Newfoundland Labrador

Natural Resources

Mines

GEOCHEMICAL TRACE-ELEMENT AND FIELD DATA FOR ROCK SAMPLES FROM NORTHERN LABRADOR TO AUGMENT DATA FROM STREAM-SEDIMENT AND WATER SURVEYS OF 1991-1992

John W. McConnell

Open File LAB/1621

St. John's, Newfoundland
2013

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INTRODUCTION

This report provides new analytical data for 70 rock samples collected as part of a large detailed-scale stream-sediment and stream-water survey conducted over parts of northern Labrador in 1991 and 1992. The data from the stream sediment and water samples, along with some rock data, were included with Open File LAB/1016 (McConnell and Honarvar, 1994). A summary version of the survey can be found in McConnell (1994).

For a description of the survey methods, bedrock and surficial geology, statistical interpretations and figures showing the distribution of trace elements in the surficial sample media, the reader is referred to McConnell and Honarvar (1994).

LOCATION

Rock samples were collected from 12, 1:50,000-scale NTS map areas. These comprise NTS map areas 14E/16, 14F/13, 14L/2, 3, 6, 7, 13, 14 and 15, 14M/3, 24I/16 and 24P/16 (Figure 1).

SAMPLE COLLECTION PROCEDURES

Samples were collected opportunistically during the course of stream-sediment sampling. Most samples are from bedrock or probable bedrock, and sites were selected as representative of local bedrock or if they appeared mineralized. Where possible, samples of fresh, unweathered material were obtained. Two samples (6240006 and 6241020) are not rocks, *sensu stricto*. Rather, they consist of erosional material obtained at the base of talus slopes, which was panned down using a gold pan. The purpose was to obtain a sample grossly representative of the scree material but concentrated to enhance the heavy mineral fraction.

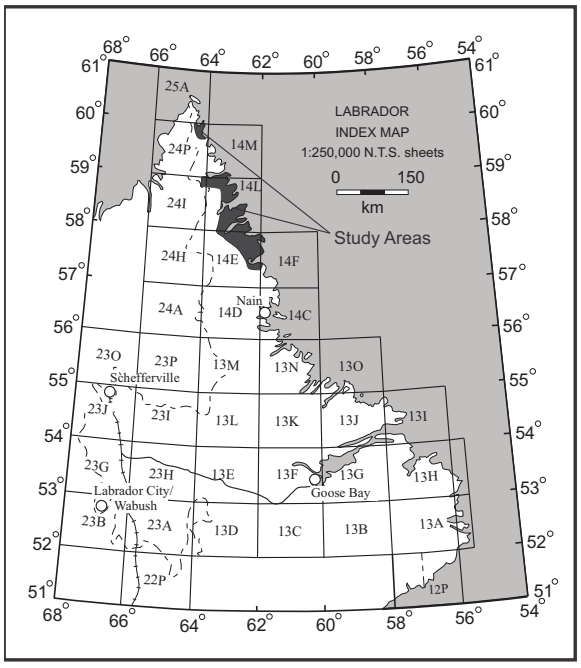

Figure 1. Index map of rock-sampling area.

Observations recorded on-site included UTM coordinates determined from 1:50 000-scale topographic maps, descriptions of the outcrop including size, fracturing, veining, vein type and homogeneity. Sample descriptors included rock type, metamorphic grade, texture, fabric or foliation, weathering, colour, economic mineralization type and quantity (if present), mode of mineralization and alteration.

SAMPLE PREPARATION AND ANALYSES

Rock samples were pulverized to <100 µm in a tungsten-carbide shatterbox in preparation for analysis. To monitor analytical precision, five percent of the samples were randomly selected, split and included as blind duplicates in all analytical procedures.

Rock samples were analyzed by up to 6 different methods for as many as 65 determinations. Several elements were analyzed by more than one method resulting in 45 unique element determinations. Elements analyzed were: Ag, As, Au, Ba, Be, Br, Cd, Ce, Co, Cr, Cs, Cu, Dy, Eu, Fe, Ga, Hf, La, Li, Lu, Mn, Mo, Na, Nb, Ni, Pb, Pd, Pt, Rb, Sb, Sc, Se, Sm, Sr, Ta, Tb, Th, Ti, U, V, W, Y, Yb, Zn and Zr.

All the geochemical data, together with the field data, are included in the file "Rock_data.csv" in Appendix 1. Descriptions of the variables on the .cvs file are provided in Appendix 2, "Variable information for Rock_data.doc".

The analytical methods are summarized in Table 1.

Table 1. Analytical methods for rock samples

ELEMENTS	METHOD	DIGESTION/ PREPARATION
As1, Au1, Ba1, Br1, Ce1, Co1, Cr1, Cs1 Eu1, Fe1, Hf1, La1, Lu1, Mo1, Na1, Ni1, Rb1, Sb1, Sc1, Se1, Sm1, Ta1, Tb1, Th1*, U1, W1, Yb1, Zn1, Zr1	Instrumental Neutron Activation Analysis (INAA) (Becquerel Labs and Actlabs)	5-10 g in shrink-wrapped vial (total analysis)
Ba2, Be2, Ce2, Co2, Cu2, Dy2, Ga2, La2, Li2, Mn2, Nb2, Ni2, Pb2, Sc2, Sr2, Th2, Ti2, V2, Y2, Zn2, Zr2*	Inductively Coupled Plasma Emission Spectroscopy (ICP-ES)	HF-$HClO_4$-HCl (total digestion)
Cd2, Cr2, Fe2, Mn2, Mo2, Rb2	Atomic Absorption Spectroscopy (AAS)	HF-$HClO_4$-HCl (total digestion)
Co4, Cu4, Ni4, Pb4, Zn4	Atomic Absorption Spectroscopy (AAS)	HNO_3-HCI (3:1) (partial digestion)
Ag6*	Atomic Absorption Spectroscopy (AAS)	HNO_3
Pd17, Pt17	Fire Assay / ICP Fluorescence (Chemex Labs)	

* Indicates preferred method of analysis for elements analyzed by more than one method. Generally, these elements have lower detection limits and better analytical precision by the preferred method.

DATA QUALITY

To ensure the reliability of the analytical data, two means of determining data accuracy and precision were employed. At the analytical stage, a sample split, or laboratory duplicate, was inserted within every batch of 20 samples. In addition, an international reference standard of known composition was similarly included. The results of these were monitored to ensure analytical precision and accuracy.

ACKNOWLEDGMENTS

Martin Batterson is thanked for his review of the report. Pauline Honarvar is thanked for her close scrutiny of the database. Many earth-science students, primarily from Memorial University, provided excellent field assistance and company during the three years of the surveys.

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fldnum	labnum	number	utmzone	utmeast	utmnorth	nts	descript	ocnature	ocsize	ocfract	ocvein	veintype	ochomog	rocktype	metgrade	texture	schist	weather	colour	mintype
6242035	6240068	2035	20	538800	6419700	14E/16	graphitic shale	1	5	4	2	2	1	2	2		4	1	2	1
6242037	6240069	2037	20	538800	6419800	14E/16	sulphide-bearing chert	3						6	2	1	1	1	3	1
6242038	6240071	2038	20	538800	6419700	14E/16	sulphide-bearing chert	3						6	2	1	2	1	3	1
6242043	6240076	2043	20	561650	6415780	14F/13	sulphide-bearing siltstone	2						2	2		2	2	2	16
6242044	6240077	2044	20	561650	6415780	14F/13	sulphide-bearing chert	1	5	3	1		2	3	2		1	2	3	1
6242045	6240078	2045	20	576780	6393700	14F/13	granite	1	5	1	1		1	1	1	3	1	2	8	
6240010	6240024	10	20	525720	6438230	14L/02	ultramafic	1	4	2	3	4	2	1		1	1	1	5	
6242005	6240035	2005	20	523455	6436853	14L/02	sulphide-bearing schist	2	5	2	2	1	3	7	3	2	3	4	3	16
6242006	6240036	2006	20	523412	6436912	14L/02	sulphide-bearing gneiss	3	2	2	2	1		7	3	2	2	4	3	16
6242007	6240037	2007	20	523405	6436898	14L/02	sulphide-bearing gneiss	1	5	2	2	1	3	7	3	2	2	2	3	16
6242008	6240038	2008	20	523412	6436912	14L/02	sulphide-bearing gneiss	3	2	2	2	1		7	3	1	3	2	3	16
6242009	6240039	2009	20	523400	6436895	14L/02	gneiss	1	5	2	1		3	7	3	4	2	2	1	1
6242010	6240041	2010	20	523440	6436868	14L/02	sulphide-bearing schist	1	5	2	1		3	7	3	2	3	4	6	16
6242011	6240042	2011	20	523475	6436837	14L/02	sulphide-bearing gneiss	1	5	2	1		3	7	3	2	3	2	3	16
6242012	6240043	2012	20	523560	6436965	14L/02	sulphide-bearing gneiss	1	2	2	1		3	7	3	3	2	2	3	16
6242013	6240044	2013	20	523175	6437075	14L/02	sulphide-bearing gneiss	1	3	2			2	7	3	3	3	3	3	16
6242014	6240045	2014	20	524250	6438480	14L/02	sulphide-bearing gneiss	1	3	3	2	1	2	7	3	2	2	3	3	16
6242015	6240046	2015	20	523445	6436837	14L/02	peridotite	1	3	3			1	4	3	2	1	2	2	1
6242016	6240047	2016	20	522440	6438100	14L/02	sulphide-bearing gneiss	1	5	3			3	7	3	2	3	3	3	1
6242017	6240048	2017	20	522450	6438100	14L/02	sulphide-bearing gneiss	1	5	3	2	1	2	7	3	2	3	2	3	16
6242018	6240049	2018	20	522515	6438100	14L/02	sulphide-bearing gneiss	1	5	3	2	1	2	7	3	3	3	2	3	16
6242019	6240051	2019	20	522560	6438100	14L/02	sulphide-bearing gneiss	1	5	3	2	1	2	7	3	2	2	2	3	16
6242020	6240052	2020	20	522590	6438100	14L/02	sulphide-bearing gneiss	1	5	3			2	7	3	2	3	2	3	16
6242021	6240053	2021	20	522640	6438060	14L/02	sulphide-bearing schist	1	5	3					3	2	4	2	3	16
6242023	6240055	2023	20	522950	6439450	14L/02	sulphide-bearing gneiss	2	2	3	1		1	7		2	2	2	3	16
6242024	6240056	2024	20	523000	6439750	14L/02	sulphide-bearing gneiss	1	2	4	1		3	7	3	2	2	3	3	16
6242025	6240057	2025	20	523000	6440200	14L/02	sulphide-bearing metamafic	1	1	4	1		3	4	3	2	1	1	5	16
6242026	6240058	2026	20	526960	6436890	14L/02	metamafic	1	5	2	2	2	1	4	3	2	1	1	3	1
6242027	6240059	2027	20	522590	6438105	14L/02	gabbro	1	5	2	2	2	2	1	3	3	1	1	5	1
6242028	6240061	2028	20	522590	6438097	14L/02	gneiss	1	5	3	1		2	7	3	3	2	2	5	
6242029	6240062	2029	20	522500	6438550	14L/02	sulphide-bearing gneiss	1	4	3	2	1	3	7	3	2	3	2	3	1
6242030	6240063	2030	20	522500	6438550	14L/02	gneiss	1	4	4	3	2	3	7	3	3	3	3	5	1
6242031	6240064	2031	20	522500	6438550	14L/02	sulphide-bearing gneiss	1	4	3	1		2	7	3	2	2	2	3	4
6242032	6240065	2032	20	522500	6438550	14L/02	sulphide-bearing gneiss	1	4	3	1		3	7	3	2	3	3	3	16
6242033	6240066	2033	20	522550	6438650	14L/02	gneiss	1	5	3			3	7	3	3	2	2	5	16
6242034	6240067	2034	20	519000	6437000	14L/02	ultramafic	1	4	2	2	2	2	4	3	2	2	2	5	1
6242041	6240074	2041	20	525650	6438150	14L/02	peridotite	1	3	2	1		1	4	2	2	2	2	2	
6242042	6240075	2042	20	523600	6441580	14L/02	sulphide-bearing gneiss	1	3	3	2	1	3	7	3	3	3	4	3	16
6240003	6240003	3	20	475780	6441350	14L/03	granulite	3	1	2				7	4	3	2	3	2	
6240004	6240004	4	20	475780	6441350	14L/03	granulite	3	1	2				7	4	3	2	3	2	
6240005	6240005	5	20	475780	6441350	14L/03	granulite	3	1	2				7	4	4	3	3	3	
6240006	6240006	6	20	475780	6441350	14L/03	panned concentrate of scree slope													
6240007	6240007	7	20	472600	6441200	14L/03	sulphide-bearing granulite	1	3	3			3	7	4	3	2	3	3	1
6240008	6240008	8	20	476600	6442300	14L/03	granulite	1	3	3			3	7	4	3	2	3		
6241020	6240023	1020	20	474950	6442950	14L/03	panned concentrate of scree slope													
6242003	6240033	2003	20	553150	6362250	14L/03	felsite	3						4		2	1	1	5	14
6242004	6240034	2004	20	553150	6362250	14L/03	granite	3						7		2	1	2	5	14
6240001	6240001	1	20	478300	6461550	14L/06	granulite	3	2	2			3	7	4	3	4	4		
6240002	6240002	2	20	478300	6461550	14L/06	sulphide-bearing granulite	3	2					7	4	3	2	2		4
6242001	6240031	2001	20	542800	6399910	14L/06	granulite	2	3	2	1			7	4	3	3	3	2	1
6242002	6240032	2002	20	548780	6359700	14L/06	granite	1	5	2	1		1	1		3	1	1	8	
6240009	6240009	9	20	509000	6480600	14L/07	quartz vein	1	2	4	3	1	3	1			1	2	1	1
6242022	6240054	2022	20	518170	6463180	14L/07	ultramafic	1	4	2	1		3	4	3	1	2	2	5	
6240012	6240011	12	20	443520	6526850	14L/13	gneiss	3						7			3	4		
6242040	6240073	2040	20	464370	6524770	14L/13	gneiss	1	5	3	1		2	7	4	2	5	1	3	
6240022	6240026	22	20	484700	6523800	14L/14	sulphide-bearing metaclastic	3			1		1	5	2	2		3	3	1

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fldnum	labnum	number	utmzone	utmeast	utmnorth	nts	descript	ocnature	ocsize	ocfract	ocvein	veintype	ochomog	rocktype	metgrade	texture	schist	weather	colour	mintype
6240011	6240025	11	20	501350	6518510	14L/15	ultramafic	1	4	2			1	4		2			5	
6240013	6240012	13	20	474120	6544480	14M/03	sulphide-bearing quartzite	3						2				1	4	16
6240014	6240013	14	20	474050	6544030	14M/03	sulphide-bearing quartz vein	3						2				1	3	1
6240015	6240014	15	20	474050	6544030	14M/03	graphitic schist	3						5		1	5	1	2	
6240023	6240027	23	20	482750	6540500	14M/03	sulphide-bearing sandstone	3						2				1	4	16
6240024	6240019	24	20	474380	6544410	14M/03	dolomite	3						3				3	6	1
6242039	6240072	2039	20	473750	6565450	14M/03	ultramafic	1	3	3	3	4	2	1	2	1	1	2	3	
6240016	6240015	16	20	441590	6531150	24I/16	massive sulphides	3										2		16
6240017	6240016	17	20	441600	6531450	24I/16	sulphide-bearing gneiss	1	5	4	1		3	7		3	3	2	3	16
6240018	6240017	18	20	441580	6531310	24I/16	sulphide-bearing gneiss	3						7		3			3	16
6240019	6240018	19	20	441580	6531310	24I/16	gneiss	3												16
6240030	6240021	30	20	441680	6531320	24I/16	sulphide-bearing gneiss	1	5	4			3					3		16
6240031	6240022	31	20	441580	6531310	24I/16	gneiss	3												16
6240032	6240028	32	20	421660	6643030	24P/16	ultramafic	3												

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fldnum	labnum	minquant	minmode	alter	age	Ag6_ppm	As1_ppm	Au1_ppb	Ba1_ppm	Ba2_ppm	Be2_ppm	Br1_ppm	Cd1_ppm	Cd2_ppm	Ce1_ppm	Ce2_ppm	Co1_ppm	Co2_ppm	Co4_ppm	Cr1_ppm	Cr2_ppm
6242035	6240068	1	1		2		24	2.7	700	550	1.2	2.6		0.1	21	30	9	12	8	92	120
6242037	6240069	7	6		2		21	6.6	25	44	0.3	0.2		0.1	10	15	6	12	5	10	4
6242038	6240071	7	6		2		12	1	25	9	0.1	1		0.1	1	2	2	8	2	10	2
6242043	6240076	5	5		2		2.7	3.9	2500	1921	1.5	0.2		0.1	17	26	56	59	42	44	45
6242044	6240077	5	3		2		32	3.4	25	45	0.3	0.2		0.1	6	4	22	24	20	10	5
6242045	6240078						0.2	1	870	721	4.1	0.2		0.1	180	183	2	2	1	10	1
6240010	6240024					0.1	0.2	3.3	25	6	0.1	0.2	1	0.1	1	3	120	111	70	1700	621
6242005	6240035	4	6	1	1		0.5	3.9	430	367	0.9	1.9		0.1	7	18	59	63	56	410	517
6242006	6240036	2	6	1	1		0.5	12	72	43	2.2	0.2		0.1	1	6	100	92	78	1700	1885
6242007	6240037	5	6		1		0.6	1	50	55	2.3	0.7		0.1	1	1	70	67	60	1500	1537
6242008	6240038	5	6	1	1		0.2	1	370	296	2.2	0.2		0.1	18	21	29	28	25	850	841
6242009	6240039	1	1	5	1		0.2	3	360	260	3.6	1.1		0.1	9	10	20	21	19	120	134
6242010	6240041	8	4	1	1		0.2	1	88	69	3.1	9.1		0.1	1	8	624	530	429	86	115
6242011	6240042	3	6		1		0.2	1	270	169	3	0.2		0.1	1	8	52	51	43	250	247
6242012	6240043	2	1	1	1		0.2	1	980	824	2.9	0.2		0.1	58	38	38	41	35	340	387
6242013	6240044	2	1		1		1.4	2.3	53	72	4.1	0.7		0.1	11	12	60	52	31	150	164
6242014	6240045	4	6	1	1		0.2	3.6	410	346	0.6	0.2		0.1	1	8	42	41	35	490	508
6242015	6240046	1	1		1		2.5	1	25	10	1.3	0.2		0.1	1	1	110	94	58	4820	4559
6242016	6240047	5	6	1	1		0.9	4.2	530	412	0.9	0.9		0.1	15	26	120	104	98	72	82
6242017	6240048	5	6	1	1		0.2	3.5	380	341	0.8	0.2		0.1	42	47	72	68	65	55	65
6242018	6240049	5	6	1	1		0.6	3.8	340	307	0.8	0.2		0.1	30	43	66	73	64	100	130
6242019	6240051	6	6	1	1		1.1	5.5	420	353	0.9	0.2		0.1	29	38	70	81	67	120	142
6242020	6240052	7	6	1	1		0.2	8.3	440	320	0.4	0.2		0.1	31	32	140	138	114	60	79
6242021	6240053	5	6	1	1		0.2	1	25	10	0.6	0.2		0.1	1	12	45	48	35	140	149
6242023	6240055	5	6		1		0.6	8.4	120	85	0.2	0.2		1.4	1	6	30	32	23	1500	1572
6242024	6240056	5	6	1	1		7.6	5	800	534	0.6	0.2		0.8	18	37	92	94	74	200	236
6242025	6240057	4	1		1		24	5.5	25	14	0.6	2.1		1.4	1	5	57	52	42	31	29
6242026	6240058	1	1		1		0.2	1	25	2	0.1	0.2		0.1	1	1	150	110	94	1900	814
6242027	6240059	1	1	2	1		1.3	1	25	28	0.2	3.5		0.1	1	5	56	50	14	360	348
6242028	6240061				1		0.5	1	190	156	0.4	3.2		0.1	11	15	56	52	16	290	273
6242029	6240062	2	1	1	1		12	2.9	620	564	0.6	1.6		0.1	1	13	21	26	20	320	354
6242030	6240063	1	1	2	1		0.2	1	160	172	1.1	143		0.1	360	352	89	88	7	150	154
6242031	6240064	2	2	1	1		1.3	4.5	590	517	1.1	10		0.1	23	34	21	24	18	280	317
6242032	6240065	6	6		1		0.8	8.2	430	347	0.8	3.2		0.1	42	49	120	109	88	97	95
6242033	6240066	1	1		1		0.7	4.2	290	227	0.4	0.2		0.2	1	6	21	9	13	98	126
6242034	6240067	1	1	2	1		0.2	1	880	691	1.8	0.2		0.1	1	4	45	47	39	2010	2201
6242041	6240074				1		0.2	1	25	6	0.1	0.6		0.1	1	1	130	129	101	1800	1342
6242042	6240075	5	1	1	1		3440	18	570	448	0.7	0.2		0.3	1	10	94	83	75	640	647
6240003	6240003				1	0.5	0.9	18	480	419	0.6	1	1	0.5	47	65	30	30	22	76	82
6240004	6240004				1	0.6	8.6	16	350	331	2	1.8	1	0.8	86	93	29	30	25	88	83
6240005	6240005				1	0.2	0.2	8.7	180	164	0.8	0.5	1	0.3	51	80	8	10	9	33	25
6240006	6240006					0.1	2.1	19	110	191	0.6	0.2	1	1.4	380	374	2	5	1	290	271
6240007	6240007	4			1	0.4	0.2	14	61	78	0.2	0.2	1	0.2	1	17	94	85	60	560	631
6240008	6240008				1	0.3	0.2	10	96	91	0.2	0.2	1	0.1	1	19	28	28	39	500	500
6241020	6240023					0.1	2.8	8	550	525	1.7	1.9	1	0.3	230	258	20	22	5	150	171
6242003	6240033	3	2				0.2	1	390	304	4.3	0.2		0.1	230	256	2	3	1	27	3
6242004	6240034	2	2	2			2	1	1300	1028	6.2	0.6		0.1	1	9	16	20	16	10	21
6240001	6240001				1	0.1	0.2	5.6	790	696	0.2	0.2	1	0.5	62	84	2	3	1	92	102
6240002	6240002	2	3		1	0.6	1.2	15	25	11	0.3	0.2	1	1	55	71	44	41	30	38	38
6242001	6240031	1	1		1		0.2	1	520	381	1.2	0.2		0.1	20	23	35	41	34	340	479
6242002	6240032						0.2	1	2600	2181	1.5	0.2		0.1	110	132	2	6	1	10	3
6240009	6240009	1				0.2	0.2	1	400	368	2.1	0.2	1	0.1	100	100	7	8	7	35	17
6242022	6240054			2	1		1.4	1	25	1	0.1	0.2		0.1	1	6	2	6	1	10	6
6240012	6240011					0.2	1.2	3.5	2600	2382	1	0.2	1	0.3	110	89	35	34	27	75	66
6242040	6240073				1		0.2	1	1100	806	1.7	0.2		0.1	83	91	22	24	13	47	39
6240022	6240026	4	1		1	0.2	0.2	1	970	937	1.4	0.2	1	0.3	11	20	54	50	45	230	219

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fldnum	labnum	minquant	minmode	alter	age	Ag6_ppm	As1_ppm	Au1_ppb	Ba1_ppm	Ba2_ppm	Be2_ppm	Br1_ppm	Cd1_ppm	Cd2_ppm	Ce1_ppm	Ce2_ppm	Co1_ppm	Co2_ppm	Co4_ppm	Cr1_ppm	Cr2_ppm
6240011	6240025					0.1	0.2	2.2	420	400	0.1	1.5	1	0.1	7	13	140	134	100	2210	1698
6240013	6240012	2	2		1	0.1	8	1	1100	1041	1.1	0.2	1	0.1	26	30	22	25	21	35	32
6240014	6240013	4	1			0.1	3	1	25	7	0.1	0.2	12	8.8	1	3	2	1	1	10	2
6240015	6240014					3.1	64	39	110	153	1.1	10	1	0.1	10	29	2	1	1	160	164
6240023	6240027	2	2		1	1	0.9	1	1400	1385	0.4	0.2	1	0.1	9	11	2	2	1	24	20
6240024	6240019	1	1		1	0.1	8.2	1	25	27	0.2	1	1	0.1	1	6	2	2	4	10	2
6242039	6240072			5	1		0.2	1	25	16	0.1	0.2		0.1	1	1	120	123	95	1400	1132
6240016	6240015	8	4		1	1.4	2.9	39	270	54	0.2	0.2	1	0.4	18	31	170	143	102	77	100
6240017	6240016	5	1		1	0.4	1.7	8.9	110	122	1.1	0.2	1	0.2	36	42	46	39	20	63	74
6240018	6240017	4	1		1	0.2	0.2	4.4	2100	1742	0.8	0.2	1	0.2	43	53	20	18	17	80	94
6240019	6240018	5				0.3	1.4	11	480	220	1	0.2	1	0.3	71	82	68	63	51	60	65
6240030	6240021	2	1		1	0.1	0.2	2.9	1900	601	0.6	0.7	1	0.1	24	37	11	14	12	10	16
6240031	6240022	5				0.4	1.7	15	1000	216	0.6	0.2	1	0.3	35	54	40	40	33	38	62
6240032	6240028					0.1	0.2	1	25	21	0.1	12	1	0.1	1	6	100	89	66	2700	2851

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fldnum	labnum	Cs1_ppm	Cu2_ppm	Cu4_ppm	Dy2_ppm	Eu1_ppm	Fe1_pct	Fe2_pct	Ga2_ppm	Hf1_ppm	La1_ppm	La2_ppm	Li2_ppm	Lu1_ppm	Mn2_pct	Mo1_ppm	Mo2_ppm	Na1_pct	Nb2_ppm	Ni1_ppm
6242035	6240068	4.1	13	13	1.6	0.5	2.7	3.2	26	4	13	14	41.7	0.02	0.01	11	14	0.74	0.6	36
6242037	6240069	0.2	15	16	2.5	0.5	13	16.5	17	0.5	6	9	2.7	0.02	0.03	2.5	2	0.03	0.5	13
6242038	6240071	0.2	6	7	0.2	0.5	2.8	4	5	0.5	1	1	0.7	0.02	0.01	2.5	2	0.02	0.1	5
6242043	6240076	0.2	185	190	3.6	0.5	22.2	23.4	35	4	7	9	45.4	0.02	0.16	2.5	4	0.58	0.5	120
6242044	6240077	0.2	113	115	1.2	0.5	6	7.6	8	0.5	3	5	2.7	0.02	0.03	2.5	4	0.02	0.5	63
6242045	6240078	0.6	4	2	4.2	2	0.8	1	24	7	85	90	38.5	0.75	0.05	20	21	2.16	4.1	5
6240010	6240024	0.2	2	3	0.5	0.5	5.1	5.7	8	0.5	1	1	1.8	0.02	0.07	2.5	1	0.22	1	2570
6242005	6240035	2.3	2580	2657	1.5	0.5	7.2	8.8	26	2	6	9	59.2	0.02	0.09	2.5	7	0.67	0.2	200
6242006	6240036	0.5	611	641	2	0.5	10	10.7	24	0.5	3	5	21.5	0.02	0.23	2.5	6	0.24	0.5	420
6242007	6240037	0.2	404	416	1.8	0.5	7.2	7.7	17	0.5	1	1	18.9	0.02	0.23	2.5	6	0.26	0.5	370
6242008	6240038	3.7	240	260	2.2	0.5	5	5.3	22	2	9	10	40.7	0.02	0.11	2.5	8	0.8	0.1	160
6242009	6240039	11	21	23	0.4	0.5	3.3	3.4	24	1	5	7	44	0.02	0.06	2.5	6	4.02	0.5	57
6242010	6240041	0.2	691	720	2.2	0.5	35.9	35	38	0.5	4	6	12.5	0.02	0.04	2.5	6	0.43	0.5	2700
6242011	6240042	6.4	108	113	1	0.5	13	13	39	4	4	4	76.7	0.02	0.25	2.5	7	0.93	0.3	230
6242012	6240043	3.9	253	260	1.4	1	5.1	5.8	36	4	25	20	67.5	0.36	0.1	2.5	9	1.3	0.1	120
6242013	6240044	0.2	317	324	3.3	0.5	7.1	6.9	25	2	4	6	9.8	0.02	0.16	2.5	8	1.9	0.1	180
6242014	6240045	2	263	283	2.1	0.5	7.8	8.3	31	1	4	6	13.8	0.26	0.11	2.5	8	0.7	0.5	140
6242015	6240046	1	22	23	0.8	0.5	8.8	8.9	19	0.5	1	1	2.8	0.02	0.15	2.5	6	0.2	0.5	1410
6242016	6240047	0.2	843	923	1.4	0.5	10	9.9	27	5	10	11	32.2	0.02	0.04	2.5	7	3.06	0.4	150
6242017	6240048	1.6	556	593	2.3	0.5	10	11	32	3	22	24	11.6	0.02	0.04	2.5	8	0.22	0.1	340
6242018	6240049	5.8	314	328	2.5	0.5	10	11.9	29	2	15	20	17.5	0.02	0.04	2.5	6	0.27	0.3	290
6242019	6240051	7.9	304	310	3.1	0.5	7.5	10.3	28	3	13	17	20.1	0.02	0.03	2.5	7	0.5	0.1	240
6242020	6240052	3	1417	1411	3.4	0.5	17	20.2	28	1	14	16	17.1	0.02	0.02	2.5	7	0.32	0.5	590
6242021	6240053	0.2	507	525	3.3	0.5	14	15.8	27	2	4	5	4.6	0.27	0.18	2.5	5	0.07	0.5	230
6242023	6240055	0.2	126	128	2.5	0.5	7.8	8.3	20	0.5	2	3	3.7	0.02	0.26	2.5	6	0.77	0.5	230
6242024	6240056	7.8	585	592	2.7	1	10	11.8	24	2	13	15	61.8	0.02	0.05	2.5	8	1	0.1	690
6242025	6240057	0.9	204	223	1.7	0.5	8.1	8	13	0.5	2	2	29.2	0.02	0.21	2.5	8	0.22	0.5	230
6242026	6240058	0.2	4	13	0.3	0.5	4.9	4.2	5	0.5	1	1	2.2	0.02	0.11	2.5	3	0.4	0.1	5270
6242027	6240059	0.2	101	109	3.2	0.5	7.3	7	22	2	2	2	5.5	0.43	0.18	2.5	7	1.2	0.5	200
6242028	6240061	1.3	26	24	4.1	1	8.5	8.2	25	2	6	6	16.6	0.51	0.17	2.5	6	1.5	0.5	270
6242029	6240062	2	93	98	1.6	0.5	3.5	4.5	22	4	1	2	23.8	0.02	0.11	2.5	5	0.6	0.5	130
6242030	6240063	3.8	422	439	5.8	2	9.3	9.9	23	1	170	193	29.7	0.55	0.16	2.5	8	1.6	0.5	460
6242031	6240064	4.5	276	290	1.7	0.5	5	6.1	24	4	13	16	34.9	0.02	0.05	2.5	6	1	0.1	100
6242032	6240065	1.9	261	268	3.3	0.5	12	12.3	26	3	22	25	16.5	0.02	0.07	2.5	6	0.64	0.1	660
6242033	6240066	1.2	88	84	32.6	0.5	20	20.9	33	1	2	2	28.4	9.2	0.72	2.5	5	0.22	1.1	44
6242034	6240067	2.3	32	32	1.7	0.5	3.8	4.5	22	0.5	2	2	30.5	0.02	0.17	2.5	5	0.09	0.5	1080
6242041	6240074	0.2	5	3	0.7	0.5	6.4	7.9	8	0.5	1	1	1.6	0.02	0.12	2.5	4	0.24	0.5	3160
6242042	6240075	6.7	347	369	3.7	1	11	11	27	0.5	4	5	35.4	0.87	0.09	2.5	6	0.27	0.5	760
6240003	6240003	0.2	59	60	4.5	1	6.1	7.4	18	4	31	30	14.9	0.37	0.06	21	23	0.93	1	140
6240004	6240004	0.7	160	170	5.1	0.5	4.3	5	18	4	43	41	27.6	0.02	0.05	22	26	1	1	93
6240005	6240005	0.2	114	107	2.7	0.5	1.3	1.6	11	33	29	32	16.5	0.66	0.01	2.5	6	0.72	1	24
6240006	6240006	0.2	70	70	39.6	0.5	16	17	29	73	170	143	12.4	6.7	0.23	11	21	0.43	10	5
6240007	6240007	0.2	1200	1148	2.5	0.5	9.2	9.9	18	0.5	4	5	17.8	0.02	0.17	2.5	4	0.37	1	560
6240008	6240008	0.2	262	261	2.2	0.5	13	14	20	0.5	7	8	11.7	0.02	0.22	2.5	3	0.38	1	54
6241020	6240023	0.2	35	36	12.5	0.5	11	13.3	30	62	110	105	14.4	1.3	0.18	2.5	6	0.91	86	24
6242003	6240033	0.7	7	6	21	1	1.2	1.6	35	18	100	107	12	2.1	0.02	2.5	5	2.54	25.3	5
6242004	6240034	0.2	11	12	1.2	0.5	3.5	4.1	27	2	8	10	88.9	0.02	0.1	2.5	7	1.7	0.9	90
6240001	6240001	0.2	56	59	5.4	1	3.6	4.7	17	4	44	49	5.5	0.47	0.08	10	10	1	1	5
6240002	6240002	0.2	299	307	11.5	1	13	15.6	18	3	25	26	2.4	0.56	1.79	2.5	4	0.03	29	120
6242001	6240031	5.8	146	154	2.2	0.5	4.2	6	27	1	10	12	46.6	0.02	0.07	2.5	6	1.2	0.2	170
6242002	6240032	0.2	5	5	5	2	2.3	3.4	21	17	48	62	11.6	0.39	0.07	2.5	5	1.7	1.9	5
6240009	6240009	0.2	7	4	1	0.5	1.6	1.8	21	11	58	52	16.1	0.02	0.04	2.5	3	4.4	1	19
6242022	6240054	0.2	18	15	1.3	0.5	1.5	1.8	5	0.5	2	3	0.1	0.02	0.54	2.5	5	0.16	0.1	5
6240012	6240011	0.2	126	127	2.4	2	5.8	6.6	26	3	69	54	8.6	0.02	0.06	5.3	8	1.6	1	81
6242040	6240073	0.2	27	26	2.9	2	3.8	4.5	25	4	39	46	8.8	0.02	0.07	2.5	6	2.53	0.2	5
6240022	6240026	4.7	68	68	3.1	1	3.9	4.4	23	1	6	7	44.3	0.02	0.1	2.5	3	0.84	1	81

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fldnum	labnum	Cs1_ppm	Cu2_ppm	Cu4_ppm	Dy2_ppm	Eu1_ppm	Fe1_pct	Fe2_pct	Ga2_ppm	Hf1_ppm	La1_ppm	La2_ppm	Li2_ppm	Lu1_ppm	Mn2_pct	Mo1_ppm	Mo2_ppm	Na1_pct	Nb2_ppm	Ni1_ppm
6240011	6240025	0.7	2	12	0.6	0.5	5.6	6.5	8	0.5	5	6	7.8	0.02	0.11	2.5	1	0.24	1	2850
6240013	6240012	0.7	10	10	0.7	0.5	1.3	1.5	12	2	10	11	13.9	0.02	0.01	2.5	1	0.07	1	28
6240014	6240013	0.2	402	391	0.5	0.5	0.7	0.8	1	0.5	1	1	1.8	0.02	0.03	2.5	2	0.05	1	5
6240015	6240014	0.8	6	6	0.2	0.5	0.3	0.3	40	0.5	9	16	30	0.02	0.01	86	88	0.04	4	32
6240023	6240027	0.2	7649	7201	0.4	0.5	0.4	0.5	5	4	4	6	1	0.02	0.01	2.5	1	0.04	1	5
6240024	6240019	0.2	3	7	0.9	0.5	1.7	1.8	3	0.5	2	2	2.8	0.02	0.23	2.5	3	0.11	3	5
6242039	6240072	0.2	2	3	1.2	0.5	6.1	7.7	10	0.5	1	1	2.1	0.02	0.12	2.5	3	0.23	0.5	2840
6240016	6240015	0.2	62	59	6.1	1	21.8	23.2	25	0.5	16	15	3.1	0.87	0.08	125	143	0.49	1	570
6240017	6240016	0.2	97	96	5.6	1	11	10.5	29	2	18	18	9.8	0.72	0.18	2.5	4	1.5	2	54
6240018	6240017	0.2	59	59	2	1	5.1	6	24	4	36	36	5.4	0.3	0.04	6.9	10	1.8	7	48
6240019	6240018	0.5	125	132	5.5	0.5	12	13.1	23	2	38	38	4.6	0.5	0.07	55	41	1.2	1	220
6240030	6240021	0.2	36	36	0.2	0.5	1.4	2	16	6	19	23	12.3	0.02	0.01	7.7	9	0.91	2	40
6240031	6240022	0.2	83	81	2.4	2	7	9.3	22	7	28	30	7.3	0.3	0.03	35	43	1.1	1	170
6240032	6240028	0.2	2	3	1	0.5	5.3	5.6	9	0.5	2	2	2.6	0.02	0.1	2.5	3	0.3	1	870

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fldnum	labnum	Ni2_ppm	Ni4_ppm	Pb2_ppm	Pb4_ppm	Pd17_ppb	Pt17_ppb	Rb1_ppm	Rb2_ppm	Sb1_ppm	Sc1_ppm	Sc2_ppm	Se1_ppm	Sm1_ppm	Sr2_ppm	Ta1_ppm	Tb1_ppm	Th1_ppm	Th2_ppm	Ti2_ppm
6242035	6240068	37	25	1	6			150	133	1	14	15.3	1	3.1	28	0.8	0.6	9.1	1.2	4544
6242037	6240069	5	3	25	11	1	2	2	7	3.7	0.7	0.4	1	1.6	17	0.2	0.2	0.1	0.5	28
6242038	6240071	4	3	11	2			2	2	0.87	0.1	0.1	1	0.2	7	0.2	0.2	0.1	0.5	7
6242043	6240076	124	100	5	2	6	5	20	17	1.1	34.3	35.9	1	3.3	58	0.2	0.2	1.1	0.5	4925
6242044	6240077	72	58	10	2			2	2	1	1.2	1.2	1	1.3	39	0.2	0.2	0.1	0.5	93
6242045	6240078	1	3	19	13			260	223	0.02	3.8	4	1	14.6	89	2.7	1.2	19	1.6	1025
6240010	6240024	2711	1628	2	2			2	2	0.02	3.5	4.2	1	0.1	1	0.2	0.2	0.1	1	34
6242005	6240035	208	170	4	2	4	5	150	124	0.02	23.7	29.1	1	1.9	146	0.5	0.2	5.7	0.5	4110
6242006	6240036	401	352	12	2	2	5	22	15	0.17	21.8	26	1	1.2	87	0.2	0.2	0.4	0.5	2239
6242007	6240037	340	309	20	6	1	10	28	14	0.23	24.5	28.2	1	1.1	68	0.2	0.2	0.1	0.5	1981
6242008	6240038	155	138	1	2	4	5	170	122	0.12	25.5	26.6	1	3.1	145	0.9	0.5	4.1	0.5	2529
6242009	6240039	67	52	16	18			190	155	0.02	6.9	7.1	1	0.9	244	0.2	0.2	0.4	0.5	1959
6242010	6240041	2481	2023	23	2	12	2	12	14	0.02	6.4	5	1	1.1	59	0.2	0.2	2.1	0.5	731
6242011	6240042	221	188	4	2			150	103	0.02	18	14.6	1	0.6	58	0.7	0.2	7.8	0.3	4482
6242012	6240043	119	95	1	2	4	5	110	96	0.02	49	52.1	1	6.6	73	0.2	0.7	10	0.5	5123
6242013	6240044	159	123	1	2	8	5	10	11	0.02	27.6	26.3	1	3.5	87	0.2	0.7	1.1	0.5	5897
6242014	6240045	138	115	9	2	14	5	47	39	0.02	29.7	30.6	1	2.2	223	0.2	0.6	1.8	0.5	3825
6242015	6240046	1296	869	1	2	12	10	2	2	0.12	17	5	1	0.7	1	0.2	0.2	0.6	0.5	1385
6242016	6240047	149	131	6	2	2	6	41	24	0.11	14	14.2	1	2.3	226	0.7	0.2	8.1	0.5	2845
6242017	6240048	321	290	6	2	2	5	56	54	0.02	8.9	8.9	1	4.8	66	0.6	0.6	6.7	0.1	1995
6242018	6240049	321	282	5	2	<20	<20	71	68	0.02	11	12.7	1	3.5	43	0.2	0.2	7.1	0.1	2236
6242019	6240051	212	170	8	2	<20	<20	93	76	0.02	15	20.4	1	3.7	66	0.2	0.2	6.1	0.7	3489
6242020	6240052	478	374	13	2	<20	<20	71	54	0.02	9	9.9	1	3.7	46	0.2	0.2	6.1	0.5	1975
6242021	6240053	206	164	3	2	6	2	2	2	0.02	15	16.7	1	1.9	4	0.2	0.2	1.5	0.5	2216
6242023	6240055	185	151	31	23	6	5	2	2	0.02	34.2	37.4	1	1	52	0.2	0.2	0.5	0.5	1419
6242024	6240056	628	489	41	30	<20	<20	140	116	0.02	10	11.5	1	3.9	62	0.2	0.2	5	0.1	2964
6242025	6240057	175	166	16	2	2	2	2	2	0.11	7.3	7.3	1	0.8	11	0.2	0.2	1.3	0.3	605
6242026	6240058	3450	2923	3	2	<20	<20	2	2	0.02	5.6	1.2	1	0.4	2	0.2	0.2	0.3	0.5	26
6242027	6240059	155	75	1	2			2	8	0.11	40.3	39.2	1	3.1	122	0.2	0.2	0.1	0.5	4592
6242028	6240061	191	82	11	2			27	16	0.02	42.6	41.2	1	4.5	131	0.2	0.8	1.5	0.5	5244
6242029	6240062	121	103	1	7			120	110	0.02	12	14	1	0.6	82	0.2	0.2	7.7	0.4	3225
6242030	6240063	382	313	10	2	<20	<20	84	64	0.02	22.7	24	1	30.6	171	0.2	1.7	3.1	0.5	3331
6242031	6240064	93	74	5	2	<20	<20	160	141	0.02	13	14.8	1	2.3	104	0.6	0.2	9.5	0.9	2416
6242032	6240065	538	413	8	2	2	2	110	79	0.02	14	14.4	1	5	75	0.7	0.2	10	0.3	2505
6242033	6240066	40	33	3	2			9	15	0.02	80.5	89.7	1	7.7	12	1.4	5.2	0.1	0.5	4774
6242034	6240067	878	832	2	2	<20	<20	140	118	0.02	26.9	31.3	1	1.7	128	0.2	0.2	0.1	0.1	2037
6242041	6240074	3147	2484	1	2	1	10	2	2	0.02	3.5	1.9	1	0.1	2	0.2	0.2	0.1	0.5	40
6242042	6240075	642	635	1	2	10	50	61	47	0.02	41.9	43.9	1	3.8	91	0.2	0.2	0.1	0.5	1997
6240003	6240003	125	105	13	2	6	5	62	52	0.02	8.9	10.3	5.5	4.7	128	1.2	1	1.1	1	941
6240004	6240004	72	87	13	2	14	5	61	59	0.02	10	11.3	1	8.6	111	1.5	1.3	18	12	1492
6240005	6240005	32	30	4	2	2	2	24	19	0.02	3.6	4.2	1	3.3	68	0.6	0.5	9	8	1130
6240006	6240006	1	1	13	2	6	15	27	20	0.02	75.1	83.5	1	35.9	43	10	7.7	90.8	49	3844
6240007	6240007	540	461	5	2	18	5	2	2	0.02	46.6	54.9	1	2.1	78	0.2	0.2	0.7	1	1772
6240008	6240008	51	18	7	2	10	10	2	2	0.02	29.8	33.7	1	1	79	0.2	0.2	1	1	1009
6241020	6240023	16	10	14	2	1	4	38	34	0.02	40.9	45.8	1	21.4	88	6.8	2.6	70.4	51	29480
6242003	6240033	1	1	1	2			150	122	0.02	0.7	0.4	1	34.1	67	14	4.6	37	2.7	794
6242004	6240034	94	80	72	84			210	168	0.02	4.5	5.2	1	1.9	721	6.7	0.2	4.4	0.5	357
6240001	6240001	2	3	13	2			45	38	0.02	11	15.8	7.9	5.5	188	1.2	1.3	4	1	667
6240002	6240002	122	105	8	2	24	2	2	2	0.02	6.2	7.5	5.4	6.9	62	3.4	1.4	2.4	1	2022
6242001	6240031	171	151	2	2			210	169	0.02	20.3	28.2	1	3.8	70	0.2	0.6	2.7	0.5	4653
6242002	6240032	1	2	10	2			83	76	0.02	4.9	6	1	13.2	212	1.2	1.2	2.5	0.5	4266
6240009	6240009	29	29	1	2			42	24	0.02	1.9	1.6	1	3.5	409	0.2	0.2	7.9	5	1337
6242022	6240054	8	5	1	2			2	2	0.02	0.4	0.3	1	0.6	36	0.2	0.2	0.3	0.3	125
6240012	6240011	96	84	36	2			220	189	0.02	4.3	3.8	1	4.8	279	0.6	0.2	11	1	1257
6242040	6240073	23	19	1	2			15	12	0.02	11	12.3	1	11.8	1,102	0.2	0.8	3.5	0.5	6190
6240022	6240026	76	66	1	2			190	162	0.35	30.1	33.1	1	2.8	70	0.2	0.6	1.2	1	6770

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fldnum	labnum	Ni2_ppm	Ni4_ppm	Pb2_ppm	Pb4_ppm	Pd17_ppb	Pt17_ppb	Rb1_ppm	Rb2_ppm	Sb1_ppm	Sc1_ppm	Sc2_ppm	Se1_ppm	Sm1_ppm	Sr2_ppm	Ta1_ppm	Tb1_ppm	Th1_ppm	Th2_ppm	Ti2_ppm
6240011	6240025	3076	2567	1	2			8	2	0.02	5.4	5.2	1	0.2	17	0.2	0.2	0.8	1	199
6240013	6240012	25	19	5	2			100	98	0.21	3.2	3.4	1	1.7	30	0.2	0.2	1.8	1	615
6240014	6240013	9	10	1	2			2	2	0.1	0.7	0.7	1	0.4	39	0.2	0.2	0.1	1	18
6240015	6240014	39	7	9	12	26	10	38	36	6.9	7.8	9.3	5.1	0.9	3	0.2	0.2	1.9	7	1488
6240023	6240027	7	5	1	2			26	19	0.02	1	1.1	1	1	22	0.2	0.2	2.1	1	269
6240024	6240019	9	10	4	2			2	2	0.22	0.3	0.2	1	0.4	39	0.2	0.2	0.3	1	44
6242039	6240072	2730	2007	3	2	1	2	8	2	0.02	2.9	2.8	1	0.2	2	0.2	0.2	0.1	0.5	141
6240016	6240015	608	467	70	49	4	2	32	28	0.02	12	12.6	13	2.2	57	0.8	1	1.2	1	66
6240017	6240016	48	38	10	2	4	10	21	13	0.02	46.5	47.5	1	4.5	176	0.2	1	1.1	1	8652
6240018	6240017	55	45	18	2			93	96	0.02	10	11.2	1	1.5	333	1	0.2	0.5	1	4101
6240019	6240018	259	217	24	2	4	2	56	14	0.02	7.8	5.3	7	6.3	153	0.7	0.9	11	1	850
6240030	6240021	44	36	14	2			120	104	0.02	1.1	1.3	1	0.8	232	0.2	0.2	0.3	1	1560
6240031	6240022	175	141	19	6	<20	<20	64	58	0.02	6.1	8.1	1	2.2	175	0.2	0.2	2.1	1	1740
6240032	6240028	903	748	4	2	1	15	2	10	0.02	30.3	37.4	1	0.6	34	0.2	0.2	0.1	1	887

fldnum	labnum	U1_ppm	V2_ppm	W1_ppm	Y2_ppm	Yb1_ppm	Zn1_ppm	Zn2_ppm	Zn4_ppm	Zr1_ppm	Zr2_ppm
6242035	6240068	4.3	286	1	9	0.2	25	38	30	100	108
6242037	6240069	0.1	16	0.5	2	0.2	25	15	10	100	21
6242038	6240071	0.1	1	0.5	1	0.2	25	8	3	100	6
6242043	6240076	0.1	134	0.5	7	1.6	25	32	23	100	49
6242044	6240077	0.1	23	0.5	6	0.2	25	8	7	100	12
6242045	6240078	5.6	6	0.5	34	5.9	25	23	20	210	134
6240010	6240024	0.3	3	0.5	1	0.2	25	38	16	100	1
6242005	6240035	1.6	181	1	8	0.2	25	82	71	100	84
6242006	6240036	2	139	1	9	0.2	350	238	77	100	12
6242007	6240037	0.3	158	0.5	9	0.2	250	185	39	100	9
6242008	6240038	2	161	3	13	1.6	260	187	142	100	68
6242009	6240039	0.5	71	0.5	1	0.2	140	79	69	100	37
6242010	6240041	4.2	32	2	5	0.2	25	100	78	100	39
6242011	6240042	2.1	171	0.5	2	0.2	190	151	149	100	128
6242012	6240043	1.7	279	1	5	2.5	260	185	145	330	92
6242013	6240044	5.9	215	5	20	3.1	190	101	20	100	52
6242014	6240045	1.2	235	0.5	12	1.5	180	126	86	100	30
6242015	6240046	0.4	100	0.5	4	1.1	250	198	45	270	8
6242016	6240047	2	77	1	7	0.2	25	32	31	100	137
6242017	6240048	1.3	59	0.5	13	0.2	100	84	75	100	95
6242018	6240049	2	100	1	13	1.1	120	121	117	100	86
6242019	6240051	1.5	136	1	13	0.2	25	111	99	100	85
6242020	6240052	1.3	61	1	9	1.4	25	79	63	100	85
6242021	6240053	0.4	102	0.5	12	1.3	25	83	63	100	43
6242023	6240055	0.5	174	0.5	12	1.8	480	413	208	100	12
6242024	6240056	1.2	85	0.5	9	0.2	280	232	210	100	106
6242025	6240057	1.7	64	0.5	5	0.2	530	395	189	100	10
6242026	6240058	0.1	3	0.5	1	0.2	25	57	24	100	1
6242027	6240059	0.1	251	0.5	16	2.9	140	92	18	100	12
6242028	6240061	0.5	270	0.5	22	3.2	190	126	38	100	34
6242029	6240062	2.8	97	0.5	9	0.2	25	51	43	200	149
6242030	6240063	1	153	0.5	24	2.4	25	51	42	100	24
6242031	6240064	2	102	2	6	0.2	25	48	42	100	154
6242032	6240065	3.3	91	0.5	14	0.2	25	36	28	100	69
6242033	6240066	0.6	141	0.5	260	58	200	132	55	100	47
6242034	6240067	0.2	170	0.5	6	1.1	25	31	26	100	17
6242041	6240074	0.1	7	0.5	1	0.2	25	58	31	100	1
6242042	6240075	0.1	224	0.5	22	7.3	450	275	112	100	15
6240003	6240003	0.8	199	1	26	1.7	25	71	26	100	107
6240004	6240004	3.2	177	2	27	1.1	25	94	42	360	129
6240005	6240005	1.4	73	0.5	23	2.6	25	58	21	1100	356
6240006	6240006	13	247	11	299	34	340	170	29	2600	956
6240007	6240007	0.1	380	0.5	8	0.2	25	125	11	100	18
6240008	6240008	0.1	362	0.5	5	0.2	130	181	6	100	13
6241020	6240023	6	320	0.5	73	4.2	220	198	38	2600	465
6242003	6240033	5.1	1	0.5	137	15	25	39	40	360	341
6242004	6240034	1.1	23	0.5	9	1.2	270	249	243	100	15
6240001	6240001	0.8	180	0.5	32	1.7	25	72	12	280	61
6240002	6240002	1.8	94	0.5	49	2.5	150	195	31	280	136
6242001	6240031	1	232	0.5	12	0.2	170	153	93	100	73
6242002	6240032	0.3	10	0.5	28	2.4	25	94	58	620	38
6240009	6240009	0.8	27	0.5	5	0.2	25	36	37	280	131
6242022	6240054	0.1	5	0.5	1	0.2	25	27	13	100	3
6240012	6240011	0.5	129	0.5	8	0.2	25	63	32	250	49
6242040	6240073	0.7	143	0.5	15	1.4	25	69	39	340	53
6240022	6240026	0.4	204	0.5	18	1.8	25	81	44	100	42

fldnum	labnum	U1_ppm	V2_ppm	W1_ppm	Y2_ppm	Yb1_ppm	Zn1_ppm	Zn2_ppm	Zn4_ppm	Zr1_ppm	Zr2_ppm
6240011	6240025	0.1	14	0.5	1	0.2	25	61	29	100	1
6240013	6240012	0.5	17	0.5	3	0.2	25	34	28	100	42
6240014	6240013	0.1	14	0.5	3	0.2	830	875	876	100	1
6240015	6240014	2.7	1081	2	3	0.2	25	9	6	100	44
6240023	6240027	0.5	12	0.5	2	0.2	25	17	9	100	52
6240024	6240019	0.5	1	0.5	5	0.2	25	32	35	100	7
6242039	6240072	0.1	9	0.5	1	0.2	130	90	43	100	1
6240016	6240015	4.7	453	2	40	3.4	25	36	11	100	51
6240017	6240016	0.1	377	0.5	32	3.2	120	136	56	100	39
6240018	6240017	0.1	142	0.5	13	1.8	25	116	47	100	38
6240019	6240018	6.9	234	3	36	2.3	25	32	13	100	84
6240030	6240021	0.3	67	0.5	1	0.2	25	36	37	100	91
6240031	6240022	1	208	2	16	0.2	25	62	48	100	72
6240032	6240028	0.1	86	0.5	3	0.2	25	42	19	100	2

Appendix 2

1. Variable Information for "Rock_data.csv"

Variable	Order	Label	Measurement Type	Ascii Format
fldnum	1	field number	Scale	F7
labnum	2	laboratory number	Scale	F7
number	3	last 4 digits of fldnum	Scale	F4
utmzone	4	UTM zone	Nominal	F2
utmeast	5	UTM easting	Scale	F6
utmnorth	6	UTM northing	Scale	F7
nts	7	1:50 000 NTS map	Nominal	A5
descript	8	Rock description	Nominal	A28
ocnature	9	Nature of outcrop/float	Nominal	F1
ocsize	10	Size of outcrop (sq. metres)	Nominal	F1
ocfract	11	Degree of outcrop fracturing	Nominal	F1
ocvein	12	outcrop veining; degree	Nominal	F1
veintype	13	outcrop veining; type	Nominal	F1
ochomog	14	outcrop homogeneity	Nominal	F1
rocktype	15	Rock type	Nominal	F1
metgrade	16	Metamorphic grade	Nominal	F1
texture	17	Texture of igneous or crystalline rocks	Nominal	F1
schist	18	Degree of foliation	Nominal	F1
weather	19	Weathering of sample	Nominal	F1
colour	20	Colour of fresh rock	Nominal	F1
mintype	21	Type of mineralization	Nominal	F2
minquant	22	Mineralization amount	Nominal	F1
minmode	23	Mineralization; mode of occurrence	Nominal	F1
alter	24	Alteration	Nominal	F1
age	25	Age	Nominal	F1
Ag6_ppm	26	ppm; HNO_3; AAS	Scale	F5.2
As1_ppm	27	ppm; INAA; Becquerel	Scale	F6.1
Au1_ppb	28	ppb; INAA; Becquerel	Scale	F5.0
Ba1_ppm	29	ppm; INAA; Becquerel	Scale	F9
Ba2_ppm	30	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Be2_ppm	31	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4.1
Br1_ppm	32	ppm; INAA; Becquerel	Scale	F5.1
Cd1_ppm	33	ppm; INAA; Becquerel	Scale	F5
Cd2_ppm	34	ppm; $HClO_4$-HF-HCl; AAS	Scale	F5.1
Ce1_ppm	35	ppm; INAA; Becquerel	Scale	F9
Ce2_ppm	36	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Co1_ppm	37	ppm; INAA; Becquerel	Scale	F5
Co2_ppm	38	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Co4_ppm	39	ppm; Aqua Regia; AAS	Scale	F4

Variable Information for "Rock_data.csv" (continued)

Variable	Order	Label	Measurement Type	Ascii Format
Cr1_ppm	40	ppm; INAA; Becquerel	Scale	F5
Cr2_ppm	41	ppm; $HClO_4$-HF-HCl; AAS	Scale	F6
Cs1_ppm	42	ppm; NA; Becquerel	Scale	F5.1
Cu2_ppm	43	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Cu4_ppm	44	ppm; Aqua Regia; AAS	Scale	F5
Dy2_ppm	45	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4.1
Eu1_ppm	46	ppm; INAA; Becquerel	Scale	F5.1
Fe1_pct	47	wt. %; INAA; Becquerel	Scale	F5.1
Fe2_pct	48	wt. %; $HClO_4$-HF-HCl; ICP-ES	Scale	F5.2
Ga2_ppm	49	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Hf1_ppm	50	ppm; INAA; Becquerel	Scale	F5.1
La1_ppm	51	ppm; INAA; Becquerel	Scale	F5.1
La2_ppm	52	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Li2_ppm	53	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4.1
Lu1_ppm	54	ppm; INAA; Becquerel	Scale	F5.1
Mn2_pct	55	wt. %; $HClO_4$-HF-HCl; ICP-ES	Scale	F5.2
Mo1_ppm	56	ppm; INAA; Becquerel	Scale	F5
Mo2_ppm	57	ppm; $HClO_4$-HF-HCl; AAS	Scale	F5
Na1_pct	58	ppm; INAA; Becquerel	Scale	F5.2
Nb2_ppm	59	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Ni1_ppm	60	ppm; INAA; Becquerel	Scale	F5
Ni2_ppm	61	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Ni4_ppm	62	ppm; Aqua Regia; AAS	Scale	F5
Pb2_ppm	63	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Pb4_ppm	64	ppm; Aqua Regia; AAS	Scale	F5
Pd17_ppb	65	ppb;FA-ICP-Fluorescence;Chemex	Scale	F3
Pt17_ppb	66	ppb;FA-ICP-Fluorescence;Chemex	Scale	F3
Rb1_ppm	67	ppm; INAA; Becquerel	Scale	F5
Rb2_ppm	68	ppm; $HClO_4$-HF-HCl; AAS	Scale	F5
Sb1_ppm	69	ppm; INAA; Becquerel	Scale	F5.1
Sc1_ppm	70	ppm; INAA; Becquerel	Scale	F5.1
Sc2_ppm	71	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4.1
Se1_ppm	72	ppm; INAA; Becquerel	Scale	F5
Sm1_ppm	73	ppm; INAA; Becquerel	Scale	F5.1
Sr2_ppm	74	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Ta1_ppm	75	ppm; INAA; Becquerel	Scale	F5.1
Tb1_ppm	76	ppm; INAA; Becquerel	Scale	F5.1
Th1_ppm	77	ppm; INAA; Becquerel	Scale	F5.1
Th2_ppm	78	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Ti2_ppm	79	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F7
U1_ppm	80	ppm; INAA; Becquerel	Scale	F5.1

Variable Information for "Rock_data.csv" (continued)

Variable	Order	Label	Measurement Type	Ascii Format
V2_ppm	81	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
W1_ppm	82	ppm; INAA; Becquerel	Scale	F5.1
Y2_ppm	83	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Yb1_ppm	84	ppm; INAA; Becquerel	Scale	F5.1
Zn1_ppm	85	ppm; INAA; Becquerel	Scale	F5
Zn2_ppm	86	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4
Zn4_ppm	87	ppm; Aqua Regia; AAS	Scale	F5
Zr1_ppm	88	ppm; INAA; Becquerel	Scale	F5
Zr2_ppm	89	ppm; $HClO_4$-HF-HCl; ICP-ES	Scale	F4

2. Guide to meaning of numeric descriptive variable values on "Rock_data.csv"

Variable	Value	Label
ocnature	1	definite outcrop
	2	probable outcrop
	3	local float
	4	exotic float
ocsize	1	<1
	2	1-5
	3	5-25
	4	25-100
	5	>100
ocfract	1	massive
	2	slight
	3	moderate
	4	extensive
ocvein	1	none
	2	slight
	3	moderate
	4	extensive
veintype	1	quartz
	2	carbonate
	3	quartz-carbonate
	4	other
ochomog	1	homogeneous
	2	moderately homogeneous
	3	inhomogeneous
rocktype	1	igneous
	2	clastic sedimentary
	3	chemical sedimentary
	4	meta-igneous
	5	meta-clastic
	6	meta-chemical
	7	meta; origin unknown
metgrade	1	unmetamorphosed
	2	up to greenschist
	3	amphibolite
	4	granulite
texture	1	aphanitic
	2	fine grained (<1 mm)
	3	medium grained (1-5 mm)
	4	coarse (> 5 mm)
	5	pegmatitic
	6	porphyritic
	7	tuffaceous
	8	porphyroblastic
schist	1	unfoliated
	2	slight foliation
	3	moderate foliation
	4	extensive foliation
	5	paper schist
weather	1	fresh
	2	slight
	3	moderate
	4	extensive
colour	1	white
	2	black
	3	gray
	4	buff
	5	green
	6	brown
	7	red
	8	pink
mintype	1	pyrite
	2	sphalerite
	3	galena
	4	chalcopyrite
	5	py±sp±cpy±galena
	6	molybdenite
	7	pentlandite
	8	pitchblende/uraninite
	9	uranium colours
	10	U-Mo
	11	U-Cu
	12	U-F
	13	Cu-Mo
	14	fluorite
	15	other (specify)
	16	pyho±py±cpy
minquant	1	trace
	2	¼-½%
	3	½-1%
	4	1-2%
	5	2-5%
	6	5-10%
	7	10-25%
	8	>25%

Variable	Value	Label
minmode	1	disseminated
	2	vein/fracture controlled
	3	combination of 1 and 2
	4	massive
	5	stratabound
	6	stratiform
	7	other
alter	1	silicification
	2	carbonitization
	3	epidotization
	4	chloritization
	5	other

Variable	Value	Label
age	1	Archean
	2	Aphebian
	3	Helikian
	4	Hadrynian
	5	Cambrian
	6	Ordovician
	7	Silurian
	8	Devonian
	9	Post-Devonian