



ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

To: GEOLOGICAL SURVEY OF NORWAY (NGU)
POSTBOKS 6315 TORGARDEN
NO-7491 TRONDHEIM
NORWAY

Page: 1
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Plus Appendix Pages
Finalized Date: 16-JAN-2019
Account: ONUSEG

QC CERTIFICATE PI18302170

Project: Not provided

P.O. No.: 379500

This report is for 167 1/4 Core samples submitted to our lab in Pitea, Sweden on 28-NOV-2018.

The following have access to data associated with this certificate:

NOLWENN COINT

SVEN DAHLGREN

HENRIK SCHIELLERUP

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-22Y	Split Sample - Boyd Rotary Splitter
PUL-31	Pulverize split to 85% <75 um
LOG-24	Pulp Login - Rcd w/o Barcode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-MS61	48 element four acid ICP-MS
ME-MS81h	High grade REE by fusion/ICPMS ICP-MS

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

Signature:

Andrey Tairov, Technical Manager, Ireland



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QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
STANDARDS																
AMISO304		8220	135.5	33.4	154.5	345	29	18.20	3380	1.86	>5000	3940	1040	11	592	22
AMISO304		8480	134.0	34.9	148.0	361	26	17.00	3690	1.86	>5000	4080	1025	11	592	24
AMISO304		8170	133.0	32.9	151.0	346	28	18.05	3610	2.07	>5000	3930	1050	10	582	25
Target Range - Lower Bound		7520	122.5	31.4	139.5	319	25	16.70	3350	1.81	4830	3600	956	9	535	15
Upper Bound		8660	141.5	36.6	160.5	367	31	19.30	3870	2.19	>5000	4150	1100	13	615	36
EMOG-17																
EMOG-17																
EMOG-17																
EMOG-17																
Target Range - Lower Bound																
Upper Bound																
GRE-04		6250	93.9	27.4	100.0	223	22	13.60	2790	1.68	3780	2690	755	1	392	78
GRE-04		5750	90.9	27.0	94.3	224	22	12.55	2700	1.60	3610	2590	703	1	378	79
Target Range - Lower Bound		5700	89.5	26.4	93.3	216	18	12.50	2540	1.59	3300	2510	670	<1	363	59
Upper Bound		6560	103.5	30.8	108.0	249	23	14.50	2930	1.93	3800	2890	772	2	418	81
GRE-3		4560	85.8	26.8	73.1	181.0	19	12.65	2300	1.64	3610	1845	512	1	269	46
GRE-3		4350	89.8	26.7	72.6	179.5	18	12.70	2240	1.86	3670	1805	509	1	269	41
GRE-3		4470	90.2	26.9	76.4	182.0	20	13.05	2290	1.83	3720	1800	501	1	281	45
GRE-3		4070	86.9	26.7	71.1	177.5	18	13.00	2090	1.69	3700	1765	463	<1	269	43
GRE-3		4580	86.8	27.5	74.1	178.0	18	13.40	2160	1.85	3700	1875	496	1	279	45
Target Range - Lower Bound		4050	85.6	26.6	69.8	177.5	17	12.55	2070	1.63	3280	1705	462	<1	260	34
Upper Bound		4660	99.1	31.1	80.7	205	22	14.55	2380	1.99	3770	1965	532	3	299	56
MRGeo08																
MRGeo08																
MRGeo08																
Target Range - Lower Bound																
Upper Bound																
OGGeo08																
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QC CERTIFICATE OF ANALYSIS PI18302170

	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
Sample Description																
		STANDARDS														
AMISO304		12.4	36.4	446	3.47	23.1	6	406	17.0	1110						
AMISO304		11.8	37.0	451	3.63	23.0	6	414	16.9	1150						
AMISO304		12.5	34.3	449	3.52	24.1	<5	417	17.1	1160						
Target Range - Lower Bound		11.6	32.5	406	3.21	22.0	<5	378	15.6	1030						
Upper Bound		14.4	37.5	468	3.80	26.0	15	442	18.4	1210						
EMOG-17											67.2	4.65	573	80	1.92	5.95
EMOG-17											68.7	4.78	591	610	1.83	6.00
EMOG-17											65.9	4.78	582	680	1.82	5.60
EMOG-17											67.0	4.65	572	160	1.91	5.82
Target Range - Lower Bound											60.9	4.18	515	310	1.60	5.31
Upper Bound											74.5	5.13	629	440	2.06	6.51
GRE-04		130.0	23.6	138.0	2.99	129.0	<5	310	14.9	970						
GRE-04		128.5	25.1	134.0	2.89	123.5	<5	299	13.9	960						
Target Range - Lower Bound		113.0	22.7	123.5	2.75	116.0	<5	294	13.8	870						
Upper Bound		131.0	26.2	142.5	3.27	134.0	10	345	16.3	1020						
GRE-3		158.5	20.2	109.5	2.89	108.0	<5	303	14.5	980						
GRE-3		173.0	22.1	109.5	2.91	113.0	<5	306	14.6	930						
GRE-3		172.5	20.1	111.0	3.06	116.0	9	312	15.1	980						
GRE-3		158.0	21.3	106.0	2.92	105.0	<5	304	14.3	990						
GRE-3		163.5	20.6	113.5	2.85	109.0	7	312	15.2	970						
Target Range - Lower Bound		149.5	20.1	109.0	2.81	103.5	<5	295	14.2	890						
Upper Bound		173.5	23.2	126.0	3.35	120.0	13	346	16.8	1050						
MRGeo08											4.50	7.95	32.1	1130	3.66	0.68
MRGeo08											4.51	7.39	33.4	1100	3.41	0.68
MRGeo08											4.19	7.39	31.3	1050	3.43	0.65
Target Range - Lower Bound											4.00	6.64	29.5	920	2.98	0.60
Upper Bound											4.92	8.14	36.5	1270	3.76	0.76
OGGeo08											19.00	6.73	114.0	910	2.96	10.30
OGGeo08											19.95	7.10	120.5	250	3.08	10.90
OGGeo08											19.40	6.72	116.5	910	2.88	10.10
OGGeo08											19.35	7.16	119.0	890	2.61	11.05
Target Range - Lower Bound											18.15	6.07	106.0	700	2.59	9.44
Upper Bound											22.2	7.44	130.0	980	3.27	11.55

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QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
STANDARDS																
AMISO304																
AMISO304																
AMISO304																
Target Range - Lower Bound																
Upper Bound																
EMOG-17		1.89	21.0	48.6	759	52	7.29	8330	4.82	12.80	0.47	2.0	0.932	1.66	24.8	24.9
EMOG-17		1.92	20.9	52.0	760	52	7.48	8390	5.00	12.05	0.09	2.1	0.944	1.67	27.3	25.2
EMOG-17		1.92	19.90	52.1	765	55	7.64	8350	4.90	11.85	0.46	1.8	0.910	1.67	26.2	26.5
EMOG-17		1.96	20.0	57.0	761	52	7.21	8140	4.91	12.40	0.19	1.8	0.902	1.67	28.4	26.3
Target Range - Lower Bound		1.72	18.15	42.9	686	49	6.56	7750	4.42	10.75	0.07	1.6	0.823	1.49	20.7	23.9
Upper Bound		2.12	22.2	52.5	838	62	8.12	8910	5.42	13.25	0.29	2.2	1.015	1.85	26.4	29.7
GRE-04																
GRE-04																
Target Range - Lower Bound																
Upper Bound																
GRE-3																
GRE-3																
GRE-3																
GRE-3																
GRE-3																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		2.77	2.31	68.3	19.6	85	11.85	600	3.97	19.30	0.22	3.4	0.168	3.16	32.8	31.1
MRGeo08		2.63	2.36	67.7	20.2	89	12.45	636	3.99	18.90	0.06	3.3	0.171	3.13	33.3	32.6
MRGeo08		2.62	2.24	67.6	19.4	86	11.95	614	3.92	19.10	0.13	2.9	0.173	3.08	29.6	34.1
Target Range - Lower Bound		2.35	2.00	66.2	17.7	81	11.20	587	3.55	17.50	<0.05	2.8	0.155	2.79	31.1	29.5
Upper Bound		2.90	2.48	81.0	21.9	102	13.80	675	4.37	21.5	0.27	3.6	0.201	3.43	39.1	36.5
OGGeo08		2.20	18.80	67.4	92.1	80	10.65	7860	5.34	16.55	0.13	2.7	1.385	2.88	33.8	30.8
OGGeo08		2.36	20.1	77.1	97.9	81	11.55	8090	5.46	17.85	0.58	3.2	1.495	2.93	38.6	33.0
OGGeo08		2.21	19.05	68.4	92.6	81	10.80	8130	5.36	16.95	0.11	2.8	1.435	2.89	33.7	30.3
OGGeo08		2.22	19.35	78.9	95.2	84	10.85	8220	5.49	17.00	0.47	2.8	1.420	2.90	38.8	30.0
Target Range - Lower Bound		1.98	16.70	64.8	87.2	78	9.85	7800	4.81	16.05	0.25	2.5	1.320	2.59	31.0	29.7
Upper Bound		2.44	20.5	79.2	107.0	98	12.15	8980	5.91	19.75	0.49	3.3	1.620	3.19	39.0	36.7

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
STANDARDS																
AMISO304																
AMISO304																
AMISO304																
Target Range - Lower Bound																
Upper Bound																
EMOG-17		0.94	749	1110	1.08	13.8	7560	820	7270	115.5	0.318	3.25	779	8.0	7	2.7
EMOG-17		0.97	753	1110	1.12	15.7	7750	820	7400	113.0	0.289	3.29	771	8.0	7	2.8
EMOG-17		0.97	751	1090	1.11	15.2	7520	800	7340	120.5	0.290	3.26	761	8.6	8	2.7
EMOG-17		0.95	713	1060	1.11	15.5	7480	790	7300	120.0	0.303	3.23	758	7.8	7	2.5
Target Range - Lower Bound		0.86	670	997	0.99	12.7	6820	700	6570	98.9	0.286	2.91	643	7.2	4	2.2
Upper Bound		1.08	830	1220	1.23	15.7	8330	880	8030	121.0	0.354	3.57	869	9.0	9	3.2
GRE-04																
GRE-04																
Target Range - Lower Bound																
Upper Bound																
GRE-3																
GRE-3																
GRE-3																
GRE-3																
GRE-3																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		1.43	535	15.20	1.99	19.5	667	1010	1100	187.0	0.011	0.31	4.58	11.3	2	4.0
MRGeo08		1.35	569	14.95	2.01	22.0	703	1050	1085	195.5	0.008	0.31	4.77	11.8	2	4.2
MRGeo08		1.31	524	14.90	1.99	19.6	677	990	1010	180.0	0.007	0.30	4.30	11.3	2	3.9
Target Range - Lower Bound		1.17	497	13.65	1.76	19.0	622	930	971	173.5	0.005	0.27	3.89	11.1	<1	3.5
Upper Bound		1.45	619	16.75	2.18	23.4	760	1160	1185	212	0.013	0.35	5.39	13.7	4	4.7
OGGeo08		1.27	501	865	1.81	16.8	8300	830	7290	171.0	1.330	2.80	26.3	9.5	9	13.9
OGGeo08		1.36	500	872	1.82	20.9	8710	840	7400	197.0	1.415	2.81	27.5	10.0	13	14.7
OGGeo08		1.25	501	875	1.81	18.6	8590	830	7260	177.5	1.345	2.79	26.7	9.6	10	14.1
OGGeo08		1.24	515	935	1.80	18.7	8850	850	7260	196.5	1.325	2.79	26.0	10.6	10	13.4
Target Range - Lower Bound		1.11	447	841	1.62	15.4	8000	760	6520	164.5	1.285	2.51	22.8	9.2	8	12.5
Upper Bound		1.38	557	1030	2.00	19.0	9770	950	7970	201	1.575	3.09	31.0	11.4	14	15.7

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Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
STANDARDS													
AMISO304													
AMISO304													
AMISO304													
Target Range - Lower Bound													
Upper Bound													
EMOG-17		205	1.07	1.37	11.75	0.322	2.16	3.3	71	4.1	16.1	7470	65.7
EMOG-17		210	1.06	1.30	11.45	0.330	2.23	3.3	73	4.2	16.1	7760	64.6
EMOG-17		211	0.95	1.40	11.45	0.323	2.18	3.5	72	3.9	17.3	7580	62.5
EMOG-17		206	0.92	1.13	11.40	0.312	1.92	3.3	73	3.9	15.2	7350	66.8
Target Range - Lower Bound		184.5	0.78	1.10	10.35	0.294	1.89	2.8	67	3.3	14.3	6800	55.6
Upper Bound		226	1.08	1.46	12.65	0.370	2.61	3.7	84	4.7	17.7	8320	76.4
GRE-04													
GRE-04													
Target Range - Lower Bound													
Upper Bound													
GRE-3													
GRE-3													
GRE-3													
GRE-3													
GRE-3													
Target Range - Lower Bound													
Upper Bound													
MRGeo08		308	1.53	<0.05	18.15	0.462	1.09	4.9	101	4.9	24.0	782	110.5
MRGeo08		305	1.56	0.05	19.00	0.508	1.06	5.3	111	4.4	26.1	807	113.0
MRGeo08		296	1.44	<0.05	19.85	0.495	0.93	5.1	99	4.4	25.1	785	106.0
Target Range - Lower Bound		277	1.39	<0.05	17.90	0.443	0.89	4.9	97	4.1	23.8	722	92.2
Upper Bound		339	1.81	0.14	21.9	0.553	1.25	6.2	121	5.8	29.3	886	126.0
OGGeo08		246	1.30	0.16	17.35	0.380	1.72	4.9	83	4.4	22.2	6830	88.9
OGGeo08		257	1.46	0.17	20.1	0.387	1.91	5.5	83	5.8	24.1	7110	103.5
OGGeo08		249	1.29	0.17	17.55	0.393	1.67	5.0	86	5.2	22.4	7150	91.5
OGGeo08		257	1.30	0.11	20.4	0.399	1.66	4.9	83	4.5	25.4	6860	91.3
Target Range - Lower Bound		224	1.19	0.09	16.90	0.353	1.43	4.5	77	3.9	21.1	6500	78.6
Upper Bound		274	1.57	0.31	20.7	0.443	1.98	5.8	97	5.4	26.0	7950	107.5

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
STANDARDS																
OREAS 920																
OREAS 920																
OREAS 920																
OREAS 920																
Target Range - Lower Bound																
Upper Bound																
REE-1		4100	863	720	23.6	449	499	208	1660	93.4	4150	1500	438	1050	384	501
REE-1		4070	883	693	23.9	452	484	215	1680	92.5	4040	1485	463	1050	391	494
REE-1		4160	848	668	24.5	427	499	209	1730	94.3	3770	1475	443	1040	396	490
REE-1		4130	881	709	24.7	463	491	222	1740	94.5	3890	1505	457	1060	383	524
REE-1		3820	852	703	23.4	438	484	207	1600	94.1	3790	1415	429	1050	374	480
Target Range - Lower Bound		3680	787	652	21.7	402	444	193.5	1540	85.9	3770	1355	404	973	354	458
Upper Bound		4240	907	750	25.3	464	514	223	1780	98.9	4330	1560	466	1120	408	538
BLANKS																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	0.6	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	0.3	<0.2	<0.2	<0.3	1	<0.05	<3	0.06	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
Target Range - Lower Bound		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
Upper Bound		6	0.6	0.4	0.4	0.6	2	0.10	6	0.10	2	1.0	0.4	2	0.4	10

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

***** See Appendix Page for comments regarding this certificate *****



ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSE

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
STANDARDS																
OREAS 920											0.08	7.70	4.9	560	2.69	0.72
OREAS 920											0.09	7.73	5.0	550	2.72	0.68
OREAS 920											0.11	7.56	4.7	560	2.56	0.78
OREAS 920											0.11	7.00	5.0	550	2.71	0.61
Target Range - Lower Bound											0.08	6.91	4.4	450	2.54	0.61
Upper Bound											0.13	8.47	5.8	640	3.22	0.77
REE-1		230	107.5	801	107.5	132.5	10	5840	686	19300						
REE-1		224	109.0	808	111.5	139.5	9	5830	699	20400						
REE-1		222	106.0	796	109.5	140.5	14	5690	688	19850						
REE-1		229	110.5	771	112.0	142.0	6	5480	724	20400						
REE-1		224	110.0	726	107.0	137.5	12	5570	680	19100						
Target Range - Lower Bound		214	98.7	668	98.5	127.0	<5	5090	630	17750						
Upper Bound		248	113.5	770	113.5	147.0	20	5870	726	20400						
BLANKS																
BLANK											0.01	<0.01	0.2	<10	<0.05	<0.01
BLANK											<0.01	<0.01	0.2	<10	<0.05	0.01
BLANK											0.01	<0.01	0.3	<10	<0.05	0.01
BLANK											0.01	<0.01	0.3	<10	<0.05	<0.01
BLANK											0.01	<0.01	0.2	<10	<0.05	<0.01
BLANK											0.02	<0.01	<0.2	<10	<0.05	0.01
BLANK											<0.01	<0.01	<0.2	<10	<0.05	0.02
BLANK											<0.01	<0.01	0.3	<10	<0.05	<0.01
Target Range - Lower Bound											<0.01	<0.01	<0.2	<10	<0.05	<0.01
Upper Bound											0.02	0.02	0.4	20	0.10	0.02
BLANK		0.9	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	8	<3	<0.2	<10						
BLANK		0.9	<0.05	<0.3	0.10	<0.3	<5	<3	<0.2	<10						
BLANK		0.5	<0.05	<0.3	<0.05	<0.3	7	<3	<0.2	<10						
Target Range - Lower Bound		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
Upper Bound		1.0	0.10	0.6	0.10	0.6	10	6	0.4	20						

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

***** See Appendix Page for comments regarding this certificate *****



ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La
		%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5
		0.2													
STANDARDS															
OREAS 920		0.51	0.06	98.8	15.4	82	8.69	111.0	4.09	20.6	0.10	4.5	0.090	2.89	50.1
OREAS 920		0.50	0.04	90.6	14.5	82	8.54	107.0	3.96	20.0	0.23	4.5	0.079	2.75	44.7
OREAS 920		0.50	0.06	93.4	14.9	84	8.62	109.0	4.07	20.3	0.12	4.7	0.082	2.86	45.7
OREAS 920		0.46	0.07	80.2	15.3	86	7.82	115.0	3.99	20.2	0.18	4.8	0.080	2.86	36.7
Target Range - Lower Bound		0.44	0.04	84.6	13.9	70	7.72	104.0	3.72	18.65	0.06	4.0	0.070	2.59	41.0
Upper Bound		0.56	0.12	103.5	17.3	88	9.54	120.0	4.56	22.9	0.28	5.2	0.098	3.19	51.2
REE-1															
REE-1															
REE-1															
REE-1															
REE-1															
Target Range - Lower Bound															
Upper Bound															
BLANKS															
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	0.3	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	<0.01	<0.1	1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	0.02	<0.1	1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
BLANK		<0.01	<0.02	0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
Target Range - Lower Bound		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5
Upper Bound		0.02	0.04	0.02	0.2	2	0.10	0.4	0.02	0.10	0.10	0.2	0.010	0.02	1.0
BLANK															
BLANK															
BLANK															
BLANK															
BLANK															
BLANK															
BLANK															
BLANK															
Target Range - Lower Bound															
Upper Bound															

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
STANDARDS																
OREAS 920		1.34	603	0.96	0.66	17.9	41.6	750	24.7	178.0	<0.002	0.03	1.52	13.6	<1	5.1
OREAS 920		1.30	596	0.49	0.62	15.7	38.0	730	22.5	169.5	0.002	0.03	1.50	13.2	2	5.0
OREAS 920		1.33	589	0.49	0.65	18.3	41.2	730	23.3	173.0	<0.002	0.03	1.55	13.0	<1	5.1
OREAS 920		1.26	583	0.53	0.64	16.4	41.7	710	22.7	151.0	<0.002	0.04	1.49	12.9	<1	5.0
Target Range - Lower Bound		1.23	535	0.34	0.56	15.6	37.4		20.7	158.5	<0.002	<0.01	1.22	12.8	<1	4.3
Upper Bound		1.53	665	0.58	0.71	19.2	46.2		26.4	193.5	0.004	0.05	1.76	15.8	2	5.7
REE-1																
REE-1																
REE-1																
REE-1																
REE-1																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	0.2	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	0.1	1	<0.2
BLANK		<0.01	<5	0.05	<0.01	0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	0.1	0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
BLANK		<0.01	<5	0.06	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	0.09	<0.1	<1	<0.2
BLANK		<0.01	<5	0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
Target Range - Lower Bound		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
Upper Bound		0.02	10	0.10	0.02	0.2	0.4	20	1.0	0.2	0.004	0.02	0.10	0.2	2	0.4
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
DUPLICATES																
198740		5550	15.8	3.6	21.8	44.3	3	2.01	3530	0.31	514	1495	502	2	113.5	<5
DUP		5410	15.4	3.3	21.1	44.5	2	1.83	3470	0.17	509	1505	504	2	110.5	<5
Target Range - Lower Bound		5290	14.8	3.1	20.5	42.5	<1	1.80	3370	0.18	493	1445	485	<1	108.0	<5
Upper Bound		5670	16.4	3.8	22.4	46.3	4	2.04	3630	0.30	530	1555	521	3	116.0	10
198781		3220	12.7	3.8	20.5	39.2	2	1.78	1890	0.41	638	952	302	2	95.5	7
DUP		3350	12.4	4.0	19.9	38.3	2	1.86	1910	0.40	637	975	309	2	96.5	6
Target Range - Lower Bound		3170	11.8	3.6	19.3	37.1	<1	1.71	1830	0.34	614	929	295	<1	92.4	<5
Upper Bound		3400	13.3	4.2	21.1	40.4	3	1.93	1970	0.47	661	998	316	3	99.6	10
199179																
DUP																
Target Range - Lower Bound																
Upper Bound																
199182		6870	12.9	2.9	34.2	60.3	1	1.53	3930	0.32	671	2270	701	23	183.5	5
DUP		6590	12.0	2.9	32.0	57.4	1	1.41	3740	0.29	578	2180	671	22	181.0	5
Target Range - Lower Bound		6490	11.7	2.6	31.7	56.5	<1	1.37	3700	0.24	602	2150	662	21	175.5	<5
Upper Bound		6970	13.2	3.2	34.5	61.2	2	1.57	3970	0.37	647	2300	710	24	189.0	10
199194																
DUP																
Target Range - Lower Bound																
Upper Bound																
199216		8380	11.7	2.2	29.5	50.7	1	1.23	5760	0.16	705	2140	759	15	164.0	<5
DUP		8090	11.2	2.4	30.7	47.5	1	1.26	5410	0.16	718	2050	756	14	153.0	<5
Target Range - Lower Bound		7940	10.7	2.0	28.8	47.1	<1	1.15	5390	0.10	686	2020	731	13	153.0	<5
Upper Bound		8530	12.2	2.6	31.4	51.1	2	1.34	5780	0.22	737	2170	784	16	164.0	10
199228																
DUP																
Target Range - Lower Bound																
Upper Bound																
199231		6850	14.2	2.8	28.3	54.6	<1	1.64	4590	0.18	696	1840	631	25	148.5	<5
DUP		6710	14.1	2.8	27.9	56.8	<1	1.58	4550	0.19	620	1800	631	25	143.0	<5
Target Range - Lower Bound		6540	13.4	2.5	26.9	53.5	<1	1.50	4410	0.13	634	1755	609	23	140.5	<5
Upper Bound		7020	14.9	3.1	29.3	57.9	2	1.72	4730	0.24	682	1885	653	27	151.0	10

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
DUPLICATES																
198740		5.5	7.05	236	0.41	5.1	<5	41	2.1	90						
DUP		4.9	7.25	231	0.39	5.2	<5	41	1.8	80						
Target Range - Lower Bound		4.5	6.85	225	0.34	4.7	<5	37	1.7	70						
Upper Bound		5.9	7.45	242	0.46	5.6	10	45	2.2	100						
198781		9.2	4.46	181.5	0.53	6.3	<5	42	3.1	90						
DUP		8.3	4.30	182.0	0.51	6.3	<5	42	3.3	100						
Target Range - Lower Bound		7.9	4.18	175.0	0.45	5.8	<5	38	2.9	80						
Upper Bound		9.6	4.58	188.5	0.59	6.8	10	46	3.5	110						
199179											0.26	0.53	2.3	2500	0.78	0.95
DUP											0.40	0.53	3.4	2450	0.73	0.96
Target Range - Lower Bound											0.30	0.49	2.5	2280	0.67	0.90
Upper Bound											0.36	0.57	3.2	2670	0.84	1.01
199182		6.3	4.40	221	0.32	6.3	<5	35	2.2	100						
DUP		6.3	3.72	210	0.25	5.7	<5	34	2.2	100						
Target Range - Lower Bound		5.6	3.87	208	0.23	5.5	<5	30	1.9	90						
Upper Bound		7.0	4.25	223	0.34	6.5	10	39	2.5	110						
199194											1.27	0.29	8.2	470	0.62	1.82
DUP											1.27	0.28	8.3	920	0.60	1.77
Target Range - Lower Bound											1.20	0.26	7.6	630	0.53	1.70
Upper Bound											1.34	0.31	8.9	760	0.69	1.89
199216		8.7	7.33	119.5	0.27	8.7	<5	27	1.2	50						
DUP		7.8	7.48	118.5	0.25	8.3	<5	27	1.1	50						
Target Range - Lower Bound		7.5	7.10	114.5	0.20	7.9	<5	23	0.9	40						
Upper Bound		9.0	7.71	123.5	0.32	9.1	10	31	1.4	60						
199228											0.43	0.10	5.3	140	0.90	0.55
DUP											0.34	0.10	5.5	110	0.88	0.56
Target Range - Lower Bound											0.36	0.09	4.9	110	0.80	0.52
Upper Bound											0.41	0.12	5.9	140	0.98	0.59
199231		2.1	7.23	124.0	0.29	2.8	<5	35	1.6	40						
DUP		1.7	7.38	121.5	0.30	2.7	<5	35	1.3	40						
Target Range - Lower Bound		1.3	7.00	118.0	0.23	2.4	<5	31	1.2	30						
Upper Bound		2.5	7.61	127.5	0.36	3.1	10	39	1.7	50						

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
198740 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
198781 DUP Target Range - Lower Bound Upper Bound																
199179 DUP Target Range - Lower Bound Upper Bound		19.95 19.90 18.90 20.9	1.20 1.33 1.18 1.35	>500 >500 475 >500	6.4 6.2 5.9 6.7	6 4 4 6	0.47 0.46 0.39 0.54	6.8 7.2 6.6 7.4	8.12 7.96 7.63 8.45	30.8 30.4 29.0 32.2	3.92 3.88 3.66 4.15	0.7 0.7 0.6 0.8	0.735 0.745 0.698 0.782	0.03 0.03 0.02 0.04	3790 3710 3560 3940	8.9 8.6 8.1 9.4
199182 DUP Target Range - Lower Bound Upper Bound																
199194 DUP Target Range - Lower Bound Upper Bound		17.80 17.80 16.90 18.70	0.45 0.42 0.39 0.48	>500 >500 475 >500	12.8 12.5 11.9 13.4	12 15 12 15	0.17 0.18 0.12 0.23	11.6 10.4 10.4 11.6	10.95 10.85 10.35 11.45	19.70 19.25 18.45 20.5	2.86 2.74 2.61 2.99	0.6 0.6 0.5 0.7	0.464 0.477 0.442 0.499	0.01 0.01 <0.01 0.02	2430 2410 2300 2540	5.7 5.5 5.1 6.1
199216 DUP Target Range - Lower Bound Upper Bound																
199228 DUP Target Range - Lower Bound Upper Bound		19.45 19.65 18.55 20.5	0.45 0.38 0.37 0.46	>500 >500 475 >500	9.3 9.6 8.9 10.0	4 5 3 6	1.07 1.10 0.98 1.19	1.9 2.0 1.7 2.2	7.14 7.36 6.88 7.62	21.2 20.4 19.70 21.9	2.81 2.68 2.56 2.93	0.5 0.5 0.4 0.6	0.433 0.433 0.406 0.460	0.11 0.12 0.10 0.13	2480 2490 2360 2610	20.6 20.5 19.3 21.8
199231 DUP Target Range - Lower Bound Upper Bound																

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
198740 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
198781 DUP Target Range - Lower Bound Upper Bound																
199179 DUP Target Range - Lower Bound Upper Bound		5.50 5.43 5.18 5.75	10750 10700 10200 11250	320 320 304 336	0.07 0.06 0.05 0.08	296 287 277 306	4.2 4.3 3.8 4.7	580 590 550 620	13.6 13.4 12.3 14.7	3.4 3.5 3.2 3.7	0.004 0.006 0.003 0.007	0.41 0.40 0.37 0.44	0.13 0.11 0.06 0.18	21.8 21.4 20.4 22.8	<1 1 <1 2	4.6 4.6 4.2 5.0
199182 DUP Target Range - Lower Bound Upper Bound																
199194 DUP Target Range - Lower Bound Upper Bound		5.41 5.45 5.15 5.71	10850 10950 10350 11450	447 449 426 470	0.02 0.03 <0.01 0.04	142.0 166.5 146.5 162.0	9.6 8.9 8.6 9.9	1720 1750 1640 1830	21.7 21.3 19.9 23.1	0.9 0.8 0.7 1.0	0.026 0.023 0.021 0.028	1.03 1.02 0.96 1.09	0.39 0.39 0.31 0.47	21.2 20.7 19.8 22.1	<1 <1 <1 2	1.8 1.8 1.5 2.1
199216 DUP Target Range - Lower Bound Upper Bound																
199228 DUP Target Range - Lower Bound Upper Bound		5.93 5.99 5.65 6.27	9990 10100 9540 10550	177.5 180.0 170.0 187.5	0.01 0.01 <0.01 0.02	248 244 234 258	4.2 4.6 4.0 4.8	3580 3740 3470 3850	13.7 13.8 12.6 14.9	16.0 16.3 15.2 17.1	0.003 0.005 <0.002 0.006	0.88 0.94 0.85 0.97	0.14 0.15 0.08 0.21	15.4 15.6 14.6 16.4	1 1 <1 2	0.5 0.6 0.3 0.8
199231 DUP Target Range - Lower Bound Upper Bound																

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

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Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
198740 DUP Target Range - Lower Bound Upper Bound		DUPLICATES											
198781 DUP Target Range - Lower Bound Upper Bound													
199179 DUP Target Range - Lower Bound Upper Bound		2090 2080 1980 2190	5.84 6.35 5.74 6.45	0.21 0.24 0.16 0.29	161.5 162.0 153.5 170.0	0.022 0.021 0.015 0.028	0.08 0.07 0.05 0.10	2.9 3.0 2.7 3.2	27 26 24 29	1.2 1.2 1.0 1.4	35.0 34.7 33.0 36.7	316 342 311 347	73.3 74.5 67.9 79.9
199182 DUP Target Range - Lower Bound Upper Bound													
199194 DUP Target Range - Lower Bound Upper Bound		1895 1860 1785 1970	1.71 1.70 1.57 1.84	0.34 0.34 0.27 0.41	279 264 258 285	0.008 0.008 <0.005 0.010	0.12 0.13 0.10 0.15	2.1 2.1 1.9 2.3	29 29 27 31	1.0 1.0 0.8 1.2	27.1 26.7 25.5 28.3	144 140 133 151	52.7 50.2 47.1 55.8
199216 DUP Target Range - Lower Bound Upper Bound													
199228 DUP Target Range - Lower Bound Upper Bound		2390 2430 2290 2530	3.22 3.06 2.93 3.35	0.13 0.18 0.10 0.21	220 222 210 232	<0.005 <0.005 <0.005 0.010	0.16 0.17 0.13 0.20	5.2 5.2 4.8 5.6	13 14 12 15	0.9 0.9 0.7 1.1	55.5 55.9 52.8 58.6	62 64 58 68	34.4 33.7 31.0 37.1
199231 DUP Target Range - Lower Bound Upper Bound													

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Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
199248 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
199251 DUP Target Range - Lower Bound Upper Bound		4810 4620 4550 4880	10.1 9.1 9.0 10.2	1.9 1.9 1.6 2.2	21.3 20.6 20.0 21.9	39.4 40.8 38.4 41.8	<1 <1 <1 2	1.19 1.13 1.07 1.25	3160 3080 3010 3230	0.16 0.12 0.09 0.19	375 318 333 360	1275 1255 1220 1310	447 425 421 451	43 43 40 46	110.0 105.0 103.5 111.5	<5 <5 <5 10
199262 DUP Target Range - Lower Bound Upper Bound																
199265 DUP Target Range - Lower Bound Upper Bound		2190 2160 2100 2250	9.0 8.7 8.2 9.5	2.5 2.4 2.2 2.7	12.3 12.9 12.0 13.2	24.9 26.7 24.6 27.0	<1 <1 <1 2	1.20 1.22 1.12 1.30	1310 1280 1245 1345	0.24 0.21 0.17 0.28	1600 1660 1570 1690	642 648 622 668	204 205 197.0 212	1 1 <1 2	61.8 62.3 59.7 64.4	<5 <5 <5 10
199281 DUP Target Range - Lower Bound Upper Bound																
199285 DUP Target Range - Lower Bound Upper Bound		4420 4440 4270 4590	9.2 8.9 8.4 9.7	1.8 2.1 1.7 2.2	17.1 16.8 16.2 17.7	29.5 28.7 27.8 30.4	<1 <1 <1 2	1.22 1.10 1.07 1.25	2940 2980 2850 3070	0.14 0.21 0.12 0.23	120 121 115 126	1180 1150 1125 1205	408 405 392 421	<1 <1 <1 2	95.0 92.2 90.1 97.1	<5 <5 <5 10
199297 DUP Target Range - Lower Bound Upper Bound																
199300 DUP Target Range - Lower Bound Upper Bound		10900 10650 10400 11150	20.8 19.7 19.2 21.3	3.4 3.1 2.9 3.6	42.0 40.9 39.8 43.1	85.4 84.1 81.5 88.0	1 2 <1 2	2.04 2.09 1.94 2.19	7230 7190 6950 7470	0.24 0.29 0.21 0.32	387 365 362 390	2850 2750 2700 2900	934 901 885 950	1 2 <1 2	203 198.5 193.5 208	<5 <5 <5 10

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
DUPLICATES																
199248											<0.01	0.06	7.7	860	0.48	0.58
DUP											<0.01	0.06	7.0	840	0.52	0.61
Target Range - Lower Bound											<0.01	0.05	6.8	780	0.43	0.56
Upper Bound											0.02	0.07	7.9	920	0.58	0.63
199251		2.8	5.28	124.0	0.24	3.3	<5	23	1.0	20						
DUP		2.4	5.33	122.5	0.22	3.5	<5	23	1.0	20						
Target Range - Lower Bound		2.0	5.07	118.5	0.17	3.0	<5	19	0.8	<10						
Upper Bound		3.2	5.54	128.0	0.29	3.8	10	27	1.2	30						
199262											0.13	0.19	0.8	580	0.45	0.19
DUP											<0.01	0.19	1.0	850	0.45	0.20
Target Range - Lower Bound											0.06	0.17	0.7	650	0.38	0.18
Upper Bound											0.08	0.21	1.1	780	0.52	0.21
199265		24.3	3.42	116.0	0.32	14.5	<5	24	1.6	20						
DUP		22.8	3.57	116.5	0.29	13.7	<5	25	1.7	20						
Target Range - Lower Bound		22.2	3.32	112.0	0.24	13.3	<5	21	1.4	<10						
Upper Bound		24.9	3.67	120.5	0.37	14.9	10	28	1.9	30						
199281											0.25	0.13	6.1	2940	0.24	0.60
DUP											0.04	0.13	6.0	2290	0.27	0.60
Target Range - Lower Bound											0.13	0.11	5.5	2410	0.19	0.56
Upper Bound											0.16	0.15	6.6	2820	0.32	0.64
199285		<0.5	2.82	76.0	0.24	1.7	<5	27	1.3	10						
DUP		<0.5	2.58	75.9	0.25	1.6	<5	26	1.3	10						
Target Range - Lower Bound		<0.5	2.56	73.0	0.19	1.3	<5	23	1.1	<10						
Upper Bound		1.0	2.84	78.9	0.30	2.0	10	30	1.5	20						
199297											0.52	0.32	2.6	2090	0.29	0.40
DUP											0.41	0.32	2.9	2560	0.31	0.42
Target Range - Lower Bound											0.43	0.29	2.4	2140	0.24	0.38
Upper Bound											0.50	0.35	3.1	2510	0.37	0.44
199300		7.5	12.25	225	0.34	8.6	<5	37	2.0	20						
DUP		7.9	11.75	220	0.39	8.4	<5	36	2.0	40						
Target Range - Lower Bound		6.9	11.55	214	0.30	7.9	<5	32	1.7	20						
Upper Bound		8.5	12.45	231	0.43	9.1	10	41	2.3	40						

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
DUPLICATES																
199248		21.0	2.61	>500	4.6	7	0.44	4.2	7.08	12.00	1.51	0.4	0.519	0.05	1520	7.4
DUP		20.4	2.63	>500	5.0	6	0.45	3.5	6.96	11.65	1.46	0.4	0.509	0.04	1480	7.7
Target Range - Lower Bound		19.65	2.47	475	4.5	5	0.37	3.5	6.66	11.20	1.36	0.3	0.483	0.03	1425	7.0
Upper Bound		21.7	2.77	>500	5.1	8	0.52	4.2	7.38	12.45	1.61	0.5	0.545	0.06	1575	8.1
199251																
DUP																
Target Range - Lower Bound																
Upper Bound																
199262		18.40	0.84	>500	4.8	8	0.52	1.3	6.91	20.3	2.39	0.4	0.387	0.05	3070	11.3
DUP		17.90	0.85	>500	5.2	7	0.52	1.2	6.62	20.3	2.32	0.4	0.384	0.05	3040	11.5
Target Range - Lower Bound		17.25	0.78	475	4.7	6	0.44	1.0	6.42	19.25	2.19	0.3	0.361	0.04	2900	10.6
Upper Bound		19.05	0.91	>500	5.4	9	0.60	1.5	7.11	21.4	2.52	0.5	0.410	0.06	3210	12.2
199265																
DUP																
Target Range - Lower Bound																
Upper Bound																
199281		18.40	2.02	>500	11.5	4	0.25	2.9	7.18	18.75	1.41	0.4	0.441	0.03	2740	7.5
DUP		19.15	2.05	>500	12.3	5	0.24	2.8	7.55	19.35	1.46	0.4	0.450	0.03	2810	7.9
Target Range - Lower Bound		17.85	1.91	475	11.2	3	0.18	2.6	6.99	18.05	1.31	0.3	0.418	0.02	2640	7.1
Upper Bound		19.70	2.16	>500	12.6	6	0.31	3.1	7.74	20.1	1.56	0.5	0.473	0.04	2910	8.3
199285																
DUP																
Target Range - Lower Bound																
Upper Bound																
199297		18.70	0.97	>500	8.7	3	0.10	2.1	7.48	26.1	3.08	0.2	0.409	0.01	4010	5.7
DUP		18.95	1.02	>500	9.1	5	0.10	2.2	7.68	25.5	2.93	0.2	0.379	0.01	4010	5.4
Target Range - Lower Bound		17.85	0.93	475	8.4	3	<0.05	1.9	7.19	24.5	2.80	<0.1	0.369	<0.01	3810	5.1
Upper Bound		19.80	1.06	>500	9.4	5	0.16	2.4	7.97	27.1	3.21	0.3	0.419	0.02	4210	6.0
199300																
DUP																
Target Range - Lower Bound																
Upper Bound																

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
DUPLICATES																
199248		6.44	10000	221	0.01	>500	4.4	7800	12.5	5.8	0.004	0.49	0.20	13.7	1	0.9
DUP		6.19	9670	213	0.01	>500	4.1	7480	12.3	5.8	0.003	0.47	0.23	13.9	1	1.0
Target Range - Lower Bound		5.99	9340	206	<0.01	475	3.8	7250	11.3	5.4	<0.002	0.45	0.15	13.0	<1	0.7
Upper Bound		6.64	10350	228	0.02	>500	4.7	8030	13.5	6.2	0.004	0.51	0.28	14.6	2	1.2
199251																
DUP																
Target Range - Lower Bound																
Upper Bound																
199262		7.26	10800	62.5	0.01	218	8.2	2370	13.9	5.8	0.006	0.24	0.08	22.9	1	1.0
DUP		7.15	10750	63.9	0.01	245	8.9	2310	14.3	5.7	0.006	0.26	0.09	23.1	1	1.1
Target Range - Lower Bound		6.83	10250	60.0	<0.01	220	7.9	2210	12.9	5.4	0.004	0.23	<0.05	21.8	<1	0.8
Upper Bound		7.58	11300	66.4	0.02	243	9.2	2470	15.3	6.1	0.008	0.27	0.10	24.3	2	1.3
199265																
DUP																
Target Range - Lower Bound																
Upper Bound																
199281		7.20	10950	248	<0.01	>500	4.8	2200	31.4	2.0	0.013	0.65	0.37	12.5	1	1.3
DUP		7.48	11250	253	<0.01	>500	4.1	2220	30.8	2.0	0.013	0.67	0.28	12.9	1	1.3
Target Range - Lower Bound		6.96	10550	238	<0.01	475	4.0	2090	29.0	1.8	0.010	0.62	0.25	12.0	<1	1.0
Upper Bound		7.72	11650	263	0.02	>500	4.9	2330	33.2	2.2	0.016	0.70	0.40	13.4	2	1.6
199285																
DUP																
Target Range - Lower Bound																
Upper Bound																
199297		6.93	10650	303	0.06	362	5.5	770	12.2	0.8	0.014	0.45	0.05	12.0	2	1.1
DUP		7.09	10950	309	0.07	390	6.0	810	12.7	0.8	0.012	0.50	0.05	12.3	1	1.2
Target Range - Lower Bound		6.65	10250	291	0.05	357	5.3	740	11.3	0.7	0.010	0.44	<0.05	11.4	<1	0.9
Upper Bound		7.37	11350	321	0.08	395	6.2	840	13.6	0.9	0.016	0.51	0.10	12.9	2	1.4
199300																
DUP																
Target Range - Lower Bound																
Upper Bound																

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
DUPLICATES													
199248		3650	1.64	0.12	165.5	0.008	0.06	3.5	14	1.8	29.5	618	33.5
DUP		3530	1.79	0.16	166.5	0.008	0.07	3.5	13	1.9	29.9	604	34.1
Target Range - Lower Bound		3410	1.58	0.08	157.5	<0.005	0.04	3.2	12	1.6	28.1	578	30.8
Upper Bound		3770	1.85	0.20	174.5	0.010	0.09	3.8	15	2.1	31.3	644	36.8
199251													
DUP													
Target Range - Lower Bound													
Upper Bound													
199262		2840	1.54	0.08	179.5	0.022	0.07	7.3	15	0.6	42.2	89	16.5
DUP		2770	2.08	0.08	172.5	0.021	0.07	7.1	14	0.6	42.0	88	16.6
Target Range - Lower Bound		2660	1.67	<0.05	167.0	0.015	0.04	6.7	13	0.5	39.9	82	14.8
Upper Bound		2950	1.95	0.10	185.0	0.028	0.10	7.7	16	0.7	44.3	95	18.3
199265													
DUP													
Target Range - Lower Bound													
Upper Bound													
199281		2500	4.62	0.27	123.5	0.009	0.11	9.9	12	1.8	25.5	529	12.9
DUP		2550	5.36	0.30	123.0	0.010	0.12	10.1	13	1.9	26.6	528	13.7
Target Range - Lower Bound		2400	4.69	0.22	117.0	<0.005	0.09	9.4	11	1.6	24.6	500	11.8
Upper Bound		2650	5.29	0.35	129.5	0.010	0.14	10.6	14	2.1	27.5	557	14.8
199285													
DUP													
Target Range - Lower Bound													
Upper Bound													
199297		2230	4.11	0.28	111.0	0.011	0.05	5.3	13	0.5	17.9	154	7.1
DUP		2270	4.04	0.18	106.5	0.011	0.05	5.1	13	0.3	17.8	157	7.1
Target Range - Lower Bound		2140	3.82	0.17	103.5	<0.005	0.03	4.8	11	0.3	16.9	146	6.1
Upper Bound		2360	4.33	0.29	114.0	0.017	0.07	5.6	15	0.5	18.8	165	8.1
199300													
DUP													
Target Range - Lower Bound													
Upper Bound													

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
199317 DUP Target Range - Lower Bound Upper Bound																
199320 DUP Target Range - Lower Bound Upper Bound		6040 6270 5940 6370	5.7 5.6 5.2 6.1	1.0 1.0 0.8 1.2	23.7 23.7 22.7 24.7	38.9 38.6 37.1 40.4	<1 <1 <1 2	0.59 0.61 0.53 0.67	3830 3950 3750 4030	0.11 0.15 0.08 0.18	358 297 315 340	1615 1645 1570 1690	549 563 536 576	<1 <1 <1 2	129.0 131.5 125.5 135.0	<5 <5 <5 10
199330 DUP Target Range - Lower Bound Upper Bound																
199333 DUP Target Range - Lower Bound Upper Bound		7840 7650 7470 8020	10.1 9.8 9.3 10.6	1.8 1.5 1.4 1.9	27.3 26.6 25.8 28.1	45.5 43.7 42.7 46.5	<1 <1 <1 2	1.11 1.11 1.02 1.20	4920 4880 4730 5070	0.14 0.13 0.08 0.19	414 363 374 403	2060 2050 1985 2130	695 698 672 721	1 1 <1 2	150.0 149.0 144.0 155.0	<5 <5 <5 10
ORIGINAL DUP Target Range - Lower Bound Upper Bound																
ORIGINAL DUP Target Range - Lower Bound Upper Bound		8500 8510 8200 8810	11.2 10.1 10.0 11.3	2.4 2.1 2.0 2.5	27.0 26.3 25.5 27.8	49.2 43.1 44.2 48.1	<1 <1 <1 2	1.40 1.14 1.18 1.36	5720 5600 5460 5860	0.21 0.21 0.15 0.27	355 330 330 355	2310 2280 2210 2380	793 747 743 797	8 7 6 9	165.5 157.0 155.5 167.0	<5 <5 <5 10
ORIGINAL DUP Target Range - Lower Bound Upper Bound																
ORIGINAL DUP Target Range - Lower Bound Upper Bound		11350 11450 11000 11800	13.5 14.0 13.0 14.5	1.9 2.2 1.8 2.3	38.0 37.6 36.3 39.3	63.0 62.6 60.3 65.3	<1 <1 <1 2	1.51 1.45 1.38 1.58	7410 7360 7120 7650	0.14 0.14 0.09 0.19	209 218 205 222	2960 2950 2850 3060	1050 1050 1015 1085	1 1 <1 2	209 204 199.0 214	<5 <5 <5 10

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
DUPLICATES																
199317											0.52	0.20	11.2	1790	0.27	0.40
DUP											0.49	0.19	8.9	1300	0.25	0.39
Target Range - Lower Bound											0.47	0.18	9.3	1420	0.20	0.37
Upper Bound											0.54	0.21	10.8	1670	0.32	0.42
199320		4.3	2.38	102.5	0.13	4.4	8	10	0.8	10						
DUP		2.7	2.23	104.0	0.15	3.0	8	11	0.8	10						
Target Range - Lower Bound		2.9	2.17	99.3	0.09	3.3	<5	7	0.6	<10						
Upper Bound		4.1	2.44	107.0	0.19	4.1	10	14	1.0	20						
199330											0.30	0.08	0.2	5320	0.21	0.44
DUP											0.32	0.09	0.2	3230	0.22	0.48
Target Range - Lower Bound											0.28	0.07	<0.2	3940	0.15	0.43
Upper Bound											0.34	0.10	0.4	4610	0.28	0.49
199333		8.8	3.55	126.0	0.21	5.7	8	21	1.0	10						
DUP		7.4	3.31	121.5	0.19	5.5	8	21	1.0	10						
Target Range - Lower Bound		7.3	3.26	119.0	0.14	5.1	<5	17	0.8	<10						
Upper Bound		8.9	3.60	128.5	0.26	6.1	10	25	1.2	20						
ORIGINAL											0.75	0.13	6.9	180	0.25	0.58
DUP											0.78	0.14	7.3	390	0.22	0.62
Target Range - Lower Bound											0.72	0.12	6.5	250	0.17	0.56
Upper Bound											0.81	0.15	7.7	320	0.30	0.64
ORIGINAL		6.6	3.17	91.1	0.24	3.5	7	34	1.8	10						
DUP		6.3	2.81	87.0	0.24	3.7	7	33	1.6	10						
Target Range - Lower Bound		5.7	2.84	85.6	0.18	3.2	<5	29	1.4	<10						
Upper Bound		7.2	3.14	92.5	0.30	4.0	10	38	2.0	20						
ORIGINAL											0.04	1.08	6.1	1970	1.85	0.13
DUP											0.09	1.09	5.4	1810	1.77	0.14
Target Range - Lower Bound											0.05	1.02	5.3	1740	1.67	0.12
Upper Bound											0.08	1.15	6.2	2040	1.95	0.15
ORIGINAL		7.8	4.51	150.0	0.19	9.7	8	31	1.0	10						
DUP		7.9	4.80	153.5	0.21	7.8	8	31	0.8	10						
Target Range - Lower Bound		7.1	4.44	146.0	0.14	8.1	<5	27	0.7	<10						
Upper Bound		8.6	4.87	157.5	0.26	9.4	10	35	1.1	20						

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
DUPLICATES																
199317		22.8	0.67	>500	13.6	3	0.06	2.5	5.99	32.3	4.10	0.1	0.432	<0.01	4480	4.2
DUP		22.3	0.76	>500	12.5	2	0.06	2.4	5.87	29.4	3.83	0.1	0.392	<0.01	4400	4.1
Target Range - Lower Bound		21.4	0.66	475	12.3	<1	<0.05	2.2	5.62	29.3	3.72	<0.1	0.386	<0.01	4220	3.7
Upper Bound		23.7	0.77	>500	13.8	4	0.10	2.7	6.24	32.4	4.21	0.2	0.438	0.02	4660	4.6
199320																
DUP																
Target Range - Lower Bound																
Upper Bound																
199330		20.4	0.87	>500	7.4	4	<0.05	0.8	6.27	27.3	2.11	0.2	0.382	0.01	4360	3.7
DUP		21.5	0.89	>500	7.8	4	<0.05	2.7	6.71	28.0	2.15	0.2	0.385	0.01	4500	3.7
Target Range - Lower Bound		19.90	0.82	475	7.1	3	<0.05	1.5	6.16	26.2	1.97	<0.1	0.359	<0.01	4210	3.3
Upper Bound		22.0	0.94	>500	8.1	5	0.10	2.0	6.82	29.1	2.29	0.3	0.408	0.02	4650	4.1
199333																
DUP																
Target Range - Lower Bound																
Upper Bound																
ORIGINAL		18.45	1.68	>500	28.7	2	0.07	2.6	8.28	50.7	5.46	0.1	0.420	<0.01	6360	3.8
DUP		19.05	1.70	>500	29.6	2	0.05	2.7	8.52	52.7	5.62	0.1	0.410	<0.01	6570	3.7
Target Range - Lower Bound		17.80	1.59	475	27.6	<1	<0.05	2.4	7.97	49.1	5.21	<0.1	0.389	<0.01	6140	3.4
Upper Bound		19.70	1.79	>500	30.7	3	0.10	2.9	8.83	54.3	5.87	0.2	0.441	0.02	6790	4.1
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																
ORIGINAL		23.2	0.95	>500	5.6	6	1.73	4.0	5.98	24.4	2.45	0.2	0.241	0.18	2090	48.6
DUP		23.3	0.98	>500	5.5	6	1.71	4.5	5.99	23.8	2.44	0.2	0.244	0.18	2100	46.9
Target Range - Lower Bound		22.1	0.90	475	5.2	5	1.58	3.9	5.68	22.8	2.27	<0.1	0.225	0.16	1990	45.2
Upper Bound		24.4	1.03	>500	5.9	7	1.86	4.6	6.29	25.4	2.62	0.3	0.260	0.20	2200	50.3
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
DUPLICATES																
199317		4.97	8280	180.5	0.05	211	4.6	820	29.5	0.3	0.004	0.74	0.22	12.6	1	0.9
DUP		4.87	8090	174.0	0.04	229	3.9	800	31.9	0.3	0.004	0.71	0.19	12.0	<1	0.9
Target Range - Lower Bound		4.66	7770	168.5	0.03	209	3.8	760	28.7	0.2	<0.002	0.68	0.14	11.6	<1	0.7
Upper Bound		5.18	8600	186.0	0.06	231	4.7	860	32.7	0.4	0.006	0.77	0.27	13.0	2	1.1
199320																
DUP																
Target Range - Lower Bound																
Upper Bound																
199330		6.22	9870	184.5	<0.01	282	1.6	430	16.9	0.1	0.016	0.47	0.21	12.0	1	0.5
DUP		6.45	10150	187.5	<0.01	323	1.7	430	18.5	0.2	0.015	0.45	0.40	12.0	1	0.4
Target Range - Lower Bound		6.01	9500	176.5	<0.01	287	1.4	400	16.3	<0.1	0.013	0.43	0.23	11.3	<1	<0.2
Upper Bound		6.66	10500	195.5	0.02	318	1.9	460	19.1	0.2	0.018	0.49	0.38	12.7	2	0.7
199333																
DUP																
Target Range - Lower Bound																
Upper Bound																
ORIGINAL		6.91	11100	157.0	0.02	170.5	4.2	900	18.0	0.3	0.010	1.36	0.11	11.7	1	0.6
DUP		7.17	11600	162.0	0.03	183.0	3.7	970	19.8	0.3	0.014	1.44	0.09	11.5	2	0.6
Target Range - Lower Bound		6.68	10800	151.5	<0.01	168.0	3.6	880	17.5	0.2	0.009	1.32	<0.05	10.9	<1	0.4
Upper Bound		7.40	11900	167.5	0.04	185.5	4.3	990	20.3	0.4	0.015	1.48	0.16	12.3	2	0.8
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																
ORIGINAL		4.46	5310	48.0	0.09	247	0.6	>10000	21.1	16.8	0.002	0.20	0.21	15.7	3	2.5
DUP		4.49	5310	46.2	0.09	237	0.7	>10000	20.9	16.4	<0.002	0.20	0.23	15.6	2	2.4
Target Range - Lower Bound		4.24	5040	44.7	0.08	230	0.4	9490	19.5	15.7	<0.002	0.18	0.15	14.8	<1	2.1
Upper Bound		4.71	5580	49.5	0.10	254	0.9	>10000	22.6	17.5	0.004	0.22	0.29	16.5	4	2.8
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

***** See Appendix Page for comments regarding this certificate *****



ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
DUPLICATES													
199317		1795	4.21	0.22	169.0	<0.005	0.02	6.3	11	0.5	20.8	83	2.6
DUP		1775	5.56	0.20	180.0	<0.005	0.03	6.7	11	0.7	20.3	87	2.8
Target Range - Lower Bound		1695	4.59	0.15	166.0	<0.005	<0.02	6.1	9	0.5	19.4	79	2.0
Upper Bound		1875	5.18	0.27	183.0	0.010	0.04	6.9	13	0.7	21.7	91	3.4
199320													
DUP													
Target Range - Lower Bound													
Upper Bound													
199330		2760	3.96	0.34	154.5	<0.005	0.03	3.9	11	0.7	21.2	109	7.1
DUP		2850	3.86	0.23	157.5	<0.005	0.03	3.9	11	0.8	21.1	119	7.4
Target Range - Lower Bound		2660	3.66	0.22	148.0	<0.005	<0.02	3.6	9	0.6	20.0	106	6.2
Upper Bound		2950	4.16	0.35	164.0	0.010	0.04	4.2	13	0.9	22.3	122	8.3
199333													
DUP													
Target Range - Lower Bound													
Upper Bound													
ORIGINAL		2780	4.17	0.39	162.5	0.006	0.03	6.4	14	0.5	30.3	299	5.7
DUP		2880	3.28	0.37	167.0	0.007	0.02	6.5	14	0.5	30.4	313	5.5
Target Range - Lower Bound		2690	3.49	0.31	156.5	<0.005	<0.02	6.0	12	0.4	28.7	289	4.7
Upper Bound		2970	3.96	0.45	173.0	0.010	0.04	6.9	16	0.6	32.0	323	6.5
ORIGINAL													
DUP													
Target Range - Lower Bound													
Upper Bound													
ORIGINAL		6830	1.07	0.18	92.7	0.072	0.27	148.5	20	0.7	146.0	267	9.4
DUP		6850	0.84	0.15	93.0	0.073	0.29	151.0	20	0.7	143.0	277	12.5
Target Range - Lower Bound		6500	0.86	0.11	88.2	0.064	0.24	142.0	18	0.5	137.0	256	9.6
Upper Bound		7180	1.05	0.22	97.5	0.081	0.32	157.5	22	0.9	152.0	288	12.3
ORIGINAL													
DUP													
Target Range - Lower Bound													
Upper Bound													

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Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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NORWAY

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Finalized Date: 16-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h
		Ce	Dy	Er	Eu	Gd	Hf	Ho	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn
		ppm 3	ppm 0.3	ppm 0.2	ppm 0.2	ppm 0.3	ppm 1	ppm 0.05	ppm 3	ppm 0.05	ppm 1	ppm 0.5	ppm 0.2	ppm 1	ppm 0.2	ppm 5
		PREP DUPLICATES														
199221		5700	10.1	2.3	23.7	43.7	1	1.14	3820	0.13	1180	1415	514	16	120.5	<5
199221 PREP DUP		6100	10.5	2.2	25.3	41.5	1	1.26	4000	0.19	1370	1530	535	15	128.5	<5
199271		11700	14.2	2.4	38.0	63.7	<1	1.44	7650	0.13	214	3050	1040	1	220	<5
199271 PREP DUP		11350	13.5	1.9	38.0	63.0	<1	1.51	7410	0.14	209	2960	1050	1	209	<5
199321		8600	11.6	1.8	35.1	62.1	<1	1.23	5130	0.18	212	2310	760	<1	196.5	<5
199321 PREP DUP		8480	11.7	2.0	35.9	63.6	<1	1.20	5080	0.17	214	2270	765	<1	198.0	<5

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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Hammarvagen 22

SE-943 36, Ojebyn

Phone: +46 911 65 800 Fax: +46 911 60 085

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Ta	Tb	Th	Tm	U	W	Y	Yb	Zr	Ag	Al	As	Ba	Be	Bi
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
		0.5	0.05	0.3	0.05	0.3	5	3	0.2	10	0.01	0.01	0.2	10	0.05	0.01
PREP DUPLICATES																
199221		7.4	5.70	159.0	0.24	5.4	<5	25	1.0	50	0.61	0.17	6.5	530	0.59	0.53
199221 PREP DUP		8.2	3.21	158.5	0.27	6.6	10	27	1.2	60	0.60	0.19	7.8	2150	0.55	0.52
199271		6.6	4.21	150.0	0.21	6.9	7	31	1.1	10	0.75	0.13	6.9	180	0.25	0.58
199271 PREP DUP		7.8	4.51	150.0	0.19	9.7	8	31	1.0	10	0.73	0.15	7.1	240	0.21	0.57
199321		3.0	4.24	262	0.21	5.0	8	24	1.1	20	1.50	0.67	9.5	1050	0.88	1.77
199321 PREP DUP		2.5	4.37	263	0.22	4.6	8	23	1.1	10	1.40	0.69	9.0	1010	0.84	1.64

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB

Hammarvagen 22

SE-943 36, Ojebyn

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
PREP DUPLICATES													
199221		2300	5.86	0.18	181.5	0.013	0.19	5.5	14	2.4	25.5	79	51.2
199221 PREP DUP		2330	3.62	0.22	174.0	0.013	0.16	6.8	16	1.8	26.6	80	51.2
199271		2780	4.17	0.39	162.5	0.006	0.03	6.4	14	0.5	30.3	299	5.7
199271 PREP DUP		2700	4.54	0.33	164.0	0.007	0.03	7.5	13	0.5	30.8	266	5.6
199321		2030	3.16	0.26	299	0.021	0.05	4.6	17	0.6	22.7	645	10.0
199321 PREP DUP		1995	3.53	0.22	302	0.020	0.05	5.1	17	0.6	22.7	593	9.8

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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ALS Scandinavia AB
Hammarvagen 22
SE-943 36, Ojebyn
Phone: +46 911 65 800 Fax: +46 911 60 085
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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302170

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: REE's may not be totally soluble in this method.
ME-MS61

ACCREDITATION COMMENTS

Applies to Method: The methods immediately below this line are ISO 17025:2005 Accredited. INAB Registration No: 173T
ME-MS61



LABORATORY ADDRESSES

Applies to Method:	Processed at ALS Pitea located at Hammarvagen 22, SE-943 36, Ojebyn, Sweden.			
	CRU-31	CRU-QC	LOG-22	LOG-24
	PUL-31	PUL-QC	SPL-22Y	WEI-21
Applies to Method:	Processed at ALS Loughrea located at Dublin Road, Loughrea, Co. Galway, Ireland.			
	ME-MS61	ME-MS81h		