

## FW: Credible Scenario and Secondary Containment

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Hi All

Sarah has shared some information following our meeting last week. I'm not sure if this has been circulated to you already.

Many thanks

Maria

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**From:** Raymond, Sarah <Sarah.Raymond@environment-agency.gov.uk>

**Sent:** 11 August 2023 10:35

**To:** Maria Woods <Maria.Woods@thameswater.co.uk>

**Cc:** McAree, Mark <Mark.McAree@jacobs.com>; Wager, Tommy <Tommy.Wager@environment-agency.gov.uk>; Daniel, Naomi <naomi.daniel01@environment-agency.gov.uk>

**Subject:** Credible Scenario and Secondary Containment

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Hello Maria,

Following on from the meeting that Thames Water requested in relation to Maple Lodge we would like to clarify our position on 'credible scenarios' for use in containment proposals.

Guidance Best Available Techniques (BAT) Reference Document for Waste Treatment ([https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/JRC113018\\_WT\\_Bref.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/JRC113018_WT_Bref.pdf)) BAT conclusion 19 requires that "in order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below.". Technique C identifies Impermeable surfacing, and technique D identifies techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels which includes providing suitable secondary containment for tanks containing liquids.

Section 4.2.1 of CIRIA 736 is clear that;

*“Where two or more tanks are installed within the same bund, the recommended capacity of the bund is the greater of:*

- 1. 110 per cent of the capacity of the largest tank within the bund*
- 2. 25 per cent of the total capacity of all the tanks within the bund, except where tanks are hydraulically linked in which case they should be treated as if they were a single tank”*

We note that CIRIA 736 provides that the total bund volume may be “based on risk assessment based on credible scenario for multi tank installation” which you raised at our meeting, and we would like to clarify our position on the use of ‘credible scenarios’.

BAT is clear that you must provide secondary containment which we would expect to include impermeable surfacing and application of the 110% or 25% rule in line with CIRIA 736. Any deviation to this would be classed as an ‘alternative approach’ to BAT which you would need to demonstrate with detailed evidence in the determination of your application (not through an IC) that the ‘alternative approach’ proposed would provide the same level of environmental protection at the relevant BAT technique.

We would also highlight at this point that cost would not be a factor for an alternative approach as BAT is considered to be affordable across the industry sector as a whole for both newly built plant and a “typical” existing plant. A cost benefit analysis is only relevant in cases which qualify for a derogation from BAT and the derogation process only applies to associated emission levels (AELs) which are not applicable to containment as the relevant BAT technique requires that, “in order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques.” Any deviation from identified BAT would require evidence to demonstrate either that:

- Any alternative technique would provide at least the same level of environmental protection that is equivalent to the BAT.
- There are specific and demonstrable reasons why the BAT should not apply in this case.
- There are specific and demonstrable reasons why a lower standard of environmental protection should be permitted.

In relation to evidence to be provided to support a ‘credible scenario’/ ‘alternative BAT approach’ we would expect the provision of your final containment proposal as part of your permit application to be provided with as a minimum, and information to be provided as per below.

- A written ‘secondary containment improvement and implementation plan’ including final detailed designs, specifications and an implementation schedule for the proposed secondary containment systems. The finalised designs and specifications must be produced by appropriate competent individuals (qualified civil or structural engineer), in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance. The plan shall include but not be limited to the following components:
  - An updated BAT assessment with specific regard to BAT 19 of the Waste Treatment BREF.
  - An assessment of the suitability of the proposals for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure.
  - Finalised designs and specifications of the proposed secondary containment proposals completed by appropriate competent individuals.
  - A program of works with timescales for the commissioning of the proposed secondary containment systems to comply with CIRIA C736 (2014) guidance, or equivalent.
  - An updated site and infrastructure plan.
  - A preventative maintenance and inspection regime.
- If the plan proposes containment volumes that do not comply with the requirements of section 4.2.1 of CIRIA C736 (2014) guidance, or an alternative approach to BAT, then the plan shall also include a written quantitative risk assessment undertaken by appropriate competent individuals (qualified civil or structural engineer) to demonstrate that the containment volume proposed will provide sufficient secondary containment in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance to protect the environment. The quantitative risk assessment shall include but not be limited to the following components:

- A quantitative risk assessment of all scenarios for tank and pipework failure and multiple tank and pipework failure, to determine credible scenarios with supporting evidence for decision outcomes.
- An assessment of the capability of adjacent tanks and pipework to withstand the hydrostatic and hydrodynamic pressures from the material released in the event of a single tank failure.
- Integrity testing results of all relevant tanks and pipework.

Should this not be provided at the 'Duly making' stage we will be unable to 'Duly make' any application where you are proposing an 'alternative approach' to BAT for secondary containment as we will not have sufficient evidence to assess in relation to compliance with BAT.

We hope the above provides clarity on our approach.

Kind regards

**Sarah Raymond**

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