United Utilities
Process Technical Services

OSM Quality Management System Overview

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Acronyms

UU	United Utilities
EA	Environment Agency
WwTW	Wastewater Treatment Works
PTS	Process Technical Services
TAPS	Trilogy Advanced Prescheduling System
OMS	Operations Management System
OSMQAS	Operator Self Monitoring Quality Assurance System

Introduction

From 01st Jan 2010, United Utilities (UU) assumed the regulatory sampling activities that were required for all its water and wastewater treatment works assets that had previously been undertaken by the EA.

Background

Up to 01st Jan 2010 the EA had been regulating UU wastewater discharges by utilising its own resources to schedule, collect, transport & analyse discrete samples of these discharges and report on the specified data. Transmission of this information to UU occurred on a weekly basis to allow UU to track it's regulatory performance in conjunction with it's own process monitoring information. The corporate system used for the purpose has been OMS (Operations Management System) which holds all UU water quality data.

Legislation

The relevant references regarding legislative requirements are stated within paragraph 7(2)(b) of schedule 10 to the Water Resources Act 1991 (as amended by the Environment Act 1995) - conditions OSM 1 - OSM 13 and annexes OSM1 and LUT1. Consent documentation LINK TO MAMS indicates specific site requirements in addition to details of general information regarding the requirements of OSM applicable to the site & similar site categories.

Scope

This quality manual relates to all activities that the Process Technical Services team undertake as part of OSM or where they interact with Laboratory Services in the delivery of the identified Operator Self Monitoring sampling requirements and sample data transfer back to the Environment Agency.

- Pre-scheduling activities to establish or maintain the sample programme in support of OSM prior to the commencement of the calendar year
- Monitoring data collection i.e. sampling frequency numbers
- Reporting and delivery of data to the EA and within UU itself.

Definition of PTS OSM procedures

For the purposes of this Quality Assurance System please refer to current OSM Process Map.

Quality policy statement

The policy of UU is to consistently achieve and maintain OSM compliance in pre-scheduling activities, monitoring data collection and the reporting of data to the Agency.

This quality policy statement is made on the authority of the Director of Wastewater Process Operations.

It is the responsibility of all UU staff involved in pre-scheduling and data monitoring and associated activities to familiarise themselves with the contents of this Quality Assurance System and to ensure that its policies and procedures are followed.

Operator Self Monitoring Quality Assurance System (OSMQAS)

Purpose

The purpose of the OSMQAS is to ensure that the procedures and activities of the Process Technical Services team deliver a quality assured output, in the terms of sampling definition, data collection and results reporting to the satisfaction of the following 'customers':

- The Environment Agency
- UU Operations Management
- Scientific Services

Objective

The objective of this OSMQAS is to ensure that UU defines, monitors and reports to published standards to consistently meet OSM requirements and achieve the highest criteria of OMA compliance.

Design

This FMQAS therefore, is designed to ensure that procedures are in place to inform, schedule, track, record, review and, where necessary, improve the processes whereby OSM data is acquired and managed, and to give assurance of its validity.

The EA published standards are available on the EA website http://www.environment-agency.gov.uk/

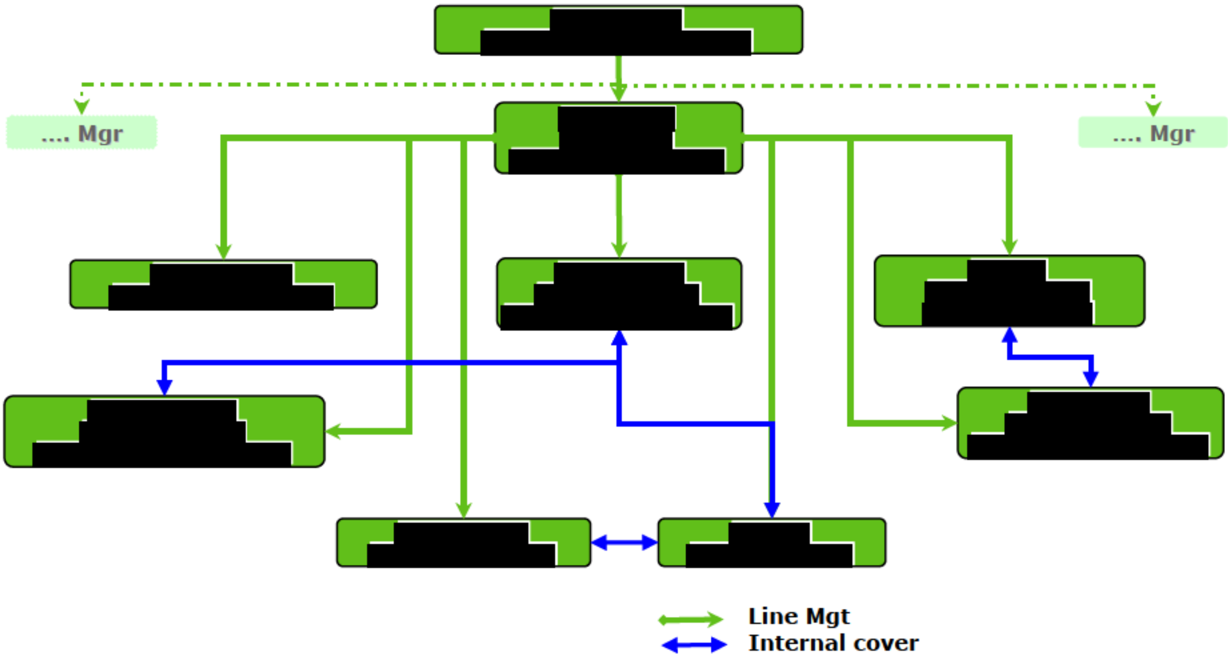
Errors and improvements

The OSMQAS shall be continually reviewed and improved wherever practicability possible. Where policy statements, operational structures, procedures, and documents are found to be in error or may be improved, the relevant section or sections shall be redrafted once the appropriate changes have been implemented.

Structure

Technical Services (Process Ops)

Ww Central - Compliance Performance Team



Directorate of Operational Services

The Directorate of Operational Services i.e. Scientific Services, are the suppliers of all the required resources to satisfy the OSM requirement of sample scheduling, sampling logistics (including any re-scheduling activities) and analytical data delivery to OMS and relevant Process Operations staff.

Directorate of Operations

The Directorate of Operations operates and maintains the processes in relation to pre-scheduling, monitoring and reporting activities under OSM requirements.

The Technical Services Manager within the Directorate of Operations shall be designated the Technical Manager (PTS) as defined by this scheme.
The Compliance Performance Manger (Process Technical Services) will be the nominated deputy Technical Manager (PTS) as defined by this scheme.

Day to day control of pre-scheduling, monitoring and reporting within the guidelines of the quality assurance systems shall be undertaken by the appropriate Business Analysts within the Directorate.

Planned and reactive maintenance of the monitoring and reporting systems are undertaken by a Business Analyst to ensure correct functioning of the scheme within the required definition of Operator Self Monitoring Regulations.

Verification and certification of the monitoring and reporting systems and data shall be undertaken through internal auditing processes.

UU have developed a computer based Operations Management System (OMS) within which all regulatory, operational & other sample data is held. Reporting functionality has been introduced which allows the transfer of the regulatory data, that satisfies the user specified criteria, across to the EA via the web portal.

The maintenance of data within the OMS environment is controlled using the documented change control process 'QP107' *LINK.*
Reporting, data extraction and analysis, etc within the OMS system is managed by the Business Analyst.
Reporting requirement statements/instructions are documented on SharePoint.

Pre-verification notifications. regarding sampling determinand results which exceed consent. are issued automatically from the Laboratory Information Management System (LIMS) to allow Process Operations to address the issues on site as soon as practicable.

Systems Operation & Support

The Operations Management System is accessed by the PTS team to retrieve data and reports to monitor OSM activity and to make reports to the regulator and UU management as required.

Support to OMS and data processing and reporting systems is undertaken by UUITOPS and Process Technical Services Business Analysts.

All reporting tools up to the point of transmission to the agency will be supported by UUITOPS and Process Technical Services Business Analysts.

Management of applicable OSM activities

Technical Manager (PTS)

The Technical Manager (PTS) has the responsibility and authority for implementing the UU policy for OSM pre-scheduling, monitoring and reporting activities within Process Operations and for providing advice on all aspects of pre-scheduling, monitoring and reporting quality.

In his/her absence a deputy will be nominated with equivalent delegated responsibility and authority for carrying out the Technical Manager (PTS) duties.

The Technical Manager (PTS) is responsible for:-

- Annually updating the list of wastewater treatment works (WwTW) and the relevant requirements for Operator Self Monitoring for each of those individual assets. This involves reviewing all WwTW's population equivalent based on the June Return submission to determine if there are any WwTW that have become eligible for self monitoring and if necessary liaising with the Environment Regulation team and the Environment Agency.
- Establishing, implementing, and maintaining the pre-scheduling, monitoring and reporting procedures, including the OSMQAS,
- Reporting to senior management on the performance of the Operator Self Monitoring scheme and any need for improvements in business practices to maintain compliance,

- Ensuring that the requirements of the pre-scheduling, monitoring and reporting procedures are understood by all relevant personnel and that appropriate training has been received.

Whilst retaining overall responsibility for the pre-schedule, monitoring and reporting procedures, the Technical Manager (PTS) may delegate the duties placed upon him/her under this OSMQAS provided that such duties are:

1. undertaken by a competent person,
2. clearly described and recorded,
3. within defined limits of authority,
4. issued and acknowledged as received in writing, and
5. in compliance with this OSMQAS.

The Technical Manager (PTS) shall ensure that:

- a appropriate deputy has been identified & suitably nominated to undertake his duties in his/her absence.
- the pre-scheduling, monitoring and reporting operation and maintenance procedures satisfy the OSMQAS requirements, and
- staff involved in pre-scheduling, monitoring and reporting are:
    - adequately trained and competent to undertake allotted tasks, and
    - aware of their responsibilities and authority limits.

Compliance Performance Manager (PTS)

The Compliance Performance Manager (PTS) has responsibility for control of quality assurance for the data product.

In his/her absence a deputy will be appointed with equivalent delegated responsibility and authority for carrying out the Compliance Performance Manager (PTS) duties.

The Compliance Performance Manager (PTS) is responsible for:-

- Ensuring that the quality assurance procedures are established, implemented, maintained and regularly reviewed within the OSMQAS,
- Reporting to the Technical Manager (PTS) on the performance of the OSMQAS and the need for any improvements with proposals,
- Ensuring that the requirements of the pre-scheduling, monitoring and reporting quality assurance procedures are understood by all relevant personnel and that appropriate training has been received.

Whilst retaining overall responsibility for the quality assurance procedures, the Compliance Performance Manager (PTS) may delegate the duties placed upon him/her under this OSMQAS provided that such duties are:

1. undertaken by a competent person,
2. clearly described and recorded,
3. within defined limits of authority,
4. issued and acknowledged as received in writing, and
5. compliant with this OSMQAS.

The Compliance Performance Manager (PTS) shall ensure that the following information is held and maintained:-

- Organisational charts showing the company's PTS structure with defined lines of responsibility,
- Job descriptions of staff involved in OSM.

Control of documents and records

Format of documents

Documents and records[1] may be 'hard' (paper) or electronic formats.

UU Water standards for control of documents and records

Control and management of the documentation and recording of actions, procedures, outputs and reports forms a fundamental element of the OSMQAS. Careful management of such documents is needed to ensure the effective planning, operation and control of the pre-scheduling, monitoring and reporting processes. Documents and records are controlled within the 'owner' departments of UU Water.

Annual sampling reporting requirements

The Technical Manager (OSM) shall ensure that the OSMQAS is maintained in line with the current version of the "Guidance on undertaking an Operator Self Monitoring Assessment of discharges to water subject to Operator Self Monitoring and Urban Wastewater Treatment Directive self monitoring".

Internal Audits

The Flow Audit Manager (flow monitoring) shall prepare and maintain a schedule of internal performance audits to verify that operations continue to comply with the requirements of this OSMQAS. It is the responsibility of the Flow Audit Manager (flow monitoring) to plan and organise such audits, which shall be carried out by trained personnel and undertaken at least once every three years.

The audit findings and any corrective actions proposed shall be recorded and transmitted to the Quality Manager (OSM). The Quality Manager (OSM) shall make

[1] Records are a particular type of document with specific control requirements.

an assessment of the impact of the findings and, if necessary, instigate either a ‘site change’ or ‘non-conformity’ procedure as appropriate.

Data handling procedures

Data treatment

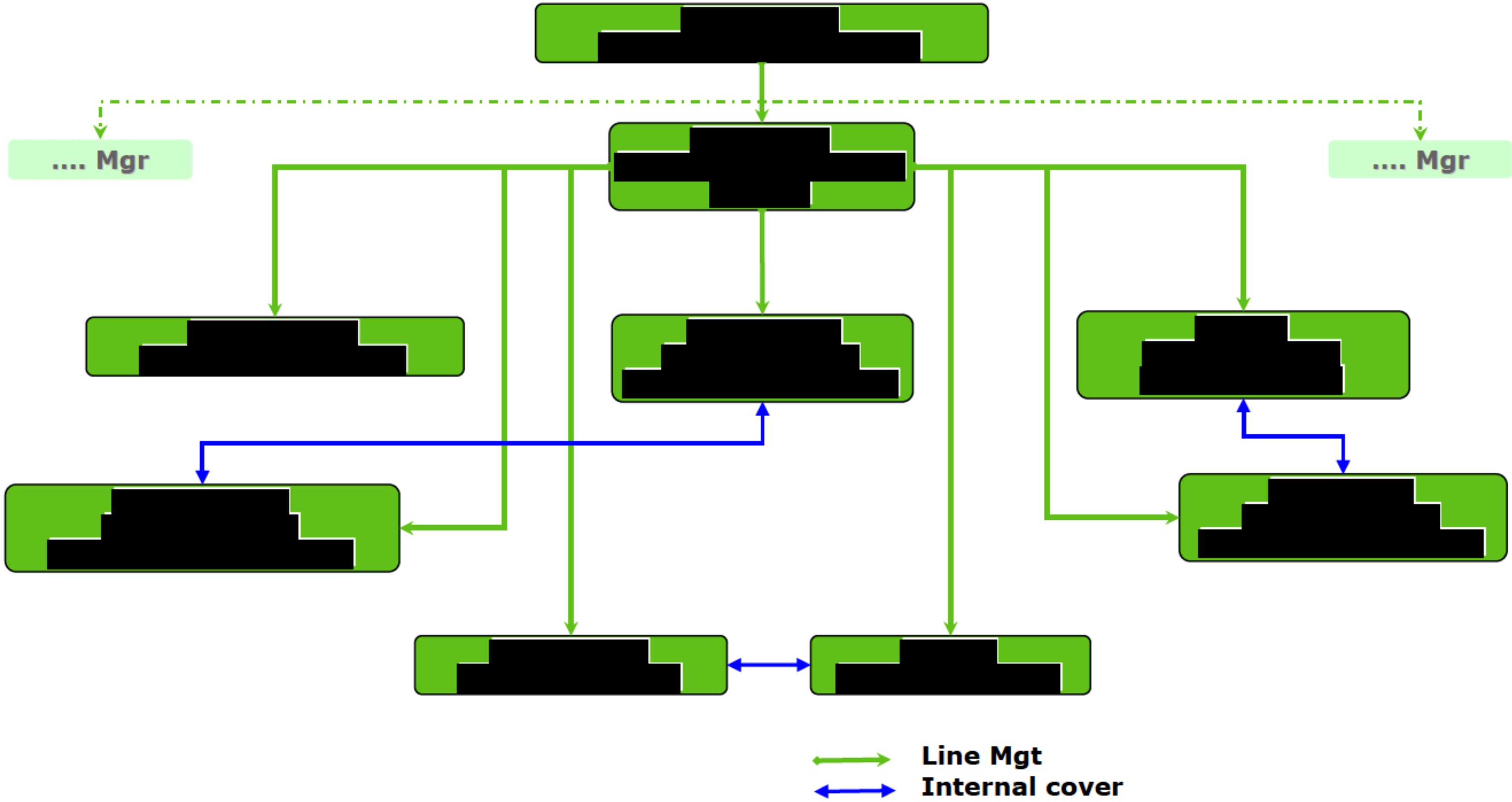
UU have implemented a process by which sample data collected by OSM samplers is verified within the lab MCERT QMS and transferred to the OMS system after final verification. The transmission of data

Lab test
Nautillus
Data transfer
Hits oms
Run report

Organagram

Technical Services (Process Ops)

Ww Central - Compliance Performance Team



OSM tasks responsible people

Below is a high level overview of the key activities carried out by PTS in support of UU's OSM obligations. A more detailed breakdown can be found in the process maps directory on SharePoint.

OSM Activity	Responsible Person							
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Annual tier review		x	x					
Annual sample frequency review		x		x				
In-year sample frequency changes			x	x				
Exceedance recording and notification			x	x				
GOR EA submission		x	x					
Annual OSM EA submission		x	x					

OSM approvals

For each OSM activity there is a responsible person who is sufficiently authorised to approve or sign off the corresponding change, report or submission. Below is a list of the people who are sufficiently authorised to approve each OSM related activity.

Sign off of OSM Activity	Responsible Person							
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Annual tier review	x	x						
Annual sample frequency review	x	x						
In-year sample frequency changes			x	x				
Exceedance recording and notification			x	x				
GOR EA submission		x	x					
Annual OSM EA submission	x	x						

Annual tier review

UU carried out a review in 2009-10 in conjunction with the EA to establish the tier status of its current WwTW assets. These tiers are reviewed each time an Environmental Permit Variation Notice is received from the Agency. Should the variation notice state a change in tier then UU will take the necessary action to ensure that when the Variation Notice comes into affect the tier of the affected WwTW is amended.

Each November the business reviews the tiers and informs the business on and associated impacts these have.

Annual sample frequency review

In November PTS reviews the current sampling frequency supplied by the Labs latest download from the TAPS system. This is reviewed in conjunction with the tiers.

The Labs are informed of any amendments required to the current schedule in terms of site frequency changes or determinand requirements to comply with EA guidance for that class of asset.

The annual tier and sample frequency review should be completed by 30th November.

In-year sample frequency changes

PTS continually maintain a register of sample frequency changes and documentary evidence of change requests of sample frequencies or determinands. This record contains increases in sampling frequency due to exceedances, reduction in sample frequency after return to compliance as well as request for additional determinands. This register forms the basis for the frequency change annual report.

Exceedance recording and EA notification

UU record all exceedances within the OMS system. PTS are informed of an exceedance via email, record the exceedance on an electronic register and inform the EA once the result has been fully validated.

GOR EA submission

PTS extract on a monthly basis all applicable sample data from the OMS system. This extract is then validated and the information transferred to the agency via the GOR web service in XML format. The extract upload provides an email notification to UU of its import status and a valid upload will indicate the number of samples successfully imported.

Annual OSM EA submission

From the 1st of February the business begins collecting data for the annual submission for the previous year.
Process Technical Services interrogates the OMS system and downloads the appropriate reports i.e. EA OSM Numeric limit/LUT Exceedance Failures.
A number of team maintained reports are also collected as part of this activity.
Then suitable validation and quality assurance tasks are carried out on the data to ensure the accuracy of the submission.
The draft submission is then sent for managerial review prior to signoff.
Final copies of the annual submission are then submitted to the 'Principle Officer (Evidence)' at the Agency. Target timescale for completion is 28th February.