2021 EDM Storm Overflow Annual Return Guide

Purpose of this document

The purpose of this document is to provide context on the use of the drop-down categories in the 2021 EDM Storm Overflow Annual Return. A collated summary from all Water & Sewage Companies will be included in the Environment Agency publication of the Annual Return to help external parties interpret the data and understand any limitations with EDM installation / spill recording.

Structure of this document

The Environment Agency have requested water companies to provide information in the "Context from WaSCs" column for as many as possible of the drop-down tables below. This document contains information specifically from Thames Water and relates to the preparation of our 2021 EDM Storm Overflow Annual Return.

Differences between 2021 and previous EDM Storm Overflow Annual Returns

Those cells with 'no fill' in Table 1 below are existing columns in the previous EDM Annual Returns. Those highlighted in blue fill in Table 1 are new columns for the 2021 return onwards.

Table 1: Columns in the 2021 EDM Annual Return

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J	Column K	Column L
Do once	*Do once*	*Do once*	*Do once*	*Do once*	*Do once*	*Do once*	*Do once*	*Do once (EA provide)*	*Do once (EA provide)*	*Do once*	*Do once*
Water Company Name	**Site Name (EA Consents database)**	**Site Name (WaSC operational name) [optional]**	**EA Permit Reference (EA Consents database)**	**WaSC Supplementary Permit Ref. [optional]**	**Activity Reference on permit (if >1 discharge)**	**Storm discharge asset type**	**Outlet discharge NGR (EA Consents Database)**	**WFD Waterbody ID (Cycle 2) (discharge outlet)**	**WFD Waterbody Catchment Name (Cycle 2) (discharge outlet)**	**Receiving Water / Environment (common name) (must match EA Consents database)**	**Shellfishery (Only populate for storm overflows that have Shellfish Water EDM requirements)**

Column M	Column N	Column O	Column P	Column Q	Column R	Column S	Column T	Column U	Column V
Do once	*Do once*	*Report each year*	*Report each year*	*Report each year*	*Report each year (if Q is >90%)*	*Report each year (if Q is >90%)*	*Report each year (if spill frequency over SOAF threshold)*	*Report each year (if spill frequency over SOAF threshold)*	*Report each year (if spill frequency over SOAF threshold)*
Bathing Beach (Only populate for storm overflows that have Bathing Water EDM requirements)	**Initial EDM Commission Date**	**Total Duration (hours) of all spills prior to processing through 12-24hr counting method**	**Counted spills using 12-24hr counting method**	**EDM Operation - % reporting period EDM operational**	**EDM Operation - Reporting percentage - Primary Reason**	**EDM Operation - Action taken / planned - Status & Timeframe**	**High Spill Frequency - Operational Review - Primary Reason**	**High Spill Frequency - Action taken / planned - Status & Timeframe**	**High Spill Frequency - Environmental Enhancement - Planning Position**

Guide to Columns & Drop-down Selection

Initial EDM Commission Date (Column N)

- Date EDM commissioned; the date data can be expected from the EDM
- NB: Installation date may precede commissioned date
- Provides further context on % operability and spills data

Drop-down categories Column N:

Category	Description	Context from Thames Water
Installed but not yet commissioned	Installed in current reporting year but data not yet expected	Not used
Commissioned in yyyy – full year data expected	Installed in previous reporting year	Here we have used the date we first reported the data; hence the earliest date is 2018.
Month (mmm) 2021	Date commissioned within current reporting year, e.g. Aug 2021	Not used

EDM Operation – Reporting Percentage – Primary Reason <90% (Column R)

- Core reason why EDM may not have been operational >90% of period (column Q)
- Select primary reason only
- Category **must** be selected when period of EDM operation (column Q) is less than 90%
- Optional to complete this column when period of EDM operation is 90% or over
- Captures information on why reporting data is missing

Drop-down categories Column R:

Category	Description	Context from WaSCs
Access – Unable to retrieve data from non-telemetry data logger (NB: not to be used for delayed access to fix existing fault)	• When access causes inability to retrieve data; e.g. landowner permission. • Consider core reason – if caused by poor installation or design then select "Installation set-up/design issue" category instead.	• Not used
Capital / maintenance works affect EDM operation	• Where planned works affect EDM operation. • Consider core reason – if caused by poor installation or design then select "Installation set-up/design issue" category instead.	• Not used
Comms failure / issue	• Any part of communication failure; e.g. intermittent signal or antenna damage. • Consider core reason – if caused by poor installation or design then select "Installation set-up/design issue" category instead. Similar if comms loss caused by power failure – select "Power failure / issue" instead	We have used this either: • Where there was an interruption to the telemetry and the data was not able to be recovered locally; Or: • Where there was an issue with the system used to receive and process the data.
EDM not yet installed	• E.g. not yet scheduled for installation, or installation not currently feasible	• Not used

EDM installed – not yet commissioned	• E.g. installed after reporting period • E.g. installed within reporting period but data not yet calibrated	• Not used
Installation set-up / design issue	• When installation or design (e.g. choice of location) affects EDM operability. e.g. Original design location cannot distinguish between two overflows & original EDM needs to be relocated to more representative point e.g. Original design location affected by river ingress & EDM requires relocation e.g. Alternative monitor type required	We have used this either: • Where the EDM was installed in an inappropriate location to accurately measure spills to the environment at that location; Or: • Where issues with the telemetry/system set-up process have led to delays in receiving the data.
Power failure / issue	• Any part of power failure; e.g. loss of mains supply / battery fault • Consider core reason – if caused by cutting through cable then select "Capital / maintenance works" category instead	• Not used
Sensor failure / issue	• Any part of sensor failure; e.g. water ingress to connection between sensor & logger. • Consider core reason – if water ingress caused by poor choice of location for installation & requires adjustment then select "Installation set-up/design issue" category instead.	We have used this either: • Where a fault developed with the sensor resulting in incorrect data that needed to be removed; OR: Where there was a third-party interference with the sensor (e.g. vegetation/rag) causing incorrect data that needed to be removed; OR: Where a third party vandalised the sensor
Telemetry or data archiving failure / issue	• Any part of telemetry failure; e.g. dial-in or storage/sending of data problems. • Consider core reason – if archiving problem caused by power fault or incorrect installation	• Not used

	then use “Power failure / issue” or ”Installation set-up/design issue” categories respectively. Similar if data transfer caused by intermittent signal – select “Comms failure / issue” instead	
No longer operational as an overflow – permit revoked or to be revoked	-	• Not used

EDM Operation – Action Taken / Planned – Status & Timeframe (Column S)

- Indicate whether action has already been taken / is planned to be taken, or whether there is an ongoing investigation to identify the appropriate action
- Which month this activity was completed / is planned
- Category **must** be selected when period of EDM operation (column Q) is less than 90%
- Captures whether operational action has been planned / taken to ensure no data gap in future

Drop-down categories Column S:

Category	Description	Context from WaSCs
Scheduled	• Appropriate operational action to address <90% EDM operation is planned	• In some cases we have used this option where issues were resolved in Jan/Feb 2022; as there was not a more appropriate drop-down option.
Resolved - month	• Appropriate operational action has already been taken within the reporting year & issue affecting EDM operation resolved	• Where we have had multiple periods of missing data in a year we have tried to choose the most recent fix
N/A - Ongoing investigation	• Appropriate action not yet identified	• In some cases we have used this option where we have identified the

		resolution but have been unable to schedule in a date for resolution due to other operational issues or supply chain delays.
N/A - EDM to be installed by Dec 2023	• Use when selection in Column R is "EDM not yet installed"	• Not used

High Spill Frequency – Operational Review – Primary Reason (asset maintenance) (Column T)

- Core reason for spill count (column P)
- Select primary reason only
- Category **must** be selected when spill frequency exceeds SOAF threshold (using column P + data from previous years)
- Captures information on why spill frequency is above SOAF threshold
- This column is included in the EDM Storm Overflow Annual Return, but not in the return relating to Emergency Overflows

Drop-down categories Column T:

Category	Description	Context from WaSCs
Performance - Partial / no capacity due to blockage or restriction - maintenance issue	• Spill frequency primarily caused by maintenance issue e.g. roots causing channel restriction e.g. blocked screens causing premature spills	• Not used
Performance - Sewer collapse (partial / full) - infrastructure issue	• Spill frequency primarily caused by infrastructure issue e.g. partial collapse of sewer	• Not used
Performance - GW inundation	• Groundwater inundation is primary reason for spills e.g. GW inundation in chalk catchment causing high spill frequency	• Not used

Performance - Infiltration	• High spill frequency caused by infiltration. Requires investment to infrastructure to resolve	• This option was used for catchments with a Ground Water Impacted System Management Plan
Performance - Asset power failure	• E.g. frequent power supply failure caused high spill frequency	• Not used
Performance - Pump failure / issue	• Spill frequency primarily caused by pump failure / premature spills e.g. pumping station struggles to maintain PFF & review of rising main design required	• Not used
Performance - Other maintenance / capital works	• Spill frequency primarily caused by works e.g. jetting	• In some cases, we have used this option where we have identified other maintenance issues
Performance - Not designed to meet Bathing / Shellfish Water regulations	• Spill frequency threshold reached because asset not designed to meet BW or SFW requirements	• Not used
Performance - Asset configuration (e.g. PS/rising main/storm tanks)	• Spill frequency primarily caused by inappropriate asset/configuration e.g. inlet design causing premature spills & requires further investigation	• Where there is evidence that the asset has not been operating as it should be, this option has been used
Data collection - EDM non-representative location	• E.g. Records multiple discharge points & cannot distinguish between the two. Requires relocation	• In some cases we have used this option where the EDM is believed not to be only recording spills, e.g. spills to a balancing tank
Data collection - Confirmed exceptional weather – Remaining spills not above SOAF threshold	• High spill frequency caused by exceptional weather events. Subsequent analysis of these data show adjusted spill frequency now not above SOAF threshold	• Not used

Data collection - Tidal / river inundation	• EDM spill frequency data quality affected by tidal or river inundation e.g. tidal cycle causes levels to reverse flows in outfall pipe	• Not used
Not asset maintenance - hydraulic capacity	• Spill frequency primarily caused by hydraulic capacity issue rather than something that can be fixed operationally	• Used where there is currently no clear evidence that majority of spills were due to asset maintenance issues

High Spill Frequency – Action Taken / Planned – Status & Timeframe (Column U)

- Indicate whether action has already been taken / is planned to be taken, or whether there is an ongoing investigation to identify the appropriate action
- Category **must** be selected when spill frequency exceeds SOAF threshold (using column P + data from previous years)
- Captures whether operational action has been planned / taken to reduce spill frequency
- This column is included in the EDM Storm Overflow Annual Return, but not in the return relating to Emergency Overflows

Drop-down categories Column U:

Category	Description	Context from WaSCs
Scheduled	• Appropriate operational action to address spill frequency is planned	• Used for committed schemes that are due to be completed by March 2025 such as the Thames Tideway Tunnel
Resolved - month	• Appropriate operational action has already been taken within the reporting year & issue affecting spill frequency resolved	• We have used this option when there was a clear reduction in spills following an operational action in that given month
N/A - Ongoing investigation	• Appropriate operational action not yet identified	• This option has been used where the root cause is still being investigated and/or an appropriate action has yet to be identified

N/A – Hydraulic capacity	• Issue is due to hydraulic capacity and unable to be fixed operationally through asset maintenance programme	• Very occasionally used when a hydraulic capacity issue has been confirmed and an appropriate action has yet to be identified

High Spill Frequency – Environmental Enhancement – Planning Position (hydraulic capacity) (Column V)

- Captures action planned or taken to reduce spill performance through the planning framework
- Select primary action only
- Category **must** be selected when spill frequency exceeds SOAF threshold (using column P + data from previous years)
- Follows SOAF for addressing high frequency discharges from storm overflows under the UWWTR (see Figure 1 in SOAF document, 2018)
- Stage 1 of the SOAF should be applied to all high spills as good practice, as part of the initial investigation to understand whether spills were due to exceptional weather events, asset performance or hydraulic capacity. Stage 1 is expected on a continual rolling basis independent of any WINEP drivers
- Progressing further past stage 1 is expected when a WINEP driver exists. Progressing past stage 1 without a WINEP driver would be proactive but at WaSC discretion
- This column is included in the EDM Storm Overflow Annual Return, but not in the return relating to Emergency Overflows

Drop-down categories Column V:

Category	Description	Context from WaSCs
SOAF N/A - Proposed SFTP (overflow previously improved)	• Schemes previously improved via SOAF but now identified for Spill Frequency Trigger Permitting	• Not used
Stage 1a: Confirmed "exceptional weather" issue	• See SOAF definition	• Not used

Stage 1b: Confirmed "asset maintenance" issue	• See SOAF definition	• Used when the evidence available to date points towards an asset maintenance issue including sites where the root cause is still being investigated
Stage 1c: Confirmed "hydraulic issue"	• If not “exceptional weather” or “asset maintenance”	• Not used
U_INV driver - Stage 2 or 3: Environmental / UWWTR assessments or improvement options appraisal	• SOAF investigation ongoing at Stage 2/3	• This option has been used for sites that have moved to SOAF Stage 2/3 with most Environmental/Biological surveys being planned for Spring and Autumn 2022
U_INV driver - Stage 4: Cost beneficial outcome not yet determined	• In process of Cost Benefit Analysis (CBA) but no outcome at present	• This option has been used where an option is at its final stage of detailed design but has still to go through a CBA
U_INV driver - Stage 4: No cost beneficial solution	• CBA indicates costs are disproportionate to environmental benefit	• No used
U_IMP4 driver - Stage 4: Spill reduction scheme - On current WINEP/AMP7 or Green Recovery investigation/scheme	• U_INV CBA indicates spill reduction scheme is cost beneficial and is on current WINEP or other planned improvement programme	• Used where a committed scheme in being progressed, most have not gone through the SOAF CBA such as Thames Tideway Tunnel or Go to Green quick fixes

U_IMP4 driver - Stage 4: Potential spill reduction scheme - Not yet on current WINEP/AMP7 or Green Recovery investigation/scheme	• U_INV CBA indicates a spill reduction scheme may be cost beneficial	• Used when a scheme is being developed but is not on a programme to be delivered
N/A – Operational solution applied	• Planning framework not required - spill frequency remedied through operational solution	• The option has been occasionally used where a quick fix has been identified