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*National Operational Guidance – Environmental protection first edition version one (ARCHIVED on 15-02-2016)*

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## **Introduction**

The structure of this guidance follows the style and format of fire and rescue service National Operational Guidance Programme. It relates to specific hazard and control measures following a literature review. The control statements support a fire and rescue service in developing policies and procedures that deliver the 'safe person' principles and promote the protection of the environment at all incidents.

## **Environmental protection**

At an incident, the highest priority for fire and rescue services will always be the safety of the public and firefighters. But they must also take into account the potential damage to the environment caused by the incident itself or fire and rescue service actions, both of which can affect air, land and water.

Effective and informed action by responders can reduce the environmental impact of incidents and protect public safety. This section of national operational guidance sets out the knowledge and controls that should be considered to protect the environment. It does not give information on the specific risks from hazardous materials, which can be found in National Operational Guidance: Hazardous Materials (to follow) and the Department for Communities and Local Government's hazardous materials guidance.

This piece of guidance contains a number of references to the Environment Agency's [Environmental Protection Handbook](#) for the Fire and Rescue Service, jointly produced by the Environment Agency, fire and rescue services and the Department for Communities and Local Government

## **Environmental responsibilities**

Responsibility for protecting the environment in the UK rests with a number of different organisations at central and local government levels.

The most significant of these are the four UK environment agencies: the Environment Agency in England, Natural Resources Wales, the Scottish Environment Protection Agency and the Northern Ireland Environment Agency. Each has similar duties and powers to protect and improve the environment, although there are some differences in responsibilities between them, for example in flood risk management, fisheries, and controlling industrial discharges and emissions. The term 'environment agencies' is used in this guidance to refer to these four organisations.

Nature conservation bodies are the enforcing authority for open land such as sites of special scientific interest (SSSI), specific areas of conservation and special protection areas. These bodies include Natural England, Scottish Natural Heritage, Natural Resources Wales and the Northern Ireland Environment Agency.

The Maritime and Coastguard Agency is responsible for pollution from shipping and offshore installations such as oil rigs. The Secretary of State has a power to extend marine responsibilities when it is considered to be in the national interest. See Section 1.8.2, [Environmental Protection Handbook](#).

Local authorities have environmental responsibilities including the impact of smoke from a fire and from vehicle emissions. They deal with complaints related to noise, litter and odour for sites not regulated by environmental agencies and most fly tipping incidents. See Section 1.3.5, [Environmental Protection Handbook](#).

## **Fire and rescue service responsibilities**

The statutory requirements for fire and rescue services are set out in the Fire and Rescue Services Act 2004, or the equivalent in devolved administrations. The act allows a fire and rescue service to take any appropriate action if an incident harms, or is likely to harm, the environment, but it does not contain a specific duty or requirement to protect the environment.

There are, however, duties for fire and rescue services in five areas of environmental legislation:

- Water quality
- Sewage systems
- Land and soil
- Waste
- Nature conservation

It is important to be aware of the duties that environmental legislation places on fire and rescue service actions and the defences available. Fire and rescue services can be prosecuted and be liable for clean-up costs if their actions cause or worsen pollution.

Fire and rescue service actions can also damage areas of nature conservation. These include legally protected sites such as sites of special scientific interest, special protection areas and national nature reserves. These sites are protected because of the value of the habitat and species present, and include forests, wetlands, rivers, beaches and moorlands. Fire and rescue services have a legal duty to consider the effect their actions might have at incidents on or near these sites.

## **Environmental legislation**

*The Environmental Permitting (England and Wales) Regulations 2010 (EPR 2010)*

Under the regulations, it is an offence to cause or knowingly permit the release of pollution to ground or surface waters. This is unless the release is allowed by an environmental permit or exemption.

To cause must involve an active operation or the failure to take action. To knowingly permit involves the failure to prevent pollution where there is knowledge of it occurring.

The regulations do allow a defence where fire and rescue service actions cause pollution, but the following three criteria must all be met:

- A discharge is made in an emergency to avoid danger to human health
- All reasonably practicable steps were taken to minimise pollution
- The relevant environment agency is informed of the incident as soon as possible

See Section 1.4, [Environmental Protection Handbook](#).

Environmental Damage (Prevention and Remediation) (England) Regulations 2015, Environmental Damage (Prevention and Remediation) Regulations 2009 in Scotland, Wales and Northern Ireland

Under the regulations, fire and rescue services must take steps to prevent or reduce environmental damage. They must notify the appropriate regulator of:

- Damage to a site of special scientific interest
- Damage to species and habitats outside SSSIs that are protected by EU legislation
- Serious long-term damage to ground or surface water (that results in a decline in water status under the Water Framework Directive)
- Contamination of land by substances or organisms that cause significant risk to human health

In normal circumstances there is no defence against a breach of the regulations. However, there is a defence in exceptional circumstances. See Section 1.4.6, [Environmental Protection Handbook](#).

The regulator may require fire and rescue services to carry out preventive and remediation measures. It may also be necessary to pay costs for any environmental damage caused. For protected sites and species, a fire and rescue service may be liable if damage is deliberate or is caused by negligence.

*Water Industry Act 1999*

It is an offence to release polluting material into a sewer without having consent from the sewerage company. Sewerage companies must be informed when accidental releases occur. See Section 1.6.4, [Environmental Protection Handbook](#).

**Other relevant legislation**

England and Wales:

- The [Hazardous Waste Regulations 2005](#) (as amended)
- The Waste (England and Wales) Regulations 2011

Scotland:

- Water Environment (controlled Activities) (Scotland) Regulations 2011
- Sewerage (Scotland) Act 1968 as amended
- Water Environment (Controlled Activities) (Scotland) Regulations 2011
- The Special Waste Regulations 1996, as amended
- Environmental Liability (Scotland) Regulations 2009

Northern Ireland:

- The Water (Northern Ireland) Order 1999
- The Waste and Sewerage Services (NI) Order 2006
- The Groundwater Regulations (Northern Ireland) 2009

- The Environmental Liability (Prevention and Remediation Regulations (Northern Ireland) 2009

## **Fire and rescue service legislation**

In addition to their responsibilities under the Fire and Rescue Services Act 2004, fire and rescue services must be aware of their responsibilities under other relevant legislation which consider the environment.

### *The Fire and Rescue Services (Emergencies) (England) Order 2007*

The Order places a duty on fire and rescue services (in England) to have the capability to remove chemical, biological, radiological, nuclear and explosive contaminants from people at an emergency. There is also a duty to contain water used for decontamination for a reasonable time. Fire and rescue services must take steps to prevent or limit environmental damage when decontaminating people.

The Fire (Additional Function) (Scotland) Order 2005 places a similar duty on the Scottish Fire and Rescue Service, as does the Fire and Rescue Services (Emergencies) (Wales) Order 2007 in Wales. See Section 1.6.6, [Environmental Protection Handbook](#).

### *Civil Contingencies Act 2004*

As Category 1 responders, fire and rescue services are part of the multi-agency response to civil emergencies. The role of the fire and rescue service under the act is to save life, and to protect property and the environment. To be an 'environmental emergency' an incident must be one of the following:

- Contamination of land, water or air with a harmful biological, chemical or radioactive substance
- Flooding
- Disruption or destruction to plant life or animal life

## **Risk management planning**

Fire and rescue service integrated risk management plans should consider environmental risk. They should identify and assess

- Potential pollution sources
- The sensitivity and vulnerability of the local environment. Factors to consider include:  
Impact on:
  - Public and private water abstraction points
  - Aquifers
  - Bathing water, fisheries and other recreational uses of water
  - Nature conservation sites, such as SSSIs
  - Other uses of water, for example, agriculture

- Pathways the pollutant will follow using drainage plans and control options, such as the type and location of pollution prevention systems

A basic understanding of environmental science will help fire and rescue services prioritise environmental protection work and help them to incorporate environmental risk into risk management planning and site specific risk plans. See Section 1.2, [Environmental Protection Handbook](#).

A template has been prepared to complete an [environmental risk assessment](#).

## **Working with environment agencies**

Partnerships between environment agencies and fire and rescue services are a key part of any strategy to control pollution. This approach is underpinned by national working agreements (memorandums of understanding) and local working agreements.

The main responsibilities of the environment agencies are:

- Managing water resources used for public and private water supplies
- Preventing and controlling pollution in inland waters, estuaries and coastal waters (to a distance of three miles)
- Protecting people and the built environment from flooding
- Regulating emissions and operations at large or complex industrial sites
- Setting consistent standards for treating, storing and moving waste
- Regulating the disposal of radioactive waste from nuclear licensed sites
- Regulating the keeping and use of radioactive materials on sites other than licensed sites

See Section 1.3, [Environmental Protection Handbook](#).

## **Communicating with environment agencies**

Fire and rescue services must have systems to advise environment agencies when there is potential for pollution, or when pollution has occurred. This includes pollution from fire and rescue service actions. There is no legal defence where pollution is caused by a fire and rescue service in non-emergency situations.

When informed of an incident, environment agencies will first provide help by telephone. A competent agency officer will assess how serious the incident is and decide on the response. The environment agencies classify environmental impacts into four categories:

- Category 1: Most serious and damaging
- Category 2: Significant damage and impact
- Category 3: Pollution confirmed – local impact
- Category 4: Event reported but no damage can be confirmed

Environment agencies will, as soon as is reasonably practicable attend incidents:

- Where there is or may be a significant environmental impact
- Where a Fire and Rescue Service reasonably requests its attendance

If the Environment Agency decides attendance is not appropriate it will advise the fire and rescue service of its decision and will provide information to incident commanders over the phone if requested. See Section 3.1, [Environmental Protection Handbook](#).

## **Scene protocols**

The attending environment agency officer will assess the scene, offer advice or where appropriate, under the knowledge and supervision of the fire and rescue service incident commander, take action to prevent or limit pollution.

Environment agencies' officers take the following roles:

- Competent officer: the officer receiving initial details of the incident and determining the response
- Site controller: responsible for co-ordinating the environmental response at the scene
- Base controller: an experienced member of staff responsible for overall incident control

For smaller incidents the same person may perform more than one role.

Environment agencies may also take direct action to control pollution themselves if there is an immediate threat to the environment and the polluter cannot be found or is unable or unwilling to act. See Section 3.6, [Environmental Protection Handbook](#).

## **Motorway and highway drainage**

The overall responsibility for managing motorways and trunk roads lies with the relevant highways agency. Some roads are managed by private companies, and other 'A' roads and all minor roads are managed by local authorities.

There are three major objectives in road drainage:

- To remove surface water quickly to provide safe roads and minimum nuisance
- To provide effective drainage to maximise the life of the road
- To minimise the impact of run-off on the receiving environment

Road drainage can be broadly classified into two elements: surface and sub-surface. These two elements are not completely separate from one another.

Because it is important that water drains quickly from the road surface, it can be difficult to contain polluted run-off from an incident before it enters a local water body.

The highways agencies have access to a wide knowledge base of the area along the national road network, including the location and operation of pollution control devices. They will also be able to call on additional environmental protection equipment and resources from their own incident support units.

Storage bins containing pollution control materials are located near many motorway slip roads. The Storage bins are kept locked and keys are held by environment agency and highways agency traffic officers. See Section 1.7, [Environmental Protection Handbook](#) for further information.

A reduced level of pollution control and response exists for locally maintained road infrastructure, and in most cases local authorities can be contacted to obtain pollution control information.

### Hazard and control statement

Hazard	Control measures
Fire water run-off	Controlled burn Containment Recycling Reduction Disposal Operational risk information plan
Firefighting with foam	Containment (Foam) Substitution Reduction Disposal Operational risk information plan
Smoke plumes	Controlled burn Extinguish Removal or separation Use of air quality cell or appropriate function Operational risk information plan
HEP004 Polluting materials	Access to specialist advice Containment Dilution Absorption Transportation Aeration Treatment Disposal Decontamination



Physical damage to the environment	<p>Defined paths and tracks in protected areas</p> <p>Liaison with conservation bodies</p> <p>Operational risk information plan (Nature conservation sites)</p>
Leaks from high pressure oil pipelines	<p>Containment</p> <p>Diversion</p> <p>Operational risk information plan</p>
Wildfires	<p>Containment</p> <p>Firefighting foam and chemicals</p> <p>Access to specialist advice</p> <p>Extinguish</p> <p>Operational risk information plan</p>

## Environmental risk assessment

Incident commanders should conduct an assessment of the environmental risk at incidents they attend. This will help them to identify the potential risks posed by fire service actions on the environment and the control measures, which can be applied to reduce or, where possible, prevent environmental damage.

An environmental risk assessment should identify:

- Nearby population
- Livestock
- Location of local watercourses
- Location of SSSI/sensitive habitats and their proximity to the incident
- Incident location in relation to sensitive groundwater.
- Local drainage
- Polluting materials
- Type of media being used
- Quantity of firewater run-off being produced
- Volume/properties of any spilt materials
- Weather conditions

A [template](#) has been prepared to complete an environmental risk assessment. For smaller incidents the [environmental risk assessment](#) may be included as part of the dynamic risk assessment.

For larger, more protracted incidents or where a known risk to the environment has been identified, a formal environmental analytical risk assessment should be completed and recorded.

Any risk to the environment either known or suspected should be communicated to those attending the incident and where appropriate, the relevant agencies. Information on environmental risk assessment is contained in Section 3.4 of the [Environmental Protection Handbook](#).

### Source-Pathway-Receptor model

Pollution control should be carried out using a Source-Pathway-Receptor model. The first action is to identify any hazards to the environment (the source). When a hazard is identified, measures should be taken to prevent or reduce the risk of pollutants reaching (via a pathway) vulnerable parts of the environment (the receptor). For example, contaminated fire water (the source) could travel via surface drains (the pathway) into a local watercourse (the receptor).



### Fire water run-off

Hazard	Control measures
Fire water run-off	Controlled burn Containment Recycling Reduction Disposal Operational risk information plan

### Hazard knowledge

During incidents, contaminated fire water can affect the environment through direct run-off into a water body, soaking away into the ground or by entering drainage systems. These systems may then transport pollutants in the firewater into rivers, lakes, estuaries and the sea, groundwater, or to sewage treatment works. Introducing a heated liquid into a watercourse is also a form of pollution because it may cause de-oxygenation or kill aquatic organisms. See Section 1.6, [Environmental Protection Handbook](#).

## Control measure - Controlled burn<sup>1</sup>

### Control measure knowledge

UK law does not require fire and rescue services to extinguish fires. There are times when an incident commander may consider stopping or limiting firefighting, for example, when it is not possible to contain polluted fire water. A controlled burn may reduce environmental damage by avoiding or restricting the use of extinguishing media or allowing better combustion of pollutants. However, it may also worsen them. See Section 3.7, [Environmental Protection Handbook](#).

Examples of when a controlled burn could be considered as a tactical option are shown below.

Controlled burn considered	Controlled burn likely to be inappropriate
Life or health is not at risk or a controlled burn will reduce risk to people	Life or health is at immediate risk or a controlled burn will increase risk to people
There is little chance of extinguishing the fire	There is a high chance of extinguishing the fire with minimal health or environmental impacts
Fighting the fire with other techniques could cause a significant risk to firefighters	The fire is likely to spread widely or to high hazard areas
Property is beyond salvage	Important or valuable buildings are involved
Fire conditions, weather conditions and/or the local landscape are appropriate for minimising air quality impacts	Fire conditions, weather conditions and/or the local landscape are inappropriate
Fire water run-off could damage an area of high environmental sensitivity or value	Drainage from the site leads to an area of low environmental sensitivity or fire water is not polluting
Fire water run-off could affect drinking water sources or affect sewage treatment works	Fire water can be contained on site or off-site

Incident commanders will decide whether to allow a controlled burn. They should take specialist advice, wherever possible, from tactical advisers, environment agency staff, owners/occupiers and public health bodies. The decision should be communicated as appropriate, including to the public via the media, if necessary.

A controlled burn strategy may be considered at any time during an incident. At incidents where it is expected that the fire will burn for some time it may be appropriate to use both controlled burn and extinguishing tactics. For example, using a controlled burn in the initial stages of an intense fire may result in lower concentrations and better dispersion of pollutants because of the high combustion temperatures as well as reduced run-off.

<sup>1</sup> Note: a controlled burn does not relate to the controlled burn of moorland, heathland etc., or agricultural or other wastes.

The technique of introducing an accelerated control burn which may include the use of fire service positive pressure ventilation fans (PPV) can help to increase temperature and therefore decrease the combustion time.

However, with both controlled burn and an accelerated controlled burn, as the fire dies back and begins to smoulder, the pollutant levels in the smoke plume may increase, resulting in less dispersion of pollutants and lowering of smoke plume and contents in the atmosphere. At this point an extinguish strategy could be used. Such a strategy would also give more time for firewater containment measures to be put in place.

Certain buildings and their contents have a high value because of their architectural, historical or monetary significance. In these cases, the benefits of a controlled burn must be considered against the building's value. Advice should be taken from the owner or occupier and the appropriate conservation body and decisions made on a case-by-case basis. Other containment measures may be used when a building is of high value and/or poses a high environmental risk.

#### *Strategic actions*

Fire and rescue services should:

- Develop a controlled burn policy and procedures
- Identify pre-determined sites where a controlled burn strategy may be appropriate

#### *Tactical actions*

Incident commanders should:

- Carry out an [environmental risk assessment](#)
- Liaise with site owner or occupiers
- Consider other options to reduce environmental impacts
- Request appropriate resources, i.e. DIM/HMA additional environmental protection equipment
- Inform, or request the attendance of the relevant environment agency and any other appropriate agencies such as:
  - Nature conservation bodies
  - Public health organisations
  - Local authority
  - Highway agencies
  - Local media
- Communicate the tactic 'Use of a controlled burn' to all personnel on the fire ground, the fire control room, the site operator (if present) the environment agency and local environmental health departments.
- When an identified nature conservation site is at risk, implement an appropriate protection plan
- Reduce the use of firefighting water, recycling or fire water run-off to foul sewer as alternative tactic to limit fire water run-off

For further information see Section 3.7, [Environmental Protection Handbook](#).

## Control measure - Containment

### Control measure knowledge

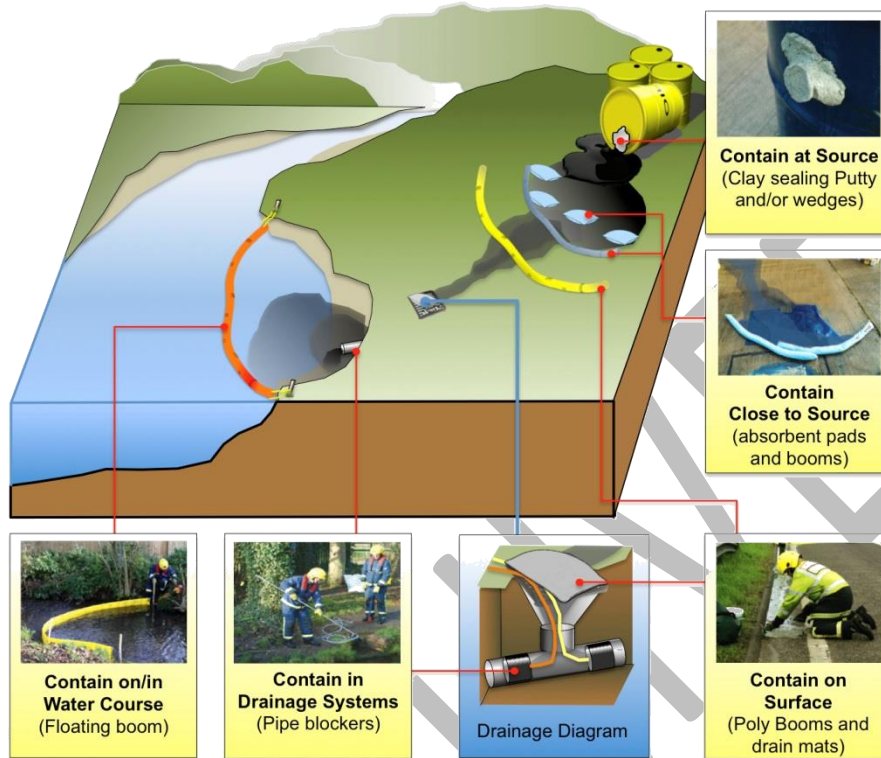
The principle of containment whenever practicable and safe to do so is the preferred approach to managing incidents where polluting liquids or materials have been released or generated by on-site activities, including firefighting.

This hierarchy should be used in most instances when containing contaminated fire water run-off and spillages of polluting materials:

Hierarchy	Activity	Description
1	Containment at source	The most effective intervention point is where the source of pollution can be controlled to stop or reduce the volume released. Methods include the use of clay seal putty, leak sealing devices, wedges, and drums. Contaminated fire water will ideally be contained at an incident scene either inside the building or as close to it as possible.
2	Containment close to source	The next point of intervention is as close to the source as possible. This may be when it is not possible to contain at source or where there has already been significant loss of pollutant. Methods include the use of grab packs, booms and pop-up pools.
3	Containment on the surface	The most common way for contaminants to enter the environment is via drainage systems. Methods to prevent this include the use of booms, clay drain mats, pipe blockers, pumps, and flexi-dams.
4	Containment in drainage system	Pollutants may be contained in drainage systems if they have already entered the system. This can be carried out using in-built pollution control devices in the drainage systems such as oil separators, drain closure valves and containment lagoons/tanks and ponds. Such a system should allow predictable volumes of run-off to be stored, although allowance should be made for rainfall and how well systems have been maintained. Portable equipment such as pipe blockers can also be used.
5	Containment on or in watercourse	The deployment of booms on a watercourse downstream of an incident is of significant benefit where a pollutant floats. Damming can be used where pollutants are mixed or do not float but is normally restricted to small ditches and streams with low flows. Booms can also be deployed around drinking water intakes.

See Section 3.2, [Environmental Protection Handbook](#).

## Pollution Hierarchy



Off- site containment is an alternative that can be considered by fire and rescue services. Foul sewerage systems can be used to contain polluting material if approved by the sewerage company and environment agency. When doing so take care that pollutants and sewage do not escape from any storm overflows into the sewerage system. The contained pollutants and sewage may then be removed.

It may also be possible to divert pollutants to a local sewage treatment works, where the pollutant can either be treated in the treatment process or contained in storm tanks before deciding on disposal. These tanks are present at many treatment works and are used to store the large volumes of diluted sewage produced during high rainfall. Approval from the sewerage company must be sought before diverting pollutants to a sewage treatment works because the treatment process can be affected if levels of pollution are too high. This would result in the release of both pollutants and untreated or partially treated sewage. See Section 1.66, [Environmental Protection Handbook](#).

Pollution control devices such as drain closure valves, storage lagoons or balancing ponds are installed in some surface water drainage systems. These devices can be used to help contain pollutants if permission is given by the sewerage company, the owner/occupier or highway authority. In some places the environment agencies keep large volume pumps that can be used to support, supplement or replace fire and rescue service pumps.

### *Strategic actions*

Fire and rescue services should:

- Develop procedures for containing fire water run-off
- Obtain sewerage information from local sewerage undertaker
- Consider the inclusion of drainage information in operational risk plans. See National Operational Guidance: [Operations](#)

### *Tactical actions*

Unless there is an immediate risk to life, containment measures can be used and advice and guidance from environment agencies should be sought before making any attempt to dilute. Never add detergent or any other cleaning products to spillages and never hose spillages to the drain without prior authority from the environment agencies and/or sewerage undertakers.

Incident commanders should, at the earliest possibility:

- Consider carrying out an [environmental risk assessment](#) to identify:
  - Site drainage
  - local surface waters and/or groundwater and vulnerability
- Consider availability of pollution control equipment and/or pollution containment facilities on site
- Establish the location of the nearest sewage treatment works, and whether it has the capacity to contain and or treat firewater run-off?
- Consider future disposal options. See section Disposal
- Inform and/or seek advice from environment agencies and/or sewerage undertakers

For further information see the [Environmental Protection Handbook](#).

## **Control measure - Recycling**

### *Control measure knowledge*

Pumps can be used to recycle firewater at an incident. It is important that the act of recycling water does not make the situation worse. Consistent recycling of fire water run-off will increase the concentration of pollution, and the risk of spreading pathogens within recycled water spray. Incident commanders should make sure that the recirculated fire water is not harmful to either to personnel attending the incident or the local population.

Recycling water from mixed waste (household waste containing organic material, often nappies and food) should be avoided. For all other recycling sites (wood, plastic etc.) recycling the firewater run-off along with other tactics i.e. controlled burn presents a viable option to reducing damage to the environment.

Disposal of used recycled fire water may also present a problem for the fire service towards the end of an incident. Advice on continued use of recycled fire water run-off and its use and disposal of should be obtained from the:

- Relevant environment agency
- Public health body
- Tactical adviser
- Hazardous materials adviser

#### *Strategic actions*

Fire and rescue services should:

- Have procedures for recycling firewater run-off
- Where appropriate, have procedures for testing pollutants in recycled firewater run-off. This maybe undertaken by:
  - Relevant environment agencies (biological and chemical sampling)
  - Sewage undertakers
  - Public health bodies
  - Alternative supplier/laboratories
  - Tactical advisers
  - Hazardous materials advisers/technical support teams

#### *Tactical actions*

Incident commanders should:

- Identify and assess the impact of the material on fire before the decision to recycle fire water run-off is made
- Consider the possibility of responders and the local population inhaling pollutants within recycled water vapour by based on their location and distance from the fire.
- Carry out an environmental analytical risk assessment
- Consider the use of smooth bore branches to avoid blockages.
- Recognise the potential contamination of equipment and PPE. See National Operational Guidance: [Operations](#)
- Consider hygiene. See National Operational Guidance: [Operations](#)
- Use false bottom dams or pools (made of plastic trays), containment tanks or lagoons to reduce the possibility of blockages from particles contained within water run-off
- Reduce the level of pollutants and debris in the firewater by replacing a proportion of the firewater each time it is recycled with fresh water
- Identify future disposal options. See Disposal

For further information see Section 3.2.8 [Environmental Protection Handbook](#).

#### **Control measure - Reduction**



### *Control measure knowledge*

The amount of water used can be reduced by using water sprays instead of jets and by using hand-held jets instead of ground monitors. This will reduce the amount of firewater run-off.

### *Strategic actions*

- Fire and rescue services should consider maintaining a stock of hand controlled branches capable of producing a fire fighting jet and/or water spray at reduced levels of flow.

### *Tactical actions*

Incident commanders should consider:

- Identifying areas of operation where a reduced use water strategy can be initiated without significantly increasing the risk of fire spread or compromising safety.
- A controlled burn strategy. See Controlled burn.

## **Control measure - Disposal**

### *Control measure knowledge*

During the early stages of an incident when the fire service activities are more dynamic, it may not always be possible to contain fire water safely. In these circumstances use of the foul sewer should be considered for disposal. The flow rate should be controlled to avoid the foul sewer overflowing. Failure to control the flow could result in polluting water entering the water environment. See Fire water run-off.

At some incidents, the foul sewage system may be the best disposal option. If this is the case, the sewerage company must be contacted. They will consider the request and take account of the likely impact if they do not approve the discharge. Agreement from the appropriate environment agency must be obtained before any release takes place. This can be obtained by telephone but must be applied for and confirmed in writing later. See Section 1.6.6, [Environmental Protection Handbook](#).

### *Strategic actions*

Fire and rescue services should:

Be aware of their legal responsibilities and possible defences for the disposal of firewater under the Environmental Permitting Regulations 2010 and Environmental Damage (Prevention and Remediation) Regulations 2015 (EDR 2015)

- Develop plans for the disposal of contaminated firewater run off which include plans for:
  - Use off-site storage within drainage infrastructure e.g. balancing ponds
  - Use of foul water drainage
  - Contingencies for where the responsibility for disposal cannot be identified

### *Tactical actions*

The incident commander should ensure that waste products created by the fire and rescue service are disposed of both legally and responsibly. The Environmental Permitting (England and Wales) Regulations 2010 (EPR 2010) provides two exceptions for the emergency disposal of contaminated fire water runoff where the primary focus of fire and rescue service actions is saving life:

- Emergency discharge and subsequent contamination of the water environment
- The removal of waste by an FRS using FRS equipment/vehicles.

For further information see Section 3.10.3 [Environmental Protection Handbook](#): The movement of hazardous waste by the fire and rescue service in emergencies.

Incident commanders should:

- Consider the legal exceptions. See Environmental Legislation.
- Ensure that the relevant environment agency is informed of the incident as soon as possible and is be involved in the decision to discharge
- Inform sewerage undertakers if discharge is to foul the water sewerage system
- Identify if the responsibility for disposal of waste produced at an incident can be delegated to a third party based on location, material and quantities involved. Namely:
  - Local authority – Playing fields, public open spaces, beaches and some roads
  - Landowner or owner / occupier – Private property
  - Highways agency – (Road Service in NI) – Major roads
- Identify if there are any alternative methods of disposal:
  - Suitable site arrangements for a waste disposal
  - Tankering away the contaminated water

For further information see Section 3.2.8 [Environmental Protection Handbook](#) .

### **Control measure - Operational risk information plan**

#### *Control measure knowledge*

Operational risk information plans are prepared in accordance with the Fire and Rescue Services Act 2004 and focus on firefighter safety. The plans should also include information on pollution, prevention and control where a risk to the environment is identified at an incident.

For further information see:

- [DCLG operational risk information guidance](#)
- Section 2.2 and 2.3, [Environmental Protection Handbook](#)
- National Operational Guidance: [Operations](#). Identify foreseeable risk
- National Operational Guidance: [Incident Command](#)

### Strategic actions

Fire and rescue services should:

- Include environmental risk information within operational risk plans

### Tactical actions

See National Operational Guidance: [Incident Command](#)

Where a risk to the environment has been identified in risk information, incident commanders should:

- Consider pollution prevention information contained within site specific risk plans
- Carry out an [environmental risk assessment](#)
- Implement the identified environmental protection control measures identified within the relevant operational risk information plan
- Monitor the impact of fire and rescue service tactics on the identified environmental risk

## Firefighting with foam

Hazard	Control measures
Firefighting with foam	Containment (Foam) Substitution Reduction Disposal Operational risk information plan

### Hazard knowledge

Firefighting foam causes water pollution. This should not stop fire and rescue services from using foam where there is an operational need. In most cases, preventive action can be taken to limit any impact. Using foam can also have environmental benefits such as reducing water use and extinguishing a fire more quickly.

The main environmental effects of firefighting foams are:

- They can lead to the de-oxygenation of water
- They can be toxic to aquatic life and present risks to drinking water supplies
- Some compounds in them do not break down in the environment and can accumulate in plants and animals

The type of foam used should be appropriate for the task in hand and the minimum quantity used. Using foam is a trigger for notifying environment agencies of an incident. This includes the use of compressed air foam systems. Extra care should be taken when using firefighting foam close to

water sources or sensitive environmental areas. Some sites have oil separators in drainage systems. Firefighting foam run-off should not be allowed to enter an oil separator because it will pass through it unaffected and may also flush oil into the drainage system. See Section 3.9, [Environmental Protection Handbook](#).

### **Control measure - Containment (Foam)**

#### *Control measure knowledge*

The ability to contain foam run-off is preferable to allowing uncontrolled discharge of foam run-off to drains. Foam containment and run-off are the same as those for fire water run-off. See Fire water run-off

#### *Strategic actions*

Fire and rescue services should:

- Develop foam procedures, which must include:
  - Containment of foam run-off
  - Environmental considerations.
- Ensure that the impacts of using foam is included for operations in and around protected sites (e.g. SSSIs)
- Where appropriate, consult with local environment agencies, sewerage companies, and nature conservation bodies where it can be reasonably expected that the use of foam may be considered.

#### *Tactical actions*

Every effort should be made to prevent firefighting foam entering surface and groundwater during an incident.

Incident commanders should at the earliest opportunity, consider:

- The need to prevent foam run-off entering drains, including during make up activity
- The availability of pollution control equipment and/or pollution containment facilities on site
- Consider the risk to the environment caused by the use of foam verses the benefits (rapid control of the fire)
- The legal exemptions. See Environmental Legislation.
- Carrying out an environmental analytical risk assessment
- Informing the following organisations of the use of foam and the quantities involved:
  - Relevant environment agency
  - Sewerage companies (where foam is likely to enter the sewerage system)

### **Control measure - Substitution**

*Control measure knowledge*

Using foam may have an environmental benefit as fires can be quickly extinguished and fire water run-off is reduced. Consider, too, the type of foam. For example, compressed air foam systems (CAFS) will usually need less concentrate and water to produce adequate foam for fighting. The reduced levels of concentrate and run-off produced are likely to result in run-off being easier to contain, and if it does enter a water body it will have less of an impact.

*Strategic actions*

Fire and rescue services should:

- Identify where alternative methods of extinguishing fire should be considered within a foam strategy
- When procuring foam concentrate, identify the environmental impact and adjust procedures accordingly

*Tactical actions*

Where foam has been applied and there is a significant risk to the environment incident commanders should evaluate:

- Alternative types of foam (if available)
- Using a different extinguishing media
- High-pressure water fogging systems (if available)
- Adopting a controlled burn strategy. See Controlled burn.

**Control measure - Reduction**

See Fire water run-off.

**Control measure - Disposal**

See Fire water run-off.

**Control measure - Operational risk information plan**

See Fire water run-off.

**Smoke plumes**

Hazard	Control measures
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Smoke plumes	Controlled burn Extinguish Removal or separation Use of Air Quality Cell or appropriate function Operational risk information plan
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## Hazard knowledge

Incident commanders should take advice from environment agencies, public health bodies and the police at fires that produce large amounts of toxic smoke. This will help them decide whether or not to extinguish the fire based on the environmental and public health implications. If they decide to extinguish the fire then pollution control measures should be used to protect bodies of water from fire water run-off.

### Control measure - Controlled burn

See Fire water run-off.

### Control measure - Extinguish

#### *Control measure knowledge*

Fire service high volume pumps, fixed installation pumps or pumps secured from a third party supplier can be used to provide water for firefighting. When using this type of equipment or when large volumes of water are being pumped, the appropriate environment agency must be informed. As well as containing run-off, care should be taken not to draw too much water because this can threaten water supplies and damage ecosystems.

#### *Strategic actions*

Fire and rescue services should:

- Develop procedures that incorporate the use of high volume pumps for incidents that will require large volumes of water to extinguish.
- Liaise with local environment agencies, local authorities' statutory resilience forums to identify and formulate plans for sites that are likely to produce significant smoke plumes/require large amounts of water to extinguish if involved in fire. See National Operational Guidance: [Operations](#). Identify foreseeable risk
- Have procedures in place for the safe decontamination of high volume pumping equipment after use. See the following sections of the [Environmental Protection Handbook](#):
  - 1.6.6 Protocol for disposing of contaminated water and associated wastes at incidents
  - 2.12.1 High volume pump decontamination

### *Tactical actions*

Incident commanders should:

- Seek technical advice – for instance, from a HMA or product specialist before deploying a high volume pump
- Complete an [environmental risk assessment](#) before deploying a high volume pump
- Notify the local environment agency each time a high volume pump is used or where large volumes of water are being pumped
- Consider the use of local environment agency pumps for incidents that are likely to be significantly protracted
- Consider the decontamination of high volume pumping equipment after use

### **Control measure - Removal or separation**

#### *Control measure knowledge*

Fires at open-air storage sites, particularly those storing combustible waste can create large volumes of smoke and fire water containing a wide range of pollutants. The direct application of water with or without firefighting additives to stacks of burning material is often ineffective and may generate large volumes of smoke and contaminated fire water.

For specific guidance on fires involving waste sites see National Operational Guidance: Fires in waste sites (including renewable energy facilities) (to follow).

#### *Strategic actions*

Fire and rescue services should:

- Develop operational procedure for incidents involving fires at waste sites

#### *Tactical actions*

Incident commanders should:

- Consider the use of firefighting additives such as foam for small waste fires and prevent fire spread. (Note: For larger waste fires, foam may provide rapid 'knock down' but often has minimal long term effects on larger waste fires)
- Consider separating burning material from the fire using heavy plant and extinguishing it with:
  - Water jets,
  - In bunded pools
  - Tanks of water
  - Controlled burn
  - Burial with approval of EA.
- Make use of specialist fire and rescue service or on-site equipment
- Where possible, recycle the fire water run-off. See Recycling fire water run-off.

## Control measure - Air quality cell function

### *Control measure knowledge*

If major chemical air pollution occurs at an incident, the environment agencies and public health bodies will set up an air quality cell. This will include other organisations including the Meteorological Office, the Health and Safety Laboratory and local authorities.

The air quality cell will co-ordinate air monitoring and will provide air quality information. Public health bodies use this information to provide health advice to responders and the public. See Section 3.8, [Environmental Protection Handbook](#).

Similar arrangements exist in Wales, Northern Ireland and in Scotland, where SEPA provides air quality monitoring through the Airborne Hazards Emergency Response (AHER) service.

### *Strategic actions*

Fire and rescue services should:

- Ensure that lines of communication are in place to disseminate information provided by the air quality cell to incident commanders and other specialist advisers during major incidents or other significant events.

### *Tactical actions*

Incident commanders should:

- Implement appropriate control measures on the receipt of air quality information.

## Control measure - Operational risk information plan

See Fire water run-off.

## Polluting materials

Hazard	Control measures
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Polluting materials	Access to specialist advice Containment Dilution Absorption Transportation Aeration Treatment Disposal Decontamination
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### Hazard knowledge

Contaminated and polluting materials will affect the environment during incidents. Operational actions may cause or increase pollution, for example, if fires are extinguished without any precautionary actions being taken to contain run-off.

The following types of polluting materials could result from an incident: See Section 1.2.4, [Environmental Protection Handbook](#) and National Operational Guidance: Hazardous Materials (to follow).

Scenario	Examples of polluting Materials
Road traffic collisions	Oils, fuel, coolants or other liquids
Spillages of non-hazardous materials	Organic matter such as beer and milk
Spillages of hazardous materials	Corrosive, toxic, and flammable materials
Using first aid equipment	Clinical waste, disposable gloves, bandages
Fires involving environmentally damaging materials	Contaminated fire water run-off, toxic smoke plumes, hazardous wastes/residues
Incidents involving contaminating materials	Biological or radioactive materials

All of these scenarios may result in contaminated personal protective equipment and operational equipment.

### Control measure - Access to specialist advice

#### *Control measure knowledge*

Seek specialist advice at any incident that could pollute the environment. This could be a hazardous materials adviser or third party expert.

#### *Strategic actions*

Fire and rescue services should:

- Ensure that fire and rescue service managers who are likely to be in command of an incident involving hazardous materials and/or environmental risk, or are likely to perform the specialist advisory role of hazardous materials advisor (HMA), receive specialist environmental training. This training should place emphasis on larger-scale incidents where there is significant environmental risk.
- Consider mobilising or involving a HMA for any incident with the potential to pollute the environment, not only those incidents involving hazardous materials. See section 3.3, [Environmental Protection Handbook](#).
- Identify triggers where the local environment agency should be informed or where advice should be requested.
- Secure access to more detailed advice from scientific advisers or from the CHEMSAFE service provided by the National Chemical Emergency Centre (NCEC)

#### *Tactical actions*

See:

- National Operational Guidance: [Incident Command](#) situational awareness
- National Operational Guidance: [Operations](#) Reduce exposure
- Delegating environmental protection HEMPAs

Incident commanders should consider:

- Seeking specialist advice from a HMA on remedial action for spillages of certain substances
- The appointment of a HMA (or equivalent) to oversee environmental protection activities
- Requesting advice from the local environment agency in the context of other specialist advice and legal and moral responsibilities
- Specialist advice from:
  - Chemical suppliers whose products are held at the incident site
  - Contracted specialist advice
  - Chemsafe
  - National Chemical Emergency Centre (NCEC)

#### **Control measure - Containment**

See Fire water run-off.

#### **Control measure - Dilution**

##### *Control measure knowledge*

In certain situations the best way to deal with domestic quantities of spillage may be to dilute it with a large amount of water. High levels of dilution should ensure that pollutants have little impact on the environment. It is important to consider the pollutant type and quantity, and how sensitive the receiving water is before doing this.

Approval should also be sought from the environment agency and sewerage company before diluting a spillage unless there is an immediate life risk. In such circumstances they must be informed as soon as is reasonably practicable. See Guideline notification criteria Appendix 4, [Environmental Protection Handbook](#)

#### *Strategic actions*

Fire and rescue services should:

- Refer to control measure action Access to specialist advice

#### *Tactical actions*

Incident commanders should contain the spill and also:

- Seek guidance from environment agencies before any attempt at dilution
- Not flush spillages down drains without approval from:
  - The local environment agency
  - Sewerage company
- Ensure that if detergents or other chemicals are added to spillages to assist with clean up or treatment the resulting mixture is not to be flushed down drains.

### **Control measure - Absorption**

#### *Control measure knowledge*

Minor spillages can be contained using absorbent materials like pads, sheets and booms. Hazardous materials will retain their hazardous properties when absorbed and this must be considered when handling any absorbed material. Soil, sand and cement all have absorbent qualities and can also be used to create improvised containment barriers or bunds. Absorbent materials should not be used for larger spillages because of the amount of waste that will be created and the cost of disposing it.

#### *Strategic actions*

Fire and rescue services will normally have the responsibility for disposing of waste they generate at incidents they attend.

Fire and rescue services should:

- Identify arrangements for the disposal of contaminated absorbents where the responsibility for waste disposal cannot be identified
- Refer to control measure actions for disposal of contaminated firewater run off under fire water run-off

#### *Tactical actions*

Incident commanders should consider:

- The appropriate type of absorbent to be used for the pollutants
- The benefits of using absorbents against the cost of disposal
- How contaminated absorbent materials will be disposed of in consultation with the relevant environment agency and responsible persons based on the “polluter pays” principle.
- Identifying who is responsible for the disposal. See CMEP005 Disposal section in Fire water run-off

## **Control measure - Transportation**

### *Control measure knowledge*

There are strict controls on transporting hazardous waste. Fire and rescue services do have dispensation in exceptional, life saving circumstances. See Section 3.10.3, [Environmental Protection Handbook](#).

### *Strategic actions*

Fire and rescue services are allowed to transport and store small quantities of non-hazardous waste from incidents.

Fire and rescue services should:

- Be aware of their legal responsibilities and possible defences for the transportation of hazardous waste.
- Develop procedures for the transportation and storage of small quantities of non-hazardous waste, which includes items such as disposable gloves or chemical protection suits. See Section 3.10.4, [Environmental Protection Handbook](#)

### *Tactical actions*

Incident commanders should:

- Consider the legal exemptions. See Environmental Legislation.
- Ensure that in the event that emergency transportation of hazardous waste is required, the relevant environment agency is to be informed of the incident as soon as possible and is involved in the decision to transport hazardous waste.
- Ensure that fire and rescue service procedures relating to management and transportation of small quantities of non-hazardous waste are followed.

## **Control measure - Aeration**

### *Control measure knowledge*

Organic pollutants such as milk and sewage will remove oxygen from bodies of water. Environment agencies and some specialist contractors can use aeration units or chemical methods to raise oxygen levels. Pumping the affected water into the air through hose jets is less effective but is a technique that can be used by fire and rescue services.

### *Strategic actions*

Fire and rescue services should:

- Identify activities that will and will not be carried out by fire and rescue service personnel and equipment

### *Tactical actions*

Incident commanders should liaise with the local environment agency and, where appropriate, specialist advisers when aeration is to be used to reduce environmental damage.

## **Control measure - Treatment**

### *Control measure knowledge*

Treatment of pollution in a watercourse, for example using activated carbon, or hydrogen peroxide are specialised techniques employed by an environment agency or specialist contractor rather than fire and rescue service personnel. However fire and rescue services may be asked to assist at incidents where such techniques are employed subject to local agreement.

### *Strategic actions*

- Identify the activities that will and will not be carried out by fire and rescue service personnel and equipment

### *Tactical actions*

Incident commanders should:

- Ensure that where fire and rescue service personnel or equipment are requested to assist with any form of treatment activity a close liaison with the local environment agency and, where appropriate, specialist advisers is maintained.

## **Control measure - Disposal**

See Fire water run-off.

## **Control measure - Decontamination**

### *Control measure knowledge*

Decontaminating equipment at the incident site will reduce the risk of spreading the contaminant. For low level contamination, equipment should be flushed with mains water. Run-off should be discharged to a foul sewer if approved by the sewerage company. For high level contamination, run-off water should be contained and removed by a registered waste carrier. It can be discharged into a foul sewer if approved by the sewerage company and environment agency.

Where decontamination of people or personal protective equipment is carried out in an emergency it is unlikely that any offence will be committed under the relevant legislation. This is not the case when decontaminating equipment, appliances and roadways. There is no legal defence if pollution is caused following decontamination of equipment or body bags. Where there is uncertainty, advice may be sought from:

- Environment agencies
- Hazardous materials adviser (or equivalent)
- Fire and rescue service high volume pump subject matter advisers
- The local sewerage company

#### *Strategic actions*

Fire and rescue services should:

- Be aware of their legal responsibilities and possible defences for decontamination of people, personal protective equipment and the difference in the legislation regarding the decontamination of equipment, appliances, body bags and washing down roadways. See Environmental Legislation.
- Include environmental protection within decontamination procedures
- Where appropriate inform the local environment agency when fire service decontamination activities are in operation

#### *Tactical actions*

Incident commanders should consider:

- The type of decontamination involved and whether it is necessary to contain the decontamination agents used.
- Where people are being decontaminated; public drinking water supplies must be protected from the effects of run-off. (Consider the deployment of additional environmental protection equipment)
- Informing the local environment agency where any form of decontamination is carried out

### **Physical damage to the environment**

<b>Hazard</b>	<b>Control measures</b>
Physical damage to the environment	Defined paths and tracks in protected areas Liaison with conservation bodies Operational risk information plan (Nature conservation sites)

#### **Hazard knowledge**

Some areas of natural conservation are susceptible to the risk of physical environmental damage. Careful movement and deployment of resources, i.e. fire service vehicles and equipment will help to

reduce the possibility of physical damage. However knowledge and identification of the most susceptible sites is the most important factor in reducing environmental damage in these areas.

### **Control measure – Defined paths and tracks**

#### *Control measure knowledge*

Nature conservation sites often have defined paths and tracks that are usually located away from the protected areas most susceptible to physical environmental damage. If present, and once it has been established that they are suitable for fire service use including access for vehicles, these paths and tracks should be used.

#### *Strategic actions*

- Fire and rescue services should ensure that the location of defined paths and tracks are included within any operational risk plans or maps

#### *Tactical actions*

Incident commanders should:

- Consider the least damaging routes to incidents
- Where possible, stay on marked paths and tracks
- Ensure that tracks and pathways are suitable for fire service vehicles
- Take care when deciding where to place equipment or tool dumps or siting control points
- Carry out an [environmental risk assessment](#)

### **Control measure - Liaison with conservation bodies**

#### *Control measure knowledge*

Areas of nature conservation (ANC) such as Sites of Special Scientific Interest (SSSI), Areas of Special Scientific Interest (ASSI) in Northern Ireland) are important sites designated and protected for being the best examples of their characteristic wildlife and geology. Staff and volunteers from relevant nature conservation bodies normally manage these sites.

#### *Strategic actions*

Fire and rescue services should be aware of their legal responsibilities under nature conservation legislation, which includes the [Environmental Damage \(Prevention and Remediation\) Regulations \(EDR\) 2009 for Wales and Scotland or equivalent in Northern Ireland.](#)

Advice should be sought from relevant nature conservation bodies relating to areas susceptible to physical damage

#### *Tactical actions*

Incident commanders should consider:

- Seeking advice from landowners, staff and volunteers from relevant nature conservation bodies when attending incidents in areas where there is a possibility of physical damage to susceptible areas of the environment.

### Control measure - Operational risk information plan (Nature conservation sites)

#### Control measure knowledge

Although each nature conservation site will have its own environmental damage risks which can be captured with individual operational risk plans, a set of generic action plans will also help to identify generic environmental protection action to be taken in the early stages of an incident. See Section 2.6.5, [Environmental Protection Handbook](#).

#### Strategic actions

Fire and rescue services should:

- Consider introducing operational risk information plans with environmental risk notes for sites of nature conservation that are more susceptible to environmental damage. Where appropriate these plans should include:
  - Environmentally safe areas for deployments and movements of fire service resources
  - Identification of areas that are susceptible to physical environmental damage.

See Fire water run-off.

#### Tactical actions

- See National Operational Guidance: [Incident command](#) situational awareness

### Leaks from high pressure oil pipelines

Hazard	Control measures
Leaks from high pressure oil pipelines	Containment Diversion Operational risk information plan

#### Hazard knowledge

A network of high-pressure oil pipelines exists in most parts of the UK. The pipelines transport flammable liquids, including petrol, diesel, aviation fuel and oil. At any one time several liquids may be in a pipeline. Should a leak or breach occur then two or three different liquids could be released.

Pipelines are typically 100 – 400 mm diameter steel pipes, laid in 1.5 m deep excavations. Marker posts normally identify the pipeline route. Excavations, landslips, flooding, pipeline corrosion and operational errors may compromise the integrity of a pipeline. Should a break occur, up to two



million litres of product could be released over a 30-minute period, resulting in a significant environmental emergency. See Section 2.7, [Environmental Protection Handbook](#).

Pollution from high pressure pipe lines can occur from:

- Mechanical failure of pipeline plant
- Accidental pipe line strike
- Illegal activity (pipe tapping)

The response and tactics used will depend on the incident, its location and resource availability. Any incident is likely to be declared a major incident because of the large quantities of highly flammable product released. Incident commanders may consider the following actions:

- Blanketing pollutant with firefighting foam to reduce vapour and ignition risks.
- Providing resources to protect drinking water supplies, important wildlife habitats and sewer systems.

The pipeline operator should be contacted immediately to find out if the affected section is being isolated.

See Section 2.7, [Environmental Protection Handbook](#).

### **Control measure - Containment**

See Fire water run-off

### **Control measure - Diversion**

#### *Control measure knowledge*

In some cases, pollutants can be diverted to areas that are considered to be of less environmental value or having less risk (called 'sacrificial' areas). For example, low-lying areas such as roadways can be used. This strategy must be agreed with the environment agency, highways authority, and other relevant parties.

#### *Strategic actions*

Fire and rescue services should:

- Identify if high pressure pipelines traverse their area of response
- Where appropriate, have multi-agency emergency plans, procedures and equipment in place for dealing with high pressure oil pipeline incidents which include guidance relating to the diversion of oil.

#### *Tactical actions*

Incident commanders should:

- Inform, or request the attendance of, the relevant environment agency and any other appropriate agencies:

- Pipeline operator
- Nature conservation bodies
- Public Health organisations
- Local authority
- Highway agencies
- Other relevant parties including police, landowners and marine agencies
- Identify sacrificial areas where products can be diverted
- Ensure water companies and other water abstractors are aware of threats to drinking water and other abstractions, which can be achieved via environment agency.

### Control measure - Operational risk information plan

See Fire water run-off

## Wildfires

Hazard	Control measures
Wildfires	Containment Firefighting foam and chemicals Access to specialist advice Extinguish Operational risk information plan

### Hazard knowledge

Large uncontrolled wildfires can have a significant effect on the environment. They occur in vegetation such as woodland, scrub, grassland and heaths and can be either of natural or of man-made origin. For the purposes of this guidance, a rural fire is defined as any uncontrolled vegetation fire which requires a decision or action regarding its suppression. A rural fire event will meet one or more of the following criteria to differentiate between a small and large incident:

- Involves a geographical area of at least 1 hectare (10,000 square metres = 100 x 100 metres)
- Has a sustained flame length of more than 1.5 metres
- Requires a committed resource of at least 4 fire and rescue service appliances
- Requires resources to be committed for at least 6 hours
- Presents a serious threat to life, environment, property and infrastructure

Wildfires can pollute air, water and land. In common with most incidents, rural fire pollution prevention will concentrate on protecting the environment.

Effects to be considered include:

- Pollution of surface and groundwater from firewater run-off containing
- Firefighting foam and additives

- Soil dislodged by firefighting
- Combustion products from burnt vegetation
- Seawater. If used to extinguish fires it can affect species that are dependent on fresh water and their habitats and other sensitive flora and fauna
- Longer-term pollution effects: After the fire, for instance, from increased soil run-off due to loss of vegetation.

The environmental impact of a wildfire is influenced by:

- Fuel: The type, moisture content, and density
- Prevailing weather conditions: Rainfall, air temperature and humidity
- Landscape: Such as the orientation and steepness of slopes

Wildfires could also threaten critical infrastructure such as pipelines and the National Grid. See section 3.11.1, [Environmental Protection Handbook](#).

#### **Control measure - Containment**

See Fire water run-off

#### **Control measure - Firefighting foam and chemicals**

See firefighting foam

#### **Control measure - Access to specialist advice**

See Polluting materials

#### **Control measure - Extinguish**

See Smoke plumes

#### **Control measure - Operational risk information plan**

See Firewater run-off

### **Glossary**

Term	Acronym	Description
Accelerated controlled burn		An accelerated controlled burn is a technique, which uses positive pressure to increase temperature of the burn and, therefore, decrease the combustion time.
Analytical Risk Assessment	ARA	A more detailed risk assessment process than Dynamic Risk Assessment
Areas of nature conservation	ANC	Areas of nature conservation (ANC) are important sites designated and protected for being the best examples of their

		characteristic wildlife and geology. Also see Areas of Special Scientific Interest (ASSI) and Sites of special scientific interest (SSSI)
Appliance		Generic term for fire service emergency response vehicle other than a light goods vehicle
Areas of Special Scientific Interest	ASSI	Areas of Special Scientific Interest (ASSI) are important sites designated and protected for being the best examples of their characteristic wildlife and geology in Northern Ireland. Also see Areas of nature conservation (ANC) and Sites of special scientific interest (SSSI)
Biological hazards		Biological hazards are hazards that involve living things, whether they come from people, animals, or plant.
Base Controller (EA role)		An experienced EA member of staff responsible for overall incident control
Category 1 responder	Cat 1	Organisations at the core of the response to most emergencies (the emergency services, local authorities, NHS bodies). Category 1 responders are subject to the full set of civil protection duties
Category 2 responder	Cat 2	Organisations (the Health and Safety Executive, transport and utility companies) are 'co-operating bodies'. They are less likely to be involved in the heart of planning work, but will be heavily involved in incidents that affect their own sector. Category 2 responders have a lesser set of duties – co-operating and sharing relevant information with other Category 1 and 2 responders.
Chemical hazards		The term chemical hazard refers to liquids, gases or solids that can harm people, other living organisms, property, or the environment.
CHEMSAFE		An industry-led mutual aid scheme that provides a co-ordinated information and response for fire and rescue services.
Coastal waters		Coastal waters are defined from the mean high water along the mainland or island and extend to a distance of three miles and include bays, harbours and sounds.
Competent Officer (EA role)		The EA Officer receiving initial details of the incident and determining the response
Department for Communities and Local Government	DCLG	The Department for Communities and Local Government (DCLG) is the UK government department for communities and local government in England.
Dynamic Risk Assessment	DRA	A risk assessment process that is used in a dynamic environment
Equipment or Tool Dump		An area created in which to store equipment or tools during an

		incident
Environment agencies		The term environment agencies is used throughout National Operational Guidance publications as a collective for Environment Agency in England, Natural Resources Wales, the Scottish Environment Protection Agency and the Northern Ireland Environment Agency.
Environment Agency	EA	The Environment Agency (EA) is a non-departmental public body, sponsored by the United Kingdom government's Department for Environment, Food and Rural Affairs (DEFRA). The EA is the English environmental regulator with responsibilities relating to the protection and enhancement of the environment in England
Environmental Risk Assessment		An environmental risk assessment is used to identify the potential risks posed by fire service actions on the environment and the control measures, which can be applied to reduce or, where possible, prevent environmental damage.
Environmental Protection Unit	EPU	A fire service vehicle or pod that carries environmental protection equipment over and above that contained within an environmental protection grab pack.
Fire control room		A mobilising centre for all emergency call handling management undertaken by the fire and rescue service.
Fire water run-off		Fire water run-off refers to water that has been used in fire fighting and requires disposal. In many cases it is a highly polluting material and requires special care in its disposal. Fire water run-off can transport pollutants into drainage systems, rivers, groundwater and land.
Hazardous materials	HAZMAT	Hazardous materials that can cause harm
Hazardous Materials Advisor	HMA	The term Hazardous Materials Advisor is used throughout National Operational Guidance publications as the collective term for Hazardous Materials Environmental Protection Advisor (HMEPA), Hazardous Materials Environmental Protection Officer (HMEPO) or other qualified specialist trained to deal and advise on incidents that involve hazardous materials (Hazmat) and substances that could damage the environment.
Groundwater		Groundwater is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers.  Groundwater supplies used for drinking water is legally protected with in identified source protection zones.

Incident		Any event or occurrence which requires an emergency response
Inland waters		Inland waters, also known as internal waters are aquatic-influenced environments such as canals, lakes, rivers, water courses, inlets, and bays that are nearest to the shores of a nation located within land boundaries.
Integrated Risk Management Plan	IRMP	The planning process and subsequent plan for a fire and rescue authority to demonstrate how its strategic direction meets the needs of the community
Intraoperability		The joint working of emergency services, especially during a major or complex incident.
Make Up		Phase of an incident where all equipment is replaced on the appliance and the appliance is prepared for deployment to another incident
Maritime and Coastguard Agency	MCA	The Maritime and Coastguard Agency is a UK executive agency working to prevent the loss of lives at sea and is responsible for implementing British and International maritime law and safety policy. It is also responsible for pollution from shipping and offshore installations such as oil rigs.
Natural Resources Wales (Welsh: Cyfoeth Naturiol Cymru)		Natural Resources Wales is a Welsh Government sponsored body it was formed from a merger of the Countryside Council for Wales, Environment Agency Wales, and the Forestry Commission Wales, and also assumes some other roles formerly taken by Welsh Government.
Northern Ireland Environment Agency	NIEA	The Northern Ireland Environment Agency (NIEA) is a Northern Ireland Executive conservation agency within the Department of the Environment. The NIEA is Northern Ireland's environmental regulator and responsible for the promotion and conservation of both the natural environment and the built environment.
Personal Protective Equipment	PPE	Personal protective equipment includes items such as fire tunics, over-trousers, helmets, fire hoods, gloves and boots. Specialist personal protective equipment may be used for certain types of incident.
Radioactive hazard		The term radioactive hazard refers to liquids, gases, solids or waves that can harm people, other living organisms, property, or the environment.
Risk information		Information that relates to specific premises or groups of premises, which enhances the safety of crews attending an incident.
Road traffic collision	RTC	The law defines a reportable road traffic collision as an accident involving a mechanically-propelled vehicle on a road or other

		public area
Rural fire		<p>A rural fire event will meet one or more of the following criteria, so as to differentiate between a small and large incident:</p> <p>Involves a geographical area of at least 1 hectare (10,000 square metres)</p> <p>Has a sustained flame length of more than 1.5 metres</p> <p>Requires a committed resource of at least 4 fire and rescue service appliances</p> <p>Requires resources to be committed for at least 6 hours</p> <p>Presents a serious threat to life, environment, property and infrastructure</p>
Safe person principles		The combination of training, PPE and work systems which contribute to working safely
Scottish Environment Protection Agency	SEPA	The Scottish Environment Protection Agency is an executive non-departmental public body of the Scottish Government. The SEPA is Scotland's environmental regulator and is responsible for the protection of the natural environment in Scotland. Its main role is to protect and improve Scotland's environment.
Site Controller (EA role)		The EA Officer responsible for co-ordinating the environmental response at the scene
Site Specific Risk Information	SSRI	Risk information is captured by each fire and rescue service to identify, through a continuous process, new risk information and the updating of existing information to support the operational effectiveness of the fire and rescue service, ensure the safety of the public and the protection of its firefighters
Sites of special scientific interest	SSSI	Sites of special scientific interest (SSSI) are important sites designated and protected for being the best examples of their characteristic wildlife and geology. Many of these varied habitats have developed over hundreds of years through management practices such as grazing and forestry and, in most cases, need active management to maintain their conservation status. Also see Areas of nature conservation (ANC) and Areas of Special Scientific Interest (ASSI)
Situational awareness		The perception and understanding of a situation and the anticipation of how the situation may develop in the near future
Smoke plume		A long cloud of smoke containing a mass of toxic material, typically regarded as a pollutant, spreading from a source, normally a fire.
Statutory resilience	SRF	A requirement under the Civil Contingencies Act 2004:

forum		A forum or multi-agency partnership formed within an individual police service boundary consisting of both Category 1 and 2 responders. The SRF aims are to plan and prepare for localised incidents and catastrophic emergencies. They work to identify potential risks and produce emergency plans to either prevent or mitigate the impact of any incident on their local communities.
Subject matter expert	SME	An individual who exhibits the highest level of expertise in performing a specialized job, task, or skill within the organisation.
Surface Water		Surface water is water on the surface of the planet such as in a stream, river, lake, wetland, or ocean
Tactical Adviser	TacAd	A tactical adviser (TacAd) may be deployed to assist the incident commander. They can be used at a range of incidents regardless of size
Watercourses		A watercourse is any channel through which water flows and can be open or enclosed underground as a culvert. This includes any channel that takes seasonal flows and may at times be dry.