The Scottish Sewage Pollution Scandal continues

Peter Hammond, Windrush Against Sewage Pollution (WASP)

www.peter-hammond.com, December 12th 2025

SUMMARY[1]

Publicly owned Scottish Water provides water and sewerage services throughout Scotland and is accountable to the public through the Scottish Government. Hence, Scotland is often cited in the argument over private vs public ownership of water and sewerage companies.

The most recent clash in this debate arose when, in a **Channel 4 interview** posted on July 21st 2025, Steve Reed, then Secretary of State at DEFRA, claimed sewage pollution was worse in Scotland than in England. The Scottish Government's Secretary for Climate Action and Energy, Gillian Martin, swiftly **criticised** his "inaccurate and misleading comments regarding performance in Scotland". Martin pointed out that the recent Independent Water Commission found that more water bodies in Scotland achieved 'good' status (66%) than in both England (16%) and Wales (30%).

Pollution in inland and coastal waters arises from road surface runoff, agriculture and wastewater discharges. Discharges of untreated sewage from storm overflows on the sewerage network, at sewage treatment works (STWs) and at sewage pumping stations (SPSs) are fully monitored in England and Wales with only emergency overflows yet to receive Event Duration Monitors (EDMs) to record untreated sewage spills.

Annual summaries of frequency and duration of untreated sewage discharges from all storm overflows are reported to the Environment Agency (EA) in England and Natural Resources Wales (NRW) in Wales and are available online. Detailed data on treated sewage flows and individual spill start-stop times (but not volume) of sewage spills are recorded and available through Environmental Information Regulation (EIR) requests from all 10 water and sewerage companies (WaSCs). WASP has extensive experience of detecting illegal sewage pollution using data obtained from water companies and environmental regulators in England and Wales[2]. WASP's analysis has been acknowledged by Ofwat in recent enforcement actions against **Anglian**, **South-West**, **Thames**, **Yorkshire** and **Wessex** water. WASP has been invited to give evidence to several parliamentary committees: Environmental Audit Committee, Welsh Affairs Committee and Environment, Farming and Rural Affairs Commitee

WASP used FOI data requests to Scottish Water and SEPA (Scottish Environmental Protection Agency) to attempt a similar review of illegal sewage pollution in Scotland and found the following:

- Scottish Water is publicly owned, but 38% of sewage and 70% of sludge is treated by private companies
- Scottish Water is the least transparent and co-operative of the 11 British WaSCs
- SEPA is the least effective and co-operative of the 3 British environmental regulators

In Scotland, until 2024, less than 4% of storm overflows were fitted with EDMs. By 2026, an additional 2,000 EDMs will raise this to 59%. Although SEPA is the only regulator to require volume of untreated sewage spills to be reported, it is for a small number of overflows and its demands on Scottish Water and private contractors to record and report sewage treatment and untreated sewage spills are the least onerous of all environmental regulators. SEPA acquires so little operational data, it is unable routinely to check that sewage treatment and sewage spilling are compliant.

These findings are in keeping with the excellent **report** published by Environmental Standards Scotland (ESS) a year ago. WASP can confirm that key recommendations by ESS for Scottish Water and SEPA to improve the regulation of sewage spills have not been acted on and are yet to be seen to influence their performance.

[1]This report is not meant to be comprehensive but summarises WASP's interaction with SEPA and Scottish Water since 2019 in an attempt to repeat its analysis of the performance of English and Welsh water companies and regulators.

[2] All reports of WASP's analysis can be found at http://www.peter-hammond.com/sewage_pollution.html.

The Scottish Sewage Scandal is that SEPA has not routinely requested and analysed the detailed data essential for effective regulation and that Scottish Water avoids third party scrutiny by withholding and mislabelling crucial data. Refusing to provide information or providing false information to SEPA is a criminal offence under the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

Specific findings

1. SEPA does not routinely request detailed sewage treatment data that is essential for checking compliance of untreated sewage discharges against licence conditions governing spills.
2. SEPA refused to comment when WASP presented evidence of illegal sewage spills.
3. SEPA said it had no data when asked to provide a list of STWs for which it had detailed sewage treatment data essential to checking licence compliance. In 4 below, this was contradicted when SEPA provided 15-min sewage treatment data for 2025 for Shieldhall STW.
4. SEPA was unable to provide evidence of treatment compliance checking between 2018 and 2025 for Shieldhall STW except for January 2025:
   a. 2018 to 2020 data were lost in a cyber-attack
   b. 2023 to 2024 data were unavailable because of Scottish Water metering issues
   c. 2021 and 2022 were not commented on until a follow up email established *"2021 was post COVID pandemic and cyber-attack and SEPA did not carry out any assessments of FFT"* and in 2022 Scottish Water renegotiated its licence.
5. SEPA appears to rely on visits to STWs serendipitously coinciding with the occurrence of illegal spills. Therefore, SEPA is poorly informed about illegal spills of untreated sewage.
6. Scottish Water denied any licence requirement for installing and monitoring a storm tank at one STW despite a 7 year-old licence requirement pointed out by WASP. After Scottish Water visited the STW, it confirmed there was a storm tank and EDM device in place. Subsequently, spill data of inferior quality and doubtful provenance were provided but were unusable for checking compliance.
7. Scottish Water frequently provided sewage treatment data that was confusingly and incorrectly labelled which obstructed investigation of licence compliance.
8. Scottish Water made hundreds of illegal untreated sewage discharges in the period 2018 to 2024 (details in table below) at the STWs it operates directly.
9. Scottish Water provided the least accurate and helpful FOI/EIR responses of any of 11 British water companies in 8 years ; for example, when asked for data for 20 STWs recently or still operated under PFI contract:
   a. data folders supplied were empty;
   b. sewage treatment data were cryptically labeled, not as requested;
   c. due to a malfunctioning URL link, no data were supplied for several STWs.
10. WASP found evidence of at least 54 illegal "early" spills by Saur UK at Dalmuir STW which it operates under PFI contract. Spill data provided previously for Dalmuir STW by SEPA was incomplete.
11. Scottish Water refused to comment when presented with evidence of illegal sewage spills.
12. In response to FOI requests, Scottish Water has withheld sewage flow data for several STWs. An appeal for such lack of transparency is being considered by the Scottish Information Commissioner.
13. Scottish Water refused to provide data arising from the use of continuous monitoring of treated sewage despite announcing a contract to do this more than 4 years ago[3].

[33] https://envirotecmagazine.com/2021/08/31/2-million-contract-for-final-effluent-monitoring-in-scotland/

Generic findings

1. Rather than keep asking SEPA for 15-min sewage treatment data for specific STWs and be sent the same frustrating reply of detailed data not being held by SEPA, WASP asked SEPA for a list of STWs where it did hold such data. The reply was

   SEPA do not hold any 15 minute data, or shorter time interval, as it is not a licence requirement. However, in some instances, it is a licence requirement for Scottish Water to record this data but not report it. We recommend you contact Scottish Water for this information **SEPA F0199383** 04/06/2025

   This confirms that SEPA does not hold any of the detailed data that would be required to check compliance of untreated sewage spills at any STW for any given period. This is an astounding admission for an environmental regulator.

   SEPA licences have not required STW operators to provide treatment data for all STWs. When they do, SEPA appears to have requested just a single number in a single year at each STW, the average daily sewage treatment volume. This would not support routine compliance checking of sewage treatment licence conditions during spills of untreated sewage. SEPA has also used occasional site inspections to observe operation and serendipitously identify sewage spills that breach licence conditions. More recently, SEPA has been requesting 4 weeks of data on which to base compliance with licence conditions governing legal sewage spills.

   In contrast, WASP typically employs more than 35,000 sewage treatment datapoints in comparable annual analyses at a single site. The conclusion has to be that SEPA has limited knowledge as to where and when its licence conditions governing sewage spills are being breached – unless it happens to visit a site and observe a breach taking place or request 4 weeks of data that include, by chance, a spill of untreated sewage.

Days with illegal "early" spills of untreated sewage (number each year) as of 01/11/2025

FOI date	Waterbody	Site	Total	2018	2019	2020	2021	2022	2023	2024
2019	River Eden	Bowhouse		PDQ						
2023	River Clyde	Bothwellbank	171	0	0	0	20	151		
2023	River Clyde	Dalmarnock	125	9	26	90	DW	DW		
2023	River Clyde	Hamilton	251	90	25	18	104	14		
2023	Kittoch Water	Philipshill	65	26	20	7	6	6		
2023	Clyde Estuary	Shieldhall		DW	DW	DW	DW	DW		
2023	Clyde Estuary	Ardoch	46	8	9	13	16			
2023	River Clyde	Daldowie	360	68	50	111	39	92		
2023	Clyde Estuary	Erskine	52		25	18	0	9		
2023	Clyde Estuary	Helensburgh	14	14	0	0	0	0		
2023	Loch Gilp	Kilmory	5	0	0	0	5	0		
2023	Kyles of Bute	Tighnabruaich	338	0	0	233		105		
	Clyde Estuary	Alloa		DW	DW	DW	DW	DW	DW	DW
	River Endrick	Balfron		DW	DW	DW	DW	DW	DW	DW
	Biggar Burn	Biggar		DW	DW	DW	DW	DW	DW	DW
	River Eden	Cupar		DW	DW	DW	DW	DW	DW	DW
	River Carron	Dalderse		DW	DW	DW	DW	DW	DW	DW

STWs recently or still operated by private companies under PFI contract

	Moray Firth	Allanfearn (Inverness)	20						4	16
	Loch Linnhe	Fort William		DW	DW	DW	DW	DW	DW	DW
	North Sea	Fraserburgh		DW	DW	DW	DW	DW	DW	DW
2025	North Sea	Nigg (Aberdeen)	126				22	52	13	39
	River Don	Persley		DW	DW	DW	DW	DW	DW	DW
	North Sea	Peterhead		DW	DW	DW	DW	DW	DW	DW
	Clyde Estuary	Dalmuir				5	33		9	7
	River Almond	Blackburn		DW	DW	DW	DW	DW		
	River Almond	East Calder								
	Firth of Forth	Seafield (Edinburgh)								
	River Almond	Newbridge								
	River Almond	Whitburn								
	North Sea	Hatton								
	Moray Firth	Banff								
	Moray Firth	Moray East								
	Moray Firth	Moray West								
	Firth of Clyde	Inverclyde								
	River Almond	Meadowhead								
	Firth of Clyde	Stevenston								
	Firth of Forth	Levenmouth								
		TOTAL								

DW=data withheld; PDQ=poor data quality;

CONTENTS OF REMAINDER OF REPORT (As of 01/11/2025)

1 Regulatory oversight of sewage treatment in Scotland

Scottish Water operates under a regulatory framework established by the Water Services (Scotland) Act 2005. It is overseen by an economic regulator, the **Water Industry Commission for Scotland**, which decides the "lowest overall reasonable cost". The **Drinking Water Quality Regulator for Scotland** regulates the clean water side of Scottish Water's operation. The **Scottish Public Services Ombudsman** represents the interest of Scottish Water's customers and has powers to investigate complaints.

The Environmental Performance Assessment Scheme (EPAS) is SEPA's replacement of its 2009 - 2019 Compliance Assessment Scheme. SEPA has no publicly available register of compliance assessment beyond 2019 due to the December 2020 cyber-attack when it incurred major data losses. SEPA's **consultation on the proposed EPAS** ran from 31 March to 30 June 2025. By the end of March 2026, SEPA plans to announce how and when it will implement **EPAS**. Nathan Critchlow-Watton, responsible for developing water resources regulatory policy at SEPA, said in a **Guardian article** in 2024:

> *"Sepa assess Scottish Water's compliance with authorisation conditions at wastewater treatment works through site inspections, investigating events and incidents, sampling discharges, assessment of operator data and Sepa's programme of environmental monitoring."* Nathan Critchlow-Watton, SEPA, April 2024.

Environmental Standards Scotland (ESS) is a public body set up to ensure the effectiveness of environmental law and to prevent enforcement gaps arising from the UK leaving the European Union. It independently monitors and investigates the effectiveness of environmental law in Scotland, and public authorities' compliance with it. In September 2024, ESS published an excellent **review of storm overflows in Scotland** which in particular addressed the recording and reporting of data on sewage spills and the use of such data to identify storm overflows that operate outside licence conditions. It made 6 recommendations which are abbreviated below:

1: The Scottish Government, Scottish Water and SEPA **must make data** in relation to wastewater spills, compliance with licences and environmental pollution incidents **available to the public** …
2: Scottish Water must complete installation of, and **publish all data from, the more comprehensive network of monitors** set out in its 'Improving Urban Waters Routemap' …
3: The Scottish Government should as a matter of priority: (1) **prepare and publish up-to-date, clear and specific guidance about the exceptional circumstances in which it is permissible for storm overflows to spill**…
4: SEPA should **review and update its authorisation regimes and associated regulatory and operational guidance**…
5: Scottish Water and SEPA should more **routinely assess available rainfall, flow and spill event data to identify all instances of overflows which appear to spill in dry weather** …
6: Scottish Water should **publish a comprehensive and accessible plan for all proposed improvement work** …

Recommendation 5 captures WASP's approach to the detection of illegal untreated sewage discharges. WASP's only criticism is its omission of illegal "early" spilling - spilling untreated sewage when not fulfilling "flow to full treatment" (FFT) at STWs or "pass forward flow" (PFF) at sewage pumping stations.

WASP's interaction with SEPA and Scottish Water shows that SEPA is still not routinely acquiring and analysing data essential for checking compliance with licence conditions and that Scottish Water often withholds and mislabels data it provides in response to FOI requests. The latter obstructs investigation of illegal sewage discharges which in England is a criminal offence under the Water (Special Measures) Act 2025. In Scotland, refusing to provide information or providing false information to SEPA is a criminal offence under the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

It is not enough to publish when and where sewage spills appear to have been detected. WASP's previous work has established that EDM devices can produce false positives, false negatives, spill duration beyond consistency with rainfall and sewage treatment data and erroneous fusing of individual spills into extended spills also inconsistent with rainfall and sewage treatment data. Sewage treatment flow data are essential to showing that spills actually took place and to determining their compliance and legality.

Scottish Water resisted the release of sewage treatment data to WASP, whereas all 10 water companies in England and Wales now provide such data on demand. Indeed, in September 2025, Thames Water provided over 1 Gb of detailed sewage treatment and spill data for over 250 STWs across 3 years in response to a single request. Scottish Water are now limiting provision to a few months of data for a handful of STWs.

WASP is yet to hear about its appeal to the **Scottish Information Commissioner** (SIC) about Scottish Water's refusal of FOI requests for data essential to investigating illegal sewage discharges. The 3 **most recent appeals** to SIC about Scottish Water found in favour of the appellant.

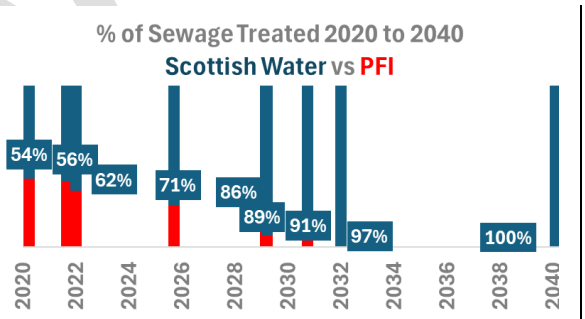
2 Public ownership, Private Finance Initative (PFI) and Public-Private-Partnership (PPP)

Using its own and FOI requests published on SEPA's disclosure website[4], WASP obtained data summarising sewage treatment in Scotland in terms of operator status (e.g., public or PFI/PPP) and population equivalent served (Scottish Water FOI CAS-2809289-P7P8X). Of the 1,853 sewage treatment processes declared by Scottish Water, 1,181 were labelled "Septic Tank", 666 as STWs[5] and 6 as "Unscreened Raw Outfall". The STWs serve a population equivalent (PE) of 6.3 million, about 98.3% of the total PE (6.4 million).

Until 2022, 54% of sewage treated in Scotland was undertaken by Scottish Water and 46% under PPP/PFI contract to private companies such as Veolia, Kelda, Saur and Catchment. Currently, November 2025, the proportions stand at 62% and 38%. Sewage treatment will not be fully under Scottish Water operation until the last PFI contract ends in October 2040. See Table 1 and figure below for more detail. About 70% of sludge is currently treated under PFI contract.

TABLE 1 STWs operated under PFI contract 2022-2040

STW	PFI/PPP Scheme	Contract end date	Pop Equiv
Allanfearn	Highland	28/05/2022	82,348
Fort William	Highland	28/05/2022	18,576
Fraserburgh	Aberdeen	30/09/2022	26,052
Nigg	Aberdeen	30/09/2022	267,714
Persley	Aberdeen	30/09/2022	46,343
Peterhead	Aberdeen	30/09/2022	38,909
Dalmuir	Dalmuir	15/06/2026	557,826
Blackburn	AVSE	30/11/2029	21,853
East Calder	AVSE	30/11/2029	110,095
Edinburgh	AVSE	30/11/2029	795,903
Newbridge	AVSE	30/11/2029	31,539
Whitburn	AVSE	30/11/2029	13,991
Hatton	Tay	16/12/2029	237,472
Banff/Macduff	Moray Coast	25/06/2031	12,173
Moray East	Moray Coast	25/06/2031	26,576
Moray West	Moray Coast	25/06/2031	44,058
Inverclyde	MSI (Ayrshire)	29/09/2032	84,494
Meadowhead	MSI (Ayrshire)	29/09/2032	221,524
Stevenston	MSI (Ayrshire)	29/09/2032	81,087
Levenmouth	Levenmouth	30/10/2040	203,564



(**sources** PPP/PFI contract end dates: https://wics.scot/system/files/2024-12/2023-24%20E%20tables%20commentary.pdf
STW population equivalent (PE): FOI to Scottish Water)

[4] https://www2.sepa.org.uk/disclosurelog/

[5] According to COO, Peter Farrer, Scottish Water has 1,827 STWs. www.bbc.co.uk/news/uk-scotland-glasgow-west-51632410

3 WASP's experience of FOI requests to SEPA and Scottish Water

WASP has submitted many FOIs to SEPA and Scottish Water to request data recording the treatment of sewage at STWs, the forward movement of sewage at sewage pumping stations (SPSs) as well as details of individual spills of untreated sewage spills. This section illustrates how Scottish Water's behaviour has established it as the least transparent and co-operative of the 11 British water and sewerage companies that WASP has dealt with. It also shows that SEPA does not routinely request, receive or analyse the data that are essential to rigorous regulation of sewage treatment and untreated sewage pollution of water bodies. Unlike the EA in England and NRW in Wales, both of whom have developed co-operative working relationships with WASP, SEPA simply refused to discuss WASP's evidence of illegal dumping of untreated sewage.

2019 3.1 Bowhouse STW

WASP's first FOI to SEPA (F0190215: 01/03/2019) was for 15-min sewage treatment data for Bowhouse STW near Auchtermuchty and received the reply:

> *SEPA does not hold the requested information* **SEPA F0190215** 29/03/2019

WASP immediately submitted an FOI to Scottish Water (**CAS-736855-S1J8C** 31/03/2019) for the same flow data and also for spill data. It required multiple reminders and email exchanges to force Scottish Water to provide the sewage flow data 2 months later on 21/05/2019. The data provided did not uniformly record sewage flow at 15-min intervals as requested (and routinely provided in England and Wales) but had a hugely variable resolution, a substantial hiatus and required significant manual editing.

Initially, when asked for spill data, Scottish Water denied there was a storm tank or overflow or monitoring requirement at Bowhouse:

> *I have been advised by our Waste Water Process Team Leader, that having carried out a review of the licence for Bowhouse WWTW* ***there is no storm overflow tank at the site or a requirement for a flow event recording data for a storm overflow****. If we did have these, we would be required to record & report the frequency & duration of all spill events and report these to our regulator SEPA, we are not required to do so for this WWTW.*
>
> **Scottish Water CAS-736855-S1J8C** 22/05/2019

WASP pointed out that a SEPA licence amendment issued in 2008 (*Dalmarnock - CAR L 1003413 VN05 - Amended 151209*) clearly stated a requirement for storm tank monitoring and reporting.

WASP put the denial by Scottish Water to SEPA (**F0190602**:28/05/2019) asking, if it were confirmed incorrect, whether it constituted an 11-year breach of permit. SEPA's reply on 25/06/2019 was

> *SEPA does not hold the information to which you refer*. **SEPA F0190602** 25/06/2019

Eventually, after a Scottish Water operative visited Bowhouse and confirmed there was a storm tank with an EDM device in place.

Files described as containing "overspill" data were provided on 20/06/2019, 3 months after the original FOI. Unfortunately, the "overspill" data provided were incomprehensible as EDM detected spill intervals in comparison to data routinely provided by water companies in England and Wales.

With such incomplete and low quality data, analysis was not possible. After this frustrating experience dealing with both SEPA and Scottish Water, WASP put aside its analysis of sewage spills in Scotland for 4 years until 2023.

2023 3.2 Bothwellbank, Dalmarnock, Hamilton, Philipshill and Shieldhall STWs

On 27/06/2023, WASP submitted an FOI to Scottish Water for detailed sewage treatment data and spill data for 5 STWs: Bothwellbank, Dalmarnock, Hamilton, Philipshill and Shieldhall.

On 25/07/2023, Scottish Water replied as follows:

we do not hold the information you have requested. **Scottish Water CAS-2239984-G9C9Y** 25/07/2023

For each STW and year, all Scottish Water did provide was the single number that SEPA requests representing the annual average daily sewage flow. In contrast, the EA and NRW routinely require an average for each day (e.g. 365 values p.a.) to be reported **but** with detailed 15-min sewage flow to be recorded (e.g. 35,040 values) and available on request. Compliance with licence conditions in relation to continued sewage treatment during spills cannot be determined using a single annual flow value or even 365 daily average flow values. The detailed flow data, such as at 15-min resolution, are essential.

WASP requested an internal review of Scottish Water's response on 25/07/2023 on the grounds that detailed sewage flow data, of inadequate quality and after frustrating negotiation, had been provided previously for Bowhouse STW.

On 22/08/2023, 2 months after the initial request, Scottish Water accepted WASP's complaint and 15-min detailed sewage flow data were provided.

Armed with both detailed flow and spill data, WASP was able to begin checking if spills of untreated sewage from these five STWs were compliant with licence conditions or were illegal.

3.2.1 Bothwellbank STW

Bothwellbank STW serves a population equivalent of about 25,000 and discharges to the River Clyde.

Bothwellbank STW has 2 storm overflows: an inlet overflow which is designed to limit the overall amount of sewage entering the works and a storm tank overflow.

Sewage spilled via such overflows is subject to a 6 mm mesh screen to remove wet wipes, sanitary products and condoms. Sewage spilled from a storm tank overflow may also undergo some settlement before excess spills to a watercourse. To be compliant, spills at Bothwellbank's inlet should only consist of flows in excess of 359 l/s at the inlet weir and spills at its storm tank should only be flows in excess of 215 l/s at the storm tank diversion weir which is the capacity flow passed to full treatment (FFT).

Table 2 provides a summary and Figure 2 a visual representation of all untreated sewage spills between 2018 and 2024 at Bothwellbank STW.

TABLE 2: untreated sewage spill data for Bothwellbank STW 2018 to 2024

Bothwellbank STW	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
SEPA compliance assessment	Poor	Excellent	No data	No data	No data	No data	No data
Inlet spills (hrs)	225	547	477	208	377	693	1,278
Storm tank spills (hrs)	695	864	2,047	700	2,040	1,570	1,197
Inlet spill volume (M litres)	287	1,500	1,627	540	2,368	No data	1,086
Storm tank (M litres)	270	364	517	329	1,155	No data	549

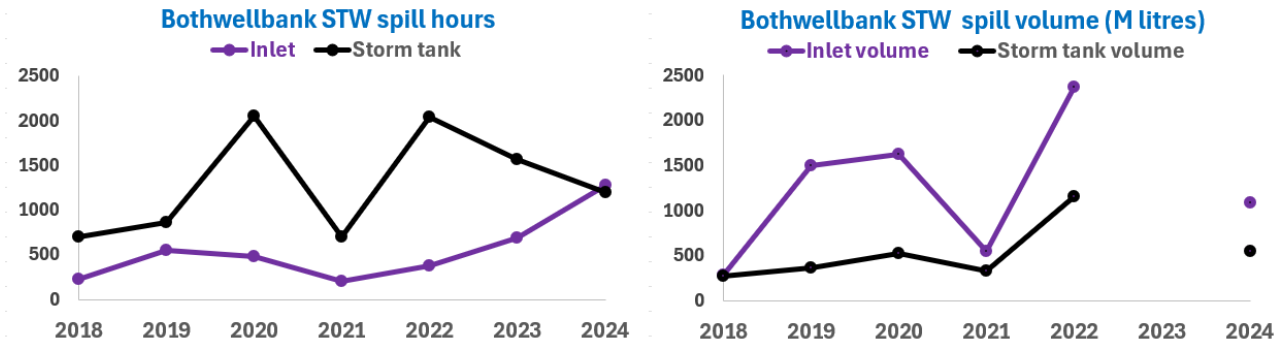


Figure 2: spill hours and spill volume 2018 to 2024 for Bothwellbank STW

Notice that although annual spill hours at the inlet overflow are typically less than that at the storm tank overflow, the volume of spill at the inlet can be significantly greater than at the storm tank.

WASP's detailed analysis of the combined 15-min sewage flow, detailed spill data and rainfall suggests that the number of days with illegal "early" storm tank spills at Bothwellbank STW were at least 24 and 175 in 2021 and 2022 respectively. An account of the analysis is provided below.

2018 to 2020 inclusive

The 2018 annual overview chart for Bothwellbank STW (Fig. 3) shows very well separated spill intervals that are consistent with sewage treatment and rainfall data.

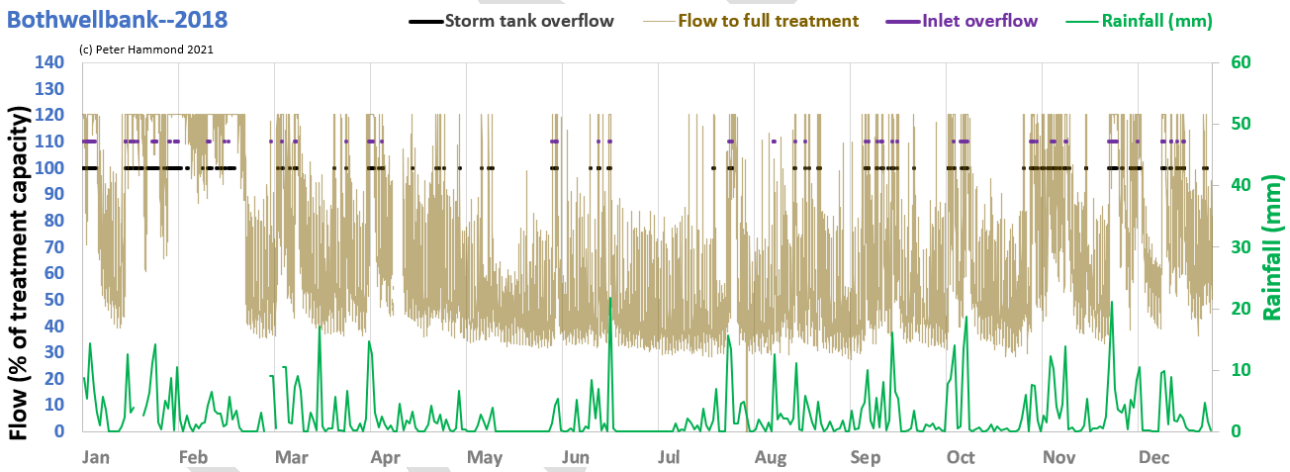


Figure 3: 2018 annual overview chart for Bothwellbank STW

This is best seen at a monthly series level as below in November 2018

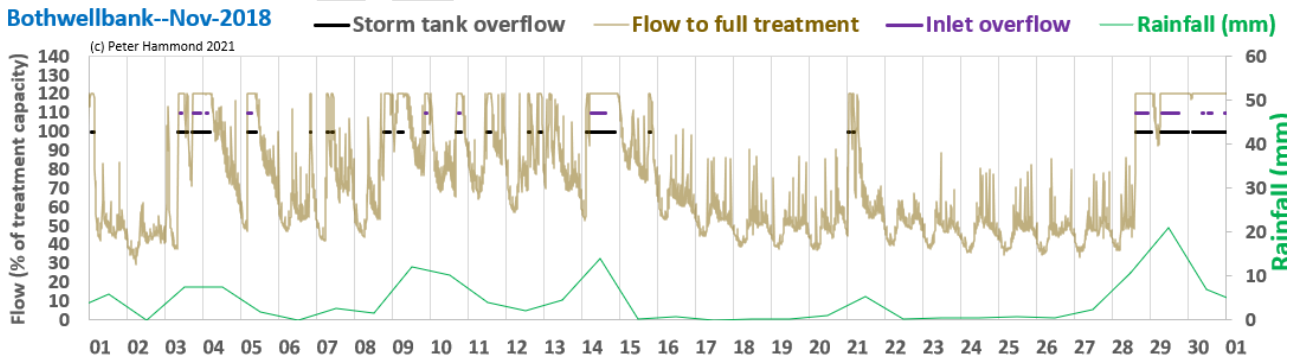


Figure 4: November 2018 monthly chart for Bothwellbank STW

Each storm tank spill interval (**black** segment) fits snugly into a sewage flow rise, levelling and fall that is consistent with rainfall. Throughout, sewage flow to treatment (brown curve) is above capacity and so all of these spills in 2018 are compliant in terms of maintaining treatment capacity. Whether the spills are compliant with rainfall levels is not being considered for the moment.

The compliant spilling of 2018 continues throughout 2019, 2020 and most of 2021.

2021

Between January and August 2021, the spills from the storm tank are compliant in terms of treatment capacity but thereafter many are "early", i.e. occur when the sewage flow to full treatment is below the licenced FFT capacity of 215 l/s, and hence are illegal (**Fig**. 5).

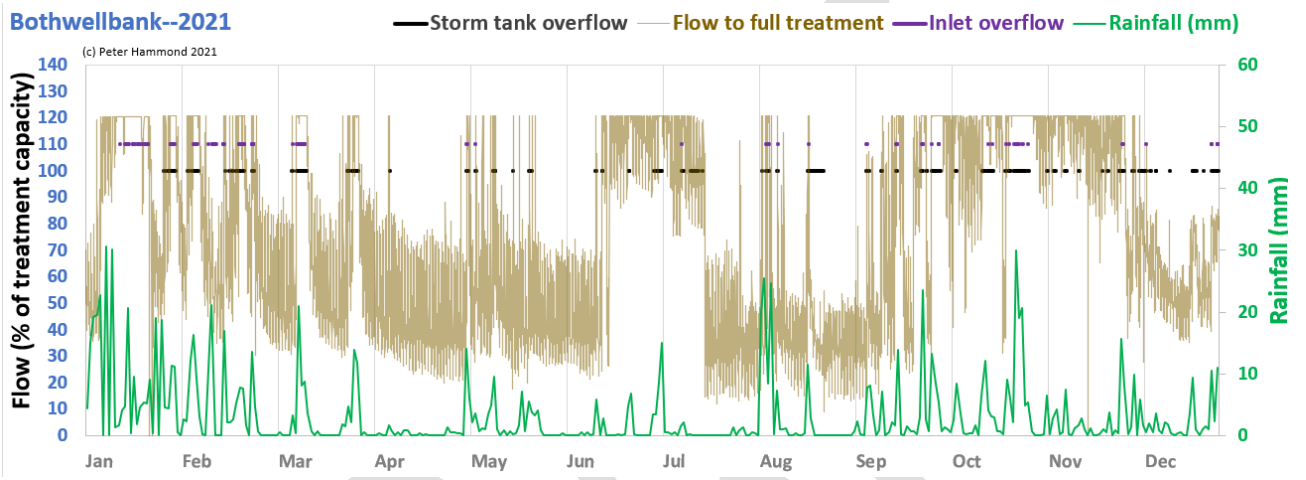


Figure 5: 2021 annual overview chart for Bothwellbank STW

By way of example, the December 2021 chart (Fig. 6) suggests there were 13 days where the flow to full treatment is well below treatment capacity throughout the entire spill from the storm tank.

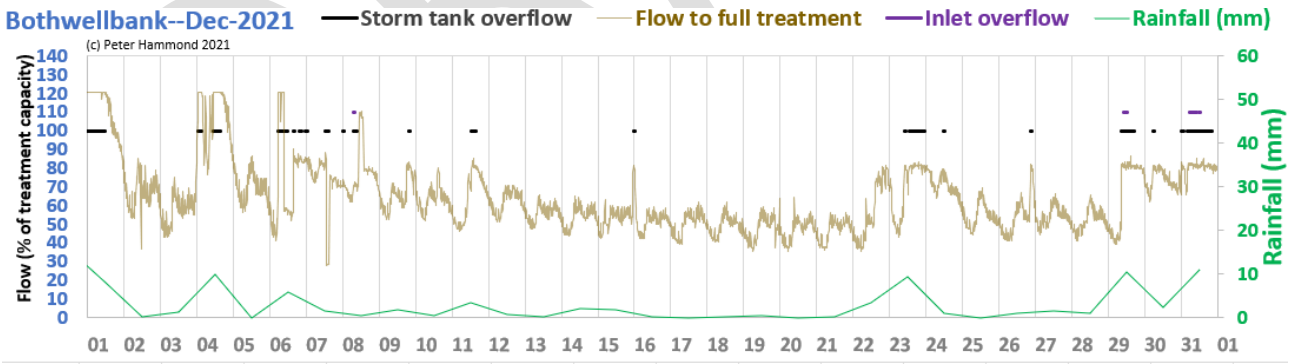


Figure 6: December 2021 monthly chart for Bothwellbank STW where there are at least 13 days with illegal "early" spills from the storm tank (Dec 6-9,11,15-16,23-24,26,29-31)

Throughout 2022, there are untreated sewage spills from the storm tank on at least 151 days where the flow to full treatment is below the works capacity and which therefore are illegal (**Fig**. 7)

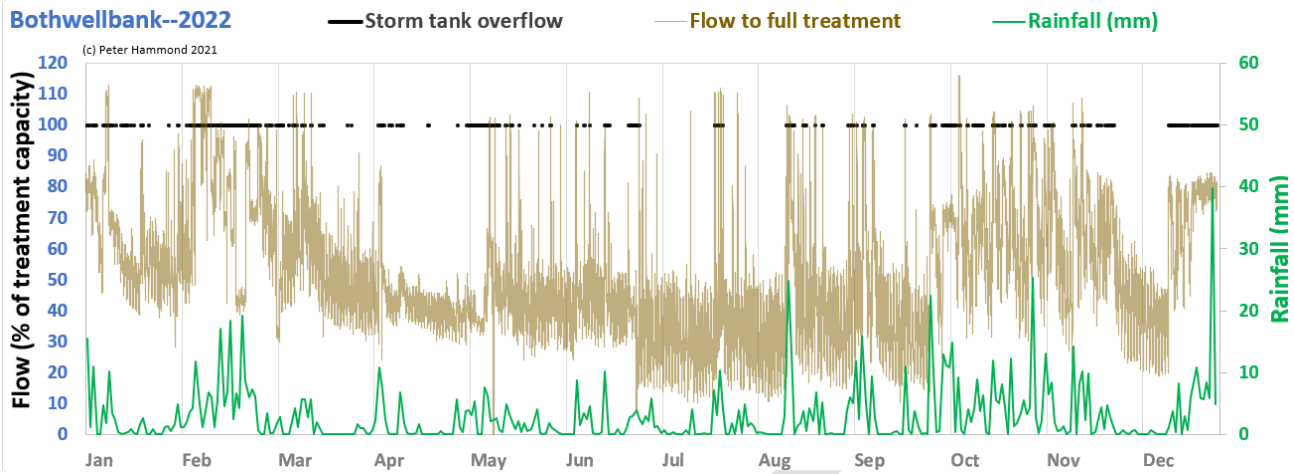


Figure 7: 2022 overview chart for Bothwellbank STW with at least 175 days with illegal "early" sewage spills

These are more easily seen in monthly charts e.g., for February 2022 monthly chart in **Fig**. 8.

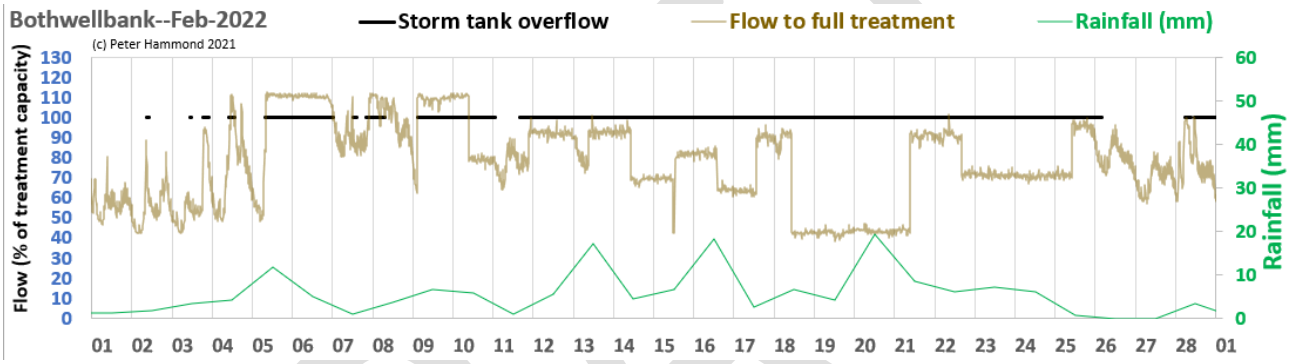


Figure 8: February 2022 monthly chart for Bothwellbank STW showing at least 21 days with illegal "early" spills via its storm tank overflow (Feb 2-3,7,10-26,28)

Once WASP had identified this illegal spilling, it presented its findings to Scottish Water (SW).

07/11/2023 18:09 WASP -> SW	WASP asked if Scottish Water agreed that there were illegal spills on at least 21 days that month.
10/11/2023 11:01 SW -> WASP	*"Unfortunately, your most recent correspondence goes out-with the scope and remit of the Freedom of Information process. We have been as helpful as we can be however, FOI is not an opportunity for members of the public to enter into open-ended discussions on a particular subject with a public body.* *To be clear, we are not able to clarify your interpretation of the data that we have provided any further than we already have."*

Often, when WASP reported suspicion of illegal spilling by English water companies to the EA and Ofwat, their first reaction was to ask how the water company had responded to the accusation. Water companies in England respond, Scottish Water made it absolutely clear that it would not.

WASP decided to put the same suspicion of illegality at Bothwellbank to SEPA and surprisingly received a similar negative response:

26/11/2023 05:51 WASP -> SEPA	WASP repeated the query about illegal spilling at Bothwellbank STW.
29/11/2023 16:11 SEPA -> WASP	*Thank you for contacting the Access to Information Team. We have reviewed your email received 26/11/2023 and advise that we do not consider this a valid request for information. The Environmental Information (Scotland) Regulations 2004 Act requires public authorities to provide recorded*

	information only. It does not require public authorities to provide opinions, make assumptions or draw conclusions, therefore we cannot comment. *Should you wish to speak with someone from the local team that covers Bothwellbank, please direct your enquiry to their mailbox: lanarkshire@sepa.org.uk*
29/11/2023 21:12 WASP -> SEPA	*I beg to differ on your interpretation of The Environmental Information (Scotland) Regulations 2004 Act which includes the following:* ***Duty to provide advice and assistance*** ***9.—(1) A Scottish public authority shall provide advice and assistance, so far as it would be reasonable to expect the authority to do so, to applicants and prospective applicants.*** *I would have thought that advising on evidence of possible breaches by Scottish Water of a permit to discharge to a river is a reasonable expectation of an environmental regulator.* *I would like to request an internal review of your decision.*
07/12/2023 10:06 SEPA -> WASP	*The Access to Information Service team has reviewed this decision and can confirm that we do not consider your enquiry to be a valid request for recorded information under the legislation mentioned above.*

So, SEPA declined to comment on potential illegality by Scottish Water and its internal review supported that response. As SEPA (national) suggested, SEPA Lanarkshire was contacted but its response was more helpful:

02/12/2023 07:05 WASP -> SEPA Lanarkshire	WASP repeated the request regarding possible illegality in February 2022 at Bothwellbank STW.
21/12/2023 12:10 SEPA Lanarkshire -> WASP	**SEPA Lanarkshire confirmed that illegality had been identified at Bothwellbank** during a visit on February 4th 2022 and that Scottish Water were warned and asked to address the cause.

Following its visit mentioned in the last email, SEPA Lanarkshire did produce a report (*1a 20220204 Bothwellbank WWTW inspection RR.pdf*) that identified illegal spills on one of the 21 days that WASP had asked about. WASP's detailed analysis of illegal spilling would not be possible without detailed sewage treatment data. SEPA (Lanarkshire) just happened to visit the works when it was spilling illegally. Its report did not include any data analysis, just observation of a meter reading. Had the analysis been completed, much more obvious and extensive illegal spilling would have been identified as detailed above.

WASP is very disappointed that both Scottish Water and SEPA (national) were reluctant to make any comment on WASP's findings despite the fact that both already knew that SEPA Lanarkshire had identified illegal spilling during a visit on one of the hundreds of illegal spilling days in the period identified by WASP and had requested Scottish Water to address the underlying problems.

By comparison, WASP has received much greater co-operation from the environmental regulators in England (EA) and Wales (NRW). Indeed, WASP has been and is currently in one-to-one discussion with the EA Chair and CEO about the EA's data analysis in relation to future regulation of water companies in England.

3.2.2 Dalmarnock STW

Dalmarnock STW serves a population equivalent of 166,000 and discharges to the River Clyde. Dalmarnock STW has an inlet overflow and a storm tank overflow.

According to Dalmarnock's licence, in order to be compliant, spills at the inlet should only consist of flows in excess of 10,417 l/s and spills at the storm tank should co-occur with flows in excess of the pass forward rate of 5,208 l/s at the inlet sewer. WASP has interpreted the last condition to mean that for a storm tank spill to be compliant, the PFF rate at the inlet weir should be at least 5,208 l/s throughout the spill.

Table 3 contains the annual spill summary data for Dalmarnock STW. WASP does not know why data is not available for more than 50% of the entries.

TABLE 3: untreated sewage spill data for Dalmarnock STW 2018 to 2024

Dalmarnock STW spill data	2018	2019	2020	2021	2022	2023	2024
SEPA compliance assessment	Poor	Excellent	No data	No data	No data	No data	No data
Inlet (hrs)	No data	No data	547	No data	230	No data	36
SSO (hrs)	135	313	995	537	1,303	No data	255
Inlet (megalitres)	No data	No data	3,512	No data	1,165	No data	78
SSO (megalitres)	437	1,217	3,741	2,577	6,844	No data	905

2018

Scottish Water provided a file labelled *FFT (Flow to Full Treatment)* but data within were labelled *Total Effluent Flow*. WASP has used these data as if the internal labelling is correct i.e. as effluent data.

It is unclear if this mislabelling of the flow data is in error or deliberate. It certainly obfuscates analysis since flow to treatment and effluent are measured at opposite ends of the treatment process and it is the former that is typically subject to permit or licence conditions.

A second file labelled *Dalmarnock 0-3 DWF Flows 2018 (May-Dec)* contained flow data at 1-min intervals that should correspond to the flow passed forward at the storm tank weir i.e. correspond to flow to full treatment (FFT).

A third file entitled *Dalmarnock 3-6 DWF Flows 2018 (May-Dec)* is presumed to define the rate at which sewage is passed on at the inlet weir but is diverted at the storm tank weir. This would mean that the sum of the 0-3 DWF and 3-6 DWF flows corresponds to the passed forward flow (PFF) at the inlet weir or "inlet sewer", the flow subject to licence conditions during spills.

Detailed spill event data on Scottish Water's website for 2018 was made available for the storm tank overflow but not for the inlet overflow.

The 2018 annual overview chart for Dalmarnock STW is shown in **Fig**. 9.

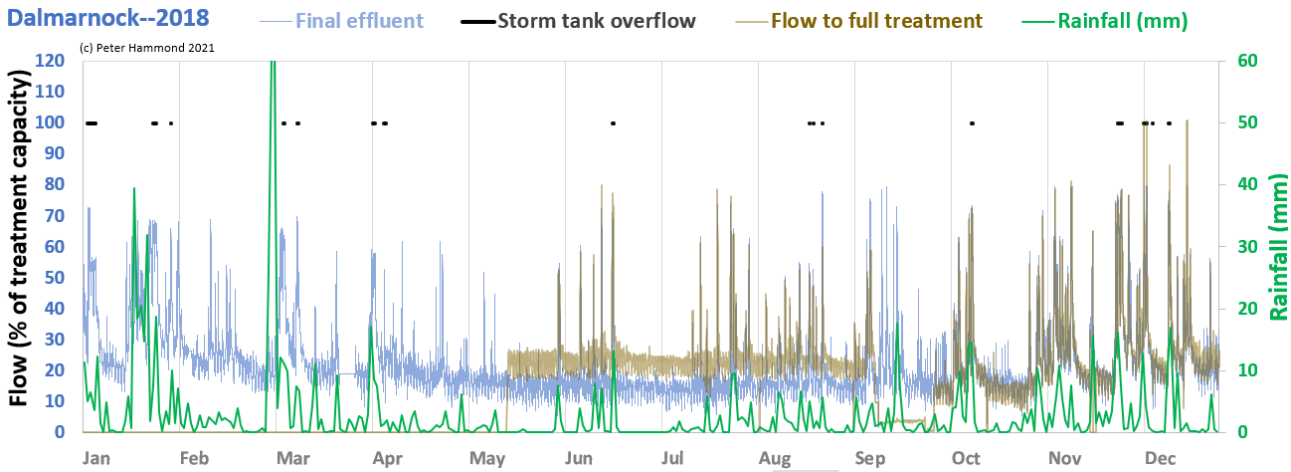


Figure 9: 2018 overview chart for Dalmarnock STW

WASP identified at least 8 days with likely illegal "early" storm tank spills of untreated sewage (**Fig.** 10).

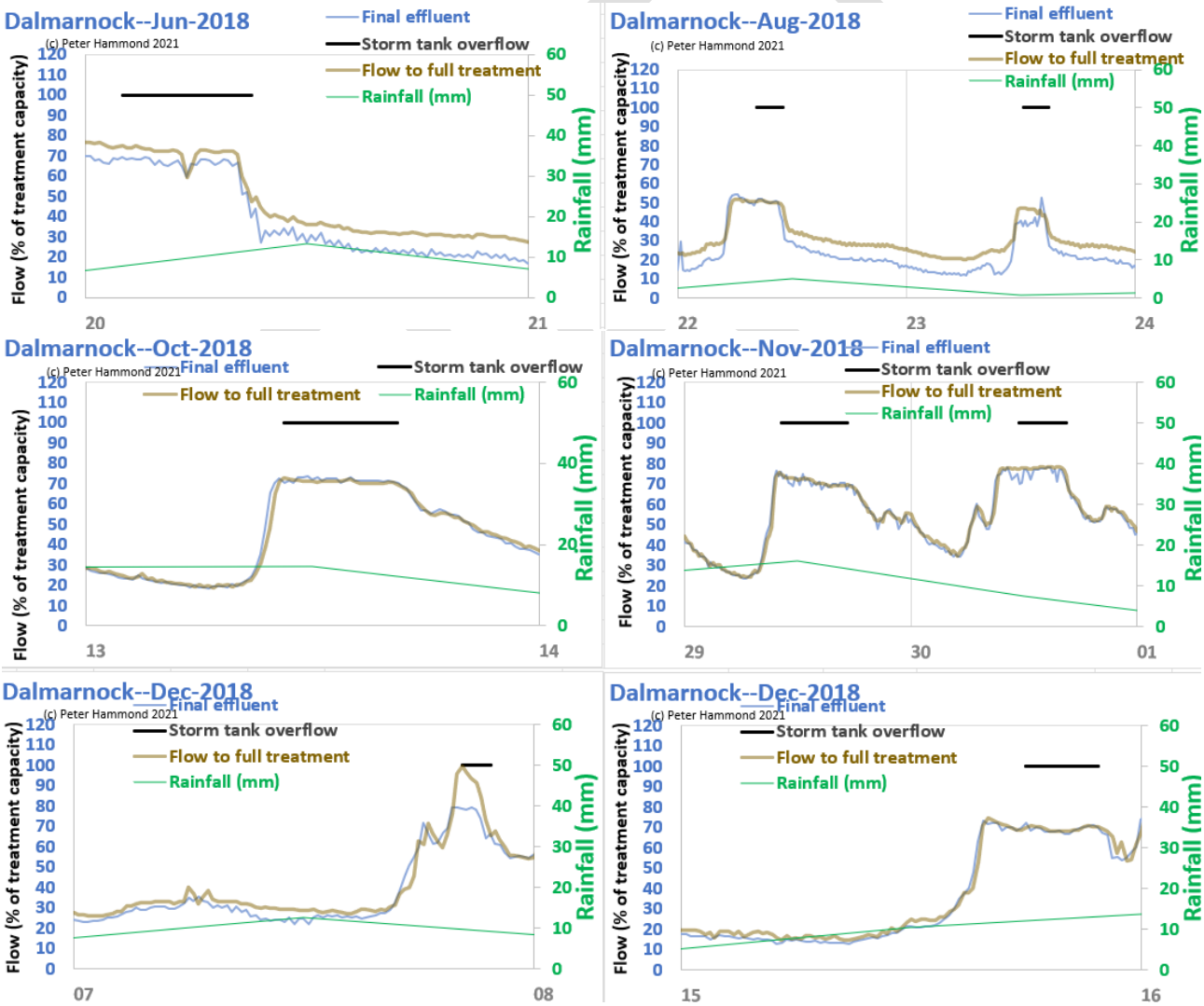


Figure 10: WASP's analysis suggests there are potentially 8 days with illegal "early" storm tank spills at Dalmarnock STW in 2018 (Jun 20; Aug 22-23; Oct 13; Nov 29-30; Dec 7,15)

2019

The 2019 flow data provided by Scottish Water included a file labelled *Dalmarnock Influent & Effluent Flows 2019* but it contained only average daily flows and not 15-min interval data.

As with 2018, there was a file labelled *Dalmarnock FFT Flows 2019* but it contained 15-min flow data in a column that was clearly labelled *Total Effluent Flow*. The daily average figures for this 15-min data matched the daily effluent flow values provided in the summary datafile *Dalmarnock Influent & Effluent Flows 2019*. So it appears that WASP is correct in assuming the datafile labelled as FFT is mislabeled and actually contains treated effluent data. No other potential FFT data was provided.

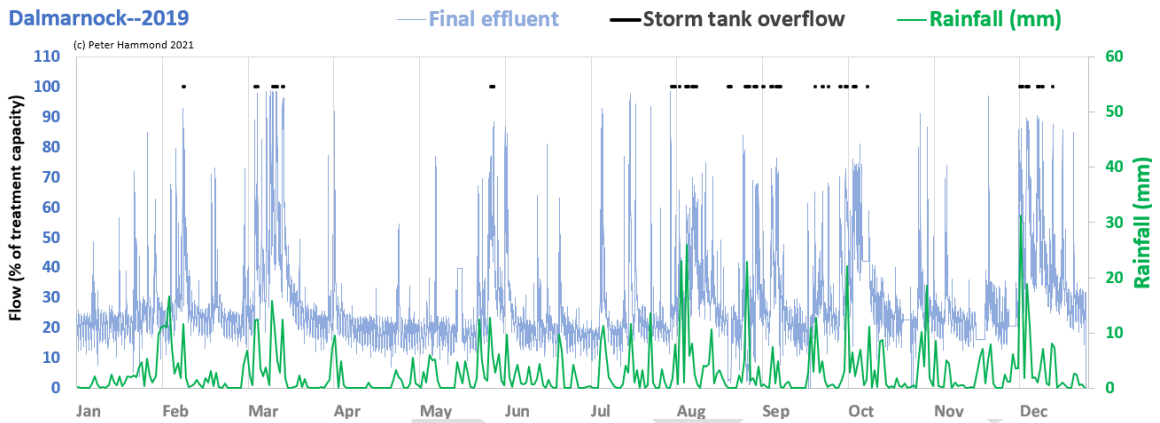


Figure 10: 2019 overview chart for Dalmarnock STW

2020

As with previous years, the 2020 data provided by Scottish Water included a similarly named file *Dalmarnock FFT Flows 2020*. Within, the 15-min flow data was set out in the same fashion as earlier years but now the label used was *Total Flows*. So WASP assumed this also to be effluent flow.

The file also contained a chart of the *Total Flows* data that is itself mislabeled *FFT Flows 2020* and is reproduced below (**Fig**. 11). WASP believes the datafile actually contains final effluent flow data as in the previous 2 years based on the similar columnar headings in the spreadsheet.

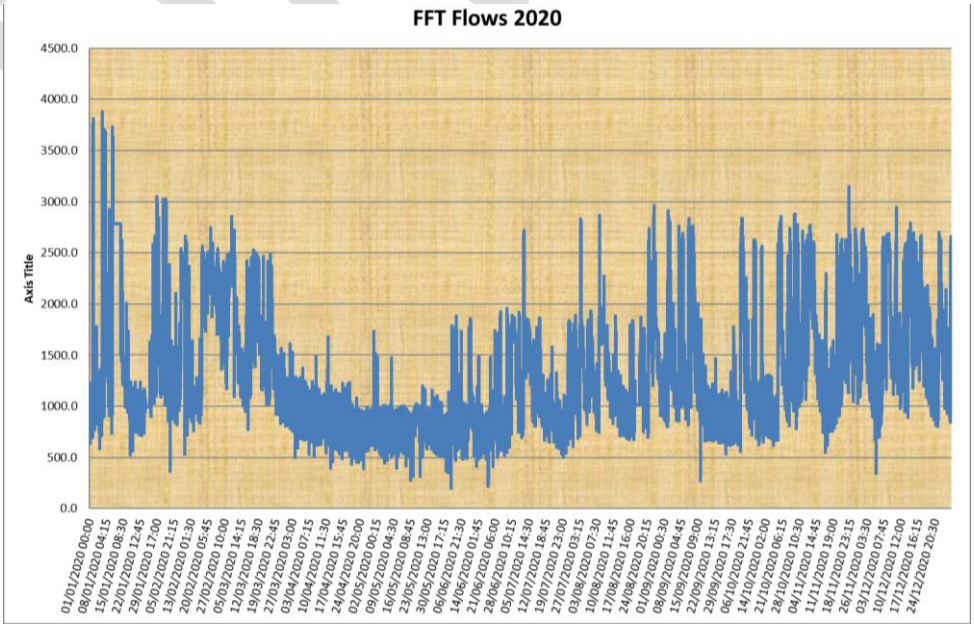


Figure 11: annual chart included in Scottish Water's datafile *Dalmarnock FFT Flows 2020*

Another datafile provided, *Dalmarnock 0-3 & 3-6 DWF Flows 2020,* contained 1 min resolution flow data as in similar files provided for 2019. The annual overview for the pass forward flow (PFF) at the inlet weir and the flow to full treatment at the storm tank weir are shown in **Figs.** 12 and 13.

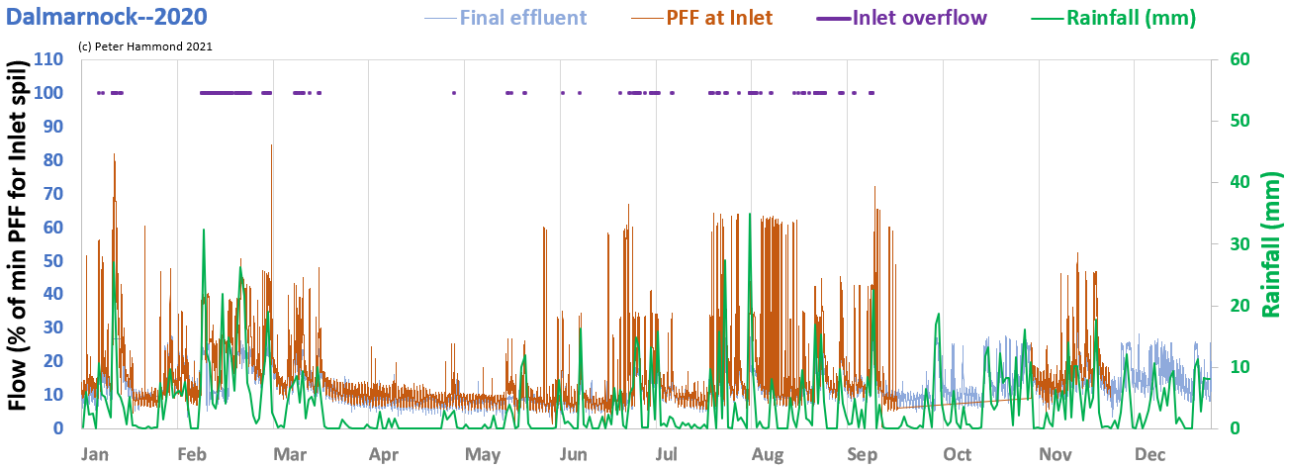


Figure 12: 2020 overview chart for Dalmarnock STW suggesting all inlet overflow spills to be "early" and illegal

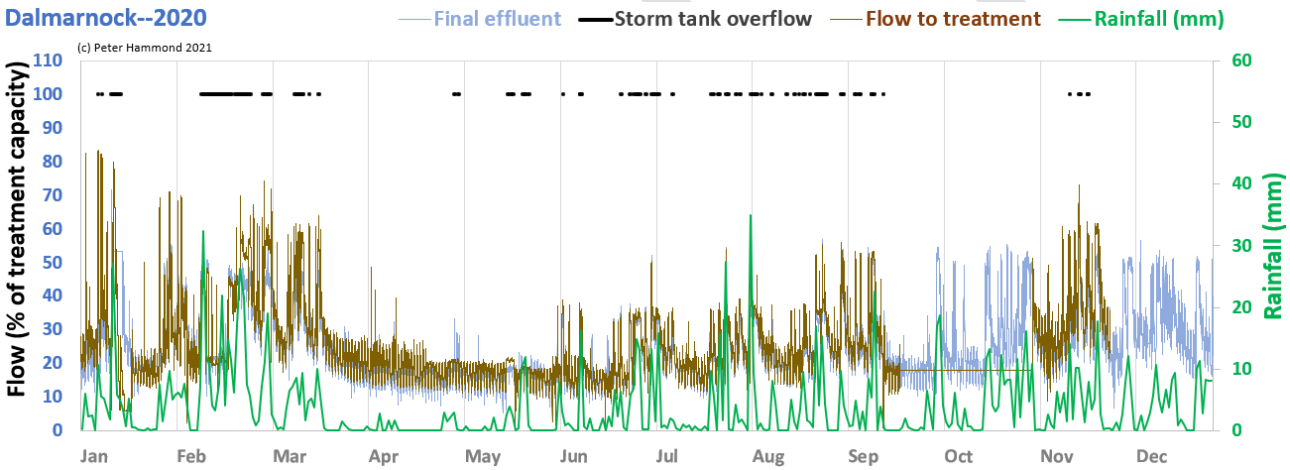


Figure 13: 2020 overview chart for Dalmarnock STW suggesting all inlet overflow spills to be "early" and illegal

These data, if correctly interpreted, suggest that all inlet spills, on 76 days, were "early" and hence illegal because the pass forward flow at the inlet (sum of 0-3DWf and 3-6DWF flows) during the spills was not above the required licence rate of 10,417 l/s.

Similarly, if the data are being correctly interpreted, all storm tank spills, on 90 days, were "early" and hence illegal because the flow to full treatment beyond the storm tank weir (0-3DWF flow) was not above the required licence rate of 5,208 l/s. This would mean that the volume of untreated sewage spill from the storm tank, 3,741 megalitres or 150 Olympic Pools' worth, was illegally discharged from Dalmarnock STW.

Scottish Water will need to clarify the labelling of the data if such interpretations are to be challenged.

2021

Scottish Water provided WASP with 3 datafiles labelled *Dalmarnock FFT Flows* followed by a date range which covered three periods Jan-Feb 2021, Feb-Aug 2021 and Aug-Dec 2021. Each of these set out 1-min interval data in a format identical to those with a similar name for earlier years. Internally, the data was clearly labelled as

Total FFT Flow but judging by column labels, WASP believes this to be effluent data as in the 2018-2020 datafile with the similar filename. Another file *Dalmarnock Inlet Flows 2021* contained daily flow rates. The 2021 overview chart for Dalmarnock STW is shown in **Fig**. 14.

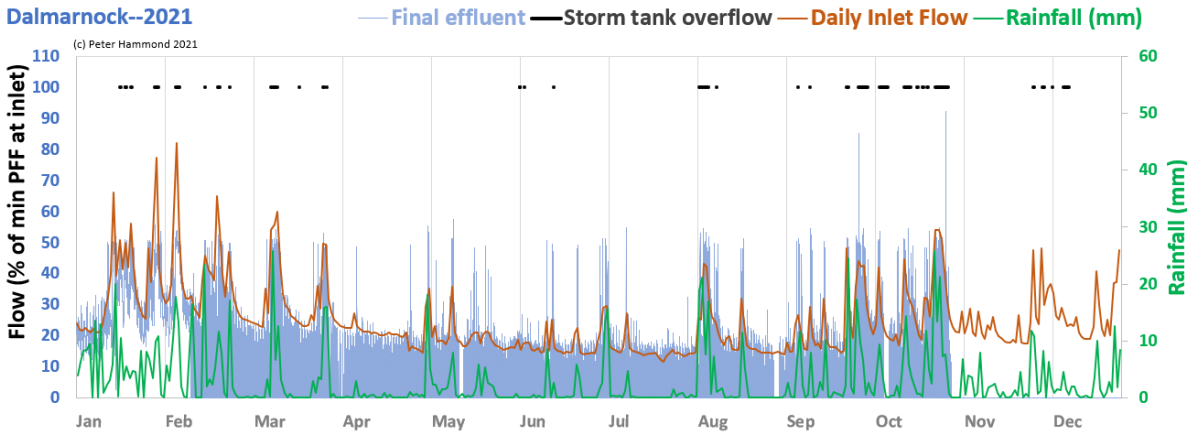


Figure 14: 2021 overview chart for Dalmarnock STW

No detailed flow data for November and December 2021 was provided and there are clearly several smaller gaps in data throughout the year in May, September and October.

By withholding more detailed and complete flow data, Scottish Water has obstructed WASP's analysis.

2022

For 2022, Scottish Water provided a file of daily 3-6DWF flow data (*On-Site Inlet Flows*) and a file labeled, as in previous years, *Dalmarnock FFT Flows 2022* which once again WASP interpreted as final effluent. If it were to be interpreted as flow to treatment then every spill would be "early" and hence illegal. No other data was provided that could be used to check the compliance of untreated sewage spills.

The 2022 overview chart for Dalmarnock STW is shown in **Fig.** 15. Note the six months of incorrect flow data in the latter half of the year. In England and Wales, that in itself would be a permit/licence breach.

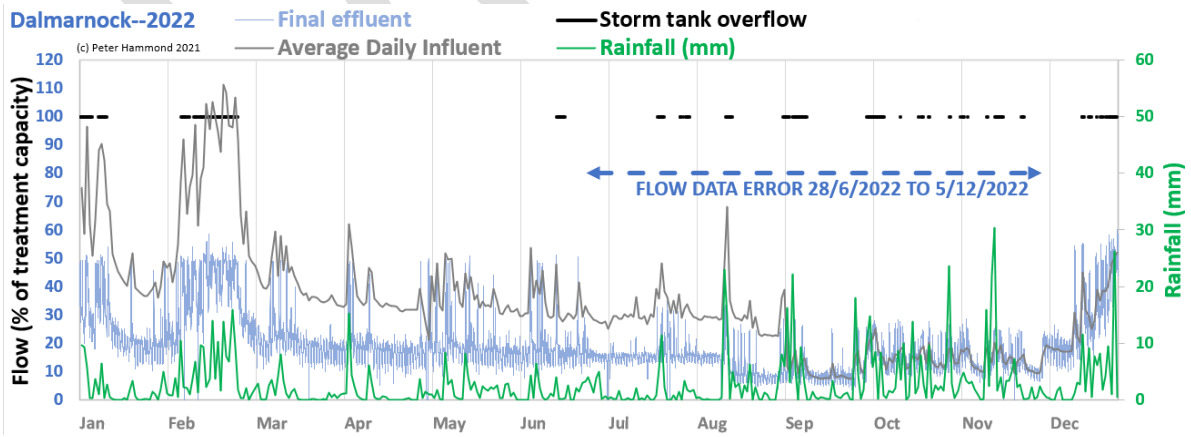


Figure 15: 2021 overview chart for Dalmarnock STW

Once again, Scottish Water withheld the essential data needed to check licence compliance of untreated sewage spills.

3.2.3 Hamilton STW

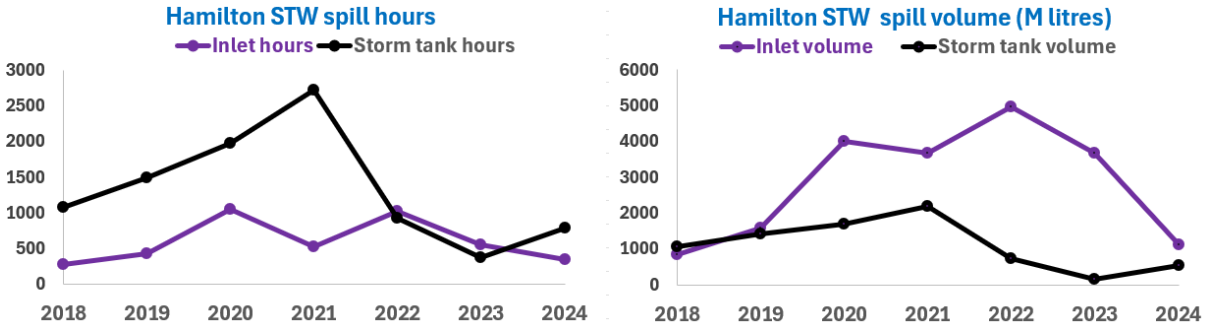
Hamilton STW serves a population equivalent of about 60,000 and discharges to the River Clyde.

In 2005, Hamilton STW underwent major improvements with a budget of £5m. Prior to the overhaul, the existing storm tanks had not been used for many years due to their poor condition and its fourth sedimentation tank had not been in service for many years and was not fit for use[6]. After completion of the improvements, flows >6DWF were screened before discharge to the Clyde. Flows then pass forward for fine screening, after which >3DWF was transferred to Storm Tanks and returned automatically to the works inlet after a storm event or overflowed to the River Clyde when the storm tank was full. The FFT (full flow to treatment) receives grit settlement/removal before primary settlement.

According to Hamilton STW's licence, in order to be compliant, spills at the inlet should only consist of flows in excess of 703 l/s and spills at the storm tank should only occur with flows in excess of the flow to full treatment of 423 l/s at the storm tank weir.

TABLE 4: untreated sewage spill data for Hamilton STW 2018 to 2024

Hamilton STW	2018	2019	2020	2021	2022	2023	2024
SEPA compliance assessment	Poor	Poor	No data	No data	No data	No data	No data
Inlet spills (hrs)	267	429	1,045	524	1018	542	343
Storm tank spills (hrs)	1,069	1,488	1,971	2,719	920	365	790
Inlet spill volume (M litres)	843	1,576	4,004	3,682	4,956	3,682	1,126
Storm tank (M litres)	1,066	1,411	1,697	2,190	738	166	538
Days with illegal early spills	90	137	14	130	21	No data	No data



In 2022, there appears to have been a dramatic reduction in the total spill hours from the storm tank overflow compared to 2021. This coincided with an increase in the volume of spills from the inlet overflow which only receives gross screening before being dumped to the River Clyde. In fact, the detailed spill data shows that the storm tank monitor only detected spills for the first 5 months of the year and clearly missed many others in the second half of the year.

2018

The 2018 annual overview chart for Hamilton STW is shown in **Fig.** ?. The only compliant spilling from the storm tank appears to occur in January and December. Otherwise, there are about 90 days with illegal "early" spills at the storm tank overflow.

[6] https://waterprojectsonline.com/wp-content/uploads/case_studies/2007/Hamilton-STW-2007.pdf

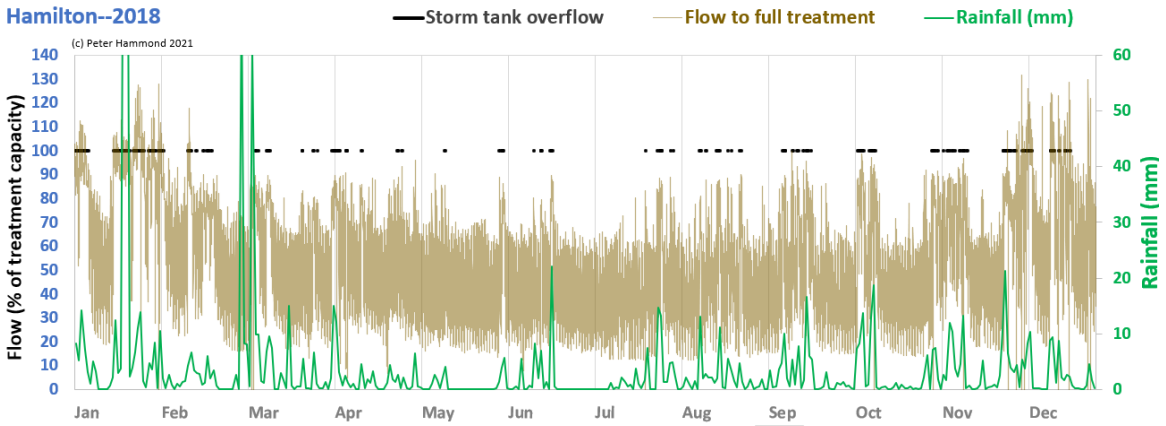


Figure ? 2018 annual overview for Hamilton STW

2019

The 2019 annual overview chart for Hamilton STW is shown in **Fig**. ?.

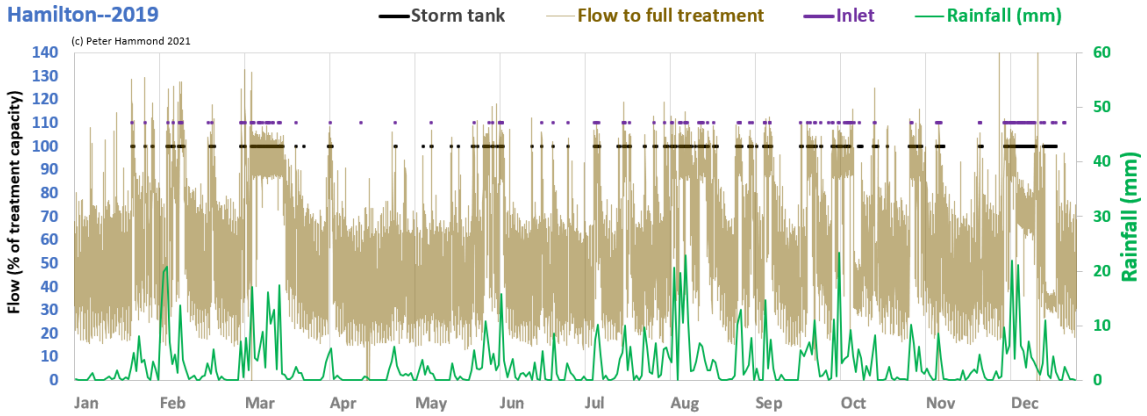


Figure ? 2019 annual overview for Hamilton STW

The data suggest there were at least 24 days with illegal "early" spills.

In response to an FOI request, SEPA provided a list of all pollution incidents. These included one at Hamilton STW that is recorded as occurring on October 11th 2019 where a sludge holding tank burst and discharged its contents on to the site. According to SEPA's account, the tank repaired had not been completed by April 6th 2020 when it was put on hold by government guidance on "non essential construction activities".

11/10	Burst sludge holding tank. Discharging in to site grounds, No impact to watercourse. Tankers on site to draw down tank, sand bags laid to stop any flow going to watercourse, job will be raised for repair of tank. Sludge is entering site drainage & being returned to the head of the works. This is causing increased loading to the treatment process & could lead to reduction in FE quality.
24/10	Sludge holding tank is offline due to burst. Sludge is being held in another smaller holding tank. The sludge is backing up and this is affecting ammonia
01/10	although rising this is well within compliance, lower benchmark is 5. More tankers are scheduled to remove sludge.
08/11	Awaiting quote from specialist contractor. Sludge being managed through a temporary well. **Site currently within license**.
29/11	Specialist engaged. Estimated 4 week lead time to repair the tank. Work around in place and is currently coping. **Site is currently compliant.**
16/01	Still waiting for sludge tank to be repaired, further issues have been found, tanker removing sludge, no impact.
13/02	Still waiting for tank to be repaired, tanker removing sludge as required, no impact.
18/03	Repairs ongoing through MD project. Expected return to service first week in April.
06/04	Project has been put on hold due to government guidance to stop all non essential construction activities. Project will resume once restrictions are lifted. Additional tankering will remain in place to sustain sludge removal.

In fact, **Fig**. ? shows a dramatic but brief loss of flow to full treatment the day before the pollution event on October 10th. On the day of the incident, there is a further dramatic loss of flow to full treatment

lasting for over 72 hours. A storm tank spill is recorded for the second half of this FFT hiatus. Similar, sudden drops in FFT between 2 and 8 days in length are repeated until the end of the year and continue to recur until June 2020. Throughout each, an illegal "early" storm tank spill is recorded.

SEPA's account of the event refers to the site being compliant on the Nov 8th and 29th. This must have been citing compliance with respect to treated effluent standards as there were illegal "early" spills via the storm tank overflow on November 11,12,13, 26 and 27.

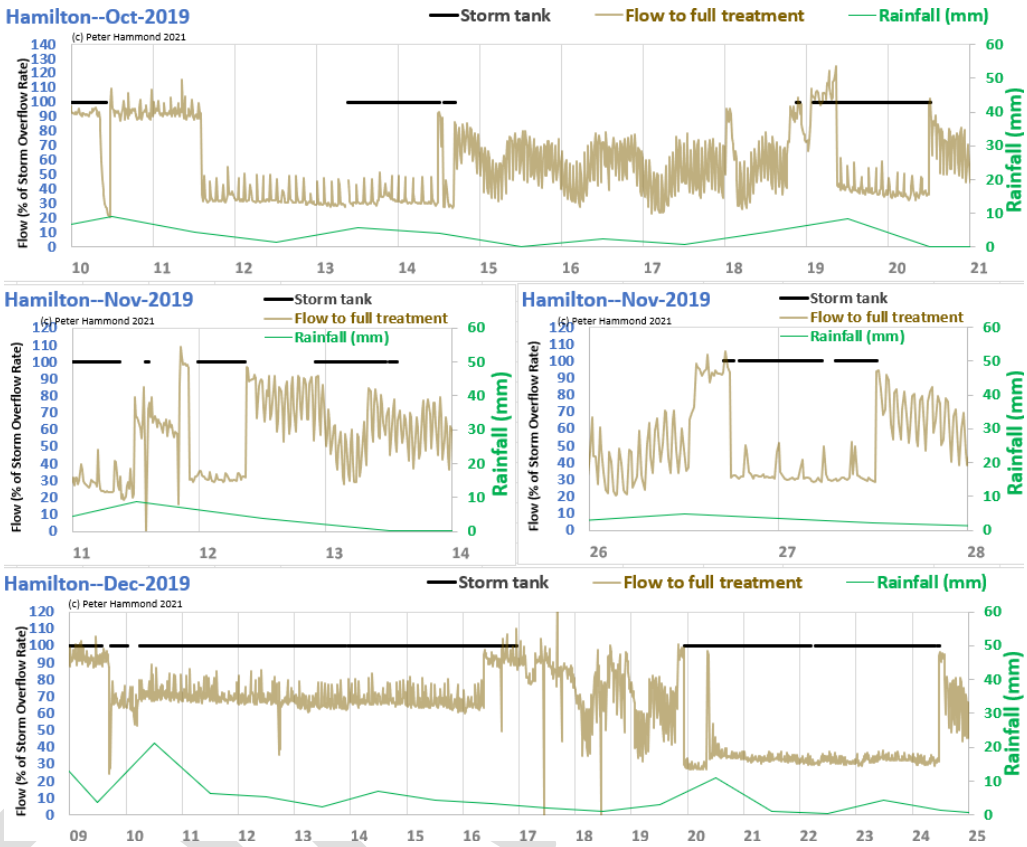


Figure : 24 days with illegal "early" spills at Hamilton STW in 2019 (Oct 10-11,13-14,19-20; Nov 11-12, 25-27; Dec 9-16, 19-24)

2020

The 2020 annual overview chart for Hamilton STW is shown in **Fig**. ?.

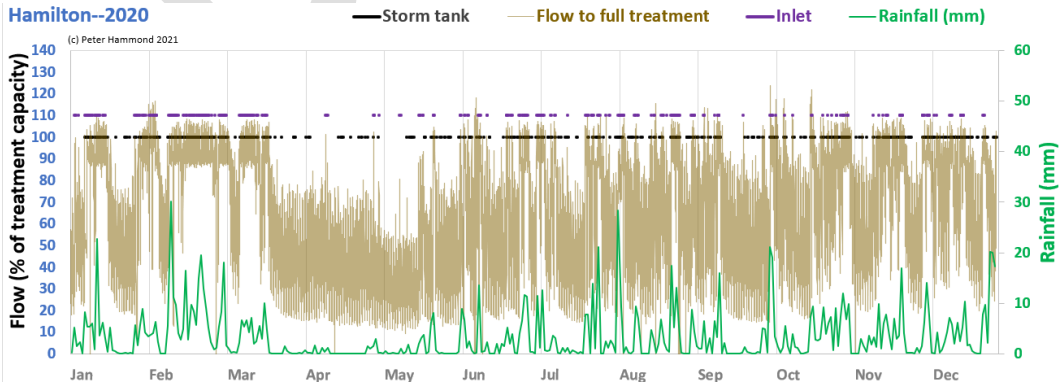


Figure ? 2020 annual overview for Hamilton STW

The data suggest there were at least 13 days with illegal "early" spills (**Fig** ?).

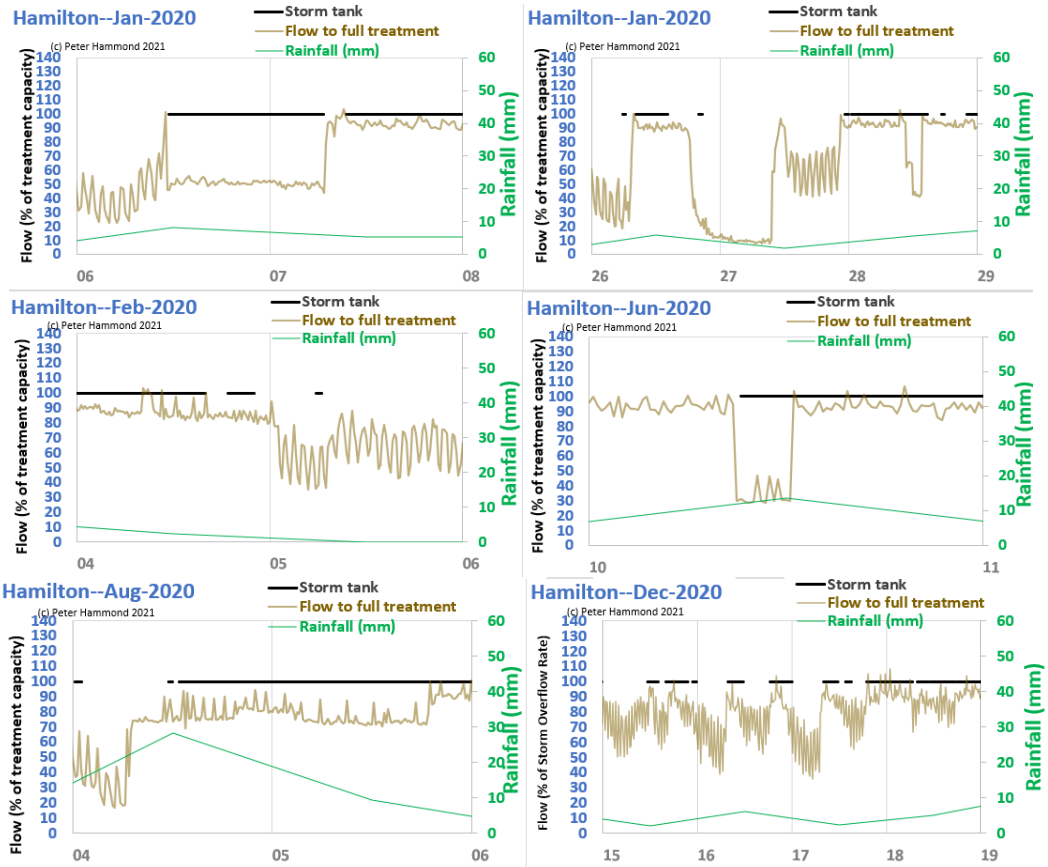


Figure ? 14 days with illegal "early" spills at Hamilton STW in 2020 (Jan 6-7,26-28;Feb 4-5;Jun 10;Aug 4-5;Dec 15-18)

2021

The 2021 annual overview chart for Hamilton STW is shown in **Fig**. ?.

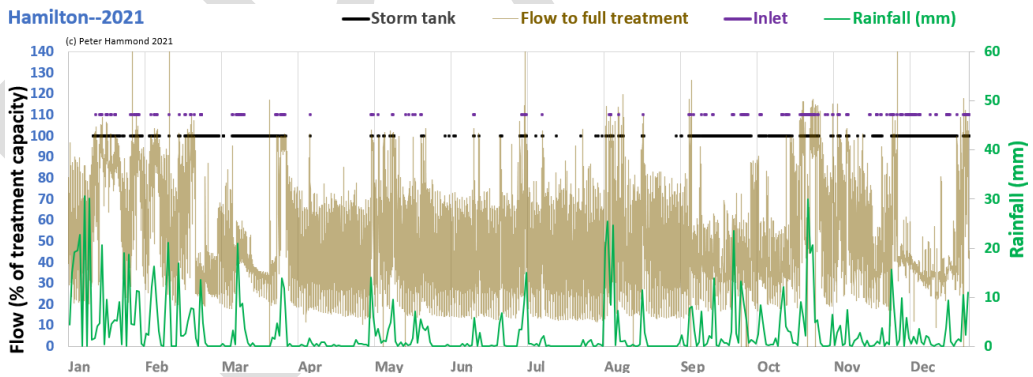


Figure ? 2021 annual overview for Hamilton STW

Hamilton spills compliantly in May 2021 (**Fig**. ?).

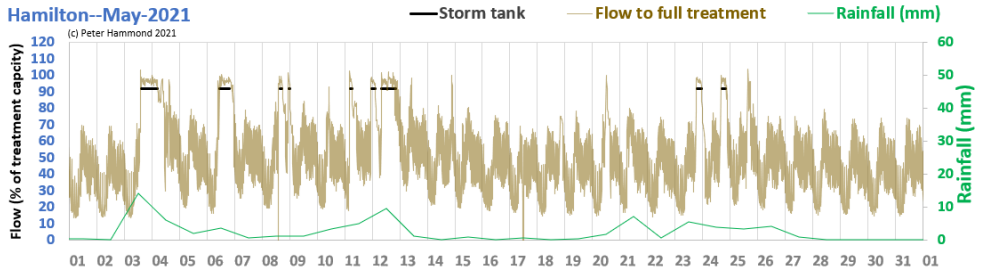


Figure ? Compliant spilling in May 2021 at Hamilton STW

But, there are many more than 100 days with illegal “early” spills at Hamilton STW in 2021 (**Fig**. ?).

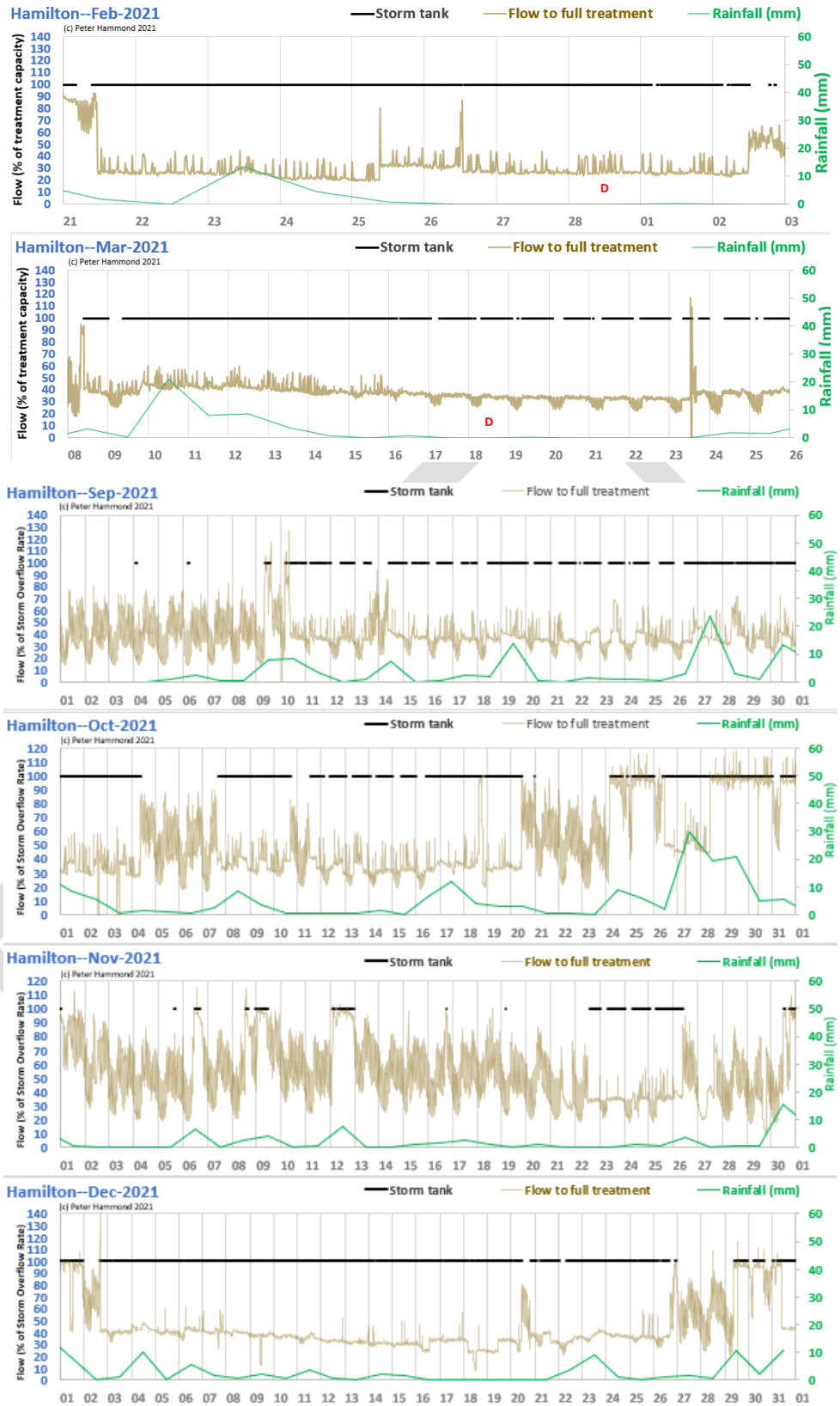


Figure ? 104 days with illegal “early” spills at Hamilton STW (Feb 21-Mar 2; Mar 8-26; Sept10-30; Oct1-4, 7-20, 26-28; Nov 22-26; Dec1-26, 31)

2022

The 2022 annual overview chart for Hamilton STW is shown in **Fig**. ?. The storm tank overflow EDM does not appear to detect any spills from June onwards despite the clear regularity of coincident spilling at both the inlet and storm tank overflows between January and May.

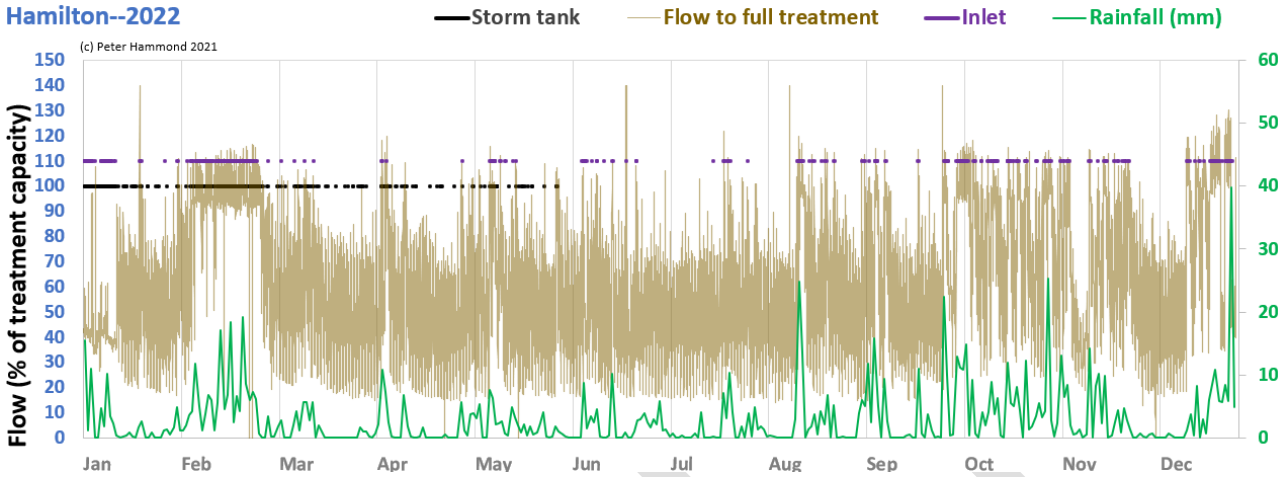


Figure ? 2022 annual overview for Hamilton STW

The data suggest that there were 14 days with illegal "early" spills between January and May (**Fig** ?).

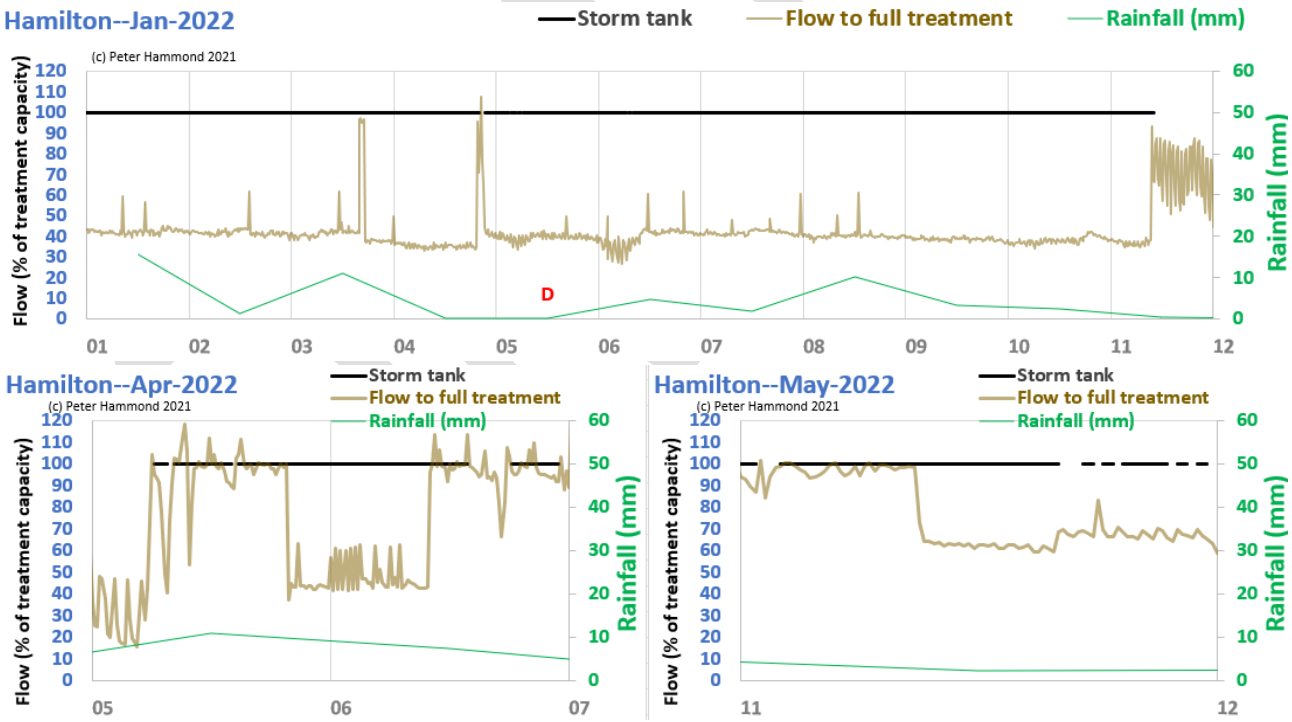


Figure ? 14 days with illegal "early" spills at Hamilton STW (Jan 1-11, Apr 5-6, May 11)

WASP believes that the spill monitoring device on the storm tank outlet failed to detect many spills in the second half of 2022 when, clearly, there was significant spilling detected at the inlet overflow. Indeed, it is rare between January and May that the storm tank overflow is inactive when the inlet overflow is active. For example, in October 2022 (**Fig**.), the inlet overflow, flow to full treatment and rainfall data suggest there were spills at the storm tank overflow on as many as 15 days. WASP suggests that the storm tank annual spilling hours should be increased by as much as 400.

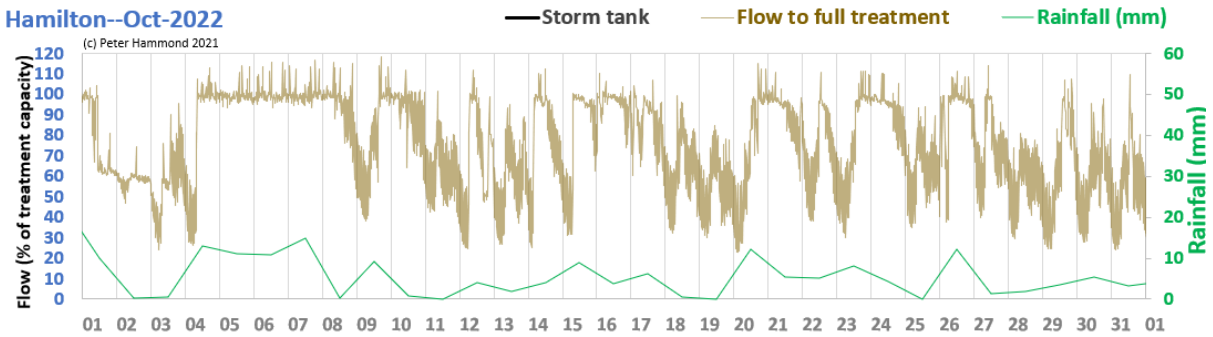


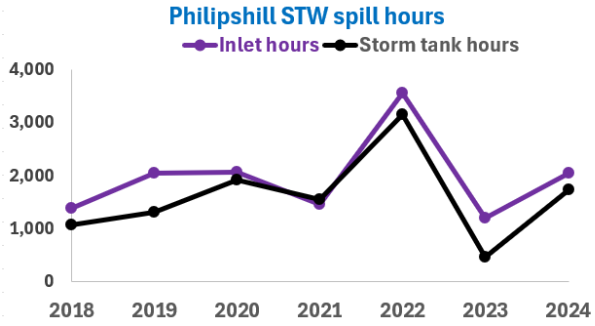
Figure ? Undetected spills at Hamilton STW storm tank overflow in Oct'22 (4-10, 12, 14-17, 20-24, 26-27)

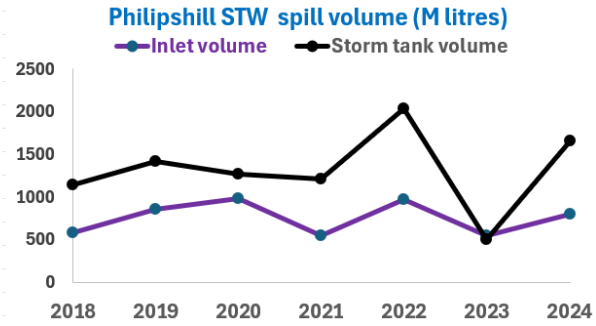
3.2.4 Philipshill STW

Philipshill STW serves a population equivalent of about 67,000 and discharges to Kittoch Water. The licenced capacity for flow to full treatment means that spills from the storm tank overflow should not occur before 398 l/s is being passed forward for treatment at the storm tan weir.

TABLE 5: untreated sewage spill data for Philipshill STW 2018 to 2024

Philipshill STW	2018	2019	2020	2021	2022	2023	2024
SEPA compliance assessment	Good	Poor	No data	No data	No data	No data	No data
Inlet spills (hrs)	1,387	2,039	2,065	1,443	3,559	1,189	2,051
Storm tank spills (hrs)	1,070	1,308	1,912	1,539	3,161	449	1,729
Inlet spill volume (M litres)	574	858	982	546	971	543	801
Storm tank (M litres)	1,137	1,412	1,266	1,210	2,040	500	1,659
Days with illegal early storm tank spills	26	0	4	5	PDQ	No data	No data





2018

The 2018 annual overview chart for Philipshill STW is shown in **Fig**. ?.

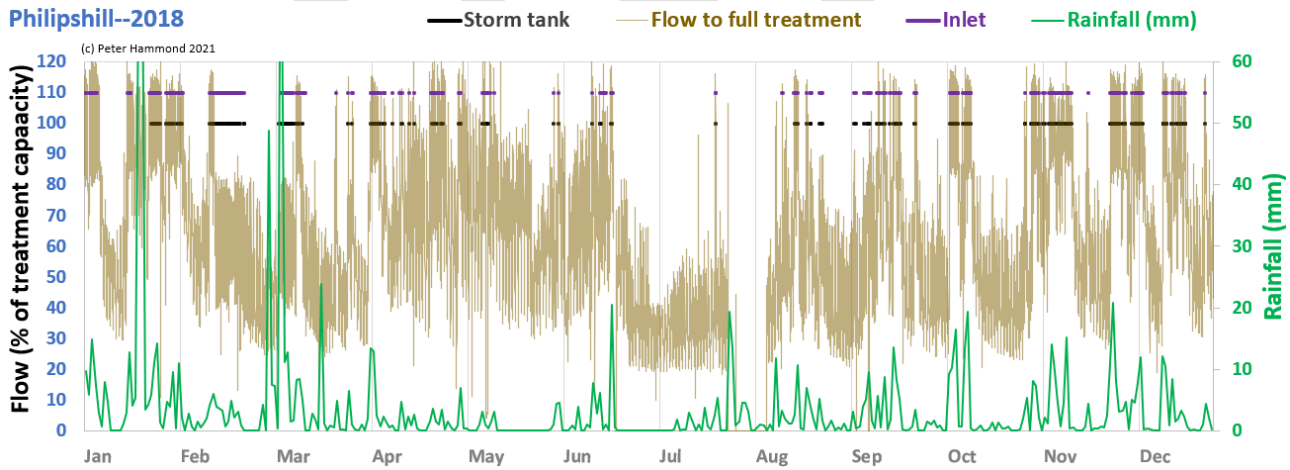


Figure ? 2018 annual overview for Philipshill STW

WASP's analysis suggests there were 26 days with illegal "early" spills (**Fig**. ?).

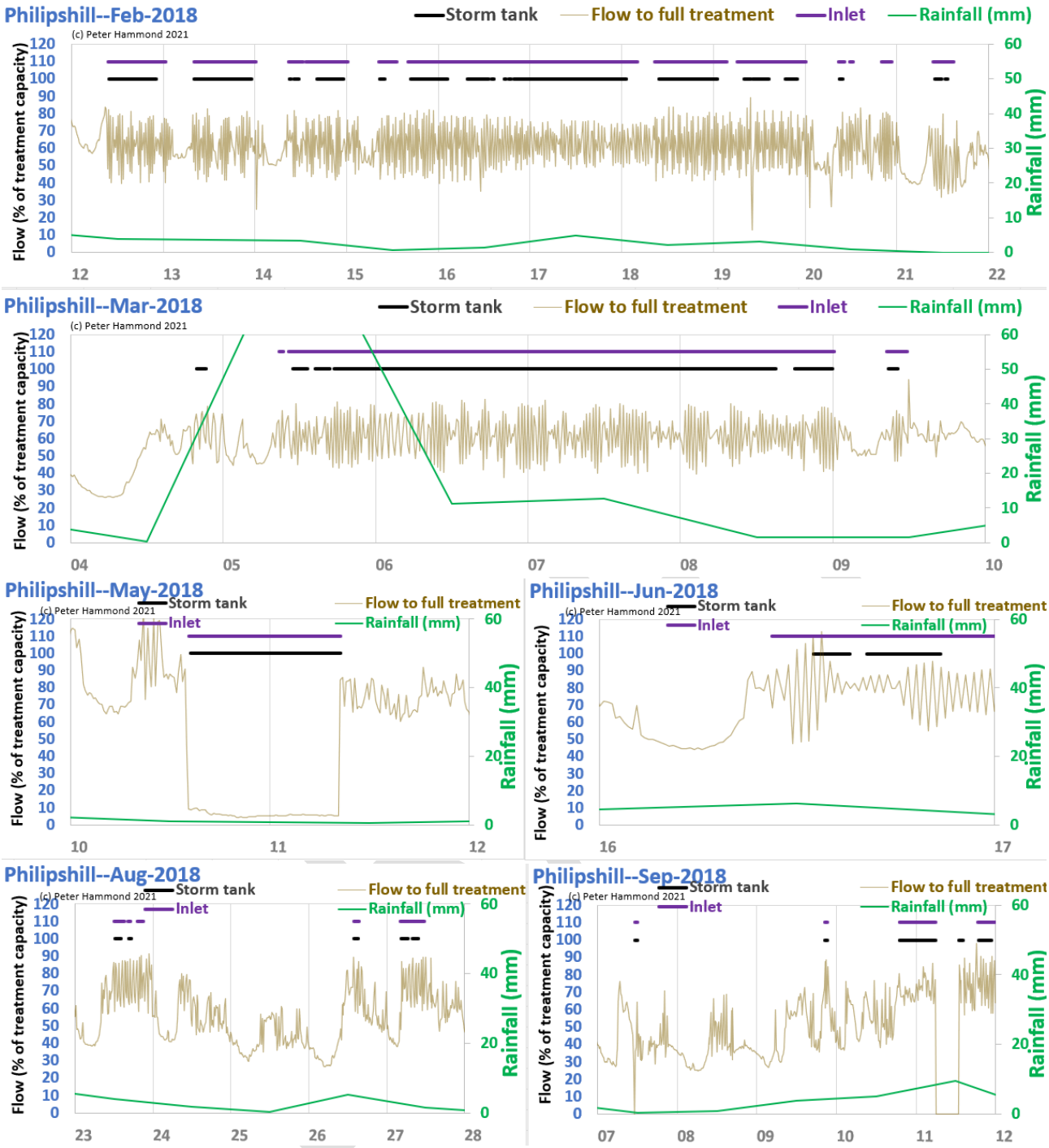


Figure ? 26 days with illegal "early" spills at Philipshill STW in 2018
(Feb 12-21; Mar 4-9; May 10-11; Jun 16; Aug 23,26-27; Sep 7,9-11)

2019

Generally speaking, in 2019, Philipshall appears to spill compliantly with respect to flow to full treatment (FFT). However, there are occasional periods where the FFT is not compliant during spills. It is difficult to see this in the overview chart for 2019 (**Fig**. ?).

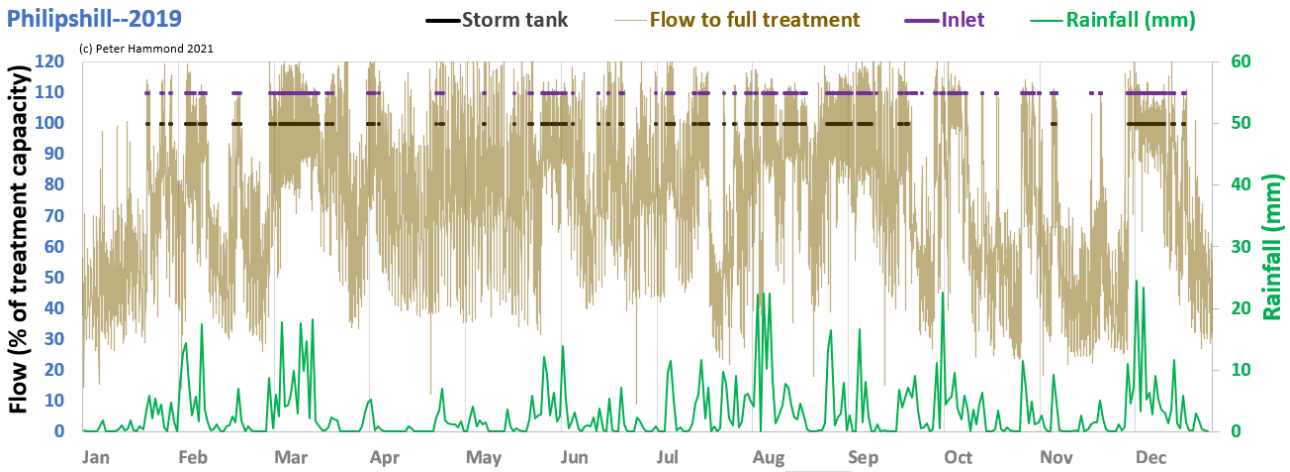


Figure ? 2019 annual overview for Philipshill STW

Examples of 20 illegal "early" spills are shown in **Fig.** ?.

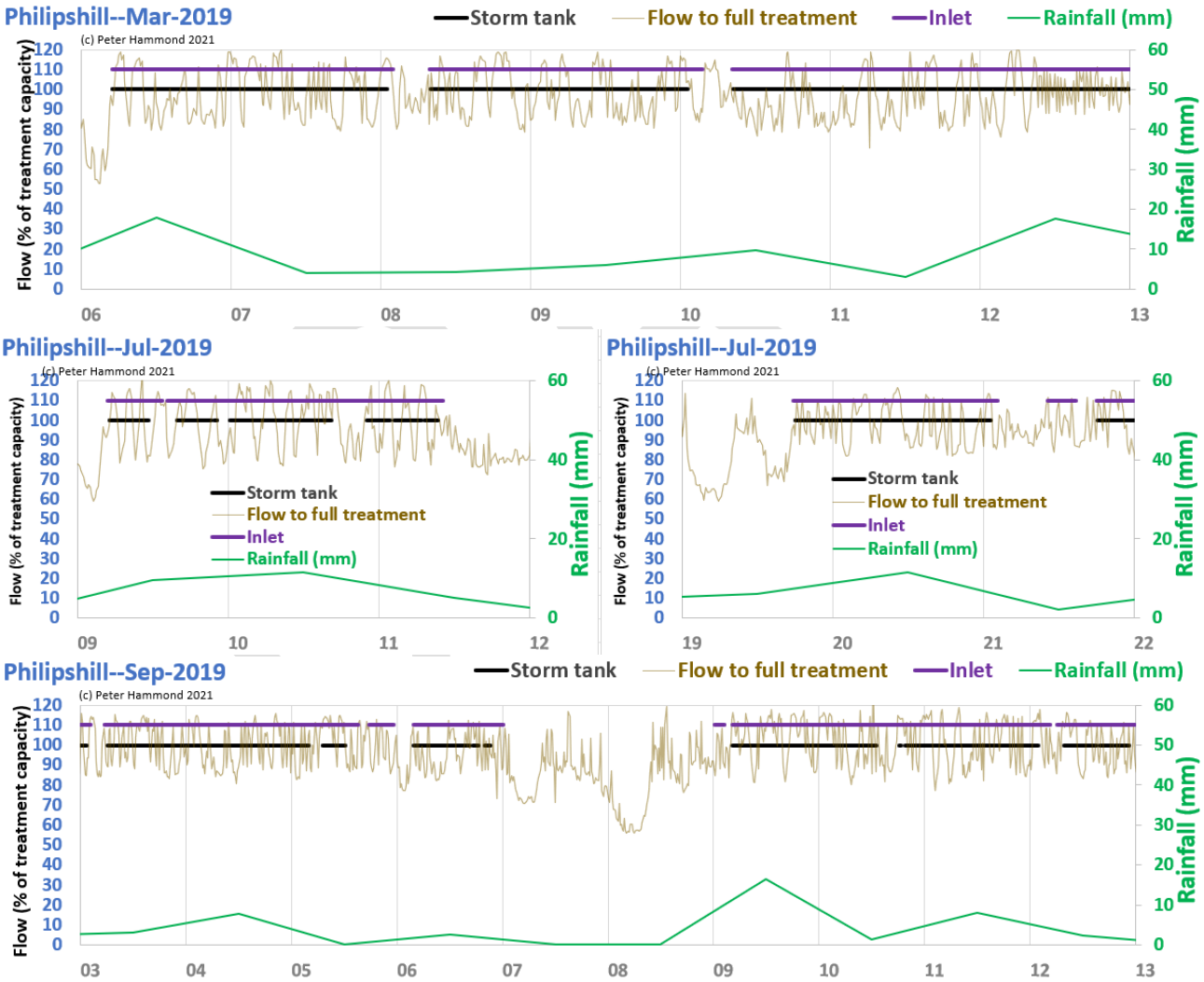


Figure ?: 20 days with illegal storm tank spills at Philipshill STW in 2019
(Mar 6-12; Jul 9-11, 20-21; Sep 3-6, 9-12)

SEPA recorded a Category 2 pollution event at Philipshill STW in a report dated September 19th 2019:

19/09 SEPA reporting (via SNL submission received 09/10) that their ecology survey (undertaken on this day) has shown Cat 2 level pollution from the short outfall to the Kittoch. NB: Ecology survey actioned following CAS site visit

10/09. US sample = "moderate to good water quality, minor pollution & no sewage fungus/SRD". DS sample (50m DS) = "stream bed covered in sewage fungus, abundant sewage debris, severe pollution". For these reasons a Cat 2 event has been assigned, which they feel has been caused by both poor quality discharges from the storm tanks & premature spills below FFT. Evidence of this comes in the form of samples taken at both the inlet overflow and the storm tanks overflow during the CAS inspection

10/09. Inlet overflow = BOD 200mg/l, ammonia 13mg/l, & RP 1.12mg/l, Storm tanks overflow = BOD 94mg/l, ammonia 20.2mg/l, & RP 1.78mg/l. They feel this shows the material held in the storm tanks, was making storm spills more polluting. Premature inlet spills also witnessed on site at this time (10/09). NB: EN also issued at this time (10/09) leading to cleaning of storm tanks - see EPI 4346 25/09.

29/10 Ops arranged site visit to outfall, however unable to access on foot, and attempt to locate with drone also failed. Ops also report that re-furb/repair works have been undertaken on the fine inlet and roughing screens, to ensure all influent is suitably screened.

01/11 Agreed Cat 2.

08/11 Work cleaning storm tanks and associated issues confirmed completed (see EPIs 4346 & 4347). Closed. Site averages about 15 ops events per year, with last Cat 3 EPI history from 2012 (3No relating to FE SPS) and one Cat 3 event since (FFT PLC issue).

It seems likely that the illegal "early" spilling in March, July and September 2019 contributed to this Category 2 pollution. Had SEPA been processing the sewage treatment and spill data routinely, it would have detected the "early" spilling and might have been able to intervene earlier in the year and avoid much of the resulting pollution. SEPA reported several other pollution incidents at Philipshill STW in 2019, some causing sewage discharges to the river but also some discharging on site.

2020

The 2020 annual overview chart for Philipshill STW is shown in **Fig**. ?.

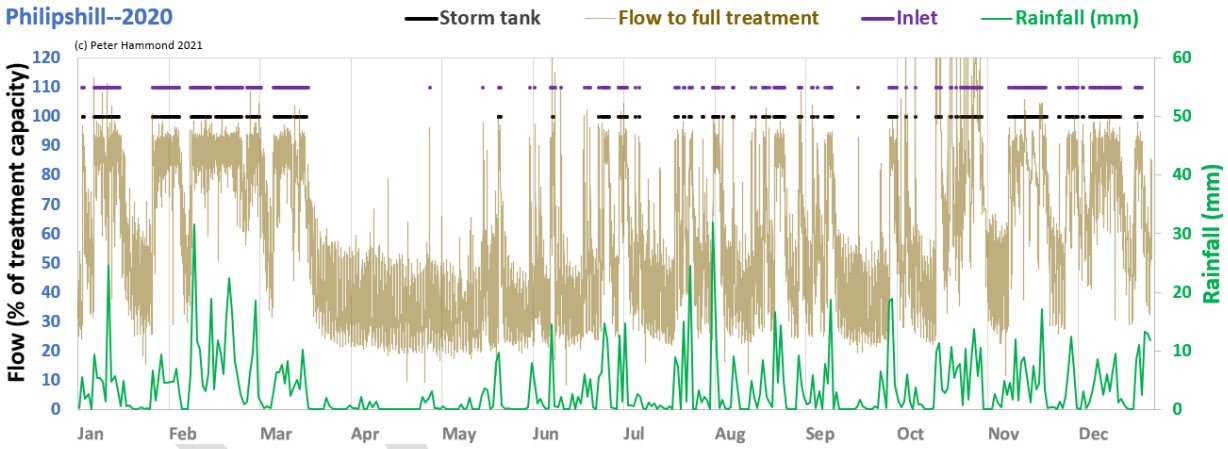


Figure ? 2020 annual overview for Philipshill STW

Examples of illegal spills on 7 days are shown in **Fig**. ?.

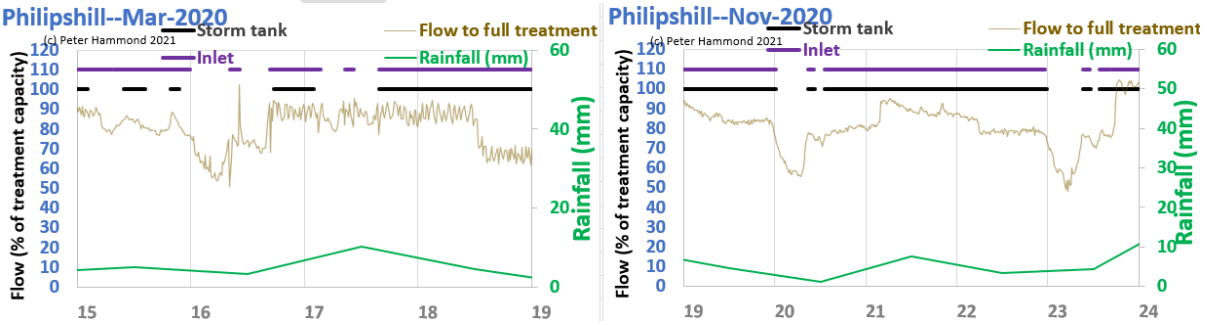


Figure ?: 7 days with illegal "early" spills at Philipshill STW in 2020 (Mar 15,18; Nov 19-23)

2021

The 2021 annual overview chart for Philipshill STW is shown in **Fig**. ?.

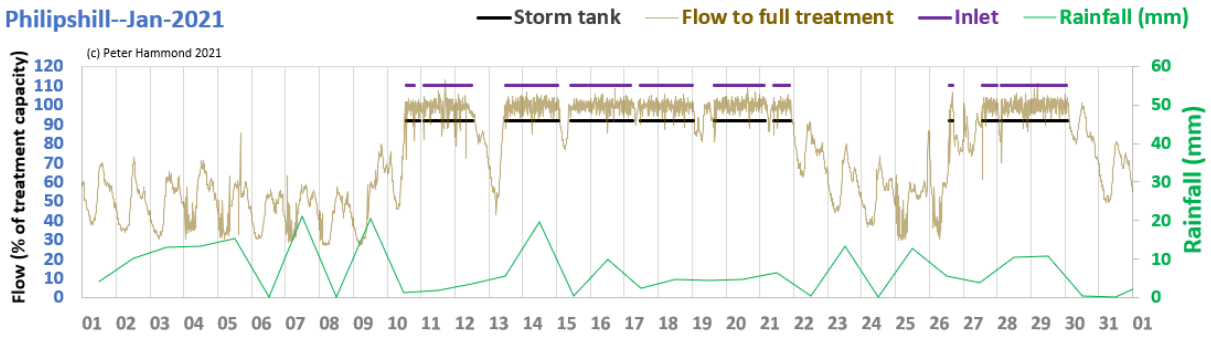


Figure ? 2021 annual overview for Philipshill STW

WASP's analysis suggests there were 6 days with illegal "early" spills at Philipshill STW in 2021.

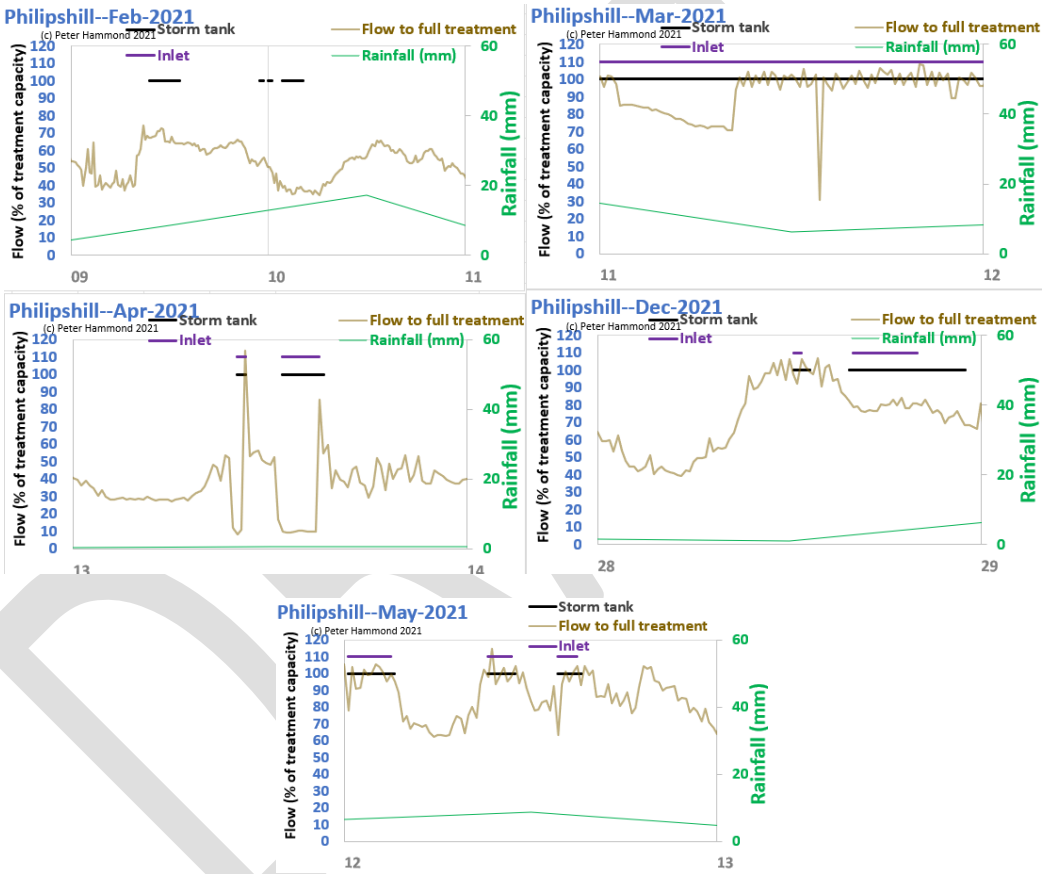


Figure ?: 6 days with illegal "early" spills at Philipshill STW in 2021
(Feb 9-10; Mar 11; Apr 13; May 12; Dec 28)

2022

The 2022 annual overview chart for Philipshill STW is shown in **Fig**. ?. The spill intervals continue to be cleanly separated and consistent with sewage flow and rainfall data at the beginning of 2022.

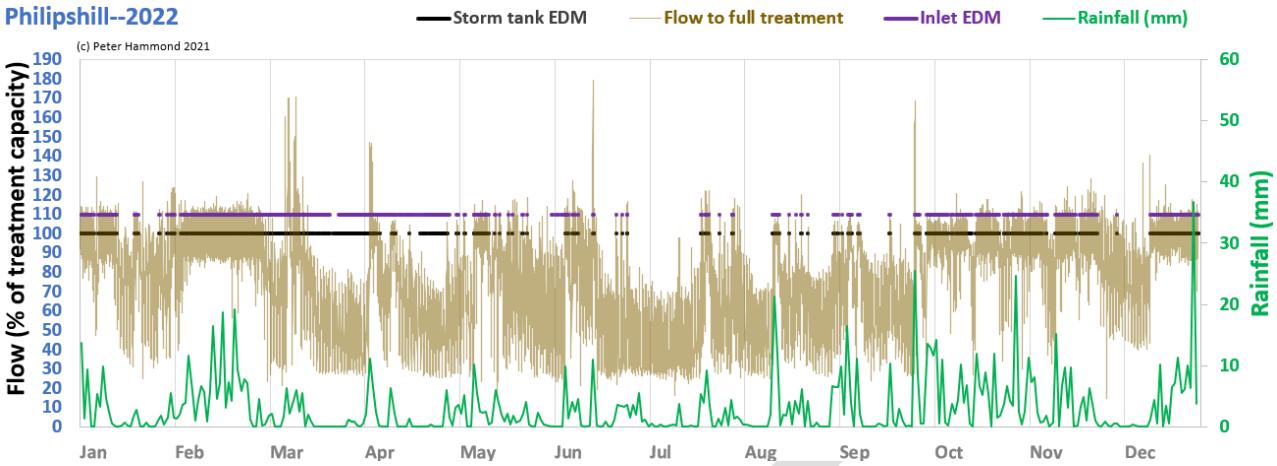


Figure ? 2022 annual overview for Philipshill STW

In January 2022, the spilling behaviour is impeccable with no "dry" or "early" spills which are crisply defined consistent with flow and rainfall data (**Fig**. ?).

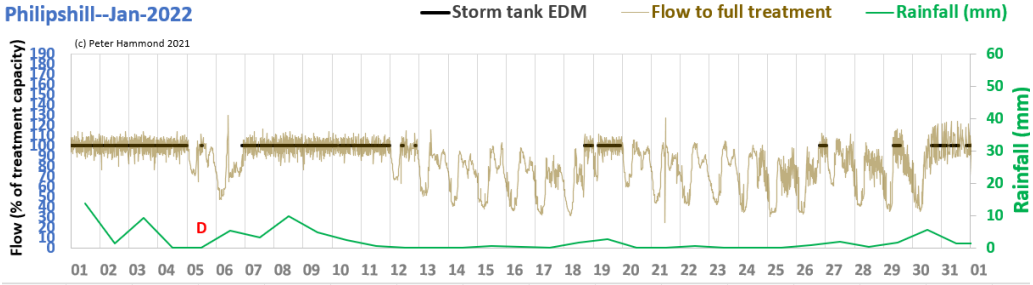


Figure ?: Jan'22 data for Philipshill STW showing impeccable spilling as far as "dry" and "early" spilling is concerned

At the end of March until early May, there is a change in the rainfall data, the detected spill intervals and the sewage flows. The rainfall is relatively low, the **Inlet flow** and **Flow to full treatment** coincide almost 100% and behave as if no sewage has been shed via the Inlet or Storm tank overflows.

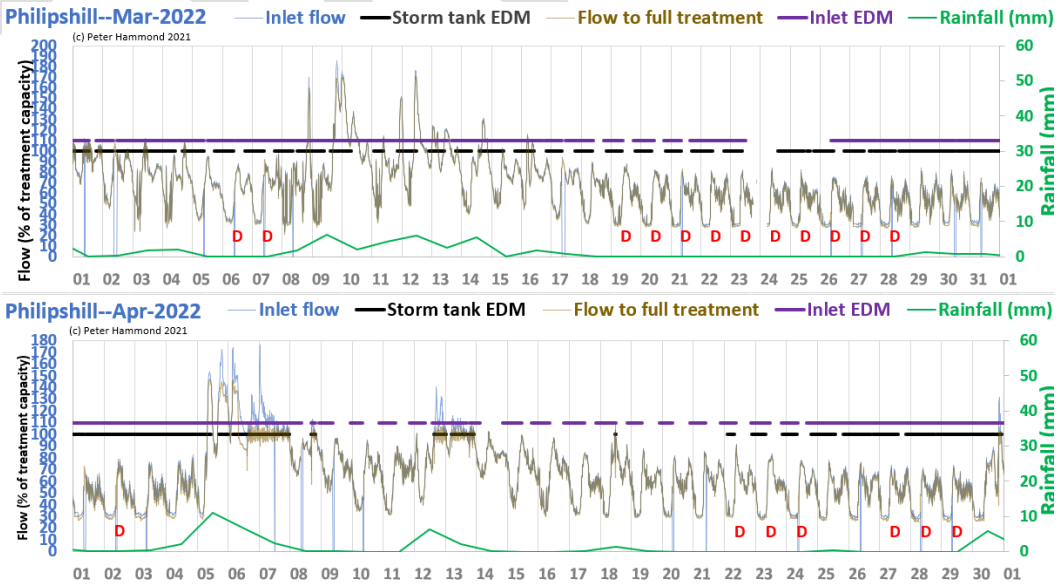


Figure: odd, unreliable data for March and April 2022 at Philipshill STW

If March and April are ignored, it removes 2,000 hours from the Inlet and Storm Tank overflow spill hour totals and WASP's analysis suggests there were just 3 days with illegal "early" spills at the storm tank in Philipshill STW in 2022 (**Fig**. ?).

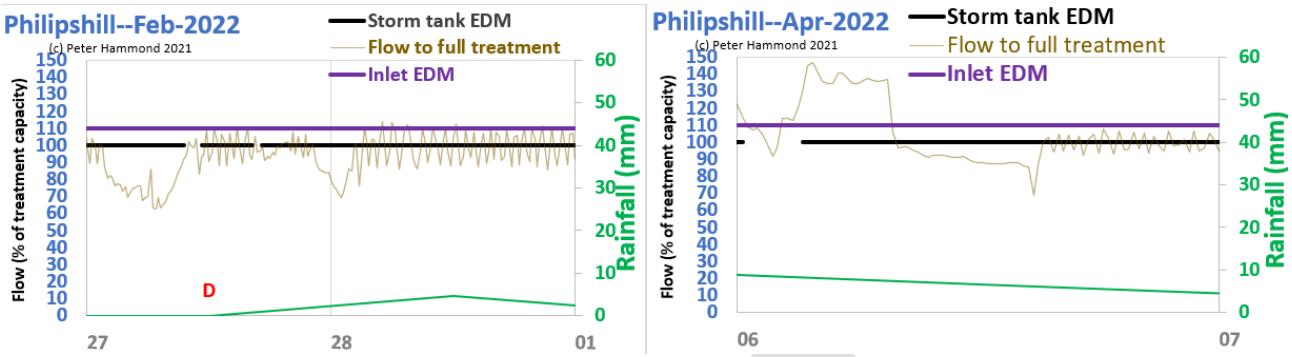


Figure ?: 3 days with illegal "early" spills at Philipshill STW storm tank in 2022

3.2.5 Shieldhall STW

Shieldhall STW serves a population of and discharges to the Clyde Estuary.

TABLE 6: untreated sewage spill data for Shielhall STW 2018 to 2024

Shieldhall STW	2018	2019	2020	2021	2022	2023	2024
SEPA compliance assessment	Good	Poor	No data	No data	No data	No data	No data
Inlet spills (hrs)			-	-	-	-	-
Storm tank spills (hrs)	844	885	1,313	2,093	1,970	422	No data
Inlet spill volume (M litres)			-	-	-	-	-
Storm tank volume (M litres)	3,732	4,697	6,319	6,638	8,296	1,527	No data
Days with illegal early spills							

Its licence to discharge includes the following conditions concerning spills of untreated sewage via its storm tank:

6.5. Sewage Storage Facility

6.5.1. A sewage storage facility of 28000 cubic metres functional capacity shall be provided/maintained.

6.5.2. The discharge shall:

(a) occur only when, and for as long as, the sewage storage facility required by Condition 6.5.1 is at capacity;

(b) occur only as a consequence of rainfall and/or snow melt within the sewered catchment; and

(c) consist only of flows in excess of the pass forward rate of 7.59 cubic metres per second at the storm overflow chamber.

6.5.3. The sewage storage facility required by Condition 6.5.1 shall be emptied and its contents returned for full treatment as soon as reasonably practicable after cessation of the overflow to the said facility.

Scottish Water's response to the request for data for Shieldhall STW was as follows:

15 minute raw data is not available. This is because the data is downloaded from the RTC already in the m3/day total daily volumes.

The lack of such data would mean checking permit compliance against the condition cited above is impossible. SEPA has been asked to explain how it has undertaken such compliance checking since 2018.

3.3 Ardoch, Daldowie, Erskine, Helensburgh, Kilmory and Tighnabruaich STWs

3.3.1 Ardoch

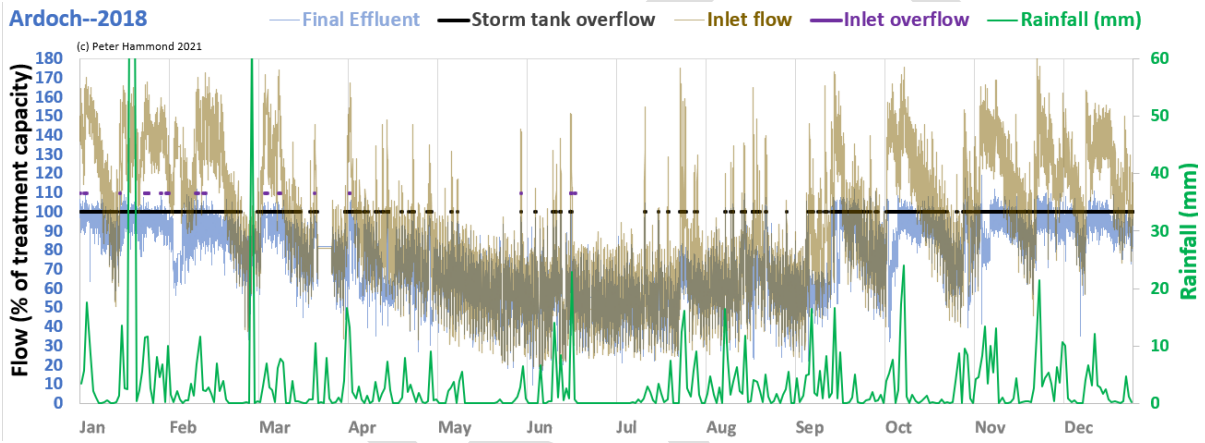
Ardoch STW serves a population of about 47,000 and discharges to the Clyde Estuary. It has 3 overflows: a CSO on the flow from Havoc Pumping Station, a settled storm overflow and an emergency overflow.

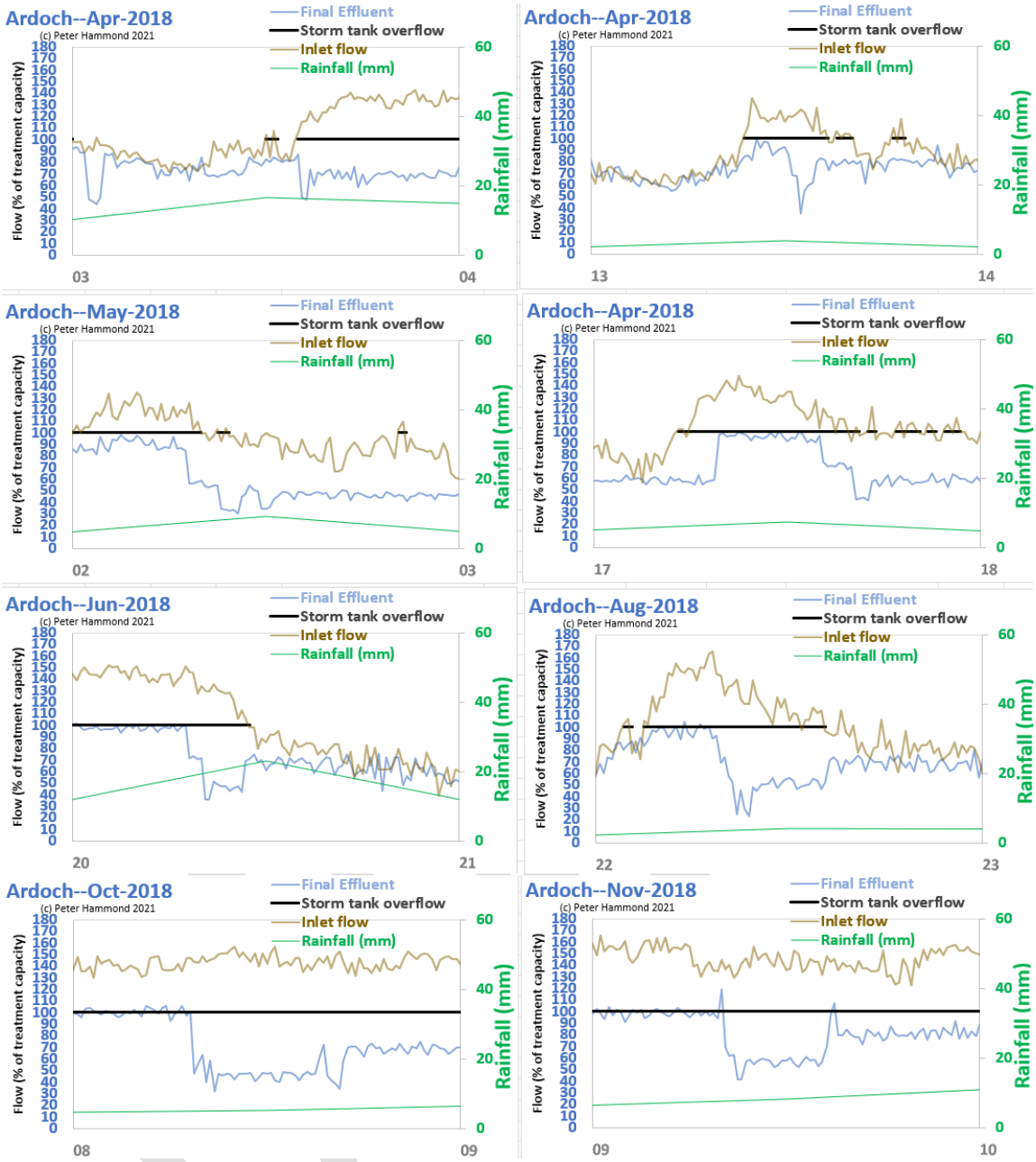
The CSO discharge should only be flows in excess of the PFF of 110 l/s at Havoc SPS. The storm tank overflow should only consist of flows in excess of the PFF of 423 l/s at the overflow structure downstream of the primary tanks.

The Emergency Overflow (EO) should only operate when the storm tank capacity is fully utilised and the SPS is inoperative due to power failure; rising main failure; a downstream blockage not due to operator act and no alternative but to discharge.

2018

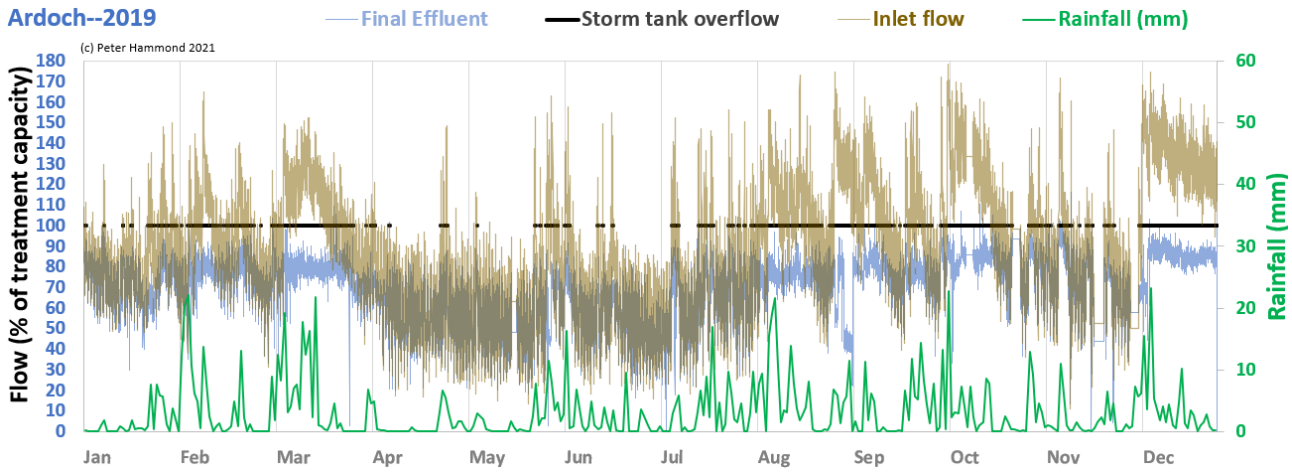
The 2018 annual overview chart is shown in **Fig**. ?.

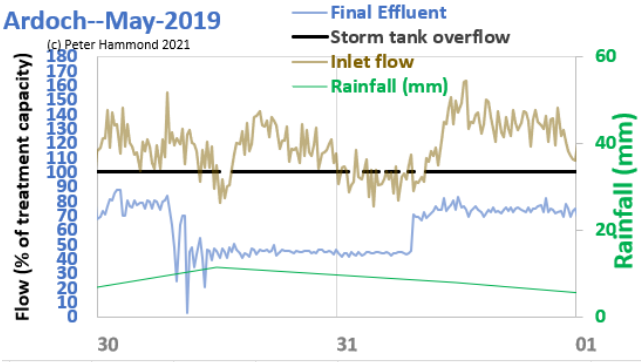


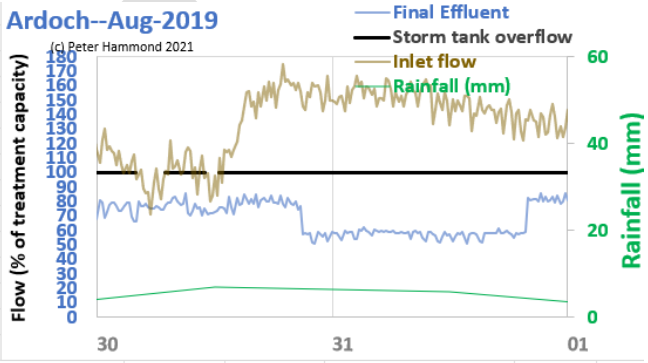


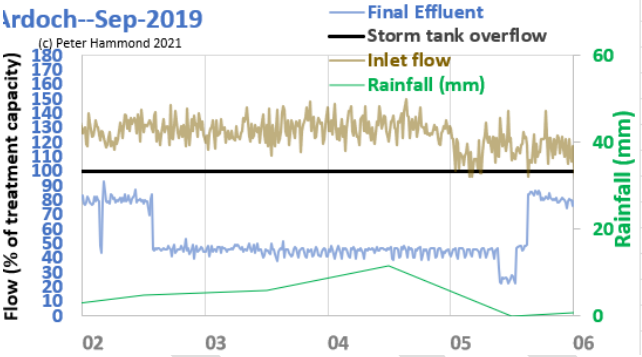
8 days with illegal “early” spills

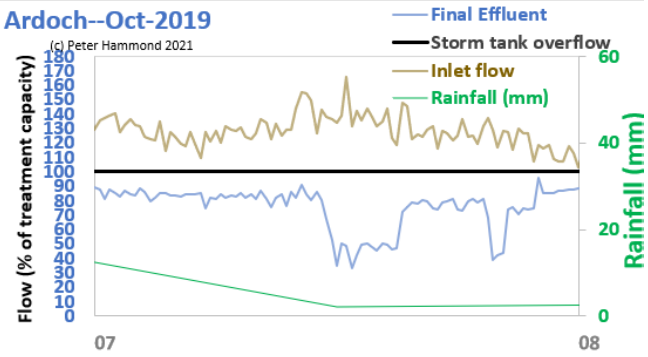
2019





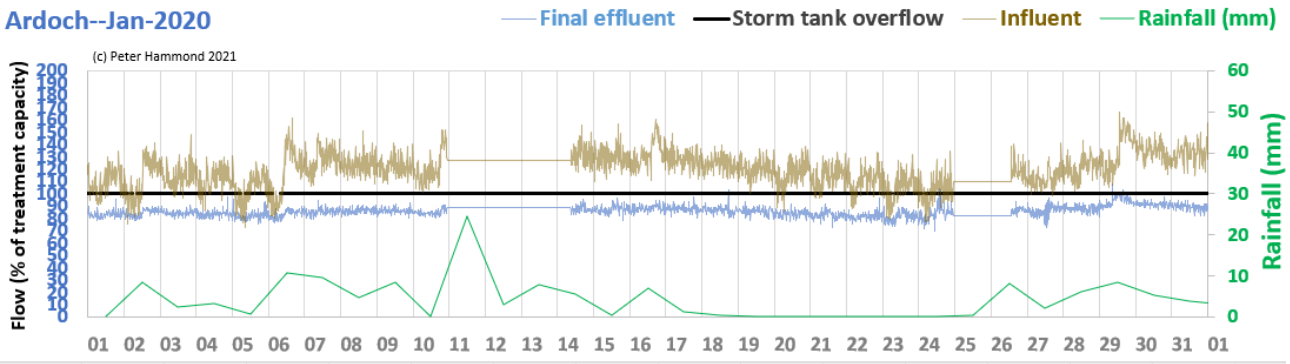


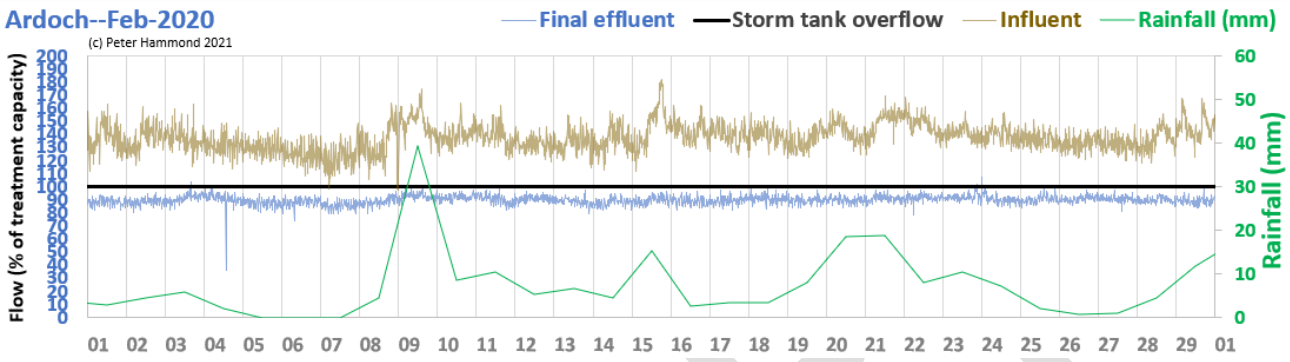


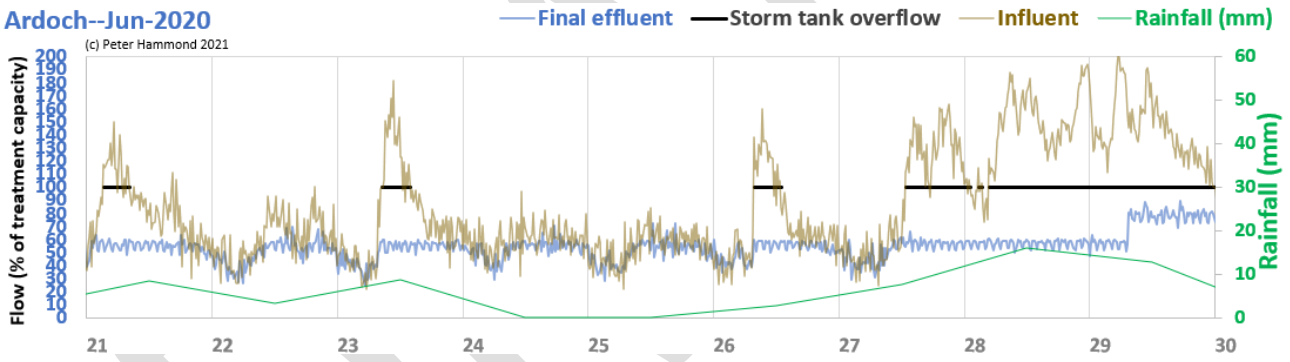


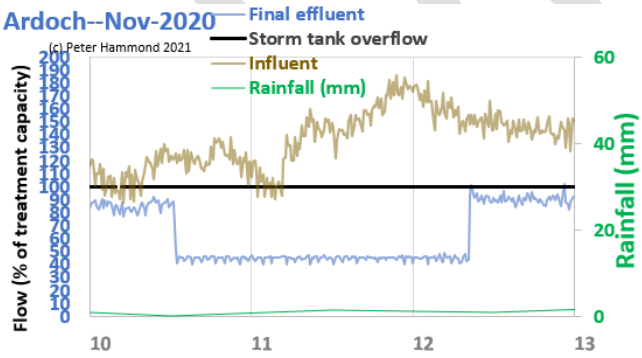
9 days with illegal early spills.

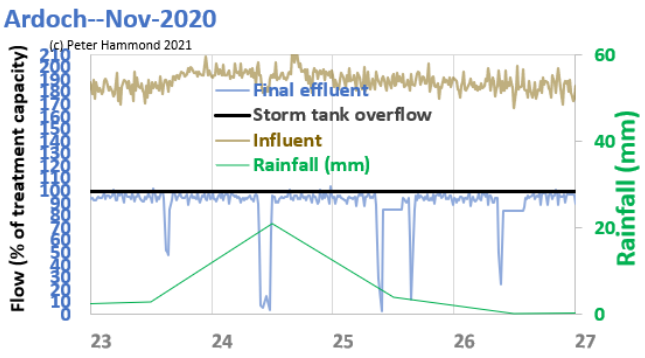
2020





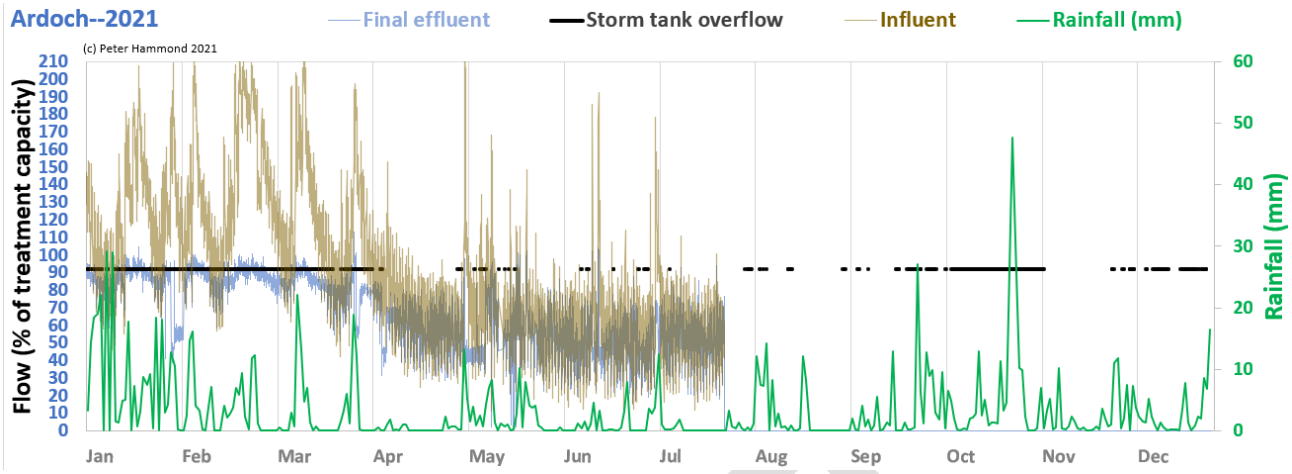


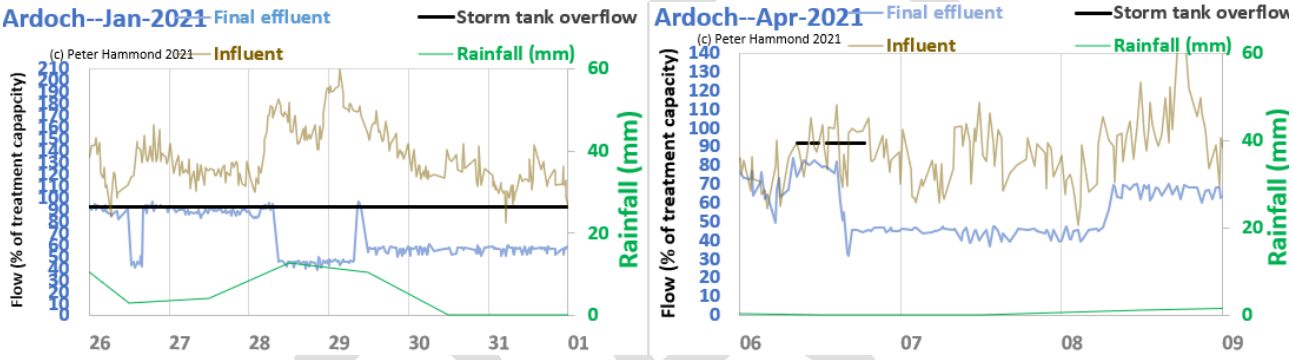


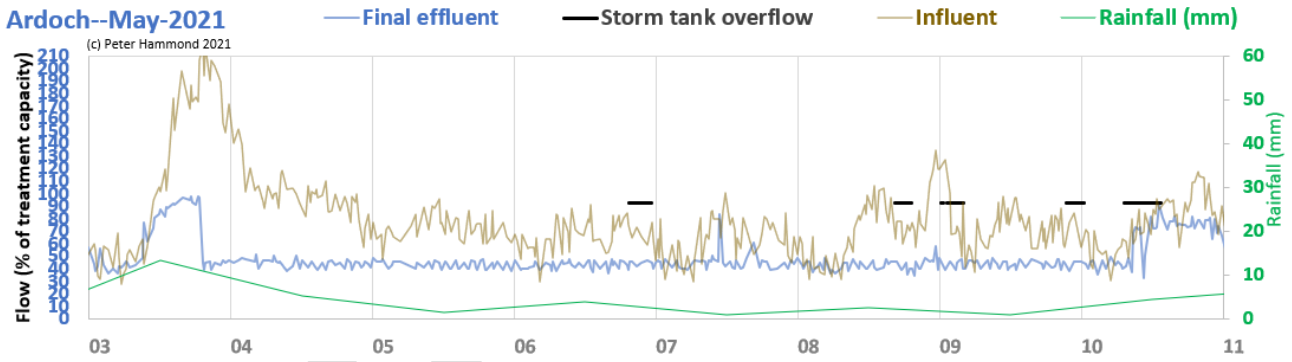


13 days with illegal “early” spills.

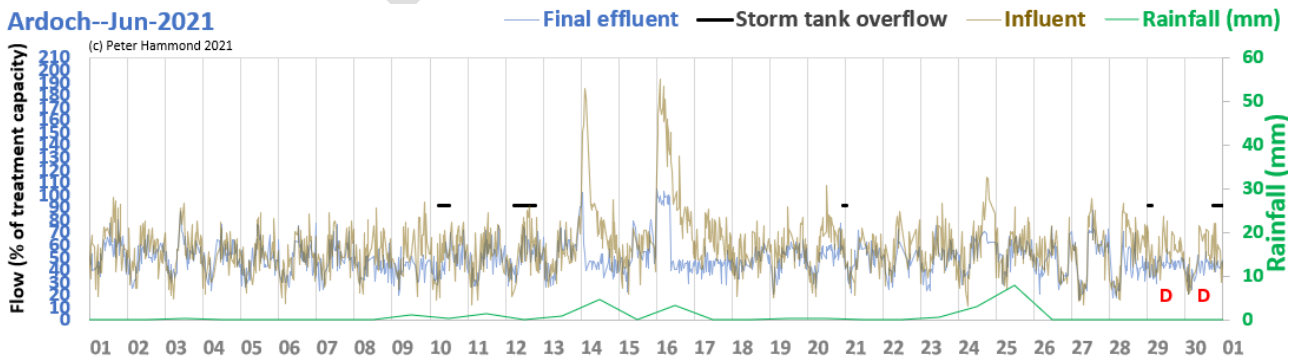
2021



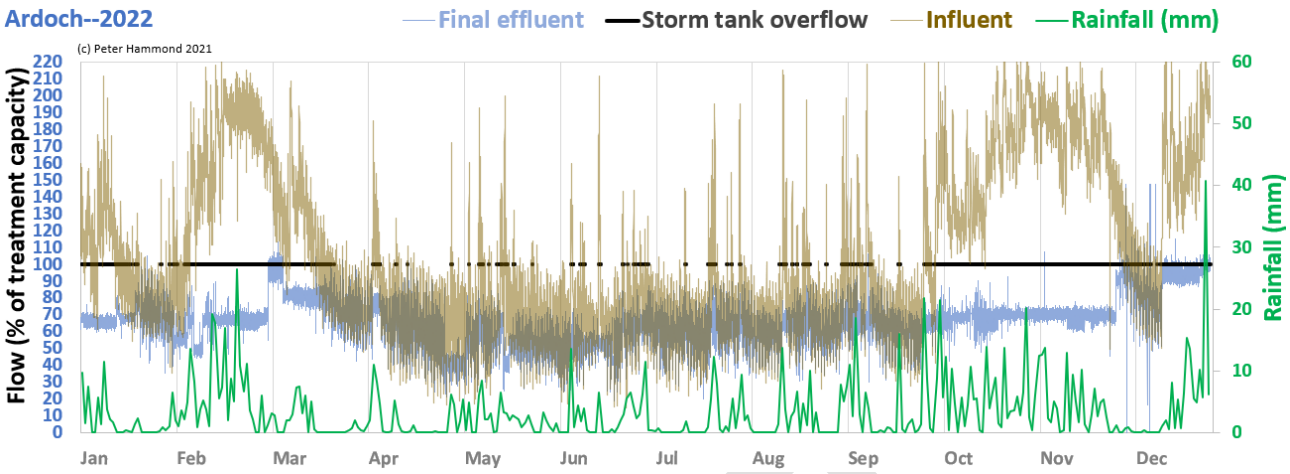




16 days with illegal “early” spills.



2022



All spilling illegal "early" except fr early March and late December – 198 days with illegal "early" spills.

3.3.2 Daldowie

Daldowie STW serves a population equivalent of about 280,000 and discharges to the River Clyde via an inlet overflow and two storm tank overflows. The licence to discharge treated and untreated sewage at Daldowie (CAR L 1003363) does not appear to document these storm tanks separately but does contain a typical requirement of minimum FFT or pass forward rate during spills from settled storm storage:

> **7.5. Overflow after Primary Tank**
>
> 7.5.1. The discharge shall:
>
> (a) occur only as a consequence of rainfall and/or snow melt within the sewered catchment; and
>
> (b) consist only of flows in excess of the pass forward rate of 2367 litres per second at the settled sewage separating weir.

and that spills at the inlet overflow should

> (a) occur only as a consequence of rainfall and/or snow melt within the sewered catchment; and
>
> (b) consist only of flows in excess of the pass forward rate of 4505 litres per second at the storm sewage separating weir at the inlet chamber.

Unfortunately, the sewage flow data for Daldowie STW, as with other STW data provided by Scottish Water, suffers from confused labelling across the period 2018 to 2022.

The influent flow column is clearly labelled, but 2 other columns of flow data are confusingly labelled in various ways that include the term FFT and are added together to provide a 4th flow column labelled FINAL FLOW. If this FINAL FLOW was interpreted as FFT then almost every storm tank 1 discharge would be considered in breach of the licenced 2,367 l/s minimum during a spill. The different terms used are shown in Table ? below

	FINAL FLOW = sum of two flows described below	
2018	STORM OVERFLOW 3A FLOW Phase 1 FFT	PHASE 2 FINAL EFFLUENT FLOW PHASE 2 FFT
2019	STORM OVERFLOW 3A FLOW Phase 1 FFT	PHASE 2 FINAL EFFLUENT FLOW PHASE 2 FFT
2020	PHASE 1 FFT 3DWF	PHASE 2 FFT 3DWF
2021	PHASE 1 FFT 3DWF	PHASE 2 FFT 3DWF
2022	AI0063-PHASE 1 PST TO ASP LANES 1 - 4 FLOW Phase 1 FFT	AI0072-PHASE 2 PST TO ASP LANES 5 - 8 FLOW PHASE 2 FFT

Perhaps generously, WASP has interpreted FINAL FLOW as the final effluent and so, although requested under FOI, flow to full treatment (FFT) data were withheld. Numerically speaking, FFT would generally be sandwiched between influent and effluent flows as they are either side of the treatment process.

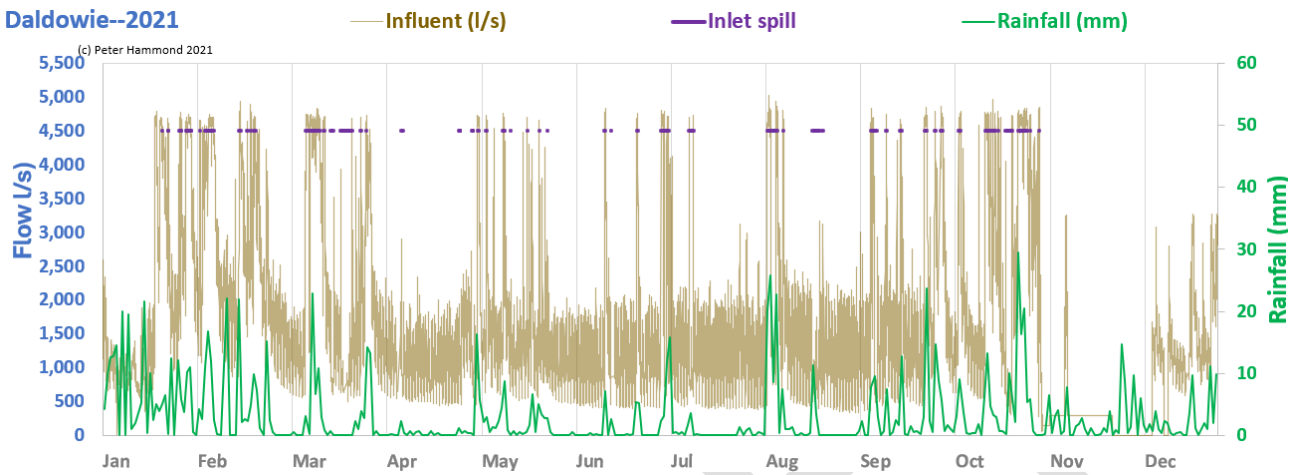
In terms of checking compliance with respect to FFT during spills from storm storage, WASP makes a conservative assumption that non-compliance of a storm storage spill occurs when both the influent and effluent flows are less than 2,367 l/s. Other instances of non-compliance could occur on other occasions, so storm tank spill non-compliance will inevitably be underestimated.

Turning to inlet overflow discharges, it appears that during the 5 years studied there have been many breaches of the 4,505 l/s minimum flow passed forward. The years 2021 and 2022 are an interesting contrast in inlet spill compliance. So that both influent and effluent flows can be visualised on the same charts, inlet flow is shown as

a % of the licenced FTT. Therefore, compliance for flow to treatment is relative to 100% of licenced FFT and compliance for inlet flow is relative to 190.4 % of licenced FFT (4505/2367 = 1.904).

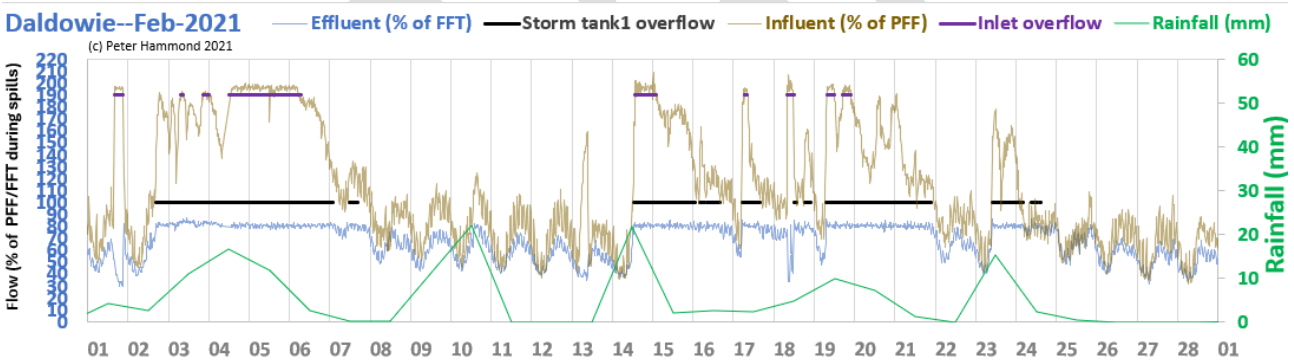
2021 and 2022

The 2021 and 2022 annual overviews for influent and inlet spills for Daldowie STW are given in **Fig**. ?>



Figure?: annual 2021 and 2022 overview charts of influent for Daldowie STW

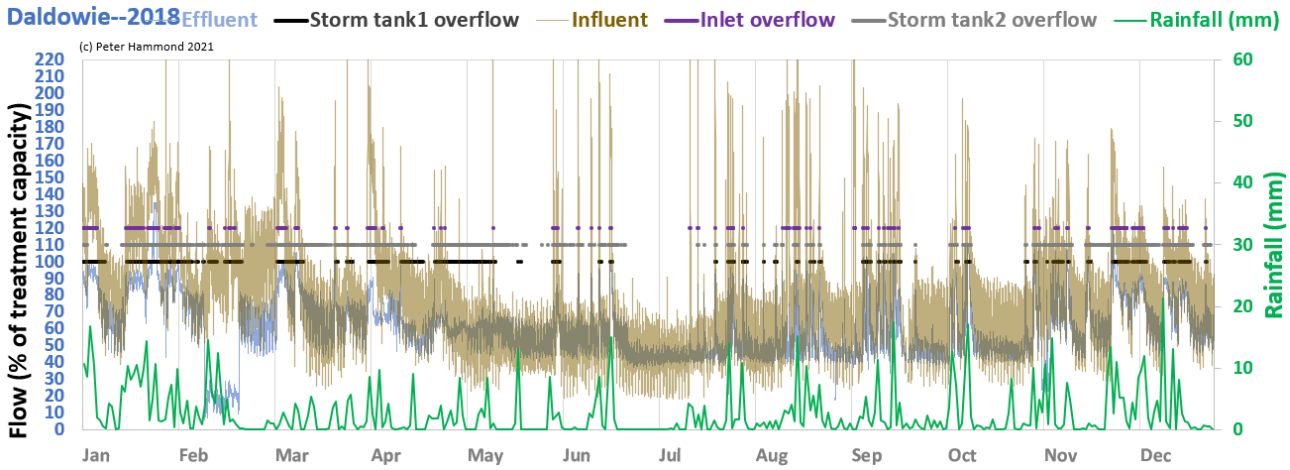
Clearly, the influent rate is above . For example, in **Fig**. ?



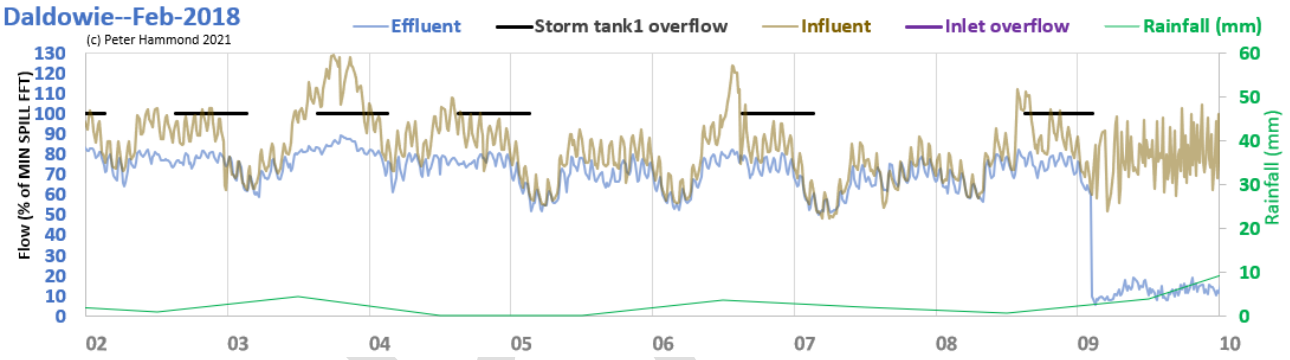
Both the storm storage and inlet spill intervals are cleanly clipped to match rlevant sewage flow and the rate of flow exceeds the licenced PFF and FFT, and so are compliant. That is, apart from the last short spill which constitutes an illegal “early” storm storage spill.

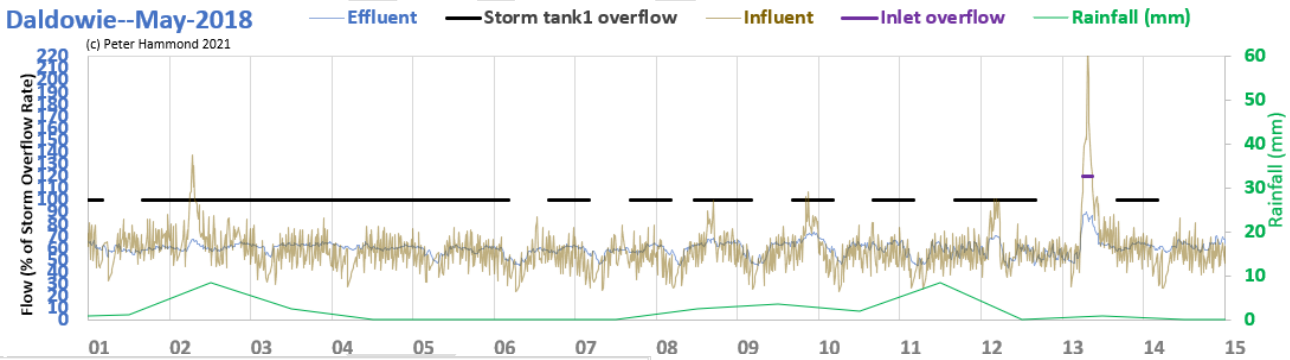
2018

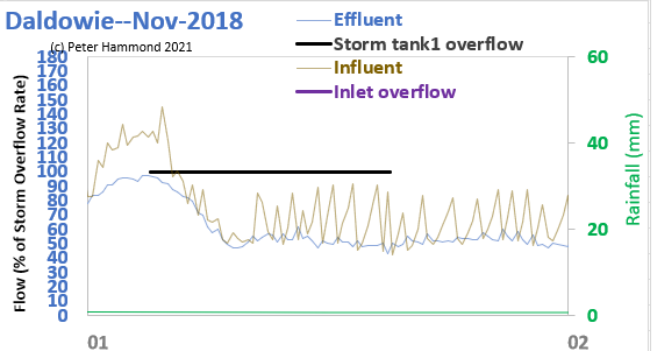
The 2018 overview chart for Daldowie STW is given in **Fig.**

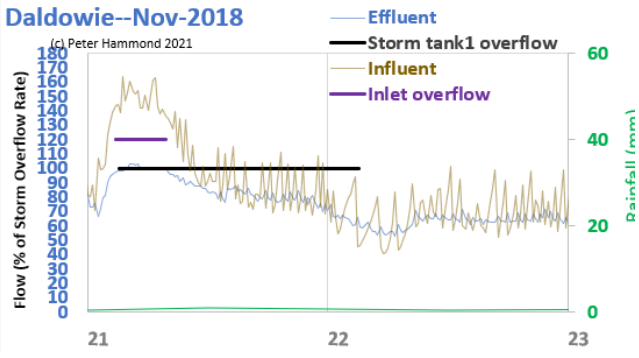


WASP believes there are at least 68 days when spills from storm storage via Storm tank 1 are "early" and hence illegal. Some examples are shown below (**Fig.**).









2019

3.3.3 Erskine

Erskine STW serves a population equivalent of about 86,800 and discharges to the Clyde Estuary.

TABLE 6: untreated sewage spill data for Shielhall STW 2018 to 2024							
Erskine STW	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
SEPA compliance assessment	Good	Poor	No data	No data	No data	No data	No data
Inlet spills (hrs)			-	-	-	-	-
Storm tank spills (hrs)							
Inlet spill volume (M litres)			-	-	-	-	-
Storm tank volume (M litres)							
Days with illegal early spills							

2019

The 2019 annual overview chart is shown in **Fig**. ?.

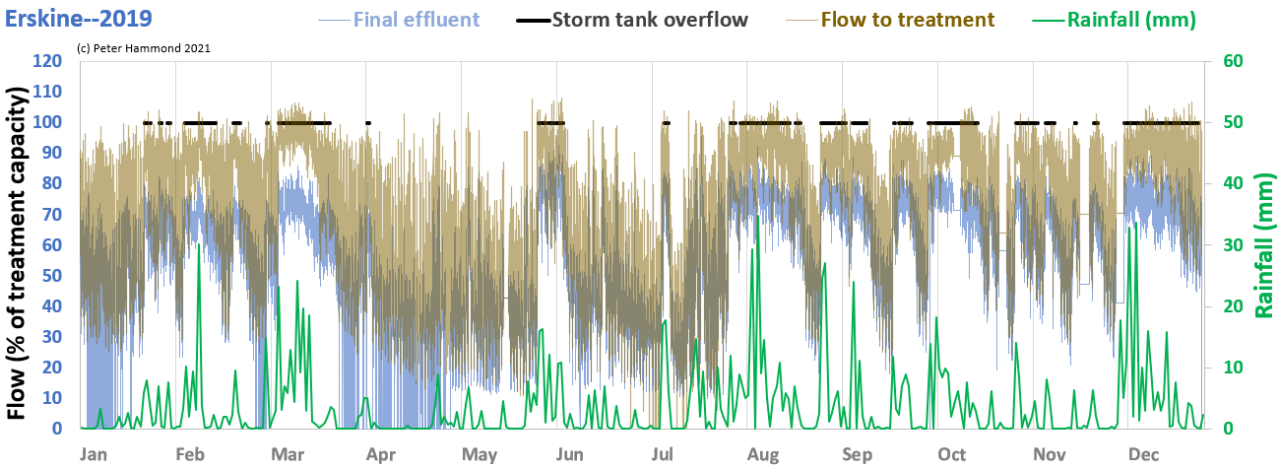
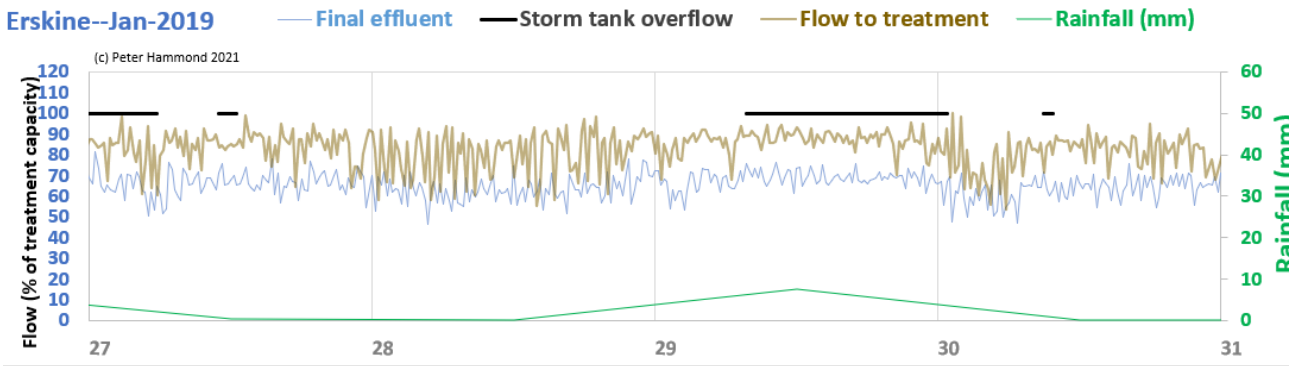
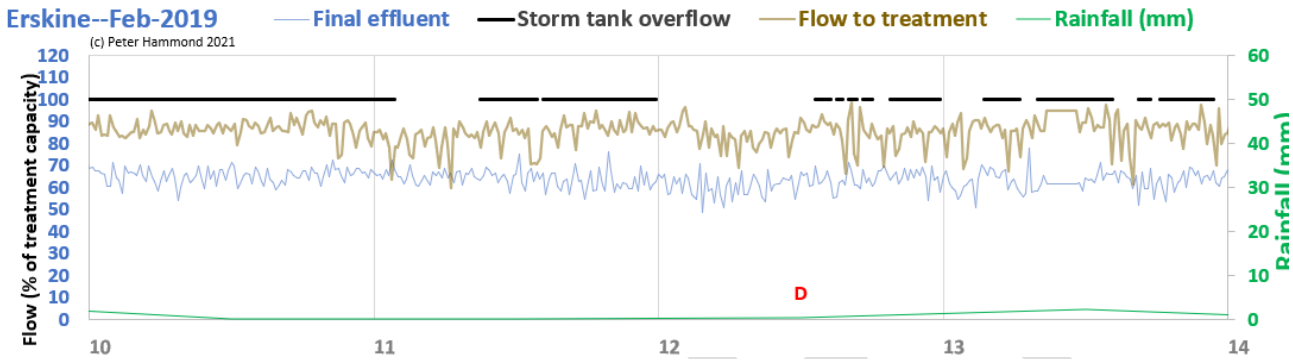
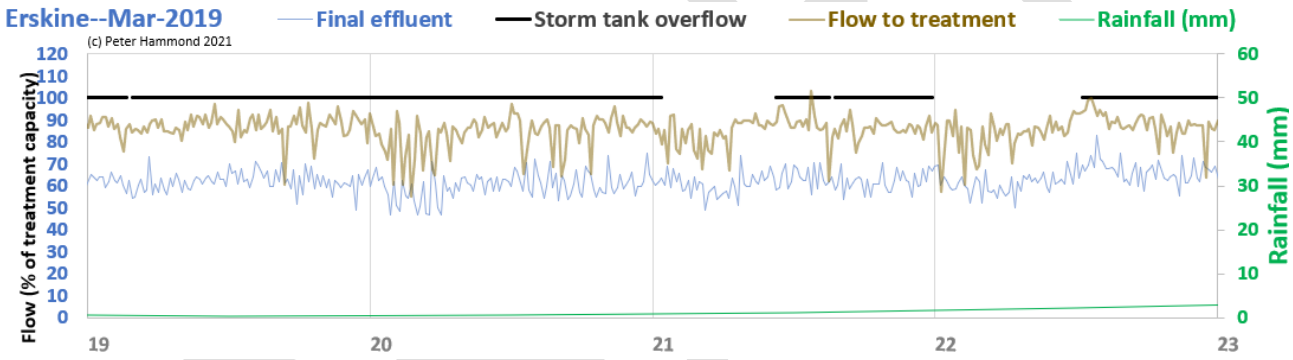


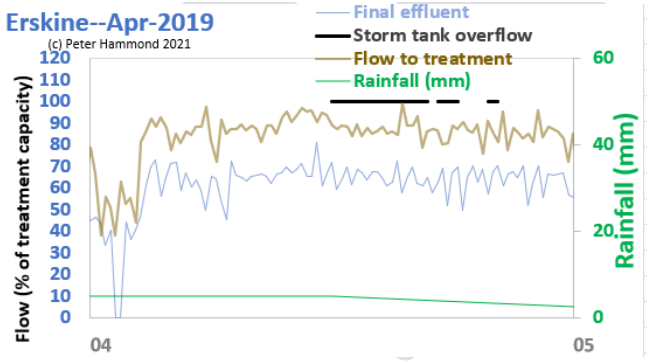
Figure ?: annual 2019 overview chart for Erskine STW

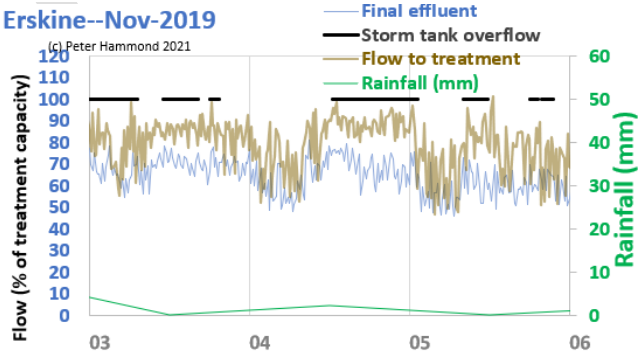
WASP's analysis suggests there were at least 25 days with illegal "early" spills at Erskine STW in 2019.


Erskine--Jan-2019
Final effluent
Storm tank overflow
Flow to treatment
Rainfall (mm)
(c) Peter Hammond 2021
Flow (% of treatment capacity)
Rainfall (mm)
27
28
29
30
31


Erskine--Feb-2019
Final effluent
Storm tank overflow
Flow to treatment
Rainfall (mm)
(c) Peter Hammond 2021
Flow (% of treatment capacity)
Rainfall (mm)
D
10
11
12
13
14


Erskine--Mar-2019
Final effluent
Storm tank overflow
Flow to treatment
Rainfall (mm)
(c) Peter Hammond 2021
Flow (% of treatment capacity)
Rainfall (mm)
19
20
21
22
23


Erskine--Apr-2019
Final effluent
Storm tank overflow
Flow to treatment
Rainfall (mm)
(c) Peter Hammond 2021
Flow (% of treatment capacity)
Rainfall (mm)
04
05


Erskine--Nov-2019
Final effluent
Storm tank overflow
Flow to treatment
Rainfall (mm)
(c) Peter Hammond 2021
Flow (% of treatment capacity)
Rainfall (mm)
03
04
05
06

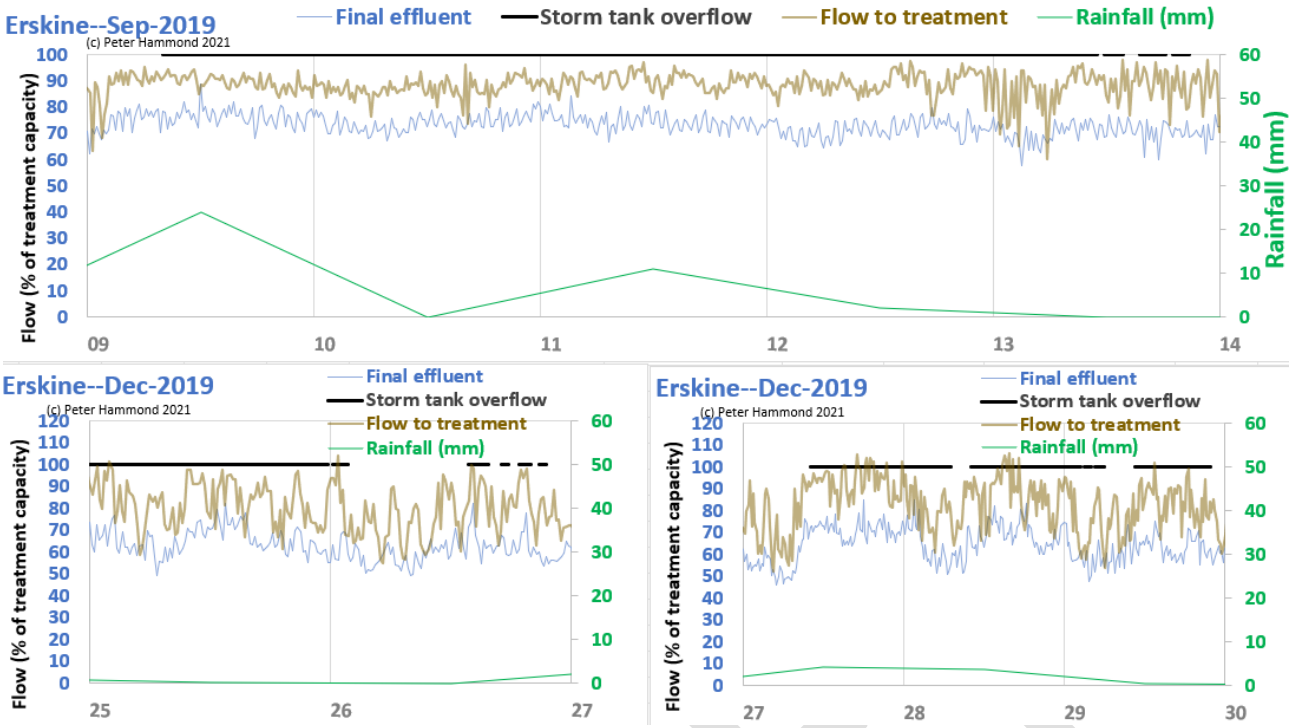


Figure ? 25 days with illegal "early" spills at Erskine STW

(Jan 27,29,30; Feb 10-13; Mar 19-22; Apr 4; Sep 9-13; Nov 3-5; Dec 25-26, 27-29)

2020

The 2020 annual overview chart is shown in **Fig**. ?.

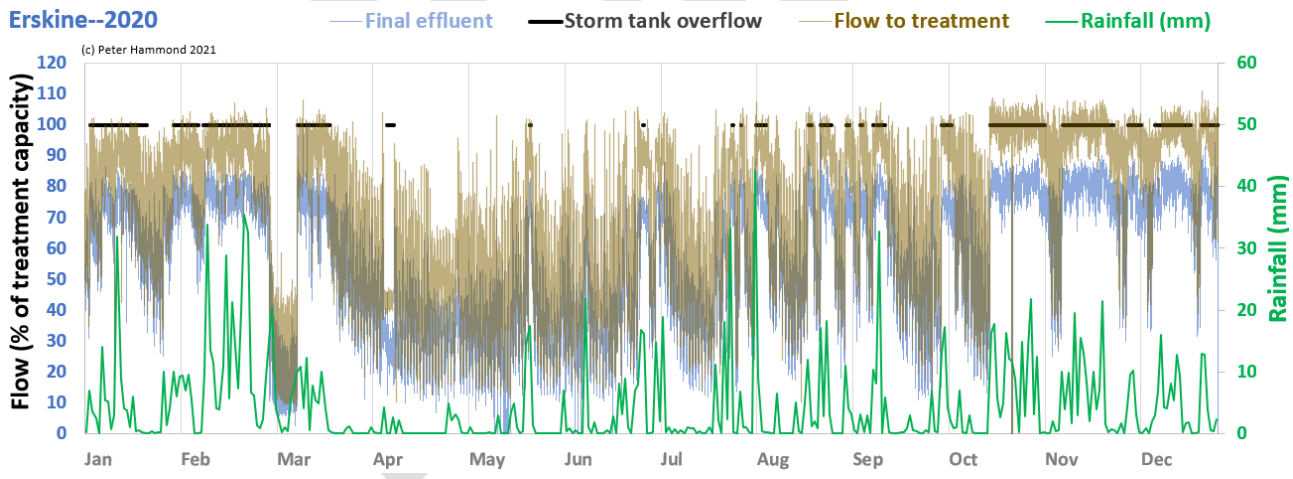


Figure ?: annual 2020 overview chart for Erskine STW

WASP's analysis suggests there were at least 18 days with illegal "early" storm tank spills at Erskine STW in 2020.

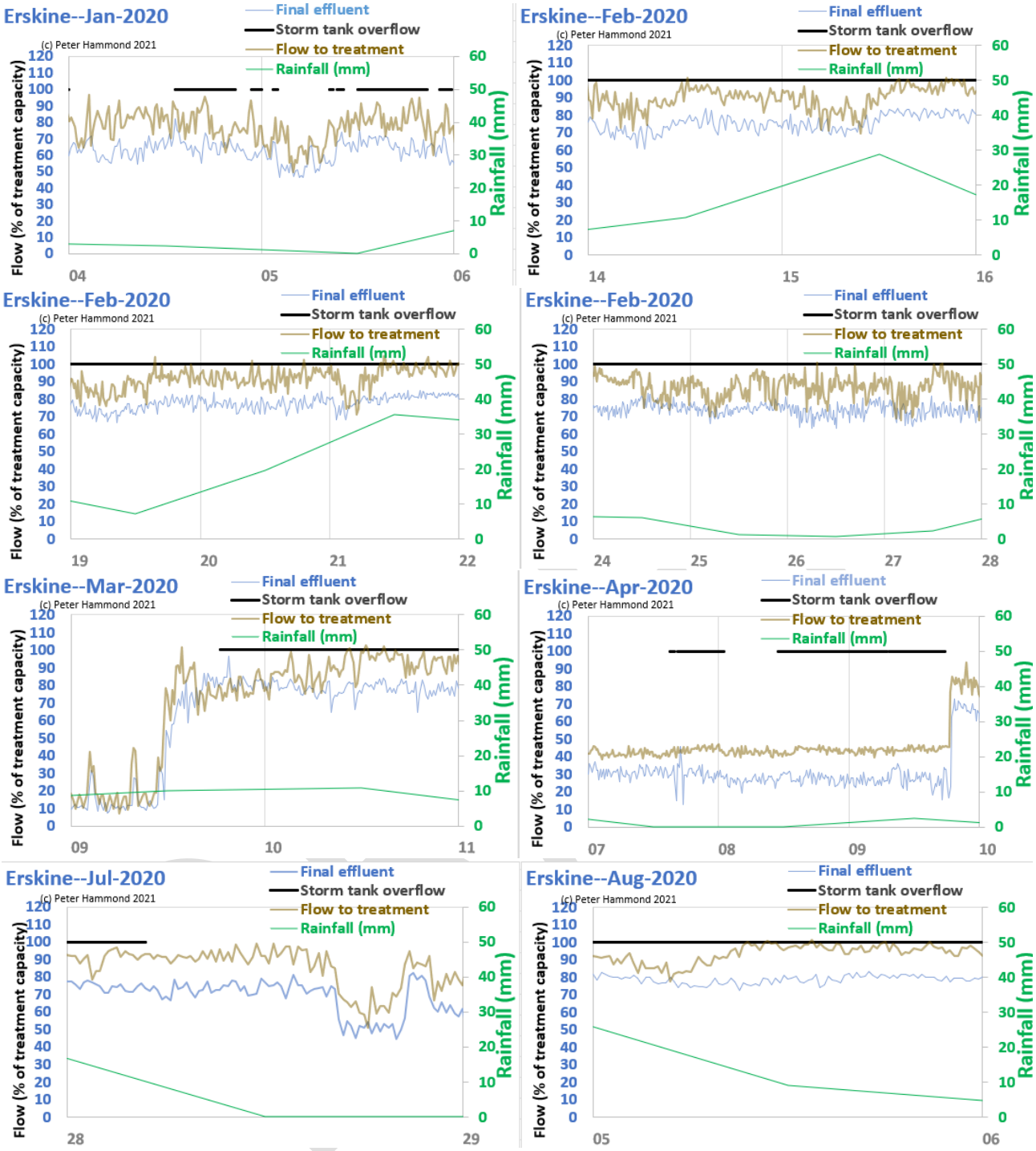


Figure ? 18 days with illegal "early" spills at Erskine STW in 2020
(Jan 4,5; Feb 14,15,19-21, 24-27; Mar 9,10; Apr 7-9; Jul 28; Aug 5)

2021

The 2021 annual overview chart is shown in **Fig.** ?.

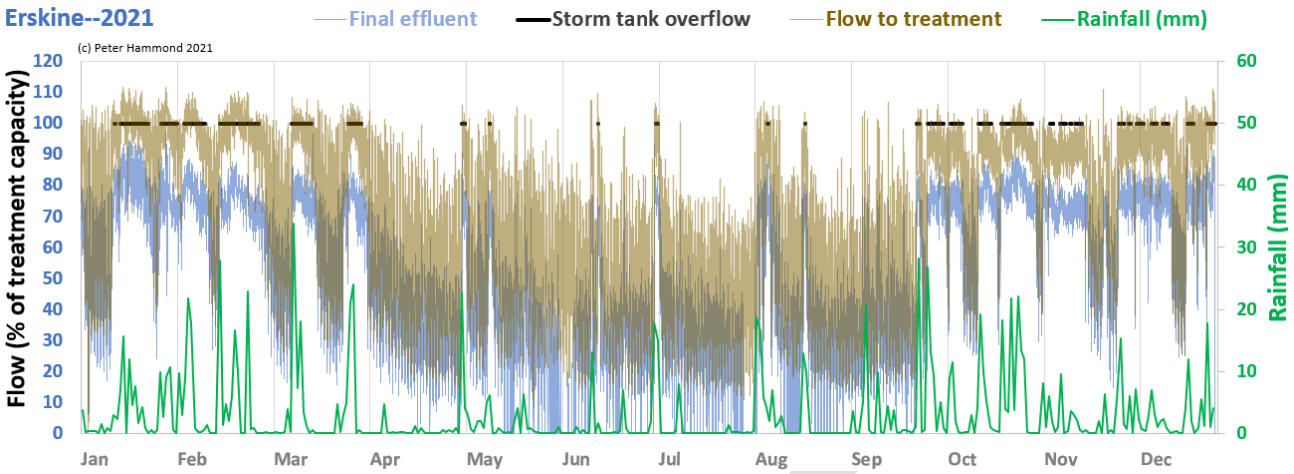


Figure ?: annual 2021 overview chart for Erskine STW

WASP's analysis suggests there were no illegal "early" storm tank spills at Erskine STW in 2021.

2022

The 2022 annual overview chart for Erskine STW is shown in **Fig**. ?.

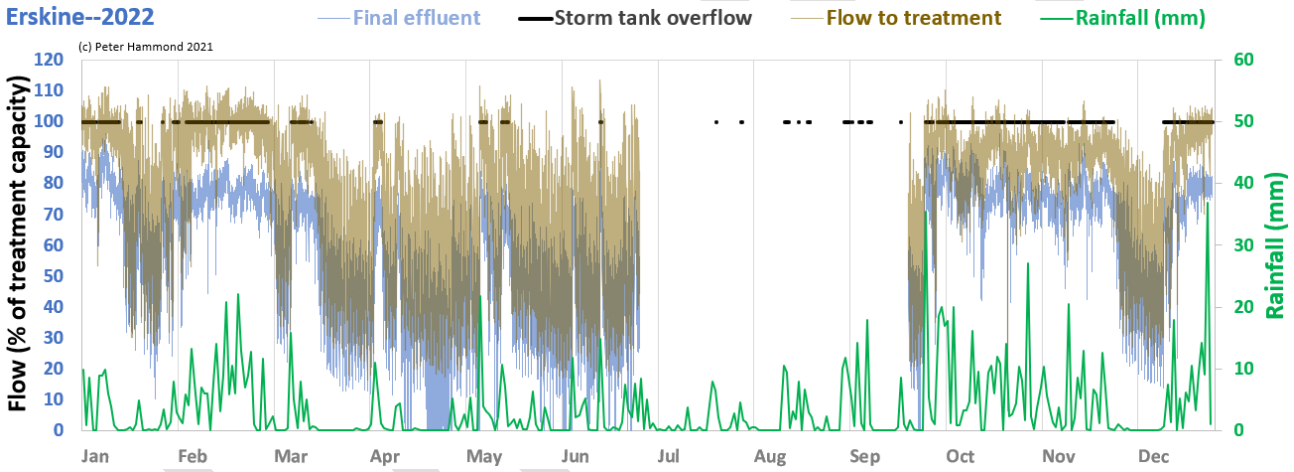


Figure ?: annual 2022 overview chart for Erskine STW

WASP's analysis suggests there were at least 9 days with illegal "early" storm tank spills at Erskine STW in 2022.

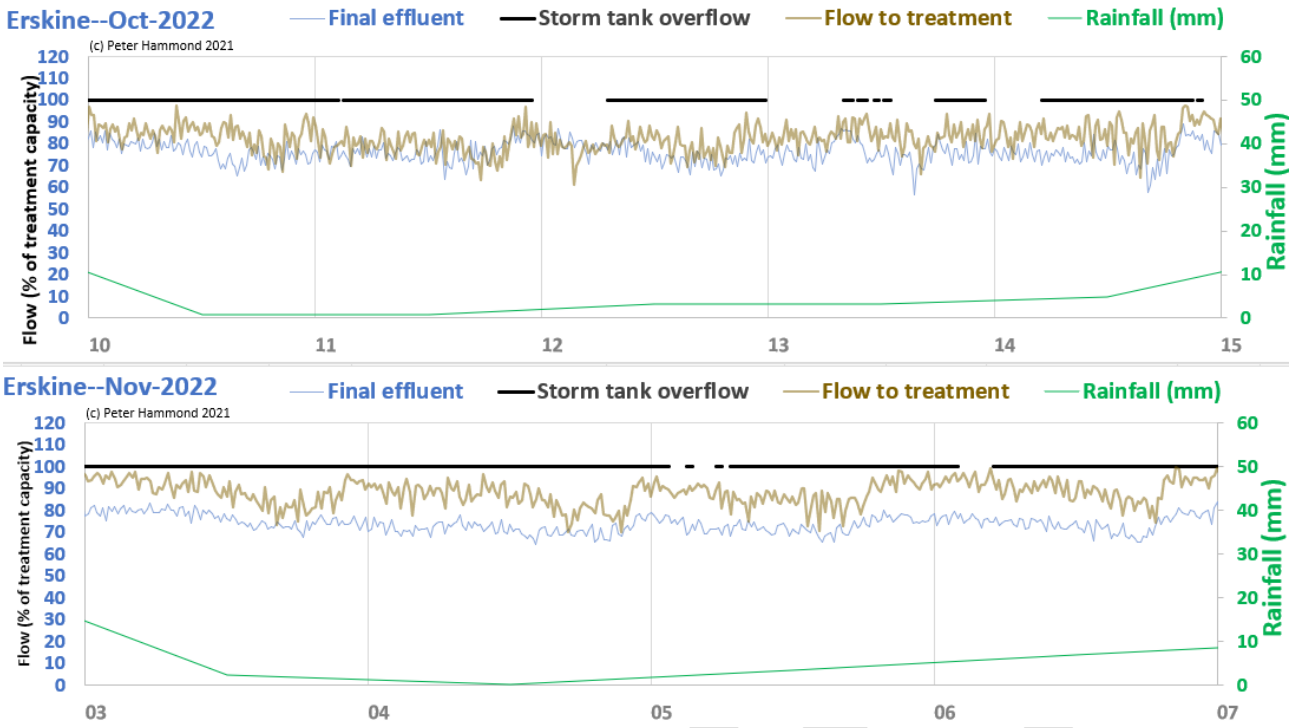


Figure ?: 9 days with illegal "early" spills at Erskine STW in 2022.

3.3.3 Helensburgh

Helensburgh STW serves a population equivalent of

TABLE 6: Helensburgh STW

	2018	2019	2020	2021	2022	2023	2024
SEPA compliance assessment	Excellent	Excellent	No data	No data	No data	No data	No data
Storm tank spills (hrs)	7,534	7,860	7,534	2,187	2,159	7,686	7,868
Storm tank volume (M litres)	1,890	2,774	1,741	1,274	1,303	944	490

The licence to discharge issued by SEPA for Helensburgh STW clearly states that instantaneous flow rates should be recorded for influent, effluent and pass forward flow (PFF) at the storm tank weir (**Fig.**), but unfortunately the licence doesn't specify the interval at which flow rates need to be recorded.

3.5. Flow Monitoring

3.5.1. A continuous flow recorder with on-site visual display from which readings can be readily obtained and an associated data storage facility, shall be provided and maintained to record the instantaneous flow rates and daily volumes of the:

(a) influent sewage;

(b) treated sewage effluent;

(c) pass forward flow at the settled storm tank overflow weir.

3.5.2. Records of the readings obtained from all flow and/or event recorders required by any condition of this licence shall be maintained in a format agreed with SEPA. (or, failing such agreement as specified in writing by SEPA acting reasonably).

3.5.3. A summary of flow statistics shall be reported in respect of each calendar year for:

(a) the dry weather flow of the influent sewage and/or the treated sewage;

(b) the mean daily flow and the standard deviation of daily flow of the influent sewage and treated sewage;

(c) the frequency and duration of overflow events from any emergency overflow and/or combined sewer overflow and/or settled storm sewage overflow structures together with an estimate of the volumes of sewage thus discharged.

The flow data that Scottish Water provided was not consistently labelled so it was often unclear which of the three "to be recorded" flows were actually recorded and provided in response to the FOI. Filenames were often inconsistent with the labelling used within the spreadsheets provided. Columnar data were sometimes labelled differently from charts used within the datafile. By comparing averages for each flow series provided against the annual averages reported separately by Scottish Water to SEPA, it was usually possible to attribute a given flow to influent or effluent. WASP has assumed that flow to full treatment would typically be sandwiched in between influent and effluent. So if a spill occurs when both influent and effluent are not above the treatment capacity for flow to full treatment it seems reasonable to infer that the flow to treatment is also below the treatment capacity and therefore that the spill is "early" and hence illegal.

	Actual flow consistent with annual summary data				
Term used in filename	2018	2019	2020	2021	2022
PFF	Effluent				
Inlet flow	Influent		Influent	Influent	
Effluent				Effluent	
Spare		??	Effluent		Effluent
Raw flow		Influent			
Influent telemetry flow		Influent			
FFT corrected for cosettling		Effluent			
SSO Telemetry flow		-			

2018

The 2018 annual overview chart for Helensburgh STW is shown in **Fig**. ?.

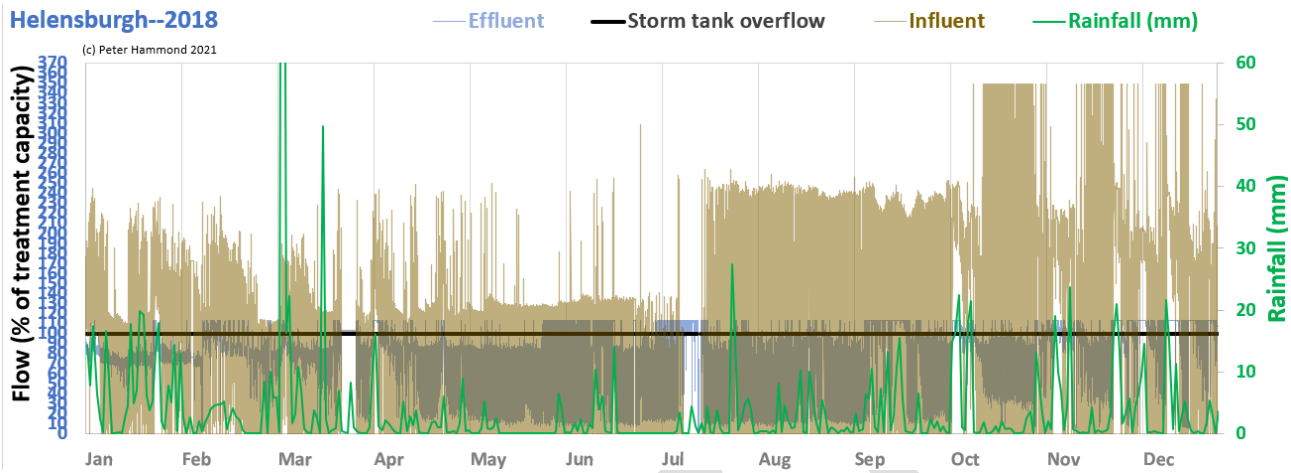
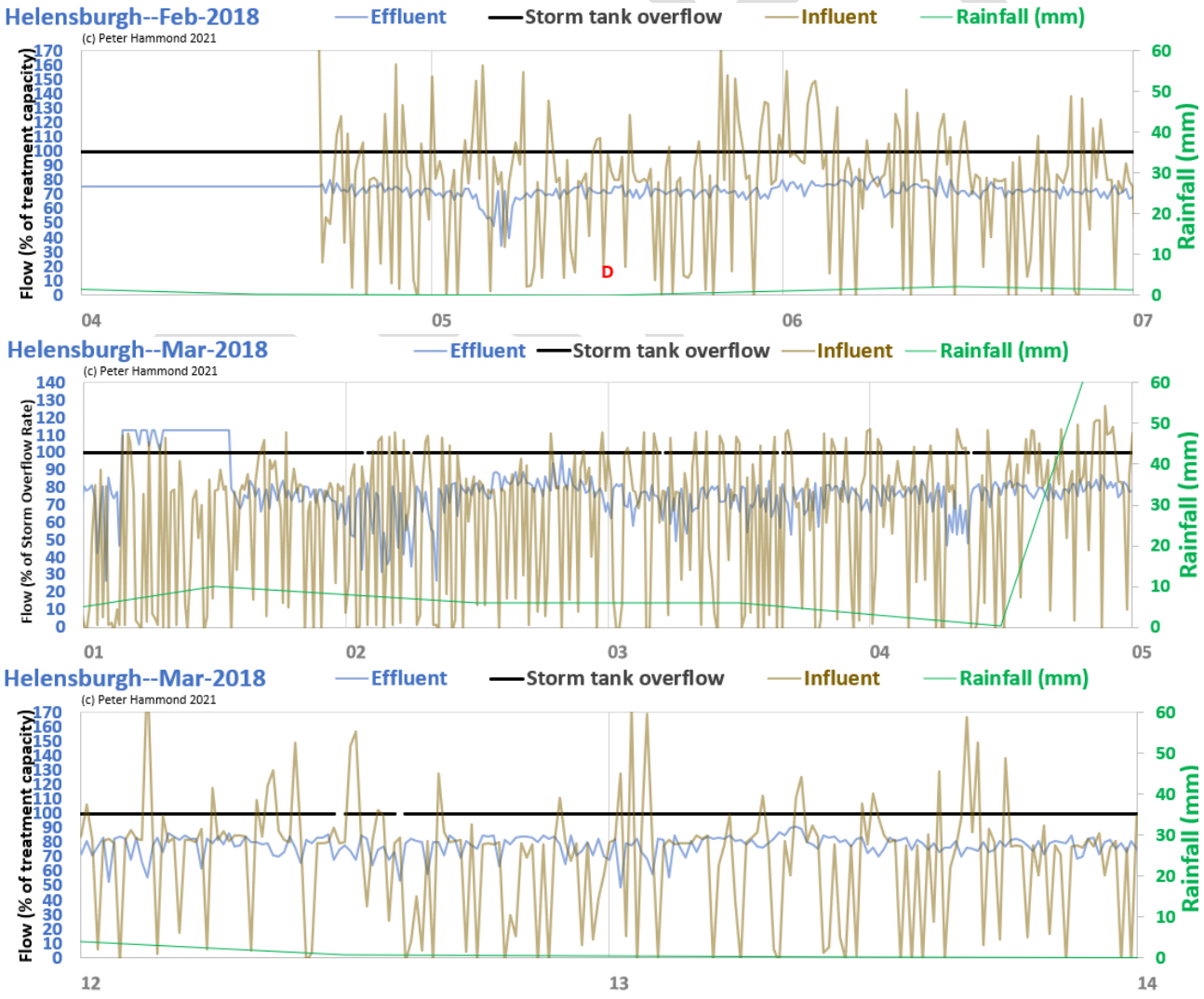


Figure ?: annual 2018 overview chart for Helensburgh STW

WASP's analysis suggests there were at least 14 days with illegal "early" spills.



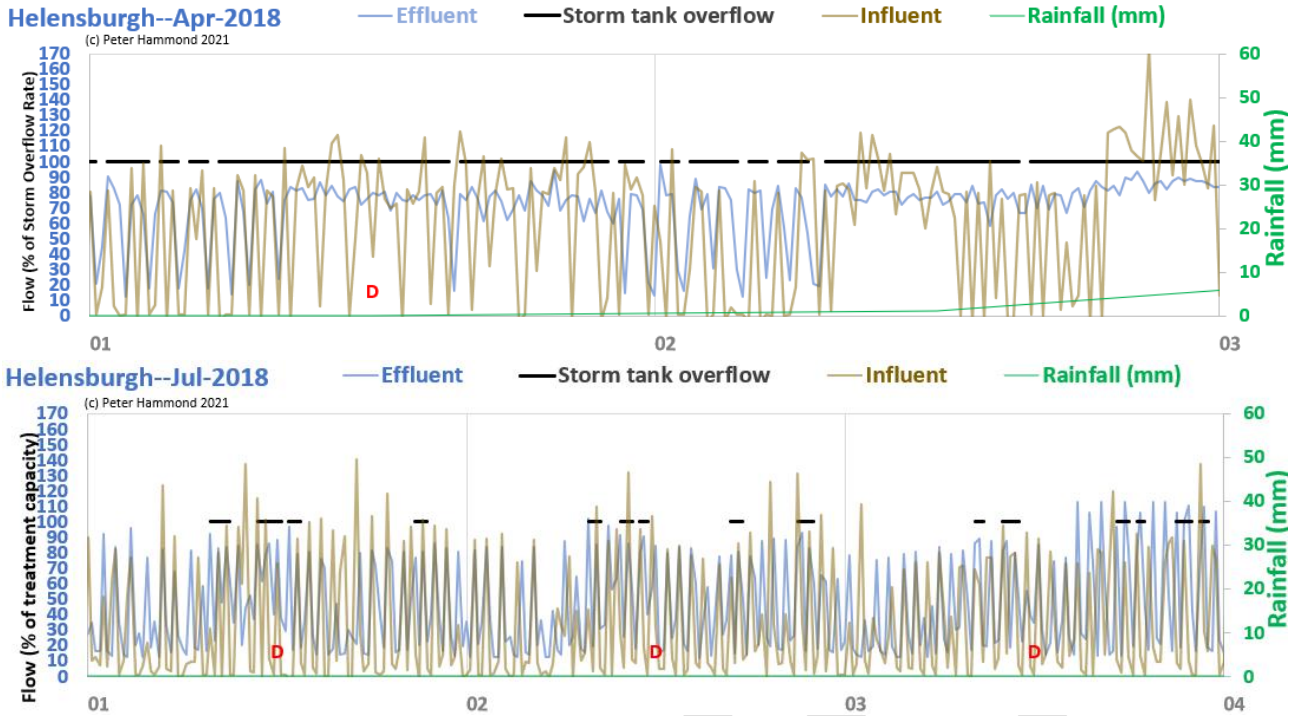


Figure ?: 14 days with illegal "early" spills at Helensburgh STW in 2018 (Feb 4-6; Mar 1-4, 12-13; Apr 1-2; Jul 1-3)

There were also 82 days with spills during dry weather (less than 0.25 mm of rainfall on the day of, and day before, the spill).

2019

The 2019 annual overview chart for Helensburgh STW is shown in **Fig**. ?.

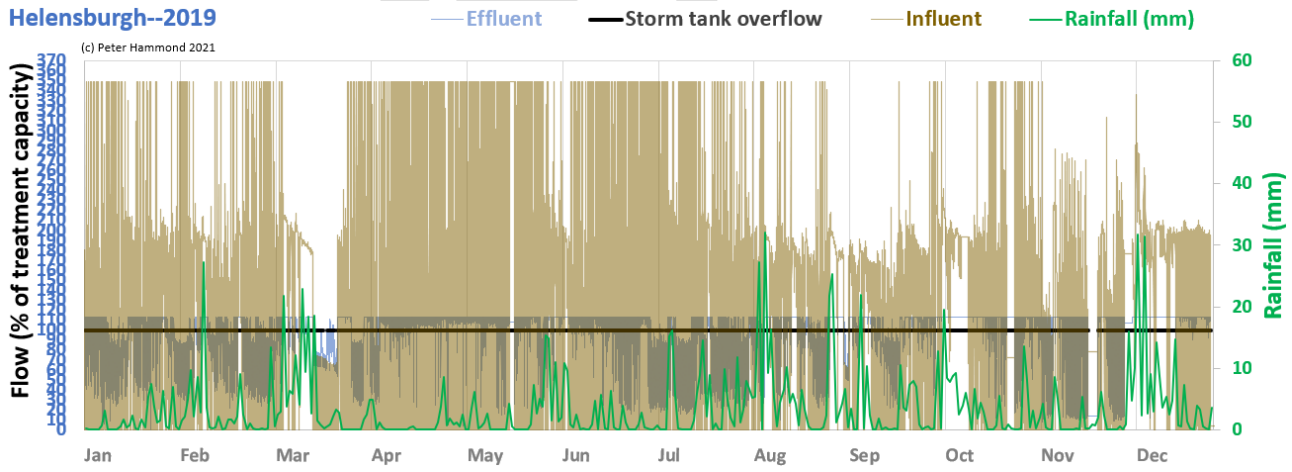


Figure ?: annual 2019 overview chart for Helensburgh STW

WASP's analysis was unable to detect any illegal "early" spills at Helensburgh STW in 2019.
There were more than 86 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

2020

The 2020 annual overview chart for Helensburgh STW is shown in **Fig**. ?.

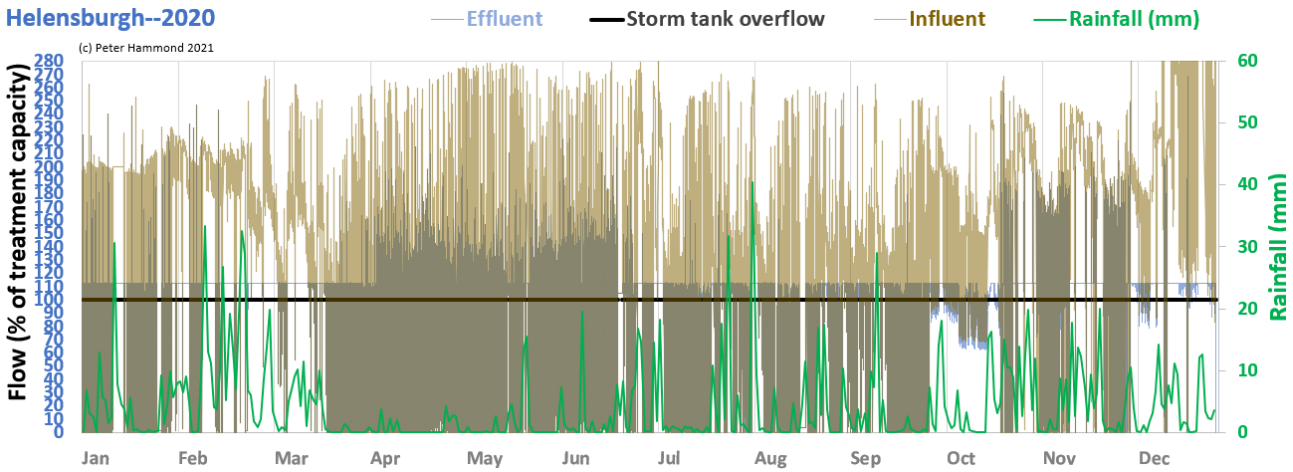


Figure ?: annual 2020 overview chart for Helensburgh STW

WASP's analysis was unable to detect any illegal "early" spills at Helensburgh STW in 2020.
There were more than 77 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

2021

The 2022 annual overview chart for Helensburgh STW is shown in **Fig**. ?.

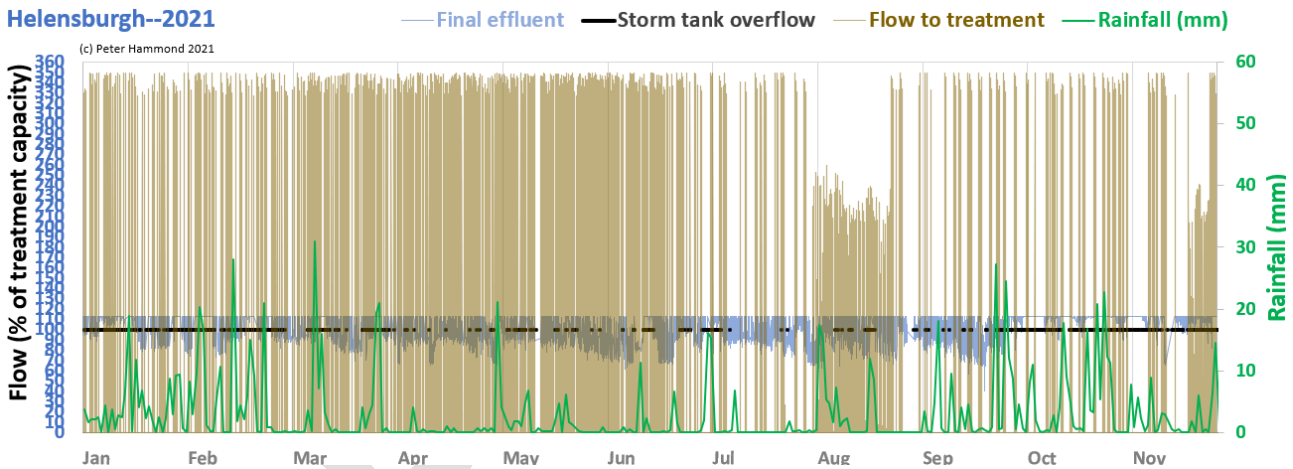


Figure ?: annual 2021 overview chart for Helensburgh STW

WASP's analysis was unable to detect any illegal "early" spills at Helensburgh STW in 2021.
There were more than 33 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

2022

The 2022 annual overview chart for Helensburgh STW is shown in **Fig**. ?.

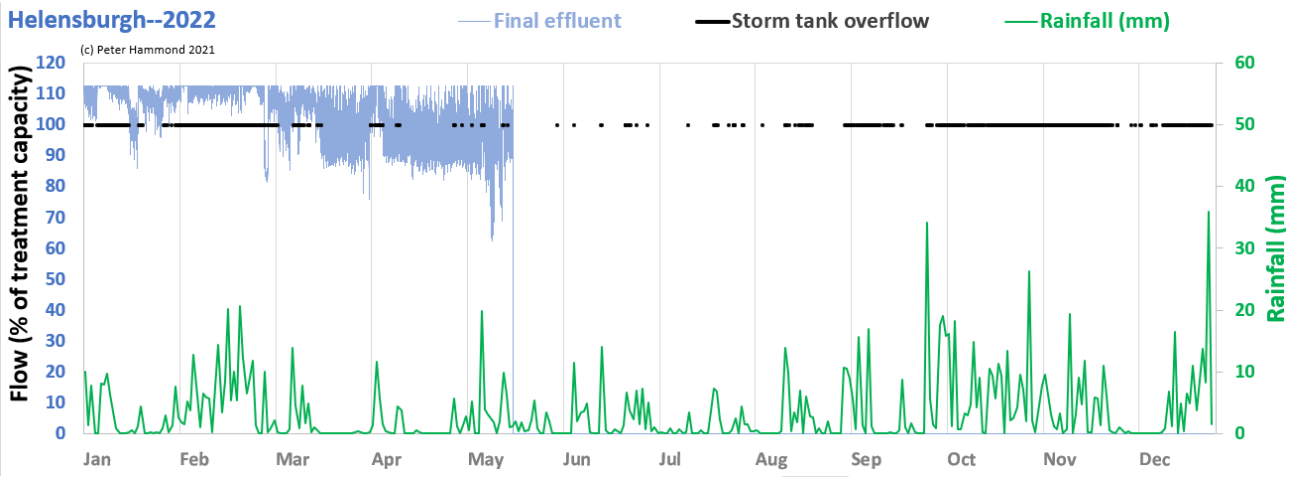


Figure ?: annual 2021 overview chart for Helensburgh STW

Summary data was provided for influent and effluent for 365 and 364 days respectively. Nothing for storm tank overflow. Detailed flow data were provided for just one meter (not named) and only up to May 19th 2022.

WASP's analysis was unable to detect any illegal "early" spills at Helensburgh STW in 2021.
There were more than 24 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

3.3.6 Kilmory

Kilmory STW is a small works serving a population equivalent of about 4,000 and discharges to Loch Gilp.

2022

The 2022 annual overview chart for Kilmory STW is shown in **Fig**. ?.

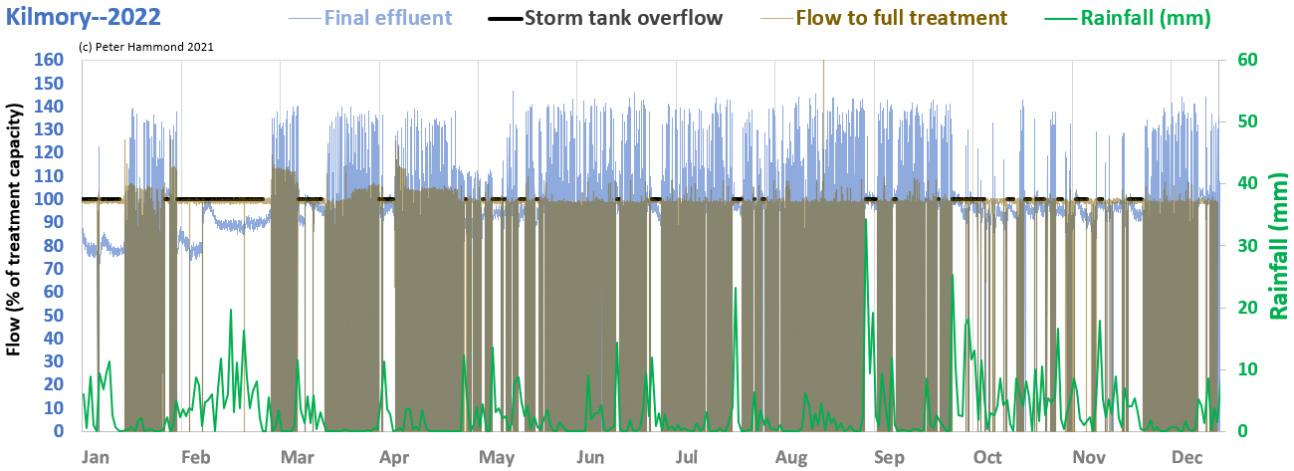


Figure ?: annual 2022 overview chart for Kilmory STW

WASP's analysis was unable to detect any illegal "early" spills at Kilmory STW in 2022.

2021

The 2021 annual overview chart for Kilmory STW is shown in **Fig**. ?.

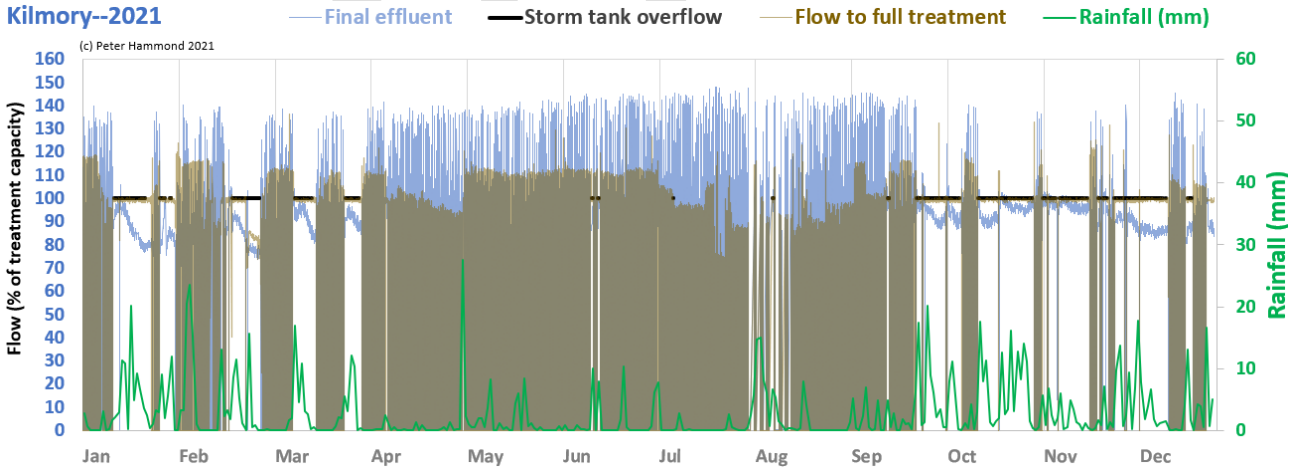


Figure ?: annual 2021 overview chart for Helensburgh STW

WASP's analysis detected 5 days with illegal "early" spills at Kilmory STW in 2021.

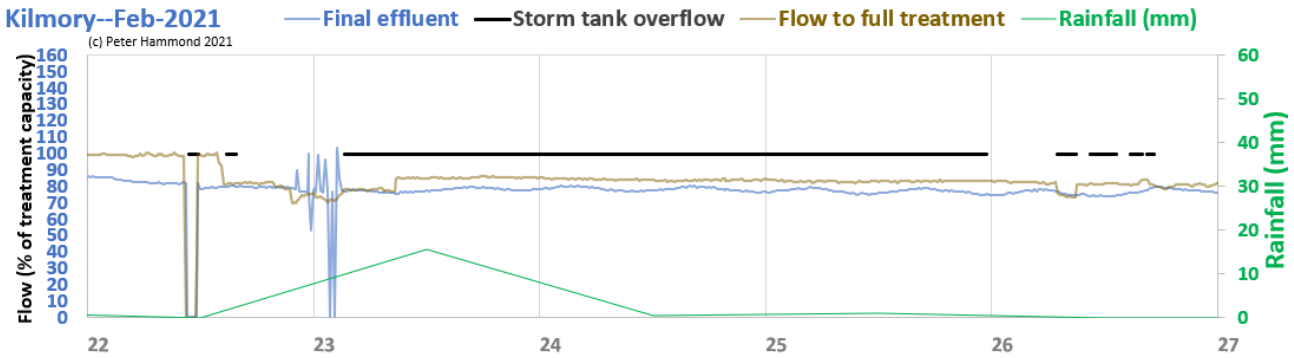


Figure ?: 5 days with illegal "early" spills at Kilmory STW in 2021 (Feb 22-26)

2020

The 2022 annual overview chart for Kilmory STW is shown in **Fig**. ?.

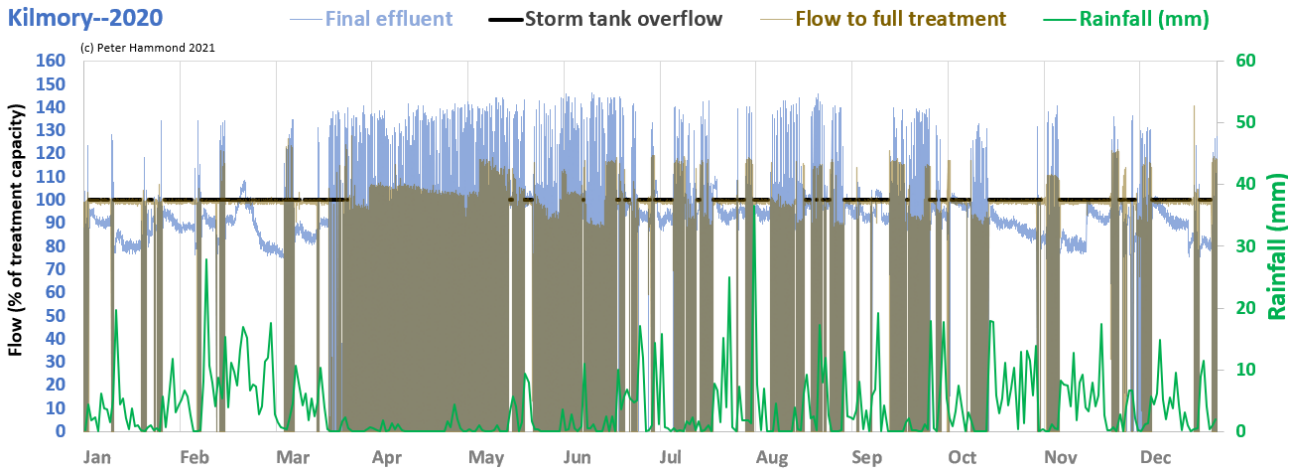


Figure ?: annual 2020 overview chart for Kilmory STW

WASP's analysis was unable to detect any illegal "early" spills at Kilmory STW in 2020.
There were more than 4 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

2019

The 2019 annual overview chart for Kilmory STW is shown in **Fig**. ?.

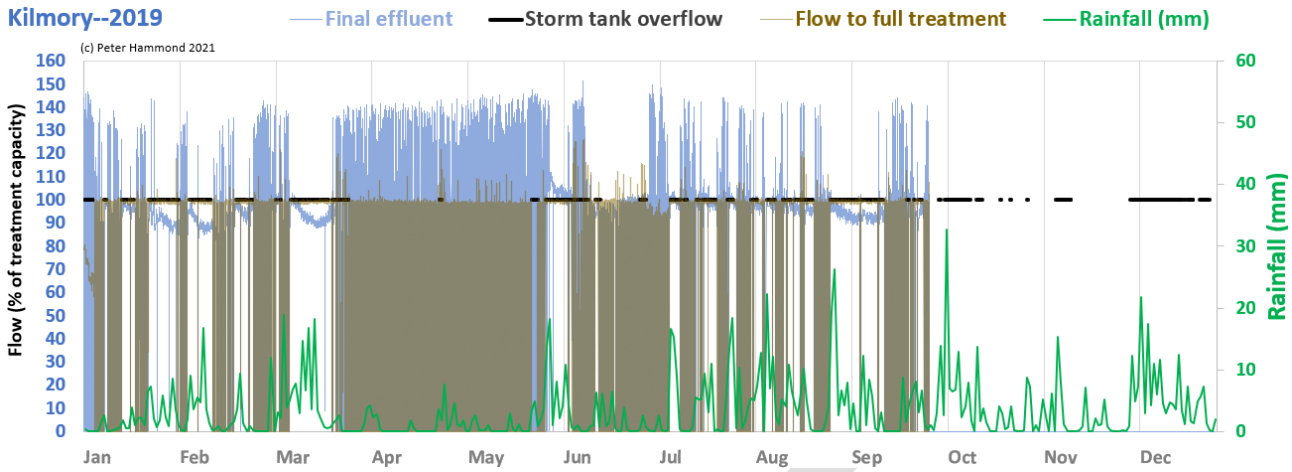


Figure ?: annual 2019 overview chart for Kilmory STW

WASP's analysis was unable to detect any illegal "early" spills at Kilmory STW in 2019.
There were more than 8 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

2018

The 2018 annual overview chart for Kilmory STW is shown in **Fig**. ?.

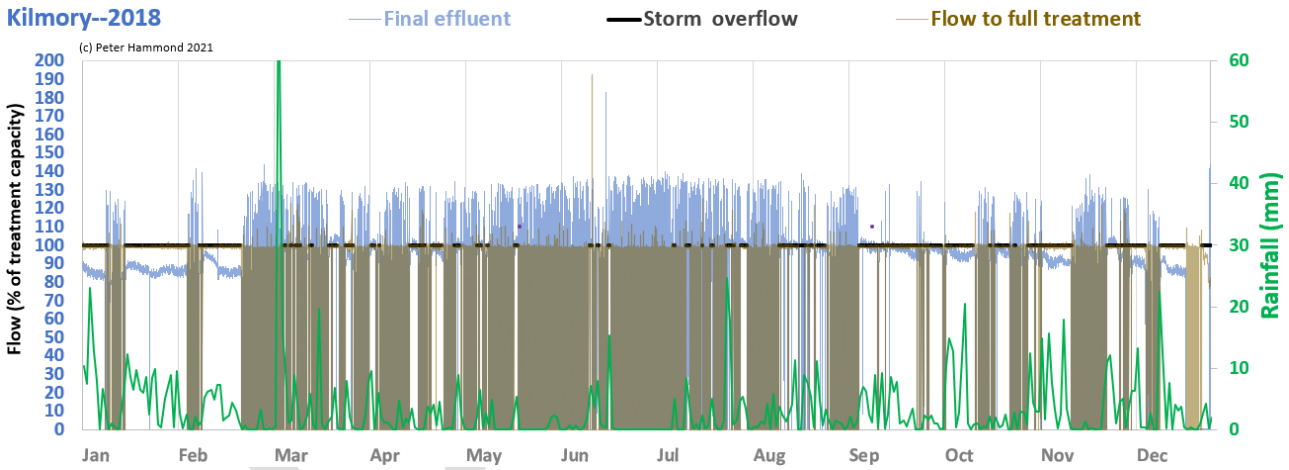


Figure ?: annual 2022 overview chart for Kilmory STW

WASP's analysis was unable to detect any illegal "early" spills at Kilmory STW in 2018.
There were more than 6 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

3.3.7 Tighnabruaich

Tighnabruaich STW is a small STW serving a population of and discharges to the Kyles of Bute.

2018

The 2018 annual overview chart for Tighnabruaich STW is shown in **Fig**. ?.

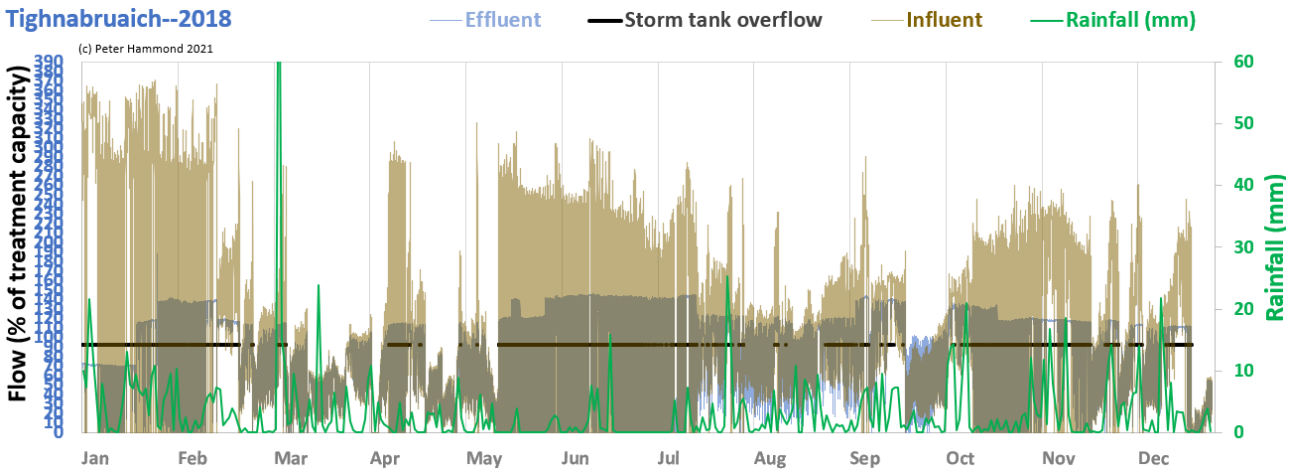


Figure ?: annual 2018 overview chart for Tighnabruaich STW

WASP's analysis was unable to detect any illegal "early" spills at Kilmory STW in 2018.
There were more than 48 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

2019

The 2019 annual overview chart for Kilmory STW is shown in **Fig**. ?.

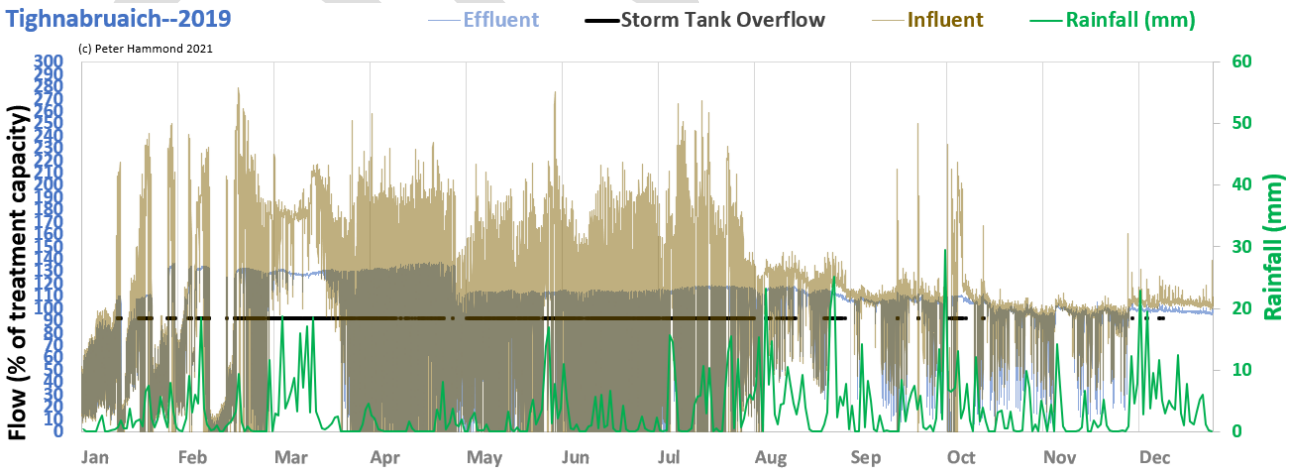


Figure ?: annual 2019 overview chart for Tighnabruaich STW

WASP's analysis was unable to detect any illegal "early" spills at Kilmory STW in 2019.
There were more than 48 days with "dry weather" spills (daily rainfall less than 0.25 mm on the day of, and day before, the spill).

3.4 Alloa, Balfron, Biggar, Cupar and Dalderse STWs

3.4.1 Alloa STW

Alloa has final effluent

Alloa STW serves a population equivalent of about 43,000 and discharges to the Brothie Burn/River Forth.

According to its licence (CAR/L/1003819), Alloa STW has 5 different discharges to the Brothie Burn/River Forth via the same outlet: 4 of untreated sewage and 1 of treated sewage (Table ?). Its management of sewage flow on site includes weirs where excess is discharged and remainder is passed forward to next stage.

Sewage flow/discharge	Flow/Discharge	Flow/events to be measured and recorded
CSO	untreated sewage	Frequency and duration of overflow events
SSSO from Storm Tank	untreated sewage	Frequency and duration of overflow events
SSSO from Primary Tank	untreated sewage	Frequency and duration of overflow events
EO	untreated sewage	Telemetry notification
PFF at CSO weir	untreated sewage	Instantaneous flow rate and daily volume
PFF at Primary Tank weir	untreated sewage	Instantaneous flow rate and daily volume
PFF at SSSO weir	untreated sewage	Instantaneous flow rate and daily volume
Influent	untreated sewage passed into treatment	Instantaneous flow rate and daily volume and data storage; report annual dry weather flow; mean and st dev of daily flow
FE	treated sewage	Instantaneous flow rate and daily volume and data storage; report annual dry weather flow; mean and st dev of daily flow

CSO=combined sewage overflow; SSSO=settled storm sewage overflow; EO=emergency overflow; PFF= Pass forward flow; FE = final effluent; Influent= flow passed forward to treatment process

Alloa STW	2018	2019	2020	2021	2022	2023	2024
SEPA compliance assessment	Good	Broadly Compliant	No data	No data	No data	No data	No data
CSO spills (hrs)	108	103	1,401	No data	No data	No data	No data
CSO spill volume (M litres)	150	157	2,678	No data	No data	No data	No data

3.4.2 Balfron

Has flow data

3.4.3 Biggar

Has flow data

3.4.4 Cupar

Has flow data – 8 weeks

3.4.5 Dalderse ST

Has flow data – 8 weeks

3.5 Allanfearn, Fort William (both PFI until 2022)

3.5.1 Allanfearn (Inverness) STW

Allanfearn STW was operated under PFI by Catchment Ltd until 28/05/2022 when it was transferred to Scottish Water. Before the transfer, Catchment Ltd reported details of sewage treatment and spills of untreated sewage to SEPA. Since the transfer, Allanfearn STW's operation is directly by Scottish Water.

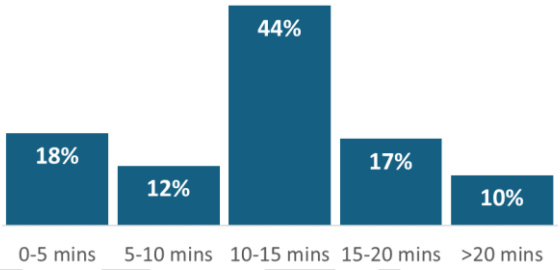
On 07/03/2025, WASP submitted an FOI request about Allanfearn STW and two others STWs to Scottish Water (*CAS-2779045-W7T2*) for

> *"all flow to full treatment, inlet flow and final effluent flow data (15-min resolution or finer) and also start-stop times for all individual spills for all overflows for the period 1/1/2020 to the present"*

On 28/03/2025, Scottish Water sent the following response

> *Whilst we endeavour to provide information whenever possible, in this instance we do not hold all the information you have requested. To explain further, Allanfearn WWTW was a Private Finance Initiative (PFI) site, and the asset was returned to Scottish Water during 2022. Allanfearn WWTW was only included on flow and event returns reported to SEPA by Scottish Water from the point of transfer (2023 return). Prior to this, flow and event return were submitted to SEPA directly by the PFI operator.* **Scottish Water** *CAS-2779045-W7T2*

and also provided "15-minute" interval influent & effluent data for Allanfearn WWTW from 01/01/2023 to 15/03/2025. The gap between datapoints was far from uniformly 15-min, ranging from 1 sec to nearly 7 days and required significant manual editing.



2023

The 2023 annual overview chart for Allanfearn STW is shown in **Fig**. ?.

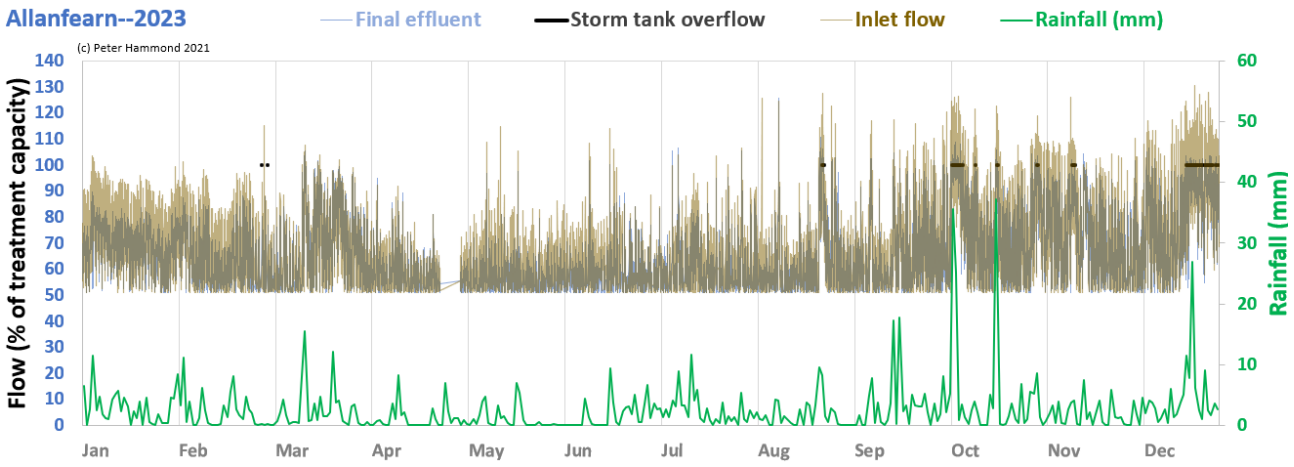


Figure ?: annual 2022 overview chart for Tighnabruaich STW

WASP's analysis suggests there were at least 4 days with illegal "early" spills in 2023 (**Fig**. ?)

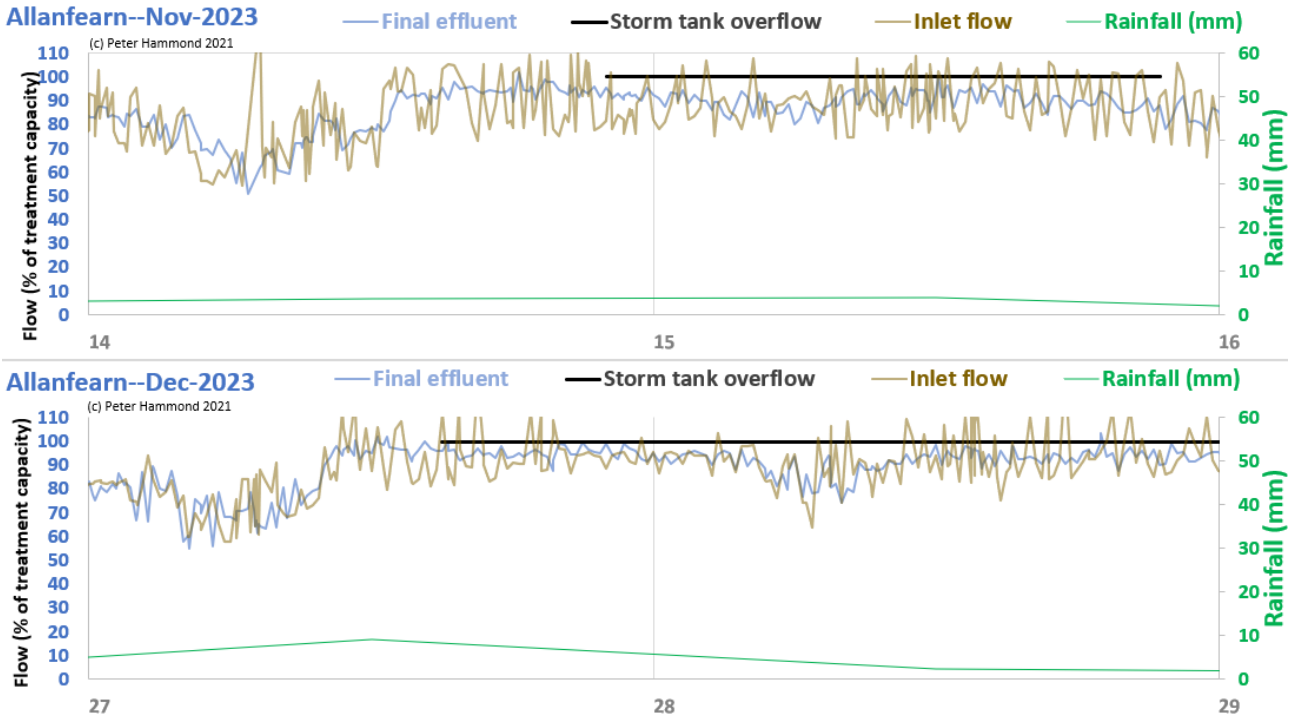


Figure ?: 4 days with illegal spills at Allanfearn STW in 2023 (Nov 14,15; Dec 27,28)

2024

The 2024 annual overview chart for Allanfearn STW is shown in **Fig**. ?.

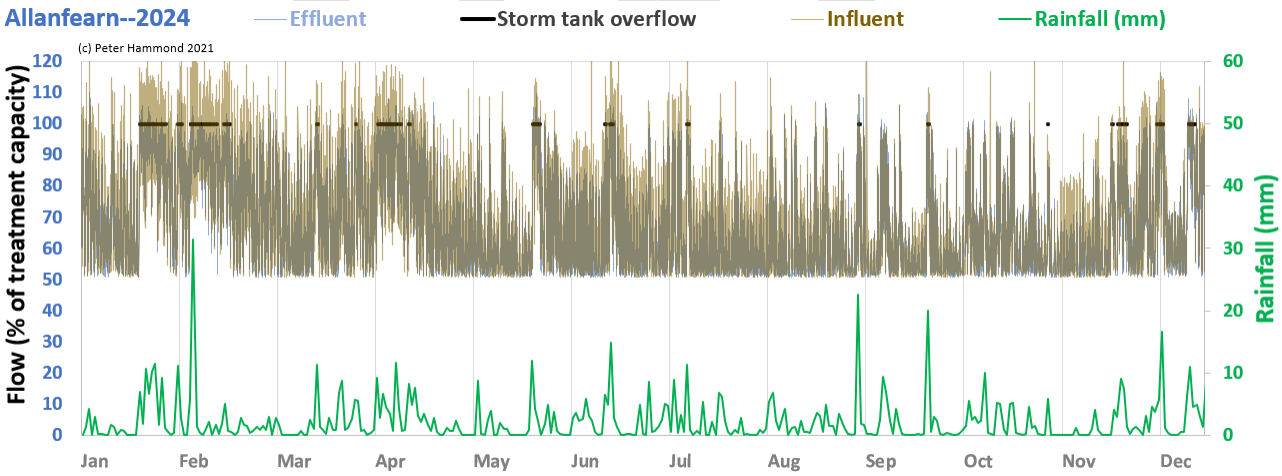


Figure ?: annual 2024 overview chart for Allanfearn STW

WASP's analysis suggests there were at least 4 days in 2024 when Allanfearn STW discharged untreated sewage "early" and hence illegally.

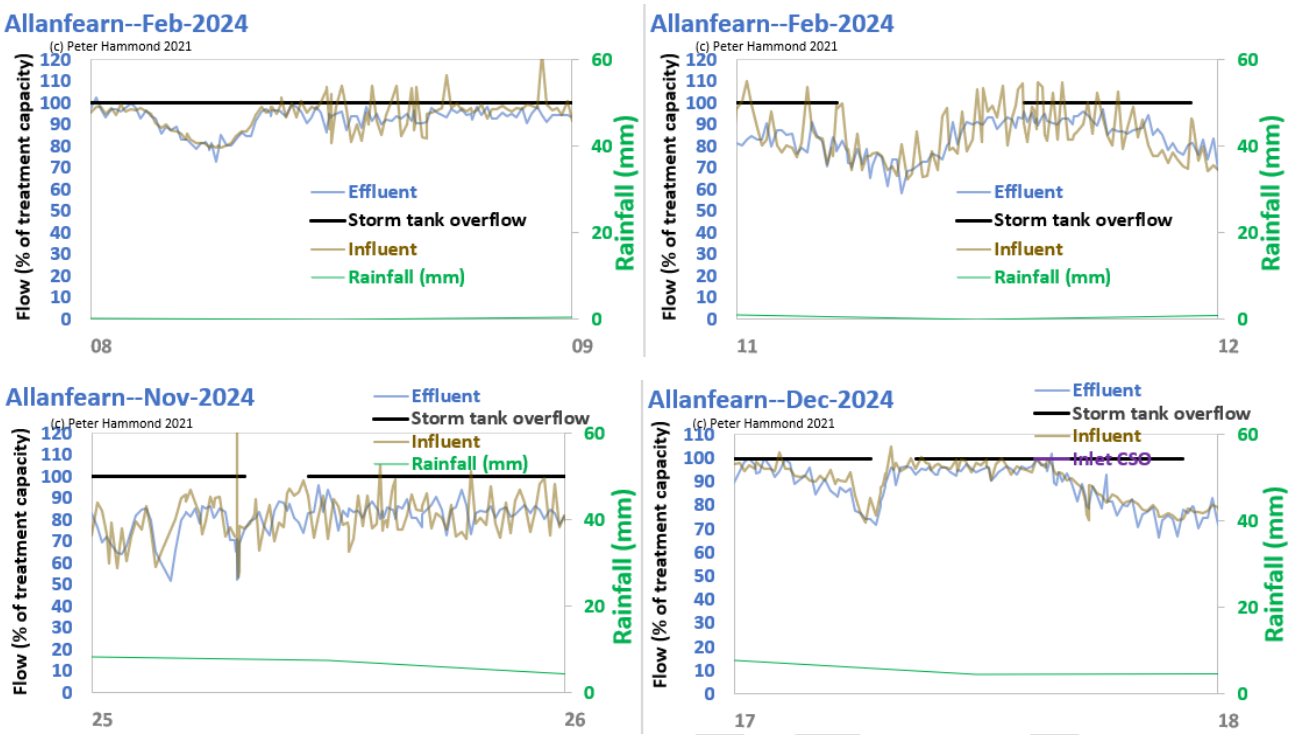


Figure ?: 4 days with illegal "early" spills at Allanfearn STW in 2024 (Feb 8,11; Nov 25; Dec 17)

3.5.2 Fort William

Currently no flow data from SEPA or Scottish Water.
Was operated by Veolia/Catchment Ltd until 2022 and now by Scottish Water.

3.6 Fraserburgh, Nigg, Persley and Peterhead

Kelda Water Services (Grampian) Ltd had a 28 year design, build, finance and operate contract with Sottish Water to operate and maintain four wastewater treatment plants serving the north east of Scotland; two sites in Aberdeen (Nigg and Persley) and two sites to the north (Peterhead and Fraserburgh).[7] Operator was Scottish Water Services (Grampian) Ltd and from 2022 has been operated by Scottish Water.

Kelda Water Services (Grampian) Ltd	09 Apr 2010 - 24 Dec 2018
Grampian Waste Water Services Ltd	05 Sep 2003 - 09 Apr 2010
Grampian Wastewater Services Ltd	12 Apr 2000 - 05 Sep 2003

FOI F0199310 to SEPA on 30/03/2025 for licence, flow, spill and operator data.

Currently no flow data from SEPA or Scottish Water.

3.6.1 Fraserburgh
3.6.2 Nigg EIR sent to Scottish Water
3.6.3 Persley
3.6.4 Peterhead

[7] www.WaterProjectsOnline.com Wastewater

3.7 Dalmuir (PFI until 2026)

FOI F0199226 to SEPA on 10/05/2025 for Blackburn
We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information.

Only TDV and spill data

3.8 Blackburn, East Calder, Edinburgh, Newbridge & Whitburn (all PFI until 2029)

FOI F0199140 to SEPA on 27/04/2025 for all but Blackburn (separately requested).
FOI F0199226 to SPEA on 10/05/2025 for Blackburn
We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information.

3.9 Hatton (PFI until 2029)

FOI F0199140 to SEPA on 27/04/2025.
We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information

3.10 Banff, Moray East, Moray West (all PFI until 2031)

FOI F0199140 to SEPA on 27/04/2025 for Banff.
FOI F0199226 to SPEA on 10/05/2025 for Dalmuir, Moray East and Moray West.
We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information.

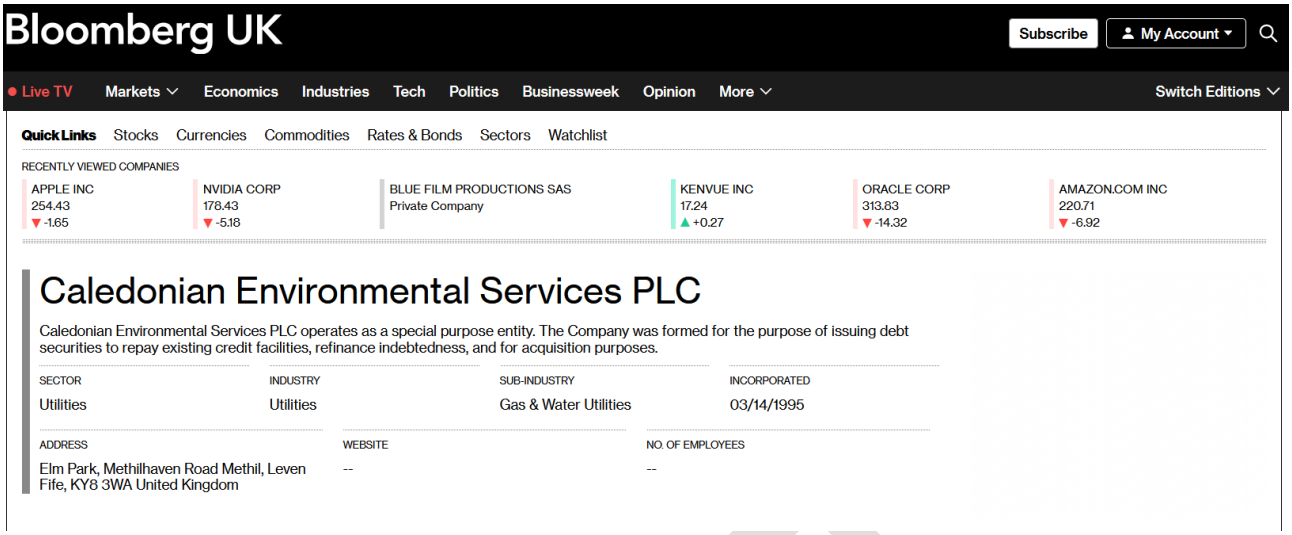
3.11 Inverclyde, Meadowhead and Stevenston (all PFI until 2032)

FOI F0199140 to SEPA on 27/04/2025.
We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information

3.12 Levenmouth (PFI until 2040)

Caledonian Environmental Levenmouth Treatment Services Limited (CELTS) operates Levenmouth STW and is a subsidiary of Northumbrian Water.

FOI F0199226 to SPEA on 10/05/2025 for Levenmouth.
We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information.



4 WASP's experience of generic FOI requests to SEPA and Scottish Water

Two further FOI requests to SEPA for detailed sewage treatment data recorded at 15-min intervals or finer resolution for 14 STWs received the following reply:

> *We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information.* **SEPA** **F0199140** 27/04/2025 **F0199226** 10/05/2025

Rather than keep asking SEPA for 15-min sewage treatment data for specific STWs and be sent the same frustrating reply, WASP decided to ask SEPA for a list of STWs where it did hold such data. The reply was

> *SEPA do not hold any 15 minute data, or shorter time interval, as it is not a licence requirement. However, in some instances, it is a licence requirement for Scottish Water to record this data but not report it. We recommend you contact Scottish Water for this information* **SEPA F0199383** 04/06/2025:

SEPA has only required STW operators to report sewage treatment data annually as a single number, the average daily value over the year. The EA and NRW typically require an average for each day of the year to be recorded but require the recording of sewage flow at 15-min (or finer) intervals.

Moreover, whereas the EA and NRW expect such data to be recorded for all STWs and SPSs, SEPA requires such data to be recorded for a minority and of those to be reported for an even smaller subset. In addition, SEPA allows some STW data to be reported every 5 years, although this has been changing since 2024. Clearly, compared to its English and Welsh counterpart, SEPA has not been keeping a tight rein on regulating sewage treatment.

In order to check compliance of STWs and SPSs against permit conditions relating to spilling on dry days or while maintaining treatment at an STW or passing forward sufficient sewage at an SPS, it is essential to have finer granular data than SEPA routinely appears to possess. SEPA appears to rely on Scottish Water and/or contracted PFI operators to self-regulate.

APPENDIX A FOIs submitted to SEPA by WASP and anonymous requesters

WASP's analysis has relied on SEPA's answers to the following FOIs, some by WASP but others by anonymous requesters. The results of all of these FOIs can be found on SEPA's website (https://www2.sepa.org.uk/disclosurelog/

FOI ID	Request		Query/data request
F0195779	WASP		List of STWs required to record and/or report sewage flow and spill events; SEPA's use of such data to check compliance for an example STW: Dalmarnock.
F0195958	Anon		Query about "dry" spilling and spill data hels by SEPA.
F0195963	Anon		List of all sewage outflows in Scotland.
F0196272	Anon		List of private sewage treatment systems in Scotland.
F0196274	Anon		PFI operators operating part of sewage overflow system on behalf of Scottish Water.
F0197873	Anon		2023 sewage spill data for PFI operated assets.
F0198628	Anon		2024 sewage spill data submitted by Scottish Water and PFI operators.
F0198854	WASP		licences, registration and exemption documents for Allanfearn, Foyers and Invergordon STWs.
F0198983	WASP		FFT/PFF for Longman SPS, Allanfearn Fort William Fraserburgh Nigg Persley Peterhead STWs.
F0198986	WASP		15-min flow data for: 12 DWF overflow at Longman SPS for Allanfearn, Allanfearn SSSO, Fort William CSO, EO & SSSO; Fraserburgh CSO & EO; Nigg Girdleness CSO & EO, St Fitticks
F0199310	WASP		Formal review of decision on F0198986.
F0199036	WASP		List of STWs and population equivalent they serve.
F0199140	WASP		Flow and spill data for Seafield (Edinburgh); Newbridge; Whitburn; East Calder; Inverclyde; Banff/Macduff; Hatton; Stevenston; Meadowhead
F0199226	WASP		Flow and spill data for Blackburn Moray East Dalmuir Levenmouth Moray West STWs
F0199383	WASP		STWs & SPSs for which SEPA has sewage flow/spill data and subset checked for compliance.
F0199541	WASP		Licences for Alloa, Bafron, Biggar, Cupar, Dalderse STWs

F0195779

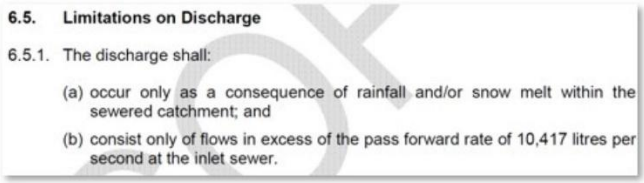
31/07/2023 WASP -> SEPA

WASP sent FOI requesting:

a) A list of STWs in Scotland which have licence requirements for permanent flow or overflow event duration monitoring;

b) The names of the subset of those in a) above which require annual reporting of flows, pass forward flows and/or overflow events;

c) An explanation of how SEPA has used rainfall, treatment flow and EDM spill data at Dalmarnock STW since 1/1/2018 to determine compliance with the following conditions in its licence to discharge - as well as the results of that compliance checking;



6.5. Limitations on Discharge

6.5.1. The discharge shall:

(a) occur only as a consequence of rainfall and/or snow melt within the sewered catchment; and

(b) consist only of flows in excess of the pass forward rate of 10,417 litres per second at the inlet sewer.

d) All pass forward flow, final effluent flow data provided to SEPA by Scottish Water for Dalmarnock STW from 1/1/2018 to the present.

30/08/2023 SEPA -> WASP

I'm sorry that we have not issued you with a response by the statutory deadline 29/08/2023.

07/09/2023 WASP -> SEPA

WASP sent reminder

14/09/2023 WASP -> SEPA

WASP sent a second reminder

14/09/2023 SEPA -> WASP

Response

a) *We can advise that monitoring information is held within each Sewage Treatment Works (STW) licence and is not on a central database. We cannot answer this monitoring question without looking at licence paperwork for all STWs. There are 259 STWs in Scotland; with so many sites, we cannot provide this information nationally.*

b) to d) SEPA provided spreadsheets for each year 2018 to 2022 containing 3 tabs of data not just for Dalmarnock STW but also for other STWs, network CSOs and pumping stations (SPSs): flow (influent/effluent); mean/st.dev. for daily flow; DWF; compliance with licence pass forward flow (PFF) at each weir; overflow spill start/stop time; duration, and sometimes volume

WASP response

- WASP is very surprised that a national body does not have a comprehensive digital record of reporting obligations of the businesses it regulates.
- Less than a third of the 259 STWs regulated by SEPA have been required to report sewage treatment flow and spills of untreated sewage. At STWs where flow is reported, SEPA receives a single figure (average daily sewage influent or effluent or both) each year. In contrast, in England and Wales, total daily flow is reported for each day of the year – 365 numbers per year.
- SEPA is not routinely provided with sewage flow and spill event data that enables permit compliance for dry and early spilling at STWs and SPSs to be checked as part of its regulatory role.
- Flow data for each STW listed is report annually, with the exception of Balfron STW which reports every 5 years. More comprehensive annual reporting of STWs was planned for introduction in 2024.

Assets reporting to SEPA	**2018**	**2019**	**2020**	**2021**	**2022***
% of 259 STWs reporting average daily sewage flow	31.3%	31.3%	31.3%	31.3%	32.4%
% of 3,674 storm overflows reporting spill events[8]	3.9%	3.8%	3.8%	3.8%	4.2%
number of PFF conditions on overflows reported on	39	38	38	38	39

*in 2022, following the expiration of PFI contracts, 6 assets were returned to Scottish Water operation.

F0195958 (not by WASP)

06/09/2023
?? -> SEPA

Whether the practice of "dry spilling" (as described in this article: https://www.bbc.co.uk/newsround/66716337) takes place in Scotland?
If so, please tell me for each year since 2017/18,
1. the number of spills which took place on dry days
2. for how many hours these took place
3. the volume of sewage released
4. whether this has triggered any enforcement action from regulators

08/11/2023
SEPA -> ??

Dry spills from sewage overflows do take place in Scotland. Evidence for this can be seen on Scottish Water's website, where one condition for an overflow being classified as 'unsatisfactory' is if it spills in dry weather. Regulation 6(1)(b) applies. Please visit the following webpage for more information: www.scottishwater.co.uk/Your-Home/Your-Waste-Water/Prioritisation-of-Sewer-Overflows-in-Scotland

1. the number of spills which took place on dry days

SEPA sewage discharge licences have not historically required overflow operators to record the reasons for overflow spills in their data returns. Therefore, we do not have records which confirm which spills took place on dry days.

Spill Data

While we do hold data on spills, we do not hold data on *all* spills. For context, only around four percent of overflows in Scotland are both monitored and required to report the data to SEPA. Therefore, SEPA holds information only on these overflows and not on the remainder.

[8] https://environmentalstandards.scot/our-work/our-analytical-work/storm-overflows-an-assessment-of-spills-their-impact-on-the-water-environment-and-the-effectiveness-of-legislation-and-policy/

	The number of spills from Scottish Water-operated overflows for 2018-2022 is publicly available on their website and is the same data that SEPA hol **Advice and Assistance** While we cannot confirm which spills took place on dry days, we do record rainfall at a network of 267 rain gauges across Scotland. A map of those gauges can be found here: www2.sepa.org.uk/rainfall/ Data provided above showing the location and time of spills could be combined with data from the nearest rain gauges to get an indication of what the weather was like on each occasion. This could be done by logging the nearest stations and putting in a new information request to SEPA for daily rainfall data for the chosen time period

F0195963 (not by WASP)

08/09/2023 ?? -> SEPA	Request for A list of **all sewage outflows in Scotland** as of 8th September 2023
21/09/2023 SEPA -> ??	*SEPA's Public Register remains impacted by the cyber-attack and we are rebuilding in phases…* *This information is held by SEPA but only on each licence and not on a central database. As detailed on the attached list, there are 759 currently granted overflows. Therefore the information is not held in a searchable format or single location that a reasonable person would be able to easily extract and process for release into the public domain. Please let us know if you would like information on particular licences from the list.*

F0196272 (not by WASP)

08/11/2023 ?? -> SEPA	How many **private sewage treatment systems are there in Scotland**?
07/12/2023 SEPA -> ??	*Please find attached a list of private sewage discharges in Scotland, this contains 82,145 licences in total* .. SEPA's Public Register remains impacted by the cyber-attack and we are rebuilding in phases. We are providing you with the best information we currently have available but cannot confirm it is complete or accurate. Any use you make of this information will be at your own risk.

F0196274 (not by WASP)

08/11/2023 ?? -> SEPA	Further to the request below, please could you tell me **how many PFI operators operate parts of the sewage overflow system on behalf of Scottish Water** and how many overflows are under their operation.
06/12/2023 SEPA -> ??	*SEPA do not hold this information. We recommend that you contact Scottish Water for this information. Regulation 10(4)(a) and 14(1)(b) of the EIRs apply.* ***Advice and Assistance*** *You can view our response to request F0195951 on our Disclosure Log:* *This request is also regarding Private Finance Initiative (PFI)-operated overflows. It has information on the overflows required to report their data to SEPA. However, not all overflows have to report their data to SEPA. Therefore, this response does not answer your request but may be of interest.*

F0197873 (not by WASP)

04/02/2025 ?? -> SEPA	2023 sewage overflow data for all sewerage assets managed by PFI companies
11/02/2025 SEPA -> ??	We only hold data for overflows which are required by the terms of their licence to report data to SEPA. Not all overflows are monitored and required to do this. Not all overflows are required to report spill frequency, volume and duration. We do not have a list of overflows or sites where reporting is not required.

F0198628 (not by WASP)

04/02/2025 ?? -> SEPA	I would be grateful if you could comply with the following request and provide: 1. 2024 sewage overflow data submitted by Scottish Water to SEPA 2. 2024 sewage overflow data for all sewerage assets managed by PFI companies
11/02/2025 SEPA -> ??	15 files provided

F0198854

07/03/2025 WASP -> SEPA	Please provide licences, registration and exemption documents as listed below that were extracted from your Public Register: Allanfearn, Foyers and Invergordon
28/05/2025 SEPA -> WASP	17 files provided

F0198983

30/03/2025 WASP -> SEPA	WASP requested: ... flow rates required for pass forward flow and/or flow to full treatment required during permitted operation of overflows at the following WWTWs and SPS. In other words, I am asking for the licence/permit requirement for storm overflow rate or pass forward flow minimum when spilling : Longman SPS Allanfearn Fort William Fraserburgh Nigg Persley Peterhead WWTWs
28/04/2025 SEPA -> WASP	

Works	**Licence No.**	**PFF**	**FFT**
Longman SPS	CAR/L/1026128	No details	No details
Allanfearn WWTW	CAR/L/1001896	>12DWF CSO 3254 l/s; 3-12DWF CSO 740l/s; SSSO 570l/s; SSSO 3-6DWF 400l/s	400 l/s
Fort William WWTW	CAR/L/1001897	CSO 172l/s; SSSO 95l/s	95 l/s
Fraserburgh WWTW	CAR/L/1004118	CSO 183l/s	183 l/s
Nigg WWTW	CAR/L/1003845	Girdleness CSO 6300l/s; St Fitticks Rd CSO 1500l/s	1500 l/s
Persley WWTW	CAR/L/1001727	SSSO 270l/s	270 l/s
Peterhead WWTW	CAR/L/1008698	Short Sea Outfall CSO 725l/s 3DWF Long Sea Outfall CSO 265l/s	265 l/s

F0198986

30/03/2025 WASP -> SEPA	WASP requested: ... information and data for the following assets: 12 DWF overflow at Longman SPS for Allanfearn, Allanfearn SSSO Fort William CSO, EO & SSSO; Fraserburgh CSO & EO; Nigg Girdleness CSO & EO, St Fitticks CSO ; Persley SSSO ; Peterhead Short sea outfall; CSO & 3DWF Long Sea Outfall. 7 forms of data requested.
21/05/2025 SEPA -> WASP	SEPA provided 38 licences; All sewage monitoring data required to be reported to SEPA is being provided. This contains inlet flow, flow to treatment/ pass forward flow, effluent flow, start-stop times and spill volumes, where available; but no effluent quality data as *Scottish Water assess their own sites. We advise you to contact them for any information they may hold*.
22/05/2025 WASP-> SEPA	WASP reply: one part of my request has been misinterpreted. I asked for *All flow to treatment, pass forward flow, inlet flow and final effluent flow data that is relevant to the operation of each WWTW or SPS at/for which these overflows are in installed*; and have been provided with an **annual** figure for these. Perhaps in Scotland that is the usual interpretation of sewage flow data. I actually was asking for the flow data that would be used to check compliance against license conditions. This would usually be recorded at 15-min or smaller intervals. Could I please be supplied with this flow data at the smallest interval at which it is measured for each of the years requested.
23/05/2025	SEPA wrongly interpreted the reply as a request for a formal review with a new ID F0199310

F0199310

16/06/2025 SEPA -> WASP	*Formal Review and Updated Response to Original Request issued. It was unsatisfactory on the following points: Question 3 asked for flow data "relevant to the operation" of the sewage assets. We provided all relevant data held by SEPA. However, we should have advised that detailed flow data is recorded by Scottish Water for self-monitoring purposes and that it could be requested from them.*

F0199036

08/04/2025 WASP -> SEPA	Please provide a complete list of all Scottish Water sewage treatment works and the population equivalent they serve. Please also indicate which of these STWs have been taken over from PFI operators giving the previous operator and the date when taken over.
07/05/2025 SEPA -> WASP	*We have provided a list of all Scottish Water sewage treatment works (STW). Please refer to attached:* ***F0199036 - Scottish Water STW*** *We do not hold a central dataset which gives the population equivalent (PE) that each asset serves. Regulation 10(4)(a) of the EIRs applies.* *Transfers to Scottish Water* *The table below shows which assets have been taken over by Scottish Water from private finance initiatives (PFI) since 01 January 2021.* *Persley ; Allanfearn; Caol Spit/Fort William; Nigg/Aberdeen; Fraserburgh; and Peterhead*

F0199140

27/04/2025 WASP -> SEPA	… information and data for 9 STWs: Seafield (Edinburgh); Newbridge; Whitburn; East Calder; Inverclyde; Banff/Macduff; Hatton; Stevenston; Meadowhead for 1/1/2020 to present a) All relevant licences you have and employ for evaluating their correct operation and for checking licence compliance; b) The names of the operators and or owners during this period; c) All 15-min or similar flow to treatment, pass forward flow, inlet flow and final effluent flow data that is relevant to the operation and compliance checking of each WWTW; d) All start-stop times of individual spills recorded for each overflow; e) All spill volumes where recorded. f) Any continuous monitoring of final effluent using sondes. g) Any spot sampling and testing results for final effluent quality monitoring.
27/05/2025 SEPA -> WASP	a & b) Please find attached copy licences and variations. The names of the operators and/or owners during this period is contained within the licences. c to e) We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information. All sewage monitoring data required to be reported to SEPA is being provided. This contains inlet flow, flow to treatment/ pass forward flow, effluent flow, start-stop times and spill volumes, where available. The spreadsheets contain data for more assets than have been asked for in this request, but these can be filtered to find data for the relevant ones. There is more than one spreadsheet for each year. This is because sewage assets are not soley operated by Scottish Water but also by Private Finance Initiatives (PFI), and operational responsibility may have changed between 2020 and 2024.

F0199226

10/05/2025 WASP -> SEPA	Could you please provide data for these 5 wastewater treatment works? BLACKBURN WWTW MORAY EAST WWTW DALMUIR WWTW LEVENMOUTH WWTW MORAY WEST WWTW The data requested , for the period 1/1/2020 to the present, are as follows 1. All relevant licences you have and employ for evaluating their correct operation and for checking licence compliance; 2. The names of the operators and or owners during this period; 3. All 15-min or similar flow to treatment, pass forward flow, inlet flow and final effluent flow data especially those flows relevant to compliance checking of each WWTW; 4. All start-stop times of individual spills recorded for each overflow; 5. All spill volumes where recorded. 6. Any continuous monitoring of final effluent using sondes. 7. Any spot sampling and testing results for final effluent quality monitoring. Please label flow data appropriately as final effluent, flow to full treatment, inlet flow etc so that permit/license conditions can be checked.
27/05/2025 SEPA -> WASP	1-2 Please find attached copy licences and variations 3-5 We do not hold 15 minute data. Regulation 10(4)(a) applies. We recommend you contact Scottish Water for this information. 6 Any information regarding the method used to monitor final effluent will be contained within the licences provided in Question 1. 7 There is no available effluent quality data for any of the requested Waste Water Treatment Works (WWTW's) within the past 4 years

F0199383

04/06/2025 WASP -> SEPA	I would be very grateful if you could provide the following information for the period 1/1/2020 to the present: a) A list of all STWs for which you have available inlet flow or flow to treatment or final effluent flow at a resolution of 15 min or shorter time interval; b) A list of all sewage pumping stations (SPSs) for which you have available passed forward flow at a resolution of 15 min or shorter time interval; c) A list of all STWs and SPSs for which you have checked compliance of untreated sewage spills against license/permit requirements for continued FFT or PFF; d) The results of the checks in c) above.
27/05/2025 SEPA -> WASP	a – b SEPA do not hold any 15 minute data, or shorter time interval, as it is not a licence requirement. Regulation 10(4)(a) of the EIRs applies. However, in some instances, it is a licence requirement for Scottish Water to record this data but not report it. We recommend you contact Scottish Water for this information. c – d Due to COVID-19 and the criminal cyber-attack against SEPA in December 2020, we do not hold compliance ratings for regulated sites from January 2020 to June 2022. Regulation 10(4)(a) applies. From June 2022 to April 2023 an interim regulatory system was introduced, but this did not record an overall compliance rating for those sites. From 1 April 2023, a new system was brought into use based on a new compliance structure. This is a three-tier system. Sites are assessed as 'Compliant', 'Non-compliant' or 'Major non-compliant'. The sites inspected between 2022, and April 2023 had this compliance information applied retrospectively. • it was not possible to clearly associate these records with an untreated sewage spill • it is not possible to identify how many of these inspections included a compliance check on untreated spills against licence requirements for continued flow to full treatment or passed forward flow. • The term 'Draft Major non-compliant/compliance' is currently used. Once the Environmental Performance Assessment Scheme (EPAS) Major non-compliance criteria launch later in the year they will cease to be draft

CAR/L/1001407	Muckhart STW	14/10/2024	Draft Major non-compliance recorded
CAR/L/1001552	Perth STW	25/02/2025	Draft Major non-compliance recorded
CAR/L/1001674	Nairn STW	26/02/2025	Draft Major non-compliance recorded
CAR/L/1003303	Shieldhall STW	06/10/2022	Compliance issue identified
CAR/L/1003303	Shieldhall STW	13/03/2025	Draft Major non-compliance recorded

CAR/L/1003363	Daldowie WWTW	07/03/2025	Draft Major non-compliance recorded
CAR/L/1003363	Daldowie WWTW	12/05/2025	Draft Major non-compliance recorded
CAR/L/1003399	Ashgill STW	05/10/2022	Compliance issue identified
CAR/L/1003401	Joppa STW	21/05/2025	Compliant
CAR/L/1003413	Dalmarnock STW	18/11/2022	Compliance issue identified
CAR/L/1003413	Dalmarnock STW	17/10/2023	Compliance issue identified
CAR/L/1003423	Shotts STW	07/10/2022	Draft Major non-compliance recorded
CAR/L/1003423	Shotts STW	15/11/2023	Non-compliance identified
CAR/L/1003431	Bothwellbank WWTW	04/02/2022	Compliance issue identified
CAR/L/1003433	Strathblane WWTW	27/06/2025	Draft Major non-compliance recorded
CAR/L/1008725	Millport STW	01/06/2022	Compliance issue identified
CAR/L/1008817	Erskine STW	20/03/2023	Non-compliance recorded
CAR/L/1010460	Balfron WWTW	27/06/2025	Draft Major non-compliance recorded
CAR/L/1019750	Dervaig WWTW	12/04/2022	Compliance issue identified
CAR/L/1025911	Gorebridge WWTW	24/01/2023	Compliant
CAR/L/1026086	Edinburgh Sewerage Network (Elginhaugh CSO)	28/04/2025	Non-compliance recorded
CAR/L/1026300	Kilmory Sewerage Network	12/04/2022	Compliance issue identified
CAR/L/1087703	Cromarty Sewerage Network	15/01/2024	Draft Major non-compliance recorded

Advice and assistance

Please see Table 2 below for the current compliance status of the sites listed in Table 1.

CAR/L/1003399	Ashgill STW	Compliant
CAR/L/1003401	Joppa STW	Compliant
CAR/L/1003413	Dalmarnock STW	Compliant
CAR/L/1003423	Shotts STW	Non-compliant
CAR/L/1003431	Bothwellbank WWTW	Compliant
CAR/L/1003433	Strathblane WWTW	Draft Major non-compliant
CAR/L/1008725	Millport STW	Compliant
CAR/L/1008817	Erskine STW	Compliant
CAR/L/1010460	Balfron WWTW	Draft Major non-compliant
CAR/L/1019750	Dervaig WWTW	Draft Major non-compliant
CAR/L/1025911	Gorebridge WWTW	Draft Major non-compliant
CAR/L/1026086	Edinburgh Sewerage Network (Elginhaugh CSO)	Non-compliant
CAR/L/1026300	Kilmory Sewerage Network	Compliant
CAR/L/1087703	Cromarty Sewerage Network	Compliant

F0199541

30/06/2025 WASP -> SEPA	*I would like copies of discharge licenses for the list of STWs below [...]* *Alloa, Bafron, Biggar, Cupar, Dalderse* *need to know the pass forward flow rates before spills of untreated sewage are permitted at inlet weirs or storm tank diversion points in the treatment process. Please provide copies of relevant licenses to discharge that contain such information valid for the period 1/1/2020 to the present.*
30/07/2025 SEPA -> WASP	Please see the attached response to your request F0199383.

FOIs to Scottish Water

23/4/2025 to 24/6/2025 Alloa, Balfron, Biggar, Cupar, Dalderse

23/04/2025 10:30 WASP -> SW	FOI request for 4 STWs listed in a table with licence identifier **1.** All inlet sewage inlet flow, flow to full treatment, flow passed forward and final effluent as appropriate for each STW at a granularity of 15-min intervals or smaller interval again as appropriate for each STW; **2.** All SPOT testing and/or sonde based monitoring at "continuous"/15-min granularity of final effluent for parameters such as Ammoniacal Nitrogen, BOD, Suspended Solids or as required in the SEPA licenses identified in the table above. **3.** The minimum flow to full treatment when spilling and the storm tank capacity where appropriate for each STW.
22/05/2025 16:58 SW -> WASP	**Response to 1:** *We are still in the process of extracting the requested data in response to this part of your request…* **Response to 2:** … *we do not hold all the information in the format you have requested.* **…** *Scottish Water holds information pertaining to the compliance information but this is not held in 15 minute intervals. We can however, provide the information held on the Operator Self-Monitoring (OSM) samples taken at the 5 sites outlined within your request since 01/01/20… refer to the document attached …* **Response to 3: …** *we do not hold all the information in the format you have requested … Scottish Water do not hold the minimum flow to full treatment when spilling and the storm tank capacity … for each sewage treatment works (STW). … refer to the table below for the storm storage licence capacity requirements …*
30/05/2025 12:09 SW -> WASP	**Response to 1:** … *we do not hold all of the information you have requested, in a readily available format required …* all of these Wastewater Treatment Works (WwTW) require influent and/or *effluent flow statistics reporting. However,* ***only Balfron requires Pass Forward Flow (PFF) reporting***