Oliver Rodés

Reg. No.: 291591

ANALYTICAL REPORT

Customer	BENASSAL WATER, SA Refrigerator Game, s/n 12160 BENASSAL
Analysis	COMPLETE physical-chemical analysis of a water sample. Parameters indicated in Royal Decree 1798/2010 and other parameters of interest
Specs	Royal Decree 1798/2010, of December 30, regulating the exploitation and marketing of natural mineral waters and spring waters packaged for human consumption. Royal Decree 902/2018, of July 20, amending RD 1798/2010.

Sample Origin

Location	Benassal Refrigerator Game, s/n 12160 BENASSAL
Point of intake sample	Public fountain existing in the Manantial Fuente emergency itself in Segures, in the Benassal area

Sample Information

Sample Type	Natural Mineral Water
Reference	**Benassal**
Description of the shot sample	Spot sample taken by technical staff of this Laboratory. PI PESE-01
Date of taking sample	28.10.2020 - 10:15 h.
Packaging	Prepared according to PESE-05 procedure.

Dates

Date of Reception	Start Date	Completion Date
28.10.2020	28.10.2020	25.11.2020

Technical Director
Marta Pedemonte Almirall
Approval
11/26/2020

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ilac-MRA ENAC ENSAYOS Nº 251 / LE510

* Test not included in the scope of accreditation or result outside the accredited range.

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RESULTS OBTAINED

Determinations made in the air

Parameter	Grades	Result (Uncertainty)	Worth Parametric	Units
* Air temperature Sampling (h): 10:15 PI PAFQ-49. Thermometry.		14	— —	°C

PHYSICAL-CHEMICAL PARAMETERS

Parameter	Grades	Result (Uncertainty)	Worth Parametric	Units
* Aspect Determination: In Situ PI PAFQ-31. Visual observation in natural light.		Limpid	— —	
Temperature Determination: In Situ PI PAFQ-49. Thermometry.		13 (±1)	— —	°C
* Smell Determination: In Situ - Type of Odor: No abnormal odor is detected PI PAFQ-31. Organoleptic.		Acceptable	— —	
* Flavor Determination: In Situ - Type of flavor: No abnormal flavor is appreciated PI PAFQ-31. Organoleptic.		Acceptable	— —	
* Color PI PAFQ-16. Colorimetry.		<5	— —	mg/L Pt/Co
Total residual chlorine Determination: In Situ PI PAFQ-40. Colorimetry.		<0.10	— —	mg Cl_2/L
Bromate PI PAFQ-08. Ion chromatography.	1	<2	3	µg BrO_3/L
pH Temperature: 19 °C PI PAFQ-03. Electrometry.		7.5 (±0.17)	— —	
Conductivity at 20°C PI PAFQ-04. Electrometry.		420 (±10%)	— —	µS/cm
Turbidity PI PAFQ-15. Nephelometry.		<0.2	— —	UNF
* Free carbon dioxide Determination: In Situ PI PAFQ-13. Volumetry.		11	— —	mg CO_2/L
* Dissolved oxygen Determination: In Situ PI PAFQ-45. Selective electrode		9.5	— —	mg O_2/L
Dry residue at 180°C PI PAFQ-12. Gravimetry.		270 (±15%)	— —	mg/L
Dry residue at 260ºC PI PAFQ-12. Gravimetry.		261 (±15%)	— —	mg/L
Silica PI PAFQ-05. UV-Vis spectrophotometry.		6.3 (±20%)	— —	mg SiO_2/L
Alkalinity (TA) PI PAFQ-46. Volumetry.		<1.0	— —	mg $CaCO_3$/L
Alkalinity (TAC) PI PAFQ-46. Volumetry.		223 (±15%)	— —	mg $CaCO_3$/L
Total hardness PI PAFQ-09. Calculus.		248 (±6%)	— —	mg $CaCO_3$/L
Total Hardness (°F) PI PAFQ-09. Calculus.		24.8 (±6%)	— —	°F
* Suspended matter PI . Visual observation in natural light.		Absence	— —	
Permanganate oxidizability UNE-EN ISO 8467 1995. Volumetry.		<0.5	— —	mg O_2/L
* Total organic carbon (TOC) PI PAFQ-121. Chemical oxidation. Detected conductivitat.		<1.0	— —	mg C/L
Phosphates PI PAFQ-51. Ion chromatography.		<0.2	— —	mg P/L
Baking soda PI PAFQ-46. Volumetry.		272 (±15%)	— —	mg HCO_3/L
Carbonate PI PAFQ-46. Volumetry.		<1.2	— —	mg CO_3/L
Chloride PI PAFQ-51. Ion chromatography.		5.7 (±15%)	— —	mg Cl/L
Sulfate PI PAFQ-51. Ion chromatography.		22.6 (±10%)	— —	mg SO_4/L
Nitrate PI PAFQ-51. Ion chromatography.		4.5 (±20%)	50	mg NO_3/L

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Parameter Grades	Result (Uncertainty)	Worth Parametric	Units
Bromide PI PAFQ-51. Ion chromatography.	<0.20	— —	mg Br/L
Fluoride PI PAFQ-51. Ion chromatography.	<0.20	5.0	mg F/L
Nitrite PI PAFQ-17. UV-Vis spectrophotometry.	<0.02	0.1	mg NO_2/L
Calcium PI PAFQ-50. Volumetry.	93.1 (±9%)	— —	mg Ca/L
Magnesium PI PAFQ-64. Atomic absorption. Flame.	3.85 (±20%)	— —	mg Mg/L
Sodium PI PAFQ-65. Atomic emission.	3.6 (±30%)	— —	mg Na/L
Potassium PI PAFQ-65. Atomic emission.	0.8 (±20%)	— —	mg K/L
Ammonium PI PAFQ-19. UV-Vis spectrophotometry.	<0.10	— —	mg NH_4/L
Aluminum PI PAFQ-97. ICP-MS	<10	— —	µg Al/L
Antimony PI PAFQ-97. ICP-MS	<1.0	5.0	µg Sb/L
Arsenic PI PAFQ-97. ICP-MS	<2.0	10	µg As/L
Barium PI PAFQ-97. ICP-MS	0.011 (±25%)	1.0	mg Ba/L
Boron PI PAFQ-97. ICP-MS	<0.025	— —	mg B/L
Cadmium PI PAFQ-97. ICP-MS	<1.0	3.0	µg Cd/L
Chrome PI PAFQ-97. ICP-MS	<5.0	50	µg Cr/L
Copper PI PAFQ-97. ICP-MS	<0.010	1.0	mg Cu/L
Strontium PI PAFQ-97. ICP-MS	117 (±10%)	— —	µg Sr/L
Iron PI PAFQ-97. ICP-MS	<10	— —	µg Fe/L
Mercury PI PAFQ-85. Atomic fluorescence.	<0.20	1.0	µg Hg/L
Lithium PI PAFQ-97. ICP-MS	<5.0	— —	µg Li/L
Manganese PI PAFQ-97. ICP-MS	<5.0	500	µg Mn/L
Nickel PI PAFQ-97. ICP-MS	<5	20	µg Ni/L
Lead PI PAFQ-97. ICP-MS	<2.0	10	µg Pb/L
Selenium PI PAFQ-97. ICP-MS	<2	10	µg Se/L
Uranium PI PAFQ-97. ICP-MS	<1.0	— —	µg U/L
Zinc PI PAFQ-97. ICP-MS	<25	— —	µg Zn/L
* Oils and fats PI . Visual observation in natural light.	They are not appreciated	— —	
* Cyanide LC LA AF-PE-0057. Fias - UV-Vis Spectrometry	<10	70	µg CN/L
* Phenols PI PAFQ-27. UV-Vis spectrophotometry.	<1	— —	µg/L
* Hydrogen sulfide Determination: In the Laboratory PI PAFQ-02. Colorimetry.	<0.02	— —	mg S/L
* Anionic surfactants PI PAFQ-30. UV-Vis spectrophotometry. Calculated as LSS (PM 288, 38 g/mol).	<40	— —	µg/L
Volatile organic compounds			
Benzene PI PAFQ-39. GC-MS.	<0.3	1.0	µg/L
* Toluene PI PAFQ-39. GC-MS.	<1	— —	µg/L
* Ethylbenzene PI PAFQ-39. GC-MS.	<1	— —	µg/L
* m,p-xylenes PI PAFQ-39. GC-MS.	<2	— —	µg/L
* o-xylene PI PAFQ-39. GC-MS.	<1	— —	µg/L
* Trichlorofluoromethane PI PAFQ-39. GC-MS.	<2	— —	µg/L
* 1,1-dichloroethene PI PAFQ-39. GC-MS.	<2	— —	µg/L

Parameter	Grades	Result (Uncertainty)	Worth Parametric	Units
* Dichloromethane PI PAFQ-39. GC-MS.		<2	— —	µg/L
* t-1,2-dichloroethene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,1-dichloroethane PI PAFQ-39. GC-MS.		<1	— —	µg/L
* c-1,2-dichloroethene PI PAFQ-39. GC-MS.		<2	— —	µg/L
Chloroform (Trichloromethane) PI PAFQ-39. GC-MS.		<5	— —	µg/L
* 1,1,1-trichloroethane PI PAFQ-39. GC-MS.		<2	— —	µg/L
* Tetrachloromethane PI PAFQ-39. GC-MS.		<2	— —	µg/L
Bromodichloromethane PI PAFQ-39. GC-MS.		<1	— —	µg/L
1,2-dichloroethane PI PAFQ-39. GC-MS.		<0.5	— —	µg/L
Trichloroethene (Trichloroethylene) PI PAFQ-39. GC-MS.		<1	— —	µg/L
* 1,2-dichloropropane PI PAFQ-39. GC-MS.		<2	— —	µg/L
* c-1,3-dichloropropene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* t-1,3-dichloropropene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,1,2-trichloroethane PI PAFQ-39. GC-MS.		<2	— —	µg/L
Tetrachloroethene PI PAFQ-39. GC-MS.		<1	— —	µg/L
Dibromochloromethane PI PAFQ-39. GC-MS.		<1	— —	µg/L
* Chlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
Bromoform (Tribromomethane) PI PAFQ-39. GC-MS.	[1]	<1	1	µg/L
* 1,3-dichlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,4-dichlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,2-dichlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,3,5-trichlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,2,4-trichlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* Hexachlorobutadiene PI PAFQ-39. GC-MS.		<2	— —	µg/L
* 1,2,3-trichlorobenzene PI PAFQ-39. GC-MS.		<2	— —	µg/L
Total trihalomethanes PI PAFQ-39. Calculus.		<8	— —	µg/L
Trichloroethene + Tetrachloroethene PI PAFQ-39. Calculus.		<2	— —	µg/L
* C6a C10 PI PAFQ-39. GC-MS.		<5	— —	µg/L
* Aliphatic hydrocarbons C10-C40 LC LA A-BS-PE-0066 LLE-GC		<0.2	— —	mg/L
Polycyclic aromatic hydrocarbons				
* Benzo(a)pyrene PI PAFQ-99. GC-MS/MS		<0.010	0.010	µg/L
* Benzo (b) fluoranthene PI PAFQ-99. GC-MS/MS		<0.01	— —	µg/L
* Benzo (k) fluoranthene PI PAFQ-99. GC-MS/MS		<0.02	— —	µg/L
* Benzo (g,h,i) perylene PI PAFQ-99. GC-MS/MS		<0.02	— —	µg/L
* Indeno (1,2,3,cd) pyrene PI PAFQ-99. GC-MS/MS		<0.02	— —	µg/L
* Acenaphthene PI PAFQ-99. GC-MS/MS		<0.01	— —	µg/L
* Acenaphthylene PI PAFQ-99. GC-MS/MS		<0.01	— —	µg/L
* Anthracene PI PAFQ-99. GC-MS/MS		<0.01	— —	µg/L
* Benzo(a)anthracene PI PAFQ-99. GC-MS/MS		<0.02	— —	µg/L
* Chrysene PI PAFQ-99. GC-MS/MS		<0.02	— —	µg/L

Parameter Grades	Result (Uncertainty)	Worth Parametric	Units
* Dibenzo (a,h) anthracene PI PAFQ-99. GC-MS/MS	<0.02	— —	µg/L
* Phenanthrene PI PAFQ-99. GC-MS/MS	<0.01	— —	µg/L
* Fluorene PI PAFQ-99. GC-MS/MS	<0.01	— —	µg/L
* Fluoranthene PI PAFQ-99. GC-MS/MS	<0.01	— —	µg/L
* Naphthalene PI PAFQ-99. GC-MS/MS	<0.02	— —	µg/L
* Pyrenees PI PAFQ-99. GC-MS/MS	<0.01	— —	µg/L
* Total Polycyclic aromatic hydrocarbons (Benzo (b) fluoranthene + Benzo (k) fluoranthene + Benzo (g,h,i) perylene + Indene (1,2,3,cd) pyrene). PI PAFQ-99. Calculus.	<0.10	0.10	µg/L
Organochlorine pesticides			
* Aldrin PI PAFQ-99. GC-MS/MS	<0.01	0.03	µg/L
* alpha - HCH PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* beta - HCH PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* gamma - HCH (Lindane) PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* delta - HCH PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* 4.4' - DDD PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* 4.4' - DDE PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* 4.4' - DDT PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Dieldrin PI PAFQ-99. GC-MS/MS	<0.01	0.03	µg/L
* Endosulfan I PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Endosulfan II PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Endosulfan sulfate PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Endrin PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Heptachlor PI PAFQ-99. GC-MS/MS	<0.01	0.03	µg/L
* Heptachlor epoxide PI PAFQ-99. GC-MS/MS	<0.01	0.03	µg/L
* Methoxychlor PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Chlorobenzilate PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Chlorpyrifos PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* DCPA PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Hexachlorobenzene PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* cis-Permethrin PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* trans - Permethrin PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Trifluralin PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
Organophosphate pesticides			
* Diazinon PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Disulfoton PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Ethoprop PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Fenthion PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Methyl parathion PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Phorate PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Ronnel (Fenchlorfos) PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L

Parameter Grades	Result (Uncertainty)	Worth Parametric	Units
* Trichloronate PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Tokuthion PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
Triazines:			
* Atrazine PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Atrazine-desethyl PI PAFQ-99. GC-MS/MS	<0.05	0.10	µg/L
* Prometryn PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Propazine PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Simazine PI PAFQ-99. GC-MS/MS	<0.03	0.10	µg/L
* Terbuthylazine PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Terbutryn PI PAFQ-99. GC-MS/MS	<0.01	0.10	µg/L
* Total pesticides: PI PAFQ-99. Calculus.	<0.50	0.50	µg/L
Polychlorinated biphenyls			
* PCB - 101 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L
* PCB - 118 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L
* PCB - 138 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L
* PCB - 153 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L
* PCB - 180 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L
* PCB - 28 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L
* PCB - 52 PI PAFQ-99. GC-MS/MS	<0.020	— —	µg/L

QUANTITATIVE CHEMICAL COMPOSITION - IONIC BALANCE

Anions	Results (in mg/L)	mEq/L	% mEq/L
Bicarbonate (HCO_3)	272	4.46	86.43
Carbonate (CO_3)	<1.2	0.00	0.00
Sulfate (SO_4)	22.6	0.47	9.11
Chloride (Cl)	5.7	0.16	3.10
Nitrate (NO_3)	4.5	0.07	1.36
Fluoride (F)	<0.20	0.00	0.00
Bromide (Br)	<0.20	0.00	0.00
Nitrite (NO_2)	<0.02	0.00	0.00
	Addition	5.16	100 ± 0.03

Cations	Results (in mg/L)	mEq/L	% mEq/L
Calcium (Ca)	93.1	4.65	90.29
Magnesium (Mg)	3.9	0.32	6.21
Sodium (Na)	3.6	0.16	3.11
Potassium (K)	0.8	0.02	0.39
Strontium (Sr)	0.12	0.00	0.00
Lithium (Li)	<0.01	0.00	0.00
Iron (Fe)	<0.010	0.00	0.00
Manganese (Mn)	<0.005	0.00	0.00
Ammonium (NH_4)	<0.10	0.00	0.00
	Addition	5.15	100 ± 0.03

GRADES

Specific notes

- -	The applied specifications (see report cover) do not indicate a parametric value for this parameter. When no specification is indicated, this symbol appears for all parameters.
PI	Internal Procedure.
LC	Determination carried out by a collaborating laboratory.
1	Maximum limits for by-products of authorized techniques (ozone-enriched air) for natural mineral waters and spring waters. (Annex VI RD 1798/2010).

General notes

If the numerical values indicated are accompanied by the sign "<" they indicate that the result obtained does not exceed the lower limit of quantification of the corresponding analytical method.

If the numerical values indicated are accompanied by the ">" sign, it indicates that the result obtained exceeds the upper quantification limit of the corresponding analytical method.

The uncertainty of physical-chemical tests is indicated when the result is within the accredited working range. The uncertainty of microbiological analysis methods, included in the scope of accreditation, is available to clients.

This results report only reflects the sample analyzed.

The Laboratory is not responsible for the data provided by the client.

In case of samples taken by the interested parties:

The sample type, reference and sample collection date are data supplied by the client.

This results report only attests to the sample analyzed as it arrives at the Laboratory.

El Prat de Llobregat (Barcelona), November 25, 2020