Newfoundland Labrador

Natural Resources

Mines

SOUTH WOOD LAKE (STAGHORN) GOLD PROSPECT LITHOGEOCHEMICAL DATABASE (MAP AREA NTS 12A/04)

H.A.I. Sandeman

Open File 012A/04/1563

St. John's, Newfoundland
August, 2014

NOTE

Open File reports and maps issued by the Geological Survey Division of the Newfoundland and Labrador Department of Natural Resources are made available for public use. They have not been formally edited or peer reviewed, and are based upon preliminary data and evaluation.

The purchaser agrees not to provide a digital reproduction or copy of this product to a third party. Derivative products should acknowledge the source of the data.

DISCLAIMER

The Geological Survey, a division of the Department of Natural Resources (the "authors and publishers"), retains the sole right to the original data and information found in any product produced. The authors and publishers assume no legal liability or responsibility for any alterations, changes or misrepresentations made by third parties with respect to these products or the original data. Furthermore, the Geological Survey assumes no liability with respect to digital reproductions or copies of original products or for derivative products made by third parties. Please consult with the Geological Survey in order to ensure originality and correctness of data and/or products.

Recommended citation:

Sandeman, H.A.I.

2014: South Wood Lake (Staghorn) gold prospect lithogeochemical database (map area NTS 12A/04). Government of Newfoundland and Labrador, Department of Natural Resources, Geological Survey, Open File 012A/04/1563, 12 pages.

Newfoundland Labrador

Natural Resources

Mines

SOUTH WOOD LAKE (STAGHORN) GOLD PROSPECT LITHOGEOCHEMICAL DATABASE (MAP AREA NTS 12A/04)

H.A.I. Sandeman

Open File 012A/04/1563

GEOLOGICAL SURVEY
NEWFOUNDLAND AND LABRADOR
Celebrating 150 years

St. John's, Newfoundland
August, 2014

CONTENTS

INTRODUCTION

The South Wood Lake (Staghorn) gold prospect database presents lithogeochemical data for a suite of rock samples collected from the immediate vicinity of the prospect near Wood Lake, in the King George IV map area (NTS 12A/4) western central Newfoundland. The rock samples were obtained during the summer of 2010 as part of a Bachelor's of Science thesis by Jonathan Hull at the Department of Earth Sciences, Memorial University of Newfoundland and Labrador (Hull, 2011).

The South Wood Lake gold prospect is located on the southern shore of Wood Lake, 75 km south on the Burgeo Highway (Highway 480) from the junction with the Trans-Canada Highway. The prospect is situated in the King George IV map area (NTS 12A/4), ~6 km west-southwest of Highway 480, and may be accessed *via* abandoned logging roads using an all-terrain vehicle.

Mineralization occurs exclusively in variably textured, mylonitized and brecciated, commonly strongly lineated, muscovite±biotite monzogranite to granodiorite of the Ordovician (467 ± 6 Ma) Peter Strides granite suite. Mineralization consists of a network of thin (≤10 cm), anastomosing, quartz–pyrite–hematite±arsenopyrite veins, fractures and accompanying wallrock sericitization and silicification. Gold is accompanied by elevated values of Bi, Sb, Cd, Ag and Te, and, in particular, strongly elevated As. The altered and mineralized granite occurs as imbricate slices in the structural hangingwall of the northeast-trending, south-dipping Victoria Lake shear zone, a long-lived, crustal scale fault zone that has focussed both deformation and hydrothermal fluids throughout its history. Mineralization is likely post-Silurian. More detailed background information on the setting and origin of the South Wood Lake prospect can be found in the references given below.

NOTES ON THE DATABASE

The location data is presented in Universal Transverse Mercator (UTM), eastings and northings (zone 21; NAD27) format. All of the location data were determined by a Garmin GPS in association with topographic maps and aerial photographs. In addition to the position for each sample, the sample identification is prefixed by the collecting geologists' initials. Samples containing the letters JH were collected by Jonathan Hull, those with the letters HS were collected by Hamish Sandeman. The chemistry table contains the whole-rock geochemical analytical data for the applicable samples. Major elements are recorded as weight percentages of their oxides. Where the oxidation state was determined, iron is presented as FeO and Fe_2O_3, otherwise it is represented as Fe_2O_3(total). Volatiles are represented as LOI (loss-on-ignition). Fluorine concentrations, determined by ion specific electrode, are presented in ppm for selected samples. The minor, trace and rare-earth elemental compositions are presented in ppm. Gold is reported in ppb. Major elements and some trace elements were analyzed by ICP-ES (inductively coupled plasma-emission spectrometry; Geological Survey of NL laboratory) following lithium borate fusion and multi-acid attack (HF-$HClO_4$-HCl and HNO_3). Other trace- and rare-earth elements were analyzed by a combination ICP-MS (inductively coupled plasma-mass spectrometry), and INAA (instrumental neutron activation analysis). Details of the analytical procedures for ICP-MS are provided by Activation Laboratories in Ancaster, Ontario (http://www.actlabs.com) and for INAA are provid-

ed by Becquerel Laboratories (http://www.becquerellabs.com/). Where an element was analyzed using multiple methods, the value determined by the method that appears most reliable is presented. For elements not determined, the number -99 has been placed in the database, whereas elemental analyses that are below detection limits are presented as the negative of the estimated detection limit (*e.g.*, -0.1, -1, -5). Please note that those elements analyzed by ICP-MS (rare earth elements, Th, U, Nb, Y, Hf, Ta, W, Tl, Bi, Ge and Cs), have differing detection limits depending upon the laboratory where the analyses were completed.

ACKNOWLEDGMENT

Pauline Honarvar assisted greatly with the formatting and cleaning of the database.

REFERENCES

Finch, C.J.

1998: Inductively coupled plasma-emission spectrometry (ICP-ES) at the geochemical laboratory. *In* Current Research. Newfoundland Department of Mines and Energy, Report 98-1, pages 179-193.

Hull, J.R.

2011: Geology, petrography, and geochemistry of the Staghorn gold prospect, southern Newfoundland; a comparison of mineralization vs. country rock. Unpublished B.Sc. thesis, Memorial University of Newfoundland, 63 pages.

Sandeman, H.A., Hull, J.R. and Wilton, D.H.C.

2014: Geology, lithogeochemistry and mineralization at the South Wood Lake gold prospect (Staghorn property), Exploits–Meelpaeg subzones boundary, western-central Newfoundland. *In* Current Research. Newfoundland Department of Mines and Energy, Report 14-1, pages 79-98.

SampleNum	LabNum	Geofile	Geologist	Unit	Rock_Type	Lab-Method	UTMEast	UTMNorth	UTMZone
HS10-022	8940235	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	444833	5335377	21
HS10-030A	8940237	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441399	5334164	21
HS10-030B	8940238	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441399	5334164	21
HS10-031A	8940239	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
HS10-032A	8940241	NFLD/3235	H. Sandeman	Bay du Nord Group	semipelitic schist	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	449304	5317824	21
HS10-032B	8940242	NFLD/3235	H. Sandeman	North Bay granitoid suite	granodiorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	449304	5317824	21
HS10-032D	8940243	NFLD/3235	H. Sandeman	North Bay granitoid suite	lamprophyre	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	449304	5317824	21
HS10-032E	8940244	NFLD/3235	H. Sandeman	North Bay granitoid suite	granodiorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	449304	5317824	21
HS10-033	8940245	NFLD/3235	H. Sandeman	North Bay granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	449331	5321925	21
HS10-035A	8940246	NFLD/3235	H. Sandeman	North Bay granitoid suite	syenogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	447812	5327807	21
HS10-035B	8940247	NFLD/3235	H. Sandeman	Bay du Nord Group	amphibolite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	447812	5327807	21
HS10-037	8940248	NFLD/3235	H. Sandeman	North Bay granitoid suite	quartz diorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	447362	5329325	21
HS10-038	8940249	NFLD/3235	H. Sandeman	North Bay granitoid suite	quartz diorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	446750	5331246	21
HS10-040	8940251	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441103	5334259	21
HS10-041	8940252	NFLD/3235	H. Sandeman	Storm Brook Formation	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	440599	5334833	21
HS10-045	8940253	NFLD/3235	H. Sandeman	Buchans Group	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	436105	5332296	21
HS10-048	8940254	NFLD/3235	H. Sandeman	Pats Pond Group	crystal tuff	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	443435	5336261	21
HS10-051	8940255	NFLD/3235	H. Sandeman	Storm Brook Formation	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	442078	5334537	21
HS10-052	8940256	NFLD/3235	H. Sandeman	Pine Falls Formation	gabbro	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	442431	5334517	21
HS10-054A	8940257	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	442573	5334165	21
HS10-054B	8940258	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	mineralized monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	442573	5334165	21
HS10-058	8940259	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	443286	5334625	21
HS10-059B	8940261	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	443526	5334700	21
HS10-018C	8940262	NFLD/3235	H. Sandeman	Storm Brook Formation	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	442855	5335214	21
HS10-023	8940263	NFLD/3235	H. Sandeman	Storm Brook Formation	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441588	5335220	21

Detection Limit

Analysis Method

SampleNum	LabNum	Geofile	Geologist	Unit	Rock_Type	Lab-Method	UTMEast	UTMNorth	UTMZone
HS10-025	8940264	NFLD/3235	H. Sandeman	Storm Brook Formation	diorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	442113	5335023	21
HS10-026	8940265	NFLD/3235	H. Sandeman	Storm Brook Formation	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	444329	5335869	21
HS10-027	8940266	NFLD/3235	H. Sandeman	Storm Brook Formation	qtz-sericite schist	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	447302	5337490	21
HS10-031B	8940267	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
HS10-031C	8940268	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
HS10-031D	8940269	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
HS10-032C	8940271	NFLD/3235	H. Sandeman	North Bay granitoid suite	syenogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	449304	5317824	21
HS10-046	8940272	NFLD/3235	H. Sandeman	King George IV ophiolite	basalt	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	435518	5332504	21
HS10-054C	8940273	NFLD/3235	H. Sandeman	Bay du Nord Group	qtz-bt-schist	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	442573	5334165	21
HS10-056	8940274	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	442942	5334238	21
HS10-059A	8940275	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	443526	5334700	21
JH10-001A	8940346	NFLD/3235	J. Hull	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
JH10-001B	8940347	NFLD/3235	J. Hull	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
JH10-001C	8940348	NFLD/3235	J. Hull	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
JH10-001D	8940349	NFLD/3235	J. Hull	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
JH10-001E	8940351	NFLD/3235	J. Hull	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441439	5334174	21
HS10-161	8940354	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	granodiorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	441725	5333672	21
HS10-168	8940355	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	445365	5334962	21
HS10-169	8940356	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	pyritic monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	445211	5335191	21
HS10-170	8940357	NFLD/3235	H. Sandeman	Peter Strides granitoid suite	monzogranite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (ACTLABS: http://www.actlabs.com/: 4B2STD method); Becquerel Laboratories	444660	5335288	21
HS10-034	8940377	NFLD/3235	H. Sandeman	North Bay granitoid suite	granodiorite	Majors and traces (ICP-ES), F (ISE) GSNL; Th, U, REE, others ICP-MS (GSNL); Becquerel Laboratories (INAA)	448360	5326075	21

SampleNum	Datum	SiO2_pct	TiO2_pct	Al2O3_pct	Fe2O3T_pct	Fe2O3_pct	FeO_pct	MnO_pct	MgO_pct	CaO_pct	Na2O_pct	K2O_pct	P2O5_pct	LOI_pct	Ag_ppm	As_ppm	Au_ppb	Ba_ppm
Detection Limit		0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	0.1	0.5	1	1
Analysis Method		ICP-ES	ICP-ES	ICP-ES	ICP-ES	Difference	Titration	ICP-ES	ICP-ES	ICP-ES	ICP-ES	ICP-ES	ICP-ES	Grav	ICP-ES	INAA	INAA	ICP-ES
HS10-022	NAD27	75.24	0.266	12.98	2.07	0.56	1.36	0.056	0.86	1.45	4.74	1.23	0.057	0.70	-0.1	1.4	-1	376
HS10-030A	NAD27	83.17	0.050	8.23	1.80	0.71	0.97	0.004	0.02	0.13	3.13	0.68	0.007	1.45	-0.1	92.6	117	99
HS10-030B	NAD27	78.78	0.079	12.27	0.79	0.01	0.71	0.002	0.06	0.23	3.81	2.38	0.049	0.96	-0.1	76.7	53	611
HS10-031A	NAD27	82.94	0.060	9.24	0.80	0.18	0.56	0.006	0.03	0.19	2.79	2.22	0.007	0.70	-0.1	770	8	804
HS10-032A	NAD27	63.20	0.693	13.48	4.77	1.38	3.06	0.170	2.89	9.17	0.78	1.09	0.150	1.64	-0.1	5.0	2	232
HS10-032B	NAD27	67.28	0.597	16.09	3.71	0.41	2.96	0.077	1.22	2.84	3.45	3.97	0.235	0.53	-0.1	2.4	-1	687
HS10-032D	NAD27	68.87	0.386	15.45	2.46	0.42	1.83	0.037	0.85	2.40	4.69	2.34	0.131	0.56	-0.1	-0.5	1	502
HS10-032E	NAD27	67.86	0.552	15.69	3.35	0.46	2.60	0.058	1.04	2.69	3.25	4.11	0.150	0.55	-0.1	2.0	3	734
HS10-033	NAD27	69.29	0.370	15.82	2.36	0.76	1.44	0.036	0.64	2.11	4.11	3.49	0.103	0.55	-0.1	1.1	-1	897
HS10-035A	NAD27	72.65	0.163	14.61	1.43	0.53	0.82	0.034	0.41	1.48	3.31	4.40	0.082	0.59	-0.1	1.5	-1	879
HS10-035B	NAD27	51.11	2.157	13.57	13.15	7.05	5.50	0.253	6.09	9.47	0.91	0.61	0.142	0.94	-0.1	0.7	4	49
HS10-037	NAD27	60.59	0.751	16.96	6.04	1.76	3.86	0.104	2.34	5.14	3.27	1.89	0.263	0.66	-0.1	-0.5	1	505
HS10-038	NAD27	63.25	0.822	16.90	5.41	1.64	3.40	0.098	2.01	4.12	3.61	1.90	0.187	0.75	-0.1	1.1	-1	496
HS10-040	NAD27	69.79	0.395	14.72	2.97	0.25	2.44	0.040	1.14	3.42	3.95	1.15	0.087	1.47	-0.1	2.0	2	439
HS10-041	NAD27	47.10	2.466	16.22	11.73	3.61	7.31	0.162	5.39	8.89	3.48	0.76	0.318	2.61	-0.1	24.0	-1	177
HS10-045	NAD27	51.86	0.767	15.99	11.18	3.37	7.03	0.226	4.26	6.73	3.60	0.58	0.091	4.02	-0.1	6.9	-1	161
HS10-048	NAD27	62.41	0.614	17.01	6.90	0.73	5.55	0.140	2.60	0.87	4.77	1.57	0.085	2.64	-0.1	0.6	-1	323
HS10-051	NAD27	47.79	2.114	14.76	11.04	2.69	7.51	0.188	5.44	11.78	2.73	0.27	0.198	2.70	-0.1	1.8	2	70
HS10-052	NAD27	46.21	2.383	14.81	14.19	3.03	10.05	0.254	5.73	8.56	2.96	0.33	0.216	2.73	-0.1	7.8	2	71
HS10-054A	NAD27	77.33	0.128	13.09	1.03	0.74	0.26	0.014	0.14	0.54	4.65	2.02	0.014	0.86	-0.1	31.0	3	613
HS10-054B	NAD27	79.63	0.091	11.91	0.85	0.45	0.36	0.017	0.07	0.53	3.79	2.90	0.010	0.72	-0.1	105	3	767
HS10-058	NAD27	76.13	0.146	12.64	1.34	0.53	0.73	0.043	0.21	0.84	3.51	3.67	0.015	0.44	-0.1	1.0	2	1160
HS10-059B	NAD27	78.47	0.126	13.00	1.28	1.07	0.19	0.005	0.21	0.04	1.52	4.54	0.017	1.58	-0.1	156	78	838
HS10-018C	NAD27	45.51	1.718	17.15	10.73	2.86	7.08	0.153	5.92	11.07	2.33	0.14	0.158	3.33	-0.1	1.4	-1	27
HS10-023	NAD27	48.98	3.001	14.97	15.37	3.66	10.55	0.242	3.68	5.05	4.31	0.29	0.337	2.88	-0.1	11.0	-1	140

SampleNum	Datum	SiO2_pct	TiO2_pct	Al2O3_pct	Fe2O3T_pct	Fe2O3_pct	FeO_pct	MnO_pct	MgO_pct	CaO_pct	Na2O_pct	K2O_pct	P2O5_pct	LOI_pct	Ag_ppm	As_ppm	Au_ppb	Ba_ppm
Detection Limit		**0.01**	**0.001**	**0.01**	**0.01**	**0.01**	**0.01**	**0.001**	**0.01**	**0.01**	**0.01**	**0.01**	**0.001**	**0.01**	**0.1**	**0.5**	**1**	**1**
Analysis Method		**ICP-ES**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**Difference**	**Titration**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**Grav**	**ICP-ES**	**INAA**	**INAA**	**ICP-ES**
HS10-025	NAD27	47.93	1.648	15.39	11.75	5.45	5.66	0.202	8.50	7.24	3.57	0.21	0.160	2.77	-0.1	-0.5	-1	97
HS10-026	NAD27	46.49	1.280	18.91	8.92	0.71	7.39	0.162	5.54	11.32	2.62	0.48	0.111	3.57	-0.1	7.3	2	71
HS10-027	NAD27	51.63	1.109	21.54	11.36	2.17	8.27	0.117	4.05	0.36	6.62	0.37	0.093	3.62	-0.1	18.0	1	74
HS10-031B	NAD27	76.72	0.089	12.62	2.14	1.34	0.71	0.006	0.17	0.14	2.58	3.23	0.011	1.85	-0.1	793	3170	655
HS10-031C	NAD27	79.72	0.073	11.73	0.68	0.44	0.22	0.005	0.10	0.18	2.99	3.10	0.009	0.89	-0.1	15.0	13	134
HS10-031D	NAD27	76.73	0.081	12.55	1.28	0.86	0.38	0.008	0.06	0.32	3.88	3.06	0.011	0.96	-0.1	112	39	729
HS10-032C	NAD27	73.61	0.061	14.86	0.94	0.41	0.47	0.113	0.17	0.55	3.78	4.32	0.178	0.67	-0.1	10.0	-1	33
HS10-046	NAD27	56.50	1.621	15.06	7.84	7.24	0.54	0.191	3.59	3.30	2.96	2.43	0.553	5.24	-0.1	31.0	-1	581
HS10-054C	NAD27	75.54	0.789	11.62	4.00	0.75	2.93	0.078	1.15	1.27	3.07	1.29	0.048	0.88	-0.1	7.3	-1	277
HS10-056	NAD27	74.81	0.247	13.37	2.11	0.91	1.08	0.039	0.51	2.16	3.50	2.18	0.032	0.45	-0.1	1.0	-1	697
HS10-059A	NAD27	76.02	0.111	12.02	1.86	1.10	0.68	0.013	0.26	0.01	0.50	4.14	0.011	1.85	0.6	1980	154	622
JH10-001A	NAD27	78.33	0.080	12.27	0.82	0.43	0.35	0.004	0.10	0.19	3.38	3.07	0.008	1.05	-0.1	683	27	767
JH10-001B	NAD27	76.60	0.086	12.76	0.68	0.40	0.26	0.005	0.01	0.35	4.32	2.91	0.007	0.71	-0.1	838	2360	1030
JH10-001C	NAD27	77.62	0.082	12.58	0.81	0.61	0.18	0.005	0.03	0.29	3.84	3.21	0.006	0.78	-0.1	53.6	31	871
JH10-001D	NAD27	76.65	0.086	12.66	0.98	0.76	0.19	0.004	0.02	0.33	3.85	3.36	0.007	0.85	-0.1	408	70	542
JH10-001E	NAD27	75.39	0.115	11.21	3.70	2.43	1.15	0.005	0.07	0.19	3.48	1.48	0.016	2.49	0.3	1630	1500	68
HS10-161	NAD27	66.38	0.443	13.88	4.42	1.62	2.52	0.087	1.55	3.92	2.76	2.31	0.078	0.72	-0.1	1.1	4	700
HS10-168	NAD27	74.49	0.287	12.98	2.18	0.96	1.10	0.066	0.57	2.11	3.07	2.93	0.040	0.43	-0.1	1.3	3	837
HS10-169	NAD27	74.60	0.301	12.87	2.06	1.02	0.94	0.046	0.82	1.43	4.28	1.26	0.058	1.16	-0.1	1.0	2	261
HS10-170	NAD27	74.01	0.282	13.29	2.26	0.82	1.30	0.061	0.68	1.43	4.21	2.08	0.042	0.78	-0.1	1.5	13	604
HS10-034	NAD27	67.71	0.444	17.68	2.65	0.44	1.99	0.061	1.10	3.53	4.58	2.08	0.135	0.52	-0.1	2.5	2	376

SampleNum	Be_ppm	Bi_ppm	Br_ppm	Cd_ppm	Ce_ppm	Co_ppm	Cr_ppm	Cs_ppm	Cu_ppm	Dy_ppm	Er_ppm	Eu_ppm	F_ppm	Fe_pct	Ga_ppm	Gd_ppm	Ge_ppm	Hf_ppm	Ho_ppm	In_ppm
Detection Limit	0.1	0.1, 0.4	1	0.1	0.05, 0.5	1	1	0.1, 0.5	1	0.01, 0.1	0.01, 0.1	0.005, 0.05	5	0.01	1	0.01, 0.1	0.5, 1.0	0.1, 0.2	0.01, 0.1	0.1, 0.2
Analysis Method	ICP-ES	FUS-MS	INAA	ICP-ES	FUS-MS	FUS-MS	ICP-ES	FUS-MS	ICP-ES	FUS-MS	FUS-MS	FUS-MS	ISE	ICP-ES	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
HS10-022	1.5	-0.4	-1	-0.1	51.9	3	2	0.8	-1	4.02	2.63	0.762	263	1.33	13	3.93	2.1	4.2	0.83	-0.2
HS10-030A	1.3	1.2	-1	0.4	35.4	1	-1	0.3	1	2.93	1.91	0.323	103	1.16	8	2.59	1.7	1.6	0.63	-0.1
HS10-030B	1.3	0.9	-1	8.6	49.8	-1	-1	0.6	32	4.95	3.34	0.439	177	0.48	13	4.13	2.3	2.7	1.06	-0.1
HS10-031A	1.2	0.5	-1	2.5	46.6	-1	-1	0.5	22	3.13	1.98	0.332	60	0.47	9	3.11	1.8	1.8	0.67	-0.1
HS10-032A	2.0	-0.4	-1	0.3	73.5	13	79	6.9	23	5.52	2.99	1.590	587	3.30	17	6.06	3.5	5.7	0.99	-0.2
HS10-032B	5.3	-0.4	-1	-0.1	67.0	8	12	7.9	3	4.20	2.45	1.424	390	2.55	21	4.61	2.8	7.3	0.80	-0.2
HS10-032D	1.8	-0.4	-1	-0.1	46.4	5	8	2.4	9	2.03	1.01	0.920	405	1.75	21	2.81	2.0	4.6	0.40	-0.2
HS10-032E	3.1	-0.4	-1	-0.1	156	7	11	1.8	3	4.16	2.04	1.530	467	2.30	21	6.62	3.4	6.3	0.72	-0.2
HS10-033	1.9	-0.4	-1	-0.1	61.8	4	3	3.0	5	1.66	0.73	0.954	315	1.62	20	2.74	1.6	5.1	0.30	-0.2
HS10-035A	1.7	-0.4	-1	-0.1	59.9	3	3	4.6	-1	4.40	2.91	1.000	155	0.95	15	4.27	2.0	4.4	0.91	-0.2
HS10-035B	-0.1	0.6	-1	0.5	23.4	42	66	4.2	-1	6.73	4.18	1.759	478	7.90	19	6.32	4.3	3.9	1.34	-0.2
HS10-037	1.1	-0.4	-1	-0.1	68.9	15	36	0.7	27	3.97	2.14	1.463	352	4.22	20	4.86	3.0	5.9	0.75	-0.2
HS10-038	2.1	-0.4	-1	-0.1	80.4	13	19	2.6	31	3.36	1.77	1.380	442	3.75	22	4.65	3.7	5.0	0.60	-0.2
HS10-040	1.4	-0.1	-1	-0.1	54.4	6	2	4.4	-1	2.09	1.20	0.714	180	2.11	15	2.62	1.7	4.1	0.42	-0.1
HS10-041	-0.1	-0.1	-1	0.5	46.8	43	160	1.9	25	5.23	2.65	2.030	234	7.70	24	6.21	1.9	4.3	1.01	-0.1
HS10-045	-0.1	-0.1	-1	0.4	14.2	41	7	0.4	56	3.16	1.97	0.730	194	7.79	16	2.86	1.3	1.2	0.65	-0.1
HS10-048	0.2	-0.4	-1	-0.1	9.7	13	5	0.5	-1	1.94	1.51	0.674	86	4.67	13	1.70	1.6	2.1	0.42	-0.2
HS10-051	-0.1	-0.4	-1	0.5	23.3	39	211	-0.5	63	6.25	3.40	1.597	148	7.24	19	5.67	3.1	3.6	1.20	-0.2
HS10-052	-0.1	-0.4	-1	0.6	24.5	45	32	0.7	67	5.92	3.39	1.716	190	9.78	20	5.93	4.0	3.7	1.14	-0.2
HS10-054A	1.8	-0.1	-1	-0.1	70.5	-1	-1	0.4	10	4.06	2.61	0.550	164	0.62	13	3.98	1.9	2.9	0.86	-0.1
HS10-054B	2.2	0.2	-1	-0.1	52.4	-1	-1	0.4	27	3.92	2.54	0.446	117	0.57	12	3.38	2.0	2.8	0.84	-0.1
HS10-058	1.2	-0.1	-1	-0.1	52.8	-1	1	1.4	-1	2.36	1.66	0.422	264	0.84	12	2.15	1.9	2.5	0.52	-0.1
HS10-059B	1.3	0.8	-1	-0.1	74.5	-1	-1	0.6	36	4.00	2.60	0.508	285	0.88	13	3.94	2.0	3.2	0.87	-0.1
HS10-018C	-0.1	-0.4	-1	0.5	17.5	48	214	-0.5	87	4.59	2.57	1.359	102	7.04	17	4.66	2.6	2.6	0.93	-0.2
HS10-023	-0.1	-0.1	-1	0.5	97.1	40	15	3.2	3	12.90	7.48	3.050	368	10.40	30	12.90	2.2	10.8	2.61	-0.1

SampleNum	Be_ppm	Bi_ppm	Br_ppm	Cd_ppm	Ce_ppm	Co_ppm	Cr_ppm	Cs_ppm	Cu_ppm	Dy_ppm	Er_ppm	Eu_ppm	F_ppm	Fe_pct	Ga_ppm	Gd_ppm	Ge_ppm	Hf_ppm	Ho_ppm	In_ppm
Detection Limit	**0.1**	**0.1, 0.4**	**1**	**0.1**	**0.05, 0.5**	**1**	**1**	**0.1, 0.5**	**1**	**0.01, 0.1**	**0.01, 0.1**	**0.005, 0.05**	**5**	**0.01**	**1**	**0.01, 0.1**	**0.5, 1.0**	**0.1, 0.2**	**0.01, 0.1**	**0.1, 0.2**
Analysis Method	**ICP-ES**	**FUS-MS**	**INAA**	**ICP-ES**	**FUS-MS**	**FUS-MS**	**ICP-ES**	**FUS-MS**	**ICP-ES**	**FUS-MS**	**FUS-MS**	**FUS-MS**	**ISE**	**ICP-ES**	**FUS-MS**	**FUS-MS**	**FUS-MS**	**FUS-MS**	**FUS-MS**	**FUS-MS**
HS10-025	-0.1	-0.4	-1	0.3	15.2	38	234	-0.5	71	3.35	1.82	1.094	84	6.09	17	3.22	2.4	2.0	0.65	-0.2
HS10-026	-0.1	-0.1	-1	0.4	17.5	55	311	0.3	44	5.83	3.38	1.530	220	7.58	18	5.70	1.9	2.3	1.18	-0.1
HS10-027	0.3	-0.4	-1	0.4	5.4	26	5	-0.5	38	4.23	2.72	0.729	112	7.44	17	2.98	2.3	1.6	0.87	-0.2
HS10-031B	1.3	2.4	-1	-0.1	59.0	1	-1	1.1	2	4.77	3.17	0.436	242	0.38	15	4.26	2.2	3.2	1.06	-0.1
HS10-031C	1.5	-0.1	-1	1.1	57.6	-1	1	0.8	17	4.47	2.82	0.448	173	1.37	13	4.03	2.3	2.6	0.96	-0.1
HS10-031D	1.7	0.5	-1	-0.1	61.9	-1	-1	0.6	9	4.99	3.32	0.475	76	0.81	13	4.38	1.9	2.6	1.11	-0.1
HS10-032C	9.9	-0.4	-1	0.1	7.6	1	1	7.9	1	1.62	0.81	0.138	321	0.47	22	1.27	2.4	1.5	0.29	-0.2
HS10-046	1.0	-0.4	-1	-0.1	69.1	17	1	1.5	-1	7.34	4.31	2.314	482	4.35	20	7.86	3.1	6.4	1.42	-0.2
HS10-054C	1.9	0.2	-1	-0.1	87.7	11	41	2.2	19	5.30	3.00	1.470	294	2.52	13	6.02	1.8	7.4	1.05	-0.1
HS10-056	1.3	-0.1	-1	-0.1	52.3	2	2	0.9	-1	2.41	1.66	0.569	310	1.33	14	2.33	1.8	3.8	0.53	-0.1
HS10-059A	1.3	2.6	1	3.3	63.2	-1	-1	0.7	124	4.22	2.94	0.472	290	1.21	15	3.58	2.3	3.0	0.96	-0.1
JH10-001A	1.3	8.3	-1	2.3	54.6	-1	-1	0.7	28	4.14	2.72	0.408	184	0.62	13	4.17	2.0	2.7	0.89	-0.1
JH10-001B	1.7	0.2	-1	1.7	58.8	-1	-1	0.5	30	4.92	3.25	0.478	73	0.42	12	4.84	2.0	3.0	1.01	-0.1
JH10-001C	2.3	0.3	-1	-0.1	51.8	-1	4	0.8	19	3.94	2.57	0.404	141	0.50	12	4.19	2.1	2.4	0.83	-0.1
JH10-001D	1.8	0.4	-1	1.2	56.9	-1	-1	0.6	23	5.08	3.44	0.457	73	0.58	13	4.64	1.9	3.3	1.07	-0.1
JH10-001E	2.0	6.0	-1	5.6	46.0	1	1	1.0	3	4.92	3.15	0.445	111	2.54	11	4.39	1.9	2.4	1.01	-0.1
HS10-161	1.1	-0.1	-1	-0.1	54.9	8	14	1.1	6	4.08	2.58	0.831	321	3.27	15	4.34	1.9	4.3	0.84	-0.1
HS10-168	1.4	0.1	-1	-0.1	40.9	1	2	1.0	23	3.64	2.24	0.736	325	1.60	13	3.52	1.7	4.1	0.73	-0.1
HS10-169	1.5	-0.1	-1	-0.1	47.8	1	3	0.4	-1	3.20	2.00	0.676	249	1.36	13	3.38	1.6	4.0	0.65	-0.1
HS10-170	1.6	-0.1	-1	-0.1	54.7	2	3	0.9	-1	3.80	2.45	0.740	182	1.52	13	3.92	1.6	4.0	0.78	-0.1
HS10-034	3.4	-0.4	-1	-0.1	30.7	9	8	1.0	2	2.0	1.2	0.76	506	1.96	22	1.9	3	3.3	0.4	-0.2

SampleNum	La_ppm	Li_ppm	Lu_ppm	Mn_ppm	Mo_ppm	Na_pct	Nb_ppm	Nd_ppm	Ni_ppm	P_ppm	Pb_ppm	Pr_ppm	Rb_ppm	Sb_ppm	Sc_ppm	Se_ppm	Sm_ppm	Sn_ppm	Sr_ppm	Ta_ppm
Detection Limit	**0.05**	**0.5**	**0.002, 0.05**	**1**	**1**	**0.01**	**0.2, 1.0**	**0.05, 0.2**	**1**	**1**	**1**	**0.01, 0.1**	**1**	**0.1**	**0.1**	**1**	**0.01, 0.1**	**1**	**1**	**0.01, 0.5**
Analysis Method	**FUS-MS**	**ICP-ES**	**FUS-MS**	**ICP-ES**	**ICP-ES**	**INAA**	**FUS-MS**	**FUS-MS**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**FUS-MS**	**ICP-ES**	**INAA**	**ICP-ES**	**INAA**	**FUS-MS**	**FUS-MS**	**ICP-ES**	**FUS-MS**
HS10-022	27.81	5.5	0.425	462	-1	3.10	7.4	21.55	1	182	-1	5.95	42	0.2	8.9	-1	4.15	2	167	0.78
HS10-030A	17.30	1.9	0.374	30	1	2.10	7.4	13.20	5	22	17	3.72	21	1.7	3.1	-1	2.76	-1	28	1.05
HS10-030B	23.90	1.5	0.658	17	2	2.50	8.0	18.80	-1	39	8	5.26	63	6.6	4.9	-1	4.11	-1	60	0.65
HS10-031A	23.20	1.0	0.398	50	-1	1.90	6.8	17.10	-1	34	10	4.79	56	0.4	3.0	-1	3.39	1	33	0.62
HS10-032A	35.89	34.8	0.390	1301	2	0.60	10.0	34.26	36	683	-1	8.74	71	0.2	12.5	-1	6.98	5	364	0.89
HS10-032B	28.27	105.1	0.328	618	-1	2.40	12.9	25.44	7	1011	12	6.80	183	-0.1	8.7	-1	5.12	3	206	2.28
HS10-032D	24.50	77.6	0.130	313	-1	3.30	6.7	19.25	3	587	4	5.18	83	-0.1	4.5	-1	3.43	2	322	1.64
HS10-032E	80.94	41.6	0.289	469	1	2.20	13.4	60.69	5	679	15	16.71	156	-0.1	8.1	-1	9.61	3	210	1.64
HS10-033	34.60	42.0	0.091	282	-1	2.60	8.0	22.75	-1	480	16	6.43	153	-0.1	3.9	-1	3.79	3	330	1.10
HS10-035A	31.45	20.7	0.440	270	-1	2.10	4.7	23.66	1	366	26	6.55	143	-0.1	3.8	-1	4.71	2	253	0.74
HS10-035B	9.89	20.6	0.563	1847	-1	0.72	6.3	17.97	35	637	-1	3.49	30	0.1	41.1	-1	5.04	2	211	0.74
HS10-037	34.86	14.0	0.259	829	-1	2.30	10.2	29.07	12	1206	-1	7.67	88	-0.1	13.0	-1	5.66	3	373	0.89
HS10-038	42.13	32.3	0.245	778	-1	2.50	11.2	33.14	15	877	4	8.85	138	-0.1	16.7	-1	5.83	2	261	1.49
HS10-040	28.50	7.0	0.217	324	-1	2.80	6.9	19.00	4	406	-1	5.42	55	0.7	12.6	-1	3.36	2	301	0.56
HS10-041	19.70	14.3	0.357	1167	-1	2.60	22.6	25.40	37	1398	-1	5.78	17	1.7	29.5	-1	6.13	2	544	1.70
HS10-045	6.14	14.4	0.333	1715	-1	2.70	1.1	8.29	7	416	-1	1.79	10	0.2	47.0	-1	2.32	-1	292	0.05
HS10-048	5.53	23.4	0.280	1102	-1	3.60	1.4	5.44	1	421	-1	1.28	34	0.2	18.8	-1	1.52	1	145	-0.50
HS10-051	11.84	11.9	0.426	1355	-1	2.20	8.3	16.08	39	875	-1	3.27	6	-0.1	42.1	-1	5.00	2	254	0.71
HS10-052	10.48	17.7	0.390	1893	-1	2.10	8.2	17.49	27	970	-1	3.49	27	0.8	45.2	-1	5.30	2	290	0.67
HS10-054A	35.00	1.8	0.492	117	2	2.90	9.6	24.30	-1	60	9	6.96	58	1.3	4.4	-1	4.51	2	74	1.06
HS10-054B	26.20	1.7	0.502	144	-1	2.50	10.1	18.10	-1	56	11	5.30	67	3.2	3.8	-1	3.67	1	69	1.45
HS10-058	21.90	3.9	0.343	342	-1	2.30	8.8	14.40	-1	69	9	4.23	140	-0.1	4.0	-1	2.61	-1	73	0.82
HS10-059B	37.30	1.0	0.497	46	-1	0.90	9.8	25.20	-1	55	1	7.38	138	19.5	4.5	-1	4.67	4	16	1.15
HS10-018C	7.51	14.1	0.355	1098	-1	1.80	6.2	12.42	47	686	-1	2.60	5	3.2	37.9	-1	3.58	2	338	0.87
HS10-023	41.50	11.5	1.180	1798	-1	3.30	38.4	49.80	10	1485	-1	11.80	10	0.7	29.7	-1	12.20	4	219	2.86

SampleNum	La_ppm	Li_ppm	Lu_ppm	Mn_ppm	Mo_ppm	Na_pct	Nb_ppm	Nd_ppm	Ni_ppm	P_ppm	Pb_ppm	Pr_ppm	Rb_ppm	Sb_ppm	Sc_ppm	Se_ppm	Sm_ppm	Sn_ppm	Sr_ppm	Ta_ppm
Detection Limit	**0.05**	**0.5**	**0.002, 0.05**	**1**	**1**	**0.01**	**0.2, 1.0**	**0.05, 0.2**	**1**	**1**	**1**	**0.01, 0.1**	**1**	**0.1**	**0.1**	**1**	**0.01, 0.1**	**1**	**1**	**0.01, 0.5**
Analysis Method	**FUS-MS**	**ICP-ES**	**FUS-MS**	**ICP-ES**	**ICP-ES**	**INAA**	**FUS-MS**	**FUS-MS**	**ICP-ES**	**ICP-ES**	**ICP-ES**	**FUS-MS**	**ICP-ES**	**INAA**	**ICP-ES**	**INAA**	**FUS-MS**	**FUS-MS**	**ICP-ES**	**FUS-MS**
HS10-025	13.53	28.2	0.271	1199	-1	2.10	5.3	9.65	34	487	-1	2.02	13	0.9	29.7	-1	2.62	2	410	0.67
HS10-026	9.48	12.7	0.530	1406	-1	2.60	2.8	15.00	103	696	-1	3.04	6	1.7	36.8	-1	4.48	1	275	0.17
HS10-027	2.52	27.0	0.379	882	-1	4.90	0.7	5.11	2	399	-1	0.82	5	0.5	33.1	-1	1.61	2	121	-0.50
HS10-031B	28.70	1.8	0.607	43	4	1.80	10.7	21.60	-1	39	4	6.01	88	2.9	3.9	-1	4.39	9	37	0.96
HS10-031C	27.60	1.3	0.495	46	-1	1.90	9.3	20.90	-1	28	8	5.91	92	1.6	4.7	-1	4.38	8	27	0.80
HS10-031D	30.30	0.8	0.658	57	-1	2.60	9.4	22.60	-1	30	10	6.32	78	1.5	5.1	-1	4.63	2	48	0.92
HS10-032C	4.50	11.6	0.141	776	-1	2.50	11.9	3.14	-1	804	17	0.84	277	-0.1	3.2	-1	1.08	9	22	3.44
HS10-046	32.33	39.5	0.598	1432	-1	2.20	9.0	34.65	-1	2477	27	8.33	81	5.8	15.1	-1	7.78	3	191	0.92
HS10-054C	40.90	9.6	0.501	606	-1	2.10	13.3	35.90	16	206	15	9.46	64	0.3	9.8	-1	7.17	2	165	1.21
HS10-056	22.70	6.6	0.359	315	-1	2.40	8.1	16.50	-1	166	-1	4.69	71	-0.1	7.8	-1	3.12	4	176	0.79
HS10-059A	31.80	1.9	0.570	123	-1	0.42	8.9	21.30	-1	36	3	6.25	116	64.9	4.0	-1	3.93	10	8	0.95
JH10-001A	27.60	1.3	0.459	36	-1	2.90	8.0	20.30	-1	41	23	5.86	81	1.5	4.7	-1	3.95	6	44	0.45
JH10-001B	29.40	1.0	0.564	35	-1	2.20	9.3	21.90	-1	39	6	6.30	63	5.6	4.7	-1	4.41	1	70	0.90
JH10-001C	26.10	2.0	0.430	52	-1	2.50	9.0	19.30	-1	36	-1	5.60	91	2.8	4.1	-1	3.89	3	47	1.00
JH10-001D	28.90	1.1	0.593	36	1	2.60	10.1	20.70	-1	38	8	6.02	74	4.5	4.8	-1	4.18	3	55	0.75
JH10-001E	23.30	2.4	0.520	43	-1	2.20	10.3	17.40	-1	84	21	4.95	57	3.1	4.3	-1	3.71	3	44	1.28
HS10-161	28.20	7.8	0.418	707	-1	2.00	9.4	21.60	6	333	-1	6.08	89	-0.1	19.0	-1	4.14	1	185	0.65
HS10-168	21.40	4.1	0.348	554	-1	2.10	8.3	15.70	-1	192	3	4.32	110	-0.1	9.8	-1	3.11	2	167	0.75
HS10-169	24.10	4.8	0.341	372	-1	2.50	8.7	17.30	-1	278	-1	4.98	42	0.2	10.3	-1	3.22	2	148	0.74
HS10-170	28.50	6.7	0.413	505	-1	3.30	8.5	20.50	-1	187	-1	5.84	69	0.2	9.8	-1	3.82	2	151	0.74
HS10-034	17.3	44.0	0.16	493	-1	3.50	9.9	12.5	2	623	1	3.2	111	-0.1	6.3	-1	2.3	2	481	2.0

SampleNum	Tb_ppm	Th_ppm	Ti_ppm	Tl_ppm	Tm_ppm	U_ppm	V_ppm	W_ppm	Y_ppm	Yb_ppm	Zn_ppm	Zr_ppm
Detection Limit	0.01, 0.1	0.05, 0.1	1	0.05, 0.10	0.005, 0.05	0.01, 0.1	1	0.5, 1.0	0.5, 1.0	0.01, 0.1	1	2
Analysis Method	FUS-MS	FUS-MS	ICP-ES	FUS-MS	FUS-MS	FUS-MS	ICP-ES	FUS-MS	FUS-MS	FUS-MS	ICP-ES	ICP-ES
HS10-022	0.63	11.07	1426	-0.10	0.375	1.93	22	-1.0	22.5	2.75	33	144
HS10-030A	0.47	7.49	115	0.10	0.311	1.79	1	3.2	18.7	2.17	13	51
HS10-030B	0.77	11.30	237	0.34	0.547	1.75	-1	2.6	32.4	3.81	1227	81
HS10-031A	0.53	9.11	221	0.26	0.324	2.34	-1	0.8	18.9	2.31	18	47
HS10-032A	0.98	9.19	4351	-0.10	0.407	2.85	86	1.8	27.4	2.96	68	214
HS10-032B	0.73	6.10	3860	-0.10	0.351	3.93	49	-1.0	21.9	2.34	78	251
HS10-032D	0.45	11.54	2654	0.15	0.145	4.31	38	7.0	10.0	0.86	62	187
HS10-032E	0.86	31.08	3584	-0.10	0.283	4.91	44	3.9	19.6	1.83	55	238
HS10-033	0.35	20.25	2347	-0.10	0.115	2.22	31	3.0	7.5	0.67	56	192
HS10-035A	0.72	18.78	1032	-0.10	0.412	3.05	15	2.5	26.7	2.82	32	148
HS10-035B	1.06	1.10	10628	-0.10	0.531	0.61	272	1.7	35.3	3.72	106	155
HS10-037	0.72	9.82	4693	-0.10	0.297	1.50	101	-1.0	20.5	1.91	83	209
HS10-038	0.62	23.35	4803	-0.10	0.258	4.56	115	1.4	17.4	1.67	73	195
HS10-040	0.38	10.90	2163	0.48	0.189	1.01	66	2.3	11.6	1.28	26	148
HS10-041	1.00	1.68	14265	0.05	0.386	0.57	259	-0.5	26.0	2.29	101	187
HS10-045	0.51	1.02	4689	-0.05	0.308	0.22	384	-0.5	18.0	2.05	94	45
HS10-048	0.26	3.49	2830	-0.10	0.229	1.01	128	-1.0	11.5	1.71	69	72
HS10-051	0.95	0.93	12001	-0.10	0.488	0.44	290	-1.0	31.3	3.11	101	133
HS10-052	0.93	0.79	14234	-0.10	0.471	0.28	358	-1.0	29.9	2.97	110	144
HS10-054A	0.67	14.40	336	0.23	0.426	2.76	4	1.0	25.1	2.94	26	97
HS10-054B	0.62	11.60	238	0.30	0.424	2.64	2	1.1	25.0	2.90	23	82
HS10-058	0.38	14.00	947	0.71	0.281	1.08	3	-0.5	16.0	2.00	25	85
HS10-059B	0.67	13.60	422	0.51	0.427	1.54	3	0.8	25.0	2.93	17	110
HS10-018C	0.72	0.57	9802	0.13	0.344	0.17	253	5.5	24.1	2.42	78	115
HS10-023	2.18	6.83	17933	-0.05	1.130	2.98	318	-0.5	71.0	7.34	158	466

SampleNum	Tb_ppm	Th_ppm	Ti_ppm	Tl_ppm	Tm_ppm	U_ppm	V_ppm	W_ppm	Y_ppm	Yb_ppm	Zn_ppm	Zr_ppm
Detection Limit	0.01, 0.1	0.05, 0.1	1	0.05, 0.10	0.005, 0.05	0.01, 0.1	1	0.5, 1.0	0.5, 1.0	0.01, 0.1	1	2
Analysis Method	FUS-MS	FUS-MS	ICP-ES	FUS-MS	FUS-MS	FUS-MS	ICP-ES	FUS-MS	FUS-MS	FUS-MS	ICP-ES	ICP-ES
HS10-025	0.53	0.58	6940	-0.10	0.272	0.20	187	10.0	17.5	1.82	73	99
HS10-026	0.98	0.58	8959	-0.05	0.501	0.28	268	-0.5	33.0	3.17	96	81
HS10-027	0.57	0.94	554	-0.10	0.386	0.35	221	5.4	23.4	2.49	105	61
HS10-031B	0.74	12.40	279	0.31	0.520	2.44	-1	4.3	30.3	3.63	20	89
HS10-031C	0.71	11.50	373	0.38	0.451	1.71	2	8.6	27.0	3.00	18	72
HS10-031D	0.78	12.80	207	0.33	0.547	2.45	-1	2.2	32.4	3.81	14	73
HS10-032C	0.26	1.61	347	-0.10	0.128	13.49	2	3.2	8.6	0.96	31	28
HS10-046	1.20	6.66	3078	-0.10	0.603	1.37	67	-1.0	38.7	3.90	120	291
HS10-054C	0.96	11.20	3620	0.42	0.463	2.86	63	-0.5	28.4	3.08	49	320
HS10-056	0.41	10.60	1445	0.38	0.287	1.48	19	0.8	13.9	2.11	25	152
HS10-059A	0.66	10.70	474	0.43	0.489	1.31	4	1.3	28.0	3.41	21	82
JH10-001A	0.65	11.70	499	0.27	0.426	2.24	-1	4.3	25.1	2.83	16	74
JH10-001B	0.77	12.90	381	0.26	0.517	2.69	-1	1.7	30.1	3.43	14	81
JH10-001C	0.64	10.80	371	0.39	0.402	2.84	-1	3.6	23.7	2.64	14	70
JH10-001D	0.79	12.90	389	0.27	0.525	3.48	-1	1.8	31.2	3.60	13	88
JH10-001E	0.75	9.95	554	0.17	0.482	3.27	11	4.5	29.6	3.23	18	65
HS10-161	0.67	8.21	3027	0.37	0.399	0.91	92	-0.5	23.5	2.58	53	148
HS10-168	0.57	9.30	1924	0.64	0.345	1.40	21	0.8	20.9	2.20	55	158
HS10-169	0.52	8.39	1770	0.18	0.306	1.30	25	-0.5	18.0	2.07	36	162
HS10-170	0.60	10.20	1879	0.29	0.382	2.01	23	-0.5	22.4	2.52	40	167
HS10-034	0.3	4.4	2837	-0.1	0.18	2.1	50	-1	12	1.3	56	135