

10th Eastern European Young Water Professionals Conference



BOOK of ABSTRACTS

New Technologies in Water Sector

7-12 May 2018 Zagreb, Croatia

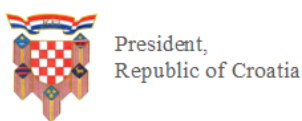
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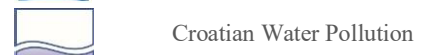
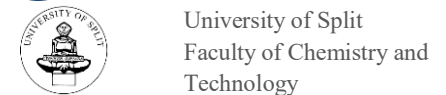
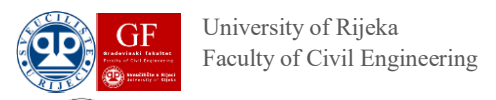
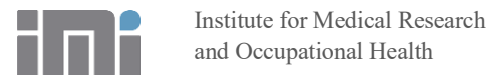
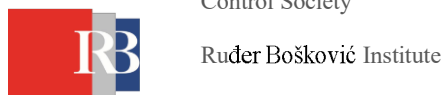
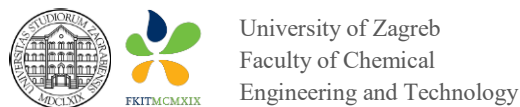
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**10th Eastern European Young
Water Professionals
Conference**



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**University of Zagreb,
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Drinking Water Quality Assessment of Uzunköprü District (Edirne, Thrace Region of Turkey)

C. Tokatli, M. Gökçek, B. Yılmaz, Ş. Nergiz, E. İşli, Ö. Şenkaya, S. Doğruel, E. Çetin and İ. A. Helvacioğlu*

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INTRODUCTION

Uzunköprü district is located at the westernmost border of Turkey in the middle part of Edirne City. It is the first place among the districts of Edirne Province in terms of its coverage area. The Ergene River that is one of the most important river ecosystems of Thrace Region flows through the middle of the Uzunköprü District and flows into the Meriç River. The Ergene River leaves plenty of organic residues to the Ergene Plain, which covers the middle of the district lands. For this reason, the land of the plain is very fertile and it is suitable for growing all kinds of crops. Irrigated farming is carried out in the Ergene Plain in general and the district is half – wet in terms of precipitation. 60% of the people live in the countryside and provide their subsistence from agriculture. (T.C. KÜLTÜR VE TURİZM BAKANLIĞI, 2017; T.C. UZUNKÖPRÜ KAYMAKAMLIGI, 2017).

Ground water is the most important source of drinking water for numbers of villages located in Edirne Province and monitoring ground water quality in Uzunköprü District has a critical importance for human health (Tokatli, 2014).

The aim of this study was to evaluate the drinking water quality of Uzunköprü District by determining some water quality parameters including dissolved oxygen, oxygen saturation, pH, electrical conductivity (EC), total dissolved solids (TDS), salinity, turbidity, nitrate nitrogen (NO₃), nitrite nitrogen (NO₂), phosphate (PO₄) and cyanide (CN).

MATERIAL AND METHOD

Ground water samples were collected from 12 selected villages located in the Uzunköprü District in autumn season of 2017.

Measurements of pH, electrical conductivity (EC), total dissolved solid (TDS) and salinity parameters were performed by using Hach branded (HQ40D) Portable Multi – Parameter Measurement Device and turbidity parameter was performed by using Hach branded (2100Q) Portable Turbidimeter Device during the field studies. Nitrate nitrogen (NO₃), nitrite nitrogen (NO₂), phosphate (PO₄) and cyanide (CN) parameters were performed by using Hach branded (DR890) Colorimeter Device during the laboratory studies.

RESULTS

Results of the physicochemical data in the groundwater of Uzunköprü District with some national and international limit values were given in Table 1.

According to the criteria of Turkish Regulations identified for Turkey (Water Pollution Control Regulation in Turkey), Uzunköprü District has I. Class water quality in terms of total dissolved solids, dissolved oxygen, oxygen saturation and pH parameters; I. – II. Class water quality in terms of cyanide, nitrite, nitrate and electrical conductivity parameters; and III. – IV. Class water quality in terms of phosphate parameter (Uslu and Türkman, 1987; Turkish Regulations, 2004; 2015).

Table 1. Results of detected parameters and some limit values

Limit Values and the Results of Present Study		Parameters										
		DO (ppm)	O ₂ Sat. (%)	pH	EC (mS/cm)	^a TDS (ppm)	Sal. (‰)	Tur. (NTU)	NO ₃ (ppm)	NO ₂ (ppm)	^b PO ₄ (ppm)	CN (ppm)
*Turkish Regulations Water Quality Classes (2015)	I. Class (Very Clean)	>8	>90	6.5-8.5	400	500	-	-	5	0.01	0.02	0.01
	II. Class (Less Polluted)	6	70	6.5-8.5	1000	1500	-	-	10	0.06	0.16	0.05
	III. Class (Much Polluted)	3	40	6.0-9.0	3000	5000	-	-	20	0.12	0.65	0.1
	IV. Class (Extremely Polluted)	3>	40>	Out of 6.0-9.0	>3000	>5000	-	-	>20	>0.3	>0.65	>0.1
Drinking Water Standards	TS266 (2005)	-	-	6.5-9.5	2500	-	-	5	50	0.5	-	-
	EC (2007)	-	-	6.5-9.5	2500	-	-	-	50	0.5	-	-
	WHO (2011)	-	-	-	-	-	-	-	50	0.2	-	-
Drinking Water of Uzunköprü District	Min	6.670	68.500	7.290	442.000	258.000	0.260	0.220	0.300	0.000	0.000	0.000
	Max	9.570	98.700	8.260	848.000	509.000	0.510	0.730	5.500	0.032	0.900	0.014
	Mean	8.374	86.367	7.740	553.583	330.833	0.329	0.465	2.050	0.013	0.398	0.004
	SD	0.922	9.363	0.308	131.828	79.615	0.080	0.140	1.939	0.011	0.361	0.005

^aTurkish Regulations, 2004; ^bUslu and Türkman, 1987; Sal. Salinity; Tur. Turbidity; Sat. Saturation
TS266 – Turkish Standards Institute; EC – European Communities; WHO – World Health Organization

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