501 days with illegal discharges of untreated sewage by United Utilities to Lake Windermere and nearby watercourses 2018-2023

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Summary

This report updates a previous WASP study[1] and an earlier version with more recent data and analysis concerning Lake Windermere and nearby watercourses. It deals with discharges of untreated sewage from 4 sewage treatments works (STWs) and 3 sewage pumping stations (SPSs) especially when they are not treating at full capacity or are passing forward insufficient flow, generally referred to as "early" spilling. Such discharges breach permits issued by the Environment Agency (EA) and hence are illegal[2]. In this report, "dry" spilling (discharge of untreated sewage during no or low rainfall) is not addressed. Due to data being withheld by United Utilities (UU) or by the EA, only 29 of 42 requested annual data series have been analysed.

A total of 501 days were identified with early spills. The detailed findings for each STW and SPS and for each year are summarised in the table below (greyed cells where data were withheld):

WASP's analysis has identified at least 501 days with illegal early spills of untreated sewage by United Utilities to Lake Windermere and nearby watercourses between 2018 and 2023. Only 69% of requested data was provided for analysis.

	2018	2019	2020	2021	2022	2023	
Ambleside STW	27	16	11	15	19	2	90
Coniston STW	14	16		3			33
Elterwater SPS				7	2		9
Glebe SPS				11	6	25	42
Grasmere STW				17	5	9	31
Hawkshead SPS	34	37	78	11	11	42	213
Near Sawrey STW	2	19	6	21	20	15	83
	77	88	95	85	63	93	**501**

Data Sources

WASP and Save Windermere submitted Environmental Information Regulation (EIR) requests to UU and the EA for treated and untreated sewage discharge data - sewage flow and Event Duration Monitor (EDM) spill detection This was for Ambleside, Coniston, Grasmere and Near Sawrey STWs as well as Glebe and Hawkshead SPSs.

Some of the requests were partially satisfied. In response to a request from WASP for all sewage spill data for all storm overflows for 2020 and 2021, UU refused, citing potential prejudice of EA and Ofwat investigations of Water and Sewerage Companies (WaSCs) started in late 2021. More recently, the EA provided data collected from UU as part of the same investigation and so enabled updates to earlier findings and new analyses. Recently, appeals by Save Windermere to the

[1] Sep 2022 WASP REVIEW OF UNPERMITTED SPILLS FROM SEWAGE TREATMENT WORKS – Part 3 EDM SUBMISSIONS
[2] "Any water companies in breach of their permits are acting illegally" https://www.ofwat.gov.uk/joint-ofwat-environment-agency-and-defra-announcement-november-2021/

Information Commissioner's Office (ICO) also resulted in further data being provided. Detailed analysis of 69% of the data requested (29 of 42 annual data series) is given below.

Ambleside STW

Ambleside STW serves a population equivalent of almost 5,000 and spills to the River Rothay which flows into Lake Windermere.

2018 Ambleside STW

The 1,201 summary spilling hours submitted for Ambleside STW by UU to the EA for 2018 agrees with the detailed EDM data provided by UU to WASP. Figure 1 shows the annual chart for detailed EDM, detailed sewage treatment and rainfall.

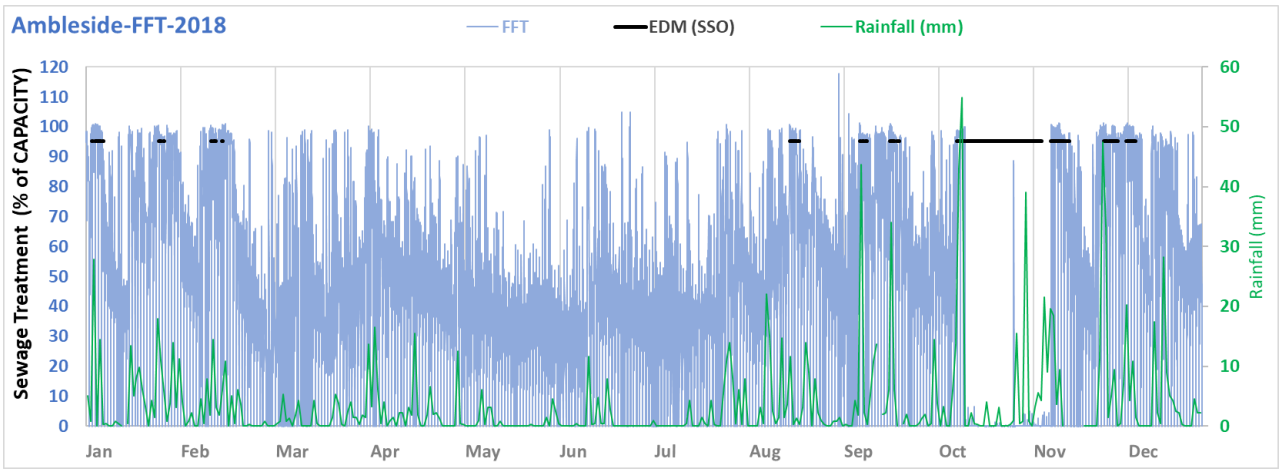

Figure 1: annual chart for detailed EDM, detailed treatment (FFT) and rainfall for Ambleside STW for 2018

There was extreme rainfall on October 14th 2018 (Fig. 1) after which the meter that records sewage treatment flow (FFT) either fails and produces no data or reflects a complete loss of sewage treatment between Oct 16th and Nov 11th. However, WASP also obtained separate total daily volume data (TDV) from UU for sewage passed into the treatment process at the works. This appears to confirm continued treatment during the gap (**Fig**. 2). Otherwise, such a gap would have corresponded to about 1.5 M litres of untreated sewage being discharged each day for 28 consecutive days. However, during much of the gap, the rate at which sewage was treated was not sustained at the capacity level prescribed in the EA permit for Ambleside STW even allowing for the 4.66% MCERTS meter error declared by United Utilities. Therefore, WASP believes that the works spilled early on 18 days between October 19th and November 8th.

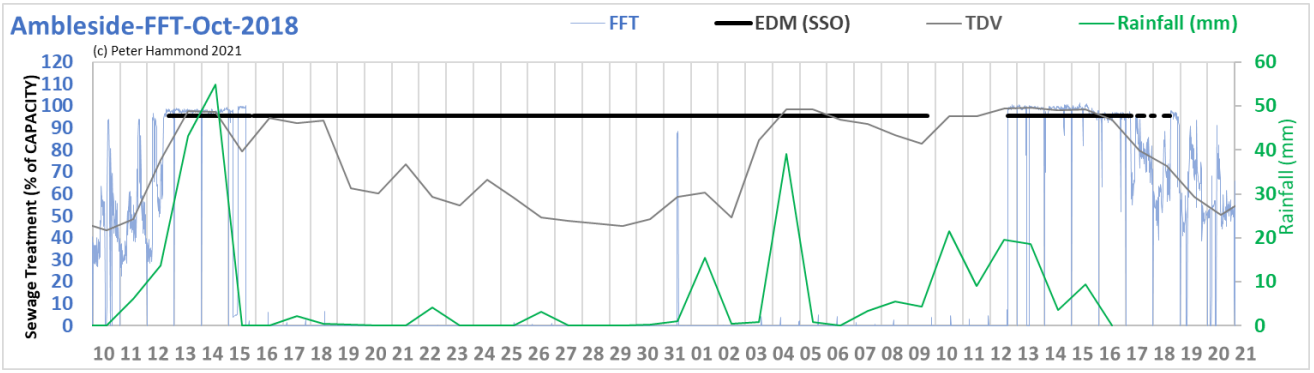

Figure 2: WASP's analysis suggests 18 days with early spills between Oct 19 and Nov 9

There were additional days in 2018 when, during a spill, the sewage flow passed into the treatment process (FFT) was not sustained above capacity (**Fig**. 3). WASP believes that early spills occurred on each of the 9 days Jan 6, 26; Aug 20-22; Sep 13, 23; Nov 17,18.

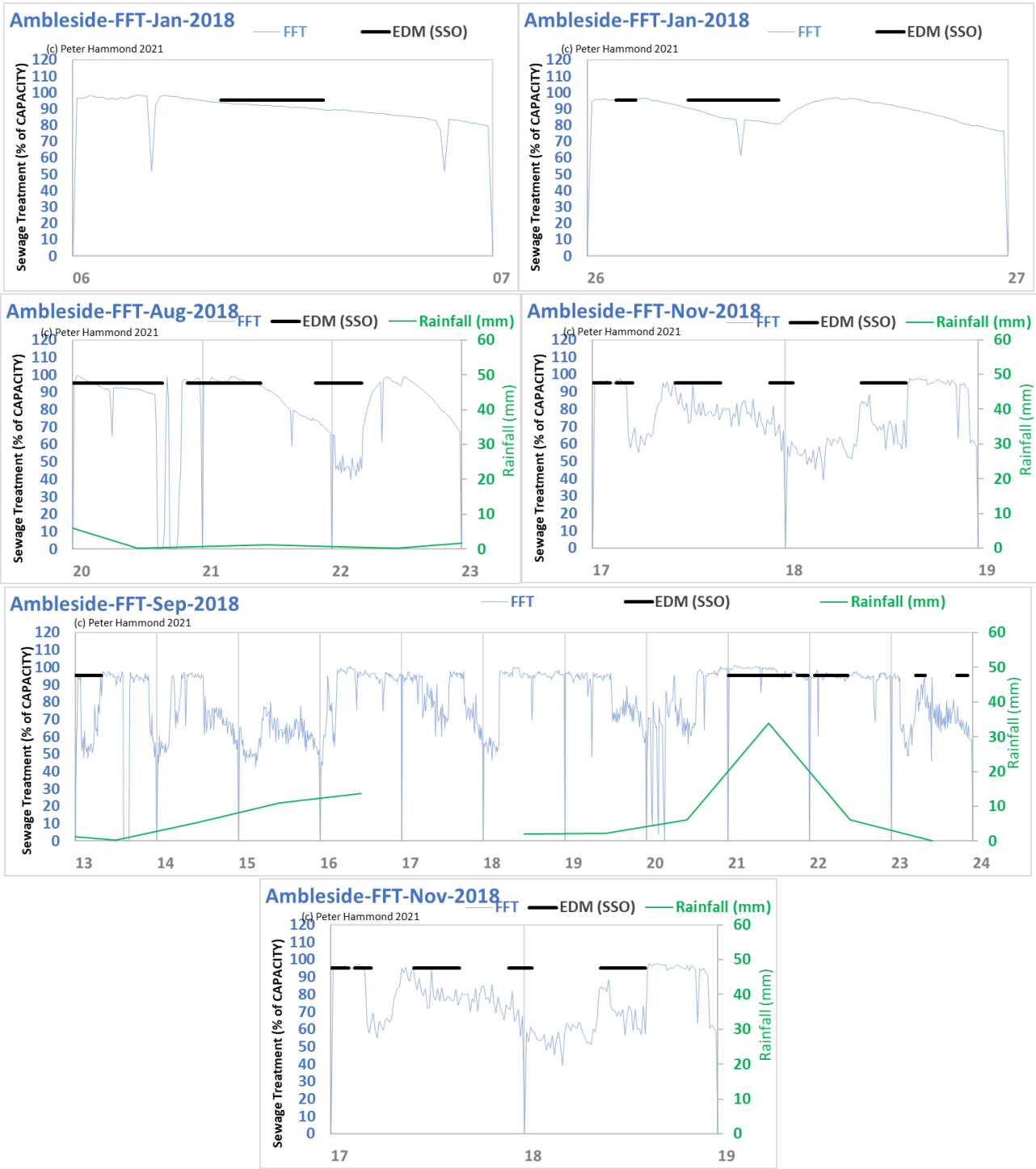

Figure 3: WASP's analysis suggests 14 days with early spills on Jan 6,26; Aug 20-22; Sep 13,23; Nov 17,18

2019 Ambleside STW

The 1,176 annual spilling hours reported for Ambleside STW by UU to the EA for 2019 agrees with detailed EDM and treatment data provided by UU to WASP. **Fig**. 4 shows the 2019 overview chart.

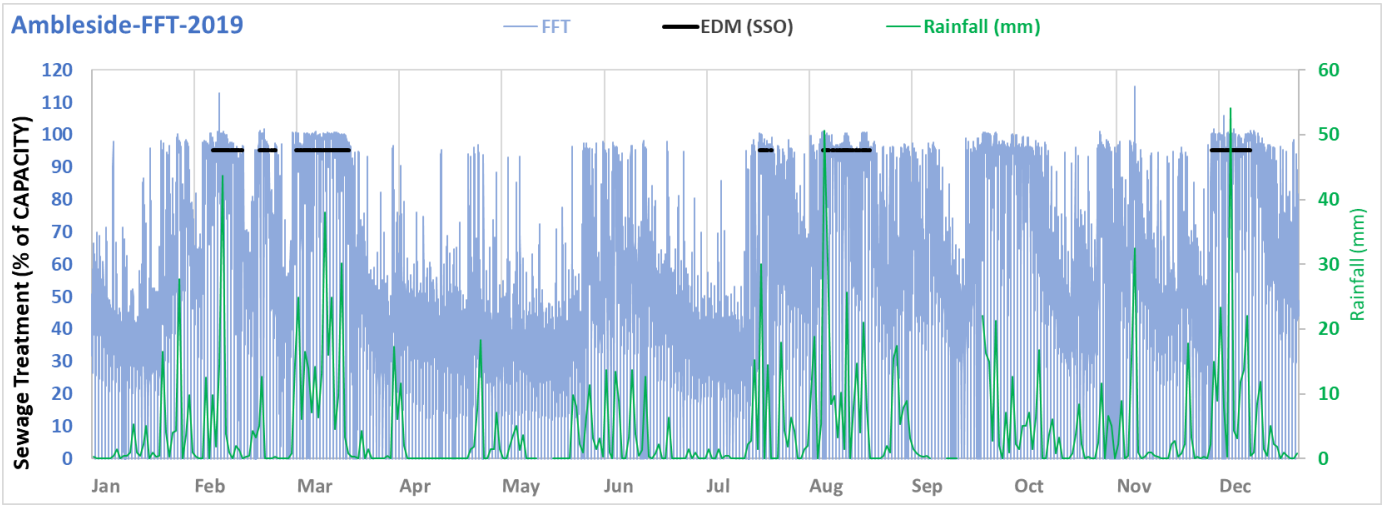

Figure 4: annual overview of treatment, EDM spill and rainfall data for Ambleside STW in 2019

Analysis suggests early spilling on Feb 12-15,23-25; Mar 18; Jul 23-25; Aug 16,19-21; Dec 9 (**Fig**. 5).

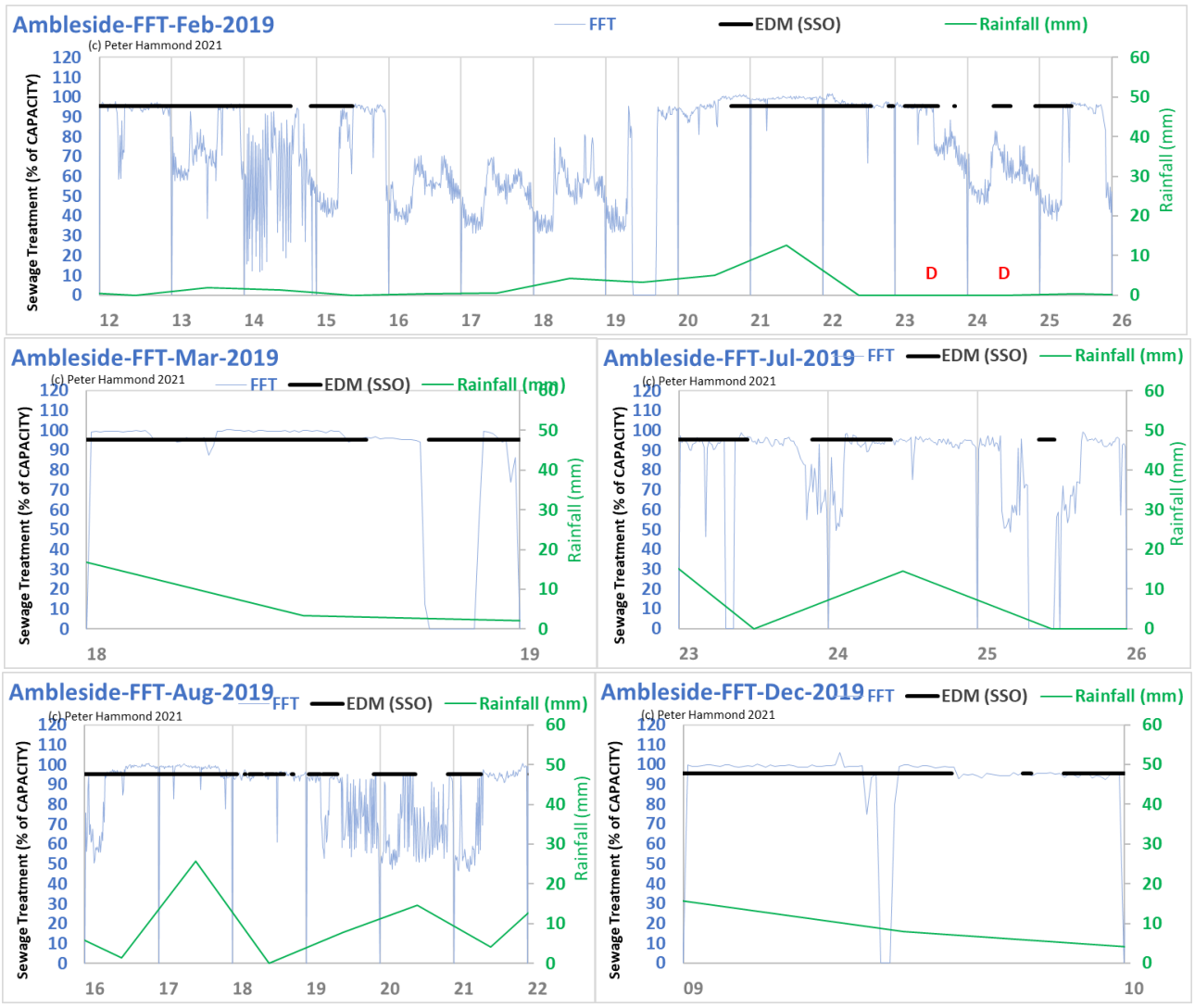

Figure 5: WASP's analysis suggests early spills from Ambleside STW on 16 days in 2019

2020 Ambleside STW

UU initially refused to provide WASP with detailed EDM and detailed sewage treatment data for 2020 for Ambleside STW, citing the investigation by the EA announced in November 2021. UU did

however provide total daily volume (TDV) sewage treatment data for 2020. Subsequently, after Save Windermere appealed to the Information Commissioner's Office (? REF), United Utilities was instructed to provide the data. The overview chart (**Fig**. 6) shows TDV and rainfall data for 2020. WASP has estimated the spills to be equivalent to 71 or so full days (1,704 hrs) which is reasonably consistent with the 1,719 hrs submitted by UU to the EA.

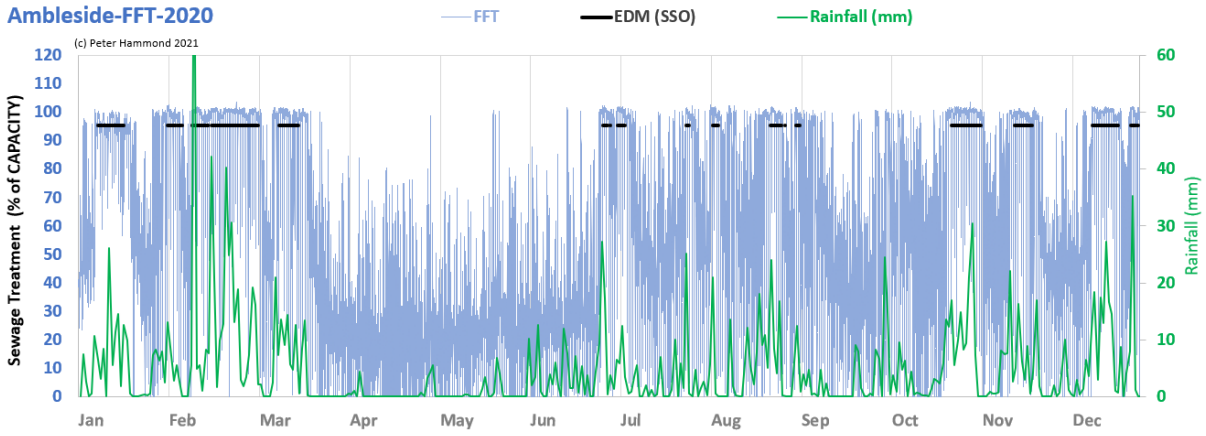

Figure 6: annual overview of rainfall and sewage flow to full treatment at Ambleside STW for 2020

WASP's analysis suggests at least 11 days involved "early" discharges of untreated sewage (**Fig**. 7).

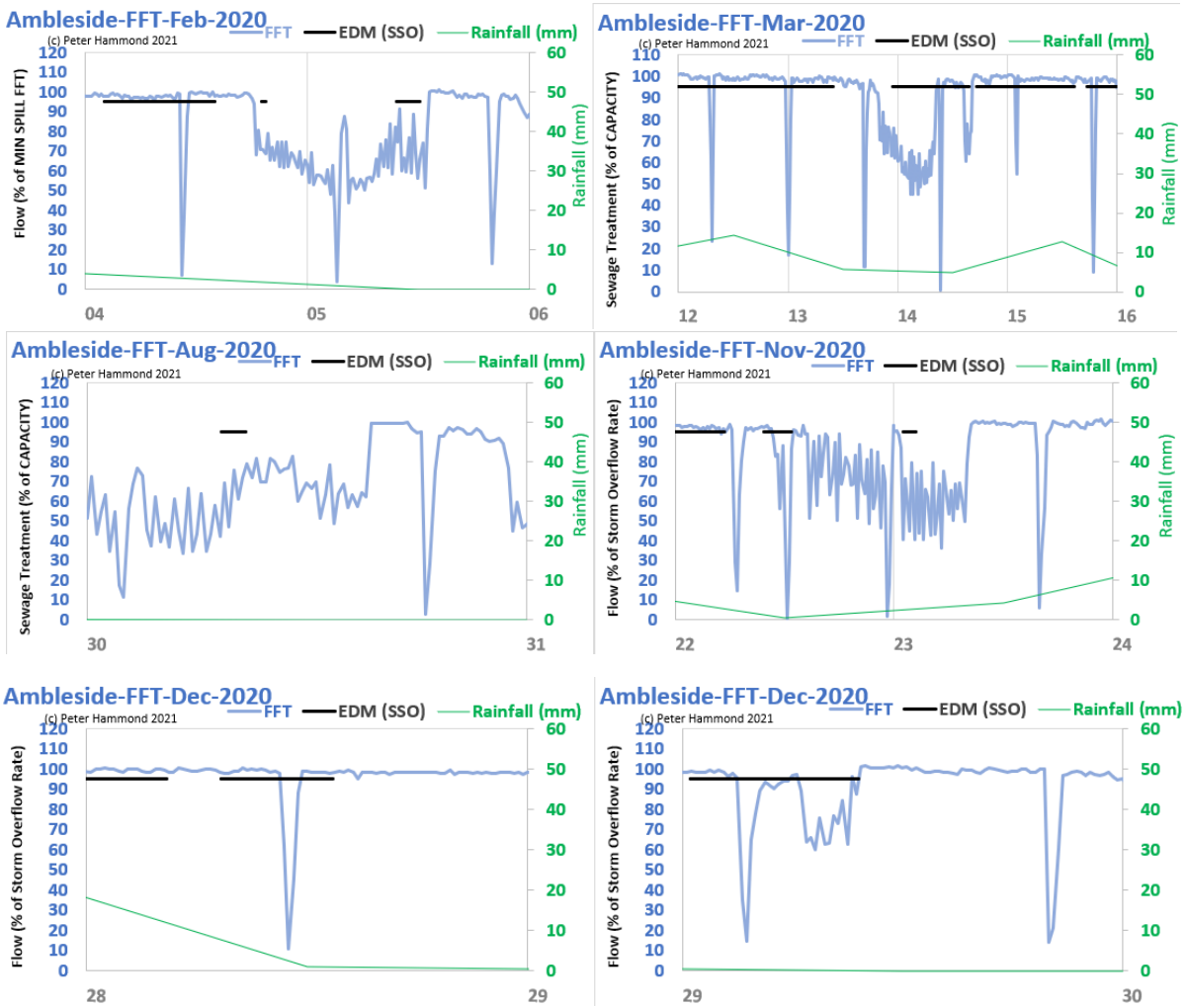

Figure 7: 11 illegal "early" discharges at Ambleside STW in 2020
(Feb 4,5; Mar 12,13,14,15; Aug 30; Nov 22,23; Dec 28,29)

2021 Ambleside STW

UU's 2021 spill submission to the EA for Ambleside was unusual. Firstly, UU did not provide the number of spilling hours but entered "N/A" without any further explanation. UU also declared 0% EDM monitor activity and an "installation" issue. However, UU did provide detailed EDM spill data to WASP that looks intermittently consistent with rainfall, EDM and sewage flow data.

As with 2018 and 2019, the detailed spill data for 2021 detects likely early spills. A more generous interpretation of these occasions suggests the EDM monitor occasionally misidentified ***false positives***. Even if this approach is taken, WASP believes the remaining spills amount to more than 900 spilling hours. Another alternative, less generous, approach is to assume correctness of the EDM data provided by UU and to interpret "flattened" regions of the sewage treatment data as involving spills not detected by the EDM device that could be interpreted as ***false negatives***. If this second alternative approach is taken, then the total spilling hours could be 1,300 hours.

Fig. 8 shows the detailed EDM and detailed sewage treatment data for 2021 for Ambleside STW with annotations identifying where there may be false positives and false negatives. Therefore, WASP believes that the detailed treatment and detailed EDM data provided by UU to WASP correspond to between 900 and 1300 spilling hours in 2021 at Ambleside STW. If the EDM data are correct then WASP believes there were 15 early spilling days in 2021.

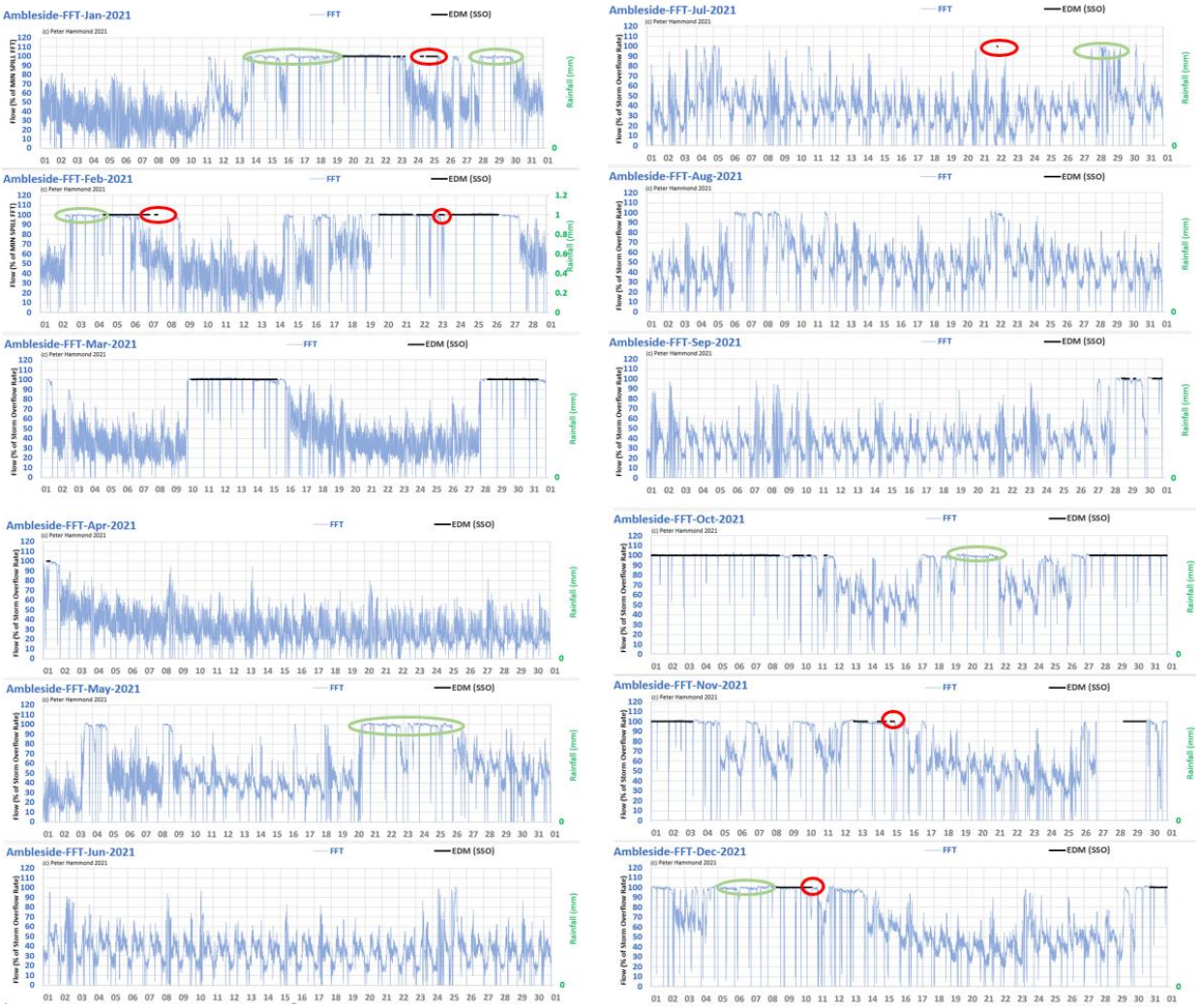

Figure 8: EDM and sewage treatment data for Ambleside STW for 2021 with annotations identifying regions where the EDM device may have made false positive or false negative detections of spills

2022 Ambleside STW

The total spilling hours from Ambleside STW provided by the EA to Save Windermere agrees with the annual EDM summary published on its website. **Fig**. 9 below shows sewage treatment flow and EDM monitoring data.

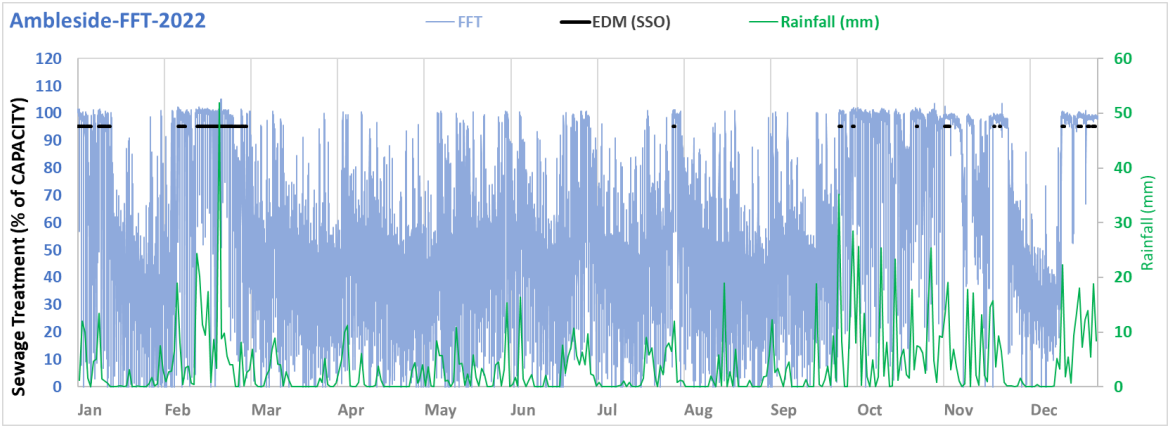

Figure 9: Overview for Ambleside STW in 2022

WASP's analysis suggests there were 19 days in 2022 with early spills (**Fig**. 10).

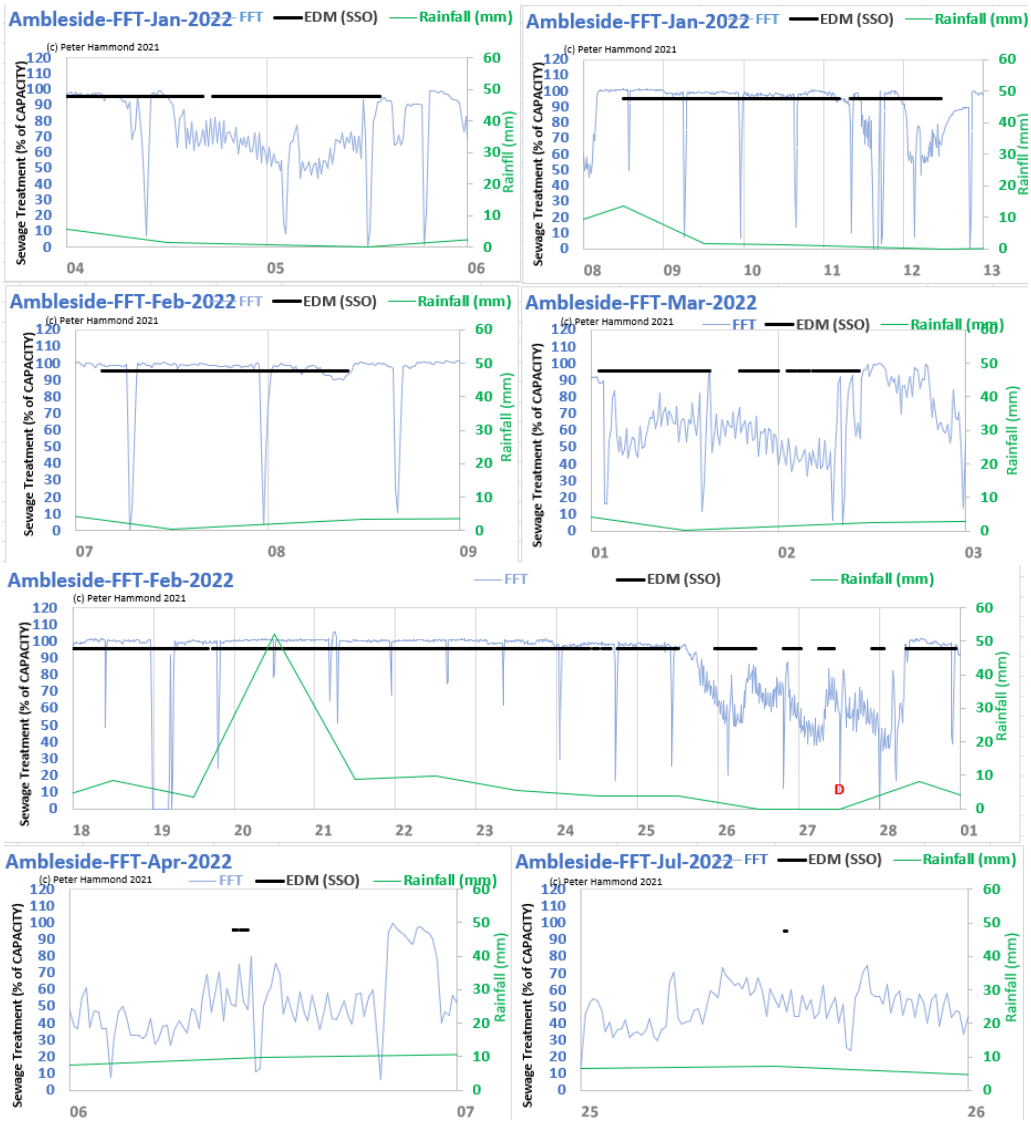

Figure 10: WASP's analysis suggests early spills on Jan 4,5,8-12; Feb 7,8,19,24-28; Mar 1-2; Apr 6; Jul 25

2023 Ambleside STW

The 2023 annual overview chart for Ambleside STW is shown in **Fig**. 11.

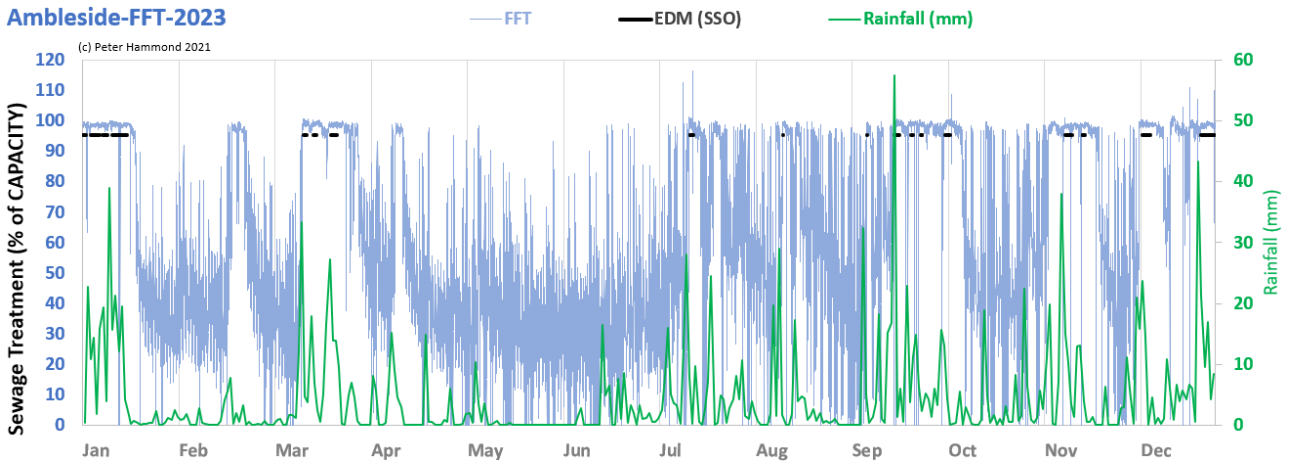

Figure 11: Overview for Ambleside STW in 2022

United Utilities reported an annual spilling total of 582.03 hours to the EA for Ambleside STW for 2023. This agrees with the sum of the lengths of the detailed individual spills provided to Save Windermere.

WASP analysis suggests there were 2 days with illegal "early" spills at Ambleside STW in 2023 (**Fig**. 12).

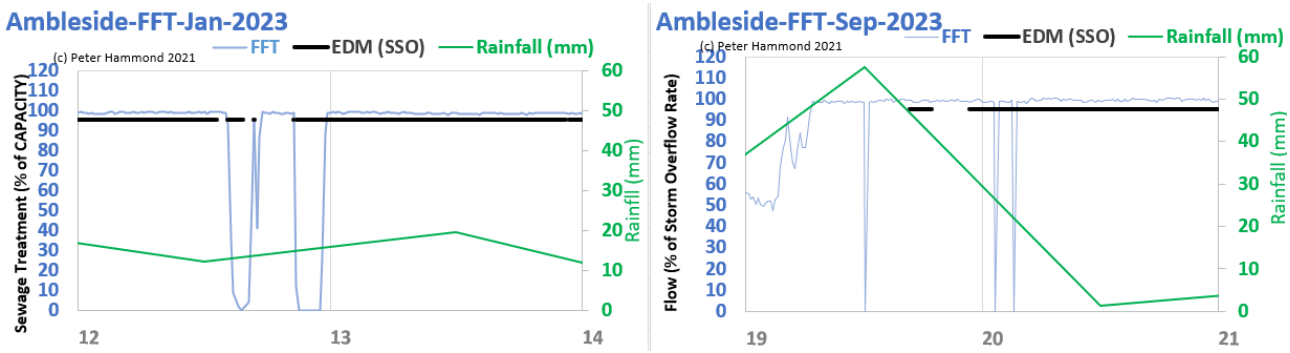

Figure 12: illegal "early" spills at Ambleside STW in 2022 (Jan12; Sep 20)

Coniston STW

Coniston STW serves about 740 and discharges to Church Beck which flows into Coniston Water.

2018 Coniston STW

UU reported a total of 3,147 hours for 2018. This looks unreliable because of occasional inconsistencies between treated sewage effluent (FE) and EDM data provided by UU (**Fig**. 13).

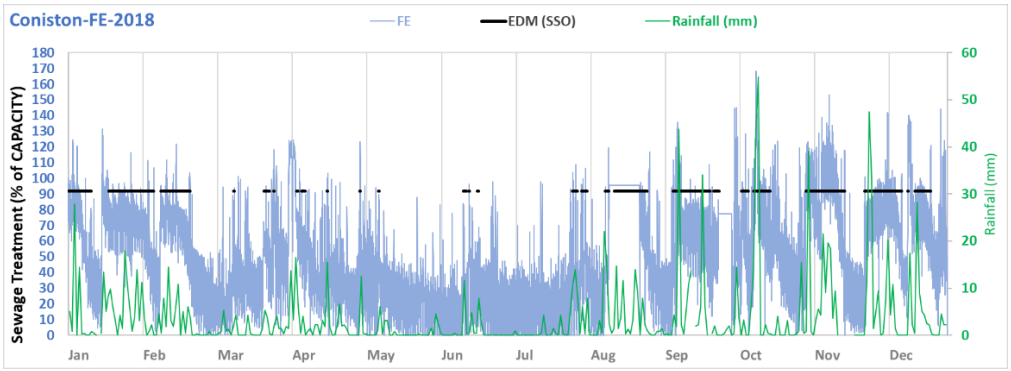

Figure 13: overview chart for Coniston STW for 2018

The most consistent and reliable data suggest there were at least 14 days with early spills (**Fig**. 14).

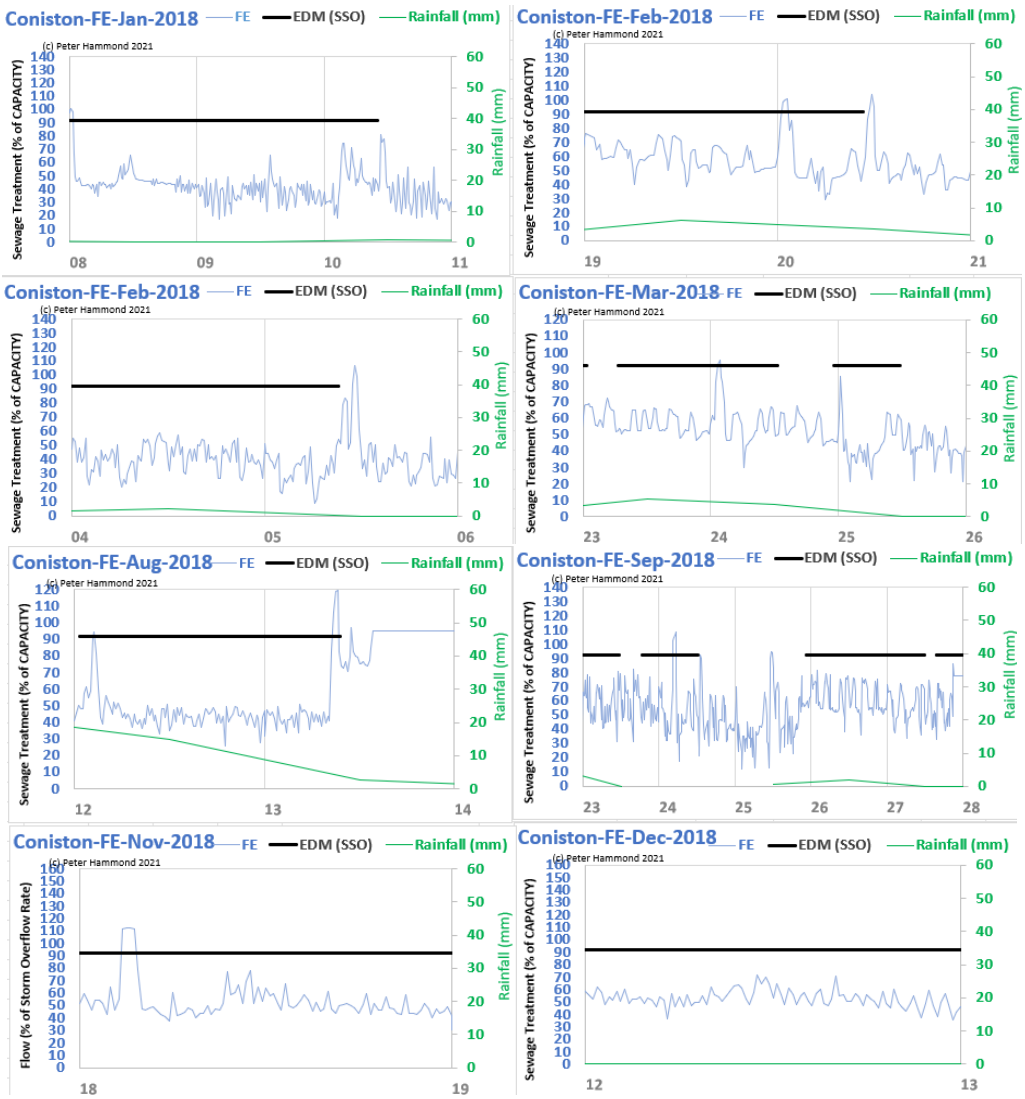

Figure 14: WASP's analysis suggests at least 14 days with early spills in 2018 at Coniston STW
(Jan 8-10,20; Feb 4-5; Mar 24-25; Aug 12-13; Sep 24,27; Nov 18; Dec 12)

2019 Coniston STW

The summary 3,516 spilling hours submitted by UU to the EA is consistent with the detailed EDM data provided by UU to WASP. Moreover, compared to 2018, the detailed EDM data look consistent with detailed flow and rainfall data. WASP's analysis suggests early spills on at least 16 days at Coniston STW in 2019 (**Fig**. 15).

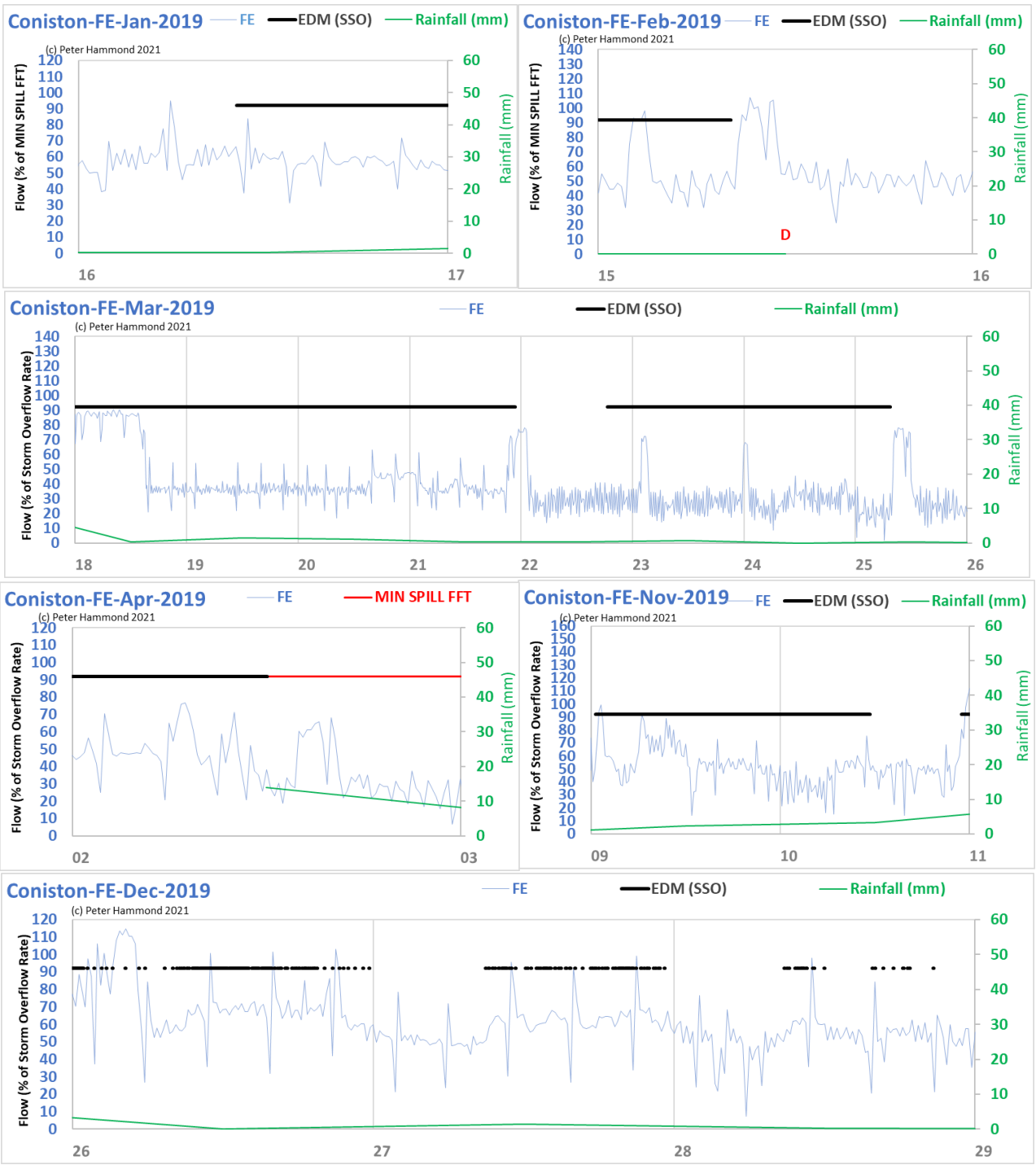

Figure 15: WASP believes there were at least 16 early spills on the following days: Jan 16; Feb 15; Mar 18-25; Apr 2; Sep 9-10; Dec 26-28

2020 Coniston STW

UU submitted summary EDM data of 5,551 spilling hours during 230 spills. This suggests an average spill length of about 24hrs for a 9 month period. UU refused to provide WASP with detailed EDM and detailed sewage treatment data for 2020 but did provide total daily flow (TDV).

An average spill length of 24 hrs and the TDV curve (**Fig**. 16) look inconsistent so WASP believes the spill data submitted to the EA is unreliable. This may explain UU's refusal to provide the data.

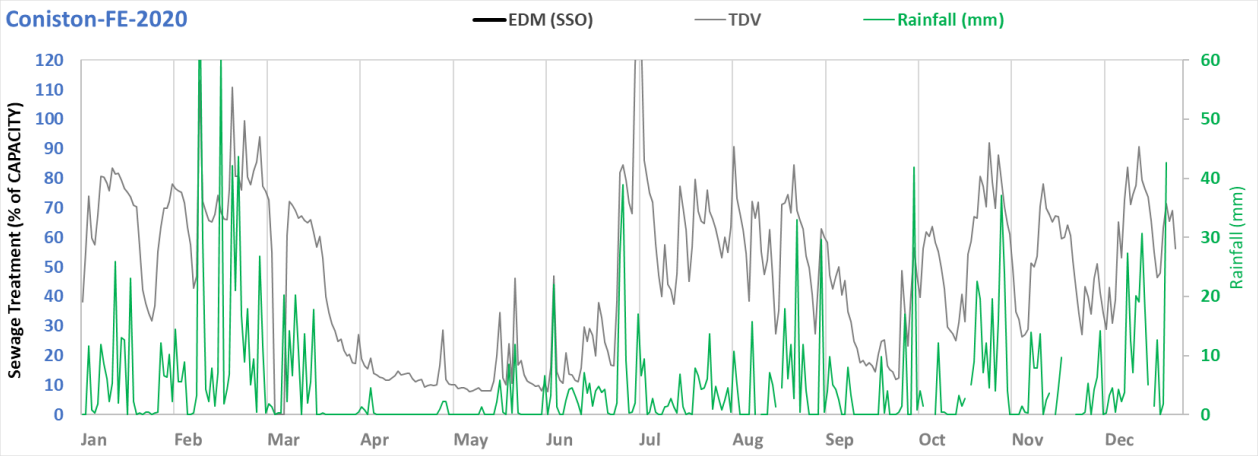

Figure 16: 2020 summary chart for total daily volume (TDV) and rainfall for Coniston STW

2021 Coniston STW

The summary EDM spilling hours of 2710 submitted by UU to the EA are consistent with the detailed EDM spill data that UU provided to WASP (**Fig**. 17) in the first six months of the year but in the second half of the year they appear less consistent. Therefore, as with 2018, either the EDM data is not entirely reliable or there are early spills in the second half of the year.

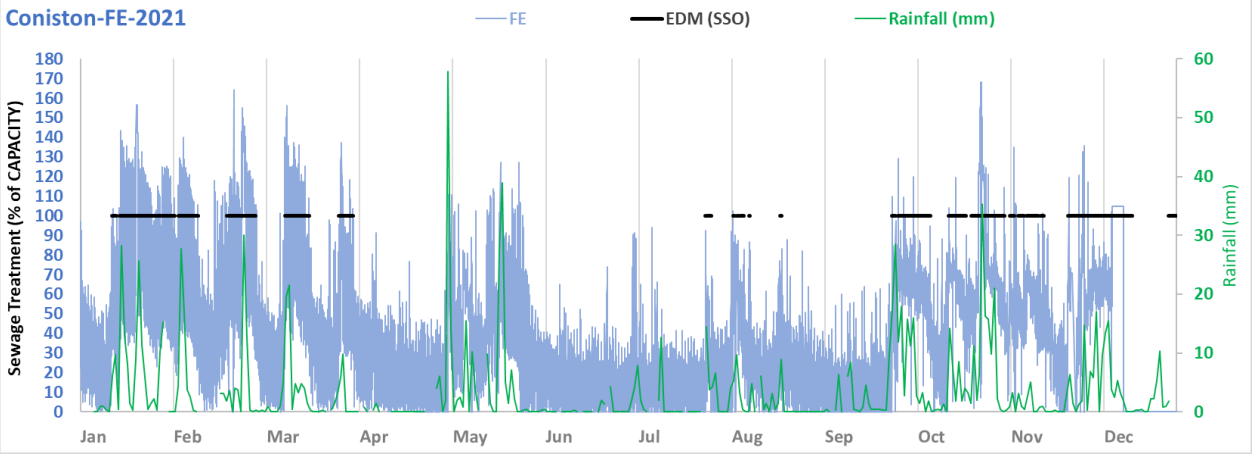

Figure 17: 2021 summary chart for Coniston STW

There are sewage treatment and EDM data that appear to be reliably consistent with some early spilling in July and September (**Fig**. 18)

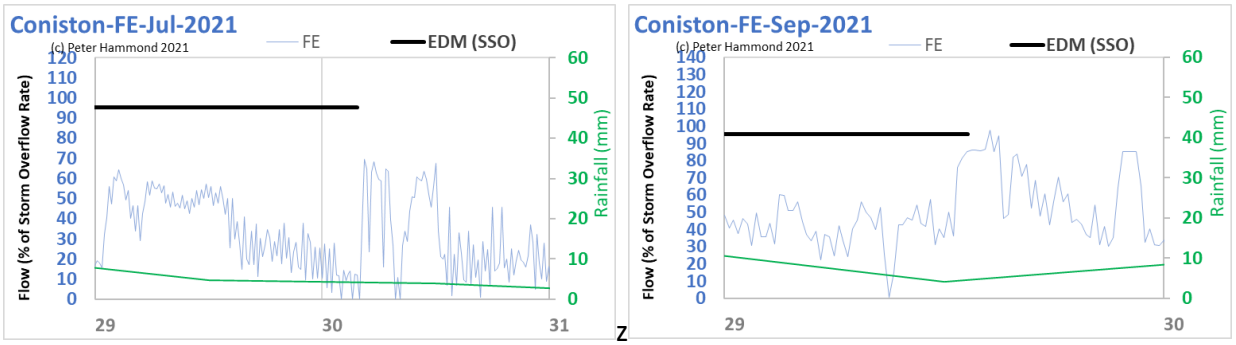

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Figure 18: 3 likely early spills at Coniston STW (Jul 29-30; Sep 29)

Glebe SPS

Generally, the spills from Glebe SPS appear to be within permit. There are also some duplicated pairs of date/time and sewage treatment flow in the data that were provided by the EA to Save Windermere. These were removed.

2021 Glebe SPS

Analysis suggests there were 11 days when Glebe Road SPS spilled early in 2021 (see **Fig** 19).

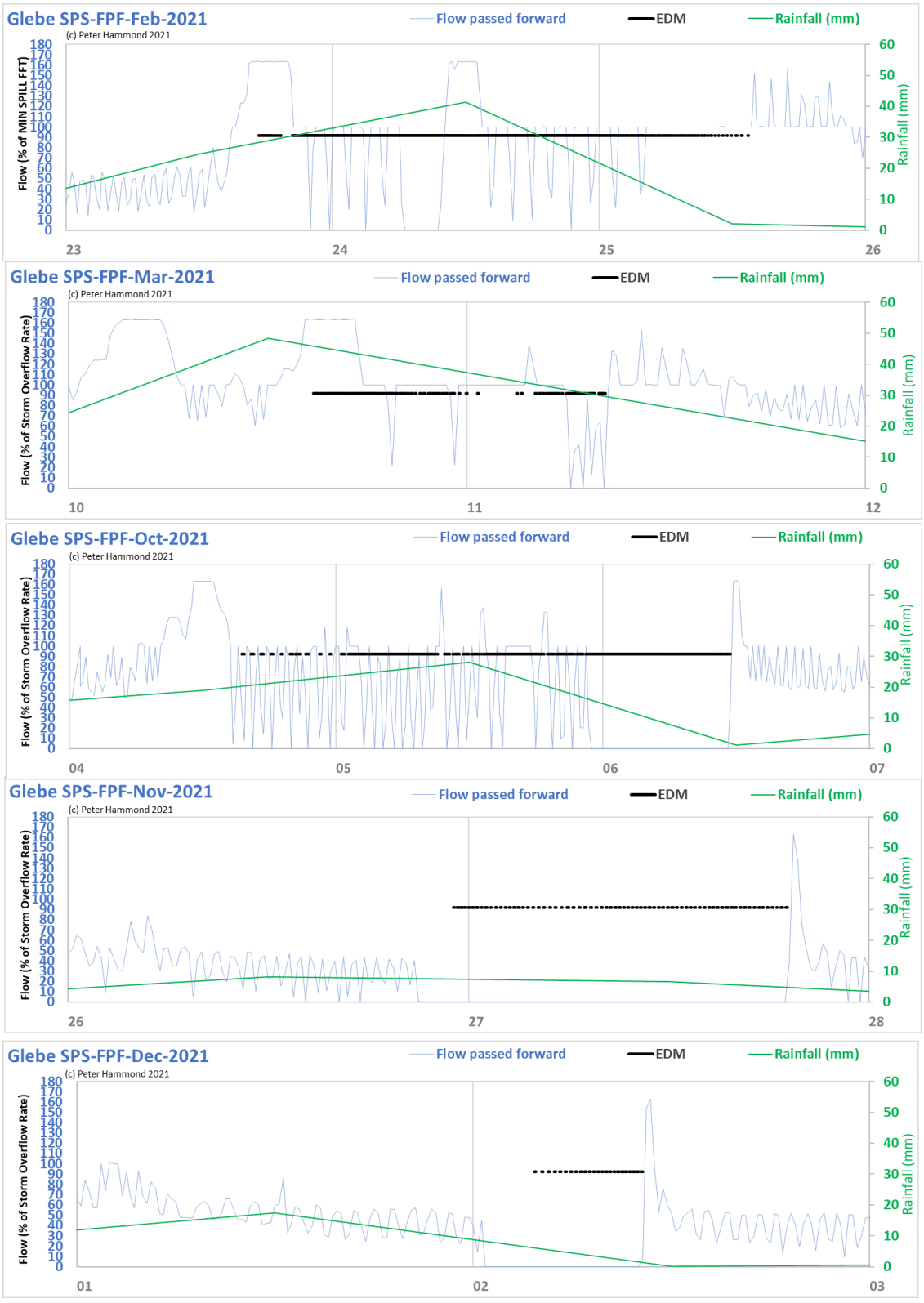


Figure 19: 11 likely early spill days at Glebe SPS (Feb 23-25;Mar 10-11; Oct 4-6; Nov 26-27; Dec 2)

2022 Glebe SPS

WASP is confident in identifying 5 days in **Fig**. 20 as involving early spills: Feb 18-21; Nov 23.

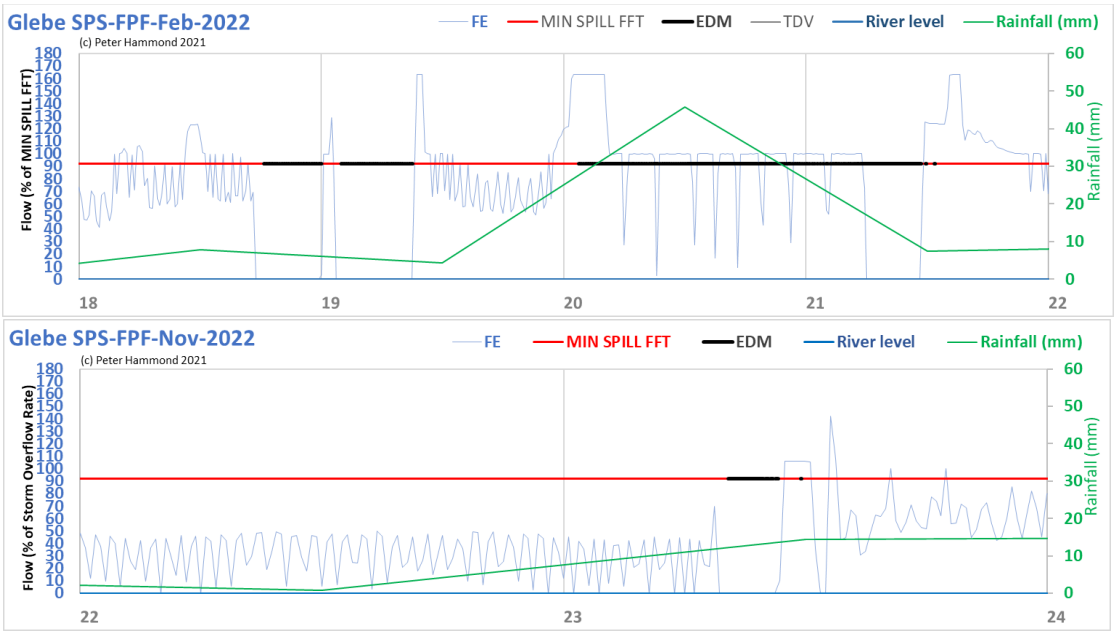
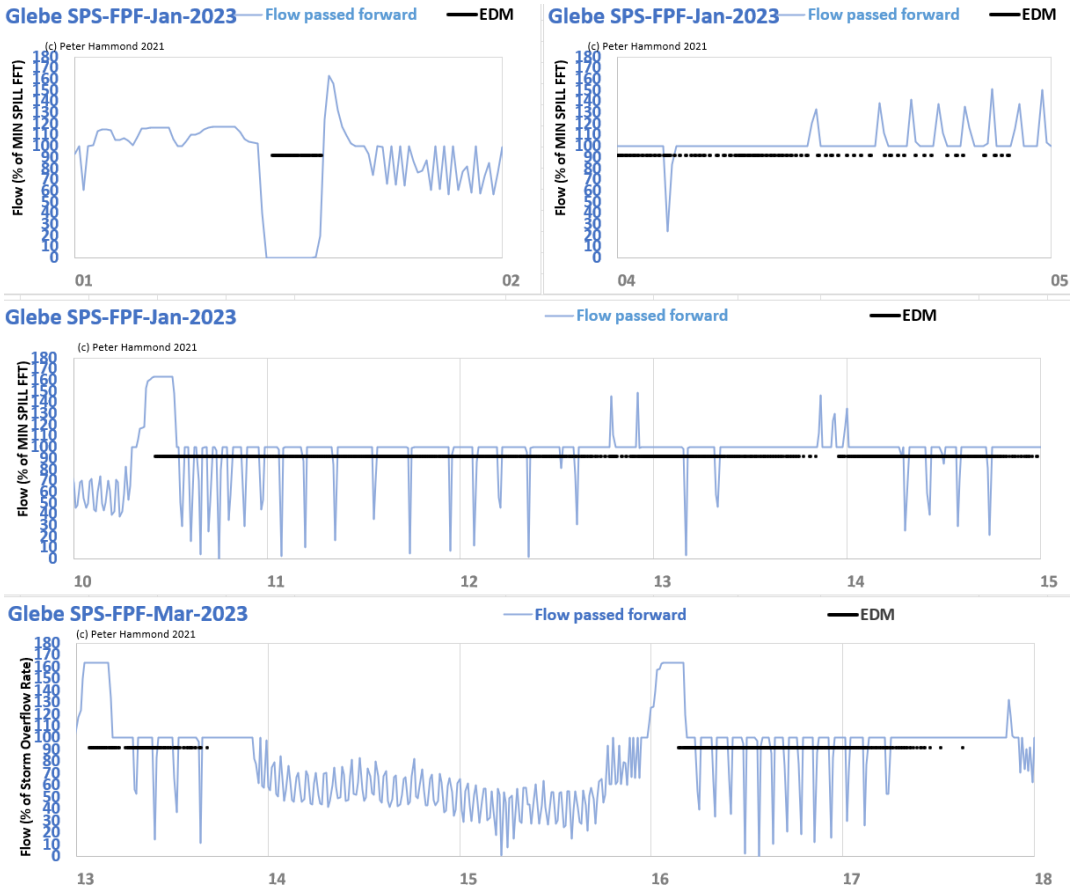


Figure 20: analysis suggests early spills at Glebe PS (Feb 18-21; Nov 23)

2023 Glebe SPS

WASP's analysis suggests there were 25 days with spills when Glebe Road SPS failed to pass forward sufficient flow to be compliant (**Fig**. 21).



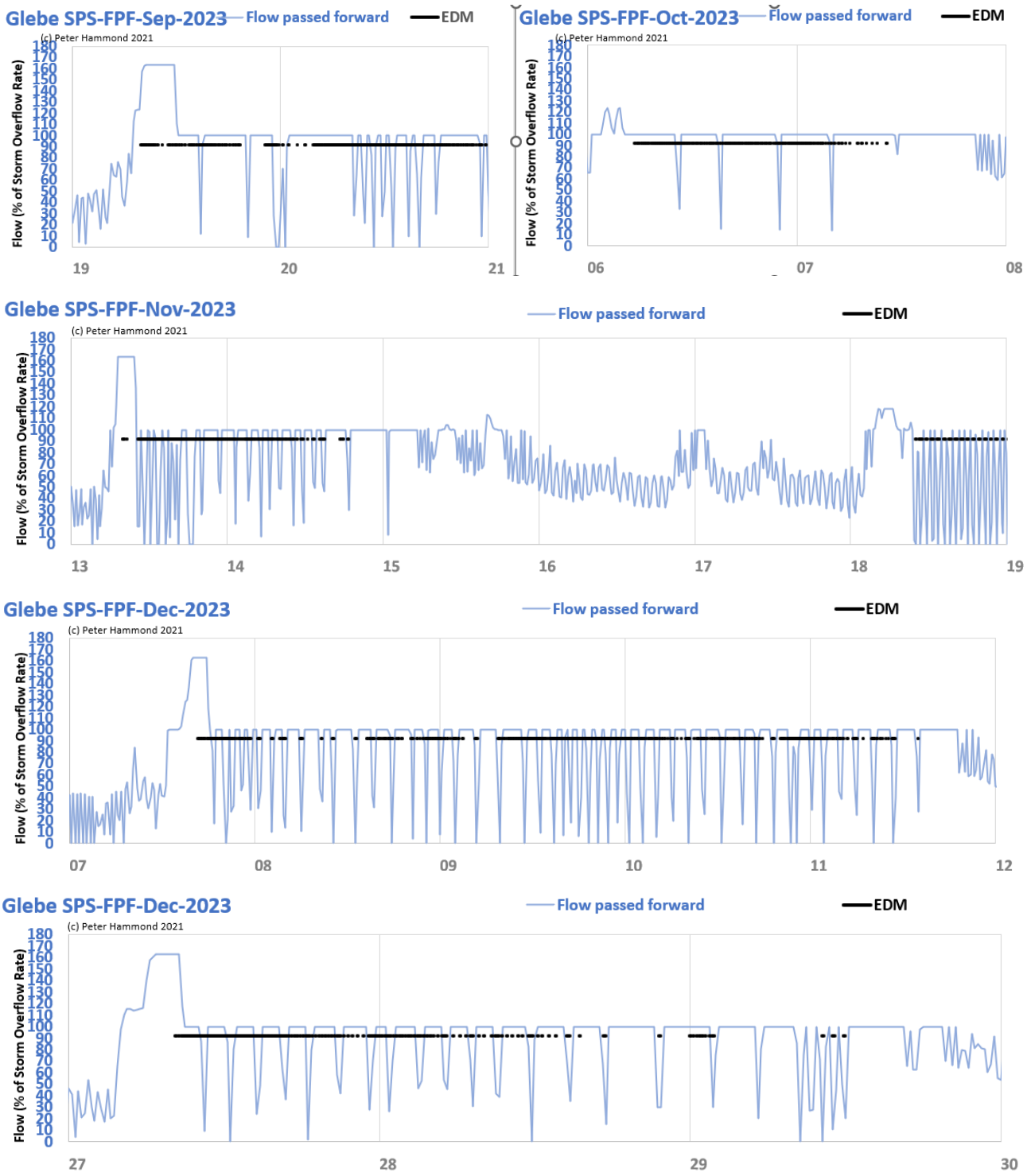


Figure 21: 25 days with spills and insufficient flow passed forward at Glebe SPS
(1,4,10-14; Mar 13,16,17; Sep 19,20; Oct 6,7; Nov 13,14,18; Dec 7-11, 27-29)

Grasmere STW

Grasmere STW serves a small population and discharges to Grasmere Lake. The 2022 sewage treatment data for Grasmere STW provided by the EA was not labelled as final effluent or as flow to full treatment. However, an EPR Compliance Assessment Report (S/0743188) provided by the EA to Save Windermere includes a photograph of an MCERTS flow meter at Grasmere STW labelled as "Flow to Works". Such a meter would provide an upper bound for flow to full treatment (FFT). If the treatment data provided corresponds to FFT then many EDM detected spills would be considered early. If the flow data is final effluent (FE) then allowance has to be made for the difference between FE and FFT. At small works this is typically of the order of 10%, so the threshold might be 82%. However, WASP has taken a very "cautious" approach here by identifying spills with a flow rate that could not be associated with FFT rates above works capacity.

2020 Grasmere STW

The 2020 EDM return for Grasmere STW was 0.37 hours which agrees with the individual spill data total. However, the large number of tiny spills declared (126) suggests a malfunctioning monitor. Both UU and the EA withheld 2020 treatment data for Grasmere STW, so no analysis was possible.

2021 Grasmere STW

The annual overview chart for Grasmere STW for 2021 is shown in **Fig**. 22.The annual EDM return for Grasmere STW was for 1,348 hours covering 90 spills in terms of the EA counting system. The EDM detected individual spill data provided by UU amounts to 1,444 hours covering 2,142 spills over 94 days. WASP believes there were at least 17 days with early spills in 2021 from Grasmere STW (**Fig**. 23).

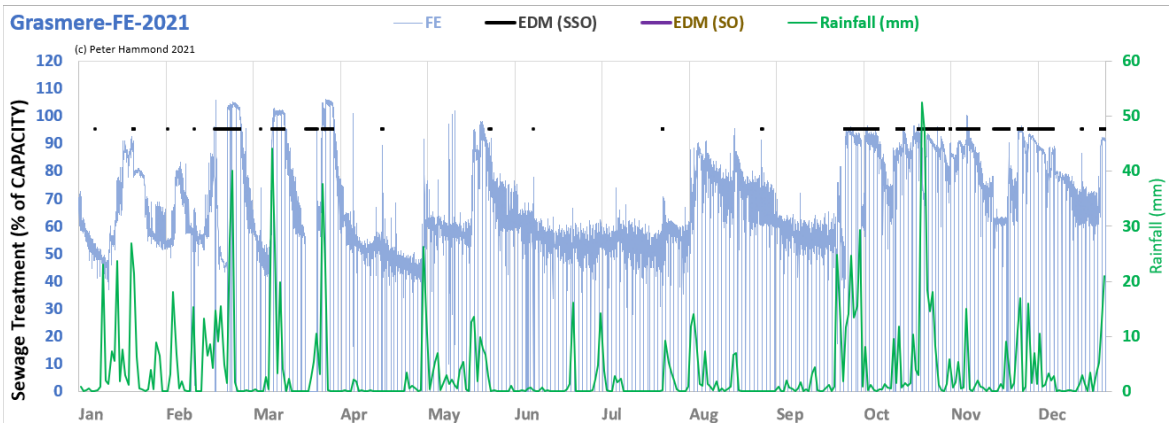
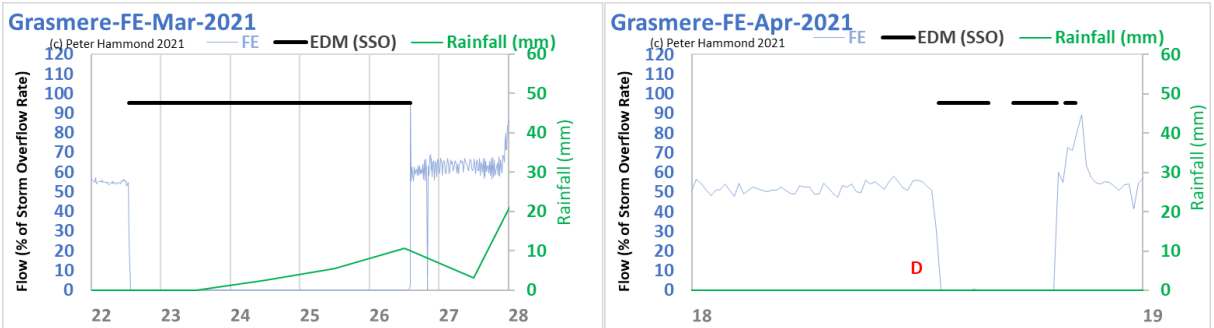


Figure 22: 2021 overview overview chart for Grasmere STW



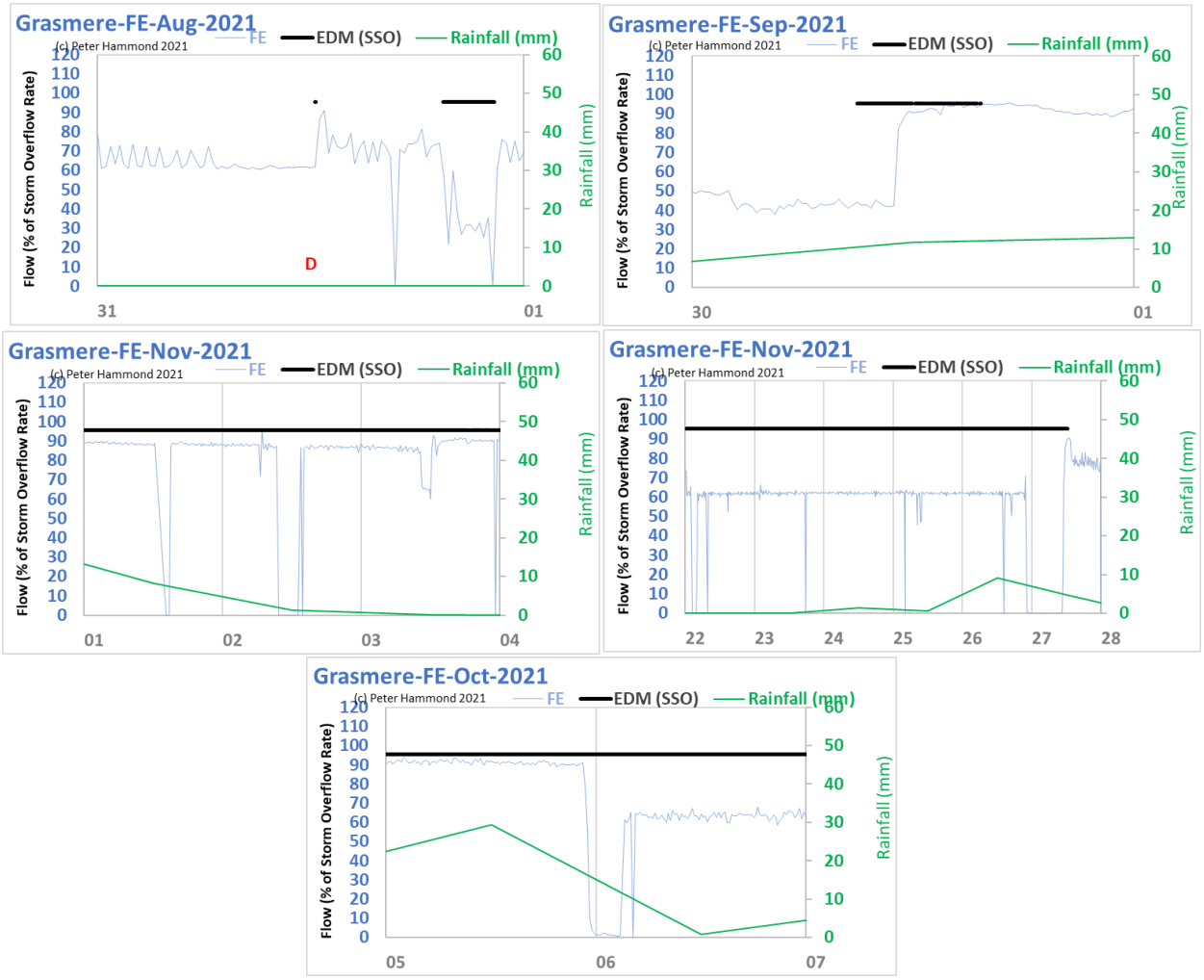


Figure 23: suggested 17 days with illegal early spills from Grasmere STW in 2021
(Mar 22-26; Apr 18; Aug 31; Sep 30; Nov 1-4, 22, 26-27; Oct 5-6.

2022 Grasmere STW

The overview chart for Grasmere STW for 2022 is shown in **Fig**. 24.

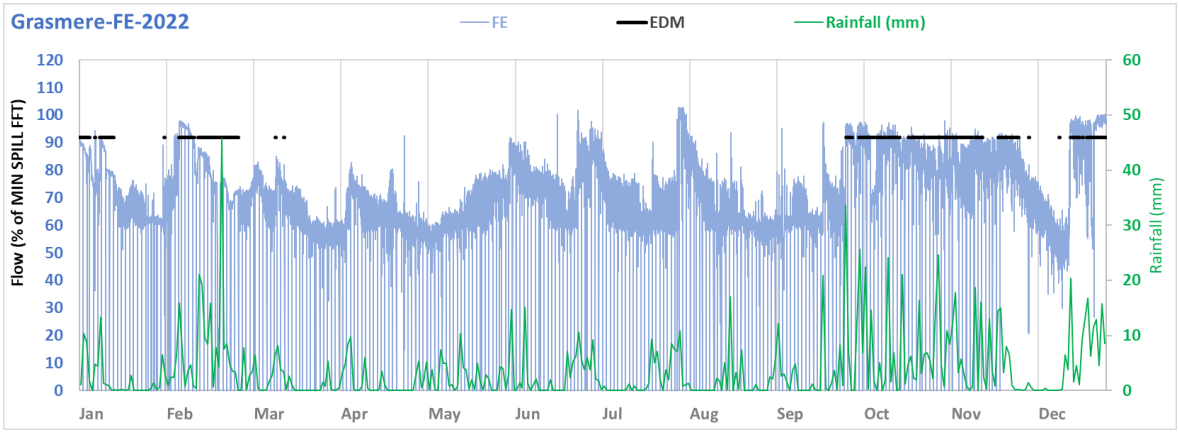


Figure 24: 2022 overview chart for Grasmere STW

Consider the 6 examples of early spilling on Jan 6, 31; Feb 18, 19; and, Dec 4, 27 in **Fig**. 25.

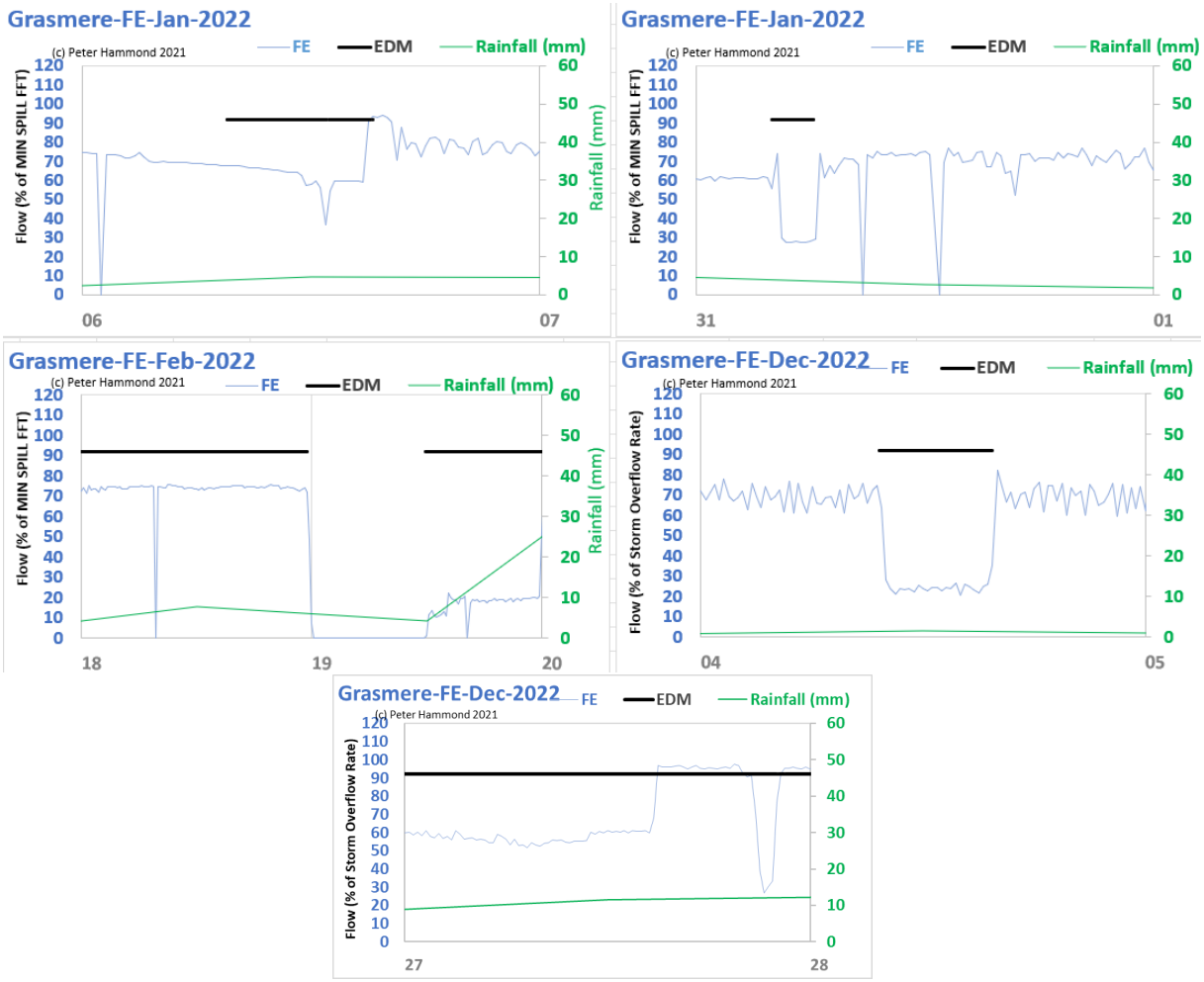


Figure 25: WASP's analysis suggests at least 6 days with early spills in 2022: Jan 6,31; Feb 18,19; Dec 4,27.

2023 Grasmere STW

The overview chart for Grasmere STW for 2023 is shown in **Fig**. 26. There is a major discrepancy between the summary 2,532 spilling hours submitted by United Utilities to the EA for Grasmere STW in 2023 compared to the sum of the lengths of the individual spills (1,351 hours) provided to Save Windermere.

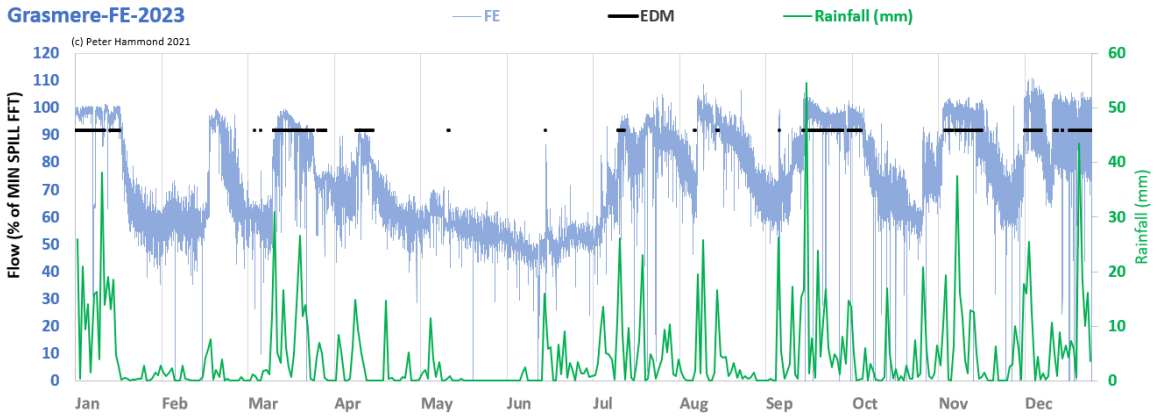


Figure 26: 2023 overview chart for Grasmere STW

The annual overview chart (**Fig**. 26) suggests unreported spills in Feb and July 2023. WASP's analysis suggests at least 9 days with illegal "early" spills at Grasmere STW in 2023 (**Fig**. 27).

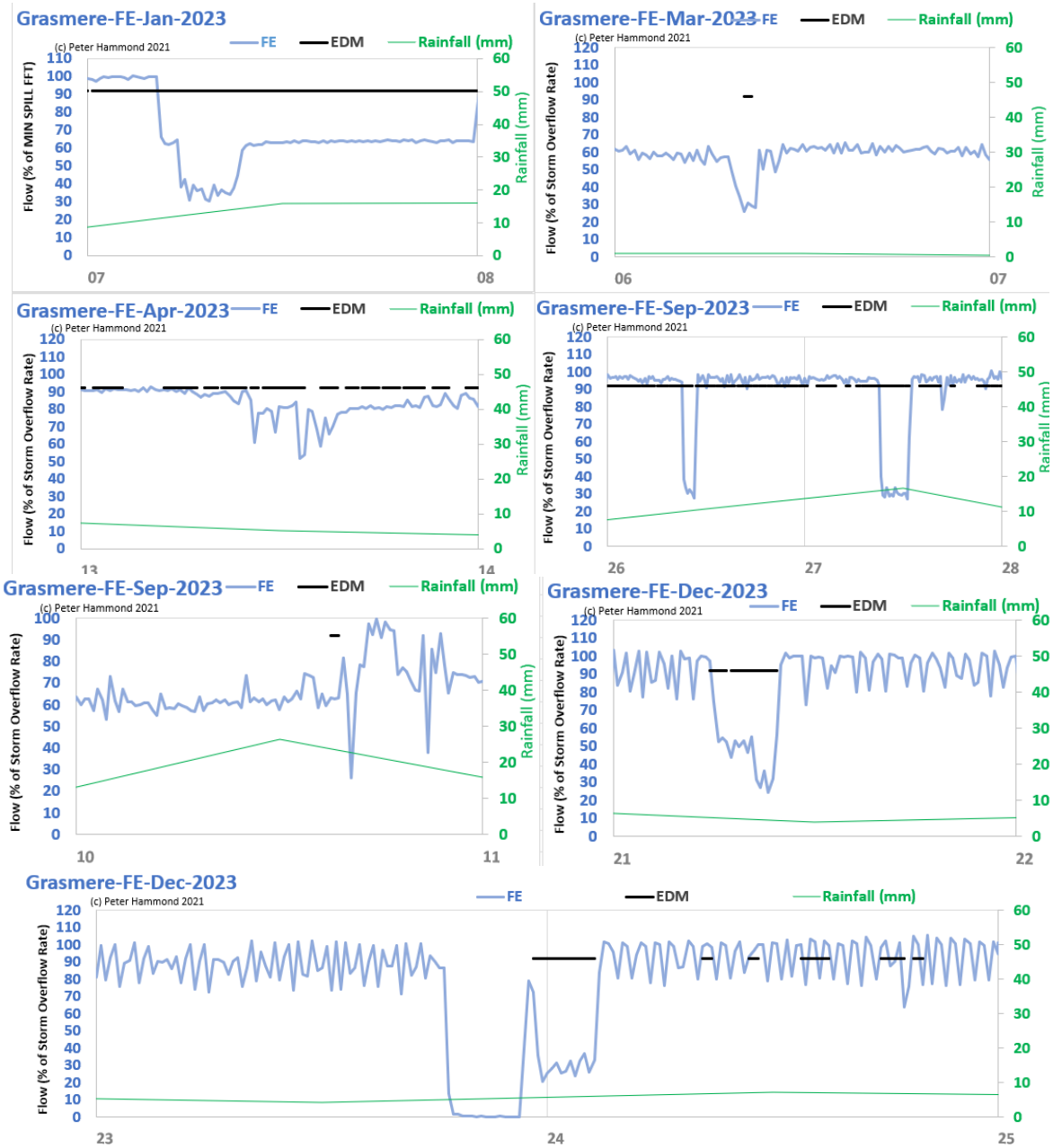


Figure 27: suggested 9 days with illegal early spills from Grasmere STW in 2023
(Jan 7; Mar 6; Apr 13; Sep 10,26,27; Dec 21,23,24).

Hawkshead SPS

Hawkshead STW does not have a storm discharge permit but the feeder Hawkshead Pumping Station (PS) does. Hawkshead PS's permit has not changed since 2011 and requires a minimum sewage flow of 14 l/s to be achieved before excess can be diverted to or overflow from its storm tank to the Black Beck. Black Beck feeds Eshwaite Water from which Cunsey Beck flows for about 2 miles before entering Lake Windermere.

A report[3] from 2011 documents decades of issues with phosphate levels in Esthwaite Water and upgrades to both the Hawkshead STW and feeder Hawskhead PS to reduce phosphate levels. The latter was planned to be upgraded in 2011/2012 which appears to coincide with amendments to its permit.

[3] https://nora.nerc.ac.uk/id/eprint/15008/2/N015008CR.pdf

2018 Hawkshead SPS

Although UU submitted summary spill data of 1,283 hours to the EA for 2018, the detailed spill start-stop times were withheld and not provided in response to WASP's EIR request. No excuse or explanation for this was provided unlike for the withholding of 2020 data. Indeed, sewage flow at Hawkshead PS was provided as requested. The 2018 overview chart is shown in **Fig**. 28.

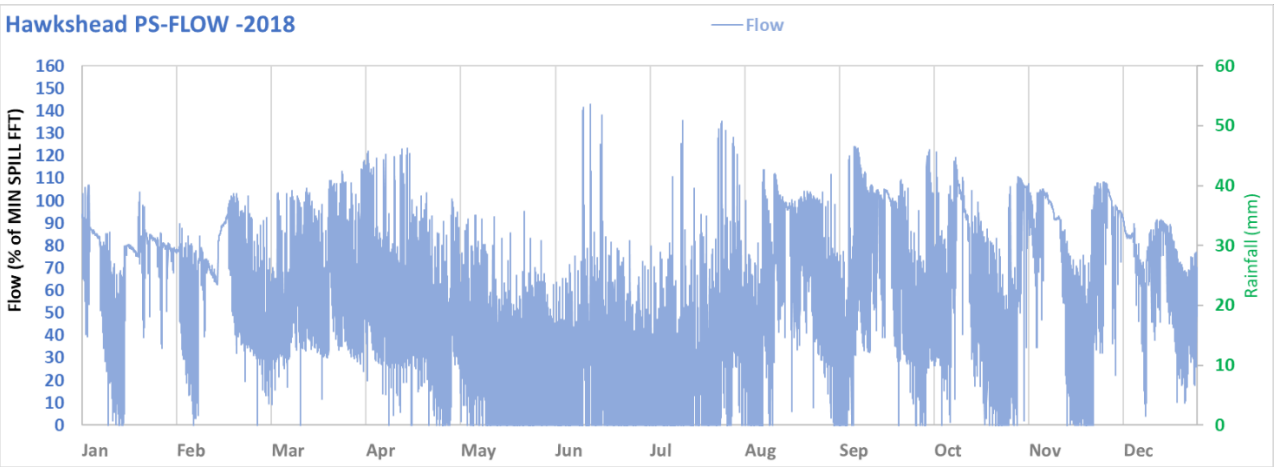
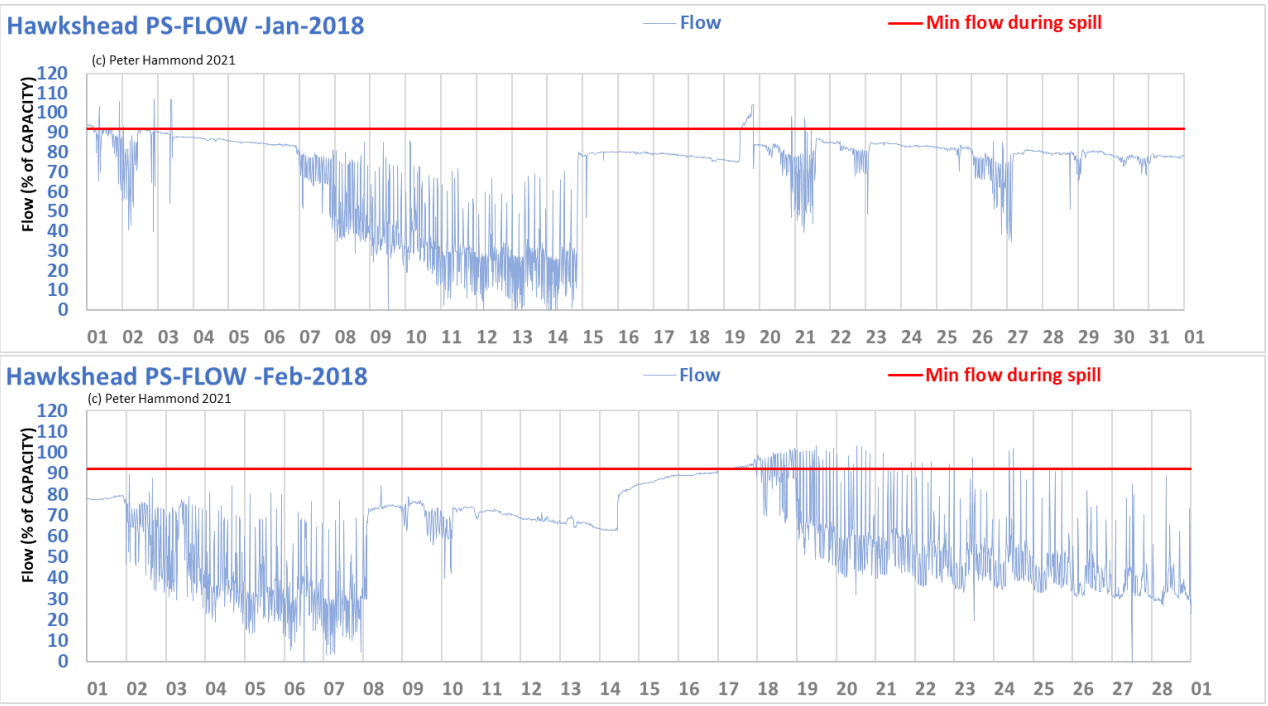


Figure 28: 2018 overview of flow from Hawkshead Pumping Station

Without the detailed start-stop times for Hawkshead PS, WASP has estimated that the number of spills submitted to the EA appears to be consistent with the sewage flow, rainfall and river level data. WASP believes there were at least 34 "early" spills when flow through the Hawkshead PS had not reached or was not sustained at a level as required by its permit. Some of these are illustrated in **Fig**. 29.



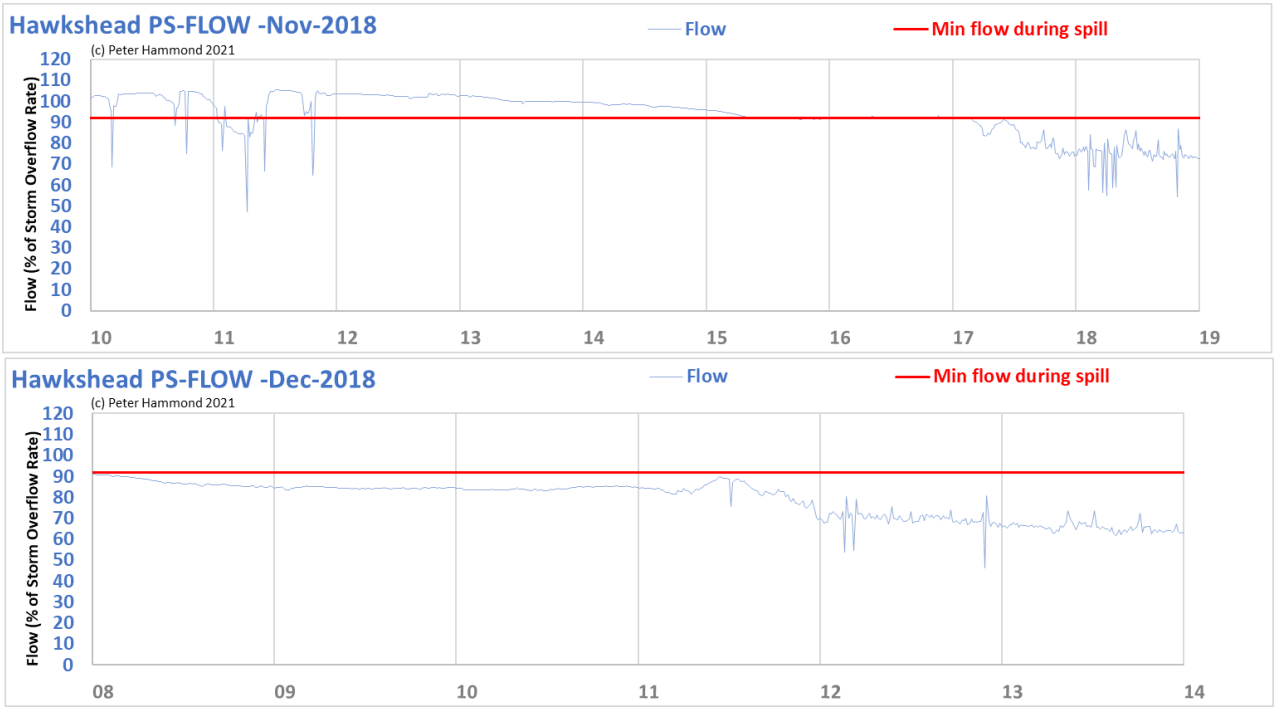


Figure 29: WASP's analysis suggests at least 34 days with early spills at Hawkshead PS in 2018: Jan 3-6,15-19, 23-25,27-31; Feb 8-15; Nov 11,17-18; Dec 8-13

2019 Hawkshead SPS

Although the detailed spill start-stop times obtained from UU via EIR request give rise to a total matching the summary spilling hours submitted to the EA, they are not always consistent with the sewage flow and daily rainfall (**Fig**. 30).

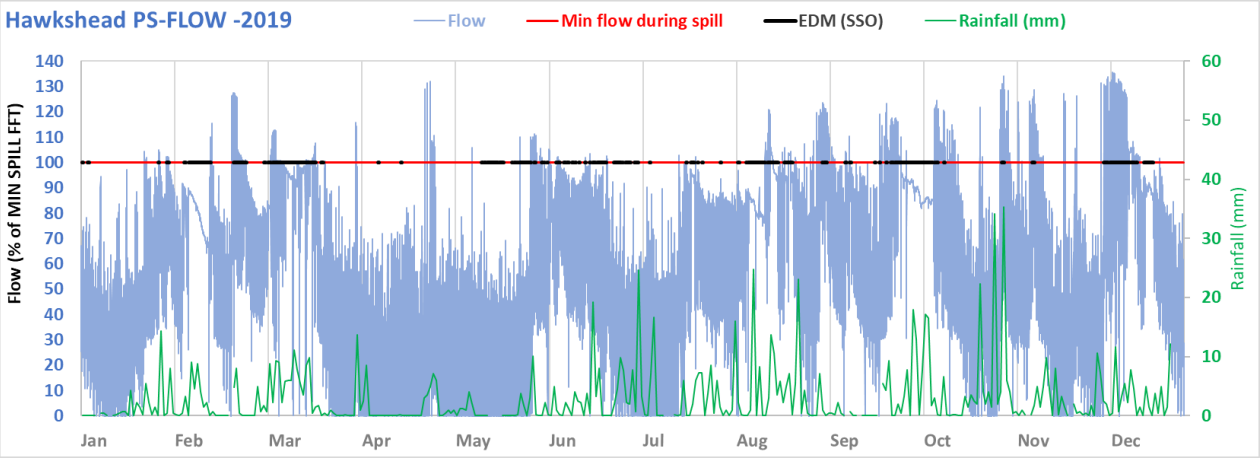


Figure 30: 2019 overview of flow at Hawkshead Pumping Station plus rainfall

The inconsistency is demonstrable at a more detailed level in the monthly charts for April and May 2019 as shown in **Fig**. 31.

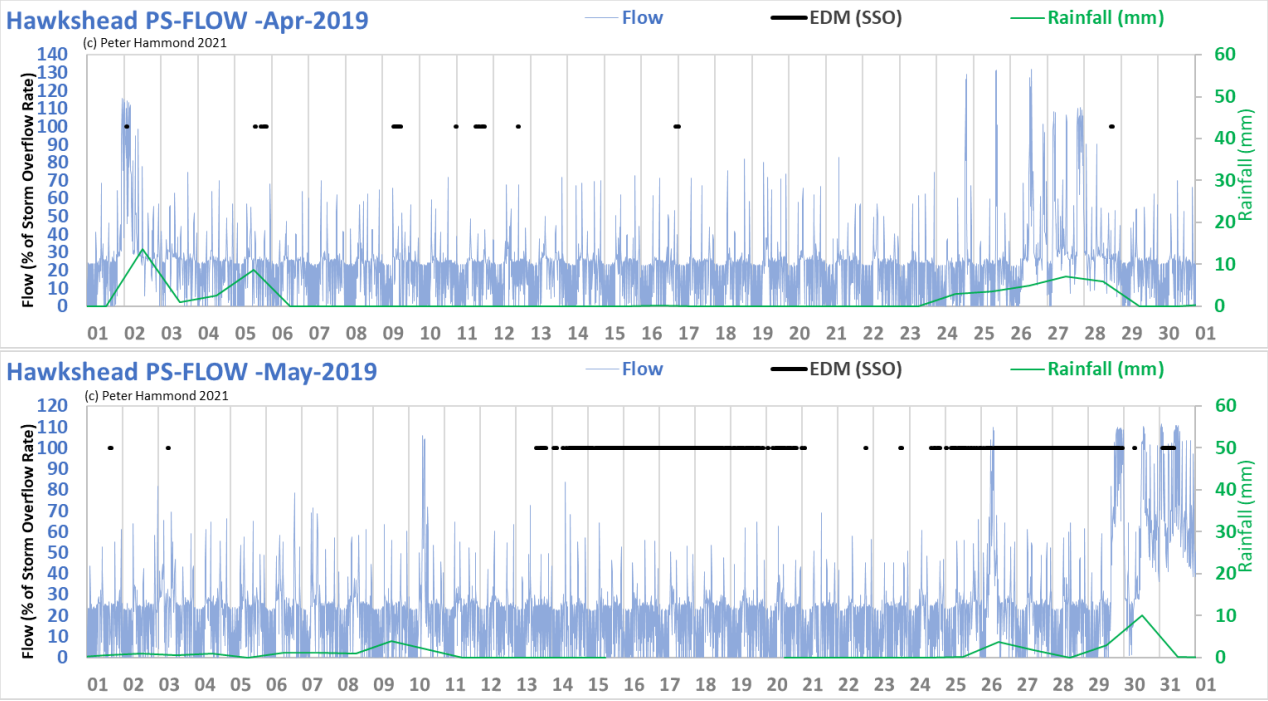


Figure 31: WASP believes the 2019 April and March charts for Hawkshead PS illustrate EDM unreliability

However, there are times when the detailed spill data are quite consistent with flow and rainfall data as demonstrated in **Fig**. 32 which suggests there were 37 early spilling days.

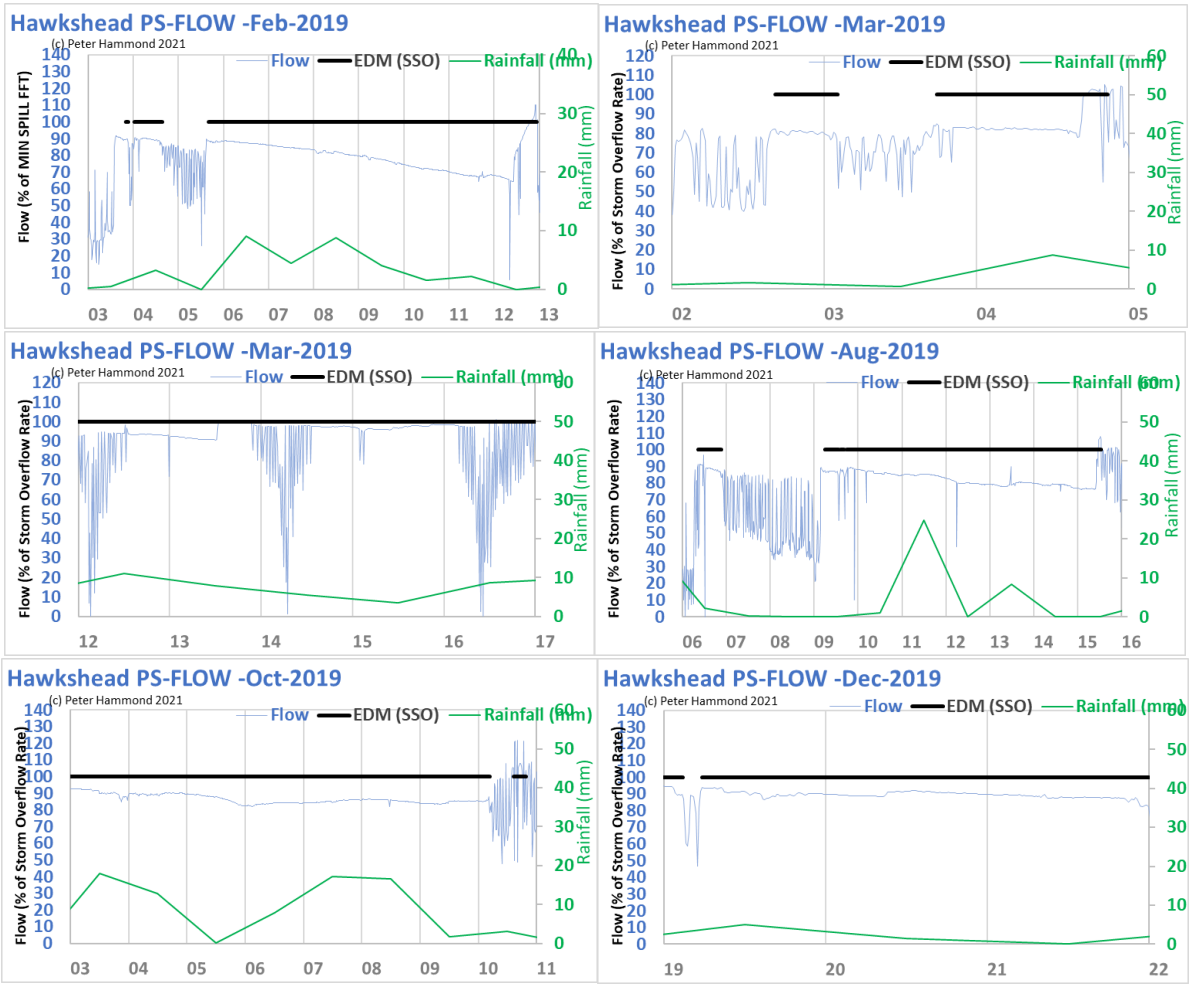


Figure 32: WASP believes there were 37 early spilling days at Hawkshead PS in 2019 (Feb 3-12; Mar 2-4, 12-14, 16; Aug 6, 9-15; Oct 3-11; Dec 19-21)

2020 Hawkshead SPS

It is clear from the annual overview for 2020 (**Fig**. 33) that Hawkshead SPS made a large number of untreated sewage spills while not passing forward the minimum required sewage to the STW.

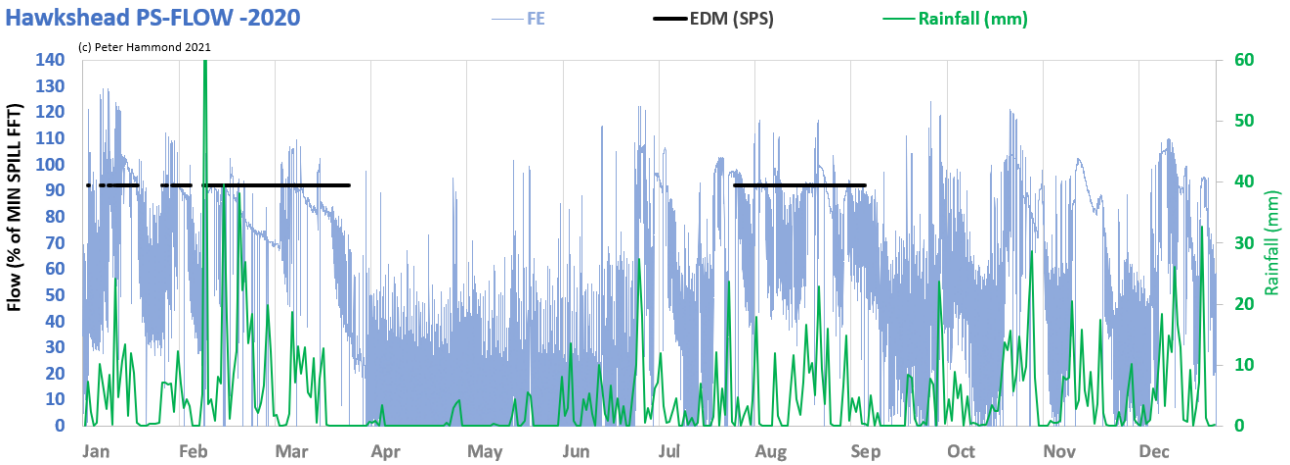


Figure 33: annual overview for 2020 for Hawkshead SPS

WASP's analysis suggests that there at least 78 days when the flow passed forward was insufficient (**Fig**. 34).

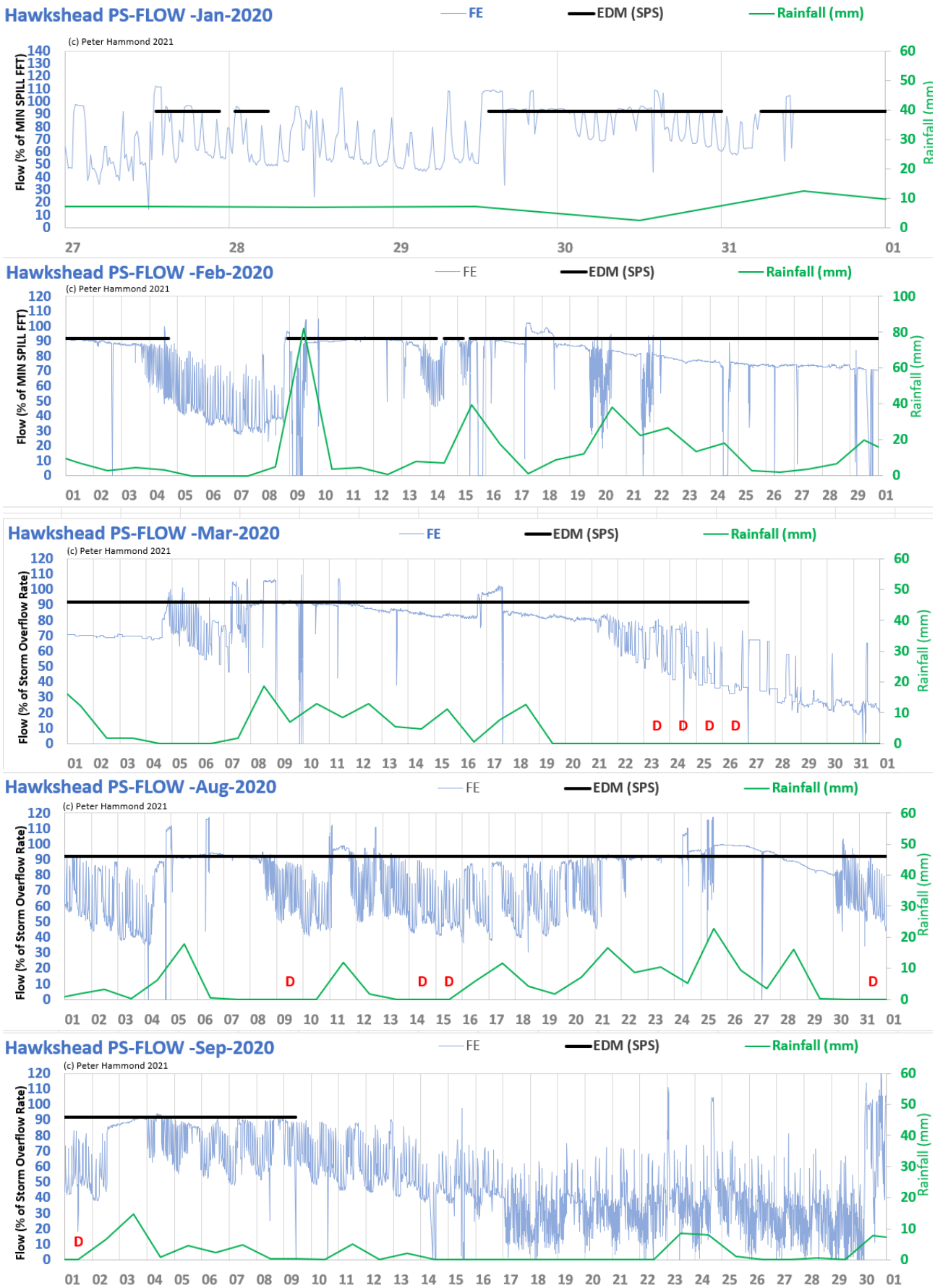


Figure 34: 78 days with insufficient flow passed forward during spills of untreated sewage

2021 Hawkshead SPS

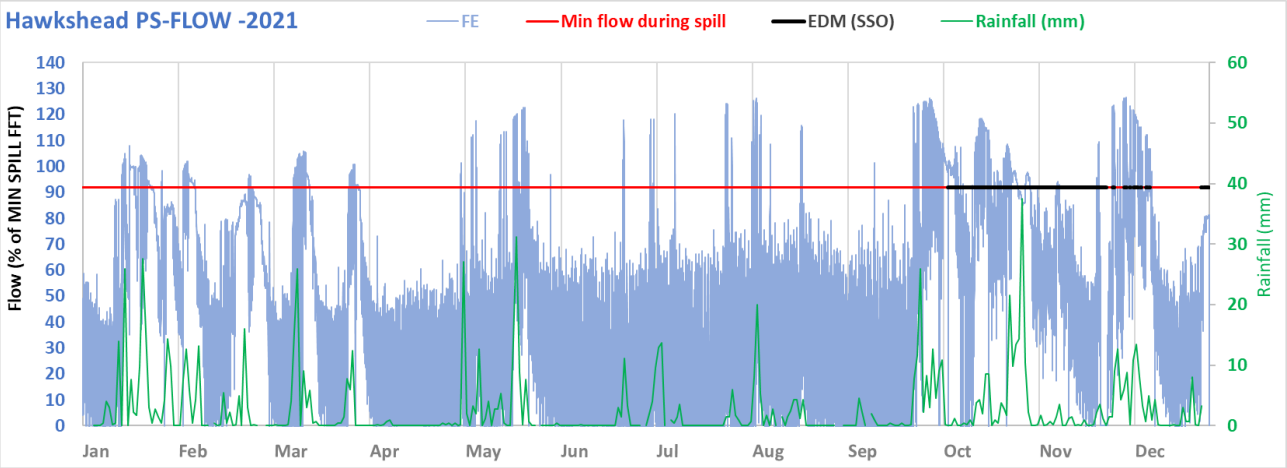


Figure 35: The 2021 overview for Hawkshead PS suggests unreliable EDM detection

The detailed spill start-stop times provided to WASP for 2021 suggest that spills only occurred in the latter quarter of the year (**Fig**. 35). The summary spilling hours provided to the EA for 2021 (1,372 hours) matches the sum of the lengths of the individual spills reported to WASP. However, WASP believes that based on the combination of sewage flow and rainfall data, some of the indicated spills are false positives and that in the first quarter of 2021 (**Fig**. 35) there were many days when undetected spills occurred. WASP believes they could amount to more than 300 hours with, for example, likely early spilling on Jan 24,28,29 and Feb 20-22,25-26 (**Fig**. 36).

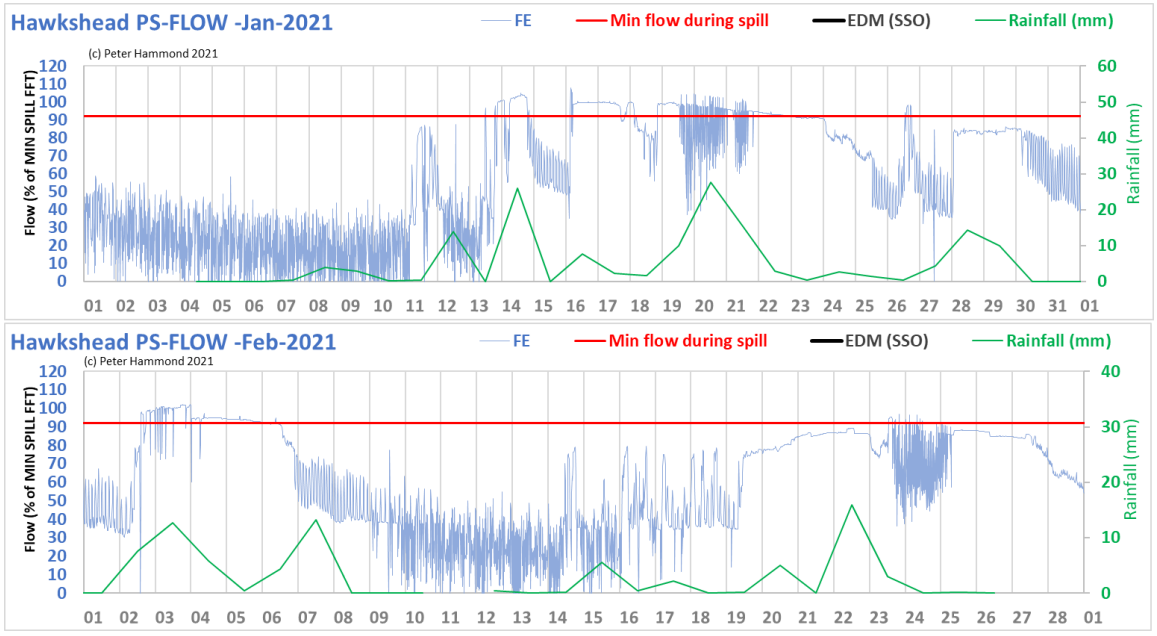


Figure 36: Flow and rainfall data suggest early spills at Hawkshead SPS on Jan 24,28,29; Feb 20-22,25-26

Fig. 37 suggests unreliable EDM data for October and November but reliable for December with the last 3 days of 2021 involving early spills. The danger is that good data is thrown out with bad.

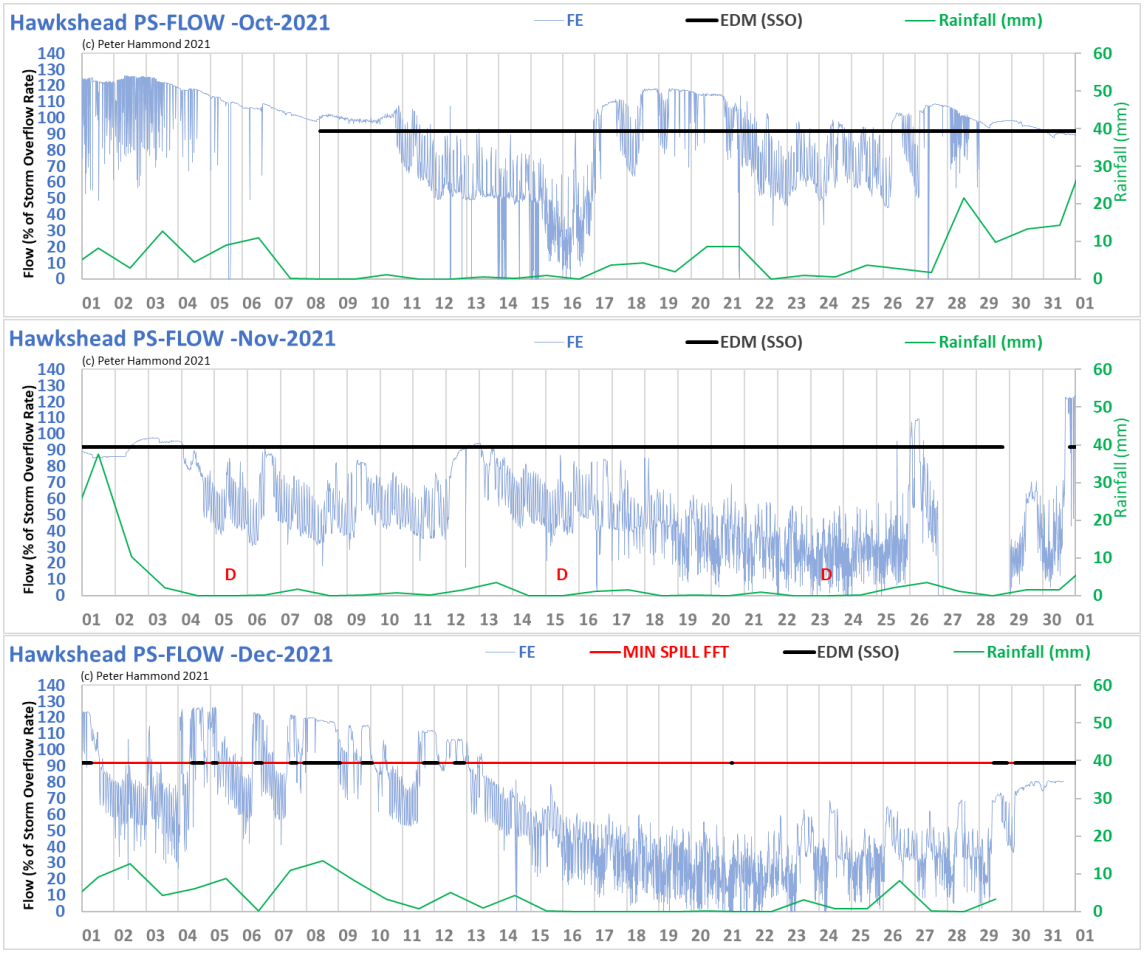


Figure 37: last 3 months of 2021 suggesting unreliable data in Oct and Nov but reliable in Dec

2022 Hawkshead SPS

The total of the detailed spills provided by the EA to Save Windermere for 2022 is 2,138 hours but the annual spilling hours in the summary data submitted to the EA by UU is much lower at 1,433 – WASP believes the former is wrong. It could be that UU has provided the EA with block spills data and not individual spill start-stop times.

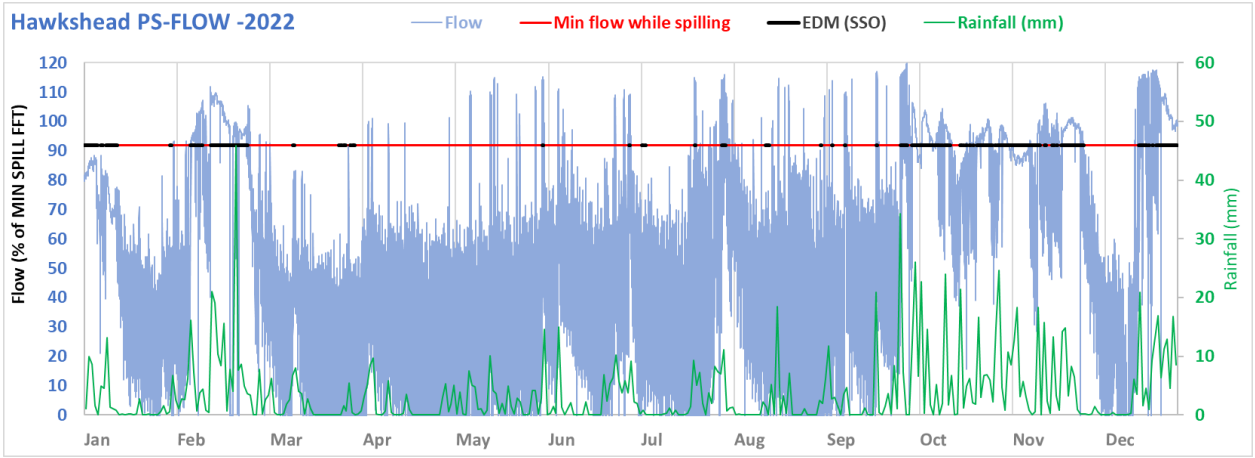


Figure 38: overview chart for 2022 for Hawkshead SPS

The spills in March 2022 appear to be erroneous false positives. However, WASP believes there is evidence of at least 8 early spilling days in January 2020 when the SPS discharged untreated sewage before or without maintaining the capacity of 14 litres/sec (**Fig**. 39).

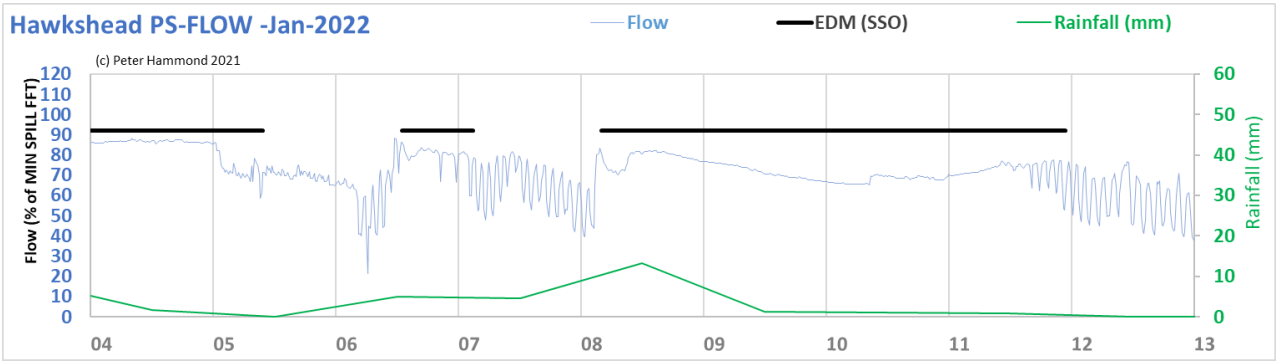


Figure 39: data suggests early "early" spilling on Jan 4-11

On Feb 18, 19 and 21, there appear to be complete losses of flow altogether.

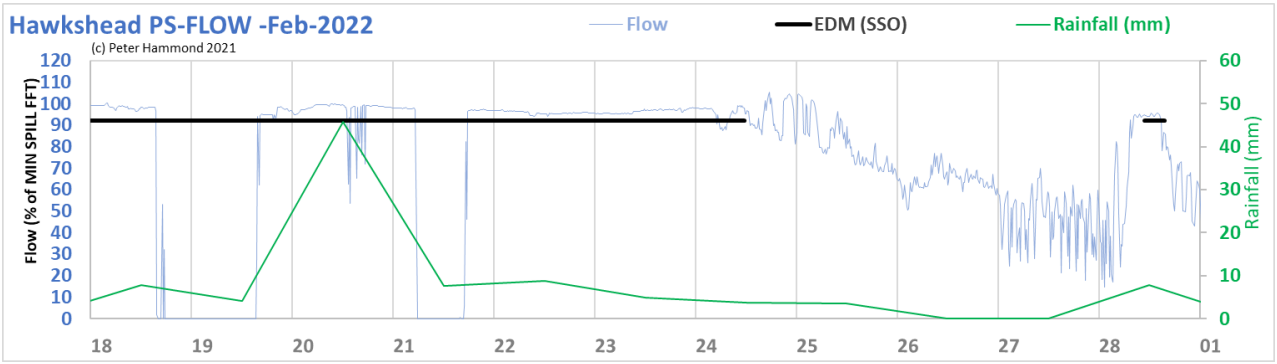


Figure 40: complete losses of flow on Feb 18, 19 and 21 counted as days with early spills

In contrast, EDM spill data for March 2022 suggests the spill monitor may generate false positives:

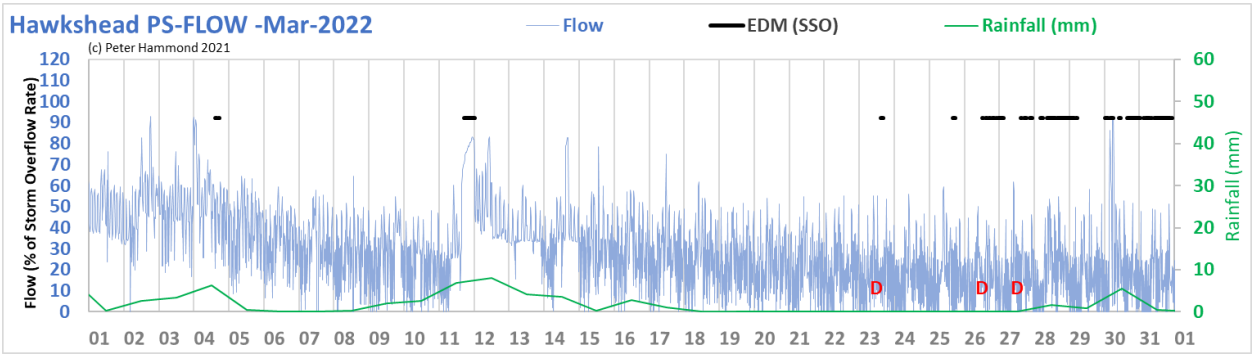
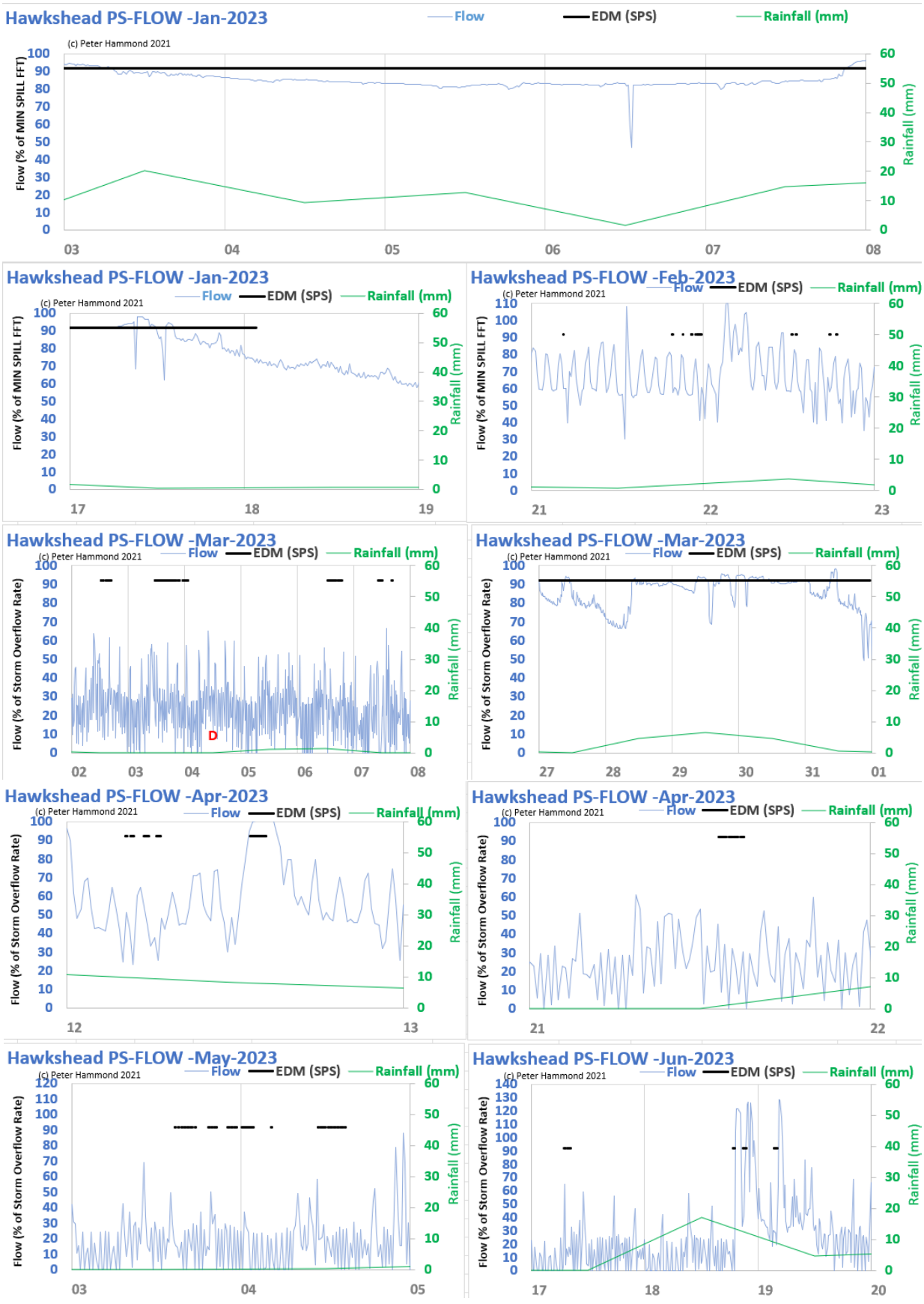


Figure 41: EDM and sewage treatment data suggests detected spills are false positives except for 11th& 30th

2023 Hawkshead SPS

WASP's analysis suggests there were at least 38 illegal spilling days at Hawkshead SPS in 2023 (**Fig**. 42).



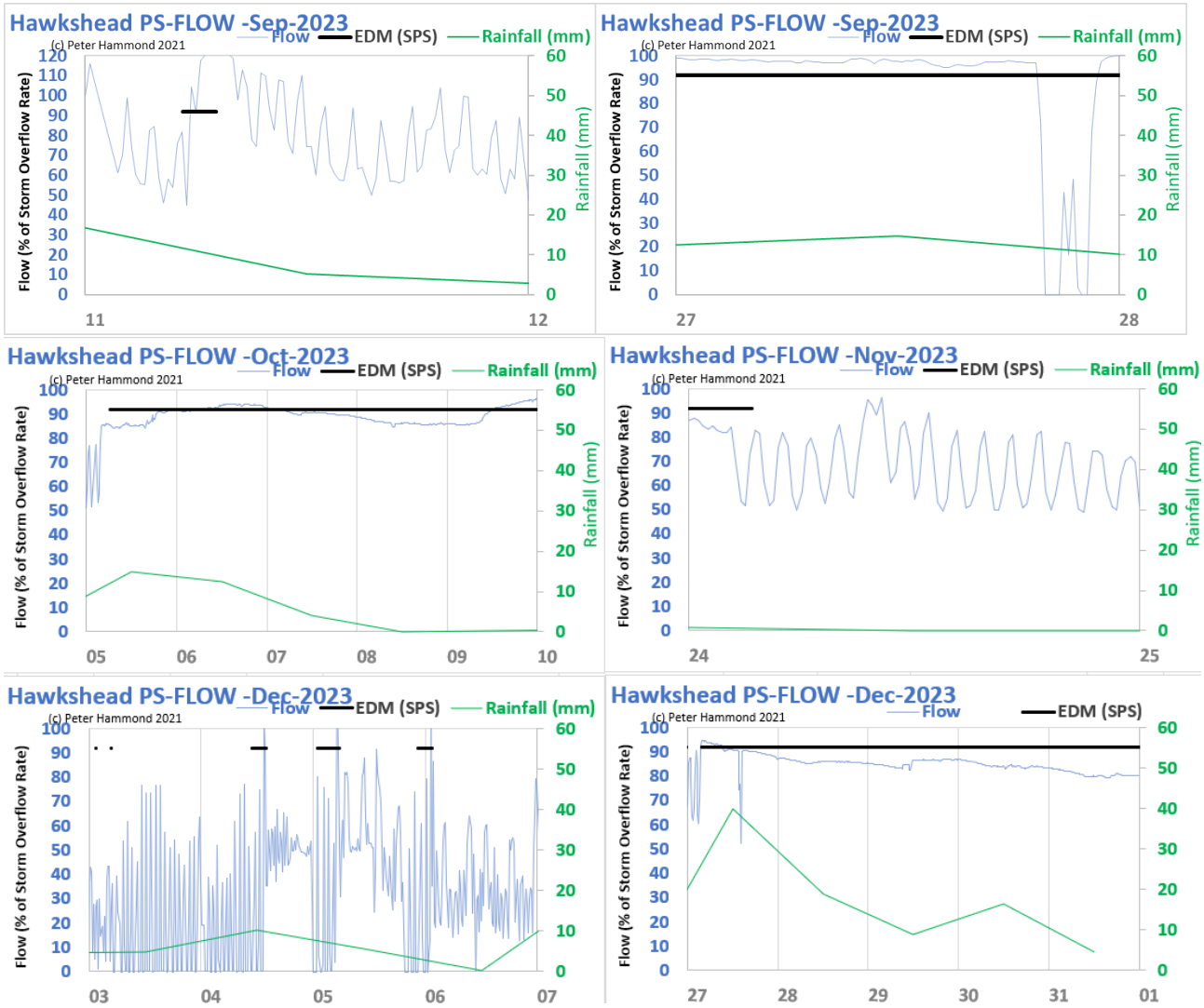


Figure 42: 42 days when Hawkshead SPS failed to pass forward the required sewage flow while spilling (Jan 3-7,17,18;Feb 21,22;Mar 2-4,6,7,27-31;Apr 12,21;May 3,4,17-19;Sep 11,27;Oct 5,7-9;Nov 24;Dec 3-6;27-31)

Near Sawrey STW

Near Sawrey STW serves a population equivalent of about 600. It discharges to the Black/Cunsey Beck which flows for around two miles between Esthwaite Water and Lake Windermere. In the summer of 2022, Cunsey Beck suffered a serious pollution incident[4] that killed 200 fish (trout, salmon, pike), eels and white-clawed crayfish.

2018 Near Sawrey STW

Although the 2018 summary spilling hours submitted to the EA by UU for Near Sawrey STW agree with the total derived from the detailed spill data supplied by UU to WASP, the overview chart (**Fig**. 43) suggests that there are periods where the detailed spill data is inconsistent with sewage treatment (FE) and Cunsey Beck levels (reflecting rainfall).

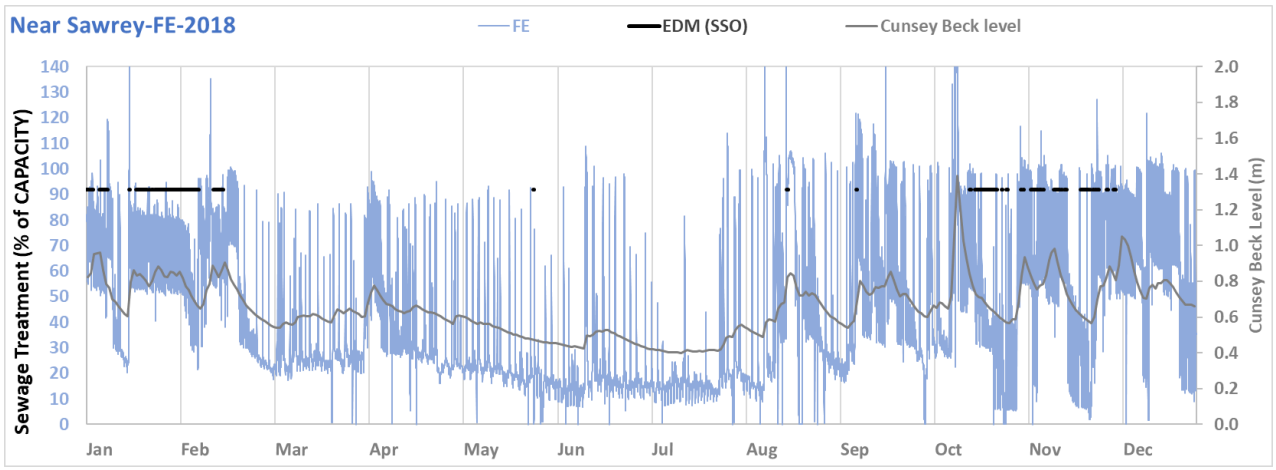


Figure 43: 2018 overview of FE (final effluent), EDM and Cunsey Beck level data for Near Sawrey STW

The monthly charts for Jan and Feb show this more clearly (**Fig**. 44).

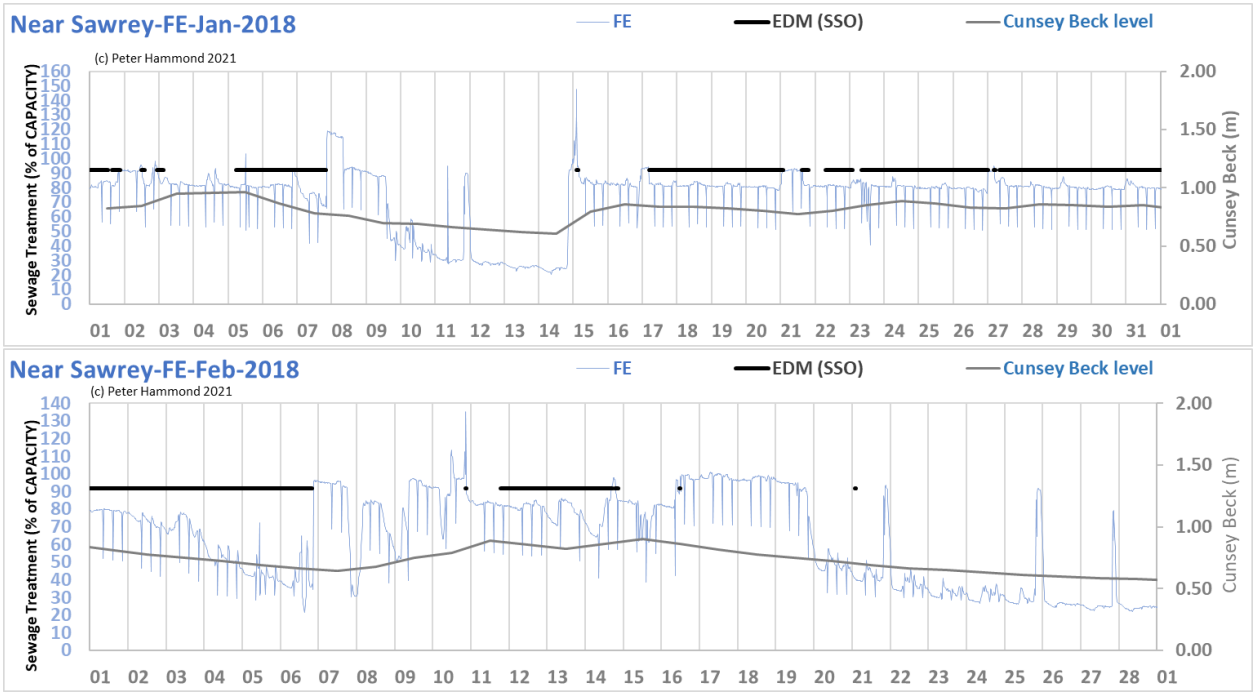


Figure 44: WASP believes Jan 2018 chart suggests consistency between sewage treatment and spills whereas that for Feb involves inconsistency or several "early" spilling days (e.g. Feb 5-6)

[4] https://cumbriacrack.com/2022/07/11/claims-untreated-sewage-killed-200-fish-in-lake-district-beck/

2019 Near Sawrey STW

The 2019 overview chart for Near Sawrey STW (**Fig**. 45) suggests the summary data submitted by UU to the EA is consistent with sewage treatment, detailed spill, rainfall and Cunsey Beck data.

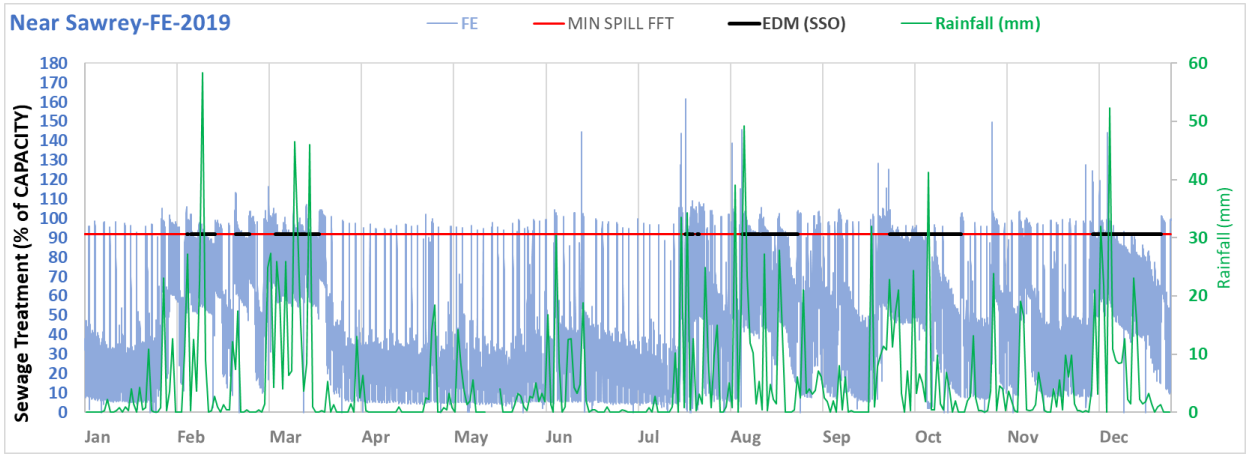


Figure 45: 2021 overview chart for Near Sawrey with STW treated effluent, rainfall and EDM

The consistency is further confirmed by analysis of monthly charts for Near Sawrey and WASP believes there were at least 19 early spilling days in 2019 (**Fig**. 46).

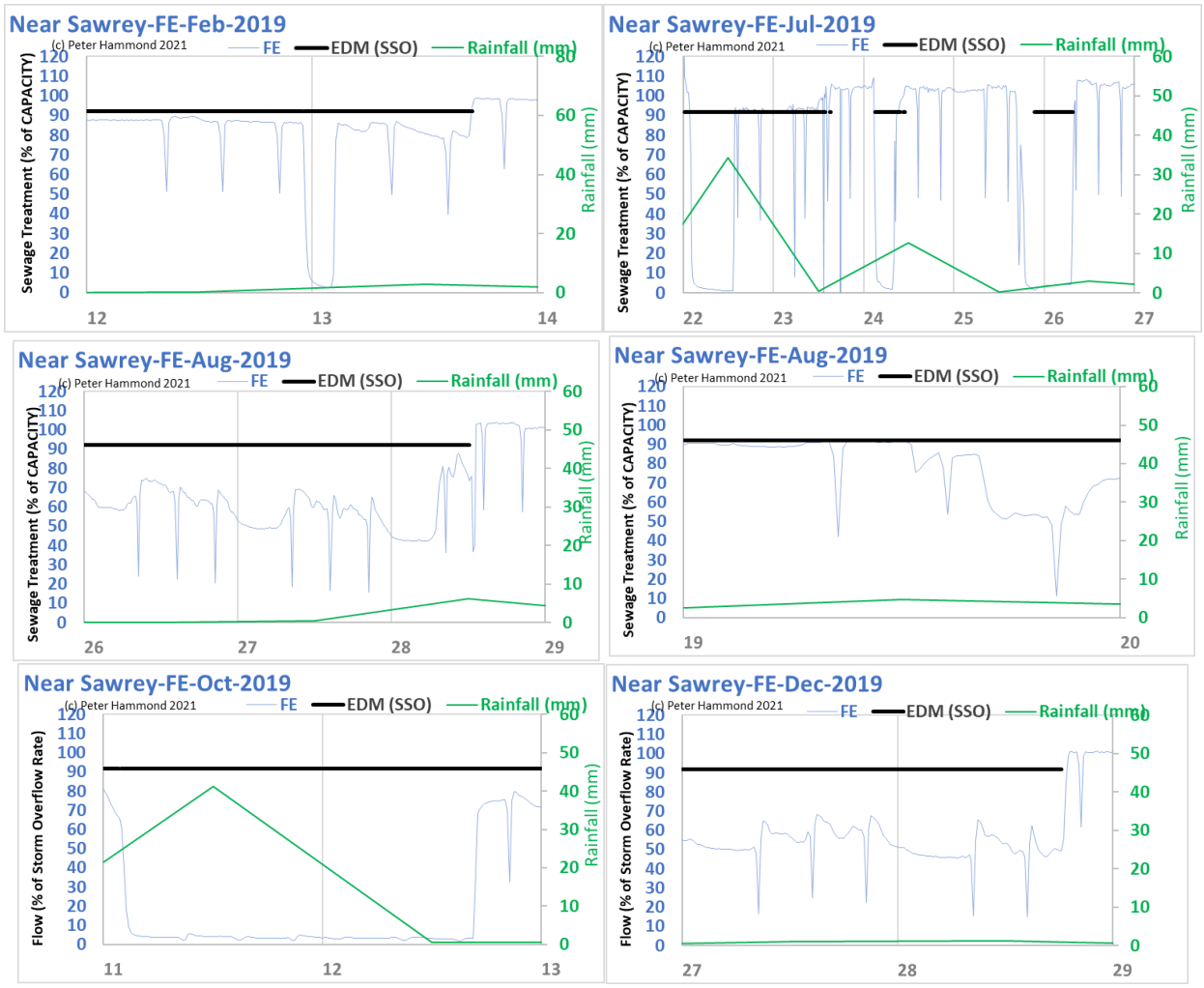


Figure 46: WASP believes there were at least 19 early spilling days in 2019 at Near Sawrey STW (Feb 12-13; Jul 22-26; Aug 19, 26-28; Oct 11-12, 19-22, 27-28)

2020 Near Sawrey STW

For Near Sawrey STW, UU submitted a total of 2,059 spilling hours for 2020. Both United Utilities and the EA declined to provide individual spill START-STOP times for 2020. Save Windermere was able to obtain telemetry data which included alarms with SPILL in their titles. Using one of them, WASP's analysis suggests at least 6 days involved spills at Near Sawrey STW in 2020 with inadequate flow being passed on to the STW (**Fig**. 47).

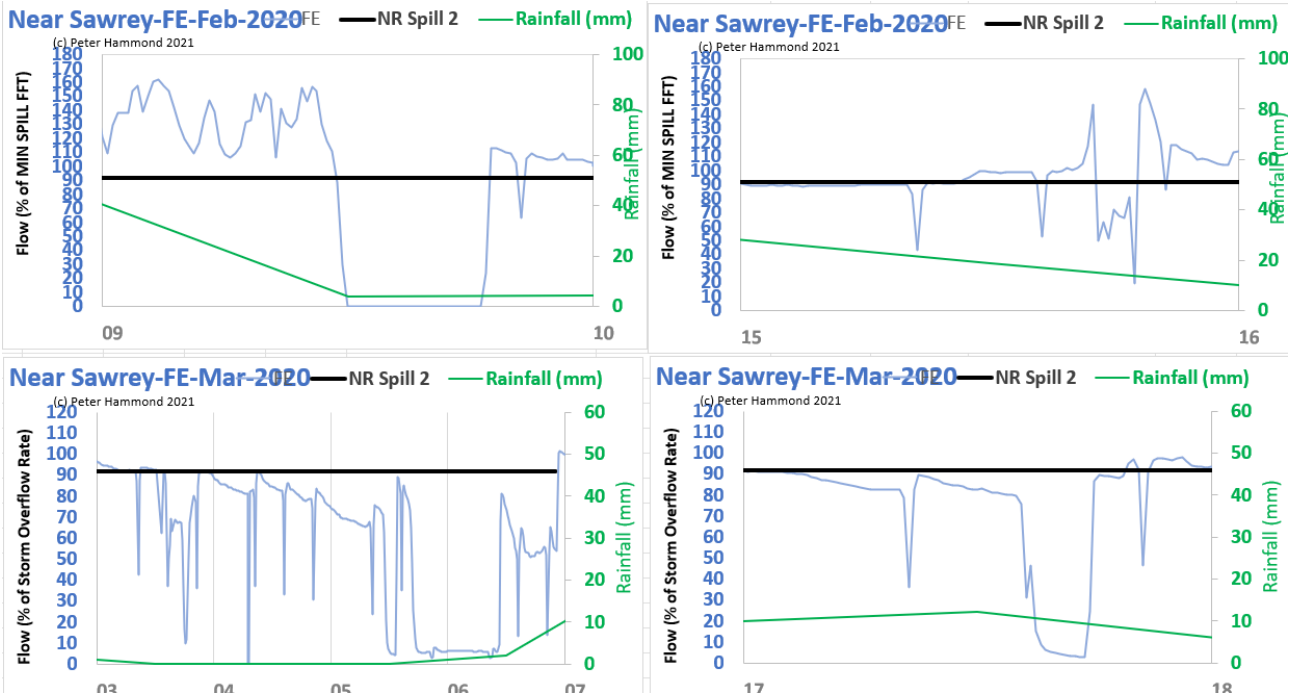


Figure 47: 6 possible days with Near Sawrey STW (Feb 9,15; Mar 3,5,6,17)

2021 Near Sawrey STW

The 2021 summary chart of final treated effluent flow (FE), rainfall, spill and Cunsey Beck level data is shown in **Fig**. 48. The summary spilling hours submitted by UU to the EA differs slightly (26 hours larger) from the detailed spill data provided by UU to WASP. Despite the storm tank at Near Sawrey STW being more than six times larger than the EA requirement and the works capacity being approximately 7 times the dry weather flow (rather than the classical 3), Near Sawrey suffers considerable spilling of untreated sewage.

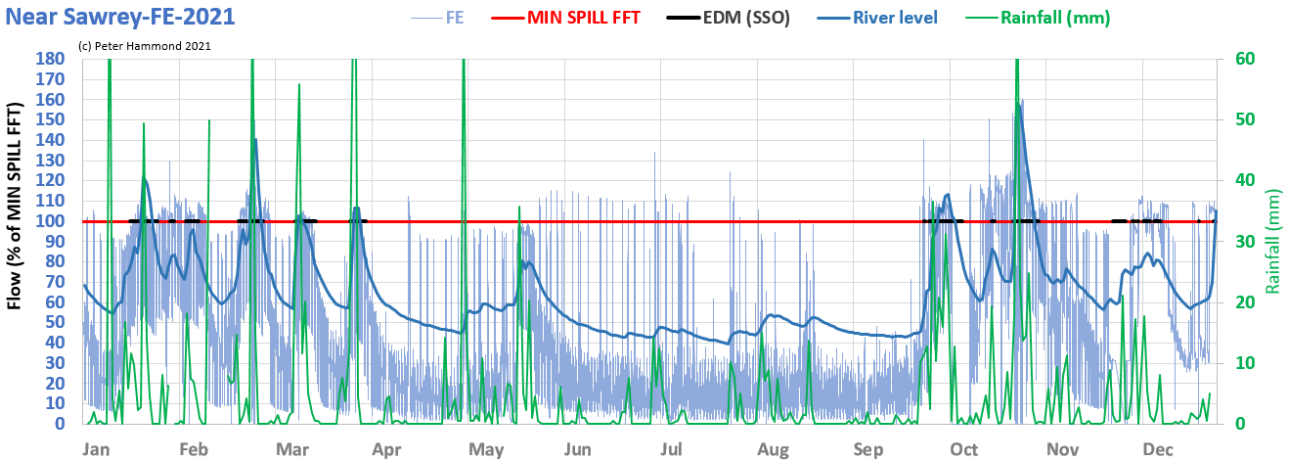


Figure 48: 2021 overview chart for Near Sawrey showing STW effluent flow, rainfall, spills

WASP believes there were 21 days with early spills from Near Sawrey STW in 2021 (**Fig**. 49).

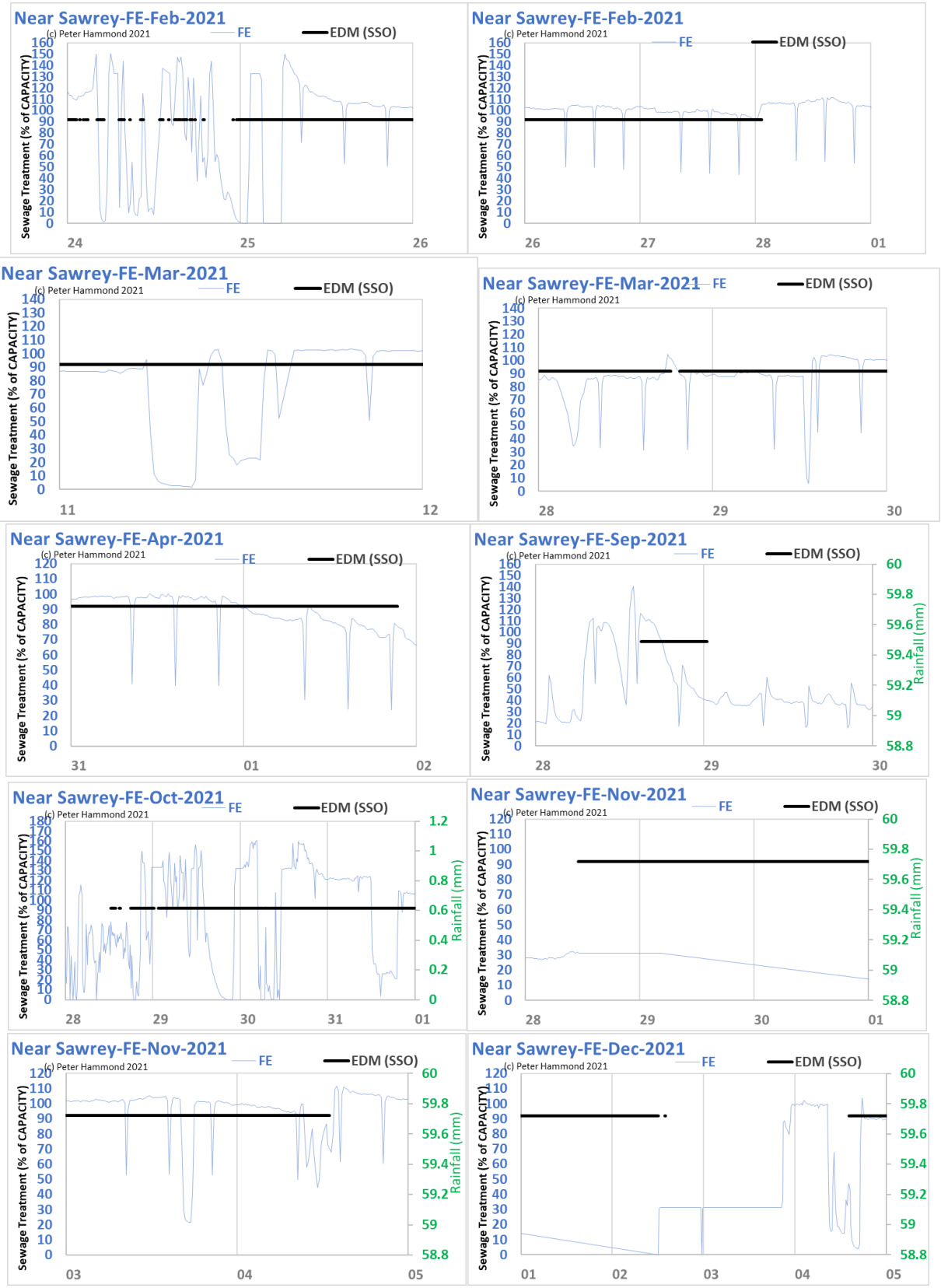


Figure 49: WASP's analysis suggests there were 21 days with early spills
(Feb 24-27;Mar 11,28-29; Apr 1; Sep 28; Oct 28-31; Nov 28-30, Nov 3-4; Dec 1,2,4)

2022 Near Sawrey STW

The annual total of spilling hours derived from the EDM data provided to Save Windermere by the EA agrees with UU's annual EDM summary data submitted to the EA and published on its website. For 2022, the overview chart is shown in **Fig**. 50.

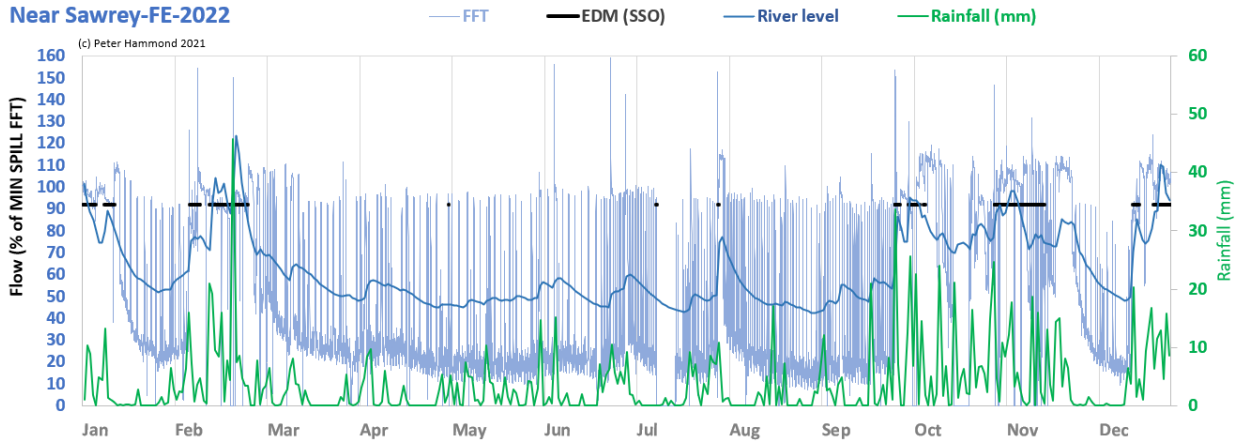


Figure 50: overview chart for Near Sawrey STW in 2022

WASP's analysis suggests there were early spills on at least 20 days in 2022 (**Fig**. 51).

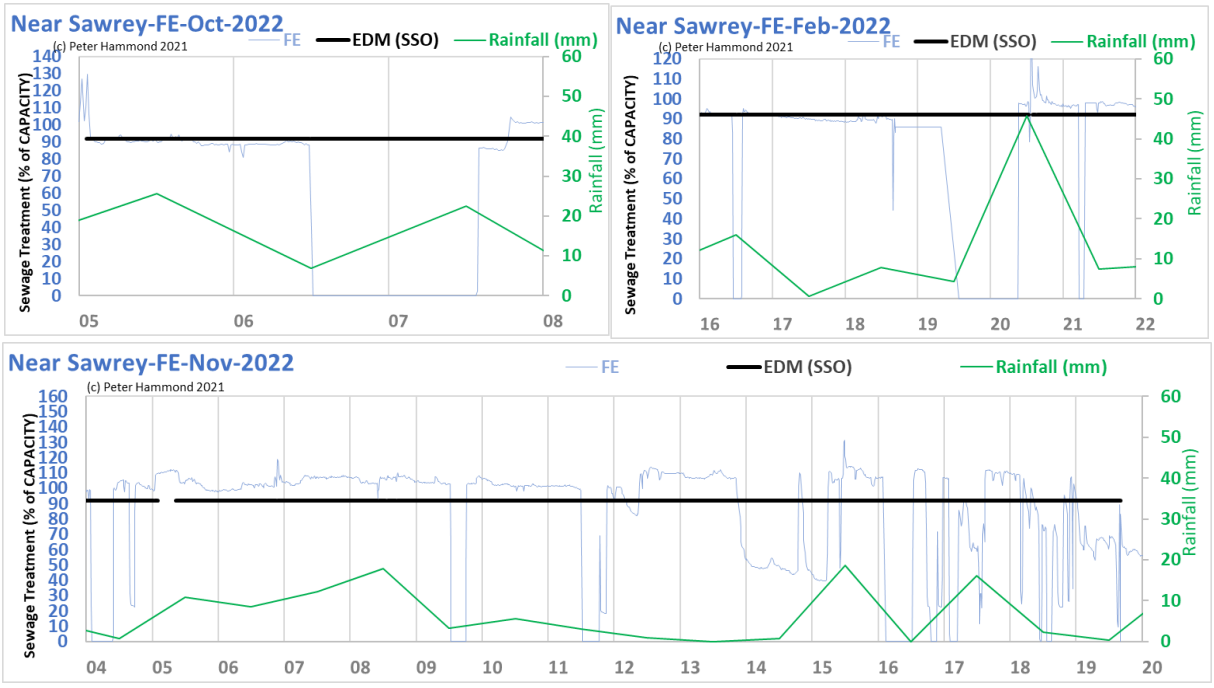


Figure 51: early spills on Feb 16-21; Oct 5-7; Nov 4,9,11-19

2023 Near Sawrey STW

The annual overview for Near Sawrey STW for 2023 is given in **Fig**. 52.

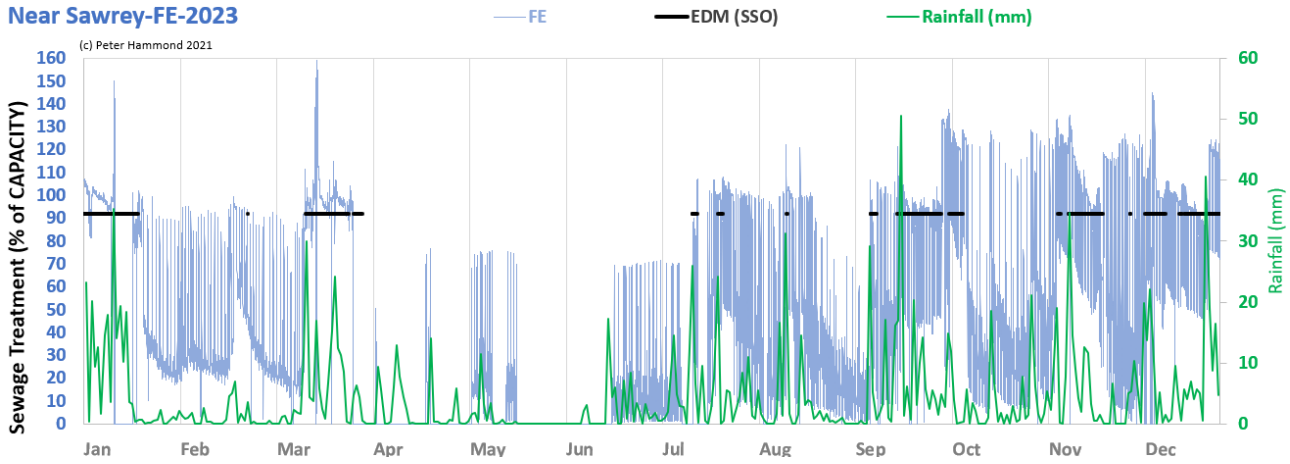


Figure 52: overview chart for Near Sawrey STW in 2023

WASP's analysis suggests there were 15 days in 2023 with illegal spills at Near Sarey STW (**Fig.** 53).

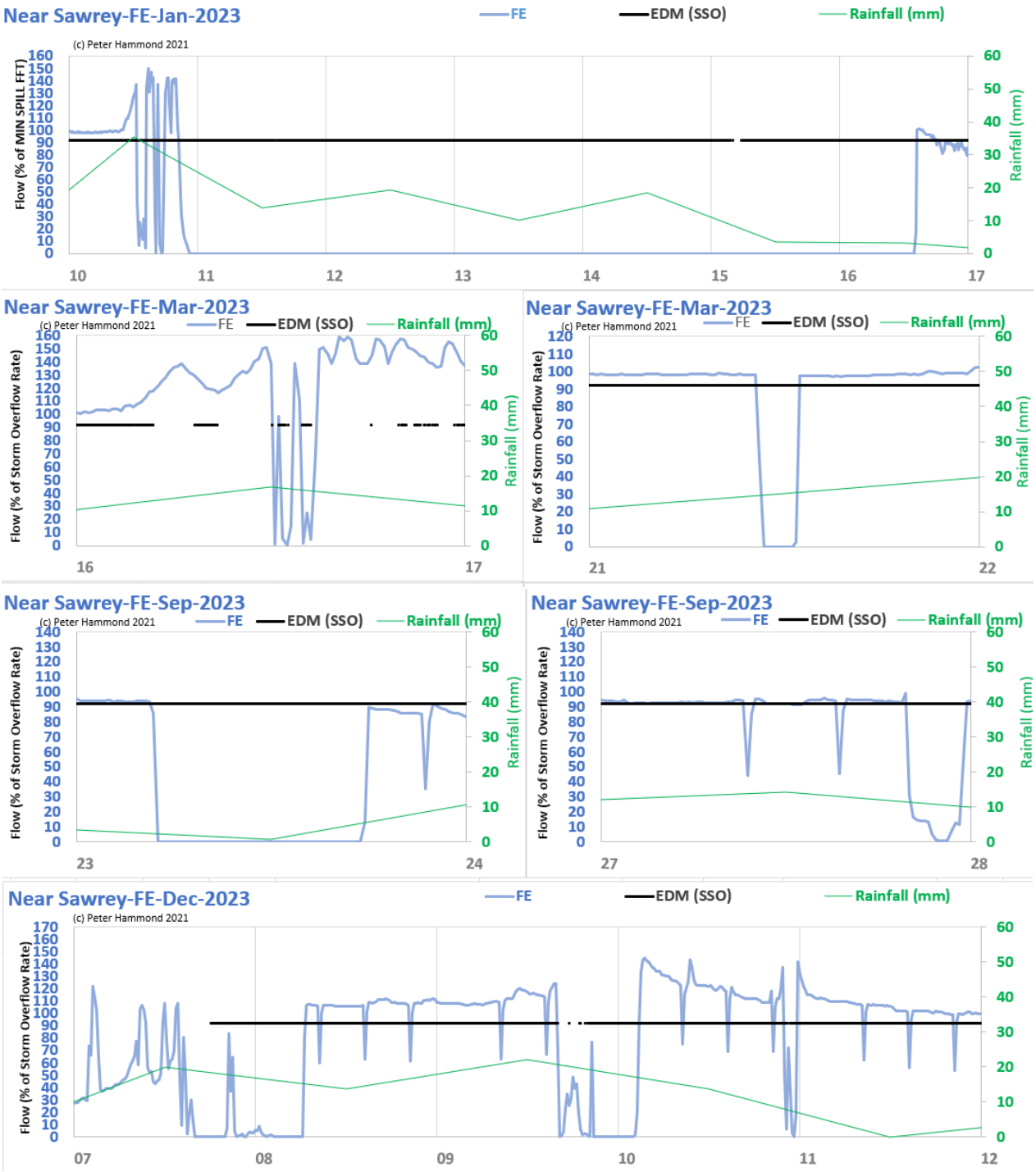


Figure 53: 15 days with illegal "early" spills at Near Sawrey STW in 2023
(Jan 10-16; Mar 16,21; Sep 23,27; Dec 7-10)

Elterwater SPS

Elterwater SPS discharges to the Great Langdale Beck which flows into Elterwater. Elterwater connects to Lake Windermere via the rivers Brathay and Rothay.

WASP's analysis suggests that there were 9 days of illegal spills when Elterwater SPS discharged untreated sewage while not passing forward sufficient flow to be compliant with its permit conditions in 2021 and 2022 (**Fig**. 54).

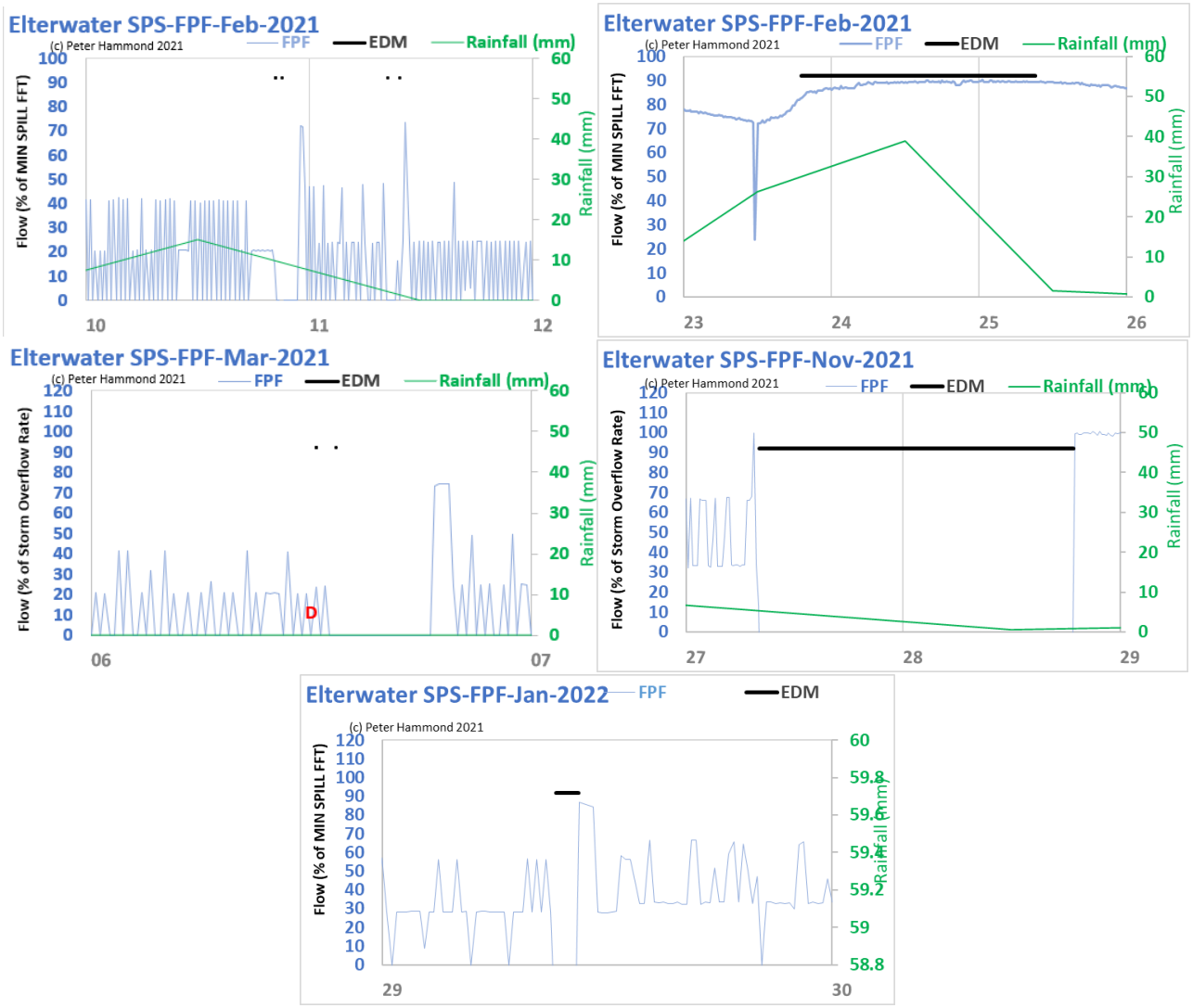


Figure 54: 9 days with insufficient pass forward flow at Elterwater SPS while spilling untreated sewage (**2021**: Feb 10,11,23-25; Mar 6; Nov 27,28; **2022**: Jan 29)

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