

ASSET INVESTIGATION DETAILS						
SAP Asset Name:	LAVISTER		Asset Template reference		CM0177001-LAVISTER - SSO-2504-Stage 4 - Non CBA-Flintshire & Wrexham	
Investigation Type	SOAF (River)					
Year of breach:	2018	Spill Trigger cause:		Hydraulic		
Year of Investigation:	2022	Investigation year performance:		35 (EDM only recorded data from 25/10/2022 - 31/12/2022)		
Population of Asset	4440	Modelled Performance: (DESIGN) / (CALIBRATED)		96 / 97		
Permit Details						
Storm Permit ID:	CM0177001	Storm Permit Name:		LAVISTER - SSO		
Asset NGR:	SJ3737658344	Waterbody ID		GB111067052130		
Discharge NGR:	SJ3738158300	Water body Discharge location		Pulford Brook		
Brief description of asset (Screen, PFF flow control, Storage, outfall)						
<p>Incoming Pipe: 300mm; CSO Type: Double-sided high-level weir ; Screening:None consented, 6mm bar screen present; Flow Control: X-Pipe; PFF Pipe: 225mm; Storage None consented; PFF Consent: 36.85 l/s. SocA: 89.8 l/s</p>						
SOAF STAGE 1						
Details of assessment:		<p>Asset condition surveys supported by hydraulic model assessment of the asset performance against available telemetry information (EDM and radar rainfall datasets). Additional flow and rainfall monitoring was undertaken to improve the baseline model accuracy and assist in defining the root cause of spills.</p>				
Permit Compliance						
PFF	Compliant					
Storage	N/A					
Screening	N/A					
Bespoke/Other	N/A					
SOAF Stage 1 findings						
<p>Following the hydraulic model assessment, the cause of the high spills at the asset is concluded to be Hydraulic, with OC Infiltration as the secondary cause of spills. The predicted pass-forward flow is within 10% of consent prior to the first spill. The model is fit for use, based on the reported spill numbers and telemetry trends.</p> <p>Modelled spills are outside of the 20% tolerance in relation to the reported spill count due to EDM ident 3E56032 only recording from 25/10/2022 - 31/12/2022 in 2022. During the final two months where data is recorded, the calibrated model produces 28 spills in comparison to the 35 reported spills. Reported spills in previous years have all been greater than 100, and this is deemed to be a reasonable measure of the true spill count given 2022 was a drier year.</p> <p>No infiltration has been removed from the design scenario due to the extent of combined network upstream of the site. An OC Infiltration secondary cause has brought forward as an outcome due the influence of long term seasonal flows in the catchment and the uncertainty over whether this is sourced from genuine network connections or direct infiltration sources. The removal of genuine infiltration sources would be beneficial in reducing future spills.</p>						
Cause of spill count :	Other Cause	Yes	Catchment Hydraulic	Yes	Infiltration & IRP required	Yes
Future Operational Management Proposal:	<p>The primary cause of the high spills is hydraulic and as such the asset progresses for Stage 2 and 3 assessments under the worst-case impact scenario of the current performance. However, operational interventions detailed below are required to mitigate excessive spills beyond the design criteria and should be implemented prior to the final Stage 4 decision confirmation.</p>					
Operational intervention required:	<p>Infiltration reduction plan (unclear whether observed GI is sourced from genuine network connections or direct infiltration sources). CCTV surveys completed downstream of asset to treatment works to understand source of surcharging seen at flow monitors. Regular maintenance of screen installed at site. Recalibration of telemetry sensor spill depth, DMS did not align with surveyed spill depth.</p> <p>The hydraulic modelling indicates the asset is compliant with its discharge permit, the above additional interventions are recommended to improve the operation of the asset</p>					
SOAF Operational Intervention						
Start Date:	Sep-24	Completion Date:	TBC	Indicative future annual spill performance (less than 40 do not continue to stage 2)		96 / 97

Intervention Description:		<p>Infiltration has been identified as a factor in excess spills at this asset. An infiltration reduction plan (IRP) is in the process of development to address the problem. It is recognised in the Storm Overflow Assessment Framework that investigation and resolution of infiltration issues can be difficult and that solutions may be iterative with IRPs potentially only succeeding over the medium to long-term.</p> <p>Telemetry has been identified as a factor in excess spills at this asset. Telemetry maintenance has been issued to address this problem. This is focused on, the re calibration to correctly capture spills and future performance will be monitored</p>			
Target Completion by Date:	Sep-29	Data years to be excluded from future SOAF triggers calculations	-	Request to hold stage 2 surveys for environment recovery	

SOAF STAGE 2					
Receiving Waterbody WFD Status			Moderate		
Stage 2a					
Aesthetic survey:	Spring	2023	Aesthetic Total score (inclusive of amenity classification, previous complaints & pollutions)	30	Moderate Impact
	Autumn	2023		20	Low Impact
Stage 2b				Yes / No, unable due to culverted watercourse	
Invertebrate survey:	Spring	2023	Invertebrate survey score:	-	-
	Autumn	2023		-	-
Stage 2c Required:				Yes / No	
Stage 2c screening:	Required	Progressed through screening?	Yes	Stage 2c water quality assessment Score:	18 - Low

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	Y	PFF Increase	N
Equivalent storage volume required	97m3	Rainscape Cost		£10,646,080.00	CBR	0.0
Bespoke future trigger agreement	40	Traditional Storage		£1,043,902.78	CBR	0.3
		Other		N/A	CBR	N/A
Key Constraints	None Identified.					
Future Active Management Proposal	<p>The primary cause of spills was hydraulic and Stage 2 impact assessments have shown that the asset was having a minimal effect on the receiving waterbody, with the waterbody itself requiring improvement to achieve Good or higher status. Assessment of the potential high-level solutions have indicated that any solution entailed excessive costs for the benefit it provided and thus the asset does not pass the SOAF Cost Benefit threshold and will not progress to detailed benefits assessment as part of the SOAF process.</p> <p>Further details are shown below detailing DCWW's plans for storm overflow spill reduction.</p>					

Conclusion and Future Spill Reduction Proposals				
Summary	<p>Based on the direction from the Welsh Government led Better River Quality Task Force, DCWW Storm overflow spill reduction programme will target the elimination of ecological harm and prevention of adverse ecological impact of any SO.</p> <p>With a large programme of assets requiring improvement priority will be given to CSOs having the greatest impact in the most sensitive receiving waters.</p> <p>To ensure that the improvement delivered is long term, the improvements for each site will be based on the expectation that water quality upstream of the discharge meets good or high ecological status (GES) irrespective of the actual status of the water.</p> <p>This approach has formed the basis of DCWW's portfolio investment plan for Storm Overflows.</p> <p>LAVISTER - SSO was Shown to have a Low Impact therefor as set out above based upon our Long Term Delivery Strategy a spill reduction scheme to eliminate this level of impact is Profiled to be delivered before 2040</p>			
Asset Prioritisation Level	Priority 4		Delivery Predicted Period	AMP10
Asset NEP ID	N/A	Asset NEP Driver Code	N/A	Detailed Design Predicted Period
Progression to Stage 5 In AMP	No	Proposed Solution yet to be taken through detailed design developed		

SOAF AGREEMENT						
	Date	SOAF STAGE		Name	Contact Details	Location of Output
DCWW Approval	01/09/2024	Stage 4 - Non CBA		Christian Phillips Adams	christian.phillipsadams@dwrcymru.com	Email
Regulator Liaison Date	Click here to enter a date					
CSO Classification						
Satisfactory	N	Unsatisfactory	Y	Sub Standard	Y	
		Any operation in dry weather conditions?	N	Does not meet modern standards of engineering and aesthetic control for storm overflow structures set out in the British standard BS EN 752:2017 drain and sewer systems outside buildings	N	

Any operation in breach of permit conditions?	N	Does not have sufficient hydraulic capacity compared to accepted minimum design standards	Y
Any significant visual or aesthetic impact due to solids or sewage fungus?	Y	Risks becoming unsatisfactory because discharges have increased beyond the original design due to infiltration, growth and urban creep	N
Cause or significantly contributes to a deterioration in the biological or chemical status of the receiving water?	Y		
Causes or significantly contributes to failures in bathing water quality standards for identified bathing waters?	N/A		
Causes or significantly contributes to failures in shellfish quality standards for identified shellfish waters	N/A		
Causes or significantly contribute to failures in water quality standards in coastal and transitional waters?	N/A		
Causes pollution of groundwater?	N/A		