SOAF Investigation Output Summary

Dŵr Cymru Welsh Water

Cyfoeth Naturiol Cymru Natural Resources Wales

Reference: SOAF.R 00001

Please see Aurill Statement Technical Guidance for further information

ASSET INVESTIGATION DETAILS					
SAP Asset Name:	Dolgellau Marian Mawr		**Asset Template reference**	CG0092201-MARIAN MAWR CSO-2155-Stage 4 - Non CBA-Dwyfor a Meirionnydd	
Investigation Type	SOAF (River)				
Year of breach:	*2019*	**Spill Trigger cause:**		*Hydraulic*	
Year of Investigation:	*2019*	**Investigation year performance:**		*58 Spills*	
Population of Asset	*2570*	**Modelled Performance: (DESIGN) / (CALIBRATED)**		*119 Spills*	
Permit Details					
Storm Permit ID:	CG0092201	**Storm Permit Name:**		MARIAN MAWR CSO, DOLGELLAU	
Asset NGR:	SH7253117834	**Waterbody ID**		GB110064048800	
Discharge NGR:	SH7203517933	**Water body Discharge location**		Wnion - lower	

Brief description of asset
(Screen, PFF flow control, Storage, outfall)

Incoming Pipe: 900 mm; CSO Type: High-level, twin-sided weir type; Screening: Mechanical, flat screen 6mm 2D; Flow Control: Penstock (fully open); PFF Pipe: 600 mm; Storage Provision: None; Consent: 87l/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	Design Compliant – Operational Intervention required to restore - Clean d/s sewer
Storage	N/A
Screening	Compliant
Bespoke/Other	N/A

SOAF Stage 1 findings

Primary Cause of Spill: Hydraulic

Following the hydraulic model assessment the cause of the high spills at the asset is concluded to be hydraulic, with pass forward flow between 80-90% of the consented value. The model is fit for use, based on the reported spill numbers and telemetry trends.

It is recommended that the asset is progressed to Stage 2 assessment.

Cause of spill count :	**Other Cause**	**Yes**	**Catchment Hydraulic**	**Yes**	**Infiltration & IRP required**	**No**
Future Operational Management Proposal:	*The primary cause of spills was found to be hydraulic, and as such the asset progressed through to Stage 2 of the SOAF process*					
Operational intervention required:	*Asset and CCTV survey indicates the presence of sediment in the continuation line from the asset. Regular cleaning and maintenance is required.*					

SOAF Operational Intervention					
Start Date:	**Jun-24**	**Completion Date:**	*TBC*	**Indicative future annual spill performance** *(less than 40 do not continue to stage 2)*	113

Intervention Description:	**A continuation restriction due to maintenance has been identified as a factor in excess spills at this asset. A cleanse of the sewerage network is required to restore compliant flows. This asset will be highlighted for future Cyclic Maintenance based upon the review of the post intervention return.**				
Target Completion by Date:	**Jun-25**	**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			Good		
Stage 2a					
Aesthetic survey:	Spring	UTC	**Aesthetic Total score** (inclusive of amenity classification, previous complaints & pollutions)	UTC	UTC
	Autumn	UTC		UTC	UTC
Stage 2b				*Yes / No unable due to culverted watercourse*	
Invertebrate survey:	Spring	UTC	**Invertebrate survey score:**	UTC	UTC
	Autumn	UTC		UTC	UTC
Stage 2c Required:				*Yes / No*	
Stage 2c screening:	Not Required	**Progressed through screening?**	Yes	**Stage 2c water quality assessment Score:**	0 - No Impact

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	Y	PFF Increase	N
Equivalent storage volume required	379.83453	**Rainscape Cost**		£6,789,800.00	**CBR**	0.0
Bespoke future trigger agreement	40	**Traditional Storage**		£1,406,886.65	**CBR**	0.0
		Other		-	**CBR**	-
Key Constraints	*None identified*					
Future Active Management Proposal	*The primary cause of spills was hydraulic and Stage 2 impact assessments have shown that the asset was not having a detrimental effect on the receiving waterbody. Assessment of the potential high-level solutions have indicated that the asset does not pass the SOAF cost benefit threshold for further investigation. Further details are shown below detailing DCWW's plans for storm overflow spill reduction*					

Conclusion and Future Spill Reduction Proposals					
Summary	*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. With a large programme of assets requiring improvement priority will be given to CSOs having the greatest impact in the most sensitive receiving waters.* *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.* *This approach has formed the basis of DCWW's portfolio investment plan for Storm Overflows.* *MARIAN MAWR CSO, DOLGELLAU was Shown to have a No / Very low Impact therefor as set out above based upon our Long Term Delivery Strategy a spill reduction scheem to elimeite this level of impact is Profiled to be delivered between 2040-2050*				
Asset Prioritisation Level	*Priority 5*			**Delivery Predicted Period**	*AMP11/12*
Asset NEP ID	*N/A*	**Asset NEP Driver Code**	*N/A*	**Detailed Design Predicted Period**	*AMP10/11*
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	01/06/2024	*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?	**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?	**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?	**N**		
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**		