CERTIFICATE OF ANALYSIS

Work Order	: **ST2434395**	Page	: 1 of 6
Client	: **Matís ohf**	Project	: ----
Contact	: Hrólfur Sigurdsson	Purchase Number	: ST2434395
Address	: Food Research, inn. and safety Vinlandsleid 12 -113 Reykjavik Iceland	Sampler Site Date Samples Received	: ---- : ---- : 2024-09-06 10:30
E-mail	: hrolfur@matis.is	Date Analysis Commenced	: 2024-09-09
Telephone	: 3544225000	Issue Date	: 2024-09-20 13:50
C-O-C number	: ----	No. of samples received	: 1
Quote number	: HL2020SE-MAT-OHF0001 (OF191270)	No. of samples analysed	: 1

General Comments

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Workorder Comments

Should a sample contain sediment it is decanted prior to volatile compounds determination.

Signatories	*Position*
Niina Veuro	Laboratory Manager

Niina Veuro

Ackred. nr 2030
Provning
ISO/IEC 17025

Laboratory	: ALS Scandinavia AB Danderyd	Webpage	: www.alsglobal.se
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Analytical Results

Client sample ID **R24-2079-2/Vatnsveita Hafnar/Skinney pinganes hf.**
Laboratory sample ID **ST2434395-001**
Client sampling date / time **Not specified**
Sub-Matrix **DRINKING WATER**

Parameter	Result	MU	Unit	LOR	Method	Issuer
Halogenated Volatile Organic Compounds						
OV-10						
Chloroform	**<0.10**	----	µg/L	0.10	W-VOCGMS01	PR
Bromoform	**<0.20**	----	µg/L	0.20	W-VOCGMS01	PR
Dibromochloromethane	**<0.10**	----	µg/L	0.10	W-VOCGMS01	PR
Bromodichloromethane	**<0.10**	----	µg/L	0.10	W-VOCGMS01	PR
Sum of 4 Trihalomethanes (M1)	**<0.250**	----	µg/L	0.250	W-VOCGMS01	PR
Sample Pre-Preparation						
V-2-S						
Stabilisation	**Yes ***	----	-	-	W-PPV-S	LE
Total Metals/Major Cations						
V-2						
Aluminum	**0.778**	± 0.164	µg/L	0.2	W-SFMS-5A	LE
Arsenic	**<0.05**	----	µg/L	0.05	W-SFMS-5A	LE
Barium	**0.266**	± 0.040	µg/L	0.01	W-SFMS-5A	LE
Cadmium	**<0.002**	----	µg/L	0.002	W-SFMS-5A	LE
Calcium	**12.9**	± 1.6	mg/L	0.1	W-AES-1A	LE
Chromium	**0.0904**	± 0.0143	µg/L	0.01	W-SFMS-5A	LE
Cobalt	**0.00545**	± 0.00311	µg/L	0.005	W-SFMS-5A	LE
Copper	**0.942**	± 0.132	µg/L	0.1	W-SFMS-5A	LE
Iron	**<0.0004**	----	mg/L	0.0004	W-SFMS-5A	LE
Lead	**0.0521**	± 0.0079	µg/L	0.01	W-SFMS-5A	LE
Magnesium	**2.95**	± 0.35	mg/L	0.09	W-AES-1A	LE
Manganese	**0.0315**	± 0.0150	µg/L	0.03	W-SFMS-5A	LE
Mercury	**<0.002**	----	µg/L	0.002	W-AFS-17V2	LE
Molybdenum	**0.276**	± 0.041	µg/L	0.05	W-SFMS-5A	LE
Nickel	**<0.05**	----	µg/L	0.05	W-SFMS-5A	LE
Phosphorus	**3.58**	± 0.59	µg/L	1	W-SFMS-5A	LE
Potassium	**<0.4**	----	mg/L	0.4	W-AES-1A	LE
Silicon	**5.29**	± 0.62	mg/L	0.03	W-AES-1A	LE
Sodium	**5.56**	± 0.67	mg/L	0.1	W-AES-1A	LE
Strontium	**34.5**	± 4.8	µg/L	2	W-AES-1A	LE
Vanadium	**0.756**	± 0.112	µg/L	0.005	W-SFMS-5A	LE
Zinc	**0.722**	± 0.158	µg/L	0.2	W-SFMS-5A	LE
V-2-ADD						
Antimony	**0.0199**	± 0.0067	µg/L	0.01	W-SFMS-5A	LE
Boron	**<10**	----	µg/L	10	W-AES-1A	LE
Selenium	**<0.3**	----	µg/L	0.3	W-SFMS-5A	LE
V-2-Bas-ADD						
Lithium	**0.0634**	----	µg/L	0.050	W-SFMS-5A	LE
V-2-S						
Sulfur	**0.906**	± 0.106	mg/L	0.2	W-AES-1A	LE
BTEX						
OV-5A						
Benzene	**<0.2**	----	µg/L	0.2	HS-OV-21	ST

Parameter	Result	MU	Unit	LOR	Method	Issuer
BTEX - Continued						
OV-5A - Continued						
Toluene	**<0.2**	----	µg/L	0.2	HS-OV-21	ST
Ethylbenzene	**<0.2**	----	µg/L	0.2	HS-OV-21	ST
Sum of Xylenes	**<0.2**	----	µg/L	0.2	HS-OV-21	ST
Polycyclic Aromatics Hydrocarbons (PAHs)						
GRV-PAH						
Naphthalene	**<0.0070**	----	µg/L	0.0070	W-PAHGMS04	PR
Acenaphthylene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Acenaphthene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Fluorene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Phenanthrene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Anthracene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Fluoranthene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Pyrene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Benz(a)anthracene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Chrysene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Benzo(b)fluoranthene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Benzo(k)fluoranthene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Benzo(a)pyrene	**<0.0010**	----	µg/L	0.0010	W-PAHGMS04	PR
Indeno(1.2.3.cd)pyrene	**<0.00030**	----	µg/L	0.00030	W-PAHGMS04	PR
Benzo(g.h.i)perylene	**<0.00030**	----	µg/L	0.00030	W-PAHGMS04	PR
Dibenz(a.h)anthracene	**<0.00060**	----	µg/L	0.00060	W-PAHGMS04	PR
Sum of carcinogenic PAH (M1)	**<0.00295**	----	µg/L	0.00295	W-PAHGMS04	PR
Sum of PAH L (M1)	**<0.00450**	----	µg/L	0.00450	W-PAHGMS04	PR
Sum of PAH M (M1)	**<0.00250**	----	µg/L	0.00250	W-PAHGMS04	PR
Sum of PAH H (M1)	**<0.00310**	----	µg/L	0.00310	W-PAHGMS04	PR
Sum of 16 PAH (M1)	**<0.0101**	----	µg/L	0.101	W-PAHGMS04	PR
Sum of other PAH (M1)	**<0.00715**	----	µg/L	0.00715	W-PAHGMS04	PR
Nonmetallic Inorganic Parameters						
Ammonium i vatten						
Ammonia and ammonium ions as NH4	**<0.050**	----	mg/L	0.050	W-NH4-SPC	PR
Ammonia and ammonium ions as N	**<0.040**	----	mg/L	0.040	W-NH4-SPC	PR
Cyanid (total) i vatten						
Total Cyanide	**<0.0010**	----	mg/L	0.001	Cyanid_7937,10	HU
Fluorid i vatten						
Fluoride	**<0.200**	----	mg/L	0.200	W-F-IC	PR
Klorid i vatten						
Chloride	**6.67**	± 1.00	mg/L	4.00	W-CL-IC	PR
Nitrat i vatten(0,02 mg						
Nitrate as N	**0.167** *	----	mg/L	0.005	W-IC-1/AKL	AK
Nitrate	**0.739** *	----	mg/L	0.022	W-IC-1/AKL	AK
Nitrit i vatten (SPC)						
Nitrites	**<0.0050**	----	mg/L	0.0050	W-NO2-SPC	PR
Nitrite as N	**<0.0020**	----	mg/L	0.0020	W-NO2-SPC	PR
Sulfat i vatten (IC)						
Sulphate as SO4 2-	**<5.00**	----	mg/L	5.00	W-SO4-IC	PR
Halogenated Volatile Organic Compounds						
OV-6B						
Dichloromethane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
1.1-Dichloroethane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
1.2-Dichloroethane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
trans-1.2-Dichloroethene	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
cis-1.2-Dichloroethene	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST

Parameter	Result	MU	Unit	LOR	Method	Issuer
Halogenated Volatile Organic Compounds - Continued						
OV-6B - Continued						
1.2-Dichloropropane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
Chloroform	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
Tetrachloromethane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
1.1.1-Trichloroethane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
1.1.2-Trichloroethane	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
Trichloroethene	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
Tetrachloroethene	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
Vinyl chloride	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
1.1-Dichloroethene	**<0.1**	----	µg/L	0.1	HS-OV-6b	ST
Physical Parameters						
Färg						
Colour (True)	**<5.0**	----	mgPt/l	5.0	W-COL-SPC	PR
Other						
TOC						
Total Organic Carbon	**<0.50**	----	mg/L	0.50	W-TOC-IR	PR

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Reference
W-AES-1A	Determination of metals in fresh water, pool and drinking water by ICP-AES according to SS-EN ISO 11885:2009 and US EPA Method 200.7:1994. Samples are acidified with 1 ml high purity nitric acid per 100 ml prior to analysis. No digestion.
W-AFS-17V2	Determination of mercury (Hg) in natural water by AFS according to SS-EN ISO 17852:2008. Samples are acidified with 1 ml high purity nitric acid per 100 ml prior to analysis. No digestion.
W-PPV-S*	Stabilisation with H2O2 prior to W-AES-1A (SE-SOP-0259).
W-SFMS-5A	Determination of metals in freshwater, pool and drinking water by ICP-SFMS according to SS-EN ISO 17294-2:2023 and US EPA Method 200.8:1994. Samples are acidified with 1 ml high purity nitric acid per 100 ml prior to analysis. No digestion.
Cyanid_7937,10	Determination of cyanid total according to DS/EN ISO 14403-2:2012.
W-IC-1/AKL	Determination of dissolved fluoride, chloride, nitrite, ortho-phosfhate, bromide, nitrate and sulphate ions using liquid chromatography according to SS-EN ISO 10 304-1:2009.
W-CL-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-COL-SPC	CZ_SOP_D06_02_079 (CSN EN ISO 7887) Determination of colour by spectrophotometry.
W-F-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-NH4-SPC	CZ_SOP_D06_02_019 (CSN EN ISO 11732, CSN EN ISO 13395, SM 4500-NO2-, SM 4500-NO3-) Determination of sum of ammonium and ammonium ions, nitrite and the sum of nitrite and nitrate ions by discrete spectrophotometry and calculation of nitrite, nitrate, ammonia, inorganic, organic, total nitrogen, free ammonia and dissociated ammonium ions from measured values including the calculation of total mineralization
W-NO2-SPC	CZ_SOP_D06_02_019 (ČSN EN ISO 11732, ČSN EN ISO 13395, SM 4500-NO2-, SM 4500-NO3-) Determination of nitrite sum and sum of nitrite and nitrate nitrogen by discrete spectrophotometry and calculation of nitrites and nitrates from measured values
W-PAHGMS04	CZ_SOP_D06_03_161 (US EPA Method 8270D; US EPA Method 8082A; ČSN EN ISO 6468; US EPA Method 8000D) Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-SO4-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-TOC-IR	CZ_SOP_D06_02_056 (CSN EN ISO 20236, SM 5310) Determination of total organic carbon (TOC), dissolved organic carbon (DOC), total inorganic carbon (TIC) and total carbon (TC) by IR detection.
W-VOCGMS01	CZ_SOP_D06_03_155 (US EPA Method 624, US EPA Method 5021A, US EPA Method 8260, US EPA 8015, CSN EN ISO 10301, MADEP 2004, rev. 1.1, CSN ISO 11423, CSN EN ISO 15680) Determination of volatile organic compounds by gas chromatography method with FID and MS detection and calculation of volatile organic compounds sums from measured values.
HS-OV-21	Measurement performed with headspace GC-MS according to EPA method 5021a rev. 2 update V.
HS-OV-6b	Determination of Chlorinated aliphatics (Low LOQ) in water with HS-GC-MS according to SS-EN ISO 10301:1997

Key: **LOR** = Limit of reporting represents the standard LOR for the respective parameters in each method. Note that limits of reporting may be affected if, e.g. additional dilution was required because of matrix effects, or the sample quantity was limited.

MU = Measurement Uncertainty

* = Symbol succeding any result indicates laboratory or subcontractor non-accredited test.

Measurement Uncertainty:

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Measurement", JCGM 100:2008 Corrected version 2010) calculated with a coverage factor of 2, which give level of approximately 95%. Measurement of uncertainty is reported only for detected substances with levels above the reporting limits.

The uncertainty from subcontractors is often given as extended uncertainty calculated with a coverage factor of 2. Contact the laboratory for further information.

Issuing lab

	Issuer
AK	*The analysis is provided by* AK-lab AB, Getängsvägen 29D Borås Sweden 50468 Accredited by: SWEDAC Accreditation Number: 1790
HU	*The analysis is provided by* ALS Denmark A/S, Bakkegårdsvej 406A Humlebæk Denmark 3050 Accredited by: DANAK Accreditation Number: 361
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