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Millbrook STC Effluent Sampling Proposal

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	August 2024	Shannon Stone	Anita Manns	Anita Manns	First issue

Commitment

Southern Water commits to undertaking (using a United Kingdom Accreditation Service (UKAS) accredited laboratory or equivalent - where suitable and available):

a) chemical analysis of the waste water which tests for ALL likely pollutants which Southern Water expect to find in the discharge (not just Ammonia, BOD, Solids, flow, pH and data on bio-eliminability) and that Southern Water will use an appropriate 'minimum reporting value' (MRV) (usually 10% of the environmental quality standards (EQS) where this is analytically achievable); and

b) the sampling and chemical analysis being undertaken in line with guidance Surface water pollution risk assessment for your environmental permit – GOV.UK (www.gov.uk) for all pollutants expected to be found.

Liquor Monitoring Proposal

Southern Water are committed to providing information about the characteristics of the wastewater streams from the Millbrook Sludge Treatment Centre (STC) and Slowhill Copse sludge reception (SHCSR) area, entering the adjacent Millbrook WTW and are undertaking a review of our commitment to (under the BREF guidance Best Available Techniques (BAT) conclusion) BAT 3, 6 and 7 further details of which are set out below.

Our review includes, but is not limited to, requesting companies providing national laboratory services to provide information relating to their capacity to analyse return liquor matrix for the determinants listed in the guidance.

Such information is essential in order for Southern Water to complete the review of our liquor monitoring proposal and delivery of BAT 3, 6, and 7. Southern Water plan to complete this at the earliest opportunity.

Southern Water will provide an updated proposal to the Environment Agency in line with a revised IED programme and in the meantime, we would like to assure the Environment Agency of our commitment to sample liquor returns at Millbrook WTW, our commitment to BAT 3, 6, and 7 and the following:

a) Summary of the sampling and analysis methodology of the effluent discharged and likely pollutants in the effluent (Guidance Monitoring discharges to water: guidance on selecting a monitoring approach - GOV.UK and Surface water pollution risk assessment for your environmental permit - GOV.UK*).*

Under BAT 3, Southern Water will establish and maintain an inventory of wastewater. Southern Water will carry out the sampling and analysis methodology of the effluent discharged at defined and recorded locations. All sampling, analysis and reporting will be undertaken by trained personnel, accredited to the Environment Agency's Monitoring Certification Scheme (MCERTS) standards or equivalent, where this is suitable and available. Southern Water will ensure to document sampling procedures with details such as:

- precise location of the discharge sampling point including a grid reference.
- sampling process.
- storage conditions and transport of samples.
- types of bottles or containers and their closures.

A management system will be used to ensure the results are recorded and subject to review to include, but not be limited to, the following procedures:

- sampling programme, including procedures for resampling.
- data review and reporting
- training and audit.

Southern Water propose a minimum of 12 sampling runs over a 12-month period (1 full sampling spec per month), initially, to establish a baseline, in accordance with the surface water pollution risk assessment guidance or other applicable guidance.

Southern Water will then take an informed viewpoint of the determinands the samples contain demonstrating those that are not in the sample. Southern Water will use an appropriate MRV (usually 10% of the environmental quality standards (EQS) where this is analytically achievable). An H1 assessment to screen out any that are not applicable or relevant will be completed.

b) A written statement with a commitment to undertake the sampling and analysis in line with BAT 3 and 'Non-hazardous and inert waste: appropriate measures for permitted facilities'.

The purpose of BAT 3 in relation to return liquors is to establish and maintain an inventory of wastewater streams, as part of the environmental management system, to facilitate the reduction of emissions to water. In accordance with BAT 3 the following data will be provided:

i. Simplified process flow sheets that show the origin of the emissions. Flow calculations based on an assessment of throughput may be used.

ii. Descriptions of process-integrated techniques and wastewater treatment at source including their performances. Chemicals used for thickening and dewatering should also be stated.

iii. Thickening and dewatering liquors, which comprise the major component of the returns, will be subject to monitoring for: Ammonia; BOD; solids; flow and pH.

iv. Data on bio-eliminability (e.g. BOD)

Southern Water is committed to providing information about the characteristics of the identified liquor return sampling points, namely average values and variability of calculated daily flows. In addition, Southern Water is committed to further undertake the sampling and analysis of ammonia, BOD, solids and pH.

Sampling and analysis in relation to Scheduled Activities will be undertaken in line with BAT 3 using a UKAS accredited, or equivalent, laboratory, where available.

Sampling and analysis in relation to permitted waste operations, other than those related to Schedule Activities, will be undertaken in line with 'Non-hazardous and inert waste: appropriate measures for permitted facilities' guidance text, using a UKAS accredited, or equivalent, laboratory, where available. This commitment is related to the acceptance of imported sludges to the sludge reception area and domestic wastes to the head of the works at Slowhill Copse.

c) A written statement with a commitment that those undertaking the sampling and analysis will be by accredited to MCERTs or provide evidence of equivalent standards.

Southern Water is committed to perform sampling and analysis of emissions to sewer for the Schedule Activity of anaerobic digestion at Millbrook, and the waste operation for imported sludges at the sludge reception point and domestic waste to be accepted at the head of the works at Slowhill Copse, in accordance with MCERTS, ISO/IEC 17025 where suitable and available, or equivalent agreed standards.

The chemical analysis of the effluent and liquor return samples will be analysed in a UKAS accredited laboratory, where available.

d) A plan which identifies the effluent sampling point(s) and emission point for the effluent discharge from the installation and the NGR of the effluent sampling point/s

Document reference 790101_MSD_SitelayoutPlan_MIL&SHC December 2024 (Site Layout Plan) indicates the applicable sampling and emissions points.

Emission points include:

Site	Sewer emission reference	Sewer emission point name	X, Y Reference
Slowhill Copse	S1	Sludge reception emission and monitoring point	438395 111174
	S2	Bund drainage emission and monitoring point 2	438422 111158
	S3	Bund drainage emission and monitoring point 2	738379 111169
	S4	Cess reception emission and monitoring point 1	438367 111210
	S5	Cess reception emission and monitoring point 2	438387 111268
Millbrook	S6	Gas condensate emission and monitoring point	438381 111089
	S7	Bund water emission and monitoring point 1	438733 112579
	S8	Bund water emission and monitoring point 2	438765 112509

	S9	Bund water emission and monitoring point 3	438723 112458
	S10	Centrifuge liquors emission and monitoring point	438750 112399
	S11	Surface water emission and monitoring point	438756 112511
	S12	Sludge and cake reception point	438741 112561
	S13	GBT liquors emission and monitoring point	438740 112443

Other emission points

E1 – Slowhill pipeline connection into Millbrook

W1 – inlet works (both Slowhill and Millbrook)

Sample Locations

We propose to sample the wastewater streams described above as set out below in Table 1 which lists the locations identified as provisional sampling points and waste waters present.

Table 1: Sample points

Site	Sample Point	Source	X, Y Reference
Slowhill Copse	M1 - Sludge reception monitoring point	Tankered waste entering sludge reception point	438395 111174
	M2 – Bund drainage monitoring point 1	Surface water from site	438422 111158
	M3 – Bund drainage monitoring point 2	Surface water from site	738379 111169
	M4 – Cess reception monitoring point 1	Cess reception point	438367 111210
	M5 – Cess reception monitoring point 2	Cess reception point	438387 111268
Millbrook	M6 – Gas condensate monitoring point	Gas condensate emission and monitoring point	438778 112400
	M7 – Bund water monitoring point 1	Surface water from bund	438733 112579
	M8 – Bund water monitoring point 2	Surface water from bund	438765112509
	M9 – Bund water monitoring point 3	Surface water from bund	438723 112458

	M10 –Liquor monitoring point	Centrifuge liquors	438750 112399
	M11 – Surface water monitoring point	Surface water from site	438756 112511
	M12 – cake reception monitoring point	Sludge and cake reception point	438741 112561
	M13 – Liquor monitoring	GBT liquors emission and monitoring point	438740 112443

Composite Sampling

Southern Water will endeavour to sample the locations shown in Table 1 in accordance with Environment Agency Guidance. Where individual representative samples are taken at each sample point they may be combined to provide a single flow proportional 'bulk' composite sample for analysis. Return flow data will be used to ensure the sample is representative of the total flow returned.