

Reykjavík Energy

2023 Annual Report

Appendices



Sewage treatment, overflows and sea water quality



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Cover photo: Atli Már Hafsteinsson

OR and subsidiaries' area of operations



Sea water quality along Reykjavík's coastline and on the periphery of dilution areas in Faxafloi bay

The percentage (%) of samples below limits, i.e., less than 100 in a 100 ml sample at the coast by Reykjavik in 2016-2023 and less than 1000 in a 100 ml sample at the periphery of dilution areas for the period 2015-2021.

Samples	Heat-tolerant microbes		2017	2018	2019	2020	2021	2022	2023
At the coast and by the discharge point									
RDEP and	Faecal coliforms	%	81	87	90	93	87	95	83
Veitur Utilities	Enterococci	%	96	96	99	97	93	99	93
At the periphery of dilution areas									
Veitur Utilities*	Faecal coliforms	%	100	100	97	100	100	-	-
	Enterococci	%	100	100	100	100	100	-	-

RDEP: Reykjavik's Department of Environment and Planning

*Veitur Utilities discontinued sampling at the dilution area periphery in 2021 as it is not required in regulations.

Sea water quality along the coastline in West Iceland

In 2023, from May to December, additional samples were collected in 6 locations along Akranes' coastline and in 11 new sampling sites along Borgarnes' coastline. The table below show the ratio of samples below limits (100 microbes in 100 mL).

Samples	Heat-tolerant microbes		2021	2022	2023
Sea quality at Akranes, 6 samples for each category of microbes					
Veitur	Faecal coliforms	%	86	85	83
	Enterococci	%	93	96	100
Sea quality at Borgarnes, 11 samples for each category of microbes					
Veitur	Faecal coliforms	%		96	100
	Enterococci	%		97	100

Chemicals and trace elements from sewage treatment plants in Reykjavik 2023

Discharge of pollutants (mg/l) from sewage treatment plants in Reykjavik in 2023. The average flow in Klettagardar was 1,685 l/sec and in Ananaust 1,160 l/sec. Calculations are based on results of chemical and trace element analysis from treated sewage samples, collected four times a year for nitrogen and phosphorus analysis and twice a year for trace element analysis.

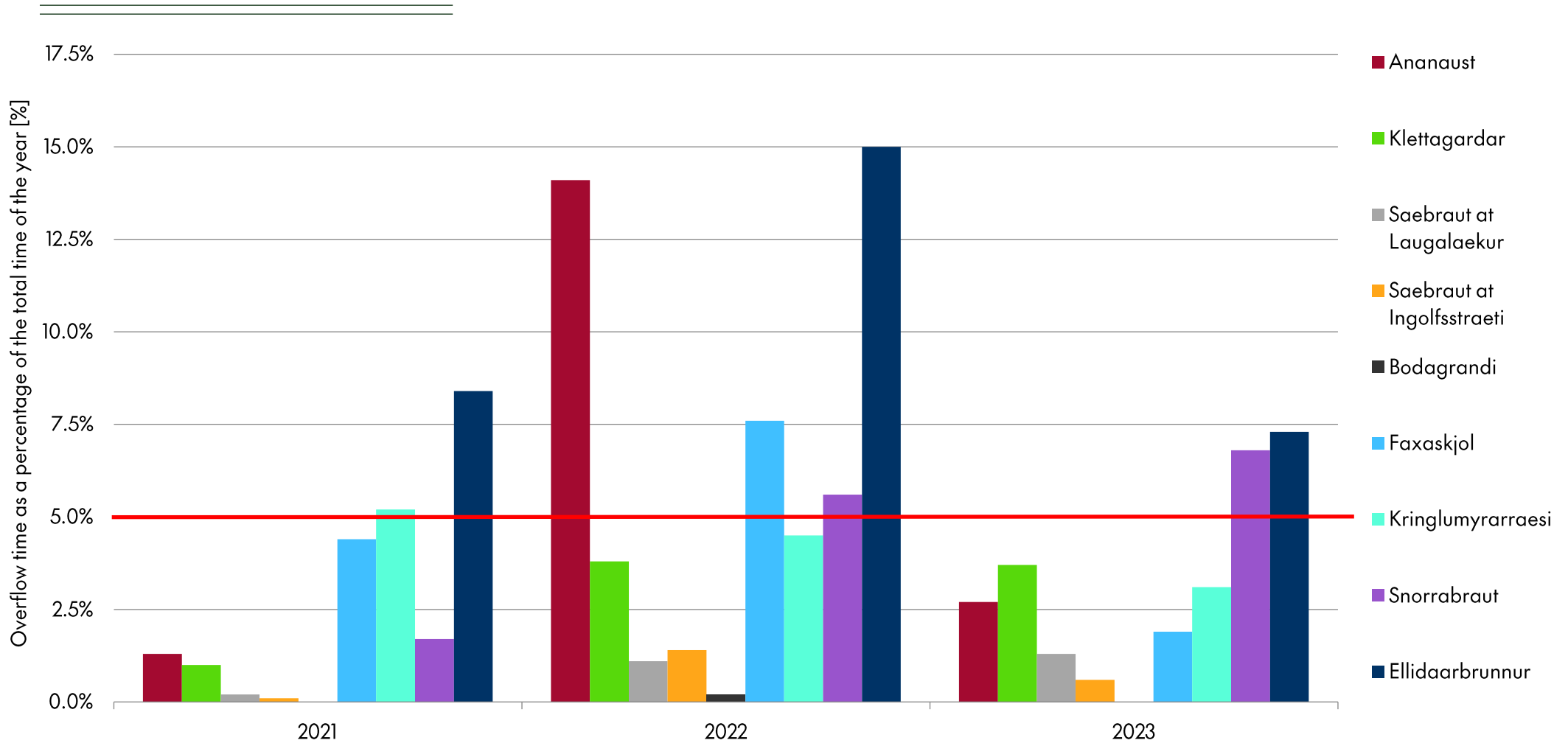
	Spring mg/l	Summer mg/l	Autumn mg/l	Winter mg/l	Average mg/l
Klettagardar					
Total nitrogen (N)	10.6	14.1	11.8	10.0	11.6
Total phosphorus (P)	1.2	1.7	1.4	1.0	1.3
Arsenic (As)	0.0011		0.0011		0.0011
Cadmium (Cd)	<0.00005		<0.00005		Below the detection limit
Chromium (Cr)	0.0012		0.0021		0.0016
Copper (Cu)	0.0082		0.0069		0.0076
Mercury (Hg)	<0.00002		<0.00002		Below the detection limit
Nickel (Ni)	0.0059		0.0069		0.0064
Lead (Pb)	0.0011		0.0007		0.0009
Silver (Ag)	<0.0005		<0.0005		Below the detection limit
Zinc (Zn)	0.11		0.12		0.12
Ananaust					
Total nitrogen (N)	12.6	18.4	14.92	11.9	14.4
Total phosphorus (P)	1.7	2.2	2.01	1.4	1.8
Arsenic (As)	0.0013		0.00173		0.0015
Cadmium (Cd)	<0.00005		0.0000944		Below or near the detection limit
Chromium (Cr)	0.0011		0.00109		0.001
Copper (Cu)	0.0057		0.00386		0.005
Mercury (Hg)	<0.00002		<0.00002		Below the detection limit
Nickel (Ni)	0.0025		0.00148		0.0
Lead (Pb)	<0.0005		0.000741		Below or near the detection limit
Silver (Ag)	<0.0005		<0.0005		Below the detection limit
Zinc (Zn)	0.035		0.0273		0.031

- When both samples collected are below the detection limits, the column "mean value" states "below the detection limit".

Release from Veitur utilities' sewerage systems

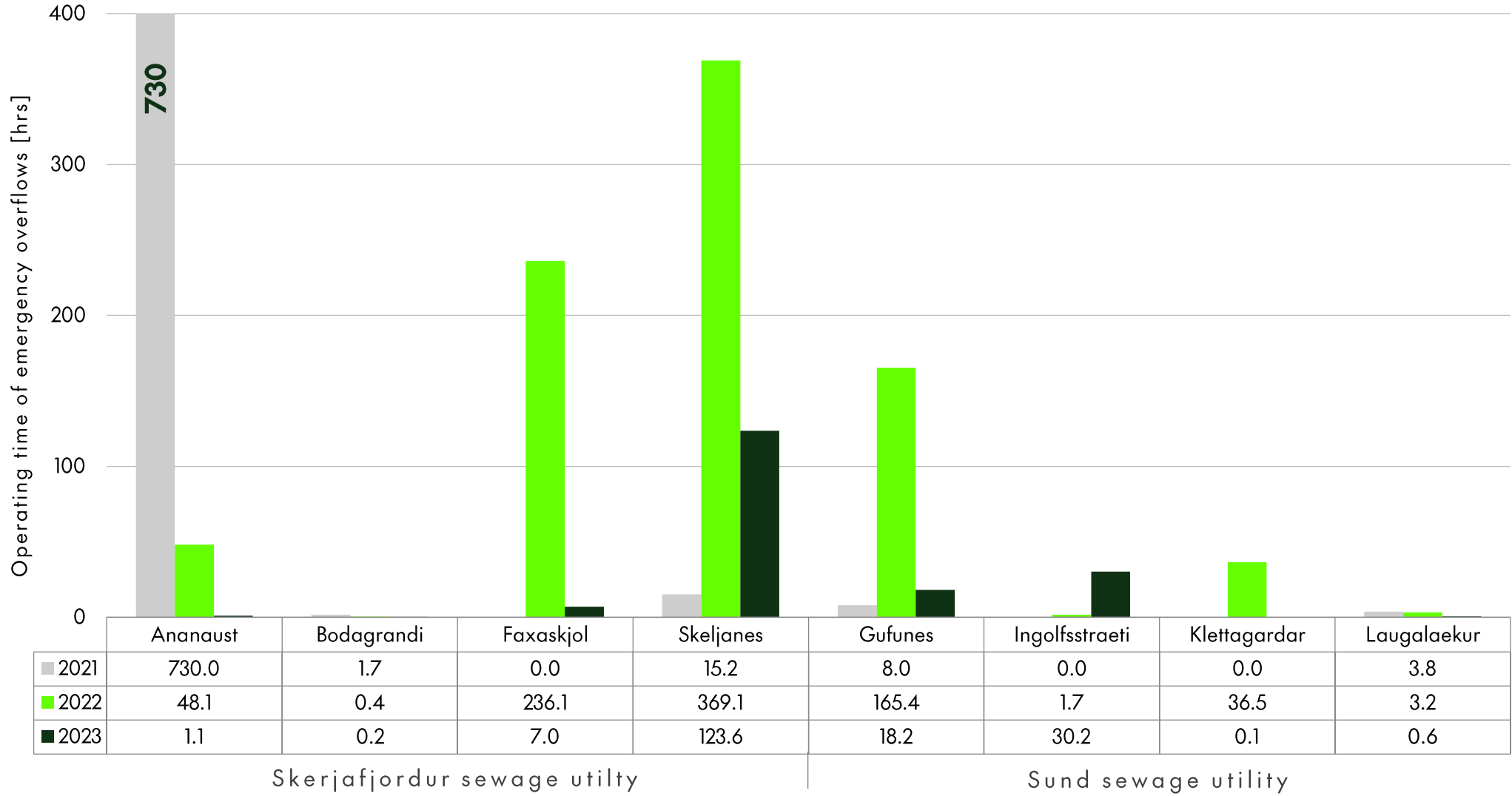
Release via overflows in Reykjavik 2021-2023

According to regulation no. 798/1999 on Sewerage systems and Sewage, overflow in the sewerage system may be active for up to 5% of the time of the year, or when the sewage mixed with hot water from district heating utilities or rainwater is at least on a ratio of 1:5.



Due to weather conditions the sewage system load was unusually high in February. Major maintenance in October at Skeljanes extended the time of emergency overflow activity at the Skeljanes pumping station.

Emergency overflow activity in Reykjavik 2021-2023



Release via overflows in West Iceland 2023

In 2023, the discharge of wastewater via overflows in West Iceland was within Veitur Utilities' established limits, apart from Bodvarsgata in Borgarnes. According to regulation no. 798/1999 on Sewerage systems and Sewage, overflow in the sewerage system may be active for up to 5% of the time of the year, or when the sewage mixed with hot water from district heating utilities or rainwater is at least on a ratio of 1:5.

