



**DWI EVENT RISK INDEX
(ERI)**

Drinking Water Inspectorate

28 March 2018

DWI Event Risk Index (ERI): Definition

A new drinking water quality measure is required to allow companies to move away from the current event response categorisation to a risk based methodology to assess the impacts of events on consumers and to promote proactive risk mitigation.

The Event Risk Index (ERI) is a measure designed to illustrate the risk arising from water quality events, and it aligns with the current risk based approach to regulation of water supplies used by the Drinking Water Inspectorate (DWI). All events are assessed by DWI using the provisions of the Water Industry Act 1991. In doing so, DWI has regard to its published Enforcement Policy, and it also follows the principles of “better regulation” to scrutinise company performance on the basis of their risk of failing to meet the requirements of the Regulations.

This is a new measure developed in consultation with water companies, alongside the Compliance Risk Index (CRI – definition [link](#) here).

The following outlines the broad principles of the ERI measure.

- the seriousness of each drinking water quality event (the Event Category score);
- a measure of the company performance in managing the event (the Inspector Assessment score); and
- the impact of each event – based on a simple measure of the population affected and duration in hours.

The formula for the calculation of the index is as follows:

$$\text{ERI} = \frac{\Sigma(\text{Seriousness} \cdot \text{Assessment} \cdot \text{Impact (population, duration)})}{\text{population served by the company}}$$

i. Seriousness score

This score (derived from the existing DWI Event classification) assesses the relative seriousness of a particular event. The score used will be the highest scoring effect of a particular event. As events are often wide and varied, the list is not intended to be exhaustive of all possibilities but provides broad categories and principles of assessment.

Score	Basis for score (examples)
5	Health Risk: Where consumers actually or potentially suffered harm through the presence of pathogens, toxic chemicals, contamination or undisinfected water in supply.
4	Health Risk Indicator: Where consumers were at a higher than normal risk of harm or suspected illness through the presence of indicator organisms, chemicals, contamination significant to health or a disinfection failure.
3	Aesthetic and Confidence: Where consumers are likely to or did reject the water or where advice limiting the use of the supply was given due to the presence of taste/odour/ discolouration, animalcules, nontoxic chemicals, specific advice to consumers and national media
2	Regulatory Impact: Where regulations were or could have been breached, but the event had no impact on the quality of water supplied to consumers such as a treatment failure, ingress or improper use of materials and local news coverage specific to water quality
1	Non-health Risk Indicator: Where consumers are dissatisfied or inconvenienced due to, for instance, loss of supplies, aeration, pressure or media interest not covered by other categories.
0	Not an event: Event reported but no effect on water quality, sufficiency or consumer confidence

ii. Assessment score

All reported events are assessed to ensure that the wellbeing and interests of consumers were protected by the companies' management of events (including mitigation of the impacts and recovery). A well-managed event with appropriate and speedy mitigation action poses a lower risk to consumers. The DWI also considers the root cause of the event and whether the company's actions led to or increased the likelihood of the event occurring, and whether further remedial action is necessary.

Therefore the DWI Inspector's assessment has been assigned a score for ERI shown below:

DWI Inspector assessment	Score
Prosecution	5
Caution	5
Warning letter	4
Enforcement – legal instrument	4
Legal instrument in place	4
Prosecution considered	4
Recommendations made	3
Suggestions made	2
No recommendations or suggestions made	1

iii. Impact score

This will be based on a simple measure of the population affected and the duration (in hours) consumers are exposed to the risk.

Reporting timescales

Provisional ERI scores will be provided to companies by the end of April each year, covering the previous calendar year (i.e. ERI for 2018 will be reported April 2019). This will include ERI scores for **all events reported in the relevant calendar year.**

There may be a small number of events where investigations are still ongoing at the end of April. For these events an estimation of the individual event scores will be included based on information provided by the company and the likely assessment for each event score.

An updated ERI figure will be reported in the Chief Inspector's Report in July and again at the end of April the following year by which time the majority of events assessments for that year will have been completed.

Special Rules

For some events default duration and population failures will be used as indicated below. The burden of proof rests with the company to identify events falling into these categories.

- **Precautionary advice issued to single premises/premises on same service** (including high lead results):

Domestic premises – population **2.4** per property affected

Public Building – population minimum of **50**.

Commercial premises – as stated by company

Duration – default value **72 hours**

- **Lab/Data/Sampling Events:** these events generally have little, if any impact on consumers and any increased risk to consumers is impossible to quantify

Population – default value of **1**

Duration – default value **72 hours**

- **Events associated with a single operational sample (including positive Crypto):**

Duration – 24 hours unless evidence of longer duration, e.g. repeat samples failed, compromised treatment process (i.e. duration is to restoration of wholesome supplies)

Population – population supplied by the asset if SR or WTW outlet

- **Events that are “Not an Event”**

Notified events where there was no impact on water quality, for example works taken out of service because of flooding; PHE report of cryptosporidiosis in community that was not found to be caused by public water supply; events associated with private water supplies.

Relationship with CRI

In some circumstances compliance failures are reported as an event, and therefore may contribute to both CRI and ERI. Most of these will attract an ERI score of 0 on the basis that they are assessed as compliance breaches. There may be circumstances, however, where it is appropriate to score such occurrences under both the CRI and ERI indices, depending on the outcome of the company investigations and DWI assessments.