Mineral water of Mlječanica (Kozarska Dubica Municipality)

In area of village Mlječanica, on the right bank of the river Mlječanica, exist spring and well of sulphate cold water with exhalations of free H_2S.

According to Stefanovski et al. (1999) water has a bitter taste and smell of rotten eggs; contains a significant concentration of H_2S ranging from 85 mg/l (1975) to 110 mg/l (1999).

Aquifers of mineral waters are Tertiary clastic sediments: sandstone and marl. Waters are SO_4-Ca type, with total mineralisation about 2,5 g/l (Miošić and Samardžić, 2016). These waters are formed by dissolving of Tertiary sulphate evaporites.

The waters are used for balneological purposes in the Mlječanica Spa since 1976 (https://spamljecanica.com/).

Generalities

Mineral waters of Mlječanica are similar to waters of close location Jelovac. This sulphate waters are formed by gypsum dissolution in P-T_1 evaporites in shallow zones; H_2S became by reduction of sulphates or biogenic processes (Miošić and Samardžić).

The pumping tests of well in Mlječanica confirmed yield over Q=10 l/s.

Anomalies

High groundwater mineralization in Mlječanica (up to 4,2 g/l) and high content of dissolved H_2S (up to 0,11 g/l).

Data

The data given in the table below are taken from Miošić and Samardžić et al. (2016).

FZZG_ factsheetMlječanica	Temperature of water (°C)	Q (l/s)	Total mineralization (g/l)	Water type	Gaseous composition	Aquifer
Spring and well in Mlječanica	13,1	10	2,5	SO_4– Ca	H_2S	Sandstone, marl (Tc)
Spring in Jelovac	12	1	1,1	SO_4-HCO_3-Ca	H_2S	Sandstone, marl (Tc)

References

Čvorović Lj., 1977: Mineral waters in zone of horsts and grabens (Majevica, Kozara, Motajica and Prosara), Herald geological, 22, Geoinženjering-Sarajevo, Sarajevo.

Josipović J (1971) Mineral, thermal and thermomineral waters in territory of B&H. Herald Geological 15, Sarajevo, pp 233-276

Katzer F. (1919): To knowledge of mineral springs of Bosnia. State museum herald in Bosnia and Herzegovina, Sarajevo.

Ludwig E (1893) Mineral springs in Bosnia. Geological annals of Balkan Peninsula, Book IV, pp 244-278, Belgrade.

Miošić N. (1977): Map of mineral, thermal and thermomineral waters of B&H, 1:200.000 with Explanation and Catalogue of occurrences, Geoinženjering, Sarajevo.

Miošić N. (1982): Genetic categorization of mineral, thermal and thermomineral waters of Bosnia and Herzegovina, Herald geological, 27, Sarajevo, 221 - 258.

Miošić, N., Samardžić, N. (2016): Mineral, thermal and thermomineral water of Bosnia and Herzegovina, in Mineral and thermal waters of Southeastern Europe, Papić, P. (Ed.), Book Environmental Earth Sciences, Springer, 147-171.

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Tišma R., Stefanovski M., 1988: Characteristics of Mlječanica Spa mineral waters and its application – Bos. Dubica, First Yugoslav Symposium - Medical problems in tourism, Crikvenica.

Stefanovski M., Stefanovski G., Tišma R., Šipka D., 1999: Health and tourism potential of Mlječanica Spa, Herald of geographic society of the Republic of Srpska, Volume 4, Banja Luka, 99-106, https://www.gdrsbl.org/wp-content/uploads/2020/04/HERALD-04-full_comP.pdf

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