SOAF Investigation Output Summary

Reference: SOAF.R 00001

Please see Audit Statement Technical Guidance for further information

ASSET INVESTIGATION DETAILS					
SAP Asset Name:	Llay Singrett (Boreen Camp) CSO		**Asset Template reference**		CM0197701-LLAY SINGRET (BOREEN CAM) CSO-2205-Stage 1 - OC-Flintshire & Wrexham
Investigation Type	SOAF (River)				
Year of breach:	*2019*	**Spill Trigger cause:**		*OC Infiltration*	
Year of Investigation:	*2022*	**Investigation year performance:**		*2022*	
Population of Asset	*3491*	**Modelled Performance: (DESIGN) / (CALIBRATED)**		*53 / 53*	
Permit Details					
Storm Permit ID:	CM0197701	**Storm Permit Name:**		LLAY SINGRET (BOREEN CAM) CSO, SINGRET HILL, LLAY, WREXHAM	
Asset NGR:	SJ3401255608	**Waterbody ID**		GB111067052173	
Discharge NGR:	SJ3403655622	**Water body Discharge location**		Alyn - Hope to confluence with Dee	
Brief description of asset *(Screen, PFF flow control, Storage, outfall)*					
Incoming Pipe: 450 mm; CSO Type: Single-sided, high-level weir; Screening: Hydrok Mecmex - 6mm 2D; Flow Control: X-Pipe; PFF Pipe: 150mm; Storage Provision: 58m3 - upstream online storage; Consent: 37 l/s. SocA is 66.6 l/s.					

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	Compliant					
Bespoke/Other	N/A					
SOAF Stage 1 findings						
Primary Cause: OC Infiltration Secondary Cause: None Following the hydraulic model assessment, the cause of the high spills at the asset is concluded to be OC Infiltration, with no secondary cause of spills. The predicted pass-forward flow is within 11% of consent prior to the first spill. The model is fit for use, based on the reported spill numbers and telemetry trends. Telemetry trends clearly show the effects of rainfall induced groundwater infiltration during the winter months which has a significant effect on the predicted spill count. Representations using an industry standard, average level of infiltration (40% PG) predict a spill count for the assessment year below that of the threshold for investigation level (33).						
Cause of spill count :	**Other Cause**	**Yes**	**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 deliverable in the short term. The asset has been added to the SOAF Intervention programme with the details outlined below.*					
Operational intervention required:	*Infiltration Reduction Plan*					
SOAF Operational Intervention						
Start Date:	**Jan-24**	**Completion Date:**	*TBC*	**Indicative future annual spill performance** *(less than 40 do not continue to stage 2)*		33
Intervention Description:	**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			Moderate		
Stage 2a					
Aesthetic survey:	Spring	2022	**Aesthetic Total score** (inclusive of amenity classification, previous complaints & pollutions)	145	Severe Impact
	Autumn	2022		125	Severe Impact
Stage 2b				*Yes / No unable due to culverted watercourse*	
Invertebrate survey:	Spring	2022	**Invertebrate survey score:**	20	Extremely severe
	Autumn	2022		20	Extremely severe

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	0	PFF Increase	Y/N
Equivalent storage volume required	6.26349m3	**Rainscape Cost**		-	**CBR**	-
Bespoke future trigger agreement	40	**Traditional Storage**		£80,339.10	**CBR**	Lowest Cost Screening Check
		Other		£ Cost	**CBR**	Update if required
Key Constraints						
Future Active Management Proposal						

Conclusion and Future Spill Reduction Proposals					
Summary	*LLAY SINGRET (BOREEN CAM) CSO, SINGRET HILL, LLAY, WREXHAM 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	*DCWW102045a*	**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 devloped*			

SOAF AGREEMENT					
	Date	**SOAF STAGE**	**Name**	**Contact Details**	**Location of Output**
DCWW Approval	27/01/2024	*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	**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	**Y**
		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?	**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**		