# SOAF Investigation Output Summary

Reference: SOAF.R 00001

Please see Audit Statement Technical Guidance for further information

| ASSET INVESTIGATION DETAILS | | | | | |
|---|---|---|---|---|---|
| **SAP Asset Name**: | Rhosymedre Park Rd CSO | | **Asset Template reference** | CG0360601-PARK ROAD RHOSYMEDRE ,-2804-Stage 4 - Non CBA-Flintshire & Wrexham | |
| **Investigation Type** | SOAF (River) | | | | |
| **Year of breach:** | *2023* | **Spill Trigger cause:** | | *Hydraulic* | |
| **Year of Investigation:** | *2023* | **Investigation year performance:** | | *15* | |
| **Population of Asset** | *552* | **Modelled Performance: (DESIGN) / (CALIBRATED)** | | *9 / 18* | |
| **Permit Details** | | | | | |
| **Storm Permit ID:** | CG0360601 | **Storm Permit Name:** | | RHOSYMEDRE PARK ROAD | |
| **Asset NGR:** | SJ2856242613 | **Waterbody ID** | | GB111067052010 | |
| **Discharge NGR:** | SJ2862442574 | **Water body Discharge location** | | Trefnant Brook | |

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

Incoming Pipes: 225mm ; CSO Type: Hole in the wall with side weir; Screening: Static Bar Screen; Flow Control: 225mm PFF pipe restriction ; PFF Pipe: 225mm; Storage Provision: N/A; Consent: Deemed consent. SocA is 9.8l/s.

If the incoming flow exceeds the capacity of the flow restriction, the level in the CSO chamber rises. Spill flows pass through the screen, discharging through the high level overflow to the outfall pipe.

| 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** | Deemed Permit – Meets SocA |
| **Storage** | N/A |
| **Screening** | Compliant |
| **Bespoke/Other** | N/A |

**SOAF Stage 1 findings**

Following the hydraulic model assessment, the cause of the high spills at the asset is concluded to be hydraulic with an operational cause (maintenance) as the secondary cause of spills. The asset has a deemed Permit and hydraulic assessment shows PFF exceeds SocA . The model is fit for use, based on the reported spill numbers and telemetry trends.

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| **Cause of spill count :** | **Other Cause** | **Yes** | **Catchment Hydraulic** | **Yes** | **Infiltration & IRP required** | **No** |
| **Future Operational Management Proposal:** | *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* | | | | | |
| **Operational intervention required:** | *Desilt from the asset chamber SJ28425605 downstream 80 m to SJ28425605.*<br>*Desilt from the asset chamber SJ28425605 downstream 280 m to SJ28423401.*<br>*Clear the screen blinding in the asset chamber SJ28425605.* | | | | | |

| SOAF Operational Intervention | | | | | |
|---|---|---|---|---|---|
| **Start Date:** | **Oct-24** | **Completion Date:** | *TBC* | **Indicative future annual spill performance** *(less than 40 do not continue to stage 2)* | 9 |

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| **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:** | **Oct-25** | **Data years to be excluded from future SOAF triggers calculations** | - | **Request to hold stage 2 surveys for environment recovery** | |

| **SOAF STAGE 2** | | | | | |
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| **Receiving Waterbody WFD Status** | | | Good | | |
| **Stage 2a** | | | | | |
| **Aesthetic survey:** | Spring | 2023 | **Aesthetic Total score** (inclusive of amenity classification, previous complaints & pollutions) | 65 | High Impact |
| | Autumn | 2024 | | 65 | High Impact |
| **Stage 2b** | | | | *Yes / No unable due to culverted watercourse* | |
| **Invertebrate survey:** | Spring | 2023 | **Invertebrate survey score:** | UTC | UTC |
| | Autumn | 2024 | | UTC | UTC |
| **Stage 2c Required:** | | | | *Yes / No* | |
| **Stage 2c screening:** | 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** | 0.22m3 | **Rainscape Cost** | | £125,035.00 | **CBR** | 0.0 |
| **Bespoke future trigger agreement** | 10 | **Traditional Storage** | | £73,736.00 | **CBR** | 0.0 |
| | | **Other** | | - | **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 minimal effect on the receiving waterbody, with the waterbody itself currently achieving a 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. Further details are shown below detailing DCWW's plans for storm overflow spill reduction* | | | | | |

| **Conclusion and Future Spill Reduction Proposals** | | | | | |
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| **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.*<br>*With a large programme of assets requiring improvement priority will be given to CSOs having the greatest impact in the most sensitive receiving waters.*<br><br>*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.*<br><br>*This approach has formed the basis of DCWW's portfolio investment plan for Storm Overflows.*<br><br>*RHOSYMEDRE PARK ROAD 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** | 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 | **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? | **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? | **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** | | |