

ASSET INVESTIGATION DETAILS						
SAP Asset Name:	Abererch		Asset Template reference		CG0431301-ABERERCH WWTW STORM OVERFLOW-73071-Stage 4 - Non CBA-Dwyfor a Merionnydd	
Investigation Type	SOAF (River)					
Year of breach:	2018	Spill Trigger cause:		Hydraulic		
Year of Investigation:	2022	Investigation year performance:		224		
Population of Asset	367	Modelled Performance: (DESIGN) / (CALIBRATED)		146 / 196		
Permit Details						
Storm Permit ID:	CG0431301	Storm Permit Name:		ABERERCH WASTEWATER TREATMENT WORKS		
Asset NGR:	SH3961936780	Waterbody ID		GB110065053570		
Discharge NGR:	SH3961536762	Water body Discharge location		Erch - lower		
Brief description of asset (Screen, PFF flow control, Storage, outfall)						
<p>Inlet Spill point Incoming line: 176mm Gravity; CSO Type: Settled Storm Tank; Screening: Static Wave Mesh Screen on Storm Tank Spill Weir; Flow Control: Actuated Valve; FFT Pipe: Unknown; Consent: 2.95 l/s (Permit); 3xDWF: 2.68 l/s.</p> <p>Storm tank spill point Volume: 20 m3 (Modelled); Spill level: 7.35mAOD; Tank emptying philosophy: Unknown; Tank emptying Rate: Unknown.</p> <p>Supporting text Flows entering the works pass through the inlet chamber. Flow in excess of FFT passes over the storm dividing weir in the inlet chamber to the storm tank. Once both storm tanks are full, spill flows pass over the screened weir in the storm tank to the outfall pipe.</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	Design Compliant – Operational Intervention required to restore					
Storage	Not Compliant – further investigation required					
Screening	Compliant					
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.</p> <p>The predicted pass-forward flow is below consent prior to the first spill and an operational Intervention required to restore.</p> <p>The modelled storage provision of 20m3 is below the consent specified volume of 31.5m3. The modelled storage is based on limited available survey data and as-built records for the site.</p> <p>The model is fit for use, based on the reported spill numbers and telemetry trends.</p>						
Cause of spill count :	Other Cause	-	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>Additional storage is required to ensure that permit storage requirement is provided at the asset. Undertake full storm tank survey to validate both tank structure dimensions and confirm extent of intervention needed.</p> <p>Infiltration Reduction Plan (no discrete ingress locations identified by the SOAF surveys).</p> <p>Ensure that the asset FFT setting consistently meets the permit PFF requirement.</p> <p>Once these interventions are in place, the hydraulic modelling indicates the asset will be compliant with it's discharge permit.</p>					
SOAF Operational Intervention						
Start Date:	Aug-24	Completion Date:	TBC	Indicative future annual spill performance (less than 40 do not continue to stage 2)		146

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>The PFF at first spill has been noted to be slightly below the expected levels, this is not noted as a factor in excess spills at this asset however the assessment has determined that the asset requires adjustments to consistently achieve PFF. Further investigation will be undertaken and the appropriate adjustments will be undertaken following this</p>			
Target Completion by Date:	Aug-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	2022	Aesthetic Total score (inclusive of amenity classification, previous complaints & pollutions)	30	Moderate Impact
	Autumn	2022		30	Moderate Impact
Stage 2b				Yes / No, unable due to culverted watercourse	
Invertebrate survey:	Spring	2022	Invertebrate survey score:	0	No impact
	Autumn	2022		6	Moderate
Stage 2c Required:				Yes / No	
Stage 2c screening:	Not Required	Progressed through screening?	No	Stage 2c water quality assessment Score:	Not required

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	Y	PFF Increase	N
Equivalent storage volume required	85m3	Rainscape Cost		Not Achievable	CBR	-
Bespoke future trigger agreement	40	Traditional Storage		£1,028,253	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 significant 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>ABERERCH WASTEWATER TREATMENT WORKS was Shown to have a Moderate Impact therefore 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 3		Delivery Predicted Period	AMP9/10	
Asset NEP ID	DCWW102044a	Asset NEP Driver Code	W_U_O_IMP1	Detailed Design Predicted Period	AMP8/9
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	01/08/2024	Stage 4 - Non CBA		Christian Phillips Adams	christian.phillipsadams@dwrwymru.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?	Y	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?	Y	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		