

EUROPE MONITORING PROGRAM TO ASSESS IMPACT OF REACH RESTRICTIONS FINDS LOW LEVELS OF D4, D5 AND D6

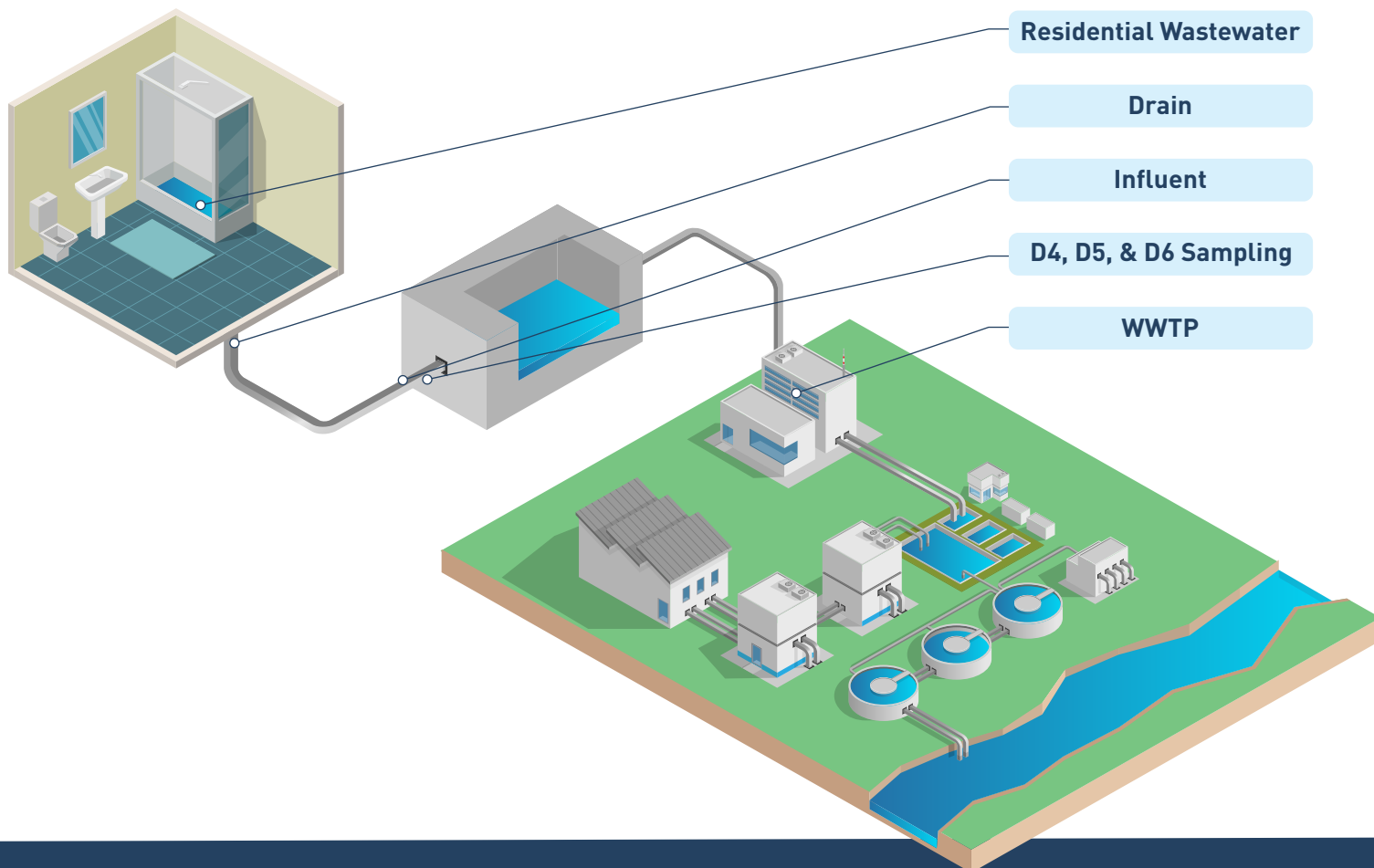
CES-SILICONES EUROPE MONITORING PROGRAM

In January of 2018, the European Union issued a REACH restriction on the use of octamethylcyclotetrasiloxane (D4) and decamethylcyclopentasiloxane (D5) in wash-off personal care products (PCPs). In January of 2019, the European Chemical Agency (ECHA) proposed a new restriction, on the use of D4, D5 and dodecamethylcyclohexasiloxane (D6) in leave-on personal care and consumer and professional products. The goal of these restrictions is to reduce the amount of D4, D5, and D6 being released to the aquatic environment by restricting their use in personal care and consumer and professional products.

To assess the impact of these REACH restrictions, CES-Silicones Europe (CES) began monitoring the amount of D4 and D5 being released into domestic wastewater treatment plants (WWTPs) in 2018. CES amended the monitoring in 2019 to include D6, once the new restriction was proposed. This monitoring is a surrogate for estimating consumer use of products containing D4, D5, and D6, although it will also capture some professional uses when releases are to water going to domestic WWTPs.

EXAMPLES OF D4/D5/D6 SAMPLING SITE

To date over 1,500 samples of residential wastewater flowing into WWTPs, during different seasons and at different times of day and days of the week have been analyzed.

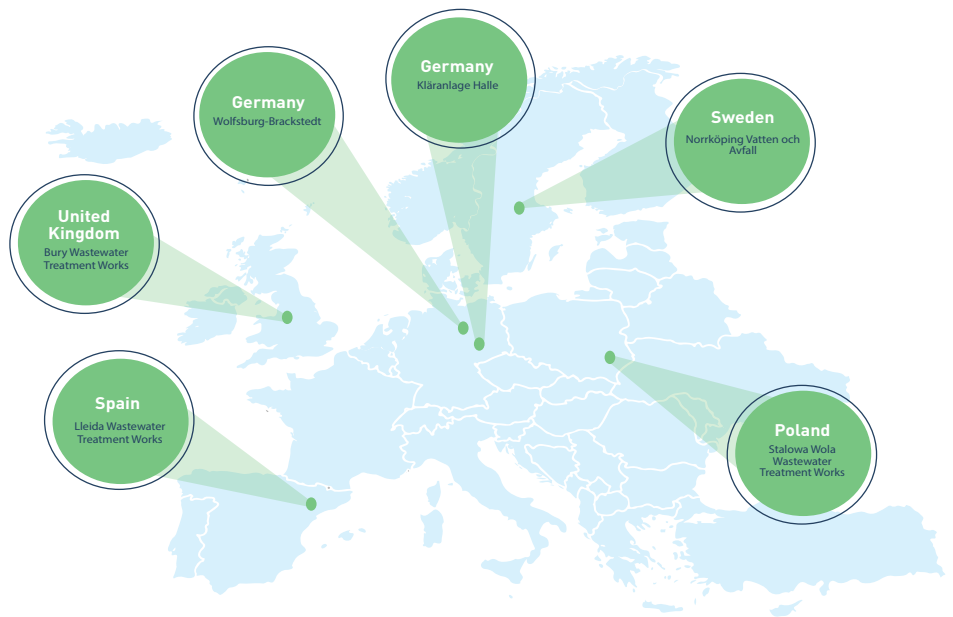


MULTIPLE SAMPLING PERIODS

Currently, the Program is assessing D4 and D5 over 3 time periods: the period before the wash-off restriction was in place (2017), the 2-year phase-out period (2018-2019), and the period after the wash-off restriction is in place (Jan. 2020). D6 is being assessed concurrently with D4 and D5 for the final 2 monitoring periods of this Program.

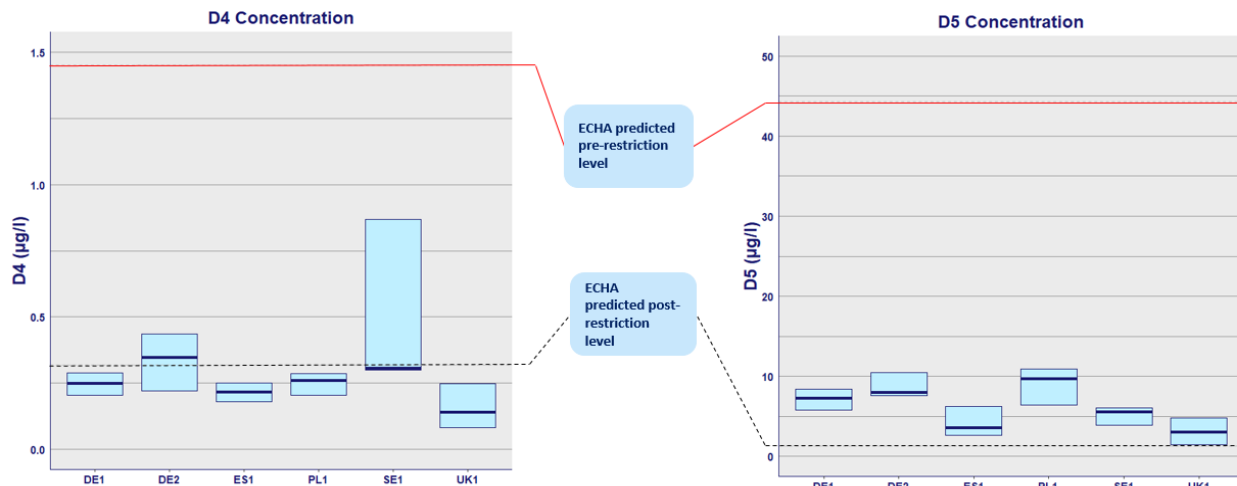
PROGRAM DESIGN

The CES Monitoring Program collects samples of the influent wastewater from six representative WWTPs across five European Union (EU) States that receive wastewater primarily from residential sources. The design of the program allows for a rigorous statistical evaluation of D4, D5, and D6 data over time to assess the impact of these restrictions.



PRE-RESTRICTION – 2 YEAR PHASE-OUT PERIOD

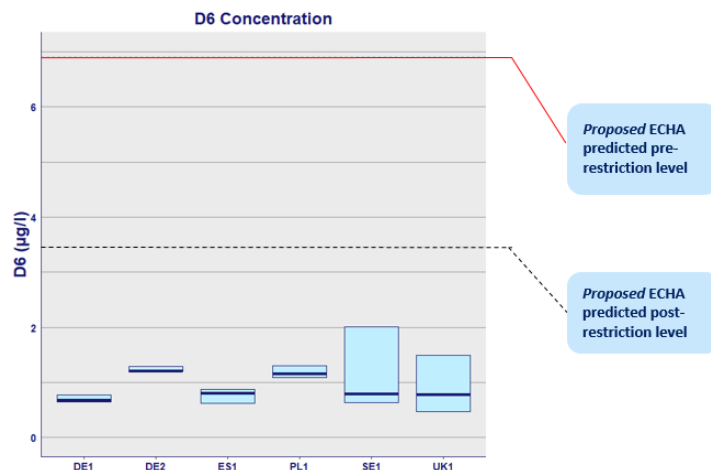
Concentrations of D4 are already in the range of the predicted post-restriction level at all WWTPs. For D5, concentrations are approaching the predicted post-restriction level at all WWTPs. For D6, concentrations are below the predicted pre-restrictions and post-restriction levels at all WWTPs for the “leave-on personal care product proposed restriction.” These concentrations are lower than assumed by EU authorities in implementing restrictions and suggest that those restrictions were unnecessary.



Samples collected between October 2017 and July 2019.

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DE1 – Halle, Germany DE2 – Wolfsburg, Germany ES1 – Lleida, Spain PL1 – Stalowa Wola, Poland SE1 – Norrköping, Sweden UK1 – Bury, United Kingdom



Samples collected between April 2019 and July 2019.