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NATIONAL CENTER FOR PUBLIC
HEALTH AND PHARMACY

Monitoring scheme and preliminary results for new parameters in Hungary

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Securing Drinking Water Supply, international workshop, 2023.11.22.

New parameters and parametric values in 2020/2184 DWD

New parameters	Higher parametric value	Lower parametric value
<ul style="list-style-type: none">• Bisphenol A• Chlorate/<i>chlorite</i>• Haloacetic acids (HAAs)• Microcystin-LR• Uranium• PFAS• Calcium, magnesium	<ul style="list-style-type: none">• Antimony• Boron• Selenium	<ul style="list-style-type: none">• Chromium• Lead

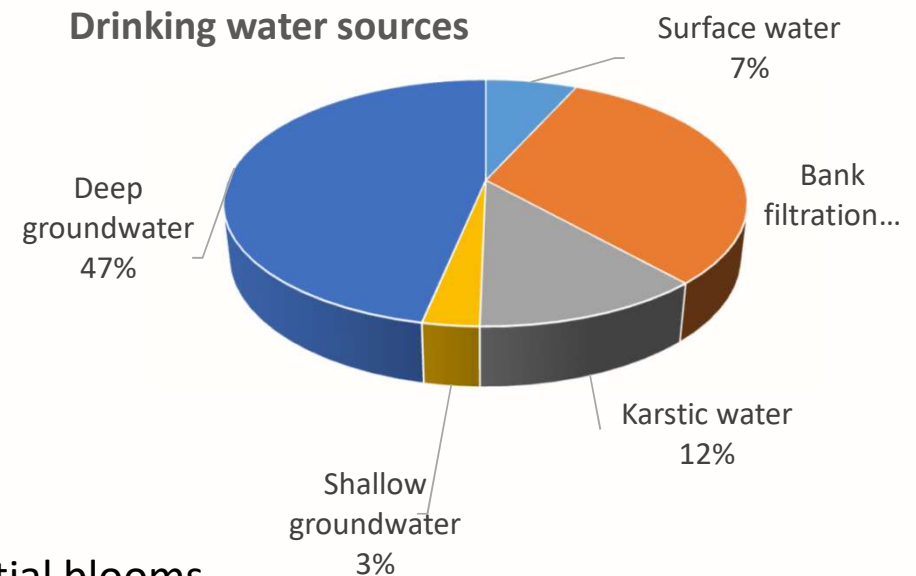
Requirements transposed in 5/2023 (I.12.) Government Decree

Bisphenol A

- Parametric value of 2.5 µg/l was transposed (no plans for a stricter value)
- From 12.01.2026.
- Endocrine disruptor
- From source water or distribution system's material
- LC-MS/MS – in house method
- **Lack of data**

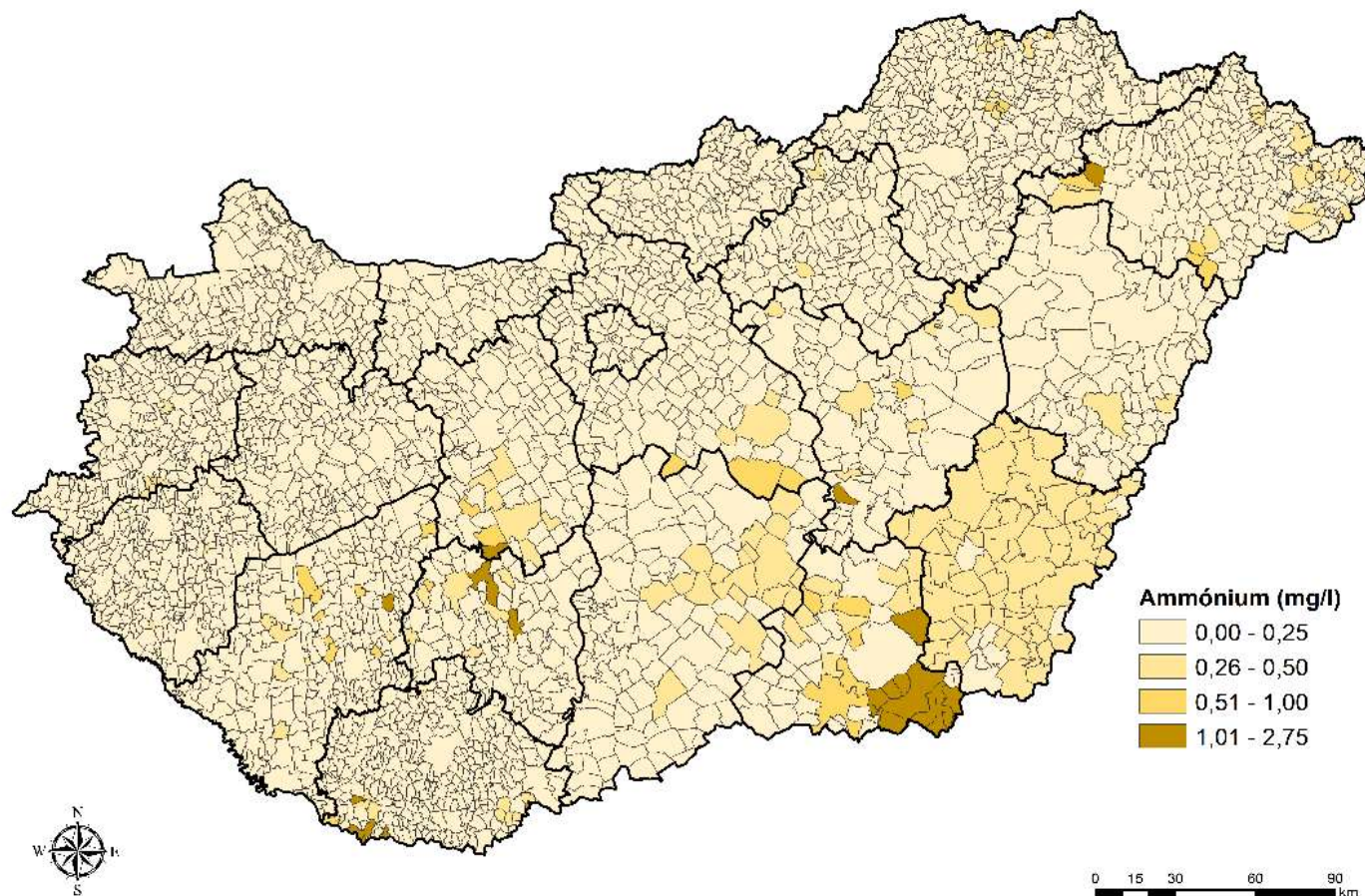
Microcystin-LR

- Parametric value 1,0 µg/l
- From 12.01.2026.
- LC-MS/MS - ISO 20179:2005
- In case of use of surface water and only in the event of potential blooms in source water (increasing cyanobacterial cell density or bloom forming potential) – **surface water abstraction is rare in Hungary (app. 5 %)**



Ammonium

- Parametric value of 0,5 mg/l
- Not a new component, but
 - Relevant in Hungary
 - risk of nitrite
 - breakpoint chlorination

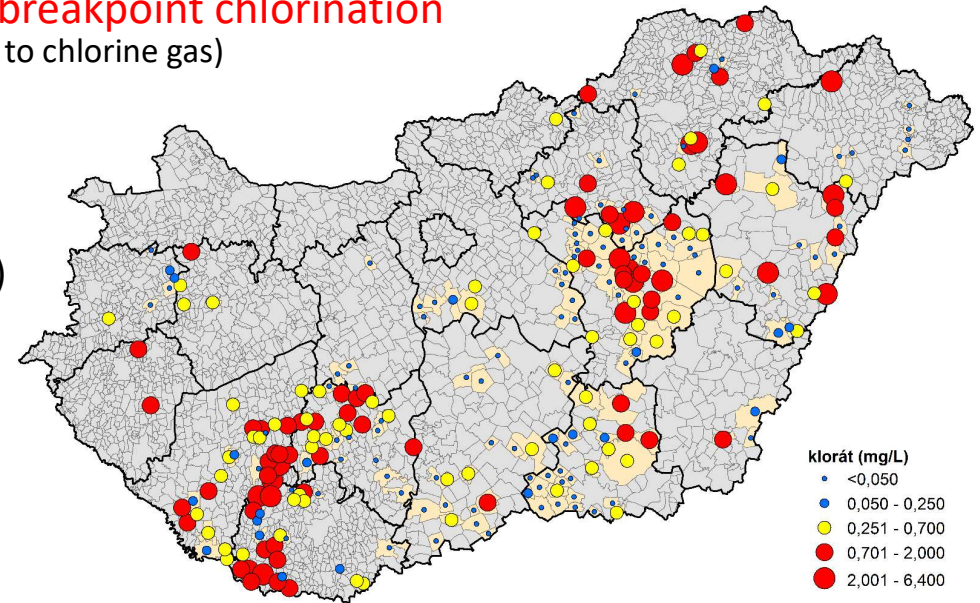


Chlorate

- Parametric value of 0.25 mg/l was transposed
- Should be measured if chlorine is used for disinfection or oxidation
- 0.70 mg/l parametric value is allowed for a total of 30 days in a year
- From 12.01.2026.
- Ionchromatography - MSZ EN ISO 10304-4
- **Based on a national survey it will be a problem in case of breakpoint chlorination by hypochlorite** – Have to change the oxidation agent (e.g. to chlorine gas)

Chlorite

- Parametric value 0,25 mg/l (previously in the national legislation, increased from 0,20 mg/l)
- Should be measured if chlorine is used (for disinfection or oxidation)
- 0,70 mg/l parametric value is allowed for a total of 30 days in a year
- Ionchromatography - MSZ EN ISO 10304-4
- Occasional non-compliance if chlorine dioxide is used



Haloacetic acids (HAAs)

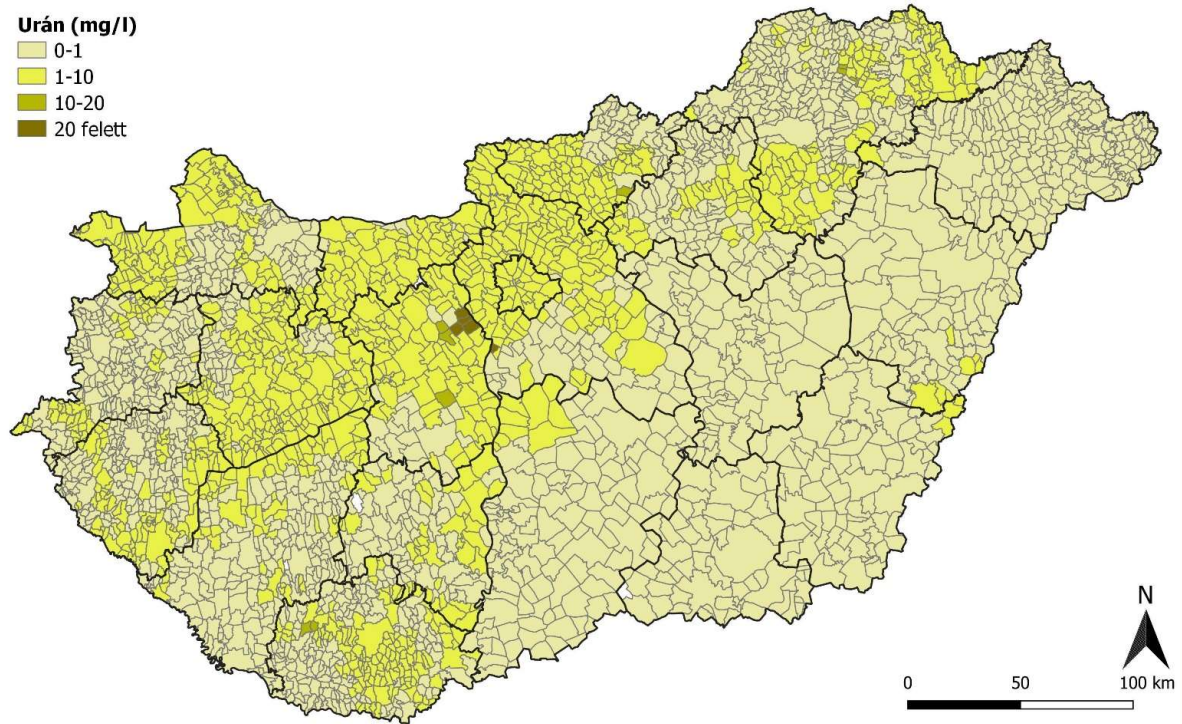
- Parametric value 60 µg/l
- In case of risk of HAA compounds formation or use of chlorine (disinfection or oxidation)
- From 12.01.2026.
- GC-MS - EPA 552.3 :2003
- Based on a national survey it won't be a problem in Hungary
- National parametric value for THM is 50 µg/l – where THM is compliant, HAA also

PFAs compounds

- Per- and polyfluoroalkyl compounds
- Parametric value: 0,10 µg/l
- Industrial pollutant, widely applied (water repellent, non-stick properties)
- Persistent compounds, proven negative health effects
- Sum of PFAs is measured by an in-house method based on ISO 21675 standard (SPE, LC-MS/MS)
- Monitoring: based on risk assessment and of the catchment areas for abstraction points of water intended for human consumption
- Lack of data – national survey would be necessary

Uranium (U)

- Parametric value of 30 µg/l was transposed
- Not in the legislation previously
- Geological origin
- From 12.01.2026.
- ICP-MS
 - MSZ EN ISO 17294 (ICP-OES / GF-AAS)
- Based on a national survey it won't be problem in Hungary



Boron

- New parametric value of 1,5 mg/l was transposed (increased from 1,0 mg/l)
- In case of regions where geological conditions could lead to higher levels of boron in groundwater then 1,5 mg/l, parametric value is 2,4 mg/l
- ICP-MS - MSZ EN ISO 17294-2 (ICP-OES,UV-photometry)
- There are many water sources with high boron concentration (up to 4.5 mg/l) in Hungary
- Derogation applied to 38 water supply zones until 2012
- Non-compliance was already solved (by water mixing, new water source or membrane treatment)

Selenium

- Parametric value of 20 µg/l was transposed (increased from 10 µg/l) – option for 30 µg/l was not used
- ICP-MS - MSZ EN ISO 17294-2 (ICP-OES / GF-AAS)
- Not a problem in Hungary (single WSZ above parametric value, below 30 µg/l)

Selenium survey	Number of settlement	Mean	Median	Minimum	Maximum	Std.Dev.
2016-2018	3172	<1,0*	<1,0*	<1,0*	22	0,52
2018-2022	2984	<1,0*	<1,0*	<1,0*	26	0,71

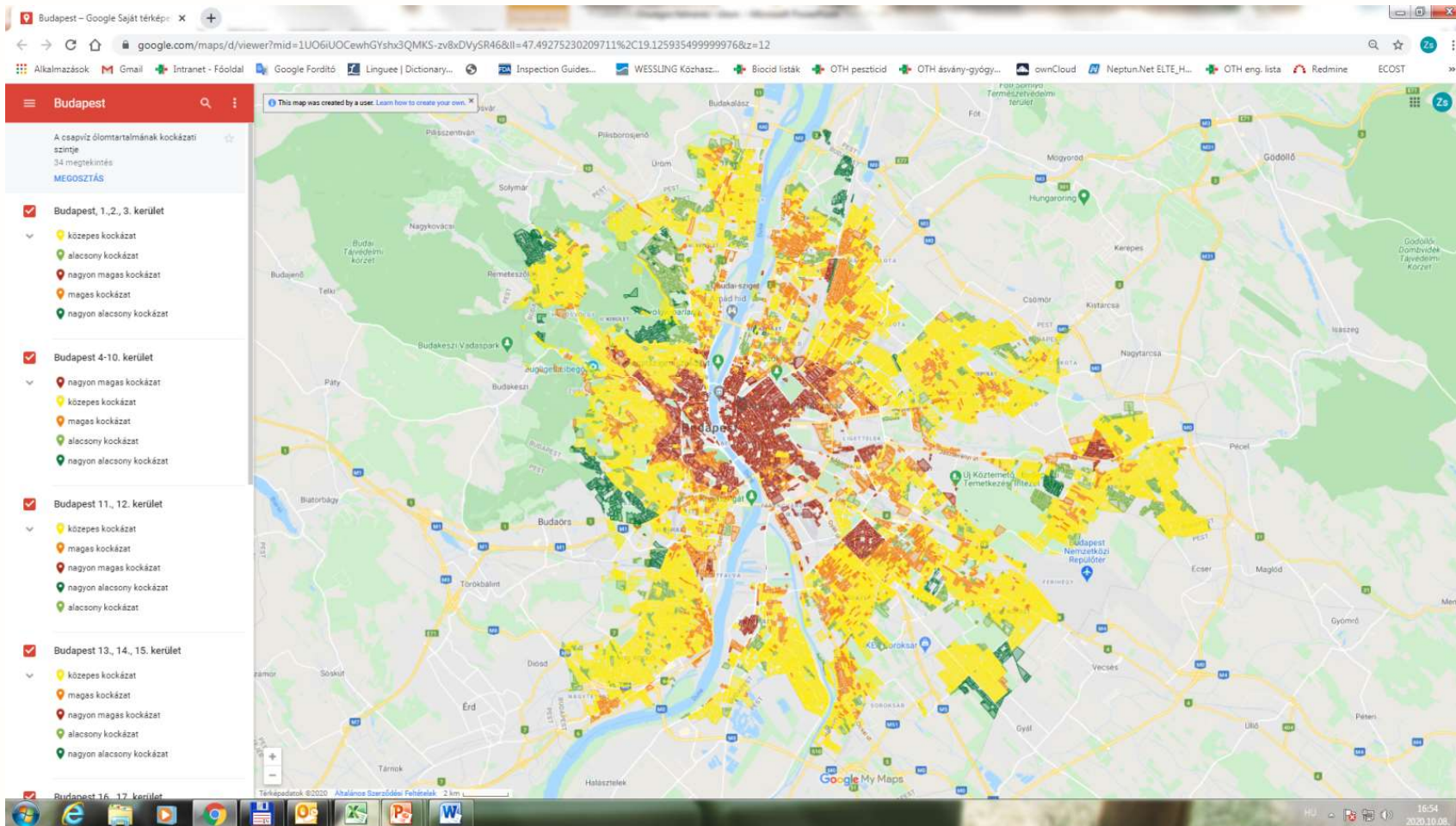
*Limit of Quantification

Antimony (Sb)

- New parametric value of 10 µg/l was transposed (increased from 5 µg/l)
- Sampling: shall be taken at the consumers' tap without prior flushing, random daytime sample
- primarily from materials in contact with drinking water
- ICP-MS - MSZ EN ISO 17294 (ICP-OES / GF-AAS)
- Rare non-compliance

Lead (Pb)

- New parametric value of 5 µg/l was transposed (decreased from 10 µg/l)
- In case of new building or priority premises (eg. schools)
- From 12.01.2036.
- Sampling: shall be taken at the consumers' tap without prior flushing, random daytime sample
- primarily from materials in contact with drinking water
- ICP-MS - MSZ EN ISO 17294 (ICP-OES / GF-AAS)
- Representative national survey between 2017-2020
 - Exposed to risk app. 600.000 person in Budapest and 130.000 person in bigger cities
 - Old buildings (before 1945)
- **Common non-compliance in old buildings**



Chromium (Cr)

- New parametric value of 25 µg/l was transposed (decreased from 50 µg/l)
- Sampling: shall be taken at the consumers' tap without prior flushing, random daytime sample
- primarily from materials in contact with drinking water (eg. taps)
- From 12.01.2023. – option to defer until 2036 was not used
- ICP-MS - MSZ EN ISO 17294 (ICP-OES / GF-AAS)
- Rare non-compliance



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**Thank you for your
attention!**

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