



Water Use

Supporting Guidance (WAT-SG-52)

Monitoring Plan Guidance: Distilleries

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Update Summary

Version	Description
v1.0	First release produced from the following source documents: <i>Distillery Sector Monitoring Guidance (040707).doc</i> <i>Appendix 1 Distillery monitoring scenarios 040707.ppt</i>
v2.0	New base template applied, links to docs revised for new SEPA website, Nov 2008
v3.0	Expired CMS links reviewed and updated.

Notes

References: Linked references to other documents have been disabled in this web version of the document. See the References section for details of all referenced documents.

Printing the Document: This document is uncontrolled if printed and is only intended to be viewed online.

If you do need to print the document, the best results are achieved using Booklet printing or else double-sided, Duplex (2-on-1) A4 printing (both four pages per A4 sheet).

Always refer to the online document for accurate and up-to-date information.

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1. Key Points

This document is supplementary to *WAT-SG-51: Water Resource Licence Monitoring Plan Guidance*, that provides guidance to operators who are required to produce monitoring plans covering an abstraction and/or impoundment licensed under the Controlled Activities Regulations.

This document contains specific guidance for the Distillery Sector and is intended to cover existing activities in operation prior to 1 April 2006.

2. Introduction

The *Water Environment (Controlled Activities) (Scotland) Regulations (CAR)* introduced controls on water abstractions and impoundments for the first time in Scotland. Distillers companies applied to SEPA during a transitional period from 1 October 2005 to 31 March 2006 providing summary information on their controlled activities. CAR Water Resources Licences were issued to Distillers in 2006 which included Conditions under Schedule 3 to submit a monitoring plan to SEPA within 6 months of the date of issue. This guidance document is to aid Distillers companies in the production of those monitoring plans, which include proposals on the location and method of recording licensed daily abstraction volumes.

SEPA needs accurate information on abstractions to enable it to carry out its duties under the *Water Environment and Water Services (Scotland) Act 2003* that includes preventing deterioration of, and protecting and enhancing the water environment and promoting of sustainable water use. Abstraction data will help SEPA to apply the standards developed by UKTAG which define the proportion of river flows which can be abstracted without risking environmental harm.

The monitoring installed at any site shall be adequate to demonstrate licence compliance but should also aim to capture the total water use such that environmental impact can be evaluated.

This guidance should be read in conjunction with:

- *WAT-SG-51: Water Resource Licence Monitoring Plan Guidance*

3. Purpose of the Guidance

The purpose of this document is to guide distillers on how to identify suitable locations and methods of flow measurements in order to provide the necessary flow data for compliance with their CAR Licence.

SEPA requires you to provide details of each abstraction, including the intake structure and how its controlled, where the water is transferred and how it is used, i.e. batch process, x volume, y times per week, how it can be measured/estimated.

Guidance on flow measurement is given in *WAT-SG-54: Technical Guide to Flow Measurement*.

SEPA recognises that determining the amount of water used does not always require purpose built flow measurement devices. SEPA is seeking to keep actual measurement requirements to a minimum consistent with meeting our needs, so where abstraction rates are governed [and can be guaranteed] by the limitations of a fixed intake structure or in a hydraulically controlled manner, then there may be no need for a specific flow measurement device, but please describe fully why this is the case in your monitoring plan.

For examples to illustrate the different scenarios for monitoring, see *section 7* of this document.

4. Monitoring Plan Template

The generic monitoring plan template, *WAT-TEMP-68: Water Resource Monitoring Plan Licence Template*, is designed to guide operators through the development of a monitoring plan and facilitate a consistency of approach. The size and complexity of the monitoring plan will vary between sites. Details of the information requirements are given within each section of the template.

As the template is generic and applies to all water resource activities, the following is further guidance appropriate to the distillery sector.

4.1 Template Section 2: Site Water Usage

This section should give a non-technical process description of the attached site plan by giving an overview of where the abstracted water is used in the distillery process and an approximate water balance indicating proportions of process and cooling water used in each process stage and volume that is returned to the water environment or lost through evaporation. (If it helps please refer to the distilling equation discussed recently between SWDEC and SEPA).

The stages in the Distillery process will be site specific but the main headings to start with should include:

- Malting & Cereal Cooking
- Milling & Washing/Mashing
- Fermentation
- Distillation – continuous or batch

The referenced site plan should be a schematic which shows the location of the abstractions and impoundments, relative to features of the water environment (wetlands, rivers, lochs, estuaries and coastal waters. The plan should also show where the water is returned to the water environment (where appropriate) and proposed existing and new monitoring locations.

5. Flow Monitoring Methods for Lades

For sites with lade abstractions, the authorisation requires that monitoring plans shall include a methodology of demonstrating the maximum instantaneous abstraction (litres per second) rate from a watercourse into a lade. The method you intend to use needs to be specified in section 3 of the monitoring template.

Guidance on monitoring methods is given in *WAT-SG-54: Technical Guide to Flow Measurement*.

SEPA recognises that the physical characteristics of lades are variable from site to site and, in some situations, safe access will only be available to restricted sections that do not meet the criteria for monitoring site selection. Therefore the level of accuracy for lade measurements will vary and Operators should describe any deviations from the standard methods in the monitoring plan. SEPA will assess whether the proposed method and associated errors are acceptable or not in terms of licence compliance.

6. Portable Flow Monitoring

Portable flow meters can be used to calibrate other fixtures or operations that can be used as a surrogate for direct flow measurement.

The whisky sector has predicted that whilst on a similar production plan or as related to the production volume, the water usage profile at a distillery will be constant year on year. Therefore SEPA are willing to consider proposals from operators with multiple sites for portable metering equipment to reduce the outlay of capital expenditure in the short term. Other benefits would be the opportunity to confirm the relationship between water usage and production volumes.

This gives operators of multiple sites several variables to consider. SEPA expects the portable equipment to be used at one location for a minimum of 6 months and there should be a maximum period of 2 years between flow measurements at each abstraction location using portable equipment.









The metering may be of two types, i.e. “strap on” meters or by the installation of in situ flow meters. Therefore, the number of actual flow meters required by a company will depend on the number of sites and also the number of different pipe sizes across sites, unless the meters used can be used on different pipe sizes.

For any portable metering proposals assessed as part of a monitoring plan submission, SEPA reserves the right to request permanent flow measurement where an abstraction results in the failure of an environmental standard or poses a risk to the waterbody achieving good status.

7. Distillery Monitoring Scenarios

The following pages include different examples of scenarios for distillery monitoring.

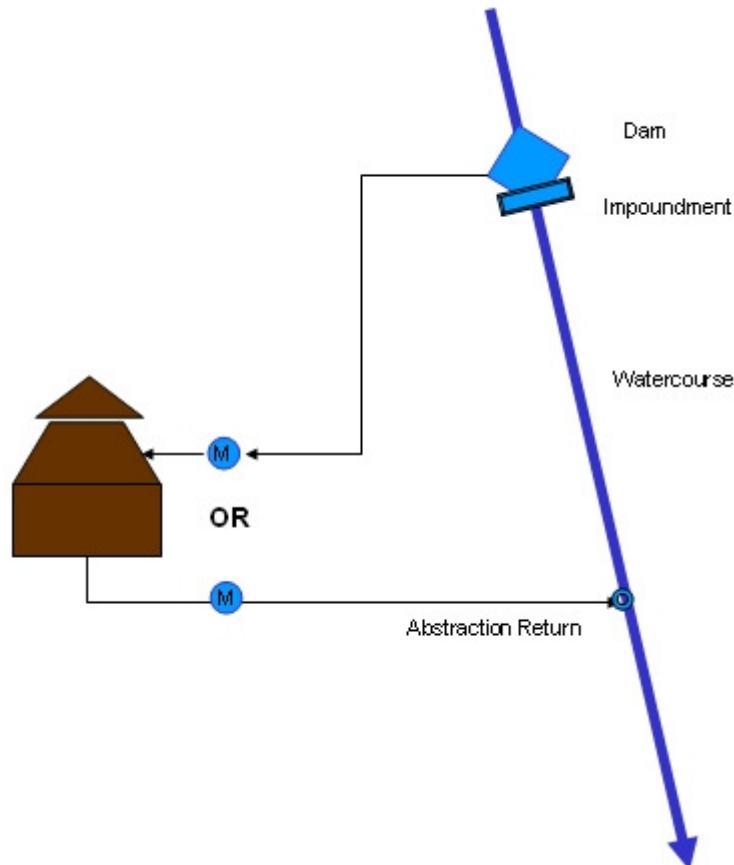
7.1 Key to Diagrams

Symbol	Definition
	Abstraction Return
	Watercourse dam
	Distillery
	Impoundment
	Flow Measurement by Direct or Indirect Method
	Offline Pond
	Water Tank
	Groundwater/Spring Abstraction

7.2 Example 1: Single Abstraction Activity

For single abstraction activities returning to the same watercourse that are non-consumptive (i.e. over 95% of abstracted water returned) flow monitoring point can be proposed at either the abstraction or discharge.

Figure 1 Single Abstraction Monitoring Points

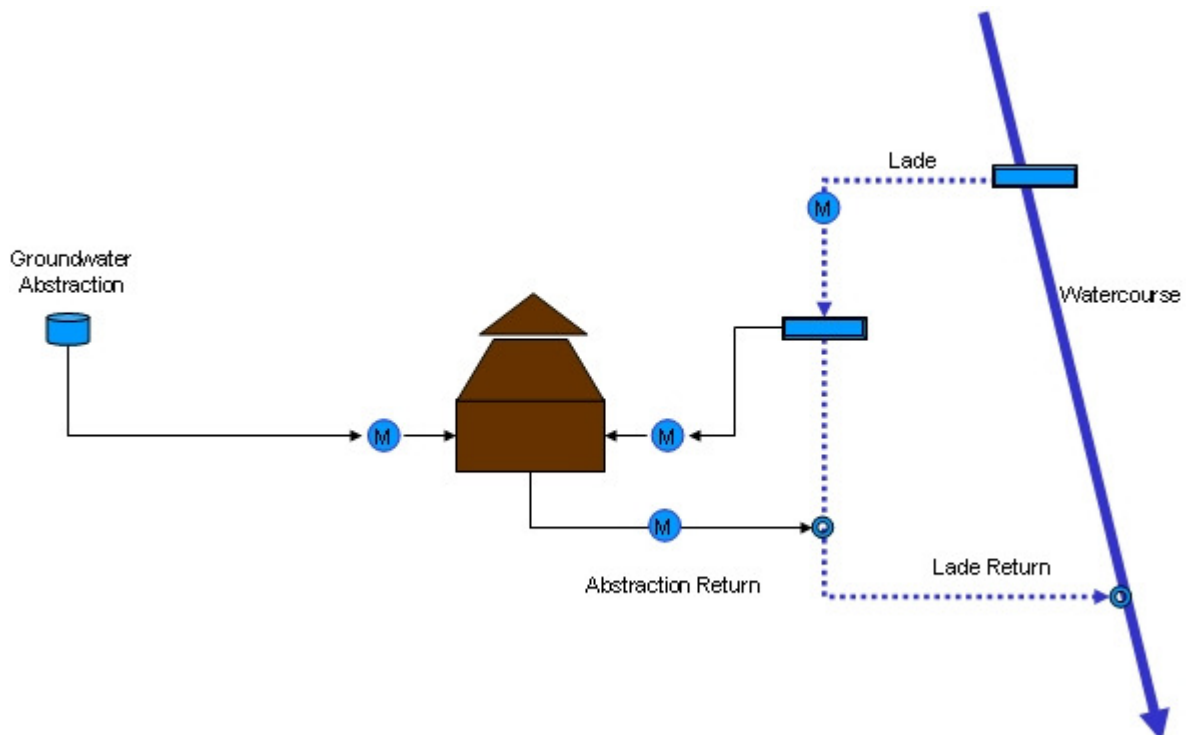


7.3 Example 2: Multiple Activities including a Lade

Flow information is required on the maximum abstraction rate from the watercourse into the lade. Flow monitoring is required on each abstraction, including from the lade, and discharge to the watercourse.

Indirect flow measurement can be used where abstraction intake is fixed or hydraulically predictable i.e. a fixed rate pump or calibrated structure.

Figure 2 Multiple Activity (inc. Lade) Monitoring Points

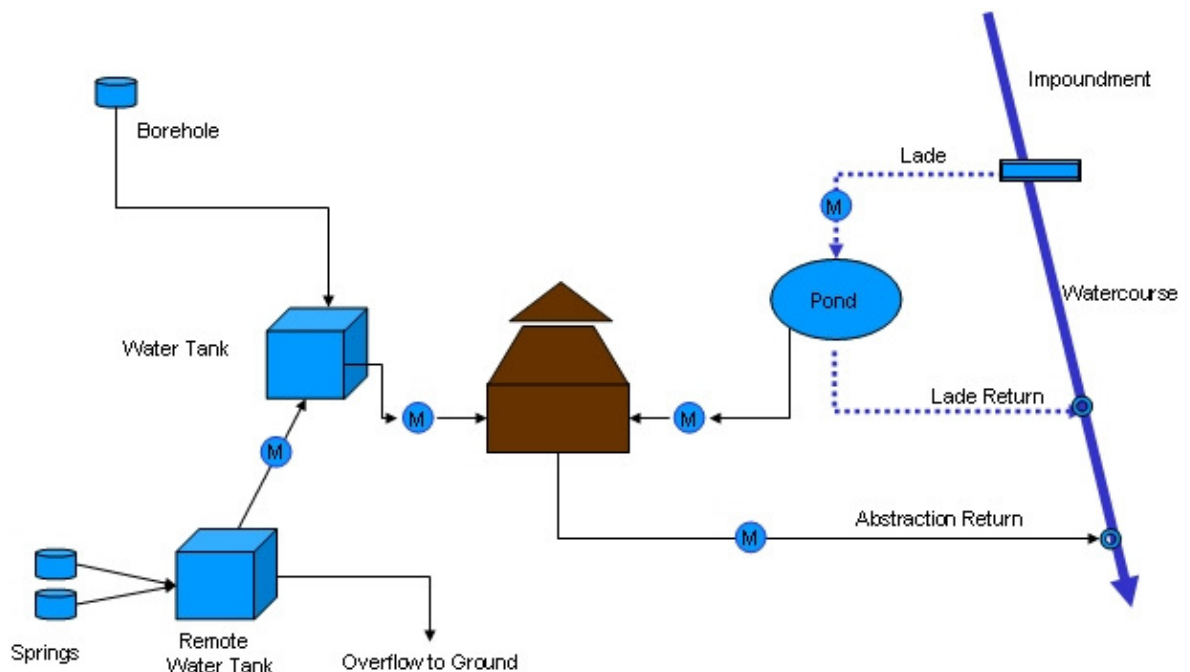


7.4 Example 3: Multiple Abstractions Collected into Holding Tanks

Multiple abstractions that are collected into a holding tank, pond or aqueduct can be monitored by outflow to the process providing any overflow is monitored or calculated. Overflow monitoring will not be required at remote sites.

The monitoring point should represent the flow at the point of abstraction and an estimate provided of the proportion from each source.

Figure 3 Multiple Abstraction (to Holding Tank) Monitoring Points



References

NOTE: Linked references to other documents have been disabled in this web version of the document.

See the Water >Guidance pages of the SEPA website for Guidance and other documentation (www.sepa.org.uk/water/water_regulation/guidance.aspx).

All references to external documents are listed on this page along with an indicative URL to help locate the document. The full path is not provided as SEPA can not guarantee its future location.

Key Documents

WAT-SG-51: Water Resource Licence Monitoring Plan Guidance

WAT-SG-54: Technical Guide to Flow Measurement

WAT-TEMP-68: Water Resource Monitoring Plan Licence Template

Legislation

Water Environment (Controlled Activities) (Scotland) Regulations 2011 SSI 209 (www.netregs.org.uk)

Water Environment and Water Services (Scotland) Act 2003 (www.netregs.org.uk)

- End of Document -