

ASSET INVESTIGATION DETAILS			
SAP Asset Name:	Verwig WwTW	Asset Template reference	BH0073802-VERWIG STW VERWIG NR CARDIGAN DYFED-70293-Stage 1 - OC-Ceredigion
Investigation Type	SOAF (River)		
Year of breach:	2020	Spill Trigger cause:	OC Continuation Restriction (Flow Control)
Year of Investigation:	2022	Investigation year performance:	6
Population of Asset	168	Modelled Performance: (DESIGN) / (CALIBRATED)	5 / 5
Permit Details			
Storm Permit ID:	BH0073802	Storm Permit Name:	Settled storm overflow at VERWIG STW
Asset NGR:	SN1828549397	Waterbody ID	GB41002G203300
Discharge NGR:	SN1828149416	Water body Discharge location	0
Brief description of asset (Screen, PFF flow control, Storage, outfall)			
Inlet Spill point Incoming line: 150 mm gravity; CSO Type: Hole in wall of wet well; Screening: Static (dimensions unknown); Flow Control: Pump; Rising Main; Consent: 1.5l/s. Storm tank spill point Volume: 30 m3; Spill level: 3.25mAOD; Tank emptying philosophy: Unknown; Tank emptying Rate: Unknown			

SOAF STAGE 1						
Details of assessment:		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.				
Permit Compliance						
PFF						Compliant
Storage						Compliant
Screening						N/A
Bespoke/Other						N/A
SOAF Stage 1 findings						
Following the hydraulic model assessment, the cause of the high spills at the asset during previous EDM trigger years is concluded to be OC Flow Control, with OC Telemetry as the secondary cause of spills. The predicted pass-forward flow is in excess of consent prior to the first spill during the 2022 assessment year. The model is fit for use, based on the reported spill numbers and telemetry trends. Flow is pumped from the wet well to the brush screen which then feeds the aeration tank. When the brush screen cannot cope the flow weirs over and returns to the well. This occurs on every pump.. This suggests that screen/treatment capacity may be driving spills at the inlet SPS rather than the performance of the pump. No surveys were undertaken downstream of the Inlet SPS pump discharge location. No FFT data available. Numerous examples of the Inlet SPS spilling during dry weather, despite model suggesting incoming flows should not be beating pumps.						
Cause of spill count :	Other Cause	OC Continuation Restriction (Flow Control)	Catchment Hydraulic	No	Infiltration & IRP required	Yes
Future Operational Management Proposal:	The primary cause of the spills are operational factors that have been assessed as requiring longer term (1+ year) intervention programmes. Given the scale of the issue, the asset will progress under a bespoke intervention programme with details to be supplied to with the regulator and other stakeholders outside of the normal SOAF processes					
Operational intervention required:	Inlet & Storm Tank Return pump maintenance and servicing to retain 2022 PFF performance Recalibrate existing depth telemetry on Inlet SPS and Storm Tank to remove errors and improve data confidence. Review signals that feed into binary multi-derived EDM and confirm whether that are appropriate and calibrated correctly (update DMS Install Sheet accordingly). Infiltration Reduction Plan (no point sources identified by surveys) Once these interventions are in place, the hydraulic modelling indicates the asset will be compliant with it's discharge permit.					
SOAF Operational Intervention						
Start Date:	Jan-24	Completion Date:	TBC	Indicative future annual spill performance (less than 40 do not continue to stage 2)		5
Intervention Description:	Flow control Performance has been identified as a factor in excess spills at this asset, the assessment has determined that the flow control setting requires adjustments to achieve PFF. 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.					
Proposed Completion Date:	Jan-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	Poor
Stage 2a	

Aesthetic survey:	Spring	2022		Aesthetic Total score (inclusive of amenity classification, previous complaints & pollutions)	10	Very Low Impact
	Autumn	2022			0	No Impact
Stage 2b					Yes / No unable due to culverted watercourse	
Invertebrate survey:	Spring	2022		Invertebrate survey score:	3	Very Low
	Autumn	2022			12	Severe
Stage 2c Required:					Yes / No	
Stage 2c screening:	Not Required	Progressed through screening?	Not Required	Stage 2c water quality assessment Score:	Not required	

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	N	PFF Increase	N
Equivalent storage volume required	-	Rainscape Cost		N/A	CBR	N/A
Bespoke future trigger agreement	40	Traditional Storage		N/A	CBR	N/A
		Other		N/A	CBR	N/A
Key Constraints	-					
Future Active Management Proposal	-					

Conclusion and Future Spill Reduction Proposals					
Summary	Settled storm overflow at VERWIG STW was Shown to have a other cause issue resulting in higher spills which are expected to reduce once a resolution has been implemented. Once the assets New spill performance is established, if this is shown to still be in excess of 10 the impact of the asset will be established as part of DCWW's Storm Overflow Water Quality Assessment Strategy (SOWQAS) in AMP8				
Asset Prioritisation Level	Priority 1			Delivery Predicted Period	AMP8/9
Asset NEP ID	DCWW101956a	Asset NEP Driver Code	W_U_O_IMP1	Detailed Design Predicted Period	AMP7/8
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	05/01/2024	Stage 1 - OC	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	N
		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	N
		Any significant visual or aesthetic impact due to solids or sewage fungus?	N	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