

Major Accident to the Environment (MATTE) FAQ

Q. What is a MATTE?

A. Major Accident To The Environment (MATTE) is defined in the EU “Seveso II” directive, implemented in the UK by the COMAH Regulations. The definition is necessarily somewhat long-winded: whether or not an accident affecting the environment amounts to a MATTE depends on a combination of the ecological or amenity value of the affected receptor(s) *and* the extent, severity and duration of damage caused to the receptor(s) by the accident.

Q. So what *is* a MATTE?

A. COMAH defines the conditions under which an environmental accident has to be notified to the European Commission as follows:

1. permanent damage or long-term damage to terrestrial habitats (more than 0.5 ha of habitat protected by legislation or more than 10 ha of other habitats, including agricultural land)
2. significant or long-term damage to freshwater and marine habitats (more than 10 km of river or canal, more than 1 ha of lake or pond, more than 2 ha of delta, coastline or open sea)
3. significant damage to an aquifer or underground water (more than 1 ha).

Here is a summary of more detailed guidance available from DEFRA (*Guidance on the interpretation of Major Accident to the Environment for the purposes of the COMAH Regulations, 1999*).

Receptor	Threshold
National Nature Reserve (NNR), Site of Special Scientific Interest (SSSI), Marine Nature Reserve (Land/Water) (MNR)	<ul style="list-style-type: none"> • More than 0.5 ha affected, or more than 10% of site area (whichever is the lesser) • More than 10% of associated linear feature affected • More than 10% of a particular habitat or population of individual species affected
Natura 2000 sites (Special Area of Conservation, Special Protection Areas), Ramsar sites	<ul style="list-style-type: none"> • More than 0.5 ha or 5% of the site affected (whichever is the lesser) • More than 5% of an associated linear feature affected • More than 5% of a particular habitat or population of individual species affected
Other designated land (Land). (Environmentally Sensitive Areas, Areas of Outstanding Natural Beauty, Greenbelt land, National Park, Local Nature Reserves, Wildlife Trust sites, National Trust land, Common land/country parks)	More than 10% or 10 ha of land damaged, whichever is the lesser

<p>Scarce Habitat (Land / Water) (Biodiversity Action Plan habitats, Geological Features: caves, fossil beds, mineral veins, moraines, etc.)</p>	<p>Damage to 10% of the area or more than 2 ha, whichever is the lesser</p>
<p>Widespread Habitat (Land / Water) (More widespread habitat, including agricultural land, that has not been otherwise classified, Forestry)</p>	<ul style="list-style-type: none"> • Contamination of 10 ha or more of land which, for one year or more, prevents the growing of crops or the grazing of domestic animals or renders the area inaccessible to the public because of possible skin contact with dangerous substances, or • Contamination of any aquatic habitat which prevents fishing or aquaculture or which similarly renders it inaccessible to the public
<p>Aquifers or groundwater (Water)</p>	<ul style="list-style-type: none"> • Any incident likely to require large-scale and long-term remedial measures, or • Any incident of contamination/pollution by persistent compounds occurring within groundwater protection zone 1
<p>Soil or Sediment (Land/Water)</p>	<p>Contamination or pollution of the receptor such that</p> <ul style="list-style-type: none"> • Soil would be regarded as contaminated land by the relevant authorities, or • Sediment would become loaded with sufficient material to compromise the chemical or biological quality of overlaying waters for any period in excess of a few days. <p>Deterioration of the biological quality of soil or sediment such that</p> <ul style="list-style-type: none"> • Common organisms of these ecosystems were absent, the structure of the biological community altered for a period in excess of a season, or normal ecosystem function was severely impaired for a period in excess of one year
<p>Built Heritage (Land – man-made)</p>	<ul style="list-style-type: none"> • Damage to Grade 1 listed building (or Category A in Scotland) or a scheduled ancient monument such that it no longer possesses its architectural, historic or archaeological importance, and which would result in it being de-listed, de-scheduled if no remedial or restorative work was undertaken, or • Damage to an area of archaeological importance or to a conservation area similarly resulting in loss of importance

<p>Particular Species (Land/Water/Air) (‘Common’ Species, Species listed under European legislation, Species listed in the Wildlife & Countryside Act, Red Data Book species)</p>	<ul style="list-style-type: none"> • Common species where reliable estimates of population exist, the death of, or serious sublethal effects within 1% of any species • Common plant species, the death of, or serious sublethal effects within 5% of the ground cover • Species where no reliable estimate of population exist, threshold to be defined in liaison with statutory authority • Any loss of Red Data Book species
<p>Marine (Water) (Non-estuarine marine waters, Littoral, sub-littoral zone, Benthic community adjacent to coast, Fish spawning grounds)</p>	<p>Permanent or long-term damage to</p> <ul style="list-style-type: none"> • More than 2 ha of the littoral, sub-littoral, coastal benthic community, benthic community of any fish spawning ground, or • More than 100 ha of the open sea benthic community <p>Or a count of</p> <ul style="list-style-type: none"> • 100 or more dead sea birds (not gulls), or • 500 dead sea birds of any species, or • 5 dead or significantly injured/impaired sea mammals of any species.
<p>Freshwater and estuarine habitat (Water)</p>	<p>Effect on a significant part of the receptor which, when assessed using the Environment Agency General Quality Assessment scheme, either lower the chemical water quality by one class for more than one month or lower the biological quality by one class for more than one year or cause long-term damage to the habitat overall.</p>

Q. What are my duties, as the operator of a COMAH site, regarding potential MATTEs?

A. They are essentially the same (incl MAPP, SMS for all sites, Safety Report and emergency plans for top-tier sites) as when dealing with potential major accidents affecting health and safety.

Q. To what extent will a safety risk assessment cover MATTE risks?

A. The consequences of MATTEs need to be analysed separately, but there will usually be a large overlap in hazard identification and frequency estimation. But note that the environmental release of a non-COMAH substance, eg milk, resulting from an accident involving a COMAH substance, can qualify as a MATTE.

Q. I am the safety manager of a top-tier site. In the safety report we produced I had to show that the residual risk was ALARP, with reference to risk criteria. Are there similar criteria for environmental risks? If not, how can I produce an ALARP demonstration? In fact, how do I even measure the consequences of a potential MATTE?

A. Guidance on consequence analysis and risk criteria for MATTEs is available from DEFRA (*Management of harm to the environment: criteria for the management of unplanned releases*, 1998; and *Comparative Environment Index*,

1999). Ideally, MATTE risks should be plotted on a graph of magnitude (measured in terms of Environmental Harm Index) v frequency, similar to FN graphs for societal risks, divided into zones labelled “broadly acceptable”, “ALARP” and “intolerable”. However, it is recognised that the science is more complex and less developed, and relevant data are less available, than is the case for safety risk assessment.

Q. How can I reduce the risk of a MATTE occurring?

A. There are several ways, beginning with site location: if possible, avoid siting potential sources of MATTEs near vulnerable environmental targets. We have, indeed, been involved in a case where planning permission has been refused (and the subsequent appeal dismissed following a public inquiry) because of risk to an aquifer. Site layout should reduce the risk of a small incident escalating into a MATTE. Environmental releases should be minimised by containment of spills with bunds, dikes, ditches, slopes etc, by appropriate drainage and adequate capacity for emergency containment. Those elements of process design which enhance safety will generally also enhance environmental protection from accidental releases.

Q. Is fire fighting a MATTE risk?

A. It is one of the main risks to the environment from COMAH sites, and must therefore be taken into account in site risk assessments and emergency response plans. Environmental risks from contaminated fire-fighting are compounded by the fact that, traditionally, site containment has been under-designed, leading to several of the most notorious MATTEs (eg Sandoz, Allied Colloids). Nowadays, consideration is given to allowing fires to burn down, while restricting the fire-fighting effort to preventing fire spread and escalation.

Q. What are my potential liabilities as a site operator?

A. A MATTE at your site may lead to administrative, civil and/or criminal liabilities. The greatest potential liability is likely to be the need for remediation and compensation for environmental damage.

Q. What are the powers of the competent authority?

A. The Environment Agency (the COMAH competent authority for environmental aspects) can issue two basic types of enforcement notice: an improvement notice where contravention of a statutory provision can be prevented or needs to be remedied, and a prohibition notice where there is an imminent risk of serious environmental damage. Breach of these notices is a criminal offence.

In case of an actual accident occurring, the competent authority can issue a direction to ‘leave undisturbed’, for as long as is reasonably necessary for its investigation. Under such a direction, the site operator is not allowed to do any work on the site (not even demolition work) without the express permission of the competent authority.

Finally, the competent authority may prosecute the site operator following an incident or in case of non-compliance with an enforcement notice or direction.

Q. Will I be prosecuted if I accidentally pollute the environment?

A. The EA uses an Incident Classification Scheme to help decide its level of response to an incident, as follows:

Category 1 are incidents which result in actual, or potential, persistent and extensive effects on environmental quality, major damage to the ecosystem, closure of a potable abstraction, major impact on property, amenity value, agriculture and/or commerce, and/or serious impact on a person. Prosecution is the normal response to this kind of incident, even if the offence is not committed deliberately, recklessly or negligently.

Category 2 are incidents that result (actually or potentially) in significant impact upon the receptors as defined in Category 1. In this case, a formal caution is normally issued, in the absence of negligence or intent.

Category 3 are relatively minor incidents and result, or have the potential to result, in minimal effects upon the receptors. In this case, the normal response is a warning.

Category 4 incidents have no impact on the receptors. Again, a warning is the likely response.

In addition further issues may inform the decision to prosecute by the EA, including previous offences, attitude of the offender and foreseeability.

Q. Will my Public Liability insurance cover a MATTE?

A. The question of insurance is a difficult one as each policy may be worded differently. It is thus difficult to give an answer to questions on insurance that will be relevant to all policies.

Public Liability policies are designed to provide cover for claims made against the insured by third parties that have allegedly suffered bodily injury, property damage or other loss due to an act or omission on the part of the insured.

MATTEs are thus covered by these policies.

Furthermore, Public Liability policies cover claims for injury or damage that was latent, ie not known to the insured until a claim was made against him. Thus claims made many years after the actual accident would be covered by the policy. However, depending on the actual wording of the policy, cover may not be provided for certain costs resulting from a MATTE (remediation of pollution, restoration of damaged environment, fines and prosecution brought by the EA and HSE).

Q. Are there any exclusions?

A. Yes, there are two types of exclusions: the pollution exclusion and the owned property exclusion.

The pollution exclusion has two main forms:

1. Clause 1685 which was issued by the Lloyd's Underwriters Non-Marine Association (NMA) in 1970. This clause bars cover for:
 - (1) Personal Injury or Bodily Injury or loss of, or damage to, or loss of use of property directly or indirectly caused by seepage, pollution or contamination, provided always that this paragraph (1) shall not apply to liability for Personal Injury or Bodily Injury or loss of or physical damage to or destruction of tangible property, or loss of use of such property damaged or destroyed, where such seepage, pollution or contamination is caused by a sudden, unintended and unexpected happening during the period of this Insurance.
 - (2) The cost of removing, nullifying or cleaning up seeping, polluting or contaminating substances unless the seepage, pollution or contamination is caused by a sudden, unintended and unexpected happening during the period of this Insurance.

- (3) Fines, penalties, punitive or exemplary damages.

The wording “sudden, unintended and unexpected” has been subject to interpretation and dispute in the US. The clause has not been tested in UK courts.

2. The Association of British Insurers (ABI) has issued a pollution exclusion cause that provides that:
 - A. This policy excludes all liability in respect of Pollution or Contamination other than caused by a sudden identifiable unintended and unexpected incident which takes place in its entirety at a specific time and place during the period of insurance. All pollution or contamination which arises out of one incident shall be deemed to have occurred at the time such incident takes place.
 - B. The liability of the company for all compensation payable in respect of all Pollution or Contamination which is deemed to have occurred during the Period of Insurance shall not exceed £... in the aggregate.
 - C. For the purpose of this Endorsement ‘Pollution or Contamination’ shall be deemed to mean
 - (i) all pollution or contamination of buildings or other structures or of water or land or the atmosphere; and
 - (ii) all loss or damage or injury directly or indirectly caused by such pollution or contamination.

The use of the word ‘incident’, which is rarely used in public liability policies, has caused problems, eg in the determination of when the incident is deemed to have occurred.

The owned property exclusion bars cover for damage to property that is owned, occupied or in the care, custody or control of the insured or an agent of the insured.

Q. Are there insurance policies dealing specifically with environmental liabilities?

A. Yes there are some. However, such policies are normally negotiated individually between the insured, or its representatives, and the insurance company.

There are two main types of environmental insurance policy: policies that provide cover to

- A company or other person for losses which may arise from a potential accident which occurs during the policy period; and
- A company or other person which has suffered an accident to investigate and/or remediate the contamination or other damages.

Q. Where can I get more information?

A. Read [Major Accidents to the Environment](#) by ASK's Ivan Vince