## **RIWA-Rijn Annual Report 2021**

Graphs from chapter 1 The quality of the Rhine water in 2021



The concentrations of the substances were compared to target values from the European River Memorandum (ERM). More information on the ERM can be found on our website: <u>https://www.riwa-rijn.org/en/riwa-rijn-en/european-river-memorandum-2/</u>

*ERM-streefwaarde = ERM target value* 





Graph 1.1 Concentrations of five X-ray contrast agents at Lobith during the period 2017-2021





Graph 1.2 Concentrations of valsartan and valsartan acid at the Rhine locations during the period 2017-2021





Graph 1.3 Candesartan concentrations at the Rhine locations during the period 2017-2021





Graph 1.4 Concentrations of three gadolinium-containing contrast agents measured at Lobith in 2020

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Graph 1.5 Concentrations of N-acetyl-aminoantipyrine (AAA) and N-formyl-aminoantipyrine (FAA) at the Rhine locations during the period 2017-2021

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Graph 1.6 Concentrations of lithium measured at the Rhine locations during the period 2017-2021





Graph 1.7 Concentrations of metformin at the Rhine locations during the period 2017-2021





Graph 1.8 Concentrations of guanylurea at the Rhine locations during the period 2017-2021





Graph 1.9 Concentrations of oxipurinol at the Rhine locations during the period 2017-2021





Graph 1.10 Concentrations of gabapentine at the Rhine locations during the period 2017-2021 RIWA

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Graph 1.11 Concentrations of 10,11-dihydro-10,11-dihydroxycarbamazepine at the Rhine locations (2017-2021)









Graph 1.13 Concentrations of EDTA measured at the Rhine locations during the period 2017-2021





Graph 1.14 Concentrations of NTA measured at Lobith over the past five years (2017-2021)





Graph 1.15 Concentrations of aminomethylphosphonic acid (AMPA) at the Rhine locations during the period 2017-2021





Graph 1.16 Concentrations of metolachlor-C metabolite (metolachlor OA) and metolachlor-S metabolite (metolachlor ESA) measured at Andijk (2017-2021)





Graph 1.17 Concentrations of 1,4-dioxane at the Rhine locations during the period 2017-2021





Graph 1.18 Perfluorobutanoic acid (PFBA) concentrations at the Rhine locations during the period 2016-2021









Graph 1.20 Concentrations of methenamine at the Rhine locations during the period 2018-2021





Graph 1.21 Concentrations of sulphamic acid at the Rhine locations in 2021





Graph 1.22 Concentrations of 1,3,5-Triazine-2,4,6-triamine (melamine) measured at the Rhine locations during the period 2017-2021





Graph 1.23 Concentrations of sucralose at the Rhine locations during the period 2017-2021





Graph 1.24 Concentrations of acesulfame-K at the Rhine locations during the period 2017-2021





Graph 1.25 Boxplots of the water discharge of the Rhine at Lobith during the period 2002-2021





Graph 1.26 Water discharge at Lobith and at Nieuwegein during the period 2017-2020. For Nieuwegein, the discharge from the Lek at Hagestein is used as representative discharge.





Graph 1.27 Average chloride concentration (red line) and average chloride load (blue line) at Lobith for each year during the period 1875 - 2021





Graph 1.28 Concentrations of chloride (measured weekly or fortnightly) at the Rhine locations during the period 2017-2021





Graph 1.29 Boxplots of bromide concentrations at each reporting location in 2020 and in 2021. The locations are presented from left to right from upstream to downstream.

