the space into which it is liberated. A classic gas encountered in industry is carbon monoxide. Certain gases such as acetylene, hydrogen and methane are particularly flammable.

Vapours

A vapour is the gaseous form of a material normally encountered in a solid or liquid state at normal room temperature and pressure. Typical examples are solvents, such as trichloroethylene, which release vapours when the container is opened. Other liquids produce a vapour on heating, the amount of vapour being directly related to the boiling point of that particular liquid. A vapour contains very minute droplets of the liquid. However, in the case of a **fog**, the liquid droplets are much larger.

Smoke

Smoke is a product of incomplete combustion, mainly of organic materials. It may include fine particles of carbon in the form of ash, soot and grit that are visibly suspended in air.

Contaminant	Particle size range (Microns)	Characteristics
Dust	0.1 – 75	Generated by natural fragmentation or mechanical cutting or crushing of solids e.g. wood, rock, coal, metals, etc. Grit particles, usually considered to be above 75 microns, are unlikely to remain airborne.
Fume	0.001 – 1.0	Small solid particles of condensed vapour, especially metals, as in welding or melting processes. Often agglomerate into larger particles as the smaller particles collide.
Smoke	0.01 – 1.0	Aerosol formed by incomplete combustion of organic matter; does not include ash, e.g. fly ash.
Mist	0.01 – 10.0	Aerosol of droplets formed by condensation from the gaseous state or as dispersion of a liquid state e.g. hot open surface tank, electroplating.
Vapour	0.005	Gaseous state of materials that are liquid or solid at normal room temperature and pressure e.g. solvent vapours
Gas	0.0005	Materials which do not normally exist as liquids or solids at normal room temperature and pressure.

Figure 1: COMPARISON OF TYPES OF AIRBORNE CONTAMINANT

Production of particulates

This is largely brought about as a result of a size reduction process through operations such as pulverisation, grinding, chemical action, transportation, spray drying, sieving, polishing and the associated grading, screening, blending and packing of dusty products. Other particulates may be produced as a result of heat processes.

Aerosol behaviour

All dusts and fumes are potential aerosols and the behaviour of particles is influenced by:

- (a) the rate of air movement;
- (b) Brownian motion, that is the “joggling” movement or effect imparted to submicron particles by molecular bombardment; and
- (c) the size, density and shape of the particle.

Evaluation of airborne particulate hazards

The following factors should be considered:

- (a) type of particulate;
- (b) source of the particulate;
- (c) duration of exposure;
- (d) air monitoring system necessary;
- (e) existing cleaning/control methods; and
- (f) current legal requirements.

Control of airborne particulates

In determining the appropriate controls, the following factors should be considered:

- (a) type of particulate – particle size and shape, weight, density, air velocity and toxicity;
- (b) the sources of particulate in a particular process e.g. blending, screening;
- (c) number of people exposed, duration of exposure (continuous or intermittent) per day, and the number of days per week this exposure takes place;
- (d) the methods available for monitoring exposure e.g. static sampling, personal dosimetry, and the results of past monitoring activities;
- (e) the efficiency of current cleaning methods; manual methods e.g. sweeping, should be replaced by the use of industrial vacuum cleaners; and
- (f) the efficiency of arrestment plant, including the system for examination, maintenance and testing of such plant.

Emphasis should always be placed on control at source by means of efficient control systems (local exhaust ventilation) sooner than the provision and use of respiratory protective equipment.

In workplaces, the requirements of the Control of Substances Hazardous to Health Regulations 2002 should be implemented as most airborne particulates are classified as “substances hazardous to health” under these Regulations.

Air pollution

Carbon monoxide

Chlorine

Control of Substances Hazardous to Health (COSHH) Regulations 2006

Copper

Environmental monitoring in the workplace

Ferrous metals

Grit, dust and fumes

Heavy metal pollution

Lead and lead poisoning

Respiratory diseases

Sulphur oxides

Air pollution

Air pollution arises when harmful substances, such as carbon monoxide, nitrogen dioxide, sulphur dioxide and lead are discharged to the atmosphere. Pollution may take the form of smoke, gases, fumes and dust from a variety of sources, such as ventilation systems, combustion of fuels, incineration of wastes and as a result of certain processes. Pollutants can affect the upper respiratory tract resulting in diseases such as bronchitis. Air pollution caused by substances such as benzene, may also be a factor in the incidence of cancer of the lung, oesophagus and stomach.

Acid rain

Air

Airborne particulates

Clean Air Act 1993

Control of Substances Hazardous to Health (COSHH) Regulations 2006

“Dark smoke”

Dark smoke offences

Emission

Emission limit value

Environmental Protection Act 1990

Fossil fuels

Global warming

Greenhouse effect

Grit, dust and fumes

Incineration

Local exhaust ventilation (LEV) systems

Ozone depletion

Part B activities

Pollution of the environment

Release into the air: substances

Respiratory diseases

Smoke

Smoke Control Areas

Smoke Control Areas (Authorised Fuels) (England) Regulations 2002 – 2006

Smoke-free premises and vehicles

Air Quality Management Area

Local authorities have duties under the Environment Act 1995 for local air quality management. This includes undertaking regular reviews and assessments of air quality against standards and objectives set out in the National Air Quality Strategy and which have been prescribed in Regulations for the purpose of Local Authority Air Quality Management.

An Air Quality Management Area is an area designated by a local authority in which recommended air quality targets are not being, or are unlikely to be, met. In such cases, the local authority must prepare and implement remedial actions to address the problem.

Environment Act 1995

Pollution Prevention and Control (PPC)

Air Quality Standard

An Air Quality Standard is the level of pollutants prescribed by Regulations that must not be exceeded during a given time in a defined area.

The Air Quality Standards Regulations 2007 implemented Directive 2004/107/EC on arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air and the European air quality legislation previously implemented in the Air Quality Limit Values Regulations 2003.

These Regulations require the Secretary of State to divide England into zones for air quality management purposes. They establish:

- (a) concentration limit values for Group A pollutants (benzene, carbon monoxide, lead, nitrogen dioxide and oxides of nitrogen, particulate matter (PM₁₀) and sulphur dioxide);
- (b) target for Group B pollutants (the content of arsenic, benzo(a)pyrene, cadmium and nickel, and their compounds within the PM₁₀ fraction); and
- (c) target values and long-term objectives for ozone.

The Secretary of State has the duty to assess the concentration of pollutants in each zone and to take the necessary measures to ensure that the standards are attained. In the case of Group B pollutants, this is through the application of measures not entailing disproportionate costs or best available techniques (BAT) where the pollutants arise from Pollution Prevention and Control (PPC) installations. In certain instances, exceedences of standards for certain pollutants, or the risk of exceedences, require the Secretary of State to draw up and implement improvement plans.

Additional duties are placed on the Secretary of State with respect to the monitoring of specified other air pollutants and the deposition of some Group B pollutants.

Environment Act 1995

Air Quality Management Area

All reasonable precautions and all due diligence

This defence is available under much protective legislation, including that relating to health and safety and food safety. In the majority of cases, it is for a court to decide whether *all* reasonable precautions have been taken and *all* due diligence exercised taking into account the individual circumstances of the case.

Section 118 of the EPA provides that it shall be a defence for a person charged with an offence with respect to the requirements in relation to genetically modified organisms that he took all reasonable precautions and exercised all due diligence to avoid the commission of the offence.

“All reasonable precautions” has been said to be related to those risks of harm reasonably foreseeable when “a prudent and competent person applies his mind seriously to the situation”.

On the other hand, an obligation to exercise due diligence has been said to be “indistinguishable from an obligation to exercise reasonable care”.

Environmental Protection Act 1990

Harm

Hazard

Offences

Reasonable excuse

Ammonia

Ammonia is a corrosive toxic substance used for a wide range of purposes, as a refrigerant (anhydrous ammonia) in the food industry, and as a cleaning agent when dissolved in water. As a gas, it is colourless with a sharp odour.

The most common route of entry into the body is through inhalation of the gas, resulting in coughing, narrowing of the bronchi, narrowing of the throat causing upper airway obstruction, accumulation of fluid in the lungs, chest pain, impaired vision, headache and dizziness.

Contact with the skin can cause irritation and skin burns depending upon the concentration of the ammonia solution. Exposure to a concentrated vapour or solution may cause the victim to experience pain, redness and blistering of the skin.

Ammonia, even at low concentrations, can irritate the eyes and cause burning, swelling, photophobia and, in some cases, blindness.

The consequences of chronic long-term exposure to ammonia may also include pneumonia, kidney damage, cataracts, glaucoma, ulceration and perforation of the cornea, and blindness.

Acid rain

Hazardous substances: classification

Anaerobic digestion

The breaking down of organic matter in oxygen free conditions.

Aerobic digestion

Animal and vegetable matter and food industries

These scheduled activities are:

Part A(1)

- (a) Tanning hides and skins at plant with a treatment capacity of more than 12 tonnes of finished products per day;
- (b) Slaughtering animals at plant with a carcass production capacity of more than 50 tonnes per day;
- (c) Disposing of or recycling animal carcasses or animal waste, other than by rendering, at plant with a treatment capacity exceeding 10 tonnes per day of animal carcasses or animal waste or, in aggregate, of both;
- (d) Treating and processing materials intended for the production of food products from:
 - (i) animal raw materials (other than milk) at plant with a finished product production capacity of more than 75 tonnes per day;
 - (ii) vegetable raw materials at plant with a finished product production capacity of more than 300 tonnes per day (average value on a quarterly basis);
- (e) Treating and processing milk, the quantity of milk received being more than 200 tonnes per day (average value on an annual basis);

- (f) Processing, storing or drying by the application of heat of the whole or part of any dead animal or any vegetable matter (other than the treatment of effluent so as to permit its discharge into controlled waters or into a sewer unless the treatment involves the drying of any material with a view to its use as animal feedstuff) if:
 - (i) the processing, storing or drying does not fall within another Section of this Schedule or Part A(2) of this Section and is not an exempt activity; and
 - (ii) it may result in the release into water of any substance listed in paragraph 13 of Part 2 of this Schedule in a quantity which, in any period of 12 months, is greater than the background quantity by more than the amount specified in relation to the substance in that paragraph.

Part A(2)

- (a) Disposing of or recycling animal carcasses or animal waste by rendering at plant with a treatment capacity exceeding 10 tonnes per day of animal carcasses or animal waste, or, in aggregate, of both.

Part B

- (a) Processing, storing or drying by the application of heat of the whole or part of any dead animal or any vegetable matter (other than the treatment of effluent so as to permit its discharge into controlled waters or into a sewer unless the treatment involves the drying of any material with a view to its use as animal feedstuff) if:
 - (i) the processing, storing or drying does not fall within another Section of this Schedule or Part A(1) or Part A(2) of this Section and is not an exempt activity;
 - (ii) the processing, storing or drying may result in the release into the air of a substance described in paragraph 12 of Part 2 of this Schedule or any offensive smell noticeable outside the premises on which the activity is carried out;
- (b) Breeding maggots in any case where 5 kg or more of animal matter or of vegetable matter or, in aggregate, of both are introduced into the process in any week.

Animal includes a bird or a fish.

Exempt activity means:

- (a) any activity carried on in a farm or agricultural holding other than the manufacture of goods for sale;
- (b) the manufacture or preparation of food or drink for human consumption other than:
 - (i) the extraction, distillation or purification of animal or vegetable oil or fat otherwise than as an activity incidental to the cooking of food for human consumption;
 - (ii) any activity involving the use of green offal or the boiling of blood except the cooking of food (other than tripe) for human consumption;
 - (iii) the cooking of tripe for human consumption elsewhere than on premises on which it is consumed.
- (c) the fleshing, drying and cleaning of pelts of fur-bearing mammals;
- (d) any activity carried on in connection with the operation of a knacker's yard, as defined in article 3(1) of the Animal By-Products Order 1999;
- (e) any activity for the manufacture of soap not falling within Part A(1) of Section 4.2 (Inorganic chemicals);
- (f) the storage of vegetable matter not falling within any other Section of this Schedule;
- (g) the cleaning of shellfish shells;
- (h) the manufacture of starch;
- (i) the processing of animal or vegetable matter at premises for feeding a recognised pack of hounds registered under article 13 of the Animal By-Products Order 1999;
- (j) the salting of hides or skins, unless related to any other activity listed in this Schedule;
- (k) any activity for composting animal or vegetable matter or a combination of both, except where that activity is carried out for the purposes of cultivating mushrooms;
- (l) any activity for cleaning, and any related activity for drying or dressing, seeds, bulbs, corms or tubers;
- (m) the drying of grain or pulses;
- (n) any activity for the production of cotton yarn from raw cotton or for the conversion of cotton yarn into cloth.

Food includes:

- (a) drink;
- (b) articles and substances of no nutritional value which are used for human consumption; and
- (c) articles and substances used as ingredients in the preparation of food.

Green offal means the stomach and intestines of any animal, other than poultry, and their contents.

[Schedule 1: Part 1: Pollution Prevention and Control (England and Wales) Regulations 2000]

Animal By-Products Regulations 2005

Composting

Part A activities

Part B activities

Pollution Prevention and Control Act 1999

Pollution Prevention and Control (England and Wales) Regulations 2000

Scheduled activities

Animal by-products

Animal by-products include whole animal carcasses, parts of carcasses or products of animal origin that are not intended for human consumption. In addition to whole carcasses and parts of carcasses, they include manure and intestinal contents, blood, ova, embryos, hides, skins, horns, hooves, shells, feathers, fur, wool, hair and some catering wastes. Generally, catering wastes are excluded from legal controls unless they are to be used as animal feed, or in a biogas or treatment plant, or arise from international transport, i.e ships and aircraft.

Animal by-products are categorised according to their risk to human and animal health or to the environment and there are different rules for the disposal of each category of by-product.

Category 1 – Very high risk material

- (a) animals and materials suspected or confirmed as being infected by transmissible spongiform encephalopathies (TSEs) such as scrapie in sheep and bovine spongiform encephalitis (BSE) in cattle;
- (b) animals which have been experimented on;

- (c) carcasses of zoo and pet animals;
- (d) specified risk material, i.e. tissues of cattle, sheep or goats which are, or might be, infected with BSE.

Category 2 – High risk material

- (a) diseased animals;
- (b) manure or animal by-products that could be contaminated with animals' diseases;
- (c) animals that die on farms and do not contain specified risk material.

Category 3 – Low risk material

Material which is fit, but not intended for, human consumption, including:

- (a) raw meat and fish from food manufacturers and retailers;
- (b) catering waste;
- (c) eggs and other by-products that do not show signs of transmissible disease;
- (d) raw milk;
- (e) fish and other sea animals;
- (d) shells.

Animal and vegetable matter and food industries

Animal By-Products Regulations 2005

Pollution Prevention and Control (England and Wales) Regulations 2000

Scheduled activities

Animal By-Products Regulations 2005

These Regulations are concerned with procedures to be followed in the collection, transportation, storage, handling, processing and disposal of animal by-products with particular reference to Categories 1, 2 and 3 materials. They place certain restrictions on access to animal by-products and lay down a regime for the approval of premises by the competent authority. Provisions are made for sampling at processing plants, biogas and composting plants.

Requirements are laid down for the placing on the market of animal by-products and processed products with respect to:

- (a) processed animal protein and other processed products that could be used as feed material;
- (b) pet food, dog chews and technical products; and
- (c) compost or digestion residues for use on agricultural land.

Parts 6 to 8 deal with derogations, record keeping requirements and administration and enforcement respectively.

Animal and vegetable matter and food industries

Animal by-products

Pollution Prevention and Control (England and Wales) Regulations 2000

Scheduled activities

Anti-Pollution Works Regulations 1999

These Regulations are made under the Water Resources Act 1991 and prescribe the contents of anti-pollution Works Notices served under Section 161A, the procedure to be followed in relation to appeals against such Notices and the compensation for rights of entry in connection with anti-pollution works paid under Section 161B of the Act.

Water Resources Act 1991

Works Notice

Appeals

Section 15 of the EPA provides various rights of appeal in relation to all of Part I. In addition, the Environmental Protection (Application, Appeals and Registers) Regulations provide detailed information about the appeals procedure. An appeal must be brought within two months.

A right of appeal lies with the person seeking the authorisation or the authorisation holder against the following:

- (a) refusal to grant an authorisation;
- (b) the conditions attached to an authorisation;
- (c) refusal to grant a variation of an authorisation sought by the authorisation holder under Section 11 (variations of conditions, etc);

- (d) revocation of an authorisation; and
- (e) a Variation Notice, Enforcement Notice or Prohibition Notice.

Furthermore, Section 22 (Exclusion from registers of certain confidential information) allows a right of appeal concerning exclusion of commercially confidential information from the public register of information.

The Secretary of State has power to take the following action in respect of appeals:

- (a) affirm the decision made by HMIP;
- (b) where the decision entailed a refusal to grant an authorisation, or a variation of an authorisation, direct HMIP to grant the authorisation or vary it accordingly;
- (c) quash all or any of the conditions of an authorisation;
- (d) quash a decision to revoke an authorisation;
- (e) give directions as to the conditions to be attached to an authorisation; and
- (f) quash, affirm or modify a Variation, Enforcement or Prohibition Notice.

Most appeals are dealt with by inspectors who have the same powers as the Secretary of State. The appeal itself may be in writing or may take the form of a hearing which may be held in private.

Enforcement Notice

Environmental Protection Act 1990

Environmental Protection (Duty of Care) Regulations 1991

Offences

Prohibition Notice

Public registers of information (various)

Variation Notice

Water Resources Act 1991

Approved Supply List

This is the list entitled *Information Approved for the Classification and Labelling of Substances and Preparations Dangerous for Supply* approved by the Health and Safety Commission comprising Parts I to VI, together with such notes and explanatory material as are requisite for the use of the list.

Chemicals (Hazard Information and Packaging for Supply) (CHIP) Regulations 1994 – 2002

Hazardous substances: classification

Areas of Outstanding Natural Beauty

These areas designated solely for their landscape qualities for the purpose of conserving and enhancing their natural beauty, which includes landform and geology, plants and animals, landscape features and the rich history of human settlement over the centuries. These areas were introduced under the Countryside and Rights of Way Act 2000 and cover approximately 15% of England.

Countryside and Rights of Way Act 2000

Sites of Special and Scientific Interest

Asbestos

Asbestos is a term given to a group of naturally occurring mineral compounds extracted from mines in, principally, Canada, South Africa and Russia. Asbestos crystals are fibrous in nature and can be woven like cotton fibres, or used in loose form, rather like cotton wool, for insulation purposes. The fibres can be used to reinforce materials such as cement.

There are various forms of asbestos, which differ quite markedly in properties such as fibre strength, resistance to acids and insulating properties. The most commonly encountered are:

- (a) *Chrysotile* (white asbestos) which, in the pure form, looks like dirty cotton wool;
- (b) *Crocidolite* (blue asbestos) because of its sky blue appearance in the pure form; and
- (c) *Amosite*, a dirty grey/brown coloured fibrous material, commonly known as 'brown asbestos'.

Industry	Use
Electricity generating	Thermal lagging of pipes, etc; blue asbestos commonly present
Buildings	Sprayed coatings on girders, etc.; blue asbestos may be present; asbestos reinforced sheeting for roofs
Railway carriages, locomotives	Thermal and sound insulation; blue asbestos used extensively for this purpose
Steel, heavy engineering	Some blue or acid resistant thermal insulation may be found
Ships	Extensively in boiler insulation; blue asbestos commonly used in the past
Heating and ventilating systems Insulating panels Decorative ceiling panels	Mostly white asbestos thermal insulation on ducting, etc; sites include hospitals, schools, domestic and industrial premises

Figure 2: OCCURRENCE OF ASBESTOS

Apart from the more general duties of employers under the Health and Safety at Work Act, employers and others must comply with the requirements of the Control of Asbestos at Work Regulations 2006.

Asbestos: activities involving

Control of Asbestos at Work Regulations 2006

Scheduled activities

Asbestos: activities involving

These scheduled activities are:

Part A(1)

- (a) Producing asbestos or manufacturing products based on or containing asbestos;
- (b) Stripping asbestos from railway vehicles except:
 - (i) in the course of the repair or maintenance of the vehicle;
 - (ii) in the course of recovery operations following an accident; or
 - (iii) where the asbestos is permanently bonded in cement or in any other material (including plastic, rubber or resin);
- (c) Destroying a railway vehicle by burning if asbestos has been incorporated in, or sprayed on to, its structure.

Part A(2)

Nil

Part B

- (a) The industrial finishing of any of the following products where not related to any activity falling within Part A(1) of this Section:

asbestos cement	asbestos cement products
asbestos fillers	asbestos filters
asbestos floor coverings	asbestos friction products
asbestos insulating board	asbestos jointing, packaging and reinforcement material
asbestos packing	asbestos paper or card
asbestos textiles	

Asbestos includes any of the following fibrous silicates: actinolite, amosite, anthophyllite, chrysotile, crocidolite and tremolite.

[Schedule 1: Part 1: Pollution Prevention and Control (England and Wales) Regulations 2000]

Control of Asbestos at Work Regulations 2006

Part A activities

Part B activities

Pollution Prevention and Control (England and Wales) Regulations 2000

Scheduled activities

Authorised discharge consent

Section 88 of the EPA provides that a person will not be guilty of an offence under Section 85 (offences of polluting controlled waters) in respect of the entry or discharge of matter into controlled waters, if the entry or discharge is made under and in accordance with a consent provided by the National Rivers Authority (NRA) under the Water Resources Act.

Authorised discharges

Consents: controlled waters

Controlled waters

National Rivers Authority

Water Resources Act 1991

Authorised discharges

Any discharges made into controlled waters which are in compliance with conditions set down by either the NRA or Environment Agency.

Any discharges made under and in accordance with:

- (a) a Waste Management Licence granted under Part II of the EPA; there is an exception, however, where the offence is of discharging trade or sewage effluent or where a prohibition is in force;
- (c) a licence granted under Part II of the Food and Environment Protection Act 1985 authorising the deposit of waste at sea;
- (d) Section 163 of the Water Resources Act 1991 or Section 165 of the Water Industry Act 1991 concerned with discharges for works purposes;
- (e) any local statutory provision or statutory order which expressly confers power to discharge effluent into water; and
- (f) any prescribed enactment.

Thus, any discharges made into controlled waters which are in compliance with conditions set down by the NRA or Environment Agency are classed as authorised discharges.

Authorised discharge consent

Consents: Controlled waters

National Rivers Authority

Waste Management Licences

Water Resources Act 1991

Authorised fuels

Authorised fuels are defined by the Smoke Control Areas (Authorised Fuels) (England) Regulations 2002-2006.

It is an offence to purchase solid unauthorised fuel for use in a Smoke Control Area, unless for an exempted fireplace (as defined), and to retail unauthorised fuel for unauthorised use in a Smoke Control Area.

[Clean Air Act 1993]

Clean Air Act 1993

Fossil fuels

Smoke Control Areas

Smoke Control Areas (Authorised Fuels)(England) Regulations 2002-2006

Authorised transport purposes

Waste may be transferred to a person for authorised transport purposes. *Authorised transport purposes* are defined in Section 34 of the EPA as:

- (a) the transport of controlled waste within the same premises between different places in those premises;
- (b) the transport to a place in Great Britain of controlled waste which has been brought from a country or territory outside Great Britain not having been landed in Great Britain until it arrives at that place; and
- (c) the transport by air or sea of controlled waste from a place in Great Britain to a place outside Great Britain.

Environmental Protection Act 1990

Controlled waste

Waste

Waste offences

Waste transfer