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# **BWON Downstream Verification**

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# The BWON is a Wastewater Regulation

- ❖ Successful BWON compliance requires a wastewater perspective
- ❖ There are caveats to this:
  - ◆ Some air requirements in the BWON control provisions
  - ◆ The definition of a BWON “waste” captures more than wastewaters
- ❖ Nonetheless, many critical aspects of the BWON are wastewater issues

# A Facility Must Know the Benzene Loading in its Sewered Wastewaters

- ❖ “Loading” units are mass per time (Mg/yr) and thus require an understanding of both:
  - ◆ Wastewater quantity (or flow rate)
  - ◆ Benzene concentration
- ❖ The best place to learn this information is at the WWTP headworks:
  - ◆ Sewered POG discharges flow to the headworks
  - ◆ Good flow rate measurements accessible
  - ◆ Good concentration results obtainable
- ❖ It is also true that the BWON citations require the characterization of wastewaters individually, at the points of generation

# Why, then, does the BWON emphasize upstream characterizations?

The EPA had good reasons

- ◆ There *is* volatilization
- ◆ We *do* want to know where the benzene is coming from
- ◆ Controls are often placed on individual high-benzene streams
- ❖ Nonetheless, the POG (upstream) characterizations can be very difficult to do correctly
- ❖ With a downstream characterization, we can confirm that we done the POGs well

# A Facility Must Know the Benzene Loading in its Sewered Wastewaters (cont.)

- ❖ So we need wastewater characterizations at both locations—upstream and downstream
  - ◆ Downstream characterizations are likely to be the best, most accurate numbers
  - ◆ Downstream characterizations enable a confirmation that the POG numbers are correct
  - ◆ Downstream characterizations are our starting point for understanding facility wastewater benzene loading



# Presentation Organization

- ❖ Discuss importance of downstream characterization of wastewaters
- ❖ Acknowledge complexities in downstream characterizations involving benzene
- ❖ Explore issues that appear to make the downstream confirmation difficult to accomplish

# What are some complexities about benzene-related downstream characterizations?

- ❖ This is not a water balance. It is a benzene balance, and benzene is not a conservative constituent
- ❖ At facilities subject to the BWON, wastewaters often have an organic phase component
- ❖ Benzene volatilize en route to the downstream location

# Recap Of Downstream Characterization

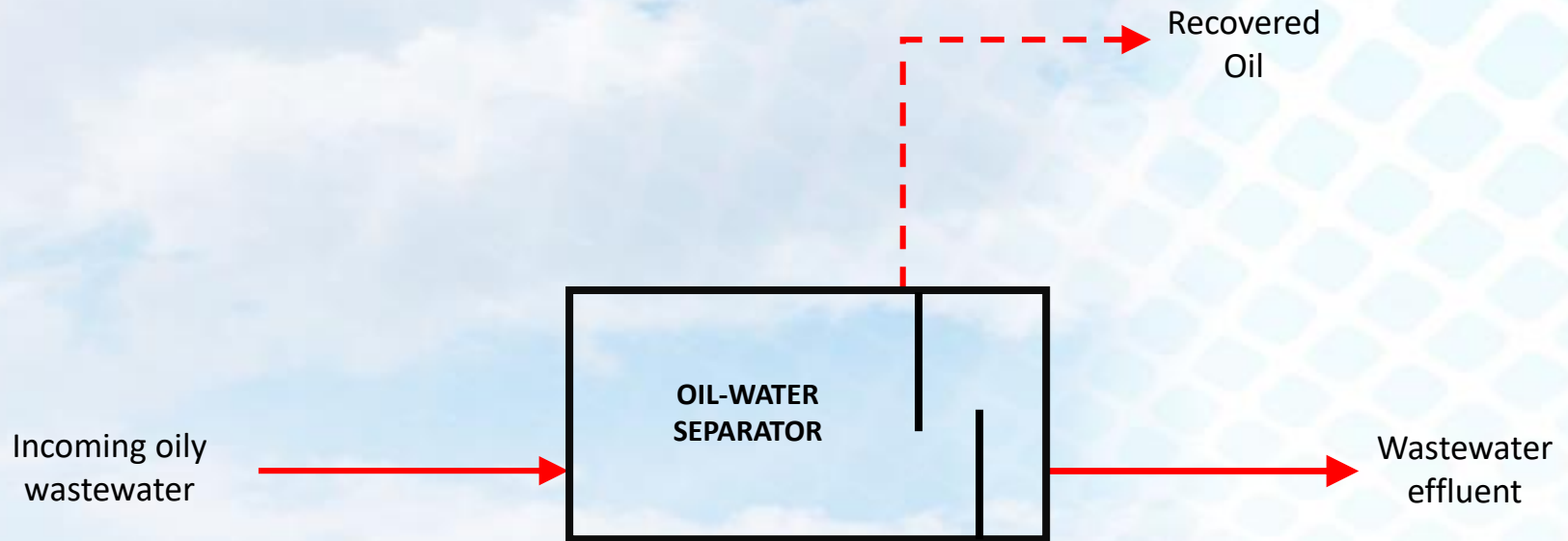
- ❖ Wastewater professionals know that downstream is where to get the best the best characterization number, especially for the organic phase
- ❖ There are complexities associated with understanding downstream characterizations (notably, interphase transfer and volatilization)
- ❖ A good downstream understanding enables the development and confirmation of good POG characterizations



# What are the barriers to conducting a downstream characterization?

- ❖ First, let's more thoroughly describe the ideal configuration
- ❖ Some barriers can be cleared away by focusing on the objective of a compliance program
- ❖ Approaches for dealing with issues arising from complicated wastewater management systems

# Ideal Downstream Configuration Scenario



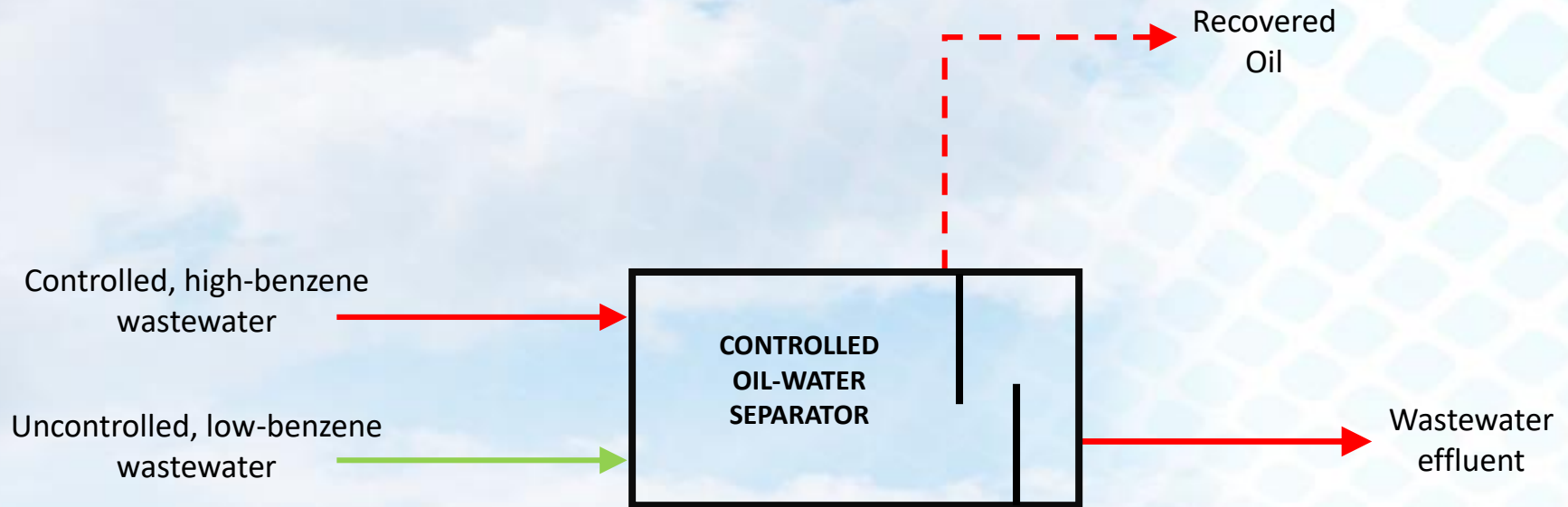
# The Ideal Wastewater System Configuration for Downstream Confirmation

- ❖ All seweraged oily wastewaters go to one oil-water separator
- ❖ Good effluent water flow rate meter
- ❖ Recovered oil managed to enable quantification; for example:
  - ◆ Two-tank skimmings management system
  - ◆ While one tank in pump-up, the other settling before dewatering
  - ◆ Tracking each transfer from dewatered tank

# These Barriers to Downstream Characterization Do Not Need to Exist

- ❖ The downstream confirmation is not required
- ❖ Belief that downstream characterization is only for uncontrolled benzene

# Barriers Related to Complicated Wastewater Management Systems

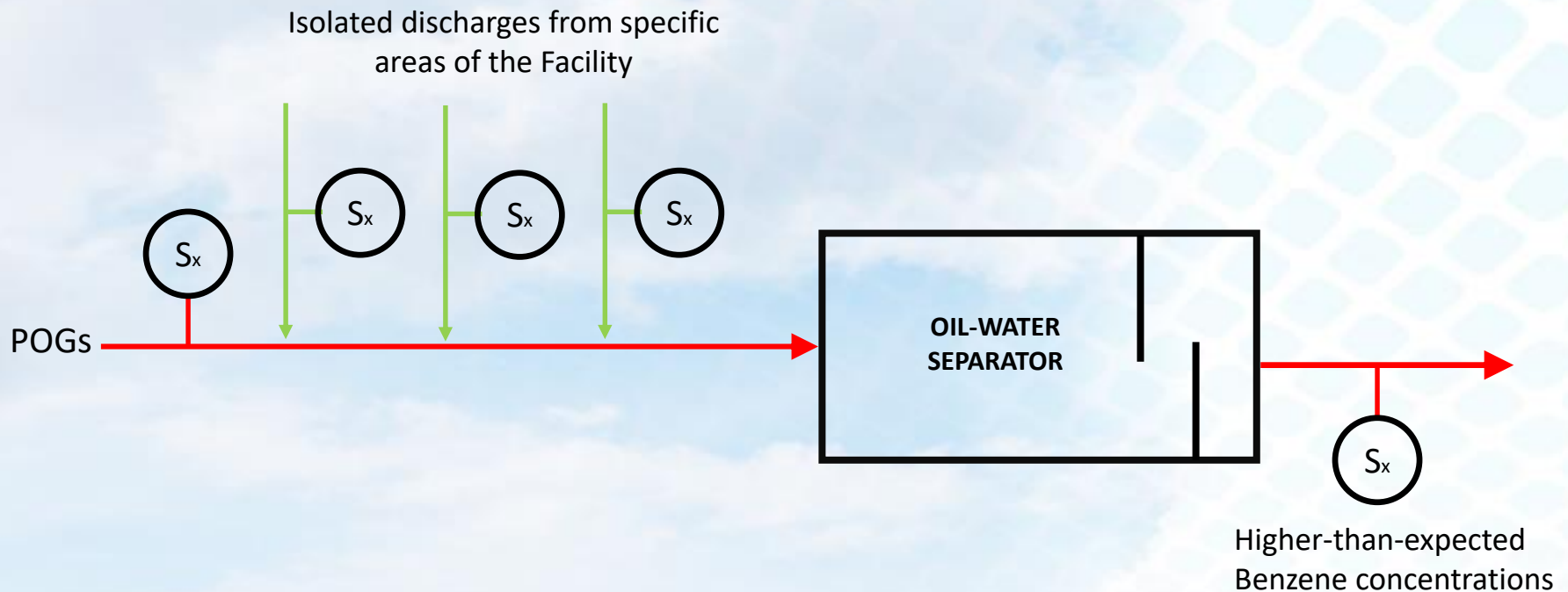




# Barriers Related to Complicated Wastewater Management Systems (cont'd)



# Barriers Related to Complicated Wastewater Management Systems (cont'd)



# Summary

- ❖ The BWON calls for knowing the benzene loading in seweraged wastewaters
- ❖ Wastewater professionals know that a downstream characterization:
  - ◆ Is the standard method for obtaining a facility-wide understanding of the wastewater
  - ◆ Enables a confirmation of the POG characterizations
  - ◆ May require site-specific approaches for complicated wastewater management systems

# Questions



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