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Proposal for deletion of JCP hot-spot No 42 Rīga WWTP



HELCOM HOD 59-2020 online meeting, 8th December 2020

Rīga WWTP as a HELCOM hot-spot



Photo : «Rīgas ūdens»

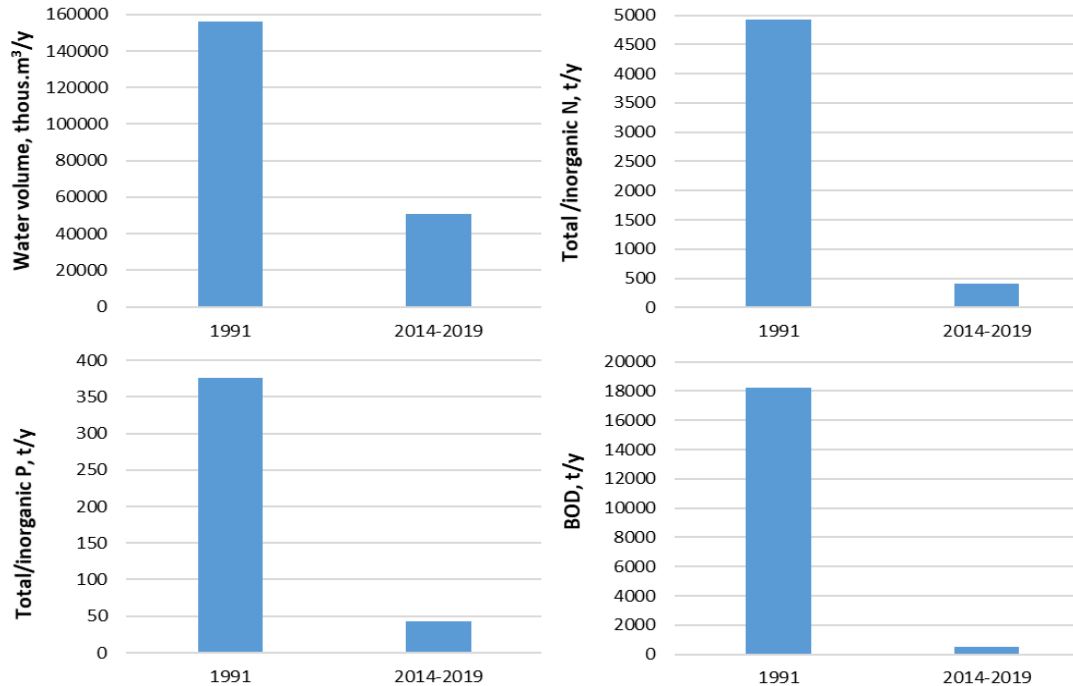
At the end of 1991, the 1st phase of the new biological WWTP in Riga was completed:

- large reduction of inputs of organic matter to the Gulf of Rīga

Since 2000, more than 200 million EUR invested:

- P sedimentation facilities, sludge dewatering storage, composting area were built.
- New connections to sewerage system were created.

Decrease in pollution loads



Data sources:
Andrušaitis et.al., 1992;
National statistical database «2-
Ūdens»

Since 1991, Rīga achieved a decrease of:

- ✓ Waste water volume – 3 x
- ✓ Nitrogen load – ~ 12 x
- ✓ Phosphorus load – ~ 9 x
- ✓ BOD load – ~39 x
- ✓ COD load – ~ 12 x

Compliance with HELCOM recommendations and legislation



Parameter	2017	2018	2019	HELCOM Rec28E/5	UWWTD	B category permit
N _{tot} , mg/l	6.6	7.2	7.5	10.0	10.0	10.0
P _{tot} , mg/l	0.68	0.67	0.67	0.5	1.0	1.0
BOD ₅ , mg/l	9.0	8.7	8.6	15.0	25.0	25.0
COD, mg/l	38.6	44.5	41.1		125.0	125.0
Susp.solids, mg/l	8.2	8.5	9.1		<35.0	<35.0
Zn, mg/l	0.02	0.05	0.01			0.2
Cr, mg/l	0.003	0.003	0.002			0.05
Cu, mg/l	0.007	0.007	0.005			0.2
Ni, mg/l	0.008	0.006	0.005			0.05
Cd, mg/l	0.00012	0.00012	0.00011			0.02
Pb, mg/l	0.0010	0.0015	0.0007			0.05
As, mg/l	0.0002	0.0002	0.0004			0.02
Hg, mg/l	0.0001	0.0005	0.0001			0.02
Removal of N _{tot} , %	86	88	87	70-80 %	70-80 %	70-80 %
Removal of P _{tot} , %	89	90	90	90 %	80 %	80 %
Removal of BOD ₅ , %	97	97	97	80 %	70-90 %	70-90 %
Removal of COD, %	94	94	95		75 %	75 %
Removal of susp. solids, %	97	98	98		90 %	90 %

SUMMARY



- Significant reduction of pollution loads to the Gulf of Rīga.
- Efficiency of Rīga WWTP in removal of nutrients, organic matter and suspended solids are in line with national and international requirements.
- Concentrations of heavy metals in sludge and wastewater are low.
- Sludge is used for biogas production, compost preparation and as a fertilizer.
- Information on pollution loads is reported to HELCOM.



Photo: Rīgas ūdens

THANK YOU FOR YOUR ATTENTION!