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Dear Alex

Information Letter 01 2025: DWQR Requirements for the Reporting of Water Quality Events

1.0 Purpose

The purpose of this letter is to update Scottish Water on the requirements for the reporting of events relating to drinking water quality.

This letter provides guidance and collates information from previous Information Letters which have now been revoked (ILs 3/2012, 4/2012, 3/2014 & 2/2020).

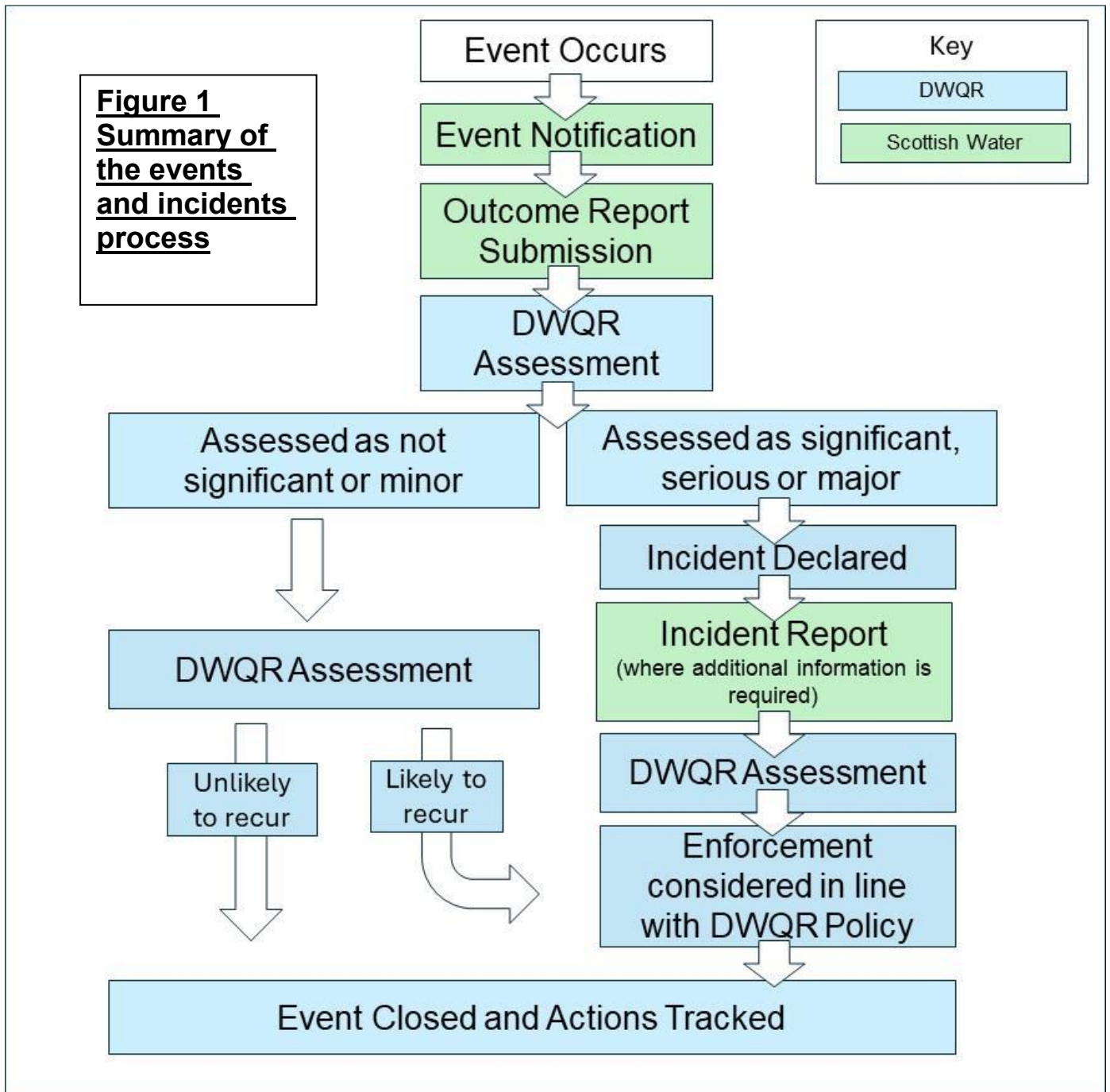
2.0 Introduction

The Public Water Supply (Scotland) Regulations 2014, as amended ('the Regulations') require Scottish Water to report events affecting drinking water quality to DWQR.

The event reporting system is well established, with Scottish Water required to promptly report any significant failure or occurrence affecting (or could affect) drinking water quality to DWQR. Additional information is provided to DWQR as it becomes available and Scottish Water is required to summarise the investigation and conclusions in an **Outcome Report**.

Once an Outcome Report is received, DWQR assess the information and may determine the circumstances as being more severe and declare an **Incident**. This requires submission of a detailed Incident Report which is assessed in line with the DWQR Enforcement Policy.

Figure 1 shows an overview of the Event Reporting and Assessment Process.



3.0 Notification Requirements - Guidance

Table 1 provides guidance on circumstances where notification is required (not exhaustive).
Table 1 – Circumstances for the notification of events

Sampling Programmes	Operational Circumstances
All exceedances of regulatory standards within treated water samples from both regulatory and operational sampling programmes (including the monitoring of tankered supplies and following consumer complaints)	Any significant/unexpected deterioration in raw water quality which is affecting / may affect treated water quality (including <i>Cryptosporidium</i> challenge)
All detections of <i>Cryptosporidium</i> made within treated drinking water unless validated UV treatment is in place.	Any significant treatment process deficiency which has or likely to have a detrimental impact to drinking water quality (including control/telemetry)
All detections of indicator organisms following mains repair and recharge	Any breach of minimum disinfection requirements (as defined by company policy / site specific disinfection arrangements)
All breaches of the lead standard in samples collected from consumer properties following enquiry or complaint	Any a significant deterioration in the aesthetic quality of water supplies which results in consumer complaints ¹
PFAS in line with DWQR guidance	Any significant increase in the number of confirmed cases of waterborne illness that may be transmitted through drinking water as reported by the local health board or identified by customer contacts ¹
	Any significant loss of supplies and/or depressurisation to part of the distribution system for a prolonged period ¹
	Unauthorised access to water company treatment sites with evidence of a risk to drinking water quality (non-NIS related)
	Any significant concern that occurs in a public building due to a defect in the plumbing system ¹
Other circumstances	
publicity or media interest relating drinking water quality either locally or nationally which could give rise to consumer concerns ¹	
Any significant contact relating to drinking water quality made by a local consumer representative e.g. local councillor, Member of Scottish Parliament, or residents association which may result in media interest ¹	

¹Scottish Water are expected to have 'trigger levels' or other guidance documented for initiation of notification.

4.0 Notification and Assessment Process – Summary

On breach of a **notification trigger**, Scottish Water shall record details upon the DWQR, Data Management System (DMS) in addition to uploading a notification document (HTML format).

It is expected that notifications shall be completed promptly. In exceptional circumstances (for the most serious of events) notification should also include telephone contact to DWQR.

Within **30 calendar days** of the event, an **Outcome Report** (HTML format) shall be uploaded to DMS providing a summary of the event and conclusions of the investigation. Associated analytical results and any supporting information shall also be uploaded. Upon submission of the report, Scottish Water shall update DMS with a summary statement which shall clearly be marked “OUTCOME” in block capitals. (Refer to **Sections 5 & 6**).

Prior to submission of an outcome report, **update notifications** on DMS should be used where material information comes to light in a significant water quality event that was not available at the time of the initial notification. For ongoing events, it may be necessary to provide several updates. This will especially be the case where large populations are affected or there is significant media interest. In addition, an update notification shall be made in exceptional circumstances where the outcome report cannot be submitted within 30 calendar days (refer below, regarding report extension requirements).

Upon receipt of an Outcome Report, **DWQR shall assess** the circumstances and severity of the event whilst also considering the adequacy of the information provided and likelihood of recurrence (considering actions undertaken/planned). Each event shall be classified into one of five risk-based categories (1: Not significant, 2: Minor, 3: Significant, 4: Serious and 5: Major).

Where an event is classified as being **Not Significant or Minor** and suitable actions have been taken/scheduled to prevent recurrence (where appropriate), DWQR shall record closure of the incident on DMS and monitor progress of any committed actions. Where DWQR is not satisfied that suitable actions have been taken to prevent recurrence, particularly with respect to regulatory sample failures, DWQR shall consider the need for further action in line with the DWQR enforcement policy.

Where an event is classified as **Significant or greater**, DWQR shall declare an incident and request further detail within an **incident report**^{1,2}. Scottish Water shall be informed of this decision by email. The incident report must be submitted to DWQR within **30 calendar days** of the declaration.

¹On occasion, following incident declaration, DWQR may consider that sufficient information to permit assessment has been provided within the Outcome Report. Under such circumstances an incident report may not be requested.

²Enhanced Outcome Reports are no longer in use.

DWQR considers that timescales stipulated for submission of outcome and incident reports, in all but exceptional circumstances, are sufficient for submission of a report.

Should an **extension be required**, this request should be made in writing to the relevant DWQR Inspector, before the original deadline, describing the reason for the delay and a proposed delivery date. An agreed date will be confirmed by DWQR, and this must be achieved.

Following receipt of an incident report, DWQR shall complete an **assessment** to confirm root cause and whether the actions taken by Scottish Water during and following the incident were appropriate to protect public health, restore water quality, and to prevent recurrence. In some cases, a site visit or audit may be appropriate to verify facts and ensure identified actions have been completed.

Further action, in line with the DWQR enforcement policy, will be considered at this stage and details of DWQR's **incident assessment** shall be summarised within an assessment letter which shall be sent to Scottish Water and other stakeholders.

5.0 Outcome Report - Requirements

The Outcome Reporting process has been successfully employed for many years, in line with **Regulations 17,18 & 19** and no specific format or changes are proposed. Additional guidance is provided below.

An **Outcome Report Summary Statement** should always include the following:

- **Reason for event notification and public health protection.** This should clearly state why the event was notified and whether this was due to a regulatory sample failure and highlighting whether this sample was collected from a public building. In addition, this should state whether any restriction of use to consumers was required and/or the number of consumer contacts received (where applicable).
- A summary of the **investigation**, root cause and any remedial action undertaken. A view should be provided by Scottish Water with respect to the **likelihood of recurrence**.
- Where the **cause for the event is not identified**, sufficient supporting information should be provided to provide reassurance to DWQR of the completion of a robust investigation. Note: if further action(s) are required to inform investigation conclusions (e.g. mains flushing) this should not be considered a justifiable reason for a delay in submitting the outcome report.
- A summary of any **further actions** arising from the event with timescales for completion.

Note: **details of all investigations** completed following an event should be retained by Scottish Water and be available for audit.

All relevant **sample results** (in addition to any supporting information e.g. online trends, bench test data, consumer contacts) should be uploaded to DMS upon submission of the Outcome Report.

6.0 Additional Guidance: Response, Investigation and Reporting of Events

- Following a regulatory sample failure from a consumer premises, the extent of impact must be demonstrated in all instances by representative upstream and downstream samples.
- Following a breach of a regulatory standard from a **public building**, where resampling does not identify an ongoing issue, but the failure may be attributed to the domestic distribution system, an assessment of plumbing arrangements within the property should be conducted to inform conclusions regarding the likelihood of recurrence.
- Following a breach of the **lead standard**, the outcome report should provide information on the status of orthophosphate dosing in the supply and a summary of Scottish Water's investigation into communication and supply pipe materials (this is expected to have been completed within the 30 days).
- During an incident all efforts should be made to collect a **sample of affected water**, even if the circumstances prevent fully UKAS accredited sampling personnel from completing this activity. For example, following the receipt of multiple discoloured water contacts, samples should be collected prior to commencing flushing activity.
- Following an operational incident at an asset (e.g. failure of disinfection), downstream sample locations should be informed by an **estimation of the time of travel** of affected water or locations of customer contacts (where applicable). Sample results should be annotated with evidence of this assessment. The number of samples collected during and following an incident should be appropriate for the size of the affected area to ensure that the impact of the event is fully understood.
- For final water ***Cryptosporidium* detections**, the results should clearly record the date and

times of starting and finishing sampling as well as sample volume and number of oocysts detected (not just concentration).

- Following **multiple single detections of *Cryptosporidium*** from a water treatment works over a short timeframe, DWQR expects the sample data provided to include raw water monitoring.
- Upon breach of Scottish Water's **minimum disinfection requirements**, the Concentration Time (Ct) within the contact tank/pipe should be estimated assuming dosing was not completely lost. Where primary chlorine has dosing ceased, Scottish Water is reminded that Ct cannot be calculated using the full residence time of the tank/pipe.

In such circumstances the minimum concentration of chlorine exiting the contact tank/pipe should be described, as well as an estimate of additional Ct within downstream storage (prior to first customer supply). The volume of affected water should always be provided as well as the total volume of the downstream storage.

DWQR expects that at the time of such an event a risk assessment shall be completed (in liaison with public health bodies where appropriate) to determine public health risk. This assessment should be retained and made available to DWQR upon request.

- Following an event associated with a **mains repair**, the sample results provided must include any operational samples collected following recharge of the main. These results should be annotated with the time of recharge and time of sampling.
- Where an event has occurred, associated with malfunction of chlorine dosing equipment that has resulted in over-dosing, investigations should ascertain the risk associated with the formation of **disinfection by-products** and appropriate sampling should be undertaken.

7.0 Additional Guidance: Content of Incident Reports

An incident report is required for the most severe incidents, to provide DWQR with sufficient evidence to review in detail the circumstances of the event, extent of issue, risk to public health & consumer confidence, cause and to assess the likelihood of recurrence.

The format of incident reports is generally good, nevertheless, DWQR is concerned about the inconsistency in the standard of reports and the frequency for further information requests required.

Additional guidance is provided below regarding several sections:

- **Executive Summary:** This standalone summary should set out the main conclusions of the investigation and clearly describe root cause. A summary of the actions should be discussed to provide assurance that the remedial actions undertaken (or planned), are appropriate to prevent recurrence. Where recurrence is considered likely, reference should be made to any longer-term actions and temporary mitigation.
- **Asset Overview.** This section mainly comprises of 'factual' information; however, the following improvements/additions are requested.
 - A review of the format of **zonal overview maps**, where the text often cannot be read.
 - Additional checks to **WTW process schematics**, which have often been found to be out of date or incorrect.
 - The Asset Overview section also includes a section to 'confirm as to whether a **Drinking Water Safety Plan** exists'. DWQR would welcome expansion of this section, to summarise risk status of hazards associated with the event, highlighting those previously recorded as being of significant risk (with reasoning) and details of any improvement plans in progress prior to the incident.
 - A summary of all **relevant events and incidents** associated with the asset over the previous 3 years, summarising root cause and actions completed to prevent recurrence.
- **Event Timeline.** This section should provide a chronology of significant occurrences and actions taken by all relevant teams that are pertinent to the event. That is, the timeline

should include the actions taken by Operations, ICC Team, Public Health Team, Sampling Team and any other teams associated with the incident. It should clearly and accurately record the dates and times that key actions were taken along with references to other important information contained within the report, for example, sample numbers, consumer contact references, asset references, figure/table references etc.

- **Event Summary:** Whilst this section of incident reports is generally well-constructed and presented - providing a description of the circumstances of the event and actions taken, supporting information can be missing or incomplete.

DWQR reminds Scottish Water of the need to provide the following information where relevant:

- Site Specific Disinfection Strategies: Where an incident at a WTW involves a failure to appropriately prepare water for or adequately conduct disinfection to Company policy, then the site-specific disinfection strategy should be provided with the incident report.
- Operational Procedures: Extracts of any relevant procedures from operations manuals and other documents relevant to the incident. For example, relevant sections of TOMs, DOMS, ICC procedures and water quality response protocols. This is particularly the case where the incident investigation identifies actions taken that were not in line with company requirements.
- Online Trends: All relevant online trends should be provided. Historically, these have been provided in the form of 'screen shots' from SCADA and on occasion can be difficult to interpret.

DWQR ideally requires all critical trend data to be downloaded and provided (with associated graphs) in a Microsoft Excel format. Graphs may also be embedded within the Event Summary as required. The Excel document should be provided as a supporting document upon DMS. Where data cannot be provided in this format, the reasons should be explained within the report. The on-line data provided should include information from at least 48hrs before and after the incident and flow data should always be included. On-line trends should be annotated appropriately (e.g. spike due to calibration, flat lining of signal due to maximum scaling, site out

of supply).

In circumstances where elevated turbidity (or other parameters that could impact disinfection) has been encountered, all other online trends associated with disinfection should be included. Similarly, where the event is associated with failure of a membrane filtration process, trends associated with chlorine disinfection should be provided.

- Network Schematics (Simplified): Where the event relates to the distribution system, it is essential that DWQR is provided simple & clear schematics showing network configuration including aspects such as mains diameter, material, valve positions and direction of flow.
- Risk Assessment Documentation: Where the incident was associated with planned activity (operational or capital delivery) a copy of all risk assessment material, associated method statements and relevant approvals should be provided.
- Intelligent Control Centre (ICC) – Alarm Logs: Where relevant, a copy of the ICC alarm log should be provided shown the time of receipt of all relevant alarms and actions taken (e.g. passed to operations, acknowledged with no other action etc). The alarm logs should be annotated with any further information to allow DWQR assessment.
- Maintenance Records: Where an incident has occurred through the malfunction of equipment, relevant maintenance records (including calibration records for monitoring equipment) should be provided for the previous 12- month period, including commentary as to whether the activities undertaken comply with company requirements/manufacture's instructions.
- Training Records: Where relevant to the root cause of the incident, training records should be provided for operational personnel directly involved.
- **Sampling and Analysis:**

All information regarding samples collected in association with the incident, as well as bench test data, should be provided as a supporting document.

This section of the incident report should include:

- Confirmation that appropriate sampling was conducted to determine impact and extent of the of the incident and always include sampling locations plotted on a map of the affected area.

Note: DWQR expects that following an incident, sufficient and timely sampling shall be undertaken to determine public health risk, the extent of the issue and to confirm resolution.

- Where appropriate, a summary of the findings from all bench test analyses conducted during the incident. Where sampling or bench test analysis was not conducted, in line with company procedures, the reason for this should be described.
- Details of any other samples collected in response to the event by a third party e.g. Local Authorities.

- **Impact to Public Health, Consumer Complaints and Communications.**

For the most serious events, reports usually include relevant detail regarding customer contacts and liaison with external public health bodies and no changes to this are required.

DWQR, however, requests that all future reports also include a brief review of the public health risk associated with all incidents with justification for this assessment. This should include any operational risk assessment completed at the time of the incident.

- **Event Learning & Actions**

Generally, the actions proposed following an event are appropriate, however, DWQR reminds Scottish Water that where longer-term actions are required to sufficiently reduce likelihood of recurrence, that the relevant risk assessment within WRAP must be updated to reflect risk to

drinking water quality.

These DWSP updates these should not be limited to asset improvement schemes but also include other risks such as procedural compliance and training/competency.

8.0 Additional Guidance: Content of Incident Reports

Issues arising from this Information Letter should be directed to David Reynolds,
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Yours sincerely



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