



INSTITUTE OF GEOLOGY & MINERAL EXPLORATION

LEGAL ENTITY OF PRIVATE LAW

SUPERVISED BY THE MINISTRY OF DEVELOPMENT (LAW No. 272/76)

ENTRANCE C, OLYMPIC VILLAGE GR 13677 ACHARNAE, GREECE ☎ +302102413000, FAX +302102413015

DIVISION OF ANALYTICAL LABORATORIES

QUALITY CONTROL LABORATORY FOR BOTTLED WATERS

ENTRANCE C, OLYMPIC VILLAGE GR 13677 ACHARNAE, GREECE ☎ +302102413137, FAX +302102413446

Information: Ms. H. Gintoni

Athens 16/7/2008

Reg. No (IGME)

Reg. No (DANL) 371/20-6-2008

Sample No (DANL) 2533

TO : REGIONAL BRANCH OF CRETE

102, G. Kourmoulis Street GR 74100 Rethimno

Attn. Mrs S. Pavlidou

Tel. +302831025581, Fax: +302831028863

Sample Description¹ : Water sample from the spring "Amati" of the bottling company "VOTOMOS S.A." in Zaros of Heraklion Crete in PE bottles of 1 l.
Condition of the sample upon arrival normal.

Sampling : IGME

Date of sample receipt : 17/6/2008

Date of analysis : 19/6-15/7/2008

TEST REPORT (SAMPLE CODE: 1378/2008)

Parameter	Unit	Result	Parametric value*	Standard Method
pH (25 °C)	pH units	7,9	≥ 6,5 and ≤ 9,5	ELOT 658:1983
Conductivity (25 °C)	µS/cm	273	2500	ELOT EN 27888:1993
Calcium, Ca ⁺²	mg/l	33,7		ELOT 169:1978
Magnesium, Mg ⁺²	mg/l	10,7		ELOT 169:1978 & ELOT 170:1980
Sodium, Na ⁺	mg/l	6,7	200	ISO 9964-1:1993
Potassium, K ⁺	mg/l	0,4	12	ISO 9964-2:1993
Carbonates, CO ₃ ⁻²	mg/l	0,0		ELOT EN ISO 9963-1:1996
Bicarbonates, HCO ₃ ⁻	mg/l	144		ELOT EN ISO 9963-1:1996
Chlorides, Cl ⁻	mg/l	13,5	250	ELOT EN ISO 10304-1:1995
Sulfates, SO ₄ ⁻²	mg/l	6,0	250	ELOT EN ISO 10304-1:1995
Nitrates, NO ₃ ⁻	mg/l	<5	50 (50)	ELOT EN ISO 10304-1:1995
Nitrites, NO ₂ ⁻	mg/l	<0,05	0,5 (0,1)	ELOT EN ISO 10304-1:1995
Ammonium, NH ₄ ⁺	mg/l	<0,26	0,50	ISO 6778:1984
Hardness Total	mg/l CaCO ₃	128		ELOT 170:1980
Hardness Carbonate	mg/l CaCO ₃	118		ELOT EN ISO 9963-1:1996
Hardness Non-carbonate	mg/l CaCO ₃	10		ELOT 170:1980 & ELOT EN ISO 9963-1:1996

*according to the 98/83/EC Directive on the quality of water intended for human consumption (values in brackets are the parametric values according to the 2003/40/EC Directive establishing the list and concentration limits for the constituents of natural mineral waters)

¹ Description and identification of the sample as stated by the customer in the application form.

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Parameter	Unit	Result	Parametric value*	Standard Method
Silica, SiO ₂	mg/l	<5		
Iron, Fe	µg/l	<100	200	ASTM D1068:2003
Manganese, Mn	µg/l	<5	50 (500)	ASTM D5673:2003
Copper, Cu	µg/l	<5	2000 (1000)	ASTM D5673:2003
Zinc, Zn	µg/l	<5		ASTM D5673:2003
Lead, Pb	µg/l	<5	10 (10)	ASTM D5673:2003
Cadmium, Cd	µg/l	<1	5,0 (3,0)	ASTM D5673:2003
Nickel, Ni	µg/l	<5	20 (20)	ASTM D5673:2003
Chromium, Cr	µg/l	<5	50 (50)	ASTM D5673:2003
Barium, Ba	µg/l	20	(1000)	ASTM D5673:2003
Boron, B	µg/l	69	1000	Internal method based on ASTM D5673:2003
Aluminum, Al	µg/l	<5	200	ASTM D5673:2003
Vanadium, V	µg/l	<5		ASTM D5673:2003
Beryllium, Be	µg/l	<5		ASTM D5673:2003
Silver, Ag	µg/l	<5	10	ASTM D5673:2003
Cobalt, Co	µg/l	<5		ASTM D5673:2003
Arsenic, As	µg/l	<5	10 (10)	ASTM D5673:2003
Antimony, Sb	µg/l	<5	5,0 (5,0)	ASTM D5673:2003
Selenium, Se	µg/l	<5	10 (10)	ASTM D5673:2003
Mercury, Hg	µg/l	<0,5	1,0 (1,0)	Internal method based on ASTM D5673:2003
Oxidizability (KMnO ₄)	mg/l O ₂	0,9	5,0	ELOT 827:1986
Dry Residue (180 °C)	mg/l	160	1500	STANDARD METHODS 148A, 13th ed.
Dry Residue (260 °C)	mg/l	150		STANDARD METHODS 148A, 13th ed.
Phosphorus, P	µg/l P ₂ O ₅	<100	5000	Internal method based on ASTM D5673:2003
Fluorides, F ⁻	µg/l	67	1500 (5000)	ELOT EN ISO 10304-1:1995
Cyanides, CN ⁻	µg/l	<50	50 (70)	
Bromides, Br ⁻	mg/l	<0,5		ASTM-D1246:1995 (1999)
Bromates, BrO ₃ ⁻	µg/l	-	10 (3)	Internal method based on EPA 300.1:1999
Total Organic Carbon (TOC)	µg/l C	424		ISO 8245:1999

*according to the 98/83/EC Directive on the quality of water intended for human consumption (values in brackets are the parametric values according to the 2003/40/EC Directive establishing the list and concentration limits for the constituents of natural mineral waters)

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Parameter	Unit	Result	Parametric value*	Standard Method
Total Viable Count, 22 °C	CFU/ml	-	100	ISO 6222:1999
Total Viable Count, 37 °C	CFU/ml	-	20	ISO 6222:1999
Total coliforms	CFU/250 ml	-	0	ISO 9308-1:2000
<i>Escherichia coli</i>	CFU/250 ml	-	0	ISO 9308-1:2000
<i>Pseudomonas aeruginosa</i>	CFU/250 ml	-	0	ELOT EN 12780:2002
Enterococci	CFU/250 ml	-	0	ISO 7899-2:2000

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Technical Supervisor

Helen Gintoni
Chemical Engineer

The measuring temperature of conductivity was 26,8°C. The measurement was made with a METROHM 712 conductivity meter which has an automatic temperature compensation device.

The chromatographic conditions for the analysis of the anions Cl, NO₃, SO₄, F and NO₂ are:

Instrument DIONEX DX-100, column IonPack AS9-HC 4x250 mm, eluent flow rate 0,85 ml/min, conductivity detector with sensitivity 100/10.

The evaluation of the results is based on peak area.

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