

ASSET INVESTIGATION DETAILS						
SAP Asset Name:	Mold WwTW		Asset Template reference	CM0031002-MOLD STW - STORM TANKS DISCHAR-2890-Stage 4 - Non CBA-Flintshire & Wrexham		
Investigation Type	SOAF (River)					
Year of breach:	2021	Spill Trigger cause:	Hydraulic			
Year of Investigation:	2023	Investigation year performance:	94			
Population of Asset	20176	Modelled Performance: (DESIGN) / (CALIBRATED)	76 / 76			
Permit Details						
Storm Permit ID:	CM0031002	Storm Permit Name:	sso at MOLD SEWAGE TREATMENT WORKS			
Asset NGR:	SJ2453563325	Waterbody ID	GB41102G204800			
Discharge NGR:	SJ2463063260	Water body Discharge location	A tributary of the River Alyn			
Brief description of asset (Screen, PFF flow control, Storage, outfall)						
<p>Inlet works CSO Incoming line: 600 mm & 450mm gravity sewers & 200mm Rising main from storm return pump; CSO Type: High level weir; Screening: Escalator screen 6mm 2D; Flow Control: Rotork penstock in inlet channel; FFT Pipe: 750mm*2986mm (retained from received model); Consent: 92 l/s; 3DWF: 165.6 l/s.</p> <p>Storm Tank Volume: 2437.61m3; Spill level: 99.01mAOD, Tank emptying philosophy: Return Pump arrangement; Tank emptying Rate: Unknown</p> <p>Supporting text Flow enters the works and passes through the inlet screen. Flow in excess of FFT passes over the storm separation weir in the inlet channel to the storm tanks (1 & 2, which are blind tanks). If storm conditions continue, spill flows pass from the blind storm tanks and begin to fill storm tanks 3 & 4. The level in the storm tanks 3 & 4 continue to rise and spill flows pass over the weir, discharging to the outfall pipe via the common storm tank spill channel.</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	Compliant					
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 no secondary cause of spills. The predicted pass-forward flow passes consent prior to the first spill. The model is fit for use, based on the reported spill numbers and telemetry trends.</p>						
Cause of spill count :	Other Cause	No	Catchment Hydraulic	Yes	Infiltration & IRP required	No
Future Operational Management Proposal:	<p>The primary cause of spills was found to be hydraulic, and as such the asset progressed through to Stage 2 of the SOAF process.</p>					
Operational intervention required:	<p>The system is operating as designed and no additional maintenance changes are required to improve the operation of the asset.</p>					
SOAF Operational Intervention						
Start Date:	-	Completion Date:	-	Indicative future annual spill performance (less than 40 do not continue to stage 2)		76

Intervention Description:					
Target Completion by Date:	Jan-00	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)	105	Severe
	Autumn	2023		115	Severe
Stage 2b				Yes / No unable due to culverted watercourse	
Invertebrate survey:	Spring	2024	Invertebrate survey score:	18	Very severe
	Autumn	2023		18	Very severe
Stage 2c Required:				Yes / No	
Stage 2c screening:	Required	Progressed through screening?	Yes	Stage 2c water quality assessment Score:	88 - Severe

SOAF STAGE 3 - STEP 1>3						
Options assessed	Rainscape		Traditional Storage	Y	PFF Increase	N
Equivalent storage volume required	869.37284m3	Rainscape Cost		£3,860,360.00	CBR	0.1
Bespoke future trigger agreement	40	Traditional Storage		£3,399,593.68	CBR	0.4
		Other		N/A	CBR	N/A
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 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. Further details are shown below detailing DCWW's plans for storm overflow spill reduction					

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>sso at MOLD SEWAGE TREATMENT WORKS was Shown to have a Severe + 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 2035</p>			
Asset Prioritisation Level	Priority 1			Delivery Predicted Period
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	29/10/2024	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		